

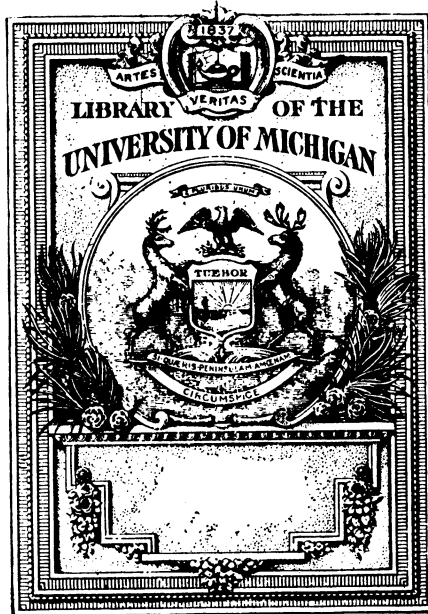
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THE GOVERNMENT OF THE PHILIPPINE ISLANDS

# WEATHER BUREAU

MANILA CENTRAL OBSERVATORY



MONTHLY BULLETIN, 1921

PREPARED UNDER THE DIRECTION OF

REV. JOSÉ ALGUÉ, S. J.

DIRECTOR OF THE WEATHER BUREAU

MANILA  
BUREAU OF PRINTING  
1922

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# WEATHER BUREAU

MANILA CENTRAL OBSERVATORY

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BULLETIN FOR JANUARY, 1921

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## INTRODUCTION

The form of our Monthly Bulletin as adopted in 1907 and modified in 1914 will be retained. Unless otherwise stated, by daily rainfall in the Philippines we mean the amount of rainfall for 24 hours beginning 6 a. m. The time used is that of the one hundred and twentieth meridian east of Greenwich.

The following is a list of all the official meteorological stations as they existed on January 1, 1921, together with the names of the respective observers who are in a great measure responsible for the accuracy of the observations published in this Bulletin.

OFFICIAL STATIONS AND OBSERVERS OF THE WEATHER BUREAU, JANUARY, 1921

Station. <sup>1</sup>	Town.	Province.	North latitude.	East longitude.	Observer.	Class.
Jolo	Jolo	Sulu	6 03	121 00	Ricardo S. Constancio.	III
Lais	Lais, Malita	Davao	6 20	125 39	Pedro Caalim	IV
Malita	Malita	Davao	6 24	125 36	Geronimo Arguna	IV
Lebak	Lebak	Cotabato	6 32	124 02	Salvador Andrada	IV
Lamitan	Lemitan, Isabela	Zamboanga	6 40	122 10	Mariano Blanca	IV
Malamau	Isabela	Zamboanga	6 45	121 57	Marcelo Dolar	IV
Zamboanga	Zamboanga	Zamboanga	6 54	122 05	Juan Lugod	II
Davao	Davao	Davao	7 01	125 35	Lamberto Garcia	III
Pikit	Pikit	Cotabato	7 05	124 40	Rufino Caballero	IV
Bual	Bual, Dulauan	Cotabato	7 12	124 30	Pio Dacumos	IV
Cotabato	Cotabato	Cotabato	7 13	124 15	Marciano Bugas	III
Naganaga	Naganaga, Margosatubig	Zamboanga	7 30	122 55	Perfecto F. Rodriguez	IV
Malabang	Malabang	Lanao	7 36	124 04	Nicanor Follosco	IV
Cateel	Cateel	Davao	7 48	126 26	Jose Grimal	IV
Ganasi	Ganasi	Lanao	7 50	124 05	Hermogenes Sabado	IV
Camp Kalao	Monkayo	Davao	7 50	126 01	Tomas P. Saldares	IV
Managok Agricultural School	Linabo, Malaybalay	Bukidnon	7 56	125 08	Mariano Avevilla	IV
Camp Keithley	Dansalan	Lanao	8 01	124 17	Pio M. Fajardo	IV
Veruela	Veruela	Agusan	8 05	125 55	Leon P. Mordeno	IV
Sumilau	Sumilau	Bukidnon	8 17	124 57	Laureano Contin	IV
Cagayan	Cagayan	Misamis	8 29	124 38	Juan Hernandez	III
Talacogon	Talacogon	Agusan	8 32	125 40	Doroteo D. Flores	IV
Butuan	Butuan	Agusan	8 56	125 32	Generoso Copin	III
Mambajao	Mambajao	Misamis	9 14	124 43	Domingo Arao	IV
Dumaguete	Dumaguete	Oriental Negros	9 18	123 19	Victor A. de la Peña	III
Kolonie, Yap <sup>2</sup>	Kolonie	Western Carolines	9 29	138 08	Prudencio Urbiztondo	II
Tagbilaran	Tagbilaran	Bohol	9 38	123 51	Anacleto Inciong	II
Iwahig Penal Colony	Puerto Princesa	Palawan	9 44	118 38	Catalino Bulaong	III
Dalaguete	Dalaguete	Cebu	9 46	123 31	Filemon Salvador	IV
Surigao	Surigao	Surigao	9 48	125 29	Arsenio C. Meneses	II
Central Palma	Ilog	Occidental Negros	10 01	122 49	Manuel Alvarez	IV
Biaong Cui's Farm	Barili	Cebu	10 08	123 34	Jose M. Cui	IV
Maasin	Maasin	Leyte	10 08	124 50	Aguedo Espina	III
Isabela	Isabela	Occidental Negros	10 13	123 00	Genaro Patosa	IV
Hacienda Tanolo	Hinigaran	Occidental Negros	10 14	122 52	Marciano Pandan	IV
Cebu	Cebu	Cebu	10 18	123 54	Segundo Peñaflorida	I
La Castellana	La Castellana	Occidental Negros	10 20	123 00	Agapito Yonque	IV
Central Azucarera de La Carlota	La Carlota	Occidental Negros	10 23	122 56	Jose B. Escara	IV
Hacienda Canlaon	La Castellana	Occidental Negros	10 25	123 02	Basilio Almonte	IV
Mao Sugar Central	Santa Cecilia, Bago	Occidental Negros	10 27	123 05	Mauro G. Benjamin	IV
Valladolid	Valladolid	Occidental Negros	10 28	122 50	Paz M. Bungsuan	IV
San Joaquin	San Joaquin	Iloilo	10 35	122 08	Ramon Serag	IV
Murcia	Murcia	Occidental Negros	10 36	123 02	Gliceria G. Empio	IV
Bacolod	Bacolod	Occidental Negros	10 40	122 57	Petronio G. Malata	IV
Oton	Oton	Iloilo	10 42	122 29	Leonardo Mediodia	IV
Iloilo	Iloilo	Iloilo	10 42	122 34	Ricardo A. Luna	I
San Jose de Buenavista	San Jose de Buenavista	Antique	10 44	121 55	Jose Ellazar	III
Tuburan	Tuburan	Cebu	10 45	123 50	Agapito Borja	IV
Leon	Leon	Iloilo	10 47	122 23	Felipe Cambronero	IV
Silay	Silay	Occidental Negros	10 48	122 58	Pedro Pineda	IV
Calag-itan	Calag-itan, San Remigio	Antique	10 51	122 05	Pedro Orquia	IV
Cuyo	Cuyo	Palawan	10 51	121 01	Roman Kabigting	III
Barotac Nuevo	Barotac Nuevo	Iloilo	10 53	122 42	Guillermo Macadagum	IV

<sup>1</sup> For the sake of uniformity in cases in which the station is not situated in a town, the name of the barrio, sitio or place of the station will invariably be followed by the name of the municipality, municipal district, or township to which it belongs. In the tables of Daily Rainfall, the name of the corresponding province will be always added after the name of the town.

<sup>2</sup> Our Yap station was transferred from Meeth to Kolonie on October, 1920. Kolonie (german) is called the place where the strangers have their residence in the District or Province of Okau, although the head-man or Gobernadorcillo of Okau has nothing to do with the Kolonie or Colonia. The Spaniards had called it Colonia and the natives have kept this name, but the Japanese keep the german name Kolonie.

## INTRODUCTION

Official stations and observers of the Weather Bureau, January, 1921—Continued

Station.	Town.	Province.	North attitude.	East longi- tude	Observer.	Class.
Hacienda Ilaya	Victorias	Occidental Negros	10 54	123 05	Fernando Gonzaga	IV
Hacienda Bilbao	Manapla	Occidental Negros	10 55	123 09	Gerardo Igoa	IV
Cadiz	Cadiz	Occidental Negros	10 57	123 18	Simon Santa Ana	IV
Dingle	Dingle	Iloilo	11 00	122 40	Jose H. Julandoni	IV
Ormoc	Ormoc	Leyte	11 00	124 36	Severo Bande	III
Guiuan	Guiuan	Samar	11 02	125 44	Patricio Yabao	III
Bugasong	Bugasong	Antique	11 03	122 04	Gerardo Mandolado	IV
Bogo	Bogo	Cebu	11 05	124 09	Sabas Aballe	IV
Tacloban	Tacloban	Leyte	11 15	125 00	Remigio C. Lauron	II
Capiz	Capiz	Capiz	11 35	122 45	Teodoro Peñero	II
Borongan	Borongan	Samar	11 37	125 26	Godofredo Bacolo	III
Catbalogan	Catbalogan	Samar	11 47	124 54	Guillermo Arteche	III
Calbayog	Calbayog	Samar	12 04	124 36	Rufino de la Cruz	II
Masbate	Masbate	Masbate	12 22	123 37	Vicente M. Sañano	IV
Romblon	Romblon	Romblon	12 35	122 16	Dolorito Coñterras	III
Batag Lighthouse	Laoang	Samar	12 40	125 04	Placido A. Edroso	III
Irosin	Irosin	Sorsogon	12 42	124 02	Eliseo Villalon	IV
Sorsogon	Sorsogon	Sorsogon	12 58	124 00	Proceso Hernia	III
Bacon	Bacon	Sorsogon	13 02	124 02	Constantino E. Elona	IV
Jovellar	Jovellar	Albay	13 04	123 36	Luis R. Nuñez	IV
Legaspi	Legaspi, Albay	Albay	13 09	123 45	Bernardino Costa	I
Guinobatan	Guinobatan	Albay	13 12	123 36	Eligio Arboleda	IV
Polangui	Polangui	Albay	13 18	123 29	Celestino Salvilla	IV
Tabaco	Tabaco	Albay	13 22	123 44	Cosme R. Medina	IV
Sumay (Guam)	Agaña	Ladrone Islands	13 24	144 38	Patrick McKenna	III
Iriga	Iriga	Camarines Sur	13 25	123 25	Mariano Calleja	IV
Calapan	Calapan	Mindoro	13 25	121 11	Aquilino Nokom	III
Virac	Virac	Albay	13 35	124 14	Eusebio Talion	III
Naga	Naga	Camarines Sur	13 37	123 11	Eduardo Ontengco	III
Tigaon	Tigaon	Camarines Sur	13 39	123 30	Tomas Mendoza	III
Libmanan	Libmanan	Camarines Sur	13 42	123 04	Nicolas Ortiz	IV
Batangas	Batangas	Batangas	13 45	121 03	Jose N. Cabrera	III
Calatagan	Calatagan	Batangas	13 50	120 38	Pablo Garcia	IV
Balayan	Balayan	Batangas	13 56	120 44	Casimiro Abellar	IV
Lipa	Lipa	Batangas	13 56	121 10	Juan Manguiat	IV
Lucena	Lucena	Tayabas	13 56	121 37	Vicente Valderrama	III
Atimonan	Atimonan	Tayabas	14 00	121 55	Pedro Baltasar	I
Lian	Lian	Batangas	14 02	120 39	Pedro Ramirez	IV
Nasugbu	Nasugbu	Batangas	14 04	120 38	Gonzalo P. Garcia	IV
Ambulong	Ambulong, Tanauan	Batangas	14 05	121 03	Gregorio Feralta	II
Daet	Daet	Camarines Norte	14 07	122 57	Benito Pelaez	II
Mendez Nuñez	Mendez Nuñez	Cavite	14 08	120 54	Pablo G. Pepa	IV
Alfonso	Alfonso	Cavite	14 08	120 51	Olimpio Ortega	IV
Indang	Indang	Cavite	14 12	120 53	Conrado Costa	IV
Canluban	Canluban, Calamba	Laguna	14 13	121 07	Nicolas Princena	IV
Silang	Silang	Cavite	14 14	120 58	Epifanio Montoya	IV
Maragondon	Maragondon	Cavite	14 17	120 44	Josefa Cuajunco	IV
Paracale	Paracale	Camarines Norte	14 17	122 47	Sinforoso Sureta	IV
Santa Cruz	Santa Cruz	Laguna	14 17	121 25	Pedro Resurreccion	III
Buenavista	Buenavista, General Trias	Cavite	14 19	120 54	Albino C. Primero	IV
Imus	Imus	Cavite	14 26	120 56	Consuelo T. Monzon	IV
Cavite Naval Station	Cavite	Cavite	14 29	120 55	Eulogio Fructuoso	IV
Antipolo	Antipolo	Rizal	14 36	121 10	Valeriano Garcia	IV
Balanga	Balanga	Bataan	14 41	120 32	Angel W. Banzon	IV
Malolos	Malolos	Bulacan	14 51	120 43	Joaquin B. Tantoco	IV
San Fernando	San Fernando	Pampanga	15 02	120 42	Isidoro Makabali	IV
San Isidro	San Isidro	Nueva Ecija	15 19	120 55	Bernardo Pecache	II
Iba	Iba	Zambales	15 20	119 58	Manuel Parayno	III
Concepcion	Concepcion	Tarlac	15 20	120 39	Porfirio Tanjuakio	IV
O'Donnell	O'Donnell, Capas	Tarlac	15 21	120 28	Ruperta Vistan de Frias.	IV
Tarlac	Tarlac	Tarlac	15 30	120 35	Arsenio T. Magat	IV
Camiling	Camiling	Tarlac	15 41	120 25	Julia de Aguilar	IV
Baler	Baler	Tayabas	15 45	121 34	Santiago Palmero	IV
Dagupan	Dagupan	Pangasinan	16 03	120 20	Jose M. Sison	I
Rosario	Rosario	La Union	16 14	120 29	Martin Posadas	IV
Tubao	Tubao	La Union	16 21	120 25	Gerardo Martens	IV
Bolinao	Bolinao	Pangasinan	16 23	119 53	Terese D. Solis	IV
Aringay	Aringay	La Union	16 24	120 21	Jose L. Brillantes	IV
Baguio	Baguio	Mountain	16 25	120 35	Jose de Jesus	I
Naguilian	Naguilian	La Union	16 32	120 24	Antonio Garcia	IV
San Fernando	San Fernando	La Union	16 37	120 19	Estanislao F. Feraren	III
Candon	Candon	Ilocos Sur	17 12	120 27	Luis Quismorio	IV
Vigan	Vigan	Ilocos Sur	17 34	120 23	Gregorio Prado	II
Tuguegarao	Tuguegarao	Cagayan	17 36	121 43	Meliton Cedeño	II
Laoag	Laoag	Ilocos Norte	18 12	120 35	Francisco Tiangco	II
Aparri	Aparri	Cagayan	18 22	121 38	Manuel Delgado	I
Cape Bojeador	Burgos	Ilocos Norte	18 30	120 34	Alejandro Ramos	IV
Basco	Basco	Batanes	20 28	121 59	Fernando Abad	III

Several volunteer or coöperative rain observers have been furnishing our Central Office with daily and monthly rainfall observations, which are included also in this Bulletin. The following list gives some information concerning these volunteer stations.

## VOLUNTEER OR COÖPERATIVE STATIONS OF THE WEATHER BUREAU, JANUARY, 1921

Station.	Town.	Province.	North latitude.	East longitude.	Remarks.
Lapac Agricultural School.	Siasi	Sulu	5 30	120 45	Under the Bureau of Education.
Glan	Glan	Cotabato	5 45	125 10	Do.
Buntung	Buntung, Koronadal.	Cotabato	6 15	124 58	Do.
Basilan Plantation	Kabunbatan, Isabela.	Zamboanga	6 41	121 53	Connected with the Basilan Plantation Company.
Padada	Padada, Santa Cruz.	Davao	6 41	125 23	Under the Bureau of Education.
Basilan Plantation Office.	Isabela	Zamboanga	6 42	121 55	Connected with the Basilan Plantation Company.
La Union	La Union, Sigaboy	Davao	6 42	126 05	Under the Bureau of Education.
Paranglalap	Isabela	Zamboanga	6 43	122 02	Connected with the American Rubber Company.
Latuan	Isabela	Zamboanga	6 44	122 00	Do.
Buluan	Buluan	Cotabato	6 44	124 48	Under the Bureau of Education.
Pagsilaan Farm School.	Mati	Davao	6 57	126 10	Do.
Cagayan de Sulu	Cagayan de Sulu	Sulu	7 00	118 30	Connected with the Atkins, Kroll and Company.
Kidapauan	Kidapauan	Cotabato	7 01	125 03	Under the Bureau Education.
Piang Agricultural School.	Kudarangan, Dula-	Cotabato	7 02	124 30	Do.
	uan.				
Cotabato Seed Station	Pikit	Cotabato	7 05	124 40	Under the Provincial Governor.
Awang	Awang	Cotabato	7 07	124 14	Under the Bureau of Education.
Sirib	Sirib, Guianga	Davao	7 09	125 23	Do.
Kabakan	Kabakan	Cotabato	7 10	124 50	Do.
Mampising	Mampising, Pantu-	Davao	7 17	125 51	Do.
	kan.				
Kabasaran	Kabasaran, Buldun	Cotabato	7 30	124 20	Do.
Banisilan	Banisilan	Cotabato	7 32	124 45	Do.
Compostela	Compostela, Monkayo.	Davao	7 36	126 01	Do.
Lumbatan	Lumbatan	Lanao	7 48	124 16	Do.
Sindangan	Sindangan	Zamboanga	8 10	122 59	Do.
Diklom	Tangkulan, Maluko	Bukidnon	8 20	124 48	Connected with the Agusan Coconut Company.
Hacienda San Jose	Tanjay	Oriental Negros	9 31	123 10	Connected with the Central Azucarera de Bais.
Hacienda Palanas	Bais	Oriental Negros	9 32	123 05	Do.
Hacienda Tamugon	Bais	Oriental Negros	9 35	123 05	Do.
Binalbagan Estate	Binalbagan	Occidental Negros	10 12	122 52	Connected with the Binalbagan Estate, Inc.
Hacienda Vallehermoso	Vallehermoso	Oriental Negros	10 20	123 18	Connected with the San Carlos Milling Company.
La Carlota Experimental Station.	La Carlota	Occidental Negros	10 25	122 55	Under the Bureau of Agriculture.
Central San Carlos	San Carlos	Occidental Negros	10 30	123 25	Connected with the San Carlos Milling Company.
Hacienda Refugio	San Carlos	Occidental Negros	10 34	123 27	Do.
Lapuslapus	Lapuslapus, Iloilo	Iloilo	10 42	122 35	Connected with the Philippine Railway Company.
Hawaiian Philippine Company, Malisbug.	Malisbug, Silay	Occidental Negros	10 50	123 00	Connected with the Hawaiian Philippine Company.
Lucena	Lucena, Santa Bar-	Iloilo	10 52	122 37	Connected with the Philippine Railway Company.
	bara.				
Dueñas	Dueñas	Iloilo	11 05	122 35	Do.
Bitaoagan	Bitaoagan, Passi	Iloilo	11 12	122 41	Do.
Dumarao	Dumarao	Capiz	11 16	122 42	Do.
Dao	Dao	Capiz	11 23	122 41	Do.
San Jose Estate, Robles Camp D-17.	San Jose	Mindoro	12 18	121 06	Connected with the Mindoro Sugar Company.
San Jose Estate, Tamaraw Plantation.	San Jose	Mindoro	12 19	121 07	Do.
San Jose Estate, San Agustin.	San Jose	Mindoro	12 19	121 01	Do.
San Jose Estate	San Jose	Mindoro	12 22	121 05	Do.
San Jose Estate, Tunnel D-12.	San Jose	Mindoro	12 24	121 07	Do.
Fort Mills	Corregidor	Cavite	14 23	120 35	Under the U. S. Army.
Alabang Stock Farm	Alabang, Muntinglupa.	Rizal	14 26	121 03	Under the Bureau of Agriculture.
Lamao Horticultural Station.	Lamao, Limay	Bataan	14 31	120 36	Do.
Montalban	Montalban	Rizal	14 44	121 09	Connected with the Metropolitan Water District.
Hacienda Pintong Sapang.	San Jose del Monte	Bulacan	14 48	121 03	
Mabayuan Dam	Olongapo	Zambales	14 49	120 16	Under the U. S. Naval Station.
Pampanga Sugar Mills	Del Carmen	Pampanga	15 00	120 32	Connected with the Pampanga Sugar Mills.
Hacienda Luisita	Comillas, La Paz	Tarlac	15 25	120 42	Connected with the Hacienda Luisita.
Hacienda Luisita	San Miguel, Tarlac	Tarlac	15 26	120 36	Do.
Paniqui	Paniqui	Tarlac	15 40	120 35	Connected with Cojuanco Estate.
Muñoz Agricultural School	Muñoz	Nueva Ecija	15 43	120 54	Under the Bureau of Education.
Sagada	Sagada	Mountain	17 05	120 54	Connected with the Sagada Mission.
Bontoc	Bontoc	Mountain	17 06	120 59	In charge of Rev. Jos. Anseun.
Tayum	Tayum	Abra	17 37	120 39	In charge of Rev. Philip Beck.

The signs and symbols employed in this publication are the following:

Symbol.	Equal to—	Symbol.	Equal to—
Ci.	Cirrus.	o	Overcast.
Ci.-S.	Cirro-stratus.	p	Passing showers of rain.
Ci.-Cu.	Cirro-cumulus.	q	Squally weather.
A.-Cu.	Alto-cumulus.	u	Ugly or threatening.
A.-S.	Alto-stratus.	v	Visibility of distant objects.
S.-Cu.	Strato-cumulus.	w	Wet or heavy dew.
N.	Nimbus.	●	Rain.
Cu.	Cumulus.	☃	Fog or mist.
Cu.-N.	Cumulo-nimbus.	♁	Dew.
S.	Stratus.	⊕	Solar halo.
Fr.-Cu.	Fracto-cumulus.	☾	Lunar halo.
Fr.-N.	Fracto-nimbus.	☽	Lunar corona.
Fr.-S.	Fracto-stratus.	⊖	Solar corona.
S.-cf.	Stratus-cumuliformis.	⚡	Heat lightning.
N.-cf.	Nimbus-cumuliformis.	⚡	Thunderstorm.
M.-Cu.	Mammato-cumulus.	⚡	Thunder without lightning.
b	Bright, clear sky.	⚡	Strong wind.
c	Cloudy weather.	☁	Rainbow.
d	Drizzling, light rain.	☁	Dry mist.
g	Gloomy or stormy-looking weather.		

NOTE.—A small <sup>o</sup> or <sup>2</sup> used as an exponent to the above symbols indicates, respectively, that the intensity of the meteor denoted by the symbols thus affected was small or very great.



## INTRODUCCIÓN

Conservaremos en esta publicación la misma forma adoptada en 1907, y modificada en 1914. Mientras no se diga lo contrario, por lluvia diaria en Filipinas entendemos la cantidad de lluvia en 24 horas empezando a 6 a. m. El tiempo usado es el del meridiano ciento veinte E de Greenwich.

Damos en el texto inglés una lista de todas nuestras estaciones meteorológicas oficiales existentes el primero de enero de 1921, con los nombres respectivos de los observadores, los cuales son en gran parte responsables de las observaciones que se publican en este Boletín.

Varios observadores voluntarios de lluvia han proporcionado a esta Oficina Central observaciones diarias y mensuales de lluvia, las cuales van incluidas en este Boletín. En el texto inglés damos alguna información acerca de estas estaciones voluntarias.

Los signos y símbolos usados en esta publicación son los siguientes:

Símbolos.	Significado.	Símbolos.	Significado.
Ci.	Cirrus.	o	Cubierto.
Ci.-S.	Cirro-stratus	p	Lluvia pasajera.
Ci.-Cu.	Cirro-cumulus.	q	Achubascado.
A.-Cu.	Alto-cumulus.	u	Tiempo feo o amenazador.
A.-S.	Alto-stratus.	v	Traspirencia del aire.
S.-Cu.	Strato-cumulus.	w	Húmedo.
N.	Nimbus.	●	Lluvia.
Cu.	Cumulus.	≡	Niebla o neblina.
Cu.-N.	Cumulo-nimbus.	p	Rocío.
S.	Stratus.	⊕	Halo solar.
Fr.-Cu.	Fracto-cumulus.	⊙	Halo lunar.
Fr.-N.	Fracto-nimbus.	⊕	Corona lunar.
Fr.-S.	Fracto-stratus.	⊙	Corona solar.
S.-cf.	Stratus-cumuliformis.	⊕	Relámpago sin trueno.
N.-cf.	Nimbus-cumuliformis.	⊙	Tempestad de trueno.
M.-Cu.	Mammato-cumulus.	⊕	Trueno sin relámpago.
b	Despejado.	⊙	Viento duro.
c	Nublado.	⊕	Arco-iris.
d	Llovizna o lluvia ligera.	⊙	Niebla seca.
g	Mal cariz; tiempo cerrado, fosco.		

NOTA.—Un ° o un ² puestos como exponentes de los signos, indican respectivamente una muy débil o una muy fuerte intensidad en el meteoro que representan.



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**BULLETIN FOR JANUARY, 1921**

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# METEOROLOGICAL BULLETIN FOR JANUARY, 1921

By Rev. JOSÉ CORONAS, S. J.,

Chief, Meteorological Division of the Weather Bureau

## GENERAL WEATHER NOTES

Pressure and temperature.—The mean atmospheric pressure for this month is, with a few exceptions, very slightly below that of the preceding year and below the normal of January. The highest pressures were generally observed on the 24th, and the lowest on the 28th, 29th, and 30th.

The mean monthly temperature does hardly differ from the normal throughout the Philippines. The absolute highest and lowest temperatures for Manila were 32.7° C., and 17.4° C.: they were recorded on the 10th and 9th, respectively. The extreme temperatures for Baguio were 25.2° C., 11.2° C. on the top of Mirador, and 25.8° C., 9.8° C. in the plateau near the City Hall.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS OF THE WEATHER BUREAU FOR JANUARY, 1921

Station.	Pressure.							Temperature.						
	Mean.	Departure from Jan., 1920.	Departure from normal.	Highest mean.	Day.	Lowest mean.	Day.	Mean.	Departure from Jan., 1920.	Departure from normal.	Highest.	Day.	Lowest.	Day.
	<i>mm.</i>	<i>mm.</i>	<i>mm.</i>	<i>mm.</i>		<i>mm.</i>		<i>°C.</i>	<i>°C.</i>	<i>°C.</i>	<i>°C.</i>		<i>°C.</i>	
Zamboanga	758.40	-0.54		760.52	24	757.10	31	26	-0.2		32.8	8	20.5	25
Tagbilaran	59.11	- .30	-0.49	61.62	24	57.06	30	25.1	- .2	-0.6	32.5	23	20.3	24
Surigao	59.25	- .36	- .23	61.76	24	57.30	30	25.6	+ .3	0	29.5	10	21	25
Cebu	59.46	- .27	- .35	61.90	24	57.29	30	26.1	- .1	0	31.3	30	21.9	14
Iloilo	59.48	- .29	- .32	61.67	24	57.51	30	25.5	- .2	- .1	30.7	13, 16, 19	21.6	28
Tacloban	59.76	- .36	- .52	62.19	24	57.38	30	25	- .2	- .4	31.2	7	20.6	24
Capiz	60.17	- .22	- .47	62.44	24	57.89	30	25.6	- .2	- .1	31.8	19, 21	22.1	20
Calbayog	60.22	- .06	- .27	62.66	24	57.92	29	24.9	+ .5	+ .1	31.2	Various	20.2	13
Legaspi, Albay	60.74	- .19	- .05	63.08	24	58.67	30	25.4	- .2	- .2	30.3	18, 21	22.2	30
Atimonan	61.43	- .08	+ .16	63.41	24	59.80	30	25.3	+ .1	+ .1	30.6	23	21.9	17, 29
Ambulong, Tanauan,														
Batangas	60.60	- .02		62.63	24	59.11	30	25.6	+ .4		31.8	19	19.9	22
Daet	61.58			63.67	24	59.62	30	24.9			29	18	20	13
Manila	61.24	0	+ .06	63.17	24	59.56	30	24.6	+ .3	- .2	32.7	10	17.4	9
San Isidro, Nueva														
Ecija	61.41	+ .03	- .03	63.32	24	59.67	30	24.7	+ .3	0	32.4	17, 26	17	12, 27
Dagupan	60.85	- .02	- .12	62.85	24	59.32	29	25.5	+ .2	0	34.5	10	18.3	9
Baguio <sup>a</sup>	637.94	+ .04	- .02	639.54	24	636.49	29	16.8	+ .1	+ .3	25.2	23	11.2	12, 27
Vigan	760.60	- .24	- .55	762.30	24	759.08	29	25.8	+ .7	+ .4	32.1	31	19.2	8
Tuguegarao	62.74	- .16	+ .05	64.72	15	61.09	28	23.3	+ 1	+ .2	31.8	24	16.3	12
Laoag	60.86	- .24		62.65	24	59.28	3	24.7	+ .5		33.4	5	14.9	26
Aparri	63.01	- .33	+ .03	65.49	15	61.38	28	23.1	+ .9	+ .2	29.1	1	17.1?	7

<sup>a</sup> The barometric readings of this station are not reduced to sea level.

Rainfall.—With the exception of southeastern Luzon, the eastern Visayas and southern Mindanao, a monthly amount of rainfall below the January's normal has been reported from our stations in the Philippines. In Manila there was no more than 0.3 mm. of rain during the month, this amount differing by -25.0 mm. from the normal, and -1.5 mm. from the monthly total of 1920. The monthly rainfall for Baguio 6.5 mm. is 21.6 mm. below the normal of this month.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF JANUARY, 1921

Station.	Total.	Departure from January, 1920.		Departure from normal.	Days of rain.		Departure from January, 1920.		Departure from normal.	Greatest rainfall in a single day.		Day.
	mm.	mm.	mm.	mm.			mm.	mm.	mm.	mm.		
Jolo	95.3	-65.8	-24	10	-2	0	59.5	30				
Malamaui, Isabela, Zamboanga	107.5	+24.4		9	+3		31	11				
Zamboanga	67	+2.7	+7.3	10	-2	+3	21.1	31				
Davao	175.4	+22.3	+39.9	15	0	+7	24.1	17, 21				
Cotabato	113.3	+13.5	+18.3	15	+3	+4	20.8	29				
Cagayan	24.6	-45.8	-25.7	3	-1	-5	11.7	26				
Butuan	207	-405.5	-53.1	25	+1	+4	64.5	25				
Mambajao	254			17			48	15				
Dumaguete	147		+57.1	17		+4	70.4	1				
Kolonie, Yap, Western Carolines	95.7	-139	-57.9	21	-3	0	20.4	21				
Tagbilaran	127	+18.2	+38.1	21	0	+8	27.6	1				
Iwahig Penal Colony, Puerto Princesa	34			4			19.3	1				
Surigao	389.4	-415.5	-77.5	27	+1	+4	64.9	14				
Cebu	114	+18.1	+16.2	21	+2	+8	24.6	1				
Iloilo	33.6	+3.5	-18.7	16	+8	+7	5.3	16				
San Jose de Buenavista	8.6	-5.4	-22.4	5	+1	+1	4.3	28				
Cuyo	4.6	+4.1	-6.6	2	+1	+1	2.8	30				
Ormoc	170.3	+42.5	-17.6	23	+2	+7	25.9	2				
Guiuan	469.8	-250.2	-182.1	28	+2	+3	76.5	28				
Tacloban	361.8	-60.8	+14.8	24	+1	+3	59.2	10				
Capiz	133.3	+48.2	-21.5	25	+8	+9	23.2	28				
Borongan	758.7	+27.7	+133.7	30	+3	+4	88.9	28				
Catbalogan	378.6	-8.3		27	+8		66.5	14				
Calbayog	211.4	-42.9	+8.4	25	+5	+5	44	28				
Masbate	321.7	-1.3	+130.5	25	+8	+8	73.2	30				
Romblon	126.9	+27.5	+12	20	+6	+5	16.8	10, 28				
Batag Light-house, Laoang	736	+234.1		25	+2		135.1	14				
Sorsogon	758.3	+316.7		29	+7		182.1	29				
Legaspi, Albay	685.4	+368.4	+298.5	26	+5	+5	139.8	30				
Sumay (Guam), Agaña	78.3	+36.4	+15.8	18	+11	+5	21.4	11				
Calapan	87.1	+42.2	-15.7	20	+7	+5	17.8	29				
Virac	157.4	+35.1	-47.9	26	+8	+5	38.6	2				
Naga, Camarines Sur	136.5	+55.4	+18.3	16	+7	+5	33.5	31				
Tigaon	246.5	+46.1		28			58.4	29				
Batangas	11.5	-1.4	-11.7	6	+1	0	5.1	5				
Lucena	108.7	+23		19	+6		27.4	5				
Atimonan	154.7	+7.2	-65.5	24	+5	+6	25.1	31				
Ambulong, Tanaunan, Batangas	4.9	-26.3		4	-5		1.8	3				
Daet	444.4			24			179.8	31				
Canluban, Calamba	9.2	-18.5		7	-1		3	3				
Paracale	91.9	-153	-290.7	16	-5	-5	12.7	20, 23				
Santa Cruz, Laguna	10.1	-30	-40.7	7	-6	-5	3.8	2				
Manila	.3	+1.5	-25	1	-3	-4	.3	31				
Antipolo	1.5	-18.7	-23.5	1	-5	-4	1.5	31				
San Isidro, Nueva Ecija	1.3	-8	-12.9	1	-1	-2	1.3	2				
Iba	0	0	4.8	0	0	0	0	0				
Tarlac	0	-17.8	-8.1	0	-1	-2	0	0				
Baler	186.3	+73	45.1	11	-2	-2	99.6	2				
Bagupan	0	-2.5	-9.6	0	-1	-2	0	0				
Baguio	6.5	+5.7	-21.6	4	+3	0	3.6	17				
San Fernando, La Union	0	-4.6	-8.7	0	-2	-1	0	0				
Candon	1.3	+1.3	-3.5	1	+1	0	1.3	3				
Vigan	21	+20.5	+19.5	2	+1	+2	18.5	19				
Tuguegarao	36.1	+7.9	+2.8	7	-6	+1	16	16				
Laog	.8	+8	-2.9	1	+1	0	.8	14				
Aparri	137.2	-21.5	-52.5	19	+5	+4	46.3	8				
Cape Bojeador	15.6	-3.3		4	-5		9.4	14				
Basco	268.1	+78.3	+32.2	6	+8	+6	46.8	29				

DEPRESSIONS AND TYPHOONS

In low latitudes there was no depression or typhoon worth mentioning during the month. Only a low-pressure area appeared to the northeast of Surigao on the 29th and moved WSW along the northern coast of Mindanao on the 30th.

In high latitudes and to the south of Japan there were shown in our Weather Maps several depressions during the month, those of the 14th and 19th having developed into cyclones or typhoons on the next day, respectively, when moving NNE to the east of Japan.

## NOTAS GENERALES DEL TIEMPO

**Presión y temperatura.**—La presión atmosférica media de este mes es, con raras excepciones, muy ligeramente menor que la del año pasado y menor también que la normal de enero. Las presiones más altas se observaron generalmente el día 24, y las más bajas los días 28, 29 y 30.

La temperatura media mensual apenas difiere de la normal en todo el Archipiélago. Las temperaturas máxima y mínima absolutas de Manila fueron  $32.7^{\circ}$  C. y  $17.4^{\circ}$  C., las cuales se registraron los días 10 y 9, respectivamente. Las temperaturas extremas de Baguio fueron  $25.2^{\circ}$  C.,  $11.2^{\circ}$  C. en la cumbre del Mirador, y  $25.8^{\circ}$  C.,  $9.8^{\circ}$  C. en la llanura cerca del *City Hall*.

**Precipitación acuosa.**—A excepción del SE de Luzón, E de Visayas y S de Mindanao, se ha recogido en nuestras estaciones de Filipinas una cantidad de lluvia mensual menor que la normal de enero. En Manila no hubo más que 0.3 mm. de lluvia durante el mes, cantidad que difiere de la normal de este mes en  $-25.0$  mm. y de la lluvia mensual de 1920 en  $-1.5$  mm. La lluvia total de Baguio 6.5 mm. es 21.6 mm. menor que la normal de enero.

## DEPRESIONES Y TIFONES

En bajas latitudes no hubo durante el mes depresión alguna o tifón que merezca mencionarse. Sólo un área de baja presión apareció al NE de Surigao el día 29 y se movió al WSW a lo largo de la costa septentrional de Mindanao el día 30.

En altas latitudes y al S de Japón se echaron de ver en nuestros mapas del tiempo varias depresiones durante el mes, habiéndose convertido las de los días 14 y 19 en ciclones o tifones el día siguiente, respectivamente, mientras se movían al NNE por el E de Japón.

METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY \*

[ $\phi=14^{\circ} 84' 41''$  N;  $\lambda=120^{\circ} 58' 33''$  E; barometer above sea, 14.2 meters; gravity correction not applied,  $-1.72$  mm.]

Day.	Pressure (mean).	Air temperature. <sup>b</sup>			Underground temperature.						Relative humidity (mean).	Vapor pressure (mean).	Radiation.		Evaporation. <sup>b</sup>		
		Mean.	Maximum.	Minimum.	0.25 meter.		0.50 meter.		1.50 meters.				2.50 meters.	Minimum on grass.	Maximum in sun. Black bulb in vacuo. <sup>c</sup>	Free exposure (total).	Shelter (total).
					8 a.m.	2 p.m.	8 a.m.	2 p.m.	8 a.m.	8 a.m.							
1	761.34	24.6	32	20.3	25.4	27.3	26.1	27	28.2	28.6	79	17.9	18.6	61.5	3	2.2	
2	60.81	24	29.6	20.2	25.6	27.1	26.7	26.8	28.2	28.7	83.8	18.4	18.3	61.6	3	1.9	
3	60.19	25.4	31	22	26	27.6	26.7	27	28.2	28.8	79.2	18.7	21.2	58.6	3	2.3	
4	61.10	24.9	31.5	21.1	26.1	28	26.8	27.2	28.2	28.7	76.4	17.5	19.4	56.3	3.6	2.6	
5	61.39	24.5	31.6	20.4	25.8	27.6	26.8	27.2	28.1	28.7	76.3	17.2	17.7	56.1	3.2	2.5	
6	61.48	24.9	32.2	19.6	25.5	28	26.7	27.2	28	28.6	71.6	16.1	17.1	58.7	4.4	3.7	
7	61.49	24.5	31.2	19.4	25.3	27.4	26.7	27.1	28	28.5	71	15.8	16.3	58.2	4.4	3.2	
8	61.36	23.9	30.9	19	25.6	27	26.7	27	28	28.5	75	16.2	17.3	54.9	3.2	2.4	
9	60.87	24.1	31.5	17.4	24.5	27.5	26.3	26.8	27.8	28.5	73.4	15.9	15	58.8	4.7	3.2	
10	60.73	25.5	32.7	20.9	25.7	28.3	26.6	27.2	28	28.6	72.9	17.2	20.3	60.3	4.9	3.2	
11	60.60	23.4	30	18.7	25.2	27.6	26.7	27	28	28.5	75.3	15.8	16.3	55.8	4.5	2.2	
12	60.72	23	30.6	17.8	24.5	27	26.5	26.9	27.8	28.5	75.1	15.3	17.4	55.4	3.9	2.6	
13	61.06	24	30.5	18.7	24.7	27.4	26.3	26.9	27.8	28.5	73.9	17.3	16.4	63.3	3.7	2.4	
14	61.60	25.4	31.1	21.2	25.6	27.7	26.6	27	28	28.5	73.3	17.3	19.4	60	4.1	2.7	
15	61.68	25.4	30.5	22.6	26.1	27.4	26.8	27.2	28	28.6	72.8	17.3	21	55.7	3.8	2.6	
16	61.59	25.1	29.3	21	25.5	27.5	26.6	27	27.8	28.5	78	18.3	18.6	56.3	3.2	2.1	
17	61.92	24.5	29.7	21.2	25.7	27.3	26.7	27	28	28.5	83.4	18.9	19.4	55	2.7	1.8	
18	61.61	24.7	31.3	20.2	25.5	27.6	26.5	27	27.8	28.4	81.1	18.5	18.2	61.2	2.8	2	
19	61.53	24.9	31.5	20	25.2	28.4	26.5	27.2	27.7	28.4	79.6	18.3	19.6	60	3.7	2.5	
20	61.31	24.3	30.2	19.8	24.7	27.8	26.5	27.2	27.7	28.4	79.2	17.7	17.3	56.6	3.4	2.2	
21	61.61	24.4	31	18.9	25.3	28.1	26.7	27	27.8	28.4	79.4	17.7	16.8	54.6	4.3	2.7	
22	61.75	24.6	30.7	19.4	25.5	28.1	26.7	27.2	27.8	28.5	77.3	17.5	17.3	60.4	4.1	2.5	
23	62.01	24.6	29.8	20.2	25.4	27.5	26.9	27.1	27.6	28.4	77.2	17.6	17.8	53.6	3.2	2	
24	63.17	25.2	32.1	20.6	25.7	27.6	26.8	27.1	28	28.5	72.5	16.9	18.2	62.3	4.7	3.1	
25	62.90	24.7	31.9	20.2	25.3	28.4	26.8	27	27.7	28.3	67.1	14.8	17.6	59.5	6.1	4.1	
26	62.14	24.4	31.8	19.2	25.7	28.1	27	27.2	27.6	28.3	67.3	14.9	16.6	61	5.2	3.8	
27	60.73	24.8	31.7	20.8	25.5	28.5	26.7	27.2	27.7	28.3	70.5	15.8	18	60.6	5.5	3.7	
28	60.22	24.6	30	20.7	25.8	27.9	26.8	27.3	27.8	28.2	73.1	16.6	18.8	58.3	4.2	3	
29	59.79	24.6	27.6	22	26.2	27.4	27	27	27.8	28.4	73.8	16.8	20.3	48.7	3.3	2.4	
30	59.56	25.1	29.8	21	25.6	27.2	27	27.2	28	28.5	71.4	16.7	16.7	53.3	5.1	8.7	
31	60.13	25.5	29.6	22.5	26.3	27.3	27	27	27.8	28.3	64.9	15.5	21.9	44.7	5.7	4.4	
Mean	761.24	24.6	30.8	20.2	25.5	27.7	26.7	27.1	27.9	28.5	75.2	17	18.3	57.3	4	2.8	
Total															124.3	85.7	
Departure from normal	+0.06	-0.2	+0.7	-0.1							-2.9	-1			+16.3		

Day.	Wind.				Clouds.				Sunshine.	Rain, 24 hours beginning 6 a. m.		Miscellaneous.	
	Prevailing direction.	Total movement.	Maximum hourly velocity.	Direction at the time of the maximum velocity.	Amount (mean).	Form and direction.		Upper.		Lower.	On the tower.		In the park.
						Upper.	Lower.						
1	N	153.5	17.5	E	4.8	A.-Cu.	Cu.	E	E	5 05			
2	NE	112.5	14	SE	3.2	A.-Cu.	ESE	Cu.	E	0 15		d a. d° p.	
3	NE	125.5	16	ENE	7.3	Ci.		Cu.	E	1 50			
4	NE	151.5	16.5	ESE	6.2	Ci.		Cu.	E	4 50			
5	NE	173	21	E	6.8	Ci.		Cu.	E	4 00		d° a.	
6	NE, ENE	211	23	E	3.9	Ci.		Cu.	E	7 30		d a.	
7	NE	212	22.5	NE	5.6	Ci.		Cu.	E	5 15		d° a.	
8	NE	116.5	15.5	ENE	6	A.-Cu.	E	Cu.	E	1 35		d a.	
9	NE quad.	122	20	E	2.8	Ci.		Cu.	E	8 35		d a.	
10	E, ESE	192	20	ESE	4.3	Ci.		Cu.	ENE	8 05		d° a.	
11	E quad.	143	15.5	NW	3.6	Ci.		Cu.	E	6 30		d a.	
12	NE	133	14	WNW	2.6	Ci.		Cu.	E	8 00		d a.	
13	NE	133	16	NW	4.2	Ci.		Cu.	E	6 55		d a.	
14	NE	142	15.5	NNE	6.7	Ci.		Cu.	E	5 20		d° a.	
15	E	141	19	ESE	7.1	A.-Cu.	ESE	Cu.	E	2 10		d° a.	
16	NE	117.5	13.5	WSW	6.6	A.-Cu.		Cu.	ENE	3 50			
17	NE quad.	104.5	13.5	WNW	6.8	Ci.		Cu.	ENE	3 40		d a.	
18	NE	116	12	WSW	6.5	Ci.-S., A.-Cu.		Cu.	ENE	5 00		d a. d° p.	
19	Variable	150	12.5	SSE	5.1	A.-Cu.		Cu.	E	7 25		d a.	
20	NE, SW	131.5	11.5	W	3.8	Ci.		Cu.	E	7 35		d a.	
21	SE	181.5	15	NW	2.8	Ci.		Cu.	E	8 40		d a.	
22	W	163.5	16	W	2.8	Ci.		Cu.	E	9 10		d a.	
23	SE	158	16	E	7.8	A.-Cu.		S.-Cu.	E	2 05		d° d° a.	
24	ESE	198.5	21	ESE	6	A.-Cu.	NE	Cu.	E	5 30			
25	E	165	24	E	3.6	Ci.		Cu.	E	9 25			
26	NE	203.5	21	ENE	7.5	Ci.	EbyS	Cu.	ENE	6 10			
27	NE, E	191	23	E	5.5	Ci.-S.		Cu.	E	6 45			
28	NE	137.5	17	WSW	5.8	A.-Cu.	ESE	Cu.	ENE	6 20			
29	W	95	8	SSW	9.7	Ci.-S.		S.-Cu.	E	0 00		d° p.	
30	NE	200	20	NE	8.9	Ci.-S.		Cu.	E	0 50		d° p.	
31	NNE	259.5	26	NNE	8.8	A.-Cu.	ENE	Cu.	E	1 35	0.3	0.3	
Mean		156.4	17.3		5.7					5 10			
Total		4,849								159 55	0.3	0.3	
Departure from normal		-328.6			+0.2					-22 53	-25		

<sup>a</sup> All the mean values given in this table are deduced from hourly observations.  
<sup>b</sup> These values are taken from instruments mounted in the Observatory Park, 1.5 meters above ground.  
<sup>c</sup> These highest readings are taken from a new instrument beginning this month.



METEOROLOGICAL DATA FOR MIRADOR OBSERVATORY, BAGUIO \*

[φ=16° 25' N; λ=120° 35' E; barometer above sea, 1,512.5 meters; gravity correction not applied, -1.65 mm.]

Day.	Pressure <sup>b</sup> (mean).	Air temperature at Mirador (on the top of the mountain).					Air temperature in the plateau near the City Hall.				Relative humidity (mean).	Vapor pressure (mean).	Radiation.		Evaporation.	
		Mean.	Maximum.	Hour.	Minimum.	Hour.	Maximum.	Hour.	Minimum.	Hour.			Minimum on grass.	Maximum in sun. Black bulb in vacuum. <sup>c</sup>	Free exposure (total).	Shelter (total).
	mm.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	Per ct.	mm.	°C.	°C.	mm.	mm.	
1	638.35	17.2	24.2	11.40a.	13.1	6.10a.	24.7	11.45a.	11.2	6.25a.	76.5	11.1	11.7	5.0	2.6	
2	37.80	17.3	22.8	11.30a.	13.7	8.55a.	25.7	0.45p.	12.7	6.25a.	79.7	11.6	12.5	3.8	2.2	
3	37.24	17.8	22.7	11.25a.	15	12 m. n.	24	0.15p.	14	6.40a.	84.2	12.7	14.2	3.6	2	
4	37.95	17.2	23.3	11.00a.	13.4	10.00p.	24.2	11.30a.	12.1	12 m. n.	81	11.6	12.4	5.6	2.8	
5	38.08	17.1	23.2	10.45a.	13.6	0.05a.	23.8	0.35p.	11.9	3.30a.	77.5	11.2	11.1	5.2	2.5	
6	38.12	16.5	23.8	11.05a.	13	5.55a.	24.4	11.45a.	11	6.30a.	65	9	11.2	8.3	4.1	
7	38.10	16.5	22.2	3.00p.	11.8	2.30a.	23.9	2.00p.	10	6.45a.	60	8.5	9.5	5.4	3	
8	38.12	16.4	24.3	11.45a.	12.3	2.15a.	25	1.10p.	10.9	5.45a.	68.5	9.5	10.5	8.8	4.5	
9	37.62	16.4	22.8	11.20a.	12	6.45a.	24	11.20a.	10.9	6.00a.	64.2	8.8	10.7	9.2	4.4	
10	37.64	17.6	24.2	11.30a.	13.8	3.30a.	25.6	0.30p.	12.6	6.30a.	78.7	11.6	12.5	5.3	3	
11	37.23	17.1	23.5	0.30p.	13.7	5.55a.	24.9	0.35p.	11.9	6.00a.	79.3	11.3	11.3	3.7	2.2	
12	36.95	15.7	21.8	1.05p.	11.2	6.35a.	23.8	2.10p.	10.7	6.30a.	76.3	10	9.8?	6.9	3.1	
13	37.61	16.4	22	1.25p.	12.7	1.00a.	24	11.25a.	11.5	1.30a.	77.8	10.7	11.5	4	2.1	
14	38.30	17	22.7	11.05a.	12.8	7.00a.	23.7	11.00a.	11.7	7.00a.	78.8	11.2	12.5	9.8	3.8	
15	38.07	16.2	21.9	0.45p.	13.7	5.55a.	23.4	11.45a.	12.2	6.50a.	74.7	10	12.5	9.2	3.7	
16	38.46	18.6	24.9	1.50p.	13.9	2.00a.	25.8	1.00p.	12.6	3.15a.	71.5	11.2	13.1	4.2	2.1	
17	38.93	17.5	22	11.45a.	15	2.30a.	24.8	11.30a.	14.7	1.00a.	86.8	12.9	14.6	52.8	4.1	
18	38.64	18.1	22.7	0.10p.	15.4	12 m. n.	25.2	Noon	14.5	10.45p.	84.8	13.1	14.2	55	2.3	
19	38.57	18.1	22.3	10.00a.	14.8	0.35a.	23.7	0.15p.	14.3	0.50a.	88.3	13.6	13.6	58.5	1.9	
20	38.12	16.7	22	1.00p.	13.6	6.10a.	23.6	3.30p.	12.8	6.05a.	88.7	12.5	11	55.2	3.1	
21	38.39	17	22.9	10.15a.	13	5.55a.	24.5	10.25a.	11.6	6.00a.	80.5	11.3	11.1	55.2	4.7	
22	38.48	16.9	22.5	0.35p.	12.8	4.30a.	24.7	11.00a.	11.4	5.50a.	81	11.5	10.2	52.5	4.3	
23	38.55	17.2	25.2	0.15p.	13	7.00a.	25.4	0.30p.	13.2	6.15a.	86.5	12.5	11.8	56	3	
24	39.54	16.9	22.4	9.25a.	13.7	6.30a.	23.8	11.00a.	13.4	6.30a.	87	12.4	12.6	58.4	3.1	
25	38.85	16.2	22.2	1.60p.	12.3	11.10p.	23.5	3.20p.	11.3	12 m. n.	83.3	11.3	10.2	56	6.9	
26	38.30	15.6	21.8	10.45a.	11.8	6.35a.	22.7	11.35a.	10	3.05a.	69.2	8.9	9.6	55.5	5.8	
27	37.13	15.9	22.2	1.45p.	11.2	5.25a.	23.9	2.40p.	9.8	5.40a.	72.5	9.5	8.6	56	6	
28	37.02	15.9	22.3	1.45p.	11.6	6.05a.	23.2	0.10p.	10.6	2.00a.	76.5	10.1	9.2	53.2	4	
29	36.49	16	22	11.30a.	12.4	5.00a.	23	11.30a.	11.4	6.00a.	78.5	10.5	10.3	53.6	3.6	
30	36.63	16.4	24.2	10.45a.	13.2	12 m. n.	24.7	10.45a.	13.1	12 m. n.	84	11.6	12.8	58	4.1	
31	36.94	16.3	24.3	1.30p.	12.5	6.30a.	24.4	2.00p.	11.9	6.30a.	73.7	9.9	11.6	52.2	8.9	
Mean	637.94	16.8	22.9		13.1		24.3		12		77.9	11	11.5	5.3	2.6	
Total														165.8	80.6	

Day.	Wind.				Clouds.				Sunshine.	Rain, 24 hours beginning 6 a. m.	Miscellaneous.
	Prevailing direction. <sup>d</sup>	Total movement.	Maximum hourly velocity.	Direction at the time of the maximum velocity.	Amount (mean).	Form and direction.		h. m.			
						Upper.	Lower.				
1	E	363.8	27.4	E	4.7	Ci.	Cu.-N.	W	5 10		☉ a. ☽ p.
2	E	404.6	30	E	5.1	Ci.	Cu.	SE	4 45	0.9	☽ a. p. ☉ p.
3	E	199.4			5.9	Ci.	Cu.	ESE	4 25		☽ p.
4	E	335.4	23	E	4.3	Ci.	Cu.	E	5 50		☽ ☉ a. ☉ p.
5	E	312.3	24.6	E	5.3	Ci.	Cu.-N. ESE, SE		3 05		☽ a. ☽ ☉ p.
6	E	420.2	23.6	SE	2.3	Ci.	Cu. ESE, SSE		6 55		☉ a. ☉ a. p.
7	E quad.	270.7	18.7	E	2	Ci.	Cu.	E	8 25		☉ a. ☽ p.
8	E	344.3	21.4	E	2.3	Ci.	Cu.	SSE	7 30		☽ a. ☉ a. p.
9	E	557.3	22.3	E	1.6	Ci.	Cu.		8 25		
10	E	410.5	27.6	SE	2.7	Ci.	Cu.	SSE	7 50		☉ a.
11	E	259.7	19.5	W	3.3	Ci.	Cu.	SSE, SE	7 15		☽ p.
12	E	364.3	33	E	2.1	Ci.	Cu.	SSE	7 45		☽ ☉ a. ☉ p.
13	E, W	370.2	29	E	4.4	Ci.	Cu., Cu.-N.		6 15		☽ p.
14	SE quad.	278.6	30	SE	3.9	Ci.	Cu.	SSE	6 15		☽ a. ☽ ☉ a. p.
15	E	645.4	31.1	E	2.6	A.-Cu.	Cu.		3 45		☉ p.
16	E	498.2	37.3	E	3.8	Ci.	Cu.	ESE	8 30		☉ a.
17	E	298.5	21.9	SE	8.9	A.-Cu.	Cu.-N.	S	2 45	3.6	☉ a. p. ☽ p.
18	NE quad.	239.5	20.9	E	7	A.-Cu.	Cu. ENE, SSE		5 00		☉ p.
19	E quad.	253.2	18	SW	8.3	Ci.	Cu.-N. E, WNW		3 15	1	☉ a. ☽ a. p.
20	E quad.	291	21.7	E	5.7	Ci.-S.	Cu.-N.	SSE	5 10		☽ a. ☽ a. p. ☉ p.
21	E, W	294	20.9	SW	4.6	Ci.	Cu.-N.	SW	5 30		☽ a. ☽ p.
22		248.8	25.47	E	3.4	Ci.	Cu.	SE	4 35?		☽ a. ☽ ☉ a. ☉ p.
23	E	290.3	24.6	E	4.4	Ci.	Cu.	ESE	4 50		☽ ☉ a. ☽ d° p.
24	E	326.7	24.1	E	5.3	Ci.	Cu.	SE	4 15		☽ a. ☽ a. p. ☉ p.
25	E, SW	309.5	21.9	E	3.9	Ci.-S.	Cu.	SE	8 00		☽ a. ☽ ☽ p.
26	E	376.4	29	E	4.7	Ci.	Cu.	SE, SSE	5 10		☉ a. p.
27	E, SE	311.3	23.5	E	3.9	Ci.	Cu.		5 50		☽ a. p.
28	NE quad.	287.7	26	W	4.4	Ci.	Cu.-N. ESE		5 10		☽ a. ☽ a. ☉ a. p.
29	E	278	19	W	6.9	A.-Cu., Ci.-S.	Cu.-N. ESE, W		4 25		☽ a. ☽ p.
30	E, W	331.3	25.2	E	6.9	Ci.-S., Ci.	Cu.-N. WNW, ESE		3 40	1	☉ a. p. ☉ p.
31	E	494.9	28	E	4.3	A.-Cu.	Cu.	SSE, SE	6 10		☉ p.
Mean		344.1	25.2		4.5				5 40		
Total		10,667.5							175 50	6.5	

\* All the mean values given in this table are deduced from 6 daily observations taken at 2, 6, 10 a. m. and 2, 6, 10 p. m.  
 b The barometric readings of this station are not reduced to sea level.  
 c Maximum of hourly observations taken from 6 a. m. to 6 p. m.  
 d This element is based on hourly observations taken from a quadruple register, which gives only eight possible directions of the wind.  
 e 6 hours missing.  
 f 12 hours missing.

DAILY RAINFALL AT THE STATIONS OF THE WEATHER BUREAU, JANUARY, 1921

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Lapac Agricultural School, Siasi, Sulu †		5.3									17.5			21.3		
Glan, Cotabato †		11.4				3.6							20.3	26.2		
Jolo, Sulu	0.8										.5	0.5	.8	1.3	28.7	
Buntung, Cotabato, Cotabato †				3.8			19	1.3		5.1		3.6	9.9	13.2	5.3	2.5
Lais, Malita, Davao	17.8	18.8	1.5	15.7			11.4	6.9		38.1			3.8	58.4	1.8	6.1
Malita, Davao	4.1	1.5		5.1			6.9	1.5		6.1			1.3	37.6	3	11.4
Lebak, Cotabato											3.3			14.7	12.2	
Lamitan, Isabela, Zamboanga										8.1	19.8	16.3		7.4		16.8
Basilan Plantation, Kabunbatan, Isabela, Zamboanga †											23.4	14.7	6.9			29.2
Padada, Santa Cruz, Davao †												12.4				
Basilan Plantation Office, Isabela, Zamboanga †				2						1.5	15.5	6.4	2.5	6.6		10.2
La Union, Sigaboy, Davao †	1.5		2.3	.8			4.3	1.8		2.3		3.6	1.3			1.5
Paranglalap, Isabela, Zamboanga †										5.1	22.9	10.2		3.8		50.8
Latuan, Isabela, Zamboanga †				2.3						1.3	23.1	19		3.8		32.5
Buluang, Cotabato †	1.3		1.3			5.1	1.3			.5		21.8	.5		3.1	.3
Malamaui, Isabela, Zamboanga											31	22.6		2.3	1.3	19.6
Pagsilaan Farm School, Mati, Davao †			2.5	6.1	6.1		7.6	12.7		2.5	5.8	2.5				5.6
Zamboanga, Zamboanga				15.2						4.5	1.5	5.1	.3			2.3
Cagayan de Sulu, Sulu †	45.9	5.3	7.4		1.3					2.3	17	4.3		22.9	31.3	10.2
Kidapauan, Cotabato †	6.4	.8		2.5			2			3.6	4.6		58.4			7.6
Davao, Davao	15			4.6			9.4			14.7	3.8		11.9		9.9	6.9
Piang Agricultural School, Kudarangan, Dulaan, Cotabato †										6.6	1.3		8.4			5.6
Pikit, Cotabato	34.3	4.8					1			1.8	5.6		11.4	.3		29.2
Cotabato Seed Station, Pikit, Cotabato †	3.8	.5				1.3			2	10.2		9.7				20.8
Awang, Cotabato †			8.9	5.8			4.6				8.4		32.3			
Sirib, Guianga, Davao †										1.3	6.4		6.9	1	.8	10.7
Kabakan, Cotabato †													25.4		7.6	12.7
Bual, Dulaan, Cotabato	15.2		.5							14	3.3		1.3			7.6
Cotabato, Cotabato	1									15	13.2	3.8	1.3			7.6
Mampising, Pantukan, Davao †	1.8	.3	.3	5.3			6.4	2	1.8	7.6			7.6	.3	4.4	6.3
Kabasaran, Buldun, Cotabato †													11.4	20.8		
Naganaga, Margosatubig, Zamboanga				31.5							2			17.3	8.9	16.5
Banisan, Banisan, Cotabato †										5.6	.8			.8		
Malabang, Lanao		8.4		29.2						5.1	.5					6.1
Compostela, Monkayo, Davao †	18.8		19.1			7.6	7.6	2.3	7.6			7.6	53.3		7.6	7.6
Lumbatan, Lanao †			5.8									5.1	12.7			
Cateel, Davao	21.8	34	48.2	16.8		4.3	14.7	19.3	13.7	50.3	12.2	1.3	83.8	2	10.4	28.2
Ganasi, Lanao	6.6					2.5				3.3						
Camp Kalao, Monkayo, Davao	5.8	3.8	11.2		2.8	4.1	2	6.1	6.9	15.2	4.6	.5	50.8	1		2.8
Managok Agricultural School, Linabo, Malaybalay, Bukidnon	4.8	3.8	4.8	1.3	2.3		2.5				2.5	1.6	19.1		3	2.1
Camp Keithley, Dansalan, Lanao	12.2	3.9	.5							7.9	5.3	1.8	11.7	.5	32.8	.5
Veruela, Agusan	11.5	16.5	24.6	1.6	.5	6.6	8.9	5.8	3.3	74.1	3.6	7.1	32.5	.5	6.4	11.9
Sindangan, Zamboanga †	1.5	1.5								1.5	3.8	1				
Sumilau, Bukidnon		3		.8							5.3	1.5	11.9			
Diklom, Tangkulan, Maluko, Bukidnon †			4.1		2.8	2				1.3	2	1.1	7.1	6.6	5.5	11.2
Cagayan, Misamis														6.4		
Talacogon, Agusan	33	9.2	21.9	.8	5.1	10.2	18.8	14.3	5.1	9.2	19.3	16.5	16.8	10.2	1.3	11.7
Butuan, Agusan	11.7	9.7	2	.3	.8	.3			9.9	2.3	2.1	7.2	23.4	6.6	2.8	2.8
Mambajao, Misamis	19					8.1	8.9	19.6			4.1	7.6	19.5	4.3	48	
Dumaguete, Oriental Negros	70.4	5.6			.5	1.8	.5		37.4	.5	1.3	4.3	1.5	6.3	2.6	.8
Kolonie, Yap, Western Carolines	1.6	4		.8	7.6	13.7	7.9				6.7	4.3		1.3		2.5
Hacienda San Jose, Tanjay, Oriental Negros †	11.7	9.9	4.8													
Hacienda Palanas, Bais, Oriental Negros †	18.8	5.4		1.5			5.1	1.3	8.9				5.1	20.3		
Hacienda Tamugon, Bais, Oriental Negros †	10.2												8.9	15.3		
Tagbilaran, Bohol	27.6	1.3		4.1	.3	.5	1.5		11.9	17.6	1.8	5.9	8.4	25.2	.5	.5
Iwahig Penal Colony, Puerto Princesa, Palawan	19.3		3													
Dalaguete, Cebu	39.9	4.3		2.8	6.1	4	3.3		6.4	10.7	16.5	.8	5.6	9.9		
Surigao, Surigao	35	7.2	.8	.5	10.4	9.3	8.1	27.7	21.6	6.4	12.3	12.4	36.6	64.9	11.1	1.1
Central Palma, Ilog, Occidental Negros	2	1.3											1.3	1.5	2.5	
Biaong Cui's Farm, Barili, Cebu				2.3	8.9						2.5		1.8			
Masin, Leyte	24.9			*	*	*	*	*	*	*	*	*	*	*	27.7	16
Binalbagan Estate, Binalbagan, Occidental Negros †	7.1	2.3		.3							.3	3	2.3	2.5	.8	
Isabela, Occidental Negros	14	5.8	.3							1	.3	2.8	2.3	1	4.8	.8
Hacienda Tanolo, Hinigaran, Occidental Negros	8.2	3.6		4.3							.5	.3	3.6	4.6	1.3	
Cebu, Cebu	24.6	16	2.8	2.5		.3	1.5	1.8	2.3	6.6	16.5	1.8	6.5	.8		
La Castellana, Occidental Negros	4.3	8.1								.3	1	3.3	2.5	5.8		
Hacienda Vallehermoso, Vallehermoso, Oriental Negros †	17.5	52.6	.8	9.4						7.6	26.7	12.7	16.8	1.3	7.4	
Central Azucarera de La Carlota, La Carlota, Occidental Negros	2.8	12.4	.3	.8							3			3.8		

† Voluntary or cooperative station.

\* No observation.

Daily rainfall at the stations of the Weather Bureau, January, 1921—Continued

Station.	Day of month.															Total.	
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	
Lapac Agricultural School, Siasi, Sulu†	27.1															41.9	113.1
Glan, Cotabato†					33												94.5
Jolo, Sulu	1.3				.6		1.3							59.5			95.3
Buntung, Cotabato, Cotabato†				1.5			1.8		53.3			3					123.3
Lais, Malita, Davao			10.4							3						4.1	197.8
Malita, Davao										1.8							80.3
Lebak, Cotabato			16.5	1.3	3.3	1.8			1.3				23.9				78.3
Lamitan, Isabela, Zamboanga			9.7		2.3	6.6											87
Basilan Plantation, Kabunbatan, Isabela, Zamboanga†													3.8	3.8			81.8
Padada, Santa Cruz, Davao†												1.3					13.7
Basilan Plantation Office, Isabela, Zamboanga†					1	8.9	2.5							1.3	5.6		74.7
La Union, Sigaboy, Davao†	10.7																19.4
Paranglalap, Isabela, Zamboanga†						3.8										38.1	134.7
Latuan, Isabela, Zamboanga†						3.8										15.7	101.5
Buluang, Cotabato†		2.5		3.8					5.6				55.6	24.4			127.1
Malamaui, Isabela, Zamboanga			1.3			3.8	.5									25.1	107.5
Pagsilaan Farm School, Mati, Davao†	7.6			.8	1	20.3	2.5			10.2			5.1	2.5			99.6
Zamboanga, Zamboanga													15.2	21.1			162.4
Cagayan de Sulu, Sulu†	1.3		1												12.2		127.1
Kidapawan, Cotabato†	15.2		5.1		8.9	7.6			3	4.3	5.1						135.1
Davao, Davao	24.1		4.6	14.7	24.1				13.5				12.4		5.8		175.4
Piang Agricultural School, Kudarangan, Dulauan, Cotabato†			1.5	4.8	1					15.2							44.4
Pikit, Cotabato	2.3		1.5		1.8				3.3	15.7					3		113.3
Cotabato Seed Station, Pikit, Cotabato†	2.5		3.6					3.3	14.7						8		73.2
Awang, Cotabato†			11.7			12.7				2.8		1.3					88.5
Sirib, Guianga, Davao†			.8	7.9	1	1.3	10.7		.5								49.3
Kabakan, Cotabato†			15.2		5.1				7.6								73.6
Bual, Dulauan, Cotabato	16.8		3.3	16.3	.5	34.5			4.6	8.4							126.3
Cotabato, Cotabato	1.5	11.4	19.1	1.3	15.2	.3			.3	1.5			20.8				113.3
Mampising, Pantukan, Davao†	18.3		4.6	41.9	10.4				5.8			6.1	11.2				142.4
Kabasaran, Buldon, Cotabato†					2.5	35.6	14.5							30			114.8
Naganaga, Margosatubig, Zamboanga			19.8	10.7	16.8									6.6	4.1		134.2
Banasilan, Banisilan, Cotabato†	3.6				3.6				6.4			26.2					47
Malabang, Lanao	4.8		3	.5	8.4	14.5			.5								81
Compostela, Monkayo, Davao†		7.6				35		4.5	12.7	10.2	5.3	2.5					216.9
Lumbatan, Lanao†	10.2	5.1	9.1	5.8	6.6	3.3	3.8	7.6					1.3	1			77.4
Cateel, Davao	13.9	31.8	18.5	5.6	18.3	5.8	77.5	6.3	9.4	54.1	3.1	2.3	3.3	*	4.6		615.5
Ganasi, Lanao	6.4					6.9									10.2		35.9
Camp Kalao, Monkayo, Davao	.8	2.5		2.3	19.5	1.8		1.3	3.8	32.5	1.5			10.9			194.5
Managok Agricultural School, Linabo, Malaybalay, Bukidnon	.6	1.1	3		2.5				10.9	.8	3			48.3			115.3
Camp Keithley, Dansalan, Lanao	20.8	1.3	9.7	3.6	12.7			.8	17.3	.6	6.4	.3		2.3			152.9
Veruela, Agusan	5	14.4	5.6	3.3	11.4	3.8	1.8	3.6	19.6	29.5	2.1				2.8		318.3
Sindangan, Zamboanga†		.8	18.8	1.8					.3			7.9	31.7	7.6			78.2
Sumilau, Bukidnon		4.6	5.8		15.7				12.2	3.3	2.5			4.1			70.7
Diklom, Tangkulan, Maluko, Bukidnon†				4.6	6.1					8.9	2.3			8.9	1.8		76.3
Cagayan, Misamis									6.5	11.7							24.6
Talacogon, Agusan	26.6	33.5	15.3	15.7	13	23.3	2.5	15.3	31.5	28	5.1						413.2
Butuan, Agusan	2.3	2.8	24.4	.8					64.5	9.4	6.1	2.3		11.2	.5		207
Mambajao, Misamis		13	36.8	1.3	2.5				36.9	12.2	8.9			3.3			254
Dumaguete, Oriental Negros									1.5		.5			10.7	.8		147
Kolonie, Yap, Western Carolines	2.3	2.8	3.6		20.4		4.1	3		.5		3.5	4.3	.3			95.7
Hacienda San Jose, Tanjay, Oriental Negros†													16.2		3.3		45.9
Hacienda Palanas, Bais, Oriental Negros†								2				15.2	22.8	6.4			112.8
Hacienda Tamugon, Bais, Oriental Negros†									20.3				6.1	7.6			68.4
Tagbilaran, Bohol	.3	.3			11.2				2.4	.3	.3				5.1		127
Iwahig Penal Colony, Puerto Princesa, Palawan					9.7										2		34
Dalaguete, Cebu						1		9.9	3.8		1.3			3.3	1.3		130.9
Surigao, Surigao	1.5	12.9	14	22.8	8.4			2.3	18.9	1.8	.8	7.8			32.8		389.4
Central Palma, Ilog, Occidental Negros												1.3	2	2.5	4.3		18.7
Biaong Cui's Farm, Barili, Cebu												3.8	.8				20.1
Maasin, Leyte		9.7											16.3				14.7
Binalbagan Estate, Binalbagan, Occidental Negros†											2.8	4.3	3.3				26.3
Isabela, Occidental Negros									1	.5	.3	2	3	54.1	1.5		95.5
Hacienda Tanolo, Hinigaran, Occidental Negros		4.6				16.3						1.3	2.3	5.6			56.5
Cebu, Cebu	7.4	2.8						9.2	2.8	1		3	2.8		1		114
La Castellana, Occidental Negros									.5			4.9	4.9	24.6			60.2
Hacienda Vallehermoso, Vallehermoso, Oriental Negros†		1.8									5.6	2	16.5	20.8	.5		200
Central Azucarera de La Carlota, La Carlota, Occidental Negros				.5						.5		1.3	7.9	31.2	7.9		75.7

† Voluntary or coöperative station. \* No observation. a 30 days of observation.  
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Daily rainfall at the stations of the Weather Bureau, January, 1921—Continued

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Hacienda Canlaon, La Castellana, Occidental Negros	3											1.5	0.5			
La Carlota Experimental Station, La Carlota, Occidental Negros †		6.4						5.1							3.8	
Mao Sugar Central, Santa Cecilia, Bago, Occidental Negros	1.3		0.3										1.3	0.8		
Valladolid, Occidental Negros	1		1.5				0.3		0.8				2	1		
Central San Carlos, San Carlos, Occidental Negros †	5.8		18.5					16	8.9	20.3	17.8	16.5	1.5			
Hacienda Refugio, San Carlos, Occidental Negros †		5.1	26.2			3.3		7.6		10.2	13.5	24.6			5.6	
San Joaquin, Iloilo										.6					.3	
Murcia, Occidental Negros							.5	.3	.8	.3			.8	4.5		
Bacolod, Occidental Negros	3.8	2.5	.8	0.8			4.8	2.5	3	1	.5		1.3	7.9	3.8	
Oton, Iloilo	6.8	2.5		1	1.5		1	2	3	2			2		1.3	1.5
Iloilo, Iloilo	4.5	3.6	.3		1.6			.3						.8	1.8	5.3
Lapuslapus, Iloilo, Iloilo †		1.3								12.7				1.3	3.8	
San Jose de Buenavista, Antique	1.8									.5						
Tuburan, Cebu	13.9	10.2	1.3				2.1	3.8	1.3	5.6	34	4.3	5.1	4.9	3.6	
Leon, Iloilo	5.1	.8					.8			1.3			.5			
Silay, Occidental Negros	20.6	6.9	6.1	3.3			2.6	8.4	3.3	4.1	2.5		1.3	8.4	2.8	
Calag-itan, San Remigio, Antique	2.3									2						
Hawaiian Philippine Co., Malisbug, Silay, Occidental Negros †	35.1	18.3	5.6	2			1.8	6.6	4.3	8.7	3.3		1.3	8.1	2	.8
Cuyo, Palawan																
Lucena, Santa Barbara, Iloilo †	24.4	2					5.3		6.9	3						
Barotac Nuevo, Iloilo	17.7	8.1		.8	2.8		9.9	2.3	3.8	4.6				.5		
Hacienda Ilaya, Victorias, Occidental Negros	21.1	5.3	7.4	14.7			3.8	8.1	5.1	13.5	.8		1.3	6.4		12.4
Hacienda Bilbao, Manapla, Occidental Negros	4.3	3.8	4.5	15.2	2.8	2.3	11.7		21.6		6.1	14.5		19.8	18.1	13
Cadiz, Occidental Negros		19.3			3.8				12.7	16.5				8.1		
Dingle, Iloilo	19.5	2		.8		2.5	5.6	3.3	1.8	5.6	1.8		2.5	2		
Ormoc, Leyte	19.5	25.9				4.3	2.3	7.6	5.4	20.3	.5		6.9	10.9	22.1	
Guiuan, Samar	10.4	3.8	7.6	.8	5.6	4.8	4.3	52.9	25.4	69.6	20.9	7.7	24.4	12.2	8.1	
Bugason, Antique																
Bogo, Cebu	1	4.1	2				2.8	4.1	4.1	19.8	1.8		5.1		.3	
Dueñas, Iloilo †	21.5	1.3	3.8			5.1	3.8	3.6	1.3	12			4.6	3		
Bitogon, Passi, Iloilo †	20.3		4.6			9.9	7.9	6.6	8.9				7.6	7.1	3.6	
Tacloban, Leyte	4.8	18.5		.8	3.8	5	7.9	21.3	38.4	59.2	47.8	10.9	35.6	19	13.2	
Dumarao, Capiz †	10.7		5.6	3.8			2.5	12.7	22.9	12.7			11.2	12.7	6.6	15.2
Dao, Capiz †	55.9	16.5	1.3		4.8	10.2	20.3	4.1	6.3	22.3			12.2	6.1		2.5
Capiz, Capiz	8.9	.8		.3	1.5	3.6	6.5	1.3	18	16.2			13	2.6	1.3	
Borongon, Samar	20.8	8.7	10.1	3.8	.8	3.3	3.8	49	34.6	41.2	68.1	19.5	45.7	20.1	14.8	2.5
Catbalogan, Samar	35.3	4	1.3	.5	.5	.8	5.4	9.1	9.9	22.4	3.5	2	12.2	66.5	21.5	1.3
Calbayog, Samar	6.4	5.9		3.3	.3		3.1	5.3	13.5	3.3	.3		10.7	15.2	7.2	9.1
San Jose Estate, Robles Camp D-17, San Jose, Mindoro †				1.5												
San Jose Estate, Tamaraw Plantation, San Jose, Mindoro †															1.5	.3
San Jose Estate, San Agustin, San Jose, Mindoro †															2.5	
San Jose Estate, San Jose, Mindoro †														.5	2	.5
Masbate, Masbate	4.3	.8		.5		7.2	1	1.5	11.9	16.8	.8		10.7	34.8	13	2
San Jose Estate, Tunnel D-12, San Jose, Mindoro †		2.5										1.5				
Romblon, Romblon	1.3		4.8	.8	12.2					16.8				3.8	6.9	6.4
Batag Lighthouse, Laoang, Samar	4.8	26.4		.8	3.3	2.8	6.4		23.6	6.6	2.8	1.5	59.7	135.1	16.7	3
Irosin, Sorsogon	6.9	16.5	1	3	3	3	5.6	6.1	29.4	33.8			10.2	72.1	23.3	8.4
Sorsogon, Sorsogon	61	17	1.5	5.3	3	1.5	10.4	2.5	15.3	24.1	2		11.9	65.8	24.8	16
Bacon, Sorsogon	38.4	35.3		3.3		1.5	4.3	7.4	4.3	16	.5		12.2	79.2	39.4	8.4
Jovellar, Albay		*	*	*	*		.8	.5	1	6.4	.5	.3		25.2	43.4	12.2
Legaspi, Albay, Albay	25.1	30.9	4.6	1			3.4	2	7.9	11.9				53.4	88.2	13.5
Guinobatan, Albay	10.4	11.4	.8	.5				2.8	.5	1.3				14.7	48.8	6.4
Polangui, Albay	9.6	16.8		1.3			1.3						2	11.7	19.1	5.3
Tabaco, Albay	5.8	73.7	2.8	4.1		2	3.3	2.5	6.4	2.8				27.9	26.1	15
Sumay (Guam), Agaña, Ladrone Islands					3.6	1.3	5.3	.3		7.4	21.4	7.1			3.8	4.3
Iriga, Camarines Sur	3.3	16.5		2.5	.5		2	2.8	.3					3.6	15.5	1.8
Calapan, Mindoro		.3	6.6	.5	8.9		.6	9.4	3.8	.3		8.4		3.6	.8	4.6
Virac, Albay	.5	33.6	3.6		7.6	1		1.8	1.8	1.5		1.3		20.1	1.8	2.6
Naga, Camarines Sur		4.8	.5	.8		.3	3.3	2.3	1					1	12.7	14.5
Tigaon, Camarines Sur	3.3	16.5	1.8	2.8	.3	3.6	1.5	1	2.3	.6			.3	5.6	20.9	1.8
Libmanan, Camarines Sur		7.6	.5	5.8		11.9	4.6	6.1	2.3	.5	.3			1.8	15.5	1.5
Batangas, Batangas			1			5.1	1.8	1.8	1.5							
Calatagan, Batangas																
Balayan, Batangas																
Lipa, Batangas				3	5.6											
Lucena, Tayabas	4.1	1.5	4.8	6.1	27.4	2.5	4.9	3.8	10.5	3.3		7.9	.5		4.1	5.1
Atimonan, Tayabas	.8	.3	2.1	7.2	8.2	1.8	3	3.3	5.6	1.8		1.3		1.3	7.9	24.1
Lian, Batangas																
Nasugbu, Batangas									1.3	1.3						.5
Ambulong, Tanauan, Batangas			1.8													
Daet, Camarines Norte	1.1	35.8	8.6	4.6	2.8	1.3	2.3	5.1	6.6		3.3	2.5		25.9	9.3	
Mendez Nuñez, Cavite			3.6	.5		1.3	1.3		2.5							
Alfonso, Cavite			1.8		.3			1								
Indang, Cavite		4.1			2.3			1								
Canluban, Calamba, Laguna		1.5	.3					.8								.8

† Voluntary or cooperative station.

\* No observation.

Daily rainfall at the stations of the Weather Bureau, January, 1921—Continued

Station.	Day of month.															Total.
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Hacienda Canlaon, La Castellana, Occidental Negros				0.5						0.8		10.2	12.5	33		62
La Carlota Experimental Station, La Carlota, Occidental Negros †										.3	0.3	5.8	7.6	27.2		56.5
Mao Sugar Central, Santa Cecilia, Bago, Occidental Negros												6.7	1.8	2.3	2.3	16.8
Valladolid, Occidental Negros												7.9	7.4	8.9	1	31.8
Central San Carlos, San Carlos, Occidental Negros †						7.6	12.2	2.5	0.8		3.3	14.2				145.9
Hacienda Refugio, San Carlos, Occidental Negros †					5.1			7.9	6.1		6.1	7.1	5.3			133.7
San Joaquin, Iloilo						.8						1.3	54.9	15.2		73.1
Murcia, Occidental Negros											2.8	3.3	15.5	11.2	10.9	50.9
Bacolod, Occidental Negros			1.3			1.3		3.3		.5	3.8	5.1	8.2	22.1	5.1	83.4
Oton, Iloilo						2	2.5				1.5		2			29.6
Iloilo, Iloilo						4.3	1				3.3	1.3	.8	.8	.3	33.6
Lapuslapus, Iloilo, Iloilo †					5			.3			2.5			3.8		30.7
San Jose de Buenavista, Antique		0.8	0.5		2.5	15.2	2.3		4.3	.8	1.3	8.2		10.2	1	137.2
Leon, Iloilo		1.5					13.7							2.5		26.2
Silay, Occidental Negros		.5	2.5	5.8	1.3	1.3	1.3	.5	1.3		8.4	2.3	5.9	91.7	.8	193.9
Calag-itan, San Remigio, Antique						2.5					8.4	1.3	8.4	8.4		33.3
Hawaiian Philippine Co., Malibug, Silay, Occidental Negros †	0.5	2.3	1	.8	1.5	1.3	3.3	.8	1.5		9.9	3	6.4	133.1	1.3	264.1
Cuyo, Palawan							8.9	1.5	4.6			2.3	1.8	2.8		4.6
Lucena, Santa Barbara, Iloilo †						5.3	.5				1.3	9.7	8.6			67.5
Barotac Nuevo, Iloilo																67.3
Hacienda Ilaya, Victorias, Occidental Negros	3	3.8		1.5	5.1		24.1				9.7	2	3.8	9.9	3.8	166.6
Hacienda Bilbao, Manapla, Occidental Negros	6.1		13	18.3	4.1	21.8	24.1	8.1		7.1	29	2.5	16.8	14.8	9.7	313.1
Cadiz, Occidental Negros		6.4					20.3				6.4	1.8		22.1		117.4
Dingle, Iloilo					.5	4.8	1.5				1.3	2	3.3	.8	1.8	63.4
Gimoc, Leyte	.5	.8			3	8.2	1	2			5	.5	18	5	4.8	170.3
Guiuan, Samar	4.6	3.8	5.1	1.8	.5	8.4			2.5	4.3	4.6	76.5	6.1	53.8	39.3	469.8
Bugasong, Antique					.8	.3	.5	.3	.8		.3	1.5	.3		.3	54.2
Bogo, Cebu		1.3				5.1		4.1	3.3		4.1	2.5	8.6	3		96.2
Duenas, Iloilo †		5.5						3			2.3	7.9	16.3	8.6	1.3	160
Bitogon, Passi, Iloilo †	2.5		4.8	8.6	17.3			3	5.6		5	5.3	1	11.7		361.8
Tacloban, Leyte		19.1			9.1	10.4	6.9	8.1		3.5	22.9	34.3	34.3	45.7		291.9
Dumarao, Capiz †		20.3				6.4		2.5			10.7	27.9	21.6	2.5	4.6	237.5
Dao, Capiz †						1.8	4.9	4.3			7.1	23.2	9.6	1.3	2.5	133.3
Capiz, Capiz	.3		1	.5	.3	1.8	34.8	9.2	18		46	88.9	84.6	52	1	758.7
Borongan, Samar	12.4	46.5	2.3	.8	3.8	24.9	5.3			10.4	1.3	37.3	41.7	52.1	.5	378.6
Catbalogan, Samar	2	12.7				24.9	.8				1.3	44	6.4	34.1	1.1	211.4
Calbayog, Samar	1.6	4.1			.8	7.7		1			1.3	44	6.4	34.1	1.1	211.4
San Jose Estate, Robles Camp D-17, San Jose, Mindoro †								.8								2.3
San Jose Estate, Tamaraw Plantation, San Jose, Mindoro †															.3	2.1
San Jose Estate, San Agustin, San Jose, Mindoro †															2.3	4.8
San Jose Estate, San Jose, Mindoro †															4.1	7.4
Masbate, Masbate		7.1	9.9	1.5	1	20.3	2.5	3.3			.8	48.8	39.6	73.2	8.4	321.7
San Jose Estate, Tunnel D-12, San Jose, Mindoro †															3.3	7.3
Romblon, Romblon	4.3	4.1	.3	.5	1	11.9	10.4		3			16.8	8.8	8.1	4.7	126.9
Batag Lighthouse, Laoang, Samar		17.3	2			24.1	30.5	1.3		2.5	12.7	106	97	44.7	104.4	736
Irosin, Sorsogon	10.9	21.8	13.2	4	22.9	35.6	7.6	8.9	2.3	2	5.1	96.2	84.8	109.2	17	666.1
Sorsogon, Sorsogon	1.8	9.9	13.5	4.8		24.1	1.5	5.8	4.9	2	3.3	77.4	182.1	131.3	33.8	758.3
Bacon, Sorsogon	.5	8.1	4.8	2.8	31	15	2		5.6		2	84.6	166.9	192.8	23.1	789.4
Jovellar, Albay	1.5	5.6	4.8	.3	11.9	14.7	2.8	.8				15.7	45	56.1	13.9	
Legaspi, Albay, Albay	6.1	34	13.2	.6	15.8	43.9	3.3	.3		6.4	1.5	1.8	39.1	73.7	139.8	64
Guinobatan, Albay	1.1	.8			10.4	1.6	.3				.5	21.9	20.3	39.2	33.5	227.2
Polangui, Albay		6.1			6.4	3.5	1.5					10.9	32.5	18.3	32.5	178.8
Tabaco, Albay	1	1.3	2.3	17.8	26.4	21.6	9.9			1.5	3.1	26.1	57.2	25.4	69.1	435.1
Sumay (Guam), Agaña, Ladrone Islands	1.3	.6			.5	2.3					.3	2.3	5.6	4.3	6.6	78.3
Iriga, Camarines Sur					3.6				.3	.3		5.4	17.5	16.2	23.1	115.2
Calapan, Mindoro	.5			.8	1.8				.5			17.8	3.8	3.8	13.8	87.1
Virac, Albay	.5	5.4	1.3	.3	8.9	1.5	.5	1.5			.6	3	18.3	24.1	9.4	157.4
Naga, Camarines Sur					.3				1.5			12.5	17.5	30	33.5	136.5
Tigaon, Camarines Sur	.3	3.9	.3	.8	23.9	.5	2.1		.3	4	1.3	26.1	58.4	25.7	36.6	246.5
Libmanan, Camarines Sur			3.6		15.7							42.2	12.9	36.4	46.5	216.5
Batangas, Batangas													.3			11.5
Calatagan, Batangas														.8	.8	1.6
Balayan, Batangas														2.5		2.5
Lipa, Batangas															1.3	9.9
Lucena, Tayabas	4.1									2.1			3.3	5.3	7.4	108.7
Atimonan, Tayabas	4.6	1.8	5.1	3.5		4.3				.8		7.4	9.3	24.1	25.1	164.7
Lian, Batangas														.5	3.3	3.8
Nasugbu, Batangas																0
Ambulong, Tanauan, Batangas																4.9
Daet, Camarines Norte	3	.5	4	4.1	1.3	3.3				8.6		50.7	59.4	20.5	179.8	444.4
Mendez Nuñez, Cavite	.8									1.3				.3		11.6
Alfonso, Cavite										1				.8		5.7
Indang, Cavite																7.4
Canluban, Calamba, Laguna								.8		1.5				.8		9.2

† Voluntary or coöperative station.

## Daily rainfall at the stations of the Weather Bureau, January, 1921—Continued

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Silang, Cavite.....	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Maragondon, Cavite.....			4.3						2.3							
Paracale, Camarines Norte.....	2.5	5.4	.5		7.1	6.1		6.4		3.8	5.9					
Santa Cruz, Laguna.....		3.8	2.3	0.5					1	1						
Buenavista, General Trias, Cavite.....																
Fort Mills, Corregidor, Cavite†.....																
Imus, Cavite.....																
Alabang Stock Farm, Alabang, Muntinlupa, Rizal†.....																
Cavite Naval Station, Cavite, Cavite <sup>a</sup> .....																
Lamao Horticultural Station, Lamao, Limay, Bataan†.....																
Manila, Manila.....																
Antipolo, Rizal.....																
Balanga, Bataan.....																
Montalban, Rizal†.....																
Hacienda Pintong Sapang, San Jose del Monte, Bulacan†.....																
Mabayuan Dam, Olongapo, Zambales.....																
Malolos, Bulacan.....																
Pampanga Sugar Mills, Del Carmen, Pampanga†.....																
San Fernando, Pampanga.....		1.3														
San Isidro, Nueva Ecija.....																
Iba, Zambales.....																
Concepcion, Tarlac.....	*	*	*													
O'Donnell, Capas, Tarlac.....																
Hacienda Luisita, Comillas, La Paz, Tarlac†.....																
Hacienda Luisita, San Miguel, Tarlac, Tarlac†.....																
Tarlac, Tarlac.....		12.7												17.8		
Paniqui, Tarlac†.....			3													
Camiling, Tarlac.....																
Muñoz Agricultural School, Muñoz, Nueva Ecija†.....																
Baler, Tayabas.....	5.6	99.6	.5		3				1.3	10.7						
Dagupan, Pangasinan.....																
Rosario, La Union.....		.3														
Tubao, La Union.....		.3														
Aringay, La Union.....																
Baguio, Mountain Province.....		.9														
Naguilian, La Union.....																
San Fernando, La Union.....																
Sagada, Mountain Province†.....	5.8							.5	1.3							
Bontoc, Mountain Province†.....		4.8														
Candon, Ilocos Sur.....			1.3													
Vigan, Ilocos Sur.....																
Tuguegarao, Cagayan.....									.8	1						16
Tayum, Abra†.....																
Laoag, Ilocos Norte.....														.8		
Aparri, Cagayan.....	.3	2.4	1.1		1.1			46.3	26.2			0.3		14.3	1.3	.5
Cape Bojedor, Burgos, Ilocos Norte.....								3.8	25.4	2.1	1.3	2.5	2.6	2.3	9.4	
Basco, Batanes.....	15	4.6	18	17.6	5.3	.9	19.1	8	25.4	2.1	1.3	2.5	2.6	26.7	7.6	7.6

† Voluntary or cooperative station.

\* No observation.

<sup>a</sup> Rain in 24 hours beginning 8 a. m.

Daily rainfall at the stations of the Weather Bureau, January, 1921—Continued

Station.	Day of month.															Total.
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Silang, Cavite.....	mm.	mm.	mm.	mm.	mm.	mm. 3.3	mm.	mm.	mm.	mm. 2.3	mm.	mm.	mm. 0.5	mm.	mm. 0.8	mm. 13.5
Maragondon, Cavite.....																2
Paracale, Camarines Norte.....			3	12.7	4.3	8.9	12.7	7.1	2.5			3				91.9
Santa Cruz, Laguna.....										1		.5				10.1
Buenavista, General Trias, Cavite.....																0
Fort Mills, Corregidor, Cavite †.....																0
Imus, Cavite.....															.3	.3
Alabang Stock Farm, Alabang, Muntinglupa, Rizal †.....																0
Cavite Naval Station, Cavite, Cavite <sup>a</sup> .....																0
Lamao Horticultural Station, Lamao, Limay, Bataan †.....																0
Manila, Manila.....															.3	.3
Antipolo, Rizal.....															1.5	1.5
Balanga, Bataan.....							.5									.5
Montalban, Rizal †.....															.5	.5
Hacienda Pintong Sapang, San Jose del Monte, Bulacan †.....																0
Mabayuan Dam, Olongapo, Zambales †.....																0
Malolos, Bulacan.....																0
Pampanga Sugar Mills, Del Carmen, Pampanga †.....																0
San Fernando, Pampanga.....							.8									.8
San Isidro, Nueva Ecija.....																1.3
Iba, Zambales.....																0
Concepcion, Tarlac.....																0
O'Donnell, Capas, Tarlac.....							.8									.8
Hacienda Luisita, Comillas, La Paz, Tarlac †.....																0
Hacienda Luisita, San Miguel, Tarlac, Tarlac †.....																0
Tarlac, Tarlac.....																0
Paniqui, Tarlac †.....																30.5
Camiling, Tarlac.....			25.4													25.7
Muñoz Agricultural School, Muñoz, Nueva Ecija †.....																0
Baler, Tayabas.....	17			.3		10.2	27.2	10.9								186.3
Dagupan, Pangasinan.....																0
Rosario, La Union.....																.3
Tubao, La Union.....		.3														.6
Aringay, La Union.....																0
Baguio, Mountain Province.....	3.6	1												1		6.5
Naguilian, La Union.....	1.5															1.5
San Fernando, La Union.....																0
Sagada, Mountain Province †.....																7.6
Bontoc, Mountain Province †.....		.5														5.3
Candon, Ilocos Sur.....																1.3
Vigan, Ilocos Sur.....		2.5	18.5													21
Tuguegarao, Cagayan.....	14.7			1	1.6									1		36.1
Tayum, Abra †.....																0
Laoag, Ilocos Norte.....																.8
Aparri, Cagayan.....	13.1		.8	10.5	.3	.3						.5	6.9	8.1	2.9	137.2
Cape Bojeador, Burgos, Ilocos Norte.....			.1													15.6
Basco, Batanes.....	22.6	7.9	4.1				10.7	.3			2.8		1.3	46.8	11.2	2.8

† Voluntary or cooperative station.

<sup>a</sup> Rain in 24 hours beginning 8 a. m.

<sup>b</sup> 28 days of observation.

MAXIMUM AND MINIMUM TEMPERATURES AT THE STATIONS OF THE WEATHER BUREAU, JANUARY, 1921

Day.	Jolo.		Lais, Malita.		Malita.		Lebak, Cotabato. *		Lamitan, Isabela, Zamboanga.		Malamaui, Isabela, Zamboanga.		Zamboanga.		Davao.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1.	28.7	23.5	32	20.5	33.1	22.4	31.6	23.1	33.4	20.2	31.5	22	31	23	31.4	22
2.	29.3	22.7	31.2	22.7	31.5	22.8	31.2	23.2	32.8	20.7	30.37	23	28.7	22.5	30.2	22.2
3.	30.2	22.2	30.5	22.5	32.3	23.2	31.2	23.5	32.7	20.1	31.3	23.3	32.5	22.5	31.5	22.6
4.	28.6	23.1	27.2	23	27	22.8	30.57	23.6	33.2	20.5	29.9	22.9	28.2	22.9	28.7	23.5
5.	29.2	25.1	30.6	22.4	31.4	24.3	30.7	22.7	34.57	20.1	30.5	22.7	31.5	21.5	31.5	23
6.	28.7	22.2	29.1	21.47	29.3	23.8	30.6	22.6	32.1	20.5	30.4	22.4	31.2	21.3	30.7	22.2
7.	29.4	24.1	29.4	24.7	28.8	25.2	31.7	22.7	32.7	20	31	23	31.9	22.7	30.2	23
8.	29	26.5	29.9	24	29.2	23.2	30.6	22.2	32.3	20.2	30.7	23.7	32.8	23.5	29.7	23
9.	29.5	26.1	30.8	23.7	32	23.3	32	22.4	32.7	20.1	30.5	24	31.6	23.9	31.7	22.3
10.	29.3	25.8	31.4	24.2	32.1	24.6	31	22.8	32.5	20.2	31.2	23.7	28.5	22.6	30.7	23.5
11.	28.9	24.4	31.6	23.6	32.8	23.7	31.2	23.2	32.2	21.4	31.4	22.9	30.8	23	31.8	23.1
12.	29.6	25.4	31.4	23.4	32.9	23.9	31.2	22.5	32.1	21	30.1	22.8	31.5	23.5	32.2	22
13.	28.4	24.2	32.2	21.5	33.1	22.2	31.3	21.5	32.2	21.5	29.2	20.8	30.2	23.3	32.2	22
14.	28.5	25.6	30.9	23.6	32.5	23	29.1	23.5	32.8	21.4	29.3	21.7	30.9	22.9	30.8	23
15.	28	24.5	29.4	23.5	28.6	22.9	29	23.5	32.7	23.4	28.8	23.7	31.2	23.7	29.7	23.5
16.	29.6	23.1	31	22.1	31.3	22.4	30.5	23.3	33.1	21.2	30.6	23.2	32.2	23	30	22.6
17.	29.3	24.9	31.4	21.8	32.1	22.3	31.3	23.2	31.4	21.5	30.5	22.3	28.5	23.3	31.2	22.5
18.	30.3	21.8	31.3	21.5	31	22.4	31.8	23.3	31	19.6	29.2	22.4	27.9	22.5	31.7	21.4
19.	29.3	23.9	31.1	23	33.1	23.5	31	23.9	31.2	20.1	29.5	22.8	32.5	23	30.2	23
20.	29.3	23.9	33.9	22.4	32.6	23.2	31	22.1	31.5	19.2	30.3	21.7	31.6	21.9	31.6	22
21.	28.6	23.1	30.3	22.5	32.5	23.1	31.1	23.6	31.2	21.3	33.1	21.7	29	23.2	29.2	21.5
22.	28.8	22	31.6	21.4	32.5	21.8	30.6	23.3	29.3	20.2	29.5	22.4	31.8	23	31.7	21.4
23.	30	24.5	32.7	23	31.1	23.7	31	22.1	31	21.4	29.2	21.5	31.6	22.5	31.2	21.6
24.	28.7	21.5	31.1	23.9	30.4	24.6	31.2	21.6	32.5	19.8	29.6	23	30	21.2	30.7	20.1
25.	29.3	21.8	30.3	20	29.3	21.3	30	21.3	31.2	18.2	29.5	21.7	31	20.5	27.2	21.5
26.	29.3	22.4	31.2	20.3	31.3	20.3	31.6	22	30.6	19.1	30.2	21.7	30.3	22.5	28.7	21.5
27.	28.7	25.4	31.7	21.3	31	21.3	32	22.2	30.5	21.3	30.8	22.8	30.5	22.5	30.7	21
28.	28.5	22.5	31.6	20.7	32.2	21.3	32	23.2	31.2	18.5	29.9	23	30	21.8	31.7	21.2
29.	29.7	25.2	31.9	22	31	22.2	30.2	24.6	31.6	19.8	28.3	23	29.7	22	31.5	22.5
30.	29.6	24.5	32	21.5	32.6	22	31	23.4	32.1	21.7	28.5	23	27.5	23.1	31.2	23.1
31.	26.1	23.8	31.3	20.5	32.6	22.1	31.7	23.6	32.27	20.2	29.2	23.5	30.6	22	30.7	22.5
Mean	29	23.9	31	22.3	31.4	22.9	31	22.9	32	20.5	30.1	22.6	30.6	22.6	30.7	22.3

Day.	Pikit.		Bual, Dulauan.		Cotabato.		Naganaga, Margosatubig.		Malabang.		Cateel.		Ganasi.		Camp Kalao, Monkayo.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1.	32.1	20.3	30.6	22.1	31	22.1	34.5	22.3	29.8	21.4	30.4	22.7	30.4	18.2	31.5	21.6
2.	31.1	21.3	30.6	22.1	28.7	22	34.5	22.3	29.8	21.4	28.5	22.4	29	19.5	29.4	21.5
3.	31.6	21.4	31.4	22	31.6	22	35	22.2	28.8	21.4	29.2	22.1	30	19	29.5	21.4
4.	29.5	23	29.6	23.1	30.4	23.1	34.5	22.2	30.5	21.4	29.6	22	29	20	29.6	22.1
5.	32.4	20.1	32.4	22.4	31.8	21	33.5	22.2	30.4	21.4	30	23.2	30	30.5	20.5	20.5
6.	31.6	18.3	32.7	23	30.8	18.9	33.5	19.77	29.4	18.7	28.7	24.6	28.4	20.5	29.5	20.9
7.	32	19.2	32.4	22	32	20	34.5	21.5	29.8	20.4	28.4	23.7	30.5	18.2	29.5	21.5
8.	33.2	21.2	34	22.1	31.5	22.1	33.2	22.2	30.4	21.2	28.4	24.5	30.37	18.8	28.9	22.5
9.	34.1	21.2	34.9	22.3	32.3	22.3	33.7	22.5	30.4	20.2	31	23	31	31.5	22	22
10.	32.5	21.4	32	22	31.8	22	34	22.7	29.6	21.3	29.5	23	30	20.5	31	22
11.	33.3	22	33.3	22.9	31.9	22.9	33.5	22.2	29.6	22.6	30.1	23.5	30.4	18.2	31	21.4
12.	33.1	20.4	34	21.4	32.4	21.4	33.7	23.5	30.6	21.8	30.3	23.6	30	32	32	21.5
13.	33.8	19.2	32.6	21.6	29.9	21.6	33.3	22.2	31.6	20.27	28.6	22.4	29.8	20	28	20.9
14.	31.7	22.4	31.5	23.2	31.4	23.2	34	22.5	29.8	23.6	30.1	22.1	30	20.2	32.5	22.4
15.	31.4	23.1	31.6	24	31.6	24	33.5	22.7	29.4	21.4	29.3	23.8	30	19	32	22
16.	30.6	21.1	32	22.7	30.7	22.7	33.3	22.5	29.8	21.4	28.2	23	29	20	29.9	21
17.	32.7	22	33	22.1	30	22.1	33.5	23	29.9	20.6	29.2	22.8	29	19.5	29	21.5
18.	33.1	20.3	32.5	21.5	31.9	21.5	34	22.2	30.3	21.4	29.5	22.5	28.67	20.5	30.9	21.5
19.	30.6	21.1	31.5	22.1	30	22.1	34.2	22.5	28.8	21.7	29.6	23.6	29.8	19.5	31.1	21.9
20.	33.5	21.4	33.1	22	31.8	22	33.7	19.3	30.2	20.8	29.9	22.1	29.2	20.3	31.5	20.5
21.	33.5	20.4	32.5	21.6	31.4	21.6	33.5	21.2	30	21.4	28.7	22	29	20.2	29	21
22.	32.6	21.2	32.5	20.6	31	20.6	34	22.5	30.2	21.4	29.8	22.1	29.3	20.5	31	20.9
23.	32.7	20	32	21.1	31.6	21.1	33.5	22.5	30.2	21.3	29.4	22	30.9	31	31	21.2
24.	33.1	19.4	33.4	20.1	31.5	20.1	33	21.3	30.8	20.2	28.9	21	29.9	29.5	31	18.5
25.	29.1	19.1	30.3	20	29.7	20	32.5	22.2	29.8	20.3	25.5	21.6	29.9	19.2	27.5	20.5
26.	29.9	21.1	30.9	21.6	30	21.6	33.5	21.3	29.6	20.7	24	21.4	30.2	19	24	20.9
27.	32.2	20	32.7	21.2	31.4	21.2	34.2	22.2	31.4	22	27.1	21	30	19.2	28	19.9
28.	34.1	20.1	33	21.7	30.9	21.7	33.5	21.2	30.2	21.6	30.3	21.8	29	20	31	20.4
29.	33.7	20	32.3	22.4	30.6	22.4	34.5	22.7	30.4	21	29.4	22.1	30	32.5	32.5	21.5
30.	32	22.27	32.5	23	30.5	23	34	22.2	30.8	21.2	29.7	22.3	28.5	20.7	33	21.7
31.	31.3	21.1	31.5	22.6	31.8	22.6	33.5	20.7	30.6	21.1	29.2	23.5	31	32.5	32.5	21.4
Mean	32.2	20.8	32.3	21.8	31.1	21.8	33.8	22	30.1	21.1	29	22.6	29.7	19.6	30.3	21.2

\* The minimum temperatures of this station do not seem to be very reliable.



Maximum and minimum temperatures at the stations of the Weather Bureau, January, 1921—Ctd.

Day.	Camp Keithley, Dansalan.		Veruela.		Sumilau.		Cagayan.		Talacogon.		Butuan.		Mambajao.		Dumaguete.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	25.3	17.0	29.8	22.6	28.4	20.8	32.2	20.8	22.1	31.5	21.5	28.9	24.5	29.5	24.9	
2	24.9	17.0	28.3	22.4	28.5	19.1	28.5	21.8	22.3	29.1	21.8	28	23	29.6	22.4	
3	25.8	17.4	29.8	21.8	28.7	20.4	32	21.3	23.2?	31.9	21.3	29	23.8	29.2	24.4	
4	25.8	18.4	30	23.2	27.9	19.6	31.8	22.6	20.4	32.6	21.5	29.1	25	28.4	24.2	
5	26.1	18.4	29.6	21.7	27.7	19.2	32.4	21.4	21.2	31.5	21	28.4	22.9	28.7	23	
6	24.9	14.9	27.8	---	27.5	18.7	31.1	19	20.4	32.1	20.2	28	23.9	28.3	23.6	
7	25.8	17	27.8	---	29	18.8	31.4	18.8	21.4	30.6	21.3	28.3	23.3	28.5	22.7	
8	24.9	19	29.2	21.6	30	20.5	30.9	21.7	21.1	32.7	21.7	27.9	23.4	29.7	24.5	
9	25.8	18.5	30.6	21.4	29	18.4	---	21.7	21.2	31.4	22.9	27.3	23	26.2	23.8	
10	26.2	19	28.4	22.7	29.4	20.1	---	21.5	22.2	28.9	21.8	28.2	24.4	29.4	24.4	
11	25.8	19.8	30	---	28.4	20.7	31.2	23.2	22.2	32.4	22.8	26.5	22.6	28.4	24	
12	25.3	19.5	29.8	22.7	26.8	16.8	30.5	21.2	21.1	31	20.5	26.8	24.3	28.9	23.7	
13	23.9	18.7	28.2	22	28.1	15.9	30.6	21.2	22.4	26.6	21.7	27.3	22.4	29.2	23.3	
14	24.8	19	31.4	23	29.5	19.8	29.2	23	---	29.6	22.1	28	22.4	29.2	22.6	
15	24.9	19.8	30.4	23.8	26.7?	19.5	30	23.3	22.3	31.1	22.6	26.8	23.9	28.5	24.6	
16	24.3	17.1	28.6	22.9	28.9	20.2	30.2	20.9	20	31.6	21.5	28.8	24.8	28.5	24.5	
17	25.4	15.9	27.3	22.1	28.7	18.9	30.7	19.6	21.2	29.6	20.1	28.9	22	28.3	23.2	
18	26	17.3	30.2	---	28.4	16	30.2	20.8	21	30.4	20.3	28	23.4	29.6	23.8	
19	24.3	18	31.8	23.1	30	17.1	30.8	21.7	22.1	32.4	22.4	29	23.6	30.4	24.3	
20	25.9	18.5	29.4	22	29	16.7	31.9	22.1	21	31.1	22	27	22.6	29.8	23.4	
21	24.9	16	28.4	21.7	26.3	17.2	30.1	20.5	21.3	29.2	21.6	26.8	24.2	29.4	23.7	
22	24.4	18.4	30.3	22.2	27.6	16	29.8	20	21	31.6	22	28.9	22.4	30.5	23.3	
23	26.6	18.7	29.6	20.4	28.1	17.3	31.5	19.8	21.4	32.6	20.7	29.4	24	30.3	24.4	
24	24.3	15	28.8	18.8	29	15.7	31.4	18.1	18.4	31.6	18.3	29.4	24.2	29.4	22.4	
25	24.3	15	26.2	20.2	22	14.8	29.8	19.4	19	27	18.8	27.3	22.6	28.4	23.4	
26	22.9	17.6	23.8	20.7	23.6	17.7	27	21.7	21.3	26	21.7	25.6	21.9	29.2	22.4	
27	23.8	16.6	27.8	21	26.5	16.7	32.3	20.6	22	28	21.3	27.5	22.4	29.2	23.8	
28	25.4	17.5	30.4	20.7	27	17.9?	30	20.5	21.2	28.4	21.5	27	23	29.7	23	
29	26.3	17	31.8	21.7	26.5	19.2	30.7	21.3	21.3	30.9	21.7	29.4	21.8	29.6	22.9	
30	27.9	17	32.3	23.4	28.5	17.7	30.6	21.4	21.4	33	21.9	28.9	21.3	30.1	23.9	
31	27	17.7	32.3	23	28.6	18.9?	30.1	23	21.3	31.9	22.4	28.9	23.7	28.9	23.3	
Mean	25.3	17.6	29.3	22	27.9	18.3	30.7	21.1	21.3	30.6	21.4	28.1	23.2	29.2	23.6	

Day.	Tagbilaran.		Iwahig Penal Colony, Puerto Princesa.		Dalaguete.		Surigao.		Central Palma, Ilog.		Biaong Cui's Farm, Barili.		Maasin, Leyte.		Isabela, Occidental Negros.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	29.8	22.3	30.2	28.5	28.3	24.5	28.3	23.3	19.6	28	21.2	30.8	22.5	30.2	23.4	
2	30.9	21.8	30.2	28.5	22	27.3	24.5	19	19	28.2	21.1	29.5	22	29.7	21.7	
3	31.7	21.5	30	29	24.1	29.4	23.9	19	18.9	28.5	21.6	34?	22	30.4	21.9	
4	28.6	21.2	29.6	28.3	24.3	28.5	24.4	18.7	20	28.2	21.6	---	---	30.3	21.7	
5	31.2	20.8	---	29	24.3	29.1	22.4	20	20	29.2	21.5	---	---	30.5	20.5	
6	30	21.3	30.2	27.5	25.8	28.1	22.4	20	20	29	21.3	---	---	30	21.4	
7	30.1	20.9	30.4	28	22.6	28.4	23.3	20.4	20.4	29.1	21.5	---	---	30.9	22.3	
8	30.1	22.1	29.4	28.4	24.5	28.9	24.2	---	---	28.5	21.2	---	---	31.5	22.9	
9	27.7	22.9	30.6	28	24.3	28	23.9	---	---	20.1	21.2	---	---	30.9	21.5	
10	30.2	22.8	30.4	28.6	24	29.5	24.9	---	---	21	28.2	---	---	31.4	22.1	
11	30.2	22.9	30.3	28.5	23.3	28.3	24.2	---	---	20.8	28.1	---	---	31.4	23.3	
12	28.7	22.5	30.4	28.5	23	27	23.4	---	---	20.5	28.2	---	---	28.1	22.7	
13	29.4	21.7	30.2	28.6	22.7	25.3	22.8	---	---	20.2	28	---	---	31	19	
14	28.7	21.3	30.2	27.7	22	27	22.6	---	---	21	28	---	---	31	19	
15	29.6	23.1	30.3	28.4	24.2	28	24	---	---	26.8	21.2	28.6	21	27.7	22.1	
16	30.5	21.8	29.8?	28.6	24	28	25.4	---	---	29.6	21.6	30.8	22	30.6	22.9	
17	31	21.6	30.4	29	23.4	28.4	22.8	---	---	28.9	21.5	31	22	30.3	22.1	
18	29.1	21.4	30	29.1	24.3	27	23.6	---	---	19	28.6	30.6	21.8	30.6	21.8	
19	31.7	22.4	30.4	29	28.6	24.4	24.4	---	---	19	29.2	32	23	31.4	21.3	
20	30.8	22.5	30.2	28.9	24.3	28	23.9	---	---	19.5	29.4	33	22	31.2	20.1	
21	30.2	20.9	31	28.5	21.8	28	22.9	---	---	18.5	28.4	20	32.6	32.2	20.5	
22	31.6	21.2	30.4	28.5	21.8	29.1	22.3	---	---	19	28.5	20.1	35	31.9	18.5	
23	32.5	20.8	31	28.5	23.7	29.2	23.2	---	---	18.4	26.5	20.1	33.1	31.7	22	
24	31.6	20.3	30.8	28.5	22.5	28.9	23	---	---	18.2	28.1	21	32.4	31.2	20.8	
25	28.9	21.3	30.2?	28.2	22.7	26.1	21	---	---	19.8	26.5	33	22.4	32.5	21.4	
26	29.8	21.3	29.4	28	22.7	26.5	23.7	---	---	20.6	26.8	31	32.5	31.4	22.2	
27	31.1	22	30.4	28.5	24.5	27	23.3	---	---	21.5	26.5	21	32	30.9	21.7	
28	30.1	21.4	30.8	28.5	23	26	22.5	---	---	20.5	25.1	35	22.4	27.9	20.9	
29	28.7	21.8	30.4	28.6	23.3	29.3	23.1	---	---	20.9	28	20.5	30	22.2	21.2	
30	28.9	22.8	30.8	30	22.8	29.3	22.1	---	---	20.6	27.8	34.4?	22	28.5	22.7	
31	29.7	22.8	30.4	28.2	24.3	29	23.6	---	---	20.5	26.3	20.1	32	30.6	21.8	
Mean	30.1	21.8	30.3	28.6	23.5	28	23.5	19.8	28	20.9	31.8	22.1	30.6	21.6		

Maximum and minimum temperatures at the stations of the Weather Bureau, January, 1921—Ctd.

Day.	Hacienda Tanolo, Hinigaran.		Cebu.		La Castellana.		Central Azucarera de La Carlota.		Mao Sugar Central, Bago.		Valladolid.		San Joaquin.		Murcia.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1.	23	28.6	23.1	21.8	21.8	21.8	30.4	21.3	29.5	22.8	31.7	22.7	31.7	22.7	30.3	25.5
2.	22.5	28.9	23.1	21.7	21.7	21.7	30.3	22	31.2	22	30.7	21.8	31.3	24.4	29.8	22.2
3.	21.8	28.8	23.9	21.5	21.5	21.5	32.3	20.3	33.5	20.5	32.2	22.2	31.5	24.5	31.5	21.3
4.	22.5	29.4	23.3	21.5	21.5	21.5	31.9	21.4	32	21.2	32.7	22	31.5	22.9	30.6	22.4
5.	21.2	29.6	23	20	20	20	32.9	19.5	32.3	19.5	33.7	22.7	31.3	23.4	32.4	21.4
6.	21	28.2	23.7	20	20	20	30.5	19.7	33.1	21.3	33.2	22.2	30.8	24	32.4	20.9
7.	21	29.7	24.7	20.3	20.3	20.3	32.7	18.8?	33.2	22.6	31.7	22.5	31.3	19.3?	30.6	22.5
8.	22.8	29.8	23.9	21.2	21.2	21.2	32.5	22.3	31.5	23.2	33.2	22.2	31.7	25.6	30.6	22.6
9.	23.1	28.9	23.8	21.4	21.4	21.4	31.7	22.2	31	23	31.8	23.5	31.1	29.1	31.7	21.8
10.	22.8	29.6	24.3	21.3	21.3	21.3	33.3	23.2	32.3	23.8	32.7	22.7	31.2	29.1	31.4	23.1
11.	23	29.8	22.9	22	22	22	32.3	22.2	31.8	23.2	32.7	22.7	31.2	30.2	30.6	22.9
12.	23.3	28.9	22.6	22	22	22	30.3	22.3	30.4	23	32.2	22.7	31.2	29.1	30.2	22.5
13.	21.5	29.9	23.9	18.1	18.1	18.1	31.7	20.8	32.7	21.4	31.7	23.2	31.6	18.1?	30.6	22.2
14.	22.5	29.5	21.9	21.5	21.5	21.5	23.5	22.1	29.8	23.5	30.7	23.7?	30.3	24.2	27.1	23
15.	23.3	29.5	24.9	21.2	21.2	21.2	30.1	22.1	31	23	31.2	23.2	30.8	25	28.6	22.2
16.	22.9	29.3	24.6	21.5	21.5	21.5	33.7	20.4	33.2	21.2	31.2	23.2	30.9	25.1	30.3	22.3
17.	21.3	30.2	22.8	20.4	20.4	20.4	33.8	19.3	34.2	18.7	31.2	23.2	32	24.4	31.7	20.1
18.	22.2	28.6	23.5	19.8	19.8	19.8	31.9	18.7	33	19.2	32.7	22.7	31.9	22.6	31.1	20.2
19.	22.2	30.8	24.2	20	20	20	32.7	19	33.1	21.1	32.2	23.2	32.7	25.4	30.2	20.6
20.	21.5	30	24.2	19.8	19.8	19.8	31.8	19.2	33.5	20	33.2	23.4	32.8	22.2	30.6	21.2
21.	20	30.3	22.9	18.5	18.5	18.5	34.4	17.9	35	19	31.2	23.7	32.2	24.3	31.4	20
22.	19	29.4	22.3	19.7	19.7	19.7	32.1	18.2	32.5	18.5	32.2	22.7	32	22.3	31.1	21
23.	22.1	29.5	23.6	20.5	20.5	20.5	33.2	21.1	33.2	20.8	32.3	23.5?	29.6	24.2	32.7	22.4
24.	20.1	29.6	22.6	18.5	18.5	18.5	33.8	17.9	33.3	20.7	32.2	22.3	32.7	23.7	31.7	21.3
25.	20.6	28.3	22.9	18.5	18.5	18.5	33.9	19.9	32.7	22.4	31.2	22.7	32	25	31.3	21.8
26.	21.2	28.5	22.6	20	20	20	31.9	20.3	32.3	22.6	33.2	23.7	32.7	24.1	31.8	21.7
27.	22.4	29	23	21	21	21	31.9	21.4	31.8	22.3	32.2	23.2	32.2	24.5	30.8	21.6
28.	21.4	28.6	23.2	20.2	20.2	20.2	29.2	19	29	21	31.7	20.2	32	23	26.6	21.3
29.	22.7	27	23.2	20	20	20	28.3	18.9?	28	22.6	29.7	22.2	32	25.4	31.3	21.8
30.	23	31.3	22.9	20	20	20	27.9	22.2	27.9	23.1	29.2	23.2	32	22.3	27.8	22.3
31.	22.5	28.9	24.1	21	21	21	29.8	22.4	30.5	22.7	30.2	23.7	31	23.5	29.1	22.4?
Mean		21.9	29.3	23.4	20.4	20.4	31.6	20.5	31.9	21.6	31.9	22.9	31.4	23.6	30.1	21.8

Day.	Bacolod.		Oton.		Iloilo.		San Jose de Buenavista.		Tuburan.		Leon.		Silay.		Calag-itan, San Remigio.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	
1.	27.7	28.8	21.8	27.8	23.5	30.9	23	28.2	23.2	27.9	30.2	26.5	20.5	22		
2.	28.9	30.2	22.8	29.7	22.5	31.8	22.8	30.5	22.4	30.1	30.2	27.5	22	23		
3.	29.9	31.3	23	29.8	23.4	31.5	21.5	30.7	22.4	30.2	30.1	28.4	22.9	21.5		
4.	29.8	30.6	23.8	29.3	23.5	31.8	21.8	29.9	23.1	30.1	30.9	27.5?	22.7	21		
5.	30.7	31.6	22.8	29.8	23.1	34.2	19.8	31.2	21.3	30.9	30.9	29	22	17		
6.	29.2	31.2	23?	29.3	22.4	32.5	18.5	30.2	21.3	30.1	30.1	28.5	21.5	17		
7.	29.5	30.4	22.8	29.5	22.7	31.6	20.1	29.9	21.3	29.2	30.2	28.1	22.9	21.5		
8.	29.6	30.4	23	29.8	23.2	32.8	22	29.5	23.6	30.6	30.6	28.5	22.7	22		
9.	29	30	23	28.8	22.6	32.4	23.4	28.2	23.8	28.1	28.1	27.5?	22.5	25		
10.	30	30.2	23.2	30	23.5	34.8	24.8	29.4	23.7	30.1	30.1	27.4	21.5	22.5		
11.	29.5	29.2	23	29.8	22.8	33.2	23.4	28.7	23.3	29.1	29.1	28	22.3	21		
12.	28.8	31	23.4	30	22.8	31.7	19.5	26.3	23.1	31.1	31.1	27.5	23	20		
13.	29.3	32	23.9	30.7	22.4	30.7	19.5	27.7	22.8	30.7	30.7	28.5	21.1	17		
14.	26.5	29.7	23.2	27.7	23.4	29.4	22.7	25.7	22.7	29.7	29.7	26.1	23	23		
15.	26.8	29.6	23.2	27.7	23.5	32.8	21.9	27.9	23.5	29.4	29.4	26.5	22.4	21.5		
16.	29.5	32.2	23.6	30.7	23.9	29.7	23.2	31.6	21.5	31.5	31.5	28.1	23.5	21		
17.	31	32	22.2	29.9	22.6	32.6	19.9	30.7	21.1	31.7	31.7	29.1	22.1	18		
18.	29.5	32.2	23.4	29.4	23.4	30.8	19	29.2	21	31.3	31.3	29.1	22.4	16.5		
19.	29.5	32.1	23.2	30.7	23.8	32.2	20.4	29.4	21.9	31.3	31.3	28.2?	23.5	20		
20.	29.5	30.7	22.5	30.4	22.8	31.7	18.7	29	21.5	30.2	30.2	29	22.5	16.5		
21.	30.2	32.4	23	30.2	22.1	31.4	19.5	28.9	20.5	31.7	31.7	29.2	21.6	17		
22.	30	32	21.4	30.2	22.1	31.8	20.9	29.2	22.3	31.5	31.5	29.5	20.6	18		
23.	29.4	28.7	22.8	27.9	23.3	31.2	22.3	28.8	21	31.6	31.6	27.2	23	21		
24.	30.5	31.2	21.9	28.8	22.2	33.3	21.3	28.6	19.6	30.2	30.2	29.6	20.6	17		
25.	29.5	30.1	22.9	29.9	21.9	31.3	20.3	29	22.8	30.2	30.2	29	21.4	19.5		
26.	29.3	30.8	22.4	29.7	22.3	32.2	19.9	28.2	21	30.5	30.5	29	22.1	22		
27.	29.2	31	22.4	28.8	23	30.3	21	28	22.5	30.1	30.1	28	22.4	23		
28.	27.2	31	21.5	28.3	21.6	30.9	22	26.6	22.7	30	30	26.9	21.4	21		
29.	26.5	30.8	22	28.2	22.5	27.7	22.4	28.6	24.2	29.9	29.9	27.2	22.5	22?		
30.	28.5	31.2	22.2	29.8	22.9	30.8	22.8	27.7	22.9	30.7	30.7	27.5	23.5	22.5		
31.	28.7	30.7	22.8	29.4	23.2	31.7	22.8	28.8	22.1	29.8	29.8	27.9	23.2	23?		
Mean	29.1	30.8	22.7	29.4	22.9	31.7	21.3	28.9	22.2	30.3	30.3	28.1	22.2	20.4		

\* These maximum temperatures seem to be not very reliable.

Maximum and minimum temperatures at the stations of the Weather Bureau, January, 1921—Ctd.

Day.	Cuyo.		Barotac Nuevo.		Hacienda Ilaya, Victorias.		Hacienda Bilbao, Manapla.		Cadiz.		Dingle.		Ormoc.		Guiuan.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum. <sup>a</sup>	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	28.8	25.3	28.1	23.1	27.2	21.7	29.7	20.8	28.5	23.3	30.5	22.5	30.9	21.4	32	23.5
2	29.6	25.7	29.9	22.2	28.5	22.3	30.6	21.7	28.6	21.2	29.1	22	30.9	22.5	31.5	22.5
3	29.6	25.3	29.5	22.8	29.3	23.7	30.8	21.9	29.6	21.8	29.7	22	31.2	22	31.7	24.6
4	29.4	25.7	29.7	23.1	29	23.4	30.6	20	29	23.2	30	21.9	32.4	23.2	30.8	23.6
5	30.2	25.2	29.8	22.4	29	22.8	29.9	20.9	29.4	23.8	30.5	22	32.1	21.2	31	24.2
6	29.3	24.8	29.4	22.5	30.5	23.8	31.1	21.7	28.6	23.3	30	21	31.6	22.9	30.3	22.6
7	28.7	25.3	29.1	19.1	31	22.8	30.7	22.1	28.7	24.5	30.4	22.1	32.4	23.5	30.8	24
8	29	24.6	30.3	22.6	30.6	23.7	30.1	21.6	28.6	24.2	29.8	22.5	31.8	22.8	30	24
9	28.	24.5	29.3	21.7	30.5	22.6	31.5	21.8	29	23	30.2	22.4	32.2	21.1	29.6	23.6
10	29.5	25.4	29.4	22.3	29.8	22.8	31.9	20.7	27.3	22.8	29.5	23	30.6	23.4	32	23.2
11	28.9	25.1	29.5	22.6	30	23.7	30.6	21.5	27.5	22.4	30	21	31.2	22.9	29.8	23.2
12	28.4	24.7	29.6	21.8	31.2	23.6	31.2	21.9	27.8	24.4	29.5	22	29.9	22.8	29.4	22.5
13	28.5	24.5	29.8	21.6	30.5	23.6	30.6	22.2	28.3	23.8	29.8	21.2	30	21.4	29.8	23.9
14	28	25.4	29.9	22.1	30.2	22.5	31.7	22.5	26	23.7	30	22.8	29	21.5	29.5	23.8
15	29	25.2	29.6	22.4	30.8	23.8	30.1	21.7	27.8	23.6	29.8	22.9	30.3	22.7	29.5	24
16	29.1	24.8	29.8	23.3	31	23.3	30.4	21.6	29	23.7	28.2	21.6	31.3	21.8	30.8	25
17	29.6	24.6	30.3	22.5	31	23	29.7	22	29.1	24	31.4	22.4	32	21.1	32	25
18	29.4	25.3	30.4	22.4	30.6	22.7	29.9	21.6	27.3	22.7	31.3	22.3	32.6	21	29.8	23.6
19	30	25.6	30.2	23.1	30.8	23	30.7	22.3	28.8	24	30.8	22.6	32.5	22.1	30.8	24.8
20	28.8	25.2	30.3	23.1	31.3	23.5	30.4	21.8	28.3	24.7	30.7	21	32.9	21.9	31.8	24.2
21	29.6	25	30.3	23.2	31.5	23	29.7	20.6	29	23.2	30.9	21.1	31.2	20.2	31.8	25
22	29.3	25.3	29.4	21.2	31	22.7	31.4	21.4	29.1	22.7	31.4	21.2	31.5	20.2	31.2	23.2
23	30.3	25.1	28.3	22.4	30	21.2	29.2	20.6	29.2	23.1	30.6	22.3	29.5	21.3	30.8	23.4
24	30.5	21.8	29.3	21.3	30.4	22.7	29.9	20.4	28.3	20.4	28.2	20.8	30.7	20.6	30.4	24.6
25	29.1	24.5	29.1	21.3	30.8	23	30.4	21.2	28.6	23.4	31	22.4	30.6	20.9	29	23
26	28.9	24.9	30.2	21	31	23	30.7	21.5	28.3	24.2	30.9	20.9	30.8	20.1	29.8	24.87
27	29.7	24.6	29.8	21.1	30.5	23.6	31.2	21.8	28.5	24.2	31	22.5	30.3	20.4	28.3	23.1
28	28.8	24.7	28.4	21.3	30.6	23.2	30.1	20.9	25.5	22.7	30	21.6	30.2	21.9	28.8	23.2
29	27.2	23.8	29.2	22.2	30.2	23	30.3	21.2	28	22.8	29.8	22	32	22.2	29.8	22.2
30	28.8	23.8	29.3	22.3	31	23.5	29.4	20.7	28.1	22.9	26.9	22.6	31.7	23.1	29.3	23.9
31	28.1	24.1	29.6	-----	31.3	23.2	29.2	21.2	28.3	23.7	29.8	23.2	31.8	22.8	30.1	22.8
Mean	29.1	24.8	29.6	22.1	30.4	23	30.4	21.4	28.3	23.3	30	22	31.2	21.9	30.4	23.7

Day.	Bugasong.		Bogo.		Tacloban.		Capiz.		Borongan.		Catbalogan.		Calbayog.		Masbate.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.2	22.7	29.8	23.9	29.9	23.1	30.9	25	30.2	25.4	29.8	-----	31.2	22.9	29	24.2
2	31.4	22	30	23.3	30.6	22.7	30.3	22.4	28.8	25.1	28.8	-----	29.2	23.1	28.8	23.5
3	32	21	29.5	23.5	30	22.6	31.3	23.9	29.7	24.5	30.5	-----	30.2	22.1	29.6	23.5
4	32	20.7	29.7	23.5	30.1	22.7	31.4	24.9	29.8	24.8	31	-----	31.2	22.6	30	24
5	31.3	19	29.9	23.7	30.9	21.7	30.9	23.5	30.1	25.3	30.7	-----	30.9	21	29.6	23.5
6	32	20	28.1	23.1	29.3	22.6	30.9	23.9	29.6	24.9	30.4	-----	30.9	21.4	29.4	23
7	34	20.2	27.8	23	31.2	22.7	30.2	22.6	30	24.3	30.5	-----	29.7	22.5	29.2	22.5
8	32	20.5	29	23.9	28.9	22.9	30.9	24.2	29	24.8	30.2	-----	29.5	20.8	29.4	23.8
9	-----	20.5	28.9	23.8	29.9	22.9	30.8	23.5	28.7	24.6	30.5	-----	30.5	23.7	28.8	23
10	-----	20.5	28	23.9	27.7	22.8	29.8	23.6	27.9	24.6	28	-----	26.9	23.8	27.6	23
11	31	-----	29.1	23.2	30	22.3	30.3	23	29.8	24.6	29.8	-----	29.8	23.3	29.4	22.8
12	31.2	18.4	30	23.6	26.9	21.8	30.3	23.5	27.1	23.1	28.3	-----	29.8	21.8	28.6	24
13	31.3	18	29.5	23.5	27.2	21.9	30.8	22.5	28.7	22.7	30	-----	29.3	20.2	29.8	23.8
14	31.5	19	29.6	24.1	27.9	22.2	27.8	22.4	28.3	24.5	27.3	-----	29.3	23.1	26	23.4
15	32.2	19	29.7	23.7	29.1	22.5	29.3	24	28.4	22.6	28.3	-----	27.9	22	27.2	23.5
16	31	20.7	28.6	23.1	29.9	21.7	30.8	24.1	30.1	24.8	30.3	-----	31.2	21	29.6	23
17	32	20.5	29.8	22.4	31	21.6	31.3	23	30.1	25.4	31	-----	30	20.9	29.8	23.4
18	31.5	19.5	29.6	22.3	26.3	22.8	31.4	23.5	27	24.6	26.9	-----	27	22.6	30.4	23.5
19	31	19.5	29.7	23.5	30	22.1	31.8	24.4	29.4	24.1	31	-----	31.2	21.6	28.8	22
20	34.2	18	30.3	23.7	30.5	22.8	31.4	22.1	29.8	23.6	30.57	-----	31	21.5	27.8	24.2
21	31.4	19.2	30.2	23.6	29.5	22.4	31.8	22.8	29.7	22.6	27.6	-----	29.3	20.9	29.6	23
22	31.4	19	30.7	23.2	28.9	22.3	30.3	23.2	28.3	22	27.2	-----	28.9	21.8	28.4	23.4
23	30.4	19.2	30.5	23.3	28.3	21.1	29.9	22.9	29.6	23.4	29	-----	29.4	22.3	28.6	22
24	32	19.2	28.6	23.5	30.9	20.6	31.4	23.4	30	24.5	31	-----	30.3	20.9	29.4	23.6
25	31.2	19.2	30	23.6	27	21.4	29.8	22.5	29.1	21.6	30.5	-----	30.5	20.9	27.6	22
26	31.2	19.1	29.4	23.4	29.6	22.1	30.8	23.4	28.7	24.4	29.4	-----	30	21.4	28.8	24.2
27	33	21	28.9	23.5	28.1	21.5	30.4	24	27.3	23.5	28.5	-----	28	23	27.6	24.2
28	30.2	23	29	23.7	26.4	22	27.3	22.7	27.6	22.3	26	-----	24.7	22.3	24.8	22.5
29	30.2	23	28.1	23.8	30.1	22.7	26.2	22.7	27	22.7	28.3	-----	28.2	23	25	22.6
30	30.2	23	29	24.1	29.9	23.3	28.7	23.5	27.6	24.2	27.4	-----	27.3	23.3	24.6	22.5
31	31.5	21.2	28.8	24	30.9	23.1	28.4	23.5	29.6	22.6	28.3	-----	29.5	22.5	28.4	22.5
Mean	31.6	20.1	29.3	23.5	29.3	22.3	30.2	23.4	28.9	23.9	29.3	-----	29.4	22.1	28.4	23.2

<sup>a</sup> These minimum temperatures seem to be not very reliable.

Maximum and minimum temperatures at the stations of the Weather Bureau, January, 1921—Ctd.

Day.	Romblon.		Batag Light-house, Laoang.		Irosin.		Sorsogon.		Bacon.		Jovellar.		Legaspi, Albay.		Guinobatan.		
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	
1	30.5	23.9	29.2	23.8	28.9	22.2	29.1	23.6	29.4	24	22.2	29.1	23.1	29.1	23.0	30.8	21.6
2	28.9	24.2	27	22.3	26.6	21.6	25.7	22.4	29.1	22.5	-----	-----	26.6	22.9	26.3	22.4	
3	30	23	28.5	23.4	28.5	21.3	29.7	23.1	28	23.4	-----	-----	28.8	24.3	30.3	21.7	
4	30.2	23.7	28.6	24.4	28.5	21.3	29.5	23.7	29.1	24.5	-----	-----	28.8	23.5	29.9	22.3	
5	30.6	22.9	28.9	23.3	28	-----	29.6	23	28.7	23.5	-----	-----	28.8	23.8	30.1	23.5	
6	29.8	23.2	27.9	22	28.3	19.9	28.5	22.2	29.3	24.8	28.5	21	29.8	24.5	30.5	20.8	
7	30.1	23.9	28	23	27.7	21	29.4	24	28.9	24.5	31.3	22.5	29.4	23.3	30.6	22.6	
8	30.5	23.2	28.5	24.3	28.6	19.8?	29.5	23.3	29	24.4	32.9	23.1	29.8	24.8	29.9	23.1	
9	30.2	23.1	28.2	22.5	28.4	21.4	29.2	23	28.7	23.7	35.7?	21.5	28.6	23.3	28.9	22.9	
10	28	24.2	27.5	22.8	25.9	20.3	27	22.8	29	24	33	23.3	26.9	23.4	29.1	23.4	
11	30.4	23.7	28.6	22.4	28.1	-----	29.1	22.6	28.8	23.4	27.7	23.3	29.4	24.3	30.5	22.2	
12	30.3	22.3	28.5	23.5	30.7	20.3	29.1	22.4	28.6	23.6	29.3	26.8?	28.8	23.3	29.6	16.7	
13	30	19.7	29.2	22.6	28.5	-----	29.5	22.6	27.7	23.7	30.2	27.7?	29.9	23.7	30.9	19.1	
14	29	22.5	26.5	22	25	23.1	29.5	23.5	29.1	23.4	-----	-----	23.2	26.8	23.3	23.6	
15	29.2	23.3	26.5	22.5	26.7	21.4	27.1	21.5	25.9	21.8	27.5	22.9	27.4	23.4	27.3	21.5	
16	30	23.1	28.8	23.2	28.3	21.4	29.9	23.5	27.6	23.4	28.4	22.5	29.4	22.8	30	-----	
17	30	21.7	29	23.3	28.4	21.6	29	22.8	29.2	22.8	29	22.1	29.9	23.1	29.7	22.6	
18	30.2	23.2	29.4	23.8	28.5	21.8	29.5	24	29.1	24.8	29.4	23.2	30.3	23.4	30.6	22.2	
19	29.9	23.3	28.8	22.5	28.3	22.3	29.1	23.7	29.9	24.3	29.5	23	29.9	23.1	30.5	22	
20	30	22.9	29	23	27.7	-----	29	22.5	29.2	23.3	29.5	18.5	29.3	23.7	29.5	18.4	
21	30	23.3	27.9	23.6	28.5	22.1	29.6	23.1	28.5	24.6	29.2	19.1	30.3	22.7	30.9	18.3	
22	29.7	23.2	28.5	22.2	27.9	22.1	28.7	23	29.2	22.8	29	20.2	26.9	22.5	27.2	21.9	
23	28.5	22.2	27.2	21.8	26.5	20.1?	28.3	22.4	28.4	22.7	29.3	22.1	28.4	22.8	27.1	22.2	
24	30	22.9	28.8	22.5	27.9	21.6	29	22.3	28.9	24.6	29.4	22.7	29.3	24.1	29.1	22.5	
25	29.5	22.7	28	22.5	27.4	21.1	29.1	23.5	29	23.4	27.9	21.5	27.6	22.6	27.3	22.4	
26	28.5	23.1	28.5	21.8	28.4	22.3	29.5	23.6	27.7	24.5	28	20.9	29.3	23	28.6	22.2	
27	30.5	22.8	25.6	23.2	26.7	22.4	28.2	23.1	27.9	23.8	28.9	22.3	28.1	22.9	28.4	20.1	
28	28.8	23.8	24.8	21.8	26.1	21.2	26.5	21.9	28.7	24.3	28.1	20.6	27.1	23	27	22.8	
29	25.9	21.2	24.9	22.8	24.4	21.3	24.4	22.6	25.7	22.6	27.7	21.7	24.7	22.6	24.8	21.5	
30	27	22.7	26	22.7	24.2	22.1	24.4	22.5	25.2	22.7	24.9	21.3	25	22.2	24.7	21.9	
31	27	22.6	26	22	26.5	21.1	25.9	21.7	25.1	22.3	26.5	22.2	26.1	22.6	28.9	22.1	
Mean	29.5	23	27.8	22.8	27.6	21.4	28.4	22.9	28.3	23.6	29.3	22.3	28.4	23.3	28.9	21.7	

Day.	Polangui.		Tabaco.		Sumay (Guam), Agaña.		Iriga.		Calapan.		Virac.		Naga, Camarines Sur.		Tigaon.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	32	21.5	28.8	21.5	27.6	24.7	31.3	21.1	31	23.5	29	22.7	30.3	19.9	30.5	20.9
2	31.8	23	29.4	21.6	27.8	24.7	30.1	22.6	28.6	23	26.6	22.6	25.9	22.7	25.5	22.5
3	31	21.5	30	22	27.9	24.4	30.6	21.1	29.5	24	29	22	30	20.1	29.5	21.4
4	31.5	21.8	29.2	21.6	27.8	25.6	30.1	21.3	29.5	23	30.8	21.5	30.6	21.4	29.1	21.6
5	31.8	22.5	29.1	23.9	28.2	25.6	30.6	22.9	28	23.1	30	21	32	22.4	29.9	22.5
6	32	20.5?	30	23	28.3	22.8	30.4	20	29.5	24	29.6	21.1	30.9	19	30.6	19.5
7	31.3	21.5	30.2	22.1	28.2	24.7	30.8	21.7	28.1	23.4	29.6	22	29.2	21.5	30	21.5
8	31.2	22.8	29	23.3	28.5	25.2	30.9	21.9	28	22.7	30.2	21.5	30.6	22.8	29.5	22.3
9	32	22.3	30	22.9	28.3	25	30.3	22.1	29.9	24	30.5	21.6	28.8	22.4	29.9	22.3
10	31	23.4	29.2	22.5	27.8	25.4	29.8	23.7	28	23.5	28.6	22	29.4	21.4	28.5	22.2
11	30.5	22	28.9	23	27.6	24.6	30.3	22.8	29.4	22.4	30.4	21.5	29.8	22.5	30	20.8
12	31.6	17	29	21.1	28.5	23.7	31	20	29	21	31	20.5	29	20.9	29.5	20.6
13	31	19.8	29.9	21.2	29	25.3	31.3	19.3	29.6	20.5	30.1	21.4	30.7	18.6	31.5	19.1
14	32.5	22.8	30	23.6	29.9	25	28.9	23.7	29.5	22	29.4	22.4	27.2	23.2	28	22.5
15	28.8	22	26.3	22.1	28.2	25	29.1	22.9	27.5	22.7	28	22.2	27.4	22.6	25.4	21.9
16	28.9	23	28.1	23.5	27.7	24	30.5	22.8	27.2	23.5	29.2	23	28	22.7	30	22.5
17	31.5	23	29.7	22.4	27.3	24.1	31.4	22.4	28.5	23.5	29	23.2	30	22	30	22.4
18	32	21.3	29.9	22.9	27.7	24.1	31.3	22.5	29.5	23.1	29.9	23.1	31	19.2	30	21
19	32.2	21.5	30.2	23.1	28.9	24.7	31.3	22.3	29.5	22.9	30	21.1	30.7	21.3	30.5	22.4
20	32	19.5	30.2	22.1	28.8	24.7	30.7	20	30.1	22.1	29.8	20	29.1	19.5	30.1	19.6
21	32.1	18.5	28	22.3	28.4	24.2	31.1	19	29.5	22	30.1	20	31.2	19.5	30.6	20
22	32.5	21.7	29	22	28	24	29.8	21.1	30	20.5	28.8	21.3	28.9	22.1	29.1	22.5
23	30	23.8	27.2	23	28	24.2	29.1	22.2	29.9	24.5	28.8	22.2	30.8	21.5	29.1	21.5
24	29	20	28.5	22.4	28.7	24.7	29.9	20.9	29.9	23	29.7	22.1	30.7	20.5	29.9	19.5
25	31	21.3	29.6	22.3	28.3	23.7	29.3	21.1	29.5	21.6	29.6	21	28.9	21.8	28.9	21.5
26	30.8	19	28	22.6	28.7	24.2	29.3	20.6	28.5	23.1	28.9	20.9	29.3	20.5	28	20
27	30.2	19.4	28.2	22.3	27.3	24.1	30.3	21.3	29.5	21.5	29.5	21	29.5	21.2	28.4	21
28	31	21	28	22.1	27.3	24.2	27.3	22.9	30	22.6	29.3	22.1	27.4	23	26.3	21.6
29	28.9	21.5	27	22	27.3	23	25.2	21.1	25.6	22.5	27.1	21.2	24.5	20.8	24.2	21.6
30	27	22	25	22	29	23	25.3	22	26	21.4	26.5	21.9	26	22.2	25	22.1
31	27	22	25	22.6	28.5	24	27.4	22.6	26.1	23.1	27.5	21.5	25.6	22.1	26	21.8
Mean	30.8	21.4	28.7	22.4	28.2	24.4	29.8	21.7	28.9	22.7	29.3	21.7	29.1	21.3	28.8	21.4

Maximum and minimum temperatures at the stations of the Weather Bureau, January, 1921—Ctd.

Day.	Libmanan.		Batangas.		Calatagan.		Balayan.		Lipa.		Lucena.		Atimonan.		Nasugbu.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum. <sup>a</sup>	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30	22.8	29	22.4	22.9	30.6	21.5	29.3	18.5	28.6	21.5	23.5	33.2	20.5	33.2	20.5
2	30.1	22.2	29.7	20.9	23.2	30	23.5	27.4	18.9	27.7	21.5	26.9	24.1	34.8	20.9	34.8
3	31.7	21.8	30.8	22.6	20	31	24	28	19.8	29.2	21.5	28.3	23.4	32.5	22	32.5
4	31.6	22.5	30.1	22.7	22.6	29.5	23.5	28.8	20.7	28	21.1	28	23.4	33.9	20.5	33.9
5	31.6	24	30.2	22.4	22.3	30	22.5	27.1	20.3	27.9	21.2	27.3	23.3	33.5	20 ?	33.5
6	29.8	22.7	30.8	20.2	22.2	31.5	22	26.4	19.8	28.3	20.5	27.8	23.5	34.5	23	34.5
7	29.7	22	28.5	20.2	22	30.5	20	28.1	18.4	28	20.2	26.5	23.4	33.5	25	33.5
8	29.7	23	27.2	19.4	19.2?	30	22.5	28.5	19	25.5	21	26.3	23.2	34.8	22.5	34.8
9	29.8	22.1	31.2	18.7	22.2	31.5	24	28	19.5	27.9	20.8	27.4	23.8	32.5	22	32.5
10	29.8	23.1	31	22.9	22.8	31	23	28.5	20	27.9	21.2	27	23.8	33.9	22	33.9
11	30	23.3	31.2	21.4?	22.2	30.5	20.6	28.6	19.4	28	21.1	28.1	24	33.4	22.8	33.4
12	29.9	22.2	30.7	17.6	20.7	30	25	28.8	20.3	27.6	20.9	26.5	23	33.5	22.6	33.5
13	30.9	20.3	31.1	19.7	21.1	30	20.5	29	19.5	28.5	19.6	28.4	22.4	33.3	22.2	33.3
14	30.8	23.4	30	18.8	17.8	30	19.5?	30	19.8	28.7	20.9	27.2	24.5	33.1	22	33.1
15	30.7	23.2	29	22.6	23.4	31	23.5	29.9	20.6	27.4	21.7	26.8	22.6	32	24	32
16	30.9	22.9	29.2	22	23	29.7	23	29.7	19.9	27.1	20.3	25.6	22.7	32.5	21.5	32.5
17	31	22.6	29.8	22.5	22.5	29	24	29	18.9	27.7?	21	27.6	21.9	34.6	24	34.6
18	30.9	24	31.8	21	22.1	30.6	21.5	28.9	19.3	29	20.7	27.9	23.8	35.6?	24	35.6?
19	29.5	24.8	32.4	21.8	22	31.5	22	29.9	20.1	28.5	21.2	25.7	23.8	32	22.5	32
20	29.6	22.8	31.6	19.9	21.4	31.5	24	29.4	17.1?	29	21	27.1	24	33.9	21.5	33.9
21	30.1	21.9	31.7	20.2	19.3?	31.5	23.6	29.1	18.2	29.5	20.5	28.8	23.5	33.5	22	33.5
22	30.1	22.2	30.7	18.8	19.2	30.6	24.5	29.9	19	29.5	18.7	27.2	23.8	34.6	21.9	34.6
23	30.2	22.3	31.6	21.8	21.3	31.5	21	29.5	19.8	30	20.3	30.6	24.3	35.5	24	35.5
24	30.2	22.2	31.7	22.8?	22.4	31	21.5	29.9	19.1	29.7	21.5	30.4	24.5	34	22	34
25	30.8	22.4	30.8	18.4	18.3?	32	22	29.3	19.1	28	20.6	27.6	24.5	32.9	21.5	32.9
26	30.7	21.2	31.3	20.6	21.6	31	23	27.4	17.2	28.5	20.1	26.4	23.8	33.5	22.6	33.5
27	30.6	21.8	31.1	20.6	21.4	31.5	21.5	28.7	17.2	29.2	19.6	28.5	22.8	33.5	23.5	33.5
28	29.2	21.8	29.5	22	21.6	30	21.5	27	18.1	28.9	21.2	27	23.8	31.9	24	31.9
29	29.3	20.7	27	21.8	21.9	30	21	25.2	18.1	26.5	20.6	25.3	21.9	35.5?	22.5	35.5?
30	29.8	22.1	27.7	22	21.2	27.6	20.5	26	17.5?	26	20.5	24.6	22.6	33.5	23	33.5
31	29.9	21.9	28	21.8	22.4	30	22.5	27.9	18.3	24.8	19.6	23.8	22.1	34	21.5	34
Mean	30.3	22.5	30.2	21	21.5	30.5	22.3	28.5	19.2	28.1	20.7	27.2	23.4	33.7	22.4	33.7

Day.	Ambulong, Tanauan, Batangas.		Daet.		Mendez Nuñez.		Alfonso.		Indang.		Canluban, Calamba.		Silang.		Maragondon.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum. <sup>b</sup>	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum. <sup>c</sup>
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	28.1	23.3	28.6	23.1	23.5	19	24.7	19.6	26.2	19.5	28.4	19.4	25.4	16.5	29.1	18.8
2	29.2	23.5	26	22.8	24.5	19.5?	25.1	20.1	26.8	20.7	28.8	20.4	25.8	17.1	30.6	19.3
3	29	24	28.5	22	24.5	19.9	25.6	20.9	26.3	20.9	28.6	21.2	25.2	17.5	29.5	20.1
4	29.5	22.7	28.3	22.3	24.5	19.9?	26	20	26.8	20.5	29.2	20.1	26.1	17.9	30.5	20.9
5	30.5	23.2	28.6	22.6	25	18.9	26.2	19.6	27.1	20.4	29.6	21	26.3	18	30.6	19.6
6	30	23.1	28.4	24.2	24.5	18.9	25.6	19.6	27	19.7	29.2	20.5	26.7	19.5	30.5	18
7	29.7	22.5	27.8	23.1	25	17.8	26	19.1	27.2	19.4	30	20.3	26.4	18	29.6	18
8	27.3	22	28.8	22.4	24.2	18.5	25.2	19.5	26.4	19.4	29.9	21	26.8	18.8	28.4	18.4
9	29	22.6	27.8	22.2	24.5	18	25.8	18.1	26.9	19.5	30	21.2	26.5	17.8	30	16.3
10	28.2	22.9	28	23.6	24.5	19.5	25.5	20.1	26.6	20.5	29.9	21	26.9	18	30.7	20.7
11	30.2	22.5	28.1	23.1	25	18.3	27.4	19.3	27.4	20	29	20.2	27.5	18.2	30.2	16.9
12	29.5	22	27.5	21.2	24.5	18.7	26.1	18.7	26.8	19	28.4	18.2	26.5	18.9	30	15.8
13	31.2	22.4	28.5	20	26	18.3	27.4	18.8	28.2	19.2	29.4	18.4	26.2	19	29.6	16.5
14	31.3	21.9	28.3	23.4	26	17.5	27	17.9	28.2	18.5	30	18	26.7	17.5	29.7	18.5
15	29.3	23.2	25.8	22.6	25	17	25	20.5	25.9	18.7	29.7	20.9	26.1	18.3	30.2	22.1
16	27.2	23.2	27.1	22.2	23.5	18.5	24.5	20	25.7	20.8	28.3	21.3	27.5	17.2	29.9	18.6?
17	31.2	23	28.4	22.6	26	19.9	27	20.8	27.5	21.4	30	21.4	27	18	30.5	19
18	30.4	23.2	29	21.8	25.5	19.2	27	20.1	28.7	20.3	30.1	21.3	26.9	16.4	31	18
19	31.8	23	27.9	23	26	19	27.5	19.8	28.4	20.2	30	18.6	27	17	31	17.4
20	31.3	22.4	27.9	21.8	26	18.5	27	19.1	28.7	18.7	30.5	18.6	27.8	18	30	17.5
21	31.6	20.3	28.6	21.7	26.5	18.5	27.5	18.8	28.5	19.1	31	19	28.3	18.5	30.2	17.8
22	30.3	19.9	28.6	21.8	27.5	17.9	27.9	18.7	29.3	19.6	30.8	17.6	28.2	18.3	30	17.5
23	31.5	22.5	28.9	24.1	26.5	19.2	27.4	20.2	28	21.1	30.2	20.4	27.7	16.8?	30.9	19.1
24	30.3	23.3	28.7	23.6	26.5	18.9	27.5	20.1	28.5	20.9	30.4	21.6	28.2	17.5	31.2	19.5
25	29.5	22.1	28	23.5	25	17.9	26.6	19.1	27.3	19.4	30	19.3	28	17.7?	30.1	17.6
26	30.1	22.2	27.1	22.5	25.5	17.9	26.4	18.8	27.9	19.4	30.1	19.6	27.6	17.4	29.6	18.1
27	30.3	21.8	28.5	24.2	25	17.5	26	18.8	27.8	18.9	29.8	20.6	26.9?	18.2	30.6	18.8
28	30.4	22.2	27.4	21.6	26.2	18.5	26.3	18.6	28.2	20.2	30.8	20.6	27.9?	19	30	17.4?
29	26.7	23.8	25.4	20.6	22.5	18.9	24	20	24.8	20.8	26.8	21.2	27.7	18.5	28.2	20.3
30	29.2	23	26.5	22.4	25	18.2	26	19.5	26.9	20.2	28.9	20.7	26.6	17.8	30.1	19.1
31	27.6	22.4	25.5	22.1	23.5	18.3	24.5	19.7	26.1	20.5	28	21	26.1	18.2	28.6	21.4
Mean	29.7	22.6	27.8	22.5	25.1	18.6	26.1	19.5	27.3	19.9	29.5	20.1	26.9	17.9	30	18.6

<sup>a</sup> These maximum temperatures seem to be too high.

<sup>b</sup> These minimum temperatures seem to be not very reliable, the differences between 6 a. m. temperatures and minimum temperatures being both too small and too uniform.

<sup>c</sup> These minimum temperatures seem to be somewhat too low.

Maximum and minimum temperatures at the stations of the Weather Bureau, January, 1921—Ctd.

Day.	Paracale.		Santa Cruz, Laguna.		Buenavista, General Trias.		Cavite Naval Station, Cavite.		Manila.		Antipolo.		Balanga.		Malolos.		
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	
1	30	23	29.3	21.7	28.3	19.6	30.4	24	32	20.8	29.8	18.9	32	21	31.4	20.5	
2	29.8	23	26.9	22.6	28.5	18.6	30	22.8	29.6	20.2	28.4	19.4	32	20	30.9	21.6?	
3	30.2	24	27.5	22.5	28.3	18.4	30.5	24.5	31	22	30.1	21	29.6	21.1	29.9	22	
4	30.2	24	27.8	21.9	29	20.4	31.4	24.3	31.5	21.1	30.7	20	31.4	21.5	30.5	22	
5	30.5	24	29	22	29.1	19.8	32	23.3	31.6	20.4	29.7	19.3	31.1	20.6	30	22	
6	30.5	23.5	28.8	22.3	28.8	19	32.5	22.7	32.2	19.6	30.2	18.7	31.1	20	30.5	20.5	
7	30.2	24	26.1	20.3	29.6	17.6	32	22.5	31.2	19.4	29.6	17.7	30.6	19.1	30	19.5	
8	30.5	24	27.1	22	29.2	18.7	32	22.9	30.9	19	30.2	18.4	31.6	20.5	30.7	20.5	
9	29.2	23	27.6	22.2	29.2	18.2	32	22.5	31.5	17.4	30.7	18.2	31.1	17.8	29.9	19	
10	29.8	23.2	26.9	22	29.4	17	31.4	24	32.7	20.9	30.7	20.5	31.2	22	29.8	22	
11	30	23.8	28.5	21.9	29	19.8	31.2	22.6	30	18.7	30	18.3	31.1	19.6	30.5	20.3	
12	30		26.8	21	30.5	17.3	32	22.3	30.6	17.8	29.4	18.1	31.4	17.5			
13	30.2		28.4	19.6	30.1	18	31.4	22.2	30.5	18.7	30.4	18	31.8	19.5	30.7	21.5	
14	30.2		28.9	19.2	30.4	18.2	30	23	31.1	21.2	31.2	19.5	31.9	21.9	30.6	22.5	
15	30.2		26.9	22.3	30.3	18.6	31	24	30.5	22.6	29.7	20.8	30.2	21.8	30.5	22.6	
16	30.2		25.7	22.6	28.8	17.4	31.5	23.1	29.3	21	29.9	19.5	30.6	22	30.4	21.8	
17	30.2		29.4	22.1	29.1	17.1	32	22.8	29.7	21.2	30.7	20	31.6	23	30.5	22.2	
18	30.2		29.3	21.2	29.6	18.4	32	23	31.3	20.2	30.1	19.4	31.7	20	31.5	21.5	
19	30		28.1	20.2	29.5	18.6	32	23.3	31.5	20	30.8	19.1	32.5	19.9		20.5	
20	29	23	29.9	19.7	29.7	18.3	32	22.5	30.2	19.8	31.3	18.5	31.6	19.9	31.4	20.1	
21	29.2	23.2	29.7	19.6	30.1	18	32.5	22.7	31	18.9	32.4	18.3	32.1	18.9	32	19.5	
22	30	24.2	29.9	18.9	30.8	19.2		22.6	30.7	19.4	31.2	18.4	32.6	19.6	32.5	19	
23	29	22	27.4	22.3	29.4	18.3		31.5	23	29.8	20.2	30.1	19.5	30.9	19.6	29.8	19.9
24	29	22	29.5	22.3	30	19.3	31.5	23.1	32.1	20.6	30.7	19.3	30.8	22.5	29.8	21	
25	28.8	23	28.3	19.5	29.4	18.5	32.4	23.5	31.9	20.2	30.2	17.7	30.5	20.1	30.4	20	
26	29.2	24	28.3	21.9	29.5	18.5	31	23.7	31.8	19.2	31.4	18.5	30.6	19.8	30.5	20	
27	30	24.2	28	20.8	29	19	32	22	31.7	20.8	30.7	19.3	31	18.6	30.5	20	
28	30.2	24	29.9	23	30	20.5		22	30	20.7	32.2	19.9	31.7	19.9	32	20	
29	30	24	26.4	21.7	27	21	30.4	22.1	27.6	22	27	20.8	30.9	21.5	31.5	21.5	
30	30	24	25.6	21.7	29	19.5	29.8	22	29.8	21	28.5	19	30	21.1	31.3	21.5	
31	30.2	23	25.1	21.6	29	20	32	21.8	29.6	22.5	30.3	21.3	30.2	21.9	32	21	
Mean	29.9	23.5	28	21.4	29.3	18.7	31.4	22.9	30.8	20.2	30.3	19.2	31.2	20.4	30.8	20.8	

Day.	San Fernando, Pampanga.		San Isidro, Nueva Ecija.		Iba.		Concepcion, Tarlac.*		Tarlac.		Camiling.		Baler.		Dagupan.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.5		31.1	20	30.6	20.4	33	18.2	32.8	18.4	32.5	22.7	27.9	20.7	34	20.1
2	31.2		30.6	19	30.6	19.3	32.5	17.1	32.6?	18.8	33.3	22.7	27.1	21.5	31.6	21.2
3	30.7	21	29.9	20.8	31.5	22.1	31	18.8	32.1	16.6?	32.3	21.4	27.5	22.1	33.2	21.5
4	30.5	20	31.4	19.5	31.1	21.7	31.5	18.2	32.1	19.6	30.5?	29	29	22	33	21.4
5	30.6	20.2	30.5	20.6	31.6	19.1	31.8	19	32.4	19.6	30.7?	20.3	27.9	21.8	33.9	19.1
6	31	18.5	31.8	18.6	30.9	19.5		16.7	32.6	17.2	34.9	20.2	29.9	19.7	33.1	19.5
7	30.5	17.5	31.6	19.5	30.2	19.4		16.5	32.8	17.4	32.4	20.2	29.7	19.8	32.2	19.5
8	30	18.7	31.1	18.4	30.5	18	32.2	16.2	33.4	17.6	30.3	18.9	29.5	19.9	31	19
9	30	18.5	31	17.2	30.4	19.5	32.7	15.2	32.4	16	33.1	18.9	30.6	19.2	32.2	18.3
10	30.2	20.5	30.9	19.3	30.8	19.6	30.8	18.2	32.8?	18.6	33.4	22.9?	27.7	21.8	34.5	19.3
11	32	17 ?	30.4	18.5	30.5	19.6	33.6	16.7	32.8	17	33.5	20.5	29	20.5	33	19.9
12	30.5	16.5?	30	17	31.5	20.7	32.4	14.4	32.6	15.4	32.3	18.2	28.7	18.6	32.5	21.3
13	31	18.5?	31.1	18.4	30	17.3	33.3	15.9	34.4	16.8	32.3	19.2	29	21	29.9	18.8
14	31.5	21.5	31.8	20.2	30.6	18.3	32.7	18.2	33	16.4	34.5	18.9	29.1	21.4	28.9	20.3
15	29	20.5	30.7	20.6	30.3	20.5	32.1	17.2	31.8	17.6	32.4	20.2	28.6	22.2	33.1	20
16	31.5	20	31.2	20	30.9	21.8	32.5	19.3	33.2	21.4	31.4?	20.2	29.5	20.9	33	22
17	31.8	20	32.4	21.6	31.1	23.3	31.3	15.1?	33.2	21.8	34.5	19.7	27.7	22.1	31.6	22.5
18	32	20	32.2	19.5	32	21	33.6	18.2	34	18.6	34	19.4	28.7	21.7	31.9	22.7
19	32.8	19	32.2	19.6	31	21.2	34.3	17.7	35.4	19.4	33.4	29	29	21.4	31.6	21.9
20	32.5	19	31.5	19	31.5	20.4	33.7	18.6	35.2	18.8	33.5	18.4?	29	21	30.3	22.2
21	35		31.1	19	30.2	19	32.8	17.4	33.2	17.2	32.1	19.7	28	22.1	32.6	20.8
22	36	20	32.1	19.5	30.5	18.6	32.3	17.2	34.6	20.2	32.2	19.2	29	19.5	30	22.3
23	33	20	31.5	21.6	31	20	33.2	16.5	33.8	20.8	32.3	19.4	27	21.5	31.3	21.4
24	35	21	30.5	21	31.2	20	32.6	16.8	33.5	19.4	33.4	19.3	26.5	20.9	33.5	20.9
25	30		31.6	18.4	33.1	20.5	32.5	16.3	32.8	17.4	32.1	19.6	29.1	18.7	33.2	19.6
26	31	18.5	32.4	17.8	30.2	18.8	31.5	14.7	32.5	16.6	30.2	17.7	30	19.1	32.5	18.4
27	31	19	30.5	17	30.4	19.5	32.2	15.2	32.6	16.6	31.8	17.8	29.2	21.4	32.5	18.8
28	31	18	31.4	18	30.1	18	32.7	14.7	34.2	16.4	33.7	17.7	28.7	21.4	31	18.5
29	31.5	19	30.4	20.4	31.5	17.6	31.1	17.4	32.8	17.8	33.5	17.7	30.1	21.1	33	19.8
30	32	20	31.5	19.5	31.3	20.6	32	15.4?	34.6	19.2	33.4	21.2	31.1	21.4	30.4	21.6
31	32	21	30.7	20.4	31.5	22.4	32.4		32.6	20.8	34.3		28.2	22	32	21.8
Mean	31.4	19.4	31.2	19.4	30.9	19.9	32.4	16.9	33.2	18.2	32.7	19.6	28.8	20.9	32.1	20.5

\* The minimum temperatures of this station seem to be not very reliable.

Maximum and minimum temperatures at the stations of the Weather Bureau, January, 1921—Ctd.

Day.	Rosario, La Union.		Tubao.		Bolinao.		Aringay.		Baguio.		Naguilian, La Union.		San Fernando, La Union.		Candon.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1.	31.8	15.8	32.5	18.1	32	19.6	32	19.6	32	19.6	33	18.1	33	18.1	32.5	19.5
2.	30.5	16	30.8	18.1	31	19.2	32	20	22.8	13.7	33.5?	30	19.7	30	19.7	29.2
3.	32.3	18	32.7	18.1	32	23	32?	21.5	22.7	15.2	33	30.5	21.5	30.5	21.5	28.6
4.	31.2	16?	31.8	18.1	30.5	20.8	33.2	20.5	23.3	13.7	33	30	19.5	30	19.5	30
5.	32	15.8	31.3	18.1	30	19.2	32.1	19.9	23.2	13.4	31.8	30.5	19.4	30.5	19.4	30
6.	31.4	15.2	31.4	18.1	31	21.5	32.4	18.6	23.8	13	32.8	30.5	18.3	30.5	18.3	30.5
7.	31.2	16	32	18.1	31	20.5	32.5	18.8	22.2	11.8	32.2	30.3	19	30.3	19	29.5
8.	31.3	16.2	31.5	18.1	29.3	20.2	31.8	18.6	24.3	12.3	32.3	29.7	18.3	29.7	18.3	30.6
9.	31.3	15	31.3	18.1	31	18.2	32.1	17.4	22.8	12	32.3	30	17.5	30	17.5	29.5
10.	31.5	16.6	32.9	18.1	33	19.7	33.8	18.5	24.2	13.8	33.3	30.4	18.8	30.4	18.8	29
11.	31.3	16.2	31.7	18.4	31.1	21.7	32.1	19.4	23.5	13.7	33	29.6	19.2	29.6	19.2	29.1
12.	31.3	16.5	31.3	18.1	30.9	21.4	32	19.2	21.8	11.2	31.9	30	18.4	30	18.4	29.7
13.	31	16.5	30	16.7	29.5	17.8	31	18	22	12.7	31	29.9	18	29.9	18	29.9
14.	31.3	17	30.8	19.3	28.6	24.7	30.8	20.5	22.7	12.8	30.8	29.8	20.5	29.8	20.5	29.5
15.	33	18.5	32.1	20.1	32	23.9	33	20.2	21.9	13.7	32.8	30.9	20	30.9	20	30.6
16.	33	18	31.6	19.4	31.2	21.5	31.8	20.2	24.9	13.5	32.1	29.7	19.8	29.7	19.8	29.7
17.	32	22	32.5	22.7	31	25.1	32.6	22.6	22	15	33.3	31	20.8	31	20.8	30
18.	32.3	22	33	23.1	31.7	24	32.7	23	22.7	15.5	32.5	30.3	23.5	30.3	23.5	30.4
19.	32.4	20.5	31.6	22.4	30.9	22.2	32.5	23.6	22.3	14.8	31.8	30.9	22.3	30.9	22.3	30.5
20.	32	21.5	31	23.4	28.7	24.5	31.6	22.9	22	13.6	30.8	30	22.6	30	22.6	29.5
21.	31.6	18.2	32	19.6	31	20.3	33	21	22.9	13	31	31	21	31	21	30.4
22.	31.3	19	30.9	19.4	29.4	25	32	20.4	22.5	12.8	31.1	30.3	20.1	30.3	20.1	29.5
23.	31.5	18.5	31.6	21.1	32.2	21.8	32.5	20.8	25.2	13	31.8	30.1	21.7	30.1	21.7	30
24.	32.8	17.6	32.4	20.4	32.5	23.1	32.3	21	22.4	13.7	32	30.5	21	30.5	21	30.5
25.	33.2	17.5	32.3	19.6	32.5	20.3	34.2?	20.8	22.2	12.3	32.5	31.6	20.2	31.6	20.2	32
26.	31.5	15.3	31.2	16.4	30.5	18.8	32	19	21.8	11.8	32.3	30.4	18.5	30.4	18.5	29
27.	31.8	16.2	31.3	16.8	30.5	18.7	31.4	17.5	22.2	11.2	31.1	29.7	18.4	29.7	18.4	28
28.	31.8	16.8	32	17.3	29.8	20.7	32.4	19	22.3	11.6	32.1	30.5	20	30.5	20	28
29.	31.9	17.1	31.8	18	31.7	21.3	34?	18.8	22	12.4	32.2	30.4	19.6	30.4	19.6	29
30.	32.6	20.2	31.4	20.8	29.3	20.5	32	21.4	24.2	13.2	32.1	30.9	21.4	30.9	21.4	31.5
31.	32.6	19.2	32.4	19.7	30.3	20	32.5	20.5	24.3	12.5	32.5	30.5	20.7	30.5	20.7	32
Mean	31.8	17.6	31.7	19.7	30.8	21.2	32.3	20.1	22.9	13.1	32.2	30.3	20	30.3	20	29.9

Day.	Vigan.		Tuguegarao.		Laoag.		Aparri.*		Cape Bojeador.		Basco.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1.	30	20.5	30	20.5	31.1	17.5	29.1	19.8	30	22.5	30	23
2.	29.1	22.4	28.4	20.5	30.7	18.5	27.5	21	29.3	22.7	29.3	23
3.	30	22.6	30.5	21	31.5	20.7	25.8	21	29.6	22.8	29.6	21.4
4.	31.3	22.1	29.7	19	32.8	18.7	28.4	19.8	27.3	22.8	27.3	20.7
5.	30.4	22.1	27.2	19	33.4	15.9	27.2	18.9	27	21.5	27	21.1
6.	29.2	19.5	27.5	18	32.9	19.3	28.1	19.9	27.5	22.6	27.5	21.5
7.	30.2	19.2	30.4	16.4	31.7	15.4	28.4	17.1	27.4	21.7	27.4	21.9
8.	31.5	21	29.7	19.2	32.3	18.5	27.6	19.5	25.6	21.6	25.6	20.4
9.	30.1	22.1	27.9	20	31.7	20.5	24.7	20.4	25.3	15.4?	20.4	18.9
10.	28.5	21.5	27.4	20.7	32.9	17.9	27	21	26.8	21.1	21	21
11.	30	23	30.4	18.8	30.9	17.4	27.2	19.4	28	20.6	28	21.2
12.	28.6	20.9	30.3	16.3	31.8	15.8	27	18	26.3	20.6	26.3	20.6
13.	28.1	21.4	29.5	20	30.6	16.2	27.7	20	31.6	20.9	20	21.6
14.	31.4	21.7	28.7	19.7	28.9	19.5	24.9	19.2	24.1	20	19.2	18.1
15.	29.9	22.9	26.5	18.8	31	19.2	23.7	18.8	22.9	13.7?	18.8	16.3
16.	29.9	23	28.4	19.2	31.8	17.1	26.5	18.6	26	20.1	18.6	18
17.	31.6	22.9	25.5	21.2	31.1	21.6	25.5	21.9	29.1	22.3	25.5	21.7
18.	29.9	23	29.7	21	33	22	26.8	20.8	26.2	22.6	20.8	21
19.	28.3	22.5	31.4	21.3	30.5	21.7	28.2	21.1	26.7	22.4	21.1	20.8
20.	28.5	20.5	29	20.7	31.1	19.3	26.5	20.5	26.1	21.5	20.5	20.5
21.	30.1	22.4	28.6	21.2	31	19.9	25.6	20.8	27.8	21.7	20.8	20
22.	28.4	21	27.7	20.9	31.1	19	25.8	20.7	27.3	21.3	20.7	18.9
23.	30.4	22.6	28.5	20.5	32	18.5	26.1	20.6	29.1	20.9	20.6	18.5
24.	29.1	22	31.8	19.3	31.3	19.8	28.6	20	28.8	22.6	20	22
25.	29	21	30.7	17.8	32.2	16.5	28	17.5	27.5	21.3	17.5	19.5
26.	31	20.5	30.2	17	32	14.9	27.6	18	30	21.2	18	20.9
27.	29.2	21	27.3	20.2	32	16.5	27.2	19.1	27.5	21.4	19.1	21
28.	30.3	21.5	30.2	19.2	31	18.3	26.9	18.9	28.8	21.6	18.9	21.5
29.	30.6	22.1	27	19.3	31.2	16.6	27.3	21.1	26.5	21.7	21.1	17.9
30.	29.8	20.6	26.2	19	31.7	20.1	22.7	19.9	23.8	18.8	19.9	17.9
31.	32.1	23.9	26.2	18.4	31.7	19.2	23.3	18.9	23.6	18.8	18.9	17.9
Mean	29.9	21.7	28.7	19.4	31.6	18.5	26.7	19.7	27.2	21.1	26.7	20.3

\* The minimum temperatures of this station seem to be somewhat too low.





## SEISMOLOGICAL BULLETIN FOR JANUARY, 1921

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### EARTHQUAKES FELT IN THE PHILIPPINES<sup>1</sup>

2, 15<sup>h</sup> 58<sup>m</sup> [2, 23<sup>h</sup> 58<sup>m</sup>]. Ormoc (W Leyte). Oscillatory earthquake, direction S-N, intensity III, duration 12 seconds.

5, 10<sup>h</sup> 00<sup>m</sup> [5, 18<sup>h</sup> 00<sup>m</sup>]. Nasugbu (SW Luzon). Earthquake shock of intensity III.

8, 1<sup>h</sup> 10<sup>m</sup> [8, 9<sup>h</sup> 10<sup>m</sup>]. Ganassi (N Mindanao). Earthquake shock of intensity III.

13, 18<sup>h</sup> 19<sup>m</sup> [14, 2<sup>h</sup> 19<sup>m</sup>]. Ilocos Norte and Sur (NW Luzon). Earthquake of intensity III felt through NW Luzon; its origin seemingly lay in the China Sea, west of Ilocos Norte and Sur.

19, 4<sup>h</sup> 44<sup>m</sup> 52<sup>s\*</sup> [19, 12<sup>h</sup> 44<sup>m</sup> 52<sup>s</sup>]. Irosin (SE Luzon). Earthquake shock of intensity III. It was recorded also at Butuan; its long duration, reported from Irosin, seems to point out that the origin lay not in the volcanic region of the Bulusan but farther west in the Masbate Sea.

21, 14<sup>h</sup> 45<sup>m</sup> [21, 22<sup>h</sup> 45<sup>m</sup>]. Talacogon (E Mindanao). Earthquake of intensity III-IV. Recorded at Butuan: origin within the Agusan Valley. Early on the same date, at 4<sup>h</sup> 37<sup>m</sup> a very light shock was also recorded and felt by some few persons: its origin lay far off in the Pacific.

24, 13<sup>h</sup> 17<sup>m</sup> [24, 21<sup>h</sup> 17<sup>m</sup>]. Glan (S Mindanao). Earthquake shock of intensity III.

26, 10<sup>h</sup> 40<sup>m</sup> 09<sup>s\*</sup> [26, 18<sup>h</sup> 40<sup>m</sup> 09<sup>s</sup>]. SE Luzon. Earthquake of intensity IV-V felt in the region of the volcanic cone Isarog, Camarines Sur. This earthquake had the same characteristics of the shocks which occurred in October 1917, originated in the same region; it was preceded by deep rumbling sound, and the jerks had a similar brusqueness.

At 12<sup>h</sup> 34<sup>m</sup> [20<sup>h</sup> 34<sup>m</sup>] occurred a repetition of intensity III, preceded also by rumbling noise. It was recorded only by the seismograph of Irosin, Sorsogon, some 125 kilometers distant.

29, 17<sup>h</sup> 15<sup>m</sup> [30, 1<sup>h</sup> 15<sup>m</sup>]. Vigan (NW Luzon). Oscillatory earthquake of intensity III.

<sup>1</sup> The intensity of earthquakes is given in the notation known as the Rossi-Forel scale. The time is that indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (\*). Otherwise the time is that noted by the observer who sent the report. All time indications are in Greenwich mean time (midnight=0<sup>h</sup>), insular time being added in brackets for the convenience of Philippine readers.

RECORDS OF THE MICROSEISMOGRAPH.

[Time: Greenwich mean. Midnight=0<sup>h</sup>. Instrument: Wiechert seismograph; 1,000 kilograms. A<sub>N</sub>: T<sub>0</sub>=6.25, ε=2.906,  $\frac{r}{T_0^2}$ =0.053; A<sub>E</sub>: T<sub>0</sub>=6.18, ε=2.393,  $\frac{r}{T_0^2}$ =0.042. Alluvium. 2.40 meters above sea level.]

No.	Date.	Character.	Phase.	Hour.		Period.	Amplitude.		Remarks.
							A <sub>N</sub> μ	A <sub>E</sub> μ	
				<i>h.</i>	<i>m.</i>	<i>s.</i>			
1	2	Iv	eP F	4	22	25			
					24				
2	2	Ir	eP S L M <sub>N</sub> M <sub>E</sub> F	7	12	02			
					16	13			
					17	55			
					17	59	6	41	
					18	00	6		37
					57				
3	2	I	e F	13	24	57			
					42				
4	6	Iv	eP L M <sub>N</sub> M <sub>E</sub> F	4	35	19			
					36	32			
					36	39	6	62	
					36	44	6		61
					54				
5	6	I	e F	12	07				
					46				
6	6	I	e F	23	19				
					45				
7	7	Iv	eP L? F	1	12	16			
					13	13			
					28				
8	7	Ir	e L? F	3	02				
					08	32			
					51				
9	7	Ir	e S L M <sub>N</sub> M <sub>E</sub> F	9	48	26			
					52	48			
					57	16			
					59	07	13	29	
					10	00	12		31
					25				
10	13	I	e F	22	06	30			
					28				
11	14	I	e F	7	17	47			
					51				
12	16	I	e F	13	20				From Omori's seismograph.
					47				
13	19	Iv	eP L F	4	44	52			Felt at Irosin (SE Luzon).
					45	29			
					53				
14	19	I	e F	15	05	12			
					58				
15	24	I	e F	11	22	33			
					59				
16	26	Iv	eP L F	10	40	09			SE Luzon. Isarog Volcano.
					40	28			
					46				
17	26	Ir	e F	18	00	48			
					22				
18	30	I	e F	7	45	45			
					59				
19	30	I	e F	10	48	46			
					11	04			

TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS<sup>1</sup>

2, 15<sup>h</sup> 58<sup>m</sup> [2, 23<sup>h</sup> 58<sup>m</sup>]. Ormoc (W de Leyte). Temblor oscilatorio, dirección S-N, intensidad III, duración 12 segundos.

5, 10<sup>h</sup> 00<sup>m</sup> [5, 18<sup>h</sup> 00<sup>m</sup>]. Nasugbu (SW de Luzón). Temblor de tierra de intensidad III.

8, 1<sup>h</sup> 10<sup>m</sup> [8, 9<sup>h</sup> 10<sup>m</sup>]. Ganassi (N de Mindanao). Temblor de tierra de intensidad III.

13, 18<sup>h</sup> 19<sup>m</sup> [14, 2<sup>h</sup> 19<sup>m</sup>]. Ilocos Norte y Sur (NW de Luzón). Temblor de tierra de intensidad III, sentido en la región NW de Luzón; su origen probablemente se hallaba en el mar de la China, al W de Ilocos Norte y Sur.

19, 4<sup>h</sup> 44<sup>m</sup> 52<sup>s\*</sup> [19, 12<sup>h</sup> 44<sup>m</sup> 52<sup>s</sup>]. Irosin (SE de Luzón). Temblor de tierra de intensidad III. Registróse también en Butúan; su larga duración hace sospechar que el origen no se hallaba cerca del volcán Bulusan, inmediato a Irosin, sino más bien en el mar hacia Masbate.

21, 14<sup>h</sup> 45<sup>m</sup> [21, 22<sup>h</sup> 45<sup>m</sup>]. Talacogon (E de Mindanao). Temblor de tierra de intensidad III-IV. Registróse en Butúan: origen dentro del valle del Agusan. La mañana del mismo día a 4<sup>h</sup> 37<sup>m</sup> se registró en Butúan, y sintieron algunas personas en reposo, otro temblor de origen lejano; seguramente en el Pacífico.

24, 13<sup>h</sup> 17<sup>m</sup> [24, 21<sup>h</sup> 17<sup>m</sup>]. Glan (S de Mindanao). Temblor de tierra de intensidad III.

26, 10<sup>h</sup> 40<sup>m</sup> 09<sup>s\*</sup> [26, 18<sup>h</sup> 40<sup>m</sup> 09<sup>s</sup>]. SE de Luzón. Temblor de tierra de intensidad IV-V, sentido en toda la región de Camarines que rodea el cono volcánico Isarog. Este temblor, aunque menos intenso, presentaba los mismos caracteres que los de octubre de 1917, originados en la región del citado cono volcánico; precediólo el mismo ruido subterráneo sordo y los movimientos eran también bruscos.

A 12<sup>h</sup> 34<sup>m</sup> [20<sup>h</sup> 34<sup>m</sup>] repitió con intensidad III y semejante ruido subterráneo. Solamente la registró el sismógrafo de Irosin, Sorsogón, distante unos 125 kilómetros.

29, 17<sup>h</sup> 15<sup>m</sup> [30, 1<sup>h</sup> 15<sup>m</sup>]. Vigan (NW de Luzón). Temblor oscilatorio de intensidad III.

<sup>1</sup> La intensidad de los terremotos se indica conforme a la conocida escala de Rossi-Forel. Cuanto a la hora de su ocurrencia, adoptamos la indicada por los sismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (\*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al medio de Greenwich (medianoche=0<sup>h</sup>). Para conveniencia de los lectores de Filipinas se añade también la hora insular.

## EARTHQUAKE DISTRIBUTION AND SUBMARINE RELIEF IN THE PHILIPPINES

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It has become an axiom in seismology that earthquake frequency in any region is intimately related to its relief. Such a relation depending either on the continuation of geogenic movements or on the existence of structural faults. Such a relation exists both in the emerged continents and islands and under oceanic depths. The relief in our Archipelago is indeed extraordinary on all the islands, but greater in the neighboring seas, chiefly to the east where the greatest submarine depths, so far known, are to be found.

Many times in this Bulletin the seismicity of different regions of our Archipelago has been related to relief. Moreover in the article, on the relation between geology and earthquakes, prepared with the heartily coöperation of the eminent geologist Dr. W. D. Smith of the Bureau of Science, a number of seismotectonic lines was tentatively indicated most of them connected with the relief. A good many extend outside of the islands, while some do not touch land, falling entirely in the sea. The seismographic records of the last nineteen years show that, a greater number than it was thought of the shocks felt in the Islands, specially through the coastal portions, have their epicenter under water. While there can not be denied the existence of insular centers in the larger islands, it must be recognized that most of them are either volcanic or rockfall, where real megasisms of a tectonic character do not originate. There exist also some few interior centers of tectonic nature and dangerous: But even in such cases the tectonic conditions and relief of the nearest coast and seas may have much influence.

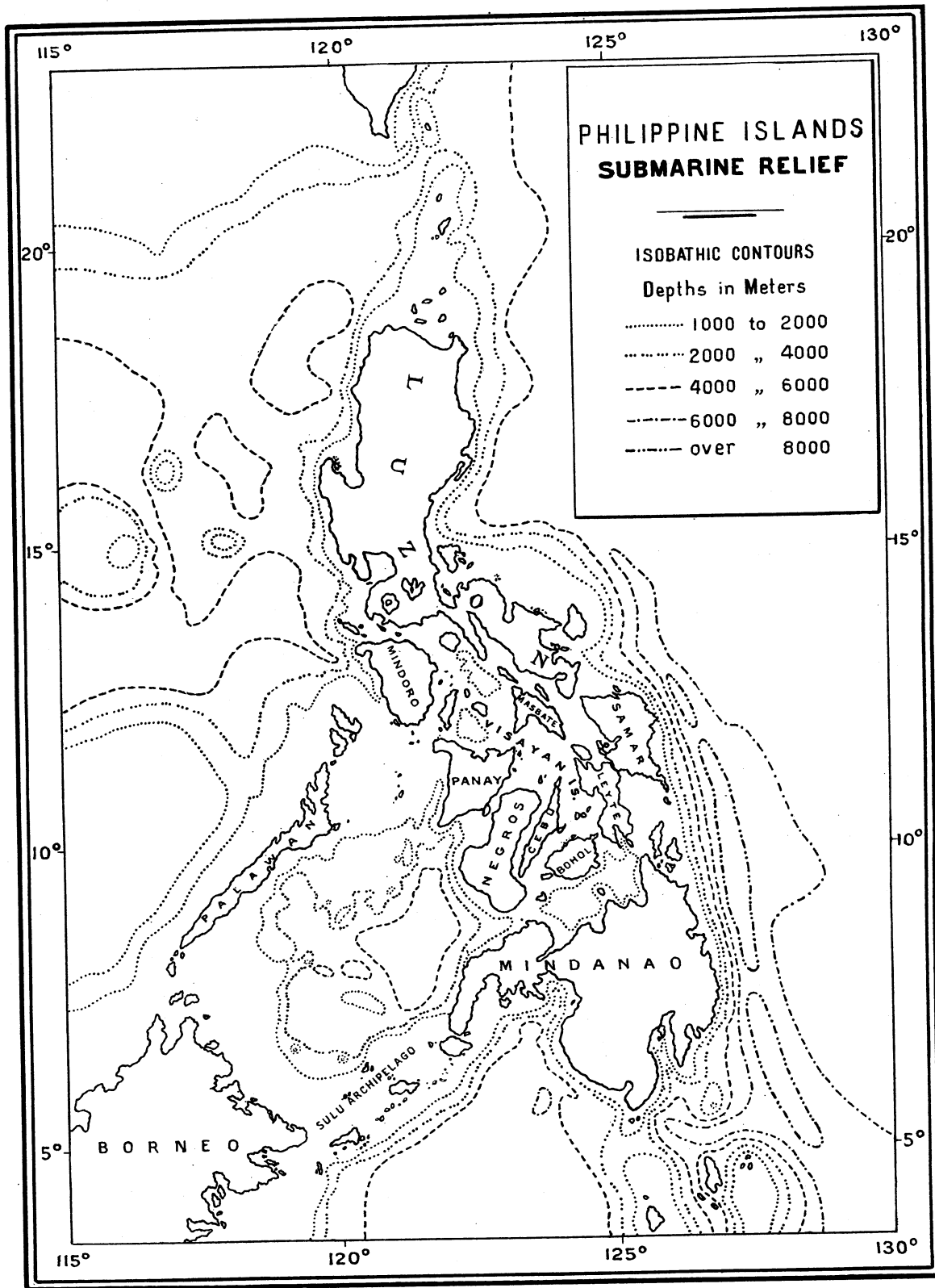
Our Archipelago on this respect does not differ much from Java and Sumatra. These two islands, after having apparently suffered deeper volcanic convulsions than ours, seem to possess greater stability, due possibly to their farther distant emergency and to the absence of insular seismotectonic active centers: These being located outside in the Indian Sea. It is indeed remarkable that, according to a recent and very valuable study of Dr. S. W. Visser of Batavia, there has not occurred between 1909 and 1919 a single tectonic earthquake of world-wide extension originated in insular centers; all had their origin under the neighboring seas, chiefly in the Indian. Such a peculiarity does not occur in the Philippines, where exist true insular tectonic centers.

The map published with the article mentioned above<sup>1</sup> shows many principal seismic regions of our Archipelago, with indications of epicenters: It will be noticed that numerous figures are extended beyond the coasts, in such a way that the epicenters fall partially outside of them, and in some instances totally under the sea and even far from the affected coast. These figures were drawn rather to show the extension which the shocks have along the coast and inland, but not towards the sea, from where observations are wanting, consequently the corresponding epicenter may fall under it.

Taking the earthquake statistics from 1903 to 1921, or since, by means of the records of the Vicentini and later of the Omori and Wiechert seismographs, the distances of the origins could be calculated, it will be found that the number of shocks

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<sup>1</sup>"The Relation of Seismic Disturbances in the Philippines to the Geologic Structure." The Philippine Journal of Science, Vol. VIII, No. 4, Sec. A. Manila, August, 1913.



originated off our coasts is exceedingly great, about 40 per cent of the total. The most unstable regions lie of course to the east of the Archipelago where relief is more prominent. More than 50 per cent of the 1,225 shocks found in our statistics as originated beyond the coasts, that is, 633 belong to centers in the Pacific Ocean; and but 208 to the western seas; 201 to the N and S and 183 to interisland seas. A similar prevalence for the east results also from the general statistics, which comprise the shocks originated inland.

Comparison of such a distribution with a bathymetric map, as the one published recently by the Bureau of Census, is exceedingly interesting. A sketch of it accompanies this article. Looking at it an explanation can be given of the figures corresponding to fourteen different divisions of our coasts selected for the study of submarine centers. These, with their number of shocks, are as follows: Luzon: Off the N coast, 123; E and NE, 106; SE, 81; S, 54; SW, 13; W, 105. Visayan Islands: Off the E coasts, 182; W, 30; Interior seas, 109. Mindanao: Off the N coast, 20; NE, 106; E, 50; SE, 108; S, 78; W, 60.

**N of Luzon.**—The number 123 seems extraordinarily high while the relief is not pronounced; the bathymetric 4,000 ms. being reached at a distance of 200 Kms. in the Bashi Channel. Consequently some other conditions are responsible for such a high number of shocks. First there exists the volcanic region of Babuyan and Batanes Islands, with some cones yet active. These last years, since Taihoku, Formosa, has seismographs, it was noticed that in the said volcanic region many shocks of a shallow origin occur, which are not recorded at Taihoku, a trifle more distant than Manila. But the existence of such volcanic region in that direction does not weaken what was published in 1909, about submarine seismic centers in the same, which moreover is traversed, in a S-N direction, by one of the main seismotectonic lines existing in our Archipelago. That such a line, indicated in 1909<sup>2</sup> exists has been shown by more recent earthquakes: Apparently this line, which runs close to the meridian 122° E. is more responsible for earthquake shocks in its northern portion than southwards, within Luzon Island.

**NE and E of Luzon.**—This region comprises true northeast Luzon and the east to the parallel 14° N.: In the number 106 appears also the influence of relief. Bathymetric 4,000 ms. runs at distances from the coast varying from 30 to 150 Kms.<sup>3</sup>

**SE of Luzon.**—Under this denomination is meant the sea expanse laying north of the long irregular peninsula of Luzon, which extends toward SE. The submarine slope on the Pacific side begins a good great distance from the coasts of the peninsula, so that it is not steep, excepting towards its eastern end approaching to the Pacific Deep. Our statistics give eighty-one shocks originated in the described area. This number is rather high due perhaps to the conditions of the said eastern end. It is moreover a fact that none of the great earthquakes at times felt in this part of Luzon, had its origin under the sea laying north of it.

**S of Luzon.**—Close to southern coasts of the main portion of Luzon Island, exists a line or fault very active, which runs through the strait separating Mindoro Island from Luzon and eastward of it. The relief of this region is relatively pronounced; within the strait depths vary from 600 to 1,000 ms. while the nearby Mount Halcon in Mindoro Island rises to 2,000 ms. Other indications persuade also the existence of a

<sup>2</sup> Submarine-seismic centers near the coasts of Northern Luzon. Bulletin of the Weather Bureau, May, 1909.

<sup>3</sup> In the article quoted in footnote 2 a submarine center is located NE of Luzon, between the mouth of Cagayan River and the Island of Camiguin, but it seems to lie farther eastwards, where the bathymetrics 1,000 and 6,000 ms. are at a distance of about 50 Kms.

fault line. The number of 54 shocks originated along this line may be considered as high relatively to the little extension of the embraced area.

**W and SW of Luzon.**—In these directions we find respectively 106 and 13 shocks. Most of the shocks corresponding to the W originated off the Ilocos coasts, where seem to lay the principal centers of the China Sea, which affect western coasts of Luzon. In front of Ilocos the bathymetrics of 4,000 and 6,000 ms. are found at a distance from the coasts varying from 30 to 50 Kms.<sup>4</sup> Towards SW, the relief is rather irregular due to some small islands and a trough 4,000 ms. deep, which from far away in the China Sea extends to ESE towards Mindoro Island: Yet this region seems to partake of the stability of Palawan with which is connected.

**Visayan Islands.**—In this zone the influence of the oriental relief appears even more manifest. The shocks originated in the Pacific Deep amount to 182, while the number corresponding to the west, in the north portion of Sulu Sea, is but 30. Such a small number corresponds very closely to the little relief of that part of the Sulu Sea, and with the small number found for the adjoining region SW of Luzon. Both regions are the nearest to aseismic Palawan.<sup>5</sup>

In the interior seas of Visayas Islands exist also some centers, which gave 109 shocks. The most active lies near Masbate Island: The shape of this island has suggested to geologists the idea that it constitutes a tectonic center or keystone of the Philippine structural lines. Moreover, the deepest seas of this region are found some distance west of that island.

**Mindanao.**—Its eastern portion lies within the seismic area of the Philippine Deep, which has its greatest depths close to the east coasts of this island. Consequently the great number of shocks 264 originated off the NE, E and SE coasts had to be expected. The extension of the Mindanao east coasts is a trifle larger than those of east Visayas and shorter than Luzon east coasts. Some other particulars can be found in the Weather Bureau, Bulletin for August, 1910. "Seismic centers of Samar, Leyte and E Mindanao."

Southern Mindanao is chiefly affected by shocks originated in the Celebes Sea. Its eastern portion, lying between Mindanao and the Sanguir and Talaut Islands, is probably at the present time the region where greater and more frequent tectonic shocks have their origin. In the study of Dr. S. W. Visser, quoted above, will be seen that this region includes the highest number of epicenters: Several times reporting Mindanao quakes we made special reference to this area.

Farther west, off south of Illana Bay, exists another unstable area, which probably has some relation with the maximum depths, 6,000 to 8,000 ms. there found. The number of shocks of this region is 78, and it is higher than the number corresponding to east Mindanao proper. Neither the southeast nor the south numbers include numerous shocks, many of them apparently local, felt in Sarangani Islands.

West of Mindanao gives a fair number of shocks, sixty in all: commonly they are very extensive. The region where they preferently originate is the eastern portion of Sulu Sea roughly between parallels 7° and 9° N. were the greatest depths of 5 to 6 thousand meters are to be found.<sup>6</sup> This most unstable portion lies between the two arms or platforms, which in a SW direction connect our Archipelago to the aseismic Island of Borneo: the northern one through Calamianes and Palawan aseismics, and the

<sup>4</sup> See article quoted in footnote 3.

<sup>5</sup> About this island, Fr. Luis de Jesus, Recolletan Chronicler, wrote in 1665: "The Island of Palawan is peculiar on this account; that is, it is not subject to earthquakes. The most convincing reason is that in the native language does not exist any word to express them." (Robertson, Vol. XXI.)

<sup>6</sup> For further particular see "Seismic epicenters near western Mindanao and Jolo." Bulletin for June, 1919.

southern through Sulu Archipelago, where volcanism had a great development. Undoubtedly the influence of relief may be admitted too in this western region.

North Mindanao is likewise affected by some few shocks of submarine origin: we found only twenty. Apparently they originate either side, east and west, of the volcanic island of Camiguin. South Bohol and SE Negros are commonly within their reach. Here again relief can be made responsible, because the main intersular deeps of two to four thousand meters lie around the said Camiguin Island. Numerous shocks originated in Butuan bay are not counted, because they have a very superficial character, probably volcanic or rockfall.

**Conclusions.**—The most evident inference which can be drawn from the above observations is a decidedly increase of shocks from W to E, or towards the border of the "horst," where relief is more prominent. This result is the only one evident from all the statistics. Any general distribution will lead to the same result, while other particular results, concerning to different regions necessarily change with the years. We ourselves published at different times somewhat dissimilar regional distributions based on longer statistics. Both tectonic and volcanic shocks occur in clusters or periods: a number of calm years ordinarily alternating with disturbed similar periods. Such succession may incline the balance, one time to one another time to another region.

With the numerous seismic records at hand from other seismic stations, the submarine epicenter of many principal tectonic earthquakes could have been localized, but we do not see in it much practical utility. After the unstability of a region and its probable cause has been established, it helps not much to ascertain if the break or slide which gave origin to an earthquake lies some kilometers to the north or to the south, specially dealing with submarine epicenters.



## DISTRIBUCIÓN DE LOS TEMBLORES CON RELACIÓN AL RELIEVE SUBMARINO, ALREDEDOR DE LAS ISLAS FILIPINAS

Viene a ser hoy un axioma admitido generalmente por los sismólogos, que la sismicidad de una región está íntimamente relacionada con su relieve. Semejante relación dependiendo unas veces de la inmadurez y por consiguiente de la continuación de movimientos geogénicos, y otras de la existencia de fallas estructurales. Ella existe tanto en las regiones emergidas como en las sumergidas todavía en el fondo de los mares. El relieve superficial de nuestro Archipiélago es ciertamente exagerado y abrupto en la mayor parte de las islas; y más todavía en los mares que lo circundan, puesto que en ellos al E. se encuentran las mayores profundidades oceánicas hasta ahora conocidas.

En diversas ocasiones hemos tratado de la sismicidad de las diferentes regiones del Archipiélago relacionándola más o menos con su relieve, y en el artículo sobre la relación entre la geología y los temblores de Filipinas, preparado con la cooperación del geólogo Dr. W. D. Smith del Bureau of Science, trazamos tentativamente las líneas sismotectónicas íntimamente relacionadas con el relieve del Archipiélago. De ellas un gran número se extiende fuera de la tierra hacia los mares vecinos, y no pocas apenas tocan tierra, quedando en toda su longitud dentro del mar. Además estos últimos años los registros de los microsismógrafos han demostrado que muchos de los temblores sentidos en diferentes regiones, sobretodo costeras, tienen sus epicentros en el mar. Es verdad que existen dentro de las respectivas islas epicentros que podemos llamar insulares, mas éstos en su mayoría son de los llamados volcánicos y tal vez de derrumbe, sin que se originen en ellos verdaderos terremotos tectónicos. Son en verdad pocos los epicentros tectónicos interiores y de hecho peligrosos que no se extiendan más allá de las costas, y en que la tectónica de éstas no juegue un papel importante, tal vez relacionado íntimamente con el relieve del fondo de los mares circundantes.

Nuestro Archipiélago se asemeja mucho en esta parte a las Islas de Java y Sumatra. Con haber aquellas sufrido más convulsiones volcánicas que las nuestras parecen poseer mayor estabilidad, tal vez por ser más antigua su emergencia, que la de nuestro Archipiélago, y carecer de líneas o epicentros sismotectónicos interiores; éstos más bien se agrupan en los mares vecinos. Es verdaderamente notable que desde 1909 a 1919, según demuestra el Dr. S. W. Visser, en un precioso estudio publicado en 1921, no haya ocurrido en el Archipiélago Holandés ningún terremoto tectónico, de los que se registran en todo el globo, cuyo origen se halle en epicentros o fracturas insulares; todos se originaron en el fondo de los mares circundantes. Semejante particularidad no ocurre en Filipinas, donde, como insinuamos antes, existen verdaderos centros tectónicos insulares. Sin embargo dijimos ya que éstos son pocos y conviene añadir también que, debido a la corta extensión de las islas algunos de ellos están en parte dentro y en parte fuera en el mar.

Nuestro mapa que acompaña el estudio poco ha citado, contiene las principales regiones sísmicas del Archipiélago con algunas indicaciones de epicentros: véase en él que las principales figuras, las de mayor extensión, se prolongan fuera de las costas, de tal manera que el verdadero epicentro cae parcialmente fuera de ellas y probablemente alguna vez lejos y aun fuera de la figura. Estas se trazaron para indicar la

extensión de los temblores a lo largo de las costas y tierra adentro y no precisamente hacia el mar, cosa del todo imposible por falta de datos: por consiguiente pueda también el epicentro caer fuera de la figura.

Examinando las estadísticas de los temblores de 1903 a 1921, desde que por medio del microsismógrafo Vicentini se pudo fijar la distancia del epicentro, se nota que el número de los originados fuera de las costas es muy grande; llega a un 40% del total. Los centros más activos están naturalmente al E., donde el relieve submarino es tan extraordinario. De los 1225 temblores que figuran en nuestros catálogos como originados fuera de las costas filipinas, más del 50%, 633, pertenecen a centros orientales del Pacífico; 208 al W, 201 al S y N y 183 a los mares interiores de las Islas Visayas. Semejante preponderancia del E. resulta también del examen de todos los temblores del catálogo que comprende los originados dentro de las islas.

No deja de ser interesante el estudio de semejante repartición a la vista del mapa batimétrico de Filipinas, publicado recientemente,<sup>1</sup> y del que presentamos una copia reducida. Con él a la vista es fácil darse cuenta de la razón de las diferentes cifras que corresponden a las 14 secciones escogidas para el estudio de la repartición de los centros sísmicos submarinos; las cuales indicamos a continuación con los números de temblores correspondientes: Luzón: N-123, E y NE-106, SE-81, S-54, SW-13, W-105. Islas Visayas: E-182, W-30, Interior-109. Mindanao: N-20, NE-106, E-50, SE-108, S-78, W-60.

Comencemos por el N de Luzón.—La cifra 123 es extraordinariamente alta, mientras que el relieve es muy poco pronunciado, puesto que la línea batimétrica de 4,000 no se encuentra hasta el canal de Bashi a una distancia de 200 Km. Por consiguiente influye sin duda otra causa que puede ser la volcánica. Existe en efecto una región volcánica que comprende el grupo de las Babuyan y Batanes, en donde la actividad no ha cesado aún. Estos últimos años desde que se abrió la estación sísmica de Taihoku en Formosa se ha podido comprobar que buen número de los temblores originados en esta región son superficiales, puesto que no llegan a registrarse en dicha estación, muy poco más distante que la de Manila. Esto sin embargo en nada modifica lo publicado en 1909 acerca de los epicentros submarinos de esta parte de Filipinas.<sup>2</sup> La existencia en la misma región de una de las principales líneas sismotectónicas del Archipiélago, señalada entonces, ha sido confirmada por terremotos posteriores. Parece ser que esta línea, que corre muy cercana al meridiano 122° E., tiene mayor actividad dentro de esta región del N. que hacia al Sur.

La región que llamamos E y NE de Luzón comprende toda la zona oriental hasta el paralelo 14° N.: La cifra 106, nos indica claramente la influencia del relieve; la batimétrica de 4,000 ms. corre a una distancia de la costa oriental de Luzón comprendida entre 30 y 150 Km.<sup>3</sup>

La porción que llamamos SE de Luzón comprende los temblores originados fuera de las costas N y NE de la prolongada e irregular península que forma la parte SE de la isla: El declive o relieve submarino se halla a gran distancia y no resulta tan brusco como al E de Luzón; excepto cerca del extremo oriental de dicha península que se acerca ya a la gran fosa del Pacífico. La cifra 81 puede considerarse como regularmente alta. Es de notar que ninguno de los grandes terremotos del SE de Luzón, Camarines y Albay, se originó en dicha región submarina situada al N de sus costas.

<sup>1</sup> Census of the Philippine Islands, Vol. I, Manila, 1920.

<sup>2</sup> Submarine seismic centers near the coasts of Northern Luzon. Bulletin of Weather Bureau, May, 1909.

<sup>3</sup> En el artículo indicado en la nota (2) señalamos también un epicentro submarino muy cerca del NE de Luzón entre la desembocadura del Río de Cagayán y la Isla de Camiguín, el cual sin duda está unas millas más al E donde las batimétricas de 1,000 a 6,000 ms. distan unos 50 Kms.

Además muchos de los ochenta y un temblores pudieron tener su origen al E de la zona a que nos referimos, y corresponden por consiguiente a la parte septentrional de la Fosa Filipina.

Inmediato a Luzón, al sur del cuerpo principal de la isla, existe una línea o falla muy activa que corre por el estrecho que separa Luzón de Mindoro y se extiende algo hacia el E. El relieve en esta región tan poco extensa debe considerarse como exagerado, puesto que las profundidades del mar oscilan entre 600 y 1,000 Km. mientras que el vecino monte Halcon de Mindoro, se eleva a más de 2,000 ms. Además todo hace ver que existe allí una línea tectónica importante. La cifra para esta región es de 54, muy alta en proporción a su pequeña extensión.

Pasando al W y SW de Luzón, encontramos las respectivas cifras de 106 y 13. De la cifra correspondiente al W gran parte son temblores originados fuera de las costas de Ilocos, donde creemos existen los principales centros del mar de la China que afectan nuestro Archipiélago. En efecto frente a las costas de Ilocos se encuentra la batimétrica máxima de 4,000 a 6,000 ms. a una distancia de solos 30 a 50 Kms.<sup>4</sup> Hacia el SW, con ser el relieve de las tierras emergidas más irregular y extenderse además desde mar adentro en dirección al ESE, hacia la Isla de Mindoro, una estrecha zona de batimétrica 4,000-6,000 ms., no parece existir centro sísmico alguno muy activo. Es probable que esta parte participe de la estabilidad de la región de la Paragua.

**Islas Visayas.**—En esta zona resalta mucho más que en Luzón la influencia del relieve oriental, pues mientras el número de los temblores originados al E, en el abismo del Pacífico, asciende a 182, los originados al W en la parte N del mar de Joló son solos 30. Este número tan bajo está muy conforme al poco relieve y con el pequeño número correspondiente al SW de Luzón, región inmediata a ésta, y ambas a la Paragua considerada como asísmica.<sup>5</sup>

Dentro de los mares de Visayas existen algunos centros, que dan un número de temblores de 109. Los principales, o el principal, se halla en las cercanías de Masbate; isla que por su forma parece constituir la clave de la tectónica del Archipiélago y llama la atención de todos los geólogos. Por otra parte los mayores relieves submarinos interinsulares se encuentran cerca al oeste de Masbate.

**Mindanao.**—Su parte oriental entra de lleno en el área sísmica del abismo del Pacífico, que alcanza sus mayores profundidades cerca de las costas de esta isla; no es pues extraño que el número 264 de temblores originados fuera de sus costas orientales NE, E y SE, con tener una extensión poco mayor que el E de Visayas y menor que el de Luzón, supere en mucho al de estas dos regiones. Pueden verse otras particularidades de ésta y de la región de Sámar y Leyte en el Boletín de agosto, 1910. "Seismic centers of Samar, Leyte and E. Mindanao."

Todo el sur de Mindanao está afectado por los focos sísmicos del Mar de Célebes. La porción oriental de este mar, entre Mindanao y los grupos de Islas de Sanguir y Talaut es probablemente la región de esta parte del Oriente donde se originan actualmente mayores y más frecuentes terremotos. Puede verse en el estudio citado del Dr. S. W. Visser que esta región contiene el mayor número de epicentros. Ya en diferentes ocasiones, hemos llamado la atención sobre este particular. Más al W, al sur de la Bahía Illana, existe también una región inestable, que seguramente se relaciona con una porción encerrada por la batimétrica 6-8 mil metros, la máxima profundidad del

<sup>4</sup> Véase "Submarine seismic centers near the coasts of Northern Luzon." Bulletin, May, 1909, donde se señala un epicentro cerca de la costa de Ilocos.

<sup>5</sup> Fr. Luis de Jesus, historiador de los AA. Recoletos, escribía 1665: "Esta isla, Palawa, es peculiar en esta parte; es decir no se experimentan en ella terremotos. La más convincente razón es que en la lengua natural no existe término o palabra ninguna para significarlos." Blair and Robertson, Vol. XXI.

Mar de Célebes. El número de terremotos hallados para el sur de Mindanao es de 78, mayor que el número correspondiente al E propiamente dicho; y esto haciendo caso omiso, de los frecuentísimos temblores casi locales, que se experimentan en las Islas de Sarangani.

En el W de la Isla de Mindanao se originan relativamente pocos pero extensos terremotos: el número encontrado es 60. La región donde suelen con preferencia originarse es la parte central oriental del Mar de Joló; precisamente donde existen las mayores profundidades marinas interinsulares, de 5 á 6 mil metros y por consiguiente el mayor relieve.<sup>6</sup> Esta porción inestable se halla entre las dos plataformas que en dirección al SW unen nuestro Archipiélago con la isla asísmica de Borneo; la plataforma de Calamianes y Paragua, que parecen ser asísmicas, y la del Archipiélago de Joló, donde el volcanismo ha tenido extraordinario desarrollo. También en esta parte es patente la grande influencia del relieve.

A la parte N de Mindanao entre Dapitan y Butúan, la afectan asímismo algunos pocos temblores de origen submarino: se originan al parecer alrededor de la isla volcánica de Camiguín, haciéndose sentir principalmente al Sur de Bohol y SE de Negros. También en este caso parece influir mucho el relieve, independientemente del volcanismo de la Isla de Camiguín; puesto que alrededor de esta isla hacia el W, N y E existen las mayores profundidades submarinas de 2 á 4 mil metros, completamente encerradas dentro del Archipiélago. No incluimos la bahía de Butúan donde se originan numerosos temblores, los cuales suelen tener un carácter muy local, y pueden clasificarse como volcánicos o de hundimiento.

Conclusiones. Lo que más resalta en las precedentes líneas, y también lo más verdadero por ser muy natural, es el aumento de centros en dirección al E, hacia el borde del "horst," donde el relieve submarino es más acentuado. Esta ley es la única que consideramos constante, cualesquiera que sean las estadísticas que se estudien. La distribución general en este sentido resultará siempre la misma, mientras que la particular de las diferentes regiones variará seguramente con los años. Nosotros mismos hemos publicado diferentes distribuciones basadas en diversas estadísticas. Tanto si se trata de terremotos tectónicos como de volcánicos, siempre alternarán períodos de reposo con períodos de mucho movimiento, que pueden durar muchos años, en las diferentes regiones. Esto hará que en las sucesivas estadísticas la balanza, como quien dice, se incline una vez a unas regiones otra vez a otras.

Con los datos sismográficos que poseemos de las demás estaciones del globo hubiéramos podido localizar el origen de los principales terremotos tectónicos, nos hemos sin embargo abstenido de ello por considerarlo de menos utilidad práctica. Una vez conocida la región y el porqué de su poca estabilidad, a poco conduce el saber si el movimiento o rotura que dió lugar a un terremoto, ocurrió unos pocos kilómetros más al N o más al S, tratándose de superficies submarinas.

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<sup>6</sup> En el artículo "Seismic epicenters near western Mindanao and Jolo" Bulletin, June, 1909, se hallarán más datos.





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P. 506

THE GOVERNMENT OF THE PHILIPPINE ISLANDS

# WEATHER BUREAU

MANILA CENTRAL OBSERVATORY

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BULLETIN FOR FEBRUARY, 1921

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PREPARED UNDER THE DIRECTION OF

REV. JOSÉ ALGUÉ, S. J.

DIRECTOR OF THE WEATHER BUREAU

MANILA  
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1922





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**BULLETIN FOR FEBRUARY, 1921**



# METEOROLOGICAL BULLETIN FOR FEBRUARY, 1921

By Rev. JOSÉ CORONAS, S. J.,  
Chief, Meteorological Division of the Weather Bureau

## GENERAL WEATHER NOTES

**Pressure and temperature.**—The mean atmospheric pressure of this month for the Philippines is slightly to moderately below that of February, 1920, and the normal of this month. The highest pressures were observed in the majority of our stations on the 23rd, while the lowest pressures were generally recorded on the 21st in the Visayas and Mindanao, and on the 9th or 10th in Luzon.

The mean monthly temperature is slightly below the normal in northern Luzon, and slightly above it in the rest of the Archipelago. The extreme temperatures for Manila were 33.8° C. and 17.8° C.: they were registered on the 28th and 17th, respectively. The absolute maximum and minimum temperatures for Baguio were 26.8° C., 11.1° C. on the top of Mirador, and 26.8° C., 11.2° C. in the plateau near the City Hall.

### PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS OF THE WEATHER BUREAU FOR FEBRUARY, 1921

Station.	Pressure.						Temperature.							
	Mean.	Departure from Feb., 1920.	Departure from normal.	Highest mean.	Day.	Lowest mean.	Day.	Mean.	Departure from Feb., 1920.	Departure from normal.	Highest.	Day.	Lowest.	Day.
	mm.	mm.	mm.	mm.		mm.		°C.	°C.	°C.	°C.		°C.	
Zamboanga	757.61	-1.98		759.13	3	756.57	21	26.1	0		33	12	22.2	4
Tagbilaran	58.09	-2.23	-1.72	59.29	3	56.80	21	25.9	+0.6	+0.2	33.4	14	20.3	17, 18
Surigao	58.34	-2.22	-1.50	59.38	3	57.09	21	25.6	+1	+2	31	28	22.4	13, 20
Cebu	58.45	-2.25	-1.55	59.41	3	57.10	21	26.9	+6	+8	32.6	9	22.7	23
Iloilo	58.22	-2.29	-1.76	59.34	23	57.30	21	26.2	0	+4	32.8	3	22.1	23
Tacloban	58.76	-2.25	-1.51	59.57	24	57.52	21	25.7	+3	+1	32.1	12, 16	22.1	Various
Capiz	58.84	-2.31	-1.88	60.53	23	57.82	9	26.1	0	+4	32.8	9, 12	22.5	12, 24
Calbayog	59.06	-2.25	-1.33	60.09	23	57.86	21	25.4	+7	+5	32.5	12	19.7	18
Legaspi	59.39	-2.40	-1.54	60.81	23	58.17	9	25.8	-5	+2	31.8	11	21.8	5, 11
Atimonan	59.87	-2.26	-1.41	61.88	23	57.90	10	25.2	-9	-1	32	10	20.8	16
Ambulong, Tanauan, Batangas	58.98	-2.19		60.66	23	57.67	9	26.2	+5		33.6	16	21.1	9
Daet	59.99			62.26	23	58.24	10	24.5			31	28	18.4	17
Manila	59.57	-2.20	-1.65	61.48	23	58.10	9	25.4	+3	+2	33.8	28	17.8	17
San Isidro, Nueva Ecija	59.67	-2.29	-1.61	61.76	23	57.99	9	26	+6	+8	34.6	28	18.2	17
Dagupan	59.26	-2.03	-1.58	60.69	23	57.89	9	26.2	-4	+4	36.9	28	20.4	18
Baguio <sup>a</sup>	636.68	-2	-1.02	637.44	24	635.90	10	17.1	-7	+2	26.8	28	11.1	23
Vigan	759.19	-2.03	-1.64	760.56	23	757.73	9	25.4	-8	-2	33.4	1	19.4	18
Tuguegarao	61.08	-1.59	-.92	63.58	22	58.51	10	23.2	-1.6	-8	33.8	15	17.6	23
Laoag	59.48	-1.80		60.92	17	57.88	10	25.1	-1		34.2	13	15.6	23
Aparri	61.39	-1.47	-1.16	64.21	22	58.45	28	22.7	-2.2	-5	33.4	28	18?	23

<sup>a</sup> The barometric readings of this station are not reduced to sea level.

**Rainfall.**—The total rainfall of the month is for a great majority of our stations greater than that of the preceding year, and than the normal of February. In Luzon, however, a good number of stations reported a total monthly rainfall below the normal. There were 44.5 mm. of rain collected in the gauges of the Manila Observatory, this amount differing by +19.6 mm. from that of February, 1920, and by -33.3 mm. from the normal. The monthly rainfall for Baguio was 63.0 mm. and it differs from the normal by -42.6 mm.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF FEBRUARY, 1921

Station.	Total.	Departure from February, 1920.	Departure from normal.	Days of rain.	Departure from February, 1920.	Departure from normal.	Greatest rainfall in a single day.	Day.	Station.	Total.	Departure from February, 1920.	Departure from normal.	Days of rain.	Departure from February, 1920.	Departure from normal.	Greatest rainfall in a single day.	Day.
	mm.	mm.	mm.				mm.			mm.	mm.	mm.				mm.	
Jolo.....	311.3	+258.7	+213	22	+14	+12	60.4	24	Sumay (Guam),								
Malamui, Isabela, Zamboanga	124.1	+116		10	+9		35.6	27	Agaña.....	24.6	-24.9	-50.9	16	+11	+5	6.6	20
Davao.....	152.6	+51.6	+24.2	14	+2	+6	28.9	28	Calapan.....	61.9		-11.5				17	24
Cotabato.....	270.3	+187.8	+175.4	21	+14	+11	77.5	24	Virac.....	300.7	+189.5	+85.6	23	+7	+7	63.2	25
Butuan.....	181.6	+31.9	-11.9	25	+8	+7	38.1	28	Naga, Camarines	155.3	+59.1	+77.1	15	+3	+7	68.3	20
Mambajao.....	59.4	-168.1		12			89.2	25	Sur.....	293.4	+154.5		21	+5		74.9	20
Dumaguete.....	181.7		+70.9	12		+3	19	16	Tigaon.....	9.4	-29.5	-9.9	2	-3	-2	6.6	5
Kolonie, Yap, Western Carolines	40.7	-200.6	-130.2	10	-11	-7	20.6	3	Batangas.....	40.2	-32.4		12	+4		7.8	18
Tagbilaran.....	101.2	+41.8	+10.1	12	+1	+1	29.8	25	Lucena.....	214.3	+149	+97.1	18	+4	+5	45	4
Iwahig, Penal Colony, Puerto Princesa	31.2			7			15.5	2	Ambulong, Tanauan, Batangas	4.3	-92.1		3	-4		2	3
Surigao.....	540.5	+55.5	+178.6	22	+1	+4	199.2	22	Daet.....	671.6			17			232.9	25
Maasin, Leyte.....	333	+108.7	+168.8	9	-1	+1	79.8	22	Canluban, Calamba	16.9	-114.1		8	-2		11.7	3
Cebu.....	165.4	+106.6	+97.1	11	-5	0	54.6	20	Paracale.....	539.7	+372.3	+261.3	20	+2	+3	66.6	20
Iloilo.....	47.7	+22.2	+9.6	8	+2	+1	28.4	25	Santa Cruz, Laguna	13.2	-105.1	-22.7	9	-4	0	3.3	19
San Jose de Buenavista	21.3	+11.6	+8	5	0	+1	8.6	26	Manila.....	44.5	+19.6	-33.3	3	-4	-1	43.6	3
Cuyo.....	0	-1.8	-15.6	0	-2	-2	0	0	Antipolo.....	38.9	+3.8	+19.6	4	-2	0	31	3
Ormoc.....	140.2	+22.7	+33.5	18	0	+5	25.4	17	San Isidro, Nueva Ecija	4.6	-5.1	-2.1	4	-2	+1	2.5	6
Guiuan.....	559.4	+267.9	+245.4	23	+1	+4	130.3	19	Iba.....	1.3	-3.9	-3.1	1	-2	-1	1.3	24
Tacloban.....	278.7	+76.4	+64.4	19	+5	+3	20.4	19	Tarlac.....	6.9	+3.7	-2.2	2	-2	0	6.1	28
Capiz.....	109.9	-30.6	+13.6	15	-5	+3	53.4	23	Baler.....	242.9	-232.7	+70.6	15	-2	+3	66	3
Borongan.....	580.6	+125.9	+155.3	24	+2	+3	92.5	22	Dagupan.....	4.1	0	-13.4	2	0	0	3.6	2
Catbalogan.....	327.6	+107.2		16	-4		53.8	19	Baguio.....	63	+26.6	+42.6	9	+4	+5	48.2	28
Calbayog.....	224.4	+68.6	+53.8	18	0	+3	30.7	19	San Fernando, La Union	3.3	+3.3	-3.5	2	+2	+1	2.8	28
Masbate.....	110	-20.8	-20.7	13	-7	+2	40.3	19	Candon.....	5.1	+3.8	-2.4	2	+1	+1	3.3	2
Romblon.....	207.7		+114.4	20		+7	46.5	14	Vigan.....	7.4	-7	+2.8	2	+1	+1	6.9	2
Batag Light-house, Laoang	360.6	+40.8		13	-4		94.5	24	Tuguegarao.....	77.2	+6.2	+52.8	16	+10	+12	40.1	1
Sorsogon.....	629.1	+294.2		16	-1		158	24	Laoag.....	14.5	+14.5	+7.5	3	+3	+2	12.7	2
Legaspi, Albay.....	686.5	+492.8	+393.4	20	+5	+4	157.3	24	Aparri.....	183	+65.8	+84.9	20	+9	+9	42.3	1
									Cape Bojeador.....	14.1	+13.1		8	+7		4.6	2
									Basco.....	145.4	-202.7	+14.1	19	-4	+4	20	6

DEPRESSIONS AND TYPHOONS

There were three important depressions or cyclones in the Far East during the month, all formed in higher latitudes not far from Formosa. They seem to belong rather to the type of continental depressions.

The first appeared SW of Formosa on the 2nd, it moved NE to the northern part of the Loochoos and then almost due east, south of Japan.

The other two formed on the 10th and 14th, respectively, over the Eastern Sea: after moving eastward for one or two days they moved northeastward to the east of Japan on the 11th to 13th and 16th to 18th, respectively.

## NOTAS GENERALES DEL TIEMPO

Presión y temperatura.—La presión atmosférica media de este mes en Filipinas es ligera o regularmente menor que la de febrero, 1920, e inferior también a la normal. Las presiones más altas se observaron en la mayor parte de nuestras estaciones el día 23, al paso que las más bajas se registraron generalmente el 21 en Visayas y Mindanao, y el 9 ó 10 en Luzón.

La temperatura media mensual es ligeramente inferior a la normal en el norte de Luzón, pero algo mayor en el resto del Archipiélago. Las temperaturas extremas en Manila fueron  $33.8^{\circ}$  C. y  $17.8^{\circ}$  C., registradas el 28 y 17, respectivamente. Las temperaturas máxima y mínima absolutas de Baguio fueron  $26.8^{\circ}$  C.,  $11.1^{\circ}$  C. en la cumbre del Mirador, y  $26.8^{\circ}$  C.,  $11.2^{\circ}$  C. en la llanura cerca del *City Hall*.

Precipitación acuosa.—La lluvia total de este mes es para la mayor parte de nuestras estaciones mayor que la del año pasado, y que la normal de febrero. En Luzón, sin embargo, un buen número de estaciones acusaron un total de lluvia mensual inferior a la normal. La lluvia recogida durante el mes en los pluviómetros del Observatorio de Manila asciende a 44.5 mm., diferenciándose esta cantidad en +19.6 mm. de la de febrero, 1920, y en -33.3 mm. de la normal. La lluvia mensual de Baguio fué 63.0 mm., la cual difiere de la normal en +42.6 mm.

## DEPRESIONES Y TIFONES

Hubo durante este mes tres depresiones o ciclones de importancia en el Extremo Oriente formados todos en altas latitudes, no lejos de Formosa, los cuales parecen pertenecer más bien al tipo de depresiones continentales.

La primera de dichas depresiones apareció al SW de Formosa el día 2: se movió hacia el NE hasta llegar a la parte N de Loochoos, y después casi al E por el S de Japón. Las otras dos se formaron en el Mar del Este el 10 y 14, respectivamente; después de moverse hacia el E por uno o dos días, se dirigieron al NE por el E de Japón los días 11 al 13, y 16 al 18, respectivamente.

METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY \*

[ $\phi = 14^{\circ} 34' 41''$  N;  $\lambda = 120^{\circ} 58' 33''$  E; barometer above sea, 14.2 meters; gravity correction not applied, -1.72 mm.]

Day.	Pres- sure (mean).	Air temperature. <sup>b</sup>			Underground temperature.				Relative humid- ity (mean).	Vapor pres- sure (mean).	Radiation.		Evaporation <sup>b</sup> .			
		Mean.	Maxi- mum.	Mini- mum.	0.25 meter.		0.50 meter.				1.50 meters.	2.50 meters.	Mini- mum on grass.	Maxi- mum in sun. Black bulb in vacuo.	Free exposure (to- tal).	Shel- ter (total).
					8 a.m.	2 p.m.	8 a.m.	2 p.m.			8 a.m.	8 a.m.				
		mm.	°C.	°C.	°C.	°C.	°C.	°C.			°C.	°C.	°C.	Per ct.	mm.	°C.
1	759.16	26.1	31.4	22.3	25.8	27.4	26.8	27	27.8	28.4	71.5	17.7	20.6	59.5	4.2	3
2	58.91	26.1	33.2	21.1	25.8	28.6	26.8	27.5	27.8	28.4	80.1	19.8	19.2	57.5	3.9	2.4
3	59.68	25.8	30.2	22.5	26.7	28.3	27.2	27.5	27.9	28.4	83.4	20.5	20.8	58.4	2.8	1.8
4	60.17	24.6	29.5	22.1	26	27.4	27.1	27.2	27.7	28.3	84.1	19.2	21.6	60.2	3	1.5
5	59.19	25	29.7	20.6	25.8	27.4	26.8	27.3	27.8	28.4	80.4	18.7	19	48.7	3.8	2.5
6	59.51	26	29.9	23	26.3	27.9	27.3	27.5	27.8	28.3	77.1	19.1	22.2	58.7	3.5	2.4
7	60.09	25.7	30.8	21.7	26.3	28.3	27.2	27.7	27.8	28.3	76.9	18.8	20.2	58.8	4.1	3
8	59.31	25.4	29.6	22.1	26.8	28.3	27.5	27.7	27.8	28.4	81.9	19.6	20.2	55.7	2.6	1.8
9	58.10	25.8	30.6	21.8	26.5	28.4	27.4	27.8	27.8	28.4	83.6	20.4	19.7	57.6	3.3	2.6
10	58.30	25.9	30.6	22.2	26.8	28.3	27.5	27.7	27.8	28.3	79.6	19.6	20.8	58.7	3.8	2.5
11	58.99	25.6	30.2	21.3	26.6	28.7	27.5	27.8	27.8	28.3	82	19.8	19.9	58	3.8	2.7
12	59.47	25.3	30.6	22.1	27.1	28.8	27.7	28	27.8	28.3	79.5	18.9	20.3	65	3.3	2.3
13	59.33	25.6	30.9	21.7	26.8	28.5	27.6	28	27.7	28.3	78	18.8	19.7	48.5	3.6	2.5
14	59.32	26	32.3	21.7	26.6	28	27.6	27.9	27.8	28.3	75.5	18.5	19.6	59.6	4.6	3.1
15	59.36	25.4	32.2	21	26.3	28	27.5	27.7	27.9	28.3	74.6	17.6	18.7	60.4	4.3	3
16	59.81	24.9	32.2	19.6	25.9	27.7	27.3	27.5	28	28.2	72.7	16.6	16.6	59.6	5.6	3.6
17	60.16	24.2	31	17.8	25.5	28	27.1	27.5	27.7	28.1	72.7	16	15.2	60.6	4.9	3.3
18	60.24	24.3	29.1	21.5	26.3	27.4	27.4	27.5	27.9	28.3	76.4	17.1	18.9	58.8	3.8	2.6
19	60.05	24.9	29.9	22.3	26.1	27.7	27.2	27.8	28	28.3	74.4	17.2	21.8	62	4.2	3
20	59.42	25.4	29.9	22.4	26.3	27.7	27.2	27.3	27.8	28.2	70.4	16.8	21.6	62.7	5.3	3.6
21	59.11	26.2	31	23.2	26.5	28	27.3	27.5	27.9	28.2	65.6	16.3	22.6	62	5.2	4.2
22	60.08	25	30.3	21.6	26	28	27.4	27.5	27.8	28.3	64.8	15	19.2	61	6.5	5.3
23	61.48	23.6	27.5	21.3	26.2	27.3	27.3	27.5	27.9	28.2	72.6	15.6	18.8	50.4	3.2	2.4
24	61.11	24.3	28.1	21.5	25.8	27.5	27	27.3	27.8	28.1	76.4	17.1	19	56.3	3.3	2.2
25	60.23	25.2	30.1	22.3	26.4	27.4	27.1	27.2	28	28.3	75.1	17.6	21.2	59.8	4.1	2.8
26	59.54	25.1	31.1	21.4	26	28	27.1	27.4	28	28.3	80.1	18.9	19.7	40.6	3.3	2.3
27	59.10	26	33.1	20.6	27.2	28.6	27.3	27.8	28	28.3	79	19.5	18.7	64.6	4.5	2.8
28	58.87	27.6	33.8	23.1	27.3	29	27.6	28.2	28	28.3	75.4	20.4	21.3	63.3	5.9	4.1
Mean	759.57	25.4	30.7	21.6	26.3	28	27.3	27.6	27.8	28.3	76.6	18.3	19.9	58.1	4.1	2.8
Total															114.4	79.3
Departure from normal	-1.65	+0.2	-0.1	+1.3							+2.5	+0.8			-17	

Day.	Wind.					Clouds.				Sun- shine.	Rain, 24 hrs. beginning 6 a. m.		Miscellaneous.	
	Prevailing direction.	Total move- ment.	Maxi- mum hour- ly veloc- ity.	Direction at the time of the maximum velocity.	Amount (mean).	Form and direction.					On the tower.	In the park.		
						Upper.		Lower.						
						h.	m.	mm.	mm.					
1	NE, NNE	196.5	18	ESE	6.5	A.-Cu.	E	Cu.	E	4	50			d a.
2	Variable	121	15	W	4.6	Ci.	NE	Cu.	E	7	45			d a.
3	SW, WNW	180	16	N	8.8	A.-Cu.	W	Cu.	E by N	1	55	43.6	47.8	● a. ● p.
4	N	171	15	N	9.2	A.-Cu.	S	Cu., cu.-N.	ENE	1	35	.8	1.3	● a.
5	N quad.	170	21	NNE	5.8	Ci.		Cu.	E	5	25	.1	.1	d° p.
6	N quad.	189	18	N	5.4	A.-Cu.	N	Cu.	NNE	4	30			
7	NNE, W	159	18	W by S	4.3	Ci.		Cu.	E	8	35			
8	E quad.	114.5	16	WNW	6.8	Ci.	SW by W	Cu.-N.	E	2	15			d° p.
9	WSW	208.5	20	W	1.8	Ci.		Cu.	E	9	55			
10	WSW	250	22	WSW	.9	Ci.		Cu.	E	9	50			
11	N	241	20	WNW	1.3	Ci.		Fr.-Cu.	N	9	35			
12	N quad.	128	10	SSW, W	8.5	A.-Cu.	ESE	Cu., Cu.-N.	E	3	20			d° p.
13	ESE, SE	174	14	ESE	8	A.-Cu.	E	Cu.	E	6	35			
14	NE	197	20	ESE	6.3	Ci.	NE	Cu.	E	7	50			
15	SE	190	18	SE	4.9	Ci.		Cu.	E	5	45			
16	E quad.	179.5	17	WNW	1.8	Ci.		Cu.	E	10	05			
17	NE	173	16	WSW	3.4	Ci.		Cu.	E	7	50			
18	NE	134.5	16	NE	9.9	A.-Cu.		S.-Cu.	E	0	05			d° a. p.
19	NE, NNE	188	16	NNE	8.5	A.-Cu.	W	Cu.	E	1	15			
20	NNE	177	16	ESE	8.8	A.-Cu.	WNW, S	Cu.	E	2	30			
21	NE	205	21	NE	9	Ci.-S.	ENE	Cu.	ENE	0	25			
22	NE	265	37	NE	4.2	A.-Cu.	ENE	Cu.	E	8	40			d° a.
23	N, E	127	17	E, ESE	8.8	Ci.-S.		Cu.	E	0	05			
24	W quad.	95.5	12	W	9.5	Ci.-S.		Cu.	E	0	00			
25	E quad.	158	19	ENE	8.2	A.-Cu.		Cu.	E	2	55			
26	W quad.	121.5	16.5	ESE	8	Ci., Ci.-S.		Cu.	E	4	20		.1	d° a.
27	SE, NE	151.5	15	WNW, SSE	3.4	Ci.		Cu.	E	9	55			
28	SE	209.5	21	SE	4.2	A.-Cu.	E by N	Cu.	E	9	00			
Mean		174.1	17.9		6.1					5	14			
Total		4,874.5								146	45	44.5	49.3	
Departure from normal		-440.3			+1.1					-48	21	+33.3		

\* All the mean values given in this table are deduced from hourly observations.

<sup>b</sup> These values are taken from instruments mounted in the Observatory Park, 1.5 meters above ground.

METEOROLOGICAL DATA FOR MIRADOR OBSERVATORY, BAGUIO •

(φ=16° 25' N; λ=120° 35' E; barometer above sea, 1,512.5 meters; gravity correction not applied, -1.65 mm.)

Day.	Pressure <sup>b</sup> (mean)	Air temperature at Mirador (on the top of the mountain).				Air temperature in the plateau near the City Hall.				Relative humidity (mean).	Vapor pressure (mean).	Radiation.		Evaporation.		
		Mean.	Maximum.	Hour.	Minimum.	Hour.	Maximum.	Hour.	Minimum.			Hour.	Minimum on grass.	Maximum in sun. Black bulb in vacuo. <sup>c</sup>	Free exposure (total)	Shelter (total)
	mm.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	Per cent.	mm.	°C.	°C.	mm.	mm.	
1	636.38	16.9	23.7	11.45a.	14.1	3.45a.	25.7	11.45a.	14	4.00a.	77.5	11	13.6	55	9.1	3.5
2	36.46	18.1	23.7	0.45p.	15.2	12m.n.	25.4	11.30a.	15	2.45a.	35.3	13.2	14.4	56.2	3.5	1.7
3	36.99	17.1	21.8	11.00a.	14.2	5.00a.	23.8	11.00a.	13.9	6.30a.	88.2	12.7	12.5	51	2.2	1.2
4	36.96	17	22.7	0.10p.	14.2	12m.n.	23.2	11.45a.	14	12m.n.	88.2	12.6	13.7	61.6	2.5	1.4
5	36.34	16.5	20.3	0.30p.	13.9	4.15a.	23	1.00p.	12.9	2.15a.	92.3	12.3	12.4	50.7	1.3	1.2
6	36.83	16.8	23.2	0.55p.	14.6	5.30a.	24.5	0.30p.	13.5	6.00a.	89.7	12.3	13.5	57.3	2.4	1.3
7	37.18	17.5	23.6	10.55a.	13.5	6.35a.	25.1	2.00p.	12.6	6.10a.	77.2	11.3	12.2	57.4	5.7	3.7
8	36.74	17.1	22.3	9.45a.	13.6	4.10a.	25.4	11.15a.	13	4.30a.	88	12.7	14.4?	57.6	2.2	1.2
9	35.92	18.2	25	0.50p.	14.1	4.10a.	25.9	1.20p.	12.9	6.30a.	72.5	11.2	12.2	54.8	6.2	4.3
10	35.90	18.1	24.2	1.40p.	13.8	5.55a.	25	1.00p.	11.2	4.45a.	64.2	9.9	9.5	55	5.9	3.8
11	36.39	17.4	23.2	1.10p.	13.7	5.55a.	24.5	11.30a.	12.4	6.20a.	85.5	12.6	10.9	55	3.4	1.9
12	36.70	17.2	22.5	10.15a.	13.5	6.30a.	24.3	10.00a.	13.4	6.20a.	85.5	12.1	11.7	59.5	4.9	2.8
13	36.62	17.2	24.9	0.15p.	12.5	5.05a.	26.8	0.45p.	13	6.00a.	77	11.1	10.9	54.9	3	1.6
14	36.67	17.6	23.2	1.15p.	14.6	5.55a.	25.4	0.45p.	13.7	6.00a.	83.3	12.4	13.1	57.2	3.3	1.9
15	36.81	17.8	23.7	10.30a.	14.5	6.05a.	24.7	1.15p.	13.9	6.45a.	84.2	12.6	13.1	59.7	2.8	1.6
16	37	17.2	23.2	11.45a.	14.2	6.30a.	25	1.20p.	14.1	6.45a.	83.5	12.1	13	58.2	3.9	1.9
17	37.10	16.1	22.9	1.20p.	13.2	12m.n.	23.3	1.30p.	12	6.15a.	80	10.8	10.6	57.8	5.9	3.7
18	36.58	16.2	24.7	0.20p.	12.4	6.40a.	24.7	0.55p.	11.4	6.00a.	72.8	9.8	11	55.1	6.9	3.8
19	36.64	15.3	20.3	11.55a.	13.1	12m.n.	21.8	0.30p.	13.5	6.00a.	82.2	10.5	12.5	44.8	2.5	1.7
20	36.26	16.3	24.2	0.40p.	13	1.30a.	24.3	1.30p.	13.5	6.00a.	83.3	11.4	12.5	61.1	3.8	2.3
21	36.18	16.2	23.2	11.55a.	12.8	12m.n.	24.1	1.35p.	12.5	12m.n.	82.5	11.2	11.8	63.5	5.5	2.3
22	36.33	15.4	23.2	1.15p.	11.7	6.25a.	24.4	1.00p.	11.6	6.30a.	73.5	9.4	10.6	51.2	7.6	3.6
23	37.34	15.4	23	0.10p.	11.1	2.00a.	22.7	0.15p.	11.5	1.45a.	75.7	9.7	10.2	55	6.2	3
24	37.44	17.3	21.8	0.50p.	14.4	12m.n.	24.6	0.10p.	13.3	1.10a.	77.7	11.4	12	54	6.8	3
25	37.10	17.4	24.6	1.50p.	13.6	3.45a.	24.7	2.00p.	13.9	2.45a.	78.3	11.3	13.2	63.6	6.1	2.2
26	36.56	17.3	23.3	11.00a.	15	6.05a.	25.4	11.00a.	15	12m.n.	83.8	12.2	13.8	67	3	2.5
27	36.76	19	25.2	10.50a.	15	1.20a.	26.7	11.25a.	14.5	6.40a.	77.8	12.5	13.6	55.5	6.1	3
28	36.63	19	26.8	10.50a.	16	5.50a.	26.5	0.30p.	15.1	6.45a.	84.5	13.6	14.3	59.5	4.2	1.9
Mean	636.68	17.1	23.4		13.8		24.7		13.3		81.2	11.7	12.4	56.4	4.5	2.4
Total															126.8	66.7

Day.	Wind.				Clouds.		Sun-shine.	Rain, 24 hours beginning 6 a. m.	Miscellaneous.	
	Prevailing direction. <sup>d</sup>	Total movement.	Maximum hourly velocity.	Direction at the time of the maximum velocity.	Form and direction.					
					Upper.	Lower.				
1	E	619.1	36.7	E	0-10.	A.-Cu. SEquad.	Cu.-N. E	h. m.	mm.	☉ a. ☉ p.
2	SW, E	395.4	32.4	E	7.3	Ci.	Cu.-N. SSW	3 20	1.2	☉ a. ☉ p.
3	NW quad.	260	15.5	N	5.4	A.-Cu. SE	Cu.-N. SSE	4 20	.5	☉ a. ☉ p.
4	W, N	259	20.6	W	7	A.-Cu., Ci.	Cu.-N. WNW	3 15	.5	☉ a. ☉ p.
5	E	286.5	20.3	E	6.9	A.-Cu., ESE	Cu.-N. ESE, SSE	3 50	1.1	☉ a. ☉ p.
6	E	277.1	20.1	E	8.6	A.-Cu., Ci.-S.	Cu.-N. SEquad.	1 45	3	☉ a. ☉ p.
7	E	357.5	19.5	E	7.9	Ci.	Cu.-N. ESE	2 05	3.8	☉ a. ☉ p.
8	SW quad.	246.6	19.3	SW	1.4	Ci.	Cu.-N. W	8 30		☉ a. ☉ p.
9	NE quad.	315.7	25.1	W	6.1	Ci.	Cu.-N. WNW	5 50		☉ a. ☉ p.
10	NW quad.	308.7	24.9	SW	.6	Ci.-S., Ci.	Cu. WNW	9 20		☉ a. ☉ p.
11	E quad.	280.6	21.2	E	2.3	Ci.	Cu. WNW	7 45		☉ a. ☉ p.
12	E	409.3	25.7	E	3.7	Ci., Ci.-S.	Cu. S	6 25		☉ a. ☉ p.
13	E	442.5	34.1	E	5	Ci.	Cu. S	5 45		☉ a. ☉ p.
14	E	369.7	26	E	2.4	Ci.	Cu. S	7 35		☉ a. ☉ p.
15	E	332.5	22.7	E	4.4	Ci.	Cu. SSE, SW	4 10		☉ a. ☉ p.
16	SW, NW	235.8	20.6	SW	5.9	Ci.	Cu.-N. SSE	5 15		☉ a. ☉ p.
17	E	325.4	23.6	W	6.3	Ci.	Cu. ENE	4 20		☉ a. ☉ p.
18	E	450.9	25.4	E	4.3	Ci.	Cu.-N. SSE	5 20		☉ a. ☉ p.
19	E	244.6	19.3	SE	4.1	A.-Cu. E, W	Cu. E	7 05		☉ a. ☉ p.
20	E	279.2	18.7	E	9.1	A.-Cu. W	S.-Cu. E	1 30	2	☉ a. ☉ p.
21	E quad.	371.9	26.6	SE	8.6	A.-Cu.	Cu.-N. SEquad.	3 10?		☉ a. ☉ p.
22	E	500.7	36.4	E	4.7	Ci.	Cu.-N. E, WNW	5 00		☉ a. ☉ p.
23	E	359.4	23.1	SW	3.1	Ci.	Cu. E	5 50		☉ a. ☉ p.
24	E quad.	301.8	21.7	E	8.1	A.-Cu. SE, SW	S.-Cu. W	4 00		☉ a. ☉ p.
25	E	386.3	30	E	8.4	A.-Cu. SSE	Cu.-N. E	3 40		☉ a. ☉ p.
26	E	372.2	36.7?	E	8.4	Ci.-S. SSW	S.-Cu. W	3 40		☉ a. ☉ p.
27	E ?	277.2		E	6.9	A.-Cu. ESE, SE	Cu.-N. E quad.	1 30	2.7	☉ a. ☉ p.
28	E	331.9	22.8	E	2.9	Ci.	Cu.-N. SSW	8 35?		☉ a. ☉ p.
Mean		342.8	24.8		5	Ci.	Cu.-N. E quad.	5 05	48.2	☉ a. ☉ p.
Total		9,597.5						137 55	63	☉ a. ☉ p.

<sup>a</sup> All the mean values given in this table are deduced from six daily observations taken at 2, 6, 10 a. m. and 2, 6, 10 p. m.

<sup>b</sup> The barometric readings of this station are not reduced to sea level.

<sup>c</sup> Maximum of hourly observations taken from 6 a. m. to 6 p. m.

<sup>d</sup> This element is based on hourly observations taken from a quadruple register, which gives only eight possible directions of the wind.

<sup>e</sup> Five hours missing.

<sup>f</sup> Six hours missing.

<sup>g</sup> Eleven hours missing.

## DAILY RAINFALL AT THE STATIONS OF THE WEATHER BUREAU, FEBRUARY, 1921

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lapac Agricultural School, Siasi, Sulu†							10.2									23.9
Glan, Cotabato†					4.1	.8										.8
Jolo, Sulu	0.3	44.7	23.6	1.6	6.6	20.1		14.2	0.5		0.8					.8
Buntung, Cotabato, Cotabato†							1			38.1		2.5			5.1	1.3
Lais, Malita, Davao							40.6			18.5	1.3		7.6		14.7	6.3
Malita, Davao				.5		1.3	50			73.4	7.9	.8	7.4		21.6	2.1
Lebak, Cotabato	1.5					3.8	9.9		42.7		5.8					
Lamitan, Isabela, Zamboanga	59.7															
Basilan Plantation, Kabunbatan, Isabela, Zamboanga†	33				5.1	9.7			7.4		2.3				1.3	
Padada, Santa Cruz, Davao†	36.8									43.2						
Basilan Plantation Office, Isabela, Zamboanga†	30.5	.5						2.3		1.5	1.3				4.1	
La Union, Sigaboy, Davao†										3.6		1			8.4	.5
Paranglalap, Isabela, Zamboanga†	43.2															
Latuan, Isabela, Zamboanga†	33.5							2		2.8					6.4	2.3
Buluan, Cotabato†										.8	.5	1.3		6.9	1.5	
Malamau, Isabela, Zamboanga	34							1.3							4.1	
Pagsilaan Farm School, Mati, Davao†									12.7	5.3			2.5	11.2		
Zamboanga, Zamboanga	5.8							1.1		.3		16.3				
Cagayan de Sulu, Sulu†																4.3
Kidapawan, Cotabato†					3.8						8.9	11.4			4.6	7.6
Davao, Davao	2.5			3.8		5.8		3.8			9.4				9.4	11.9
Piang Agricultural School, Kudarangan, Duluan, Cotabato†	1.3			22.9	25.4	1.3				32.3	34				23.9	44.7
Pikit, Cotabato				1.3	1.5	2				7.4	3.3	6.1			7.6	10.9
Cotabato Seed Station, Pikit, Cotabato†				6.9					4.3	1.8	2			13.5	14.7	
Awang, Cotabato†					2.5				39.1						50.8	
Sirib, Guianga, Davao†	1	2			.5						1				20.8	.8
Kabakan, Cotabato†												2.5		12.7		15.2
Bual, Duluan, Cotabato	1		.8	8.4	12.7	5.8	19.8			67.67	2.5				5.1	11.2
Cotabato, Cotabato	4.1			.3	31.7	.3				7.9	14.7	1			5.8	7.5
Mampising, Pantukan, Davao†			1.8	35.3	2.5	1.5	.8			5.3	33.5	11.2	.8		84	16
Kabasaran, Buldun, Cotabato†	26.2	1	3.8	15.2	19.8		12.2	20.8	16.7	33					20.3	17.8
Naganaga, Margosatubig, Zamboanga			9.1							12.2	5.6				5.1	10.2
Banisiilan, Banisiilan, Cotabato†	11.2		4.8	25.7		13.4	10.2		26.9	43.2		1.3		5.1	3.3	
Malabang, Lanao	9.9			4.6	7.9	1.3				12.2		2.8	34.8		17	9.1
Compostela, Monkayo, Davao†	3	21.6				15.7				19		8.4	.3		11.4	
Lumbatan, Lanao†			24.4			2.5	3.3	.8	10.2		26.7	21.6	3.3		37.8	49
Cateel, Davao	8.9			17	11.7	25.7	1.5	.5	6.3	57.4		39.6	22.9	10.7	6.1	2.3
Ganasi, Lanao	18.3	3.8	4.1	1.8	3.3				2.5	27.2					18.5	2
Camp Kalao, Monkayo, Davao	3	16.5			4.8	1.3	3.6			1.5	3	4.1				
Managok Agricultural School, Linabo, Malaybalay, Bukidnon	24.1		34.8						20.3	8.9		.5	1.8	1.4	9.1	4.3
Camp Keithley, Dansalan, Lanao	11.7	1.8	.5			1.8	9.6	.8	13.5	7.4				.3	2.3	2.8
Veruela, Agusan	4.1			5.8	21.6	4	3.3		8.4	13.5	15.5	15.2	4.3	6.3	33.8	20
Sindangan, Zamboanga†	6.6			4.1			8.1	5.3		3.8						
Sumilau, Bukidnon	1.8						2.5		18.5	7.9					5.3	
Diklom, Tangkulan, Maluko, Bukidnon†		11.7	6.9		12.7	10.2	4.3							3.8		5.1
Cagayan, Misamis									4.6	1.3						
Talacogon, Agusan						39.1			5.5			10.4	12.7		35.8	8.6
Butuan, Agusan	2.3			.5	2.3	7.4		.3	11.9	2	.8	8.9	.3		2.5	3.1
Mambajao, Misamis															6.9	19
Dumaguete, Oriental Negros	.8								19.3	10.2						4.8
Kolonie, Yap, Western Carolines	7.1	3.8	20.6			1.5	.3		.5		3.1			2		.5
Hacienda San Jose, Tanjay, Oriental Negros†										1.8	7.6					
Hacienda Palanas, Bais, Oriental Negros†	5.1					2		1.8	1.5	5.1		1				
Hacienda Tamugon, Bais, Oriental Negros†										15.2						
Tagbilaran, Bohol				7.5		.8	4.6					.8				
Iwahig Penal Colony, Puerto Princesa, Palawan	2.3	15.5	3.5	3.5												
Dalaguete, Cebu			8.9	2						3.6						
Surigao, Surigao	1.8			.5	1.8	14.8	3.6			3.3		6.4		10.2	2	43.1
Biaong Cui's Farm, Barili, Cebu				2.3							45.7					
Maasin, Leyte						27.4	7.1									
Binalbagan Estate, Binalbagan, Occidental Negros†	2					2.3										
Isabela, Occidental Negros		3.5		.3		5.3				9.1				.5		
Hacienda Tanolo, Hinigaran, Occidental Negros																
Cebu, Cebu	.5									54.6		1			2.5	
La Castellana, Occidental Negros		4.8														
Hacienda Vallehermoso, Vallehermoso, Oriental Negros†				2									1	2.5	.8	
Central Azucarera de La Carlota, La Carlota, Occidental Negros		15	.3	1.3	6.1		1.3	15.2		.5						
Hacienda Canlaon, La Castellana, Occidental Negros			34.3								31.3					
La Carlota Experimental Station, La Carlota, Occidental Negros†		37.3		4.8						8.4						
Mao Sugar Central, Santa Cecilia, Bago, Occidental Negros		3.8		.5	8.1			1.5	.3					.3		
Valladolid, Occidental Negros																
Central San Carlos, San Carlos, Occidental Negros†	4.1			3.8		1.8							5.1		3.8	

† Voluntary or cooperative station.



Daily rainfall at the stations of the Weather Bureau, February, 1921—Continued

Station.	Day of month.													Total.
	17	18	19	20	21	22	23	24	25	26	27	28		
Lapac Agricultural School, Siasi, Sulu †		50.8	34.3		15.7	36.3	33	88.9			12.7	1.3	307.1	
Glan, Cotabato †		26.7								2.3	30		63.9	
Jolo, Sulu	12.7	25.4	13.5	0.3	5.3	41.1	17	60.4	13.2	.5	4.6	4.1	311.3	
Buntung, Cotabato, Cotabato †		2.5		1.5	13.5	.5	2.8		94		2.8		165.6	
Lais, Malita, Davao	.8	23.6	3.8		2				19.6	3.8	42.9	34.3	217.8	
Malita, Davao	.5	8.4	5.3	2.8					4.1	2.8	20.1	18.5	229.5	
Lebak, Cotabato		17.3	6.9		13.5	20.3	3.3			8.9	17	11.1	162	
Lamitan, Isabela, Zamboanga	19.6												79.3	
Basilan Plantation, Kabunbatan, Isabela, Zamboanga †	3.3				14.2	29.7	13.7				36.8	8.3	176.2	
Padada, Santa Cruz, Davao †	61										72.6		213.6	
Basilan Plantation Office, Isabela, Zamboanga †	3				10.7	15.7	17.5		13.7		55.8	6.6	163.2	
La Union, Sigaboy, Davao †				3.6	.5			1.5	22.1	2	3.6	.5	47.3	
Paranglalap, Isabela, Zamboanga †					33		17.8	35.6			45.7	5.1	180.4	
Latuan, Isabela, Zamboanga †					9.7		25.7	8.9	12.7		32.2	7.4	145.6	
Buluan, Cotabato †	2							9.9		20.1	10.2	3.8	124.1	
Malamaui, Isabela, Zamboanga	5.1		44.4	19.6		.8	2.3	25.4		11.4	35.6	7.4	124.1	
Pagsilaan Farm School, Mati, Davao †	1.8				5.1		17.8	12	2.5	25.4	30.5	10.1	2.5	120.5
Zamboanga, Zamboanga	3.3												6.6	69.3
Cagayan de Sulu, Sulu †		40.7	4.3		16.5	16.6	6.6	31.7	16.5		2.5		139.7	
Kidapauan, Cotabato †		1.8	4.3	7.6	9.1	30.2	48.6	8.4	16.5				162.8	
Davao, Davao	2.5						14.2	5.8	19.8	22.3	17.8	23.6	152.6	
Piang Agricultural School, Kudarangan, Dulauan, Cotabato †	5.1				64.8	45.7	61	8.6	38.4	50.8	.8	23.6	484.6	
Pikit, Cotabato					51.8	29.7	26.2	1.8	51.6	25.4	1.3	15.7	260.1	
Cotabato Seed Station, Pikit, Cotabato †					59.7	31.2	26.7	.8	57.9	21.6		16.8	279.8	
Awang, Cotabato †	.8				27.9	2.3		19.3	17.8	42.9	37.6		257.3	
Sirib, Guianga, Davao †	6.9	1.3			3	30.5	49.5	13.2	8.6	81.8		.5	221.4	
Kabakan, Cotabato †	30.5				2.5		30.5	27.9	50.8			15.2	187.8	
Bual, Dulauan, Cotabato	2.5	5.1			61.5	9.7	34.3	45.7	17.3	28.2	.8	19.8	380.9	
Cotabato, Cotabato	1.5	24.4	1.3		4.3	2	15	15.7	77.5	23.6	.8	12.4	270.3	
Mampising, Pantukan, Davao †	23.6				9.4	7.4	16.5	5.8	2.5	12.9	5.3	.5	232.2	
Kabasaran, Bulduin, Cotabato †	33	12.2	20.8	25.4		8.1	11.9	2.5	3.8	12.7			317.2	
Naganaga, Margosatubig, Zamboanga	6.4				52.1	19.3	12.2	25.1	4.1		1		162.4	
Banisilan, Banisilan, Cotabato †	3.3	1.3			7.6	42.6	17.8	2.5	10.7	19.8	.8	8.4	259.9	
Malabang, Lanao			21.3	1.5		11.7	2.8	12.2	8.9			22.9	180.9	
Compostela, Monkayo, Davao †					9.4			8.7				2.5	97.3	
Lumbatan, Lanao †					4.6	4.3	50	3	6.1			2	2.3	165.9
Cateel, Davao	12.7	25.9	31.7	29.3	6.9	14	1		46.2	38.3	3	37.6	535.6	
Ganasi, Lanao	3.6	3.6			12	3.8	30	3.8	19.8	1.8	12.2	4.8	164.8	
Camp Kalao, Monkayo, Davao		1	.5					9.6	20	16			146.8	
Managok Agricultural School, Linabo, Malaybalay, Bukidnon	1.6	3.3					.8	12.7	15.5	14.2	1.6	3.6	16.5	175
Camp Keithley, Dansalan, Lanao	37.6	8.1	3.3	6.1	16.8	38.4	46.3	12.4	35	.5	51.3	8.1	316.4	
Veruela, Agusan	2.3	27.4	7.6	10.5		9.4		10.2	26.9	20.8			45.2	316.1
Sindangan, Zamboanga †		1.3	.5	1.3	.3	9.2	.8	2	18	28	20.9	19.5	129.7	
Sumilau, Bukidnon	7.3	12.4		16.8	17.8	37.3	47.8	8.9	37.4	2	5.3	4.6	233.6	
Diklom, Tangkulan, Maluko, Bukidnon †				15.5	15.7	33	8.4	14	24.9	18.5	9.4		194.1	
Cagayan, Misamis	1.8	9.4		6.4		8.4	63.4	10.9	44.4	3.8		11	165.4	
Talacogon, Agusan	10.2	21.6		5.6	14.3	9.2	6.4	18.8	11.2	4.1	60.9		274.5	
Butuan, Agusan	5.1	6.4	14.2	8.6	.8	3.3	9.7	5.6	22.3	18.3	6.6	38.1	181.6	
Mambajao, Misamis	2	5.1	4.1						18	1.5	2.8		59.4	
Dumaguete, Oriental Negros	.3	5.8	2		6.9	19.8	22.1		89.2	.5			181.7	
Kolonie, Yap, Western Carolines			1.3										40.7	
Hacienda San Jose, Tanjay, Oriental Negros †		6.1			14	4.1			85.6	76.2			195.4	
Hacienda Palanas, Bais, Oriental Negros †		5.1		7.6	3.8	11.5	8.9		50.8		27.9		132.1	
Hacienda Tamugon, Bais, Oriental Negros †						7.6			21.8		6.1		50.7	
Tagbilaran, Bohol	4.9	5.1	2.3		7.9	26.6	8.6	2.3	29.8				101.2	
Iwahig Penal Colony, Puerto Princesa, Palawan									4.6	.5		1.3	31.2	
Dalaguete, Cebu	1.8	10.4	6.1			8.9	9.1		20.6	9.7		.5	81.6	
Surigao, Surigao	44.4	59	40.1		18.8	199.2	65.6	3.8	2	13.5	1.8	4.5	540.5	
Biaong Cui's Farm, Barili, Cebu			18.8	8.9	29		46						150.7	
Maasin, Leyte	39.4	25.1	70.6		16.5	79.8	63				4.1		333	
Binalbagan Estate, Binalbagan, Occidental Negros †	.3		2.8		52.6	4.8	8.2	5.1	36.1	.3			114.5	
Isabela, Occidental Negros			5.1		3.6		6.1		53.8	.3			87.6	
Hacienda Tanolo, Hinigaran, Occidental Negros			3.6	.5	44.2	16.1	5.1		31	1.5			102	
Cebu, Cebu	3.9	6.6	27.7			13.2	39.4				13.2	2.8	165.4	
La Castellana, Occidental Negros	.3		6.9		8.7	.5	7.7		33.5				62.4	
Hacienda Vallehermoso, Vallehermoso, Oriental Negros †	.5		11.2	.5		3	20.1		5.6		3.8		51	
Central Azucarera de La Carlota, La Carlota, Occidental Negros			6.1	7.6	5.6	.3	12	.3	44.4	.3	.5		116.8	
Hacienda Canlaon, La Castellana, Occidental Negros	4.8							11.4	5.1				86.9	
La Carlota Experimental Station, La Carlota, Occidental Negros †			5.1	6.9	11.5	11.2	1		33	3.6	.3		123.1	
Mao Sugar Central, Santa Cecilia, Bago, Occidental Negros		5.1	.8	1			12.9		11.2	4.4	3.3		52.9	
Valladolid, Occidental Negros		6.4	.5				7.3		31	1			46.5	
Central San Carlos, San Carlos, Occidental Negros †	9.9		4.1		.8	23.4			10.9				67.7	

† Voluntary or coöperative station.

<sup>a</sup> Amount of rainfall from 21 to 26.

## Daily rainfall at the stations of the Weather Bureau, February, 1921—Continued

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hacienda Refugio, San Carlos, Occidental Negros †	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
San Joaquin, Iloilo				3.6							2			0.3		
Murcia, Occidental Negros		1.5		1.8												
Bacolod, Occidental Negros	0.3			5.8		1.3										
Oton, Iloilo				2										1.3		2
Iloilo, Iloilo				2										2.5		
Lapuslapus, Iloilo, Iloilo †																
San Jose de Buenavista, Antique				2				4.8			5		4.8		0.8	
Tuburan, Cebu																
Leon, Iloilo		13.2							43.9							
Silay, Occidental Negros				5.8		12.7										1.3
Hawaiian Philippine Co., Malisbug, Silay, Occidental Negros †				10.7	8.9	15.2	1.5					7.9			.3	2
Cuyo, Palawan																
Lucena, Santa Barbara, Iloilo †									5.3							
Barotac Nuevo, Iloilo				4.1										26.4		
Hacienda Ilaya, Victorias, Occidental Negros				10.2	26.9	8.9					3.8					7.6
Hacienda Bilbao, Manapla, Occidental Negros		5.3	2.5	9.9	4.8		11.4	8.6		2.3		1.8	9.4		3.8	2.5
Cadiz, Occidental Negros		11.4		3.8						7.4			1			
Dingle, Iloilo			5	2									3			
Ormoc, Leyte		19				2		1	1.3	8.1			2.5	1.8		
Guiuan, Samar					4.3	14.5	1.5	2.8	2.5		5.3	.5	4.6	9.1	8.9	13.5
Bugasong, Antique				.5												
Bogo, Cebu						.3							1	.8	.5	1
Dueñas, Iloilo †						.5										
Bitagan, Passi, Iloilo †			5.8	4.3												
Tacloban, Leyte				11.9		7.3		7.1	1.5				9.1	5.3	1	
Dumarao, Capiz †	1.3		1.3								1.3			2.5		
Dao, Capiz †			17.8	7.6					2.5				2.8	24.1		
Capiz, Capiz			5.1	3.1	.3							1.8	1.5	10.7		
Borongon, Samar	7.6			5.8		8.1	.8	25.4	.5		.3	1.5	12.7	9.4	.5	4.1
Catbalogan, Samar				1.5	5.1	6.4		1.8		33.5	3		7.9	6.3		
Calbayog, Samar			3	3.3	15.2		8.9	7.4					4.6	2.4		
San Jose Estate, Robles Camp D-17, San Jose, Mindoro †				22.1	4.8											
San Jose Estate, Tamaraw Plantation, San Jose, Mindoro †				6.4	1	31.7	1									
San Jose Estate, San Agustin, San Jose, Mindoro †						8.4								6.6		
San Jose Estate, San Jose, Mindoro †					1.5	9.7		1							.5	
Masbate, Masbate													8.1	7.1		
San Jose Estate, Tunnel D-12, San Jose, Mindoro †				26.1		20.3										
Romblon, Romblon	.9		11.7	16.6			1.1		3.6		.5	2.8	36.2	46.5	1	
Batag Lighthouse, Laoang, Samar								1.5					13.2	7.6		
Irosin, Sorsogon					5			1	25.4			3.8	30	21.1		
Sorsogon, Sorsogon	3.6			2.8				30.5	12.7			7.4	23.6	8.6		
Bacon, Sorsogon	.5		2.3	3.3				4.3	27.7			6.6	37.8	2.8		
Jovellar, Albay	.8		.3				21.9	13.7	16.5	8.1		1.5	18.3	1.6		
Legaspi, Albay, Albay	4.3			4.1	10.2	24.1	76.7	6.4				3	29.3	2.5		
Guinobatan, Albay	3		10.4	5	8.6		10.2	7.9				.8	4.1			
Polangui, Albay	.5		10.4	38.6			1.3					1.3	3.1			
Bacacay, Albay	5.3		19	2.5	20.6	28.2	7.1					14.2	30.5	2.8		
Tabaco, Albay	7.7		10.7	6.4	10.9	17.8	32.6	19.6				14.7	43.2	4.1	2.5	
Sumay (Guam), Agaña, Ladrone Islands	3.3	.5	1.3						1.3	1.3	.8	1.3		1	.8	.3
Iriga, Camarines Sur					1.3	.3	.5	18.5								
Calapan, Mindoro	2.3	1.3		2.5	.3		4.1	1.5				5.1	5.6			
Virac, Albay	5.3	.3		12	2.8	3.8	6.8	4.6	2.5			4.3	10.4	.5		
Naga, Camarines Sur	.3			3.3		1.3	2.5	13.5			10.7	.3	.5			
Tigaon, Camarines Sur	6.9		4.8	13		10.2	1.3	1.5				2.8	7.1	.3		
Libmanan, Camarines Sur	1.8			7.6	.8	11.4	29.5					5.1	11.7	.5		
Batangas, Batangas					6.6											
Calatagan, Batangas						10.5										8
Balayán, Batangas	10.4						3.3					3.8				
Lipa, Batangas				2.5												
Lucena, Tayabas	5.1			5.3			2.5				1.8	1.3				
Atimonan, Tayabas	4.3		44.2	45	6.1	6.3	2				4.1	3.5			1.5	
Lian, Batangas			9.7			2.3										
Nasugbu, Batangas																
Ambulong, Tanauan, Batangas			2													
Daet, Camarines Norte	.5			5.1	.3	39.9	16.7	41.9				1.8	13.8	1		
Mendez Nuñez, Cavite	.3		41.9					.8						.8		
Alfonso, Cavite	.5		8.4											.5		
Indang, Cavite	.6		33.3	5												
Canlubán, Calamba, Laguna			11.7	2									.5	.3		
Silang, Cavite		2	45											.5		
Maragondon, Cavite			9.7	.3									.5			
Paracale, Camarines Norte		19	11.5	7.1		.8				2.3				17.8	62.2	19.8
Santa Cruz, Laguna			2.5		1	.3	.5						2.3			
Buenavista, General Trias, Cavite			24.9	1.5				.3								
Fort Mills, Corregidor, Cavite †			1	.5												
Imus, Cavite			74.9	1.8	1											
Alabang Stock Farm, Alabang, Muntinglupa, Rizal †			48.3	29.2												
Cavite Naval Station, Cavite, Cavite <sup>a</sup>			74.7													

† Voluntary or cooperative station.

<sup>a</sup> Rain in 24 hours beginning 8 a. m.

Daily rainfall at the stations of the Weather Bureau, February, 1921—Continued

Station.	Day of month.												Total.
	17	18	19	20	21	22	23	24	25	26	27	28	
Hacienda Refugio, San Carlos, Occidental Negros †	mm. 8.6	mm.	m m. 12.7	mm.	mm. 2	mm. 14.7	mm. 8.9	mm.	mm. 7.6	mm. 7.1	mm.	mm.	mm. 65.2
San Joaquin, Iloilo			1				.3		5.1	3.3			12
Murcia, Occidental Negros			7.9				16.6		22.9				50.7
Bacolod, Occidental Negros		0.8	5.6		1	1.3	15.7		10.7				42.5
Oton, Iloilo			3.3				3	7.1	17.8				36.5
Iloilo, Iloilo	.3		5.1		3.6	1.8	4		28.4				47.7
Lapuslapus, Iloilo, Iloilo †			2.5		1.3		12.7						16.5
San Jose de Buenavista, Antique				4.3		2			1.8	8.6	4.6		21.3
Tuburan, Cebu	3.3	.8	15.2	4.6	1	11.4	44.5		18.8	1.3			113.8
Leon, Iloilo		7.1				7.1		6.6		9.7			87.6
Silay, Occidental Negros			.5	10	5.8	13.2	23.4		10.9				83.6
Hawaiian Philippine Co., Malisbug, Silay, Occidental Negros †		.8	8.4	6.1	11.4	11.4	18.3	1.3	6.4				110.6
Cuyo, Palawan													0
Lucena, Santa Barbara, Iloilo †		9.9		14	2.3	12.2		15.2					58.9
Barotac Nuevo, Iloilo			6.4			4.6	10.7	2.3	36.8				91.3
Hacienda Ilaya, Victorias, Occidental Negros		5.1	8.4	7.6	24.6	17.8	26.7	1.5	12.7				161.8
Hacienda Bilbao, Manapla, Occidental Negros		1.8	12.7	4.3	7.6	28.4	24.1						141.2
Cadiz, Occidental Negros				20.3		22.1	48		21.3				135.3
Dingle, Iloilo			10.4	.8	1.8	2.3	15.5	16.5					50.1
Ormoc, Leyte	25.4	.8	16.5	8.4	1.3	19.8	23.1	1.3	6.4	.5	1		140.2
Guiuan, Samar	31.5	29	130.3	10.2	3.6	93	98	86.9	1	1.8	5.6	1	559.4
Bugason, Antique			1	.3		1.5			2	.5	.8		6.6
Bogo, Cebu	1.5	1.5	8.9		8.9	4.3	36.3		18.5				83.5
Dueñas, Iloilo †		3	15.2			17	6.6	17.1	2.5	31.2			93.1
Bitaoagan, Passi, Iloilo †			10.7	12.7	13.2	20.8	18.1	13.5	40.1				139.2
Tacloban, Leyte	27.7	11.2	31.9	9.8	14.8	49.6	53.4	22.7	3.1	1.8	.8	8.7	278.7
Dumarao, Capiz †		2.5	6.4	8.9	10.2	15.2	10.2	22.9	15.3				98
Dao, Capiz †		3	8	25.4	10.2	21.6	18.1	4.3	20.3	1.6			158.1
Capiz, Capiz †		3.8	20.4	11	2.8	12.2	14.5	11.2	9.2	2.3			109.9
Borongon, Samar	18.1	46.5	85.6	31.8	21.1	92.5	85.1	70.1	4.6	21.3	8.9	18.3	580.6
Catbalogan, Samar	.5		53.8	34.5	49.5	9.7	44.2	50	19.9				327.6
Calbayog, Samar		.5	40.3	8.7	20.6	10	25.6	25.4	38.8	7.1	2.1	.5	224.4
San Jose Estate, Robles Camp D-17, San Jose, Mindoro †													26.9
San Jose Estate, Tamaraw Plantation, San Jose, Mindoro †													40.1
San Jose Estate, San Agustin, San Jose, Mindoro †													15
San Jose Estate, San Jose, Mindoro †													11.7
Masbate, Masbate		.8	30.7	22.3	2.5	7.3	6.9	14.2	5.6	1	2.5		110
San Jose Estate, Tunnel D-12, San Jose, Mindoro †													46.4
Romblon, Romblon		.8	15.2	24	2		17.5	1	6.4	1.1	13.2	5.6	207.7
Batag Lighthouse, Laoang, Samar		4.6	40.6	13.7	37	45	23.6	94.5	10.9	4.8	3.6		300.6
Irosin, Sorsogon		7.9	108	55.1	10.9	28	25.4	65	55.9	3.8			446.3
Sorsogon, Sorsogon	2.5	30.2	71.6	75	51	30.5	33.2	158	87.9				629.1
Bacon, Sorsogon	3.6	24.9	140.7	97.8	55.1	20.1	35.8	183.4	100.1	4.8	3.3	1.8	756.7
Jovellar, Albay		2.1	54.9	49.8	16.5	.3	2.1	54.4	11.5		.3		274.6
Legaspi, Albay, Albay	.3	6.1	76.7	148.4	34.2	5.9	.3	157.3	95.1	.3	1.3		686.5
Guinobatan, Albay			25.9	73.4	20.8	4.8	1.8	73.6	20.3				266.1
Polangui, Albay	.5	2.3	27.9	66.3	14.7	.8	1.5	43.9	40.6	.5			249.2
Bacacay, Albay	12.4	18.3	86.1	151.9	81.5	3.8	4.8	142	69.6	8.6	13.7		722.9
Tabaco, Albay	3.8	18.8	79	122.4	57.7	3.3	8.9	150.6	58.9	6.1	5.8		685.5
Sumay (Guam), Agaña, Ladrone Islands			1.3	6.6		.5		1.8	2	.5			24.6
Iriga, Camarines Sur			8.1	24.7	3.6	.5	1.8	44.2	8.6				112.1
Calapan, Mindoro				*11.9	1.8	.8	2	17	4.6	.8			61.9
Virac, Albay	6.4	7.1	36.6	26.7	31.5	.8	.5	44.4	63.2	9.4	16.5	4.3	300.7
Naga, Camarines Sur			2.5	68.3	30.7	.8	4.1	5.6	10.9				155.3
Tigaon, Camarines Sur	5.6	7.6	10.7	74.9	50.5	3.9	1.5	51.1	28	.3	3.3		293.4
Libmanan, Camarines Sur	3.6		18.5	94.8	29.8	2.8	3.3	32	11.7				264.9
Batangas, Batangas								2.8					9.4
Calatagan, Batangas													11.3
Balayan, Batangas													13.7
Lipa, Batangas			1.3					.5	2.5				10.6
Lucena, Tayabas		7.8	1.3		5.8	.8		1.6	3.6	3.3			40.2
Atimonan, Tayabas			2	7.3	32.6	4.1		5.3	28.5	1.8	1.8	13.9	214.3
Lian, Batangas													12
Nasugbu, Batangas													0
Ambulong, Tanauan, Batangas		1.3				1							4.3
Daet, Camarines Norte		34.3	68.3	34	43.7	1.3		130.5	232.9	5.6			671.6
Mendez Nuñez, Cavite		2.5											46.3
Alfonso, Cavite		2											11.4
Indang, Cavite													34.4
Canluban, Calamba, Laguna		.8				.3		.8		.5			16.9
Silang, Cavite		2											49.5
Maragondon, Cavite													10.5
Paracale, Camarines Norte	43.2	21.8	33.1	66.6	59.4	9.9	26.4	18.5	7.4	5.5	45.5	61.9	539.7
Santa Cruz, Laguna		1.8	3.3	1				.5					13.2
Buenavista, General Trias, Cavite													26.7
Fort Mills, Corregidor, Cavite †													1.5
Imus, Cavite		.3				.3	.3						78.6
Alabang Stock Farm, Alabang, Muntinglupa, Rizal †													77.5
Cavite Naval Station, Cavite, Cavite <sup>b</sup>													74.7

† Voluntary or cooperative station.

<sup>a</sup> Amount of rainfall from 15 to 20.

<sup>b</sup> Rain in 24 hours beginning 8 a. m.

## Daily rainfall at the stations of the Weather Bureau, February, 1921—Continued

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lamao Horticultural Station, Lamao, Limay, Bataan †	mm	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Manila, Manila			43.6	0.8	0.1											
Antipolo, Rizal			31	4	3.1											
Balanga, Bataan			.5	.5			1									
Montalban, Rizal †			44.4	2												
Hacienda Pintong Sapang, San Jose del Monte, Bulacan †			58.9	17.8												
Mabayuan Dam, Olongapo, Zam- bales †																
Malolos, Bulacan			9.7													
Pampanga Sugar Mills, Del Car- men, Pampanga †						0.5										
San Fernando, Pampanga						2.5										
San Isidro, Nueva Ecija			.5													
Iba, Zambales																
Concepcion, Tarlac				2.3												
O'Donnell, Capas, Tarlac				12.4												
Hacienda Luisita, Comillas, La Paz, Tarlac †																
Hacienda Luisita, San Miguel, Tarlac, Tarlac †																
Tarlac, Tarlac																
Paniqui, Tarlac †																
Camiling, Tarlac																
Muñoz Agricultural School, Mu- ñoz, Nueva Ecija †												0.5				1
Baler, Tayabas	34		66	4.3		1	9.9					15.7	59.7	33.5		
Dagupan, Pangasinan		3.6														
Rosario, La Union																
Tubao, La Union																
Aringay, La Union																
Baguio, Mountain Province	1.2	.5	.5	1.1	3	3.8										
Naguilian, La Union																
San Fernando, La Union																
Sagada, Mountain Province †		3	3.8		18.3	.5										
Bontoc, Mountain Province †	1.5		1.3		2.5	.3										
Candon, Ilocos Sur		3.3														
Vigan, Ilocos Sur		6.9														
Tuguegarao, Cagayan	40.1	.3	5.9	1.6	8.9	1	1.3	2.4	0.8	3.6	0.3					
Tayum, Abra †	1											1.3				
Laoag, Ilocos Norte	.5	12.7														
Aparri, Cagayan	42.3		2	.3	18.1	15.3	9.6	5.9	3.8		3.1	1.8	.3	.3		
Cape Bojeador, Burgos, Ilocos Norte	2	4.6			2.3	.8	.5			1.3						
Basco, Batanes	10.7	4.6	5.1	3.3	15.7	20	18.5	18	2.5	1		1.3		5.8	10.2	3.6

† Voluntary or cooperative station.

Daily rainfall at the stations of the Weather Bureau, February, 1921—Continued

Station.	Day of month.												Total.
	17	18	19	20	21	22	23	24	25	26	27	28	
Lamao Horticultural Station, Lamao, Limay, Bataan†	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Manila, Manila													44.5
Antipolo, Rizal										0.8			38.9
Balanga, Bataan		0.5	1.8										4.3
Montalban, Rizal†		.8											47.2
Hacienda Pintong Sapang, San Jose del Monte, Bulacan†													76.7
Mabayuan Dam, Olongapo, Zambales†													0
Malolos, Bulacan													9.7
Pampanga Sugar Mills, Del Carmen, Pampanga†			1.3										.5
San Fernando, Pampanga													1.3
San Isidro, Nueva Ecija		1.3								.3			4.6
Iba, Zambales								1.3					1.3
Concepcion, Tarlac		.8										50.8	53.9
O'Donnell, Capas, Tarlac		1.5	.3										14.2
Hacienda Luisita, Comillas, La Paz, Tarlac†													0
Hacienda Luisita, San Miguel, Tarlac, Tarlac†				.5									6.1
Tarlac, Tarlac													0
Paniqui, Tarlac†													0
Camiling, Tarlac													1.5
Muñoz Agricultural School, Muñoz, Nueva Ecija†		1.8	6.9					.3	1.5	4.8	0.8	2.3	242.5
Baler, Tayabas										.5			4.1
Dagupan, Pangasinan										.3			24.9
Rosario, La Union													15
Tubao, La Union													27.9
Aringay, La Union										2.7			48.2
Baguio, Mountain Province			2										16.3
Naguilian, La Union													2.8
San Fernando, La Union								.5					8.3
Sagada, Mountain Province†		.8	11	0.8	1			4.6			26.7	13.7	84.2
Bontoc, Mountain Province†			1.3					8.1			2.5	23.6	41.1
Candon, Ilocos Sur			1.8										5.1
Vigan, Ilocos Sur			.5										7.4
Tuguegarao, Cagayan		.8	8.1	.5					.8	.8			77.2
Tayum, Abra†													2.3
Laoag, Ilocos Norte									1.3				14.5
Aparrí, Cagayan	9	14.5	11.4	24.2	18.8	0.3			1.5	.5			183
Cape Bojeador, Burgos, Ilocos Norte	1.3	4.8	1.5	10.9									14.1
Basco, Batanes		4.8	1.5	10.9						7.6	.3		145.4

† Voluntary or coöperative station.

MAXIMUM AND MINIMUM TEMPERATURES AT THE STATIONS OF THE WEATHER BUREAU, FEBRUARY, 1921

Day.	Jolo.		Lais, Malita.		Malita.		Lebak, Cotabato.		Lamitan, Isabela, Zamboanga.		Malamaui, Isabela, Zamboanga.		Zamboanga.		Davao.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.*	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31	23.4	31.8	22.5	32.7	22.6	32	24	29.6	22.9	27.9	23	27.8	23.5	30.9	22
2	28	23.3	31.9	21.5	30.9	21.8	28.1	23.1	30.5	20.4	30	22.1	29.9	23.8	31.2	22.3
3	28.6	22.7	32.4	20.4	33.4	21.4	31.2	23.5	31.6	20.1	29	22.2	28.7	22.9	31.2	22.1
4	29	22.6	31.4	21	33.4	21.8	32	24.5	31.4	19.3	28.8	23.2	30.7	22.2	32.7	22
5	28.1	23.1	32	21.7	33.3	22.8	31.1	23.5	32	20.6	29.8	23.3	30	23	31.2	22
6	27.7	22.5	32.4	21.9	32.6	22.5	31.1	23.4	31.2	19.8	29.5	23.2	28.9	23.5	31.7	21.7
7	28.8	22.8	28.7	20.5	29.1	22.6	30	23.2	30.6	20.4	29.4	23.7	30	23	30.7	23.5
8	26.8	22.5	32	21	32.3	21.9	31	23.7	32.4	19.6	29.7	23.6	29.9	23	31.2	21.2
9	28.1	22.8	31.5	20.3	31	21.2	31.4	23.4	31.1	18.4	29.1	23.5	29.5	22.4	31.3	22.2
10	29.5	23.5	31.6	22.5	32.6	22.4	31.2	23.8	31.9	20.2	28.4	23.7	28	23.4	31.7	23
11	28.8	23.5	30.6	23.4	32.4	22.9	31.5	22.9	31.7	21.7	30	23	30.5	23.2	31.2	23.3
12	28.2	25.3	31	20.5	31.4	21.9	32.1	22.7	32.5	20.2	30.6	23.7	33	23.5	32.2	21
13	28.1	22.8	27.7	22	27.4	23.2	31.2	22.5	32.4	20.5	30.5	22.5	32.9	22.4	30.7	22.5
14	29.1	23.8	32.1	21.2	32.1	23.5	32	22.5	32.1	21.6	30.4	20.2?	28.8	23.2	32.2	21.9
15	31	21.8	31.6	22	33.2	22.8	22.8	22.5	32.3	19.1	30.7	23.8	31.7	22.8	31.2	22.5
16	28.6	24.2	28.8	23	29.6	22.4	32.1	24.1	32.2	22.1	30.8	23.8	32.1	23.8	30.7	22
17	28.3	25	28.6	22.9	29	23	31	24.1	31.6	21.4	30.8	23.7	32.1	23.6	30.2	22.8
18	27.5	23.8	30.2	25	31.4	24.2	31.6	22.1	31.4	21.5	29.8	23.4	32	23.5	31.7	23.2
19	28.3	23	30	22.9	31.8	22.6	31.1	23.6	32.2	20.2	29.9	23.2	31.6	23.9	-----	-----
20	29.1	23.5	30.6	22	32	21.2	31	23.8	30.2	18.6	30.3	20?	28.8	23	-----	-----
21	28.5	23.4	30.4	21.7	32.6	21.7	30.5	24.4	31.5	20.1	28.6	23.2	28.5	23.3	-----	-----
22	27.5	23	32.3	23.5	32.5	23.3	30.2	23.1	31.4	20.6	29.7	22.5	32.5	22.8	-----	-----
23	27.3	23	31.4	23	31.9	22.8	31.1	22.8	31.8	20.4	30.3	23.3	29.2	23	-----	-----
24	26.8	23.9	30.2	22.3	31.8	22.7	31.2	23.8	30.6	22.1	30.5	23.4	31.6	23.4	32.9	22.9
25	27.3	23.3	30.7	23.4	31.4	23.2	30.7?	23.6	31.6	21.8	29.8	23.7	27.9	23.4	31.7	23.6
26	28.3	23	28.2	23.3	27.6	22.9	30.5	23.1	32.4	20.6	29.5	22.7	29.5	22.8	28.1	23.3
27	26.8	22.9	31.7	22.4	31.8	22.5	31.2	23.6	32.7	20.3	29.8	23.5	31.9	23.1	31.5	22.5
28	27.6	22.3	30.7	23.3	32.3	22.9	30.5	23.5	33.4	21.7	30	23	27.5	22.4	30.7	23.9
Mean	28.3	23.2	30.8	22.2	31.6	22.5	31.1	23.4	31.7	20.6	29.8	23	30.2	23.1	31.3	22.5

Day.	Pikit.		Bual, Dulauan.		Cotabato.		Naganaga, Margosatubig.		Malabang.		Cateel.		Ganasi.		Camp Kalao, Monkayo.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	33	21.3	33.4	-----	32.2	22.5	33.7	22.5	31.8	20.7	28.5	22.9	-----	-----	31.5	21.5
2	33.8	20.3	34	-----	31.3	22.4	34.5	20.3	30.6	20.3	29.8	20.9	-----	-----	33	21.5
3	35	22.7	34.2	-----	32.6	23.5	34.7	22.2	31.5	20.4	29.7	21.3	-----	-----	33.1	22.8
4	33.9	22.1	33.7	-----	31.4	22.1	33.5	20.7	30.6	21.4	30.2	21	-----	-----	32.5	21.3
5	34.9	22.3	33.8	-----	32.5	22.6	34.2	23.2	30.8	22.2	28.1	20.5	28.5	18	30.5	21.2
6	34.3	22.4	32.6	-----	31.8	22	34.5	22.5	30.6	21.8	29.5	22.6	29	18.3	31.9	21.1
7	33.4	24.2	32.5	-----	32.4	23.2	33.5	22.2	30.6	22.4	29.3	22.5	29.2	18.6	31.9	21.4
8	33.9	21.2	32.6	-----	33	22	33.7	21.2	30.5	21.5	29.3	22.4	29.3	19.4?	32.5	19.5
9	35.3	22.4	-----	-----	31.8	22.5	34.5	22.5	31.6	24.3	27.7	22.9	28.4	20.5	30.5	22.2
10	33.6	23	-----	-----	32.4	22.2	35.5	22.2	30.6	22.4	29.4	22.5	30	-----	30.5	21.5
11	33.2	23.3	32.9	-----	31.5	22.4	34.5	22.5	30.4	20.8	30	23	28.8	18	31.4	22.5
12	33.1	21.4	33.2	-----	32.3	22.6	34.2	22.2	30.8	21.2	30.2	21.3	30.2	17	32	19.9
13	30.1	23	31	-----	31	22.2	34.3	22.2	30.4	21.5	29.4	23.1	30	19	31.7	21.5
14	34.1	21.1	33.4	-----	32.5	21.5	34.3	22.2	31.4	20.8	30.1	21.6	30.3?	18.8	32.5	21.2
15	32.6	21.4	32.4	-----	32.8	20.5	33.7	22.2	30.6	19.4	27.5	23.4	31	18.6?	28.3	20
16	31.2	22.1	30.5	-----	32	21.9	34.5	23.2	30.5	21.5	29.1	23	30.9	18.1	30.5	21.8
17	31.4	23	31.2	-----	32	23	33.7	22.5	30.6	21.3	29.5	22.7	30.5	18.2	31	22
18	32.2	22.4	31.7	-----	31.4	22.9	34.2	22.3	30.6	22.8	29.6	22.7	30.6	19.8	31	21.6
19	32.6	22.4	33.4	-----	32	22.2	33.7	23.3	30.2?	23.2	30	22.5	30	20.5	32.5	21.6
20	33.9	23.4	33	-----	32.3	23	33.5	22.5	31.3	22.6	27.1	22.8	29	20	29.5	21.4
21	33	23.1	33	-----	32	22.5	34.2	23	31.4	22.6	28.8	22.6	29	19.5	30.4	22
22	33.5	24.2	32.6	-----	32.8	23.5	33.7	22	30.6	23.6	29.9	23.4	30	20.5	32	21.5
23	33.4	24.1	33.2	-----	32.3	23.6	33.3	22.5	30.8?	23.4	30.3	22.5	30	20.2	32.5	22
24	34.4	22.2	33.3	-----	32.9	23	33.7	22.2	30.6	21.5	29.9	23.1	28.8	-----	32.5	22.5
25	32.6	23	33.1	-----	30.5	22	34.2	22.5	31.4	22.9	28.6	23.4	29	20.5	32.4	22
26	27.4	23.1	27.7	-----	27.6	22.8	33.7	22.3	29.8	22.4	25	23	28.8	20	26.2	22
27	33.6	23.2	34.2?	-----	32.4	23.2	34	22.5	31.6	22.2	29.5	22.1	27.5?	18.1	32.5	21.1
28	31.6	23.3	31.5	-----	31.5	23.1	33.5	22.2	30.4	23.8	29.4	22.7	28.5	21	30.6	22.5
Mean	33	22.6	32.6	-----	31.9	22.5	34	22.3	30.8	22	29.1	22.4	29.4	19.2	31.3	21.5

\* These minimum temperatures seem to be not very reliable.

Maximum and minimum temperatures at the stations of the Weather Bureau, February, 1921—Cont.

Day.	Camp Keithley, Dansalan.		Veruela.		Sumilau.		Cagayan.		Talacogon.		Butuan.		Mambajao.		Dumaguete.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	27.5	17.6	30	21.8	29.8	19.7	31.2	20.8	21	30.2	22.5	29.7	24.5	29.9	25.4	
2	26.8	17.1	32.3	22.7	29.6	18.3	31.5	21.7	22.2	33	22.3	29.8	23.9	30.3	24.4	
3	27.5	18.9	33.6	22.2	29.5	18.3	31.8	21.7	21	33.6	22.8	29.3	22.3	31.3	22.6	
4	26.6	17.9	31.4	23.2	29.4	17.4	31.8	21.5	21.2	32.6	22.3	29.9	22.1	31.5	23.7	
5	27.3	17.5	29.5	21.5	29.1	18.5	32.1	21.2	22.3	34.1	22.4	29.5	23.3	30.9	24	
6	27.9	18.9	31.2	22.2	29	18.1	31.5	22.7	21.3	31.4	22.2	29.4	23.5	31.3	25	
7	28.3	17.9	31	22.7	30.7	17	32	21.6	22	32.9	22.7	29.8	24.5	30.2	25.5	
8	27.8	17.9	32	21.2	30.4	16	31.3	20.9	21.7	31.4	21.8	29.9	24.5	30.5	22.6	
9	28.3	19	29.8	22.7	28.6	17.7	32	22.6	22.1	33.6	21.7	29.6	23.3	30.9	23.8	
10	28	17.9	31	22.7	29.8	19	31.2	21.6	22.2	34	22.4	29.9	23.9	31	24.7	
11	27.3	17.9	31	22.4	29.7	17.5	31	21.4	20.4	33.6	22.1	30.3	24	31.2	25	
12	26.8	18	31	20.7	29.4	16.5	32.9	20.8	20.2	33.5	21.3	30	23.9	31.1	25.1	
13	25.9	19.8	30.2	22.4	27.9	18.4	30.9	22.5	22.3	31.3	22.7	27.4	23.7	30.3	24.4	
14	27.9	17.1	28.7	22.2	29.5	20.1	33.4	21.1	22.4?	32	22.3	31.4	24.4	30.9	25.5	
15	25.9	15	26	21.7	27.6	20.4	30.7	19.8	21.7	29.9	20.9	30.3	24.6	30.3	26	
16	24.9	18	27.8	22.7	27.7	19.8	32.3	21.1	20.3	30.4	21.9	29	23.5	30.7	24.4	
17	25.3	19.4	29	22.5	27.7	18	30.5	23.4	20	31.6	22.6	27.4	23.3	28.3	24	
18	24.3	18.5	30	21.8	29.3	19.3	30	21.8	21.2	30.6	20.9	27.4	23.3	29.9	23.3	
19	25.9	18.5	32.4	22.6	27.8	17.5	29	21.4	21.3	31.6	22.4	27.1	23.2	27.9	23	
20	26.4	19	26.8	23.2	28	19	30.1	21.3	20.7	29.9	22.3	28.6	23.5	30.3	23.7	
21	26.3	19	30.6	22.8	29	18.7	31	22.4	22	31.6	22	28	23.5	30.4	24.4	
22	25.8	19.6	29	22.7	28.3	19.3	31.1	23.1	21.4	31.6	22.4	27.4	23.3	29.9	24.4	
23	25.5	18.9	32.4	23	29.2	19.1	30	23.4	21.2	30.9	23.1	27.4	23.3	25.7	23.4	
24	26.4	17.2	29.8	22.7	29.4	17.7	30	21.5	22.2	32.4	23.1	27.4	23.3	29.9	23.5	
25	27.3	19.7	30	23.7	27.6	19.1	30.2	22.5	22.1	32.6	22.4	27.4	23.3	30	25	
26	25.2	18.1	25	22.2	23.8?	19.2	28	22	23	26.9	22.5	27.4	23.3	29.6	22.7	
27	27.7	19.1	31.4	22.2	28.3	19	31	22.6	23	31	22.2	30.3	23.2	30.7	24.7	
28	26.8	19.4	30.2	22.5	28.9	19.2	30.2	23	23?	33.2	22.9	29.2	24.9	30.4	24.9	
Mean	26.7	18.3	30.1	22.4	28.8	18.5	31	21.8	21.6	31.8	22.3	29.3	23.7	30.2	24.3	

Day.	Tagbilaran.		Iwahig Penal Colony, Puerto Princesa.		Dalaguete.		Surigao.		Biaong Cui's Farm, Barili.		Maasin, Leyte.		Isabela, Occidental Negros.		Hacienda Tanolo, Hinigaran.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.8	22.1	31.4	22.8	29.1	23	29.2	23.6	23.6	22.1	30.5	22.2	30.8	21.8	22.4	
2	31.2	22.4	31.8	21.8	29.7	25.3	29.9	22.8	26.5	22.5	33	23	31.3	23.2	23.1	
3	31.3	22.4	29.4	21.8	31	23	29.9	23.8	30.7	22.2	34	22	32?	20.2	20	
4	29.8	22.9	31	21.5	30	23.7	29	23	29.5	23.1	32	22.4	31.2	21.6	22.4	
5	30.3	21.4	29.7	21.8	30.2	24.2	29.9	22.7	31.2	22.5	33.1	22	33.2	21.4	22.4	
6	30.8	22.2	30.8	21	29.6	25	27.6	22.7	29.5	22.5	30.8	22.2	32.4	21.6	21.6	
7	30.8	21.9	30.8	21	29.7	25	29.4	23.5	28.2	22.2	34	22.4	31.6	21.6	22.2	
8	29.6	20.5	30.8	22	29.6	23.2	29.9	23.4	28.5	22.1	33.8	22	31.7	20.2	21.7	
9	31.2	22.4	31	22.8	30.9	24.5	30	23.7	29.2	22	33	22.4	31.9	20.4	20.8	
10	31.1	23	31.2	22	30.8	24.9	30.6	23.9	27.2	21.5	33.3	22.5	32.9	21.5	21.6	
11	31.2	22.3	30.8	22.4	30.5	25.1	30.4	22.7	25.6	21.6	33.6	22.5	32.2	21.5	22.3	
12	30.7	21.5	31.8	22.8	30	25.6	29.9	23.4	27.2	21.2	33.8	22.2	33.2	19.8	20.5	
13	32.7	20.5	30.6	22.8	30.4	24.5	27.8	22.4	26.7	21.1	30.8	22	32.6	21.5	22.7?	
14	33.4	22.2	31	22.7	30.9	24.1	29.1	23.2	26.8	22.1	32.2	22.8	30.6	22.4	21.5	
15	32.4	21.2	31	22.7	29.6	24.5	28.4	24.1	26.5	22.5	34	23	32.1	23.5	22.7	
16	32.6	21.9	31.2	22.2	29.5	24.6	27.9	24.1	26.2	21.8	34.5	23	32	23.2	22.4	
17	29.4	20.3	30.8	19.2	28.1	25.3	25.4	23.2	26.7	21.5	30.8	22.8	29.2	22.4	23.5	
18	31.5	20.3	30.8	21.2	29	23	27.8	23.7	25.9	20	32	22.4	31.8	23.7	23.4	
19	26.1	22.5	31.2	22.8	27.5	23.6	24.8	22.7	25.1	20.1	33	22.2	29.3	22.8	23.7	
20	31.2	21.7	31.2	22	29.3	23.6	27.5	22.4	25	19.9	35	21.6	32.5	22.2	22.6	
21	30.2	22.3	31.2	22	29.5	24.7	29.2	22.8	25.5	21.2	34	21.4	30.5	21	22.5	
22	30.2	22.9	32	21.8	29.1	25	27.3	23.8	25	20.8	29	21.8	31.4	23.2	22.6	
23	26.4	22.4	30.8	21.7	26.7	23.2	25.4	23.4	24.7	20	29.5	21.6	30.2	22.4	23.5?	
24	30.8	22.9	31.2	22	29.4	23.6	28.2	23.2	23.2	21.5	30.6	22	31.4	22.1	22.5	
25	29.4	23.5	30.4	22.8	29	23.6	29.2	23	26.8	21.7	31	22.4	32.7	22.6	22.5	
26	29.5	22.2	30.4	22.4	29.2	23.2	28.5	23.4	27.4	21.2	32	22	31.7	22.2	22.5	
27	30.2	22.6	31.8	22	29.4	25.2	30.4	23.4	27.2	21.8	31.5	22.8	32.4	23.5	23.2	
28	30.7	23.3	31	22.4	30	24.5	31	23	29.1	22.4	33	22.8	31.5	23.3	23.1	
Mean	30.6	22.1	31	22	29.6	24.2	28.7	23.2	27.3	21.6	32.4	22.3	31.7	22	22.4	

Maximum and minimum temperatures at the stations of the Weather Bureau, February, 1921—Cont.

Day.	Cebu.		La Castellana.		Central Azucarera de La Carlota.		Maa Sugar Central, Bago.		Valladolid.		San Joaquin.		Murcia.		Bacolod.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	29	24.1	21	21	31.5	20.1	33	21.5	32.2	23.7	24.5	31.2	21.5	30.5	23.6	
2	31.2	24.8	22	22	31.9	20.1	32.5	21.7	32	22.7	24.1	31.7	22.2	30.5	21.9	
3	31.7	23.9	19.5	19.5	31.9	20	33.8	20.8	33.5	20.2	24.1	32.4	20.3	30.9	22	
4	30.6	24.2	21	21	32.1	21	32.5	21.4	34.2	21.2	23.4	31.2	22	31.3	21.5	
5	30.8	24.7	21	21	32.2	21.6	32.2	22.5	33.9	22.7	22.4	31.6	22.1	31	23.6	
6	30.8	24.5	21.4	21.4	32.2	21	33	21.3	34.2	21.9	22.9	31.4	21.7	31.6	22.2	
7	30.3	24.9	21.5	21.5	31.9	22	33	22.6	31.5	23.5	23.2	32.8	22.6	31.5	23.8	
8	30.7	23.9	20.5	20.5	31.2	21	33.7	21.3	31.2	23.1	31.6	24.1	31.3	31.2	21.7	
9	32.6	24.7	21	21	32.3	20.3	33.2	20.3	33.2	21.2	33.1	22.8	32.8	20.6	21.4	
10	31.6	24.1	21	21	32.5	20.9	33.6	21.5	34.9?	22.2	33.6	23.9	32.6	21.2	21.8	
11	31.4	24.5	21	21	32.8	21.4	33.3	21.4	34.2?	21.3	32.6	23.2	32.7	22.4	22.3	
12	29.9	25	20.5	20.5	33.1	18.7	34.6	19.5	33.5	22.2	32.1	20.5	32.8	21.8	23.3	
13	29.9	24.4	20	20	34.7	20	34.7	21.5	34.2	23.4?	32	25.1	33.2	20.9	23.7	
14	30.6	24.4	21	21	33.2	19.7	33.6	21.7	32.2	22.2	31.8	25.9	32.1	20.6?	23.4	
15	29.6	23.7	22	22	33.9	20.7	35.3	20.6	33.5	22.4	32.5	25.9	34.5	21.2?	22.1	
16	30.6	23.9	21.8	21.8	33.5	19.5	34.8	22	33.2	22.2	32.2	24.9	34.1	21.9	23.5	
17	27.2	23.4	21.2	21.2	29.5	22.1	32.5	22.6	32.3	22.5	31.1	24.9	28.2	23.2	23.8	
18	29.4	23.5	20.6	20.6	34.3	21.5	32.7	23.5	35.2	22.2	31.1	25.1	32.9	22.1	23.8	
19	25.2	23.4	21.8	21.8	33.2	22.3	33	23.3	32.4	21.5	31.7	25	30.2	22.8	23.2	
20	29.9	23.4	21.5	21.5	30.9	21.1	32.2	21.7	32.7	22.2	31.9	22.8	29.6	21.1	23.4	
21	30.7	23.6	20.5	20.5	31.7	21.2	32.3	21.5	33.2	22.2	31.7	22.3	31.6	22.1	23.4	
22	29.6	24	21	21	31.7	22.4	32.2	23.4	33.2	22.2	31.1	25.3	30.1	22.6	22.8	
23	25.6	22.7	22	22	27.8	21.7	26.4	22.4	26	22.2	32.6	24.8	28.8	21.3	22.2	
24	29.5	23.4	21.5	21.5	29.2	21.6	31.3	22.6	32.7	22.5	31.3	24.4	28.7	21.3	22.2	
25	30	23.8	22	22	30.8	21.3	31.8	22.5	33.2?	23.2	31.7	24.7	30.6	21.8	23.6	
26	29.4	24.8	22	22	30.7	21.8	32.4	22.4	32.2	22	30.8	23.6	31.1	22.1	22.6	
27	30.4	25	22	22	31	21.9	33.3	22.3	33.5	23.2	31.4	23.2	33.4	22.5	23.2	
28	30.5	23.8	22	22	32.8	22.6	32.6	22.9	32.5	22.4	31.4	23.9	23.4	30.6	23.4	
Mean	30	24.1	21.2	21.2	31.9	21.1	32.8	21.9	32.9	22.3	31.9	24	31.6	21.8	30.4	22.8

Day.	Oton.		Iloilo.		San Jose de Buenavista.		Tuburan.		Leon.		Silay.		Calag-itan, San Remigio.		Cuyo.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	32.8	23.2	30.4	23.5	31.2	21.4	30.7	22.9	31.7	30	23.5	20.5	29.6	24.3		
2	33	22.6	32.3	23.4	32	22	30.3	22.3	32.6	30.6	20.6	21	32.8	24.7		
3	33	22.5	32.8	23	31.7	22	30.7	22.5	33.2	32.5	21.5	20	31.1	22.9		
4	33.1	21.2	30.5	23	31.5	23.3	30.7	22.2	31.7	29.6	20.5	21.2	21	22.5		
5	33.2	23.4	30.7	23.8	32.3	21.2	30.7	22.6	34.1	30	23	20?	29.8	24.9		
6	34.7	21.4	31.3	22.4	32.3	21.2	30.7	22.3	34	31	22.6	20.1	29.7	25		
7	33.3	23.2	31.4	24	32.3	21.2	30.8	23	34.2	30.5	23.1	21	30	25.3		
8	34.2	23	31	23.5	31.4	21	30	21.5	33	30	19.2	20.1	30.5	24.9		
9	34.7	22.6	31.7	23.3	31.3	22	30.9	22	34.1	31	21.4	20	30.4	25.3		
10	34.4	22	32.2	23	31.5	22.5	31.4	22.6	33.4	31.5	20.6	20.1	30.7	25.2		
11	34.6	22	31.9	22.7	31.8	21.8	31.8	23.8	33.1	31.5	23	21.2	30.5	25.2		
12	33.8	22.4	30.9	22.9	32	19.2	32.1	23.1	33	30.5	21.5	16.7	30.7	25.6		
13	33.2	23.2	31.5	23.7	32.2	20.4	32.5	21.3	32.4	30.6	23	17.8	29.7	25.4		
14	32	24	29.8	24.4	31.5	19.9	30.3	22.7	31.1	30	22.5	18.9	29.5	25.3		
15	33	22.5	30.8	24	32.3	22	31.6	22.8	32	30.5	23	22.3	31	24.9		
16	32.1	23	30.2	23.2	33.5	19.5	29.7	22.4	30.3	29.5	21.5	18.9	30.1	24.8		
17	30.8	23.2	28.9	23.6	33	20.6	27.1	23.2	29.4	27.6	23.2	18.9	28.7	25.6		
18	31.2	23.8	29.3	23.6	33.5	26	30.8	21.2	29.6	29.2	22	20.5	29.9	25.3		
19	30	22.8	29.6	23.5	32	21.4	26.3	23.5	30.2	26.5	23	21.2	29.5	25		
20	31.4	22.2	30	22.4	32.1	23.2	28.7	22	30.9	27.8	23.4	21?	29.5	24.9		
21	33	22.8	30.4	23.1	31.7	21.6	30	22.8	31.1	29.5	23.5	22.3	28.5	25		
22	29.7	23	28.5	23.2	31.6	22.7	28.3	23.6	28.9	27.5	23.5	22.3	28.5	25		
23	24.2	22.2	23.5	22.1	29.8	25.1	23.7	22.9	24.5	28	21	23.4	26.5	24.4		
24	30.6	22.5	28.8	22.3	32.8	22.5	27.7	23.2	29.2	27	22.9	23	28.5	24		
25	31.9	21.9	29.8	23.5	32.4	23.3	29.1	23.8	32.2	29	23.9	22.2	28.5	24.1		
26	32.1	23	29.8	23.4	30.4	23.3	29.9	23.9	31.9	27.5	23.4	22.5	29.5	24.8		
27	33.9	23	30.8	23.9	31.5	22.7	30.5	23.2	32.6	27.5	23.5	22.5	30.5	25.2		
28	34.1	24	31.2	24.5	32.6	23.4	29.4	23.3	33	31.1	23.5	23.3?	32.6	25.3		
Mean	32.4	22.7	30.4	23.3	31.9	22.1	29.9	22.7	31.7	29.6	22.4	20.6	29.9	24.8		



Maximum and minimum temperatures at the stations of the Weather Bureau, February, 1921—Cont.

Day.	Barotac Nuevo.		Hacienda Ilaya, Victorias.		Hacienda Bilbao, Manapla.		Cadiz.		Dingle.		Ormoc.		Guiuan.		Bogo.	
	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum. <sup>a</sup>	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.5	22.5	29.2	23.2	31.7	21.7	29.7	23.8	31.5	22	31.9	23.4	31.3	24.4	29.9	24.2
2	31.8	22.6	29.5	22.7	31.9	22.1	29.4	22.6	31.8	22.6	33.1	22	31.5	23.8	30.7	24
3	31.9	22.5	30.5	23	31.6	21.8	30.3	22.3	32.2	21.5	33.2	21.6	31.9	22.3	30.9	23.1
4	31.6	22.8	29.6	22.2	30.8	21.4	29.2	21.5	29	20	33.6	21.5	31.8	21.8	30.8	23.2
5	31.2	23.3?	29.4	21	29.9	21.1	30.1	24.2	31.5	22.3	33.6	20.9	32	22.5	31.9	23.5
6	31.5	22.4	30	22.9	31.1	22.4	30	24.3	31.8	22.4	33	18.1	31	22.5	31.8	23.4
7	30.6	22.4	29.2	23.3	31.6	22.5	29.7	23.2	33	23.5	33.2	18.3	30.6	23.7	31.9	23.5
8	31.3	22.3	30	23.7	30.6	22.2	29.3	22.1	32.1	21.9	33.2	22.4	31.6	24.8	31.9	23.6
9	31.4	22.5	30.2	23	31.3	21	29.7	22.3	33	22.6	33.5	20.4	31	22.5	32	23.6
10	30.5?	23.4?	30.1	23	31.8	22.1	30.1	23.1	32.7	22.2	33.2	20.6	31.3	22.7	32.2	23.3
11	31.2	22.3	30	22.6	31.9	22.3	29.7	22.2	33.1	21.9	33.2	21.9	31.7	22.1	32.4	23.4
12	30.5	23.2	29.6	23.1	32.1	22.2	29.7	22.5	33.5	22	33.7	21.4	31.5	23.3	32.3	23.2
13	29.3?	21.6	29.5	23.2	32.4	22.5	29.9	23	33	22.8	33.2	21.4	32	24.4	32.1	23.1
14	29.3	21.3	30.3	22.6	31.6	22.1	28.5	23.4	32.5	23.5	32.8	22	31.4	23.5	32	23
15	29.2	21.4	30.5	23.4	31.7	22	29.9	22.8	31.1	23	32.1	22.9	31.4	23.3	31.9	22.8
16	29.3	21.3	29.3	22.7	30.9	21.9	29	22.8	32.1	22.2	32.7	23.4	31.3	23.2	31.9	23.7
17	29.4	21.1	30.7	23	31.8	22.5	27.3	24.8	31.5	22.5	32.8	23.1	28.8	23	31	23.4
18	29.3	21.3	30.5	23.2	31.4	22.6	29.2	22.9	30	21.2	31.5	21	32	23.1	30.2	23.3
19	29.8	22.3	30.2	23.5	30.8	21.9	28.7	23.8	31	22.2	31.6	21	26	22.5	30.1	23.4
20	29.6	21.3	29.4	22.2	31.6	21.2	29	22.8	29	21.9	30.8	22.5	27.5	22	30	23.4
21	29.6	22.3	29.8	22.5	30.7	22.1	29.3	23.8	30	22	32.9	22.2	30.8	22.8	30	23.3
22	29.3	22.1	30	23	29.8	21.7	27.1	23.1	31	22.3	33	22	26.8	23	29.5	23.2
23	29.4	22	29	22.8	29.4	20.9	29.2	22.3	28.1	21.8	26.8	22.6	26.8	23	29.2	23.1
24	29.1	21.9	29.5	23	30.7	20.5	27.5	22.4	25.4	21.9	28.5	22.8	26.5	23	27.4	22.7
25	29.4	22.6	29.7	23.1	31.4	21.2	29.1	24.2	28.9	22.1	31.8	22.9	31	22.4	29	22.6
26	30.2	22.5	30.8	23.3	31.6	21.6	29	23.6	30.3	22.2	31.6	22.2	31.4	22.6	30.5	23
27	31.4	22.8	30.4	23.5	31.8	21.9	29.2	22.7	33	22.7	33.2	22.2	31	23.2	31	23.2
28	31.5	22.7	31	23	31.9	22.3	29.3	23.1	33	23	32.5	22.9	32	24	31.9	23.5
Mean	30.4	22.2	29.9	22.9	31.3	21.8	29.2	23.1	31.3	22.2	32.4	21.8	30.5	23	30.9	23.3

Day.	Tacloban.		Capiz.		Borongan.		Catbalogan.		Calbayog.		Masbate.		Romblon.		Batag Light-house, Laoang.	
	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.8	23.4	31.2	24	29.6	24.8	30.4	-----	31.2	22	29.6	23.2	29.5	22.7	-----	22.8
2	30.4	23.8	31.4	23.2	30.4	22.2	31.1	-----	31.1	21.3	29.4	23.2	29.2	22.9	-----	22.9
3	31	22.4	31.9	23	30.4	22.1	31	-----	31	22.4	30.4	23.8	30.9	22.7	-----	23.1
4	31.8	23.2	31.8	23.5	30.2	22	31.5	-----	32	21.9	29.4	23.5	29.8	22.2	-----	23.3
5	30.4	22.3	31.8	24.1	30	22.2	30.5	-----	31	21.5	29.4	24.2	29.6	23.2	-----	22.4
6	32	22.1	31.8	24	30	20.8	30.5	-----	31	20.9	30	23.6	29.8	23.7	-----	21.5
7	31.1	23	32.3	24.9	30.1	23.7	31	-----	31	22.4	29.8	24.5	29.5	23.8	-----	23.3
8	30.9	23.1	32.6	23.5	30	25.3	31.3	-----	29.9	22.2	30.4	23.8	30.9	23.3	-----	24
9	30.4	22.6	32.8	24.4	30.1	23.2	30.4	-----	31.1	21.9	30	24	30.4	22.8	-----	22.5
10	31.1	23.4	32.4	23.5	30.4	22.5	31	-----	31.4	22.3	30.4	23.8	31	20.4	-----	23.3
11	31.7	23	32.3	23.1	30.6	22	31.3	-----	31.4	21.3	29.8	23.2	30.3	20.2	-----	22.6
12	32.1	23	32.8	22.5	30.5	22	31	-----	32.5	21.4	31	23.8	30.9	22.2	-----	23.4
13	31.9	22.1	31.8	24.1	30.6	24.8	31	-----	31.5	21.4	30.4	23.4	26.3	23.9	-----	23.8
14	29.9	23.4	30.3	24	29.2	24.9	31.3	-----	29.5	23.4	27	23	27	23.4	-----	22.8
15	31.1	22.9	31.8	23.5	30.2	25.3	29.3	-----	31.9	21.3	29.6	23.6	30.2	23.7	-----	24
16	32.1	23.1	32.2	24	30.6	23.4	30.9	-----	31.8	20.4	30.4	23.6	30.6	23.7	-----	22.6
17	25.6	22.5	29.2	24.3	26.6	23.2	31.4	-----	30	22.8	29.4	24.5	31.7	22.2	-----	23.5
18	30.2	22.2	30.5	24.5	29.8	21	30	-----	31.7	19.7	23.4	23.2	28.8	23.7	-----	24.3
19	25	22.1	29	23.1	26	23.6	30.9	-----	26.4	22.8	23.6	22.6	30.5	23.3	-----	22
20	27	22.1	29.5	23.5	27.6	22.9	26.6	-----	28.8	22.6	27.4	22.5	26.6	22.6	-----	22.4
21	29.5	23.2	29.6	23.6	30.2	22.3	27.5	-----	31.3	22.5	27.6	22.2	27.3	23.1	-----	22.2
22	26.2	22.6	26	23.1	26.1	22.6	29.9	-----	25.8	22.7	25.6	22.2	27.3	23.3	-----	21.6
23	23.9	22.3	24.2	22.6	26.3	23.5	26	-----	24.6	22.6	25	22	24.2	21.9	-----	21
24	26.2	22.5	27.4	22.5	26.2	23.7	25	-----	26.7	22.9	26.6	22.4	27	21.7	-----	21.5
25	31.3	22.5	30	24	30	23.8	26.2	-----	30.7	23	23.4	23.4	27.1	22.7	-----	22.2
26	30.4	22.1	30.5	24.1	29.3	22.9	29	-----	30.8	21.4	30.8	23.4	29.5	23.1	-----	22.9
27	30.9	23.1	30.7	23.8	30.6	24.8	31.4	-----	31	22.4	31.4	23.2	30.9	22.9	-----	24
28	30.8	22.9	32	25	30.7	23.8	31.4	-----	30.9	22.5	30.2	24.2	29.5	24.3	-----	23.4
Mean	29.8	22.7	30.7	23.7	29.4	23.2	30	-----	30.3	22	29.2	23.4	29.2	22.8	-----	22.8

<sup>a</sup> These minimum temperatures seem to be not very reliable.

Maximum and minimum temperatures at the stations of the Weather Bureau, February, 1921—Cont.

Day.	Irosin.		Sorsogon.		Bacon.		Jovellar.		Legaspi, Albay.		Guinobatan.		Polangui.		Bacacay.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1.....	28.3	21.6	29.6	22.9	29.5	22.9	28	23.3	29.8	23.1	29.6	22.3	30.3	22	27.2	22.7
2.....	32.3	20.7	29.9	21.5	30.4	21.5	29.4	24.2	30.4	22.3	30.6	20.8?	30.2	20.9	29.6	21.9
3.....	32.5	20.7	30	21.6	31.5	22.4	30.7	21.7	30.8	23.9	31.5	21.2	32.8	21	29.9	22.8
4.....	30.5	20.5	30	23	30.2	23.2	31.1	22.4	31.1	24	30.6	22.6	34	23	29.1	23.1
5.....	31.5	20.2	30.5	21.9	30	24	31	25.2	30.6	21.8	30.9	21.2	30.7	21.5	29.3	21.4
6.....	33.9	22.2	30.3	22.3	29.8	23.1	30.4	23.2	30.3	23.8	30.9	22.8	33	23	28.3	23.2
7.....	29.8	22	28.5	23.5	30.2	23.5	31.1	22.2	27.7	22.8	29.9	22.2	33	22.5	28.2	22.3
8.....	29.8	21	30.9	23.4	29.5	23.4	30	21.8	30.4	23.8	30.5	20.2	32	20.7	29.7	21.5
9.....	32.2	21.6	31.5	21	30.6	22.7	31	22	30.9	23.2	30.9	22.3	33	22	30.1	22.2
10.....	33.2	18.6	31.3	21	31	21.1	31.5	-----	31.3	22	32.7	19.2	32	20.3	29.9	20.7
11.....	32.4	19.4	31.5	21.5	30	21.4	31.5	21.8	31.8	21.8	31.5	20.5	34.4	20.5	29.3	21.4
12.....	29.9	19.4	30.5	21.9	30	21.7	31.1	21.3	31.3	25	31.3	20.4	34.4	20.9	29.8	22.3
13.....	28.3	22.1	27.5	21.6	30.2	23.5	30.4	21.8	26.6	23.6	30.3	22.3	32	21.9	27.8	22.5
14.....	27.5	22.8	29.5	23.5	28.8	23.6	28.8	25.6	30.7	23.8	29.8	23	30.4	23.3	29.4	22.7
15.....	28	22.4	30	23.9	29	24.9	28.6	24.2	30.8	25.1	30.1	24.6	33	22	29.8	23.7
16.....	29	20.3	30.5	22.1	30.2	24.6	29.8	19.4	31.4	24.1	30.8	19.7	30.5	17.8	29.1	20.2
17.....	28.2	20	29.6	23	29.5	23.3	29.5	17.4?	30.1	24	30.9	16.8	31.2	17.4	29.9	22.2
18.....	26.6	20.7	27.1	22.4	29	22.8	29	22	26.3	23	28.3	22.1	30.2	22	27.2	21.9
19.....	27	21.8	27.7	22.5	27	22.9	26.8	21.9	26.6	22.5	28.6	22.5	29	23.9	26.2	22.6
20.....	28.2	21.8	28.3	22.5	28.9	22.1	27	22	25.5	22.6	-----	22.3	28.4	22	26.8	22.5
21.....	27.5	21.9	27.7	22	29	22.4	26.7	22.3	27.2	22.6	-----	22.1	28.1	22	27.3	22.6
22.....	24.4	20.9	25.7	21.6	26.8	22.3	27	22.4	26.7	22.7	25.7	22.2	29	22	26.1	22.4
23.....	25.3	20.5	26.3	21.6	25.6	21.9	27.4	22.3	26.4	22.9	24.8	21.7	28	22.1	26.3	22.3
24.....	26.5	21.4	26	21.6	26	22.4	26.2	22.9	25.4	22.6	27	21.9	27	22	27.6	22.5
25.....	27.4	22.1	24.4	22	25.6	22.7	27.2	22.7	24.8	22.7	28.3	22.5	29	22.5	28.8	22.7
26.....	28.6	21.5	28.9	22.6	30	22.9	30.6	22.2	30.2	22.5	30.1	21.6	29.6	21.3	29.5	22.2
27.....	30.3	22.6	30.1	22.5	30.2	22.8	30.1	21	30.6	24.4	30.8	21	33.7	22	29.1	22.5
28.....	29.8	23.6	31.4	24.5	29.5	23.8	30.5	23.4	29.8	24.6	30.9	22	34.9	23	29.9	23.1
Mean.....	29.2	21.2	29.1	22.3	29.2	22.9	29.4	22.3	29.1	23.3	29.7	21.6	31.2	21.6	28.6	22.3

Day.	Tabaco.		Sumay (Guam), Agaña.		Iriga.		Calapan.		Virac.		Naga, Camarines Sur.		Tigaon.		Libmanan.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1.....	29	22.5	28.8	24.6	31.3	22	28.5	22.1	29.6	22.2	30.9	22.3	29.5	22.3	29.9	22.2
2.....	30.1	22	28.9	24.7	31.4	20	29	22	30.2	22.5	32	21.2	30.1	22.4	30	21.3
3.....	30.3	22.9	28.2	24.1	31.5	20.8	30	21.1	30.5	21.2	33.1	21.5	31.5	22.2	30.9	21.2
4.....	31.2	22	29.8	22.2	31.1	20.7	27.5	24	30	20.3	28	22.1	28.7	23.1	32	22
5.....	29.5	22	28.7	24.2	31.6	21.4	29.5	23	29.2	20.5	30.7	22.1	30.7	21	31.9	22.5
6.....	29.6	23	29.4	24.1	31.3	22.4	29.5	23?	30	22.9	33.2	22.4	30.4	22.4	32	21.6
7.....	30.2	22.7	29.9	24.1	32.1	22.1	29.5	23	29.5	22	27.9	23	30	23.3	31.8	22.6
8.....	28.5	22.1	29.9	24.2	32	21.9	29.1	23	29.4	21.2	30.6	20.6	30.5	21	31.4	21
9.....	30.5	22	28.2	24.2	32.3	22	30	21.5	30.5	22.6	33.5	21.7	31.7	21.4	31.4	21.7
10.....	30.8	21.4	29.7	23.7	32.9	20.1	31	21	30.4	20.5	33.4	21.3	31.9	21	32.8	21.1
11.....	31	22	30.8	25	32	20.9	30.9	19.8	30.6	20.2	32.1	21	31.6	21.2	32.6	21
12.....	31.2	22.9	30.9	22.1	32.1	20.8	29	23.1	30.1	19.5	30.7	22.2	31.7	22.4	32.7	24
13.....	30	22.3	30.9	22.7	30	22.5	28.6	22.5	27.2	21.6	28	23.7	27.1	23	32.6	24
14.....	28	22.1	28.3	24.2	29.8	23	-----	22.5	29.6	22.2	30.5	21.8	30.5	22.7	32.5	23.6
15.....	29.3	23	30	24.1	32	22.1	-----	-----	30.1	22	32.1	21.2	30.4	22.7	32.6	-----
16.....	30.2	20.2	29.8	24.2	31.8	20.8	-----	-----	30.4	19.8	31.9	17.9	31	17.9	31.8	20.6?
17.....	30.3	20.8	31.2	24.7	31.3	17.7	-----	-----	31	19	30.8	17.8	30.2	18.2	30.6	19.7
18.....	28.8	21.9	29.8	24.6	29.3	21.5	-----	-----	27.6	21.4	28.4	22	26.3	21.9	30.1	23
19.....	27.9	21.5	29	24.8	30	20.3	-----	-----	28.5	22.3	29.4	20.2	27.5	21.5	30	22.5
20.....	27.7	22.1	29.2	24.2	31.5	22.1	-----	-----	27.9	22.2	25	21.9	26	22.2	30	22.5
21.....	26.2	22	29.3	25.2	26.7	22.1	30.5	22	26	21.4	25	22.1	25	22.3	29	22.2
22.....	26.8	22.1	29.2	24.6	26.3	21.8	27.5	22.4	26.6	20.9	26.4	21.4	23.8	21.3	30	21.4
23.....	26.4	22.4	31	24	29.7	21.7	26.5	21.5	27.5	21	24.5	20.7	24.2	21.3	30	21
24.....	26.2	21.7	28.3	24.6	28.2	21.6	26.5	21	28	21.1	26.4	21.5	26	21.7	27.8	22
25.....	25.2	22.4	29.8	24.6	28.2	22.5	26.9	21	26.3	22.2	26.5	22.4	25.8	22.4	27.9	22
26.....	28	21.1	27	24.1	31.4	20.5	28.9	22.5	29.5	22	30.1	21.2	29.6	21.7	30	21.8
27.....	30.1	22.9	-----	24.8	31.8	21	30	22.9	29.9	22.6	30.7	22.5	31	22.7	31.1	23.2?
28.....	29.2	22	29.8	24.7	33.1	22	30.2	23.5	29.9	23	32.4	22.8	30.7	23.8	31.8	23
Mean.....	29	22.1	29.5	24.2	30.8	21.4	29	22.2	29.1	21.5	29.8	21.5	29	21.8	31	22

Maximum and minimum temperatures at the stations of the Weather Bureau, February, 1921—Cont.

Day.	Batangas.		Calatagan.		Balayan.		Lipa.		Lucena.		Atimonan.		Nasugbu		Ambulong, Tanauan, Batangas.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.5	21.6	21.8	21.8	29.5	22	28.8	19.8	28.8	20.2	26.5	22.3	33.2	21.8	30.4	22.7
2	32.8	22.5	21.7	21.7	29	22.5	30.5	20	30.5	20.6	28.4	21.8	32	23	31.5	22.2
3	31.5	21.6	21.7	21.7	30	22	30.2	20.1	30	20.1	31	22	32.9	20.9	31.7	22.1
4	29.6	21.5	21.8	21.8	31	21.5	31	20.3	27.5	21.5	25.7	22.3	32	20.5	31	23.3
5	29.6	22.1	21.9	21.9	30	22	30.5	19.9	28.4	21.1	26	23.7	32.1	23	30	23.5
6	29	22.6	21.2	21.2	29.5	23.5	29.1	20.7?	28.7	21.8	26.5	23	32.5	23	31.9	23.5
7	31	22.7	19.4	19.4	31	22	29.5	21.5	28.5	20.6	26.3	23	33	21.7	31.9	23.2
8	32.4	22.2	21	21	29.5	20	30.5	20.3	31	20.8	28.3	22.6	32	21	32	23.1
9	32	20	19.5	19.5	30	22	31.4	21.3	31	19.3	30.1	23.2	32.5	21.4	30.4	21.1
10	31	21.6	20.5	20.5	29.5	22.5	31.3	20.4	30.9	18.5	32	21.2	32.5	20	30.4	22.2
11	30.8	19.6	17.2	17.2	31.5	20.5	32.2	21	32	19	30.9	21.5	32.5	20	32.7	22
12	29.4	22	20.1	20.1	31.6	22.5	27.3	21.1	27.7	20.7	26	23.5	32	20.5	28.1	24.1
13	32.6	22	22.6	22.6	31.5	20.5	29.3	20.8	29.7	21.1	29.1	23.9	32	20	31.2	23.9
14	32.8	23.7	22.1	22.1	31	23	31	20.1	29.3	22.1	27.7	24.8	32.1	20.5	31.3	24.2
15	32.4	24.6?	23.5	23.5	32	21	30.3	21	30.9	20.7	29.9	22.4	31.5	23	32.3	22.8
16	32.4	21.3	22.1	22.1	30	20	31.6	19	30.4	19.2	28.6	20.8	32.5	20	33.6	22.2
17	32.2	18.2	21	21	31	22.5	31	17.3	29.5	19.5	29	24.5	32	21	32.5	21.8
18	28.8	22.5	22.2	22.2	31.7	20.5	28	18	26.1	21	26.6	23.6	31.5	20.5	27	23.2
19	32	22.7	24.2	24.2	31.8	25?	28	17?	28.9	20.6	27.9	24	32.5	20.1	30	23.2
20	31.8	22.5	22.7	22.7	30	23	27	20.3	26.8	21	25.7	23	33.9	20.5	29.2	22.6
21	27.7	22.6	23.2	23.2	30	22.5	28	19.9	28.4	20.8	24.9	22.4	32	21.5	28.7	22.4
22	27.2	23	22.7	22.7	29.8	23	25.4	18.3	25.9	19.7	24.7	21.8	32	21.1	27.2	22
23	22.6	22.6	22.7	22.7	28.8	21.7	27.3	19.8	27.2	19.6	25.6	21.8	31	20.5	28.5	22.1
24	30.4	22.5	22.7	22.7	29.5	22.8	27	20.1	27.5	21.5	25.2	22.8	35	21	29.1	23.4
25	31	21.9	22.7	22.7	29.6	23	27.7	19.7	27.2	19.9	25.4	21.9	35.5	25	28.8	22.5
26	32.8	23.8	22.2	22.2	30	21	28.3	19.5	28.1	20.6	26.8	22	35.5	24.5	30.8	23.6
27	32.8	22.2	22.2	22.2	32	22	32.4	19.7	30	21.1	27.3	24.1	34.5	23	32.1	23.2
28	34	22.2	22.2	22.2	31.7	21.6	30.9	20.7	31.5	22.2	29.2	24.1	33	23.5	33	24.2
Mean	31.1	22.1	21.7	21.7	30.4	22	29.5	19.9	29	20.5	27.5	22.8	32.7	21.6	30.6	22.9

Day.	Daet.		Mendez Nuñez.		Alfonso.		Indang.		Canluban, Calamba.		Silang.		Maragondon.		Santa Cruz, Laguna.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum. <sup>a</sup>	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum. <sup>b</sup>	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	28.7	22	25	18.2	25.9	19.6	26.9	20.3	30	20.6	26.4	16.3	31	20.8	28.5	21
2	25.7	21.5	29.5	18	29.3	18.8	31.2	20.6	31.9	19.2	26	16.7	31	19.5	30.1	21.3
3	30.6	21.3	27.5	18.9	27.7	19.3	29.6	20.5	32	20.2	26.2	18.5	29.7	20.3	31.2	21
4	27	23.3	26	19.8	27.3	19.7	26.4	20.5	32.2	20.9	26.1	18.6	29.7	21.4	28.8	22.4
5	28.8	22.7	25.5	19.9	25.8	19.7	27.1	20.3	31.5	21.1	26.3	18.2	30.3	19.8	28.4	22.3
6	28	21.5	25	19.9	26.5	20.4	25	21.3	31	20.9	27.2	18.1	30.5	21.7	29.9	21.5
7	28.7	22.7	27	18.9	28	19.2	26.3	19.3	31.6	21	27	18	30.6	21.6	28.8	22.2
8	29.1	20.9	27	18.8	29	20.6	29.7	21.2	32	20.8	27.5	19.5	30.5	20.7	30.9	22.2
9	29.2	20.7	28.5	18.5	28.6	18.1	30.7	19.3	32.6	19.8	27.8	19.2	31.3	19.6	32.3	20.8
10	30.1	20	28.5	17.5	29	18.3	30.6	20.5	32	20	28.8	18.8	31	19.7	32.8	20.6
11	29.8	19.7	28	16.9	28.5	17.2	30.1	18.6	32.7	19	28.4	18.5	30.6	18.1	31.8	19.8
12	28	22.9	25.5	20?	27	20.8	27.5	21.6	30.1	21.8	27.6	18	28.9	20.5	27.4	23
13	27.7	23	25.5	20	27	20.5	28.2	21	30.8	21.6	27	18.3	31.8	19.1	28.6	22.5
14	28.6	24.6	26	20	27.7	21.1	28.6	21.8	31	21.9	27.7	18.7	32	21.4	30.2	22.9
15	29.8	21.4	28	19.8	29.6	21.7	30	21.7	32	21.6	28.2	17.7	33.1	19.8	30.6	23.3
16	28.7	18.7	27.5	18.2	29.4	20	29.6	20.5	31.9	19	28.7	17.5	31.9	18.1	31.4	20.2
17	28.4	18.4	27.5	18.5	28	18.4	29	19	32.1	18.2	28.3	17	31.1	17	29	18.6
18	27.6	21.7	22.5	18.5	23.7	19.7	25	20.6	28.2	21.5	28	17.9	28.5	20.5	26.4	21.8
19	26.6	22.5	25	18.8	27.1	19.7	27.2	20.2	31	21.2	27.5	17.3	29.1	21.1	25.5	22.2
20	26	22.1	24.5	18.9	26	20.1	27.1	20.6	29.4	21.6	27	17.3	30.6	21.2	26.1	22.2
21	25.1	22.2	24	18.9	26	19.8	27.9	20.8	30.5	21.2	27.5	17.2	29.7	21.9	27.9	21.9
22	24.9	21.7	23	18	24.5	19.8	29.9	20.8	28.4	21.5	27.3	17.5	30.2	20.6	24.9	22
23	26	21.7	23.5	17	24.7	19.7?	25.8	19.6	28	20.1	28.6	17.7	29.1	18.5	26.3	21.2
24	25.6	22.3	23.5	19	24.5	19.6	25.7	20.5	27.5	21	28.8	18.6	29.2	21.9	26.3	22.3
25	25.5	21.4	24.5	18.9	25.7	19.6	27.2	20.3	30	20.7	28.4	18.8	31.6	21	27.2	21.5
26	27.2	22.5	25	19.5	27.5	20.4	28.2	21	30.5	21	28	18	31.6	20.2	28.3	22.5
27	29.3	22	27.5	19.5	28.5	20.4	30.7	21	32.2	21.1	28.3	18.5	32.7	19.6	31.1	21.2
28	31	22.6	28	22	30.5	21.5	31.7	21.4	33.2	21.6	28.5	18.3	34.1	19.6	31.9	23.4
Mean	28	21.7	26	18.8	27.2	19.8	28.3	20.5	30.9	20.7	27.6	18	30.8	20.2	29	21.7

<sup>a</sup> These minimum temperatures seem to be not very reliable, the differences between 6 a. m. temperatures and minimum temperatures being both too small and too uniform.

<sup>b</sup> These minimum temperatures seem to be somewhat too low.

Maximum and minimum temperatures at the stations of the Weather Bureau, February, 1921—Cont.

Day.	Buenavista, General Trias.		Cavite Naval Station, Cavite.		Manila.		Antipolo.		Balanga.		Malolos.		San Fernando, Pampanga.		San Isidro, Nueva Ecija.	
	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	29.9	20	33.2	23	31.4	22.3	31.7	19.2	32	21.5	31.5	22	32	20.5	32	21.6
2	30.2	19.5	31.7?	23.5	33.2	21.1	34.1	19.5	32.8	21.8	32.8	21	32	19.5	33.2	20.4
3	32	20.5	31.9	22.7	30.2	22.5	31.2	21	30.7	22.3	32.7	23	32	21.5	31	22
4	30.5	20.5	32	21.2	29.5	22.1	29.9	20.9	31	22.4	29.7	22.5	33	22.5	31.6	22.9
5	29.5	19	31.9	21.2	29.7	20.6	29.7	19.5	32.6	22.1	32.5	21	32.5	19.5	33.2	20
6	29.7	21.5	32.5	21.4	29.9	23	31.7	21	32.2	23	32.8	23	32	33.6	31.6	21.6
7	29.5	20.7	32	23.2	30.8	21.7	32.7	20	33	21.8	32.6	21.2	34	32.6	32.6	20.6
8	30	21.5	33	22.8	29.6	22.1	29.9	20.8	32.7	21.4	31.4	22.5	34	32.9	32.9	21.4
9	31	20.2	31.5	21.9	30.6	21.8	32.1	20.2	33.4	20.5	33.1	21.5	33	20	34	20.6
10	31	20	31.8	23.3	30.6	22.2	32.5	19.5	32.4	21.9	33.7	21.5	33	19.5	34.2	22.9
11	30.5	18	29.6?	21.8	30.2	21.3	32.3	20.7	33	20.4	33.7	21	33	18.5	34.4	21
12	30.5	20.7	31	22.5	30.6	22.1	31.8	20.8	29.7	20.9	33	23	31.7	21.5	31.2	21.6
13	29.5	20.3	31.5	22	30.9	21.7	32.7	20.3	32.5	22.5	33	23	33	21	32.9	20
14	30.2	19.9	31.5	22.6	32.3	21.7	31.7	20.8	32.5	22.1	33	22.5	34.4	21.5	33.2	22.4
15	30.2	21.2	32.4	22.3	32.2	21	32.7	20.8	32.6	20.5	32.5	22.5	34.4	20	32.2	20.8
16	31	20	33	20.7	32.2	19.6	33.1	19.2	33.2?	20	31.6?	23.1	34	19.5	34.2	19.6
17	31.7	18.2	31	21	31	17.8	32.8	18.3	32.6	18	33.5	22	32.5	18.5	33.1	18.2
18	31.2	21.4	30.5	22.6	29.1	21.5	29.2	20.3	30.3	21.3	32.5?	23.5	30	19.5	30	20
19	29.7	20.2	30.5	22	29.9	22.3	31.8	20.4	29	21.2	31.5?	22.5	30	21	29.2	21.2
20	30	20.2	31	22	29.9	22.4	31.4	20.5	31.3	21.2	31.5	22.5	32.2	21	32.4	21.3
21	30.2	21.4	30	21.8	31	23.2	30.2	20.3	32.4	22.5	31.5	22	32.5	22	31.6	22.2
22	30.2	19.6	31	22	30.3	21.6	29.2	21.5	30.3	21.8	31.5	22.5	32.5	19.2	30.4	18.4
23	29.7	20.7	29.1	20.5	27.5	21.3	29.2	19.5	30	20.3	29.5	20	28.5	18.5	30	19
24	27.7	20.4	31.7	21.5	28.1	21.5	30.3	19.6	31.3	21.2	31.5	20.9	30.5	20	30.2	19
25	28.7	19.9	30.5	21.3	30.1	22.3	30.8	20	31.1	21.5	30.5	22	33	20	31.4	20.8
26	31.4	19	33.1	21.8	31.1	21.4	31.5	20.9	31.8	20.4	32	22	31.5	20.5?	32.4	21.2
27	30.7	19.8	33	23	33.1	20.6	34.7	19.8	33.8	20.4	33.6	20	35	20	34.0	20.2
28	30.4	19.7	34.5	21	33.8	23.1	34.3	21.9	32.9	21.7	33.3	22	34	19.5	34.6	22.4
Mean	30.2	20.1	31.7	22	30.7	21.6	31.6	20.3	31.9	21.3	32.2	21.9	32.2	20.3	32.4	20.8

Day.	Iba.		Concepcion, Tarlac.		O' Donnell, Capas, Tarlac.		Tarlac.		Camiling.		Baler.		Dagupan.		Rosario, La Union.	
	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.1	24	32.6	23	31.3	20.7	32.8	22.2	34.2	22.7	26.1	21	33.9	22.8	32	20
2	31.5	21	35.7	23	33.9	19.6	35.6	18.8	34.5	21.5	29.2	21.9	34.3	21.6	34	19.8
3	33.2	21.1	32.1	23	30.1	20.8	32.4	21	32.4	21	29.6	21.5	27.9	24.4	31	21
4	30.7	22	33.1	23	33.7	22.2	33.6	22.6	33.2	23.2	26.9	20.3	32.6	23.4	32.3	21.5
5	31.4	20.5	31.7	23	34.2	19.2	34.6	18.6	33.3	20.4	29.1	20.2	29.7	21.5	31.4	20.2
6	32.4	22.6	33.1	23	33.7	22.2	34.4	21.8	34.3	20.3	30	20.9	29	24	31.5	20.1
7	30.5	20.2	34.6	23	33.7	19.5	35.2	19.6	34.3	20	30.5	21	33	20.8	32.8	19.5
8	30.9	22	34	23	33.3	22	35.8	20.6	35.3	22.4	30.5	22.1	32.4	21.6	32.6	19.5
9	30.2	19.4	36.5	23	33.7	19.8	36.2	18.8	35.3	22.4	30.5	22.1	32.4	21.6	32.6	19.5
10	30.7	18.8	33.7?	20.1	33.7?	20.1	36.4	17.8	35.5	19.3	31.7	20.4	30.2	21.4	31.4	16.8
11	31	18.5	36.1	18.5	33.7	20	35.6	18.4	35.5	19.4	31.2	20.7	29.8	20.5	33	17.6
12	30.5	19.1	32.7	20	33.7	20	33.5	21.6	35.5	18.9	30	22.6	30	21	33.3	19.1
13	31	19.6	34.8	21	34.1	19.5	35.6	18.6	34.3	19.7	28.5	22.7	34.1	21	34	18.3
14	31.1	20.5	36.4	21	34.1	21.4	34.8	19.8	35.3	19.4	28.7	22.4	31.4	21.5	34.3	19.3
15	31.6	19.8	34	22	32.2	18.5	35.2	19.2	35.2	20.2	27	21.9	30.5	21.4	34	19.2
16	32.5	20	33.9	18.4	33.9	18.4	35.8	19.2	33.3	19.2	29	18.9	29.9	21	32.3	22
17	31.8	17.5	36	17	33.2	17	34.8	17.6	33.4	18.7	29.5	17.9	29.8	21.6	32.3	18
18	31	19.9	31.5	18.5	31.1	18.5	32.4	19.4	32.4	18.4	28	22.6	34	20.4	33	18.8
19	31.3	22.8	30	20.7	29.7	20.7	31.7	20.4	32.3	19.3	25.6	20.1	29.8	22.9	32.6	18.8
20	31.1	22.9	32.5	20	32.5	20	33.2	20.2	33.7	21.4	29	20	30.8	22.1	32.1	20.8
21	31.2	23.2	34	20.9	32.9	20.9	34.6	20.2	35.3	21.4	29.4	20.7	31.4	22	33.3	22.3
22	32.4	23.3	34.1	18.4	30.9	18.4	35.4	20.4	35.3	21.4	28	22.2	31.8	21.2	33.5	19.3
23	32.9	22.5	31	18.7	30.7	18.7	32.6	19.6	30.1	21.8	29.6	19.9	34.2	21.1	32.5	19
24	32.8	22.8	32	19.5	31.7	19.5	34.4	19.8	35.3	21.8	27.3	19.7	34	21.6	34	18.8
25	31.4	21.5	32.6	21.2	32.1	21.2	32.8	19.2	33.7	23.5	27.6	20.9	34.9	23.7	34	22
26	32.1	21.4	32.5	19.8	31.8	19.8	34.2	20	34.3	23.6	27	21.7	32.9	22	34	19.9
27	32.5	21.6	34.2?	20	34.2?	20	35.6	19.8	36.7	22.2	28.6	21.3	35.1	22.2	35.3	20.4
28	31.6	21	36	19.2	32.3?	19.2	37.4	19.4	31.7	21.7	28.4	22.6	36.9	22.5	37.8?	20.2
Mean	31.5	21.1	33.6	21.6	32.7	19.9	34.5	19.8	34.2	20.7	28.8	21	32	21.9	33.1	19.6

Maximum and minimum temperatures at the stations of the Weather Bureau, February, 1921—Cont.

Day.	Tubao.		Bolinao.		Aringay.		Baguio.		Naguilian, La Union.		San Fernando, La Union.		Candon.		Vigan.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
1	32.9	21.3	31.8	20.5	34.8	20.4	23.7	14.1	33.9	-----	31.4	21.8	29.6	23	33.4	24.3
2	35.4	20.2	33.7	22	36.2	21.2	23.7	15.2	35.4	-----	33	21	31.1	22.7	31.4	23.4
3	30.8	23.4	28.1	24.2	30.2	23.2	21.8	14.2	31.5	-----	30	22.8	29.5	23.4	28.2	20.9
4	32	22.4	29.3	24.5	32.2	22.2	22.7	14.2	32	-----	31	22.4	30	23	28.4	21
5	30.8	21.1	28.5	24.5	31.5	21.5	20.8	13.9	31	-----	30	21.3	28.7	21.8	27.4	21.2
6	31.2	20.6	27	24	30.8	21.2	23.2	14.6	31.3	-----	29.5	22.5	29	21.7	27.6	21.3
7	32.3	20.3	29.1	24	33	21	23.6	13.5	32.3	-----	31.5	20.5	30.9	21.5	29.5	19.9
8	32.7	20.5	30.9	20.1	33.2	20.8	22.3	13.6	32.7	-----	31	20.5	30	21.2	30.2	19.6
9	32.3	18.9	29.7	20	32	20.2	25	14.1	33.1	-----	31	19.5	30.5	21.6	29.9	21.4
10	32	17.1	29.8	24.5	31.6	19.6	24.2	13.8	32.4	-----	30.5	19.5	30.5	19.5	29.7	20.4
11	31.9	17.8	29.4	23.7	31.5	18.5	23.2	13.7	31.9	-----	30.4	18.8	30	20.3	28	20.6
12	32.1	19.6	29.8	24.2	32.9	19.8	22.5	13.5	32.8	-----	30.6	18.4	30.5	21.2	29.6	20.4
13	33.4	18.9	31.5	20.7	33.5	20.5	24.9	12.5	33.1	-----	31	17.8	30.5	20.9	30	20.6
14	33.5	20.2	32.4	21.3	33.4	20.4	23.2	14.6	33.8	-----	-----	-----	30.5	22	30.5	21.9
15	33.2	20.1	30.4	21	32	20.6	23.7	14.5	33.1	-----	-----	-----	30.2	23.5	29.4	23.1
16	32.6	22.4	29	25.1	32.8	21.8	23.2	14.2	32.4	-----	-----	-----	30.6	23.1	29.7	20.4
17	32.3	18.8	28.5	24	31.8	19.8	22.9	13.2	31.8	-----	-----	-----	29.6	20.2	28.5	19.5
18	32.9	18.4	33	21.3	33.6	19.4	24.7	12.4	32.8	-----	-----	-----	29.1	21.4	29.9	19.4
19	28.9	22.4	29	21.5	30	22	20.3	13.1	33.8	-----	-----	-----	28.7	22.9	26.2	21.6
20	31.8	21.6	29	22.6	32.2	21.5	24.2	13	32.3	-----	-----	-----	29.5	22.5	30.6	20.9
21	32.6	21.5	29	24.4	31.9	21.6	23.2	12.8	32.8	-----	30.9	22.5	31.6	22.5	28.5	21
22	32.1	20.3	32.9	19	32.2	21	23.2	11.7	31.6	-----	30.5	20	31.1	21.9	31.1	21.1
23	32.2	20.2	31.3	21.6	32	20	23	11.1	30.4	-----	29.6	20.6	29.2	21	28.4	20.6
24	32.7	20.3	32.2	22.7	32.8	20.8	21.8	14.4	32.8	-----	31	21.4	30	22.2	29.2	21
25	33.9	23	32.6	23.2	33	22.8	24.6	13.6	32.2	-----	30.7	23	30.5	24	30.6	23.3
26	33.2	22.4	32.5	24	33.4	22.4	23.3	15	33.3	-----	30.8	22.1	31	24	30.4	22.4
27	35.2	21.6	32.7	23	34.5	22.3	25.2	15	34.7	-----	31.7	22.8	31.4	24.4	31.6	23.4
28	35.9	22.2	35	22.8	37 ?	23	26.8	16	-----	-----	32.7	22	31	25.2	31.9	23.6
Mean	32.6	20.6	30.6	22.7	32.7	21.1	23.4	13.8	32.6	-----	30.9	21	30.2	22.3	29.6	21.4

Day.	Tuguegarao.		Laoag.		Aparri. <sup>a</sup>		Cape Bojeador.		Basco.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
1	25.2	19.4	33.2	19.4	24.1	19.4	24.3	19.2	-----	18.2
2	31.2	21	32.6	21.8	30.4	21	30.3	21.5	-----	21.4
3	26.6	19.2	28.7	21.1	26.3	21	25.5	19.3	-----	20.5
4	27.6	19.3	30.7	19.5	26.6	19.7	26	21.6	-----	18.5
5	27.2	20.2	29.2	19	25.1	20	24.4	19.8	-----	18.8
6	26.5	20	30.7	21.5	25	19.9	24.1	18.8	-----	18.7
7	27.2	20.1	31.7	19.8	23.5	19.6	23.3	19	-----	18.5
8	27.8	20.9	33.8	20.5	25	20.6	24.3	19.5	-----	18.6
9	29.7	21.3	32.2	19.1	24.4	21.1	25.8	20.5	-----	19
10	29.3	21.6	32	19	25.9	21.9	26.3	21.3	-----	19.3
11	28.2	20.7	30	19.6	25.2	20.9	24.5	20.4	-----	18.5
12	28.3	20.2	33.2	19.5	26.8	20.4	25.3	20.2	-----	20.2
13	26.7	19.8	34.2	18.3	24.8	20	25	20.2	-----	20.1
14	31.5	20.4	32.2	20.9	26.6	20.6	29.9	21	-----	20.1
15	33.8	21.2	31.7	20.8	31.3	21.2	30.7	23.3	-----	20.1
16	32.5	20.5	31.1	18.2	27.2	21	27.1	21.3	-----	18.5
17	29.5	19.5	30.5	17.1	26.4	18.9	26.1	20.2	-----	19.6
18	26.7	18.8	31.6	20.5	22.6	18.6	23.9	16.8	-----	16
19	22.4	19	27.7	20.1	22.2	18.6	23.8	15.7?	-----	17.1
20	25.2	19	31.4	20.1	24.2	19.1	25.1	18.3	-----	18.6
21	26.2	18.6	30.1	21.9	22.8	18.6	24.3	17.8	-----	19
22	24.8	17.9	30.3	17.7	22.5	18.1	23.9	15	-----	17
23	27.5	17.6	32.4	15.6	25.2	18	26.6	18.4	-----	17.5
24	28.2	17.7	33.2	17.9	25.7	18.4	26.5	19.7	-----	17.3
25	28	20	33.5	21.7	27.5	20.8	27.3	21.6	-----	20.4
26	28	20.5	33.2	22.7	26.8	20.1	31.3	22.1	-----	22
27	32.8	21.4	33.6	21.8	28.5	20.5	30.5	23.2	-----	21.3
28	33.2	21	33.5	22.6	33.4	21.1	31.6	24	-----	23.5
Mean	28.3	19.9	31.7	19.9	25.9	20	26.3	20	-----	19.2

<sup>a</sup> The minimum temperatures of this station seem to be somewhat too low.



## SEISMOLOGICAL BULLETIN FOR FEBRUARY, 1921

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### EARTHQUAKES FELT IN THE PHILIPPINES<sup>1</sup>

5, 8<sup>h</sup> 56<sup>m</sup> 16<sup>s\*</sup> [5, 16<sup>h</sup> 56<sup>m</sup> 16<sup>s</sup>]. Butuan (N Mindanao). Oscillatory earthquake, direction ENE-WSW, intensity III-IV, duration 20 seconds. The epicenter lay in the Pacific.

7, 9<sup>h</sup> 24<sup>m</sup> [7, 17<sup>h</sup> 24<sup>m</sup>]. Ormoc (W Leyte). Earthquake of intensity III, duration 8 seconds.

10, 21<sup>h</sup> 03<sup>m</sup> [11, 5<sup>h</sup> 03<sup>m</sup>]. Cape Bojeador (NW Luzon). Earthquake shock of intensity III-IV, duration 5 seconds.

12, 18<sup>h</sup> 33<sup>m</sup> [13, 2<sup>h</sup> 33<sup>m</sup>]. Butuan (N Mindanao). Oscillatory earthquake, direction SSW-NNE, intensity IV, duration 10 seconds. A repetition of minor intensity occurred at 10<sup>h</sup> 14<sup>m</sup> [18<sup>h</sup> 14<sup>m</sup>]. Both shocks originated within the Agusan Valley, not very far from Butuan. On the same date the seismograph of this station recorded five instrumental shocks, originated at a distance of about 300 kilometers in the Pacific.

14, 1<sup>h</sup> 03<sup>m</sup> 46<sup>s\*</sup> [14, 9<sup>h</sup> 03<sup>m</sup> 46<sup>s</sup>]. SE Mindanao. Earthquake of intensity III-IV, felt through the SE part of Mindanao, comprising the Davao Province. The origin lay far off towards the Moluccas group, where must have been very strong and extensive. It was recorded throughout the world. The seismograph at Butuan, where the principal shock reached intensity II, recorded only an aftershock at 9<sup>h</sup> 09<sup>m</sup> [17<sup>h</sup> 09<sup>m</sup>]: on the following day, the 15th, complete calm prevailed, which very seldom happens in the said station.

14, 9<sup>h</sup> 00<sup>m</sup> [14, 17<sup>h</sup> 00<sup>m</sup>]. Calbayog (NW Samar). Earthquake shock of intensity II-III.

27, 8<sup>h</sup> 53<sup>m</sup> 33<sup>s\*</sup> [27, 16<sup>h</sup> 53<sup>m</sup> 33<sup>s</sup>]. Panay Island. Earthquake of intensity III-IV, felt in the southern portion of Panay, comprising partially the Provinces of Iloilo and Antique. Its origin lay within the island, in the region situated WSW of Iloilo, where now and then originate earthquakes of limited extension but of great intensity, as for instance, the one which occurred in August, 1902.

<sup>1</sup>The intensity of earthquakes is given in the notation known as the Rossi-Forel scale. The time is that indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (\*). Otherwise the time is that noted by the observer who sent the report. All time indications are in Greenwich mean time (midnight=0<sup>h</sup>), insular time being added in brackets for the convenience of Philippine readers.

RECORDS OF THE MICROSEISMOGRAPH.

(Time: Greenwich mean. Midnight=0<sup>h</sup>. Instrument: Wiechert seismograph; 1,000 kilograms.  $A_N: T_0=6.25, \epsilon=2,906, \frac{r}{T_0^2}=0.053$ ;  
 $A_E: T_0=6.18, \epsilon=2,393, \frac{r}{T_0^2}=0.042$ . Alluvium. 2.40 meters above sea level.)

No.	Date.	Character.	Phase.	Hour.		Period.	Amplitude.		Remarks.
				h.	m.		$A_N$ $\mu$	$A_E$ $\mu$	
20	3	I	e F	19	19	11			
21	4	Iu	e P <sub>E</sub> P <sub>N</sub> S L M <sub>E</sub> M <sub>N</sub> F	8	42	17			Earthquake in Mexico.
					44	50			
					45	24			
				9	36	20			
					37	10	18	4	
					38	08	19	5	
				10	40				
22	5	Iv	e F	8	56	16			Felt at Butuan (N Mindanao).
				9	24				
23	6	I	e F	4	37	11			
				5	06				
24	9	Iv	eP F	18	11	28			
					17				
25	10	I	e F	19	55	45			
				20	36				
26	10	IIr	eP L M <sub>N</sub> F	23	59	25			
	11			0	04	39			
				1	05	24	9	73	
				1	08				
27	11	Iv	eP F	20	19	58			
					26				
28	12	Iv	eP F	2	20	25			
					27				
29	12	I	e F	6	03				
					21				
30	13	I	e F	12	33	37			
					54				
31	14	IIr	eP S L M <sub>N</sub> M <sub>E</sub> F	1	03	46			Felt at Lais and Malita (SE Mindanao).
					07	22			
					08	32			
					08	50	8	259	
					09	24	8	145	
				2	40				
32	14	Iv	e F	11	19				
					40				
33	15	Iv	eP F	10	36	46			
					50				
34	16	I	e F	9	55				
				10	07				
35	19	Iv	eP F	0	30	46			
					36				
36	19	Ir	eP L F	14	38	21			From Omori's seismograph.
					42	01			
				15	30				
37	19	Ir	eP L F	18	20	30			From Omori's seismograph.
					25	03			
				19	33				
38	23	Ir	eP F	4	15	49			
					42				
39	24	I	e F	16	58				
				17	09				
40	27	Iv	e F	8	53	33			Felt in the southern portion of Panay Island.
				9	21				



Records of the Microseismograph—Continued

No.	Date.	Character.	Phase.	Hour.		Period.	Amplitude.		Remarks.
							A <sub>N</sub> μ	A <sub>N</sub> μ	
41	27	II <sub>u</sub>	eP	18	35	04			
			PR <sub>1</sub> N		37	44			
			PR <sub>1</sub> E		38	25			
			PR <sub>2</sub> N		40	19			
			PR <sub>2</sub> E		41	10			
			S		44	35			
			SR <sub>1</sub> N		48	32			
			SR <sub>1</sub> E		49	13			
			SR <sub>2</sub> E		52	20			
			SR <sub>2</sub> N		52	41			
			L	19	01	12			
			M <sub>N1</sub>		01	18	20	80	
			M <sub>E1</sub>		01	34	23	99	
			M <sub>N2</sub>		03	36	22	73	
			M <sub>E2</sub>		04	00	20	42	
			C	21	19	00			
F		52							
42	28	I	e	3	20				
			F		47				

### TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS<sup>1</sup>

5, 8<sup>h</sup> 56<sup>m</sup> 16<sup>s\*</sup> [5, 16<sup>h</sup> 56<sup>m</sup> 16<sup>s</sup>]. Butúan (N de Mindanao). Temblor oscilatorio, dirección ENE-WSW, intensidad III-IV, duración 20 segundos. Su origen se hallaba seguramente en el Pacífico.

7, 9<sup>h</sup> 24<sup>m</sup> [7, 17<sup>h</sup> 24<sup>m</sup>]. Ormoc (W de Leyte). Temblor de tierra de intensidad III, duración 8 segundos.

10, 21<sup>h</sup> 03<sup>m</sup> [11, 5<sup>h</sup> 03<sup>m</sup>]. Cabo Bojeador (NW de Luzón). Temblor de tierra de intensidad III-IV, duración 5 segundos.

12, 18<sup>h</sup> 33<sup>m</sup> [13, 2<sup>h</sup> 33<sup>m</sup>]. Butúan (N de Mindanao). Temblor oscilatorio, dirección SSW-NNE, intensidad IV, duración 10 segundos. Repitió con menos intensidad a 10<sup>h</sup> 14<sup>m</sup> [18<sup>h</sup> 14<sup>m</sup>]. El origen de estos dos temblores se hallaba dentro del valle del Agusan, a corta distancia de Butúan. El mismo día el sismógrafo de esta estación registró cinco choques instrumentales originados a unos 300 kilómetros en el Pacífico.

14, 1<sup>h</sup> 03<sup>m</sup> 46<sup>s\*</sup> [14, 9<sup>h</sup> 03<sup>m</sup> 46<sup>s</sup>]. SE de Mindanao. Temblor de tierra, sentido con intensidad III-IV en la parte SE de Mindanao, comprendida por la Provincia de Dávao. El origen de este terremoto se hallaba muy lejos hacia las Islas Molucas, donde seguramente tuvo grande intensidad y extensión. Registróse en todo el Globo. El sismógrafo de Butúan, donde el terremoto tuvo intensidad II, no registró este día más que una réplica a 9<sup>h</sup> 09<sup>m</sup> [17<sup>h</sup> 09<sup>m</sup>], y el día siguiente 15 fué de calma completa, cosa muy rara en dicha estación.

14, 9<sup>h</sup> 00<sup>m</sup> [14, 17<sup>h</sup> 00<sup>m</sup>]. Calbayog (NW de Sámar). Temblor de tierra de intensidad II-III.

27, 8<sup>h</sup> 53<sup>m</sup> 33<sup>s\*</sup> [27, 16<sup>h</sup> 53<sup>m</sup> 33<sup>s</sup>]. Isla de Panay. Temblor de tierra de intensidad III-IV, sentido en toda la parte sur de la Isla de Panay, comprendiendo parte de las Provincias de Iloilo y de Antique. Su origen parece se hallaba dentro de la isla, en la región situada al WSW de Iloilo, donde suelen originarse frecuentes terremotos de carácter muy local pero de grande intensidad, como por ejemplo, el que tuvo lugar en agosto de 1902.

<sup>1</sup> La intensidad de los terremotos se indica conforme a la conocida escala de Rossi-Forel. Cuanto a la hora de su ocurrencia, adoptamos la indicada por los sismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (\*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al medio de Greenwich (medianoche=0<sup>h</sup>). Para conveniencia de los lectores de Filipinas se añade también la hora insular.

## SEASONAL DISTRIBUTION OF EARTHQUAKES IN THE PHILIPPINES

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Until nearly the end of the last century, when the geologic or tectonic nature of the majority of the earthquakes began to be accepted, students of Seismology had tried to relate them closely to meteorological seasons and variations. Quite recently, 1920, Mr. M. G. Zeil, while following modern theories, believes that the quantity of rain, specially under the tropics, can have a real influence. His explanation is founded on the fact that by the translation of materials from one portion to another of the earth's surface, due to erosion and water currents, the equilibrium is broken and a readjustment must take place. He distinguishes two classes of tectonic earthquakes, centrifugal and centripetal. The former corresponding to places where has been a great deal of erosion and of material carried away by heavy runoffs, and the later to places where the same alluvial material has been accumulated: in the first place readjustment of the earth's crust or vault consists on an outward movement due to diminution of load; in the second on an inward movement due to an overload. Mr. M. G. Zeil bases his theory on the seismic maps published by Montessus de Ballore, but it seems that the distribution given by this distinguished author is founded on geologic and structural conditions of the earth. Moreover heavy rains, if any influence exists can exert it only on the emerged portions of the earth and under the sea near the shore lines.

As Mr. Zeil alludes<sup>1</sup> to our Archipelago and invites us to pay attention to his theory, we decided to make a revision of the Philippine earthquakes to find out if such theory can be supported by facts.

Before proceeding on, it will be proper to remark that our Agusan Valley is far from being the wettest region of the Philippines, as believes Mr. Zeil. Rain maps published in 1914 by us and more recently, 1918, by Rev. José Coronas, show that in the Agusan Valley, the yearly average of rainfall is less than two meters, while there exist many other regions with more than three meters.

In the article published last month about the distribution of earthquakes in relation with the relief of the neighbouring seas, may be seen that in the Philippines exists clearly and constantly an increase of seismicity from W to E: But in the same we tried to set forth the physiographic conditions responsible for such increase. It is also true that, excepting SW and NW Luzon and the high plateau of Baguio, the greatest annual rain averages fall on the eastern coasts during the NE monsoon. We doubt nevertheless if the conditions of our eastern coasts with steep submarine slopes admit the accumulation and erosion theory; possibly the explanation given by the author of the Brazilian anomaly, applies to our heavily wooded eastern regions. In the interior of Luzon exist some seismic centers where that theory may have something to do, but not so much as to explain all the shocks, specially great macroseisms. They are not all placed in wettest regions but where erosion seems to be more active.

In the Agusan Valley, the great seismicity of which is mentioned by the author, fifty per cent of the disturbances recorded since the year 1915 by a Wiechert seismograph, had their origin in the "Philippine Deep:" a good percentage of them originates in the Celebes sea and farther, remaining a relatively small number of local origin.

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<sup>1</sup> Comptes Rendus, Academie des Sciences, Paris, 12 Juillet, 1920, p. 117.

More probably can be credited to readjustments of equilibrium broken by erosion the seismic periods occurring at long intervals in the plateau of Baguio and in the region of the Isarog extinct volcano. They occur more frequently in the former than in the latter, due perhaps, to the nature and different weight of the materials transferred in each place. The circumstance that the last seismic periods occurred during the rainy season and immediately after its end, in years of exceptionally heavy averages, certainly invites to attribute to rainfall some kind of action.

If the rainfall has really in one or other way any influence, then its annual distribution should present some kind of parallelism with earthquake distribution. We tried to find it as early as 1895 in "La Seismología en Filipinas." In fact the statistics of 1599 to 1889 give the following distribution:

January .....	78	July .....	82
February .....	86	August .....	106
March .....	92	September .....	106
April .....	61	October .....	83
May .....	89	November .....	83
June .....	73	December .....	78

Taking separately into consideration the more complete statistics of 1880-89 we find:

January .....	34	July .....	38
February .....	43	August .....	43
March .....	36	September .....	52
April .....	35	October .....	43
May .....	39	November .....	35
June .....	31	December .....	36

These statistics seem to show some predominance for the wet months: Certainly the numbers corresponding to the months of July, August, and September are higher: But we must have in mind that these months are the wettest only in the western part of the Archipelago, so that such a greater amount means very little. The eastern regions have their rainy season from October to January, consequently maximum values should occur during or rather immediately after these months, at the end of both rainy seasons. Unless we admit that the law holds only for the western part and the SW monsoon rainfall.

Recent and far more reliable statistics do not turn very sensibly the balance in favor of the rainfall. Taking the shocks felt during the last eighteen years 1903-1920 and separating them into two groups corresponding to the regions watered by the SW monsoon and to those receiving the rains from the NE winter winds, or into W and E shocks the following distribution is found:

Months.	Luzon and Visayas.		Mindanao.	
	W.	E.	W.	E.
January .....	46	93	19	101
February .....	49	75	21	85
March .....	42	101	17	95
April .....	58	80	7	59
May .....	82	102	7	74
June .....	65	95	11	78
July .....	55	93	15	102
August .....	59	89	22	102
September .....	75	70	21	78
October .....	76	93	23	77
November .....	57	88	12	83
December .....	39	84	20	77
	703	1,063	195	1,011

As for the distribution of rainfall it will suffice to take some typical stations representing the different distributions: Dagupan on the western coast of Luzon, and Legaspi for the eastern regions: and similarly Zamboanga and Caraga for Mindanao.

Months.	Mindanao.		Luzon.	
	Dagupan.	Legaspi.	Zamboanga.	Caraga.
	<i>mm.</i>	<i>mm.</i>	<i>mm.</i>	<i>mm.</i>
January .....	10	376	64	295
February .....	21	373	56	402
March .....	29	172	29	270
April .....	91	126	42	149
May .....	256	134	73	204
June .....	293	207	95	104
July .....	567	231	108	143
August .....	472	173	95	76
September .....	472	252	100	67
October .....	209	329	117	123
November .....	61	349	103	172
December .....	20	489	108	423

As a further investigation, let us compare the distribution of all seismic disturbances, perceptible and instrumental during the last five years, which amounted to 2,122 at Manila and to 5,205 at Butuan, Mindanao, with that of the rainfall.

Months.	Disturbances (total number).		Rainfall (average).	
	Manila.	Butuan.	Manila.	Butuan.
			<i>mm.</i>	<i>mm.</i>
January .....	197	464	21	246
February .....	174	397	12	204
March .....	161	505	19	167
April .....	172	324	48	133
May .....	201	357	113	156
June .....	184	322	202	166
July .....	206	464	457	123
August .....	186	529	369	106
September .....	183	398	358	143
October .....	183	451	186	162
November .....	147	504	108	250
December .....	131	490	71	295

The distribution of these disturbances presents more openly a tendency to follow the yearly rain distribution. Manila shows high numbers clustering around July, while at Butuan occurs the same in the last months of the year. But the period considered is too short to draw any good conclusion.

## DISTRIBUCIÓN ESTACIONAL DE LOS TEMBLORES DE TIERRA EN FILIPINAS

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Hasta muy cerca del fin del pasado siglo, en que las teorías de la naturaleza geológica o tectónica de la mayor parte de los terremotos comenzaron a predominar, los sismólogos habían siempre pretendido relacionarlos íntimamente con los fenómenos y cambios meteorológicos. Recientemente, en 1920, Mr. M. G. Zeil sin dejar de admitir las modernas teorías, cree que la cantidad de lluvia, principalmente en los trópicos, influye realmente en el número de temblores. Su explicación se funda en el hecho de que la erosión y el consiguiente acarreo de materiales por las aguas, de unas partes a otras, forzosamente rompen el equilibrio y ha de seguirse un reajuste. En consecuencia el autor distingue dos clases de temblores de tierra tectónicos: centrífugos y centrípetos. Los primeros ocurren en los sitios donde la erosión y arrastre disminuyó la carga, y los segundos donde la acumulación de material de aluvión la aumentó. En la primera región el reajuste consiste en un movimiento hacia la parte exterior de la costra terrestre, y en el segundo al contrario hacia el interior. Mr. M. G. Zeil funda su teoría en los mapas sísmicos de Montessus de Ballore, mas parece que la distribución encontrada por este eminente sismólogo se funda principalmente en las condiciones geológicas y estructurales de cada región del Globo. Puede también añadirse que la influencia de las lluvias, dado que exista, tan solo se hará sentir en las tierras emergidas y cerca de las costas.

Puesto que Mr. Zeil<sup>1</sup> hace alusión a nuestro Archipiélago y en cierta manera nos invita a considerar su teoría, nos decidimos a recorrer nuestras estadísticas de temblores de tierra filipinos, a fin de ver si los hechos favorecen semejante teoría. Antes sin embargo conviene hacer notar que el valle del Agusan en Mindanao, dista mucho de ser, según cree este autor, la región de Filipinas, donde más llueve. El mapa pluviométrico que publicamos en 1914 y el más reciente, 1918, el del R. P. Coronas, S. J. demuestran que el valle del Agusan recibe anualmente poco más de dos metros de agua, al paso que existen otras muchas regiones en las que la lluvia anual pasa mucho de tres.

En un artículo publicado el mes anterior, acerca de los temblores de tierra y el relieve en los mares que rodean nuestro Archipiélago, puede verse que la sismicidad aumenta decididamente de W a E; mas allí mismo se hacen notar las condiciones geológicas y fisiológicas que pueden explicar semejante aumento. Ciertamente que, excepción hecha de la meseta de Baguio y del SW y NW de Luzón, las más grandes cantidades anuales de lluvia caen en las costas orientales, durante la monzón del NE. Sin embargo dudamos si las condiciones de tales costas, con grandes declives submarinos y cubiertas de densos bosques, admiten las teorías del autor; es posible cuadren aquí las explicaciones que el mismo autor da de una anomalía observada en el Brazil. En el interior de las islas existen ciertamente algunos centros sísmicos, donde esta teoría parece tener aplicación, pero no de manera que con ella pueda darse razón de todos los temblores, sobre todo de los macrosismos. Estos centros no se encuentran todos precisamente en las regiones de más lluvias sino donde la erosión parece ser más activa a causa de la naturaleza especial del terreno.

No contamos entre ellas el valle del Agusan, cuya grande sismicidad mencionada por el autor, reconoce otras causa. Desde 1915 en que se montó en Butúan un sismógrafo Wiechert ha sido posible comprobar que un cincuenta por ciento de las perturbaciones allí registradas se originan en el abismo del Pacífico; otra buena porción pro-

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<sup>1</sup> Comptes Rendus, Academie des Sciences, Paris, 12 Juillet 1920, p. 117.

cede de más lejos, del mar de Celebes, quedando un número pequeño de origen local o regional. Más parecen acomodarse a la teoría, ciertos períodos sísmicos que ocurren a largos intervalos en la elevada región de Baguio y en las cercanías del volcán apagado Isarog, los cuales ocurren con más frecuencia en Baguio que en Camarines, debido sin duda a la diferente naturaleza y peso de los terrenos trasladados en cada lugar. La circunstancia de que los dos últimos períodos de Baguio, 1913 y 1920, y el de Camarines, 1917, ocurrieron durante e inmediatamente después de la estación de lluvias y en años excesivamente lluviosos, invita ciertamente a atribuir a las lluvias alguna manera de influencia.

Si la lluvia tiene realmente influencia su distribución anual presentará cierto paralelismo con la de los temblores. Se intentó encontrarla por el que esto escribe ya en 1895 en "La Seismología en Filipinas." Las estadísticas o catálogo de 1599 a 1889 allí publicado nos dió la siguiente distribución:

Enero .....	78	Julio .....	82
Febrero .....	86	Agosto .....	106
Marzo .....	92	Septiembre .....	106
Abril .....	61	Octubre .....	83
Mayo .....	89	Noviembre .....	83
Junio .....	73	Diciembre .....	78

Tomando separadamente las estadísticas muchísimo más completas de 1880 a 1889, se obtiene:

Enero .....	34	Julio .....	33
Febrero .....	43	Agosto .....	43
Marzo .....	36	Septiembre .....	52
Abril .....	35	Octubre .....	43
Mayo .....	39	Noviembre .....	35
Junio .....	31	Diciembre .....	36

Ambas series muestran ciertamente un predominio para los meses lluviosos de agosto, septiembre y octubre, mas conviene tener presente que son los más lluviosos solamente en la parte occidental del Archipiélago, por esta razón estos máximos pierden mucho de su significación. Las regiones orientales tienen su estación de lluvia de octubre a enero; por manera que los valores superiores deberían corresponder más bien hacia el fin de estos meses o sea después de las dos estaciones de lluvias.

Las estadísticas sísmicas más recientes y completas no inclinan mucho que digamos la balanza en favor de la lluvia. Tomando los temblores sentidos en el Archipiélago durante los últimos 18 años 1903-1920 y separándolos en dos grupos W y E, correspondientes a las regiones occidentales, regadas por la monzón del SW, y a las orientales, que reciben las aguas de las corrientes invernales del NE, se halla la siguiente distribución.

(Véanse las tablas del texto inglés.)

Para la correspondiente distribución de la lluvia bastará presentar algunas estaciones que nos den distribuciones típicas: Por ejemplo Dagupan y Zamboanga para el W, Legaspi y Caraga para el E.

(Véanse las tablas en el texto inglés.)

Otra comparación puede establecerse entre todos los registros de los sismógrafos de Manila y de Butúan, pertenecientes a sismos perceptibles y no perceptibles, durante los últimos cinco años y el promedio de la lluvia en cada sitio. Los registros de Manila suman 2,122 y los de Butúan 5,205.

(Véase su distribución en el texto inglés.)

La distribución de estos registros presenta más abiertamente alguna tendencia a conformarse con la de la lluvia. Manila presenta números altos al rededor de julio, Butúan en los últimos meses del año. Sin embargo los períodos considerados son demasiado cortos para deducir ninguna conclusión.





THE GOVERNMENT OF THE PHILIPPINE ISLANDS

# WEATHER BUREAU

MANILA CENTRAL OBSERVATORY

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BULLETIN FOR MARCH, 1921

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PREPARED UNDER THE DIRECTION OF

REV. JOSÉ ALGUÉ, S. J.

DIRECTOR OF THE WEATHER BUREAU

MANILA  
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1922



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**BULLETIN FOR MARCH, 1921**

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# METEOROLOGICAL BULLETIN FOR MARCH, 1921

By Rev. JOSÉ CORONAS, S. J.,

Chief, Meteorological Division of the Weather Bureau

## GENERAL WEATHER NOTES

Pressure and temperature.—The mean atmospheric pressure for this month in the Philippines is slightly below that of the preceding year and the normal of March. The highest pressures were generally observed on the 6th, while the lowest were recorded on the 16th–17th, on the 3rd and on the 20th.

The mean monthly temperature in the Philippines is, with very few exceptions, very slightly above the normal of this month. The highest and lowest monthly temperatures for Manila were 35.3° C. and 20.4° C., the former having been recorded on the 2nd and 24th, and the latter on the 12th. The extreme temperatures for Baguio were 26.2° C., 13.6° C. on the top of Mirador, and 27.5° C., 12.6° C. in the plateau near the City Hall.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS OF THE WEATHER BUREAU FOR MARCH, 1921

Station.	Pressure.						Temperature.							
	Mean.	Departure from March, 1920.	Departure from normal.	Highest mean.	Day.	Lowest mean.	Day.	Mean.	Departure from March, 1920.	Departure from normal.	Highest.	Day.	Lowest.	Day.
	<i>mm.</i>	<i>mm.</i>	<i>mm.</i>	<i>mm.</i>		<i>mm.</i>		<i>°C.</i>	<i>°C.</i>	<i>°C.</i>	<i>°C.</i>		<i>°C.</i>	
Tagbilaran	758.52	-1.03	-1	759.58	6	757.66	16	26.4	+0.4	+0.1	34.3	30	21.5	29, 30
Surigao	58.71	-1.15	-.96	59.79	24	57.60	15, 16	26.2	+.3	+.3	32	23	22.3	14
Cebu	58.84	-1.05	-.91	60.24	6	57.78	16	27.4	+.4	+.5	32.8	22	23.1	6
Iloilo	58.66	-1.02	-.86	59.93	6	57.79	3	26.8	0	+.1	33.2	1, 3	23.1	6, 7, 17
Tacloban	59.23	-1.05	-.96	60.14	29	58.14	17	26.1	+.2	-.2	34	27	22.2	4
Capiz	59.25	-1.06	-.94	60.82	6	58.20	3	26.8	+.2	+.2	33	3	22.2	7
Calbayog	59.50	-1.05	-.71	60.64	6	58.55	17	25.9	+.5	+.4	33	25	21.3	11
Legaspi, Albay	59.91	-1.01	-.62	61.63	6	58.72	3	26.7	-.4	+.1	32.4	29	22.7	7, 16
Atimonan	60.19	-.95	-.46	62.03	6	58.66	3	26.4	-.5	0	31.7	24	21.6	2
Ambulong, Tanauan,														
Batangas	59.21	-.98		60.99	6	57.80	3	27.2	0		36.8	3	21.2	12
Daet	60.40			62.18	6	58.88	20	25.6			32	20	21	1
Manila	59.84	-.88	-.67	61.54	6	58.43	3	26.8	+.3	+.2	35.3	2, 24	20.4	12
San Isidro, Nueva														
Ecija	59.88	-.98	-.71	61.69	6	58.38	20	27.3	+.4	+.5	37	23	19.2	12
Dagupan	59.30	-.97	-.80	60.96	6	58.04	20	27.9	+.2	+.7	38.7	24	21.2	12
Baguio <sup>a</sup>	637.40	-.71	-.28	638.58	6	636.58	16	13.6	+.2	+.6	26.2	5, 25	13.6	16
Vigan	759.14	-1.11	-1.10	760.42	6	758.06	20	27.8	+.7	+.9	34.1	26	21.6	13
Tuguegarao	60.63	-.69	-.38	63.72	6	58.48	20	25.9	-.5	-.3	37.5	25	18.5	17
Laoag	59.22	-1.14		60.76	6	58.16	3	27.9	+.8		38.9	29	19.4	18
Aparri	60.86	-.85	-.46	64.04	6	58.55	20	24.9	-1	0	34.2	24	19?	17

<sup>a</sup> The barometric readings of this station are not reduced to sea level.

Rainfall.—The total rainfall for this month is, with a very few exceptions, greater than that of March 1920: but compared with the normal, although it is also greater in almost all the stations of the Visayas and Mindanao, yet it is lower in a good number of our stations of Luzon. The monthly rainfall for Manila, 8.7 mm., is 6.8 mm. above that of the preceding year, but 9.3 mm. below the normal. The total amount of rain fallen in Baguio during this month (63.8 mm.) differs from the normal by +16.8 mm.; and from the total of March, 1920, by +62.8 mm.

## RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF MARCH, 1921

Station.	Total.	Departure from March, 1920.		Days of rain.	Departure from March, 1920.	Departure from Normal.	Greatest rainfall in a single day.	Day.	Station.	Total.	Departure from March, 1920.		Days of rain.	Departure from March, 1920.	Departure from Normal.	Greatest rainfall in a single day.	Day.
		mm.	mm.								mm.	mm.					
Jolo	204.8	+115.5	+118.6	16	+6	+6	39.9	27	Calapan	62.7	+8.6	-9.7	15	+4	+3	19.5	6
Malamui, Isabela, Zamboanga	175.4	+170.3		14	+13		42.4	16	Virac	387.3	+313	+230.2	19	+8	+2	159.8	7
Davao	149.8	+102.1	+11.6	15	+9	+7	57.2	17	Naga, Camarines Sur	153.1	+125.3	+87.9	13	+7	+6	57.9	6
Cotabato	136.6	+55.6	+52.3	20	+16	+10	34	7	Tigaon	261.4	+225.1		24	+11		71.1	6
Cagayan	20.7	+20.7	-11.2	5	+5	+1	11.7	9	Batangas	8.6	+1.5	+1.7	5	+4	+2	3.6	6
Butuan	409.8	+298.7	+234.9	26	+10	+8	88.4	6	Lucena	48.1	+34.1		9	+3		20.4	6
Mambajao	224.9	+119.1		11	-1		76	10	Atimonan	101.7	+67.2	+21	12	0	+2	25.7	14
Dumaguete	62.9	+29.7		10		+5	22.8	21	Ambulong, Tana-uan, Batangas	45.1	+34.9		6	0		16.5	6
Tagbilaran	70	+17.4	-1.7	13	-1	+5	15.5	10	Daet	390.8			19			183	6
Iwahig Penal Colony, Puerto Princesa	127.9	+72.7		7	+2		55.9	18	Canluban, Calamba	51.6	+36.9		9	+3		21.3	6
Surigao	701.3	+356.7	+389.9	21	-1	+2	209.3	6	Paracale	89.8	-19	-82.1	17	+4	+1	14.5	2
Maasin, Leyte	307.3	+54.8	+163.9	10	+1	+3	145.8	6	Santa Cruz, Laguna	38.6	+24.6	+8.8	7	+2	-1	24.9	6
Cebu	82.3	-20.9	+24.8	12	-2	+3	32.7	6	Manila	8.7	+6.8	-9.3	4	+3	0	4.8	14
Iloilo	56.9	+22.6	+26.8	7	-2	+1	23.6	17	Antipolo	29.1	+24.6	+15.6	5	+3	+1	19.8	4
San Jose de Buenavista	3.3	-14	-13.1	2	-2	-1	2.3	15	San Isidro, Nueva Ecija	56.5	+9.8	+39.4	4	+1	+1	48.5	4
Cuyo	.8	-5	-2.5	1	0	0	.8	18	Iba	9.7	+8.8	-14.6	1	-1	-2	9.7	5
Ormoc	398.9	+328	+295.9	17	+4	+5	249.7	6	Tarlac	1.3	-22.9	-16.3	2	0	0	1	7
Guiuan	659.8	+309.6	+359.3	22	-1	0	305.3	15	Baler	385.1	+138.9	+175.6	18	0	+5	66	3
Tacloban	360	+244.2	+199.7	20	+9	+3	89.6	15	Dagupan	7.6	-3.4	-17.6	3	+2	0	5.3	27
Capiz	71.5	+22.7	+39.1	14	-1	+6	20.7	6	Baguio	63.8	+62.8	+16.8	8	+6	+2	23.4	6
Borongon	780.3	+520.2	+498.4	26	+7	+4	236.2	15	San Fernando, La Union	4	+4	-5	2	+2	+1	2	7.9
Catbalogan	441.8	+325.2		20	+4		117.4	15	Candon	3.8	+3.8	-6.6	2	+2	+1	2.8	9
Calbayog	390.3	+333.1	+249.2	23	+12	+9	135.5	6	Vigan	0	0	-7	0	0	-1	0	0
Masbate	317.7	+217.2	+246.4	12	0	+2	94.5	6	Tuguegarao	49.3	+43.7	+18.7	11	+10	+7	17.3	3
Romblon	158.7		+102.8	18		+8	38.9	6	Laog	0	-5	-4.7	0	-1	-1	0	0
Batag Light-house, Laoang	486.1	+372.4		20	+4		147.3	16	Aparri	78.7	+21.9	+19.3	11	+4	+3	24	8
Sorsogon	785.8	+491.6		22	+11		226.1	6	Cape Bojeador	0	-8.6		0	-2		0	0
Legaspi, Albay	688.4	+574.5	+498.7	24	+10	+9	154.1	6	Basco	115.1	+10.1	-4.8	14	-3	+1	39.9	30
Sumay (Guam), Agaña	60.3	-81.8	-18.3	15	+2	+5	23.4	8									

## DEPRESSIONS AND TYPHOONS

There has been no depression or typhoon near the Philippines during this month. In higher latitudes there were several depressions of the Continental type, two of them having formed in the Eastern Sea NE of Formosa on the 11th and 24th, respectively, and moved NE toward Japan.

## NOTAS GENERALES DEL TIEMPO

**Presión y temperatura.**—La presión atmosférica media de este mes en Filipinas es ligeramente menor que la del año pasado y que la normal de marzo. Las presiones más altas se observaron generalmente el día 6, al paso que las más bajas se registraron los días 16-17, 3 y 20.

La temperatura media mensual en Filipinas es, salvo unas pocas excepciones, ligeramente mayor que la normal de este mes. Las temperaturas máxima y mínima absolutas del mes en Manila fueron  $35.3^{\circ}$  C. y  $20.4^{\circ}$  C., habiéndose registrado la primera los días 2 y 24, y la última el día 12. Las temperaturas extremas de Baguio fueron  $26.2^{\circ}$  C.,  $13.6^{\circ}$  C. en la cumbre del Mirador, y  $27.5^{\circ}$  C.,  $12.6^{\circ}$  C. en la llanura cerca del *City Hall*.

**Precipitación acuosa.**—La lluvia total de este mes es, con muy raras excepciones, mayor que la de marzo de 1920; pero comparada con la normal, aun cuando es también mayor en casi todas las estaciones de Visayas y Mindanao, resulta, no obstante, menor en buen número de nuestras estaciones de Luzón. La lluvia mensual de Manila, 8.7 mm., es mayor que la del año pasado en 6.8 mm., pero menor que la normal en 9.3 mm. La cantidad total de lluvia caída en Baguio durante este mes (63.8 mm.) difiere de la normal en +16.8 mm.; y de la lluvia total de marzo de 1920, en +62.8 mm.

## DEPRESIONES Y TIFONES

No ha habido durante este mes ninguna depresión o tifón cerca de Filipinas. En más altas altitudes hubo varias depresiones del tipo continental, habiéndose formado dos de ellas en el Mar del Este, al NE de Formosa, los días 11 y 24, respectivamente, y moviéndose al NE en dirección a Japón.

METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY<sup>a</sup>

[φ=14° 34' 41" N; λ=120° 58' 23" E; barometer above sea, 14.2 meters; gravity correction not applied, -1.72 mm.]

Day.	Pressure (mean).	Air temperature. <sup>b</sup>			Underground temperature.				Relative humidity (mean).	Vapor pressure (mean).	Radiation.		Evaporation. <sup>b</sup>			
		Mean.	Maximum.	Minimum.	0 25 meter.		0 50 meter.				1.50 meters.	2.50 meters.	Minimum on grass.	Maximum in sun. Black bulb in vacuo.	Free exposure (total).	Shelter (total).
					8 a. m.	2 p. m.	8 a. m.	2 p. m.								
1	759.39	27.9	34.3	22.6	27.1	29.7	27.7	28.5	27.9	28.2	73.6	20	20.3	64.9	5.5	4.1
2	59.04	27.8	35.3	22.7	27.5	30.3	28.2	28.8	27.9	28.2	78.7	21.6	20.6	62.2	4.8	3.8
3	58.43	28.2	34.6	24.9	28.4	30	28.7	29.5	28.1	28.4	80.1	22.5	23.3	62.7	4.9	3.8
4	59.66	27.5	34.7	23.3	28.2	30	28.7	29	28	28.3	76.2	20.5	21.2	65	4.6	3.4
5	60.99	27.1	33	21.2	28.2	30	28.2	28.9	29.2	28.2	74	19.4	21.6	69	4.3	3.3
6	61.54	26.3	31.5	23.2	27.9	29.6	28.7	29	28	28.3	77	19.3	21.3	69	4	3.5
7	60.72	24.9	28.8	22.4	27.6	28.8	28.5	28.7	28.2	28.3	83.5	19.4	21.5	61.6	2	1.5
8	59.72	25.9	32.6	21.3	27.1	29.2	28.3	28.6	28.2	28.3	75.8	18.5	19.2	65.4	3.9	3.2
9	60.80	26.4	33.4	22.1	27.2	29.1	28.3	28.5	28.2	28.3	73.4	18.2	20.2	67.5	5	3.5
10	61.13	26	32.7	21.5	27	28.5	28.2	28.5	28.3	28.3	73.4	18	19.2	65	5.1	3.5
11	59.84	26.8	33.4	21.2	27.1	29.1	28.2	28.5	28.2	28.3	68.5	17.4	19	64.9	6.6	4.5
12	59.49	26.4	32.4	20.4	26.8	29.2	28.2	28.6	28.2	28.3	75.6	18.2	19.8	63.5	5.4	3.5
13	60.11	26.6	32.7	22.1	27	29.5	28.7	28.9	28.3	28.3	75.6	19.3	19.8	63.5	4.7	3.2
14	60.54	25	28.9	23.2	27.6	28.6	28.5	28.9	28.3	28.3	85.4	20	21.1	57.1	1.3	1.4
15	60.24	25.4	30.6	22.7	27.3	28.7	28.3	28.5	28.3	28.3	77.4	18.4	21.3	65	3.3	2.6
16	59.55	25.2	30.6	21.3	26.7	28.6	28	28.3	28.3	28.3	75.9	17.8	19.2	63.6	4.1	2.2
17	59.70	25.2	30.5	21.3	26.8	28.7	28	28.3	28.2	28.3	75.5	17.9	19.5	57.8	3.4	2.3
18	59.51	25.9	32.1	20.6	26.5	28.5	27.8	28.2	28.4	28.3	73.4	17.8	18.7	61.7	5.2	3.3
19	59.02	26.2	32.4	22.2	27.2	28.9	28.1	28.3	28.4	28.3	76.6	19.2	20.2	63.3	4	2.8
20	58.56	27.5	34.6	22.7	27.3	29.8	28.2	28.5	28.3	28.2	76	20.5	20.5	62.5	5	3
21	58.80	28	34.3	24	28.1	29.9	28.6	29	28.4	28.4	77.3	21.5	22.2	61.3	5.1	3.7
22	59.17	28.1	34.7	23.4	28.4	30.2	28.8	29.2	28.5	28.5	71.5	19.8	21.3	62.6	5.9	3.8
23	59.66	27.7	34.2	22.2	28.2	30.5	29	29.5	28.4	28.3	73.6	20	19.9	64.5	5.9	3.5
24	60.02	28.1	35.3	23.1	28.6	31	29.1	29.5	28.5	28.5	69.8	19.1	20.5	64	6.2	4.5
25	59.86	27.6	34.7	21.9	28.2	31	29.1	29.6	28.7	28.5	68.8	18.4	19.7	64.5	6.8	4.5
26	59.32	27.1	34	21.5	28.1	30.8	29.2	29.6	28.5	28.4	71.7	18.8	18.2	62.9	6.1	4
27	59.25	27.3	34.6	20.8	28.1	31.3	29.1	29.8	28.5	28.3	69.6	18.4	17.8	64.8	6.5	4.3
28	60.08	27	34	21.5	28.5	31.2	29.3	29.8	28.7	28.5	68.9	18	18.7	66.7	7.2	4.2
29	60.95	27.3	33.5	22	28.5	30	29.3	29.5	28.6	28.4	67.1	17.7	19.1	65.4	6.2	5.1
30	60.66	26.7	34.8	21.1	28	30.3	29.1	29.5	28.7	28.5	69.1	17.6	17.8	64.7	6.1	4.3
31	59.91	26.4	32.8	21.4	27.9	30.3	29.1	29.5	28.8	28.5	72.6	18.4	18.5	62.3	5.5	3.7
Mean Total	759.84	26.8	33.1	22.2	27.6	29.7	28.6	28.9	28.3	28.3	74.3	19.1	20	63.8	5	3.5
Departure from normal	-0.67	+0.2	+0.6	+0.9							+2.7	+1			-23.7	

Day.	Wind.			Clouds.			Sunshine.	Rain, 24 hours beginning 6 a. m.		Miscellaneous.			
	Prevailing direction.	Total movement.	Maximum hourly velocity.	Direction at the time of the maximum velocity.	Amount (mean).	Form and direction.		On the tower.	In the park.				
						Upper.					Lower.		
1	SE	168	15	SE	0-10.	Ci.	S	Cu.	SSE	h. m.	mm.	mm.	
2	WSW	157.5	18.5	WSW	3.4	Ci.	S	Cu.		7 35			∠° p.
3	W	171.5	21	W	1.5	Ci.	S	Cu.		9 45			
4	W quad.	157	18	SW	3.5			Cu.	SE	8 50			T ∠ p.
5	NE, SW	155	18	ENE	6.2	A.-Cu.		Cu.	ENE	6 00			
6	E quad.	169	22	ESE	8.5	A.-Cu. E, SSE		Cu.	ENE	2 50	2	2	d° p.
7	NE quad.	110	11	W	9.8	Ci.-S.		Cu.	ENE	0 35	.9	1.3	d° a.
8	E quad.	147	13	W	6.5	Ci.	WSW	Cu.	E	5 35	1	1	d° p.
9	E quad.	206.5	26	ENE	4.6	A.-Cu. ENE		Cu.	E	6 25			
10	ESE	191.5	24	E	6	Ci., A.-Cu.		Cu.	E	4 30			
11	SE	231	23	SE	3.6	Ci., A.-Cu.		Cu.	E	9 45			
12	W	183	15	WNW	4	Ci.	WSW	Cu.	E	9 20			
13	E quad.	168	15	WNW	5.9	Ci.-S.	E	Cu.	E	5 50			
14	Variable	90.5	10	NNE	9.6	Ci.-S.	N.	E		0 25	4.8	4.9	d° a. ● p.
15	NE quad.	144.5	15.5	NE	8.9	Ci.-S.		Cu., Cu.-N.	E	2 20			d° a. † p.
16	ESE, W	147	16	W	7.8	Ci.-S.	ESE	Cu.	E	3 05			
17	Variable	141	12	W	7.1	Ci.	SE	Cu.	E	2 40			
18	Variable	148	17	W	4.8	Ci.	SSW	Cu.	E	8 40			
19	SE, W	136	17.5	WbyS	6	Ci.	ENE	Cu.	E	5 30			∠° a.
20	W	167	19	W	3.9	Ci.		Cu.	E	7 55			† ∠ p.
21	SE	183	18	W	5	Ci.-S.	ESE	Cu.	E	7 10			d° a.
22	SE	220	18	W	1.4	Ci.		Cu.	ENE	9 20			
23	SE	189	17	SE	5.3	A.-Cu.	SE	Cu.	E	6 20			
24	SE, E	188	20	SE	2.9	A.-Cu.		Cu.	SE	8 10			
25	SE	224	23	SE	2	Ci.		Cu.	E	9 45			
26	SE	236	24	WbyS	3.1	Ci.		Cu.	E	8 00			∠° a.
27	SE	241	17	SE	2.1	Ci.		Cu.	SE	10 05			
28	NE, SE	218	19	E	3.2	Ci.	SW	Cu.	E	8 10			
29	NE, E	236	20	W	3.4	Ci.		Cu.	E	9 40			
30	E	197	18	W	5.2	Ci.		Cu.	E	9 20			
31	SE	199	17	W	4.2	Ci.-S.	E	Cu.	E	7 50			
Mean Total		178.1	18		4.9					6 45			
Departure from normal		-1,209.9			+0.4					209 00	8.7	9.2	

<sup>a</sup> All the mean values given in this table are deduced from hourly observations.  
<sup>b</sup> These values are taken from instruments mounted in the Observatory Park, 1.5 meters above ground.



METEOROLOGICAL DATA FOR MIRADOR OBSERVATORY, BAGUIO<sup>a</sup>

[ $\phi = 16^{\circ} 25' N$ ;  $\lambda = 120^{\circ} 35' E$ ; barometer above sea, 1,512.5 meters; gravity correction not applied, -1.65 mm.]

Day	Air temperature at Mirador (on the top of the mountain).		Air temperature in the plateau near the City Hall.					Relative humidity (mean).	Vapor pressure (mean).	Radiation.		Evaporation.				
	Mean.	Maximum.	Hour.	Minimum.	Hour.	Maximum.	Hour.			Minimum.	Hour.	Minimum on grass.	Maximum in sun. Black bulb in va- cuo. <sup>c</sup>	Free exposure (total).	Shelter (total).	
	mm.	°C.	°C.	°C.		°C.	°C.	°C.	Per ct.	mm.	°C.	°C.	mm.	mm.		
1	637.21	19.5	25.8	3.15p.	15.6	4.30a.	26.5	2.30p.	15.9	5.05a.	76.5	12.4	14.7	53	7.2	3.4
2	37.26	19.5	25.6	1.10p.	16.2	4.00a.	27.1	1.00p.	15.4	6.15a.	81.3	13.5	14.5	58.2	5.1	2.3
3	36.63	18.8	25.2	1.00p.	15.6	4.15a.	26.6	0.50p.	15.1	5.35a.	84	13.6	13.7	62.6	4	2.3
4	36.95	19.2	26.1	1.15p.	16	6.40a.	25.9	1.20p.	15	6.25a.	82.8	13.7	13.5	62.6	3.9	1.8
5	38.28	18.3	26.2	10.40a.	15.5	5.30a.	27.2	11.10a.	14.9	6.20a.	83	12.8	13.7	61.1	5.2	2.1
6	38.58	18.5	24.3	0.30p.	14.7	11.55p.	25.9	2.15p.	14.4	5.20a.	81	12.8	13	55.5	4.6	1.9
7	37.96	16.3	18.4	10.25a.	14.3	3.15a.	20.2	10.20a.	14	2.00a.	85.3	11.7	13.2	56	2.8	1.6
8	37.05	17.3	24.8	1.55p.	14.5	2.15a.	24.5	2.45p.	14.9	2.00a.	83.3	12.2	13.3	55.2	5.7	2.7
9	37.87	17.8	23.2	1.35p.	14.8	4.10a.	25.3	Noon	15	4.00a.	75	11.2	13.6	57	7.9	3.3
10	37.98	18.3	24.4	0.25p.	14	3.50a.	24.9	0.30p.	13.7	4.50a.	75	11.3	12.3	53.2	7.4	3.3
11	37.06	18	24	1.00p.	14.1	5.30a.	25.3	11.30a.	13.1	6.15a.	79.8	12	12.6	55.5	4.1	2.2
12	36.97	17.9	24.2	1.45p.	13.7	5.30a.	24.4	1.35p.	12.7	6.00a.	88	13.4	11.8	60.7	3.4	1.5
13	37.48	18.4	24.2	10.25a.	15	6.05a.	25.3	10.40a.	14.1	6.10a.	84.8	13.2	13.6	55.2	4	1.9
14	37.40	17.6	23.8	0.40p.	14	6.10a.	24	10.30a.	13.6	6.00a.	80.7	11.9	12.5	62.5	5.5	2.3
15	37.13	18	24.6	0.40p.	13.8	11.45p.	25.2	1.30p.	13.5	12 m. n.	69	10.2	12.7	56	8.1	3.2
16	36.58	17.6	24	10.40a.	13.6	1.05a.	25.1	11.15a.	12.6	6.15a.	78	11.5	11.7	56.2	4	2.1
17	36.75	17.8	23.2	0.40p.	13.8	5.55a.	25.1	0.45p.	13.2	6.15a.	83.3	12.4	11.8	56.8	5.2	2.4
18	36.78	18.7	24.5	10.10a.	13.7	5.30a.	26.1	11.25a.	12.9	3.55a.	71.7	11.2	11.7	54.4	9.6	4.3
19	36.67	19.3	25.2	1.50p.	14.8	3.30a.	26.7	2.10p.	14.1	5.45a.	63.8	10.7	13.1	53.6	6.7	3.5
20	36.62	19.2	25.2	0.30p.	15.7	4.55a.	26.8	10.30a.	15.1	6.00a.	85	14.1	13.6	58	3.8	1.7
21	37.14	20.1	25.3	0.10p.	17.5	5.35a.	25.6	4.15p.	17.2	5.10a.	85.5	14.9	16	62.3	3.3	1.4
22	37.32	19.7	24.1	1.30p.	16.8	5.55a.	26.1	1.15p.	16.7	5.50a.	90	15.3	14.6	57.2	2.7	1.1
23	37.73	20	25.8	1.50p.	16.2	6.05a.	27.5	11.10a.	16.8	6.15a.	88	15.2	15	60	3.5	1
24	38.01	20.2	25.8	0.50p.	16.7	6.05a.	27.3	2.50p.	16.3	12 m. n.	83	14.3	15.2	55.6	6.6	2.7
25	38	19.6	26.2	11.00a.	16	6.00a.	26.7	0.40p.	14.2	6.00a.	74.8	12.5	13.5	59.4	5.6	2.8
26	37.32	19.2	25.3	0.50p.	15.2	5.30a.	26.8	3.20p.	14.8	4.30a.	81	13.3	13.4	57.2	7.3	3.1
27	37.14	19.2	25	1.10p.	15.5	5.55a.	26.2	2.00p.	14.1	5.45a.	81	13.3	13.3	59.3	5.4	2
28	37.70	18.8	24.8	0.15p.	15.2	4.15a.	26.4	2.10p.	15.4	5.35a.	84.2	13.5	13.8	59.6	4.6	2.1
29	38.34	18	24	1.10p.	15.1	4.30a.	25.7	1.25p.	14.4	5.30a.	82.2	12.6	12.3	58.5	2.1	1.7
30	38.04	17.5	23.2	2.30p.	15	5.55a.	25.2	1.40p.	14.6	5.40a.	89.5	13.3	12.6	55	2.1	1
31	37.53	17.4	22.4	1.00p.	14.5	5.55a.	24.7	1.45p.	14	5.25a.	89	13.1	12.4	59.2	2.1	1.1
Mean.	637.40	18.6	24.5		15.1		25.7		14.6		81.3	12.8	13.3	57.6	5	2.3
Total.															153.5	69.8

Day	Wind.				Amount (mean).	Clouds.		Sunshine.	Rain, 24 hours begin- ning 6 a. m.	Miscellaneous.
	Prevailing direction. <sup>d</sup>	Total movement.	Maximum hourly veloc- ity.	Direction at the time of the maximum velocity.		Form and direction.				
						Upper.	Lower.			
1	E	389.2	28	E	2.7	Ci.	Cu. SSW, SSE	h. m.	mm.	☉ a.
2	E, W	295.8	25.4	W	4.1	Ci.	Cu. S	8 05		☉ a. ☽ p.
3	W quad.	249	21.9	SW	4	Ci.	Cu.-N. SSW	5 25		☉ a. ☽ p. ☽ a. ☽ p.
4	SE, W	282.6	24.9	W	4.3	Ci.	Cu.-N. WSW	7 40		☉ a. ☽ p. ☽ a. ☽ p.
5	E	426.7	25.1	E	4.4	Ci., Ci.-S.	Cu.-N. SSE, SW	4 20	19.3	☉ a. ☽ p. ☽ a. ☽ p.
6	E	364.4	27.2	E	5.9	Ci.	Cu. E	5 00	23.4	☉ a. ☽ p. ☽ a. ☽ p.
7	E	321.9	28.7	E	8.7	Ci.-S.	Cu.-N. SSE	0 00	1.3	☉ a. ☽ p. ☽ a. ☽ p.
8	E	486.9	32.5	E	9.3	Ci.-S.	Variable	2 55	2.1	☉ a. ☽ p. ☽ a. ☽ p.
9	E	496.7	30.9	E	7.6	A.-Cu.	Cu.-N. ESE	2 05		☉ a. ☽ p. ☽ a. ☽ p.
10	E	391	25.4	SE	3.4	Ci.	Cu. E, SE	8 20		☉ a. ☽ p. ☽ a. ☽ p.
11	E	392.5	24.7	SW	3	Ci.	Cu. SSE, ESE	6 45		☉ a. ☽ p. ☽ a. ☽ p.
12	NE quad.	269.2	22.2	W	4.6	Ci.	Cu.-N. SSE	6 40		☉ a. ☽ p. ☽ a. ☽ p.
13	E	362.9	22.7	E	5.3	Ci.	Cu.-N. sw, SSE	5 25		☉ a. ☽ p. ☽ a. ☽ p.
14	E	418.7	27.9	E	5.3	Ci.	Cu.-N. SSE	3 55		☉ a. ☽ p. ☽ a. ☽ p.
15	E	376.7	28.2	E	3.7	A.-Cu.	Cu. E	7 55		☉ a. ☽ p. ☽ a. ☽ p.
16	E	356	27.2	W	5.1	A.-Cu.	Cu.-N. SW	7 05		☉ a. ☽ p. ☽ a. ☽ p.
17	N, SW	283.8	24.6	SW	4.9	Ci.	Cu.-N. WNW	7 05		☉ a. ☽ p. ☽ a. ☽ p.
18	E	368.3	23.5	SW	2.6	Ci.	Cu. SE quad.	8 15		☉ a. ☽ p. ☽ a. ☽ p.
19	E	384.2	24.1	E	2	Ci.	Cu.-N. SSW	9 25		☉ a. ☽ p. ☽ a. ☽ p.
20	E	302.4	24.1	W	4.6	Ci.	Cu.-N. SSW, W	5 50		☉ a. ☽ p. ☽ a. ☽ p.
21	E, SW	241.3	20.7	SE	7.3	Ci.	Cu.-N. SSE, SE	5 00		☉ a. ☽ p. ☽ a. ☽ p.
22	E	360.2	22.2	SE	7.7	Ci.-S.	Cu.-N. S	3 25		☉ a. ☽ p. ☽ a. ☽ p.
23	E, W	239.5	19.6	NW	6	Ci.	Cu.-N.	6 05		☉ a. ☽ p. ☽ a. ☽ p.
24	E	356.1	24.7	SW	4.7	Ci.	Cu. SE	6 15		☉ a. ☽ p. ☽ a. ☽ p.
25	E	342.4	23.3	W	3.9	Ci.	Cu.-N. S	7 35		☉ a. ☽ p. ☽ a. ☽ p.
26	E, SW	350.9	24.1	SW	2.9	Ci.	Cu. SE, ENE	9 25		☉ a. ☽ p. ☽ a. ☽ p.
27	E, W	329.1	23.1	W	3.9	Ci.	Cu.-N. SSW	8 30		☉ a. ☽ p. ☽ a. ☽ p.
28	E	308.8	21.4	W	5.9	Ci.	Cu.-N. E	4 30		☉ a. ☽ p. ☽ a. ☽ p.
29	E	322.2	26.2	W	5.6	Ci.	Cu.-N. W	5 00	3.7	☉ a. ☽ p. ☽ a. ☽ p.
30	E quad.	289.4	22	SW	7.3	Ci.	Cu.-N., Cu. E	2 35	12.7	☉ a. ☽ p. ☽ a. ☽ p.
31	E, W	311.8	20.9	W	6.7	Ci.	Cu.-N. SE, SW	5 05	1	☉ a. ☽ p. ☽ a. ☽ p.
Mean.		344.2	24.8		5.1			5 52		
Total.		10,670.6						181 55	63.8	

<sup>a</sup> All the mean values given in this table are deduced from six daily observations taken at 2, 6, 10 a. m. and 2, 6, 10 p. m.  
<sup>b</sup> The barometric readings of this station are not reduced to sea level.  
<sup>c</sup> Maximum of hourly observations taken from 6 a. m. to 6 p. m.  
<sup>d</sup> This element is based on hourly observations taken from a quadruple register, which gives only eight possible directions of the wind.

## DAILY RAINFALL AT THE STATIONS OF THE WEATHER BUREAU, MARCH, 1921

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lapac Agricultural School, Siasi, Sulu †						19.8				24.1		24.1	17.5	21.6		18.3
Glan, Cotabato †						6.4	1.5						14.8	2.8		32.5
Jolo, Sulu	0.8	1.3	22.1					1.3	7.6	4.1	1	5.1			6.8	
Buntung, Cotabato, Cotabato †	10.7	2.8		1.5				1.3	7.6	4.1	1	5.1			6.8	
Laia, Malita, Davao					35.3	12.7	8.6	20.3	9.6	3	8.6	20.3			2.5	6.9
Malita, Davao		1.5			6.6	14	33	5.1	6.6	8	2.8	21.6	5		49.3	
Lebak, Cotabato	9.9	27.4				22.9	36.8		25.7		41.4	34.3	41.1	16		3.8
Lamitan, Isabela, Zamboanga				23.9	22.1	7.1			4.3		5.8				52.6	62
Basilan Plantation, Kabunbatan, Isabela, Zamboanga †					19.8	5.1	2			13.7	11.4	3.3	10.2	3.3		85.6
Padada, Santa Cruz, Davao †	35.6									43.2						
Basilan Plantation Office, Isabela, Zamboanga †	.8				12.2	5.6	7.9	.8	12.7	8.6		2.8	10.2			54.9
La Union, Sigaboy, Davao †	3.6			.3	.5	9.4	1.3	1.5			3.3	.3			3.6	
Paranglalap, Isabela, Zamboanga †					12.7	38.1	12.7	15.2	20.3	10.2		5.1	17.8			81.3
Latuan, Isabela, Zamboanga †					8.9	4.8	1.8		16.8	7.9		3.3	16.5			40.4
Buluan, Cotabato †	.3				20.8	4.8	1	.8	2				39.4	15.5	25.9	4.8
Malamau, Isabela, Zamboanga		1.3			4.8	1.8	3.8		12.4	9.4		2.5	16			42.4
Pagsilaan Farm School, Mati, Davao †		17.8	7.6		12.7	7.6	10.1	7.6	5.1	17.8	20.4	10.2	5.1			5.8
Cagayan de Sulu, Sulu †	7.6	.8			55.9				5.1	.3			14.5	49.3		34.5
Kidapawan, Cotabato †	3.3	7.6			5.1	6.9	14.5		24.1	31.7			3.8		17.3	8.1
Davao, Davao	5.1				9.4	2.8	3.8	4.8	5.8	8.4	7.3		3.6		2	
Piang Agricultural School, Kudarangan, Dulauan, Cotabato †	16.5						50.8	1	64.7	19	6.4					
Pikit, Cotabato					1.3	5.6		57.7		44.5	32.5	21.1				2
Cotabato Seed Station, Pikit, Cotabato †			1.5			1.3	116.3	40.9	35.6	20.6						8.1
Awang, Cotabato †				15.2		2.5		22.9	10.2		11.2	8.9		7.6	14	
Sirib, Guianga, Davao †						1.3	38.4		33	40.1	9.9		1		27.9	3.8
Kabakan, Cotabato †	20.3					17.8	22.8	20.3	33	50.8						
Bual, Dulauan, Cotabato						3.6	40.9	1.8	31.3	16.8	4.6	10.2	1		3.6	1.5
Cotabato, Cotabato	.8		.8		4.8	.3	34		19.8	13	4	22.1	.3			.8
Mampising, Pantukan, Davao †	19.3	12.2	3		24.1	17.5	11	1.8	13	13.5	7.4	6.4	8.4		1.3	
Kabasaran, Buldun, Cotabato †		77.5					26.4						15.7	12.7	35	20.3
Naganaga, Margosatubig, Zamboanga	5.8		6.1	7.6	7.1	43.7	23.6		25.1	15.2	6.1	27.2			23.9	6.1
Malabang, Lanao	6.4	12.7	1.5		19.3		23.1	18.5	38.6	50.3	37.4		12.7			
Compostela, Monkayo, Davao †				.5	1.3	25.7		23.9	63	58.4	35.6	25.4	6.9	7.1		
Lumbatan, Lanao †		10.2		12.7		15.2							7.6	22.8	57.7	12.2
Cateel, Davao	5.1	3.3	5.8	6.1	42.7	69.3	2.5	11.9	65.8	154.7	76.8	28.7	36.9	3.8		
Ganasi, Lanao	.5	11.9			9.9		7.9							12.2	12.7	5.1
Camp Kalao, Monkayo, Davao	1.3	4.9		.5	14.5	32.3	2.8	13.7	20.1	69.3	35.3	6.6	18.6	.5	3	1.5
Managok Agricultural School, Linabo, Malaybalay, Bukidnon	.8				.5	4.6		10.7	35.1	18.5	18.3	15.3	7.4	6.4	37.3	10.4
Camp Keithley, Dansalan, Lanao		2.3	8.9	.8	10.2	2.6	16	9.4	40.6	4.6	3.3	11.1	1.5	7.1	63.5	.5
Veruela, Agusan	26.2		4.6	12.7	32.5	35.6	4.1	15.3	38.1	76.2	58.7	7.1	57.4	2.5	25.1	6.4
Sindangan, Zamboanga †		16				.8	11		20.8	2.8	.3	4.8	1.5		2.5	
Sumilau, Bukidnon		8.6			14.5		38.6		16	48.7	12.7	5.1	2.3		44.5	37.4
Diklom, Tangkulan, Maluko, Bukidnon †	19.8	13.2			16	8.8						21.9	12.7	18.3		45.2
Cagayan, Misamis					1.3				11.7	4.1						2.3
Talacogon, Agusan	3.6	11.7	1.3	3.3	35.1	67.6	3	74.2	228.67	49.3	51.8	11.9	8.1		19.3	3.8
Butuan, Agusan		1.5	.8	5.3	18.8	88.4	48.8	5.6	36	44.2	26.2	5.5	23.8	6.9	51.1	2
Mambajao, Misamis					20.6	34.1	3.3	11.4	38.1	76		6.1	3.8	15.7		
Dumaguete, Oriental Negros					1.5	4.6			2.8	13.7	3.3	.3	2.5			
Hacienda San Jose, Tanjay, Oriental Negros †					6.4	3			3.3	16.3						
Hacienda Palanas, Bais, Oriental Negros †					1.3			6.9	2.5						14	6.4
Hacienda Tamugon, Bais, Oriental Negros †						7.6	5.1	5.1		7.6	5.1	5.1			3.8	10.2
Tagbilaran, Bohol					4.9	8.1	2	1	15.5	6.1	12.7	5.1	.3			
Iwahig Penal Colony, Puerto Princesa, Palawan	15.7					21.6									21.6	8.1
Dalaguete, Cebu					5.1	3.1		9.9	5.1	3.8	1	7.1	6.4	8.4		
Surigao, Surigao					47.7	209.3	11.6	12.4	63.2	52.8	1	23.9	136.6	39.4	12.4	3.3
Biaong Cui's Farm, Barili, Cebu						21.8										2.8
Maasin, Leyte					13.2	145.8	5.6	22.6	19	10.2		4.3	38.1	8.9	39.6	
Binalbagan Estate, Binalbagan, Occidental Negros †		.8											.8			
Isabela, Occidental Negros						.8	3.3									5.8
Hacienda Tanolo, Himigaran, Occidental Negros		3.3				2	4.8						1.3	.5	14.7	
Cebu, Cebu					32.7	1.3		1	2	4.3	.5		3	7.7	19.5	2.3
La Castellana, Occidental Negros													.5			
Hacienda Vallehermoso, Vallehermoso, Oriental Negros †						13.7		18.8						1.3	3.3	
Central Azucarera de la Carlota, La Carlota, Occidental Negros						3.3	.8	1.3					1.8			
Hacienda Canlaon, La Castellana, Occidental Negros				1									2.5	26.7	7.9	
La Carlota Experimental Station, La Carlota, Occidental Negros †						2.5							1		2.5	
Mao Sugar Central, Santa Cecilia, Bago, Occidental Negros		12.4	.5			9.9	17		.5				1.3		1	
Valladolid, Occidental Negros					.8	5								.8		
Central San Carlos, San Carlos, Occidental Negros †					15	15.2							1	8.9	11.7	8.1

† Voluntary or coöperative station.

Daily rainfall at the stations of the Weather Bureau, March, 1921—Continued

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hacienda Refugio, San Carlos, Occidental Negros †	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
San Joaquin, Iloilo					7.6	24.9								11.4	10.2	1.3
Murcia, Occidental Negros					2.5	16.3						3	2.5	1	1.8	.8
Bacolod, Occidental Negros					24.9	26.4							2.5	5.1	5.6	2
Oton, Iloilo						6.6							1.3		2	1.3
Iloilo, Iloilo						12.7							.5		3.8	1
Lapuslapus, Iloilo, Iloilo †						17.8							1		3.8	2.3
San Jose de Buenavista, Antique								0.8							10.7	15.7
Tuburan, Cebu					1	69.6						4.6	.3	.3	11.2	38.1
Leon, Iloilo						5.6			4.6						10.7	1.8
Silay, Occidental Negros						53.3		3	5.6	3		1.3	10.2	1		
Calag-itan, San Remigio, Antique			1.3											.5	6.4	
Hawaiian Philippine Co., Malisbug, Silay, Occidental Negros †						33.3	1.8	6.9	4.3		2.8	.5	24.9	3.8	8.4	2.3
Cuyo, Palawan																
Lucena, Santa Barbara, Iloilo †	3					5.6		3.3					3.3	5.1	1	18.8
Barotac Nuevo, Iloilo																
Hacienda Ilaya, Victorias, Occidental Negros						24.6		6.1				3	20.6	5.8	8.1	6.6
Hacienda Bilbao, Manapla, Occidental Negros		4.3		3.6	1.8	2.5		5.6		4.8	6.6		2.3	19.3	20.9	9.1
Cadiz, Occidental Negros						36.1						10.2	.8	3.8	12.9	14
Dingle, Iloilo						20.5								2	1.3	9.9
Ormoc, Leyte	3.8				4.6	249.7	14.2	5.9	3.6			8.6	11.4	13.7	54.3	8.1
Guiuan, Samar	7.1		1.8		21.3	49.3	4.6	6.4	8.1		7.6	21.6	97.8	57.6	305.3	36.3
Bugasong, Antique																
Bogo, Cebu					1.8	117.8	2		1.5			16.3	.6	13.7	14.5	57.1
Dueñas, Iloilo †					3.8	16.5						4.3		2.5	11.5	
Bitaoagan, Passi, Iloilo †					7.1	12.7		4.8							8.4	24.4
Tacloban, Leyte					12.7	80.9	29.7	13.5	3.8			12.4	12.6	46.5	89.6	6.8
Dumarao, Capiz †					10.9	11.4		1.3				2.5	5.1	11.4	13.5	13.5
Dao, Capiz †				1.3		12.7	8.9	5.3			1.3	14	4.6	14.5	9.9	4.1
Capiz, Capiz						20.7	.3	2.6				6.6	.3	7.1	7.9	4.4
Borongon, Samar	8.6		.8		19.6	80	7.6	4.9	13.4	.5		72.1	53.9	61.5	236.2	110
Catbalogan, Samar	.8				1.5	89.7	52.1	6.3	12.7		1.8	12.4	5.1	34	117.4	70.1
Calbayog, Samar				1.5	2.5	135.5	29	2.6	8.1			13.7	1.5	35.6	39.1	39.8
San Jose Estate, Robles Camp D-17, San Jose, Mindoro †												4.6				
San Jose Estate, Tamaraw Plantation, San Jose, Mindoro †																
San Jose Estate, San Agustin, San Jose, Mindoro †							3.3									
San Jose Estate, San Jose, Mindoro †							3.3									
Masbate, Masbate					15.7	94.5		29						38.4	24.6	22.3
San Jose Estate, Tunnel D-12, San Jose, Mindoro †						4.1	1.5									
Romblon, Romblon						38.9	.8	13	4.3				4.1	2	36.5	4.1
Batag Lighthouse, Laoang, Samar			2		28.2	15.2	20.3	10.7				4.8		41.7	44.9	147.3
Irosin, Sorsogon					40.1	137.2	19.5	16	2	.5		5.1		27.9	45.7	51
Sorsogon, Sorsogon					104.1	226.1	84.8	14	4.3	1.8		6.4		30.7	25.7	72.9
Bacon, Sorsogon				.5	81.3	151.6	105.2	14.5	5.8	7.9	2	10.2		14.7	15.2	54.9
Jovellar, Albay	.8				26.7	133.3	10.1	13	1.1	.5	.6	1.8	2.3	16.5	14	6.1
Legaspi, Albay, Albay					51.3	154.1	56.7	7	2.8	1.8	3.6	5.6	6.1	48.2	29.1	25.4
Guinobatan, Albay	.5	.3	1.3		16.3	88.4	24.1	26.2	.8	.8				3.6	2.3	5.4
Polangui, Albay			11.9	11.9	15.7	111.2	21.1	15	1.3			.8	.8	.8	3	3.8
Bacacay, Albay					49.3	106.4	54.8	15		4.6		3.3	2.3	20.3	31	26.2
Tabaco, Albay				1	49.5	127.8	92.2	22.8	2.8	.8		2.3	.8	17.8	11	8.9
Sumay (Guam), Agaña, Iadrone Islands						2.8	7.6	23.4	.5			2.5	1.3	4.3	7.4	
Iriga, Camarines Sur					16.5	10.2	94.3	18.8	2.8			.3	.3	1.3	.3	
Calapan, Mindoro					3.3	.8	19.5	.3	2		2.3		2	4.6	14.5	
Tiwi, Albay						86.4	70.4	7.6	7.6	8.6		4.8	2.3	18.3	3	8.1
Pasacao, Camarines Sur				8.1		1.8	64.3	2.8	9.9		6.9				4.3	
Virac, Albay					48.5	78.8	159.8	10.7	1.5	2	2.8	2.3	4.8	26.4	3.8	13.7
Naga, Camarines Sur	9.4	.3			11.7	57.9	11.5	31.5						.5	.8	
Tigaon, Camarines Sur		.5	2.5		34.8	71.1	45.5	13	2	11.2	3	9.1	5.6	11.4	4	3.3
Libmanan, Camarines Sur					5.1	55.4	9.1	6.9		.5				6.1	3.3	4.6
Batangas, Batangas						3.6	1			1.5				1		
Ragay, Camarines Sur	(*)	(*)	(*)	(*)	(*)	(*)	3.6	1.3	.5	2.3			1.3	27.7	53.1	27.7
Calatagan, Batangas				4.1												
Balayan, Batangas	3.8															
Lipa, Batangas						5.1		1	.5	1				8.1		
Lucena, Tayabas					3.1	20.4	.8	1						12.7	3.3	3.3
Atimonan, Tayabas					2.3	13.2	18.5	13	3.5				6.4	25.7	1.3	4.4
Lian, Batangas					17.5	8.6										
Nasugbu, Batangas																
Ambulong, Tanauan, Batangas				11.4		16.5	1.5						2	12.7		
Daet, Camarines Norte					3.9	183	21.3	5.1		6.9	10		9.4	6.8	11.9	37.8
Mendez Nuñez, Cavite					1.3	17				1.5				5.1		
Alfonso, Cavite				4.8		10.4								1.8		
Indang, Cavite			20.8			17.5	1									
Canluban, Calamba, Laguna			10.7		8.9	21.3	3			1.3			1.8	3.3		
Silang, Cavite			3.6			18.3	1					1.3		8.4		
Maragondon, Cavite						1	.8									
Paracale, Camarines Norte	11.2	14.5	3.3	10.2	8.9	2.5	3			3	4.5	2.1		5.3	3.6	
Santa Cruz, Laguna					4.8	24.9	3.8			2.5	1.3					
Buenavista, General Trias, Cavite			36.6			6.6	1.3			1	.5			.8		

† Voluntary or coöperative station.

\* No observation.

## Daily rainfall at the stations of the Weather Bureau, March, 1921—Continued

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Fort Mills, Corregidor, Cavite †	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Imus, Cavite					0.3	2.5	0.3								0.3	
Alabang Stock Farm, Alabang, Muntinlupa, Rizal †						4.3	1.1								.6	
Cavite Naval Station, Cavite, Cavite					10.2	1						0.8	1.8			
Lamao Horticultural Station, Lamao, Limay, Bataan †						3.3								4		
Manila, Manila						10.2?										
Antipolo, Rizal						2	.9	1							4.8	
Balanga, Bataan				19.8		1.8	3	2							2.5	
Montalban, Rizal †						.5	1								.8	
Hacienda Pintong Sapang, San Jose del Monte, Bulacan †				2.3		6.6	2.8	.5							.5	
Mabayuan Dam, Olongapo, Zambales †					44.4	5.8	4.3	1.5	1.3						5.1	
Malolos, Bulacan																
Pampanga Sugar Mills, Del Carmen, Pampanga †				7.9		.8	1.6									
San Fernando, Pampanga				2.3	6.4		1	.3								
Mitla, Porac, Pampanga †					3		2.8	.5	.3							
San Isidro, Nueva Ecija				1.6	48.5											
Iba, Zambales																
Concepcion, Tarlac						9.7										
O'Donnell, Capas, Tarlac																
Hacienda Luisita, Comillas, La Paz, Tarlac †				10.2	65	.8	3.3									
Hacienda Luisita, San Miguel, Tarlac, Tarlac †																
Tarlac, Tarlac																
Paniqui, Tarlac †						.3		1								
Camiling, Tarlac				0.3		.5	.8									
Muñoz Agricultural School, Muñoz, Nueva Ecija †																
Baler, Tayabas					21.6		1.3									
Dagupan, Pangasinan	0.1		66	2.3	33	29.2	58.1	45	3	58.9	15.2		27.9	2.3	10.2	1
Rosario, La Union						1.5	.8									
Tubao, La Union						8.6	.8	2			.3					
Aringay, La Union						.2	.3	.8		5.3						
Baguio, Mountain Province						.5	.3	.3	5.3							
Naguilian, La Union				19.3	23.4	1.3	1.3	2.1							.3	
San Fernando, La Union						2	2		6.1							
Sagada, Mountain Province †						2			2							
Bontoc, Mountain Province †					3.3		21.1	7.1	2.3			5.1		3		1
Candon, Ilocos Sur					2.3		19.3	9.1	1.8			10.4		1.8		
Vigan, Ilocos Sur							1		2.8							
Tuguegarao, Cagayan																
Tayum, Abra †																
Laoag, Ilocos Norte																
Aparri, Cagayan																
Cape Bojeador, Burgos, Ilocos Norte																
Basco, Batanes																
		4.8	16.3	10.4	13.7	4.3	.8		3.3			2.8				2.5

† Voluntary or cooperative station.

a Rain in 24 hours beginning 8 a. m.

Daily rainfall at the stations of the Weather Bureau, March, 1921—Continued

Station.	Day of month.															Total.
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Lapac Agricultural School, Siasi, Sulu †		7.1	36.1	24.1	18.8								5.1			172.7
Glan, Cotabato †		35.6							14.7	47.3						141.5
Jolo, Sulu	24.6	9.1		23.1	7.6	12.7			4.1	39.9	1.5					204.8
Buntung, Cotabato, Cotabato †	41.4	4.1		12.7	4.1	3.8	10.2	1								135.5
Lais, Malita, Davao		11.4	40.7	17.8					9.4				11.4		2.5	221
Malita, Davao		2.5	9.7	42.9					2.5	6.1			5.1			210.6
Lebak, Cotabato		5.3	16.7	33	18.8				3.3	23.6						360
Lamitan, Isabela, Zamboanga		10.2	13.7	11.9		22.6	18.5	6.6		3.3		14.2				278.8
Basilan Plantation, Kabunbatan, Isabela, Zamboanga †	3.6	22.6	24.9	21.1	52.8					3.6	9.1	10.7				302.8
Padada, Santa Cruz, Davao †	61										71.1					210.9
Basilan Plantation Office, Isabela, Zamboanga †	2	24.6	1.3	26.6	41.2		3.3			2		32.5				250
La Union, Sigaboy, Davao †	.8	1.8								11.4			.3			39.9
Paranglapp, Isabela, Zamboanga †	6.4	108		15.2	20.3							10.2				373.5
Latuan, Isabela, Zamboanga †	1	41.1		13.2	8.1					21.1		.8				185.7
Buluang, Cotabato †		2.5		5.3		1			1							125.1
Malamaui, Isabela, Zamboanga		33.5		16.8	17					12.4		1.3				175.4
Pagsilaan Farm School, Mati, Davao †				10.5	25.4	7.6	10.2		2.5					2.5		186.5
Cagayan de Sulu, Sulu †	10.4		.3	82	1					22.9		.8	.3			285.7
Kidapawan, Cotabato †		25.4	9.4	11.2					25.7	4.8						198.9
Davao, Davao	57.2	1.8		11.4	14.2					12.2						149.8
Piang Agricultural School, Kudarangan, Dulauan, Cotabato †			20.1	22.9	20.3											221.7
Pikit, Cotabato	5.6	49.3	15.5	1.8	.8					13.2	4.6					255.5
Cotabato Seed Station, Pikit, Cotabato †	40.9	5.6						15.7								236.5
Awang, Cotabato †					2.5					17.8						112.8
Sirib, Gulanga, Davao †	13.5	32.3	17.8		20.3					7.4						246.7
Kabakan, Cotabato †	63.5	25.4	2.5	15.2					12.7	5.1						239.4
Bual, Dulauan, Cotabato	4.1	33	1	9.1	34.5				25.9	4.8						227.7
Cotabato, Cotabato	3.6	3.3	.8	.5	14.7				6.6	.3	8.9		.8			136.6
Mampising, Pantukan, Davao †	9.1		3.6	9.9	15.7				17	33.5						227.7
Kabasaran, Buldun, Cotabato †		10.2		14.2									24.4			236.4
Naganaga, Margosatubig, Zamboanga	4.8	5.6			1					4.6	3					216.5
Malabang, Lanao		14.2		22.3	6.9					17		5.1			59.9	345.9
Compostela, Monkayo, Davao †			25.4	50					2.3				.5	4.1		330.1
Lumbatan, Lanao †			17.3		14.7	2.8				18.5	16	24.6	10.9			243.7
Cateel, Davao		2	18.1	.5				3.8	15	31.7	1.3	9.1	14.2	6.9	18	634
Ganasi, Lanao	47.8	14.7		5.1	59.7	7.4				3.8						203.3
Camp Kalao, Monkayo, Davao		12.4	6.1	18.8	.5				2.8	37.1	1	.8	3.3	4.8	1	313.5
Managok Agricultural School, Linabo, Malaybalay, Bukidnon	22.6	46.5	8.1	4.1	.5			1		1.5			.8	1		251.4
Camp Keithley, Dansalan, Lanao	16.8	52.6	9.4	9.9	5.1	13					3.3	.5				233
Veruela, Agusan	.5	2.3	6.4	1.5		.3		3	5.6	39.4		4.1	.5	2	7.9	476
Sindangan, Zamboanga †		4.3		28.4	2.3											95.5
Sumilau, Bukidnon	18.3	5.8	19	19	14											304.5
Diklom, Tangkulan, Maluko, Bukidnon †			3.6	24.9												184.4
Cagayan, Misamis		1.3														20.7
Talacogon, Agusan		4.3	9.9	7.1					1.5	10.9	2.5	7.6	5.6		16.5	638.5
Butuan, Agusan		2.8	8.1	17.3	1	3.3			1.3		5.4	7.6	1.3	1.3	2.1	409.8
Mambajao, Misamis		6.4												9.4		224.9
Dumaguete, Oriental Negros		10.9	.5		22.8											62.9
Hacienda San Jose, Tanjay, Oriental Negros †		76.4														105.4
Hacienda Palanas, Bais, Oriental Negros †	10.9	38.1	12.7	1.3									1.3			95.4
Hacienda Tamugon, Bais, Oriental Negros †	5.1	7.6														57.2
Tagbilaran, Bohol		10.2	1.3		1.5								1.3			70
Iwahig Penal Colony, Puerto Princesa, Palawan		55.9	3	2												127.9
Dalaguete, Cebu		10.9											6.4			67.2
Surigao, Surigao	7.6	1.3		1.8	3.3			1.8		.3	45.3		2.1		24.2	701.3
Biaong Cui's Farm, Barili, Cebu	28.7							18.8								72.1
Maasin, Leyte																307.3
Binalbagan Estate, Binalbagan, Occidental Negros †	42.7	4.3	13.2													61.8
Isabela, Occidental Negros		10.7	3		.5											24.1
Hacienda Tanolo, Hinigaran, Occidental Negros	16.5	10.1	17.8		3								.3			74.3
Cebu, Cebu		7.9	.3		2.3					.8						82.3
La Castellana, Occidental Negros	1.3	41.4			2.3						.3					49.1
Hacienda Vallehermoso, Vallehermoso, Oriental Negros †	36.1															73.2
Central Azucarera de La Carlota, La Carlota, Occidental Negros	3.9	8.4		.8	27					6.9						54.2
Hacienda Canlaon, La Castellana, Occidental Negros								.8	1.1					10.2		50.2
La Carlota Experimental Station, La Carlota, Occidental Negros †	1.3	21.8	.3	1	15.5					7.9						53.8
Mao Sugar Central, Santa Cecilia, Bago, Occidental Negros	3.3	2	9.2		12.2											68.8
Valladolid, Occidental Negros	6.4	1.3			11.2											26
Central San Carlos, San Carlos, Occidental Negros †												4.6			.8	65.3

† Voluntary or coöperative station.

## Daily rainfall at the stations of the Weather Bureau, March, 1921—Continued

Station.	Day of month.														Total.		
	17	18	19	20	21	22	23	24	25	26	27	28	29	30		31	
Hacienda Refugio, San Carlos, Occidental Negros †	18.5															73.9	
San Joaquin, Iloilo		5.6														7	
Murcia, Occidental Negros	1.8	11.9			0.5											41.3	
Bacolod, Occidental Negros	25.9	5.6	1		1.3											99.1	
Oton, Iloilo	7.1	4.6														22.9	
Iloilo, Iloilo	23.6	15								0.3						56.9	
Lapulaslapus, Iloilo, Iloilo †	11.5											2.5				36.6	
San Jose de Buenavista, Antique										1						3.3	
Tuburan, Cebu	.3	3.1	.3								0.8		1.3			108.8	
Leon, Iloilo		3							2.3							64.8	
Silay, Occidental Negros	1.3	8.9	.5								15.2				12.7	125.8	
Calag-itan, San Remigio, Antique	2.3	2.8	6.4	27.7							5	1.5				49.4	
Hawaiian Philippine Co., Malisbug, Silay, Occidental Negros †	1.8	8.7								4.3	4.6	31.2	2.3		0.5	2.3	144.7
Cuyo, Palawan		.8														.8	
Lucena, Santa Barbara, Iloilo †	26.7	27.4	8.4							1	3					74.6	
Barotac Nuevo, Iloilo													3.6			35.6	
Hacienda Ilaya, Victorias, Occidental Negros	71.9	19.8						7.4	2	5.6	2.8	3.3	2	5.8	5.1	200.5	
Hacienda Bilbao, Manapla, Occidental Negros	8.1	39.1	21.8	4.8			5.1		6.9	4.1	4.8	6.4		3.8	4.3	190	
Cadiz, Occidental Negros									20.3	10.9						108.2	
Dingle, Iloilo	4.6	30.5	20.5					10.4		15.2						115.7	
Ormoc, Leyte	5.6	1.3	11.7					.8					1.3		.5	398.9	
Guiuan, Samar		5.8	1		1.3			4.8	3.3	3.3	.8		5.3		9.4	659.8	
Bugasong, Antique		.8														1.4	
Bogo, Cebu	2													5	16	243.8	
Dueñas, Iloilo †	6.6	74.7	4.1		91.7					25.4						241.1	
Bitaoagan, Passi, Iloilo †	8.4	8.1								19.8						106.1	
Tacloban, Leyte	10.9	1			5.1			9.1	4.1	1.3		2.8	10.9	2.5	3.8	360	
Dumarao, Capiz †	5.1									5.1						79.8	
Dao, Capiz †	16.2	12.2						1.8	.8	21		2.8	3.8			135.2	
Capiz, Capiz	16.9	.9								1.9		.8	.8	.3		71.5	
Borongon, Samar	60.7	3.1	1.8		1.8	2.5		5.1	3	5.3	2.3	1.3	8.8	13	2.5	780.3	
Catbalogan, Samar	13.2	7.6	.8	6.4	1			3.6	2.3							441.8	
Calbayog, Samar	37.4	7.4	1.3		.3	4.1		1.8			10.7	8.4	3.1	1.8	4.6	.5	390.3
San Jose Estate, Robles Camp D-17, San Jose, Mindoro †											5.1						9.7
San Jose Estate, Tamaraw Plantation, San Jose, Mindoro †																	0
San Jose Estate, San Agustin, San Jose, Mindoro †																	3.3
San Jose Estate, San Jose, Mindoro †		.3	.3								5						5.2
Masbate, Masbate	45.4	15.7						1.8			12.1		11.9		6.3		317.7
San Jose Estate, Tunnel D-12, San Jose, Mindoro †		1.5	1														8.1
Romblon, Romblon		35.6	7.1	.8	2.5						1.3	1.3	2	.4	3.9	.1	158.7
Batag Lighthouse, Laoang, Samar	41.9	74.1	1.8	1.8		2		3	17.3	13.4		2	2.5	11.2			486.1
Irosin, Sorsogon	77.7	52.8	4.5	.5	1				7.1	28.9	3	17	1.3	12.7	2		553.5
Sorsogon, Sorsogon	52.1	95.3	12.5			4.8		2.3	5.3	13.8	2.3	5.1	5.8	14.2	1.5		785.8
Bacon, Sorsogon	28.7	69.1	60.7	.8	1.5	6.1	1.5		5.6	17.8	10.4	2.3		9.1	2		679.4
Jovellar, Albay	14	72.1	4.8			.8			2.3	2	1.5	4.3					357.5
Legaspi, Albay, Albay	34.6	94	83.3			1	3		5.3	14.2	3.3	4.1	1.3	55.1	2.5		688.4
Guinobatan, Albay	4.4	27.2	14.2							2.5	.8	1.5		13	1.3		234.9
Polangui, Albay	2.3	17.3	14							4.8	.8						240.8
Bacacay, Albay	27.9	79.8	53.1	4.1					8.9	19	1.5	4.6	3	35.3			550.4
Tabaco, Albay	24.9	27.9	31.5	1				1.3	1.5	18.3	2	2.5	.8	14.7	1.3		465.4
Sumay (Guam), Agaña, Ladrone Islands				.5	.3	.5	.5					2.6	.3	5.8			60.3
Iriga, Camarines Sur	.3		10.2	1			5.3			1.3				3			165.9
Calapan, Mindoro	.3		3.8		3.6									4.6	.3	.8	62.7
Tiwi, Albay	7.6	21.1									7.6				22.9		276.3
Pasacao, Camarines Sur		2.8	1.3	1.5				4.6									112.9
Virac, Albay	2.8	2.3	1.5			2					2	.5		21.1			387.3
Naga, Camarines Sur	4.3	1.8	10.7	2										10.7			153.1
Tigaon, Camarines Sur	15.8	1.3	7.8	4.8			6.1			.8	1.8	3.8		3.6	1.3		261.4
Libmanan, Camarines Sur	26.4	4.4	5.6	4.1										16.3			147.8
Batangas, Batangas									1.5								8.6
Ragay, Camarines Sur	22.9						10.7				1.5		.5		15.2		168.3
Calatagan, Batangas																	4.1
Balayan, Batangas																	3.8
Lipa, Batangas																	15.7
Lucena, Tayabas		1.5					2										48.1
Atimonan, Tayabas	.5	7.2	5.7														101.7
Lian, Batangas							4.3										30.4
Nasugbu, Batangas									.5								.5
Ambulong, Tanauan, Batangas				1													45.1
Daet, Camarines Norte	49.7	21.6	9.9	5						4.3	4.6	2.5	.5	1.1			390.8
Mendez Nuñez, Cavite		.3														1.3	26.5
Alfonso, Cavite				27.9													51.5
Indang, Cavite				5.6			6.6										44.9
Canluban, Calamba, Laguna				2.1										3	1		51.6
Silang, Cavite												1.3					36
Maragondon, Cavite																	1.8
Paracale, Camarines Norte	3.6	2	3	6.6	2.5												89.8
Santa Cruz, Laguna													.5	.8			38.6
Buenavista, General Trias, Cavite																	46.8

† Voluntary or cooperative station.

\* 25 days of observation.

Daily rainfall at the stations of the Weather Bureau, March, 1921—Continued

Station.	Day of month.															Total.	
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Fort Mills, Corregidor, Cavite †																mm.	3.1
Imus, Cavite																mm.	6.3
Alabang Stock Farm, Alabang, Muntinglupa, Rizal †																mm.	13.8
Cavite Naval Station, Cavite, Cavite <sup>a</sup>																mm.	7.3
Lamao Horticultural Station, Lamao, Limay, Bataan †																mm.	10.27
Manila, Manila																mm.	8.7
Antipolo, Rizal																mm.	29.1
Balanga, Bataan																mm.	2.3
Montalban, Rizal †				15												mm.	29.2
Hacienda Pintong Sapang, San Jose del Monte, Bulacan †				.5												mm.	62.9
Mabayuan Dam, Olongapo, Zambales †																mm.	0
Malolos, Bulacan																mm.	10.3
Pampanga Sugar Mills, Del Carmen, Pampanga †				8.9												mm.	18.9
San Fernando, Pampanga																mm.	6.6
Mitla, Porac, Pampanga †					20.1											mm.	20.1
San Isidro, Nueva Ecija																mm.	56.5
Iba, Zambales																mm.	9.7
Concepcion, Tarlac				16.8												mm.	18.1
O'Donnell, Capas, Tarlac				27.9												mm.	107.2
Hacienda Luisita, Comillas, La Paz, Tarlac †																mm.	0
Hacienda Luisita, San Miguel, Tarlac, Tarlac †																mm.	0
Tarlac, Tarlac																mm.	1.3
Paniqui, Tarlac †															0.8	mm.	2.4
Camiling, Tarlac																mm.	0
Muñoz Agricultural School, Muñoz, Nueva Ecija †																mm.	23.2
Baler, Tayabas	1.3				.3	0.2						33	1.1			mm.	385.1
Dagupan, Pangasinan											5.3					mm.	7.6
Rosario, La Union													3			mm.	14.7
Tubao, La Union																mm.	6.6
Aringay, La Union												3				mm.	6.7
Baguio, Mountain Province													3.7	12.7	1	mm.	63.8
Naguilian, La Union																mm.	8.1
San Fernando, La Union																mm.	4
Sagada, Mountain Province †				1.3		5.3						16	5.1	1.5		mm.	72.1
Bontoc, Mountain Province †						23.6	16.8				5.6		22.1			mm.	115.1
Candon, Ilocos Sur																mm.	3.8
Vigan, Ilocos Sur																mm.	0
Tuguegarao, Cagayan												2	.5			mm.	49.3
Tayum, Abra †														.8		mm.	8.2
Laoag, Ilocos Norte																mm.	0
Aparri, Cagayan												3.6	2			mm.	78.7
Cape Bojeador, Burgos, Ilocos Norte																mm.	0
Basco, Batanes											8.4	6.4	1	39.9	.5	mm.	115.1

† Voluntary or coöperative station.

<sup>a</sup> Rain in 24 hours beginning 8 a. m.

MAXIMUM AND MINIMUM TEMPERATURES AT THE STATIONS OF THE WEATHER BUREAU, MARCH, 1921

Day.	Jolo.		Lais, Malita.		Malita.		Lebak, Cotabato.		Lamitan, Isabela, Zamboanga.		Malamaui, Isabela, Zamboanga.		Davao.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum. <sup>a</sup>	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1.	29.7	23.5	30.4	22.3	30.5	21.4	30.3	22.1	33.6	21.4	28.3	22.7	31.2	22
2.	29.3	23.7	31.3	21.6	32.4	22	31	23.1	32.4	20.2	29.5	23.5	32	23
3.	28.8	23.2	32.3	21.5	33.7	21.2	31.5	23.1	32.2	20.4	31.5	24.3	33.2	22.9
4.	29.5	22.8	30.7	23.5	31.8	23.6	31.5	23.6	32.1	20.6	30	24.5	32.2	23.1
5.	29.8	24	32.7	21.4	33.5	21.8	32	23.4	33.5	21.2	31.2	23.7	32.7	22.3
6.	28.5	23.4	29.6	23.2	30.4	23.1	31.2	22.7	32.6	20.3	29.8	22.7	29.2	23
7.	28.5	22.8	30.8	22.9	31.6	22.7	30.5	23.4	32.3	20.5	29.3	22.7	30.7	21.6
8.	28.4	22.8	31.9	21	32.6	21.7	31.1	22.5	32.1	21.5	30.3	23.5	33.2	22
9.	30.1	22.6	31.4	23.4	30.5	23.5	31.6	23.6	32.4	19.2	30.5	23.4	31.1	23.5
10.	29.5	23.4	30.7	22.9	32.3	23.2	31.5	24.4	32.7	20.3	29.6	22.6	30.7	22.8
11.	28.8	23.6	28.8	22.6	28	23.4	31.5	22.6	32	20.6	30.5	22.7	28.6	21.9
12.	29.7	22.6	31.3	21.9	32	22.6	30.2	23.3	33.4	20.4	30.8	23.7	30.6	21.5
13.	28.4	24.8	30.3	23.3	30.9	23.2	31.2	22.7	31.9	21.2	30.7	22.3	28.7	23.5
14.	28.3	23.2	30.3	22.5	30.3	22.7	30.5	23.1	32.2	20.5	30.3	23.6	30.2	23
15.	28.5	23.9	30.6	21.9	31.8	22.7	30.2	24.4	33.4	21.4	29.7	24.4	32.3	23.4
16.	28	22.6	31.3	21.4	31.6	22.2	22.5	23.5	32.9	19.7	29.2	23.5	31.7	22.7
17.	28.7	22.5	31.4	21.9	32.4	22.5	31.5	23.6	31.6	19.5	30.3	23.6	31.7	22.9
18.	29.2	23.2	31.6	22	32.5	22.7	32.3	23.6	33.5	21.3	30.3	23.5	31.7	22.1
19.	30.3	23.9	32.1	22.6	32.1	22.6	30.5	23.4	34.2	20.1	31.3	23.3	30.7	23
20.	26	24.3	31.4	20.2	30.5	23	31.2	23.5	32.6	20.2	27.2	23.9	30.3	23
21.	27.8	23.6	30.8	20.2	32.2	22.3	29.2	23.3	32.1	21.1	29.2	23	31.7	22.4
22.	28.7	22.5	31.3	20.7	34	22	31.1	22.4	32.5	20.1	30.8	22.5	32.8	23
23.	29.7	22.6	31.1	22.6	33.1	23.2	32.1	24.3	33.2	21.3	29.8	24	33.2	22.4
24.	30	24.8	32.2	21.8	33.5	22.7	32.9	23.4	32.8	20.5	31.3	23.7	33.7	21.5
25.	30	22.9	31.1	20.5	34.2	21.7	32.1	23.7	31.9	20.2	29.5	23.8	32.2	21.5
26.	29	23.5	32	21.9	28.1	23.8	31.1	23.8	32.3	20.2	30.8	24.1	32	22
27.	27.7	23.2	30.3	21.3	33.3	21.9	31.2	23.5	32.5	19.8	30.3	23.6	32.7	21.5
28.	30.5	22.4	32	22.5	33.4	23.2	32.5	24.7	33.4	20.4	30.6	24.2	33.5	22.5
29.	31	22.6	30	23	29.6	24	33.8	23	32.2	21.7	30.4	23.5	29.7	23.1
30.	29.5	25.4	31.3	22.2	32.8	23.8	33.5	22.5	32.6	20.2	30.4	21.7	33.2	23
31.	29	23.3	33.3	22.6	32.5	23.2	32.6	24.8	33.5	20.7	30.3	23.5	32	22.5
Mean.....	29.1	23.3	31.2	22	31.9	22.7	31.4	23.4	32.7	20.5	30.1	23.4	31.6	22.5

Day.	Pikit.		Bual, Dulauan.		Cotabato.		Naganaga, Margosatubig.		Malabang.		Cateel.		Ganasi.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1.	32.5	22.4	32.7	22.4	32	21.6	33.7	22.5	30.6	22.8	30.8	22.5	28.3	19.5
2.	34.2	23.2	34.4	22.4	32.2	23.5	34	22.7	31.6	22.3	30.8	22.3	29.5	18.5
3.	34.7	23.2	34.4	22.4	34	22.8	35	22.2	31.2	21.4	30.7	22.9	29	17.2
4.	34.4	23	34.4	22.4	33.8	22.6	34.2	22.5	31.4	21.6	31	23.5	30	17.8
5.	33.5	22.1	33.6	22.4	31.7	22.4	33.5	20.3	30.6	22.2	31	23.3	31.4	18.6
6.	31.2	23.4	31.7	22.4	31	22.2	34.2	20.5	30.4	22.6	29.2	23	31	20.8
7.	32.6	23.4	32.5	22.4	32.6	23	33.5	21.7	30.4	20.4	30.6	22	28.5	18.6
8.	32.9	22	31.8	22.4	32.1	21.8	33	21.5	29.8	21.8	29.7	23.7	30.9	18.5
9.	32.8	23.4	32.4	22.4	32.7	22.6	33.7	22.5	29.8	22	29.7	23.7	30.8	18
10.	31.5	23.2	31.7	22.4	30.5	22.5	33.5	21.3	30.4	22.9	27.3	22.6	30.5	20.6
11.	31.1	22.1	31.6	22.4	30.6	22.5	33.5	22.2	29.6	21.3	28	22.6	28	18.5
12.	32.5	22.4	30.2	22.4	32	22	34.5	21.5	30.2	21.6	30.5	23.1	28.8	17
13.	30.5	24.4	31	22.4	29.8	23.5	34.3	22.2	29.6	21.4	25.5	23	31.6	17
14.	32.4	23.4	32.2	22.4	31	23.6	33.5	22.5	29.8	20.8	29.5	22.8	27.2	20.8
15.	33.9	23.4	33	22.4	30.5	23.5	33.5	22.2	30	22.3	29.4	22	29	20
16.	34.1	23.2	32.4	22.4	30.6	23.2	34	22.5	31.4	23.4	29.8	21.3	27.2	20.6
17.	34.3	23.4	32.9	22.4	32.2	23.5	34.5	21.3	31.5	21.7	30.2	21.3	27	17.6
18.	34	23.3	33.5	22.4	32	23	34.2	22.5	31.6	21.5	30.4	22.1	29	19
19.	32.3	22.4	32.4	22.4	32.2	22.6	34	22.2	30.2	21.6	30	22.2	29.2	19
20.	29.4	24.2	29.9	22.4	30.2	23.6	33.7	22.5	30.4	22.4	30.5	22.5	29.4	19
21.	33.2	23.2	33.7	22.4	31.2	23	33.5	22.2	31.5	20.8	30.7	22.3	28.8	18.6
22.	34	22.4	33.4	22.4	31.6	22.5	34.5	22.5	30.8	21.8	31.4	22.5	28	17
23.	34	22.4	34	22.4	33.3	22.6	34.2	22.7	30.8	21.7	30.9	22.1	29.5	19.5
24.	34.6	22.4	33.8	22.4	33.5	22.5	34.2	23	31.6	21.8	31	22	29.2	17
25.	34.4	22.2	34.5	22.4	31.5	22.6	33.5	22.5	31.4	21.4	29.1	21.8	30.4	17.2
26.	32.3	23.2	33	22.4	32.5	23.1	33.7	23.5	31	21.6	29.8	22.5	30	17.3
27.	34.2	23	33.4	22.4	34	22.8	34	22.5	31.8	21.6	31	21.8	30.3	17.5
28.	34.3	22.4	34.5	22.4	33.6	23	35	23.3	31.6	21.4	31	22.5	30.2	17
29.	31.5	22.4	32.4	22.4	31.6	22.7	34	20.5	32.2	21.8	31.1	23.5	31.2	17
30.	33.1	21.4	32.8	22.4	31.5	21.2	33.7	21	30.4	21	31	23.4	29	19
31.	33.4	23	33.7	22.4	32.8	22.8	34	22.5	30.4	21.4	29.5	23	30	18
Mean.....	33	22.9	32.8	22.4	32	22.7	33.9	22.1	30.8	21.8	30	22.5	29.5	18.6

<sup>a</sup> These minimum temperatures seem to be not very reliable, the differences between 6 a. m. temperatures and minimum temperatures being both too small and too uniform.



Maximum and minimum temperatures at the stations of the Weather Bureau, March, 1921—Continued

Day.	Camp Kalao, Monkayo.		Camp Keithley, Dansalan.		Veruela.		Sumilau.		Cagayan.		Talacogon.		Butuan.	
	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	32.1	22.2	29.3	18.4	31	22.2	29.2	19.5	30.5	22.2	33.3	21.3	33.1	22.4
2	32	21	27.8	18.5	32.5	23	30.8	19	31.4	22.8	31.7	22	33.9	22.5
3	33.5	20	28.3	17	32	22.2	30.4	17.9	31.8	21.5	32.5	21.4	33.1	22.1
4	31.4	21.6	27.3	17.6	31.7	22.4	29.2	19.8	32.6	21.4	32.4	20.4	32.9	21.4
5	32.4	20	25.9	17.9	30.5	22.5	29	20.5	32	21.5	30.4	21.3	29	22.7
6	30.5	19	24.1	19.4	24	22.7	24.5	18.9	27.3	21.5	31	22.3	24.6	22.7
7	30	21	25.4	18	30.3	22.2	29.2	19.5	29.9	22.1	30	21.4	28.5	21.5
8	33	22	26.9	18.3	31.3	22.6	28.8	19.1	31.4	21	31 ?	21	33.2	21.5
9	32.3	21	26.3	18.4	31.3	22.9	28.5	19	32.1	22.6	29.7	23	31.6	22.5
10	27.1	21.4	23.3	19.5	25.1	22.8	24.5	19.3	27.3	23	30.9	23	26.1	22
11	30	22	24.3	18.5	24.5	22.7	25.6	19.5	27.5	21	29.9	22	25.2	21.7
12	31.3	21.4	25.9	17.9	31.5	22.5	28.5	20.5	30.5	20.4	30	21.4	30.4	21.5
13	29.3	21.6	23.2	20	24.3	23	19.7	19.7	31.1	22.9	32	21.2	27.6	22.5
14	30.5	22.5	24.6	19.2	23.6	22.7	28.3	18.8	31.1	22.8	30.7	22.7	27.6	22.7
15	31.5	22.2	23.8	19.6	32.7	22.4	26.2	19.9?	29.5	23.7	33.3	23	27.8	23.1
16	31.2	22.6	26.4	18.9	32.5	22.7	26.6	18.5	30.6	23.5	30.5	22.3	31.1	22.4
17	30.6	20.4	27.8	18.6	31.2	22.6	28.4	19	30.2	22.3	32.4	23.4	33.9	23
18	32.6	21.4	27.8	19.1	33.4	23.2	30	18.5	31.6	22.2	33.4	24	32.9	22.9
19	31.5	22.5	26.4	17.5	31.3	23	29.3	18	30.6	21.9	31.6	23	31.1	23.3
20	31.9	21.2	27.5	18	30.8	22.8	29.3	18.6	31.3	22.3	30.7	23.7?	32.6	23
21	31.4	20.9	27.3	17.5	33	21.2	30	17.5	31.6	22	32.4	22.8	32.6	22.9
22	32.2	20.9	27.8	17.6	32	22.5	31	17.5	31.3	21.1	31.5	23	33.6	22.9
23	30.5	20	27.5	17.9	31.5	22	30.4	15.5	32.6	20.6	31.7	21	33.6	22.3
24	32.1	22	27.1	16.5	32	22.4	29.9	19	33	20.6	30.7	21.3	33.2	22
25	31.5	21	26.7	14.7	29.3	22.2	29.3	20	32.4	19.4	31.4	21.3	32.1	21.9
26	30.5	20.4	28.3	17.1	29.8	22.7	30	19.6	32.2	20	31.5	21.2	34.1	22.3
27	32.4	21	28.1	17.5	31.2	22.2	30	17.8	32.2	21.8	30.2?	21.2	32.4	21.9
28	32.5	21.4	27.3	17.1	32.2	21.4	30.6	15.8	32.8	20.7	30.3	21.3	34.1	21.7
29	30.9	22	26.5	18.5	31.5	22.8	29.4	21.5	33.3	21.5?	33.3	22.2	33.8	22.2
30	32.4	20.7	27.9	17.1	31.2	22	29.4	19	31.3	21.5	33.5	21.4	33.1	21.1
31	30.4	20	27.3	18.1	29	21.6	30	18.9	31	22.9	32.5	21.4	30.6	22
Mean	31.3	21.2	26.6	18.1	30.4	22.5	28.9	18.9	31.1	21.8	31.4	22	31.3	22.3

Day.	Mambajao.		Dumaguete.		Tagbilaran.		Iwahig Penal Colony, Puerto Princesa.		Dalaguete.		Surigao.		Biaong Cui's Farm, Barili.	
	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.5	23.7	30.7	25.6	31.4	23.3	30.4	23.7	25.1	30.5	23	30	30	23
2	30	23.8	31.4	23.7	31.3	23	31 ?	23.7	24.6	30.4	24	30.4	31.5	23.1
3	30.3	23.1	30.8	24.2	30.4	22.5	21.5	21.5	24.4	31.2	23.4	31.6	22.6	22.6
4	30.3	25.4	31.8	24.2	32.6	22.1	22	22	24.6	31.4	25	31.5	22.5	22.5
5	30.4	25.2	31.8	24.5	33.4	22.3	31.2	22.8	24.9	30.1	24.6	30.2	21.8	21.8
6	25.8	23.3	28.4	24.7	29.4	22.5	31.2	22.8	25	25	25	26.4	19.8	19.8
7	28.3	22.4	29.4	23.8	29.6	22.3	31.8	21.2	23.8	27.7	22.9	27.5	19.6	19.6
8	28.8	23.9	30.2	24.8	31.7	22.5	31	23.2	24.7	29.1	22.9	30.2	21.8	21.8
9	29.4	22.4	30.4	25	33.2	22.9	30.8	22.4	24.4	29.1	24.2	30.5	21.6	21.6
10	29.4	22.5	27.4	24.3	26.9	22.9	31.2	22.5	24	27.2	23.8	28.2	22.4	22.4
11	27	22.4	29.4	23.9	31.4	22.6	31.2	22.4	23.9	28.6	23.8	29	21.8	21.8
12	29.4	23.6	30.6	23.7	29.9	22.3	30.8	20.2	24	28.4	24.4	30	21.4	21.4
13	27.4	23.3	30.2	24.7	30.7	22.5	31	22.4	24.4	26.9	23.1	29.8	21.2	21.2
14	26.8	23.3	28.8	24.4	30.3	22.3	30.9	22.4	23.8	25.3	22.3	27.4	21.2	21.2
15	27.1	23.9	29.1	24.2	29.2	23.1	31	20.2	23.5	25.8	23.8	27.1	22.4	22.4
16	29.5	23.2	29.9	23.9	29.7	22.6	30.7	23.4	24	28.3	22.8	27	22.1	22.1
17	29	22.4	30.8	24	30	22.9	31.2	22.9	23.3	29.3	23.5	27.5	21.9	21.9
18	30.2	22.8	30.6	23.9	31.7	23.2	31	23.5	24.3	29.6	23.3	29.1	22.5	22.5
19	30	22.7	30.8	24.9	31.1	23.2	31.2	22.9	24.1	31	23.4	29.2	22.8	22.8
20	30.5	24.9	30.8	25	31.2	22.9	31.7	22.4	25.5	31.6	23.7	30.5	22.5	22.5
21	30.3	23	30.9	25.2	31.2	23.4	30.7	22.8	25	30.4	24.3	32.5	23.5	23.5
22	30.7	23.5	30.9	24.8	32	22.5	30.8	22.8	24.2	31.5	23.7	31.2	23	23
23	30.6	24.9	30.9	24.2	32.4	22.3	31.8	22.8	24.5	32	23.2	30.5	23.1	23.1
24	30	23.3	30.1	23.4	31.3	22.3	31.4	22.7	24.5	30.9	22.9	30.1	22.6	22.6
25	31.2	24.5	31.4	25	32.4	22.9	31.4	22.9	25.2	31.1	23.4	31.5	22.5	22.5
26	31	24.6	31.2	24.4	32.2	22.4	32	22.2	24.6	30.7	24.1	31.3	22.4	22.4
27	30.5	23.4	31.2	23.5	31.2	21.9	31.4?	22.4	24.2	29.8	23.8	30.5	22.5	22.5
28	30.4	23.3	30.9	24	31.3	22.5	31.8	22.4	23.8	30.7	23.7	30.4	22.1	22.1
29	30.8	23.9	31.6	24.7	32.8	21.5	31.6	22.8	25.7	30.7	24	30	22	22
30	29.4	24.8	31.1	24.9	34.3	21.5	31.2	22	24.4	29.3	25	30.2	22.1	22.1
31	30.3	23.5	30.8	23.8	33.3	21.9	30.8	22.8	24.9	29.8	23.8	29.7	22.1	22.1
Mean	29.5	23.6	30.5	24.4	31.3	22.5	31.2	22.4	24.4	29.5	23.6	29.7	22.1	22.1

Maximum and minimum temperatures at the stations of the Weather Bureau, March, 1921—Continued

Day.	Maasin, Leyte.		Isabela, Occidental Negros.		Hacienda Tanolo, Hinigaran.		Cebu.		La Castellana.		Central Azucarera de La Carlota.		Hacienda Canlaon, La Castellana.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum. <sup>a</sup>
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	33.6	23	34.7	24.1	32.1	24.2	30.4	25.5	22	34.5	23.2	33.5	18.7	
2	34.2	23.1	33.2	22.9	33.5	20.7	31.3	25.3	22	33	22.6	33	19.9	
3	35.4	22.6	35	20.7	33.4	22.2	32.4	24.8	22	34.6	22.7	32.5	19.8	
4	34.8	22.2	33.3	24.1	33.4	22.1	31.1	24.9	21.5	33.5	20.9	30.8	19.4	
5	31	22.6	33.5	22	34.4	22.4	31.6	24.8	20	34.7	19.4	33.5	18.2	
6	30	21.4	29.1	25.2	28.6	24	26.5	23.1	21.4	27.9	22.6	33.7	17.7	
7	31	22	30.8	23.2	30.5	21.9	29.5	23.8	21	30.5	19.8	32.5	18.3	
8	30.8	22.1	32.6	22.7	32.1	21.6	30.3	24.3	20.5	32.7	19.6	32.2	18.6	
9	32	22.8	32.5	22.9	34.3	22.9	29.6	24.2	21.4	33.2	21.9	33	18.9	
10	33	22.2	31.2	23.7	31.1	23.3	29.2	24.8	21.3	31.2	21.7	33	18.9	
11	33.2	22.2	32.6	22.7	31.8	21.5	30.2	25.1	21	33.8	20.3	33.7	18.4	
12	30	22.4	32.8	20.2	32.5	22	31.2	24.3	20.2	32.5	19.3	33.7	17.2?	
13	32	22.3	33.2	23.9	32.6	22.7	31.2	24.7	21.5	33.3	20.1	32.5	17.3	
14	30.6	22.6	32.1	23.2	30.5	23.1	28.7	24.3	22.3	33.1	22.4	33.2	17.5	
15	27	22.8	31.7	21.4	30.1	22	28.2	23.8	22	32.4	22	26.4	21.3	
16	30.4	22.5	30.3	23.4	30	23.2	27.5	23.3	21	30.7	21.6	33.5	20.5	
17	31	22.9		21	30.5	22.1	29.8	23.9	20.5	30.8	21.2	33.7	19.5	
18	31.4	22.6	31.5	23.4	30.6	23	30.8	23.9	19.2	31	22.7	34.2	18.4	
19	32.6	23	33.1	21.4	31.5	22.6	31.5	24.9	22	32.2	23	32.8	18.9	
20	33.4	23.2	33.9	22.2	30.5	23	31.4	25.1	22.4	32.9	21.7	33.1?	18.4	
21	34	23	31.9	21.4	31.6	21	32.1	25.8	22.5	32.8	23	34.2	19.1	
22	34.6	22.9	33.5	21.4	32.2	22.3	32.8	25.6	22.5	32.7	21.9	33	18.9	
23	33	23.6	34.5	20.5	32.6	23	30.9	25.2	22.5	31.3	22.6	34.7	17.4	
24	34	22.2	33	22.6	34	22	31.2	24.8	22.5	33.8	18.9	33.2	20.1	
25	34.4	23.6	33.5	23.2	33	21.5	32.4	25.1	22.3	34.7	19.3	33.9	19.5	
26	34.6	22.6	33.2	21.9	31.5	22	30.7	24.6	21.7	32.8	20.1	33.9	19.5	
27	33	22.4	34.2	21.5	32.4	22	30.9	24.6	20.5	32.5	19.5	33.7	19.7	
28	33	22.8	34	18.5	34	21.3	31.6	25.2	20.3	35.3	19.4	34	19	
29	33.6	22.4	33.4	24.2	34.5	21.3	31.5	25.3	20.5	34.7	20.7	33.1?	21.3	
30	34	21	33	21.7	33.5	23	31	25.1	21.5	34.2	19.8		19.9	
31	34.6	22	34.2	19.2	32	20.2	31.2	24.3	20.5	33.2	18.6	31	21.5	
Mean	32.6	22.5	32.8	22.3	32.1	22.2	30.6	24.7	21.4	32.8	21.1	33	19.1	

Day.	Maa Sugar Central, Bago.		Valladolid.		San Joaquin.		Murcia.		Bacolod.		Oton.		Iloilo.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	34.2	23.5	32.9	23.2	33.5	24.6	33.1	22.2	31.5	23.1	35	23.5	33.2	24.5
2	33.4	22.8		21.2	34.3	24.6	32.9	22.2	31.6	22.7	34.6	23.4	31.8	24.3
3	33.8	22.2	34.5	22.2	34.3	24.5	33.8	21.5	32.5	22.4	36.1	23.5	33.2	24.8
4	34.9	21.1	33.2	22.4	33.4	23.6	34.9	22.1	32.5		35.2	24	32.4	24.4
5	34.1	20.6	34	20.7	34.3	25.7	33.7	20.4	32.1	21.8	33.8	23.6	31.4	23.9
6	32.5	24.5	28.7		31.1	26.5	25.9	22.7	26.1	24.5	28.7	23.8	27.1	23
7	29.5	21.2		22	32	24.9	31.4	20.9	29.7	21.9	32.6	22.9	30.3	23
8	33	20.5	33.7	23.2	33.2	25.1	30.9	22.3	30.4	23.3	33.2	23	30.9	23.3
9	34.5	22.7	33.2	22.3	32.4	26.1	33.2	22.2	30.2	23.7	32.2	24	30.3	24
10	31.5	23.7	34.5	24.7	32.1	25.7	30.8	22.6	30.4	24.2	31.7	23.8	29.6	23.9
11	33.8	23.2	34.7	23.2	33.3	25.3	31.7	21.7	30.2	23.7	33.6	23.5	30.9	23.6
12	32.4	21	33.9	21.8	33.8	24.8	31.8	20.7?	30.8	22.8	34.2	23	31.3	23.2
13	33.7	20.4	33.2	21.7	32.8	26.3	32.1	22	31.4	24	33.6	24	30.9	24.1
14	32	23.7	31.7		34.2	26.4	32.4	22.8	30.2	23.7	31.7	24.5	29.8	23.4
15	32.4	22.3	33.2	23.4	31.5	24.4	30.1	22.7	29	23.5	31.7	23	29.3	23.3
16	32	23.3	32.3	23.5	31.2	24.6	28.9	22.6	28.6	23.5	29.7	23	29	23.3
17	31.4	22.5	33.2	22.7	32.1	22.3	31.6	21.7	30.2	22.6	32.2	22.5	30.2	23
18	31.3	23.9	31.7		31.8	24.5	30.3	23.8	28.3	23.7	29.7	23.5	28.2	23.6
19	34.1	23.7	34.6	23.5	33.3	23.8	31.8	21.7	29.8	23.2	33.4	24	31.3	24
20	33	22.5	34	22.7	33.6		32.2	22.2	31.5	23	34.2	24.2	31.6	24.3
21	33.3	23.2	34.8	22.3	34.3	24.6	32	22.1	31	23	35	24.2	32.2	24.7
22	32.8	22.2	34	22.6	34.7	24.9	32.1	21.6	31.1	21.8	34.4	23.1	32.1	24
23	34.9	22.7		23.2	33.8	24.9	33.9	21.7	31.2	22.4	34.4	23	31.7	24.2
24	35	22.1		23.7	33	24.5?	35.2	21.6	33.8	20.7	35	22.9	31.2	23.5
25	34.2	22.3	33.7	23.5	30.9	26.3	35.9	22.4	31.7	23.8	34.6	24.5	32.2	24.8
26	33.1	21.4	33.5	22.5	31.8	26	33.1	21.8	30.2	23.5	31.7	24	29.5	24.5
27	34.6	20.3		21.2	33.3	24.4	33.6	20.2?	31.6	21.3	34.7	23.4	31.3	23.9
28	34.9	21.5	34.2	23.4	33.4	23.9	34.3	21.4	32.2	24	33.8	23	31.4	23.9
29	33.7	24.3	34.7	23.7	33.7	25.6	33.9	21.3	31.5	23.2	33.8	23.8	30.4	23.9
30	34.6	22.1	33.7	24	33.5	25.6	33.7	22.5	31.5	24.1	34.1	24	31.7	24.3
31	34.8	19.4	34.2	20.7	34.1	23.1	33.4	22.4	31.1	21.3	34.9	23.5	31.3	23.9
Mean	33.3	22.3	33.5	22.7	33.1	24.9	32.4	21.9	30.8	23	33.3	23.6	30.9	23.9

<sup>a</sup> These minimum temperatures are somewhat too low.

Maximum and minimum temperatures at the stations of the Weather Bureau, March, 1921—Continued

Day.	San Jose de Buenavista.		Tuburan.		Leon.		Silay.		Calag-itan, San Remigio.		Cuyo.		Barotac Nuevo.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1.....	31.4	23.8	32.6	22.9	34.5	-----	33.5	22.9	-----	22.5	32.8	25.3	-----	23.1
2.....	32.5	23.2	31.7	22.9	34.3	-----	31.4	22.9	-----	22.4	31.8	23.4	-----	23.2
3.....	32.6	23.2	31.7	22.3	35.3	-----	32.5	21.6	-----	23.3	32.6	24.3	-----	23.3
4.....	32.3	22	31.9	22.4	34	-----	32.1	23.5	-----	21.2	31.8	26.3	-----	22.2
5.....	32.6	21.8	31.6	21.7	33.3	-----	34.1	24	-----	20.1	31.4	26	-----	22
6.....	32.5	22.9	26.2	23.8	27.9	-----	26.5	23.2	-----	22	30.6	26	-----	23.1
7.....	32.2	23.2	28.7	21.9	31.6	-----	29.8	23	-----	21.2	30.5	25	-----	22.2
8.....	33	21.6	31.6	22.4	32	-----	29	22.8	-----	22.1	30.6	25	-----	22.3
9.....	36	24	30.7	23.4	30.2	-----	28	23	-----	23.2	30.9	24.9	-----	22.4
10.....	35.6	22.3	31.1	23.8	31.1	-----	29	22.8	-----	23.3	30.7	25.9	-----	23.2
11.....	35.2	23	30.7	21.9	32.3	-----	29.4	23.2	-----	21.2	30.7	25.3	-----	22.4
12.....	32.7	21	29.8	22.3	33.7	-----	29.8	24	-----	19	30.7	25.3	-----	23.1
13.....	35.7	23.5	31.3	22.6	31.8	-----	30.2	23.8	-----	-----	30.4	25.1	-----	23.2
14.....	34.3	25.3	29.2	24.2	31	-----	29	24	-----	-----	29.7	25.8	-----	22.8
15.....	32	23.2	27.6	23.8	29.9	-----	27.5	23.5	-----	-----	29.7	25.1	-----	22.5
16.....	32	23	25.5	23.7	29	-----	27	23.9	-----	-----	29.9	25	-----	23.4
17.....	31.4	22	28.7	23.6	30.6	-----	29	23	-----	22	30	25	-----	22.2
18.....	31.7	24	29.8	23.4	31	-----	30	23.9	-----	22	30	25	-----	22.1
19.....	32.5	23.7	30.7	23.2	33.1	-----	29	23.8	-----	23	31.1	24.7	-----	23.2
20.....	32.6	23.6	32.6	23	33.4	-----	30.5	23.9	-----	22	31.3	25.9	-----	23.2
21.....	31.7	23.4	32	23	34.3	-----	30.8	22	-----	22.3	30.7	25.5	-----	23.2
22.....	32.5	22.6	32.4	22.6	34.4	-----	31.5	22.2	-----	21	-----	23.8	-----	23.2
23.....	32.7	23.6	32.7	22.8	33.4	-----	31.5	23	-----	23	32.3	24.1	-----	23.4
24.....	32.8	20.4	31.1	21.3	33.9	-----	30.8	23.9	-----	18	32	24.2	-----	23.5
25.....	33.4	22.6	32.8	23.4	34.3	-----	31.5	23	-----	21	31.5	26.1	-----	23.4
26.....	32	22	31.8	23.2	31.9	-----	30	24.1	-----	19.9	30.9	26.3	-----	23.7
27.....	32.7	21.5	30.2	21.3	33.1	-----	30.5	23.9	-----	20	30.5	25.6	-----	23.5
28.....	34	21.7	30.8	23.6	32.2	-----	30.4	23.8	-----	19	30.4	25.4	-----	23.7
29.....	35.9	21.2	30.3	21.4	32.7	-----	29	23.9	-----	20	32.3	26	-----	23.6
30.....	33.7	20.8	30.9	22.5	31.6	-----	30.6	24	-----	19	30.5	26.3	-----	23.6
31.....	33.3	20.4	31.7	21.2	32.5	-----	30.6	23.2	-----	19	31	25.6	-----	23.8
Mean.....	33.1	22.6	30.7	22.8	32.5	-----	30.1	23.3	-----	21.2	31	25.3	-----	23

Day.	Hacienda Ilaya, Victorias.		Hacienda Bilbao, Manapla.		Cadiz.		Dingle.		Ormoc.		Guiuan.		Bugasong.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum. <sup>a</sup>	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1.....	31	23.7	31.8	22.6	30.1	22.5	-----	22.4	32.8	22.8	30.7	25	30	-----
2.....	31.2	23.5	31.9	22.5	31.1	-----	24	33.7	22	32	23	31	-----	-----
3.....	31	23.1	31.2	22.3	30.5	21.9	-----	22.1	34	21.5	32.2	22.5	30.4	-----
4.....	30.7	24	30.8	22.4	30.7	23.2	-----	23.5	34.1	21.4	32	24.8	30	-----
5.....	31.3	23.2	31.6	22	30.2	22.8	-----	23	33.6	21.8	31.5	24.8	33	-----
6.....	30.4	23.9	31.8	22.3	30.3	22	-----	24	33	21.2	30	23.5	30.2	-----
7.....	30.4	23.2	31.9	22.7	28.7	21.8	-----	22.3	29.8	21.8	30.8	24	32.2	-----
8.....	31	23.8	31.6	23	29.2	24.7	-----	22.5	30.9	21.4	31.3	23.2	33	-----
9.....	30	23.8	31.2	22.6	28.5	24.3	-----	22.5	31.9	22.6	31	24.2	33	-----
10.....	30	24	31.7	22.7	29.1	24.4	-----	22.6	31.6	23.9	32	25.8	34.2	-----
11.....	30.6	23.8	31	21.9	29.2	24.8	-----	22.2	33.2	22.9	31	24.2	32	-----
12.....	30.3	23.8	30.8	21.7	30.5	24.1	-----	21.8?	33.6	23.1	31	25.2	31.2	-----
13.....	30.5	23.2	31.4	21.9	30.7	24.9	-----	23	30.9	23.1	30.5	23.5	34	-----
14.....	31	23.8	31.6	21.8	29	23.2	-----	23.3	29.2	23	30	22.2	32.2	-----
15.....	31	23.9?	30.4	21.2	26.7	22.7	-----	22	28	23.1	25.6	22.6	30.3	-----
16.....	31.2	23.4	30.2	21.6	26	22.8	-----	23	30.4	22.9	29.4	22.4	30.2	-----
17.....	31.2	23.2	30.7	21.4	28.2	22.8	-----	22	32.2	22.8	31.3	22.9	32	-----
18.....	28.6	20.8	30.3	21.2	28.2	22.9	-----	23	32.2	23.2	30.4	23.2	31	-----
19.....	30	23.3	31.6	21.1	29.4	23	-----	23	32.8	22.8	31.4	23	30.2	-----
20.....	30.8	23	31.7	21.6	29.5	22.9	-----	22.4	32	22.4	31.2	23.8	31.2	-----
21.....	31	23.2	31.9	22.4	28.2	23	-----	23.5	33.6	22	32.5	22.9	31.3	-----
22.....	30.4	22.9	31.9	22.6	29.6	23.2	-----	22.6	34	22	32.7	24	30.5	-----
23.....	30.7	22.9	32.2	22.9	30.1	22.9	-----	23.3	34.2	22.4	32.5	22.4	31.2	-----
24.....	30.6	23.2	31.6	22.4	29.2	24.4	-----	20.4	33.3	21	32.3	23.3	32.2	-----
25.....	31	23.2	31.8	22.6	30.7	23.3	-----	23	33.3	21.4	32.4	24	32.4	-----
26.....	30.2	23	31.6	21.9	30.5	22.3	-----	24	33.9	23.2	32.5	24	32	-----
27.....	30	23.2	31.7	22.1	30.2	22.1	-----	23	33.2	21.5	31.5	23.4	33	-----
28.....	31	23.8	31.8	22.3	30.3	24.3	-----	23	33.2	22.2	32.3	24.8	34	-----
29.....	31.3	23.9	31.1	21.8	31	23.2	-----	22	33	23.2	32.2	25.5	33.5	-----
30.....	30.7	23.5	31.6	22.3	30	22.5	-----	22.6	33	22.6	32	24.5	33	-----
31.....	30.6	22.8	31.2	22	30.1	22.6	-----	22.3	33.2	21.4	31.8	24.8	33.5	-----
Mean.....	30.6	23.4	31.4	22.1	29.5	23.2	-----	22.8	32.5	22.3	31.3	23.8	31.9	-----

<sup>a</sup> These minimum temperatures seem to be not very reliable.

Maximum and minimum temperatures at the stations of the Weather Bureau, March, 1921—Continued

Day.	Bogo.		Tacloban.		Capiz.		Borongan.		Catbalogan.		Calbayog.		Masbate.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	32	23.7	31.1	24.1	32	24.3	30.6	24.4	31.2	22.5	31.7	21.8	30.8	23.5
2	32.7	23.8	30.3	24	32.1	24.8	31.1	22.5	33.2	22.5	32.3	22.5	30	24
3	32.4	23.5	31.2	22.5	33	24	31.7	22.5	33	22.5	31.8	22.6	31	24
4	32.8	23.6	32.3	22.1	32.5	25	31.3	25.6	31.9	22.5	32.5	21.9	32	24.8
5	32.5	23	31.9	23	32.4	24.1	31.1	22.7	31	22.7	32.7	21.7	31.4	24.2
6	31	22.5	25.2	23	28.1	23.1	28.1	25.8	25.4	22.5	26.4	23.2	29	22.6
7	28.5	23	27.2	22.6	30.1	22.2	29.3	25.3	26.5	22.5	27	22.9	27.4	22
8	29.7	23.2	30.4	22.6	31.2	24	30.2	23.6	30.7	22.5	30.4	22.3	29.8	23.6
9	30.5	23.1	30.3	23.9	30.5	24.1	29.4	24.1	28.5	22.5	30.7	23.7	29.8	22.2
10	31.3	23.2	31.2	24.1	31.4	24.6	30.5	25.6	30.6	22.5	31.3	22.8	29.8	24.2
11	32	23.4	32.9	23.8	31.5	23.5	30.8	25	31.4	22.5	31.8	21.3	30	23.8
12	31.2	23.1	29.9	23.4	31.6	23.5	30.8	25.6	30.4	22.5	31.2	22.9	30.2	23.4
13	30.7	23	29.9	23.1	31	24.5	28.6	23.1	29	22.5	29.2	23.8	30.6	23.5
14	27.8	22.9	28	22.5	30	24.5	29.2	23.2	29	22.5	27.3	23.6	29	24.5
15	27.5	22.7	24.2	22.4	27.5	24	26	23.8	25.5	22.5	25.8	23	27.6	22.8
16	26.3	22.6	26.6	22.2	28.4	23.8	25.6	23.2	26.2	22.5	24.6	22.4	24.6	22.6
17	26.5	22.8	30	23.1	30	23.5	29.4	22.4	28.5	22.5	29.2	22.9	27.6	23
18	28.9	23	31	23.4	29.4	24	30.7	23.5	28.8	22.5	27.8	23.8	28	23.4
19	30.1	23.2	30.7	23.3	31	24.5	30.3	23.2	29.6	22.5	30.2	22.8	30.8	24
20	31	23.2	31.3	23.1	31.6	24.5	31.1	23.5	31.5	22.5	31.2	22.4	30.8	24
21	31.4	23.6	32.1	22.9	32.5	24.4	31.4	23.2	31.3	22.5	32	22.1	30.6	24.6
22	31.3	23.6	31.9	22.7	32.1	25	31.6	23	31	22.5	32	23.3	32.8	24.8
23	32.5	23.3	31.9	22.9	32.4	24.5	31.2	23.3	31.4	22.5	32.1	23.5	31.2	24.8
24	32.8	23.5	32.9	22.4	32.1	23.5	31.4	22.1	32.2	22.5	32.7	21.9	31.6	23.8
25	32.9	23.4	31.7	23.6	32.5	25.4	31.1	25.8	32.4	22.5	33	23.1	31.6	24.5
26	32.8	23.7	31.2	23.7	30.5	25.2	31	24	31.9	22.5	31.1	23.5	27.6	24
27	32.5	23.8	34	23	31.4	24.9	31.8	24.1	31.5	22.5	32.8	22.4	31	23.6
28	31	23.7	32.3	23.4	30.5	25	31.1	23.5	31.4	22.5	30.9	23.7	29	24.2
29	30.9	23.2	31.8	23.6	31.7	25	30	24.2	31.1	22.5	31.7	23.1	30.6	24.6
30	30.5	23.1	33.2	23.3	31	24	31.1	25.9	31.5	22.5	31.9	23	29.6	24.2
31	30.2	23	32.9	23.2	31.5	23.5	31.1	25.6	31.5	22.5	32.2	22.4	31.2	23.6
Mean	30.8	23.2	30.7	23.1	31.1	24.2	30.3	24	30.3	22.5	30.6	22.8	29.9	23.8

Day.	Romblon.		Batag Light-house, Laoang.		Irosin.		Sorsogon.		Bacon.		Jovellar.		Legaspi, Albay.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	30.5	23.6	23.7	23.7	33	21.7	29.9	22.4	30.2	22.3	20	20	31.7	23.8
2	31.5	22.7	24.3	24.3	34.2	21.6	31.1	24.4	32	23.6	31.4	23.2	31.4	25.7
3	31.1	22.6	24	24	33.8	21.8	31.5	22.7	31.8	22.5	31.7	21.3	32.3	23.6
4	31.7	23.4	24.5	24.5	30.7	21.9	31	23.6	30.6	22.8	31.9	21.9?	32.3	25.4
5	31.7	23.9	24.2	24.2	30.6	21	31.9	23	32	22.3	31.9	21	32.1	23.9
6	27.2	24.2	22.5	22.5	26.1	20.5	28.9	22	30.6	22.4	31.7	22	26.9	22.9
7	27	22.2	22.2	22.2	25.2	19.4	24.5	21.5	27.8	22.1	26.2	22	25.1	22.7
8	29.8	23	23.2	23.2	28	21.9	26.6	22.4	29	22.5	25.2	22.3	28.4	23.5
9	30.4	23.3	22	22	28.4	22.7	29	23.5	29.2	23.9	29.2	22.6	30.3	24.3
10	30.5	23.6	24.4	24.4	28.8	22.5	29.6	23	30	24.5	29	23.1	30.8	24.7
11	30.8	24.2	24.5	24.5	29.6	23.2	30	22.7	30	23.7	29.1	22.2	31.2	23.4
12	31	22.1	24.8	24.8	29.9	22.2	28	22.4	30	22.1	29.8	19.3	31.3	24
13	30.9	23.1	24.5	24.5	28.8	23	28.7	22.7	30.5	24.6	31	23.9	30.1	24
14	30.9	23.6	22.8	22.8	27.9	23.5	29	25	29.2	25.4	29.2	22.9	30.3	23.7
15	27.5	23.4	22.7	22.7	26.5	21.5	26.6	23.1	28	23.7	28.6	22.5	26.8	23.2
16	27.6	23.2	21.5	21.5	24.2	19.5	24.5	22.6	27.2	23.4	26.4	21.9	25.1	22.7
17	29.8	22.9	21.8	21.8	25.5	22	25.1	23	26	23.1	26.5	22.1	26.4	23.3
18	29.4	24.1	23.8	23.8	26.7	22	29	24	29.7	23.9	27.4	23	29.3	24
19	29.1	23.8	23.5	23.5	31.9	23.7	30.5	23.5	30	23.5	28.6	22.8	29.6	23.4
20	30	23.7	23.5	23.5	31.7	23.8	31.7	24.2	30.7	23.8	30.4	21.3	30.6	24.2
21	31.3	23.1	23.4	23.4	31.3	22.7	30.5	23.1	32	22.8	31.2	21.3	31.7	24.7
22	31.1	23.8	23.8	23.8	30	23.1	31.5	24	31.2	24.3	32.1	21.9	31.8	25.8
23	31.6	24.1	24.2	24.2	30.8	24.2	32	24.5	30.2	23.8	30.7	21.8	32.1	25.3
24	31.7	23.6	24.1	24.1	30.5	21.4	31	22.6	31	22.3	31.2	20	31.8	23.8
25	31.9	25.1	24.1	24.1	30.2	24.6	30.5	24	30.1	24.3	31.1	21.3	32.1	25.8
26	31.5	24	23.4	23.4	27.8	22.9	29.9	23.7	30.5	23.9	30.6	21.1	29.6	24
27	31.7	23.9	23.4	23.4	30	20.7	31	23.4	30	23.4	29.2	21.4	31.4	23.8
28	31.5	24.2	23.7	23.7	29.3	23	30	24	30.2	23.8	31	21.9	31.1	23.1
29	31.5	24.9	24	24	29.4	23.5	30.7	24	30.2	25.6	30.3	22.8	32.4	25.7
30	31.5	24.3	23.9	23.9	28.4	23.3	29	23.5	30.2	24.4	30.5	20.4	27.8	23.3
31	30.6	21.7	22.8	22.8	29.8	20.7	31.1	22.5	30	23.7	27.5	20	31.4	23.6
Mean	30.5	23.5	23.5	23.5	29.3	22.2	29.5	23.3	30	23.5	29.7	21.8	30.2	24

Maximum and minimum temperatures at the stations of the Weather Bureau, March, 1921—Continued

Day.	Guinobatan.		Polangui.		Bacacay.		Tabaco.		Sumay (Guam), Agaña.		Iriga.		Calapan.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.6	21.3	34.3	20	29.9	21.6	30.7	22.2	28.6	24.7	32.5	20	30.6	24
2	32	21.7	33.7	21	30.2	22.7	31.3	23.8	29.5	24.2	33	22	30.6	22.5
3	32.3	21.1	33.1	22.4	31.5	22.8	31.8	22.5	30.8	22.5	32.9	21	31	22.1
4	31.7	21.1	34.4	20.9	30.3	22.1	31.4	22.3	28.4	24.6	32.4	20	31.2	23
5	31.6	20.8	32.1	21	31.1	22.2	32.2	22.4	31.8	24.8	32.5	20.1	30	23
6	27.6	23	34	23	30.1	23.6	31.7	22.9	29.4	25.3	27.9	22.8	29.5	24.5
7	25.2	22.1	29	23.3	26.8	21.3	28.5	22.8?	27.7	24.2	25.8	22	28.6	22.9
8	29.7	22.2	27	22	27.1	22.4	27.3	22	28.2	22.8	28		30	22.2
9	30.3	23	31	23.4	27.3	22.8	28.3	23	26.8	23.8	31	22.1	30.6	24.1
10	30.3	22.9	32.1	23.4	29.1	23.9	30.3	22.9	27.2	24.8	31	22.2	30.5	25
11	30.9	22.4	32	23.3	29.9	22.2	30.6	23.5	28	25	31.8	22	30.4	22.5
12	31.9	20.2	34	20	29.8	21.7	31	22.7	28.5	24.4	32.2	20	30.5	22.1
13	29.8	22.3	34	23.5	30.7	23.6	31.3	23.5	29	24	30	23	30	22.2
14	29.3	22.3	31	23.4	29.1	21.2	30.2	23	27.9	24.8	30.8	22.5?	30.5	23.5
15	28.6	23.1	31.4	24.2	29.1	21.4	28	23	29.2	24.1	28.4	22.7	28.1	23.5
16	25.6	22.6	29.4	23.4	27.1	21.6	27.2	22.5	30.2	24.1	27.7	22	28.5	22
17	27.7	22.2	28	23.4	27.8	22.8	28	22.6	30.7	24	30.6	23	29.5	24
18	30.3	23.2	30.7	22.5	27.9	23.5	28.2	23	29.9	24.8	32.1	23.1	29	22.1
19	30.1	23.3	31	23.5	28.9	23.3	29.3	23.5	29.7	24.8?	31.9	23.9	30	24
20	31.6	22.7	31	23.5	29.8	23.4	30	23	29.8	25.1	32	22.8	30.7	24.4
21	32.3	21	34	22	30.2	22.5	31.2	22.6	29.4	24.1	33.3	20.8	32	22.5
22	31.9	21.2	35	20.9	30.9	23.5	31.6	23.2	30.3	25	32.6	20.1	31.1	24
23	31.5	22.5	34	22.5	30.5	22.8	32.1	23.4	30	24.8	33.1	19.9	32	23.5
24	31.7	20.5	35	20.5	30.8	22.9	32	22.1	31.2	24.6	32.6	19.9	32.4	24
25	31.9	21.6	32.1	20.1	30.2	22.7	31.9	24.5	29.8	25.1	32.7	21.3	32	24.5
26	30	21.4	32	20.5	30.1	23.4	32	23	30.4	25.1	31	21.5	31.5	25
27	31.9	21.4	29.9	20.1	29.1	23.6	30.5	23.1	30.3	25.1	33.4	22.1	31	23.1
28	31.2	21.4	32.2	23	30.8	23.5	31	23	29.3	24.2	31.5	21.9	31.1	23.1
29	32.3	21.1	32.1	24.4	29.3	25	30.2	24.6	28.8	24.8	31.9	22	31.6	24
30	28.8	21.6	32.2	22.1	30.8	24.8	31.3	23.9	29.3	25.2	30	22.9	31.6	23.4
31	30.3	18.7	29.4	20	30.9	24.2	29	20.5	27.8	24.9	32.1	18.5	33	23
Mean.....	30.4	21.8	32	22.2	29.6	22.9	30.3	22.9	29.3	24.5	31.2	21.6	30.6	23.4

Day.	Tiwi.		Pasacao.		Virac.		Naga, Cama- rines Sur.		Tigaon.		Libmanan.		Batangas.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.2	23.1	32.1	23.3	32	23.8	32	20.9	31.2	22.1	31.9	20.9	34.4	24.3
2	30.4	23.2	32.7	22.1	31.6	24	34	23.1	32	23.7	32.9	24.2	34.6	22.7
3	30.4	20.8	33.6	22.4	31.5	21.6	33.3	22.5	32.3	22.6	32.9	23.2	34.8	23.5
4	30.6	23.7	32.2	21.7	32	21.5	33.9	21.7	32	23.1	32.9	23.2	35.4	23.4
5	30.9	22.3	31.9	22	30.5	21	31.3	22.4	32.1	23.8	31.5	22.8	34	23.2
6	30.6	23.1	32.4	21.7	29.1	22.3	27.4	22.6	28	22.9	31.3	23.2	30.3	23.9
7	30.7	21.2	31.4	24.4	27	22?	24.4	22.6	23.4	22.4	31.2	22.9	31.5	23
8	28.2	22.1	27.3	22.9	29.7	21.5	28.9	20.5	29.6	21	31.1	22.6	33.2	22
9	29.5	22.4	25.7	23.5	30.1	23.7	31.7	21.6	30.5	21.5	31.1	23.8	33.6	24.6
10	29.8	23	30.9	21.2	29.5	22.5	31.5	22.4	30.5	22	30	22.8	33.8	24.3
11	29.9	22.1	31.9	22.2	30.6	22.6	31.2	20.2	31	21.5	30	23.3	33.5	23.6
12	30.1	22.3	31.9	23.2	30.7	21	32.3	21.3	32.4	21.4	31.8	21.7	33.8	21.4
13	29.8	22.5	31.2	22.5	31	22.4	30	23	29.5	22.4	31.8	24	34	22.2
14	30.1	23.5	31.2	24.3	29.4	22	31.1	21.5	31	22.4	31.7	23.3	32.2	22.4
15	30.2	23.6	30.7	23.8	27.5	22.5	27.6	22.7	27.2	22.5	28?	23	32.3	24.4?
16	26.4	22.4	32.2	23.8	26	22	26.2	22.4	24.9	21.7	28	22.3	33	24.1
17	26.3	22.6	27.9		27.5	21.4	28.9	21.7	27.7	22.6	27.9	23	32.8	23.6
18	29.2	22.8	26.3	21.7	30.9	23	29.1	23	30	23	28	24?	32.2	22.3
19	29.2	22.3	31.3	23.7	29.6	23	29.5	23.2	30.9	23.5	29.1	23.9	34	23.8
20	29.8	24.1	29.9	24.8	30.5	23.5	32.4	23.5	31.4	23.4	31.2	23.4	34.4	23.7
21	30.2	23.2		24.5	31	21	33	22	32.2	23	31.8	23.2	35.4	23.8
22	30.6	23.2	32.4	21.7	31.6	23.2	32.7	22.2	32.5	23	32	23.4	35.4	24.7
23	30.5	23.2	32.7	22.4	31.8	23	33.4	23	32	24	32.4	23.9	34.9	23.1
24	30.2	23	32.3?	23.2	31.6	21.5	33.1	21.5	32	21.5	32.6	22	35.3	24.5
25	30.1	23.4		23.2	32	23.6	32.3	22.2	32	23.1	32.4	22.8	35.6	24.6
26	28.2	22.4		23.2	31.5	22.7	32.9	20.5	32	20.6	32.5	22.7	36.1	22.8
27	29.8	23.2	32.9	23.7	32.7	22.9	31.4	21.1	31.5	22.1	32.7	22.7	34.8	24
28	30.1	22.8	32	22.9	31.6	22.8	32	22.4	32.1	21.9	32.8	22.6	34.8	23.1
29	30.4	23.5	30.9	23.9	32.1	22.5	33.5	21.6	32.5	21.5	32.5	23.3	35.4	
30	30.8	24.3	32.2	23	29.8	22.6	30.1	21.7	28.3	21.9	32.5	24.2	36	22.1
31	29.6	23.4	32.9	23	30.7	21.5	31.7	18.6	31.3	18.5	30.8		35.3	22.7
Mean.....	29.8	22.9	31.2	23	30.4	22.4	31.1	21.9	30.5	22.3	31.3	23.1	34.1	23.4

Maximum and minimum temperatures at the stations of the Weather Bureau, March, 1921—Continued

Day.	Calatagan.		Balayan.		Lipa.		Lucena.		Atimonan.		Nasugbu.		Ambulong, Tanauan, Batangas.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.2	22.2	31.6	24	31.5	21.5	32	21.5	29.5	22.5	33.2	21.8	32.8	22.2
2	32.7	23.2	31	20	32.7	20.5	32.4	20.5	29.6	21.6	32	21	33	22
3	32.2	22.2	32	21	33.4	20.8	32.5	21.5	30.7	22.9	32.5	22.1	36.8	23.8
4	32.2	22.7	32	21	32.7	20.5	31.5	22.2	30.3	23.1	32.1	22	32.2	23.2
5	32.2	21.7	32	22.6	31.4	19.8	30	22.1	27.7	24.1	32.8	22	32.1	23.7
6	32.7	23.2	32.5	25	27.8	18.9	27.9	21.7	27	24	33.9	22	28.4	22.4
7	33.2	22.7	30	22.5	28	19.5	28.5	21.1	25.9	22.9	32.7	22.5	28	22
8	33.2	23.7	30.1	22	28.9	19.8	30	20.6	27.4	23.9	32	22	30.5	22.8
9	33.7	23.7	31.5	23	29.8	19	30.5	20.5	29.9	24.9	33	21.5	31.5	23.2
10	33.2	23.7	31	23	31	20.5	31	21.2	28.7	24.2	32.7	20.9	32	22.8
11	33	22.2	32	23.5	31.2	20.8	30.5	20.4	29	24.1	32.9	21.6	32	22.7
12	33.7	23.2	32.5	20.4	32.6	20	32	19.4	29.7	23	32.7	21.6	33	21.2
13	32.7	23.2	31	24	30.5	21.2	30.5	21.4	29.4	25.5	32.4	22.2	31.1	23.1
14	32.7	24.2	30.5	23	30.6	20.3	29	21.6	27.4	23.7	33.4	21.5	26.5	23.7
15	32.7	23.7	31.8	25.5	27.5	20.5	28.5	21.1	27.2	24	33.2	20.5	28.8	23.2
16	32.2	23.7	30	23	29	20.2	29	21.6	26.4	23	32.2	21.2	31.2	23.4
17	33.2	23.7	32	26	29.9	20	28.1	20.6	26.3	22.4	32.1	20.5	30.4	24
18	32.7	24.2	31.8	22.5	29.4	21	28.5	22.5	26.2	23.8	32.3	21.9	52	24.1
19	32.7	23.2	32	23	30	20.1	30.5	21.5	26.9	23.8	32.6	20.9	31.8	23.9
20	32.7	23.7	32.5	24	31	20.5	32	22.7	28.6	23.8	32.8	21	33	24.2
21	33.2	22.7	32	22	34	21.5	33.3	22.4	30.4	23	32.8	21.4	34	22.8
22	34.2	22.7	32.7	21	33.4	21	32.7	22.4	30.1	23	33	22	34.8	23.8
23	34.2	23.7	32	22.5	33.2	21.5	33	22.7	30.3	24.8	31	21.2	34.5	22.9
24	33.2	23.7	33	24	32.5	20	32.5	23.7	31.7	24.4	31.2	21.5	35	23.4
25	33.7	23.7	32	20.6	32.9	20.6	33.3	21.2	30.9	24.1	33.7	21.1	35	24
26	34.2	23.7	32	22	32.4	20.4	33	21.9	29.9	25.6	34.3	21.8	34.7	24.7
27	33.7	23.7	31.5	25	31.8	20.5	32.7	21.3	30	25.5	34.1	21.8	35	24
28	33.7	23.2	32.6	20	31.2	21.5	32	21.4	29.6	25.5	34.1	21.3	35.2	24.9
29	34.2	22.7	32	20	32.7	21.9	32.6	21.7	30.4	25.9	33.2	21.1	35.8	24
30	33.7	23.2	32.8	21	33.2	20.9	32.1	20.4	30.2	25.1	32.5	21.9	35.3	24
31	33.6	22.7	32.6	20	32.9	22.8	33.1	21.4	31.4	25.6	34	20.9	36.2	23
Mean	33.1	23.2	31.8	22.5	31.3	20.6	31.1	21.5	29	24	32.8	21.5	32.7	23.3

Day.	Daet.		Mendez Nuñez.		Alfonso.		Indang.		Canluban, Calamba.		Silang.		Maragondon.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum. <sup>a</sup>	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum. <sup>b</sup>
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31	21	29	20.5	30	21.6	31.5	20.7	34	20.6	28.8	18.3	32.7	19.9
2	31.2	22.4	30.5	20.5	31.5	20.9	33.2	20.9	35	20.8	28.3	18.7	34.6	19.7
3	30.5	22.9	31	20.2	31.5	20.5	33.3	21.2	35.2	21.5	28.5	18	34.2	20.5
4	31.2	21.6	30	21	31.7	21.2	32.8	21.7	34.2	21.9	28.5	18.4	34.4	20.7
5	29.2	22.2	27	19	29.2	21.6	29.7	21.4	33.3	21.6	28.4	18.2	32.2	20.7
6	27.6	22.4	24.5	20	26.7	21.3	26.4	22	30.6	22.4	28.6	18	32.1	22.6
7	24.7	21.7	24.5	19.9	26.1	20.6	26.2	21.3	30.6	21.2	28.7	18.6	28.2	21.6
8	27.6	22.6	25.5	19.9	27.5	20.3	28.3	20.9	31.2	21.6	29.4	19	32.4	20.4
9	29.5	24.7	27	19.9	28.5	21.1	29	20.8	31	21.8	30.3	19.5	32.6	18.3
10	28.8	22.7	27	19.8	28	20.6	28.7	21.2	32.2	21.9	30.5	19.3	33	21.6
11	28.9	23.2	28	18.9	28.5	20.2	29.5	20.7	32.4	21	30.4	19.2	33	19.3
12	30.1	22	28.5	18.5	30.2	19.6	30.8	20.2	32.8	19.9	30.2	19.7	32.1	18.8
13	29.5	24	27	19.8	28.9	20.8	29.4	21.4	32	21.6	29.8	19.3	33.1	20
14	29	23.5	27	19.8	25.5	21.1	26.4	20.9	28.8	21	29.5	18.9	29.9	22.1
15	26.9	22.3	24.5	19.5	26.5	20.6	27.5	21	30.7	21.9	29.4	18.3	32.1	21
16	27.3	22.2	26	18.9	27.3	20.1	27.9	20.9	30.6	21.4	29.6	18.5	32.1	20
17	26.7	22.8	26	19.5	27.6	20.3	28.2	21.2	30.2	21.6	29.3	18.5	32.1	19.9
18	27.5	22.8	26.5	18.9	28.9	20.4	29.7	21	32	21.5	29.7	18.4	33.1	20.1
19	28.4	23.5	27.5	19.5	29.4	20.9	29.6	21.4	32.1	22.2	29.4	19	33.3	21.6
20	32	23.7	30.5	20	31.3	21.4	32.7	22.2	33.2	22.3	29.2	19.2	33.7	21.9
21	30.6	22.7	31	18.5	31.3	19.9	33.1	21.9	35.1	21.5	29.5	19.8	33.5	20.9
22	30.2	21.9	30	20.5	31.5	21.1	33.2	22.5	34.6	22.1	30.1	19.7	34.9	21
23	30.7	23.8	30	19.8	29.6	21	32.7	22	34.9	22.4	30.5	19.7	34.2	20.5
24	30.1	22.1	30	20	29.8	20.6	32.6	21.6	34.4	22.8	30.5	19.5	35.5	22.7
25	30.1	22.2	30.5	20	31	21.6	32.2	22	34.2	22	30.4	19.6	35.5	20.4
26	30	22.4	29.5	20	30.2	21.1	31.8	21.4	33.6	22.1	30.2	20.3	34.2	20.5
27	28.9	22.2	29.5	19.5	30.5	21.6	32.3	21.7	34	21.8	30.7	20.5	34.8	20.6
28	30.7	22.8	29	19.5	29.9	21.1	31.5	21.9	34.2	21.6	30.5	20.4	34.5	19.9
29	30	24	29	19.9	30	21.2	31.7	21.9	33.5	22.3	30.3	21.3	34.5	20.9
30	30.1	22.5	29	19.5	30	20.6	31.4	21.2	33.7	21	30.6	20.8	33.6	18.9
31	30.1	22.2	30.5	19.5	30.8	21	32.1	20.8	34	21.8	30.4	21.5	32.9	19.6
Mean	29.3	22.7	28.2	19.7	29.3	20.8	30.5	21.4	32.8	21.6	29.7	19.3	33.2	20.5

<sup>a</sup> These minimum temperatures seem to be not very reliable, the differences between 6 a. m. temperatures and minimum temperatures being both too small and too uniform.  
<sup>b</sup> These minimum temperatures seem to be somewhat too low.

Maximum and minimum temperatures at the stations of the Weather Bureau, March, 1921—Continued

Day.	Santa Cruz, Laguna.		Buenavista, General Trias.		Cavite Naval Station, Cavite.		Manila.		Antipolo.		Balanga.		Malolos.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	32.9	22.4	33	22.2	35.5	20.9	34.3	22.6	34.1	21.4	34.2	22.8	33.6	22
2	33.9	21.5	34.9	20.7		20.6	35.3	22.7	36.2	22	34.7	21.9	34.6	22.6
3	33.1	22.3	34.7	22.8	35	20.6	34.6	24.9	35.2	23.3	36.1	24.9	34.3	25
4	33.1	21.8	34.2	21.9	33.5	23	34.7	23.3	31.2	22.7	35.1	22.7	34.2	23.2
5	30.6	23.2	31.8	21.4		23.4	33	23.2	32.7	21.4	34	24.2?	33	23
6	28.6	23	31.8	21.2		21.6	31.5	23.2	31.2	23.1	32.6	23	31.5	23
7	28.8	22.5	28.9	21.4	33	20.1	28.8	22.4	30.7	21.6	28.8	21.2	28.6	22
8	30.9	21.9	30.7	18.5?	33.5	22.4	32.6	21.3	32.7	19.6	32.6		32.5	21.9
9	30.4	22.9	30.7	18.2?	32.8	22.6	33.4	22.1	31.7	20.8	33.6	23	33.2	22.2
10	30.4	22.8	30.2		32.5	22.6	32.7	21.5	31.9	21.5	32.8	22.6	32.5	22
11	31.3	22	30.8	18.7?	34.5	22.1	33.4	21.2	32.8	20.9	32.8	22.5	32.4	22
12	32.3	20.3	32.7	19.7	33.5	21.2	32.4	20.4	32.9	19.6	34.1	19.9	34.8	19.8
13	31.1	21.3	31.6	20.2	30	21	32.7	22.1	32.8	20	34.4	22	34	22.5
14	28.6	23.3	28.7	21.7	30	21.1	28.9	23.2	29.5	21.8	31.2	22.7	29.5?	22.4
15	29.2	22.1	30.7	18.8	32	22.5	30.6	22.7	31.3	20.7	33	22.7	32.5	23.5?
16	29.1	22.9	30.5		31.6	22.4	30.6	21.3	32.7	19.7	32.5	22	32	21.5
17	28.6	22.9	30.5	18.7	33.9	22	30.5	21.3	32.3	20.1	32.2	20	33	20.5
18	29	21.4	31.7	18.7	33	21.7	32.1	20.6	32.9	20	33.8	20.2	33.6	21
19	30.5	23.2	31.7	20.7	31.5		32.4	22.2	33.8	20.9	33.4	22.5	34.5	21.5
20	33	23.2	34.7	22.2	36		34.6	22.7	33.6	22	35.7	23	34.5	22
21	34	23.9	34.1	22.7	36		34.3	24	34.7	22.9	36.2	23.6	36.2	23.5
22	32.8	23	34.7	22.7	35.5		34.7	23.4	35.7	22.3	35.8	24	34.7	23
23	33.4	23.5	33.7	23.2	35.6	23	34.2	22.2	35.2	21	35.4	22.6		22.5
24	34.1	22.6	33.8	22.7	35.4	23.6	35.3	23.1	35.5	22.5	35	24.2	34.7	23.8
25	33.2	22.2	33.5	21.2	34	22.6	34.7	21.9	35.6	21.3	34.9	21.6	34.8	22.5
26	32.3	21.5	33.2	20.4	34.7	22.8	34	21.5	35.6	20.5	34.9	21.6	35.2	21.9
27	33	22.5	32.9	21.7	34.7	21.4	34.6	20.8	35.5	20.5	34.7	21.5	35.3	20
28	31.8	22	33	21	34	22	34	21.5	34.3	21	35.3	22	35.8	22.7
29	32.7	21.9	33.4	22.4	34	23	33.5	22	35.1	21.5	34.8	23.6	34	23.2
30	33.1	21.6	33.2	21.8	33.5	22.5	34.8	21.1	35.6	20.5	34.4	21	34	21.2
31	33.5	22.5	33.4	22.4	34.5	22	32.8	21.4	34	20.4	33.3	20	35	20.3
Mean	31.6	22.4	32.4	21	33.7	22	33.1	22.2	33.5	21.2	33.9	22.3	33.6	22.2

Day.	San Fernando, Pampanga.		San Isidro, Nueva Ecija.		Iba.		Concepcion, Tarlac.		O'Donnell, Capas, Tarlac.		Tarlac.		Camiling.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	35	21.5	35.3	22.1	32.5	22.5	35	20.8	35.2	21.2	36.6	21.2	35.5	22.7
2	35	22	36.3	22.7	32	21.4	36	20.6	34.9	21	38.4	22	35.7	22.6
3	36	21	36.7	23.9	32.8	22	35	22.4	34.1	21.8	37.8	23.2	35.7	24.5
4		21.5	35.3	22.3	32	22.2	36	20.4	34.9	21.2	37.4	21.2	34.3	23
5	34.5	22	33.5	23	32.5	22	36.1	21.4	33.8	21.2	36.6	21.2	34.5	23.7
6	32	23	31.2	23.1	31	22.3	33.4	20.9	32.7	21	34.2	22.6	34.3	24.3
7	28	21.5	27.4	22.2	30.6	23.8	26.8	21	30.9	21.7	27.6	21.6	34.6	24.4
8	32	21	32.1	21.5	33	22.3	33.1	20	31.1	21.2	32	20.4	35.3	23.4
9	32.5	21.5	32.1	22.2	32.2	22.5	33.5	21	32.5	19.8	34.2	21.2	33.7	23.7
10	32.5	21.5	31.8	22.4	33.2	21.7	33.7	20.2	31.7	20.7	32.6	21.2	35.7	23.3
11	32	20	31.5	20.7	33.6	23.2	33.2	20.1	31.8	18.7	34.6	19.8	36.5	23.7
12	35	18.5?	34.5	19.2	31.6	19.8	35	18	35.2	19.2	35.2	19.2	34.5	24
13	34.5	21.5	33.8	22.2	32.5	21.3	35	21.7	35.4	21.8	35.6	23.4	36.5	23.2
14	32.5	21	31.7	22.1	31.6	21.6	34.2	20.8	33.3	20.9	32.8	21.6	34.5	23.7
15	31.5	21.5	31	21	32.5	23.5	33.1	21.3	32.9	20.7	33.4	21.8	35.3	23.1
16	32.5	20	31.6	19.9	32.8	23.4	33.1	19	32.7	18.9	34.2	19.9	34.7	23.7
17	33	18	33.3	19.7	32.5	20.4	34.4	18.5	34.9	18.7	34	18.8	35.3	
18	34	20	32.5	20.5	32.2	20.8	34.2	19.5	34.2	18.6	34.8	20	33.6?	22.7
19	35	20	33.5	20.9	33.8	23.2	35.1	20	33.9	18.7	35.2	19.2	34.5	21.6?
20	36	20	36.4	21.7	32.2	22.4	38	20.3	37.2	20.9	35.8	19.4	38.6	23.7
21	36.2	23	36.5	23.7	33	25	36.5	18.2	34.8	23.7	36.2	20.2	37.5	24.7
22	37	24	36.5	24.5	33.4	23.5	37.1	24.7?	36.1	22.3	38.4	19.8	37.5	23.7
23	36	20	37	22.1	33.1	23	37.1	21.7	36.2	21.2		21.8	37.5	23.7
24	36.5	22.2	35.2	23.2	33.4	24.5	36.2	23	35.7	23.7			38	23.7
25	36	20	35.7	21.5	34.2	21.6	37	20.2	35.9	20			37.5	21.7
26	36	21	35.5	22	34	21.7	36.5	19.5	36.2	21			37.8	24.7
27	36	18	35.6	20.9	33.2	21.4	37	20	36.4	19.9	36.4		37.3	22.5
28	36.5	21.5	35.8	21.7	33	22.5	37.2	20.5	36.2	21.9	37.2	20	37.8	22.7
29	35	20.5	34.3	23	34.1	22.2	35	22.5	33.3	22.7	35.6	23.4	34.8	22.8
30	34	19.5	34.8	20.5	33.6	23	35.8	19	34.2	22.6	37.4	20.2	37.6	24.2
31	35.2		34.8	19.9	33.4	20	36.6	19	34.3	22.8	38	19.6	38.8	21.5
Mean	34.3	20.9	34	21.8	32.8	22.3	35	20.5	34.3	21	35.3	20.9	36	23.4

Maximum and minimum temperatures at the stations of the Weather Bureau, March, 1921—Continued

Day.	Baler.		Dagupan.		Rosario, La Union.		Tubao.		Bolinao.		Aringay.		Baguio.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum. <sup>a</sup>	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1.....	31.3	23	37.3	23.2	36.2	22.2	36.2	22.9	34.4	23.8	36	22.5	25.8	15.6
2.....	31.6	21.2	36.2	23.8	36.3	21	36.3	22.3	32.8	22.7	34.3	22.4	25.6	16.2
3.....	32.7	23.5	31.3	25.5	34.3	21.4	33.8	22.5	30.9	26	32.8	22.8	25.2	15.6
4.....	30.4	23	34.2	23.6	35.4	21.5	35.5	21.7	31	22	34	22.2	26.1	16
5.....	29.4	22.1	36.9	22.5	35.5	21.5	35.7	22.3	34.9	21.5	35.4	22.6	26.2	15.5
6.....	29	22.5	32.9	23.3	35.5	22.2	34.4	22.8	33.2	21.9	34.3	22.8	24.3	14.7
7.....	28.8	21.7	30.9	23	28	21.5	28.5	22.1	30.5	22.4	30.4	22.2	18.4	14.3
8.....	30	21.4	32.3	23.5	33.3	21.7	33	22.3	31	23.8	32.3	21.9	24.8	14.5
9.....	28.5	21.7	34.8	23.5	32.4	21	34.2	21.4?	33.7	23	34	21.3	23.2	14.8
10.....	29	21.7	34.4	22.9	32	19.5	33.6	20	32.7	21.5	33.6	20.8	24.4	14
11.....	29.6	21.4	35.3	22	34.1	19.8	35.1	21.3	34.9	23.2	35	21.5	24	14.1
12.....	30.7	20.1	32	21.2	32.2	19.5	32.8	20.8	31	22	32.2	21.3	24.2	13.7
13.....	29.8	22.2	30.9	22.9	34.3	21.5	34.1	22.2	30.3	25.5	33	22.5	24.2	15
14.....	27.9	22.2	33	23.5	33.6	20.7	32.8	22.1	32.4	21.7	32.2	22.2	23.8	14
15.....	27.4	21	34.7	23.1	33.6	19.8	34.7	22	33.3	21.2	33.8	21.8	24.6	13.8
16.....	27.6	20.5	35	22.6	34.6	18.8	34.3	20.2	33.6	23.6	34	20.8	24	13.6
17.....	29.6	21.9	34.4	22.5	34.3	18.7	34.8	20.1	33.5	23.3	33.5	20.5	23.2	13.8
18.....	29.7	22.4	35.9	21.8	35.7	18.9	35.2	20	34	23.5	34	21	24.5	13.7
19.....	30.1	21.4	35.5	22.8	36.7	18.5	36.3	19.1	34.9	21.5	35.4	20	25.2	14.8
20.....	30.5	22.4	33.3	22.9	36.2	19	36.2	22.3	34	23	34.5	22.8	25.2	15.7
21.....	30.7	22.1	33	25.1	35	23.5	35.6	24.9	31.5	24.3	34.5	24	25.3	17.5
22.....	30.8	23	35.1	24.3	37	23.5	36.5	24.6	33.4	24.2	37	24.5	24.1	16.8
23.....	31.7	21.6	34.4	24.3	36.2	23.1	35.9	24.3	32.4	25.2	35.5	25.2	25.8	16.2
24.....	31	22.5	38.7	24.8	36.3	22.8	37.6	23.5	36.2	23.9	38.8	24.3	25.8	16.7
25.....	31.6	20.4	36	22.5	36.3	22.6	36.2	22.3	35	23.6	36	23.6	26.2	16
26.....	32.8	21	36.1	23.5	37	21.1	37.2	23.3	35	26.3	-----	23.5	25.3	15.2
27.....	31.3	21	34.5	22.5	36.3	20	35.8	21.2	32.7	24.2	37	22.4	25	15.5
28.....	31.3	20.6	35.8	23.8	36	20	35.9	24.2	34.7	26.8	37	24.2	24.8	15.2
29.....	30	22.6	34.9	25.1	36.6	21	36	23.1	34.4	23.2	37.2	24.5	24	15.1
30.....	30.4	20.7	34.1	24.4	36.5	21	35.8	22.3	34.2	25.4	36.5	23.5	23.2	15
31.....	31.1	20.8	32.9	21.5	34.7?	18.9	34.9	20.1	32.2	21.7	36.3	21.4	22.4	14.5
Mean.....	30.2	21.7	34.4	23.3	34.9	20.8	35	22.1	33.2	23.4	34.7	22.5	24.5	15.1

Day.	Naguilian, La Union.		San Fernando, La Union.		Candon.		Vigan.		Tuguegarao.		Laoag.		Aparri.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum. <sup>b</sup>
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1.....	35.1	-----	35	21.7	31.7	25	31.4	24.1	34.6	22.2	33.8	23.7	31.7	22.7
2.....	35.6	-----	32.5	22.5	32	25	31.5	24	35.7	22.1	34.2	25.2	30	22.9
3.....	33.9	-----	32.7	23.6	31.5	24	31.4	23	34.7	21	34.6	22.5	28.6	23.2
4.....	34.9	-----	32.5	21.7	31.5	22.9	32.1	22.9	30.9	21.3	34.5	21.5	27	20.9
5.....	34.5	-----	32.5	22	31.5	23.6	32.5	25	28.1	20.5	36.2	21.5	25	20.6
6.....	34.5	-----	32.4	22.5	31.7	23.8	32.1	25	29.7	21.2	35.7	22.3	26.4	22
7.....	35.1	-----	30.3	23.1	31	24.5	31.4	24.4	26.7	21.8	35	22.2	27.6	21
8.....	32.1	-----	31	22.3	30.5	24	32.1	23.7	27.6	21.3	34.6	23.4	23.9	21.8
9.....	33.1	-----	31.9	21.6	30.5	24.4	31	25.3	29.3	21	36.2	24	27.4	20.6
10.....	33.7	-----	31.7	21.5	31	23.8	30.5	24.5	30	22.2	36.3	24	28	21.9
11.....	34.7	-----	33.9	21.5	31.4	23.5	31.4	24.1	32.5	20.1	34.2	22	30.6	20.5
12.....	32.1	-----	31.6	21.6	31.1	24	30.6	22.9	32.2	20.2	33	22	29.2	20.9
13.....	33.8	-----	32.3	22.7	31.4	24	31.5	21.6	26.8	20	35.6	21.5	25	20
14.....	32.8	-----	32.2	22.3	31.4	23	30.9	24.9	27	19.8	34.2	20.7	23.9	19.9
15.....	33.9	-----	31.7	20.8	31.6	22.5	33.1	24.5	27.2	19.6	34.5	21.6	24.4	19.4
16.....	33.8	-----	31.8	20.7	31	22.5	31	23	30	19.6	33.1	19.7	28	19.1
17.....	34.7	-----	31.5	21.1	31.5	22.9	31	22.6	32.7	18.5	34.5	19.6	28.8	19
18.....	34.9	-----	32.4	21	31.5	23.6	31	22.9	33	18.7	34.1	19.4	29.6	19.6
19.....	35.8	-----	32.1	20	32	24	32.8	23.9	34	19.5	34.2	20.3	32	20.2
20.....	35.7	-----	33	22.1	32.2	23.7	31.8	22.4	36.3	21	34.4	20.5	32.6	21.9
21.....	35.5	-----	33.1	24.5	32.4	25.5	32.6	23	36	22.4	35.4	21.1	30.3	21.4
22.....	36.8	-----	33.4	25.2	33	25.4	33	24.1	37	23.8	36.2	21.6	33	22.4
23.....	36.5	-----	34	25.6	32.9	27.2	32.9	25	36.4	24.5	35.7	24.4	33	24
24.....	35.5	-----	-----	-----	33	25	32.9	24.1	37.2	24	36.2	23.7	34.2	24
25.....	36.7	-----	-----	-----	32.4	27.2	32	24.5	37.5	21.5	35.1	24	33.8	22.9
26.....	37	-----	-----	-----	32.5	26.2	34.1	25.1	36.2	24.2	36.6	23.7	30.8	22.7
27.....	36.4	-----	-----	-----	32.5	26.5	32.6	25.6	36.5	21.7	35.2	24	31	22.4
28.....	35.2	-----	-----	-----	32	25.9	32.3	24	35.6	23.2	36	23.9	29.2	23
29.....	35.1	-----	-----	-----	32.5	26	31.8	25.1	33	22.8	38.9	22.5	27.4	22.3
30.....	35.3	-----	-----	-----	32.5	24.4	31.1	24.9	33.2	22.8	34.9	22.4	30.7	22.5
31.....	35.5	-----	34	23.2	32	24.5	30.9	24.5	36.6	19.8	34.1	24.6	33.2	22.4
Mean.....	34.8	-----	32.5	22.3	31.8	24.5	31.8	24	32.7	21.4	35.1	22.4	29.2	21.6

<sup>a</sup> These minimum temperatures seem to be not reliable, the differences between 6 a. m. temperatures and minimum temperatures being both too small and too uniform.

<sup>b</sup> These minimum temperatures seem to be somewhat too low.



Maximum and minimum temperatures at the stations of the Weather Bureau, March, 1921—Continued

Day.	Cape Bojeador.		Basco.	
	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.
1	31.9	24	23.5	22.7
2	33.3	25.1	22.7	20.7
3	29.2	23.7	18.7	18.7
4	27.2	21.7	18.7	18.7
5	28.7	19.4	20.7	21.5
6	27.4	22.6	22.2	22.2
7	28.1	21.6	23	24.4
8	28.2	21.6	20	19.2
9	30.3	21.5	18.9	19.5
10	30.8	23.7	20.9	21.3
11	32.8	23.3	22.1	22.1
12	31.5	24.3	24.4	24.4
13	26.3	21	20	20.8
14	24.6	19.3	19.2	20.5
15	27.2	19	18.9	21.9
16	29.3	20.7	19.5	22.1
17	31.9	21.6	20.9	22.1
18	32.2	21.5	21.3	24.5
19	33.3	23	22.1	23.9
20	33.3	23.7	24.4	21.5
21	31.5	23.2	20.8	20.8
22	34	23.2	20.5	20.8
23	32.4	24.5	21.9	19.3
24	34.9	24.3	22.1	21.2
25	32.1	25.8	24.5	21.1
26	32.1	25	23.9	
27	33.8	24.2	21.5	
28	28.6	24.5	20.8	
29	28	20.6	19.3	
30	32.6	22	21.2	
31	30.8	25.1	21.1	
Mean	30.6	22.8	21.4	



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## SEISMOLOGICAL BULLETIN FOR MARCH, 1921

By Rev. MIGUEL SADERRA MASÓ, S. J.,  
*Chief, Seismic and Magnetic Divisions, Weather Bureau*

### EARTHQUAKES FELT IN THE PHILIPPINES<sup>1</sup>

4, 14<sup>h</sup> 02<sup>m</sup> [4, 22<sup>h</sup> 02<sup>m</sup>]. Tigaon (SE Luzon). Earthquake shock of intensity III, duration 8 seconds. Probably of volcanic origin.

11, 22<sup>h</sup> 13<sup>m</sup> 21<sup>s\*</sup> [12, 6<sup>h</sup> 13<sup>m</sup> 21<sup>s</sup>]. SE Luzon. Earthquake of intensity III-IV, felt through the Provinces of SE Luzon, Camarines Sur, Albay and Sorsogon, and in the Islands of Masbate and Cebu. Its origin was located in the neighborhood of Masbate.

13, 0<sup>h</sup> 15<sup>m</sup> 00<sup>s\*</sup> [13, 8<sup>h</sup> 15<sup>m</sup> 00<sup>s</sup>]. Talacogon (E Mindanao). Earthquake shock of intensity III. Recorded at Butuan as a disturbance of distant origin, probably in the Pacific.

14, 23<sup>h</sup> 05<sup>m</sup> 14<sup>s\*</sup> [15, 7<sup>h</sup> 05<sup>m</sup> 14<sup>s</sup>]. Guam (Mariana Islands). Earthquake of intensity III. Its origin lay in the Pacific, some distance SW of Guam. Recorded also at Butuan.

18, 2<sup>h</sup> 30<sup>m</sup> [18, 10<sup>h</sup> 30<sup>m</sup>]. Camarines Sur (SE Luzon). Earthquake of intensity III, felt in the region of Isarog Volcano.

18, 13<sup>h</sup> 13<sup>m</sup> [18, 21<sup>h</sup> 13<sup>m</sup>]. Camiguin Island (N of Mindanao). Earthquake of intensity III-IV. The record of Butuan places the origin at a distance of about 50 kilometers from this station, towards NE or E of Camiguin Island.

22, 9<sup>h</sup> 04<sup>m</sup> [22, 17<sup>h</sup> 04<sup>m</sup>]. Butuan (N Mindanao). Earthquake shock of intensity III, duration 15 seconds.

28, 16<sup>h</sup> 44<sup>m</sup> 13<sup>s\*</sup> [29, 0<sup>h</sup> 44<sup>m</sup> 13<sup>s</sup>]. S Luzon. Earthquake of intensity V, felt chiefly through the eastern part of Batangas Province, western Tayabas and southern Laguna. In the town of Batangas occurred five aftershocks of intensity III and IV during the next five hours: Of these aftershocks the seismographs at Manila recorded four at 1<sup>h</sup> 20<sup>m</sup>, 1<sup>h</sup> 25<sup>m</sup>, 3<sup>h</sup> 12<sup>m</sup>, and 4<sup>h</sup> 39<sup>m</sup>, respectively. At Ambulong, north Batangas, where the principal shock was but lightly felt, the seismograph recorded six aftershocks. The origin of the disturbance lay east of the Batangas town, presumably in the contact of the volcanic tuffs with the older mountains rising in the southern end of Batangas Province.

29, 20<sup>h</sup> 55<sup>m</sup> [30, 4<sup>h</sup> 55<sup>m</sup>]. Samar and Leyte Islands. Earthquake of intensity IV, felt through central and south Samar, and northeast Leyte. Its origin probably should be located in the northern portion of San Pablo Bay, between Samar and Leyte, where seems to exist a secondary seismic center. See Bulletin for August, 1910. The seismograph at Butuan recorded the principal shock and, four hours later, a light aftershock.

30, 14<sup>h</sup> 59<sup>m</sup> [30, 22<sup>h</sup> 59<sup>m</sup>]. Camiguin Island (N of Mindanao). Earthquake shock of intensity III. This shock gave at Butuan a record of great amplitude, but it was not felt.

<sup>1</sup>The intensity of earthquakes is given in the notation known as the Rossi-Forel scale. The time is that indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (\*). Otherwise the time is that noted by the observer who sent the report. All time indications are in Greenwich mean time (midnight=0<sup>h</sup>), in-sular time being added in brackets for the convenience of Philippine readers.

RECORDS OF THE MICROSEISMOGRAPH

(Time: Greenwich mean. Midnight=Oh. Instrument: Wiechert seismograph; 1,000 kilograms. AN:  $T_0=6.25$ ,  $\epsilon=2.906$ ,  $\frac{r}{T_0^2}=0.053$ ;  
 AE:  $T_0=6.18$ ,  $\epsilon=2.393$ ,  $\frac{r}{T_0^2}=0.042$ . Alluvium. 2.40 meters above sea level).

No.	Date.	Character.	Phase.	Hour.			Period.	Amplitude.		Remarks.
				h.	m.	s.		$A_N$ $\mu$	$A_E$ $\mu$	
43	1	I	e F	6 8	41 06	20				
44	1	I	e F	21	14 42					
45	3	I <sub>r</sub>	eP L M <sub>E</sub> M <sub>N</sub> F	3	08 15 15 17 4	23 32 41 07	6 7	41 56		
46	3	I <sub>r</sub>	iP L F	8	26 34 9	18 24			W Java Island.	
47	4	I <sub>r</sub>	eP S L L M <sub>N</sub> M <sub>E</sub> F	12 13	55 59 00 01 01 03	20 18 46	8 9	29 32		
48	5	I <sub>v</sub>	eP F	0	55 59	09				
49	5	II <sub>r</sub>	eP S L L M <sub>E</sub> M <sub>N</sub> F	6	30 35 38 40 41 7	16 32 40 16 38 36	9 11	101 284		
50	6	I	eL F	8	22 45					
51	10	I <sub>r</sub>	eP L F	20	02 10 52	18 29				
52	11	I	e F	16 17	57 19					
53	11	I <sub>r</sub>	eP L F	19	12 15 32	00 29				
54	11	I <sub>v</sub>	eP F	22	13 20	21			Felt in southeastern Luzon, Masbate and Cebu Islands.	
55	13	I	e F	0	15 30	00			Felt at Talacogon (E Mindanao).	
56	13	I <sub>r</sub>	eP L M <sub>E</sub> M <sub>N</sub> F	2	47 50 50 50 3	00 10 36 41 52	7 10	40 82		
57	14	I	e F	23	05 17	14			Felt at Guam (Mariana Islands).	
58	15	I	eP F	21	29 32	59				
59	16	I	e F	11 12	43 04	28				
60	19	I	e F	8 9	22 04	20			From Omori's seismograph.	
61	20	I	e F	22 23	34 10					
62	21	I <sub>v</sub>	eP F	6	02 07	29				
63	22	I	e F	12	19 45					

## Records of the Microseismograph—Continued

No.	Date.	Character.	Phase.	Hour.			Period.	Amplitude.		Remarks.
				h.	m.	s.		$A_N$ $\mu$	$A_N$ $\mu$	
64	23 24	II <sub>r</sub>	eP	22	49	32			S Moluccas.	
			F	0	10					
65	24	II <sub>r</sub>	eP	1	30	45			S Moluccas.	
			L		38	27				
			M <sub>E</sub>		39	16	9	111		
			M <sub>N</sub>		40	28	11	74		
			F	2	42					
66	24	I	e	2	50	29				
			F	3	23					
67	24	I	e	9	29					
			F	10	38					
68	24	I	e	14	50	29				
			F	16	16					
69	24	I <sub>v</sub>	eP	19	18	21				
			F		25					
70	28	I	e	8	09	00				
			L?		53	45				
			F	10	02					
71	28	I	e	12	40	52				
			F	13	00					
72	28	I <sub>v</sub>	eP	16	44	13			Southern part of Luzon.	
			L		44	27				
			M <sub>N</sub>		44	51	2	285		
			M <sub>E</sub>		45	09	2	256		
			F		58					
73	28	I <sub>v</sub>	eP	17	19	37			Aftershock of the No. 72.	
			F		22					
74	28	I <sub>v</sub>	eP	17	24	35			Aftershock of the No. 72.	
			F		28					
75	28	I <sub>v</sub>	eP	19	12	00			Aftershock of the No. 72.	
			F		15					
76	28	I <sub>v</sub>	eP	20	39	28			Aftershock of the No. 72.	
			F		42					
77	29	I	e	22	21	23				
			F	23	02					
78	30	I	e	10	32	38				
			F	11	12					
79	30	II <sub>r</sub>	eP	15	07	08			S Moluccas.	
			S		12	18				
			L		15	11				
			M <sub>E</sub>		15	49	9	250		
			M <sub>N</sub>		15	52	9	203		
			F	16	42					

### TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS<sup>1</sup>

4, 14<sup>h</sup> 02<sup>m</sup> [4, 22<sup>h</sup> 02<sup>m</sup>]. Tiguaon (SE de Luzón). Temblor de tierra de intensidad III, duración 8 segundos. Probablemente de origen volcánico.

11, 22<sup>h</sup> 13<sup>m</sup> 21<sup>s\*</sup> [12, 6<sup>h</sup> 13<sup>m</sup> 21<sup>s</sup>]. SE de Luzón. Temblor de tierra de intensidad III-IV sentido en todas las provincias del SE de Luzón, Camarines Sur, Albay y Sorsogón y en las Islas de Masbate y Cebú. Su origen se hallaba en las cercanías de Masbate.

13, 0<sup>h</sup> 15<sup>m</sup> 00<sup>s\*</sup> [13, 8<sup>h</sup> 15<sup>m</sup> 00<sup>s</sup>]. Talacogon (E de Mindanao). Temblor de tierra de intensidad III. Registróse en Butúan como lejano; seguramente se originó en el Pacífico.

14, 23<sup>h</sup> 05<sup>m</sup> 14<sup>s\*</sup> [15, 7<sup>h</sup> 05<sup>m</sup> 14<sup>s</sup>]. Guam (Islas Marianas). Temblor de tierra de intensidad III. Su origen se hallaba en el Pacífico, hacia el SW y algo distante de Guam; registróse también en Butúan.

18, 2<sup>h</sup> 30<sup>m</sup> [18, 10<sup>h</sup> 30<sup>m</sup>]. Camarines Sur (SE de Luzón). Temblor de tierra de intensidad III, sentido en la región del volcán apagado Isarog.

18, 13<sup>h</sup> 13<sup>m</sup> [18, 21<sup>h</sup> 13<sup>m</sup>]. Isla de Camiguín (N de Mindanao). Temblor de tierra de intensidad III-IV. Registrado en Butúan; el origen parece se hallaba a poco más de 50 kilómetros de distancia de la última estación, hacia el E o NE de la isla de Camiguín.

22, 9<sup>h</sup> 04<sup>m</sup> [22, 17<sup>h</sup> 04<sup>m</sup>]. Butúan (N de Mindanao). Temblor oscilatorio de intensidad III, duración 15 segundos.

28, 16<sup>h</sup> 44<sup>m</sup> 13<sup>s\*</sup> [29, 0<sup>h</sup> 44<sup>m</sup> 13<sup>s</sup>]. Sur de Luzón. Temblor de tierra, sentido con intensidad V en la parte oriental de la Provincia de Batangas, occidental de la de Tayabas y sur de la de Laguna. En la población de Batangas se notaron cinco réplicas de intensidad III y IV hasta las 5<sup>h</sup> a. m.; de éstas se registraron en Manila cuatro, a 1<sup>h</sup> 20<sup>m</sup>, 1<sup>h</sup> 25<sup>m</sup>, 3<sup>h</sup> 12<sup>m</sup> y 4<sup>h</sup> 39<sup>m</sup> de tiempo insular. Los sismógrafos de Ambulong, donde apenas fué perceptible el terremoto principal, registraron seis réplicas. El origen de esta serie de temblores se hallaba hacia el E de la población de Batangas; probablemente en el contacto de los terrenos tobáceos con los macizos antiguos del sur de la provincia.

29, 20<sup>h</sup> 55<sup>m</sup> [30, 4<sup>h</sup> 55<sup>m</sup>]. Islas de Sámar y Leyte. Temblor de tierra de intensidad IV, sentido en la parte central y sur de Sámar y en la parte NE de Leyte. Su origen probablemente se hallaba al N de la Bahía de San Pablo, entre Sámar y Leyte, donde parece existir un centro secundario indicado en otras ocasiones. Véase "Bulletin for August 1910." Solamente se registró en Butúan, donde cuatro horas después ocurrió una réplica.

30, 14<sup>h</sup> 59<sup>m</sup> [30, 22<sup>h</sup> 59<sup>m</sup>]. Isla de Camiguín (N de Mindanao). Temblor de tierra de intensidad III. Este temblor fué registrado en Butúan con grande amplitud pero no sentido.

<sup>1</sup> La intensidad de los terremotos se indica conforme a la conocida escala de Rossi-Forel. Cuanto a la hora de su ocurrencia, adoptamos la indicada por los sismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (\*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al medio de Greenwich (medianoche=0<sup>h</sup>). Para la conveniencia de los lectores de Filipinas se añade también la hora insular.

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1921

THE GOVERNMENT OF THE PHILIPPINE ISLANDS

# WEATHER BUREAU

MANILA CENTRAL OBSERVATORY

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BULLETIN FOR APRIL, 1921

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PREPARED UNDER THE DIRECTION OF

REV. JOSÉ ALGUÉ, S. J.

DIRECTOR OF THE WEATHER BUREAU

MANILA  
BUREAU OF PRINTING  
1922





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**BULLETIN FOR APRIL, 1921**



# METEOROLOGICAL BULLETIN FOR APRIL, 1921

By REV. JOSE CORONAS, S. J.,  
Chief, Meteorological Division of the Weather Bureau

## GENERAL WEATHER NOTES

Pressure and temperature.—The mean atmospheric pressure for this month in the Philippines is very slightly below that of the preceding year and below the normal of this month. The highest pressures were generally observed on the 10th and 14th, and the lowest on the 16th and 17th.

There is only a very slight difference between the mean temperature of this month and the normal of April. The highest and lowest monthly temperatures for Manila were 35.5° C. and 19.7° C.: they were registered on the 25th and 2nd, respectively. The extreme monthly temperatures for Baguio were 26.7° C., 14.5° C. on the top of Mirador, and 27.0° C., 12.6° C. in the plateau near the City Hall.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS OF THE WEATHER BUREAU FOR APRIL, 1921

Station.	Pressure.							Temperature.						
	Mean.	Departure from April, 1920.	Departure from normal.	High-est mean.	Day.	Lowest mean.	Day.	Mean.	Departure from April, 1920.	Departure from normal.	High-est.	Day.	Low-est.	Day.
Zamboanga <sup>a</sup>	758.69			759.92	14	757.62	27	26.1			31.8	26	21.7	14
Tagbilaran	58.84	+0.43	+0.08	60.11	14	57.68	25	26.5	0	-0.5	33.1	13	20.8	8
Surigao	58.95	+ .25	+ .04	60.32	14	57.66	17	26			31.2	18, 20	20.7	15
Cebu	59.03	+ .36	+ .12	60.28	14	57.83	17	28	- .1	+ .2	32.7	12	23.5	14
Iloilo	58.86	+ .51	+ .19	60.03	14	57.54	25, 26	27.4		- .9	32.7	26	21.8	17
Tacloban	59.27	+ .19	0	60.19	23	57.96	16	26.7	- .3	- .4	34.7	18	21.6	15
Capiz	59.34	+ .53	+ .07	60.35	14	57.84	25	27.5	- .6	- .1	33.8	25	21.1	17
Calbayog	59.58	+ .39	+ .24	60.84	14	58.19	17	25.8	- .9	- .4	33.8	28	19.4	14, 15, 16
Legaspi, Albay	59.76	+ .38	+ .27	60.74	10	58.19	17	27.7	- .4	+ .1	33.7	30	20	8
Atimonan	59.98	+ .57	+ .48	61.10	10	58.23	17	27.6	- .3	- .1	32.6	14	21.6	11
Ambulong, Tanauan, Batangas	59	+ .60		60.13	5	57.34	17	28.5	0		37.8	8	19.8	11
Daet	60.20			61.32	10	58.47	17	25.8			31.2	25, 26, 29	18.9	17
Manila	59.61	+ .67	+ .25	60.72	10	57.89	17	27.4	- .6	- .7	35.5	25	19.7	2
San Isidro, Nueva Ecija	59.61	+ .59	+ .23	60.90	10	57.62	16	28.6	+ .4	+ .2	38.4	17	19.9	28
Dagupan	59.11	+ .53	+ .19	60.22	10	57.52	16	28.8	+ .1	+ .3	38.8	29	22.5	10
Baguio <sup>b</sup>	637.39	+ .37	+ .21	638.38	22	636.32	16	18.8	- .4	0	26.7	18, 25, 30	14.5	5, 21, 30
Vigan	759.05	+ .44	- .01	760.04	11	757.44	16	28.1	0	- .2	34.3	26	21.2	4
Tuguegarao	59.84	+ .66	+ .29	61.62	9	57.81	16	28.2	+ .5	+ .3	39	27	20.6	6
Laoag	59.11	+ .60		60.20	10	57.23	16	28.2	+ .1		36.8	21	20.2	4
Aparri	60.06	+ .53	+ .33	62.08	9	57.94	16, 26	26.4	- .4	- .2	35	27, 28	21.4	30

<sup>a</sup> 20 days of observation.

<sup>b</sup> The barometric readings of this station are not reduced to sea level.

Rainfall.—The total rainfall for this month is below the normal of April in a great majority of our stations throughout the Archipelago. In Manila 28.4 mm. of water were measured with our rain gauges during the month, an amount which differs from the Manila normal of April by -4.6 mm. The monthly total of Baguio, 40.8 mm., is 72 mm. below the normal.

## RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF APRIL, 1921

Station.	Total.	Departure from April, 1920.		Days of rain.	Departure from April, 1920.		Greatest rainfall in a single day.	Day.	Station.	Total.	Departure from April, 1920.		Days of rain.	Departure from April, 1920.		Greatest rainfall in a single day.	Day.
		mm.	mm.		mm.	mm.					mm.	mm.					
Jolo	108.7	-14.3	-13.5	9	-1	-1	42.2	30	Calapan	85.2	-30.4	-18.6	9	-2	-2	32.3	26
Malamau, Isabela, Zamboanga	99	+40.2		6	+2		54.6	29	Virac	26.6	-12.9	-81.2	9	+2	-4	8.4	24
Davao	296.9	-148.4	+131.4	13	0	+4	69.6	27	Naga, Camarines Sur	41.2	-4.1	-49.7	7	+1	+1	15.5	5
Cotabato	155.5	+36.8	-2	16	+2	+3	28.7	3	Tigaon	66.6	-39.7		10	0		19.8	5
Cagayan	16.8	+16.8	-11.7	2	+2	-2	12	28	Batangas	1.5	-53.9	-28	1	-2	-2	1.5	5
Butuan	124	-191.5	-21.4	16	-2	+1	34.3	23	Lucena	28.2	-4.6		6	+3		13.2	5
Mambajao	65.5	+14.4		3	-2		25.4	22	Atimonan	35.3	+19.7	-50.9	5	+1	-2	23.4	5
Dumaguete	94	+87.7	+64.4	10	+8	+5	39.4	22	Ambulong, Tanaunan, Batangas	0	-20.4		0	-4		0	0
Kolonie, Yap, Western Carolines	233.3	+162.5	+100.7	24	+4	+5	58.4	19	Daet	52.1			12			17.8	5
Tagbilaran	174.2	+50.1	+8.6	10	0	+3	73	28	Canluban, Calamba	0	-15.8		0	-4		0	0
Iwahig Penal Colony, Puerto Princesa	153.8	+128.2		10	+6		64.3	29	Paracale	29.3	-2.2	-51.8	3	-3	-7	11.5	21
Surigao	262.1	-78	+15.7	16	-3	0	54.4	21	Santa Cruz, Laguna	17.4	-7	-18.7	6	+1	-1	5.1	25
Maasin, Leyte	79.1	-72.3	+9.7	4	-2	-1	27.5	29	Manila	28.4	+17.9	-4.6	6	+2	+2	24.4	12
Cebu	24.7	+11.6	-7.3	7	0	0	16.5	28	Antipolo	6.1	-61.5	-30.8	2	-4	-2	4.6	4
Iloilo	11.9	+11.4	-25.7	2	+1	-3	8.1	22	San Isidro, Nueva Ecija	1	-31.1	-37	1	-4	-3	1	12
San Jose de Buenavista	17.6	-17.5	-34.7	3	-2	-2	14.5	22	Iba	11.9	-1.9	-27.5	3	0	-1	6.6	8
Cuyo	0	-64.6	-23.1	0	-6	-3	0	0	Tarlac	5.8	-16.4	-52.6	3	-4	-3	3	7
Ormoc	112	+50.7	+35.2	15	+6	+5	23.1	22	Baler	259	-32.1	-20.3	19	+3	+3	54.1	13
Guianan	100.9	-90.3	-59.5	17	0	-1	23.1	4	Dagupan	85.7	+36.9	+8	4	-3	+3	26.7	19
Tacloban	149	+49.1	+20.6	14	+5	0	41.9	23	Baguio	40.8	-90.2	-72	12	+1	+2	11.7	9
Capiz	11.7	-24	-34.3	5	-2	-2	6.4	22	San Fernando, La Union	34.8	+26.4	+18.1	3			34	9
Boronagan	119.3	-166.4	-109.6	19	0	0	27.7	1	Echagüe	6.3		-68.8	6		-2	3.6	8
Catbalogan	86	+24.3		18	+9		16.6	3	Candon	38	+38	+23.7	2	+2	0	35.5	9
Calbayog	116.9	+4.8	+1.7	16	+6	+3	32.5	26	Vigan	11.4	+11.4	-7.1	2	-2	0	9.4	5
Masbate	11.9	-3	-20.3	5	0	0	5.6	22	Tuguegarao	12.8	-18	-53.6	2	-5	-3	9.9	8
Romblon	19.7		-35.2	6		-1	11.4	24	Laoag	4.1	-16.2	-5.7	1	0	0	4.1	26
Batag Light-house, Laoang	60.5	-4.7		12	+3		15.3	22	Aparri	83.9	-123.9	+38	6	-2	+1	62.5	9
Sorsogon	58.3	-41.7		12	+2		13.5	25	Cape Bojeador	3	-23.8		1	0		3	7
Legaspi, Albay	81.1	-3.3	-55	12	+6	0	37.1	5	Basco	42.5	-73.9	-62.2	6	-7	-4	15.7	14
Sumay (Guam), Agaña	220.8	+135.4	+162.8	16	+3	+8	58.2	8									

## DEPRESSIONS AND TYPHOONS

Prescinding from other depressions of higher altitudes, practically all of them of the continental type, we will mention here only two as they were shown in our Weather Maps of the first half of this month.

The first appeared on March 31 and April 1 as a depression of little importance to the east of Bashi Channel or of southern Formosa. It moved first to the north toward the Eastern Sea, and then northeastward toward the Sea of Japan. It developed into a real cyclone or typhoon while approaching Japan and traversing Japan's Sea.

The other depression or typhoon was probably formed between Yap and Guam on April 8, and it moved slowly northwestward until it filled up not far from 135° longitude E and 20° latitude N. The disturbance was clearly shown by the observations of Yap and Guam, although it is not possible to decide whether it was only a depression or a well developed typhoon. Its track will be included later in one of our next bulletins.

## NOTAS GENERALES DEL TIEMPO

**Presión y temperatura.**—La presión atmosférica media de este mes en Filipinas es muy ligeramente menor que la del año pasado y menor que la normal de este mes. Las presiones más altas se observaron generalmente los días 10 y 14, y las más bajas los días 16 y 17.

Entre la temperatura media de este mes y la normal de abril no hay más que una diferencia muy ligera. Las temperaturas máxima y mínima absolutas del mes en Manila fueron  $35.5^{\circ}$  C. y  $19.7^{\circ}$  C., las cuales se registraron los días 25 y 2, respectivamente. Las temperaturas extremas de Baguio fueron  $26.7^{\circ}$  C.,  $14.5^{\circ}$  C. en la cumbre del Mirador, y  $27.0^{\circ}$  C.,  $12.6^{\circ}$  C. en la llanura cerca del *City Hall*.

**Precipitación acuosa.**—La lluvia total de este mes es menor que la normal de abril en una gran mayoría de nuestras estaciones en todo el Archipiélago. En nuestros pluviómetros de Manila se recogieron durante el mes 28.4 mm. de agua, cantidad que difiere de la normal de Manila del mes de abril en  $-4.6$  mm. La lluvia total del mes en Baguio, 40.8 mm., es 72 mm. menor que la normal.

## DEPRESIONES Y TIFONES

Prescindiendo de otras depresiones de más altas latitudes, prácticamente todas ellas del tipo continental, sólo haremos aquí mención de dos que se notaron en nuestros mapas del tiempo durante la primera quincena de este mes.

La primera apareció el 31 de marzo y 1 de abril como una depresión de poca importancia al E del Canal de Bashi o del S de Formosa. Se movió primero hacia el N en dirección al Mar del Este, y luego hacia el NE en dirección al Mar de Japón. Llegó a desarrollarse como un verdadero ciclón o tifón a medida que se aproximaba al Estrecho de Korea y atravesaba el Mar de Japón.

La otra depresión o tifón se formó probablemente entre Yap y Guam el día 8 de abril, y se movió lentamente hacia el NW hasta que se deshizo no lejos de los  $135^{\circ}$  longitud E y  $20^{\circ}$  latitud N. Esta perturbación atmosférica fué claramente indicada por las observaciones de Yap y Guam, aun cuando no es posible determinar si fué simplemente una depresión o un tifón bien desarrollado. Su trayectoria se incluirá más tarde en uno de nuestros próximos boletines.

METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY <sup>a</sup>

[ $\phi = 14^{\circ} 34' 41''$  N;  $\lambda = 120^{\circ} 58' 33''$  E; barometer above sea, 14.2 meters; gravity correction not applied, -1.72 mm.]

Day.	Pressure (mean). mm.	Air temperature. <sup>b</sup>			Underground temperature.				Relative humidity (mean). Per ct.	Vapor pressure (mean). mm.	Radiation.		Evaporation. <sup>b</sup>			
		Mean.	Maximum.	Minimum.	0.25 meter.		0.50 meter.				1.50 meters.	2.50 meters.	Minimum on grass.	Maximum in sun, Black bulb in vacuo.	Free exposure (total).	Shelter (total).
					8 a. m.	2 p. m.	8 a. m.	2 p. m.								
1	759.46	26.9	33.9	21	28	30.2	29.1	29.5	28.7	23.4	69.1	17.7	18.4	61.5	8.2	4.6
2	59.28	26.5	33.8	19.7	27.7	30.5	29	29.5	28.7	28.5	66.8	16.8	16.4	61.3	6.2	4.2
3	59.42	27.1	33.9	20.5	28.3	31	29.3	29.6	28.9	28.5	72.1	19	17.5	61.3	5.8	3.8
4	60.15	26.6	31.3	22.6	28.8	29.6	29.3	29.5	28.8	28.5	74.5	19.1	19.6	63.9	3.9	3
5	60.62	27.2	33.1	21	27.7	29.5	29	29.4	28.8	28.4	68.9	18	18	62.4	6.9	5.3
6	60.27	27.4	34.5	22.7	28.2	29.6	29.1	29.5	28.8	28.5	70.4	18.8	20.2	66.4	5.2	4
7	59.82	27.1	34.2	21.5	27.8	29.7	28.9	29.3	28.8	28.5	72.2	18.9	19	66.2	6.1	4.1
8	59.50	27.4	33.7	22.2	28.3	30.5	29	29.5	28.8	28.5	71.4	19.1	19.6	63.1	6	4
9	60.57	26.6	32.4	21.5	28.3	30.3	29.1	29.5	28.8	28.5	70.8	18	18.1	62.6	5.4	3.7
10	60.72	27	34.2	20.4	28	30.7	29	29.6	28.9	28.6	65	16.5	17.3	66	7.5	5.1
11	60.54	26.5	32.2	22	28.4	31	29.1	29.5	29	28.5	75.1	19.2	18.5	65.5	4.2	2.9
12	59.44	27.1	32.7	21.7	28.1	30	29.2	29.5	29	28.5	72.9	19.1	19.3	65.5	5.1	3.3
13	59.47	27.4	32.6	22.9	28.3	30	29.1	29.5	29	28.5	78.5	21.1	21.4	60.7	4.3	3
14	60.26	28.1	32.8	25	29.3	30.7	29.5	29.8	29.1	28.7	79.5	22.2	23.8	60.6	4.7	3.1
15	59.66	28.5	33.2	25.1	29.5	31.5	29.7	30	29	28.6	77.9	22.3	23.6	64.3	4.9	3.2
16	57.90	28.6	33.3	25.1	30	31.7	30	30.5	28.9	28.6	76.8	22	23.5	61.3	5	3.3
17	57.89	28.2	33	24.5	29.8	32	30.5	30.5	29	28.5	80.8	22.8	22.2	61.4	4.1	3
18	59.30	28.2	34.6	24.8	30.3	32.1	30.4	30.7	29.2	28.8	76	21.4	22.6	64.3	5.6	3.7
19	60.17	27.5	33.8	23.2	30	30.8	30.3	30.5	29.2	28.6	75.7	20.4	21.1	65	4.2	2.9
20	59.91	26.9	32.6	23.9	29.1	31	30.3	30.3	29.2	28.6	75.9	19.9	21.7	61.7	3.8	3.1
21	59.62	27.6	35	22	29	31.2	29.9	30.2	29.3	28.6	70.7	18.7	19.5	65.7	6.3	4.1
22	60.48	28.1	34.5	22.8	29.5	31.2	30	30.4	29.4	28.8	68.2	18.7	20.5	65.3	6.3	5.2
23	60.58	26.6	32.4	22.2	29	30.7	29.8	30	29.4	28.7	78.6	20.2	19.7	61.9	3.5	2.6
24	59.02	28	34.7	22	29.4	31.3	29.7	30.8	29.4	28.7	69.2	18.9	19.6	64.6	6.5	4.7
25	58.22	27.9	35.5	22.2	29.4	30.8	29.7	30.2	29.4	28.8	69.9	19.2	19.5	63.3	5.4	3.8
26	58.24	28.9	35.2	24.1	29.7	32.3	29.9	30.4	29.5	28.8	66.2	19.1	21.8	63.5	7.7	4.8
27	58.74	28.1	34.8	22.6	29.6	32.5	30	30.7	29.4	28.8	65	17.9	19.7	66.3	7.7	5.3
28	59.32	26.6	34	20	29.5	31.9	30	30.6	29.4	28.7	69.3	17.7	16.3	64.7	5.9	4.8
29	59.84	27.5	34.9	21.5	29.5	32.2	30	30.5	29.5	28.7	63.5	16.7	18.3	65.3	8.2	5.7
30	59.94	27	35.1	20.2	29.7	31.9	30.2	30.5	29.5	28.9	64	16.5	17.1	64.5	6.7	4.8
Mean Total	759.61	27.4	33.7	22.4	28.9	30.9	29.6	30	29.1	28.6	71.8	19.2	19.8	63.7	5.7	4
Departure from normal	+0.25	-0.7	-0.3	-0.3							+1.9	-0.2			-15.9	119.1

Day.	Wind.				Clouds.		Sunshine. h. m.	Rain, 24 hours beginning 6 a. m.		Miscellaneous.				
	Prevailing direction.	Total movement.	Maximum hourly velocity.	Direction at the time of the maximum velocity.	Amount (mean).	Form and direction.		On the tower.	In the park.					
						Upper.					Lower.			
1	SE	227	18	SE	0-10.	1.8	Ci.	Cu.	9 30					
2	SE	196	19	WNW	2.2	2.2	Ci.	Cu.	9 40					
3	W quad.	191	19	WNW	2.6	2.6	Ci.	Cu.	9 40					
4	NE	207.5	20	ENE	6.8	6.8	A.-Cu.	E Cu.	0 55	0.2	0.2			
5	NE, E	190.5	19.5	WNW	2.7	2.7	Ci., Ci.-S.	Cu.	8 10					
6	E quad.	159.5	18	SE	5.5	5.5	A.-Cu.	E Cu.	4 55					
7	SE, W	188.5	21	W	4.2	4.2	Ci.	Cu.	7 55					
8	SE	209	21	SE	2.8	2.8	A.-Cu.	E Cu.	8 35					
9	ESE	192	18	ESE	5.2	5.2	A.-Cu.	E Cu.-N.	5 40					
10	NE, E	213.5	19	ENE	2.6	2.6	Cu.	Cu.	8 10					
11	SE, NW	165.5	18	W	6.5	6.5	A.-Cu. EbyN	Cu.	5 20	.3	.3			
12	W quad.	211	17.5	WNW	5	5	A.-Cu. ENE	Cu.	5 55	24.4	25.4			
13	E, SW	214.5	19	SW	2.8	2.8	Ci.-S.	Cu.	8 05	2.8	2.8			
14	W, SE	167.5	13.5	W	4.8	4.8	Ci.-S.	Cu.	6 55					
15	W, SSE	189.5	15	W	4	4	Ci.-S.	Cu.	8 15					
16	SE, S	194	16	SSW	3.2	3.2	Ci.	Cu.	8 25					
17	WSW	236	24	WSW	2.7	2.7	Ci., A.-Cu.	Cu.	8 20					
18	SE	197.5	22	SE	3.2	3.2	A.-Cu.	Cu.	7 10					
19	ESE, SE	131	20	WNW	5.5	5.5	Ci.-S.	Cu.-N.	6 35					
20	SE	124.5	16	SE	7.1	7.1	A.-Cu.	Cu.	4 30					
21	E	199.5	22	WSW	3.8	3.8	Ci.	Cu.	10 00					
22	E, ESE	179.5	19	ESE	4	4	Ci.	Cu.	9 50					
23	E quad.	145.5	14	NW	7.3	7.3	Ci.-S.	SE Cu., Cu.-N.	3 35	.5	.5			
24	ESE, SE	210	20	SE	4.1	4.1	Ci.	Cu.	11 10					
25	SE	181	15.5	WNW	5.5	5.5	Ci.	SE Cu., Cu.-N.	8 55	.2	.3			
26	SE	222	25	SE	4.3	4.3	Ci.	Cu.	9 05					
27	SE	245	28	SE	2.8	2.8	A.-Cu.	E Cu.	9 40					
28	SE	250	21.5	SE	3.4	3.4	Ci.	Cu.	8 15					
29	SE, ESE	257	28	SE	1.2	1.2	Ci.	Cu.	11 10					
30	NE, ESE	227	19	ESE	3.6	3.6	Cu.	Cu.	9 50					
Mean Total		197.4	19.5		4				7 48	234 10	28.4	29.5		
Departure from normal		-883			-0.1				-27 04	-4.6				

<sup>a</sup> All the mean values given in this table are deduced from hourly observations.  
<sup>b</sup> These values are taken from instruments mounted in the Observatory Park, 1.5 meters above ground.

METEOROLOGICAL DATA FOR MIRADOR OBSERVATORY, BAGUIO

[φ=16° 25' N; λ=120° 35' E; barometer above sea, 1,512.5 meters; gravity correction not applied, -1.65 mm.]

Day.	Pressure (mean). <sup>b</sup>		Air temperature at Mirador (on the top of the mountain).					Air temperature in the plateau near the City Hall.				Relative humidity (mean).	Vapor pressure (mean).	Radiation.		Evaporation.	
			Mean.	Maxi- mum.	Hour.	Mini- mum.	Hour.	Maxi- mum.	Hour.	Mini- mum.	Hour.			Mini- mum on grass.	Maxi- mum in sun. Black bulb in va- cuo. <sup>c</sup>	Free exposure (total).	Shelter. (total).
	mm.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	Per ct.	mm.	°C.	°C.	mm.	mm.		
1	637.15	18.2	23.2	0.40p.	15.3	6.05a.	24.5	2.00p.	15.0	5.40a.	91.2	14.2	13.8	59.8	2.8	1.2	
2	37	19	23.5	1.55p.	16	6.45a.	25.1	3.00p.	15.8	11.50p.	89.2	14.5	14.8	59.2	2.9	1.3	
3	37.07	18.7	23.5	0.35p.	14.8	5.20a.	25.2	1.50p.	14	6.30a.	81.7	13.1	14.4	56.1	5.1	2.1	
4	37.35	18.4	24.3	2.30p.	15.1	6.10a.	24.7	2.45p.	14.9	1.00a.	85.7	13.4	13.1	55	3.5	2	
5	37.91	18.3	23.6	9.55a.	14.5	5.40a.	24.4	11.00a.	13.6	6.00a.	79.2	12.4	12.2	55.5	9.4	3.3	
6	37.82	19	26.2	11.10a.	15.6	1.45a.	26.2	11.15a.	14.4	5.45a.	75.8	12.3	13.3	59	4.7	2.5	
7	37.53	17.4	23.3	1.00p.	15.2	3.00a.	23.4	1.40p.	14.7	6.15a.	93	13.8	13.5	58.1	1.6	.8	
8	37.11	18.1	24.2	10.30a.	15	5.10a.	24.7	1.25p.	14.4	5.30a.	88	13.6	12.8	53	2.8	1.7	
9	37.59	16.8	20.1	9.30a.	15.2	5.55a.	20.5	0.30p.	14.6	5.45a.	95	13.6	13.4	47	1.9	.5	
10	37.99	17.9	21.7	9.40a.	14.6	6.05a.	24.5	11.15a.	13.9	6.30a.	88.3	13.5	12.3	55.3	2	.9	
11	37.96	18	22.7	2.30p.	15.2	6.05a.	24.2	2.30p.	14.6	6.00a.	91.8	14	13.1	53.4	1.5	.7	
12	37.18	18.4	23.3	0.30p.	16.1	5.45a.	24.5	2.30p.	15.8	6.30a.	91.3	14.3	13.9	58	2.1	1	
13	37.08	18.7	24.3	0.30p.	15.7	6.05a.	24	1.30p.	14.6	5.45a.	87.2	14	12.6	56.2	3.3	1.3	
14	38.14	19.4	24.5	1.25p.	15.8	6.05a.	25.7	0.50p.	14.6	6.20a.	89.7	15	13	58	2.7	1.4	
15	37.81	19.9	25.7	1.30p.	16.3	5.30a.	26.7	1.35p.	16	6.00a.	90.3	15.6	14.4	59	3.3	1.5	
16	36.32	19.7	25.8	1.35p.	16.4	6.20a.	25.7	2.45p.	15.8	5.40a.	88.5	15.1	14.5	61.7	2.7	1.2	
17	36.44	19.6	26.2	0.35p.	16.7	6.05a.	26.6	0.45p.	16.4	2.20a.	85.5	14.4	13.8	60	4	1.8	
18	37.42	19.8	26.7	10.10a.	16.5	4.15p.	25.7	10.00a.	16.3	3.30p.	81.8	13.9	14.5	63.3	2.7	1.3	
19	37.97	18.4	23.3	11.50a.	15.7	5.00a.	24.1	Noon	15.6	6.00a.	90.8	14.2	13.5	60	1.7	.9	
20	37.62	18.4	24	1.30p.	15.8	5.55a.	24.8	1.30p.	15.7	6.00a.	90.2	14.2	14	57.8	2.2	1.2	
21	37.41	19	24.7	2.25p.	14.5	5.45a.	25.7	10.35a.	14.4	5.00a.	85.8	13.9	12.5	58	3.4	1.5	
22	38.38	19.1	25.7	10.30a.	14.6	5.15a.	26.7	11.00a.	13.8	5.25a.	82.5	13.2	12.2	57	6.4	2.7	
23	38.23	19.1	25.3	1.15p.	15.2	5.50a.	26.9	10.40a.	14.2	5.30a.	80.7	13	12.7	56.5	5	2.4	
24	37.23	18.5	24	0.25p.	15.6	5.50a.	25.2	9.40a.	14.9	5.35a.	87.8	14	13.7	58.5	4.6	2	
25	36.35	19.8	26.7	1.55p.	15.2	5.50a.	27	10.50a.	14.4	4.55a.	79.3	13.4	13	58	5.8	2.7	
26	36.45	19	25.5	9.55a.	16.2	4.00a.	26.2	10.00a.	15.9	5.45a.	88	14.2	14.3	57.8	2	1.2	
27	36.83	19.6	26.5	11.00a.	15.8	5.45a.	27	11.50a.	14.9	5.45a.	83	13.8	13.3	61	5	2.4	
28	37.17	19	24.8	1.00p.	15.3	5.25a.	25.7	1.40p.	13.8	5.05a.	86.2	14.1	12.6	60	5.8	2.3	
29	37.52	19.6	25.7	0.15p.	15	4.15a.	26	10.30a.	14	5.20a.	79.2	13.2	12.2	59.1	7.3	3.2	
30	37.72	19.4	26.7	11.15a.	14.5	5.50a.	26.7	11.10a.	12.6	3.35a.	68	11.1	10.6	55	8.4	4.1	
Mean	637.39	18.8	24.5		15.4		25.3		14.8		85.8	13.8	13.3	57.7	3.9	1.8	
Total															116.6	53.1	

Day.	Wind.				Amount (mean).	Clouds.		Sunshine.	Rain, 24 hours begin- ning 6 a. m.	Miscellaneous.
	Prevailing direction. <sup>d</sup>	Total move- ment.	Maxi- mum hourly veloc- ity.	Direction at the time of the maximum velocity.		Form and direction.				
						Upper.	Lower.			
1	E quad.	Km. 274.8	Km. 20.3	W	0-10.	Ci., Ci.-S.	Cu.-N. W, SSE	h. 5 m. 45	mm. 1.4	Ω² a. ≡² a. p. ● p.
2	SW, E	198.8	19.5	SW	7	Ci.-S.	Cu.-N. SSW	5 30		≡² a. ≡² a. p.
3	SW, W	234.2	23.1	W	3.9	Ci.	Cu.-N. SW	6 15	3.8	Ω² a. ≡² a. p.
4	E	348.4	25.7	E	7	A.-Cu. SE	Cu.-N. SSE, ssw	3 30	.8	● Ω² a. ≡² a. p.
5	E	332.5	33	E	5	Ci.-S.	Cu.-N. E	3 00		Ω² a. ≡² a. p.
6	E	315	25.7?	E	4.7	Ci.	Cu.-N. SSW	6 20	2.3	Ω² a. p. ● p.
7	W, NE	308.7	20.4	W	6.6	Ci.-S.	Cu.-N. SSW	3 20	6.1	Ω² a. ≡² a. p.
8	W quad.	285.9	24.1	E	6.3	Ci.-S.	Cu.-N. E, SSW	5 00	.6	d ≡² a. ≡² a. p.
9	E, W	283.9	18.8	E	7.6	Ci.-S.	N.	0 25	11.7	Ω² a. ≡² a. p. ● p.
10	SE, W	223	17.1	W	6.4	Ci.-S.	Cu.-N. SSE	3 55		≡² a. ≡² a. p.
11	W	255.3	18.7	W	6.9	Ci.-S.	Cu.-N. S quad.	2 10	.5	Ω² a. ≡² a. p.
12	W	265.3	22.8	W	8.9	Ci.-S.	Cu.-N. NNW, ssw	2 25		≡² a. p.
13	SW, W	250.2	23	SW	5.3	Ci., Ci.-S.	Cu.-N. SW	4 50		Ω² a. ≡² a. p.
14	W, SW	214.1	21.9	SW	6.1	Ci.-S.	Cu.-N. SSW	5 10		Ω² a. ≡² a. p.
15	E quad.	280.8	21.9	SW	5.1	Ci.	Cu.-N. SSW, E	6 05		Ω² a. ≡² a. p.
16	E, SW	292.8	20.3	SW	6.1	Ci.-S.	Cu.-N. W	6 30		Ω² a. ≡² a. p.
17	W	301.2	21.7	SW	7.9	Ci.-S.	Cu.-N. NNW	4 35	.5	≡² a. p.
18	E	325.6	21.7	N	7.7	Ci.-S.	Cu.-N. NW quad.	2 45	9.6	≡² a. p. Ω² a. p.
19	SW, W	258.4	23	W	6.7	Ci.-S.	Cu.-N. W	3 10		≡² a. p. d² p.
20	E	298.8	26.2	SW	6.4	Ci.-S.	Cu.-N. W, NNE	4 55		Ω² a. ≡² a. p. Ω² a. p.
21	E	265.8	21.5	N	7.1	Ci.	Cu.-N. E	3 35		Ω² a. ≡² a. p.
22	E	344.3	25.9?	W	4.7	Ci.	Cu.-N. SE, S	5 55		Ω² a. ≡² a. p.
23	W, E	264.2	26.4?	W	4.3	A.-Cu. SE	Cu.-N. SW	5 50	1.2	Ω² a. ≡² a. p.
24	E	335.3	21.9	SW	6.4	Ci.	Cu.-N. SE	4 35		≡² a. p.
25	E, W	359.4	26.4	SW	3	Ci.	Cu.-N. S, SW	7 10		Ω² a. p.
26	E	302.1	22.2	SW	6.9	Ci.	Cu.-N. SE	3 05	2.3	Ω² a. p. Ω² a. p. ● Ω² a. p.
27	E	285.5	25.7	W	2.9	Ci.	Cu.-N. SE	7 55		Ω² a. p.
28	E, SW	283.4	24.3	W	5.3	Ci.	Cu.-N. NE, E	5 50		Ω² a. p.
29	NE quad.	312.8	24.9	W	2.1	Ci.	Cu.-N. SSW, SW	9 35		Ω² a. p.
30	E, W	303	25.2	W	3	Ci.	Cu.-N. SE	9 40		≡² a.
Mean		286.8	23.1		5.8			4 58		
Total		8,603.5						148 45	40.8	

<sup>a</sup> All the mean values given in this table are deduced from 6 daily observations taken at 2, 6, 10 a. m. and 2, 6, 10 p. m.  
<sup>b</sup> The barometric readings of this station are not reduced to sea level.  
<sup>c</sup> Maximum of hourly observations taken from 6 a. m. to 6 p. m.  
<sup>d</sup> This element is based on hourly observations taken from a quadruple register, which gives only eight possible direc-  
tions of the wind.  
<sup>e</sup> 4 hours missing.  
<sup>f</sup> 2 hours missing.  
<sup>g</sup> 6 hours missing.  
<sup>h</sup> 12 hours missing.

## DAILY RAINFALL AT THE STATIONS OF THE WEATHER BUREAU, APRIL, 1921

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Lapac Agricultural School, Siasi, Sulu †					3.8											
Glan, Cotabato †					6.3											
Jolo, Sulu	7.1				6.3					1.3						
Lais, Malita, Davao									1.3	10.9		2	8.4		8.1	
Malita, Davao										3	1.3	1	2.8			
Lebak, Cotabato					12.4	1.8		8.6					51	9.2		
Lamitan, Isabela, Zamboanga			20.3		8.1									3.3		
Basilan Plantation, Kabunbatan, Isabela, Zamboanga †					14.7		5.6		1.5	45.5	3					
Padada, Santa Cruz, Davao †				0.3			12.7					.5			2	
Basilan Plantation Office, Isabela, Zamboanga †					7.6	.8			5.3	31						
La Union, Sigaboy, Davao †						2.8	1.5		1.3	2	11.4					
Paranglalap, Isabela, Zamboanga †				2.5		7.6				61						
Latuan, Isabela, Zamboanga †										17.3						
Buluan, Cotabato †					1.8				50.8		.8		1.3			2.8
Malamau, Isabela, Zamboanga										7.6						
Pagsilaan Farm School, Mati, Davao †	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)							
Zamboanga, Zamboanga																
Cagayan de Sulu, Sulu †											26.7	39.4				
Kidapuan, Cotabato †	8.9		7.6													
Davao, Davao					11.9				38.9		34.3	43.7		17.3	19.8	
Piang Agricultural School, Kudarangan, Dulauan, Cotabato †				2.5	1.3	3.3				3.3						
Pikit, Cotabato						51.6	17			9.7	5.3					
Cotabato Seed Station, Pikit, Cotabato †					56.9	24.1			26.7	3.6						
Awang, Cotabato †						3										
Sirib, Guianga, Davao †			5.1	31.7		8.9		38.1	10.4	14	96.5	27.9		45.7		10.4
Kabakan, Cotabato †	20.3		22.9			2.5				17.8		5.1				
Bual, Dulauan, Cotabato						6.4					11.7					
Cotabato, Cotabato		27.2	28.7	4.3	19.3	2.3					2.8					
Mampising, Pantukan, Davao †	2.8				2.5				9.7			17	28.4	.5		
Kabasaran, Buldun, Cotabato †					24.1	9.1	1.8	22.6	2.8	39.1	10.2		8.1			
Naganaga, Margosatubig, Zamboanga				32						25.9						
Banisilan, Banisilan, Cotabato †	10.4	1.3	2.8	12.7	1.5		13.5	.8	12.7	.5	5.1	1.5	6.4	11.9	33	26.2
Malabang, Lanao					12.2	2						2.3				
Compostela, Monkayo, Davao †	10.2		5.1		1.8	38.1				13.5						
Malangas, Margosatubig, Zamboanga †			2.3	6.4		4.8	43.7		2.5	11.2	36.1		31.2	3		
Lumbatan, Lanao †						24.4	5.8	3.8	.8							
Cateel, Davao	7.6	11.4	15.5	19.8	13.5	25.1				8.1						
Ganasi, Lanao					21.6	38.1			1.3	2.3			31			1.8
Camp Kalao, Monkayo, Davao	3.1		1.5	1	2.5	1.5					.5					
Managok Agricultural School, Linabo, Malaybalay, Bukidnon			1.3					3.8	.8		4.3	1				
Camp Keithly, Dansalan, Lanao					4.6	21.1										
Veruela, Agusan	6.6	.5	.5		13	25.7										
Sindangan, Zamboanga †					8.1											
Sumilau, Bukidnon																
Diklom, Tangkulan, Maluko, Bukidnon †																
Cagayan, Misamis																
Talacogon, Agusan	1.5	11.9		5		2.8	3	.3		1	2.5					
Butuan, Agusan	21.3	.3		.3	9.4	6.1					1					
Mambajao, Misamis	21.8															
Dumaguete, Oriental Negros	6.1		1.5			.5				2.3						
Kolonie, Yap, Western Carolines	5.7	3.3	.3	3	5	16.8	10.6	14	1.3	.8	9	4.3				.6
Hacienda San Jose, Tanjay, Oriental Negros †																
Hacienda Palanas, Bais, Oriental Negros †																
Tagbilaran, Bohol	3.8	.3			5.8	14.5						8.1				
Iwahig Penal Colony, Puerto Princesa, Palawan				1							2.5	10.7				.5
Dalaguete, Cebu	1.3		1.3	7.4		2.3										
Surigao, Surigao	11.9	4.1		5.9	23.1	9	.8		2							
Central Palma, Ilog, Occidental Negros																
Hacienda Naval, Himamaylan, Occidental Negros	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)			
Biaong Cui's Farm, Barili, Cebu					31.7											
Maasin, Leyte					6.4											
Binalbagan Estate, Binalbagan, Occidental Negros †	11.7								1.3							
Isabela, Occidental Negros	.5															
Hacienda Tanolo, Hinigaran, Occidental Negros	3.3				2											
Cebu, Cebu					.5											
La Castellana, Occidental Negros	.3		6.9						6.9	1						
Hacienda Vallehermoso, Vallehermoso, Oriental Negros †					4.1											
Central Azucarera de La Carlota, La Carlota, Occidental Negros	10.6		45.7		2.1											
Hacienda Canlaon, La Castellana, Occidental Negros	3.2	4.4	2.5		29.8		10.2						2.3			

† Voluntary or cooperative station.

\* No observation.



Daily rainfall at the stations of the Weather Bureau, April, 1921—Continued

Station.	Day of month.														Total.	
	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	
Lapac Agricultural School, Siasi, Sulu †			30.5	15.5						6.6				15.5	71.9	
Glan, Cotabato †				1.5			61	40.4	19.6	22.4	0.2		8.1		153.2	
Jolo, Sulu					9.6	33.3	2.8	.5					5.6	42.2	108.7	
Lais, Malita, Davao		30.5							24.6	67.5	42.4	10.2		19.6	229.3	
Malita, Davao		25.4				1.5	3.3		16.8	25.6	80.3	19.6	2	20.1	200	
Lebak, Cotabato		5.5	5.1			15.2						42.7			151.5	
Lamitan, Isabela, Zamboanga				17.5			20.3	13.7				39.9		16.3	139.4	
Basilan Plantation, Kabunbatan, Isabela, Zamboanga †				6.9		34	6.4	.8		8.9		7.1		9.2	143.6	
Padada, Santa Cruz, Davao †								1		30.5					47	
Basilan Plantation Office, Isabela, Zamboanga †			1.8	1.3	5.1	46.2	3.3			1.3		31.2	12.2	18.8	165.9	
La Union, Sigaboy, Davao †								1.3	14.5	25.6	11.4				71.8	
Paranglalap, Isabela, Zamboanga †			7.6		8.9	6.4		10.2				7.6	71.2		183	
Latuan, Isabela, Zamboanga †			.3		7.9	10.2							54.4	7.6	97.7	
Buluang, Cotabato †			3	24.1				1.3		.5	21.1	38.1			145.6	
Malamau, Isabela, Zamboanga			1.5		24.1	9.9						1.3	54.6		99	
Pagsilaan Farm School, Mati, Davao †		17.8	17.8	28	17.8	10.2	10.2	68.6	25.4	15.2	50.8				261.8	
Zamboanga, Zamboanga					1	10.7				5.6		61.8	2.6	16.5		
Cagayan de Sulu, Sulu †							1.3	53.3	1.8			.3	12.8	40.1	175.2	
Kidapawan, Cotabato †			45.7			50.8					25.9	15	4.1	9.1	167.1	
Davao, Davao		9.1	14.5					8.4	6.3	2	69.6		21.1		296.9	
Piang Agricultural School, Kudaran-gan, Dulauan, Cotabato †		23.6			4.1	18.5	2.5					18.8	5.8	31	14	128.7
Pikit, Cotabato				6.1		27.7	14	1.3				16.8	51.6	44.4	51.3	296.8
Cotabato Seed Station, Pikit, Cotabato †			13.2	38.9	10.7	1				15.2	53.3	29.2	54.6	8.9	336.3	
Awang, Cotabato †				1.3			12.7		9.1	8.6					71.5	
Sirib, Guianga, Davao †		12.7	17.5					8.4	21.6	27.9		3			340.3	
Kabakan, Cotabato †					43.2		2.5			2.5	2.5	38.1	2.5		159.9	
Bual, Dulauan, Cotabato		2		38.6	9.1	26.2	2.3			23.7	5.3	13.2	50		188.5	
Cotabato, Cotabato				.3	7.4	9.1	6.1	.8		2.5	20.3	2.1	21.3	1	155.5	
Mampising, Pantukan, Davao †	0.5	2	.8	1		9.9	.1	.1	10.5	1.5	36.3	1	2		140.1	
Kabasaran, Buldun, Cotabato †	37.8	44.4	15	8.6	29.5	29.7	21.6	6.1		42.7	61.4	9.1	7.4		431.1	
Naganaga, Margosatubig, Zamboanga			22.1		8.1	11.9	10.2	8.1	11.4	6.4	12.7			7.6	156.4	
Banisan, Banisan, Cotabato †	5.1	1.3	2.5	22.1	1.3	50.8	15.7	12.7	14.5	40.1	52.6	51.3	53.1		463.4	
Malabang, Lanao		9.9	4.8	18.3	19.3	12.2			14.9		36.6	1.5		45.7	179.7	
Compostela, Monkayo, Davao †		12.7		17	3.3										101.7	
Malangas, Margosatubig, Zamboanga †		34.3	2.3		60.4	36.6	26.4	2.5			23.1	9.1		9.1	345	
Lumbatan, Lanao †				5.6	4.6	3.6	5.6	4.8	50.3	69.8	30.8	33.5	4.8	6.3	254.5	
Cateel, Davao	24.4			.5	38.1	1.5	2.3	21.4	43.2	54.6	41.4	7.4			335.8	
Ganasi, Lanao	23.9			5.1	63.5	7.6			21.3		55.9	33	33	7.6	347	
Camp Kalao, Monkayo, Davao	4.6				2.3	5		6.4	50.8		32				111.2	
Managok Agricultural School, Linabo, Malaybalay, Bukidnon	.3		18.3	5.1				4.1		4.1		36.1	29.7	1	109.9	
Camp Keithly, Dansalan, Lanao			.3	3.6	1.3	42.4	5.1	.3	9.4	19.3	66.8	38.1	38.6		250.9	
Verueta, Agusan				1	1.5	11.4	24.6	3.3	24.2	11.9	153.2	1.5	3.8	.8	283.5	
Sindangan, Zamboanga †		1.8				5	13.5	1.3			20.1	45.5	12.2	5.8	100.7	
Sumilau, Bukidnon					10.7	7.6	15.7				34	15.7			91.8	
Diklom, Tangkulan, Maluko, Bukidnon †					5.1	15.7	2.5			6.4	3	11.4			44.1	
Cagayan, Misamis											4.8	12			16.8	
Talacogon, Agusan					9.1	14.2	11.9		3.6	39.1	70.1	17.8	.5		194.3	
Butuan, Agusan					2.3	24.1	34.3	1.3	7.4	7.1	6			1.8	124	
Mambajao, Misamis						25.4					18.3				65.5	
Dumaguete, Oriental Negros		1	6.9			39.4	.5				2.8	33			94	
Kolonie, Yap, Western Carolines		24.2	58.4	45.2	1.8	.5	3.1	13.7	1.2		4.8		5.2	.5	233.3	
Hacienda San Jose, Tanjay, Oriental Negros †											14.5				14.5	
Hacienda Palanas, Bais, Oriental Negros †															0	
Tagbilaran, Bohol						21.6	17.6		13.4			73	16.1		174.2	
Iwahig Penal Colony, Puerto Princesa, Palawan					15.3	14.2	4.1	30					64.3	11.2	153.8	
Dalaguete, Cebu						3.8		.8				67.8			84.7	
Surigao, Surigao					54.4	39.4	11.2	3	17.8	7.9	29	31.7	10.9		262.1	
Central Palma, Ilog, Occidental Negros												53.3			53.3	
Hacienda Naval, Himamaylan, Occidental Negros						6.4	.5				7.1	46.2				
Biaong Cui's Farm, Barili, Cebu			3.8			11.4	21.1								63	
Maasin, Leyte						25.1						20.1	27.5		79.1	
Binalbagan Estate, Binalbagan, Occidental Negros †						1.8	.3				.5	37.9	2.8		106.3	
Isabela, Occidental Negros						1.3						23.9			25.7	
Hacienda Tanolo, Hinigaran, Occidental Negros											.5	56.6	4.8		67.2	
Cebu, Cebu						5.6			.5	.5		16.5	.3	.8	24.7	
La Castellana, Occidental Negros			3.6									33	16	5.1	72.3	
Hacienda Vallehermoso, Vallehermoso, Oriental Negros †									31.7			36.3	1.3		73.4	
Central Azucarera de La Carlota, La Carlota, Occidental Negros		16.8		3.1	.5	1.3	15.7		2.8		2	23.1	3.1		126.8	
Hacienda Canlaon, La Castellana, Occidental Negros	2.5							3							58	

† Voluntary or coöperative station.

## Daily rainfall at the stations of the Weather Bureau, April, 1921—Continued

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
La Carlota Experimental Station, La Carlota, Occidental Negros †	5.1		7.1		0.3											
Maao Sugar Central, Santa Cecilia, Bago, Occidental Negros	3.6			1			0.5									
Valladolid, Occidental Negros	10.2															
Central San Carlos, San Carlos, Occidental Negros †																
Hacienda Refugio, San Carlos, Occidental Negros †																
San Joaquin, Iloilo	7.2		47											1.8		
Murcia, Occidental Negros					1.3											
Bacolod, Occidental Negros	5.1				5.1											
Oton, Iloilo	1.3				3								1.5			
Iloilo, Iloilo																
Lapuslapus, Iloilo, Iloilo †					1.8								1.3			
San Jose de Buenavista, Antique					.5	1.1					9.1					
Tuburan, Cebu	3					2.8						20.1	20.3			
Leon, Iloilo	13.5					.8										
Silay, Occidental Negros	3.8			5.1	27.2											
Calagit-an, San Remigio, Antique			52.1		1.3							1.8		26.2		
Hawaiian Philippine Co., Malisbug, Silay, Occidental Negros †	1.5	3		1.8	11.6	5.1	3.8									
Cuyo, Palawan																
Lucena, Santa Barbara, Iloilo †																
Barotac Nuevo, Iloilo						1.3										
Hacienda Ilaya, Victorias, Occidental Negros		40.6			2.8	8.1										
Hacienda Bilbao, Manapla, Occidental Negros	11.7		2.5		2			3								
Janiuay, Iloilo				4.1	7.6			8.6	3.1				14			15.5
Cadiz, Occidental Negros										11.2						
Dingle, Iloilo			31.7		.8											
Ormoc, Leyte	15.2		3.3	5.9	4.8	.5	.5									
Guiuan, Samar	8.2	.8	1.3	23.1	.8	2.3	2.5	3.3		2.8						
Bugasong, Antique							.5									
Bogo, Cebu	5.6					8.9				1						
Dueñas, Iloilo †					5.1	4.1										
Bitagoan, Passi, Iloilo †	23.1					18	13									
Tacloban, Leyte	39.9		8.4	6.3	13.2				5.1							
Dumarao, Capiz †	1.3	5.1		1.3	1.3	18.3										
Dao, Capiz †	9.4	2.3			10.2	1			1							
Capiz, Capiz	2	.8			1.5											
Borongnan, Samar	27.7	1.3	1.3	10.1	6.8	6	.8		1.3	1.8						
Catbalogan, Samar	4.8	2	16.6	4.8	9.6	3.5	.8		3.8	3.3	6.6					
Calbayog, Samar	11	2.5	2	9.4	7.9	6.9	2.8	3			.8					
San Jose Estate, Robles Camp D-17, San Jose, Mindoro †			10.2		2.5	4.6										
San Jose Estate, Tamaraw Plantation, San Jose, Mindoro †				1.5	1.3	1.8							.3	.3		
San Jose Estate, San Agustin, San Jose, Mindoro †																
San Jose Estate, San Jose, Mindoro †					2	1.5										
Masbate, Masbate				1.5	1.5	2.3										
San Jose Estate, Tunnel D-12, San Jose, Mindoro †				1.5	3.6	3.3										
Romblon, Romblon							.9	1.6	2.4							
Batag Lighthouse, Laoang, Samar	4.3				6.9	7.1	1.3		3.5							
Irosin, Sorsogon	2.3	1.5		5	11.5	4.5										
Sorsogon, Sorsogon	6.4	1.3		2.8	10.4	2.5			.8							
Bacon, Sorsogon	2	.8		8.6	1.3	1.3			1							
Jovellar, Albay	1.3			.5	8.4	3.1										
Legaspi, Albay, Albay	3.3	.5		.5	37.1	4.9	.5	2.5								
Guinobatan, Albay			2.5		14	.3										
Polangui, Albay			.5		20.6											
Bacacay, Albay									8.1							
Tabaco, Albay		1.8				5.6	5.3									
Sumay (Guam), Agaña, Ladrone Islands	1	.8						5.3	58.2	68.6	4.1	13.5	2.8	46.2	1.1	
Iriga, Camarines Sur				1.5	2.3											
Calapan, Mindoro	1			6.4	10.2	5.1								13.2		
Tiwi, Albay	8.1			6.1												
Pasacao, Camarines Sur		23.6				12.4	8.2									
Virac, Albay	.8			2.3	5.5	.3			3.3							
Naga, Camarines Sur	1.3	8.4			15.5											
Tigaon, Camarines Sur	.3	7.9		1	19.8	6.1			8.6	1						
Libmanan, Camarines Sur					5.1				1.8							
Batangas, Batangas					1.5											
Ragay, Camarines Sur	6.6		2	.3	12.2	.6										
Calatagan, Batangas																
Balayan, Batangas																
Lipa, Batangas				1.5	1.3											
Lucena, Tayabas				6.6	13.2				.8		3.8					
Atimonan, Tayabas				3.6	23.4											
Lian, Batangas														4.8		
Nasugbu, Batangas				2.5												0.8
Ambulong, Tanauan, Batangas																
Daet, Camarines Norte	1.8	1.5			17.8	1.3	.5					14.7				
Mendez Nuñez, Cavite																

† Voluntary or coöperative station.

Daily rainfall at the stations of the Weather Bureau, April, 1921—Continued

Station.	Day of month.														Total.
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
La Carlota Experimental Station, La Carlota, Occidental Negros †		72.2	1.8			1.3	9.7		1.5			21.3	0.8		121.1
Mao Sugar Central, Santa Cecilia, Bago, Occidental Negros						11.4			40.4			27.7	1.8		86.4
Valladolid, Occidental Negros						4.6						22.3			37.1
Central San Carlos, San Carlos, Occidental Negros †	0.8				1			7.6			31.2	2.8	2.3		45.7
Hacienda Refugio, San Carlos, Occidental Negros †											32.5	8.1		2.3	42.9
San Joaquin, Iloilo						3.1						1.1			60.2
Murcia, Occidental Negros						7.4						16.8	8		26.3
Bacolod, Occidental Negros						7.4						4.6			22.2
Oton, Iloilo				1.5		6.4						24.1			37.8
Iloilo, Iloilo						8.1						3.8			11.9
Lapuslapus, Iloilo, Iloilo †						7.6						3.8			11.4
San Jose de Buenavista, Antique						14.5						3.8			17.6
Tuburan, Cebu		46.7	.3			3.8	3					2		5.3	72.1
Leon, Iloilo					15.7										72.4
Silay, Occidental Negros				1	.5	55.4		6.1				5.1		28.7	133.7
Calag-itan, San Remigio, Antique						53.1					77.5				212
Hawaiian Philippine Co., Malisbug, Silay, Occidental Negros †					1.8	35.5		44.2				3.6		68.6	180.5
Cuyo, Palawan															0
Lucena, Santa Barbara, Iloilo †								3				1.5			4.5
Barotac Nuevo, Iloilo					30	28.5								5.1	64.9
Hacienda Ilaya, Victorias, Occidental Negros						7.6	10.4	21.1			4.1			50.8	145.5
Hacienda Bilbao, Manapla, Occidental Negros					1.3									19	39.5
Janiuay, Iloilo	27.2					8.4	9.7	.3	7.3						105.8
Cadiz, Occidental Negros					11.9										23.1
Dingle, Iloilo				.5		18.5									51.5
Ormoc, Leyte		2.5		6.6	22.9	23.1	12.7		4.3	1.8	.5		7.4		112
Guiuan, Samar					3.3	9.1	16.5	3.6	.8	3	13.7	5.8			100.9
Bugasong, Antique						3									8
Bogo, Cebu		1.5			7.6	3						6.9		25.7	60.2
Dueñas, Iloilo †						14.5									23.7
Bitaoagan, Passi, Iloilo †					28										32.1
Tacloban, Leyte			1.5		1	5.3	41.9		2.5	13	6.3	4.1	5		149
Dumarao, Capiz †						18.5									45.8
Dao, Capiz †						52.8	1.3					1.8			79.8
Capiz, Capiz						6.4						1			11.7
Borongon, Samar					2.8	25.9	3.8	2	7.6	4.3	4.3	6.9	8	3.8	119.3
Catbalogan, Samar		1.5		5.3	.8	8.7	7.7	.3	5.6	3					86
Calbayog, Samar				2.8	7.9	6.9	5.8	.5	14.2	32.5					116.9
San Jose Estate, Robles Camp D-17, San Jose, Mindoro †									8.4						25.7
San Jose Estate, Tamaraw Plantation, San Jose, Mindoro †					1	.5		1.3							8
San Jose Estate, San Agustin, San Jose, Mindoro †															0
San Jose Estate, San Jose, Mindoro †					2	.3									5.8
Masbate, Masbate						5.6	1								11.9
San Jose Estate, Tunnel D-12, San Jose, Mindoro †					1	3.3									12.7
Romblon, Romblon						2.1		11.4						1.3	19.7
Batag Lighthouse, Laoang, Samar			2.8	2.5		15.3	2	6.4		1.8		6.6			60.5
Irosin, Sorsogon					12.4	7.6	1	4.1	8.9			1	1.8		57.1
Sorsogon, Sorsogon					.5		2.3	9.7	13.5	6.6	1				58.3
Bacon, Sorsogon					8.4		1	1	7.6	10.4	1.3		4.1		48.8
Jovellar, Albay					8.1		.8	1.3	.5		1.3				25.3
Legaspi, Albay, Albay					1.5		.3	3.1	25.1	1.8					81.1
Guinobatan, Albay					1			.3	.8	4.4					23.3
Polangui, Albay					4.8	1			4.3	1.8					33
Bacacay, Albay							4.3	3.8							16.2
Tabaco, Albay					26.9	7.1	3	11.7	14.5	.5	1.8		1.3		98.8
Sumay (Guam), Agaña, Ladrone Islands	1.8	.1	.8	.1								13.4	3		220.8
Iriga, Camarines Sur					1.3				11.7						16.8
Calapan, Mindoro				.3					3	32.3	13.7				85.2
Tiwi, Albay								17.8							32
Pasacao, Camarines Sur															44.2
Virac, Albay							2.5	8.4	1	2.5					26.6
Naga, Camarines Sur						.8				5.6					41.2
Tigaon, Camarines Sur						1.5	11.7	14.2	2.3						66.6
Libmanan, Camarines Sur						1.3									6.4
Batangas, Batangas															1.5
Ragay, Camarines Sur						4.1			5.8	15.7					47.3
Calatagan, Batangas															0
Balayan, Batangas															0
Lipa, Batangas			.3	2.1	1.5										6.7
Lucena, Tayabas						2.5				1.3					28.2
Atimonan, Tayabas						3								2	35.3
Lian, Batangas								2.3		3.3					22.8
Nasugbu, Batangas			15.7												5.8
Ambulong, Tanauan, Batangas			2.5												0
Daet, Camarines Norte			2.5			5	.5	2.4			8.1	.5			52.1
Mendez Nuñez, Cavite															0

† Voluntary or cooperative station.

## Daily rainfall at the stations of the Weather Bureau, April, 1921—Continued

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Alfonso, Cavite.....																
Indang, Cavite.....																
Canluban, Calamba, Laguna.....																
Silang, Cavite.....					5.1	2.3										
Maragondon, Cavite.....												1				
Paracale, Camarines Norte.....																
Santa Cruz, Laguna.....				2.3	3.6				2.8		2.8					
Buenavista, General Trias, Cavite.....																
Fort Mills, Corregidor, Cavite†.....																
Imus, Cavite.....				1					.3			2.8	.8			
Alabang Stock Farm, Alabang, Muntinglupa, Rizal†.....																
Cavite Naval Station, Cavite, Cavite <sup>a</sup> .....				.3								9.1				
Lamiao Horticultural Station, Lamiao, Limay, Bataan†.....																
Manila, Manila.....				.2						0.3	24.4	2.8				
Antipolo, Rizal.....				4.6								1.5				
Balanga, Bataan.....							0.8							6.6		
Montalban, Rizal†.....				5.6	5.8						.5	7.4				
Hacienda Pintong Sapang, San Jose del Monte, Bulacan†.....												23.9	5.6	.3		
Mabayuan Dam, Olongapo, Zambales†.....																
Malolos, Bulacan.....												4.3				
Pampanga Sugar Mills, Del Carmen, Pampanga†.....							23.4	1.8					9.7			
San Fernando, Pampanga.....					.5			.3				3.6	1.3			
Mitla, Porac, Pampanga.....							12.2	.9				11				
San Isidro, Nueva Ecija.....												1				
Iba, Zambales.....	3.8							6.6	1.5							15
Concepcion, Tarlac.....							23.4									38.1
O'Donnell, Capas, Tarlac.....	4.3						22.4	26.7								
Hacienda Luisita, Comillas, La Paz, Tarlac†.....																
Hacienda Luisita, San Miguel, Tarlac, Tarlac†.....																16.5
Tarlac, Tarlac.....							3									
Paniqui, Tarlac†.....							30.5					15.3				
Camiling, Tarlac.....											1.8					
Muñoz Agricultural School, Muñoz, Nueva Ecija†.....																
Baler, Tayabas.....			45.7	7.6	.3	22.6		30.5	5.1	11.9	.8	12.2	54.1		17.8	2
Dagupan, Pangasinan.....									46							
Rosario, La Union.....				.5			.8	.8	8.6							
Tubao, La Union.....									4.3		.8					
Aringay, La Union.....							3		23.6						1.5	
Baguio, Mountain Province.....	1.4		3.8	.8		2.3	6.1	.6	11.7		.5					
Naguilian, La Union.....				31.7		.5			3							
Kapangan, Benguet, Mountain Province.....	(*)	(*)	(*)	(*)	(*)	(*)	43.7	1.8	11.9	1	3.8		4.6	24.4		.3
San Fernando, La Union.....				.5	.8				34							
Echague, Isabela.....		1		.5	.8			3.6	.3							
Balaoan, La Union.....	(*)	(*)	(*)	(*)					41.7							
Sagada, Mountain Province†.....							16.5		11.7		1					9.9
Bontoc, Mountain Province†.....																27.4
Candon, Ilocos Sur.....								2.5	35.5							
Vigan, Ilocos Sur.....					9.4				2							
Tuguegarao, Cagayan.....								9.9	2.9							
Tayum, Abra†.....					6.9	2.5										
Laoag, Ilocos Norte.....					8.4	6.9									.3	
Aparri, Cagayan.....								5.5	62.5	.3						
Cape Bojeador, Burgos, Ilocos Norte.....								.3								
Basco, Batanes.....			6.4				14.5	4.8	.3					15.7		.8

† Voluntary or coöperative station.

\* No observation.

<sup>a</sup> Rain in 24 hours beginning 8 a. m.

Daily rainfall at the stations of the Weather Bureau, April, 1921—Continued

Station.	Day of month.														Total.
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Alfonso, Cavite															0
Indang, Cavite															0
Canluban, Calamba, Laguna															0
Silang, Cavite								0.8							8.2
Maragondon, Cavite								2.3							3.3
Paracale, Camarines Norte				6.6	11.5			11.2							29.3
Santa Cruz, Laguna								.8	5.1						17.4
Buenavista, General Trias, Cavite															0
Fort Mills, Corregidor, Cavite †															0
Imus, Cavite			0.8												5.7
Alabang Stock Farm, Alabang, Muntinglupa, Rizal †			3			1.5									4.5
Cavite Naval Station, Cavite, Cavite <sup>a</sup>			25.4									0.5			35.3
Lamao Horticultural Station, Lamao, Limay, Bataan †															0
Manila, Manila							0.5		.2						28.4
Antipolo, Rizal															6.1
Balanga, Bataan															7.4
Montalban, Rizal †			2												21.3
Hacienda Pintong Sapang, San Jose del Monte, Bulacan †							14	.8	15.7						60.3
Mabayuan Dam, Olongapo, Zambales †															0
Malolos, Bulacan															4.3
Pampanga Sugar Mills, Del Carmen, Pampanga †			3.8						17.8						56.5
San Fernando, Pampanga									3.3						9
Mitla, Porac, Pampanga										17.3					41.4
San Isidro, Nueva Ecija															1
Iba, Zambales															11.9
Concepcion, Tarlac		3.8													42.2
O'Donnell, Capas, Tarlac		10.4								2.5					104.4
Hacienda Luisita, Comillas, La Paz, Tarlac †															0
Hacienda Luisita, San Miguel, Tarlac, Tarlac †															16.5
Tarlac, Tarlac			2						.8						5.8
Paniqui, Tarlac †															45.8
Camiling, Tarlac			2.5	14.7											19
Muñoz Agricultural School, Muñoz, Nueva Ecija †															0
Baler, Tayabas	20.8		.3		1.3		4.6		.6	11.4				9.4	259
Dagupan, Pangasinan			26.7							8.1		4.9			85.7
Rosario, La Union		.8	10.7	.3			1.5		1	3					28
Tubao, La Union		.3	1							3.6					10
Aringay, La Union										10.2					35.6
Baguio, Mountain Province	.5	9.6					1.2			2.3					40.8
Naguilian, La Union								7.6		12.9					55.7
Kapangan, Benguet, Mountain Province		1.3	5.1	38.1	48.3	46.5	36.8	51.1	6.6	29.7					354.7 <sup>b</sup>
San Fernando, La Union															34.8
Echagüe, Isabela			.1												6.3
Balaoan, La Union									2.3						44 <sup>c</sup>
Sagada, Mountain Province †	10.4	6.4	9.1	11.4				1.3		39.4					117.1
Bontoc, Mountain Province †	9.4														36.8
Candon, Ilocos Sur															38
Vigan, Ilocos Sur															11.4
Tuguegarao, Cagayan															12.8
Tayum, Abra †						6.1				57.9					73.4
Laoag, Ilocos Norte										4.1					4.1
Aparri, Cagayan															83.9
Cape Bojeador, Burgos, Ilocos Norte															.3
Basco, Batanes															42.5

† Voluntary or coöperative station. <sup>a</sup> Rain in 24 hours beginning 8 a. m. <sup>b</sup> 24 days of observation. <sup>c</sup> 26 days of observation.

MAXIMUM AND MINIMUM TEMPERATURES AT THE STATIONS OF THE WEATHER BUREAU, APRIL, 1921

Day.	Jolo.		Lais, Malita.		Malita.		Lebak, Cotabato.		Lamitan, Isabela, Zamboanga.		Malamaui, Isabela, Zamboanga.		Zamboanga.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum. <sup>a</sup>	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	29.8	23.6	31.5	22.6	33.1	23.3	30.2	24	32.5	20.1	30.7	23.2		
2	30.5	24	31.4	21.5	33.2	22.6	31.5	24.5	32.7	20.4	31.3	23.7		
3	30.6	22.8	31.2	20	33.7	22	33.4	24.7	33.4	20.3	30.3	23.9		
4	30.5	24.5	32.5	22	34.4	24	32.9	24.6	31.6	21.2	31.7	24.2		
5	31.1	24.5	32.5	22.9	33.5	24.4	32.5	24.4	32.3	20.1	32	24.1		
6	30.3	23.3	32	21.7	32.9	22.7	32	23.8	32.3	20.5	31.3	23.5		
7	30.2	22.9	33	21.5	32.5	22.2		22.5	32.1	19.6	30.3	23		
8	30.3	22.9	32	20.5	32.1	21.7	31.7	24.6	32.4	20.2	31.7	23.5		
9	29.3	23.3	31.8	20.2	32.6	21.6	30	24.2	33.3	20.5	30.8	23.4		
10	29.6	22.6	32.5	20.5	34.1	22.5	32.7	24	32.6	20.1	31.2	23.1		
11	30	22.4	31.5	22.2	33.4	23.2	31.9	24.5	31.5	20.3	30.7	23.2	28.5	22.2
12	31.4	23.5	33	21.8	32.8	22.9	33.1	25.4	32.5	19.2	29.7	23.7	28.7	22.8
13	31.6	23	31.4	21.9	32.9	22.4	32.1	24.5	32.4	20.5	30.1	23.8	28.7	22.5
14	30.6	22.9	31.5	20.9	33.1	21.7	30.1	25.7	32.8	20.3	29.9	23.7	30	21.7
15	31.6	22.9	30.7	22.6	32.6	22.5	33.7	23.3	31.5	21.2	30.1	23.4	28.4	21.9
16	32	22.8	32	21.8	33.3	22.3	33.1	24.7	32.7	20.3	30	23.5	28.9	22.2
17	30.6	22.8	32	22.5	33.5	23	32.1	25.1	32.8	20.6	30.2	23.7	28.7	22.4
18	32.5	23	31.9	22	33	23.2	33.4	25	33.4	19.2	30.5	24.2	29.9	23.4
19	31.3	24	31.5	23	33.5	23.2	33.2	25.2	32.5	20.1	30.1	24.7	29.6	24
20	29.6	23.8	32.5	21.4	34	22	33.5	23.8	33.2	20.3	32.3	23.5	29.5	24
21	29.2	23	32.2	21.4	33.8	22.2	33.2	24.2	31.4	21.6	30.8	23.1	30.4	23.5
22	29.6	22.5	31.5	22.2	32.6	24.7?	33.2	21.5	31.4	20.1	30.8	23.9	28.9	23
23	29.8	23	31	23	31.7	22.8	32.3	24.1	32.7	20.4	31.3	22.2	29	22.7
24	30.4	22.8	28.4	22	28.6	23.2	31.3	24.2	32.6	20.5	31.3	24.2	31.7	24
25	31.6	24	27	22.5	28.1	22.8	31	24.1	32.5	21.4	31.8	24.5	28.9	24.2
26	30.2	22.8	25.9	22.7	25.5	23	31.6	24.3	32.6	19.9	31.2	22.9	31.8	23.5
27	30	23.4	25	22	25.7	21.8	31.5	23.5	32.5	20.2	30.7	23.5	29	23
28	30.8	22.8	29.5	21.8	30.8	22.2	30.5	22.6	33.2	20.2	31	24	31.2	23
29	30.5	23.5	30.1	23	31.3	23.1	33	22.5	30.7	22.1	30.5	23.3	30.7	22.8
30	28.4	23.3	31	21.7	32	22.3	32.1	24.4	32.5	21.4	29.9	23.7	29.9	23.7
Mean	30.5	23.2	31	21.9	32.1	22.7	32.2	24.1	32.4	20.4	30.8	23.6	29.6	23

Day.	Davao.		Pikit.		Bual, Dulauan.		Cotabato.		Naganaga, Margosatubig.		Malabang.		Cateel.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum. <sup>b</sup>	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.7	21.9	33.8	22.1	33.5		32.3	22.1	34	22.3	30.4	21.4	30.2	22.5
2	32.8	22	34	21.4	34		32.1	22	33.7	22.5	31.7	21.6	30.2	22.7
3	34.3	21.9	35.3	22.3	34.4		31.5	22.6	34.2	22.3	31.4	21.5	31.5	22.6
4	34.5	22.5	35.2	22	35.5		31.6	22.5	33.5	22.5	31.2	21.6	31.4	22.5?
5	32.7	22.9	34.4?	22.1	34.5		32.8	22.6	35	22.2	31.2	21.4	31	22.7
6	32.7	21.6	34.3	21.2	33.5		31.5	21.9	35.3	23	31	22.4	29	22.2
7	33.4	21.6	33.4	22.1	33.7		32.4	22.1	34.3	22.2	30.8	21.4	30.9	22
8	32.9	21.1	33.7	23	33.7		31.6	23	34.5	22.5	31.6	21.5	31	20.2
9	31.7	22.1	34	22	34.4		33	22.1	34.5	22.2	31.6	20.8	31.5	22
10	33.7	22	35.5	23.4		22.4	33	23.2	35	23	32.4	22.4	30.2	
11	31.5	23.5	33.6	24	33.5	23	31.5	23	35.5	22.3	31.4	22.8	30.8	22.1
12	31.7	22.8	34.2	24	33	22.5	32	23.4	34.3	22.5	31.4	21.8	31	22.8
13	32.1	22.7	34.1	23.3	34.2	22.6	32.4	23	35.2	22.3	31.8	21.4	30.9	22.2
14	32.1	22.4	34.7	23.1	34.4	22.2	32	23.2	34	22.5	31.6	22.6	30.6	21.4
15	31.9	23.4	35.9	24.4	34.5	23.5	31.7	23.7	36.5	22.3	32.4	21.6	30.4	21.3
16	31.7	23	35.4	23.1	34.2	21.8	31.8	22.5	35.2	22.5	31.6	21.5	30.8	21.1
17	32.7	23.4	36.3	23.3	34.6	21.6	32.5	22.6	36.3	22	32	22.4	31	22
18	32.6	23.8	37.3	23.4	35.5	22.6	33.4	23.2	35.5	22.5	32.6	22	31.5	23
19	33.2	23.3	36.4	24.4	34.8	23	33	23.2	36.5	22.2	31.8	21.6	31.3	22.2
20	33.8	22.9	35.8	22.1	35	21.4	32	22.6	35.5	23	31.8	22	30.1	22.7
21	33.2	22.5	35.3	22	33.6	21.7	33.5	23.4	35	22.7	31.8	22	30.8	22.6
22	31.7	23.4	34.2	22.4	32.4	22	32	23.5	34.5	23	31	22.4	30.9	23
23	31.2	23.4	33.6	23.3	32	22.4	32	23.2	35.2	22.7	31	21.6	28.9	23
24	29.7	23.9	31.6	23.1	35	22.4	31.4	23	34.7	21.2	30.4	21.4	30	23
25	26.7	22.5	29.7	24		23	31.6	23.6	35	22.2	30	21	27.5	22.6
26	30.2	22.3	30.6	24.1	29.7	22.5	30	23.5	33.7	22.5	30.6	22.6	30.6	22.3
27	24.3	23	25.5	23.4	26	22.1	27.3	22.2	34	22.2	30.4	21.8	28.7	22
28	29.9	22.5	32.4	22.1	31	21.5	28.6	21.8	34.5	22.5	31.8	22.4	29.6	23
29	31.2	23.5	34.8	23.4	33	23	32.5	23.5	33.7	22.3	31.8	22.4	29.3	23
30	32.7	23.5	34.2	23	33	21.5	33.4	22.5	34.3	22.5	31.6	22.2	30.5	22.6
Mean	31.8	22.7	34	22.9	33.5	22.3	31.9	22.8	34.8	22.4	31.4	21.8	30.4	22.3

<sup>a</sup> These minimum temperatures seem to be not very reliable, the differences between 6 a. m. temperatures and minimum temperatures being both too small and too uniform.  
<sup>b</sup> These maximum temperatures seem to be somewhat too low.

Maximum and minimum temperatures at the stations of the Weather Bureau, April, 1921—Continued

Day.	Ganasi.		Camp Kalao, Monkayo.		Camp Keithley, Dansalan.		Veruela.		Sumilau.		Cagayan.		Talacogon.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.2	18.2	31.5	22	26.9	18.5	31.5	22.7	28.4	17.1	31.2	21.4	31.4	21.4
2	29.5	19	32.5	22.1	28.3	18.9	31	22.3	29.6	15.4	32.1	20.9	32.8	21.4
3	30	17.5	31.4	22	27.8	18	31.6	22	30.1	16.8	32.3	21.3	31.7	21.5
4	30.2	18.7	33	21.2	27.8	18	33.6	21.5	30.2	16.3?	32.8	21.5	30.4	21.6
5	29?	18	32.4	20.1	27.9	18.2	31.9	22	30.6	18	32.6	21.6	31.9	21.5
6	31.5	19.3	29.4	21	27.3	16.6	29.2	21.8	29.7	19.2	33	20.5	31.6	21.4
7	31.4	16.5	32	21.4	27	17.6	31.3	21.6	30.1	15.5	32	20.5	32.2	21.3
8	29.2?	17	33	20.6	27.4	18.2	32.6	20.7	29.3	17	32.5	21.5	33.3	20
9	30.4	16.7	32	22.1	27.8	16.5	32.8	23	30.1	18.9	33?	21.4	31.4	21.4
10	31	19	31.3	22.4	28.3	19	32.2	21.2	29	17.5	32.6	21.7	32.4	22.4
11	29	18	33.5	21.3	27.8	18.1	32	22.7	29.3	18.7	33.5	23.4	32.5	---
12	29.3	17.8	33.4	22.1	28.3	16.9	33	21.7	30.5	16.9	32.6	21.6	33.5	21.4
13	29	---	33.4	22	28.4	18.1	33	22.8	30	19.1	33.4	23	32.2	21.2
14	30	---	32.4	21.2	28.1	16.6	33	22.8	30.1	17.2	32.7	21.6	33.8	---
15	29.8	17.4	32.5	19.2	28.2	16.6	31.7	20.6	29.8	15.5	32.5	20	33	23.3
16	29.2	16	33.6	20	28.8	16.6	32.8	21.2	29.7	16.7	33	20.4	33	22.2
17	29.5	---	33.6	21	29	16.7	34.2	21.7	31	16.5	33.6	20.6	---	---
18	29.6	---	33.5	22.1	29.3	17.1	34.6	23.7	31.3	17.8	33.5	21.9	33.7	21.4
19	30	19.2	33.2	21.9	29.3	18.8	35.8	22.7	32.3	17.7	33.8	23.1	---	21.4
20	30	17.5	32	20.1	28.9	18	34	21.8	31.5	17.3	33.8	22.2	32.5	21.4
21	30.3	17	30	20.1	28.3	18.4	29.2	22.6	30.5	17.1	33.2	22.1	32.1	21.7
22	29.8	18.5	31.5	21.1	29.3	18.9	30.3	23.2	30.2	20.2	33.4	23.1	30.2	22.4
23	30.7	17.5	30.1	22	27.8	18.6	29	23.3	30	19	32.2	22.6	31.8	22.1
24	30	19.2	31.4	21.4	27.9	19.6	31.2	22.6	31.6	19.2	33.5	22.8	31.3	22.2
25	29.5	19.5	30.6	21.8	27.3	18.5	28.4	22.4	27.5	17.3	31.7	22.5	31.6	22.8
26	30	17	32.4	21.5	28.3	18.5	31.9	23.3	30.3	17.7	32.6	22.4	32.9	22.2
27	30	18.6	29.4	21.5	26.7	17.9	25.2	23.3	28.3	19	33.4	22.8	32.8	22.6
28	29	18.8	32.2	21.3	23	18.1	29.4	23.2	25.3	19.5	26.2	22.3	31.5	23.1
29	29.3	19	32.2	21.8	28.8	19	32.8	23.5	30.3	20	31	22.4	32	23
30	30	18.5	32.4	22.2	27.8	19.1	31	23.2	30	18.6	32.5	23.1	32.9	23.2
Mean	29.9	18	32.1	21.4	27.9	18	31.6	22.4	29.9	17.8	32.5	21.9	32.2	21.9

Day.	Butuan.		Mambajao.		Dumaguete.		Tagbilaran.		Iwahig Penal Colony, Puerto Princesa.		Dalaguete.		Surigao.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	32.2	22.7	30	23.3	30.4	25.1	30.3	23.1	31.8	---	---	25.2	30.5	23.5
2	32.9	21.8	30	24	31.2	22.8	31.7	21.8	30.8	22.8?	---	24.5	30.7	23.4
3	32.6	21.8	30	23.5	31.3	23.4	31.6	22.5	31.2?	22.6	---	24.6	30.5	23.8
4	33.4	22.4	30.8	24.5	31.6	24.2	31.8	22	32	22.4	---	24.7	31	23.4
5	33.4	21.8	29.6	25.3	31.6	25	32.4	22.9	32?	---	---	25.4	29.6	23.3
6	32.5	21.3	30.3	23.9	31.5	25.9	32.1	22	31	---	---	24.6	30	23.4
7	31.6	21.3	29.8	23.9	31.6	23.5	31.5	21.9	---	---	---	23	30	22.9
8	32.1	21	31.3	22.8	30.6	24	31.4	20.8	32.4	20.5	---	23.6	29.6	21.9
9	34.4	22.8	30.4	22.8	31.4	22.6	31.7	21.6	31.8	22.2	---	24	29.7	23.5
10	33.7	21.3	31	24.3	31.6	23.4	32	21.9	31.8	---	---	24.3	29.7	22.8
11	32.8	22.7	31	24.9	31.8	24.7	31.8	23.1	32	---	---	24.3	29.7	23.7
12	32.6	22.3	31.6	23.8	31.8	23	30.3	22.8	32.2	---	---	24.4	29.5	23
13	33.1	21.4	30.5	22.2	31.8	24.2	33.1	22.2	32	22.8	---	22.4	29.8	22
14	33.1	20.2	30.3	22.3	32.1	23.6	30.8	21.6	32.2	---	---	23.4	30.1	20.9
15	32.1	18.9	29.7	21.9	31.5	23.8	30.9	21.8	32	21.2	---	23.3	29.6	20.7
16	33	19.8	31	22.3	31.9	22.6	32.9	21.6	33	---	---	22.1	30.3	21.3
17	34.9	20.1	30.6	22.4	31.9	23.4	32.8	21.6	32	21.8	---	23.3	31	21.9
18	34	21.1	32	22.5	32.3	24	31.8	22.5	---	---	---	24.8	31.2	22.9
19	---	---	31.5	24.5	32.6	25.6	32.7	22.8	---	---	---	25.8	30.3	23.8
20	34.1	22.8	31.8	24.4	32.1	25	32	22.5	31.8?	22.8?	---	25.2	31.2	23.7
21	33.9	22.9	31.5	25.5	32.3	25.2	32.3	22.4	33.2	22	---	25.5	29.9	23.4
22	31.8	23.3	30.1	25	32.7	26	32.8	22.9	30.5	23	---	25.8	29.9	23.4
23	31.7	22.4	29.1	23.6	30.9	23.2	31.6	23.1	29.7	23.2	---	25.4	28.3	22.8
24	33.6	22.2	30.3	24.1	31.8	25.9	32.2	23	31.2	23.2	---	25.6	30	22.6
25	29.6	22.6	30.8	24.4	31.8	26	31.2	23	31.7	23.2	---	26.1	29.6	23.1
26	32.3	21.8	30.3	23.9	31.4	25.5	31	22	31.7	23?	---	25.2	30.9	23.4
27	29.1	22.9	30.5	25.4	31.3	25.6	31.8	22.6	32.2	22	---	26	29.3	23.7
28	29.6	23.4	30.4	24.3	30.8	24.8	31.2	22.9	32	22.2	---	24.6	29.7	23.9
29	32.9	22.6	29.9	24.5	31.1	23	30.7	22.9	31.8	22.4	---	22.7	27.8	22.9
30	33.6	22.5	30.4	24.5	31.2	25.4	31.2	22.4	30	22.8	---	25.4	30	22
Mean	32.6	21.9	30.6	23.8	31.6	24.3	31.7	22.3	31.7	22.4	---	24.5	30	22.9

Maximum and minimum temperatures at the stations of the Weather Bureau, April, 1921—Continued

Day.	Central Palma, Ilog.		Biaong Cui's Farm, Barili.		Maasin, Leyte.		Isabela, Occidental Negros.		Hacienda Tanolo, Hinigaran.		Cebu.		La Castellana.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.4	20.6	32.2	21.8	34	22.5	31.4	19.7	32.2	22	30.6	24.6	-----	19.8
2	30.9	21	30.4	21.5	32.1	22.4	34.1	21.7	32.5	22	31.7	24.7	-----	21.4
3	31	22	31.2	21.9	33.8	22	33.3	19.7	33	22	31.4	24.9	-----	20.5
4	30.9	21	29.5	21.5	33	22.5	34.4	19.5	31.5	20.6	32.2	25.4	-----	20
5	31.1	20.6	30.4	22.4	32	22.6	34	23.2	33	22.6	30.6	25	-----	21.2
6	32	21.8	30.3	22.3	32.8	22.5	34.4	21.9	33.4	21.3	32.5	25	-----	20.9
7	33.2	22	31.1	22	33.2	22.6	34.3	21.7	33.5	21.7	31.1	24.7	-----	21
8	33	21.6	31.5	22.5	33	21.4	34	17.9	34	20.4	30.9	24.4	-----	19.3
9	32.1	20.9	30.2	22.1	34	21.6	33.7	17.7	33.4	19.5	32	25.2	-----	19
10	33	21	31.2	21.8	34.1	22.2	34.4	18.9	34	20.4	31.4	25.2	-----	19.5
11	33.2	21.5	32.8	21.5	33.8	22	34.9	19.5	34	-----	31.3	24.9	-----	20
12	33.6	22.3	31.5	21.4	35.6	22.8	34.9	19	33	20.5	32.7	24.8	-----	20
13	32.6	22.4	32.1	21.5	34.5	22.6	33.7	18.5	33.3	20	31.4	23.7	-----	20
14	32.7	22.6	32	22	34.5	22.8	33.9	18.6	33.1	20.2	30.3	23.5	-----	20
15	33	22.5	31.5	22.5	34.6	22	34.3	18.7	32.4	19.4	30.7	23.6	-----	19.2
16	33	22	33.2	22	34	22.4	33.1	18.7	33.3	19.5	32.1	23.8	-----	18.5
17	32.9	20.8	32.5	22.5	35	22.4	33.3	18.5	34.1	20	31.8	24	-----	18.6
18	33.2	21.6	33.8	22.5	35.1	22.4	33.2	18.6	34.8	21.5	31.9	25	-----	21
19	33.5	21.5	34.2	23	35.8	22.2	35	20.6	34.1	22	31.8	25.9	-----	21.2
20	33.9	21.7	31.5	23.6	35	22	35.6	22.5	33.7	22.2	31.9	25.8	-----	21
21	33.7	22.4	33.5	23.2	35.1	22.4	35.3	22.7	33.7	22.4	32.3	25.7	-----	20.9
22	33.4	21	32.4	23.1	31.5	22.4	35.4	26.1	33.5	24.4	31.8	24.9	-----	22.6
23	33.3	21.2	31.8	22.5	31.8	23.2	35.4	23.7	33.5	23	31.3	25	-----	22.7
24	33.7	21.8	30.2	22.1	33.5	23	35.3	24.6	33.7	23	32.2	25.8	-----	22.6
25	33.9	21.9	31.5	22.6	34.5	23.1	34.8	21.7	35.2	22.4	31.6	26.1	-----	21.4
26	35	22.1	32.1	22.1	34	23	35.4	21.2	33.6	24.7	32.2	25.3	-----	21.5
27	33	21.9	31.2	22.5	34	23.1	34.9	24.9	33.8	23.7	31.8	26.3	-----	22.7
28	31.4	23	29.2	22.1	30.6	22.5	30.2	23.7	31.5	23.7	30	24.8	-----	22
29	32.4	22.6	30.1	23	32	22.6	32.7	21.9	33	22.6	29.9	24.9	-----	21.5
30	32.6	22.9	32.2	23.4	34	22	34.5	23.2	-----	-----	32.1	24.8	-----	21.6
Mean	32.7	21.7	31.6	22.3	33.7	22.4	34.1	21	33.4	21.7	31.5	24.9	-----	20.7

Day.	Central Azucarera de La Carlota.		Hacienda Canlaon, La Castellana.		Mao Sugar Central, Bago.		Valladolid.		San Joaquin.		Murcia.		Bacolod.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.3	19.5	32	19.9	32.5	20.8	33.9	24.5	31.8	23.1	31.4	22.4	30.2	24
2	32.4	20.6	32.7	19	34.8	21	34.2	21.9	32.3	25.4	34	21.4	31.7	23.5
3	32.9	20.4	31.6	20.8	35	21.3	34	22.9	32.5	24.5?	34.1	21.3	32.6	23
4	33.2	19.7	33.5	21	34.8	20.1	35	22.5	33.7	22.6	33.1	20.7	31.6	22.2
5	32.1	20.3	33.7	19.6	34	21.1	33.2	21.7	32.7	25.8	31.9	21.7	30.3	23.6
6	34	19.8	32.7	18.9	35	20.7	34.2	22.7	33.6	25.3	33.9	20.7	32.2	21.7
7	34.2	19.9	32.9	18.5	35.5	20.5	35.7	20.6	33.2	24.5	34.5	21.6	32.1	21.3
8	33.7	18.7	33.2	20	35	19.8	35.5	21.5	33.2	24.3	33.7	20.7	32.2	22.1
9	32.9	18.4	31.9	19.5	34	19.5	36	20.2	33.6	24.5	33.4	20.2	32	19.8
10	33.3	19.4	32	20.2	35.6	20	37	20.7	33.4	23.7	34.5	21.3	32	23
11	34.1	19.9	32.1	19.9	35.5	20.9	36	21.9	32.5	22.8	34.1	21.2	32.8	22.9
12	34	19.3	32.6	20.5	35.4	20.5	36.3	20.3	32.9	25.3	34.6	20.8	32.7	22.4
13	33.9	18.6	32.8	20.9	35.1	19.8	37.5	19.6	32.8	23.2	34.5	20.2	32.9	19.7
14	33.6	19.6	31.7	21.8	34.6	20	36.7	20.4	31.2	23.2	33.5	20.6	32.5	19.5
15	33.7	18.9	33.5?	20.2	35.1	19.4	35.5	19.7	33.4	23.1	34	20.7	32.8	20.1
16	32.8	18.7	33.4	19.6	35.5	19.1	36.2	19.4	33.8	22.3	34.1	20.3	32.2	19.5
17	33.5	18.5	33.7?	20.6	35.3	18	36.9	17.9	33.8	22.6	34.9	20.2	32.2	18.3
18	33.4	19.7	34	20.4	35.1	18.9	36.5	20.1	33.8	22.5	35.1	23.9	32.8	17.9
19	33.8	20.9	34.2	20.1	35.4	21.6	37.2	22.2	33.3	-----	34.8	23.2	33.2	23.9
20	33.3	20.3	34.3?	20.4	35.6	20.4	36.7	22.5	33.8	-----	34.7	21.2	33.6	24.4
21	33.9	20.5	33.5	21.3	35.9	20.7	34.2	21.2	32.8	25.9	34.6	22.1	33.9	20.3
22	33	22.1	34.5	21.2	35.8	22.1	34.7	22.2	32.8	-----	35.1	22.7	33.3	23.5
23	33.6	22.9	35.7	21.4	34.9	22.9	35.2	24.2	34	25.1	33.6	22.9	32.3	23.4
24	33.8	22	34.5	20.4	35.7	22.4	35.9	21.2	33.8	26.5	32.5	22.1	33	23.8
25	33.6	20.5	34.4	19.9	35.1	20.5	35.5	23.2	34.2	24.3	34.1	22.6	32.5	23.2
26	33.8	22.5	34.6	20.3	34.2	22.3	36	23.2	34.3	26.9	36.5	22.7	33.2	22.3
27	33.9	21.2	35.3	21.1	33.9	22.4	34.2	22.7	34.1	26.3	35.1	22.4	33.2	22.8
28	30.9	20.7	35.6	20.6	31	21.3	34.2	22.3	32.8	26.4	31.8	22.4	30.5	25.2
29	32.7	20.9	34.4	21.5	32.2	21.5	34.2	22.4	33.3	-----	31.7	21.2	32.2	21.9
30	33.6	20.7	34.3	21.2	34.6	21	35.2	22.5	33.6	-----	34.4	21.6	32.5	23.1
Mean	33.3	20.2	33.5	20.4	34.7	20.7	35.4	21.6	33.2	24.4	33.9	21.6	32.4	22.1



Maximum and minimum temperatures at the stations of the Weather Bureau, April, 1921—Continued

Day.	Oton.		Iloilo.		San Jose de Buenavista.		Tuburan.		Leon.		Silay.		Calag-itan, San Remigio.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	32.4	23	30.8	23.5	34.2	20.3	29.9	22.3	32.3	29.5	23	29.5	23	19
2	34.7	23.6	31.8	24	32.8	22.6	31.4	22.1	33.2	30.5	24	30.5	24	19
3	34.4	23.5	31.9	24	32.8	22.7	32.7	22.3	34.4	31	23.9	31	23.9	20.1
4	35.2	23	32.3	23.3	33.8	20.9	30.8	22.3	33.5	31	24	31	24	19
5	32.7	24	30.8	24.2	33.3	21.5	32.2	22.4	33	28.7	24.1	28.7	24.1	19
6	34.3	23.5	32.3	23.6	33.3	21.6	33.2	21.7	32.9	29	23.4	29	23.4	20
7	34.7	23	31.7	23.2	34.4	21.7	31.4	22.3	32.4	30.5	21.5	30.5	21.5	20
8	34.8	22	30.8	23	32.5	20.5	31.6	21.3	33	30.5	22.1	30.5	22.1	19
9	34.7	22.2	31.3	22.8	33.2	20.6	31.7	23.7	33.6	30.5	21.9	30.5	21.9	19
10	34.1	23.4	31.4	23.7	33.3	20.7	31.9	22.2	33.9	30.5	23.5	30.5	23.5	20.1
11	35.4	22.8	31.7	23.5	33.4	22.2	32.6	23.3	34.2	32	23.4	32	23.4	20
12	34.4	22.4	31.8	23.3	33	23.4	31.7	23.3	34.1	31	23.5	31	23.5	21.2
13	34.4	21	31.7	22	32.8	22.7	31.9	22.1	30.8	32.2	20.1	32.2	20.1	21
14	34	21.4	31.3	22.7	31.8	23	32.2	21.4	33	32.5	20.2	32.5	20.2	21.2
15	34.6	20.9	30.9	22.3	32.5	22.4	31.7	21.2	32.9	32.1	20.2	32.1	20.2	21.2
16	35.2	20.2	32.3	22	33.5	22.3	31.7	21.9	34	33.5	21	33.5	21	20
17	35.7	19	32.2	21.8	33.6	22.1	32.1	21.9	34	33.4	19.4	33.4	19.4	20
18	35.8	20.2	32.3	22.3	33.6	22.2	32.4	21.9	34.3	32	19.5	32	19.5	21.2
19	34.7	24	31.7	24	34.8	22	32.1	23.2	34.2	32.2	23.8	32.2	23.8	20
20	34.5	23.8	31.8	24.1	34.7	22.7	31.7	23.6	33	31.5	23.9	31.5	23.9	21
21	35.2	24.2	32.2	24.5	34.4	23	31.5	22.7	33.7	32.5	24	32.5	24	20
22	35.2	24.8	32.2	23.9	35.3	24.2	31.9	23.4	32.9	31.6	23.9	31.6	23.9	22.3
23	35.2	23.4	31.9	23.8	32.9	24	31.6	23.8	32.3	30.6	24	30.6	24	23?
24	35.6	24.2	32.4	24.5	34	22.7	31.7	23.2	33.2	31	23.9	31	23.9	20.1
25	36	24.4	32.5	24.9	33.8	23.1	32.2	23.6	34.9	30.5	24	30.5	24	21
26	36.2	24.2	32.7	25.3	34.7	24	32.6	22	34.9	30.5	22.3	30.5	22.3	21
27	35.9	24.8	32.3	24.9	34.5	23	32.1	23.6	34.8	30.7	23.8	30.7	23.8	20.1
28	32.2	24.2	30.9	24.4	34.5	22.1	30.1	23.9	32.7	30.2	24	30.2	24	20
29	33.1	23.8	30.8	24.4	33.9	23.5	30	22.8	33	30.6	24.1	30.6	24.1	20.1
30	35	23.9	32.5	24.2	34.2	22.5	32.6	21.6	34.8	30.5	24.2	30.5	24.2	19
Mean	34.7	23	31.8	23.6	33.6	22.3	31.8	22.5	33.4	31.1	22.8	31.1	22.8	20.3

Day.	Cuyo.		Barotac Nuevo.		Hacienda Ilaya, Victorias.		Hacienda Bilbao, Manapla.		Cadiz.		Dingle.		Ormoc.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	31.3	25.9	32.1	22.3	30	23.8	30.8	21.7	29.2	22.1	33.7	22.5	33.3	22.2
2	31.5	26	32.5	22.5	31	23	31.5	21.6	30.2	23.8	33	22.5	31.1	21.8
3	32	26.5	32.4	22.6	31	23	31.8	21.9	30.3	23.7	33.2	24	33.2	21.4
4	33	25.8	32.5	23.2	30.5	23.8	31.8	22.3	29.7	23.5	32.3	22	33.2	21.5
5	31	26.3	32.4	22.5	31.2	23.5	31.7	22.6	30	23.1	32.1	22.5	32.6	21.9
6	31.6	26.6	32.4	22.1	30.8	23.3	31.9	22.8	30.1	21.6	33.7	22.5	32.9	22
7	31.6	26	31.8	24.4	30.2	23.5	32.4	22.9	29.4	22.4	33	21.5	32.6	22
8	32	26.3	32.4	22.3	30.2	23.5	32.6	23.1	30.2	21.5	33.5	22	33.2	19.4
9	32.3	25.2	32.2	22.4	30.5	22.7	32.1	22.7	31.2	23	33.4	20.9	32.7	19.9
10	31.5	26.3	32.2	22.2	30.7	23.4	32.7	22.6	30.5	20.2	33	22	33.6	20.4
11	31.7	26.3	32.2	23.2	31.5	24	32.8	22.7	30.3	24.5	32.2	21.4	33.9	21.4
12	31.8	26.6	32.1	23.1	31.8	23.8	32.9	22.8	30.6	20.5	34.5	21.9	33.4	21.4
13	32.8	26.1	32.1	23.2	31.3	23.2	32.7	22.1	30.6	21.4	33.8	20.1	32.9	19.7
14	33.1	25.5	31.4	23.3	31.5	24	32.1	23.2	30.3	21.6	33	20.9	32.8	19.1
15	32.6	26.7	32.2	22.2	32	22.8	31.8	22.9	30.2	21	32.4	20.3	32.6	18.7
16	33	25.3	31.3	22.2	31	23.2	32.6	22.7	30.4	20.8	33.8	20	33.1	18.8
17	33	24.7	31.4	23.3	31.2	23.2	31.8	21.9	30.5	20.1	33.2	20.5	34	20.4
18	33	24.7	32.2	22.1	30.7	23.6	32.6	22.6	31	20.3	33.4	20.1	34.9	20.7
19	32.5	26.8	32.1	22.2	31	23.4	33	22.9	31.3	24.8	34	22	35	21.4
20	32	27.2	32.4	22.5	31	23.8	33.6	23.1	31.5	24.7	34	23	34.4	21.7
21	32.2	26.9	31.1	22.1	30.3	23.5	33.4	22.8	31.1	24.2	34	22.5	34.8	21.4
22	32.9	26	31.2	22.4	31.4	23.7	33.6	22.9	31.2	23.1	34.5	24.5	33.2	21.7
23	33.5	26.6	32.1	22.2	31.2	22.8	33.9	23.1	30.7	24.6	34	23	30.9	22.9
24	33	26.6	32.2	23.1	30.6	23	34.1	23.6	31	24.1	34.1	23.5	32.2	22.8
25	34	26.6	32.2	23.1	31.2	23.3	33.7	23.4	31	22.7	33.5	23	32.6	22.9
26	34.3	25.6	32.2	23.2	30.6	23.4	33.9	23.1	31.3	23.1	34.5	23	32.7	21
27	34.3	24.5	31.3	23.4	30.4	23.5	33.7	23.5	31.3	23.7	35.5	23	33.6	21.2
28	33	27.3	31.2?	22.1	30.5	23.5	34.3	23.2	31	23.8	35.2	23.2	33	24.2
29	32.8	25.6	31.2?	22.3	31.2	23.7	34.1	23.6	31.1	23.2	33.8	23	32.6	22.4
30	32	27.1	31.3	23.1	31.5	23.6	33.4	22.9	31.1	23.2	34	22	33	20.9
Mean	32.5	26.1	31.9	22.7	30.9	23.4	32.8	22.8	30.6	22.7	33.6	22.1	33.1	21.2

Maximum and minimum temperatures at the stations of the Weather Bureau, April, 1921—Continued

Day.	Guiuan.		Bugasong.		Bogo.		Tacloban.		Capiz.		Borongan.		Catbalogan.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.8	24.2	34.2	20.2	30.5	24	29.3	23	31.1	24.4	30.1	23.5	28.5	-----
2	32	22.5	33.5	22.3	29	24.1	30.9	22.8	31.6	23.4	31	23.1	31.1	-----
3	31.7	22.8	33	-----	30.7	24.1	31.3	23.5	32	24.1	31.2	23.2	31	-----
4	32.1	24	33.2	20.5?	31.2	24.2	32.2	23	32.1	24	31.5	22.7	30.4	-----
5	31.7	23.4	32	21	31.1	24.3	30.9	23.4	31.5	25	31	24.5	31	-----
6	32.2	25.7	33.2	23	31	23.5	33.1	23.4	32.4	24.9	31	23.5	31.4	-----
7	31.8	25.2	33.2	22.4	32	23.4	32.5	23.5	32	24.5	30.9	23.2	30.2	-----
8	31	22.4	33.3	20	31.9	22.9	32.1	22.5	32	22.9	30.8	21.6	30.2	-----
9	31.2	22.7	32	20	31.5	23.6	32.1	22.9	32.5	23	31.6	21.4	30.5	-----
10	31.5	25.8	32	20.4	32	23.3	33.1	23.5	32	24.6	31.1	23.1	31.2	-----
11	32.5	24.7	32.2	20.3	32.1	23.4	33	24.1	32.1	22.5	30.8	23	31	-----
12	32.7	24	32	21	32.2	23.5	32.1	23	31.9	23.4	31	21.1	30.5	-----
13	31.6	22.5	32	21.4	32.1	24	32.9	22.6	32.5	22	31	19.6	30	-----
14	31.8	20.5	32	23	32	23.5	32.5	22.4	32.5	22.4	30.6	19.3	30.3	-----
15	32	21	31.7	21.4	31.9	22.3	33.1	21.6	32.5	21.9	31	-----	30	-----
16	31.7	22.3	32.2	20.4	31.6	22.8	34	23.2	32	22	31.3	21.5	30.9	-----
17	32.6	22.9	32.2	-----	31.9	22.7	33.9	22.8	32.8	21.1	31.6	21.6	31.2	-----
18	32.4	24	32	20.4	32	22.6	34.7	23.4	32.9	21.5	32.1	22.1	31.6	-----
19	33	25.5	33.7	20.4	32.2	22.9	33.6	23.8	32.9	24.4	32	22.3	31.9	-----
20	33	24.8	33.2	23	32.3	23.5	33.9	23.1	32.6	25	31.9	23.5	30.9	-----
21	33.2	24	33	23	32.5	23.2	34.1	23.6	33.4	25.8	32.1	22.6	31	-----
22	33	24	33	22.4	32.2	24	33	24.2	33.5	25.5	31.6	24.2	30.6	-----
23	32	24	32	22.4	32.3	24.2	30.8	23.4	33	24.1	31.5	23.3	31.5	-----
24	32.8	23	33	22	32.3	24.5	32.4	22.6	33	25.1	31.6	23.4	31.9	-----
25	33	24	33.2	23	32.6	23.6	32	24.1	33.8	25.5	31.5	26.8	32.2	-----
26	32	24	32	23	32.9	22.9	30.8	23.4	33.2	25.3	31.2	23.7	31.5	-----
27	32.5	25.8	34	23	33	23.7	33.2	23	33.1	25	31.8	26.4	33.4	-----
28	32.2	24.5	34	22	32.7	24.1	32.7	23.9	33.1	25.1	31.8	26.8	33.8	-----
29	32	24.5	33.3	22	31.8	24	33	23	32.8	25	31.4	24.1	31.6	-----
30	32.6	22.8	34.5	21.5	31.7	23.5	32.9	22.8	33.3	24.2	32	21.8	32.5	-----
Mean	32.2	23.7	33	21.6	31.8	23.5	32.5	23.2	32.5	23.9	31.3	23	31.1	-----

Day.	Calbayog.		Masbate.		Romblon.		Batag Light- house, Laoang.		Irosin.		Sorsogon.		Bacon.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	29.7	22.7	30.4	24	31.6	22	-----	22.8	29.2	21.6	29.5	23.6	32	25
2	30.6	21.6	30.2	24	32	24.2	-----	24	29.4	20.3	31	23.5	30.2	22.3
3	31.6	22.5	31	24	32.4	23.2	-----	24.3	31.2	21.2	30.4	22.5	30.4	22.1
4	31.5	21.2	31.4	24.5	32	22.9	-----	24.3	30	21.3	30.4	23.1	30.5	25.3
5	29.1	22.4	30	24.6	30.5	24.6	-----	24	29.4	21.5	28.9	23.7	30.7	24
6	31.5	21.9	30.8	24.6	32.2	24.4	-----	24.2	29.7	22.6	30.2	23.1	30	24.8
7	31.2	21.9	31	23.6	32.2	24.5	-----	23.6	29.2	21.9	29.5	23.5	30.5	25.5
8	30.7	20.8	30.6	23.6	32.2	22.4	-----	23	31.2	20.5	30.5	22.5?	30.4	23.4
9	32.3	20.4	30.8	23.5	32.3	22.8	-----	22.7	30	20.2	29.4	22	30	25.2
10	32.2	21.4	31	24.6	32	23.7	-----	22.7	29.5	23.9	30.6	23.3	31	24.6
11	31.1	22.5	30.4	23.8	31.6	22.5	-----	23.7	31.2	20.1	31.5	22.4	30.2	24.4
12	31.7	20.7	30.8	24	32.5	23.5	-----	23.2	31.8	21.1	31.5	22.2	30.4	24.5
13	30.9	20.4	30.8	23.5	32.7	22.1	-----	22.4	31.6	20	31.2	22.4	30	24
14	31.2	19.4	30.6	23	32.3	22.1	-----	22.3	31.2	19.5	31.9	22	30	21.8
15	31	19.4	32	23	32.2	22.5	-----	22.1	32.7	19	31	22?	30.2	23.5
16	31.2	19.4	30	23.4	32	22.7	-----	22.1	33.3	17.6	31.5	-----	30.4	23.8
17	32.2	21.3	30.8	-----	32.6	21.7	-----	22	32.7	18.6	32.2	-----	30.5	21
18	33	22	32.8	24	32.5	20.9	-----	22.1	32.9	18.5	32	-----	31	21.3
19	32.7	21.9	31.8	24.5	32.8	23.9	-----	22.5	31.2	22.3	30.9	-----	31.2	25.9
20	32.8	22.1	32.6	24.6	32.4	25.2	-----	23.5	31.8	21.9	30.6	-----	30.9	25.8
21	32.3	21.8	32.2	24.2	33.3	24.5	-----	23.5	30.5	21.6	30.5	-----	31.2	25.6
22	30.7	23.6	30.6	24.5	33	25.9	-----	24	29.5	22.8	32	-----	30.9	24.7
23	31.7	22.1	32	25.2	32.4	24.8	-----	24.8	30.7	24.1	32.5	-----	30.5	24.6
24	32.2	22.4	32.4	24.4	32.6	24.8	-----	24.1	30.8	23.1	31.7	-----	31.2	25.1
25	31.3	23.3	32.8	25.5	32.4	24	-----	24	30.3	24.2	31	-----	31	24.8
26	31.2	22.4	32.2	25	32.6	26.1	-----	24	30.6	22.3	29.5	-----	32.2	23.1
27	33	21.9	32.6	25.2	32.5	26.1	-----	24.7	30.5	24.7	32	-----	30.6	22.5
28	33.8	23.4	32.6	24.5	32.6	24.6	-----	24.8	30.5	22	31.5	-----	31	24.5
29	33	22.6	32.6	25.2	32.3	24.8	-----	24.1	30.2	24.1	31.6	-----	30.5	25.8
30	33	21.3	32.8	23.8	32.6	24.3	-----	24.3	31.1	21	31.6	-----	31	24.3
Mean	31.7	21.7	31.4	24.2	32.3	23.7	-----	23.5	30.8	21.4	31	-----	30.7	24.1

Maximum and minimum temperatures at the stations of the Weather Bureau, April, 1921—Continued

Day.	Jovellar.		Legaspi, Albay.		Guinobatan.		Polangui.		Bacacay.		Tabaco.		Sumay (Guam), Agaña.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.2	20.1	30.8	24.8	30.6	19.5	31.2	19.3	30.1	22.7	31.2	22.5	29.2	25.1
2	30.5	19.2	32.1	24.2	31.2	19.3	30.2	20.1	30.3	22.5	31.6	22.1	29.8	25.1
3	30.7	19.9	32.4	23.3	31.5	20.1	30.2	20.2	30.2	21.2	31.2	22	29.9	25.2
4	32.1	20	33.1	25.4	30.7	20.2	32.2	19.3	30	21.8	31.7	23.2	28.9	25
5	30.9	21.5	29.6	23.9	30.9	21.1	32.2	20.2	30.8	22.6	31.5	24.5	28.3	24.8
6	29.5	21.8	31.6	24.7	30.9	22.1	30.6	22.2	30.2	22.4	30	23	29	25.3
7	30	19.9	31.4	24.2	31.5	20.7	32.2	20.1	30.4	22.5	31.2	22.1	29.3	25.7
8	30.2	17.9	31.8	20	31.8	18.6	32.2	19.1	29.8	22.7	31.1	22.1	30.6	24.7
9	30.9	18.8	32.3	24.7	30.9	19.6	33.2	19.2	30.3	21.3	31	21.6	28.2	23.6
10	30.8	24.7?	31.6	23.9	31.5	21.9	32.2	20.2	30.4	23.1	31.2	22.8	29.7	23.5
11	30.7	18.7	33.2	22.4	31.9	18.6	32.2	19.2	30.1	21.2	31.2	21	30.5	24.6
12	31.4	19.1	31.9	23.5	32	19.1	31.2	20.1	30.8	22.7	31.8	21.8	30.5	24.1
13	30.7	18.8	32.3	22	31.8	19.1	32.2	20.1	30.5	23.2	31.1	21.2	30.1	24.7
14	30.8	18.9	32.8	23.1	32.3	20.2	33.2	20.1	30.6	21.1	31.3	21.3	29.8	24
15	31.3	17.8	32.8	22	32.4	18.9	32.2	20.1	30.7	22.4	31.8	22	29.8	25.2
16	31.2	16.9	31.9	20.9	31.9	17.3	31.2	19.3	30.6	21.1	31.6	19.9	29.7	24.7
17	31.1	18	33.1	21	32.3	18.8	30.4	19.4	30.1	21.4	31.3	20.3	29.2	24.7
18	31.9	18.3	33.3	22.9	33.3	19.5	34.2	19.3	30.7	21	32.2	20.2	29.8	25.3
19	32.1	19.7	33.3	25.9	32.6	20.1	33.4	20.1	31	23.4	32.2	22.8	30.2	25.5
20	31.9	20.4	33.6	26.1	33.8	21.2	31.2	20.1	31.4	22.4	32.7	20.1	29.4	25.4
21	32.7	20	32.9	25.2	32.3	20.2	34.2	20.2	30.2	23.4	32.9	22.5	30.3	25.6
22	31.4	22	32.4	25.9	32.3	22.2	22.8	22.8	31.2	25.1	32.4	23.4	29.2	25.7
23	31	21.6	32.9	25.3	32.4	22.3	32.4	20.5	31.5	23.2	32.2	22.5	29.2	25.5
24	31.7	21.7	32.4	25.4	32.5	20.9	34.2	20.1	31.5	24.1	32.2	23.1	29	25.2
25	31.9	23.8	31.8	24.8	32	22.8	32.4	20.2	31.6	24.2	32.1	23.9	30	25.1
26	31.1	21.7	32.4	25.5	30.9	21.4	34.2	20.1	31	22.1	31	22.3	30.2	25
27	31.3	20.4	33.2	25.5	32.7	21.5	33.2	20.2	31.2	23.1	32	21.3	31.3	25.2
28	33.4	21	33.1	26.5	32.9	21.4	34.2	21	31.1	23.7	32.1	24.4	30.8	25.4
29	31.7	22	33.3	25.4	30	19.7	32.4	20.1	31.4	23.8	32.2	22.1	30	23.2
30	31.6	20.3	33.7	24.4	32.7	20.6	31.2	20.2	31.6	23.7	31.9	21.5	29.7	25.5
Mean	31.2	20.2	32.4	24.1	31.9	20.3	32.3	20.1	30.7	22.6	31.7	22	29.7	24.9

Day.	Iriga.		Calapan.		Tiwi.		Pasacao.		Virac.		Naga, Camari- nes Sur.		Tigaon.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	32.5	20.6	31.5	22.5	30.4	21.8	30.9	23.3	30.8	21.2	31.1	19	31.6	19.6
2	32.8	18.9	31.5	23.1	30.6	22.4	31.9	22.6	31.5	20.1	31.5	20.5	32.4	20.4
3	32.6	19.9	32.5	21.4	30.8	21.6	31.8	22.1	31.8	20.7	33.1	21.8	32.4	21
4	32.6	20.4	32.2	23.1	30.4	22.6	31.7	22.4	33.3	20.5	32.2	21.7	32.7	21.2
5	27.8	21.8	31.5	24	31.2	22.8	30.9	22.1	30.4	23	30.4	20	31.4	21
6	32.6	20	31.1	23.5	31.2	23.6	31.9	23.1	31.3	22.6	31	20.8	31.5	21.1
7	33	19.9	31.4	24	31.4	23.8	32.4	23.4	31.7	20.4	32	19.2	32	19.7
8	32.6	17.8	31.5	21.7	30.4	22.4	31.6	22.1	32.8	19.1	31.7	19	32.5	18.5
9	33.3	18.9	31.1	23	30.6	22.8	32.2	22.7	31.6	20	31.7	19.3	31.7	20.6
10	32.5	19.2	31.5	24	30.8	24.2	31.9	23.4	31.5	20.3	32	22.8	32.2	21.3
11	32.5	19	31.5	22	30.4	20.2	32	22.6	31.6	20.5	30.6	18.7	32.6	20
12	32.7	19.3	32.1	23.4	30.8	21.2	30.4	22.8	31.7	21	31.6	19.4	31.4	20
13	32.7	19.6	32.1	22.5	30.2	20.4	32.1	21.2	31	19.7	32.8	20.4	32.1	19.6
14	32.8	18.6	31.5	23.8	30.4	20.5	30	22.7	29.9	19.5	32.5	20.3	31.9	19.9
15	33.3	18.8	32.4	24	30.5	20.2	30.6	22	31.8	20.2	32.7	19.9	32.2	20.3
16	33.2	17.2	31.1	24.4	30.8	20.4	31.1	21.3	31.7	19	31.9	18.6	32.4	17.9
17	33.8	19	31.5	24	30.5	20.1	32	22	32.2	20	32.9	18.4	33	18.1
18	33.3	19.4	32.5	23.5	31.8	21.4	32.2	21.4	33	20.3	33.6	20.8	33.4	21.1
19	33.4	20.4	32.5	24.1	31.5	22.4	30	22.6	32.5	21	33.8	21	33.3	21
20	33.1	21.3	32.5	24.6	31.4	25.2	31.7	23	31.8	22	33.3	22.2	33.2	22
21	32.6	21.5	32.5	24.5	30.8	23.6	32	21.9	32.4	22.2	32.1	20.8	33.3	21
22	34.2	22.6	32	25.5	30.5	22.8	30	23.8	32.7	22.4	33.5	21.2	33.7	21.5
23	34	21.7	32	26.8	30.4	22.6	31.2	22.8	33.1	22	34	22.5	33.4	22.1
24	33.7	22.2	32.6	26	31.2	22.2	30.8	21.4	32	22	33.9	20.4	32.4	21
25	32.8	22.4	32	26.5	30.4	22.8	31.9	22.7	32.5	23	33.6	22.2	32	22.1
26	33.6	19.5	32.4	24	31.2	23.2	32	23	31.6	22.8	33.5	21.1	32.2	24
27	33.4	21.3	31.2	23.8	31.4	23.4	31.7	22.7	32	21.1	34.2	20.3	32.8	22.5
28	34	21.8	32	24	30.4	23.2	32	21.9	31.9	23.1	35.1	20.7	33.3	22
29	33.7	20.3	31.5	25	31.5	23.4	33.7	23.6	31.7	21.5	32.9	20.1	32.5	19.8
30	34.2	20.9	32.5	24	31.5	22.2	32	22.7	32.2	22	33.8	18.8	33.4	20
Mean	33	20.1	31.9	23.9	30.8	22.3	31.6	22.5	31.9	21.1	32.6	20.4	32.5	20.7

Maximum and minimum temperatures at the stations of the Weather Bureau, April, 1921—Continued

Day.	Libmanan.		Batangas.		Ragay.		Calatagan.		Balayan.		Lipa.		Lucena.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.9	21.4	36.6	23.5	31.4	18.6	31.7	21.5	31.5	24	33.5	20.6	32.5	21
2	31.4	21.3	35.7	23	31.9	19.7	32.5	23.2	32	21	33	20.4	32.9	20.4
3	32.1	23.4	35.2	23	31.4	20.2	34.1	21	33	34.6	18.6	32.5	19	
4	32	22.9	35.3	22.6	30.9	21.1	32.2	33.7	21	30.2	17.8?	33	20.6	
5	32.1	23.9	35.8	22.4	31.4		34	22.7	30.8	21.3	32.4	17.6	31.6	21
6	32		35.3	22.6	31.6	21.1	34.2	23.3	33	24	32.3	20	31.7	21.7
7	32.1	21.6	35.6	23.6	31.4	20.3	33.3	22.6	33	22.5	32.4	20.6	32.1	20
8	32	21.7	33.7	21	31.6	20.1	33.2	21.2	32.3	20	33	18.9	32.5	18.7
9	32.7	21.2	34.9	21.4	32.5		33.5	31.5	19.5	31.8	17.4	31.5	19.5	
10	32.6	24.2	35.3	21	31.2	22.3	33.7	22.5	31.6	22.2	32.6	18.9	31.9	19.6
11	32.7	21.1	34.4	21.2	32.9	19.1	33.2	22	32	19.2	31.2	17.6?	32.5	19.5
12	32.6	21.1	34.3	22.4	32.2	20.1	33.6	22.5	31.5	24.2	32	18.1	32.5	20.5
13	32.6	22	34.3	24	31.4	20.2	34.7	23	32.3	23.3	32.4	20	33	20.7
14	32.7	21	34.9	24.5	31.2	21.1	33.3	22.7	32.3	23.3	33.2	21	32.5	20.6
15	32.8	21.5	33.5	25.2	31.4	17.1	32.8	22.9	32	24.7	34	21.6	32.7	21.1
16	32.7	20.2	34.4	25.5	31.5	20.1	33.4	23.3	33		34.6	21	32.6	22.1
17	32.9	19.8	34.3	24.4	33.3	18	34	23.5	33	24.4	32.7	22.3	32.1	22.3
18	33.2	20.2	36.4	24.1	34.1	19.1	33	21.3	33	23	32.5	20.5	33.1	22
19	33.2	24	35.5	24.2	32.4		33.2	22.5	32.2	23	30.7	20	33.5	22
20	32	25.2	34.4	24.5	32.3		33.4	23.8	33	23.5	30	18.1	32.6	21.6
21	33.2	23.7?	34.9	22.2	32.7	21.2	33.6	23	33	22.7	29.8	18	32.5	21.6
22	33.2	24.8	36.4	25.5	32.6	22.8	33.7	24.6	33	25	32.9	20.6?	32.7	21.7
23	33.8	24	35.5	24.4	32.8	23.7	35	24.5	33	23.3	32.7	21.2	32.5	22.6
24	33.1	21.9	36.5	24.7	32.2	21.6?	34.1	24.7	33	23.2	33	19.8	33.1	21.6
25	33		36.2	26.1	32.1	22.2	34.3	23.8	33.6	24.5	33.1	23.2	32.4	22.6
26	34	22.2	35.4	26.3	32.2	21.6?	34.6	25	33	25	33.9	22.5	32.5	22.6
27	34.1	22.1	36	25.5	33.4	21.1	34.3	23.6	32.5	24.5	33.6	20.5	33.9	21.1
28	34.2	22.4	35.8	23.5	32.3	21.1	34.2	23.5	32.6	21?	31.7	19.2	32.9	21
29	34	22.1	36	24.4	31.8		33	32.7	22.3	33.8	18	32.4	20.5	
30	33.9	21.3	34.7	23.8	33	20.2	33.2		33	25	32.7	20.1	32.5	20.7
Mean	32.8	22.2	35.2	23.6	32.1	20.5	33.6	23	32.5	22.9	32.5	19.8	32.6	21.1

Day.	Atimonan.		Nasugbu.		Ambulong, Tanauan, Batangas.		Daet.		Mendez Nuñez.		Alfonso.		Indang.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.*
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.6	25.3	34.5	22.2	35.2	22	30	20.2	30	19.5	31.1	20.8	32.8	21.5
2	31.2	23	34.2	20.2	35	21.4	30.1	20.4	30	18	31.3	19.1	32.8	21.5
3	31.2	22	32.6	21.6	36.7	20.7	30.3	22.5	30	18	31.4	17.6	33.4	20.9
4	32.4	23.5	32.7	22.1	33	23	30.5	22.2	29.5	17.5	30	19.1	30.4	20.2
5	29.6	24.4	32.4	22.2	35	23.2	29.5	23.3	29	20	30.2	20.8	31.7	20.1
6	29.8	24.8	32.2	20.5	34.8	24.7	30	22.6	29	20	30.5	21.4	31.5	21.6
7	30.5	23.4	32.2	20.9	35.8	24	29.5	21.8	30	20.2	31	21.7	32.2	22.2
8	31.4	25.3	32.3	21.9	37.8	22.1	29.3	20.4	31	19	31.5	20.6	33.2	21.4
9	30.4	25.5	32.6	20.9	34.6	22.7	29.6	21	29	18	30.2	20.1	31.5	20.5
10	29.8	25.4	32.8	21	34.7	23.1	30	23.1	29	19.5	30	20.4	31.5	20.8
11	31.1	21.6	32.8	21.4	33.8	19.8	30.1	20.4	29.5	19	30.6	19.8	31.8	20.9
12	31.1	24.3	33	22	34.3	24.8	29.6	21.7	29.5	20	30.1	20.8	33.4	21
13	31.2	22.8	31	21.2	32.2	23	30	21.5	29.5	20	30.5	22.1	32.9	21.2
14	32.6	23.2	33.2	21.5	32.5	24.8	30.1	20.6	30.5	20	31.1	21.6	33.1	22.5
15	32.1	26.1	32.7	21.7	36.4	25.1	30	21.2	30	21	32.5	22.1	34	22.8
16	30.2	25.7	33.7	21.8	37.4	25	29.6	19.5	31.5	21	32.6	22	34.6	23.2
17	32.4	23	34.1	21.8	33	24	30.6	18.9	31.5	21	32.9	21.7	34.4	22.3
18	31.5	23.3	34.1	21.3	35.2	24.9	30.6	20.5	30	20.8	32	21.1	33.4	21.7
19	32.3	26.5	33.2	21.1	35.5	22.2	30.6	22.4	30.5	20.5	32	22.4	33.4	21.4
20	31.8	26.4	32.5	21.9	34.2	23.7	30.2	23.7	29	20.5	31.5	21.8	31.5	21.2
21	31.6	26.3	34.5	20	35.2	24.7	30.6	22.7	30	20.8	32.3	21.1	32.9	21.4
22	31.1	26.5	33.2	20.1	35.2	26.1	31	25	29.5	20.5	31.8	22.1	32.4	22.5
23	30.4	25	33.5	20.5	34.8	25.7	30.7	23.9	29.5	20.5	30.6	21.8	32.1	21.5
24	30.8	25.6	34.2	20.6	34.2	25.6	30.6	22.3	30	20	31.6	21.6	33.1	22.2
25	31.3	26	32.1	24.5	34.6	25.9	31.2	23.6	30	20.5	32.1	22.5	33.9	22.8
26	31.7	24.1	33.1	20.5	37.3	25.5	31.2	21.4	30	20.5	32.3	22.6	33.7	22.9
27	31.9	23.5	32.9	20.4	37	24.7	31.1	20.8	30	19	31.9	22.4	34	23.1
28	31.1	25.4	32.5	22.5	36.3	24.4	30.9	22.9	31	20	32.5	21.1	33.8	21.6
29	31.4	26.1	32.5	22.6	35	24.4	31.2	22.1	29.5	20	31	21.3	31.9	21.7
30	31.4	24.4	32.4	24.2	35	24	31.1	21.5	29.5	19.9	31.3	20.6	32	20.8
Mean	31.2	24.6	33	21.5	35.1	23.8	30.3	21.8	29.9	19.8	31.3	21.1	32.8	21.6

\* These minimum temperatures seem to be not very reliable, the differences between 6 a. m. temperatures and minimum temperatures being both too small and too uniform.

Maximum and minimum temperatures at the stations of the Weather Bureau, April, 1921—Continued

Day.	Canluban, Calamba.		Silang.		Maragondon.		Paracale.		Santa Cruz, Laguna.		Buenavista, General Trias.		Cavite Naval Station, Cavite.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum. <sup>a</sup>	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	34	20.6	31.4	20.5	34.3	19.1	29.8	23	33.2	20.5	34.2	21.8	34.6	22.4
2	34.2	20.2	31	20.6	33.5	18.6	29.5	23	33.8	21.1	33.8	19.8	34.2	22
3	35.9	19.9	32.7	19.8	34.3	19.1	29.8	23.2	35.1	20.1	33.2	20.7	32.5?	21.8
4	34.7	21	31.3	20	33.8	21.3	29.5	24	32.8	21.8	32.5	20.5	34	22.6
5	34.4	20.6	31.1	19.7	35.2	19.5	30	24	33.7	20.6	33.6		34	23.1
6	33.4	21.8	30.4	21.1	34.2	20.7	30	24.2	32.9	22.4	32.8	19.2?	34	23
7	33.8	22	31.3	21.3	34	20.5	30.2	24.2	32.3	19.5?	33.8	22.2	34.2	22.6
8	35.1	20.6	31.7	20	34.4	20.4	30	24	34.1	21	33.7	21.2		22.5
9	33.2	20.8	30.2	19.8	33.2	20.1	30	24	32.2	21.2	34.5	19.7?	34	23
10	33.8	21	30.4	19.3	34.8	18.7	29.8	23.8	32.7	20.5	33.2	18.7	33.7	22.3
11	33	19.2?	30.3	19.8	33.7	19.1	29.5	23.5	32.6	20.9	32.8	20.5	34.5	22.2
12	34.4	20.9	31.1	20.7	33.6	20.6	30	24	33.2	21	33.7	21.8	34.2	23.1
13	35.3	22	32.3	21.2	33.9	22.6	30	24	34.2	23.4	33.7	22.8	34.7	22.6
14	35.8	22.2	32.2	21.7	34.4	23.7	30.2	24.2	33.2	23.5	34.5	23.2	34.5	24.6
15	35.1	23.1	33.4	20.3	34.5	22.9	31	24.2	33.3	23.2	35.2	23.5	35	24.3
16	35.4	23.4	33.1	22.5	34.8	23.6	31	24.2	33.3	23.8	35.5	23.8	35	22.1
17	36.1	23.1	33.2	21.2	35.1	22.8	31.2	24.5	34.3	24.2	34.7	22.6	34.1?	24.2
18	35.2	23.4	32.5	21.6	35.6	22	31.2	24.5	33.4	24.5	34.7	21.7	33.7	24.2
19	34.8	23.3	32.7	21.8	34.1	21.5	30.2	24	33.2	23.5	34.5	22.5	33.4	23.8
20	34	23.2	32.2	21.5	34.8	21.5	29.2	24	32.4	24	32.7	22.5	34	23.5
21	34.6	23.2	32.3	20.6	35.7	22.3	29	23.5	33	23.5	34.2	21.2	33.9	23.2
22	34.9	22.9	32.1	21.3	35.1	21.6	29	23.8	33.4	23.1	34.2	21.7	33.6	22.6
23	33.2	23.4	32.6	21.2	34.1	21.1	29	24	32.8	23.1	33.2	22.2	34.5	22
24	35.2	23.3	32.5	21.7	35.4	21.4	29	24	34.4	22.8	34.2	21.5	35	23.5
25	35.6	22.6	32.4	21.3	34.7	22	28.8	24	34.4	23.9	35.2	22.6	35	23
26	35.2	24	32.1	22.1	35.8	23.4	29	24.2	34.7	23.8	34.8	23.5	35	25
27	34.6	23.2	33	20.3	35.5	22	29.2	24.2	34	24.2	34.5	22.2	34	24.4
28	35.2	21	32.9	20.7	35.2	20.2	29.5	24.5	33.2	21.3	34.8	20.2	33	24.3
29	34	21.6	31	20.4	36	21.3	30	24.5	32.8	22.5	33.5	19.8?	33.6	22.3
30	34.8	20.6	32.2	20.7	34.7	18.9	30.2	25.8	33.5	21.6	33.2	19.5	35	24
Mean	34.6	21.9	31.9	20.8	34.6	21.1	29.8	24	33.4	22.4	34	21.5	34.1	23.1

Day.	Manila.		Antipolo.		Balanga.		Malolos.		San Fernando, Pampanga.		San Isidro, Nueva Ecija.		Iba.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	33.9	21	36.3	20	35.4	21.9	35	20.3	35.2	21.2	35.8	21.7	33.5	22.5
2	33.8	19.7	35.2	19.7	34.8	21	34.3	20.3	36.7	19	36.5	20.8	32.6	21.2
3	33.9	20.5	36	20.2	35.4	21.5	35.5	20.5	---	20.5	36.3	22	32.9	23
4	31.3	22.6	30.9	21	33.1	22.8	33.8	23.5	36.5	22.5	34.3	23.2	32	21.5
5	33.1	21	34.6	20.1	35.4	21.7	33.8	23.2	34.5?	22.5	35.1	23.7	33.7	22.2
6	34.5	22.7	35	21.5	34.8	22.2	34	23.8	35	22	35	22.5	33.6	21.6
7	34.2	21.5	35.2	20.9	35.6	21.4	34.3	21.5	35.5	18.5	35.6	21	33.5	22.8
8	33.7	22.2	34.8	21	35.3	23.2	34.5	24	36	22	35.5	23.5	32.8	23.6
9	32.4	21.5	31.2	20.9	35	23.5	34	23.5	33	21.2	33.5	23.2	32	22.5
10	34.2	20.4	34.4	19.6	35.9	23.5	34.7	20.8	35	18	34.5	20.8	33.2	22.5
11	32.2	22	32.7	20.9	34.1	22.4	31.5	22.4	35.5	21	34.3	22	33	22.3
12	32.7	21.7	34.1	20.6	34.8	22.2	34.4	23	33.5?	21.5	35.6	23.6	31.9	23
13	32.6	22.9	33.8	22	34.3	24	33.5	23.2	---	22.5	35.2	23.5	32	23.1
14	32.8	25	33.5	23.2	35.1	24	33.9	23	35.5	22.5	35.7	25	32.9	23.5
15	33.2	25.1	34.4	23	35.8	24.6	34	24.9	36	24	36.7	24.4	32.6	23.8
16	33.3	25.1	34.8	23.3	35.4	24.5	35	26.3	36	22.5	36.6	26	33.4	25.1
17	33	24.5	35.5	22	35.6	24.5	35.5	24.4	37	23.5	38.4	25	32.7	23.4
18	34.6	24.8	36.3	22.5	36.1	24.2	35.5	24	36.5	22.5	36.4	23.5	33.1	23
19	33.8	23.2	34.9	22.5	34.8	25.4	34	24.2	35.5	23.5	34.4	25.1	31.9	25.5
20	32.6	23.9	34.7	22	34.9	24.7	33.9	24.4	35.5	24	34.4	24.4	32.9	23.5
21	35	22	34.9	21.5	35.6	22.5	35.3	22.8	36.4	21.5	35.8	23.2	33.7	22.9
22	34.5	22.8	35.4	23	36.1	23	35.1	22.5	36	22.5	35.4	22.6	34.4	24.6
23	32.4	22.2	35	21.3	35.6	22.1	33.5	22.9	34	22.3	35	22.2	33.8	22.9
24	34.7	22	35.8	22	36.1	22.5	35.7	21.7	36	20.5	35.5	22.1	34.8	24.4
25	35.5	22.2	36.4	21.4	36.2	22	34.6	21.4	37	20	36.4	21.4	34.5	22
26	35.2	24.1	35.8	22.5	35.6	25.3	35.4	21.9	36	22	36.9	24.4	34.6	26
27	34.8	22.6	35.8	23.2	36.3	23.7	35.4	22.6	37	21.5	36.9	22.7	35	22.4
28	34	20	34.2	19.9	36.3	20.4	35.2	20.2	---	18	37.4	19.9	34.2	21.6
29	34.9	21.5	35.5	21.2	36.2	20.4	36.4	22.1	36	20.5	35.4	22.3	34.6	23.5
30	35.1	20.2	36	19.8	36.3	18?	34.9	20	36	---	35.3	20	36.1	23.6
Mean	33.7	22.4	34.8	21.4	35.4	22.8	34.6	22.7	35.7	21.5	35.7	22.9	33.4	23.1

<sup>a</sup> These minimum temperatures seem to be somewhat too low.

Maximum and minimum temperatures at the stations of the Weather Bureau, April, 1921—Continued

Day.	Concepcion, Tarlac.		O'Donnell, Capas, Tarlac.		Tarlac.		Camiling.		Baler.		Dagupan.		Rosario, La Union.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	22.4	36.2	22.2	38	22.2	38.4	23.7	30.8	21.1	33.1	24.5	35	21	
2	21	35.7	21	37.2	22.2	36.3	22.7	31.1	19.8	32.6	24.8	34.3	21.4	
3	20.5	36.1	21.7	37	22.6	38.3	22.7	32.3	21	31.5	25.3	35.3	21.3	
4	21.8	35.2	21.8	36.4	21.8	39.3	23.3	30.7	21.4	36.7	24.5	36.6	21	
5	22.4	35.2	21.7	36	22.2	37.5	23.4	30.2	21.7	36.2	23.1	35	21	
6	20.9	34.2	19.8	35.4	21.2	37.6	23.8	31	22	35.9	23.8	36.5	20.1	
7	20.7	35.3	20	38	21.2	37.3	23.2	30.7	22.1	34.6	23.3	34.4	21	
8	23.9	34.7	22.2	36.4	23.2	36.5	24.7	31	21.6	32.1	25	34.3	20.9	
9	22.9	33.7	21.8	35.2	22.4	34.5	23.7	30	21.7	34.1	23.1	34.3	21.1	
10	21	33.7	20	35.8	20.8	36.8	22.4	30.3	21.7	32.1	22.5	34.4	21	
11	21.7	34.2	20.6	35.8	21.2	36.1	22.3	30.6	22.6	34	24	35	21.6	
12	23	34.9	21.7	36.2	21.2	36.5	22.7	30	22.8	32.2	25.6	35.3	22.3	
13	23.2	35.3	21.9	37.4	23.2	36.8	23.7	31.4	22.9	33.2	24.3	35.1	22	
14	24.6	34.9	23.1	38	24.8	38.3	24.6	31.8	23.1	32.6	26.4	35	20.9	
15	23.9	34.7	21.9	37.4	23.2	38.3	23.2	31.5	24.2	36.2	25	35.4	22.1	
16	25.2	34.9	22	37	22.4	37.1	24.3	29.8	23.8	33.6	26.3	36	22.7	
17	24.5	36.6	22.5	37.2	23.8	38.3	22.1?	32.4	24	33.7	25	36.3	23.1	
18	24.2	35.2	22.4	36.8	23	38.3	24.3	31.3	22.6	36.9	26.4	36.2	23.1	
19	25.3	32.9	23	37.4	24.2	38.3	24.2	31.9	25.5	36.7	24.8	35.1	23	
20	23.7	33.7	22.6	36.4	22.8	36.3	23.2	31	24	36.4	24.1	35.3	22.8	
21	22.7	34.6	20.9	37.2	22	35.3	22.2	31.2	23.3	37.7	23.8	36	22	
22	21.8	34.9	20.7	36.8	21.6	38.5	21.2	31.3	23	36.9	24	36.5	21.9	
23	21.9	33.6	20	35.4	21.6	36.4	23.1?	29.5	22.8	36.7	24.6	36.6	22	
24	21.5	34.7	19.9	37.8	21.8	36.4	22.3	31.7	22.4	35.4	25.3	37.3	22.2	
25	20	35.3	19.1	36.8	20.8	37.3	21.7	31.3	22	38.3	22.9	37.6	22.3	
26	22.9	35	23.3	38	20.2	37.3	24.3	31.2	22.7	38.4	24.4	35.6	21.9	
27	19.2	35.7	20	36.2	21.8	37.3	23.8	31.4	22.1	38.3	23.4	37.4	22.2	
28	17.6	36.2	18.1	38.8	18.4	38.3	20.7	32.5	19.1	36.2	22.7	37.6	22	
29	19.5	35.3	19.7	38	20.6	37.8	23.5	31.4	22.1	38.8	23.5	37.6	21.4	
30	17.3	35.2	16.7	37.6	19.2	38	20.5	32	19.8	38	23.9	37.3	20	
Mean	22	34.9	21.1	36.9	21.9	37.3	23	31.1	22.3	35.3	24.3	35.8	21.7	

Day.	Tubao.		Bolinao.		Aringay.		Baguio.		Naguilian, La Union.		San Fernando, La Union.		Balaoan.	
	Maximum.	Minimum. <sup>a</sup>	Maximum.	Minimum.	Maximum. <sup>b</sup>	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	34.9	22.7	31.5	26.4	35.8	23.5	23.2	15.3	34.3	33.8	23.4	32.8	24.6	
2	34.5	24.8	31.2	26	35.2	24.8	23.5	16	33.7	32.6	25.2	32.2	24.6	
3	33.9	21.7	31.2	25.8	35.2	22.3	23.5	14.8	33.9	33.2	21.8	32.8	24.6	
4	36.2	22.9	36.2	25.8	37.2	22.8	24.3	15.1	35.7	33.7	21.8	32.8	24.6	
5	36.1	23.3	35.1	24.9	37.2	23.2	23.6	14.5	33.9	33.8	22.2	32.9	24.6	
6	36.7	20.6	35.5	21.2	36.8	20.2	26.2	15.6	34.5	33.5	20.1	32.2	22.6	
7	36.5	22.5	34.1	23	36.2	22.8	23.3	15.2	33.8	33.8	22.3	31.9	24.1	
8	34.6	23.8	31.8	26.3	34.8	23.8	24.2	15	34	33	24	31.9	23.6	
9	32.8	23.9	31.6	23.8	34	24	20.1	15.2	31	32.5	23.3	31.8	24.3	
10	34.5	23.4	33.3	23	34	22.2	21.7	14.6	33.5	31.8	22.8	31.6	22.3	
11	35.3	24.4	32	25.3	35	24.2	22.7	15.2	34	33.5	24.6	32.6	24	
12	34.4	24.7	32	26.5	35.8	24	23.3	16.1	33.7	32.5	24	32.2	24	
13	34.8	22.3	31.8	26.4	35.8	22.8	24.3	15.7	34.2	33.6	20.6	32.6	21.2	
14	35.3	23.7	31.3	26.5	35	23.8	24.5	15.8	34.1	32.5	23.6	31.9	22.6	
15	36.4	23.9	31.7	26.3	36.8	24	25.7	16.3	34.7	33	23.5	33.5	20.6	
16	36.3	27.1?	32	25.8	35.8	25.2	25.8	16.4	34.9	32.6	25.6	32.6	25.2	
17	34.9	25.3	31.5	24.5	36.8	25	26.2	16.7	34.1	33	25.7	33.7	24.3	
18	36.7	25.7	32.1	27.2	37.3	25.2	26.7	16.5	35.6	33.5	25	33.6	23.6	
19	36.2	24.4	32.1	25	38	25.8	23.3	15.7	35.3	33.5	23	33.1	23.7	
20	36.7	23.7	34.5	24.4	37.8	24.8	24	15.8	35.5	33.7	24	33.3	23.2	
21	36.5	23.9	35	24.2	37.6	24	24.7	14.5	35.8	33.3	24.7	33.4	23.8	
22	36.8	23.7	35.1	24.1	37.2	23.8	25.7	14.6	35.5	33.4	24	33.4	23	
23	37.4	22.4	37.4	24.2	38	22.8	25.3	15.2	36.2	34.5	23.5	34.2	22.4	
24	37.3	23.6	36.8	25.2	37.8	23.8	24	15.6	35.7	33.7	23.8	33.1	23.5	
25	37.8	22.4	35.2	24.6	39	22.8	26.7	15.2	36.1	35.3	23.2	33.9	23	
26	36.9	22.9	36.8	24.5	39	24.3	25.5	16.2	35.9	36.2	24	35	22.2	
27	38.1	22.5	37.2	24.3	38.8	23.8	26.5	15.8	36.3	36.5	23.5	35.2	22.5	
28	36.3	23.2	35.4	25.8	38	23.2	24.8	15.3	35.1	35.3	25	34.1	24.6	
29	37.5	22.4	36.7	24.7	39	23.2	25.7	15	36.3	35.5	23	34.2	22.9	
30	37.9	21.6	37.2	24.5	38.8	21.8	26.7	14.5	35	35	23.4	33.9	22.3	
Mean	36	23.4	33.8	25	36.8	23.6	24.5	15.4	34.8	33.7	23.5	33.1	23.2	

<sup>a</sup> These minimum temperatures seem to be not very reliable, the differences between 6 a. m. temperatures and minimum temperatures being both too small and too uniform.  
<sup>b</sup> These maximum temperatures seem to be somewhat too high.

Maximum and minimum temperatures at the stations of the Weather Bureau, April, 1921—Continued

Day.	Candon.		Vigan.		Tuguegarao.		Laoag.		Aparri.		Cape Bojeador.		Basco.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.5	24.5	31	23.3	36.7	24.5	33.2	22.2	29.9	23.6	28.8	24.2	21.4	21.4
2	31.5	24.9	30.5	22.4	36.8	24.3	32.7	22.5	30.4	24.3	29.4	23.4	20	20
3	31.5	23	29.8	21.6	35.8	23.8	32.2	20.9	29.2	24.3	30.5	22.5	23.2	23.2
4	31.7	22.8	32.8	21.2	34.3	23.2	35.2	20.2	30.3	24.7	30.2	23.6	21.7	21.7
5	31.6	24.5	31.7	23.9	33.6	21.6	35.7	21.6	31.4	23.1	33.6	23.6	23	23
6	32.4	24.6	31.5	24	33.8	20.6	34.4	21.8	29.8	22.5	34.2	24.1	24.2	24.2
7	32.5	25.9	32.2	24.1	37.5	21.5	35.3	23.5	30.7	22.6	35	25.2	24.5	24.5
8	32	25	31.6	22.8	35	21.4	34.2	23	29.1	22.9	28.8	24	20.4	20.4
9	31	25.5	31.4	24.1	29	21.5	36.1	23.8	25.9	22.6	28.3	24	19.7	19.7
10	31.5	24.5	31.4	23.4	30.9	22.5	34.4	22.4	28.4	22.1	32.4	22.2	21.1	21.1
11	32	25.5	33.2	25.2	34.3	23.6	35.2	24.5	31	23.2	34	24.4	23.2	23.2
12	31.5	25.6	31.7	23.6	35	23.6	34.7	23.1	29.9	23.4	33.8	24.8	23.5	23.5
13	32	23.2	32.1	22.2	35	22.6	34.8	21	31.2	22.8	32.1	24.5	22.4	22.4
14	31.5	24.2	31.4	23	35.2	21.5	34.7	20.6	29.4	22.5	30.8	23.2	22.3	22.3
15	32.2	25	32.5	23.8	36.7	23.5	35.9	22.5	30.5	23.8	34.1	24.7	23.9	23.9
16	32	26.9	32.1	26	37.5	23	34.7	24.1	30.5	21.8	32.1	24	21.6	21.6
17	31.5	25.1	31	24	37	23	34.3	23.4	30.7	22.9	33.2	25	21.3	21.3
18	31.5	24	33.1	23.4	35.8	23.6	36.7	23.8	29.9	25.4	31.5	22	23.9	23.9
19	32.5	25	32.1	24.1	34.4	23	35.7	22.5	28.9	25	30.5	23.4	21.2	21.2
20	33	24.5	32.4	23.6	34.2	23	36.2	22.4	28.7	24	32.4	22.6	21.6	21.6
21	33	25	33.9	24.4	37.7	22.8	36.8	22	31.4	22.3	34.2	23.5	21.7	21.7
22	33	25.2	32.7	24.5	37.7	22.2	35.7	22	32	21.9	32.9	23.5	21.6	21.6
23	33	25	33.5	24.5	37.6	22.2	35.7	21.4	32.8	23.3	33.2	23.5	23.6	23.6
24	33	25.5	33.7	24.9	38	22.5	35.7	23.1	32.8	23.6	35.6	25.2	25.5	25.5
25	33.5	26.4	33.8	25	38.6	22.2	34.7	24.3	34.8	23.9	35.5	25	25.8	25.8
26	33	27.8	34.3	26.1	38.2	23.5	36	25	33.9	23.9	36.3	25.2	26	26
27	34	26	34	25.1	39	23.1	35.2	24.7	35	24.5	35.1	26	26.1	26.1
28	33	26.6	34.2	25.8	38.6	23	36.7	24.2	35	23.2	33.4	25.2	25.6	25.6
29	33.5	26	33.7	26.4	38.5	23.2	35.7	22.2	32.4	23	36.4	25	24.5	24.5
30	33.7	25.5	33.7	25.2	37.7	20.8	35.7	22.1	33.7	21.4	34	24.4	25.5	25.5
Mean	32.3	25.1	32.4	24.1	36	22.7	35.1	22.7	31.1	23.3	32.7	24.1	23	23





## SEISMOLOGICAL BULLETIN FOR APRIL, 1921

By REV. MIGUEL SADERRA MASÓ, S. J.,

*Chief, Seismic and Magnetic Divisions, Weather Bureau*

### EARTHQUAKES FELT IN THE PHILIPPINES<sup>1</sup>

2, 12<sup>h</sup> 43<sup>m</sup> [2, 20<sup>h</sup> 43<sup>m</sup>]. **Ganassi** (N Mindanao). Earthquake of intensity III; several shocks during five minutes. In this station, located south of Lake Lanao and near to the volcanic region of Macaturing and Ragang volcanoes, local shocks are frequently experienced.

4, 12<sup>h</sup> 04<sup>m</sup> [4, 20<sup>h</sup> 04<sup>m</sup>]. **Camp Keithley** (N Mindanao). Earthquake shock of intensity II-III. Recorded by the seismograph of Butuan, 160 kilometers distant.

6, 12<sup>h</sup> 24<sup>m</sup> 00<sup>s\*</sup> [6, 20<sup>h</sup> 24<sup>m</sup> 00<sup>s</sup>]. **Lais** (SE Mindanao). Earthquake of intensity IV-V. Its origin apparently lay towards the Sarangani Islands, SSW of Davao Gulf. The record at Butuan places it at a distance of 300 to 400 kilometers.

7, 3<sup>h</sup> 03<sup>m</sup> [7, 11<sup>h</sup> 03<sup>m</sup>]. **Legaspi** (SE Luzon). Oscillatory earthquake, direction E-W, intensity III, duration 6 seconds.

12, 19<sup>h</sup> 35<sup>m</sup> [13, 3<sup>h</sup> 35<sup>m</sup>]. **Davao** (SE Mindanao). Earthquake shock of intensity III.

14, 20<sup>h</sup> 45<sup>m</sup> [15, 4<sup>h</sup> 45<sup>m</sup>]. **Lais** (SE Mindanao). Light shock of intensity II-III.

24, 22<sup>h</sup> 40<sup>m</sup> [25, 6<sup>h</sup> 40<sup>m</sup>]. **Central Mindanao**. Earthquake of intensity V; very short duration; felt through the Bukidnon Province, chiefly in its eastern and southern parts. It was recorded with great amplitude, but not felt, at Butuan. The epicenter probably lay towards the boundary between Agusan and Bukidnon.

<sup>1</sup> The intensity of earthquakes is given in the notation known as the Rossi-Forel scale. The time is that indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (\*). Otherwise the time is that noted by the observer who sent the report. All time indications are in Greenwich mean time (midnight=0<sup>h</sup>), insular time being added in brackets for the convenience of Philippine readers.

## RECORDS OF THE MICROSEISMOGRAPH

[Time: Greenwich mean. Midnight=0h. Instrument: Wiechert seismograph; 1,000 kilograms.  $A_N: T_0=6.25, \epsilon=2.906, \frac{r}{T_0^2}=0.053$ ;  
 $A_E: T_0=6.18, \epsilon=2.393, \frac{r}{T_0^2}=0.042$ . Alluvium. 2.40 meters above sea level.]

No.	Date.	Character.	Phase.	Hour.	Period.	Amplitude.		Remarks.
						$A_N$ $\mu$	$A_E$ $\mu$	
80	1	II <sub>r</sub>	e	h. m. s.	s.			Destructive earthquake at Tapanoei, Sumatra.
			S	4 12 14				
			L	17 12				
			M <sub>E</sub>	20 00	8		156	
			M <sub>N</sub>	21 36	9	182		
			F	5 55				
81	1	I	e	12 09 38				
			F	13 13				
82	1	I <sub>v</sub>	eP	12 16 58				
			F	20				
83	2	III <sub>r</sub>	e	9 39 03				
			S	41 06				
			L	41 30				
			M <sub>N1</sub>	43 32	11	1,042		
			M <sub>E1</sub>	43 47	11		734	
			M <sub>E2</sub>	45 08	10		901	
			M <sub>N2</sub>	45 21	10	1,091		
			M <sub>N3</sub>	47 09	10	898		
			M <sub>E3</sub>	47 17	10		844	
			M <sub>E4</sub>	49 10	9		612	
			M <sub>N4</sub>	49 51	10	880		
			C	11 18				
			F	52				
84	6	I <sub>v</sub>	eP	1 35 15				
			F	38				
85	6	I <sub>v</sub>	e	12 24 00				Felt at Lais (SE Mindanao).
			F	36				
86	10	I	eP	14 02 00				
			F	10				
87	12	I <sub>r</sub>	e	9 48 34				
			L	54 41				
			F	10 22				
88	15	I <sub>r</sub>	e	21 19 00				
			L?	28 58				
			F	22 03				
89	17	I <sub>v</sub>	eP	15 59 10				
			F	16 02				
90	20	I <sub>v</sub>	eP	16 04 52				
			F	12				
91	21	I <sub>v</sub>	eP	8 18 20				
			F	27				
92	21	I <sub>v</sub>	eP	16 15 35				
			F	18				
93	22	I	e	6 33 14				
			F	7 52				
94	22	I	e	20 58				
			F	21 23				
95	23	I <sub>v</sub>	eP	23 33 09				
			F	37				
96	24	I <sub>v</sub>	eP	22 04 13				
			F	10				
97	25	I	e	17 44 44				
			F	18 42				
98	28	I	e	16 37				
			F	17 23				
99	28	I	e	19 55				
			F	20 52				

TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS<sup>1</sup>

2, 12<sup>h</sup> 43<sup>m</sup> [2, 20<sup>h</sup> 43<sup>m</sup>]. Ganassi (N de Mindanao). Temblor de tierra de intensidad III; notáronse diferentes choques durante 5 minutos. En esta estación, situada al sur de Lánao cerca de la región volcánica del Macaturing y del Ragang, son frecuentes los temblorcitos de carácter muy local.

4, 12<sup>h</sup> 04<sup>m</sup> [4, 20<sup>h</sup> 04<sup>m</sup>]. Camp Keithley (N de Mindanao). Temblor de tierra de intensidad II-III. Registrado por el sismógrafo de Butúan, distante 160 kilómetros al NE.

6, 12<sup>h</sup> 24<sup>m</sup> 00<sup>s\*</sup> [6, 20<sup>h</sup> 24<sup>m</sup> 00<sup>s</sup>]. Lais (SE de Mindanao). Temblor de tierra de intensidad IV-V. Su origen se hallaba al parecer hacia el grupo de las Islas Sarangani, al SSW del Golfo de Dávao. El registro de Butúan lo coloca entre 300 y 400 kilómetros de distancia.

7, 3<sup>h</sup> 03<sup>m</sup> [7, 11<sup>h</sup> 03<sup>m</sup>]. Legaspi (SE de Luzón). Temblor oscilatorio, dirección E-W, intensidad III, duración 6 segundos.

12, 19<sup>h</sup> 35<sup>m</sup> [13, 3<sup>h</sup> 35<sup>m</sup>]. Dávao (SE de Mindanao). Temblor de tierra de intensidad III.

14, 20<sup>h</sup> 45<sup>m</sup> [15, 4<sup>h</sup> 45<sup>m</sup>]. Lais (SE de Mindanao). Temblor de tierra de intensidad II-III.

24, 22<sup>h</sup> 40<sup>m</sup> [25, 6<sup>h</sup> 40<sup>m</sup>]. Centro de Mindanao. Temblor de tierra de intensidad V, pero de corta duración; sentido en la provincia de Bukidnon, principalmente en su parte este y sur. Registróse con grande amplitud en Butúan, pero sin ser perceptible; el epicentro al parecer se hallaba hacia los límites entre Bukidnon y Agusan.

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<sup>1</sup>La intensidad de los terremotos se indica conforme a la conocida escala de Rossi-Forel. Cuanto a la hora de su ocurrencia, adoptamos la indicada por los sismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (\*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo medio de Greenwich (media noche=0<sup>h</sup>). Para conveniencia de los lectores de Filipinas se añade también la hora insular.



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1921

THE GOVERNMENT OF THE PHILIPPINE ISLANDS

# WEATHER BUREAU

MANILA CENTRAL OBSERVATORY

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BULLETIN FOR MAY, 1921

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PREPARED UNDER THE DIRECTION OF

REV. JOSÉ ALGUÉ, S. J.

DIRECTOR OF THE WEATHER BUREAU

MANILA  
BUREAU OF PRINTING  
1922



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**BULLETIN FOR MAY, 1921**





# METEOROLOGICAL BULLETIN FOR MAY, 1921

By Rev. JOSÉ CORONAS, S. J.,  
Chief, Meteorological Division of the Weather Bureau

## GENERAL WEATHER NOTES

Pressure and temperature.—The mean atmospheric pressure for this month in the Philippines is slightly below the normal of May, although in Luzon it is slightly above the monthly mean of the preceding year. The highest pressures were generally observed on the 10th in Luzon, and on the 18th or 24th in the Visayas and Mindanao, whilst the lowest were generally recorded throughout the Archipelago on the 13th or 16th.

The mean monthly temperature does hardly differ from the normal of this month, particularly in Luzon. The absolute maximum and minimum temperatures for Manila were 36.9° C. and 20.0° C.; they were registered on the 14th and 1st, respectively. The absolute monthly maximum temperature for the whole Archipelago was that of Tuguegarao, 40.2° C. The extreme temperatures for Baguio were 26.0° C., 14.6° C. on the top of Mirador, and 26.7° C., 13.6° C. in the plateau near the City Hall.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS OF THE WEATHER BUREAU FOR MAY, 1921

Station.	Pressure.							Temperature.						
	Mean.	Departure from May, 1920.	Departure from normal.	Highest mean.	Day.	Lowest mean.	Day.	Mean.	Departure from May, 1920.	Departure from normal.	Highest.	Day.	Lowest.	Day.
Zamboanga	757.98	-0.41		759.15	24	756.20	13	26.1	-0.4		31	6	22.2	23
Kolonie, Yap, Western Carolines	58.22	+ .10		59.13	18	56.86	15							
Tagbilaran	57.82	- .16	-0.33	58.94	18	55.96	13	26.9	- .5	-0.7	32.9	24	22	5, 6, 7
Surigao	57.95	- .07	- .38	58.89	24	56.19	13	26.5	-1	- .5	32.4	6, 27	20.9	7
Cebu	57.97	- .08	- .28	59.07	18	56.18	13	28.3	- .1	+ .1	33.4	28	22.9	18
Iloilo	57.72	- .18	- .38	58.84	24	55.78	13	27.8	- .4	- .2	34.3	5	22.3	5
Tacloban	58.20	+ .04	- .24	59.13	24	56.52	13	27	- .6	- .7	33.8	2	21.4	6
Capiz	57.89	- .02	- .45	58.89	1, 24	56.21	16	27.6	+ .1	- .4	34.5	11, 13	21.5	5
Calbayog	58.36	+ .14	- .08	59.36	24	56.83	13, 16	26.6	-1	- .3	33.5	7	18.8	4
Legaspi, Albay	58.19	+ .22	- .17	59.44	10	56.53	16	28.3	+ .1	+ .1	35.2	31	21.4	5
Atimonan	58.07	+ .28	- .17	59.47	1	56.11	16	28.2	+ .5	0	35.6	30	22	3
Ambulong, Tanauan, Batangas	57.30	+ .09		58.46	1, 10	55.52	16	28.5	+ .8		38.8	15	21.2	3
Daet	58.32			59.36	10	56.44	16	27			35.6	31	19.9	4
Manila	57.93	+ .16	- .38	59.06	1, 24	56.03	16	28.5	+ .4	+ .1	36.9	14	20	1
San Isidro, Nueva Ecija	57.89	+ .07	- .35	59.19	10	55.90	16	28.5	+1	+ .1	37.4	16	21.4	1
Dagupan	57.45	+ .09	- .40	58.82	10	55.59	16	28.8	+ .5	+ .3	39.3	13	23	1, 15
Baguio <sup>a</sup>	636.17	+ .12	- .25	637.53	10	634.86	16	18.8	+ .2	0	26	9	14.6	1
Vigan	757.34	+ .10	- .61	758.64	10	755.44	16	28.9	+ .5	+ .2	35.2	14	22.8	18
Tuguegarao	57.60	+ .31	- .40	59.33	1	55.55	16	28.9	+1.2	+ .4	40.2	12	23.2	1, 27, 30
Laoag	57.34	+ .31		58.35	10	55.88	16	28.8	+ .7		37.6	15	21.9	4
Aparri	57.59	+ .20	- .51	59.33	1	55.41	16	27.4	- .3	- .1	37	18	22.3	1

<sup>a</sup> The barometric readings of this station are not reduced to sea level.

Rainfall.—The majority of our stations in the Philippines reported a monthly amount of rainfall smaller than the normal for May, particularly in the central part of the Archipelago. The total monthly rainfall for Manila was 59.8 mm., its difference from the normal being -45.6 mm. On the contrary, Baguio reported a total of 497.1 mm., which is 85.9 mm. above the normal.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF MAY, 1921

Station.	Total.	Departure from May, 1920.		Days of rain.	Departure from May, 1920.		Greatest rainfall in a single day.	Day.	Station.	Total.	Departure from May, 1920.		Days of rain.	Departure from May, 1920.		Greatest rainfall in a single day.	Day.
		mm.	mm.		mm.	mm.					mm.	mm.		mm.	mm.		
Jolo	358.1	+264.2	+159.7	26	+14	+11	50.8	18	Calapan	142.4	+ 51.5	-10.2	12	- 1	- 2	49	16
Malamau, Isabela, Zamboanga	268.8	+210.2		16	+12				Virac	71	+ 20.6	-62.1	12	+ 7	- 3	18	20
Zamboanga	161.5	+146.2	+ 82.3	15	+ 9	+ 5	51.1	17	Naga, Camarines Sur	76.1	- 54.8	-42.7	10	- 6	0	30	16
Davao	347.5	+177.1	+105.8	16	+ 6	+ 4	75.2	2	Tigaon	97.3	-198.6		12	- 3		23.7	20
Cotabato	215.2	+195.3	-10.3	23	+10	+ 6	51.6	22	Batangas	41.1	- 2.5	-45.9	5	0	- 4	30.2	20
Cagayan	47.9		-45.2	11		- 1	9.6	19, 31	Lucena	32.3	- 73.2		3	- 9		12.7	19
Butuan	262.4	+182.1	+105.7	22	+ 9	+ 7	66.8	31	Atimonan	48.6	- 96.9	-101.2	5	- 7	- 7	36.6	19
Dumaguete	113.6	+ 21.5	+ 5.7	14	+ 6	+ 5	40.4	16	Ambulong, Tanaunan, Batangas	41.9	- 61.2		6	- 9		14.2	25
Kolonie, Yap, Western Carolines	334.1	+116.7	+ 53.3	24	+ 3	+ 2	117.2	11	Daet	34			7			26.2	15
Tagbilaran	167	+118.1	+ 65.6	14	+ 7	+ 5	36.6	16	Canluban, Calamba	133.2	-128.7		8	- 8		39.1	27
Iwahig Penal Colony, Puerto Princesa	84.1	- 52.7		11	- 4		40.4	16	Paracale	46.3	-150.5	-116.5	6	-11	- 9	17.8	22
Surigao	192.4	+179.4	+ 58.6	16	+ 9	+ 5	70.6	17	Santa Cruz, Laguna	85.8	- 10.9	-42.8	9	- 5	- 3	48.7	7
Maasin, Leyte	153	+120.2	+ 27.4	5	+ 2	- 1	45.5	15	Manila	59.8	- 81.1	-45.6	8	-10	- 3	31	6
Cebu	235.5	+141.6	+130	12	0	+ 1	73.9	20	Antipolo	124.4	- 20.2	- 6.5	14	0	+ 3	30.5	23
Iloilo	140.7	+ 87	-12.6	12	- 2	0	33.3	8	San Isidro, Nueva Ecija	153.2	- 60.2	-31.7	12	- 9	- 1	45.5	5
San Jose de Buenavista	175.6	- 16.8	+ 5.7	19	+ 2	+ 5	57.4	17	Iba	205.5	+ 47.1	- 14	9	- 5	- 3	69.3	19
Cuyo	244	+155.9	+ 78.4	18	+ 2	+ 5	78.5	13	Tarlac	186.8	+ 43.2	+ 12.6	11	- 6	- 2	56.6	14
Ormoc	63.7	- 59.9	-20.4	14	0	+ 2	24.1	20	Baler	88.6	-193.3	-176.7	13	0	- 2	49	9
Guiuan	176.7	+ 91.6	-39.3	22	+11	+ 6	26.2	20	Dagupan	142.1	+ 61.2	- 91	14	- 2	0	25.9	29
Tacloban	144.9	+ 92.1	- 7	16	+10	+ 1	28.5	20	Baguio	497.1	+ 134.4	+ 85.9	25	+ 3	+ 5	113	23
Capiz	175.4	- 12.8	- 7	18	- 1	+ 5	27.6	15	San Fernando, La Union	124.8	+ 34.4	- 59.4	12	- 3	+ 2	51.3	21
Borongan	129.9	+ 11.4	-76.5	19	+ 7	+ 2	32	8	Echague	111.5		- 52.1	12		- 1	39.9	30
Catbalogan	180.2	+ 38.3		17	+ 6		44.2	1	Candon	308.4	+ 117.6	+106.2	12	0	+ 2	182.6	18
Calbayog	107.3	+ 21.1	-41.9	17	+ 2	+ 1	24.1	10	Vigan	294.9	+ 135.7	+136.5	8	- 5	- 1	97.2	22
Masbate	74.6	-103.7	-10.8	6	- 9	- 2	39.6	16	Tuguegarao	144.2	+ 56.3	+ 22.3	14	0	+ 4	33.8	25
Romblon	63.7	+ 29.7	-49.1	11	+ 6	- 1	23.4	20	Laog	141.1	- 76.8	-51.4	9	- 3	- 1	42.7	17
Batag Light-house, Laoang	68.7	- 75		11	- 1		15.2	9	Aparri	184.5	+ 92.2	+ 68.1	12	+ 1	+ 2	75.1	18
Sorsogon	138	+ 95.7		12	+ 2		36	14	Cape Bojeador	114.6	- 9.1		8	- 2		38.1	22
Legaspi, Albay	107.4	+ 15.9	-21.3	11	- 3	- 2	29	13, 17	Basco	145	-165.6	- 98.2	10	-10	- 4	46	23
Sumay (Guam), Agaña	66.2	- 38.5	- 35.2	11	- 8	- 2	20.3	31									

DEPRESSIONS AND TYPHOONS

Besides several purely continental depressions which traversed China and Japan during this month, there were also three or four other depressions of no great importance which moved NE or ENE to the south of Japan and north of the Bonins. There was no depression or typhoon near the Philippines.

## NOTAS GENERALES DEL TIEMPO

**Presión y temperatura.**—La presión atmosférica media de este mes en Filipinas es ligeramente menor que la normal de mayo, aun cuando en Luzón es algo mayor que la media mensual del año pasado. Las presiones más altas se observaron generalmente el día 10 en Luzón, y el 18 ó 24 en las Visayas y Mindanao, al paso que las más bajas fueron registradas generalmente en todo el Archipiélago el día 13 ó 16.

La temperatura media mensual apenas difiere de la normal de este mes, particularmente en Luzón. Las temperaturas máxima y mínima absolutas del mes en Manila fueron 36.9° C. y 20.0° C., las cuales se registraron los días 14 y 1, respectivamente. La temperatura máxima absoluta del mes en todo el Archipiélago fué la de Tuguegarao, 40.2° C. Las temperaturas extremas de Baguio fueron 26.0° C., 14.6° C. en la cumbre del Mirador, y 26.7° C., 13.6° C. en la llanura cerca del *City Hall*.

**Precipitación acuosa.**—En la mayoría de nuestras estaciones de Filipinas se recogió una cantidad de lluvia mensual menor que la normal de mayo, especialmente en la parte central del Archipiélago. La lluvia total del mes en Manila fué 59.8 mm., la cual difiere de la normal en —45.6 mm. Por el contrario, en Baguio se recogió una cantidad total de lluvia de 497.1 mm., la cual es mayor que la normal en 85.9 mm.

## DEPRESIONES Y TIFONES

Además de varias depresiones puramente continentales que atravesaron China y Japón durante este mes, hubo también otras tres o cuatro depresiones de no mucha importancia, las cuales se movieron al NE o ENE por el S de Japón y N de Bonins. No hubo depresión ni tifón cerca de Filipinas.

METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY<sup>a</sup>

[ $\phi=14^{\circ} 34' 14''$  N;  $\lambda=120^{\circ} 58' 33''$  E; barometer above sea, 14.2 meters; gravity correction not applied, -1.72 mm.]

Day.	Pressure (mean). mm.	Air temperature. <sup>b</sup>			Underground temperature.				Relative humidity (mean). Per cent.	Vapor pressure (mean). mm.	Radiation.		Evaporation. <sup>b</sup>			
		Mean.	Maximum.	Minimum.	0.25 meter.		0.50 meter.				1.50 meters.	2.50 meters.	Minimum on grass.	Maximum in sun. Black bulb in vacuo.	Free exposure (total).	Shelter (total).
					8 a. m.	2 p. m.	8 a. m.	2 p. m.								
		$^{\circ}$ C.	$^{\circ}$ C.	$^{\circ}$ C.	$^{\circ}$ C.	$^{\circ}$ C.	$^{\circ}$ C.	$^{\circ}$ C.			$^{\circ}$ C.	$^{\circ}$ C.	$^{\circ}$ C.	mm.	mm.	
1	759.06	27.5	35.5	20	29.4	32	30	30.5	29.5	28.8	65.6	17.4	17	64.5	7.7	5.3
2	58.10	28.3	35	22.5	30.3	32.5	30.3	30.8	29.5	28.9	68.7	19.3	17	63.3	7	4.9
3	57.57	28.8	34.7	23.9	30.7	33.2	30.5	31.2	29.5	28.9	69.6	20	21.5	61.6	6.9	4.7
4	57.72	28.8	34.3	24.5	31	33	30.8	31.3	29.6	29	71.2	20.6	21.9	65.3	5.2	4
5	57.68	28.6	35	24	30.8	33.6	30.9	31.6	29.6	29	72.4	20.6	21.8	62.5	6.9	5
6	57.90	28.5	34.8	24.1	31.2	33.7	31.2	31.8	29.6	29	74.1	21.1	22.5	61.7	5.6	3.6
7	58.19	28.2	33.2	24.2	30.5	32.2	31.1	31.4	29.6	29	77.4	21.6	22.8	63	4.6	3.2
8	58.09	28.9	35	24.1	30.7	32.7	30.9	31.5	29.7	29	72.3	21	22.6	62.8	5.5	3.7
9	58.62	28.9	35.2	24.2	30.5	33.3	31	31.6	29.7	29	70.2	20.3	22.4	64.5	7.2	4.7
10	59.05	29.3	35.2	25.2	30.5	33.5	30.9	31.6	29.7	28.8	70	20.8	23.6	66.2	5.8	4.1
11	58.18	29.3	35.9	23.2	30.8	33	31	31.5	29.7	29	66.9	19.7	20.4	61.4	6.7	4.3
12	56.54	29.6	35.7	24.5	31.3	33.7	31.2	31.8	29.8	29	64.1	19.2	22.1	64.9	7.3	5.3
13	56.61	29.7	36.4	23.6	31.4	34.1	31.3	32	29.8	29	65.8	19.8	21.3	64.4	7.7	5.1
14	57.16	29.8	36.9	24.2	32	34	31.5	32	30	29.1	66.2	20.2	21.5	67.6	6.2	4.5
15	56.70	29.1	35.9	24.5	31.7	33.7	31.5	32.2	30.1	29.1	68.8	20.4	22.3	65	5.8	4.1
16	56.03	28.5	35.3	25	31.7	34	31.7	32.2	30	29.1	73.8	21.1	23.3	65.5	4.5	3.2
17	57.25	28.9	35.4	24.7	31	34.2	31.5	32.1	30.1	29.1	73.3	21.3	22.4	66.7	5.9	3.8
18	58.21	27.8	32.5	25.4	31.4	32.7	31.6	31.8	30.1	29.1	79.4	22	23.3	65.9	3.4	2.4
19	58.38	26.4	32.4	25	30.5	32.2	31.2	31.5	30.1	29	85.4	21.7	23.4	66.2	2.9	1.5
20	58.52	27.1	33.5	24	30.6	32.2	30.9	31.4	30.3	29.1	81.4	21.4	22.4	64.5	2.2	1.9
21	58.41	27.2	34.5	24.1	30.1	32.6	30.7	31.4	30.2	29.2	84.7	22.4	22.7	65	3.1	2.1
22	58.52	27.8	31.7	24.5	30.3	32	30.8	31.2	30.3	29.2	80.1	22.1	22.6	65.1	3.6	2.4
23	58.31	28.7	35.1	24.4	30.3	33	30.8	31.5	30.3	29.2	77.2	22.2	22.6	63.2	5.8	3.4
24	59.06	27.6	33.4	24.4	30.3	32.2	30.8	31.4	30.3	29.2	82.1	22.2	23.3	62.8	3	2.1
25	58.94	27.9	33.9	24.8	30.2	31.7	30.9	31.2	30.2	29.2	82	22.7	23.6	61.4	2.6	2
26	58.39	28.8	35.7	24.2	29.7	33	30.6	31.4	30.2	29.1	76.1	21.8	22.4	66.8	4.9	3.5
27	57.80	29	35.2	24.8	31	33.5	31	31.5	30.3	29.3	75.7	22.2	22.6	62.1	4.8	2.9
28	58.01	28.4	33.5	24.2	30.7	32.8	31.1	31.6	30.3	29.3	78.3	22.2	23	63.5	4.2	2.4
29	57.98	28.7	33.8	24.8	31	33	31.2	31.8	30.2	29.3	76.9	22.2	23	62.7	4.4	2.5
30	57.74	28.9	33.5	24.2	30.7	33.3	31.3	31.7	30.5	29.3	76.1	22.2	23	60.5	5.3	3.2
31	57.06	28.8	33.8	24.5	31.2	33.5	31.3	31.9	30.3	29.3	75.9	22.1	22	60.3	6	4.1
Mean Total	757.93	28.5	34.6	24.2	30.8	33	31	31.6	30	29.1	74.2	21.1	22.3	63.9	5.2	3.6
Departure from normal	-0.38	+0.1	+0.9	+0.3							-1.8	-0.5			+8.4	

Day.	Wind.				Clouds.			Sunshine. h. m.	Rain, 24 hours beginning 6 a. m.		Miscellaneous.
	Prevailing direction.	Total movement.	Maximum hourly velocity.	Direction at the time of the maximum velocity.	Amount (mean).	Form and direction.			On the tower.	In the park.	
						Upper.	Lower.				
	Km.	Km.	0-10			mm.	mm.				
1	SE	227.5	18	W	1.4	Ci.	Cu.	11	10		
2	SE	186.5	19	W	2.4	Ci.	Cu.	10	35		
3	SE	200	20	W	3.3	Ci.	Cu.	9	25		
4	E quad.	146.5	15	SSW	5.6	A.-Cu. E, ESE	Cu.-N.	7	25		☼° p.
5	SW quad.	184.5	20.5	SW	3.2	Ci.-S. SSW	Cu.	8	25		☼° p.
6	W	187.5	22	WSW	5.2	Ci.	Cu.	7	35	31	33.1
7	W	151.5	17.5	WSW	4.3	Ci.-S. SSW	Cu.	7	00		☼° p.
8	SE	143	15	WSW	3.5	Ci.	Cu.	9	45		☼° p.
9	SE	190.5	20	SE	6.3	Ci.-S. ESE	Cu.	7	40		☼° p.
10	SE	184.5	18	SE	7.1	Ci.	Cu.	5	20		☼° p.
11	SE	184.5	18	W	1.1	Ci.	Fr.-Cu.	10	55		
12	SE	159.5	18	SSE	1.8	Ci.-S.	Cu.	11	05		
13	SE	222.5	22	SE	2.9	Ci.	Cu.	10	50		
14	SE	175	15	SE	5.4	Ci.	Cu.	8	55		
15	NE, W	172	15.5	W	5.5	Ci.	Cu.	8	20		
16	NE	154	16.5	WNW	4.9	Ci.	Cu., Cu.-N.	7	25		
17	SE	229	18	SE	7.2	Ci.	Cu.	6	55		
18	WSW	216.5	22	WSW	9.2	Ci.-S.	Cu., Cu.-N.	0	35		
19	WSW	166.5	23	WSW	9.8	Ci.-S.	Cu.-N. WNW, S	0	35	3.4	3.5
20	SE	130.5	19	SSW	7.2	Ci. N, NNE	Cu.	5	55	10.3	10.2
21	SW quad.	144.5	24	SW	7.8	Ci. N by W	Cu.	6	25	2.7	3
22	SW	161	18	SW	7.8	Ci.-S.	Cu.	2	50		
23	SW	196.5	20	WSW	7.4	Ci.	Cu. SSE, ESE	7	25	8.9	9.9
24	E, W	115.5	13.5	NW	6.8	Ci.	Cu.	5	40	1.5	1.5
25	NE	92.5	10	N	7.8	Ci.-S.	Cu. E, ESE	2	45	.2	.2
26	NE quad.	109.5	14	ENE	6.2	A.-Cu. SE	Cu.	5	50		
27	NE, W	126	13	W	5	Ci.	Cu., Cu.-N.	7	55	1.8	2
28	W	129	13	WSW	8	Ci.-S. ENE	Cu.	4	25		
29	NNE, WSW	211	19.5	WSW	5.9	Ci.	Cu.-N. ESE	5	55		
30	WSW	219.5	23	WSW	3.8	Ci.	Cu.	8	05		
31	WSW	288.5	25	SW	2.8	Ci.	Cu.	9	35		
Mean Total		176.6	18.5		5.4			7	11		
Departure from normal		5,475			-0.3			222	40	59.8	63.4
Departure from normal		-1,375.9						-6	15	-45.6	

<sup>a</sup> All the mean values given in this table are deduced from hourly observations.  
<sup>b</sup> These values are taken from instruments mounted in the Observatory Park, 1.5 meters above ground.

METEOROLOGICAL DATA FOR MIRADOR OBSERVATORY, BAGUIO<sup>a</sup>

[ $\phi = 16^{\circ} 25' N$ ;  $\lambda = 120^{\circ} 35' E$ ; barometer above sea, 1,512.5 meters; gravity correction not applied, -1.65 mm.]

Day.	Pressure (mean). <sup>b</sup>		Air temperature at Mirador (on the top of the mountain).					Air temperature in the plateau near the City Hall.					Relative humidity (mean).	Vapor pressure (mean).	Radiation.			Evaporation.	
	mm.	°C.	Mean.	Maximum.	Hour.	Minimum.	Hour.	Maximum.	Hour.	Minimum.	Hour.	Per ct.			mm.	°C.	°C.	Free exposure (total).	Shelter (total).
1	637.01	18.9	24.7	1.1cp.	14.6	3.35a.	25.1	2.00p.	5.50a.	13.7	84.5	13.7	11.8	61	3.7	2			
2	36.24	19	25.8	1.15p.	16	4.45a.	25.4	1.00p.	5.45a.	87	14.1	14.5	61.2	4.5	1.8				
3	35.74	18.8	25.2	1.30p.	15.9	5.05a.	25.5	1.15p.	5.05a.	88.7	14.2	12.5	61	2.5	1.3				
4	35.75	18.3	24.2	0.3cp.	15.5	5.55a.	25	1.30p.	4.25a.	87.2	13.6	13.5	56.3	2.3	1.7				
5	35.80	18.6	25.2	2.35p.	14.8	3.30a.	25.2	2.45p.	5.30a.	83.2	13.2	12.7	58	4	2				
6	36.06	18.8	22.8	2.30p.	16	7.10a.	22.6	2.40p.	15.9	11.55p.	89.5	14.3	15.4	50	2.1	.9			
7	36.34	18.1	24	11.00a.	16	4.00a.	23.7	9.40a.	15.1	4.25a.	89.3	13.8	14.1	59.7	1.9	1.1			
8	36.32	18.6	23.9	11.30a.	15.9	5.45a.	24.9	16.5	3.30a.	92.2	14.7	15.5	61	2.1	.9				
9	36.95	19.2	26	0.50p.	15.8	5.25a.	26.7	0.45p.	15.1	84.7	13.8	14.7	61	6.4	2.4				
10	37.53	18.2	24	0.30p.	16.2	5.30p.	25.5	11.55a.	15.6	5.20a.	89.8	14	15.2	59.2	3.1	1.5			
11	36.74	19.5	25.2	3.10p.	16.3	1.10a.	26.1	10.30a.	15.2	5.55a.	84.8	14.3	14.5	58.2	5	2.1			
12	35.32	19.6	25.7	1.10p.	16.8	5.50a.	26	10.15a.	16.2	4.30a.	86.7	14.6	15.6	61.2	3.3	1.5			
13	35.56	20.4	25.8	10.45a.	16.7	5.10a.	26.6	10.55a.	15.4	5.30a.	78.7	13.8	14.5	56.7	6.4	2.8			
14	35.98	20.1	25.8	1.55p.	17	5.35a.	26.3	1.35p.	15.4	5.20a.	76.3	13.3	15.2	59.8	4.1	2.3			
15	35.38	20.1	24.8	9.30a.	17	5.3ca.	25.7	0.45p.	15.9	5.00a.	79.2	13.8	14.5	58.3	3.9	1.8			
16	34.86	18.9	24.3	10.30a.	16	5.00a.	25.6	1.50p.	15	4.15a.	87.7	14.2	14.4	62.8	2.1	1			
17	35.50	19	25.2	0.1cp.	16.9	5.50a.	26.7	1.00p.	15.6	0.45a.	89.5	14.4	16	58.2	2.6	1.4			
18	35.97	18.7	22.6	2.20p.	16.6	5.30a.	23.7	2.4cp.	17	4.25a.	89.8	14.3	16	54	2.6	1.2			
19	35.78	18.1	23.7	1.20p.	15.8	5.55a.	24.2	1.30p.	16	6.00a.	88.5	13.5	15.5	59.5	3.3	1.4			
20	36.04	17.7	22.7	11.20a.	16	5.55a.	23.3	11.25a.	16.1	6.15a.	89.5	13.4	15.4	54.1	2.4	1.2			
21	36.17	19	24.1	1.45p.	16.1	3.30a.	24.5	1.30p.	16	5.20a.	86.7	14	15.4	59.5	3.5	1.5			
22	36.34	18.5	22.2	10.10a.	16.5	4.45a.	23.9	9.10a.	16.9	4.30a.	93.2	14.7	16	57.7	1.2	.5			
23	36.54	18.7	24.2	0.05p.	15.8	5.55a.	23.9	11.45a.	15.7	5.15a.	90.7	14.4	14.7	57.2	3.5	1.8			
24	37.22	18.5	24.3	0.45p.	15.6	5.50a.	23.7	0.35p.	15.2	5.35a.	89.7	14.2	14.3	59.7	2.7	1.2			
25	37.11	18.2	22	0.30p.	15.7	5.30a.	23.4	0.30p.	15	3.30a.	91.3	14.1	14.2	57.8	3.5	1.5			
26	36.82	18.7	24.9	9.50a.	16.2	7.30p.	24.3	9.55a.	15.6	3.00a.	84.2	13.4	15.3	57.9	4.4	1.3			
27	36.26	18.4	22.3	0.15p.	16.5	5.50a.	23.9	10.40a.	15.4	6.00a.	88.5	14	14.2	52.3	1.3	1			
28	36.36	18.9	23.5	1.50p.	15.7	3.30a.	23.7	11.50a.	15	4.00a.	90.2	14.6	14.4	58.8	1.7	1			
29	36.22	18.1	21	11.00a.	16.3	11.55p.	22.2	9.05a.	15.2	12m. n.	92	14.2	15.8	50	1.6	1			
30	36.12	18.1	24.2	0.4cp.	16.1	10.10p.	24.2	1.00p.	14.8	2.30a.	86.7	13.4	13.6	60	1.9	1.1			
31	35.33	18.4	23.7	0.15p.	15.7	4.40a.	23.8	1.00p.	14.5	4.35a.	90.5	14.2	13.7	57.2	2	1			
Mean	636.17	18.8	24.1	-----	16.1	-----	24.7	-----	15.4	-----	87.4	14	14.6	58	3.1	1.5			
Total	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	95.6	45.2			

Day.	Wind.				Clouds.				Sunshine.	Rain, 24 hours beginning 6 a. m.	Miscellaneous.		
	Prevailing direction. <sup>d</sup>	Total movement.	Maximum hourly velocity.	Direction at the time of the maximum velocity.	Amount (mean).	Form and direction.		h.				m.	
						Upper.	Lower.						
1	NE, W	Km. 308.2	Km. 23	W	0-10 5.6	Ci.-S., Ci.	Cu.	SSW	5	15	≡ ∞ p.		
2	E, W	320.2	25.4	SW	6	Ci.	Cu.	E	4	35	∞ a. ≡ ∞ p.		
3	W	253.6	23.3	NW	7.3	Ci.-S.	Cu.-N.	SSW	2	50	∞ a. ≡ ∞ p. d° p.		
4	W	303.8	29.5	W	6.9	Ci.	Cu.-N.	SW	2	10	≡ ∞ a. p° p.		
5	W	293.8	29.2	W	5.9	Ci.	Cu.-N.	WNW	6	40	∞ a. ≡ ∞ p.		
6	W	220.4	23.6	W	9.6	Ci.-S.	Cu.-N.	WSW	1	20	∞ a. d° ≡ a. p. p.		
7	W	242.1	19.1	NW	8.9	Ci.-S., Ci.	Cu.-N.	Variable	2	55	∞ a. ≡ ∞ p. d° p.		
8	E	285.3	22.2	W	8	Ci.	Cu.-N.	WSW	2	30	≡ a. ≡ ∞ p.		
9	E	335.5	25.2	SW	5.7	Ci.	Cu.	ESE	6	10	≡ ∞ p.		
10	E quad.	291.6	18	SW	7.3	Ci.	Cu.-N.	E, SE	3	10	≡ a. p. ≡ ∞ p.		
11	E	348.5	25.1	W	4.7	-----	Cu.-N.	SSW	8	05	≡ ∞ p.		
12	E	345.2	23.5	W	5.1	Ci.	N.	NNE	5	35	≡ ∞ p.		
13	E	277.4	24.9	NW	3.6	A.-Cu.	SSW	Cu.	E	6	40	≡ a.	
14	E quad.	353.2	29.5	W	5.3	Ci.	Cu.-N.	W	7	00	∞ a. d p.		
15	E, W	270.8	24.1	W	5.6	Ci., Ci.-S.	Cu.-N.	SSW	5	00	≡ ∞ p.		
16	Variable	285.4	23.1	NW	6	Ci.	SSW	Cu.-N.	SSE	5	10	≡ a. ∞ a. p. ≡ ∞ p.	
17	E	320.8	20.4	E	5.6	Ci.	Cu.-N.	SSE	4	05	≡ ∞ p.		
18	E	299.2	22.5	SE	8.1	Ci.	Cu.-N.	S	2	10	≡ d° a. p.		
19	E	317	24.7	E	8.6	A.-Cu., Ci.-S.	Cu.-N.	S	3	30	d a. d° p.		
20	SE, E	322.9	21.4	E	7.3	Ci.-S.	SSW	Cu.-N.	SSW	2	00	∞ p.	
21	SE	248.6	17.2	S	6.7	A.-Cu.	SW	Cu.-N.	SSE	5	10	≡ p p.	
22	SE quad.	173.5	17.2	SW	9.1	Ci.-S.	Cu.-N.	SSE	0	40	14.2	≡ a. ≡ a. p. ≡ ∞ p.	
23	W quad.	355.1	35.1	W	6.7	Ci.	Cu.-N.	WSW	4	40	113	∞ a. ≡ a. p. ≡ ∞ p.	
24	W	296.8	22.7	W	6	Ci.	Cu., Cu.-N.	SW	5	50	30.8	≡ a. ≡ ∞ p.	
25	E, W	230.7	15.6	SW	6.7	Ci.-S.	Cu.-N.	WNW	3	30	1.8	≡ ∞ p.	
26	E quad.	291.3	26.6	SW	6.7	A.-Cu.	N.	W	5	10	20.4	d a. ≡ ∞ p.	
27	N quad.	210.2	21.2	SW	6.6	Ci.	N., Cu.-N.	wnw	3	35	9.4	d a. ≡ ∞ p.	
28	W quad.	191.3	15.9	W	7	Ci.	Cu.-N.	WNW	3	30	4.3	≡ a. p.	
29	W quad.	205	20.1	W	8.3	Ci.-S.	SSW	Cu.-N.	WNW	0	35	5.9	≡ a. ≡ ∞ p.
30	W, NW	288.4	26	SW	5.9	Ci.	Cu.	W	5	55	78.5	≡ a. ≡ ∞ p.	
31	W	333.7	25.4	SW	6	Ci.-S.	W	W	4	50	55.1	≡ ∞ p.	
Mean	-----	284.7	23.2	-----	6.7	-----	-----	-----	4	12	-----	-----	
Total	-----	8,824.5	-----	-----	-----	-----	-----	-----	130	15	497.1	-----	

<sup>a</sup> All the mean values given in this table are deduced from 6 daily observations taken at 2, 6, 10 a. m. and 2, 6, 10 p. m.  
<sup>b</sup> The barometric readings of this station are not reduced to sea level.  
<sup>c</sup> Maximum of hourly observations taken from 6 a. m. to 6 p. m.  
<sup>d</sup> This element is based on hourly observations taken from a quadruple register, which gives only eight possible directions of the wind.

## DAILY RAINFALL AT THE STATIONS OF THE WEATHER BUREAU, MAY, 1921

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lapac Agricultural School.																
Siasi, Sulu †		20.3	10.2	20.1		12.7					20.3					
Glan, Cotabato †	3.8			2			1.5	0.8	1.8				4.1		22.9	
Jolo, Sulu	41.9	22.4	7.4	2.3	26.4	4.8	8.1	3.6	1.8	18.3	4.3	38.6	14.2	5.4	0.8	
Lais, Malita, Davao	1.3		5.6					18	3.8		1.3	14	32.3		11.9	
Malita, Davao	.5		8.6					3.8		1	26.7	127.8	16.2		20.6	
Lebak, Cotabato						.5		8.4	10.7	27.7		33		14.5	2.8	
Lamitan, Isabela, Zamboanga								10.7					14.5		27.4	
Basilan Plantation, Kabunbatan, Isabela, Zamboanga †		14.5	14.5		40.1	1.3	7.6							20.6	39.4	
Padada, Santa Cruz, Davao †	25.9			26.9				.5		1.8	26.2	60.2	88.7	2.3	25.9	27.2
Basilan Plantation Office, Isabela, Zamboanga †	.8			14.5	26.7	5.6	3					48.3	76.2	50.3	17.3	1.5
La Union, Sigaboy, Davao †					4.6			2.8					11.7	1.8	15	3.8
Paranglalap, Isabela, Zamboanga †	10.2			15.2	40.6						3.3		50.8	12.7		
Latuan, Isabela, Zamboanga †	3			3.8								21.1	55.1	15.2		10.7
Buluan, Cotabato †	4.3	32.3		1	6.4									5		31.7
Malamau, Isabela, Zamboanga				22.6	30.5							20.3	7.6	22.9		38.1
Pagsilaan Farm School, Mati, Davao †		5.1	12.7	5.1											10.2	15.2
Zamboanga, Zamboanga	14.2				10.5					.3				2.3	2	12.4
Cagayan de Sulu, Sulu †	.5				.3		1.3							10.2		17.8
Kidapawan, Cotabato †	27.9			20.3				6.4		28.4			9.1		11.7	7.9
Davao, Davao	47	75.2		17.3		8.9				5.8	8.1	4.1	4.6	20.1	73.4	38.9
Piang Agricultural School, Kudarangan, Dulauan, Cotabato †			4.6	6.1		5.3						12.7	.5	18.5	1.8	16.8
Pikit, Cotabato	11.7			6.4		1.3	2				3		2	15.2	51.8	44.7
Cotabato Seed Station, Pikit, Cotabato †	1.3	3							3					2.5	15.7	52.3
Awang, Cotabato †				7.6				10.2		1.8		6.4	10.7	15.7	22.9	24.1
Sirib, Guianga, Davao †		1.3	11.4	25.9					6.4	2		45.2	23.6	19		43.2
Kabakan, Cotabato †				33						30.5	22.9				17.8	43.2
Bual, Dulauan, Cotabato	8.1									21.3	1.8		35.1	3.8	4.6	73.7
Cotabato, Cotabato	5.1		4.6	.3	.3		7.9	10.4		.3		3	19.6	4.6	27.2	18.8
Mampising, Pantukan, Davao †	1	21.1	4.6			4.3		2.5	18.5		10.2	1	10.2	1	4.3	21.6
Kabasaran, Buldun, Cotabato †	43.2		16.3		25.4		45.7		15.2			81.3	16.3		43.7	55.9
Naganaga, Margosatubig, Zamboanga					5.6			17		49.5		6.6	48	13.2	55.9	35.6
Banisilan, Banisilan, Cotabato †	11.5	1.5				12.7	13.2	25.9	11.4	2.3	.5				8.9	7.9
Malabang, Lanao				50.8				3				36.6	5.3		27.2	40.9
Compostela, Monkayo, Davao †	38.6	25.4	160	8.6				6.6				11.4	18.3		19	65.5
Malangas, Margosatubig, Zamboanga †				6.4			27.2	1.5		14					8.4	44.2
Lumbatan, Lanao †	3	14.2		1.5	2.5	6.9		4.6	3	15.7	5.1	5.1	50.8	7.6	7.4	16.3
Cateel, Davao	2.5							3.6		21.6	18	5.3		3.6	11.9	7.9
Ganasi, Lanao			18.5	52.1	11.9	41.9		8.6		14.5		31.7	28.2		5.1	84.6
Camp Kalao, Monkayo, Davao													6.4	50.8	7.6	43.7
Managok Agricultural School, Linabo, Malaybalay, Bukidnon		11.2	3	21.1	11.7						3			84.6	51.6	43.2
Camp Keithley, Dansalan, Lanao						7.9		11.4	12.2	9.4	1	5.3	67.8	5.1	6.4	3.3
Veruela, Agusan								2.8	3.5	11	5.6	4.3	5.1	9.9	21.1	8.6
Sindangan, Zamboanga †			10.2		1.3			1.8	4.3		1.5		3	36.1	5.1	
Sumilau, Bukidnon				38.9		5.3				16			7.4	19.8	53.9	1.8
Diklom, Tangkulan, Maluko, Bukidnon †										22.9	6.4		6.1	11.7	13.2	6.4
Cagayan, Misamis															8.4	
Talacogon, Agusan	3.8	6.1	2					14	5.1	7.6	3.8	13.8	50.8	40.6	10.2	9.7
Butuan, Agusan		.6	.8					2.1	38.1	.8	24.6	8.4	28.4	5.8	37.1	
Mambajao, Misamis													34.8		34.5	
Dumaguete, Oriental Negros									.3				11.7		1.5	40.4
Kolonie, Yap, Western Carolines					.9	9.7	3.8	25.9	5.5	12	117.2	3.9		.3	5.1	44.4
Hacienda San Jose, Tanjay, Oriental Negros †								3.3		4.6			13.5	3.3	15.7	50.8
Hacienda Palanas, Bais, Oriental Negros †								45.7				3.6	4.6	6.4	41.5	14
Hacienda Tamugon, Bais, Oriental Negros †						6.4				7.6				68.6	86.3	27.9
Tagbilaran, Bohol		.3								8.1		32		14.3		36.6
Iwahig Penal Colony, Puerto Princesa, Palawan												2.8			3.6	34
Dalaguete, Cebu													77.5	3.8	12.2	15.2
Surigao, Surigao	2	4.1						1.8	.8	14.8	8.7	9.9	.5	.8	13.7	.3
Central Palma, Ilog, Occidental Negros													20.3	15.2		20.3
Hacienda Naval, Himamaylan, Occidental Negros													3.6	17.8	23.9	37.3
Biaong Cui's Farm, Barili, Cebu	9.4												8.9	6.4	45.5	2.3
Maasin, Leyte														27.4	45.5	
Binalbagan Estate, Binalbagan, Occidental Negros †													27.7	4.8	1.5	
Isabela, Occidental Negros		1.5	.3										19.3	35.3	.3	.8
Hacienda Tanolo, Hinigaran, Occidental Negros													18.3	5.1	.8	
Cebu, Cebu									.5		.5		1.8	42.1	30.9	2.3
La Castellana, Occidental Negros	1					27.7							26.4	37.1	2	
Hacienda Vallehermoso, Vallehermoso, Oriental Negros †														6.1	5.8	14.5
Central Azucarrera de La Carlota, La Carlota, Occidental Negros	26.7							3.3	6.9	.8		7.9	1.3	8.4	.6	1.1

† Voluntary or coöperative station.

Daily rainfall at the stations of the Weather Bureau, May, 1921—Continued

Station.	Day of month.															Total	
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Lapac Agricultural School, Siasi, Sulu†	8.1	15.2		40.6	5.6				11.2				19.3			206.5	
Glan, Cotabato†	5.6			34.3	.5	2	1.5		.8							60	
Jolo, Sulu	.5	50.8	9.9	18.8	3.3	30		0.3			18	6.6		2.8	16.8	358.1	
Lais, Malita, Davao	4.8		26.9	8.1					21.1	11.7		3.8	5.8	4.3		174.7	
Malita, Davao	1		63.8	11.2	.5			1.3	9.9	17		1.3	1.5			312.7	
Lebak, Cotabato	11.2	4.1		26.1		25.7		11.4	2.5	15.5		104.1	7.1		2.8	308.1	
Lamitan, Isabela, Zamboanga						1				55.1				9.1		117.8	
Basilan Plantation, Kabunbatan, Isabela, Zamboanga†	3	40.7	18.3	80.8	19.6	54.6		.8	21.6	52.6			1.3		17.3	603.3	
Padada, Santa Cruz, Davao†					1											139.7	
Basilan Plantation Office, Isabela, Zamboanga†	1.8	82.5	28.9	59.9	12.2	57.4	9.9	3	24.9	12.7					39.2	576.6	
La Union, Sigaboy, Davao†		3.3		.3	4.1											47.4	
Parangialap, Isabela, Zamboanga†		5.1	83.8		19				38.1	5.1		24.1				308	
Latuan, Isabela, Zamboanga†		9.7		49	8.6	21.3			19.8	41.9					27.4	272.7	
Buluang, Cotabato†				9.7									34.8			150.9	
Malamaui, Isabela, Zamboanga	3	22.1		38.1	10.4	13		.8		34.8					2.3	268.8	
Pagsilaan Farm School, Mati, Davao†	2.5	5.1		2.5			5.1					2.5			5.1	71.1	
Zamboanga, Zamboanga	51.1	1.3		28	3.6	16.5		1	3.8	14			.5			161.5	
Cagayan de Sulu, Sulu†	15.2															45.3	
Kidapauan, Cotabato†	48.8	2.3		27.7		6.1					33	39.4				304.6	
Davao, Davao			3.8			18.5		2.8					7.1		11.9	347.5	
Piang Agricultural School, Kudarangan, Dulauan, Cotabato†	22.9			6.9	9.1			2.5	1.5			10.9				140.4	
Pikit, Cotabato	17.8			4.8	2.5	26.2	1.8	2.5	3			4.1	15.5		2.5	218.8	
Cotabato Seed Station, Pikit, Cotabato†	13.2		2.8		32.3	3.8		4.8		30.5				10.2		226.2	
Awang, Cotabato†		23.9							7.9							127.2	
Sirib, Guianga, Davao†		.5	.8					38.1	24.4							198.6	
Kabakan, Cotabato†				12.7					38.1					81.3		279.5	
Bual, Dulauan, Cotabato	15.5				1.8	1.3	.5	.8	2.5	47				10.7		228.5	
Cotabato, Cotabato	4.1					51.6	.5	2.5	2.8	7.9	.5	31.7	10.7		.5	215.2	
Mampising, Pantukan, Davao†	1.5			12.4		8.1		2.3			3.3	13.2	30	.5		180.8	
Kabasaran, Buldun, Cotabato†	105.4					38.1	17.8	24.4	30.5				12.2		15.2	586.6	
Naganaga, Margosatubig, Zamboanga	5.3			1.3	16	76.2	.5	.8	2.5	42.7		29			14.2	419.9	
Banasilan, Banasilan, Cotabato†	4.3		2.3	38.1	25.4	10.2	2.6	2	1.8	.5	33.7	46.9	26.4	12.7		303.5	
Malabang, Lanao	72.9		10.2	33		11.7	13.2	18		67.6			66.3			456.7	
Compostela, Monkayo, Davao†	37.6			8.9												399.9	
Malangas, Margosatubig, Zamboanga†	6.1			4.3	1.5	5.8				23.1			13.5		7.9	248.5	
Lumbatan, Lanao†	31		5.6	7.1		6.6		17.8	6.6	17.8		7.4	8.1	2.8	3	257.2	
Cateel, Davao	3	5.3	4.1	9.7		8.1	.8	10.9				37.6	12.2	30.7	1	201.4	
Ganasi, Lanao	37.6	2	6.6		8.4	12.7	.5		58.2	7.9			11.4	23.4	13.2	501.3	
Camp Kalao, Monkayo, Davao									.8	5.6		16	48.5		.5	201.5	
Managok Agricultural School, Linabo, Malaybalay, Bukidnon	32.8			2.5	6.6	1		.5		2.3			6.4	8.9	34.3	322	
Camp Keithley, Dansalan, Lanao	18.8	16.8	9.4	3.5	.5	10.2	4.8	55.4	27.9	7.8	.3	2.3	11.2	14.5	4.8	318	
Veruela, Agusan	38.6		2.8	.5	11.7	2.3		2.8	4.3		6.4	19.3	3.6	14.2	1.3	179.7	
Sindangan, Zamboanga†	18.8		16	1.8		27.9	.8	21.9	1.8	3.6		43.7	.3		19.6	219.5	
Sumilau, Bukidnon	32.3	8.4	47.8	10.9	4.1	10.9		49.3	3.8	53.3	19.3	4.3	20.1	3	34.3	456.1	
Diklom, Tangkulan, Maluko, Bukidnon†	5.1	6.4	6.6	4.6	8.1	2		5.6	5.1	10.7	2.5	8.9	5.1	3	4.6	145	
Cagayan, Misamis	4.3	3.8	9.6	2.3	1.3	2.3				2			2.3		9.6	47.9	
Talacogon, Agusan	2			13.2						14.2		2.5	10.4	7.6	8.1	9.4	234.9
Butuan, Agusan	3.3			2.3		8.2	.8	5.4		6.1	.3	7.4	3.6	7.9	66.8	262.4	
Mambajao, Misamis																116.3 <sup>b</sup>	
Dumaguete, Oriental Negros	1.3	.8	9.4	17.8	5.4		11.2	10.9		.8			.8	1.3		113.6	
Kolonie, Yap, Western Carolines	2.5		13.9	13.2	1.5	1.8		4.3	1.5	1.3	40	1.8	8.6	11.4	3.6	334.1	
Hacienda San Jose, Tanjay, Oriental Negros†		10.9	3.8	4.3		8.4										118.6	
Hacienda Palanas, Bais, Oriental Negros†		5.1	7.6	1	20.3	4.3	1		1.3							156.8	
Hacienda Tamugon, Bais, Oriental Negros†		30.5			50.8	40.6	7.6	10.2								336.5	
Tagbilaran, Bohol	15.7		32.8	9.4	4.6	.5				8.6			1.8	2	.3	167	
Iwahig Penal Colony, Puerto Princesa, Palawan	7.4	3		6.6	1.3					10.7	.5			12.4	1.8	84.1	
Dalaguete, Cebu	15.2		.8	6.6	23.3					9.1			7.1		.5	171.3	
Surigao, Surigao	70.6			.5						16.3			46	1.6		192.4	
Central Palma, Ilog, Occidental Negros	19		17.8	10.2		22.9		24.1		10.2						190.5	
Hacienda Naval, Himamaylan, Occidental Negros	41.9		26.9	55.9	5.1			13.5		18			25.7			271.9	
Biaong Cui's Farm, Barili, Cebu	14.2		8.1	7.1					16.3					18		133.9	
Maasin, Leyte	24.4			26.2												153	
Binalbagan Estate, Binalbagan, Occidental Negros†	49.8	1.8	51	44	2.6			2					4.3	.3	.8	190.6	
Isabela, Occidental Negros	17.5	2.3	12.7	53.1	3.1			6.1		5.6	.3		4.6		23.7	191.5	
Hacienda Tanolo, Hinigaran, Occidental Negros	45	1.1	25.4	30.5	1.3					1.5			27.4		.8	157.2	
Cebu, Cebu	66.3	.8		73.9						1.3			4.5		10.6	235.5	
La Castellana, Occidental Negros	3.8	3.5	4.1			1.5	31.5	1.3					9.1		2.3	185.1	
Hacienda Vallehermoso, Vallehermoso, Oriental Negros†	26.7			15.2						16.5	15		10.2	1.8		162.6	
Central Azucarera de La Carlota, La Carlota, Occidental Negros	35.8	2.3	22.4	45.2	.3	2	3	9.4	3	.3		2	.3		31.2	214.2	

† Voluntary or coöperative station. \* Amount of rainfall for the 25th and 26th. <sup>b</sup> Amount of rainfall from the 16th to 30th.

## Daily rainfall at the stations of the Weather Bureau, May, 1921—Continued

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Hacienda Canlaon, La Castellana, Occidental Negros		3.3		4.6			0.8	19	9.1	14.7	19	12.2	1.3	33	3.8	49.8
La Carlota Experimental Station, La Carlota, Occidental Negros †					1		22.1		6.9		1		33.3	8.1	.8	
Mao Sugar Central, Santa Cecilia, Bago, Occidental Negros	7.1								.8	2	7.1	2.3	1.3	16.6	12.7	1.3
Valladolid, Occidental Negros											36.3			1.3	2	4.6
Central San Carlos, San Carlos, Occidental Negros †												3.8	1.3	11.4	50.3	3.6
Hacienda Refugio, San Carlos, Occidental Negros †												11.2			40.6	14.7
San Joaquin, Iloilo	5.3											.8		2.8	36.8	26.4
Murcia, Occidental Negros								4.5				16		32.3	7.6	7.6
Bacolod, Occidental Negros								19.8		6.9		.5	.8	6.6	1.6	1.5
Oton, Iloilo								32.3						10.4	19.8	7.3
Iloilo, Iloilo								33.3	3				1.5		9.5	5.3
Lapuslapus, Iloilo, Iloilo †								27.9					1.3		3	8.9
San Jose de Buenavista, Antique								.8	.8	1.8		2.8	10.2	2.3	6.9	2.3
Tuburan, Cebu													3.6	28.7	.5	29.7
Leon, Iloilo											1		7.9		23.6	26.4
Silay, Occidental Negros														.3	1.8	
Hawaiian Philippine Co., Malibug, Silay, Occidental Negros †																
Cuyo, Palawan			0.5						5.1		.8		7.4		16	.3
Lucena, Santa Barbara, Iloilo †									23.6				78.5	.3	54.4	7.9
Barotac Nuevo, Iloilo										1.8				1.5	3.6	1.5
Central Victorias, Victorias, Occidental Negros †											3.3				32.5	.5
Hacienda Ilaya, Victorias, Occidental Negros									3			12.2				24.3
Hacienda Bilbao, Manapla, Occidental Negros														1.3	10.9	
Janiuay, Iloilo									2.5				6.9	16.5	32.8	30.8
Cadiz, Occidental Negros														2	12.2	1.5
Dingle, Iloilo															6.1	2.8
Ormoc, Leyte	1								3.3			.5	.8	2.3	2	1
Guiuan, Samar	1.3								17.3	4.5	5.6	6.1	23.1	5.6	4.3	17.2
Bugasong, Antique						1.3				.5			1		4.8	3
Bogo, Cebu															16.5	53.8
Dueñas, Iloilo †									11.4						37.3	2
Bitaoagan, Passi, Iloilo †									12.4					4.3	10.7	2
Tacloban, Leyte	.5								7.4					4.1	8.8	21.1
Dumarao, Capiz †					1.3			2.5						14.2	4.1	8.8
Dao, Capiz †										3.8				1.3	1.3	25.4
Hacienda Amparo, Pontevedra, Capiz	*	*											8.9		2.5	7.9
Capiz, Capiz		8.9											8.6		1.5	23.9
Borongan, Samar	1							1.8	32	16	5.8	7.9	4.3	13.7	1.5	27.6
Catbalogan, Samar	44.2	3.8						1.3	11		1.5		9.6	5.6	8.4	1.8
Calbayog, Samar	.3	.5						.5	16.1		24.1	16.3	3	11.9	3.3	11.7
San Jose Estate, Robles Camp D-17, San Jose, Mindoro †		2														2.3
San Jose Estate, Tamaraw Plantation, San Jose, Mindoro †		4.6		2.3	27.1											11.7
San Jose Estate, San Agustin, San Jose, Mindoro †											4.3					3
San Jose Estate, San Jose, Mindoro †																12.4
Masbate, Masbate																12.7
San Jose Estate, Tunnel D-12, San Jose, Mindoro †												1.5				35.6
Romblon, Romblon															10.2	3.8
Batag Lighthouse, Laoang, Samar		5.8										1.8			5.6	
Irosin, Sorsogon										15.2	5.3	.8	1	5.1	11.2	2
Sorsogon, Sorsogon												1	2.5	8.9	5.1	
Bacon, Sorsogon										4.1	15.2	15.1	2.1	17.8	36	8.6
Jovellar, Albay								.5		7.4	18.5	30	2.3	19.8	10.7	2
Legaspi, Albay, Albay									28.7			.3		9.4		2.6
Guinobatan, Albay										.3	.8	5.8	10.5	29	2.5	19.3
Polangui, Albay										.8	1.8	.5		5.4	.8	3.3
Bacacay, Albay												1.5				.5
Tabaco, Albay										6.9	.8		21.1	22.6	63.1	
Sumay (Guam), Agaña, Ladrone Islands										1.8			5.6	6.1	36.8	1.3
Iriga, Camarines Sur									1.5	2.6						
Calapan, Mindoro									3				2.1	.3		1.3
Tiwi, Albay									4.8	39.7	.3		22.6	2		10.2
Pasacao, Camarines Sur										10.2				13.5		12.2
Virac, Albay										9.9			24.4	3.8	14.7	
Naga, Camarines Sur										5.6	.8	.3	.8	4.6	11.7	.8
Tigaon, Camarines Sur										9.4			20.6	2.8	.3	11.4
Libmanan, Camarines Sur										14.7						9.4
Batangas, Batangas														1.5	5.1	.8
Ragay, Camarines Sur															1.5	12.4
Calatagan, Batangas															2	
Balayan, Batangas																5.6

† Voluntary or cooperative station.

\* No observation.



Daily rainfall at the stations of the Weather Bureau, May, 1921—Continued

Station.	Day of month.														Total.		
	17	18	19	20	21	22	23	24	25	26	27	28	29	30		31	
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	
Hacienda Canlaon, La Castellana, Occidental Negros			3.8		21.6				8.9			25.4			1.8	232.1	
La Carlota Experimental Station, La Carlota, Occidental Negros †	17.6	28.2	34.1	18		12.2	3.8	8.6				2.3		43.2		241.2	
Maao Sugar Central, Santa Cecilia, Bago, Occidental Negros	16.5	1	43.7	58.4		6.1	1.3	52.3	4.6		1.5	7.9	10.9		61	316.4	
Valladolid, Occidental Negros	35.8	1.3	11.7	29.7			4.1					20.1		.8	19	166.7	
Central San Carlos, San Carlos, Occidental Negros †	39.1		12.2		3									3.3	17.5	145.5	
Hacienda Refugio, San Carlos, Occidental Negros †	20.3		13.5		14.2	19.8								62.7		197	
San Joaquin, Iloilo	5.6	.3	34.3	19	.5	1.8	3.5	8.4		1.8				9.4	45	201.7	
Murcia, Occidental Negros	31.7	24.1	2.6	11.9	15.2	2	1	12.4				5.1				174	
Bacolod, Occidental Negros	20.3	7.6	8.6	13.7	3.3	.5		1.6		32				2.3	2.5	130.1	
Oton, Iloilo	30.5	2	3	19			9.7	31.5		4.8	2					2.5	174.8
Iloilo, Iloilo	23.7	14	13.1	19.2				18.3		1						1.5	140.7
Lapuslapus, Iloilo, Iloilo †	20.3	12.8	24.2	25.4					16.5	3					19	7.6	169.9
San Jose de Buenavista, Antique	57.4	3	16.5	6.1				1		9.4	9.1	5.6	10.7	11.4	17.5	175.6	
Tuburan, Cebu	18.1		.5	33.3		2.6		1.3					14.5		.8	133.6	
Leon, Iloilo	1		9.4				8.6		5.8			2.8				86.5	
Silay, Occidental Negros	4.1	1.3	2.1	10.4											1.3	21.3	
Hawaiian Philippine Co., Malibug, Silay, Occidental Negros †	2.8	4.3	2.8	17			.8		.3						26.2	83.8	
Cuyo, Palawan	.5	23.6	20.8	8.4	2		.8	2.3	4.1	6.4	1		3.3		5.6	244	
Lucena, Santa Barbara, Iloilo †	10.7	3		16				2		9.9					.8	49	
Barotac Nuevo, Iloilo	18.8	3.3	1.8	53.3		2.5		1	25.4						1.8	1	134.2
Central Victorias, Victorias, Occidental Negros †	49.5	9.2	.3	13	3.6			6.4								.3	136.2
Hacienda Ilaya, Victorias, Occidental Negros	32.3	12.2		20.3	6.1												110.4
Hacienda Bilbao, Manapla, Occidental Negros	53.3	2.5									2.5	8.7	1.8				81
Januay, Iloilo	22.9		4	10.2	9.1			8.6		7.6						.8	166.7
Cadiz, Occidental Negros	55.4			34.5									26.2				118.1
Dingle, Iloilo	14.4	2.8		21.1		5.1	2.5		6.4	58.4	1.3			4.8	3.1	186.7	
Ormoc, Leyte	12.7			24.1					1				3.3	1.3	2.5	63.7	
Guluan, Samar	3.8		6.6	26.2		8.4	3.8	1	3	12.2		12.2	.5	7.9		176.7	
Bugasong, Antique	.3	5.1	.5	.3	3.6								.3			21	
Bogo, Cebu	9.4		2.5	2	10.4								6.9		3.6	119.3	
Duenas, Iloilo †	6.3	3.6	4.9	34		3	1.3	5.1		3.6		19.6	38.4	.3	27.4	229.2	
Bitagan, Passi, Iloilo †	2.5	12.7		58.4				16.3			4.6				32	171.9	
Tacloban, Leyte	15.2		8.1	28.5		.8		.8				16.3	2.5			144.9	
Dumarao, Capiz †	16.2	1.3	26.6	48.8		7.6		1.3	1.3				1.3	3.8	1.3	200.9	
Dao, Capiz †	20.9	8.4	41.9	50.3		36.8		7.1	2.8		7.8		49.5	9.9		254.7	
Hacienda Amparo, Pontevedra, Capiz	12.7	16.8	49.5	133.6		8.2		5.6		9.4				5.1	1.3	*316.6	
Capiz, Capiz	5.5	19	25.4	9.9	3	5.1	10.7	4.8	2	27.4	21.3	1.5	.3	1		175.4	
Borongon, Samar	7.2		.8	15.2				1.3	5.6				1.3	5.3		129.9	
Calbalogan, Samar	3.6		26.4	42.4						11.9	.3			8	3.3	180.2	
Calbayog, Samar	.3	5.1		3.3				3.3	3.8	2				1.8		107.3	
San Jose Estate, Robles Camp D-17, San Jose, Mindoro †	19.8	18.8	1.3												1.5	97.3	
San Jose Estate, Tamaraw Plantation, San Jose, Mindoro †	38.1	10.6	27.7			.5		.3		1.5					27.4	154.8	
San Jose Estate, San Agustin, San Jose, Mindoro †	51.3	22.8	38.1												31.5	160.4	
San Jose Estate, San Jose, Mindoro †	51.9	41.6	22.6			.5		4.8							9.9	179.6	
Masbate, Masbate	17.7	.3	5.6			9.9										74.6	
San Jose Estate, Tunnel D-12, San Jose, Mindoro †	41.9	2.3	57.4	7.4			6.1	3.8		5.1		1.8				141.8	
Romblon, Romblon	15.7	9.5	2.1	23.4			.5	.1			.4			2.3	2.3	63.7	
Batag Lighthouse, Laoang, Samar		1.8	11.9	8.6													68.7
Irosin, Sorsogon	11.9			6.4						7.9			2.5	2.3	6.6	55.1	
Sorsogon, Sorsogon			2.5	3.3						6.1				11.2		138	
Bacon, Sorsogon	1.5			5.6						5					3.8	103.9	
Jovellar, Albay	3.3	1	14.7	7.4				1.3		3.8			4.3	.3		77.1	
Legaspi, Albay, Albay	29		2.8	4.4						3						107.4	
Guinobatan, Albay	6.9		3.8	18.1						.3						42.7	
Polangui, Albay	6.1				5.1										17.8	31	
Bacacay, Albay																	104.5
Tabaco, Albay			6.1	12.7		19.6									9.7	119.3	
Sumay (Guam), Agaña, Ladrone Islands	1.8	1.8				14.5	1.3			.5	7.1	10.7	4.1			20.3	66.2
Iriga, Camarines Sur	4.6			7.6						2	11.2		1	19.8		73.8	
Calapan, Mindoro		1.3	2.3	3.3		1.8			5.1								142.4
Tiwi, Albay			2.5	3.8		12.7											54.9
Pasacao, Camarines Sur	5.8		3	1.8													97.4
Virac, Albay	5.9			18												2	71
Naga, Camarines Sur	.5		.3					2								.8	76.1
Tigaon, Camarines Sur	15.2		5.3	28.7		1					1.3	12.7			7.4		97.3
Libmanan, Camarines Sur	2.3			.8						15							44.4
Batangas, Batangas	1.5		1.8	30.2					2	.5						15.7	69.3
Ragay, Camarines Sur	16.3		9.9	4.6													41.1
Calatagan, Batangas		11.4	2.8		.3	.3											14.8
Balayan, Batangas			21.1	9.1													30.2

† Voluntary or coöperative station.

\* 29 days of observation.

## Daily rainfall at the stations of the Weather Bureau, May, 1921—Continued

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lipa, Batangas	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Lucena, Tayabas			3.6													
Atimonan, Tayabas								2.8								
Lian, Batangas																
Nasugbu, Batangas																
Ambulong, Tanauan, Batangas																
Daet, Camarines Norte	0.5						1				1.3		3	26.2	9.6	
Mendez Nuñez, Cavite			17	3.8	2.3	10.2								7.6	6.1	
Alfonso, Cavite			18.5	35.1	4.1	8.9	3	2.8							16.5	
Indang, Cavite				25.4	30.7	14.7	.8							1	9.1	
Canluban, Calamba, Laguna															.3	
Silang, Cavite					69.1	7.4	1.3									
Maragondon, Cavite							16.5							.8	1	
Paracale, Camarines Norte											3					
Santa Cruz, Laguna						10.4	48.7					1				7.9
Buenavista, General Trias, Cavite				5.3		14										15
Fort Mills, Corregidor, Cavite†						34	1.5	10.2								
Imus, Cavite																
Alabang Stock Farm, Alabang, Muntinglupa, Rizal†																
Cavite Naval Station, Cavite, Cavite <sup>a</sup>																
Manila, Manila						31										
Antipolo, Rizal				11.2			28.4							1.5	3	
Balanga, Bataan				2									9.9	.3		
Montalban, Rizal†					1.5									.8	42.4	
Hacienda Pintong Sapang, San Jose del Monte, Bulacan†				.8										.8	32.5	
Mabayuan Dam, Olongapo, Zambales†																
Malolos, Bulacan							13				.8			2		
Pampanga Sugar Mills, Del Carmen, Pampanga†								26.2						19.8	.3	5.6
San Fernando, Pampanga				6.6	.5	3.8			10.9	0.3				12.7	19.8	.5
Mitla, Porac, Pampanga†														10.7		
San Isidro, Nueva Ecija																
Iba, Zambales			14.7	13	45.5	12.9	14.2									
Concepcion, Tarlac		3.3		.8	1.5		3.8	52.1	.8					4.3	.8	
O'Donnell, Capas, Tarlac				4.1		20.3		8.6	5.1	3.8				1.3	6.6	
Hacienda Luisita, Comillas, La Paz, Tarlac†				5.1	.3									20.1		
Hacienda Luisita, San Miguel, Tarlac, Tarlac†			2	8.4	.5		7.4	.8						36.6	24.1	
Tarlac, Tarlac			1	18.8			9.1							56.6	3.6	
Paniqui, Tarlac†				25.4	33									15.2		20.8
Camiling, Tarlac				21.6	39.4		10.2		17.8							2
Muñoz Agricultural School, Muñoz, Nueva Ecija†		8.9	70.1	19	61	19	3.8	.3	1	1.5	5.1					
Baler, Tayabas		3	5.6						49	1.3				.1	1.3	.5
Dagupan, Pangasinan					24.6					1.3				11.7		3.8
Rosario, La Union					2.8		1.5			5.3	19.8					
Tubao, La Union					4.1					13.2						
Aringay, La Union										57.2	.8					
Baguio, Mountain Province					3	.3	57.2	.8		6.6	2.6	7.4	1.3	.5	10.2	19.8
Naguilian, La Union								.8		9.7	14.2					
Kapangan, Mountain Province							35.6	36.1	18	12.9	14.2	7.6	3		31.5	2.5
San Fernando, La Union									2.5	3.8						
Echagüe, Isabela		.1					16.5							13.2		
Balaoan, La Union										2						
Tagudin, Mountain Province								6.6								
Sagada, Mountain Province†		.8	.8			3.6	22.4	21.8	3.8	31.2	.8	27.2	27.7		5.1	
Bontoc, Mountain Province†		5.3	2.5	10.4	35.6	13.5	27.4	1		16.5	.5	4.3	9.9	4.8	8.1	4.8
Candon, Ilocos Sur								1.5	1.8							
Vigan, Ilocos Sur																
Tuguegarao, Cagayan						8.4						17.8				
Tayum, Abra†								6.4	1			28.4				
Sinait, Ilocos Sur																
Laoag, Ilocos Norte																
Pasuquin, Ilocos Norte																
Aparri, Cagayan						2.5			1.5							
Cape Bojeador, Burgos, Ilocos Norte		1.3														
Basco, Batanes																

† Voluntary or coöperative station.

<sup>a</sup> Rain in 24 hours beginning 8 a. m.

Daily rainfall at the stations of the Weather Bureau, May, 1921—Continued

Station.	Day of month.															Total.	
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	
Lipa, Batangas	2.5		0.8	41.9	0.5	38.6						38.1	7.4	5.4		138.8	
Lucena, Tayabas	10.2		12.7										9.4			32.3	
Atimonan, Tayabas	4.1		36.6	1.8	3.3											48.6	
Lian, Batangas	10.9	20.8		18.5					26.7		5.8					82.7	
Nasugbu, Batangas	4.1		16.5	13					20.8		8.9					63.3	
Ambulong, Tanauan, Batangas	.8			7.9				6.4	14.2							41.9	
Daet, Camarines Norte			2.5	1							1.5					34	
Mendez Nuñez, Cavite	3.8				9.4			37.1	4.3					30.5		132.1	
Alfonso, Cavite	5.1		4.3		8.4		10.4	2	10.2			11.2		33		173.5	
Indang, Cavite		2.5			6.9					1.3	4.4	1.8		18		116.6	
Canluban, Calamba, Laguna			2.5	2.5			26.7	37.8			39.1			18.5	5.8	133.2	
Silang, Cavite				17		3	27.9		11.4	3.8	5.3	2				148.2	
Maragondon, Cavite			3.3		1.3	16.8										39.7	
Paracale, Camarines Norte				3	3.8	17.8	5								13.7	46.3	
Santa Cruz, Laguna			6.9	4.6		3.3		2.5			.5					85.8	
Buenavista, General Trias, Cavite						22.9	11.4					16.5				85.1	
Fort Mills, Corregidor, Cavite †	5.1		7.4	2.5	32.3	1										94	
Imus, Cavite	14		1.3	22.9	27.7	4.1	2.3					8.6				80.9	
Alabang Stock Farm, Alabang, Muntinglupa, Rizal †				23.9	13											36.9	
Cavite Naval Station, Cavite, Cavite <sup>a</sup>	4.3	.8		3.5	23.6	.3	9.1			2.5	35.8					79.9	
Manila, Manila			3.4	10.3	2.7		8.9	1.5	2		1.8					59.8	
Antipolo, Rizal	.5	1.8	9.2	1.5	8.1	1	30.5	7.6		18.8	1.3					124.4	
Balanga, Bataan	4.1	14.7	1	.3	7.1							2.8				42.2	
Montalban, Rizal †		1.5	9.4	3.8	44.7	.5	14.7							2.3		121.6	
Hacienda Pintong Sapang, San Jose del Monte, Bulacan †		1	20.6	2	6.4		2.3				.5					66.9	
Mabayuan Dam, Olongapo, Zambales †																0 ?	
Malolos, Bulacan		3.6	42.9	.8	14.7	.3					.3	31.5				109.9	
Pampanga Sugar Mills, Del Carmen, Pampanga †	5.1	6.4	.3		2.8				11.4			1.5				79.4	
San Fernando, Pampanga	12.2	2.8		1.3	.3				5		.5	29				101.7	
Mitla, Porac, Pampanga †										24.4						35.1	
San Isidro, Nueva Ecija	.5		.3		1.3			35		14	.8			1		153.2	
Iba, Zambales	14.7	31.2	69.3	47.7	33.3	3	4.3								.5	205.5	
Concepcion, Tarlac	15.2			2.3					1	.5		2	3.8			90.7	
O'Donnell, Capas, Tarlac	.5		9.7	2.8				2.8	6.4			4.6		.8		77.4	
Hacienda Luisita, Comillas, La Paz, Tarlac †													25.4			50.9	
Hacienda Luisita, San Miguel, Tarlac, Tarlac †	7.9	.5	.3	10.7	5.3				.8	3	.5	3.6		9.1	2.8	124.3	
Tarlac, Tarlac	3.8			19.8	3					38.4	15.7				17	186.8	
Paniqui, Tarlac †				35.6							20.3			2.5		152.8	
Camiling, Tarlac			3.8		1		21.6		70.4					20.3		208.1	
Muñoz Agricultural School, Muñoz, Nueva Ecija †																189.7	
Baler, Tayabas	1	5	19	6.4	5			.4								88.6	
Dagupan, Pangasinan	12.5	11.2	1.8	16.5	17.5	4.1	3.3		7.1				25.9	.8		142.1	
Rosario, La Union	.5	63.8		4.8	14.2		3			4.1	6.9				23.6	146.3	
Tubao, La Union	23.6	52.1		15	17.8					8.4	1.3				3	143.8	
Aringay, La Union	25.1	7.6	.3	14.7	3.8					2.5					2.5	114.5	
Baguio, Mountain Province	19	22.4		3.9	8.7	14.2	113	30.8	1.8	20.4	9.4	4.3	5.9	78.5	55.1	497.1	
Naguilian, La Union	.8	53.1	1.5	9.4	34					4.1	.5				.5	128.6	
Kapangan, Mountain Province	18.3	3	1.8	1.8		7.9	7.9	10.2	12.7	51.8	23.4	1	38.1	69.1	78	486.4	
San Fernando, La Union	13.5	6.9	5.1	24.6	51.3	1	.8					8.6	3		6.4	124.8	
Echague, Isabela		2.5	.5			6.6		12.2		1.3	9.1		7.6	39.9	2	111.5	
Balaoan, La Union	.8		102.6	2.3	4.1	39.6	17	13.2			1.3	19				201.9	
T'agudin, Mountain Province	2.5	49.5	25.4	3.7	55.9	7.4	10.2					.8			38.9	200.9	
Sagada, Mountain Province †	10.9	15.2	39.4	7.4	1.8	1.8	7.6	1.3	35.3	4.3	2	43.9	24.9	13.2	2.5	356.7	
Bontoc, Mountain Province †	5.3	5.1	12.4	27.9			9.4		22.3	8.6	12.7	5.6	9.7		8.1	263.6	
Candon, Ilocos Sur	19.8	182.6	24.6	1	19.8	20.6	2.5						2		24.1	308.4	
Vigan, Ilocos Sur	7.6	87.3	38.1	.8	25.1	97.2	2.5								36.3	294.9	
Tuguegarao, Cagayan		7.6	30.5	2.5	5.1			4.4	33.8	6.9	1	6.6	1.3	18	*	144.2	
Tayum, Abra †	11.7	61	28.7		76.2	40.9				*	*	*	*	*	*	b254.3	
Sinait, Ilocos Sur	1.5	50.8	60.2	12.2	3	23.1	15.7			2.5						9.7	178.7
Laoag, Ilocos Norte	42.7	35	7.6	7.6	14.2	16.5	6.6								8.9	2	141.1
Pasquin, Ilocos Norte		13.7	30.8	5.1	55.4	30.3	3.3				1.8				9.7	7.6	157.7
Aparri, Cagayan	.5	75.1	43.4	10.2	10.2	10.1	16	3					10.7			184.5	
Cape Bojeador, Burgos, Ilocos Norte		26.7	3.8	5.1	13.2	38.1	6.3				6.9		.8			14.5	114.6
Basco, Batanes			17.8	19	12.4	1.3	46	16.5			21.1		4.8		5.3	145	

† Voluntary or cooperative station. \* No observation. <sup>a</sup> Rain in 24 hours beginning 8 a. m. <sup>b</sup> 25 days of observation.

MAXIMUM AND MINIMUM TEMPERATURES AT THE STATIONS OF THE WEATHER BUREAU, MAY, 1921

Day.	Jolo.		Lais, Malita.		Malita.		Lebak, Cotabato.		Lamitan, Isabela, Zamboanga.		Malamaui, Isabela, Zamboanga.		Zamboanga.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum. <sup>a</sup>	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	28.8	22.6	31.5	21.8	32.1	22.2	32.3	24.4	30.4	22.1	30.8	22.8	30	23.2
2	30.1	23.7	31.3	22.2	31.3	22.6	32.1	24.3	32.5	20.6	31.8	24.2	29.4	22.9
3	30.5	22.5	29	22	29	21.8	32	24.7	32.6	20.5	30	24.3	30.7	22.8
4	30.2	22.8	30	21.5	32.4	22	33.6	24.6	33.5	19.8	31.4	23.5	29.2	23.5
5	28.8	22.7	31.4	21.4	32.7	22.2	33.9	25.7	32.6	20.4	31.4	23.4	29.9	23.5
6	28.7	23.7	31.1	21.5	32.2	22	34.5	25.4	32.4	20.6	30.3	23.3	31	23.4
7	30.5	23.2	32	21.2	33.4	21.9	32.5	24.8	33.8	20.5	30.4	24.2	29	24
8	30.3	23.2	31.9	22.2	32.1	22.2	34.1	23.4	32.5	19.5	30.4	24.9	29.7	22.9
9	31	23.3	31	22.4	32.1	22.7	31.1	24.6	33.1	20.2	31.5	23.9	29.7	23.6
10	29.6	24.2	32	22.6	32.2	23.4	33.9	25.2	32.4	20.1	31	24.1	29.6	23.8
11	30.4	23.3	33	22.1	33.6	22.7	31.9	24.7	32.6	20.4	30.5	24	29.7	24.5
12	29.8	23.9	30.7	22.9	31.6	22	30.5	24.8	32.5	20.1	31.1	23.9	28.5	24
13	29	23	31	22.1	31.5	22.2	31.2	24.7	32.1	20.3	31.3	23.3	29.7	23.4
14	30	23.9	30.5	21.8	31.5	22.5	30.7	24.7	32.2	20.5	29.9	23.3	30.6	24.7
15	30	23.7	31.2	22.2	31.3	22.8	31.8	23.5	30.7	22.4	31.3	23.8	29.3	24.2
16	29.7	23.7	29.7	23	29	22.7	27.8	24.1	31.4	21.6	28.7	22.6	29.4	23
17	29.3	23.7	29.5	22.7	29.8	22.7	31.3	24	32.5	19.2	26.8	23.5	26.9	23.2
18	29.5	24	31.5	22.1	31.9	22.4	32.1	23.8	32.3	20.5	29.8	23.5	29.5	23
19	29.6	22.7	28.5	20.8	29.1	21.3	31.1	23.4	33.5	20.3	30.4	23.3	28.7	23.3
20	29.2	23.8	27.2	21.2	27.3	22	30.4	24.5	32.1	20.1	29.8	23.7	29	22.8
21	28.9	23.2	30.5	22.5	31.5	22.3	30.2	24.2	32.4	20.6	29.5	22.1	29	22.5
22	29.1	22.7	31	20.5	32.5	21.9	32.3	23.4	31.6	19.8	30	23	27.7	23.2
23	30.3	22.8	31.5	21.3	32.4	21.8	30.5	22.8	33.7	20.4	30.2	22.2	28.6	22.2
24	30	22.8	31.4	21	32.6	21.9	30.8	22.7	32.5	20.2	28.1	23.7	28	23.8
25	31.1	22.4	32	22.6	33.1	22.8	31.5	23.4	34.2	21.2	31	23.3	29.1	22.9
26	30.6	23.6	30.7	23	30.2	22.3	29	25.2	32.5	20.1	31.4	20.7	28.3	22.5
27	30.1	23.6	31.6	20	32.6	21.6	32.5	23.8	31.6	22.3	29.8	23.3	30.1	23.3
28	30.5	22.5	31.5	22	33	22.6	33.4	24.7	32.6	20.4	30.5	23.5	29	22.7
29	29.6	22.8	31.4	23	30.3	23.4	32.1	22.8	33.5	21.4	30.4	24.5	28.4	23.8
30	29.5	22.9	30.5	22.5	31.1	22.1	31.3	22.7	32.5	20.7	29.8	24.1	29.6	23.8
31	30.6	23.1	28.5	22	29.7	22.8	31.1	25	32.1	20.5	31.4	23.7	29.2	23.1
Mean	29.8	23.2	30.8	21.9	31.5	22.3	31.7	24.2	32.5	20.6	30.3	23.5	29.2	23.3

Day.	Davao.		Pikit.		Bual, Dulauan.		Cotabato.		Naganaga, Margosatubig.		Malabang.		Cateel.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum. <sup>b</sup>	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	32.1	23.3	33.4	22.2	33.6	22	31.8	22.4	34	22	30.8	21.8	30.6	21.2
2	31.7	22	34.7	23.4	32.9	22	31.7	23	33.5	22.2	30.4	22.4	31	22.1
3	30.5	22.5	34	24	32.9	22.9	32.5	23.6	34	22.5	31.4	22.6	30.7	22
4	31.2	22.8	34.5	23.3	33.4	22.4	32	23	34.2	22.3	31.5	21.4	30.5	21.7
5	31.7	23	33.6	23.4	32.9	22.1	32	23	34.5	22.2	31.8	22.6	30.5	21.6
6	32.1	22	34.5	23.4	34	22.2	32.5	22.8	33.7	23.3	31.6	22.4	30.4	21.5
7	32.6	23	34.6	23.1	34.4	22.4	33.7	23.4	33.5	23	32.2	21.5	30.8	21.9
8	32.6	22.3	34.5	22.1	34.2	21	32.5	22.1	33.6	22.7	31.4	21.6	31.3	21.5
9	32.7	23.1	34	24	33.6	22.9	33.3	23.5	34	22.2	30.8	22.8	30.5	23
10	32.2	22.2	34.8	23.4	34	23.5	33.5	24.5	35.5	22.7	31.8	22.2	31.6	22.9
11	32.2	23	34.7	23	33.6	21.5	33	23.6	34.5	22.5	32.4	22.3	31.6	23.5
12	32.2	23.9	33.6	23.3	33.3	23.1	33	24	33.7	22.3	31.8	21.6	30.2	22.7
13	32	23.9	35.4	24.2	33.4	23.4	32.5	23.8	34.5	22.5	32	23.2	30.1	22.7
14	31.2	23.9	34.9	24.1	32.4	22.8	32.4	24	34.2	23.5	31.6	22.3	31.3	23.1
15	31.2	23.3	33.5	23.4	31.9	23	32	23.5	34	23	31.8	22.6	30.2	23.3
16	29.7	23.2	32	23.1	30.6	22.7	30.9	23.2	33.5	22.2	31.6	21.8	30	23
17	30	23.3	32.2	23.2	31	22.5	31.5	23	30.7	21.5	31.8	22.4	30.1	22.5
18	32.5	23.5	33	23.4	31.6	22.8	31	23.8	33.5	23	31.4	19.8	30	22.7
19	28.9	22	30.6	23.4	31	22.9	31.6	23	33.7	22.2	30.8	21.6	27.9	22.9
20	28.9	21.6	30.5	23.1	30	22.1	30.5	22.6	33.5	22.2		21.5	31.5	22.9
21	31.2	22.8	33.5	23.4	32.7	22.1	31.6	23.3	33.3	22.5	31	22.4	29.7	22.2
22	31.7	22.5	34.1	23.4	32.6	22.4	32.4	23.2	34.5	22.3	30.5	21.4	30.8	22
23	31.2	22.5	33.3	23.1	32.5	22.5	32.4	23.5	33.7	22.7	31.8	22.4	30.9	22.7
24	32.6	22.9	33.9	24.2	32.7	23.2	31.2	24.1	33.5	22.2	30.4	22.4	30.7	21.6
25	32.7	23.5	34.3	23.1	32.5	22.2	32.4	23.8	34.2	22.3	30.8	22.5	31	22.6
26	32.2	22.9	34.2	24.1	33.8	22.5	31.5	24.3	33.5	22.2	31.4	21.8	30.7	22.5
27	32.2	22.9	33.8	24	33.5	22.6	32.8	23.4	34.2	22.3	31.4	22.5	31.1	21.9
28	32.9	22.9	34.9	23.2	34.2	21.5 <sup>a</sup>	32.4	24	33.7	22.5	31.4	22.5	31.5	22.3
29	32.2	23.2	33.6	24	34.2	22.6	30.5	23.8	33.5	22.2	30.6	22.8	30.4	23.4
30	31.3	22.5	32.2	22.2	33.4	21.8	30	23.1	33.7	22.5	30.6	22.6	30	22.6
31	29.7	22.9	33.6	23	33.2	21.8	31.9	23.5	33.5	23	31.5	22.4	31.7	21.7
Mean	31.5	22.9	33.7	23.4	32.9	22.4	32	23.4	33.8	22.5	31.3	22.1	30.6	22.4

<sup>a</sup> These minimum temperatures seem to be not very reliable, the differences between 6 a. m. temperatures and minimum temperatures being both too small and too uniform.  
<sup>b</sup> These maximum temperatures seem to be somewhat too low.

Maximum and minimum temperatures at the stations of the Weather Bureau, May, 1921—Continued

Day.	Ganasi.		Camp Kalao, Monkayo.		Camp Keithley, Dansalan.		Veruela.		Sumilau.		Cagayan.		Talacogon.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	30	18.6	33.6	21	28.7	17.6	33.2	22.3	30.4	17.7	32	22.5	33.2	21.2
2	29.5	18.6	31.4	20.1	29	17.7	33.3	22.8	30.1	18	32.8	23.1	32.2	23.2
3	29.3	19	33.5	20.5	28.8	17.4	33.5	22.5	30	18.1	33	22.5	32.5	21.5
4	29.5	19.5	33.6	22.5	29.1	17.7	33.5	23.8	30	17.5	33.2	21.8	33.5	22.2
5	30.2	18	33.4	21.5	29.4	17.6	34	22.2	30.2	17.1	32.7	21.5	33.2	21.2
6	30.1	19	30.1	19.1	29.3	18	34	23.8	29.8	18	33.5	22	33.8	21
7	30	17	31.6	19	28.8	18.6	32.8	22.3	30	17.1	33	22.1	31.4	20
8	30.1	17.2	32	20.9	29.4	18.1	31.6	21.2	31.2	16.4	32.8	21.8	32.3	20
9	30.3	17.8	33	21	27.8	19	31.8	22.7	30.7	20.5	33.5	23.3	32.2	22.3
10	29.5	18.5	33.5	21	28.4	17.9	29	23.5	29.6	21.2	33.1	22.5	32.5	22.5
11	30.5	17.5	33.2	21.2	28.5	17.5	31.8	23.4	31	21	33.3	21.8	32	23
12	30.3	19	33	21.2	28.4	19.5	31.6	23.5	30.4	18.6	33.3	22.8	33.5	23
13	29.5	19.5	33.6	21.2	29.1	19.5	33.5	23.2	30.1	18.2	33.7	22.6	33.3	23.3
14	29.9	19.4	33.6	22.2	28.3	19.5	32.9	23.5	29.3	19.3	33.3	23	33.5	23
15	29.2	19	31.9	22.5	29.3	19	33.2	23.5	29.4	18.8	32.8	22.3	31.6	23.1
16	29.3	19	32.9	20.4	27.4	20	31.6	22.2	28	19	30.7	22.8	32.7	21.4
17	29	19.5	31.9	22	26.8	19.8	31.4	22.8	28	19.8	32.2	23	31.8	22.3
18	28.2	19.6	32.4	21.9	26.4	19.1	31.8	23	30.2	19.6	31.2	22.8	31	
19	28.3	19.3	30.1	22.5	27.4	19.4	33	23.2	29	18.7	30.7	22.9	32.4	
20	28.8		31.5	21.3	25.8	18.7	33	21.6	29	18.5	30.4	22.2	32.7	21.4
21	29.2	19.6	32.8	22.2	26.8	19.4	33.8	23.2	28.3	19.6	31.4	22.6	32.6	22.3
22	28.2	18.5	32.9	21.4	27.9	18.5	32.6	23.4	29.1	18	32.2	22.8	32.4	22.4
23	29.5	18.3	32.4	21.4	28.3	18.1	32	21.2	29.4	16.8	32.2	21.5	31.7	21.4
24	29.6	18.4	33.4	21.9	27.4	19.5	32.3	22.3	28.4	18.1	32	22.3	33.4	21.4
25	28	17.8	30.4	21	27.4	18.3	31.2	22.3	28.2	17.4	32	21.2	33.5	22
26	29.6	20	33	21.5	27.9	18.3	32.8	23	30.5	18.5	32.6	23	33	22.2
27	29.4	18.2	33.9	22.4	27.8	18.3	33	22.5	29.1	17.7	32	21	32.7	21.2
28	30.6	18.4	31	21.6	28.8	18.4	32.3	22.7	29.2	17.7	32.4	22.2	33.2	22.3
29	30.5	18.3	32.1	20.9	27.3	19.1	33	23.4	29.6	18.5	32.3	22.6	33.7	22.4
30	29.7	18.5	31	21	27.1	19	31.3	21.5	26	18.8	30	22.5	33.5	22.4
31	29.4		33.6	21.4	27.9	18.5	32	22.2	28.6	18	31.5	21.7	33.4	22.1
Mean	29.5	18.6	32.5	21.3	28.1	18.6	32.5	22.7	29.4	18.5	32.3	22.3	32.7	22

Day.	Butuan.		Mambajao.		Dumaguete.		Tagbilaran.		Iwahig Penal Colony, Puerto Princesa.		Dalaguete.		Surigao.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	33.9	21.9	31	24	31.4	23.9	31.2	22.1	31.5	22.4	31.5	24.4	31.2	21.9
2	32.6	22.5	31.1	23.8	31.3	24	31	23.1	32	22	31.5	24	30.2	22.9
3	33.6	22	30.8	24.2	31.4	24.6	31.3	22.7	32.2	22.2	32	23.8	31.2	23.4
4	34.1	22.9	31.5	23.5	31.5	23.7	31.1	22.3	31.7	22.4	31.5	24.2	31.8	23.3
5	35.6	22.8	30.9	22.5	31.4	23.9	31.5	22	31.2	22.2	31.8	24	31.7	22.3
6	34.1	22.3	30.3	22.8	31.6	23.1	31.4	22	32	22.4	30.8?	23.2	32.4	21.6
7	35.2	21.4	31.1	21.5	31.6	22.9	31.7	22	32.2	22	31.6	23	32	20.9
8	33.8	22	30.9	24.2	31.8	24.1	32.1	23.1	32	22.2	32.1	25	30.6	23.2
9	32.1	23.7	30.9	25.9	31.2	25.8	31.9	23.8	31.5	22.2	32?	26.5	31.1	24.4
10	30.6	23.4	30.6	25.9	31.7	26.2	31.7	23.4	32.2	20.5		26.5	30.8	23.8
11	32.6	23.2	31.4	24.8	31.9	25.8	32	22.8	30.7	23.7	31.2?	27	30.4	23.7
12	34.1	22.4	31.6	25.3	31.9	26.5	31.7	23.4	33	23.2	31.5	21	30.7	23.8
13	32.1	23.3	31.4	24.8	31.8	25.3	31.8	23.3	33	23.8		25.5	30.8	23.7
14	32.6	23.4	31.3	24.3	30.6	24.9	31.3	24.5	32.2	21.5	29.5	26.7	30.2	24
15	32.5	22.9	31.3	24.3	31.6	23.6	32.1	24	32	25	29	24.3	30	23.4
16	30.4	21.7			30.2	23.7	29.9	23	32.5	22.8	28.6	24.2	29.3	23.5
17	31.7	22.7			30.3	24.2	31	23	32.5	23.2	30.2	23.9	31.2	23.6
18	30.4	23.1			30.4	24.2	29.5	23	28.4	23.4		23.8	30.7	23.6
19	32.8	22			31.6	23.3	31.9	23.8	30.7	23	31.7	24.2	32.1	23.1
20	29.6	22.4			30.3	24.1	30.3	23.4	31.3	22.4	30	24.9	31.4	23.8
21	33.2	22.7			29.9	24	31	23	30.7	22.8	30.3	24.4	31.3	24.1
22	33.1	22.4			30.9	23.1	30.8	24	31	23.2	31	24.4	31.7	23.9
23	33.5	22.5			31.4	24	31.6	23.4	30.8	22.2	31.2	25	31.4	23.4
24	33.8	23			30	24.4	32.9	23.5	31.4	22.8	29.9	25.4	31.5	22.8
25	33.4	22.4			31.2	24.2	32.4	23	31.8	22.2		24.7	30.8	23.5
26	33.1	23.2			31.8	26	31.9	23.3	32.4	22.4	30.5	26.1	31	22.9
27	34.4	22.8			30.9	23.4	32	22.8	32	21.6	31.2	23.2	32.4	22.9
28	34.1	22.7				24.5	32.3	22.5	31.8	22.8	31.4	25.4	31.5	23.6
29	33.9	23.4			30.6	23.4	32.3	23.2	31.6	22	31.5	24.4	31	23.8
30	30.8	22.6			29.9	24.2	30	23.3	31.5	22	29.5	24	29.2	23.7
31	33.4	22.2	32.5	22.4	31.6	24.3	32.3	23.4	33.2	21.5	31.6	23.7	31.8	23.7
Mean	32.9	22.6			31.1	24.3	31.5	23.1	31.7	22.5	30.9	24.7	31.1	23.3

Maximum and minimum temperatures at the stations of the Weather Bureau, May, 1921—Continued

Day.	Central Palma, Ilog.		Hacienda Naval, Himamaylan.		Biaong Cui's Farm, Barili.		Maasin, Leyte.		Isabela, Occidental Negros.		Hacienda Tanolo, Hinigaran.		Cebu.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	32.5	22.4	33.4	20.5	30.1	23.2	34.6	21.6	33.8	22.2	33	22.4	31.3	25.9
2	33.5	21.9	33.4	21	31.5	22.5	33	22.2	33.1	21.4	33.2	21.5	32.2	25.7
3	33	23.4	34	21.5	33.1	22.1	34.2	22.4	33.7	20.7	33.3	22	31.6	25.3
4	32.6	22.6	32.5	20.5	33.4	22.5	34	22.4	33.9	21.1	32.8	20.5	32.2	24.7
5	32.9	22	33.6	20.4	32.2	23	34	22.8	34.1	21.5	32.9	20.5	32.1	24.6
6	33.6	23	33.8	22.4	32.4	23.4	35	22.2	33.8	21.4	33.6	22.2	31.8	25.3
7	33.8	23.3	33.5	22	32.5	22.5	35.6	22.4	34.7	21.9	33.6	22.2	32.6	25.2
8	35	23.4	33.4	21.5	32.5	22.4	35	22.9	36.3	21.9	33.5	22	32.1	26.5
9	35.2	22.9	33.7	23	32.5	24.5	33.3	23.2	34.8	24.7	34.6	24.7	32.7	26.6
10	35.6	23	36.3	24.4	32	24.5	33	23.6	35.1	24.7	34	25.5	32	26.7
11	33.6	22.1	35.4	23.5	33.1	24	32	23	35.2	25	34.2	24.3	32.3	26.5
12	34.2	24.1	36.3	21.5	32.8	23.6	30.4	22	35.4	25.7	34.1	22.5	31.9	26.4
13	33.1	23.2	34.3	21.6	30	24.1	31.2	23.6	35.1	25.8	34	23.5	32.3	26.3
14	33.1	24	33.3	22.5	32	23.5	30.6	23.5	35	24.5	29.5	24	30.5	24.6
15	32	23.3	35.3	22.4	30.2	23.7	29.5	23.2	30.7	22.1	31	22.4	28.5	24.8
16	30.5	23.4	33.5	23.2	29.5	23.1	33	23.6	29.6	22.9	29	23.2	29.6	24.5
17	32	23.9	30.3	23.4	31.5	22.8	32.2	22.2	30.1	23.2	30.2	22.3	30.9	23.7
18	31.5	23	30.5	22	28.5	23.5	33	22	30.4	22.2	30.2	22.7	30.3	22.9
19	32.6	22.5	32.3	21.6	32.1	22.5	32.6	21.8	31	21.7	30.6	22	33	25.7
20	33	23.1	31.5	21.5	30.6	21.6	32	23	30.5	21.5	30.2	22.6	31.2	23.7
21	32.6	22.9	31.3	22.4	31.6	21.5	33.6	22	31.5	21.4	30.5	23	30.9	24.7
22	31.1	23	31.3	21.5	31.5	22.5	34	23.8	31.2	23.5	30.5	24	32.7	25.8
23	33	22.6	32.3	22.3	32.1	22.5	35	23.8	33	22.9	32.6	22.5	31.4	25.9
24	32.1	22.7	31.8	21	31.5	23.5	32	24	31.4	23.4	30.3	22	32.5	25.9
25	33.1	22	31.9	21.1	30.8	23.8	34	23	33.5	22.8	32.6	23	32.3	25.9
26	33.2	23.7	32.9	22.5	30.5	23	34	24	34.1	22.9	33.5	25	32.1	26.4
27	33	23.4	31.8	21.9	31.5	22.5	34.5	24.4	32.7	22.9	32	22.5	31.7	25.8
28	32.7	23.3	33.8	23	31.8	22.5	35	23.3	33.6	22.4	32.8	22.2	33.4	26
29	32.6	23.5	33.5	23	32	23	34	22	33	23.4	32.8	23.5	32.4	26.3
30	31	23.8	32	22.1	32.5	23.5	33	24.6	30.2	23	29	23	29.2	25
31	33.1	23.2	33.2	21.2	30.5	23	31.5	23.1	32.6	22.6	31.8	23	31.3	25.2
Mean	32.9	23.1	33.1	22	31.6	23	33.2	23	33	22.8	32.1	22.8	31.6	25.4

Day.	La Castellana.		Central Azucarera de La Carlota.		Hacienda Canlaon, La Castellana.		Mao Sugar Central, Bago.		Valladolid.		San Joaquin.		Murcia.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum. <sup>a</sup>	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	33.2	21.6	33.2	21.6	34.4	21.2	34	22.1	36.2	22.7	33.7	25.1	33.8	21.8
2	21	33.3	20.4	34.6	20.6	34.5	20.6	36	21.2	33	23.9	34.4	20.5	34.8
3	20.5	33.7	19.9	35	20.4	34.8	21.3	35	21.5	34.4	23.9	34.8	21.2	34.4
4	20	33.2	19.6	35.1	21.6	34.7	19	35.7	20.2	34.7	24.7	34.4	20.4	35.1
5	20.2	33	19.4	34.6	20.8	34.6	19.4	36.2	20.7	33.8	24.7	34.5	20.7	34.3
6	20	33.7	21.2	32.7	21.8	35.3	22	36.7	21.2	34.5	25	34.5	22.4	34.5
7	21.7	34.3	21.8	33.9	21.6	35.2	21.1	36.9	22.2	33.8	25	34.5	22.6	34.5
8	22	34.9	20.8	34	22.9	35.5	21.8	36.5	21.8	34.8	24.5	35.6	21.4	35.8
9	23.2	34.8	21.9	32.4	20	35.4	21.5	36.7	21.2	33.7	26.5	35.8	23.8	35.8
10	24.2	33.8	23.4	32.7	20.3	35.3	22.2	36.9	23.7	33.9	24.8	35.9	24.5	35.9
11	23.2	34.2	21.9	32.4	21	35	21	36	23.2	35.9	24.8	35.9	23.4	36
12	22.8	33.8	22	30.8	20.5	35.8	22.1	36.2	23.7	35.1	24.9	35.1	23.5	36.2
13	23	33.6	21.7	31.3	20.9	34.8	21.9	34.2	22.5	34.9	25.7	34.9	22.1	34.2
14	22.4	30.8	22.9	29.4	20.9	32	23.5	31.2	23.2	34.2	27.6	34.2	22.2	34.2
15	22	30.5	21.3	29.8	20.7	30.3	21.9	32	23.2	32.4	24.5	32.4	22.4	32.4
16	23	30.2	23.7	31.9	21.4	30.2	22.4	32.2	24.2	28.2	24	28.2	23.2	29.8
17	23	31.2	22	32.8	20.9	31.5	22.1	32.7	23.7	32.2	23.9	30.3	22.7	30.3
18	22.5	32.3	21.9	32.5	22	33.4	22.4	33.2	22.8	31.8	24.6	32.2	22.3	32.2
19	21.6	32.3	21.6	32.6	21	33.2	21.4	33.7	21.9	32.1	24.8	32	22.1	32.1
20	21.6	31.8	22.3	33.8	21.8	32.3	21.3	36.3	21.7	32	23	30.8	22.3	30.8
21	23.5	31.6	23.2	32.6	21	32.2	22.5	35.9	22.9	31.7	23.4	31.4	22.7	31.4
22	23.2	31.5	24	34	20.8	31.6	22.7	34.2	23.4	31.8	24.6	32.2	23.1	32.2
23	22.5	33.1	22.6	34.6	21.9	33.3	22.5	33	23.2	33.2	24.6	32.4	22.3	32.4
24	22.5	31.9	22.7	34.5	21.8	33.2	23.1	34.1	23.6	33.8	24.1	31.4	22.9	31.4
25	22.5	32.9	22.9	33.2	21	33.6	22.2	35.2	23.2	33.3	24.4	32.5	21.8	32.5
26	24	33.7	23.2	33.8	21.3	34.7	22.5	34.7	22.3	33.8	26	31.1	23.6	31.1
27	23	32.8	22.7	32.5	21.6	33.5	23.3	35.2	22.3	33.5	24.3	32.3	23.1	33.5
28	22.3	33.1	22.8	32.9	21	34.8	22.2	31.5	21.2	33	25.2	32.3	22.4	32.3
29	23.2	32.3	23.5	33.3	21.2	33.6	22.1	33.2	24.2	33.8	24.2	32.3	22.3	33.2
30	22.5	29.7	23.4	33.9	20.5	30.1	22.2	36.2	22.9	32.4	24.5	32.4	21.4	32.4
31	22	32.2	22.3	32	19.5	32.5	22	32.6	22.6	32.8	24	31.3	25.2	31.3
Mean	22.3	32.7	22.1	33	21.1	33.6	21.9	34.8	22.5	33.3	24.7	32.7	22.3	32.7

<sup>a</sup> These minimum temperatures seem to be somewhat too low.

Maximum and minimum temperatures at the stations of the Weather Bureau, May, 1921—Continued

Day.	Bacolod.		Oton.		Iloilo.		San Jose de Buenavista.		Tuburan.		Leon.		Silay.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	32.5	23.9	35.9	24.2	32.5	24.5	33.5	23.4	31.7	23.6	34.4	30.6	24.2	
2	34	22	34.9	22.8	31.9	23.2	34	23.2	32.7	23.2	34.7	31	22.4	
3	33.7	21.1	34.7	22.2	32.3	23.5	32.8	23.4	32.3	23.5	35.1	31	23	
4	33.8	19.3	35.7	22.1	32.8	23.1	33.4	23	32.6	21	35.1	32	21.5	
5	33.5	19.6	34.1	21	34.3	22.3	33.2	23.2	33.3	20.1	35.6	33.5	20.5	
6	33.7	22.2	34.2	22.1	34	23.4	33.7	23.7	33	21.8	35.5	33.5	22.5	
7	34	22.2	36.7	22.1	33.8	23.3	34.3	24.4	32.9	21.2	36.1	34	23	
8	33.1	21.9	37	23.5	33.6	23	34.4	23.5	33.9	23.2	36.6	33.5	23.5	
9	33.4	23.4	35.6	24.6	32.6	24.5	36	23.6	33.4	24.3	36.1	33.5	23	
10	33	23.2	35.8	25.2	32.8	25.8	33.7	24.4	33.6	23.8	36	33.2	24	
11	33.4	22.6	36.2	25	32.9	25.3	35.2	23.4	33.8	22.7	36.1	33.5	24.4	
12	34.7	24	35.6	25	32.5	25.3	34.2	23.7	33.6	23.8	34.9	33	24.7	
13	33.5	23.2	35.4	24.8	32.8	25.2	34.3	24.4	31.6	23.9	35.1	33	24.5	
14	32.3	24.4	34.1	25.2	32	25.5	32.8	24.9	30.3	24.2	34	31	24.4	
15	29.5	22.6	30.9	23.6	29.2	24.4	32.2	23.5	29.5	24	30.8	31	24.4	
16	28.8	22.4	27.3	24.2	26.7	24	27.4	23.5	29.3	24.5	27.9	31	24.4	
17	30.4	22.8	30.8	24.8	29.9	24.1	29	24	30.8	24.1	30	27	24	
18	31	22.4	30.9	23.6	30.2	24.1	29.8	23.3	30.4	23.3	31.1	32.5	23.4	
19	31.4	21.9	30.8	23	30.8	23.9	29.1	23.5	31.2	23.9	31.7	32.5	22	
20	30.7	22.6	31.2	22.9	30.8	23.7	30.8	22.3	30	23.6	32.2	32.1	23.4	
21	30.9	23.2	31.6	23	29.8	23.4	30.8	23.4	30.8	23.5	32.5	32	23.4	
22	31.5	23.2	31.2	23.8	30.7	24	30.9	23.5	31.3	24.2	32.4	32.1	23.3	
23	32.1	23	34	22.6	32.8	23.6	31.8	23.4	32.9	23.2	34.3	31	23.4	
24	31.1	23.7	32.8	24.8	32.3	25.4	29.6	24.6	31.8	24.3	33.9	28.4	24.2	
25	32.2	22.9	34.2	24.1	32.2	24.7	32.3	23.8	32.7	23.6	34	32.6	24.3	
26	32.5	23.1	35	24.4	32.7	25	33.4	23.8	32.1	23.9	34.8	33.1	24.3	
27	32.3	24	32.1	22.8	31.5	23.4	31.3	24	32.7	24.3	33.7	33.6	24.2	
28	33.1	23.2	32.7	23.8	33.2	25	32	24	33.7	23.6	34.9	33.5	24.3	
29	32	22.3	32.8	23.4	31.7	24.3	31.4	22.5	32.7	23.7	33.4	33.6	24.4	
30	30.5	23.2	30.5	23.5	29.4	24.3	30.3	24.2	32.2	24.3	31.8	30	23.4	
31	32	22.5	31.9	23.5	31.3	24.3	30.8	23.8	31.7	23.9	32.6	27.5	23	
Mean	32.3	22.6	33.4	23.6	31.8	24.2	32.2	23.7	32.1	23.4	33.8	31.9	23.5	

Day.	Calag-itan, San Remigio.		Cuyo.		Barotac Nuevo.		Hacienda Ilaya, Victorias.		Hacienda Bilbao, Manapla.		Januay.		Cadiz.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	21.2	24.9	31.2	22.8	30.9	23.8	30.9	23.8	33.6	22.8	34.6	22.5	31	24.6
2	20.1	25.9	32.3	22.5	30.8	23	33.9	23.2	34.7	20.5	33.5	20.5	33.5	23.2
3	22	26.8	32.2	23.2	30.9	23.8	33.8	23.5	35.3	20.3	30.7	20.3	30.7	22.9
4	21	24.1	32.2	23.1	30.3	23.3	33.6	23.6	35.4	19.8	30.7	21	30.7	21
5	20.1	24.1	32.2	23.3	32.3	22.7	33.7	23.4	36	19.4	31.4	19.6	31.4	19.6
6	21.2	23.8	33.4	22.4	31.2	23.6	33.6	22.9	35.2	21	31.5	21.6	31.5	21.6
7	22	24.2	32.3	22.2	32	23.6	33.9	23	35.6	19.9	31.6	21.6	31.6	21.6
8	20.1	25.8	32.6	22.4	31.8	23.2	34.2	23.2	35.8	21.5	31.7	23.2	31.7	23.2
9	22	26.6	32.5	22.3	32.2	23.3	34.3	23	35.2	24	32.3	22.7	32.3	22.7
10	22.3	23.5	33.8	23.4	31.9	23.8	34.2	22.8	35.7	24.1	31.4	24.2	31.4	24.2
11	22?	26.3	32.5	23.7	31.5	23.9	33.6	22.9	35.6	24.2	31.7	24.1	31.7	24.1
12	21.2	27.3	33.5	23.7	30.9	23.6	33.8	23.1	33.7	23.4	31.8	24.3	31.8	24.3
13	22.3	26.1	33.4	23.5	30.3	23.2	33.7	23.3	34	23.1	32	24.1	32	24.1
14	23	24.4	32.5	23.5	31.5	23.9	33.4	22.8	32.7	22.1	31.6	24.2	31.6	24.2
15	22	24.4	31.3	23.6	30.8	23.2	32.8	23	31.2	22.8	29	24.2	29	24.2
16	22.3	24.7	31.4	23	30.4	23.2	32.9	23.2	29.2	23	29	23.1	29	23.1
17	22.3	24.8	31.3	23.2	30.3	23.5	32.7	23.6	30.2	23.4	30.5	22.7	30.5	22.7
18	21.2	24.7	32.3	23	31.2	22.3	32.1	23.1	32.1	22.7	29	22.7	29	22.7
19	22.3	24.3	31.7	22.8	29.8	23	32.4	23.6	32.7	22.5	29.1	23	29.1	23
20	20	24.7	32.8	22.9	30.9	22.6	32.6	23.2	32.5	21.5	29.3	24.1	29.3	24.1
21	22.3?	23.4	33.2	23	30.4	23.9	32.8	23.1	32.2	23	29.8	23.4	29.8	23.4
22	22.3	24.5	32.3	23	30.7	22.9	31.6	23.2	33.7	22.3	30.2	22.8	30.2	22.8
23	22	24.5	32.4	23	30.2	22.7	32.7	23.4	33.8	22	31.7	24.7	31.7	24.7
24	23.4	24.8	33.2	23.5	30.5	23.7	32.4	23	33	23.8	31.8	22.4	31.8	22.4
25	23	24.4	32.4	23.5	31.4	23.3	32.1	23.1	33.7	24	31.5	22.6	31.5	22.6
26	22.3	26.2	32.2	23.5	31.4	23.3	31.8	22.9	34.2	24	31.2	23.7	31.2	23.7
27	23	25.8	33.2	23	31.3	23.2	32	23	34.2	22	31.5	22.8	31.5	22.8
28	22.3	24.3	33.3	23	31.9	23.3	32.5	22.8	34.4	23	31.7	23	31.7	23
29	20.1	25.3	32.4	23.2	31.9	23.5	32.6	23	34.2	21.8	31.8	23.1	31.8	23.1
30	23	25.1	32.9	23.3	31.8	23.7	32.7	23.2	33.2	22.5	31.3	23	31.3	23
31	22.3	25.1	32.3	23.2	30.8	23.5	32.6	23.4	33.7	22.3	31.9	22.6	31.9	22.6
Mean	21.8	25	32.5	23	31.1	23.3	33.1	23.1	33.8	22.3	31.1	23.1	31.1	23.1

Maximum and minimum temperatures at the stations of the Weather Bureau, May, 1921—Continued

Day.	Dingle.		Ormoc.		Guiuan.		Bugasong.		Bogo.		Tacloban.		Hacienda Amparo, Pontevedra.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	34.5	23.5	34	21.5	33	24	34	23.4	32	24	32	23.5		
2	34.4	21.5	33.9	21.4	32.9	24	33	22.4	32.3	23.8	33.8	23.5		
3	33.6	21	33.9	21.9	32.5	24	32.2		32.4	23	33.3	23.7	32.1	23.2
4	34	21	34	19.5	32.5	21	32	24	32.5	22.1	33.2	22.6	32.5	20.7
5	34	19	33.9	19.4	31.5	20.6	32.2	21.7	32.5	21.5	31.9	22	32.5	19.2
6	34.5	21.4	33.8	18.1	32.3	21	33	22	32.6	22	33	21.4	33.6	20.3
7	34.5	21	34.4	18.5	33.5	22.4	33	24	32.7	22.1	33.1	23.2	33.2	20
8	35	22	34.4	20.9	32	24	32.4		33.5	22.5	32.5	23.1	33.5	22.8
9	36	22.2	34.4	22.2	32.4	23.3	33	22.4	34	23.8	31.6	23.4	34.6	23.6
10	36	24	34.6	22.9	33	24.1	33.2	20.7	34.5	24	31.9	24.2	33.1	22.6
11	34.6	24.2	33.4	22.4	32.5	26.3	33	24	34.6	24.1	32.8	23.8	33.3	23
12	35.2	24.5	33.7	22.9	32.8	24	33.4	23	34.2	24	32.2	24.1	34.3	25.2
13	34.8	24.2	31.9	23.4	31.6	24.8	34.2	23.2	33.7	24	31.3	24	32.9	23.9
14	34.8	24	32	22.9	30.4	24	34	23	32.6	23.9	28.9	24.4	32.4	24.8
15	30.5	23.2	30.2	23.2	28.4	24.7	34.5	23	33.7	23.8	30.1	23.1	33.8	24.5
16	30.1	22.8	32.6	24.4	30	24.7	31.2	24	29	23.6	30.7	23.8	31.3	22.4
17	30	23.2	32.7	23.2	30.3	24.9	30.7		30.6	24	29.8	23.8	29.4	23.6
18	31.4	23	33.4	23.1	31.6	24	29.8	23.4	31.4	23.9	31.4	23.9	30.2	23.8
19	31.8	22	32.3	22.4	32.5	24	31.5	23.4	32.5	24.1	31.6	23.9	31.9	23
20	32.8	22.1	33.9	22.2	31.5	22.5	30.2	22	33	24	31.9	23	31.4	20.7
21	32.9	22.1	33.9	22	31.6	22.5	31.9	23.4	32.8	24.1	31.2	23.4	32.4	23
22	33	23	33.9	21.9	31.3	23.6	31.9	22.8	32.3	24.3	31.9	24.1	32.5	23.4
23	32.8	22	34	21.4	32	22.2	31.3	22.9	32.5	24.5	32.5	23.5	32.3	22.4
24	34	24	34.2	22.9	32	24	30.4	24.8	32.6	24.4	31.9	24.1	31.8	23.8
25	34	24.3	33.8	21.4	32.5	23	31.7	23.9	32.8	24.5	33.3	23.1	32.4	23.2
26	34.2	23.5	34.1	21.4	32.6	24.7	31.7	23.4	32.9	24	32.1	24.1	32.9	24.2
27	34.3	21.8	34.3	21.8	32.5	22.9	31	24.2	33.2	24.5	32.2	24.6	33.5	23.2
28	34.5	23.5	34.3	21.1	32.8	22.5		23.4	33.5	24.2	33.2	23.6	32.4	23.7
29	34.5	22.5	33.6	20.6	31.6	24	31.5	21.9	32.8	24.1	32.3	23.4	33.2	22.8
30	35.4	22.5	31.6	21.9	31	23.4	31.5	24.8	33.6	24	29.9	23.5	31.8	24
31	32.2	22.6	33.9	21.6	31.2	22.6	31.7	23.7	32	24	32.9	23.9	33.8	23.2
Mean	33.7	22.6	33.5	21.8	31.9	23.5	32.2	23.1	32.8	23.7	31.9	23.5	32.6	22.9

Day.	Capiz.		Borongan.		Catbalogan.		Calbayog.		Masbate.		Romblon.		Batag Light-house, Laoang.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	33.5	25.2	31.3	23.2	32		32.8	21.9	32.8	24.5	32.9	23.9	31.4	24
2	33.8	24.1	31.3	22.8	32		32.2	21.6	32.6	23.8	33.2	23.6	30.8	23.5
3	32.5	23.9	31.3	21.8	31.4		32.4	20.4	32.2	23.8	33.4	23.2	30.6	22.5
4	33	22.5	31.2	20.8	31		32	18.8	32.6	23.6	33.2	22.5	30.9	21.6
5	33	21.5	31.9	21.4	31.5		32.5	20.3	32.8	23.4	33.8	22.1	31.1	22.7
6	33.1	22.4	31.8	21.2	32.1		32.8	20	32.6	23.8	32.8	21.8	31.8	23
7	33.7	22.5	32.1	23.1	32.5		33.5	23.1	34.8	25	33.8	22.2	32.3	23
8	34.2	24.5	31.8	24.3	31.9		32.3	22.8	33.8	25	34	23.7	30.8	24.1
9	34	26.4	31.3	22.6	32.6		32.6	23.2	32.8	26	32.9	26.9	31.4	24.5
10	34.1	25.5	32.3	24.1	32		32.5	23.4	34.4	26.2	34.2	26.2	30.7	24.4
11	34.5	25.8	32.5	25.9	32		31.8	22.8	33	26.2	33.7	26	31	24.4
12	34.1	26.4	30.7	23.2	33		32.2	23.4	34	25.6	34.1	25.2	32.3	24.7
13	34.5	25.4	32.1	26.2	31.2		31.4	23	34.6	25.6	34	25.6	31.6	24.8
14	33.9	25.7	29.1	24.3	29.9		29.6	23.9	34	25.8	34.7	26.7	28.4	24.3
15	30.6	23.3	28.6	23.6			31.6	23.9	32.4	25.5	33.6	24.7	30.2	23.8
16	31.6	23.1	30.6	22.8			31.5	23.5	32.4	24.8	31.7	23.6	31.2	23.7
17	30	24	30.1	23.5			32	23.5	30.4	23.8	29.8	24.7	30.8	24
18	31.5	23.9	31.4	23.4			32	24.3	32	24.5	30.9	23.7	31.7	23.8
19	32.4	23.4	32.3	23.5	32.3		32.4	23.3	32.4	25	31	24	31.6	23.7
20	32.5	22.5	31.8	22.7	31.8		32.8	23.2	31.6	24.4	32.9	23.4	30.6	23
21	32.5	23.5	31.4	22.9	32.2		31.8	23.2	31.8	24.6	32.1	22.9	30	23.2
22	32.9	23.9	32	24.1	32.2		32.6	23.0	32.8	25.2	32.8	23	31.8	24.5
23	33.5	23.1	32.6	23.7	32.3		32.6	22.6	35	24.6	32.1	24	32.1	23.3
24	32.6	24	32.1	24.8	31.2		33	23	33	26	32.6	23.9	30.9	24.5
25	33	24.9	32.1	24.7	32.9		32.8	22.5	33.8	25.2	32.8	23.7	32.4	24.2
26	33.1	25.4	32.3	24.3	32.6		32.7	23	33.6	26	33.7	24.6	32.2	24.2
27	34	23.4	32	23.8	32.8		33.4	23.8	34.6	26.5	33.7	23.8	32.1	24.8
28	33	23	32.4	23.9	32.4		33.1	22.2	33.8	25.6	33.8	23	32.4	23.4
29	33.4	24	32.2	24.2	32.9		33.1	22.8	33.2	25.6	33.5	23	32.7	24.6
30	32.9	23.9	31	23.9	30.5		32	23	32.8	25.5	33	23.7	32.9	24.3
31	33.6	24	32.1	24.6	31.6		33	23.9	33.8	25.5	33.7	23.2	33.2	24.2
Mean	33.1	24	31.5	23.5	32		32.4	22.7	33.1	25.1	33	24	31.4	23.8



Maximum and minimum temperatures at the stations of the Weather Bureau, May, 1921—Continued

Day.	Irosin.		Sorsogon.		Bacon.		Jovellar.		Legaspi, Albay.		Guinobatan.		Polangui.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31	19.9	31.6	---	31.2	24.5	32	19.6	33.5	25.6	32.3	17.6	32.4	20.1
2	30.3	20.2	32	---	31.4	25.1	32	19.5	33.4	25.5	32.5	18.9	32.4	20.7
3	31.2	19	32.1	---	31.5	21	33.2	19.5	32.8	22.3	32.9	18.1	32.3	21.2
4	30.9	19.5	32.7	---	30.4	20	32.6	18.5	33.3	22	32.8	18.7	34.2	20.7
5	33.5	19.6	32.5	---	31.2	20.1	32.5	18.8	33.6	21.4	32.9	17.9	32.4	21.7
6	34.4	18.5	32.8	---	32	20	33	17.3	33.6	21.9	33	17.5	34.4	21.2
7	34	21.8	32.9	---	33	22.4	33.2	18.5	33.8	22.7	33.5	18.3	33.2	20.4
8	33.4	21.7	33.1	---	31.9	23.2	34.5	20.4	33.8	23.8	34	20	32.4	20.7
9	34.7	25.3	33.5	---	33	24.3	32.1	21.3	32.8	26.3	34	24.4	35.2	21.2
10	32.2	25.5	31	---	32.9	24.4	32.6	25.4	34.1	25.6	33.1	24.7	32.4	20.4
11	32.1	23	31.7	---	31.2	23.5	32.5	21.8	33.7	26.6	32.3	21.3	30.5	22.2
12	31.6	23	32	---	30.8	24.6	31.5	23	33.4	24.9	33.3	22.5	32.4	22.3
13	31.4	22.9	31.4	---	31.2	24.1	33.2	22.2	31.6	25.8	31.8	22.5	34.4	22.1
14	32	23.3	31.5	---	31.7	24.5	31.2	22	33.3	26.2	32.7	22.6	35.2	20.1
15	34.2	23.7	32	---	31.2	24.1	32.7	22.9	32.8	24.7	32.7	20.4	34.2	20.6
16	32.3	22.7	31.4	---	30.9	22.4	31.7	24.4	32.8	24.8	32.9	24.1	35.3	20.4
17	32.5	23.5	31.4	---	30.9	22.9	31.9	21.3	32.1	24.1	31.8	21.6	35.2	20.5
18	34.2	23.2	31.3	---	31.6	23.4	31	22.1	33.9	24.3	32.3	22.4	33.2	21.2
19	34.8	23.4	31.7	---	32.1	23.8	31.7	22.6	33.1	23.8	32.9	22.6	34.3	20.4
20	34.3	22.7	32.1	---	32.5	22.6	32	21	32.8	23.3	32	21.4	35.4	20.3
21	34.2	22.9	32.5	---	32	23.1	32.2	22.7	33.8	24.3	32.9	22.4	33.2	20.3
22	34.8	22.2	31.6	---	32.5	23.3	32.1	21.5	34.1	24.3	33.6	22.8	30.5	20.4
23	34.7	21.8	33	---	32.9	23.3	---	21.5	34.2	24.1	33.9	21.6	35.2	20.5
24	34	22.6	33	---	31.9	22.8	33.5	21	34.2	24.2	34.1	21.2	32.4	21.4
25	32.9	22.5	32.9	---	32.9	23	33.3	20.5	33.8	24.2	33.7	21.4	30.6	22.3
26	33.3	22.8	33.4	---	32.5	22.6	32.9	21	33.8	26	33.9	21.2	32.6	20.6
27	34.5	22.3	33	---	32.8	23	32.7	23.1	34.1	24.8	34.9	24	34.2	20.3
28	35.7	22	33.4	---	33	22.9	33.7	21.3	34.4	24.6	34.8	21.3	32.4	20.1
29	35.9	24.7	33.5	---	32.5	23.3	34.2	19.4	34.9	23.8	34.5	---	32.4	25.1
30	34.5	21.7	32	---	32.9	22.9	33.4	21.2	34.3	24.6	34.1	21.7	30.4	20.4
31	35.2	21.7	32.5	---	32.7	22.4	33.7	21.3	35.2	24.4	34.3	21.5	32.3	20.3
Mean.....	33.4	22.2	32.3	---	32	23	32.6	21.2	33.6	24.4	33.2	21.2	33.1	21

Day.	Bacacay.		Tabaco.		Sumay (Guam), Agaña.		Iriga.		Calapan.		Tiwi.		Pasacao.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.6	21.2	32.2	21.1	30.5	25	34.1	20.5	31.5	24.1	30.8	22.5	32.7	22
2	30.4	22.2	32.7	21.8	29.8	23.6	34.2	21.5	32	23.4	31.4	22.4	31.6	22
3	30.7	22.1	32.6	21.1	30.3	21.8	34.1	20.8	31.5	23	31.8	22.4	32.6	22.9
4	30.6	21.2	32.4	20.6	30.4	21.9	34.3	21.6	31.6	23.1	31.6	22.5	32.4	21.7
5	31.2	20.1	32.8	20.9	31.4	23	34.4	21.1	32	22.5	31.4	22	32.9	22
6	31.8	20.3	32.9	20.1	31.8	26	34.6	18	32.5	22	31.6	22.4	33.4	21.7
7	32.6	21.4	33.3	21.5	30.7	25.8	33.6	19.4	32.6	22.6	31.4	23.2	32.6	24.4
8	32.2	22.1	33.9	22.5	30.8	25.7	32.4	20.6	33.2	23	31.6	23.4	32.8	21
9	32.3	23.1	33.7	23.5	30.6	25.8	34.9	21.1	32.8	23	31.8	23.8	30	20
10	32.1	21.3	33.8	24	30	25.8	35.3	20.3	32.5	24	31.5	23.6	31.6	21
11	31.8	21.7	33.4	23.7	30.9	25.8	34.2	21.2	32.1	27.5	31.8	23.8	33	23.8
12	32.6	21.2	33.3	24	32	22.4	34.3	20.2	32.5	24	31.8	24.2	30.9	20
13	32.1	23.2	33.7	23.8	31.3	22.1	34	21.8	33	24	31.9	25.2	32.6	21.9
14	32.4	20.3	32.2	23.7	30.3	24.2	33.6	22.5	32.6	24.4	32.2	25.2	32	24.2
15	30.9	22.3	32.9	24	32	25.6	33.9	22.6	34	24.5	31.6	25.2	31.9	23.5
16	32.1	23	32.2	23	32	25.4	33	21.9	32.6	24.5	31.5	24.6	30.7	21.9
17	32.4	23.2	32.7	22.8	31.8	26.2	32	21.6	31.6	24	30.5	23.5	31.1	22.8
18	32.9	23.8	32.2	22.6	31.3	24.8	33	22.4	30.8	23.9	30.8	24.2	32	23.8
19	31.6	22.4	33.2	22.8	31.8	26.2	33.1	22.8	30.8	23.5	30.2	22.2	33.6	24.9
20	32.7	22	33.1	22.1	32.5	25.9	33.3	22.7	31	23.5	29.2	22.2	33.9	23
21	32.5	23.9	32.8	22.3	32.6	26	33	22	31.5	23	31.2	23.6	32	21
22	32.8	22.2	33	22.5	30.8	24.2	33.1	22.2	31.3	23	32.2	23.2	33.1	21.7
23	32.9	22.3	33.3	21.9	30.8	23.5	33.6	21.6	32	22.5	31.8	22.2	31.8	22
24	32.7	22.2	32.9	22.5	31.7	24.1	34	21.2	33.1	23.5	31.8	22.8	32.7	22.2
25	32.9	22.8	33.7	23	31.2	24.1	34.2	22	32.8	24	32.2	23.2	29.7	20.7
26	32.6	22.7	32.8	22.6	31.7	26	34.2	22.8	32.5	23.5	31.8	24.2	34.5	23.9
27	32.9	22.5	34	23.5	31.3	24.3	33.8	22.4	32.4	23	32.2	24.1	32.9	22.7
28	31.8	22.7	33.9	23	30.7	24.2	33.9	21.3	32.6	23.5	31.8	24	31.4	21.9
29	32.2	22.9	33.2	22.2	31.5	24.2	34.6	22	32.6	22.6	31.9	24.2	30	23.6
30	32.9	22.8	33.3	22.9	31.4	23.8	32.2	22	33.5	22.9	32.2	24.4	32	20.7
31	32.7	22.6	34.1	23	29.2	24.1	34.6	21.3	34.5	23.5	32.5	22.5	29	21.4
Mean.....	32.1	22.2	33.1	22.5	31.1	24.6	33.8	21.5	32.3	23.5	31.5	23.4	32	22.3

Maximum and minimum temperatures at the stations of the Weather Bureau, May, 1921—Continued

Day.	Virac.		Naga, Camarines Sur.		Tigaon.		Libmanan.		Batangas.		Ragay.		Calatagan.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum. <sup>a</sup>
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.1	21	33.7	19.5	33.3	19.5	32.7	21.4	36.8	23.2	32.8	24.1	34.3	23.9
2	31.7	20.4	33.6	20.6	33.2	20.5	33	22	36.5	25	33.1	24.1	34.3	20.8
3	31.6	20.1	34.2	19.7	32.9	19	33.2	20.9	35.5	23.1	32.5	24.1	35	21
4	32	20.2	34.4	19.6	33.2	19.8	34.1	20.9	36.4	24.4	33.7	24.1	34.7	22.3
5	31.8	20	35.5	20.4	33.7	20.3	34.9	21.7	35.5	23.6	33.1	24.1	34.4	21.3
6	33.3	20.2	36.3	20.6	33.8	20	34.9	21.2	36.4	24.1	32.6	24.1	35.2	21.6
7	33.2	21	35.6	21.1	34.5	21.4	35	21.8	35.5	24.1	33	24.1	34.6	22.3
8	32.5	21.8	35.9	21.9	34.9	22.9	35.6	22.9	35.5	24	33.8	24.1	34.8	21.6
9	32.8	24.7	33.6	22.9	32.3	24.4	34.5	24	35.5	24	32.4	24.1	34.1	24.1
10	33.1	24	33.4	22.1	33.3	25	30.8	23	36.4	24	34	24.1	34	25.3
11	32.9	22.5	33.6	21.1	33.7	23.2	34	22.9	36.6	24.5	34.2	24.1	35.7	24.6
12	32.9	23	33.9	21.9	34.2	22.6	34.6	23.2	37.3	24.8	32.2	24.1	34.5	20.8
13	32.9	22.3	33.7	22.9	34	23.3	34.6	23.9	36.8	26.2	34	24.1	33.9	22.1
14	31.9	22.9	35	22.8	34.4	23.4	35.2	24.2	37.4	26.6	34.4	24.1	34.8	23.8
15	32	22	33.5	23.5	33	23.7	35.3	24.5	34.7	25.1	32.6	24.1	34.9	23.1
16	32	22.8	33.4	22.3	32.7	23.4	35.2	22.7	35.7	24.4	32	24.1	35.8	22.8
17	31.3	23.9	31.5	22.5	30.4	23.2	35.1	22.9	33.2	25.3	31.3	24.1	34.8	24.8
18	33.5	23.6	32.6	23.1	32.4	22.7	35.2	22.9	31.3	24.3	30.6	24.1	30.9	23.2
19	33.6	24.5	32.4	24.6	30	24.7	34	22.8	30.7	23.8	31.2	24.1	27.5	21.9
20	33.5	23.1	33.9	22.7	28.9	23	33.6	23.5	33.7	23.5	33	24.1	34.7	22.6
21	32.3	23	34.2	23.6	32	23.3	33.7	23.8	33.7	23.4	32	24.1	34.2	22.2
22	32.5	24.9	34.1	24	31	23.4	33.6	23.6	32.6	24	32.4	24.1	34.2	22.3
23	33.8	23	35.5	23.5	32.9	22	34.7	23.2	35.6	23.9	33	24.1	35.2	21.5
24	33	22.2	35.8	24	33.9	23.5	35	24.5	36	24.2	33	24.1	34.8	22.6
25	33.2	22.4	35.1	22.7	33.5	23	35.1	23.2	36	24.6	32.6	24.1	35.2	22.3
26	34.5	23.4	36	22.2	33.5	23.3	35.1	23.1	36.1	24.6	33	24.1	34.6	23.6
27	34.5	24	35.2	24.2	33.6	24	35	24	36	23.7	32.1	24.1	34.7	21.5
28	34.1	24.2	35.1	22.7	32.9	22.5	35.1	23	36	24.8	34.1	24.1	35.5	21.8
29	34	22	36.1	21.5	33.6	23	35	22.1	34.8	23.6	32.2	24.1	35.6	21.5
30	32	22.3	35.7	23.6	34	23.5	35	23	34.8	24.2	33.1	24.1	35.7	21.4
31	34.6	22	35.5	22.5	33.7	21.8	35.1	22.6	35.2	24.5	33.8	24.1	34.4	21.3
Mean	32.8	22.5	34.5	22.3	33	22.5	34.4	22.9	35.2	24.3	32.8	24.1	34.4	22.4

Day.	Balayan.		Lipa.		Lucena.		Atimonan.		Nasugbu.		Ambulong, Tanauan, Batangas.		Daet.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	34	22.5	33	18.6	33.3	22	31.9	26.1	36.2	23.2	37	23.1	31.1	20.6
2	32.2	22	33.7	19	33.6	22	32.6	26.4	37.8	23.2	35.6	21.8	31	21.7
3	33	21.5	32.5	19.8	32.7	21.5	32.6	22	36.5	22.2	34	21.2	31.1	20.7
4	33.5	21.8	33.1	20.1	34	22.9	32.1	24.9	35.5	21.2	35.7	23.2	31.6	19.9
5	32	23	32.5	19.7	31.7	22.1	32.7	22.6	34.5	20.6	33	22.7	32.1	20.6
6	33	23.5	32	20.3	32	21.5	33.7	23	37.9	22.3	33.7	23.7	32.7	20.7
7	32.7	22.5	33.7	21.6	33	21.3	33.4	23.3	35.9	20.3	34.2	24	32.3	21.5
8	33	23	34.6	22	32.2	22.4	32.8	23.6	35.2	25.3	36	23.8	32.6	21.4
9	34	22.5	33.5	23.7	33.5	23.1	32.2	25	38.7	23.5	36.2	25	32.1	23.4
10	33.5	25	34	23.1	33.6	22.8	33.1	23.9	35.9	24.3	38	25.8	31.9	22.4
11	33.5	24	35.3	20	34	22.3	32.7	23.7	37.5	22.4	37.8	24	32.2	21.9
12	32.3	23	34.9	22.7	34	23	33.2	26.9	38.8	20.7	38	24.5	32.2	22.5
13	33.8	23	34.8	22.9	34	23	33.1	27.5	37.3	24.6	38.3	25.4	32.5	23.4
14	33.5	25	33.5	22.5	33.6	23.6	33.8	25.6	35.6	24.6	35	26.4	32.5	23.6
15	34	24	34	22.1	34.6	22.2	33	27.3	36.1	23.7	38.8	24.7	31.1	23.4
16	33.8	23	34.1	22.3	32.9	22.3	35.4	25.9	35.9	23.7	33.5	24	32.2	23.4
17	33.5	23.5	30	21.9	31	22.5	33.1	23.5	32.6	24.1	31.2	23.8	33.1	23.4
18	32	23.3	30.2	23	31.4	23.6	32.4	24.2	32.5	24.5	30.3	25.2	33.4	24
19	30.5	23	28.4	22.4	30.4	25.2	31.1	23.7	31.6	23.5	29.4	24.5	32.6	24.7
20	31.7	23.7	29	20.1	31.4	22.2	33.7	23.8	33.5	24	33.7	23.4	33	23.8
21	32.5	23	31.2	21	31.4	21.1	33.8	23.9	33.9	23.9	32	23.7	34.2	23.5
22	32	23	31	20.7	31.6	21.4	33.1	23.2	32.8	23.8	32.8	23.6	34.7	23.5
23	33	24	33.9	20.9	32	22	33.8	24.1	33.4	23.3	34.1	23.7	34.7	23.5
24	32.7	24	33.5	20.7	32.7	21.3	34.1	23.6	34.5	23.9	35.7	24.4	33.8	23.5
25	33	23	33	22	32.6	22.4	32.8	23.1	33.6	23	31.7	23.8	33.5	23
26	32.5	23	33.7	22.1	33.2	22.7	34.9	24.1	34.5	20	35	24	34.5	22.9
27	33.5	22	33.2	21.2	32.6	22	33.1	24	32.8	22.8	34.5	24	35.2	23.7
28	33.7	23	32.7	22.1	33.4	21.6	35.2	23.6	34.5	23.2	35.5	24.2	33.1	23
29	33.8	21.5	31.9	22.3	32.7	22.7	34.8	23.8	33.6	23.6	33.7	24.2	34.5	22.4
30	33	22.5	31.4	21.8	33	21.3	35.6	23.7	33.7	23.9	32.9	24	34.1	22.9
31	33	22.3	32.6	21	32.8	22	35.4	23.5	34.8	25.2	33.2	23.5	35.6	22.1
Mean	33	23	32.7	21.4	32.7	22.3	33.4	24.3	35.1	23.1	34.5	24	32.9	22.6

<sup>a</sup> These minimum temperatures seem to be somewhat too low.

Maximum and minimum temperatures at the stations of the Weather Bureau, May, 1921—Continued

Day.	Mendez Nuñez.		Alfonso.		Indang.		Canluban, Calamba.		Silang.		Maragondon.		Paracale.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum. <sup>a</sup>	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum. <sup>b</sup>	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31	19.9	32.2	20.8	33.9	21.5	35.2	20.1	32.2	21	34.8	18.9	29.2	23
2	31	20	31.6	21.1	34	21.9	35.4	20.6	32.5	21.6	35	20.1	29.2	23
3	31	18.5	32.6	19.6	34.3	22	36	22	32.3	20.2	35.8	21.3	30	24
4	31	19.5	31.7	20.4	31.8	22.4	35	22.8	32.8	21.5	34.9	21.9	31	24
5	32	19.5	31.5	20.5	33.2	21.7	36	23.1	32.7	21.3	35.5	21.2	31	24.2
6	31.5	20	31.2	20.6	32.2	22	35	22.8	31.8	21.1	35.2	23	31.2	24.2
7	30.5	20.9	31	21.6	31.5	22.4	36.2	23.1	31.6	21.7	35.1	22.8	31.2	24.2
8	31	20	30.6	20.6	32.7	21.6	36	23	31.9	21.5	33.7	23	31.5	24.2
9	31	20.5	31.5	22.2	32.9	21.5	36.5	22.4	32.3	21.4	35.8	21.8	31	24
10	30.5	21.5	31.6	22.5	32.7	22.2	36.3	23	32.2	22	35.3	22.8	31.5	24
11	31	20	31.7	22	33.3	22.5	35.9	23.2	32	21.1	36.5	21.3	31.2	24
12	32	20	32.7	22.1	33.7	22.9	36.2	23.8	32.7	21.4	36.5	22.8	31.2	24
13	31.5	20	32.2	21.3	33.2	23.2	35.3	23.6	31.8	21.8	37.1	23.2	31.5	24
14	31.5	21.5	32.5	23	33.7	23.9	36.8	23.8	31.4	21.5	36.4	24.2	31.8	24
15	32	20.5	33.3	22.2	34.5	22.9	36.3	23.5	32.9	21.6	35.6	23.2	32	24.2
16	31	21	32	21.9	33.3	23.4	36.1	23.3	30.7	22.7	36.2	22.8	32.2	24.2
17	31	22	28.2	21.1	30.4	22.6	33.4	22.8	30.8	22.5	34.2	22.8	32.2	24.2
18	27.5	21	27.2	22.1	29.4	22.9	33.8	23.4	30	21.8	32.6	23.1	31	24
19	27.5	20	26.4	20.4	27.4	22.5	30	23.2	30.7	22.1	30.1	22.9	31	24
20	31	20.5	30	20	31.8	21.5	36	22.4	30.3	21.6	35	22.3	31	23.8
21	20.5	20.2	31	20.7	31.7	21.7	35	22.6	30.5	21.4	33.6	21.3	31	23.5
22	30	20	30	20.6	31.2	21.9	33.2	22.1	30	20.6	32.7	21.6	31	23.8
23	31	19	32	20.6	33.4	22	34	22.3	31.3	20.5	35.4	22.3	31.2	24
24	31	20.2	31	21.3	31.8	22.3	34.6	22	31.8	20.7	34.4	21.9	31.5	24
25	29.5	20.5	30.5	21.1	32.3	22.2	33.2	21.6	32.6	21.4	33.9	22.3	32	24
26	30.5	20.9	30.6	21.3	33.2	22.5	33.6	23	31.7	22.1	35.4	20.5	32	24
27	31	20.5	30.5	21.3	33.3	22	34	22.4	32	20	34.6	21.4	32	24
28	30	20.9	30.5	21.1	31.7	22	33.3	22.5	32.2	20.3	34.5	22	32	24.2
29	30	20	31	20.4	32.2	22.5	33.8	22.6	32.4	20.7	34.6	22.5	32	24.2
30	29.5	19.5	29	20.1	31.2	21.7	34	22.2	31.1	20.4	35.3	22.1	31	24
31	29.5	19.5	30.5	20.1	31.3	21.9	33.9	22.6	31.7	20.8	35.3	23.4	30.8	24
Mean	30.6	20.3	30.9	21.1	32.4	22.3	34.8	22.6	31.7	21.3	34.9	22.2	31.2	24

Day.	Santa Cruz, Laguna.		Buenavista, General Trias.		Cavite Naval Station, Cavite.		Manila.		Antipolo.		Balanga.		Malolos.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	34.4	21.5	35.2	21.2	35.5	23.6	35.5	20	36.6	20	36.9	20.6	34.6	20.5
2	34.6	22	35.5	21.5	35	23	35	22.5	35	21.7	36.4	22.6	34.6	24.5
3	36.1	22.6	34.7	22.2	35	23.4	34.7	23.9	36.7	22	35.6	23	35	24.7
4	35	24.2	34.8	21.7	35.6	24	34.3	24.5	33.8	23.5	35	25.1	35	24.5
5	35.6	23.6	34.7	22.2	35	24.1	35	24	36.2	22.5	35.8	22.6	35	22.5
6	35	22.4	34.2	22.5	35	24.3	34.8	24.1	36.5	21.8	35	25.4	35.5	24.5
7	36.2	23.1	33.5	22.8	35.5	24	33.2	24.2	36	23	35	25.1	35.2	24
8	34.3	23.5	34.7	22.7	35.3	23.8	35	24.1	36.2	22	36.2	24	35.4	23.9
9	35	24.2	34.7	23.2	36	24.5	35.2	24.2	35.1	22	36.1	24	35.4	23
10	34.2	25	35.7	23.6	36.5	24.2	36.2	25.2	34.5	23.8	36.3	25.2	36	23.5
11	34.3	23	34.7	23.2	36.4	24.1	35.9	23.2	35.8	22.5	36.8	25.2	36.2	23
12	34.9	23.7	34.8	23.8	35.5	23	35.7	24.5	36.3	23.2	36.6	24.9	34.6	23.5
13	34.3	24.3	34.7	23.5	36.5	22	36.4	23.6	36.6	22.6	36.6	24.6	36.4	23.8
14	35.4	24.7	34.7	23.9	36.5	22.5	36.9	24.2	36.2	23.7	36.8	24.2	36.2	24
15	35.9	23.2	34.7	22.7	36.5	23	35.9	24.5	34.4	22.5	36.7	24.2	35.1	23.2
16	34.2	24.2	34.7	23.5	---	23.4	35.3	25	35.4	22.9	37.1	24.5	36.7	23.5
17	33.5	24.4	34.7	22.2	---	25	35.4	24.7	33.1	23	35.4	26	34.2	24.8
18	34	24	34.7	23.2	32.5	25	32.5	25.4	32.8	23	33.3	24.3	31.2	23.2
19	32.1	24	34.8	23.2	34	24.8	32.4	25	28.1	23.1	31.1	23	---	23.2
20	33.4	22.9	34.6	22.2	33.4	23.4	33.5	24	33.4	22.7	33.7	24.1	32.4	23.5
21	33.6	22.9	34.7	22.2	---	23	34.5	24.1	33.7	22.5	34	24.1	33.5	24
22	34.2	23	34.7	22.3	35	23.2	31.7	24.5	31.5	22.8	31.9	24.5	33.5	23.7
23	34.2	22.7	34.6	22.2	34.3	22.6	35.1	24.4	35.2	23	34.9	24.2	34.5	24
24	35.6	23.1	34.7	22.6	34	23.2	33.4	24.4	33.6	22.4	35.8	25.1	34.8	23.2
25	35.4	23.4	34.7	22.9	35.6	25	33.9	24.8	33.5	23	35.4	25.4	34.5	24.8
26	35.1	23.4	34.9	22.9	35	24.8	35.7	24.2	34.7	22.5	35.9	24	34.8	23.9
27	35.6	23.7	34.7	22.7	34	24.7	35.2	24.8	33.8	22.8	35.6	25.1	35.2	23.9
28	34.8	23.1	33.8	22.4	34	24	33.5	24.2	34.1	22.8	34.4	24.6	34.2	23.6
29	34.6	23	35	23.3	34.1	24.2	33.8	24.8	33.8	23	34.1	24.4	33.2	24
30	35	23.5	34.7	23.1	34	24.2	33.5	24.2	33.6	23.4	35.1	25.3	33.9	24
31	34.9	22.2	34.8	22.4	34	22.6	33.8	24.5	33.3	22.8	34.6	22.9	33.5	23.5
Mean	34.7	23.4	34.7	22.7	35	23.8	34.6	24.2	34.5	22.7	35.3	24.2	34.7	23.7

<sup>a</sup> These minimum temperatures seem to be not very reliable, the differences between 6 a. m. temperatures and minimum temperatures being both too small and too uniform.  
<sup>b</sup> These minimum temperatures seem to be somewhat too low.

Maximum and minimum temperatures at the stations of the Weather Bureau, May, 1921—Continued

Day.	San Fernando, Pampanga.		San Isidro, Nueva Ecija.		Iba.		Concepcion, Tarlac.		O'Donnell, Capas, Tarlac.		Tarlac.		Camiling.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	36	22.5	36.1	21.4	33.6	23	37.7	20.2	35.7	20.4	37.5	20.6	37.5	20.5
2	36	22.5	36.6	23	33	22.5	38.3	20.8	36.7	20.5	36.2	19.8	38.5	24
3	36	23	37	23.4	33.5	25.5	37.4	21.3	33.9	22	38	21.2	37.3	25.5
4	36	23	35.4	23.3	33.5	24	37.1	20.3	35	22.1	37.5	22.8	37.3	23.3
5	36	22	34.9	23	33.4	23.3	36.7	20.2	34.2	21.7	34.2	21.8	35.3	21.4
6	35.5	23	34.9	24.4	33	24	37.1	22	33.9	23.2	32.8	23.2	32.4	22.3
7	35	22	34.6	22.8	34	23.8	37.1	21.9	33.1	21.9	34.4	22.8	34.5	23.4
8	36	24	34.6	23.6	34.5	23.8	36.7	21.1	34.2	22.9	36	22.8	35.5	23.4
9	35.5	23.5	34.6	23.4	36.9	23.5	35.1	20.7	34.2	20.8	34.2	22.6	34.8	24.2
10	36	23.5	34.6	25	35.4	25.8	36	22.5	34.7	22.2	35.6	23.6	35.3	23.8
11	36	22	36.2	23.4	34.4	25.4	36.1	22.2	35.7	21.4	36.8	22.4	35.5	23.3
12	35.5	24	36.2	24	33.6	24.5	37.3	21.7	35.7	22.2	37.4	22.8	36.5	23.8
13	36.5	21.5	36.4	22.8	34.8	24.1	37.6	21.3	36.3	21.7	36.8	23.2	37.6	23.7
14	36	22.5	36.6	24.2	35.1	25.4	37.4	21.4	36.2	21.7	37.6	22.6	37.3	24.8
15	36	22.5	37.2	23.5	34.2	24.1	37.4	22.4	36.3	21.7	34	23	36.4	23.4
16	36	22.5	37.4	23.9	33.8	24	37.2	23.1	35.6	22.2	36.2	22.6	36.5	23.5
17	34	23	35.6	24.8	34.2	24.5	36.7	24.3	36	23.7	34.8	24.2	36.2	23.8
18	33.5	23.5	32.2	25	31.6	25	32.8	22	33.2	23.2	34	24.2	36.5	24.8
19	32	23	31.4	24.4	28.5	23.2	31.9	22.9	32.2	21.8	33.8	23	36.5	23.2
20	33.5	21.5	34.4	24	30	22.6	33.9	23.6	31.7	21.5	29	22.6	31.3	21.8
21	34	22	35.5	24.1	31.2	23.4	35.8	23.4	32.2	22.2	34.2	23	34.5	22.7
22	32.5	22	33	24.1	31	23.5	34.4	23	32.2	21.7	36.2	22.8	33.3	23.5
23	35	22.5	35.5	24.2	32.2	23.5	35.8	22.8	33.7	20.7	34.8	22.6	34.8	23.2
24	35.5	23	36.9	23.2	31.5	23.5	36.7	21.9	34.7	20.8	36	22.4	35.5	22.5
25	35.5	24.9	34	24.6	32.9	24.2	36.8	24.6	34.7	23.2	32.8	24.4	35.3	23.3
26	35	23	35.5	23.5	33	24	36.7	22.4	34.7	22.2	35.2	23.8	35.3	22.8
27	36	23	35.4	23.4	33	24.1	37.5	22	35.7	22.1	34.8	22.6	35.8	23.5
28	34	22.5	33.9	23.5	32.4	23.5	36.1	21.9	34.2	21.1	34.2	22.4	34.5	23.8
29	34	23.5	33.5	24.2	31.6	24	34.9	23.3	33.7	21.9	36.4	23.4	34.5	23.4
30	35	22	34.9	24.1	32	22.6	35.7	22.7	34.2	21.7	36	22.4	34.3	22.7
31	35	22	35.4	23.5	32.2	23.3	36.6	23	35.7	20.4	35.4	21.8	34.5	21.8
Mean	35.1	22.8	35.2	23.7	33	23.9	36.3	22.2	34.5	21.8	35.3	22.7	35.5	23.3

Day.	Baler.		Dagupan.		Rosario, La Union.		Tubao.		Bolinao.		Aringay.		Baguio.		
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum. <sup>a</sup>	Maximum.	Minimum.	Maximum. <sup>b</sup>	Minimum.	Maximum.	Minimum.	
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	
1	31.4	21.5	35.6	23	37.1	19.5	35.6	22.3	36.2	24.4	37	22.8	24.7	14.6	
2	31.5	21.6	36.4	24.6	37.2	19.6	36.7	24.5	35.3	25.2	37	23.8	25.8	16	
3	30.2	22.6	35.4	24.9	37.3	21.8	36.3	24.7	33.8	26.2	37.2	23	25.2	15.9	
4	31	23.3	36.4	23.6	37.1	23.3	36.1	23.9	34.8	24.8	37.8	24.8	24.2	15.5	
5	32.8	22.2	36.4	23.5	37.3	23.5	36.9	22.4	35	25	38.2	22.8	25.2	14.8	
6	33	23	32.5	23.3	37.3	23.5	33.2	24.6	33.5	25.8	37.8	24	22.8	16	
7	32.1	24.3	34.5	25	36.8	23.6	34.3	23.8	34.5	24.2	37.2	24	24	16	
8	32.5	23.9	36.9	24.5	36.7	23.5	37	26.1	35.7	26	36.8	25.2	23.9	15.9	
9	31.7	21.8	37.8	24.8	36.5	23.4	-----	24	38.6	24.8	37.2	24.8	26	15.8	
10	31.3	23.2	38.4	24.5	36.4	23	-----	23.9	37	25.3	37	23.8	24	16.2	
11	33.1	23.2	37.4	24.5	36.4	22.3	-----	23	37.1	25	36.2	22.2	25.2	16.3	
12	33.4	21.9	37	25.2	36.9	22	-----	23.5	35.7	25.8	37.2	24.2	25.7	16.8	
13	33.1	20	39.3	24.5	37.8	22	-----	23.6	37.4	27.4	37.2	23.8	25.8	16.7	
14	33.3	23	39	23.4	38.3	22.1	-----	22.7	36.1	25.7	37.8	23.2	25.8	17	
15	33.2	21.9	36.3	23	38.3	23.1	-----	23.4	35.6	26.5	36.8	24	24.8	17	
16	34	23	36.7	24.8	38.3	23.2	-----	24.2	33.8	26.1	37.8	24.8	24.3	16	
17	34	23.6	37.5	24.1	37.2	23.6	-----	25	35.4	25	37.2	24.8	25.2	16.9	
18	32.8	24	35.2	24.8	35.4	23	-----	35.4	34.3	25.2	37.2	24	22.6	16.6	
19	32.2	23.4	34.3	24.4	35.3	23.2	-----	33.2	34.4	25	35	23	23.7	15.8	
20	31.8	22.5	32	23.6	35.4	24.1	-----	33.6	30.8	31.8	23.8	34.7	25.2	22.7	16
21	32.4	22.9	35.4	23.9	35.3	24.1	-----	34.7	23.8	34.5	23.2	35.2	23.2	24.1	16.1
22	32.6	23.3	33.8	24.2	35.3	24	-----	33.1	24.7	33.1	24.5	35	23.8	22.2	16.5
23	33	23	34.9	24	34.8	23.8	-----	35.2	24.2	34.6	25.4	35.8	23.8	24.2	15.8
24	33	23.5	34.9	23.6	34.8	23.1	-----	35.6	24.2	32.8	24.1	36.8	23.2	24.3	15.6
25	32.5	23.7	34.8	25.2	34.8	23.4	-----	35.2	24.1	32.5	24.6	35.8	24.2	22	15.7
26	33.6	23.7	35.5	24.3	33.4	23.2	-----	36.1	23.8	34	26.2	36.2	24	24.9	16.2
27	34.6	22.9	35.4	24.4	34.4	22.1	-----	34.7	23.4	33.3	24.9	37.2	23	22.3	16.5
28	34	23.3	34	24.2	35.1	22.1	-----	34.6	23	32	23.7	34.2	23	23.5	15.7
29	33.1	24	34.7	24.5	34	24.1	-----	34.2	24.8	33.2	25	35	24	21	16.3
30	35.1	22.8	34	24.2	34.2	23.2	-----	34	22.6	33	24.8	36	22.8	24.2	16.1
31	35.7	22.7	34.8	24.5	34	22.1	-----	35.7	22.8	33.3	25.5	35	24	23.7	15.7
Mean	32.8	22.9	35.7	24.2	36.1	22.9	35.1	23.7	34.6	25.1	36.6	23.8	24.1	16.1	

<sup>a</sup> These minimum temperatures seem to be not very reliable, the differences between 6 a. m. temperatures and minimum temperatures being both too small and too uniform.

<sup>b</sup> These maximum temperatures seem to be somewhat too high.

Maximum and minimum temperatures at the stations of the Weather Bureau, May, 1921—Continued

Day.	Naguilian, La Union.		San Fernando, La Union.		Echague.		Balaoan.		Tagudin.		Candon.		Vigan.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	35.3	23.2	34	23	36.4	21.6	33.9	22.3	33.3	24	33.5	25.8	34	24.1
2	35.8	23.8	34.5	24.7	36.2	21.6	33.5	22.3	33.3	24	33.4	26.5	34	24.4
3	35.1	23.7	34.4	24.4	36.3	22.6	34.2	23.7	33.9	24.9	33.4	25.7	33.6	24.1
4	35.4	24.2	34.1	22.7	36.4	22.9	34.2	22.3	33.8	24.9	33.5	25.2	33	23.6
5	35.6	23.8	36	23	36.7	23.7	34.2	22.3	33	23.6	33.5	24.8	33.2	23.6
6	35.8	24	35	26.5	36.7	23.7	34.7	25.5	34.3	26.5	33.5	27	33.2	24.1
7	35.3	23.5	34.4	24.5	36.4	21.6	34.1	24.3	34.2	25	33.6	26.2	33.6	24.6
8	36.3	23.5	36.7	25.6	36.2	21.6	35.9	25.3	34.3	26	34.4	25.9	34	25.5
9	36.1	23.5	36	24.1	36.3	22.6	34.6	23.7	34.3	24.5	33.5	26.5	34.8	25
10	35	23.5	35.5	23.5	36.3	22.6	34.9	23.3	33.5	24.1	33.5	25	35.1	25.4
11	35.4	23.5	35.3	23	37.1	22.9	35.4	22.8	34.6	24	34	25.5	34	25.6
12	35	23.5	35.3	24	38.2	22.9	35.2	23.9	34.2	25.1	33.4	26	34.6	25.6
13	35.5	23.5	36.5	24.3	38.5	22.4	35.6	24.3	35.1	25.3	34.2	26	34.7	25.5
14	30.2	23.7	37.4	23.7	38.4	21.6	35.5	23.7	36	25	34.2	25.6	35.2	26.1
15	34.3	23.5	35	24.6	36.7	23.7	36.5	23.8	34.3	25	34	25.1	34.8	25.3
16	35.6	23.5	36.3	23.5	38.4	22.9	34.5	24.3	35	25.1	34.4	26.6	34.7	26.6
17	34.8	23.5	36.9	25.3	36.7	23	36.9	24.3	35.2	25.2	34	26.8	34.8	25.1
18	34.5	23.5	37	24.8	37	23.2	36.1	24.3	33.2	25	33	26	33.5	22.8
19	34.6	23.5	34	24	35.3	24.1	36	23.9	32.9	23.8	31.4	25.4	31.6	23.2
20	35.3	23.8	32.8	24.7	35.8	22.8	33.3	23.9	32.6	23.3	30.5	24.8	31.8	23.6
21	35.5	23.8	34.8	24	36.8	23.8	33.4	23	33.6	23	32.4	25	33	24.5
22	34.8	23.6	33.6	24	35.8	23	33.6	23.7	32	24	31.6	25.4	31.2	23
23	34.3	23.8	34.8	25.2	35.7	24	33.6	24.6	33.3	25.1	32	25.6	32.4	23.1
24	32.9	24.1	34	24.1	36.5	22.7	34	23.5	32.8	23.9	32.7	25	34.1	24
25	33.9	24.8	34	24.8	35.4	22.5	33.3	24.1	34.3	24.4	33.4	26	33.6	25
26	32.4	25.1	35.2	25.1	36.5	23.1	33.2	24.1	33.6	24.8	33	25.9	33.4	24.9
27	34.7	24	34.7	24	37.3	22.6	34.2	23.4	33.6	24.2	32.9	25.6	33.4	25.2
28	33.3	24.9	34	24.9	35.2	22.9	34	23.5	33.3	24.2	32.9	26.5	32.8	25.5
29	32.8	24	33.7	24	35.1	23.3	34.2	23.4	33.1	24.2	32.5	26.2	34	25.5
30	34.9	24	33.5	24	36.1	22.8	33.3	23.4	32.9	23.9	33.5	26.4	34	25
31	36.1	25	34.6	25	34.8	21.6	33.4	24	33.9	24.3	33	25.5	33.8	25.2
Mean	34.7	24.3	35	24.3	36.5	22.9	34.4	23.8	33.8	24.6	33.2	25.8	33.7	24.7

Day.	Tuguegarao.		Sinait.		Laoag.		Pasuquin.		Aparri.		Cape Bojeador.		Basco.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	35.6	23.2	33	22.5	35.7	22.6	34.7	23.1	31.9	22.3	35.8	24.8	33.7	24.6
2	37	23.8	34.9	23	35.7	23.6	34.6	23.1	31.4	22.6	34.2	23.8	33.2	23.9
3	37.8	23.7	34.9	23.1	35.9	23	35.5	23.5	32.1	22.4	36.2	24.2	33.6	23.6
4	38.5	24.2	34.2	21.8	35.2	21.9	33.9	22.3	35.2	24.4	33.5	24.9	33.5	25.1
5	38	23.8	34.2	21.8	35.9	22.5	34.6	22.7	34.6	23.9	33.9	24.5	33.9	25.1
6	37.8	24	34.2	23.1	36.2	24.1	35	24.1	32.2	23.5	34.5	25.8	33.2	23.2
7	37.2	23.5	34	23.5	36.2	24.2	34.9	24.3	31.3	23.2	35.8	25.7	32.7	22.5
8	37.9	23.5	34.3	23.1	35.2	23.5	35.1	23.4	35.5	23.9	34	25.3	32.9	23
9	38	24.4	36	25.2	37.2	24.7	35.6	25.1	35.5	24.6	35.9	25.7	32.8	26.2
10	38.8	23.6	36.1	24.2	37	24.7	35.7	25	34.2	24.5	38.1	26.2	33.2	27
11	39.2	24.6	36.4	24	35.7	23.8	35.4	23.6	36.6	24.4	34.4	25.2	32.9	26.7
12	40.2	24.8	36.1	24.9	37.2	24	36.3	24.4	35.5	24	34.8	25.4	31.9	23.9
13	38.3	24.2	36.2	23.9	36.8	24.6	36.6	24.8	34.6	24.7	35.3	25.7	33	22.7
14	39.7	24.6	36.2	24.5	36.7	24.8	36	24.7	36.4	24.6	35.1	25.4	33	22.8
15	39.3	24.7	36.9	24.6	37.6	23.2	39.2	23.3	33	23.8	34.3	25	31.3	24.5
16	39.5	24.6	35.9	24.9	36.2	25.6	35	25.1	36	24.5	35.5	25.8	33.8	24.1
17	39.5	25.2	35.2	24.9	36.7	24.1	35.6	25	36.5	24.6	37.1	25.7	33.3	24.5
18	39	23.8	34.5	23.9	34.2	24.1	35.4	25.6	37	22.5	35	26	34	24.5
19	35.9	23.5	32	23.4	32.6	23.6	32.1	23.8	33.1	23.1	31.4	23.8	30.5	23.9
20	35.5	24.2	32.4	23.4	33.1	23.3	31.8	24	31.2	23.1	33.4	24	31.8	22.7
21	37	24.7	32.4	25	32.7	23.9	32.4	23.3	33.4	24.4	31.3	24.3	31	25.3
22	34	24	32.2	23.6	32.2	24.1	31.3	24.5	34.2	24.4	30.4	23.3	30.1	24.1
23	34.8	24.5	32.2	23.6	32.6	23.6	31.7	24	32.2	23.8	31.3	23.1	30.3	25.1
24	36.8	24.4	32.2	23.6	34.2	23.8	33	24.6	31.8	23.6	33.2	24.5	29.2	23.5
25	36	23.4	33	22	34.5	24	34	24.3	32.4	24.5	33.9	24.6	30.1	23.7
26	35.8	23.5	32	23.6	33.8	24.1	34	24.1	34.1	24.2	33.6	25.5	31.8	24.1
27	36	23.2	33.3	23.9	34.2	24.3	34.3	24.6	34.2	23.8	33.2	25.6	31	24.5
28	35.2	24.4	33.4	24.4	33.7	25.1	34	24.8	33.6	25	32.7	24	29.6	24.2
29	35.2	23.8	33.2	25.2	34.2	25.2	34.9	24.7	34	24.4	32.8	25	31.6	24
30	36	23.2	33.2	24.2	34.2	24.4	35	24.9	32.9	23.7	32.5	25.8	30.8	24
31	35	23.3	33.5	24.3	33.5	24.3	33.3	24.7	34.2	23.6	32.1	26	30.1	24.5
Mean	37.2	24	34.1	23.8	35.1	24	34.5	24.2	33.9	23.9	34	25	31.7	24.2



## SEISMOLOGICAL BULLETIN FOR MAY, 1921

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### EARTHQUAKES FELT IN THE PHILIPPINES<sup>1</sup>

5, 23<sup>h</sup> 57<sup>m</sup> [6, 7<sup>h</sup> 57<sup>m</sup>]. Naga (SE Luzon). Earthquake shock of intensity III. It was also felt in the towns placed close to the San Miguel Bay.

6, 15<sup>h</sup> 30<sup>m</sup> [6, 23<sup>h</sup> 50<sup>m</sup>]. Lais (SE Mindanao). Earthquake shock of intensity III.

8, 18<sup>h</sup> 33<sup>m</sup> [9, 2<sup>h</sup> 33<sup>m</sup>]. Tabaco (SE Luzon). Earthquake of intensity III; recorded at Tigaon, about 40 kilometers distant to the NW.

10, 0<sup>h</sup> 19<sup>m</sup> [10, 8<sup>h</sup> 19<sup>m</sup>]. Ormoc (W Leyte). Earthquake of intensity IV, long duration. Near and shallow origin towards the SW, in the vicinity of Camotes Islands.

10, 13<sup>h</sup> 58<sup>m</sup> [10, 21<sup>h</sup> 58<sup>m</sup>]. Lais (SE Mindanao). Earthquake shock of intensity III. Recorded at Butuan; origin some 280 kilometers distant, towards Sarangani Islands.

10, 18<sup>h</sup> 12<sup>m</sup> [11, 2<sup>h</sup> 12<sup>m</sup>]. Catbalogan (W Samar). Earthquake of intensity III-IV, apparent direction NNW-SSE, duration 15 seconds.

11, 6<sup>h</sup> 50<sup>m</sup> 47<sup>s\*</sup> [11, 14<sup>h</sup> 50<sup>m</sup> 47<sup>s</sup>]. Atimonan (E Luzon). Earthquake of intensity III. Its epicenter lay in the isthmus between the Bays of Ragay and Lamon, Tayabas Province; it was perceptible through it and farther eastward to the limits of Camarines. Recorded at Tigaon about 90 kilometers distant to the east.

12, 3<sup>h</sup> 47<sup>m</sup> 39<sup>s\*</sup> [12, 11<sup>h</sup> 47<sup>m</sup> 39<sup>s</sup>]. Lais (SE Mindanao). Earthquake of intensity III. Distant origin towards south. Recorded at Butuan. Aftershock at 13<sup>h</sup> 09<sup>m</sup> [21<sup>h</sup> 09<sup>m</sup>].

14, 1<sup>h</sup> 02<sup>m</sup> 13<sup>s\*</sup> [14, 9<sup>h</sup> 02<sup>m</sup> 13<sup>s</sup>]. Paracale (SE Luzon). Earthquake of intensity III. Origin about 160 kilometers distant from Manila, probably in the sea N of Camarines.

14, 3<sup>h</sup> 12<sup>m</sup> [14, 11<sup>h</sup> 12<sup>m</sup>]. Butuan (N Mindanao). Oscillatory earthquake, direction N-S, intensity III.

14, 13<sup>h</sup> 18<sup>m</sup> [14, 22<sup>h</sup> 58<sup>m</sup>]. Guam (Mariana Islands). Earthquake shock of intensity III. Near origin.

17, 8<sup>h</sup> 21<sup>m</sup> 08<sup>s\*</sup> [17, 16<sup>h</sup> 21<sup>m</sup> 08<sup>s</sup>]. Baguio (W Luzon). Earthquake of intensity III. Epicenter, SE of Benguet Province.

21, 20<sup>h</sup> 26<sup>m</sup> 30<sup>s\*</sup> [22, 4<sup>h</sup> 26<sup>m</sup> 30<sup>s</sup>]. Benguet (W Luzon). Earthquake of intensity III-IV; regional origin and character, in the center of the province.

23, 21<sup>h</sup> 55<sup>m</sup> 54<sup>s\*</sup> [24, 5<sup>h</sup> 55<sup>m</sup> 54<sup>s</sup>]. Ilocos (NW Luzon). Earthquake of intensity III-IV, felt along the two provinces, Ilocos Norte and Ilocos Sur. On the same 23rd at 10<sup>h</sup> 55<sup>m</sup> [18<sup>h</sup> 55<sup>m</sup>] a light shock had been felt at Sinait, a town located close to boundaries of the two provinces, below the parallel 18° N. The epicenter probably lay some distance in the China Sea.

<sup>1</sup> The intensity of earthquakes is given in the notation known as the Rossi-Forel scale. The time is that indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (\*). Otherwise the time is that noted by the observer who sent the report. All time indications are in Greenwich mean time (midnight=0<sup>h</sup>), insular time being added in brackets for the convenience of Philippine readers.

24, 7<sup>h</sup> 35<sup>m</sup> [24, 15<sup>h</sup> 35<sup>m</sup>]. Surigao (NE Mindanao). Earthquake shock of intensity III, duration 3 seconds. Recorded at Butuan.

28, 19<sup>h</sup> 22<sup>m</sup> 09<sup>s</sup>\* [29, 3<sup>h</sup> 22<sup>m</sup> 09<sup>s</sup>]. SE Mindanao. Earthquake of intensity III-IV, in the southern portion of Davao Province, and II-III northwestwards to the center of the Island. The origin lay some distance S or SE of the Davao Gulf. Recorded in the Far East.

29, 15<sup>h</sup> 55<sup>m</sup> [29, 23<sup>h</sup> 55<sup>m</sup>]. Batac (NW Luzon). Local earthquake shock of intensity III.

### RECORDS OF THE MICROSEISMOGRAPH

(Time: Greenwich mean. Midnight=0h. Instrument: Wiechert seismograph; 1,000 kilograms.  $A_N$ :  $T_0=6.25$ ,  $\epsilon=2.906$ ,  $\frac{r}{T_0^2}=0.053$ ;

$A_E$ :  $T_0=6.18$ ,  $\epsilon=2.393$ ,  $\frac{r}{T_0^2}=0.042$ . Alluvium. 2.40 meters above sea level.)

No.	Date.	Character.	Phase.	Hour.	Period.	Amplitude.		Remarks.
						$A_N$ $\mu$	$A_E$ $\mu$	
100	1	Iv	eP F	h. m. s. 0 17 26	s.			
101	1	I	e F	3 35 4 02				
102	1	I	e M <sub>N</sub> F	7 00 08 00 42	16	4		
103	1	Iv	eP F	11 39 35 46				
104	1	Ir	eL? F	19 50 15 58				W Java.
105	2	Iv	eP F	7 58 14 8 00				
106	4	I	e F	5 04 44 44				
107	4	Iv	eP F	21 31 36 43				
108	6	I	eP F	3 32 53 44				
109	6	Iv	eP F	16 02 48 05				
110	8	Iv	eP F	18 16 48 22				
111	9	I	e F	20 37 40 47				
112	9	Iv	eP F	22 53 06 23 00				
113	11	Iv	eP F	4 02 18 06				
114	11	Iv	eP L M <sub>N</sub> M <sub>E</sub> F	6 56 47 51 10 51 12 51 16 7 01	2 2	182 87		Felt at Atimonan (E Luzon).
115	12	Ir	e M <sub>N</sub> F	3 47 39 4 01 28 55	15	20		Felt at Lais (SE Mindanao).
116	13	Ir	e F	12 45 40 13 20				E Borneo.
117	13	Ir	e L?	20 04 37 07 29				End overtaken by following earthquake. Borneo.
118	13	Ir	e F	20 40 14 21 09				E Borneo.
119	13	Ir	e L M <sub>N</sub> M <sub>E</sub> F	21 12 34 17 52 18 02 18 31 22 06	16 16	23 18		E Borneo.



Records of the Microseismograph—Continued

No.	Date.	Character.	Phase.	Hour.	Period.	Amplitude.		Remarks.
						A <sub>N</sub> μ	A <sub>E</sub> μ	
120	14	Iv	eP F	<i>h. m. s.</i> 1 02 13	<i>s.</i>			Felt at Paracale (SE Luzon).
121	14	IIr	eP L M <sub>E</sub> M <sub>N</sub> F	11 21 12 26 00 26 44 27 02 13 08		11 12	126	E Borneo.
122	14	I	e F	20 30 21 56				
123	15	Iv	eP L M <sub>N</sub> M <sub>E</sub> F	2 27 58 23 46 29 12 29 42 47		5 4	80 54	
124	15	I	e F	14 54 15 13				
125	16	I	e F	15 23 36 16 14				
126	17	Iv	eP F	8 21 08 26				Felt at Baguio (W Luzon).
127	17	Iv	eP F	10 19 18 24				
128	17	I	e	23 19 53				End overtaken by following earthquake.
129	17	I	e F	23 31 0 50				
130	18	I	e F	8 23 9 12				
131	18	Iv	eP F	16 36 18 42				
132	20	I	e? F	0 51 1 13				From Vicentini's seismograph. S Turkestan.
133	20	I	e F	13 26 33 14 32				Amboina.
134	21	IIv	eP F	6 43 54 7 12				Northeast of Samar.
135	21	IIIId	eP L	8 43 21 44 21				Northeast of Samar. Maxima lost by the force of the shock. End overtaken by following earthquake.
136	21	Iv	eP F	10 58 48 11 10				Aftershock of the No. 135.
137	21	IIv	eP L M <sub>E</sub> M <sub>N</sub>	11 25 60 26 00 26 14 26 22		5 5	101 204	Aftershock of the No. 135. End overtaken by following earthquake.
138	21	Iv	eP F	11 59 45 12 12				Aftershock of the No. 135.
139	21	IIv	eP L M <sub>N</sub> M <sub>E</sub> F	12 24 53 25 14 26 11 26 26 51		6 6	155 79	Aftershock of the No. 135.
140	21	Iv	eP F	13 56 47 14 04				Aftershock of the No. 135.
141	21	Iv	eP F	14 35 16 44				Aftershock of the No. 135.
142	21	Iv	eP F	15 42 04 52				Aftershock of the No. 135.
143	21	IIv	eP L M <sub>N</sub> M <sub>E</sub> F	16 29 44 30 44 31 11 31 18 51		6 6	155 92	Aftershock of the No. 135.

## Records of the Microseismograph—Continued

No.	Date.	Character.	Phase.	Hour.			Period.	Amplitude.		Remarks.
								A <sub>N</sub> μ	A <sub>E</sub> μ	
144	21	Iv	eP F	h. m. s.	s.				Aftershock of the No. 135.	
				16 56 48						
				17 12						
145	21	Iv	eP F	17 26 37					Aftershock of the No. 135.	
				34						
146	21	IIv	eP L M <sub>E</sub> M <sub>N</sub> F	19 48 48 49 47 50 10 50 11 20 16		5 5		117 170	Aftershock of the No. 135.	
147	21	Iv	eP F	20 26 30 35					Felt at Baguio (W Luzon).	
148	21	Ir	e	22 34 14					End overtaken by following earthquake. Kurile Islands.	
149	21	IIIv	eP L M <sub>N</sub> F	23 38 39 39 45 40 20 1 27			6	1,182	Northeast of Samar.	
150	22	Iv	eP F	2 46 00 55					Aftershock of the No. 135.	
151	22	Iv	eP F	8 35 08 43					Aftershock of the No. 135.	
152	22	Iv	eP F	13 37 22 48					Aftershock of the No. 135.	
153	22	Iv	eP F	13 58 30 14 05					Aftershock of the No. 135.	
154	22	Iv	eP F	16 01 22 10					Aftershock of the No. 135.	
155	23	IIv	eP L M <sub>N</sub> M <sub>E</sub> F	2 40 18 41 18 41 22 41 36 57		5 6		155 95	Aftershock of the No. 135.	
156	23	IIv	eP L M <sub>E</sub> M <sub>N</sub> F	2 57 33 58 28 58 46 58 50 3 24		5 5		55 82	Aftershock of the No. 135.	
157	23	Iv	eP F	3 43 28 51					Aftershock of the No. 135.	
158	23	IIv	eP L M <sub>N</sub> M <sub>E</sub> F	3 55 35 56 32 56 38 56 42 4 07		5 4		58 57	Aftershock of the No. 135.	
159	23	IIIv	eP L M <sub>N</sub> M <sub>E</sub> F	4 14 38 15 44 16 13 16 16 6 04		6 6		1,164 834	Aftershock of the No. 135.	
160	23	Iv	eP F	8 33 00 41					Aftershock of the No. 135.	
161	23	Iv	eP F	12 57 58 13 11					Aftershock of the No. 135.	
162	23	IIv	eP F	14 28 55 48					Aftershock of the No. 135.	
163	23	IIv	eP L M <sub>N</sub> M <sub>E</sub> F	21 55 54 56 56 57 10 57 11 22 21		5 5		145 107	NW Luzon.	
164	24	Iv	eP F	11 07 00 23					Aftershock of the No. 135.	
165	25	IIv	eP L M <sub>N</sub> F	1 58 00 59 00 59 34 3 02		6		245	Aftershock of the No. 135.	

Records of the Microseismograph—Continued

No.	Date.	Character.	Phase.	Hour.	Period.	Amplitude.		Remarks.		
						A <sub>N</sub> μ	A <sub>E</sub> μ			
166	25	IIIv	eP	h. m. s.	s.			Aftershock of the No. 135.		
			L	9 22 28						
			M <sub>N1</sub>	23 31					6	418
			M <sub>E1</sub>	23 31					6	267
			M <sub>E2</sub>	24 45					6	326
M <sub>N2</sub>	24 50	6	540							
			F	10 59						
167	25	Iv	eP	15 53 15				Aftershock of the No. 135.		
			F	16 12						
168	25	Iv	eP	16 53 45				Aftershock of the No. 135.		
			F	17 08						
169	25	Iv	eP	17 45 45				Aftershock of the No. 135.		
			F	18 02						
170	26	Iv	eP	0 28 00				Aftershock of the No. 135.		
			F	37						
171	26	Iv	eP	23 32 40				Aftershock of the No. 135.		
			F	43						
172	27	Iv	eP	6 13 29				Aftershock of the No. 135.		
			F	23						
173	27	Iv	eP	21 59 00				Aftershock of the No. 135.		
			F	22 15						
174	28	IIr	eP	19 22 09				SE Mindanao.		
			L	26 00						
			M <sub>N</sub>	26 16	8	182				
			M <sub>E</sub>	27 18	10	154				
			F	21 16						
175	29	I	e	21 50						
			F	22 17						
176	30	IIv	eP	4 05 18				Aftershock of the No. 135.		
			L	06 19						
			M <sub>E</sub>	07 48	8	228				
			M <sub>N</sub>	08 10	7	440				
			F	5 48						
177	30	I	e	18 28						
			F	19 04						
178	31	I	e	11 03						
			F	24						
179	31	I	e	22 21						
			F	40						

### TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS<sup>1</sup>

5, 23<sup>h</sup> 57<sup>m</sup> [6, 7<sup>h</sup> 57<sup>m</sup>]. Naga (SE de Luzón). Temblor de tierra de intensidad III. Sintióse también en otros pueblos situados cerca del fondo de la Bahía de San Miguel.

6, 15<sup>h</sup> 50<sup>m</sup> [6, 23<sup>h</sup> 50<sup>m</sup>]. Lais (SE de Mindanao). Temblor de tierra de intensidad III.

8, 18<sup>h</sup> 33<sup>m</sup> [9, 2<sup>h</sup> 33<sup>m</sup>]. Tabaco (SE de Luzón). Temblor de tierra de intensidad III. Registrado en Tigaon, distante 40 kilómetros al NW.

10, 0<sup>h</sup> 19<sup>m</sup> [10, 8<sup>h</sup> 19<sup>m</sup>]. Ormoc (W de Leyte). Temblor de intensidad IV, duración larga. Origen cercano y superficial hacia el SW, cerca de las Islas Camotes.

10, 13<sup>h</sup> 58<sup>m</sup> [10, 21<sup>h</sup> 58<sup>m</sup>]. Lais (SE de Mindanao). Temblor de intensidad III. Registrado en Butúan; origen a unos 280 kilómetros hacia las Islas de Sarangani.

10, 18<sup>h</sup> 12<sup>m</sup> [11, 2<sup>h</sup> 12<sup>m</sup>]. Catbalogan (W de Sámar). Temblor de tierra de intensidad III-IV, dirección aparente NNW-SSE, duración 15 segundos.

11, 6<sup>h</sup> 50<sup>m</sup> 47<sup>s\*</sup> [11, 14<sup>h</sup> 50<sup>m</sup> 47<sup>s</sup>]. Atimonan (E de Luzón). Temblor de tierra de intensidad III. Su epicentro parece se hallaba cerca del istmo que une las Bahías de Lamón y de Ragay, de la Provincia de Tayabas; fué perceptible en todo él y también hacia el E, hasta los límites occidentales de la Provincia de Camarines. Registrado en Tigaon, distante unos 90 kilómetros al E.

12, 3<sup>h</sup> 47<sup>m</sup> 39<sup>s\*</sup> [12, 11<sup>h</sup> 47<sup>m</sup> 39<sup>s</sup>]. Lais (SE de Mindanao). Temblor de tierra de intensidad III. Origen lejano hacia el S. Registrado en Butúan. Repetición apenas perceptible a 13<sup>h</sup> 09<sup>m</sup> [21<sup>h</sup> 09<sup>m</sup>].

14, 1<sup>h</sup> 02<sup>m</sup> 13<sup>s\*</sup> [14, 9<sup>h</sup> 02<sup>m</sup> 13<sup>s</sup>]. Paracale (SE de Luzón). Temblor de tierra de intensidad III. Origen a 160 kilómetros de Manila, probablemente en el mar, al N de Camarines.

14, 3<sup>h</sup> 12<sup>m</sup> [14, 11<sup>h</sup> 12<sup>m</sup>]. Butúan (N de Mindanao). Temblor oscilatorio, dirección al parecer de N-S, intensidad III.

14, 13<sup>h</sup> 18<sup>m</sup> [14, 22<sup>h</sup> 58<sup>m</sup>]. Guam (Islas Marianas). Temblor de tierra de intensidad III. Origen cercano.

17, 8<sup>h</sup> 21<sup>m</sup> 08<sup>s\*</sup> [17, 16<sup>h</sup> 21<sup>m</sup> 08<sup>s</sup>]. Baguio (W de Luzón). Temblor de tierra de intensidad III. Su origen se hallaba hacia el SE de la Provincia de Benguet.

21, 20<sup>h</sup> 26<sup>m</sup> 30<sup>s\*</sup> [22, 4<sup>h</sup> 26<sup>m</sup> 30<sup>s</sup>]. Benguet (W de Luzón). Temblor de tierra de intensidad III-IV, origen regional en el centro de la provincia.

23, 21<sup>h</sup> 55<sup>m</sup> 54<sup>s\*</sup> [24, 5<sup>h</sup> 55<sup>m</sup> 54<sup>s</sup>]. Ilocos (NW de Luzón). Temblor de tierra de intensidad III-IV, sentido a lo largo de las dos Provincias de Ilocos Norte y Sur. El mismo día 23 a 10<sup>h</sup> 55<sup>m</sup> [18<sup>h</sup> 55<sup>m</sup>] se había sentido un ligero temblor en Sinaít, población situada cerca del límite de las dos provincias al sur del paralelo 18° N. El epicentro parece se hallaba algo lejos hacia el W, en el Mar de la China, que baña las costas de Ilocos.

24, 7<sup>h</sup> 35<sup>m</sup> [24, 15<sup>h</sup> 35<sup>m</sup>]. Surigao (NE de Mindanao). Temblor de tierra de intensidad III, duración 3 segundos. Registrado en Butúan.

28, 19<sup>h</sup> 22<sup>m</sup> 09<sup>s\*</sup> [29, 3<sup>h</sup> 22<sup>m</sup> 09<sup>s</sup>]. SE de Mindanao. Temblor de tierra de intensidad III-IV en el extremo S de la Provincia de Dávao, y II-III hacia el NW hasta el centro de la isla. El origen de este terremoto se hallaba fuera de la isla, algo lejos hacia el S o SE del Golfo de Dávao. Registrado en el Extremo Oriente.

29, 15<sup>h</sup> 55<sup>m</sup> [29, 23<sup>h</sup> 55<sup>m</sup>]. Batac (NW de Luzón). Temblor de tierra local, de intensidad III.

<sup>1</sup> La intensidad de los terremotos se indica conforme a la conocida escala de Rossi-Forel. Cuanto a la hora de su ocurrencia, adoptamos la indicada por los sismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (\*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo medio de Greenwich (medianoche=0<sup>h</sup>). Para conveniencia de los lectores de Filipinas se añade también la hora insular.

## SEISMIC PERIOD IN SAMAR MAY, 21--26

On the 21st at 6<sup>h</sup> 43<sup>m</sup> 54<sup>s</sup>\* [14<sup>h</sup> 43<sup>m</sup> 54<sup>s</sup>] occurred an earthquake of intensity IV-V, through the Island of Samar, N Leyte and SE Luzon, with which began a short seismic period. This first shock was the forerunner of a more violent one, the strongest of the series, which was felt two hours later at 8<sup>h</sup> 43<sup>m</sup> 21<sup>s</sup>\* [16<sup>h</sup> 43<sup>m</sup> 21<sup>s</sup>]. It showed its greatest intensity, VII-VIII, on Batag Island, located near to the NE end of Samar; being perceptible to the NW as far as Manila, and to the S in NE Mindanao, that is, a radius exceeding 500 kilometers.

The note received from the station at Batag, where is located the easternmost lighthouse of the entrance of San Bernardino Strait, reads: "Violent earthquake, intensity VIII, direction SE-NW, duration 16 seconds. It stopped the clockwork of the light of this station. Light shocks continued at intervals, during the following evening and night." The said clockwork did not run again until some repairs were made.

In the grade VIII seems to be some exaggeration; because no other damage was reported, excepting the disablement of the light, either from the island or from the adjacent NE coast of Samar. Moreover the nearest stations of Calbayog, 75 kilometers distant; Catbalogan, 100 kilometers; Borongan, 115 kilometers; Irosin and Catanduanes, 120 kilometers, reported but intensity V.

During the first twenty-four hours after the strongest earthquake the seismographs at Manila recorded 14 aftershocks; and 8 the following period of 24 hours. Afterwards they were less numerous; we find only 15 to the end of the month. The seismograph at Butuan, located about 125 kilometers nearer to the origin than Manila, recorded a total number of forty-four aftershocks. Of all these, ten reached intensity IV-V at Batag and were perceptible at distances of 300 kilometers. On the same night of the 21st at 15<sup>h</sup> 38<sup>m</sup> 39<sup>s</sup>\* [23<sup>h</sup> 38<sup>m</sup> 39<sup>s</sup>], occurred a shock, the strongest among the aftershocks, considered of intensity VI by the observer at Batag.

Outside of the Archipelago, only the main earthquake was recorded all over the Globe. Four other shocks were also recorded in the seismic stations of China, Japan, and Java.

The epicenter of this earthquake, certainly tectonic, lay close to the NE end of Samar Island, in the Philippine Deep, which in that part reaches to depths of 8,900 meters at distances of but fifty kilometers from the said NE coast of Samar.<sup>1</sup>

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<sup>1</sup> See Monthly Bulletin for August, 1910.

## PERÍODO SÍSMICO DE SÁMAR MAYO, 21--26

El día 21 a 6<sup>h</sup> 43<sup>m</sup> 54<sup>s\*</sup> [14<sup>h</sup> 43<sup>m</sup> 54<sup>s</sup>] ocurrió un temblor de tierra de intensidad IV-V en toda la Isla de Sámar, N de Leyte y en la parte SE de Luzón, con el cual principió un corto período de temblores. Este temblor fué como el choque premonitorio de otro mucho más violento, el principal del período, que tuvo lugar dos horas después, a 8<sup>h</sup> 43<sup>m</sup> 21<sup>s\*</sup> [16<sup>h</sup> 43<sup>m</sup> 21<sup>s</sup>]. Desarrolló su máxima intensidad VII-VIII en la pequeña Isla de Batag, próxima al extremo NE de la Isla de Sámar, y se hizo perceptible hacia el NW hasta Manila, y hacia el S hasta el NE de Mindanao, o sea en un radio de algo más de 500 kilómetros.

La nota recibida de la estación de Batag, donde está el faro más oriental del Estrecho de San Bernardino, dice así: "Temblor violento de intensidad VIII, dirección SE-NW, duración 16 segundos. Paralizó el funcionamiento del aparato giratorio del faro de esta estación. Continuaron a intervalos temblores ligeros durante la tarde y noche siguientes." El grado de intensidad VIII nos parece exagerado, puesto que no consta causase otro daño, fuera del accidente del faro, ni en la isla ni en la vecina costa de Sámar. Además las estaciones más próximas, Calbayog 75 kilómetros, Catbalogan 100, Borongan 115, Irosin y Catanduanes 120, le dieron tan sólo intensidad V.

Durante las primeras 24 horas después del terremoto principal se registraron en Manila 14 réplicas, y 8 del 22 al 23. Los días siguientes ya fueron pocas; sólo encontramos 15 hasta el 31. El sismógrafo de Butúan, situado a unos 125 kilómetros más cerca del epicentro que Manila, registró en el mismo período un total de 44 réplicas. De todas estas réplicas unas diez llegaron a intensidad IV-V cerca del epicentro, y fueron perceptibles hasta 300 kilómetros de distancia. El mismo día 21, a 15<sup>h</sup> 38<sup>m</sup> 39<sup>s\*</sup> [23<sup>h</sup> 38<sup>m</sup> 39<sup>s</sup>], ocurrió la que puede considerarse como la más fuerte de todas las repeticiones, calificada de intensidad VI por el observador de Batag.

Fuera del Archipiélago tan sólo se registró en todo el Globo el terremoto principal de la tarde del 21. Las estaciones de China, Japón y Java registraron además cuatro de las principales repeticiones.

El epicentro de este terremoto, de carácter ciertamente tectónico, se hallaba cerca del extremo NE de la Isla de Sámar, dentro del Abismo Filipino, el cual alcanza profundidades de 8,900 metros, a unos 50 kilómetros de la costa NE de la isla.<sup>1</sup>

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<sup>1</sup> Véase Monthly Bulletin for August, 1910.

1925

THE GOVERNMENT OF THE PHILIPPINE ISLANDS

# WEATHER BUREAU

MANILA CENTRAL OBSERVATORY

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BULLETIN FOR JUNE, 1921

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PREPARED UNDER THE DIRECTION OF  
REV. JOSÉ ALGUÉ, S. J.  
DIRECTOR OF THE WEATHER BUREAU

MANILA  
BUREAU OF PRINTING  
1922





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**BULLETIN FOR JUNE, 1921**



# METEOROLOGICAL BULLETIN FOR JUNE, 1921

By Rev. JOSÉ CORONAS, S. J.

Chief, Meteorological Division of the Weather Bureau

## GENERAL WEATHER NOTES

Pressure and temperature.—The mean atmospheric pressure for this month in the Philippines is slightly above that of the preceding year, but slightly below the normal of June. With the exception of the southernmost stations, the highest pressures of the month were observed on the 10th and 11th, while the lowest pressures took place generally on the 15th or 30th in Luzon, and on the 17th in the Visayas and Mindanao.

The mean monthly temperature is very slightly below that of June, 1920, and the normal of this month. The absolute highest and lowest temperatures for Manila were 33.7° C and 22.7° C., registered, respectively, on the 1st and 26th. The extreme monthly temperatures for Baguio were 25.3° C., 14.8° C. on the top of Mirador, and 26.2° C., 14.6° C. in the plateau near the City Hall.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS OF THE WEATHER BUREAU FOR JUNE, 1921

Station.	Pressure.							Temperature.						
	Mean.	Departure from June, 1920.	Departure from normal.	Highest mean.	Day.	Lowest mean.	Day.	Mean.	Departure from June, 1920.	Departure from normal.	Highest.	Day.	Lowest.	Day.
	mm.	mm.	mm.	mm.		mm.		°C.	°C.	°C.	°C.		°C.	
Zamboanga	758.02	+0.28	-----	758.95	29	756.38	17	26.1	-0.5	-----	31.2	3	21.8	20
Kolonie, Yap, Western Carolines	57.98	+ .55	-----	59.44	28	56.28	17	26.9	-1.1	-0.5	33	10	22.5	23
Tagbilaran	57.49	+ .34	-0.45	58.23	23	56.03	17	26.7	-1.1	- .5	32.6	4,5	22.5	10,24
Surigao	57.53	+ .44	- .47	58.34	23	55.96	17	28	- .7	+ .1	33.3	12	23.3	19
Cebu	57.62	+ .44	- .38	58.44	23	56.19	17	27.2	- .7	- .2	31.9	26	22.4	24
Iloilo	57.51	+ .38	- .32	58.41	11	56.15	17	26.5	-1.3	- .9	34.9	3	22.4	3,23
Tacloban	57.58	+ .43	- .53	58.50	11	56.09	17	26.8	-1.1	- .7	34.3	30	22.6	25
Capiz	57.35	+ .36	- .63	58.23	11	55.82	17	27.1	- .6	+ .3	33.8	11	22.4	21
Calbayog	57.71	+ .42	- .36	58.47	10	56.26	17	27.5	- .9	- .4	34.4	4,5	23.2	21
Legaspi, Albay	57.29	+ .35	- .53	58.37	10	55.94	17	27.5	- .5	- .4	34.6	1,11	22.4	4
Atimonan	57.06	+ .29	- .52	58.15	10	55.61	30	27.1	- .2	-----	34.4	5	22.2	26
Ambulong, Tanauan, Batangas	56.62	+ .30	-----	57.68	10	55.10	14	27	-----	-----	34.9	1	22.2	4,18
Daet	57.18	-----	-----	58.35	10	55.62	30	27.4	- .2	- .4	33.7	1	22.7	26
Manila	57.20	+ .33	- .63	58.25	10	55.69	14	26.9	- .3	- .7	35	1	22.6	23,26
San Isidro, Nueva Ecija	57.14	+ .25	- .55	58.29	10	55.49	15	27.6	- .1	- .4	35.9	21	23	5
Dagupan	56.70	+ .35	- .54	57.77	11	54.64	15	18.2	- .4	- .5	25.3	21	14.8	4
Baguio <sup>a</sup>	635.25	+ .08	- .60	636.95	11	633.28	15	28	- .1	- .1	34.8	16	22.6	4
Vigan	756.22	+ .23	- .96	757.55	11	753.62	15	28.5	+ .4	- .2	38.2	30	22.8	18
Tuguegarao	56.31	+ .40	- .89	57.74	11	53.43	30	27.5	- .3	-----	35.1	14	22.6	26
Laoag	56.22	+ .53	-----	57.69	11	53.75	15	27.4	- .8	- .7	35.8	30	22.8	23
Aparri	56.21	+ .30	- .81	57.82	11	53.04	30							

<sup>a</sup> 26 days of observation.

<sup>b</sup> 27 days of observation.

<sup>c</sup> The barometric readings of this station are not reduced to sea level.

Rainfall.—The number of stations giving for this month a monthly total of rain greater than the normal of June does not differ much from the number of those reporting a smaller monthly amount. Taking, however, separately the stations of the Visayas,

we can say that the majority of them reported a monthly rainfall above both that of the preceding year and the normal of this month. The total monthly rainfall for Manila, 328.0 mm., is 18.6 mm. below that of the preceding year, and 89.7 mm. above the June's normal. That of Baguio, 577.9 mm., is 165.0 mm. above the normal.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF JUNE, 1921

Station.	Total.	Departure from June, 1920.		Days of rain.	Departure from June, 1920.		Greatest rainfall in a single day.	Day.	Station.	Total.	Departure from June, 1920.		Days of rain.	Departure from June, 1920.		Greatest rainfall in a single day.	Day.
		mm.	mm.		mm.	mm.					mm.	mm.					
Jolo.....	254.3	+ 5.9	+ 43.1	21	+ 5	+ 5	60.2	11	Calapan.....	77.1	- 51	-146.6	16	+ 3	- 1	22.1	14
Malamau, Isabela, Zamboanga	131.8	+ 76.6	-----	14	+ 7	-----	25.4	14	Virac.....	91	+ 32.7	-123	10	+ 5	- 8	45.2	13
Zamboanga.....	60.3	- 17.3	- 38.6	13	+ 5	+ 1	17.5	19	Naga, Camarines Sur.....	125.1	- 55.3	- 73.1	19	+ 1	+ 5	30.7	24
Davao.....	267.3	+ 66.9	+ 20.1	15	+ 1	+ 2	43.9	4	Tigaon.....	228.1	- 8.4	-----	19	- 2	-----	44.7	6
Cotabato.....	275.9	+129.2	+ 17.3	20	+ 1	+ 1	52.1	9	Batangas.....	40.1	-136.3	-115.1	12	- 2	0	13.7	12
Cagayan.....	157.4	+ 56.3	- 27.6	19	+ 9	+ 2	20.1	6	Lucena.....	397.2	+323.1	-----	16	+ 5	-----	145.5	23
Butuan.....	119.1	- 56.5	- 45.6	18	- 1	- 1	18.8	15, 22	Atimonan.....	207.1	+ 12.7	+ 17.8	22	+11	+ 8	37.6	14
Mambajao.....	116.5	+ 58.3	-----	-----	-----	-----	51	20	Ambulong, Tanauan, Batangas.....	173.5	- 9.5	-----	16	- 3	-----	42.5	13
Dumaguete.....	86.2	+ 44.6	- 54	15	+ 5	+ 2	21.8	19	Daet.....	169	+108.8	-----	17	+ 7	-----	51.3	3
Kolonie, Yap, Western Carolines.....	199.4	- 66.9	- 43.2	24	+ 4	0	36.9	18	Canluban, Calamba.....	183	- 46.8	-----	18	- 3	-----	86.3	13
Tagbilaran.....	240.5	+221.3	+ 91	14	+ 7	+ 1	64.6	23	Paracale.....	138.5	+130.9	- 50.5	14	+11	- 1	19	22
Iwahig Penal Colony, Puerto Princesa.....	293.5	+107.9	-----	22	+ 7	-----	43.2	13	Santa Cruz, Laguna.....	84.4	- 53.8	-100.5	16	0	- 1	18.5	21
Surigao.....	122.8	+ 24.9	- 1.8	12	+ 5	0	22.9	19	Manila.....	328	- 18.6	+ 89.7	24	+ 7	+ 8	90.9	24
Maasin, Leyte.....	401.1	+361.2	+221.8	14	+12	+ 5	88.6	14	Antipolo.....	389.1	+ 1.2	+ 66.4	21	0	+ 5	104.2	28
Cebu.....	208.5	+129.2	+ 31.4	14	- 1	- 2	64	19	San Isidro, Nueva Ecija.....	222.9	+ 58.9	+ 21.8	22	+ 1	+ 5	34.2	3
Iloilo.....	317.6	+ 43.5	+ 74.6	14	- 5	- 3	57.6	24	Iba.....	429.6	-237.2	- 62	23	+ 1	+ 2	54.4	8
San Jose de Buenavista.....	243	-119.9	-110	18	- 4	- 4	52.9	13	Tarlac.....	156.7	- 86.7	- 64.7	18	- 1	+ 2	36.1	17
Cuyo.....	299.3	+ 33.9	+ 8.2	19	- 4	- 1	54.9	19	Baler.....	300	+183.3	+ 28.8	13	+ 4	- 2	97.5	15
Ormoc.....	175.1	- 11.5	- 30.4	15	- 4	- 2	29.7	22	Dagupan.....	169.3	-111.3	-121.4	22	+ 1	+ 4	20.1	11
Guiuan.....	240.6	+114.4	+ 3.4	13	- 2	- 5	51.1	20	Bolinag.....	338.3	-253.6	- 51.8	24	+ 6	+ 4	48.3	2
Tacloban.....	281.4	+145.7	+ 77.8	14	+ 1	- 3	46.2	2	Baguio.....	577.9	+ 83.4	+165	27	+ 3	+ 5	122.9	2
Capiz.....	263.5	-130.3	- 13.8	20	+ 2	+ 2	33.6	19	San Fernando, La Union.....	333.5	+ 3.6	+ 45.8	22	+ 7	+ 5	60.7	30
Borongan.....	274.6	+206.7	+ 24.7	16	+ 8	- 3	71.9	7	Echague.....	148	-----	+ 41.5	16	-----	+ 5	40.6	1
Catbalogan.....	213.3	+ 87.1	-----	15	+ 1	-----	89.4	23	Candon.....	268.9	-108.5	- 45.7	19	+ 6	+ 3	52.1	8
Calbayog.....	244.1	+134.9	+ 30.3	20	+ 9	+ 2	74.4	13	Vigan.....	372.1	- 77.2	+ 66.9	18	0	0	87.4	3
Masbate.....	259.4	+184.9	+108.9	14	+ 4	+ 3	102.3	14	Tuguegarao.....	119.2	- 73.6	- 13.9	15	+ 2	+ 5	39.9	11
Romblon.....	150.7	+ 52.8	- 66.2	14	+ 6	- 2	48.3	8	Laoag.....	187.7	- 68.2	-100.9	21	+ 5	+ 4	51.3	25
Batag Light-house, Laoang.....	151.1	+ 75.1	-----	10	+ 4	-----	50.8	1	Aparri.....	270	+155.7	+135.5	14	+ 4	+ 4	52.6	4
Sorsogon.....	159	+114.6	-----	13	+ 6	-----	38.6	19	Cape Bojeador.....	267	- 54.1	-----	17	+ 4	-----	45.2	20
Legaspi, Albay.....	177.6	- 1.7	- 27.1	16	- 2	+ 1	25.1	11	Basco.....	353.8	+244.2	+193.6	21	+ 6	+ 8	115.6	2
Sumay (Guam), Agaña.....	202	+ 62.7	+ 59.8	23	+ 1	+ 6	35.8	30									

DEPRESSIONS AND TYPHOONS

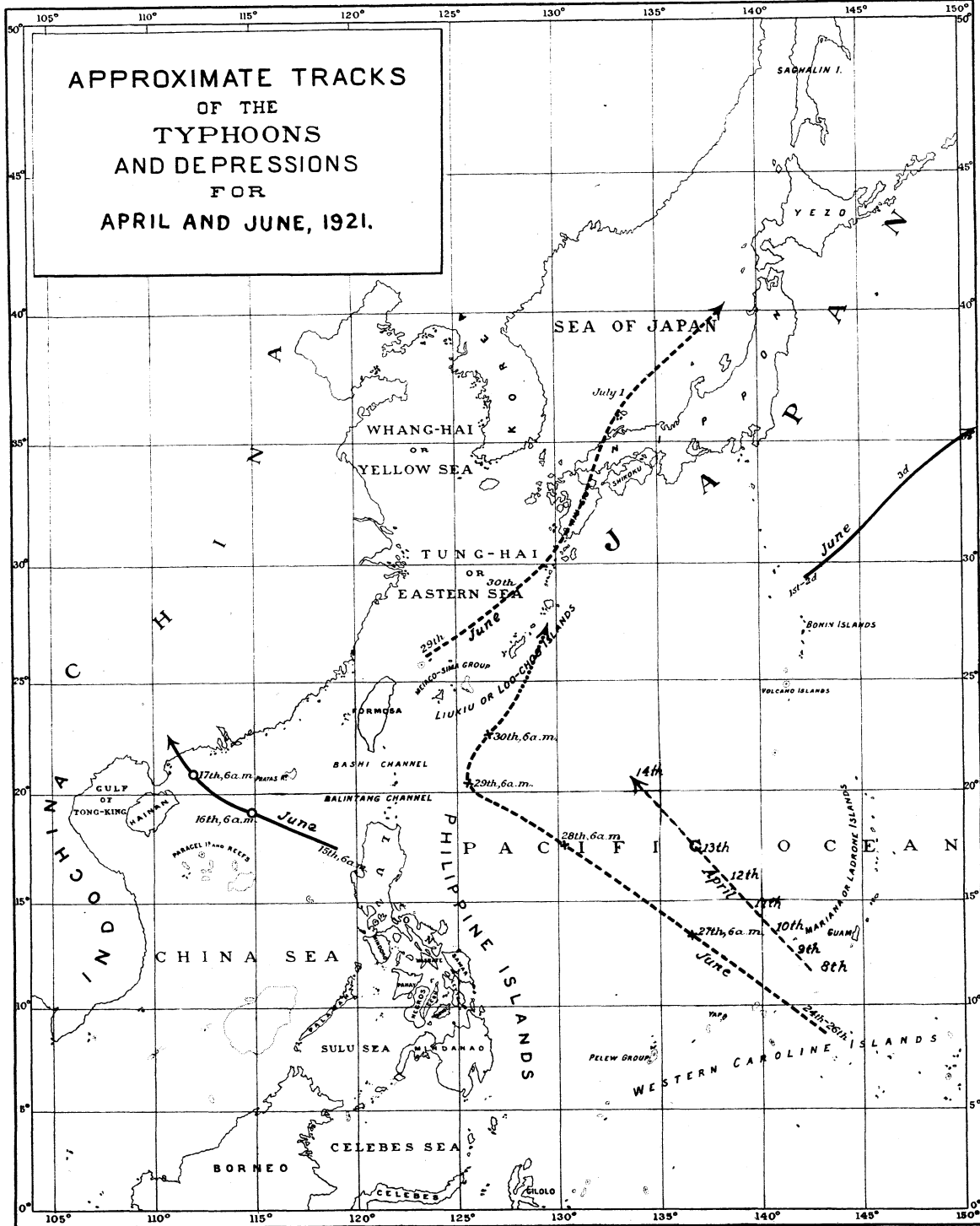
Prescinding from other low-pressure areas or depressions of less importance, we will mention here only four depressions or typhoons as they were shown by our Weather Maps during this month.

On June 1 to 2 a depression was developed into a real typhoon of considerable intensity to the north of the Bonin Islands. It moved northeastward, and was encountered by the American four-masted bark *Moshula*, on the 3rd in latitude 39° 04' N, longitude 155° 25' E. The wind set in from ESE and backed to NE; highest force, 10. The barometer at noon of the 3rd was 29.37 inches (745.98 mm.). The *Moshula* lost her fore lower topsail, mizzen upper topsail, and jib in this gale.<sup>1</sup>

The second typhoon of this month was developed on the 15th over the China Sea near the western coast of northern Luzon after two days of a low-pressure area covering the northern part of the Philippines. The approximate position of the center at 6 a. m. of the 15th was 119° longitude E, between 17° and 18° latitude N. It moved first to WNW, its position being at 6 a. m. of the 16th about 115° longitude E and 19° latitude N. It inclined NW in the afternoon of the 16th, and entered China in the afternoon of the 17th.

<sup>1</sup> Information taken from the "Monthly Weather Review," Washington; June, 1921, page 359.

Plate II.



A third depression or typhoon of unknown intensity was formed on the 24th to 26th over the Western Carolines to the E of Yap not far from  $143^{\circ}$  longitude E and  $9^{\circ}$  latitude N. It moved NW by W until the 29th, when it recurved to the N and NNE near  $125^{\circ}$  longitude E and  $20^{\circ}$  latitude N, and probably filled up near the Loochoos on July 1.

While the preceding depression or typhoon was situated south of the Loochoos on the 29th, another moderate depression was developed over the Eastern Sea to the NE of Formosa. On the 30th it was shown by our Weather Maps as moving NE toward southwestern Japan and the Sea of Japan.

## NOTAS GENERALES DEL TIEMPO

**Presión y temperatura.**—La presión atmosférica media de este mes en Filipinas es ligeramente mayor que la del año pasado, pero algo menor que la normal de junio. A excepción de las estaciones más meridionales, las presiones más altas de este mes se observaron los días 10 y 11, al paso que las más bajas tuvieron lugar generalmente el día 15 ó 30 en Luzón, y el día 17 en Visayas y Mindanao.

La temperatura media mensual es muy ligeramente menor que la de junio de 1920, y que la normal de este mes. Las temperaturas máxima y mínima absolutas de Manila fueron 33.7° C. y 22.7° C., las cuales se registraron los días 1 y 26, respectivamente. Las temperaturas extremas del mes en Baguio fueron 25.3° C., 14.8° C. en la cumbre del Mirador, y 26.2° C., 14.6° C. en la llanura cerca del *City Hall*.

**Precipitación acuosa.**—El número de estaciones que dan para este mes una lluvia mensual mayor que la normal de junio no difiere mucho del número de aquellas que recogieron una cantidad mensual menor que dicha normal. Tomando, sin embargo, separadamente las estaciones de Visayas, podemos decir que la mayoría de ellas observaron una lluvia mensual mayor que la del año pasado y que la normal de este mes. La lluvia total del mes en Manila, 328.0 mm., es 18.6 mm. menor que la del año pasado, y 89.7 mm. mayor que la normal de junio. La de Baguio, 577.9 mm., es 165.0 mm. mayor que la normal.

## DEPRESIONES Y TIFONES

Prescindiendo de otras áreas de baja presión o depresiones de poca importancia, sólo mencionaremos aquí cuatro depresiones o tifones, según se echan de ver en nuestros Mapas del tiempo, durante este mes.

Del 1 al 2 de junio una depresión se desarrolló, hasta llegar a ser un tifón de considerable intensidad, al norte de las Islas Bonins. Se movió hacia el NE, y fué encontrado por el barco de vela americano, de cuatro palos, *Moshula*, el día 3 en la latitud 39° 04' N, y longitud 155° 25' E. El viento sopló primero del ESE, y rolló luego al NE; máxima fuerza, 10. El barómetro al mediodía del 3 estaba a 745.98 mm. (29.37 pulgadas).<sup>1</sup>

El segundo tifón de este mes se desarrolló el día 15 en el Mar de China cerca de la costa occidental del norte de Luzón después de unos dos días de baja presión que se extendía sobre la parte septentrional de Filipinas. La posición aproximada del centro del temporal a las 6 a. m. del 15 era 119° longitud E, entre 17° y 18° latitud N. Se movió primero al WNW, siendo su posición a las 6 a. m. del 16, 115° longitud E y 19° latitud N. Se inclinó al NW la tarde del 16, y penetró en China la tarde del 17.

Otra tercera depresión o tifón de intensidad desconocida se formó del 24 al 26 en las Carolinas Occidentales al E de Yap, no lejos de 143° longitud E y 9° latitud N. Se movió al NW  $\frac{1}{4}$  W hasta el 29, en que recurvó al N y NNE cerca de 125° longitud E y 20° latitud N. Probablemente se deshizo cerca de Loochoos el 1.º de julio.

Mientras la depresión o tifón anterior se hallaba al sur de Loochoos el día 29, otra depresión de regular intensidad se desarrolló en el Mar del Este al NE de Formosa. El día 30 se echa de ver esta depresión en nuestros mapas del tiempo moviéndose al NE en dirección al SW de Japón y al Mar de Japón.

<sup>1</sup> Información tomada del "Monthly Weather Review," Washington; junio de 1921, pág. 359.

METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY\*

[ $\phi=14^{\circ} 34' 41''$  N;  $\lambda=120^{\circ} 58' 33''$  E; barometer above sea, 14.2 meters; gravity correction not applied, -1.72 mm.]

Day.	Air temperature. <sup>b</sup>				Underground temperature.				Relative humidity (mean).	Vapor pressure (mean).	Radiation.		Evaporation. <sup>b</sup>			
	Mean.	Maxi- mum.	Mini- mum.	Pressure (mean).	0.25 meter.		1.50 meters.				Minimum on grass.	Maximum in sun. Black bulb in vacuo.	Free exposure (total).	Shelter (total).		
					8 a. m.	2 p. m.	8 a. m.	2 p. m.							8 a. m.	8 a. m.
1.	757.33	29.1	33.7	25	31	34.2	31.6	32.3	30.4	29.4	75.8	22.5	23	62.8	5.5	3.7
2.	57.68	28.6	33.2	25	32	33.3	31.8	32.2	30.5	29.4	76.2	21.9	23	66.7	4.2	3.2
3.	58.04	26.5	31.5	24.3	30.6	32.1	31.5	31.8	30.3	29.3	85.6	21.9	23.6	62.5	2.4	1.8
4.	57.48	26.9	33.2	22.8	30.1	32.5	31.5	31.5	30.4	29.3	83.1	21.6	23.3	59.4	3	2.2
5.	56.97	27.5	33.3	23.7	30.3	32.5	31	31.5	31	29.3	82.6	22.3	23.7	44.2	3.1	2.7
6.	57.26	27.8	32.5	25.2	30.2	32.2	31.1	31.5	30.5	29.4	83.5	23.1	24.4	62.8	3.6	2.5
7.	57.24	28.1	32.4	25.1	30.7	32.5	31.1	31.5	30.4	29.3	81.1	22.7	23.9	64	4	2.7
8.	57.29	26.8	32.6	24.5	30.9	31.7	31.1	31.4	30.4	29.4	85.4	22.2	23.6	63.9	2.4	1.9
9.	57.52	27.2	32.4	23.7	29.8	31.8	30.8	31.3	30.5	29.3	85	22.6	23.3	62.1	2.2	2
10.	58.25	27.8	32.9	23.7	29.7	31.7	30.7	31	30.5	29.3	80.9	22.3	23.1	64	3.5	2.3
11.	58.22	27.9	33	24.6	30.3	31.8	30.7	31.1	30.4	29.3	80.7	22.3	23.4	59.8	3.6	3.3
12.	57.29	27.7	33.2	24.1	30.5	32.1	31	31.2	30.4	29.5	81.8	22.4	23.5	63	3	2.3
13.	56.78	27	33.2	24.6	30.3	32	31	31.3	30.5	29.4	84.6	22.2	23.6	66.8	2.5	2.4
14.	55.69	26.2	29.8	24.6	29.6	30.6	30.7	30.8	30.4	29.3	87.9	22.3	23.6	53.7	1.3	1.1
15.	55.89	25.8	31.1	23.7	29.1	29.8	30.3	30.5	30.4	29.3	91.2	22.4	22.9	60.9	1.7	1.3
16.	56.69	26.6	31.1	24.5	29	30.4	30.3	30.5	30.5	29.4	86	22.2	23.7	65.2	1.8	1.6
17.	56	26.3	29.6	24.2	29.1	30	30.2	30.2	30.3	29.4	86.5	21.9	23.6	51	1.6	1.5
18.	56.20	27.6	32.4	23.6	29.4	30.5	30.2	30.2	30.4	29.5	81.4	22.1	22.3	62.8	3.2	2.8
19.	57.31	28	33	24.2	29.7	31.4	30.2	30.5	30.4	29.5	81.1	22.6	23.5	64.1	3.7	2.6
20.	57.53	27.5	33.5	24.1	29.9	31.5	30.6	30.9	30.5	29.5	80.2	21.7	22.9	67.4	3.3	2.4
21.	57.01	26.7	33.3	23.8	29.8	31.6	30.6	30.9	30.3	29.5	84.5	21.9	22.3	66.5	2.4	2
22.	57.35	27.2	32.4	24.2	29.7	30.6	30.5	30.5	30.3	29.5	83.9	22.3	22.9	66.8	2.3	2.1
23.	57.78	27.2	33	23.9	30.1	31.2	30.5	30.7	30.5	29.5	84.1	22.4	22.5	62.6	2.7	2.1
24.	57.34	26.3	31.4	23.4	29.8	31	30.5	30.7	30.4	29.5	87.1	22	23.3	62	1.8	1.6
25.	57.26	26	30.7	23	28.9	29.5	30.1	30	30.4	29.5	86.4	21.5	21.7	61.3	1.8	1.7
26.	57.66	27.6	32.6	22.7	29.2	30.5	29.9	30.1	30.4	29.5	79.7	21.5	21.2	62.5	4.3	3
27.	58.01	28.1	32.6	23.7	29.6	31.1	30.3	30.4	30.3	29.5	79.3	22.2	22.1	61	4.8	3.5
28.	57.93	28.7	32.5	25.4	30.3	31.2	30.5	30.6	30.3	29.5	77	22.5	24.3	62.5	4.6	3.8
29.	57.04	28.8	32.4	26.8	30.3	31.6	30.6	30.8	30.2	29.5	78.1	23	25.2	62.7	4.7	3.8
30.	56.06	28.4	32.4	25.4	30.3	31.5	30.8	31.0	30.5	29.5	80.8	23.2	24.6	64.8	4.1	3.2
Mean.	757.20	27.4	32.4	24.2	30	31.5	30.7	31	30.4	29.4	82.7	22.3	23.1	62	3.1	2.5
Total.															92.1	73.7
Departure from normal.	-0.63	-0.4	-0.1	+0.2							+1.7	0			-15.9	

Day.	Prevailing direction.	Wind.		Direction at the maximum velocity.	Amount (mean).	Clouds.		Sunshine.	Rain, 24 hours beginning 6 a. m.		Miscellaneous.		
		Total movement.	Maximum hourly velocity.			Form and direction.	Upper.		Lower.	On the tower.		In the park.	
		Km.	Km.			0-10.	h.		m.	mm.		mm.	
1.	WSW	314.5	30	SW	5.1	Ci.	NE	Cu.	W	7	20		
2.	sw, wsw	227.5	24	WSW	8.3	Ci.-S.	NE	Cu.	SW	3	55	17.5	18.5
3.	WSW	228	25	SW	9.2	Ci.-S.	WSW	Cu.-N.	sw, wsw	0	20	1	1
4.	NE	175	29	WSW	6.7	Ci.	E	Cu.	WSW	7	45	6.2	6.7
5.	NE	154	23.5	WSW	7.8	Ci.		Cu.	W	6	15	2.1	2.6
6.	SW	247	37	SW	7.9	Ci.-S.	N, NNE	Cu.	SW	4	30	1	1.4
7.	WSW	244	26	WSW	6.9	A.-Cu.	SW	Cu.-N.	W	5	45		
8.	E	150	24	WSW	7	Ci.-S.	NE	Cu.-N.	sw, wsw	4	30	8	8
9.	E quad.	108	12.5	SW	8.8	A.-Cu.	ENE	Cu.-N.	ESE	2	30	38.1	38.1
10.	SW, W	174	13	NW	8.2	Ci.-S.	SSE	Cu.	E	5	40	8	8
11.	W, WSW	188	20	SW	6.2	Ci.		Cu.	E	7	15	5.6	5.6
12.	WSW	141	19	WSW	7.7	Ci.-S.		Cu.-N.	E	6	25	2.5	2.8
13.	NE, wsw	149	22	WSW	8.2	A.-Cu.	N	cu, cu.-N.	E	4	10	9	9
14.	N	97	9	W	9.7	Ci.-S.		Cu.	ENE	0	00	2.3	2.4
15.	SE	134	15	SE	9.5	Ci.-S.		N.	SSW	1	30	56.5	59.1
16.	SE	168.5	14	SE	9.6	Ci.-S.		Cu.	SSF	0	45	2	2.2
17.	SW	139.5	16	SW	10	Ci.-S.		S.-cu., Cu.-N.	sw	0	00		1
18.	S, WSW	132	17	WSW	7.6	A.-Cu.	SSW	Cu.	SSW	5	50	3	3
19.	SW quad.	180	22	WSW	6.3	Ci.-S.	E	Cu.		6	50	2.3	2.3
20.	S	127	11	SW	8.2	Ci.-S.		s.-cu., cu.	E	3	15		
21.	E	129	12.5	WSW	7.4	Ci.-S.	ENE	Cu.	E	4	40	57.7	58.2
22.	E	161	14	SW	5.9	Ci.		Cu.	SSE	6	10	14	14
23.	SW	148	18	WSW	7.2	Ci.-S.	SE	Cu.	E	4	20	2.4	2.7
24.	SE, wsw	154	19	WSW	9.5	Ci.-S.		Cu.	E	0	50	90.9	94.3
25.	E	191	21	WSW	7.2	Ci.-S.	SSE	Cu.-N.	SW	4	30	17.3	18
26.	W	216	25	WSW	3	Ci.		Cu.	S	9	55		
27.	WSW	284	25	WSW	4.2	Ci.	E	Cu.		8	10		
28.	WSW	389	30	WSW	6.2	Ci.-S.	E quad.	Cu.	W	7	55	1.9	2
29.	WSW	616	40	W	6.5	Ci.-S.	E	Cu.	W	7	50	3.3	3.5
30.	sw, wsw	562	39	SW	6.8	Ci.-S.		Cu.-N.	wsw	7	50	.6	.7
Mean.		210.9	21.8		7.4					4	53		
Total.		6,328								146	40	328	339
Departure from normal.		-373.3			+0.4					-22	18	+89.7	

\* All the mean values given in this table are deduced from hourly observations.  
 \* These values are taken from instruments mounted in the Observatory Park, 1.5 meters above ground.



METEOROLOGICAL DATA FOR MIRADOR OBSERVATORY, BAGUIO\*

[φ = 16° 25' N; λ = 120° 35' E; barometer above sea, 1,512.5 meters; gravity correction not applied, -1.65 mm.]

Day.	Pressure (mean). <sup>b</sup>		Air temperature at Mirador (on the top of the mountain).				Air temperature in the plateau near the City Hall.				Relative humidity (mean).	Vapor pressure (mean).	Radiation.			Evaporation.	
	mm.	°C.	Mean.	Maximum.	Hour.	Minimum.	Hour.	Maximum.	Hour.	Minimum.			Hour.	Minimum on grass.	Maximum in sun. Black bulb in vacuo. <sup>c</sup>	Free exposure (total).	Shelter (total).
1	635.55	17.7	23.3	11.40a.	16.2	5.50a.	23.2	0.50p.	15.8	12 m.n.	94	14.1	15.8	60	1.0	0.5	
2	35.73	17.5	23.1	11.55a.	15.2	6.45p.	24.2	11.30a.	15.2	4.25a.	92.5	13.8	14.2	59.1	1	.5	
3	35.78	16.8	19	10.50a.	15.2	5.50a.	20.6	10.30a.	15.6	10.10p.	94.5	13.5	14.6	53.2	.5	.4	
4	35.27	16.8	21.1	11.00a.	14.8	9.45p.	22.8	0.05p.	15.4	1.00a.	96.8	13.8	14.5	55.7	.5	.4	
5	35.29	18	23.3	0.15p.	15.2	5.55a.	23.2	0.25p.	15.2	5.30a.	89	13.6	14.3	60.8	1.8	1	
6	35.39	18.2	23.3	11.50a.	15.5	5.00a.	24	Noon	14.6	4.30a.	92.7	14.4	14.2	59.6	1.2	.5	
7	35.46	17.9	22.9	1.00p.	16.2	5.40a.	24.8	0.30p.	15.6	6.00a.	94	14.3	15.2	61	1.8	1	
8	35.52	17.9	22.8	0.20p.	15.7	6.05a.	24.9	10.30a.	15.2	5.20a.	93.5	14.3	14.1	54.8	2.2	.8	
9	35.71	18.8	23.1	11.15a.	15.6	5.55a.	25.2	11.20a.	14.9	5.30a.	88.2	14.2	14	56.2	2.2	1.1	
10	36.31	18.6	22.2	0.30p.	15.8	5.00a.	24.3	11.00a.	15.7	5.10a.	92.5	14.7	15.2	56.6	.8	.4	
11	36.35	18.6	23.7	11.35a.	16.3	5.00a.	25.2	11.15a.	15.6	5.50a.	92	14.6	14.7	62	1.1	.7	
12	35.70	18.6	23.1	11.55a.	15.7	5.35a.	24.2	11.15a.	15	5.40a.	93.7	15	14.6	58.2	1.7	.9	
13	35.38	18.4	23.5	0.50p.	16.4	10.35p.	23.8	0.30p.	16.7	12 m.n.	94	14.8	16	59	1.6	.8	
14	34.14	19	23.6	9.15a.	16.4	0.05a.	24.8	10.20a.	15.9	5.30a.	92.7	15.2	14.9	57.8	1.6	.9	
15	33.28	17.6	19.8	2.40p.	16.2	12 m.n.	21.5	2.30p.	17	12 m.n.	96	14.3	16.4	48.2	1.1	.8	
16	34.36	17.7	21.1	1.10p.	15.8	4.55a.	24.8	3.15p.	16.9	3.30a.	86.5	13	15.6	57.6	5.8	2.1	
17	33.88	16.4	18.3	0.30p.	15.7	8.30a.	19.9	Noon	16	5.30p.	88.8	12.3	15	30.4	2.8	1.5	
18	34.36	17.8	22.1	0.30p.	16	2.00a.	23.2	1.40p.	15.7	2.00a.	99.2	13.7	14.8	53.7	2.5	1.1	
19	35.53	18.7	23.6	3.40p.	16.2	2.30a.	24.1	3.40p.	15.9	4.30a.	89.2	14.2	15	51.1	2.6	1.2	
20	35.62	19	23.3	2.10p.	16	5.50a.	24.3	2.00p.	15.8	5.45a.	84.7	13.8	14.6	50.2	4.6	1.9	
21	35.20	19.4	25.3	0.45p.	15.4	5.55a.	26.2	1.15p.	15.2	2.25a.	84.7	14.1	14.3	56.5	3.7	1.6	
22	35.40	19.9	23.3	0.40p.	16	5.35a.	24.8	2.40p.	16.1	3.45a.	83.5	13.5	15.3	56.2	4.7	2.2	
23	35.84	19.4	24.8	11.40a.	16.5	4.30a.	25.8	1.10p.	15.9	4.50a.	85.3	14.2	15.3	53.4	4.9	2	
24	34.98	18.7	25.1	11.15a.	15.6	2.45a.	25.8	0.30p.	15.3	5.20a.	90.5	14.4	14.5	59	2.2	1.2	
25	34.59	18.3	22.7	0.30p.	16	5.00a.	24.3	10.55a.	16.4	12 m.n.	89.7	14	15.7	54.5	3.9	1.6	
26	35.36	18.8	23.8	2.45p.	15.3	5.55a.	24.8	2.20p.	14.9	5.45a.	83	13.3	14.3	51.8	4.8	2.4	
27	36.19	18.7	23.2	11.30a.	15.8	12 m.n.	24.4	0.40p.	15.3	12 m.n.	92	14.7	16	57.6	1.7	1	
28	35.92	18	22.2	2.55p.	15.3	3.00a.	23.6	2.40p.	14.9	2.50a.	95.3	14.6	13.7	52	.8	.5	
29	35.13	17.2	18.8	9.30a.	15.9	6.05p.	20.2	10.00a.	15.9	12 m.n.	99.3	14.5	16	44.5	.2	.2	
30	34.28	17.4	19.6	11.10a.	15.2	0.30a.	21.4	11.15a.	16	0.10a.	98.8	14.6	15.1	50.8	.2	.2	
Mean.	635.25	18.2	22.5		15.8		23.7		15.7		91.3	14.1	14.9	54.7	2.2	1.0	
Total.															65.5	31.4	

Day.	Wind.				Clouds.		Sunshine.	Rain, 24 hours beginning 6 a. m.	Miscellaneous.
	Prevailing direction. <sup>d</sup>	Total movement.	Maximum hourly velocity.	Direction at the time of the maximum velocity.	Amount (mean).	Form and direction.			
		Km.	Km.		0-10.	Upper.	Lower.		
1	SW, W	402.2	32.8	SW	9	Ci.-S.	Cu.-N.	W	h. m. mm.
2	SW, W	218.8	17.4	SW	7.3	Ci.	Cu. wnw, wsw	W	1 50 13.2
3	W	403.5	29.8	SW	9.9	Ci.-S.	N.	WSW	4 05 49.8
4	W	443.9	36	SW	9.9	Ci.-S.	N.	W	0 50 7.9
5	W	335.2	25.5	W	7.3	A.-Cu.	NE	Cu.-N.	W
6	W	328.2	30	W	6.9	Ci.	Cu.-N.	W	4 30 16
7	W	277	26.6	W	7	Ci.	Cu.-N.	W	4 40 27.5
8	SW quad.	279.2	27.7	SW	6.9	Ci.	Cu.-N.	W	5 35 58.4
9	W, NE	187.5	16.4	E	6.9	Ci.-Cu.	SW	WSW	4 55 25.9
10	SW quad.	166.5	13.9	SW	8.7	Ci.-S.	Cu.-N.	SSW	5 15 6.6
11	W, NE	189.1	19.9	W	7	Ci.	Cu.-N.	W	1 25 22.6
12	W quad.	250.8	19.5	W	7.1	Ci.	Cu.-N.	SSW	4 25 18.1
13	E quad.	265.4	21.9	W	9	A.-Cu.	WNW	E, W	5 20 10.7
14	Variable	232.3	21.4	E	8.3	Ci.-S.	Cu.	W	2 55 18.8
15	E	634.1	37.2	E	9.3	Ci.-S.	Cu.-N.	S	2 55 5.8
16	E, SE	519	40.5	E	8.1	A.-Cu.	SE	Cu.-N.	S
17	SE	406.1	21.4	S	9.7	Ci.-S.	Cu.-N.	SSW	3 10 3
18	E	352.5	26.2	E	8.6	A.-Cu.	WSW	Cu.-N.	SSW
19	SE quad.	267.2	19.5	SE	8.4	A.-Cu.	S	WSW	1 60 27.4
20	E	302.5	29.6	E	8.6	Ci.-S.	E	Cu.-N.	2 35 2.6
21	E	275.3	18.8	W	6.6	Ci.	Cu.-N.	E, SSE	1 65 7.6
22	E	435.6	33.8	E	5.9	Ci.	Cu.-N.	SSW	5 50 1.3
23	E	313.8	25.1	SE	6.3	Ci.	Cu.	SSE	6 45 1.3
24	E, W	292.4	19.8	E	6.1	Ci.	Cu.	E, SSW	6 30 16.3
25	E	435.3	29	SE	5.7	Ci., Ci.-S.	Cu.	SE	4 50 24.4
26	E	477.6	37.8	E	2.7	Ci.	Cu.	S	3 20 8
27	W quad.	346.9	25.1	SW	6.4	Ci.-S.	Cu.-N.	S	6 30 3.1
28	W	390.6	22.8	W	9.1	Ci.-S.	Cu.-N.	w, wsw	1 25 21
29	SW	707.9	38.9	SW	10	Ci.-S.	N.	W	0 00 36
30	SW	605.2	36.5	SW	10	Ci.-S.	Cu.-N.	W	0 00 26.2
Mean.		358.1	26.7		7.8				3 12
Total.		10,741.6							95 45 577.9

\* All the mean values given in this table are deduced from six daily observations taken at 2, 6, 10 a. m. and 2, 6, 10 p. m.  
<sup>b</sup> The barometric readings of this station are not reduced to sea level.  
<sup>c</sup> Maximum of hourly observations taken from 6 a. m. to 6 p. m.  
<sup>d</sup> This element is based on hourly observations taken from a quadruple register, which gives only eight possible directions of the wind.

DAILY RAINFALLS AT THE STATIONS OF THE WEATHER BUREAU, JUNE, 1921

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lapac Agricultural School, Siasi, Sulu †		2.5									22.9			60.4		
Glan Cotabato †											3	4.3			20.3	
Jolo, Sulu	16.8	6.9	1	0.8	13.5	4.3			0.5	0.8	60.2	53.8	30.5	6.6	8.2	0.8
Buntung Koronadal, Cotabato †															11.1	4.3
Lais, Malita, Davao								11.7	2.3						2.5	.8
Malita, Davao								3	2		2.5				5.1	30.7
Lebak, Cotabato												1.5			5.1	37.1
Lamitan, Isabela, Zamboanga				1.8					3.3	11.7		13.5	18.8	9.9		5.8
Basilan Plantation, Kabunbatan, Isabela, Zamboanga †	6.3	23.4	114.8		63.7	10.9				26.7	40.4	50.8	5.1	10.2	9.9	4.6
Basilan Plantation Office, Isabela, Zamboanga †	3.3	14.7	42.9	2	52.8	14.5	0.5			11.2	94	22.7	7.6	12.2	9.9	.8
La Union, Sigaboy, Davao †	17		190?		200.27			50.5		5.1	7.9	57.4		19.6		25.1
Paranglalap, Isabela, Zamboanga †	15.2				35.6	21.6					10.2		2.5	5.1	10.2	30.5
Latuan, Isabela, Zamboanga †	.8	14.7			3.6	9.1					9.9	12.7	2.3	10.7	26.7	31.7
Buluang, Cotabato †	2.5	4.3			21.3	19	3.8	31.7						6.6		6.6
Malamaui, Isabela, Zamboanga					10.4	2.5					17.8	6.9		21.6	25.4	3
Pagsilaan Farm School, Mati, Davao †		7.6			12.7	2.5					5.1					12.7
Zamboanga, Zamboanga	2.5	1		2.8		2					1	.8		8.2	7.9	
Cagayan de Sulu, Sulu †							13.5	1.3			12.7		10.2	35.6	62.2	20.3
Davao, Davao		13.5	35.1	43.9		10.2			31.7	3.8	24.6	25.1		11.7		
Piang Agricultural School, Kudarangan, Dulauan, Cotabato †	46.7	.8	5.1		2.5			17.5	35.6				3.6	12.2		9.7
Pikit, Cotabato	27.7	9.4		1	3	1.8		22.1	48	12.4	13.2	14.5			3	2
Cotabato Seed Station, Pikit, Cotabato †			11.4		3.6	1.8	19	56.4	10.4	15.5	14.7	3	1.3			31
Awang, Cotabato †	25.4						7.9		13.3			27.4				7.9
Kabakan, Cotabato †	2.3	81.5	45	4.1		94	1.3	1.3	19		4.6	33	5.1	5.8	21.3	
Bual, Dulauan, Cotabato		22.6	16.3	4.6		1.8			15.2	4.1	.5	24.1	5.1	5.1	1.8	
Cotabato, Cotabato	9.1	23.6	1	41.7		16.8	2.5		52.1		10.9	29.2	.8	20.4	2.5	
Mampising, Pantukan, Davao †	11.9			8.1	3		1.5	17.8							10.7	4.6
Kabasaran, Buldun, Cotabato †				21.1	7.1										22.9	1.3
Naganaga, Margosatubig, Zamboanga	17.3	3.8	1.3	3.3	20.3	5.1			3.6			4.1	20.3	17.8	45.2	
Banisilan, Banisilan, Cotabato †	39.9	15.2	13.2				1.3	1.3	10.2	1.5			1.3	17.8	2	
Malabang, Lanao	7.1	4.3		4.8	21.3				22.1	13.5		3.6		24.6	15	
Compostela, Monkayo, Davao †	24.1	21.6	2.5			11.4	3	25.9	23.6	16.3	15.7	12.7	14.5	3.8	61	4.8
Malangas, Margosatubig, Zamboanga †	5.6	15.3	3	3	3.8	52.1			6.9	1.5	8.4	17	17.8	12	32.8	9.7
Lumbatan, Lanao †		9.7	6.6		3.3	5.3	30.5		11.9			41.4		7.6		
Cateel, Davao								.5	1.8		.5					27.9
Ganasi, Lanao	3.6	16.5	17.8	3.5	6.4	4.6	17.8		8.1		21.3	15.2	11.1	4.1		
Camp Kalao, Monkayo, Davao			2.5	2.5	11.7	2.5	3.6		35.3	2.5	6.6	11.2	8.4	12.2		2.5
Managok Agricultural School, Linabo, Malaybalay, Bukidnon	29	4.1	26.2	4.3	3.8	28.7	4.6	.5	29.2	4.1	25.9	27.9	50.3	4.1	36.6	9.7
Camp Keithley, Dansalan, Lanao	69.8			6.1	51.3	14.5	8.1	7.4	20.1	71.4	16.8	2	7.8	.3	3.6	61.2
Veruela, Agusan	.3				2.5				49.3	.8		6.9	13.5	8.6		
Sumilau, Bukidnon		79.2	7.1	39.1	36.8	15.5	3.6	6.1	4.8	17.3		2.8	10.9	5.3	9.1	
Tagayan, Misamis		3.8		.8	6.9	20.1			2.5	12.4			1	18.5	1.8	5.1
Calacogon, Agusan			6.4		11.4	35.6			7.6	10.2			3.8	5.1	6.4	
Butuan, Agusan		6.4		3.8	10.7				11.2	3.3			3	5	9.4	18.8
Mambajao, Misamis											9.17		2	24.4	5	
Dumaguete, Oriental Negros		4.3	3.8			.5			2	4.3			.8	10.9	10.4	
Kolonie, Yap, Western Carolines	10.2	3.8	1.3		6.9	5.1	7.9	5.6	15.2	3.8	2.1		14.5	3.6	1.4	2
Hacienda San Jose, Tanjay, Oriental Negros †			6.1	8.1						13				15.2		
Hacienda Palanas, Bais, Oriental Negros †						30.5	8.9			1.5			14	22.3		
Tagbilaran, Bohol		2.6				7.7		8.9	12.7	21.2			60.4	3.9	8	
Iwahig Penal Colony, Puerto Princesa, Palawan			10.4	27.7	2.8	.8	42.4	1	3	11.2	3		43.2	11.7	29.2	.5
Dalaguete, Cebu	.8	6.9	1		1				35.3	2.5			24.2	4.6	6.4	
Surigao, Surigao								.5		11.9			1.1	4.5	2.3	
Central Palma, Ilog, Occidental Negros					27.9			2.5					2.5	22.9		
Hacienda Naval, Himamaylan, Occidental Negros					15.7				7.6		8.9		10.2	19.1		
Biaong Cui's Farm, Barili, Cebu	6.6				13.7		30.5			7.4	10.4			9.4	3.8	
Maasin, Leyte	6.4					24.4	16	22.9	4.6				35.6	88.6		
Binalbagan Estate, Binalbagan, Occidental Negros †				1.6	2.5			12.2	5.9	3	8.6		5.1	15		2.3
Isabela, Occidental Negros	.5	.3		1.3	.5			41.7	18.3	10.2	1.8	.3	8.1	20.5		
Hacienda Tanolo, Hinigaran, Occidental Negros			.5						.5	4.5	2.3	3.3	1	17.8	15.2	7.6
Cebu, Cebu	4.5	11.7						16.5	3.8	5.1		2.5	19.6	23.9		
La Castellana, Occidental Negros				18.8		3		15.5	25.1	37.6			15.5	15.7		
Hacienda Vallehermoso, Vallehermoso, Oriental Negros †		53.3											17.8	2.5		
Central Azucarera de La Carlota, La Carlota, Occidental Negros	.5	1.5	1	1.8		.5	.8	10.4	8.4	4.3	1.3		24.6	45.2	.8	
Hacienda Canlaon, La Castellana, Occidental Negros	7.7	3.6		6.3	2.5		.8		13			8.9	4.3	.5		
La Carlota Experimental Station, La Carlota, Occidental Negros †		.3		5.1				23.9	17	25.9			35.6	30.2		
Mao Sugar Central, Santa Cecilia, Bago, Occidental Negros	1.3				2			37.3	14.7	2.5	4.3		40.3	52.6		.5
Valladolid, Occidental Negros	20.1			7.9		11.7	1.5	83.6		.8	6.9	.5	53.3	40.6		
Central San Carlos, San Carlos, Occidental Negros †	1.5	9.4			6.1				.3	.3			9.4	1		

† Voluntary or cooperative station.

\* Amount of rainfall from 1 to 10.

Daily rainfall at the stations of the Weather Bureau, June, 1921—Continued

Station.	Day of month.													Total.	
	17	18	19	20	21	22	23	24	25	26	27	28	29		30
Lapac Agricultural School, Siasi, Sulu †	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Glan, Cotabato †	26.7	26.2	4.1	14.7	5.3	8.4	3.8	8.1	1.5	17.1	14.2	132.5	78.2	254.3	
Jolo, Sulu	3.3	16.5	1.8	7.1	2.3	8.6	5.4	14	2.5	8.9	20.8	2.5	13.5	0.8	94.9
Buntung, Koronadal, Cotabato †	2.5	8.9	20.8	2.5	13.5	0.8	8.6	5.4	14	2.5	8.9	20.8	2.5	13.5	0.8
Lais, Malita, Davao	6.1	1	30	4.8	.5	10.7	.8	2	.5	3.3	99.2	111.7	91.2	199.2	
Lebak, Cotabato	7.6	12.7	45.7	22.1	26.9	5.8	12.4	14.2	146.2						
Lamitan, Isabela, Zamboanga			27.4	20.3	27.9	.8	8.1	452.3							
Basilan Plantation, Kabunbatan, Isabela, Zamboanga †			9.4	27.9	15.7	3	1.5	5.1	356.3						
Basilan Plantation Office, Isabela, Zamboanga †	5.6	22.9	2	7.4	30.5	40.9	682.17								
La Union, Sigaboy, Davao †			17.8	7.6	8.9	2.5	22.9	190.6							
Paranglalap, Isabela, Zamboanga †			20.3	9.7	6.9	3.8	30.2	193.1							
Latuan, Isabela, Zamboanga †			25.4	25.4	50.8	8	1.3	197.4							
Buluang, Cotabato †			21.1	8.1	2.3	8	1.3	131.8							
Malamaui, Isabela, Zamboanga	10.2	2.5	7.6	7.6	14.5	1	2.5	5	7.6	83.6	60.3	308.5	267.3		
Pagsilaan Farm School, Mati, Davao †			17.5	.5	18.8	2.5	14	2.5	8.1	5.8	17.3	50.8	308.5	267.3	
Zamboanga, Zamboanga			4.8	35.1	15	11.4	8.1	2.5	8.1	5.8	17.3	50.8	308.5	267.3	
Cagayan de Sulu, Sulu †	22.6		18	3.8	9.4	5.1	5.6						175.6		
Davao, Davao			25.9	6.9	7.9	13.7	1.8			25.4	7.6	6.4	254.5		
Piang Agricultural School, Kudaranagan, Dulauan, Cotabato †	.8	5.6	7.1	15	22.9	17.3	6.9	6.9	2.5	5.1	213.4	136.5	409.7		
Pikit, Cotabato			49.3	17	14.5	2							197.6		
Cotabato Seed Station, Pikit, Cotabato †	5.3	2.3	3	30.5	15.7	1	1.3	1	26.7	1.3	275.9	62.4	67.6		
Awang, Cotabato †			4.8	9.4	7.9	4.8	9.1	2.5	2.3				67.6		
Kabakan, Cotabato †													67.6		
Bual, Dulauan, Cotabato													292.3		
Cotabato, Cotabato													310.2		
Mampising, Pantukan, Davao †													181.3		
Kabasaran, Buldan, Cotabato †													285.3		
Naganaga, Margosatubig, Zamboanga	52.1	49.3	2.5	6.4	51.3	53.3	5.1	6.4	4.3	1	10.2	13.2	292.3		
Banasilan, Banisilan, Cotabato †	25.9	26.7	20.3	51.3	53.3	5.1	6.4	4.3	5.1	1	10.2	13.2	310.2		
Malabang, Lanao	5.1	7.1	2	17.3	31.5	6.1	3.3	1.5	18				181.3		
Compostela, Monkayo, Davao †			8.1	7.4	6.1	3.3	1.5	18					285.3		
Malangas, Margosatubig, Zamboanga †			83.3	19	1.8	1.3	2	12.7	1.5	2	4.1	.8	317.1		
Lumbatan, Lanao †	4.6	5.6	7.6	2	5.1	2.5	27.2	8.4	8.4				184.6		
Cateel, Davao			3.3	.5	6.6	5.6	14.5						46.7		
Ganasi, Lanao	8.4	38.6	10.4	.8			14.5				1.8	16.3	220.8		
Camp Kalao, Monkayo, Davao			.5	7.4	2.3	1.3	1.3	.8					115.1		
Managok Agricultural School, Linabo, Malaybalay, Bukidnon	3	1	12.7	9.9	1.8	61	44.2	30.2	33.8	11.2	22.6	20.6	541		
Camp Keithley, Dansalan, Lanao			6.1	10.9	1.3	41.4	7.9	10.7	.5	2.1	4.6	27.4	1.3	457.6	
Veruela, Agusan			1	2	1.3	4.1	1.3	1.8	34.8				133.3		
Sumilau, Bukidnon	14.2	10.4	71.1	31.7	22.9	11.7	2.5	39.9					442		
Cagayan, Misamis			15.5	8.4	19.3	3.3	7.1	5.3	7.1	2.8	15.7		157.4		
Talacogon, Agusan			5.1	24.6	8.6	3.8	10.4	4.1	10.9	9.1			163.1		
Butuan, Agusan	.3	.5	6.9	11.2	3.3	18.8	7.1	5.1	5.1				119.1		
Mambajao, Misamis	5.1		51		15.5	8.9							116.5		
Dumaguete, Oriental Negros			4.8	21.8	16.5	1	3.8						86.2		
Kolonie, Yap, Western Carolines			36.9	3.6	2	18.9	.5	3	12	8.7			28.3		
Hacienda San Jose, Tanjay, Oriental Negros †			6.4		9.4	5.6		3.3	4.3	6.1			77.5		
Hacienda Palanas, Bais, Oriental Negros †			22.9	36	5.1	23.9	4.1	3.6	10.2				195.7		
Tagbilaran, Bohol	1.3	17.5	45.3	3	4.3	64.6			5.6				240.5		
Iwahig Penal Colony, Puerto Princesa, Palawan	12.7	6.1	.8	9.1	12.7	22.9	21.1	23.4	.5				298.5		
Dalaguete, Cebu			49.8	40.4	72.6	65.3	.5	5.1					316.4		
Surigao, Surigao	9.6	22.9	19.3	11	4.9			13.2	21.6				122.8		
Central Palma, Ilog, Occidental Negros	27.9		74.9										158.6		
Hacienda Naval, Himamaylan, Occidental Negros	59.4	26.2		33.8	8.1	8.9	8.1				1.3		207.3		
Biaong Cui's Farm, Barili, Cebu			11.9	7.1	2.5	1.3	8.1	23.4					136.1		
Maasin, Leyte			18.5	5.8	78.7	31.8	19.8		23.6	24.4			401.1		
Binalbagan Estate, Binalbagan, Occidental Negros †	38.1	9.4	66.3	3.3	13.2	33	1.6						221.1		
Isabela, Occidental Negros	67.6	18.8	44.7	33	2	19	1.8		4.1				294.5		
Hacienda Tanolo, Hinigaran, Occidental Negros	8.1	4.6	10.7	8.6	11.4	34.6	1.5				.5		132.7		
Cebu, Cebu	6.9	64	17.3	12.9	9.9			9.9					208.5		
La Castellana, Occidental Negros			14	22.9	11.4	8.1	25.9	1.6					212.4		
Hacienda Vallehermoso, Vallehermoso, Oriental Negros †			6.9	5.6	3.3	5.1	2.8						97.3		
Central Azucarera de La Carlota, La Carlota, Occidental Negros	3.8	50.8	11.4	4.6	3.8	32	4	.3		5			212.3		
Hacienda Canlaon, La Castellana, Occidental Negros	1		12.7	6.1	3	11.7	22.4	21.6	22.9	1.8	30.5	14	194.8		
La Carlota Experimental Station, La Carlota, Occidental Negros †	21.6	75.7	3.5	8.6	15.7	41.2	.6						304.9		
Mao Sugar Central, Santa Cecilia, Bago, Occidental Negros	6.9	16.5	15.5	6.4	4.8	14.9	.5						221		
Valladolid, Occidental Negros	5.6	3.8	12.7	7.6	7.4	17.8	1.3			.5		.8	284.4		
Central San Carlos, San Carlos, Occidental Negros †	.5	15		1	1.8	51	3.3			50.3		1.5	152.4		

† Voluntary or cooperative station.

## Daily rainfall at the stations of the Weather Bureau, June, 1921—Continued

Station.	Day of month.																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Hacienda Refugio, San Carlos, Occidental Negros †	6.4							5.1	1.3				7.6	4.1			
San Joaquin, Iloilo	3.3			12.2			15	5.6	50.5				4.6	54.3	51.3	1.3	
Murcia, Occidental Negros	2.3	2.8						10.2	56.6	2		2.8	17.8	54.4			
Bacolod, Occidental Negros	.5	5.3	8.6					36.8	6.7				16.7	79	1.3		
Oton, Iloilo						2.3	9.9	36.8	3	2.5			10.9	76.2	25.7		
Iloilo, Iloilo	4.3					29.7		19.3	1			43.2	22.3	44.9	3.6		
Lapuslapus, Iloilo, Iloilo †						53.3		20.4		2.5		35.6	15.2	26.6			
San Jose de Buenavista, Antique	.5		.3	3.8		2.8		2.5	1.5				52.9	23.7	42.2	2.5	
Tuburan, Cebu	1.5					.3	6.3	11	7.4	.8	0.3		13.7	3.3	.3		
Leon, Iloilo				3			6.9					3.6	73.9	6.4			
Silay, Occidental Negros		19.3	12.2		1.8			11.2					54.9	41.9	2.5	.3	
Calag-itan, San Remigio, Antique	1	1.3	.3	6.6		4.3	13.5	19.9			7.6	4.8	39.6	82	17.2		
Hawaiian Philippine Co., Malisbug, Silay, Occidental Negros †		31.5	8.1	3.3		.3		5.6	3		2.5		88.1	34.6	3		
Cuyo, Palawan		6.1	29.2					10.1	31.7	1.3	1	4.3	54.1	54.9	32.2	1.8	
Lucena, Santa Barbara, Iloilo †			13			.8		11.4	2.3	4.6		6.4	7.4	58.9			
Barotac Nuevo, Iloilo			1.3				48.3	11.4		37.6		8.3	8.4		12.4		
Central Victorias, Victorias, Occidental Negros †		9.1	1.8	1.3				6.4	3.6		48.8		47	29.5			
Hacienda Ilaya, Victorias, Occidental Negros		23.9				15	4.1			6.4			22.9	36.6	3.3		
Hacienda Bilbao, Manapla, Occidental Negros		1.3	51.1			2	14.2	23.4				15.2	3.8	6.4	4.3	11.4	
Janiuay, Iloilo			.8		.8	8.1	.3	7.6	1.3	11.7	.3		5.8	35.9	1.3		
Cadiz, Occidental Negros			10.2					2							59.7		
Dingle, Iloilo			12.2	24.6		41.4		40.9	8.4	5.3	.8		7.4	52.6			
Ormoc, Leyte		16.5						10.7	9.1				14.7	27.2			
Guiuan, Samar	7.1						1.3	10.2	1			8.9	43.2	40.4			
Bugason, Antique	.5				1	.3		4.6	5.8			.5	9.9	13	.5		
Bogo, Cebu	2.5	5.1				1.8	10.9	10.2	5.3		2	20.3	48	48.5			
Dueñas, Iloilo †		2.3				24.1		17.8	3.6	5.8			10.9	32.3			
Bitagan, Passi, Iloilo †	19			35.3		3.8			5.1				50.8	17.3			
Tacloban, Leyte	46.2						2		7.1			23.8	29.2	28.7			
Dumarao, Capiz †			8.4	1.3	49	46.5	30.5	5.6	3	3		10.9	16	18			
Dao, Capiz †	15.5	3.6	26.7	12.7		12.7	36.1	27.9	1.8		3	16.5	51.3	6.4			
Culasi, Antique	.5					6.1	1.3	4.3	2.5	.3	.3	20.3	40.8	99.8	5.8		
Hacienda Amparo, Pontevedra, Capiz	22.3	9.4		21.1	1.8	.3	30.5	4.3	13.2	9.4	.8		.3	2.3	14	4.6	
Capiz, Capiz	9.7	1	.8			1.1		3.3	2.3	3.3		11.9	34	6.4	.3		
Borongan, Samar			1			1.8	71.9					.8	38.4	43.2		11.4	
Pandan, Antique			1.5				2.5		2.5			10.2	78.5	48	5.6		
Calivo, Capiz		.8	3.5		3.8				.3			8.7	12.7	10.2	.5		
Catbalogan, Samar	43.9	.8					1.8	5.1		.3			14.7	1.5			
Ibajay, Capiz			1.5				.8	9.4	.5				15	22.1	1.3		
Calbayog, Samar	2.8	4.8			.5	10.4		1		.3			74.4	13.4	2.6		
San Jose Estate, Robles Camp D-17, San Jose, Mindoro †			.3					22.6	3.8				73.7	24.1	21.6	1.8	
San Jose Estate, Tamaraw Plantation, San Jose, Mindoro †	3.6							14.7	1	8.6			2.8	36.1	189.4	47.5	3.8
San Jose Estate, San Agustin, San Jose, Mindoro †	4.6	3.3											33	204.7	62.2	5.6	
San Jose Estate, San Jose, Mindoro †		.3						4.8	1.5	1		3	2.3	24.9	256.2	49.5	1.3
Masbate, Masbate		.5	9.9	25.9		12.2	27.9	5.8	16.2		4.1		41.4	102.3			
San Jose Estate, Tunnel D-12, San Jose, Mindoro †				4.8	3.8			2.3	2.5					28.2	42.7	8.1	
Romblon, Romblon		.3						48.3	5.2			2.6	23.4	26.8	8.4	1.1	
Batag Lighthouse, Laoang, Samar	50.8	1											7.6				
Irosin, Sorsogon				6.4					10.4	26.4		12.7	59.4	37.4			
Sorsogon, Sorsogon		.8	9.7						1.3	1.3		19	31.2	32.5			
Bacon, Sorsogon						1.3	1	1.8	8.1				26.7	15.2			
Jovellar, Albay	.5	4.6				.5				3.8		7.4	9.9	33.3	6.6	.8	
Legaspi, Albay, Albay		20.5	19.3				16.5	.8	22.6	3.6	25.1	13.5	3	14.4			
Guinobatan, Albay	3.8	1.8		.8	13.7	15	49.8	1.1	46	9.4		1.5	12.9	22.7	.8	.5	
Polangui, Albay	17.8				10.2	5.1	6.6	.5	2.5				10.9	19.5	3		
Bacacay, Albay						17.8		39.9		13.2	8.6		81.8				
Tabaco, Albay	2.6	2.5		35.6			27.4	5.6	2	1.8		4.1	10.2	8.2	.5		
Sumay (Guam), Agraña, Ladrone Islands		9.1	3.3		1.6	6.6	.4	1			5.3	.1		3.6	.3		
Iriga, Camarines Sur	24.1	12.2					6.9	17.8	.8	1.8		1.3	14.2	31.2	.5		
Calapan, Mindoro		4.8	3.3	3.6			.3	2		2			6.6	22.1	2.3	.6	
Tiwi, Albay		2.5			7.6		10.2				10.2		8.9				
Pasacao, Camarines Sur	35.6	77.7	39.1	13	19.3	29.2				1.8					31		
Virac, Albay	2.3	.8										4.1	45.2	7.1			
Naga, Camarines Sur		5.3	2.8	1.8	.3			.5		6.1	2	.3	22.4	13.5	.8	.5	
Tigaon, Camarines Sur		1	4.6			44.7	13	11.9	.3	10.2	8.9	18.8	24.6	12.2	.3		
Baras, Albay	2.3	17.8	1	57.7	16.5				.8				70.1	12.1			
Libmanan, Camarines Sur		1.5	1.8	1.5		10.6	37.1	14.5	15.2	4.8	2.5	20.1	1	65.5	2	1.3	
Batangas, Batangas		2	2.3			.5	4.6				4.8	13.7	3.3	3.5	1.5	1.6	
Ragay, Camarines Sur	25.4	49	7.6					14.7		31.5			62	49	33.3	1.5	
Calatagan, Batangas		16.3	6.9	1.3	3			5.6	13.7	4.8		2.3	48	28.9	1.5	1.8	
Balayan, Batangas				1.3				25.4	5.8				30	55.6		16.8	
Lipa, Batangas			1.8			5.1		40.6	3.8	20.4	10.4	2.1	42.1	5.6	2	2.1	
Lucena, Tayabas				.8	1.5	2.3		14.2					69.6	78.2	1.3	7.2	
Atimonan, Tayabas		.3	8.9	6.4	2.8	12.2	13.2	9.9	.5	.5		1	9.4	37.6	1	9.5	
Lian, Batangas		20.6		9.9			12.7		18				20.8	58.4		10.7	
Nasugbu, Batangas		27.9	3.6			3.6		1	3			5.1	38.1	27.9		6.3	
Ambulong, Tanauan, Batangas	1	7.6				3.8	23.4		6.7	1.3			42.5	.8	22.9	1	

† Voluntary or cooperative station.

Daily rainfall at the stations of the Weather Bureau, June, 1921—Continued

Station.	Day of month.													Total.	
	17	18	19	20	21	22	23	24	25	26	27	28	29		30
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Hacienda Refugio, San Carlos, Occidental Negros †	2.8		5.6			2.5	54.4	3		25.4					118.2
San Joaquin, Iloilo			1.3	28.2	7.1		37.4	8.6			0.3		1.5	21.1	303.6
Murcia, Occidental Negros		132	35.1	34.8	8.9	19.6	1.5					3.6			384.4
Bacolod, Occidental Negros	28.2	1	4.1	38.1	5.3	2.5		3.6				9.7	3		262.4
Oton, Iloilo		3.8	20.3	3.6	50		13.2	6.9			2			6.6	264.8
Iloilo, Iloilo		2.5	5.1	19.6	10.7		53.8	57.6							317.6
Lapuslapus, Iloilo, Iloilo †		5.1	5.6	11.4	10.2		40.7	25.4							252
San Jose de Buenavista, Antique			7.4	50.8	1.5	2	10.2	15.5					6.9	16	243
Tuburan, Cebu	1.3	1		12.2	1.3	7.4	6.1	4.3			1				79.5
Leon, Iloilo		8.1	3.6	26.4		14		4.8		2	2.8				155.5
Silay, Occidental Negros			26.7	20.1	18.5	1.5	4	45				16			275.9
Calag-itan, San Remigio, Antique		3.3	6.6	8.8	9.4	5.1	13.4	7.1					5.6	4.6	262
Hawaiian Philippine Co., Malisbug, Silay, Occidental Negros †			9.1	18.3	7.9	1.5	4.6	115.6				46			383
Cuyo, Palawan			.8	21.4	3.3	4.6	4.8	29.5					4.1	4.1	299.3
Lucena, Santa Barbara, Iloilo †			6.8	56.9	6.8		7.6				4				186.9
Barotac Nuevo, Iloilo			9.9	55.9	13.5		7.4				5.1				219.5
Central Victorias, Victorias, Occidental Negros †			14	52.8	4.6	2	12.7	75.7				30.5			339.8
Hacienda Ilaya, Victorias, Occidental Negros				17.5		5.1	7.6	47				33			222.4
Hacienda Bilbao, Manapia, Occidental Negros							11.4	14.3							158.8
Januay, Iloilo	.3	.5	19.3	47	6.1	4.4		5.8			4.8				162.1
Cadiz, Occidental Negros			24.6	20.1		12.7	11.7								141
Dingle, Iloilo		39.6	28.5	7.6	49.5		2.5	33.8			4.6	50.8			410.5
Ormoc, Leyte	.8	1.8	.8	4.6		29.7	22.1	28.7			3.3	2.3			175.1
Guiuan, Samar		12.7	13.7	51.1	3	42.9	5.1								240.6
Bugasong, Antique		.3	2.5	4.1	1		.3	3.3			1		1.3		49.9
Bogo, Cebu		11.4	3.3	2.5	4.8	132	18.5				2				329.1
Dueñas, Iloilo †			16.5	17.8			3.8				12.7				154.4
Bitogon, Passi, Iloilo †				6.4			15.2		24.6	2.8	1.3	50.8	5.8		271.8
Tacloban, Leyte			12.5	13.5	11.9	43.2	35	16.8	9.7				1.8		281.4
Dumarao, Capiz †	38.9	38.6	13	6	23.6	6.4	11.4		6.4		6.4	2.5	5.1		344.1
Dao, Capiz †	12.7	15.2	3.6	8.1	9.7	11.2	8.1	50.8	38.1		8.9	8.4		12.7	401.7
Culasi, Antique		2	6.9	7.1		3.3	27.7	12.7				8.4	3	1	264.1
Hacienda Amparo, Pontevedra, Capiz	66	10.2	19.8	5	3.6	46.7	7.4	38.6	36.1		26.9			1.3	391.4
Capiz, Capiz	1		83.6	4.1	8.6	35.6	14.8	6.6	3		6.9			31.2	263.5
Borongon, Samar			19.8	5.6	11.4	56.6	3	3.8	1.3	4.1	.5				274.6
Pandan, Antique			22.4		34.8	15.5	5.1	81.3			1	10.2	8.9		328
Calivo, Capiz			1.3	9.7	26.4	3	23.3	5.6	1						110.8
Catbalogan, Samar	.5	1	9.4	33.3	2		89.4		3.3	5.8	.8				213.3
Ibajay, Capiz			27.2	2.3	50.6	2	2.6	11.4							144.7
Calbayog, Samar		19	19.7	1.3	4.1	.3	51.8	34.6	.8		1	.3		1	244.1
San Jose Estate, Robles Camp D-17, San Jose, Mindoro †						20.6		3.8				2.8	1.3		176.4
San Jose Estate, Tamaraw Plantation, San Jose, Mindoro †				18.3	21.3	3.6	48.3	38.1	16.3		11.9		3	47.5	510.3
San Jose Estate, San Agustin, San Jose, Mindoro †			3.3		35.6		38.1	34.8	31.7			4.8	8.1	1.8	471.6
San Jose Estate, San Jose, Mindoro †	.3			8.6	9.1	.8	47.7	43.4	7.7		1.8	.3	4.8	11.4	477.7
Masbate, Masbate					1.5	2	3.6							6.1	259.4
San Jose Estate, Tunnel D-12, San Jose, Mindoro †	5.1			4.6	15.5	3.8	61.7	33.5	25.4	1	.8		17	8.2	269
Romblon, Romblon			9	1.6	2.1	4.1	3	14.8							150.7
Batag Lighthouse, Laoang, Samar		4.6	21.1	4.6	2		24.2	8.6	26.6						151.1
Irosin, Sorsogon						1.3	8.9				29.7	23.4			216
Sorsogon, Sorsogon			38.6	2	3	11.2	4.8					3.6			159
Bacon, Sorsogon			76.7	5.3		2.3	5.6								144
Jovellar, Albay		3.8	4.8	6.4		.3	.3	18.1			8.9	9.2	8.6	18	146.3
Legaspi, Albay, Albay			14.2		3.3		1.3	1			18.2	.3			177.6
Guinobatan, Albay	.5		22.4	9.9	3.8		1.3	16.7			20.3	.3		2	257
Polangui, Albay		22.9	6.9		8.9			23.4	1.3		8.9		1.3		149.7
Bacacay, Albay		19	31			13									224.3
Tabaco, Albay	1.3		31		.8	2.5	4.3	10.2			12.7				163.3
Sumay (Guam), Agaña, Ladrone Islands	.3		7.4	3.6	9.9	34.2	6.6	3.6	17.8	17.1	25.4	7.6	2.3	35.8	202
Iriga, Camarines Sur		12.7	34.5	1.3	1	51.8		12.2				.5	2		226.8
Calapan, Mindoro				11.7	1.5	.3	13.2	2.3	.5						77.1
Tiwi, Albay			38.1			17.8						15.7			111
Pasacao, Camarines Sur				3.3				23.9							273.9
Virac, Albay			23.1	.8			3.1				1.5				91
Naga, Camarines Sur			16.8	.8	9.1		3.3	30.7	1					7.1	125.1
Tigaon, Camarines Sur			37.8	.3	24.7	12.7		1.5	.3		.3				228.1
Baras, Albay			41.4				1.8								221.5
Libmanan, Camarines Sur			19					19	2		1				220.4
Batangas, Batangas					1.3								1		40.1
Ragay, Camarines Sur				11.9	1.8			15	7.9						310.6
Calatagan, Batangas	1.3		.8		5.6		2.8	11.7	14.5					35.8	206.6
Balayon, Batangas	5.3				6.4	2.5		11.7					2.8	24.6	188.2
Lipa, Batangas	.5	4.9	2.3	.8	21.3	13.7	22.4						20.3	.8	223
Lucena, Tayabas	.8			34.8	27.7		145.5	2.3	7.4		1.3				397.2
Atimonan, Tayabas	2		30.7	25.4	2	.3	24.1	1	8.4						207.1
Lian, Batangas							48.8	43.7							243.6
Naugbu, Batangas	1.3			3			44.7		20.1		2.5	1.5	9.7	1.8	201.1
Ambulong, Tanauan, Batangas			1.8	.8	2.5	4.6	38.6	14.2							173.5

† Voluntary or cooperative station.

## Daily rainfall at the stations of the Weather Bureau, June, 1921—Continued

Station.	Day of month.																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
Daet, Camarines Norte	mm.	1.3	51.3	19.8	2.1	16.5	1.3	1.3	0.3	1.3	22.4	10.7	mm.	13	mm.	0.8		
Mendez Nuñez, Cavite	4.3	6.4				7.6		72.4	1.3	1		7.1	7.6	5.8	1.3			
Alfonso, Cavite	11.4	8.4				15.5		49.6	22.9	12.4	62.5	7.4	4.3	7.8	2.3			
Indang, Cavite	4.1	18.8	.5					47.5	8.7	14.7	13.5	13	5.8	2.3	5.8			
Canluban, Calamba, Laguna	1.8			4.6		.5	13.7			4.9	2.6	4.6	86.3	4.1	24.6	1		
Silang, Cavite	34.1	17.5	10.2					84.6			33	34.5	6.4	2	7.7	2.3		
Maragondon, Cavite	1.8	15.3	10.5	8.6		7.3	11.7		6.3	1.3	5		3	1.8	5	.8		
Paracale, Camarines Norte	7.3		.8											5.3	18.6	14.7		
Santa Cruz, Laguna	6.6	5.6				7.1	2.8			4.6			7.1	12.4	5.6	2.8		
Buenavista, General Trias, Cavite	10.2	1.5	6.9	6.4								6.9	8.9	14.5	6.1			
Fort Mills, Corregidor, Cavite†	4.6	3.8	22.9	15.5	7.6	2	39.4	4.6	7.1	30.5		7.4		14.5	5.1	2		
Imus, Cavite	.5	2.3	.8			.3		.5	.3				34.3	5.6	2.5	1		
Alabang Stock Farm, Alabang, Muntinglupa, Rizal†	10.7	47.8				2.1	1.3					.8		21.6	10.6	.5		
Cavite Naval Station, Cavite, Cavite <sup>a</sup>	18.8	2			2			.5	12.2	5.1		14.7	42.4	3.8	3.5	1.1		
Manila, Manila	17.5	1	6.2	2.1	1			.8	38.1	.8	5.6	2.5	.9	2.3	56.5	2		
Antipolo, Rizal		16.5	24.1	7.6				5	52.3	30.5	.8		39.3	8.9	18.5	1.3		
Balanga, Bataan	2.3	2	.3					5	3.6				5.1	35.6	30	6.3		
Montalban, Rizal†	1		8.4	3	.5	9.1	3	60.9	20.3	3.8	.3	1	33	4.8	18.8	.5		
Hacienda Pintong Sapang, San Jose del Monte, Bulacan†	18.6			7.5	3			11.2	3.8	12.4	3.6		2.5	11.7	5.3	8.4	4.6	
Mabayuan Dam, Olongapo, Zambales†													7.6	12.7	50.8	53.3	18.3	
Malolos, Bulacan			1.8					2.8	8.6				3.8	7.1	14.2	9.7		
Hacienda Carmencita, Gutad, Del Carmen, Pampanga†					4.1	1.5						3.5	6.3	6.1	3.5	2.5	2.5	
Pampanga Sugar Mills, Del Carmen, Pampanga†			1.6	8.4	10.9	1.3	.3						5.1	21.1	18.3	9.7	3.8	
San Fernando, Pampanga†			2.3	25.9	6.1		.3	.3					3	31.7	7.2	32	2.5	
Mitla, Porac, Pampanga†										18								
San Isidro, Nueva Ecija		34.2	14.2	7.6			1.8	21.8	.5	1.8	8.1	16.3	13	5.3		.8		
Iba, Zambales	4.3	11.9	41.4	1.3				54.4	13.5	.5	26.2	14	12.2	9.4	22.9			
Concepcion, Tarlac	76.7	4.6	21.5	12.7	2.8			23.4		10.9	.5	10.4	2.3	10.2	17.6		9.4	
O'Donnell, Capas, Tarlac		5.1	1.8	6.4				43.2	4.3		27.4	1.3	35.1	16	15.2		3.8	
Hacienda Luisita, Comillas, La Paz, Tarlac†	6.6					54.1												
Hacienda Luisita, San Miguel, Tarlac, Tarlac†	6.9		5.8	9.4	13.7	2.5	14	5.8		9.4		2.3	54.9	22.9	10.2	2.3		
Tarlac, Tarlac	8.1		6.6	3	3	17		1.8	2	10.7			7.9	19.3		8.1		
Paniqui, Tarlac		7.6		3.8		7.6		2.5	13.2				7.6	1.3	12.7	2.3		
Camiling, Tarlac		3.8	4	2.8	15.2	1.5	6.1	40.6		3.8			14	19.8		6.4		
Muñoz Agricultural School, Muñoz, Nueva Ecija†	69.8	1	11.4	14	1.5	33	1.8	1	66	.8	.3	37.8	3.8	27.9	1	1.5		
Baler, Tayabas			.5				15.7			.8	1.8	3.8		63.3	97.5			
Dagupan, Pangasinan	1.8	2.5	15.4	10.9				6.1	6.1	20.1	2.6			1.3	1.3	3.8		
Rosario, La Union	4.3	35.8	14.5	5.1		16.8	6.1	6.6	13.2	24.6	3.8	5.3	41.1		6.1	3.6		
Tubao, La Union	1.3	36.8	6.3	4.1		17.5	16.5	39.6	3.8	46.2	50.8	45.7				2.5		
Bolinao, Pangasinan		48.3	21.6	41.6		14.7	3.3	11.7	10.4	6.4	6.6	.3	17.7	30	5.3			
Aringay, La Union	3.8	35.6	6.3	2.5		2.5	11.4		3.8	57.9	2.5		43.2			2.8		
Baguio, Mountain Province	13.2	122.9	49.8	7.9	16	27.5	58.4	25.9	6.6	22.6	18.1	10.7	18.8		5.8	.3		
Naguilian, La Union		23.9	8.9	4.9		17.8	5.1	57.9	24.4	14.2	.3		28.7			.8		
Kapangan, Mountain Province	9.9	4.8	22.9	16.6	1	2.5	7.9	4.8	6.6	22.9	1.8	2.3	5.8	.3				
Atok, Mountain Province	17	32.3	19.5	6.1		16.8	51.3	88.9	5.4	25.9	16.5	14.2	80.8		.8	.3		
San Fernando, La Union	17.5	41.4	7.9	8.9	.5	.5	.3	36.3	5.8	43.9	3		18					
Echagüe, Isabela	40.6	15.2	26.4			3.3	3.6	2	2.3	5.3			.5	12.8	8.4	.3		
Balaoan, La Union		5.1	38.6	1	4.8			8.9	14	19	3			102.1	.5			
Tagudin, Ilocos Sur	24.1	39.1	.1	10.4		69.6	2	5.3	13	4.6			50.9	1.8				
Sagrada, Mountain Province†	15.2	17.3	4.1		5.6	2.3	6.1	20.8	11.9	31.2	6.9	7.6	22.4	.3	1.3			
Bontoc, Mountain Province†	2.3	16					7.1	47.8	2	7.1	35.6	18.8	8.1		3.3			
Candon, Ilocos Sur	9.9	47.5	21.3	9.1		5.6		52.1		4.3			5.8		5.1			
Vigan, Ilocos Sur	85.1	44.7	87.4	9.1	1	3.3		11.4		12.2	4.3				.4			
Bangued, Abra	49.3	39.9	17.3	23.9	.3	5.6	1.5	5.1	2	45.2			.3		2.8			
Tuguegarao, Cagayan	1.3	11.7		12.4		1.5	6			3.3	39.9		4.3	3.8				
Sinait, Ilocos Sur	113.8	165.1	106.7							13					53.1	21.1		
Batac, Ilocos Norte	17.2	15.7	18.8					1.5		17.3	.5	2.3	1.3	4.6	49.8	.5		
Solsona, Ilocos Norte	21.3	46.7	5.1	9.1		.5	16	4.8		41.4	1.3	.8	31.7	.8	51.6	14		
Laoag, Ilocos Norte	7.9	11.4	33.8	1						9.6		7.4	.6	1	28.7	.3		
Pasquin, Ilocos Norte	32.2	26	8.6		2					8.4				9.1	74.9	2.8		
Aparri, Cagayan	51.6	48	.3	52.6		17.5				4.3			24.1	.3	1			
Cape Bojeador, Burgos, Ilocos Norte	24.5	17.3	33.8								2.3	.5	4.8		13.7			
Basco, Batanes	57.1	115.6	88.2	15	8.6	12	3.6	4.1	12.7		1.3			11.2	1.5	.5		

† Voluntary or coöperative station.

<sup>a</sup> Rain in 24 hours beginning 8 a. m.

Daily rainfall at the stations of the Weather Bureau, June, 1921—Continued

Station.	Day of month.														Total.	
	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	
Daet, Camarines Norte			11.4		1	5.3	9.2								169	
Mendez Nuñez, Cavite	0.8			6.4	1.3	1	1.3	4.6	3.3			15.2	15.2	3.8	167.7	
Alfonso, Cavite	1			20.8		5.6	.8	7.6	.8			13.7	17.3	11.2	233.3	
Indang, Cavite	1	3.8	3.3	10.4	2		2.3	2.5	.5			10.1	1.3	7.6	179.5	
Canluban, Calamba, Laguna		.5	22.1		2.3	7.4	.5	1			0.5				183	
Silang, Cavite			2.3	3.8	17.8		1.5	3.3	1.3	8.9					271.2	
Maragondon, Cavite			29.8	10.2		6.6	15.5		3			9.2	11.9	8.1	163.7	
Paracale, Camarines Norte	6.3	7.1	11.7	14.2	18.2	19		6.4	2.5						138.5	
Santa Cruz, Laguna			2.8	1.3	18.5		1.8	1.8						1.8	84.4	
Buenavista, General Trias, Cavite				2.5	11.9		25.4	17.3	11			4.3	6.9	2.8	147.1	
Fort Mills, Corregidor, Cavite†	1.8				11.4	8.4		45.2	12.2			4.6	14	11.2	275.8	
Imus, Cavite		9.9	.3		31.5	6.4	1.5	11.5	7.4			1.3	1		118.9	
Alabang Stock Farm, Alabang, Muntinglupa, Rizal †			3.8		8.9		5.6	15.2	29.5				12.5	2.5	173.4	
Cavite Naval Station, Cavite, Cavite a		6.9	.3		14	1.3	34.3	34.5	16.8			25.7	2		241.9	
Manila, Manila		.3	2.3		57.7	14	2.4	90.9	17.3			1.9	3.3	.6	328	
Antipolo, Rizal		2.5	2.8		1.3	.5	7.6	4.6			7.1	104.2	52.9	.8	389.1	
Balanga, Bataan	2	.5		.3	.8	1.5	.8	9.9	16			12.4	42.2	13.5	185.6	
Montalban, Rizal†	.5	2.5	2.5		16.3	.8	28.7	33	3.6			4.6	2.8	12.2	281.2	
Hacienda Pintong Sapang, San Jose del Monte, Bulacan †		5.1		3.8	1.3	1.3	7.9	3.6	.6					3.8	6.6	126.6
Mabayuan Dam, Olongapo, Zambales †	7.6	7.6					10.2	2.5	17.7			35.6	27.9	58.4	310.2	
Malolos, Bulacan	1.3		.8		7.4	4.6	8.9	41.9	3				.5	6.4	122.8	
Hacienda Carmencita, Gutad, Del Carmen, Pampanga †	3	1			4.6		.5	9.6				1.3		7.6	57.6	
Pampanga Sugar Mills, Del Carmen, Pampanga †	2.3	6.1			9.9	1		8.6	6.4						114.8	
San Fernando, Pampanga	2.1		1.8			3.3		1.8	.8					.3	118.7	
Mitla, Porac, Pampanga †		76.2												.8	95	
San Isidro, Nueva Ecija	.5		3.8		33	10.4	13	.5			1	4.4	21.8	9.1	222.9	
Iba, Zambales	9.1	4.8		.8	28.2		1.5	.5	25.6		3	48.8	44.2	51.1	429.6	
Concepcion, Tarlac	.8		1.3		18.3	7.6		1				.5			232.5	
O'Donnell, Capas, Tarlac			4.6	2	3.3	1.3		2	1.8	1.8		1.3	.8		178.5	
Hacienda Luisita, Comillas, La Paz, Tarlac †														163.6?	224.3?	
Hacienda Luisita, San Miguel, Tarlac, Tarlac †	.3	3.8			30.2							17.8		.5	216	
Tarlac, Tarlac	36.1		9.1		4.1	1.8					7.4	6.6	4.1		156.7	
Paniqui, Tarlac	2.3	5.1			4.8		.3							4.6	77.7	
Camiling, Tarlac			13.7			50.8								10.2	192.7	
Muñoz Agricultural School, Muñoz, Nueva Ecija †	8.9	3.8													285.3	
Baler, Tayabas			14.7	22.6	70.9	4.6			.8	3					300	
Dagupan, Pangasinan	3.6	10.7	6.9		13.5	6.6	4	6.6				17	14.5	13.2	169.3	
Rosario, La Union	1.8	26.7	2.8		10.9	26.7	28.4	25.1				5.6	41.9	7.1	360.1	
Tubao, La Union	1.3	3.3	.8		6.6	8.9	22.9	83.8			.8	27.9	32	5.1	464.5	
Bolinao, Pangasinan	6.1	3.5	.3		23.9	15.5	3.3	2	5.6			27.9	24.9	7.4	338.3	
Aringay, La Union	4.3	2.3	.5		3.8	7.6	2.5	45.7			17.8	20.3	33	4.6	314.7	
Baguio, Mountain Province	6.7	27.4	2.6		7.6	1.3	16.3	24.4	.8		3.1	21	36	26.2	577.9	
Naguilian, La Union	4	4.3	13.7		2.5	63	42.7	55.2			2.5	32	28.7	64.5	480	
Kapangan, Mountain Province	2.8	18.5	2.3		5.8	2	35.3	38.1	2.3		2.5	3.3	30.2	36.8	290	
Atok, Mountain Province	4.1	8.9	.3		17.8	2.3	5.1	48.2	.3		26.1	9.1	30	35.1	563.1	
San Fernando, La Union	3	1			3.1	20.8	21.3	9.7			.5	21.3	8.1	60.7	333.5	
Echague, Isabela			23.4			2.3					2.3		1.3		148	
Balaoan, La Union		.5				28.4	9.7	24.1	5.8			1.5	9.4	18.8	298	
Tagudin, Ilocos Sur	2.6		2.5	.1	178.3	19.3	2	34.5	30		6.5	6.2	36.8	14.8	552.2	
Sagada, Mountain Province †	2.3	.5	21.8	5.3	22.9	26.9	5.8	23.9	1.8	23.9	2	1.3	1.3	.5	293.7	
Bontoc, Mountain Province †	3.3		14.2		3.8	31		23.6		8.1					232.1	
Candon, Ilocos Sur			1.3	3.3		35.3	1.3	35.3	5.6	4.8		8.4	7.1	5.8	268.9	
Vigan, Ilocos Sur			1.3	2.8		13		24.1		32		3.5	14.7	21.8	372.1	
Bangued, Abra	.3	.3	3.6	3		11.7	1	2	1.5	.3		.3	14	21.1	313.8	
Tuguegarao, Cagayan		4.1	8.9			11.2		.3						1.3	9.2	119.2
Sinait, Ilocos Sur				7.9		17	1.5		10.9	1.8		20.3	18.6	11.9	554.8	
Batac, Ilocos Norte				1		6.1	1.3	14.2	22.4	4.8		3.3	6.1	2.3	197.9	
Solsona, Ilocos Norte		.3	1.8	25.4	1	17.3	20.1	3.8	39.6	4.1	.8	.5	5.8	.3	365.9	
Laoag, Ilocos Norte		.8		8.4		2.5		1.3	51.3	2.3	.3	8.4	6.1	4.1	187.7	
Pasauquin, Ilocos Norte			1.5	30		6.1		10.7	43.4	6.1	2.3	5.3	3.8	15.8	289.8	
Aparri, Cagayan	30.7	2.5			25.4	1.3					10.4				270	
Cape Bojeador, Burgos, Ilocos Norte		4.8		45.2		2.5	13.7	13.2	43.9	4.1		15.2	14.5	13	267	
Basco, Batanes			3.6	4.3	.5		3.8				4.6	1.8	.8	3	353.8	

† Voluntary or cooperative station.

a Rain in 24 hours beginning 8 a. m.

MAXIMUM AND MINIMUM TEMPERATURES AT THE STATIONS OF THE WEATHER BUREAU, JUNE, 1921

Day.	Jolo.		Lais, Malita.		Malita.		Lebak, Cotabato.		Lamitan, Isabela, Zamboanga.		Malamaui, Isabela, Zamboanga.		Zamboanga.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum. <sup>a</sup>	Maximum.	Minimum. <sup>b</sup>	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30	23.6	30.5	22.2	31	21.9	31.1	24.3	31.6	22.1	31.3	23.5	30.2	23.8
2	28.6	23.5	31	21.4	31.6	22.3	31.1	24.1	32.5	20.4	29.6	23.2	27.7	23.5
3	30.5	23.2	31.5	21.5	32.4	22.6	32.8	23.3	33.7	20.2	30.7	22.7	31.2	23.3
4	30.6	22.4	32	21.4	32.8	22.4	32.9	24	32.3	20.4	30.3	24	30	23.3
5	29.8	23.3	31.7	21.8	32.5	22.6	31.1	23.4	32.7	20.1	31.3	23.5	29.5	23.4
6	30.7	22.7	32.5	21.6	32.5	23	31.7	24.3	32.3	20.8	30.3	23.3	29.2	23.3
7	30.9	22.4	32	21.8	33.5	22.8	32.3	24.1	33.5	20.3	31	24.2	29.5	23.5
8	30.3	22.9	31.9	22.8	32.8	22.8	32.3	24.1	33.7	20.5	30.1	24.5	29.5	23.8
9	30.6	23	33.8	22.4	32.4	22.5	32.2	23.4	33.7	20.6	31.1	23.5	29.5	23.2
10	32.5	24.4	29.5	22.3	30.1	22.9	31.9	23.5	30.3	20.6	30.3	23.5	30.7	24.3
11	29.8	23.5	31.6	21.8	32.4	22.6	33.4	24.8	31.6	21.5	30.3	23.5	29.2	23.6
12	29.6	22.8	32	22	32.2	22.8	32.1	24.8	32.1	20.5	30.7	24.1	29.2	23.6
13	29.5	23.8	32.5	21.1	32.5	22.8	32.3	24.6	31.6	21.3	31.3	23.7	29.4	23.5
14	29	22.5	31.1	21.8	32.6	22.2	32.3	24.6	30.5	21.7	30.8	23.5	29.2	24
15	31.7	22.5	32	21.2	32.7	22.2	32.3	23.1	32.6	20.2	28.5	23.8	27.8	23.2
16	29.8	23.5	32.1	21.2	32.3	21.8	31.8	24.4	32.4	20.5	30.7	23	29.5	22.8
17	30	23.2	31.6	22	32.3	21.8	31.8	24.4	33.5	20.3	27.3	23.5	28	23.4
18	30.5	22.8	29.3	23	31.8	22.5	32.4	24.7	33.4	20.5	30.5	23.5	29	22.5
19	30.1	24.5	30	22.5	30.3	23.5	31.6	23.1	32.3	20.2	30.5	23.5	30.2	22.4
20	29.4	23.6	29.5	22.4	30.1	23	31.8	25.4	33.4	20.4	30.8	24.5	29.5	23.3
21	30.3	23.4	31.5	21.4	31.8	22.1	32.6	23.1	31.5	19.4	27.5	21.5	27.3	21.8
22	30.6	22.5	31.5	22.2	32.5	22.4	31.5	24	32.4	20.1	30.7	23	28.6	23.5
23	30.4	22.8	29.5	22.4	30.9	22.3	31.8	23.8	32.6	20.7	30	23.5	28.8	22.7
24	31.2	23.3	30.2	22.6	31.9	22.7	31.8	23.1	32.6	20.4	26.3	23	26.8	22.5
25	31.5	23.3	32	22.5	32	23.2	31.8	23.1	32.5	20.2	30	23	30.6	22.1
26	30.7	22.8	33	22	31.2	22.2	31.8	24.3	33.5	21.2	31.6	22.9	30.6	22.8
27	30	22.7	32.6	21.5	31.5	23.2	30.4	24.4	32.6	20.4	31.1	23.7	29.5	23.5
28	30.3	23.3	33.5	21.3	32.8	22.2	32.3	24.1	31.5	19.2	31.3	24	29	23.8
29	29.6	23.5	32	20.5	30	23.2	31.5	24.1	32.7	20.5	29.8	24.2	28.9	23.8
30	31.6	23.6	32.1	22.5	33.1	23.6	32.3	23.1	32.4	20.6	31.2	24.1	29.2	23.4
Mean	30.3	23.2	31.5	21.9	31.9	22.6	32	24	32.5	20.5	30.3	23.5	29.2	23.2

Day.	Davao.		Pikit.		Bual, Dulauan.		Cotabato.		Naganaga, Margosatubig.		Malabang.		Cateel.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	29.8	22.5	33.5	23.4	33.4	22.7	32.5	23.4	33	21.2	31.8	22.4	30.8	23.4
2	31.2	23.1	34.1	24.1	33.5	24	32.9	23.3	33.5	22.5	32.4	23.6	31.3	22.5
3	31.7	22.3	33.1	23	32.5	21.5	32.4	23.4	33.2	22.5	31.1	23.1	31.1	22.3
4	31.2	22.4	34	22.4	33.4	21.5	32	23.6	33.5	22.5	30.5	22.2	30.5	22.2
5	31.4	22.5	33.5	23	33	21.2	31.5	23	33.7	23	30.7	22.5	30.7	22.5
6	31.2	22.3	34.2	24	33.3	21.2	31.6	24.1	34	23	31.4	23.4	31.4	23.4
7	31.2	23.5	33.4	23.1	33	23	30.6	23.6	33.7	22.5	30.4	21.6	30.4	22.7
8	31.1	23	32.4	24	31.6	23.5	30.8	23.1	33.5	23.2	21.8	22.2	30.5	22.8
9	31.6	23.5	33	23.4	32.1	23.5	30.3	23.8	31.7	23	30.4	21.6	30.4	23.3
10	29.2	22.3	32.9	23	32.2	22.4	31	23.4	34.3	23.5	30.6	21.4	30.8	22
11	31.2	22.5	33.9	23.4	33.5	22.4	31.9	24.2	33.5	24.2	30.8	21.8	30.4	23.2
12	31.1	23	33.9	22.4	33	23	31	23.1	34.3	23.5	30.6	21.4	30.8	22
13	30.9	22.4	32.3	23.4	32	22.9	30.6	23.5	34.5	23.5	31.3	21.5	31.5	22.4
14	31.2	22.5	32.8	23	32.6	22.6	30.5	23.4	33.5	22.2	31.8	21.8	30.5	22.5
15	31	22.5	33.4	23.2	32.1	23	31	24	34.2	22.5	31	22.2	30.5	22.1
16	31.4	21.8	31.7	22.3	31.5	21.2	30	23.5	33	22.2	21.8	22.2	30.4	22.7
17	32.1	22.5	34.1	23.1	33.4	22.7	31.6	23.5	33.5	22	22.6	21.1	31.1	22
18	29.7	23.4	32.1	24.4	32	23.3	31	24	33.5	22.5	31.6	21.4	29.4	22.7
19	30.7	23.6	31.7	24	31.6	23.1	31.8	24.2	34	22.3	30.8	23.8	27.5	23.5
20	31.3	22.5	32.7	23.3	31.9	22.9	29.9	23.8	33.7	22.5	22.6	22.2	29.2	22.4
21	30.7	22.3	33.1	22.1	33.1	21.6	30.8	23	32	21.2	31.4	21.6	30.6	22.8
22	31.6	22.5	33.3	23.1	32.1	21.6	30.8	23.6	33.7	22.2	30.4	22.4	30.3	22.3
23	29.2	22.9	31.4	23.1	31	21.8	31.5	23.3	33.5	22.5	31.2	21.5	30.6	22
24	31.2	22.5	33.2	23.2	32.5	21.8	30.7	23.3	34.2	22.3	30.8	21.4	30.5	23.1
25	31	22.8	34.5	24.1	34	23.5	31.5	23.4	33.7	22.2	22.4	22.4	30.8	21.9
26	31.6	22.8	33.6	22.2	33.7	21.5	32.8	23.6	34	22.3	30.4	22.2	30.4	21.6
27	30.6	23	33.6	22.2	33.7	21.5	32	23.5	33.7	22.5	31.8	21.6	30.5	22
28	31.8	22.3	33.6	23.1	31.4	22.3	30.4	23.7	33	22.3	31.6	22.6	29.3	22.5
29	30.8	22.3	33.6	22.4	31.9	22	30.5	23.2	33.5	22.5	30.6	21.6	30.8	23.1
30	31.7	23.3	33.6	22.4	32.3	22.2	29.9	23.5	33.3	22.2	30.8	22.4	31.5	23.2
Mean	31	22.7	33.1	23.2	32.5	22.4	31.2	23.5	33.5	22.5	31.1	22.1	30.5	22.6

<sup>a</sup> These minimum temperatures seem to be not very reliable, the differences between 6 a. m. temperatures and minimum temperatures being both too small and too uniform.  
<sup>b</sup> These minimum temperatures seem to be somewhat too low.



Maximum and minimum temperatures at the stations of the Weather Bureau, June, 1921—Ctd.

Day.	Ganasi.		Camp Kalao, Monkayo.		Camp Keithley, Dansalan.		Veruela.		Sumilau.		Cagayan.		Talacogon.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	28.2	18.9	32.4	21	27.7	20.1	31.8	23	29.1	18.7	31.9	22.1	33.2	-----
2	29.7	19	33.5	21.9	28.2	18.9	31	21.3	27.8	20	31.7	23	33.8	-----
3	29.4	-----	33	21.9	27.9	18.3	32.8	22	29.2	18.5?	31.5	21.1	33.4	-----
4	29.5	17.3	33.5	21.5	28.8	17.5	32.6	23.5	30	18	32.3	22.3	33	-----
5	29	17.5	33.9	21.5	29.3	18	33.8	22	30.4	18.5	32.7	22.1	33.2	-----
6	29.3	18.5	32.9	21.2	28.4	18.7	34.3	22	28.5	18.3	32	22.5	33.7	22.5
7	29.2	-----	32.6	21.2	28.3	19	33.3	22.5	28.6	18.6	32	21.9	32.1	22.1
8	28	17.5	31.6	21.9	27.8	18.1	31.6	22.2	28.5	18	32.2	21.9	33.5	22.4
9	28.4	17.9	32	22.2	27.9	19.9	31.7	23.2	28.7	19	32	23.3	32.5	24.1
10	28.5	18	32	21.9	28.3	19.5	32.2	22.6	29.6	19.3	32	22.1	32.3	22.3
11	28.4	18.5	32.8	21.5	27.5	18.3	33.5	22.2	29.4	17.8	33	21.1	32.2	22.1
12	29.6	18.6	30	22.6	28.8	18.5	34	23.2	29.1	18.3	33.1	22.8	34.2	22.2
13	29.5	18.5	30.5	22.1	27.3	19.5	36	21.8	27	18.1	31.2	23	32.4	22.3
14	28	18.6	33	21	27.3	20.1	32	21.5	27	19.8	31.2	22.9	32.9	22.4
15	28.7	18.8	33	22.1	27.9	19.5	32.3	22	29.1	18.1	31.5	21.7	32	22.1
16	28.8	19.5	32.9	21	26.4	20	32.8	21.8	28	17.6	30.3	22.2	32.7	22.4
17	-----	18.8	31.9	20.9	28.8	18.3	31.8	22.2	30	18.2	32.4	22	33.5	22.7
18	29.8	19	32.5	21.2	26.8	18.8	29.3	23	28	18.2	31.5	22.9	33	21.4
19	29.4	17.8	30.5	22.5	27.3	18.6	31.3	23.2	28	19.4	32	22.1	32.4	22.3
20	29.5	19.6	30.9	21.9	26.9	19.1	32.3	22.8	27	18.2	30.5	22	33.5	22.4
21	28	19.4	31.4	21.9	28	18.9	32.8	21.7	28.7	17.5	31.3	21.5	32.3	21.2
22	28.2	19.5	32.5	20.9	28.5	19.6	31.9	22.7	29	18.3	31.4	22.2	32.7	22.4
23	28.3	19.6	30.5	21.5	25.3	19.6	30	22.8	26.6	19.2	29.3	22.6	31	22.2
24	28.7	19.7	31.5	21.1	27.3	18.4	32.4	21.8	26.6	17.7	31	21.5	32	22.1
25	30	17.5	33.5	-----	29	19.7	34.5	22	29.7	18	32.2	22.6	-----	22.2
26	30.4	17.7	30	21.2	28.9	19.1	33.3	21.5	29.4	17.6	32.7	21.8	-----	21.4
27	29.8	19.8	33	20.5	27	19.4	30	22	30	18.1	32.4	21.8	33	21
28	29.4	19.4	32	21	26.3	20	33.8	21.5	-----	17.6	32	21.6	33	23.7?
29	29.2	19	32	21	26.3	18.7	32.5	21	27.2	18.5	30.2	22.1	31	23.1
30	-----	18.2	31.9	21.2	27.3	19.1	33.8	22.2	28.3	18.5	32	22	32	21.3
Mean	29	18.6	32.1	21.5	27.7	19	32.3	22.2	28.6	18.4	31.7	22.2	32.7	22.3

Day.	Butuan.		Mambajao.		Dumaguete.		Kolonie, Yap.		Tagbilaran.		Iwahig Penal Colony, Puerto Princesa.		Dalaguete.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.9	22.3	-----	-----	31.7	24.4	-----	-----	31.7	24.9	-----	-----	-----	24.6
2	33.1	23.6	-----	-----	31.6	24.1	-----	-----	31.7	23.5	-----	-----	-----	24
3	32.4	21.9	-----	-----	31.2	23.5	-----	-----	31.7	23.4	32.4	21.4	-----	24
4	33.2	22.1	-----	-----	30.7	23.7	-----	-----	32.3	23.2	32.3	22.2	-----	23.5
5	32.9	22.8	-----	-----	31.8	23.9	-----	-----	32.8	22.9	32.4	22.7	-----	24
6	33.1	22.7	-----	-----	32.4	25	-----	-----	32.2	24.2	32.7	22.8	-----	25.3
7	32.6	22.9	-----	-----	31.9	24.2	-----	-----	31.5	23.4	30.7	23.4	-----	24.1
8	32.4	23.3	-----	-----	31.6	24.1	32.4	24	31.2	23.4	32	21.5	-----	24.7
9	30.9	23.8	-----	-----	32.2	23.9	33.1	24.6	32.9	24.6	29.7	22.8	-----	24.5
10	32.1	22.7	-----	-----	31.5	24	29	24.3	33	24.4	31.2	23.5	-----	23
11	33.1	22.2	32.3	22.3	31.6	24.2	31.7	24.7	31.5	23.9	31.4	23.5	-----	24.3
12	34.1	22.8	33.5	23.5	32.1	24.3	32.8	25.4	32.3	23.2	31.5	22	-----	23.8
13	29.1	23.1	31.8	23.8	31.1	24	30.8	25	32	23.4	31.4	22	-----	24.9
14	32.8	22.8	30.4	23.8	30.5	24.4	28	23.3	29.9	23.1	32	-----	-----	23.7
15	32.8	22.5	30	23.5	31.1	23.1	32.3	24.1	31.1	23.1	31.8	-----	-----	23.3
16	31.4	21.8	32.9	23.5	31	22.7	32	25	32.1	22.7	30.7	22.4	-----	23.5
17	32.2	22.9	31.3	23.7	31.6	23.2	32.8	23.4	31.5	23	31	21.6	-----	23.8
18	29.3	23.3	30	23.1	32	23.7	30.8	24	31.8	23.2	31	-----	-----	23.6
19	32.1	21.9	30.8	25.4	31.1	23.7	31.1	24.2	30.7	23.4	32.7	21.7	-----	24
20	32.1	22.9	29.4	23.4	31.1	23.6	32	25	31	22.8	31.4	22.8	-----	23.3
21	32.3	21.2	30.4	22.8	30.4	23.3	30.3	23	31.2	23.2	31.2	22.4	-----	23.3
22	32.7	22.5	31.2	24.4	31.2	23.3	29.5	23	31.5	23.2	31.4	22.5	-----	22.9
23	29.3	22.4	27.5	22.8	26.8	23.9	30	24.1	26.8	22.5	30.8	22.2	-----	23.6
24	31.9	21.7	28.6	22.1	29.2	21.8	31.8	24.2	-----	-----	31.2	21.4	-----	22.6
25	33.8	22.4	30.4	23.8	30.9	22.9	33	25	-----	-----	29.8	23.2	-----	23
26	34.1	21.9	31.4	24.1	31.5	23.4	28.8	22.6	-----	-----	31.2	22.2	-----	24
27	31.1	22.9	31.5	23.5	31.2	22.9	30.8	22.7	32.5	22.8	31.7	21.4	-----	24.3
28	32.8	21.7	33	24.4	31.6	23.5	32	23.8	32.2	23.9	32.4	21.4	-----	23.5
29	31.1	21.5	31	24.1	30.8	23.3	32	24.7	31.8	24.4	31.7	21.4	-----	24
30	32.9	22.9	32.9	25.4	31.9	22.9	28.7	22.8	31.7	24.1	32.5	22.5	-----	23.5
Mean	32.2	22.5	31	23.6	31.2	23.6	31.1	24	31.6	23.5	31.5	22.2	-----	23.8

Maximum and minimum temperatures at the stations of the Weather Bureau, June, 1921—Continued

Day.	Surigao.		Central Palma, Ilog.		Hacienda Naval, Himamaylan.		Biaong Cui's Farm, Barili.		Maasin, Leyte.		Isabela, Occidental Negros.		Hacienda Tanolo, Hiniganan.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.5	24.6	34	22	32.4	21.4	30.5	22.5	34	23.4	31.9	22.4	31	23
2	30.1	24.2	31.5	23.1	31.5	22.4	31.4	22.1	33	23	31.3	22.9	31	23.3
3	31.1	23.2	33	22	32.3	22.4	30.2	22.5	34	23.2	31.9	21.5	31.2	21.7
4	32.6	23.8	33.4	22.2	31.4	22.5	29.3	22	34	23.6	32.9	22.3	31.5	22.5
5	32.6	23.3	33.1	22	32.4	22.6	29	22.2	33.5	23.5	33	22.2	32	22.5
6	32.3	23.7	31.6	23.1		22.5	30.1	22.5	34	23.3	31.7	23	31.2	23.5
7	30	24.3	32.4	22.5	31.3	22.4	32.5	21.2	33.3	23.2	31.8	21.7	31.5	22.8
8	32	24.2	32	23.1	31.5	22.6	30.1	21.5	33	23.6	32.5	22.5	31	23
9	31.2	23.5	31	22.5	30.3	21.4	31.8	22.5	33.6	22.8	32.3		30.3	23
10	32.5	23.5	32	23.7	31.6	21.3	32.6	23.5	33	23	31.8	23.1	31.7	23.4
11	31.6	23.5	32.5	23.3	31.5	22.6	29.5	23.2	34	22.6	31.5	22.3	31.7	22.5
12	31.5	23.4	31.8	23	32.3	22.3	32.6	23.5	33.2	24.2	31.4	23	31.3	23
13	28.6	24.4	31	23.1	33	24.2	29.5	23.1	34	23.6	30.1	23.4	30.5	23.3
14	30	23.7	29.5	23	30	21	29.4	22.4	31.4	22.4	28.1	23.2	29.7	23.5
15	31.2	23	32.2	23.2	31.8	21.8	31.2	22.2	32.1	22.5	31.5	22.2	31	22.5
16	30.6	23.2	31.5	23	32.4	22	31.7	22	33.6	23.6	30.6	21.8	30	22.9
17	31.6	23.9	33.2	23.5	32.5	22.5	31.5	23.2	32.6	22.4	32	22.9	31	23.5
18	27.8	23.8	33	22.2		23	31.5	22.5	34	22.8	32.2	21.6	31.5	21.7
19	29.8	22.8	33	23	31	23	30.1	21.5	31.5	23	30.9	22.5	31.5	23.1
20	29	22.9	30	22.8	33	22	30	22.4	31.6	23.6	27.8	22.7	29.2	23.2
21	31.2	22.7	31	22.5	33.4	23.4	29.4	21.6	33.3	23.8	30.4	22.5	30.2	22.6
22	30.5	23.2	31.5	22.7	33.2	23	31.8	22	31.4	23.5	31.4	22.2	30.5	22.7
23	27.6	22.9	32	22.9	31	23	27.1	22.5	30.2	22.2	28.2	23.2	28.2	23.1
24	31.2	22.5	31.9	22.7	32.5	21.2	30.5	22	33.2	22.4	29.3	22.2	29.5	22.5
25	32.1	22.8	31.8	22.4	33.5	21.5	31.4	21.2	33.7	22.6	31.2	21.9	30.8	22.7
26	32.1	23.4	32	23	34	23.5	32	22.4	34.5	23.5	31.9	21.7	31.6	21.5
27	31.2	23.8	32.1	23.1	33.8	23.8	33.5	22	33	23.8	31	22.1	31.2	22.3
28	31.5	23.4	31.9	22.9	33	23.4	32.2	22.2	33	22.4	30.9	22.9	31.2	22.9
29	29.6	24	32	23	32.4	22.8	32.4	22.5	32.1	23.8	31.1	22.4	31.3	22
30	31.5	24	31.8	22.6	32.9	22	33.8	22.4	31.4	23.6	31.9	21.9	31.7	22
Mean	30.8	23.5	32	22.8	32.2	22.3	31	22.3	33	23.2	31.2	22.4	30.9	22.7

Day.	Cebu.		La Castellana.		Central Azucarera de la Carlota.		Hacienda Canlaon, La Castellana.		Mao Sugar Central, Bago.		Valladolid.		San Joaquin.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.3	25.4	32.8	22.8	31.9	23.2	31.2	20.1	31.8	22.6	33.2	21	31.8	23.7
2	30.7	24.9	31	22.7	31.7	23.6	29	20.9	32.5	22.9	32.5	24.2	32.1	24.4
3	32.1	25.4		21.3	32	22.2	30.9	21.9	32.1	21.1	33.7	21.9	32.6	24.2
4	32.7	25.4	32	22.4	31.9	22.9	31	22.5	32.4	22.2	34	22.7	32.3	24.1
5	33.2	25.9	33	22.4	32.7	23.2	31.6	21.9	33.3	22	33.7	22.5	32.6	24.2
6	32.5	26.4	32.8	23	31.8	23.2	32.2	21.4	32.2	23.4	33.5	21.5	33.1	23.6
7	31.2	26.5	32.6	23	31.7	23.4	31	22	31.5	22.5	32.7	22.2	32.1	24.3
8	32	26	32.7	23	31.5	23.6	31.5	20.7	32.4	22.3	34.2	19.4	32.7	
9	31.2	24.8	33.4	23	30.3	23.3	33.8	20.8	31.1	22.2	33.4	23.5	32.6	24.1
10	33.1	25	32.5	23	32.4	23.5	32.6	19.5	32.7	21.6	34.2	21.4	32.3	24.3
11	32.2	25.8	33.2	22.5	31.8	23.2	32.4	21.5	32.1	22.1	33.4	20.9	33.4	24.3
12	33.3	26	33.5	23.5	31.9	23.5	32.3	21.9	32.4	22.4	33.2	23	33.3	24.2
13	29.3	25	33.3	23	31.9	24.1	31.7	21.5	30.1	23	34.3	24.3	31.3	25.5
14	29.6	23.8	32.1	20.7	30.1	23.4	32.2	21.9	29.5	22.2	32.7	19.4	29.8	23.8
15	31.5	23.8	32.1	21.3	31.7	22.8	32.6	22.3	32.4	22	33	23.2	29.7	22.8
16	30.8	26	32.2	22.7	30.4	22.9	31.5	21.5	33.3	22.1	33.5	23.5	32	25.5
17	31.4	25.2	31.2	22.4	32.6	23.5	32.1	21.9	32.8	21.9	34.3	23.2	29.2	23.2
18	32.1	25.3	33	21.5	32.2	22.7	31.8	20.5	32.8	21.9	33.9	23.4	32.6	23.6
19	32.1	23.3	32.8	23	31.8	22.8	33.5	20.9	32.2	22.8	32.5	24.2	32	23.5
20	31.5	23.7	32.7	22.5	30	23	32.1	20.9	30.3	22.7	35.2	23.6		
21	31.5	25.5	32.6	23	31.2	22.9	31	20.6	31.4	22.2	34.5	23	30.7	23.5
22	30.8	24.9	33.5	23.5	31.9	23.7	31.5	20.6	31.6	22.3	32.4	23.4	31.2	23.1
23	27.6	24.8	32.4	23.5	29	22.8	31.7	20.9	27.4	22.4	29.7	22.7	29.9	24.1
24	29.9	24	32.7	22.5	30.2	23	30.8	19.8	30.3	22.1	31.2	23.2	30.4	23
25	31.3	24		22.6	31.7	23.6	32	21	31.7	22	32.2	23.4	31.3	23.7
26	32.6	25.5			32.6	22	28.3	21.3	33	21.4	33.4	22.3	31.5	
27	30.9	25.1	33.3	21.2	33.3	22.4	32	21.2	32.6	21.6	33.2	22.2	32.5	23.6
28	31.3	25	32.8	23.6	32	23.6	29	13.9	32.1	23.2	33.5	24.3	32.9	25.8
29	31.1	26.3	32	22.8	32.1	23.3	30.9	20.7	32.5	23.1	33.7	24.3	32.7	
30	30.9	26.4		22	31.9	23.4	31.1	21.4	32.2	22.9	34	23.4	32.3	23.8
Mean	31.4	25.2	32.6	22.5	31.6	23.2	31.5	21.1	31.8	22.3	33.3	22.7	31.8	23.9

\* These minimum temperatures seem to be somewhat too low.

Maximum and minimum temperatures at the stations of the Weather Bureau, June, 1921—Continued

Day.	Murcia.		Bacolod.		Oton.		Iloilo.		San Jose de Buenavista.		Tuburan.		Leon.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	33.5	23.1	30.4	23.3	31.4	25	30.8	25.1	30.5	24	32.8	24.1	31.9	
2	32.4		31.2	23.6	31.6	24	30.3	24.4	29.8	23.5	30.7	24.8	32	
3	33.7	21.3	32.6	22	32.2	22.8	31.3	23.8	30.8	23.2	32.8	22.7	32	
4	32.7	22.5	31.5	22.9	32.6	22.9	31.2	24	31	23.3	31.3	23.9	31.8	
5	34.1	22.4	32.2	23.2	32.5	23	31.2	24.3		23.1	32.8	23.1	32	
6	32.8	23.3	32.4	24	32.4	23	31.4	23.8		23.4	34.2	24.5	32.2	
7	32.6	22.6	31.6	23.5	31.8	23.1	30.8	24		23.5	32.3	24.1	32	
8	33.4	22.4	31.3	23.4	32.8	23.5	30.7	24.5		23.5	31.1	24.6	31.9	
9	30.1	22.6	29.6	23.2	30	24	29.2	24.3		23.5	30.5	23.9	31.1	
10	32.1	22.6	30.8	23.1	31.8	24.9	31.2	24.8		23.5	31.8	24	32.7	
11	31.6	21.9	31.4	22.8	32.6	23.8	31.6	24		24	32.7	24.3	31.8	
12	32.4	22.4	31.9	23.4	32.5	22.7	31.6	23.6		23.5	32.8	24.4	31.5	
13	30.1	22.9	30.9	24.1	30.6	25.3	29.9	24.4		24	31.7	24.3	30.4	
14	28.4	22.4	28.5	23.4	28.8	24.6	27.5	23.4		22.8	31.6	25.8	29.2	
15	31.4	21.4	31.6	22.3	30.2	22.9	30.2	23		22.9	31.7	25.3	29.3	
16	31.1	22.2	30.5	23	29.7	23.1	29.4	23.4		22	31.8	25.3	29.4	
17	32.8	22.3	31.7	22.7	31.8	22.8	30.8	23.9		23	31.3	25.8	29.4	
18	32.6	22.2	31.5	21.8	32.4	22.5	30.8	23	29	23	31	25	31.4	
19	31.5	21.3	30.9	21.4	32.2	23.8	31.8	23.6	32.8	23.1	32.2	25.9	32.1	
20	29.4	22.7	30	23.2	30.8	23.9	30.3	23.4	31.2	23.4	31.6	24.2	32.7	
21	31.5	22.3	31.5	22.8	31.2	24.2	30.3	23.6	30.2	23	32.3	23.2	30.3	
22	31.6	22.8	31.5	23.2	31	23	30	23.4	30.6	23.1	32.3	23.6	30.8	
23	26.4	22.8	27.3	23.3	28.8	23.7	27.3	23.5	27.3	23.1	27.4	24.3	28.3	
24	30.2	21.9	30.3	22.5	29	25	28.6	22.4	29.6	22.4	30.5	23.1	29	
25	32.1	21.7	32	22.4	30.8	25.7	29.8	23.4	30.7	22.5	32.7	22.5	30.9	
26	32.7	21.2	31.9	21.7	32.3	22.5	31.9	23.4	31.6	21.8	32.3	23.2	32.2	
27	33.1	21.6	32	21.4	32.2	23.5	30.6	24	31.1	22.9	32.4	24.3	32.1	
28	31.1	23.7	31.8	24	32.2	24.8	30.9	25.6	32.1	23.7	33	23.4	32.4	
29	32	22.9	31.5	23.4	33	24.5	31.7	26.9	30.9	23.4	32.9	23.4	32.9	
30	31.8	22.3	31	23.2	31.4	26	30.8	24.8	31.5	22.9	32.8	23	31	
Mean	31.7	22.3	31.1	22.9	31.4	23.8	30.5	24	30.6	23.2	31.9	23.7	31.3	

Day.	Silay.		Calag-itan, San Remigio.		Cuyo.		Barotac Nuevo.		Hacienda Ilaya, Victorias.		Hacienda Bilbao, Manapla.		Janiuay.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.2	24.2		23	31.7	26.9	32.8		30.3	23.4	32.2	22.2	33.1	23
2	33.5	24.5		22.3	28.2	24.1	32.4		30.8	23	32.6	22.7	32.4	22.6
3	32.5	23.1		22.3	30.3	24.3	32.4		30.3	23	32.9	22.9	33.2	21.8
4	30.5	24		22	29.4	23.5	32.5		29.4	23.2	32.8	22.1	33.5	22.2
5	33.5	23.9		22.3	31.7	25	33.2		30.2	22.7	32.4	22.6	33.7	21.2
6	32.3	24.3		22.3	31.7	25.3	33.4		31.2	22.5	32.7	23	34.1	21.6
7	30	24.4		23.4	31.7	24.9	33.5		29.5	23	32.7	23.2	34	21.9
8	32.5	24		22.3	32.2	25.8	33.3		29.8	23.2	32.9	23.5	32.7	22.5
9	31.5	24.1		22.3?	28	23.6	33.4		30.5	23.7	33	23.2	32.6	23.2
10	31	24.4		23	31.3	24.6	33.2		30.8	22.5	32.6	22.7	32.5	23
11	30	23.1		23.4	31.9	25.6	32.3		29.9	23	32.9	22.5	33.2	22.5
12	32.5	24		23.3	31.3	24.8	31.2		30.3	23.5	32.8	23	33.2	21.9
13	30.5	24.4		23.3	30.7	25.1	31.5		31.2	23.3	32.6	22.8	30.9	24.1
14	28	24.5		22.3	26.5	24.1	31.3		29.5	22.9	32.9	22.9	29.8	23.5
15	30.5	23.4		22?	26	24.1	32.3		30.5	23.2	31.8	22.7	30.9	22.3
16	29.8	23.5		22.3	27.9	24	32.3		30.3	23.5	32.6	22.9	30.4	22.8
17	33	23.5		22.3	31.4	24.1	32.5		29.5	22.7	32.7	23.1	33	21
18	29	23.4		22.3	30.7	24.6	33.1		30.2	23.2	32.5	23.3	32.9	21
19	32.6	23.9		21.2	31.9	24.8	32.3		30.1	22.8	33.1	23.5	32.7	21.6
20	30.1	23.4		22.3?	28.3	24.3	30.2		29.3	23.8	33.4	24	32.8	21.5
21	30.6	23		22	29.4	24.3	31.3		29.7	23	32.7	23.2	31	22.3
22	31.4	23.5		22.3	29.4	24.9	31.2		29.8	23.5	32.9	23.4	32.5	22.7
23	27.5	24.1		23	29.2	23.3	31.4		30.5	23	33	23.8	27.2	22.5
24	28.6	23.4		22.3	30.5	24.1	31.2		29.5	23.2	32.1	22.8	29.3	22.3
25	32	23		22?	30.6	23	32.3		31.5	23.5	32.2	22.9	32	22.3
26	31.5	24.1		23	32.2	23.1	33.2		30.5	23	32.4	23.1	33.3	21
27	32.5	23.1		21.2	31.2	23.6	33.3		30.7	23.2	32.7	23.4	32.4	22.2
28	31.5	24		23	32	26.6	33.2		30.8	23.5	32.9	23.6	34	21.4
29	31.6	24.1		22.3	31.6	24.9	33.2		30.8	23.8	33.3	23.8	33.3	20.9
30	30.5	24.2		21.2	31.7	24.8	33.5		31.5	23.5	32.8	23.5	32.3	22.2
Mean	31.1	23.8		22.3	30.4	24.5	32.4		30.3	23.2	32.7	23.1	32.3	22.2

Maximum and minimum temperatures at the stations of the Weather Bureau, June, 1921—Continued

Day.	Cadiz.		Dingle.		Ormoc.		Guiuan.		Bugasong.		Bogo.		Tacloban.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.8	23	33.5	23	33.2	22.7	30.4	25	32.2	24.4	32.7	23.7	31.6	23.9
2	31.6	22.9	33.2	23.5	31.6	23.1	32.5	24	31.6	23.4	31.8	23.6	32.1	22.6
3	31.3	22	33.2	22.4	33.4	23.1	32.7	24.8	31.7	22.9	31.9	23.7	34.9	22.4
4	31.4	22.3	32.6	22.6	33	22.8	31.5	23.3	31	23.4	32	23.8	32.3	23.1
5	31.7	23.7	32.8	22.4	34.1	22.6	32.4	27	31.7	23.9	33.2	23.9	31.9	23.5
6	33.5	22	34.3	23	33.4	22.6	31.5	25.4	31.5	23.4	33	23.7	32.6	24.4
7	31.7	22.7	31.8	21.9	33.3	23.5	30.2	25.5	31.7	23.9	32	23.5	32.8	24.4
8	31.5	23.1	34.1	23.5	33.2	23.9	31.3	23.8	32.6	23.2	32.7	23.6	32.1	24
9	31.4	23.4	31.8	23	32.6	23.9	32	24.1	29.6	22.9	32.5	23.5	33.5	23.7
10	30.2	23.1	33	23	33.4	23.3	32	24.7	31.4	23.4	32.7	24	33.2	23.1
11	31.6	23.2	33.5	22.8	33.5	22.4	32.2	25.6	31	23.6	32.3	24.2	33	23.8
12	30.2	23.7	33.6	22.1	33.2	22.5	32.4	24.9	31.2	23.9	30.2	24.1	34	24.2
13	31	23.2	33.2	23	31.1	23.3	30.5	24.1	31.1	22.4	31.6	24.2	31.9	23
14	31.4	22.7	33.3	22.5	31.1	24.1	30	23.6	26.2	23.4	31.7	23.8	30	22.9
15	31.8	23.2	31	22.1	32.8	23	32.5	23.6	31.7	22.5	29.5	23.9	30.2	22.8
16	31.3	22	31.3	22.6	32.7	23.6	32.2	24.4	29.3	22.9	31.4	24	33.9	24
17	31.8	23.5	34.1	21.2	33.2	23.4	32.3	24.2	31.7	22.9	32.7	24.2	33.1	24
18	32.5	21.9	34.2	22	32.9	22.6	29.5	23.7	31.9	22.9	32.1	24	30.9	24
19	31.3	23.7	31.2	21.7	32.1	22.6	33	24.1	31	22	31.8	23.7	31.4	23.6
20	30	22.2	33	23.2	30.9	22.5	31.1	25	31.2	22.5	32	23.6	32.1	23.3
21	31	22	32.4	21.5	32.9	23.2	31.3	24.1	30	22.5	30.2	23.1	31.3	22.6
22	31.7	22.2	32.5	22.7	33.2	22.2	31.8	24	31	23	29.3	23	31.8	23.7
23	30.5	23.1	31.1	22.6	33.2	22.2	28	22	30	22.7	30	23.2	26.1	22.4
24	31	22.2	31.2	20.5	31.5	22	30	26.2	30	22	28.7	23.4	29.9	22.7
25	30.8	22.1	33	22.5	32	22.9	31.6	27.2	30.2	23	30	23.3	31.3	22.9
26	31.7	21.9	34.4	21.8	33.8	22	32.8	24	31.7	23	31.2	23.6	31.8	24.3
27	31.6	21.6	34.5	23	33.8	22	31	22.5	31.5	23	31.8	23.7	32.9	23.6
28	32.6	22.6	33.8	22.4	33.1	22	31	26.9	31.5	23	32.7	23.6	31.9	22.8
29	33.2	21.7	33	21.5	33.2	22.1	30.7	27.3	31.5	22.5	32.4	23.2	32	23.3
30	33.2	21.6	31.5	23.2	33.1	23.5	31.2	27.5	31.5	23	33	23.7	32.1	22.5
Mean	31.5	22.6	32.9	22.4	32.8	22.8	31.4	24.8	31	23.1	31.6	23.7	32	23.4

Day.	Culasi.		Hacienda Amparo, Pontevedra.		Capiz.		Borongan.		Pandanan, Antique.		Calivo.		Catbalogan.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.5	24.4	33.7	24	33.5	25.4	31.8	24.2	32.1	23.6	33.3	23.1	31.3	31.3
2	31.3	24	31.4	24	31.3	24.1	32.8	24.8	32.5	23.2	32.3	23.1	31.3	31.3
3	31.7	23	32.2	22.6	33.3	23.1	32.4	23.5	32.4	22.8	33.3	22.1	31.6	31.6
4	31.7	23.3	32	23.1	33.5	24.1	32.8	23.6	32.4	23.1	33.8	23.1	32.1	32.1
5	32	23.7	32.5	23	33.5	24	30	23.9	36.7	23.6	33.8	23.1	32.5	32.5
6	31.3	24.2	33.3	24	33.5	24.1	32.7	24.8	32.8	23.2	33.3	23.6	32.2	32.2
7	32.3	24.2	32.5	22.8	34	23.9	31.6	23.8	32.7	24.2	33.3	23.1	31.7	31.7
8	32	23.8	32.4	24.3	32.9	24.2	32.1	23.8	35	23.2	33.3	22.2	32.1	32.1
9	31	23.4	31.2	23.4	32.5	23	32.4	23.3	35.1	22.4	32.3	23.1	32.1	32.1
10	32.2	23.7	32.3	23.5	32.5	24	32.5	24	32.5	23.2	32.8	22.6	33	33
11	31.5	24.2	32.3	23.1	33.5	23.9	32.6	24.4	35.7	22.1	34.3	22.9	32.7	32.7
12	32	24	32.5	22.8	34	23.6	33.1	24	30.5	24	34.3	24.1	32.5	32.5
13	30.6	22	32	22.8	32.6	24	32.6	24	34	24.1	34	24.1	31.9	31.9
14	23.5	24	31.9	24	30.4	23.8	31.2	22.9	32	25.2	30.3	24.1	29.6	29.6
15	31	23.4	31.9	23.1	31.4	22.9	31.2	22.9	32.8	23	31.5	23.1	31.6	31.6
16	31	23.4	30.1	23.4	29.5	24.1	32.7	23.5	31.9	24.6	34.1	23.1	31.8	31.8
17	31.5	23.2	33.3	22.9	33.5	23.4	32.1	22.6	34.8	23	32.8	22.8	32	32
18	32.2	23.2	32.1	21.7	33.4	22.9	31.9	22.9	35.2	23.7	32.8	22.1	31.1	31.1
19	32.1	24	31.3	22.6	32.6	23	32.5	23.7	35	22.9	32.8	22.1	32.3	32.3
20	32	24.3	31	23.6	31	23.1	31.6	23.7	30.8	23.9	33.3	24	31.7	31.7
21	29.5	24	32.9	23.2	32.5	23.5	31.5	23.1	34	24.8	31.8	23.3	32	32
22	31.5	23.7	33	23.1	33.1	22.8	32.3	23.3	34	23	32.1	23	32.3	32.3
23	29.6	23.7	26	23	26	23.2	27.3	23.2	32	24.5	32.8	23.1	25.8	25.8
24	30.5	22.7	30.2	23.2	30.5	23.4	31	22.1	30.8	22.3	30.6	23.1	29.8	29.8
25	30.5	22.7	31.4	22.4	32.5	22.6	32.3	23.8	33.9	23.5	31.8	21.4	32	32
26	32.3	22.7	32.4	22	33	22.9	32.1	23.7	35.3	21.8	32.3	22.1	32.8	32.8
27	32.3	24.3	33.7	22.9	33.5	23.5	32.6	23.5	35.4	24	33.7	23.7	31.3	31.3
28	31.9	23.4	32	22.1	33.5	22.8	34.5	23.8	34.3	25.4	34.3	22.3	31.9	31.9
29	31.5	23.2	33.2	22.4	33.1	23.5	33.7	22.9	33.8	25.8	34.4	22.4	32.2	32.2
30	31.9	23.2	33	23.2	34.3	23.5	33.5	23.4	34.1	25	35.3	22.1	32.5	32.5
Mean	31.4	23.7	32	23.1	32.5	23.5	32.2	23.6	33.4	23.6	33	22.9	31.7	31.7

Maximum and minimum temperatures at the stations of the Weather Bureau, June, 1921—Continued

Day.	Ibajay.		Calbayog.		Masbate.		Romblon.		Batag Light-house, Laoang.		Irosin.		Sorsogon.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	32.8	24.3?	33	23.8	33.6	25.8	31.9	25.7	32.9	23.8	33.9	22.3	32	22.5
2	31.5	23.5	32.5	24.4	31.2	25.6	30.8	24.5	31.7	23.4	33.3	23.7	29.5	32
3	32.8	22.9	32.7	23.7	32.6	25	33.5	23.9	31.3	23.8	35	22.5	32	22.5
4	32.9	23.3	33.3	23.9	32.6	24.5	33.7	24.5	32.3	24.3	36.1	22.7	32.1	32
5	33.6	23.8	32.8	23.6	32.2	23.6	33.8	25.6	32.4	23.6	35.8	22.8	32.5	32
6	32.7	23.4	33	23.8	32.6	25.8	33.5	25.5	32.9	24.1	35	23.5	32.1	32
7	33.7	23.9	32.4	23.2	33.4	24.8	34.5	25.1	33	23.6	37.4	23.5	32.5	32
8	32.2	24	32.4	23.9	32.6	25.4	32	25.2	30.6	24.5	35.8	22.4	32	32
9	32.2	23	32.5	24	31.6	24.6	30.4	24.2	32.1	24.4	36.7	23.1	31.2	32
10	31.6	23.2	33.5	23	31.2	25.2	31.8	24.2	32.9	23.8	34.3	22.3	31.7	32
11	32.7	22.8	33.8	23	33.2	24.6	33.2	23.8	33.5	24	35	22.3	33	32
12	33.5	23.9	33.4	23.2	33.6	25	33.1	23.9	33.4	23.7	35.6	22.2	32	32
13	32	24.7	32.6	23.6	33	25	31.6	24.3	31.3	24.7	33.6	22.9	30.4	32
14	29.4	23.9	29.7	23.7	29.4	23.6	28.8	24.3	29.3	23	29	23	29	32
15	29.5	23.6	32.3	24.1	33	23.5	29	24.2	30.5	23.2	30	22.8	31.1	32
16	29.3	23.5	30.8	23.7	30.6	25.5	27.2	23.4	30.8	23.9	30.7	22.6	29	32
17	32.3	23.3	32.8	23.7	32.8	25.4	32.5	23.5	33.2	23.6	34.9	22.3	32.6	32
18	32.7	22.6	32.4	22.9	32.6	24.6	32.9	23.9	31.2	23.7	32.6	21.3	32	32
19	32.3	23.1	31.3	23.5	31.6	24.6	33	23.9	30	23.2	33.3	22	31.5	32
20	31.2	23.2	32	23.3	31.6	26	30.8	22.9	30.4	23	32	23	32	32
21	30.8	24.1	32.5	22.4	33.6	24.4	30.7	24.1	32	23.1	34.2	22.7	32.5	32
22	31.7	22.8	32.2	23.2	32.6	26	31.3	24.2	31.8	23.9	34.8	23.7	32.1	32
23	30.7	23.9	24.9	23.2	27.8	24.8	31.1	23.9	26	22.9	27.4	23.2	27	32
24	31	23.6	30.4	22.7	31.4	24	30.5	22.9	29.6	22.8	31.5	21.9	32	32
25	31.3	22.3	32	23.6	31.6	24	31.1	24	30.8	22.7	34.3	22	32	32
26	32.5	21.8	33	23.5	32.4	24.2	32.6	23.1	30.6	23.4	34.9	21.4	32	32
27	32.2	23.4	32.6	23.6	32.2	25.2	32.7	23.4	31.3	24	35.7	22.2	31.9	32
28	32.4	25	31.8	26.7	31	26.4	33	25.7	29.8	23.9	31.1	21.8	30.5	32
29	32	24.6	32	27.3	31.6	26.6	32.4	26.6	31.4	24.6	33.2	23.5	31.9	32
30	32.5	23.8	32.8	24.6	33.2	26.6	32	25.3	32.3	24.2	34.7	23.6	32	32
Mean	31.9	23.5	32.1	23.8	32	25	31.8	24.3	31.4	23.7	33.7	22.6	31.4	32

Day.	Bacon.		Jovellar.		Legaspi, Albay.		Guinobatan.		Polangui.		Bacacay.		Tabaco.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	32.9	24.4	33.7	22.1	33.4	24.4	32.8	23.2	34.2	20.3	32.8	22.7	34.1	23.4
2	32.8	24	32.5	22.7	30.3	24.5	30.2	23.1	31.4	21.1	32.5	22.4	32.9	24
3	31	23.3	31.6	21.6	33.6	24.1	33.2	21.8	30.3	20.4	32.7	22.3	31.2	23
4	32.9	23.6	32.9	21.6	34.4	23.9	33.6	22	31.2	20.4	32.9	22.7	32.2	22.5
5	32.6	24.4	33.5	22.3	34.4	25.1	32.9	23.1	34.1	22.3	31.8	23.2	33.2	23.5
6	32.4	23.6	33.8	22.2	33.7	25	32.1	22.6?	32.4	21.2	31.6	23.5	33.5	23
7	32.9	23.5	33.6	22.6	32.5	24.5	32.2	23.1	31.2	20.1	32.9	23.7	33.2	23
8	31.1	22.8	33.5	21.4	33.1	23.9	32.4	21.6	32.2	20.1	31.2	23.4	33	22.5
9	31.6	23.5	32.9	22.2	32.6	24.3	31.8	22.9	33.4	21.2	31.8	22.9	32.8	22.8
10	31	22.4	33.8	21	31.1	24	30.4	21.7	30.3	20.4	30.2	22.8	32	22.1
11	31.2	22.5	31.2	21.2	33.3	24.1	31.9	22.5	31.4	20.4	30	22.3	31	22.5
12	30.2	23.9	33.7	23.5	32.4	24.6	32	22.9	32.3	20.2	30.4	22.5	33.2	23.4
13	31	22.3	33.3	22.2	32.7	23.9	32.3	23.8	33.3	20.2	30.5	22.8	32.8	22.5
14	31.2	23.1	32.4	22.6	30.4	23.5	29.6	23.5	33	23.9	31.5	22.7	32.9	22.6
15	30	22.5	33.6	22.6	30.9	23.5	29.4	24.1	31	23	30.6	23.4	31.7	22.9
16	31.9	23.3	30	22.5	29.4	24.8	28.9	23.2	30.1	24	30.9	23.8	31.1	23
17	30.8	21.9	33.5	22.6	33.6	24.7	33.3	22.8	29	23	31.4	22.5	31.2	22.4
18	32.1	21.6	33.1	21.6	33.3	24	33.2	21.2	33.5	20.5	31.9	22.7	33.2	21.8
19	31.9	22.1	32.4	20.9	32.9	23.6	31.9	21.1	33.1	22	30.8	23.6	33.3	22
20	30.5	22.5	32	22.4	31.6	23.6	31.8	22.4	33	23	30.4	23.2	32.4	21.3
21	32.1	21.5	31.4	20.5	33.3	23.2	31.9	21.2	30	22.1	29.5	21.4	31.2	21.1
22	32.3	22.9	31.2	22.2	34.1	24.3	32.8	23	32.3	22.1	30.2	22.2	33.2	22.8
23	32	24	32.3	22.4	29.1	24.6	28.3	22.9	32.7	23.6	31.2	21.2	34	23
24	27.8	22.6	33.2	22.1	31.3	23.6	27.9	22.8	29.5	23.1	31.1	22.4	29.2	21
25	31.5	23	33	21.7	33.3	23.5	32.3	23.7	29.2	23.2	30.4	22.6	31.3	21.5
26	32.5	22.3	31.7	20.9	33.9	23.7	33.8	21.2	32.2	20.4	31.7	22.9	33	21.4
27	32.9	23.2	33.6	21.6	34.3	24.1	32.7	22	33.2	20.4	31.8	22.4	33	22
28	32	23.4	32.9	21.5	31.5	23.8	31.3	22.9	33.2	23.1	31.7	22.7	33.6	22.5
29	31.7	25.7	30.2	22.1	32.6	24.9	31.7	22.5	32.2	22.1	31.4	22.8	33.3	24
30	32.2	24.6	31.6	23.1	33	25.3	32	22.4	32.2	20.1	30.9	23.2	32.7	25
Mean	31.6	23.1	32.6	22	32.5	24.2	31.7	22.6	31.9	21.6	31.3	22.8	32.5	22.6

Maximum and minimum temperatures at the stations of the Weather Bureau, June, 1921—Continued

Day.	Sumay (Guam), Agaña.		Iriga.		Calapan.		Tiwi.		Pasacao.		Virac.		Naga, Camari- nes Sur.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.4	23.8	33.4	22.1	33.7	23	31.8	22.4	32.7	21.5	32.8	24	33.3	23.7
2	31.4	23.6	26.9	22.6	31.5	23	30.5	22.2	34	22	32.4	23.3	28.7	23.4
3	30.1	24	27.3	22.9	32.1	22.2	30.6	22.4	31.5	20.9	34.9	22.5	33.5	22.9
4	30.7	24.6	34.3	21.5	33.5	22.7	30.8	22	34.9	22.7	33.9	22	34	22.6
5	30.8	26.5	33.8	22.1	33.2	23.1	31.2	22.5	33.5	22	35	22.3	34.2	24.4
6	31.3	25.7	33.7	22.8	34	23	31.6	23	33	23.6	33.8	23	34.1	23.8
7	30.9	25.4	33	23.4	33.5	23	31.2	22.8	34	22.9	34	23.4	33.8	23.4
8	31	24.7	33.6	23	33.5	22.9	31.4	22.6	34.8	22.1	33.8	23.1	34.2	23.6
9	31.6	26	31.3	22.6	31.5	23.5	31.6	22.8	33.1	24	32.7	22.8	34.4	23.1
10	30.9	24.5	33.8	22	32.5	23	31.8	23.2	34	23	32	22.6	31.9	23.1
11	32	25.6	33.6	21.8	33	23	31.4	22.8	31.1	21.6	33.3	22.9	34.4	22.6
12	31.5	24.4	33.1	21.4	33.6	23.5	30.8	22.2	30.6	23.5	35.2	23.1	33.9	24.1
13	31.5	24.5	31.6	22.4	32.5	24	29.8	24.2	29.9	22	33.2	22.7	33.9	23.3
14	31.4	26.2	29.3	22.8	31.5	23.8	29.6	24	34	23	31.2	22.6	31.5	23.4
15	31.4	24.5	29.9	22.8	29.8	24	30.2	24.2	34.9	22.5	31.9	23.8	29.8	23.1
16	32.2	26.2	30.8	22.1	28.1	23.5	31.9	23.8	33	23	33.4	23.5	30.4	24.1
17	31.7	25.9	34.1	22.8	30.6	23.3	31.8	21.4	32.5	21.9	33.8	23	33.4	23.7
18	31.9	26.4	33.6	21.8	31.5	23	32.6	20.4	32	21.8	32.8	22.7	34.1	23.2
19	30.3	26	32.6	21.3	32.5	22.5	30.8	20.8	32	21.4	32.5	21.5	33.8	22.6
20	30.9	25.4	31	21.4	31	23.4	30.6	20.2	31	21	32	21.8	32.5	21.9
21	30.9	26.5	31.2	21.8	31.4	23	29.8	22.4	31	20	32.8	23.7	31.4	22.5
22	30.7	24.4	30	22.7	31.5	22.6	30.4	22.6	30	23.7	32.9	23.3	32.9	24
23	30.1	24.6	29.1	22.5	31.5	24	30.2	22.4	31	21.9	29.7	22.5	30.5	23
24	30.7	25.2	30.8	22.6	30.5	23	31.2	22.6	31	22.6	32.1	22	31.9	23.1
25	30.1	25.8	32.6	22.9	31	23	30.8	23.8	32.8	23.4	33	23	32.5	23.4
26	27	23.2	33.2	21.5	31.5	22.5	31.6	22.6	32.4	23	33.3	23.2	33.6	23
27	25.7	23.6	33.5	22.3	33.5	23.1	30.8	23.4	34	24.9	33.4	22.2	33.8	22.6
28	30	22.7	34.2	22.5	33	22.5	30.8	23.2	32.7	23.1	34.3	24.6	32.8	24.1
29	29.9	24.5	31.8	24.1	33.5	23	31.8	23.6	33.6	24.8	35	24	33	24.2
30	27	25.1	32.6	24.3	33	23.8	30.6	23.8	32	23.7	35	23.8	33.4	24.7
Mean	30.6	25	32	22.4	32.1	23.1	31	22.7	32.6	22.6	33.2	23	32.9	23.4

Day.	Tigaon.		Baras.		Libmanan.		Batangas.		Ragay.		Calatagan.		Balayan.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	32.8	24	31.5	22.1	32.3	24.4	34.8	25.3	32.1	24.6?	34.7	23.4	34	23
2	27.1	24	31	22.1	32.1	23.9	31.6	25.2	27.6	23.6	32.3	22.8	32.5	23.5
3	31.8	21.5	30.5	22.1	32.5	22.9	32.8	24	32.3	22.5	30.7	23	31	23
4	30	21.6	30.7	22.1	33.4	22.6	33.5	23.1	32.1	22.1	32.7	20.7	32	21.5?
5	33.3	25	31.1	22.8	33.6	24.1	34.5	23	32.6	22.5	32.2	22.1	32.5	23
6	33	23	31.8	22.1	33.4	23.9	34.3	25	32.1	22.5	33.7	22.3	32	24
7	32	23.1	31	22.1	33.4	23.5	34.2	23.9	32.2	22.6	33.7	22.3	32.5	23
8	30.3	22.4	31.3	22.1	33.7	23.3	31.6	24.5	32.1	23	30.8	23.7	32.6	22.5
9	31.5	22.7	30.6	22.1	33.4	23.7	32.6	24.3	31.2	23.7	32.3	22.4	31.5	23
10	31	22.4	31	22.1	33.5	23.9	32.8	23.8	31.2	23.7	33.7	22.9	30.5	24
11	30.5	22.2	31	22.1	33.6	22.2	33.9	24	32.8	22.6	33.3	22.6	30	23
12	31.5	24.5	30.2	22.1	33.7	24.2	33.7	25.5	32.4	23.1	33.9	23.1	31.5	23.5
13	29.6	22.4	31	22.1	33.6	23	32.2	24.6	32.1	24.1	34.2	22.5	32	23.7
14	30.5	22.7	30.2	22.1	33.4	23	31	24.5	30.3	23.7	31.7	22.6	32	24
15	29.7	23.2	29	22.1	33.6	23.4	30.6	24.4	30.2	23.6	30.3	22.8	30	23.5
16	31.5	24.2	29.8	22.1	33.5	23.6	30.4	24.6	28.6	22.9	30.2	21.9	30	24.5
17	32.7	23.3	31	22.1	33.7	23.4	30	24.2	32	23.6	30.5	21.4	30	23
18	32.6	20.7	31.1	22.1	33.6	23.5	31.5	22.9	32.2	23.5	34.3	21.8	29.5	24
19	31.4	20.8	31	22.1	33.5	23.2	33.7	23.5	32.2	23	33.8	22.3	32.5	23
20	30.3	21.5	31.2	22.1	33.7	22.2	31.6	23.4	32.9	23.1?	32.2	22.5	30.5	23.5
21	30.5	21.9	30	22.1	33.8	23	32	23.3	32.2	22.8	32.7	22.5	31	23
22	28.5	23.2	30.8	22.1	33.6	24.5	32.5	24.2	31.7	23	33.2	23.1	32	24
23	28.8	21.5	31	22.1	33.4	23.2	31.7	24.8	31.8	22.5	33.1	22.1	32	24
24	29.7	23.4	30.5	22.1	33.5	23.8	31	24.4	30.8	22.6	31.7	23.3	31.5	24
25	31.5	23.2	30.4	22.1	33.7	23	30.8	23.1	31.6	22.1	31.1	22	30	22
26	33	21.7	30.6	22.1	33.7	23.3	32.8	23.2	32.2	23.1	33.1	21.6	32	21.3?
27	31.5	23	30	22.1	33.6	22.2	33.3	23.8	32.3	22	33	21.3	32.6	22
28	31.6	23.6	30	22.1	33.7	24.5	33	26.3	32.3	23	33.2	25.3	31.5	23.5
29	30.5	24.4	30.1	22.1	33.6	24.6	33	26.8	31.7	23.1	33.1	25.6	32	25.5?
30	32.6	25.7	31	22.1	33.7	24.9	33.2	25.4	32.1	23	33	25	32	20?
Mean	31	22.9	30.7	22.1	33.4	23.5	32.5	24.3	31.7	23.1	32.5	22.7	31.5	23.2

Maximum and minimum temperatures at the stations of the Weather Bureau, June, 1921—Continued

Day.	Lipa.		Lucena.		Atimonan.		Nasugbu.		Ambulong, Tanauan, Bantangas.		Daet.		Mendez Nufiez.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	33.4	22.7	32.7	21.9	34.6	24.4	34.9	34.9	34	24.8	34.9	22.7	23.5	21.5
2	29.6	21.9	31.1	22	30.8	23.3	31.5	31.5	31.7	24.7	29.5	23.6	23	21
3	30.7	22	32.9	21.3	33.1	23.5	32.6	32.6	30.9	23.6	34.7	23	26.5	20.5
4	32	21.8	32.5	21.1	33.9	22.4	32.7	32.7	33.2	22.7	32.9	22.2	29	19
5	32	22.3	33	21.1	33.6	23.1	33.1	33.1	34.4	24.2	34	23.2	23	20
6	31.8	22	33	21.1	32.4	23.9	32.4	32.4	30.3	25	33.8	23.3	23	21.5
7	32.1	22.1	32.2	19.5	33.4	22.7	32.5	32.5	32.4	23	32.7	22.7	23	21
8	31	21	32.2	21.5	32.2	23.5	32.2	32.2	30.5	24.4	32.3	23.7	23	21.5
9	29.9	21.9	31.1	21.6	31.2	23.5	31.5	31.5	29.6	23.9	30.7	23.6	27	20.5
10	31.4	22.1	31.4	22.1	31.8	23.7	31	31	31	23.7	32.1	23.5	27	21.5
11	31	22.5	32	21.4	34.6	24.1	32.4	32.4	32.8	24.3	33	23.6	29	21
12	31.3	22.6	32.9	21.5	33.7	24.4	32.6	32.6	32.7	23.9	32.7	23.4	29.5	20.9
13	30.4	21.4	32.8	22.4	32.7	24.1	32.6	32.6	32.6	24	32.2	22.7	29.5	20.5
14	28.3	21.6	29.5	22.3	27.8	24.2	31	31	29.6	24	29.6	23.7	26	21.2
15	29.1	21.1	29.5	22.1	30.8	24.2	29.8	29.8	30	24.3	29.5	23.8	26.5	21
16	28.3	20.7	29	24	28.7	24.8	30.4	30.4	28.4	25	32.3	23.4	25.5	21
17	28.2	21.1	29.5	22	30.9	23.8	31	31	28.6	23.7	33.3	23.5	25	20
18	28.7	21.4	31	20.9	33	23	33.1	33.1	31.7	22.3	34.5	22.2	29.5	20.5
19	30.3	20.8	31.4	21.9	33.6	23.8	32.7	32.7	33.2	23.3	32.3	23.1	29	20
20	31.8	22.1	31.5	22.3	30.9	22.8	32.1	32.1	33.1	22.9	31	22.9	29.5	20.5
21	29.7	22.3	31.9	22.7	31.6	24	31.6	31.6	31	23.8	33.4	22.7	28	19.5
22	29.9	22.6	31.4	23	32.4	23.5	32.2	32.2	30.3	24.2	33	24.1	28	21
23	30.7	21.9	31.1	22.5	30.8	23.5	31.6	31.6	32.4	23.4	31.9	22.7	28	20.5
24	28.8	21	28.8	20.5	30.4	23.5	30.5	30.5	28.7	23.4	31.7	23.4	28	21
25	27.3	20.7	29.7	21.4	31.7	23	29.5	29.5	29.2	23.1	32.3	23.4	26.5	21
26	29.7	20.7	30.5	21.6	32.6	23.2	32.5	32.5	32	22.2	33.8	23	29	18.9
27	31.9	21.9	31.5	22.4	34.1	23.6	32.5	32.5	33.3	22.9	33.4	22.5	28	19.9
28	30.2	22.3	32.2	22.6	33.4	23.4	32.6	32.6	31.3	23.5	33.9	23	26.5	21.9
29	30.4	23	32.4	24.3	33.7	26	32.5	32.5	30.7	25.8	33.7	23.2	25.5	21
30	30.3	22.8	32.6	23.8	34.1	26.6	32.4	32.4	31.2	25.5	34	23.9	27.5	26.5
Mean	30.3	21.8	31.4	22	32.3	23.8	32	32	31.4	23.8	32.6	23.2	27.7	20.7

Day.	Alfonso.		Indang.		Canluban, Calamba.		Silang.		Maragondon.		Paracale.		Santa Cruz, Laguna.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	29.4	21.7	30.6	22.2	32.4	23	30.5	21.3	35.6	23.8	30.2	23.2	34.6	23.5
2	27.9	21.1	30	22.9	32	22.9	29.8	21.2	33.3	24.4	30.2	23.5	33.7	24.2
3	26.4	19.7	27.8	22.9	31.3	23.2	29.7	20.6	33.6	24.1	30.5	23.8	31.4	23.4
4	29.5	21.1	30.5	20.6	34	21.2	29.5	21.2	32.2	22.5	31	24	33.6	22.3
5	29	21.1	29.1	22	31.6	22.6	30.8	20.2	31.3	23.8	31	24	33.4	24.3
6	28.5	21.7	29.6	22.9	31.2	23.4	29.3	20.1	32	24.5	31.2	23.5	33.3	24.2
7	29.5	21.5	29.4	22.3	32	22.9	29.5	20.3	31.5	23.5	31.2	23.8	33.5	23
8	28.6	21.8	30	22.7	32.5	23.4	29.2	20.5	31.3	24.5	31.5	23.8	34.3	23.6
9	28.3	20.7	29.4	21.4	31.5	22.2	30.3	21	31.3	23.3	31.5	24	31.3	23
10	28.5	21.9	28.6	22.1	31.2	23	30	21.7	33.6	23.8	31.8	24	33.7	23.1
11	28.3	21.6	30.2	22.8	33.2	23.2	30.5	22	34.6	24.6	31.8	24.2	34.6	23.6
12	29.3	21.1	30.6	22.6	33.5	23.1	30.2	21.3	32.6	23.5	32	24	34.4	23.5
13	28.4	21.6	30.8	22.2	28.8	22.9	30.4	21.6	33.3	21	32	24.2	33.7	24
14	26.5	22.5	28	22.6	29	22	29.2	22.5	29.4	23.2	32	23.5	29.2	24
15	26.2	22.1	28.6	22.8	31.2	23	28.5	22.6	30.5	24	31.8	23.5	32.4	23.6
16	26.9	22.2	28.3	23.2	30.1	23.1	28.2	22.7	32.3	23.8	31.5	23.2	30.3	24.6
17	25.7	21.2	27.1	22	30	22.8	28.2	22.1	29	20.8	31.2	23.5	30.6	23.4
18	29.4	20.8	31.1	21.3	28.9	22	28.5	21.8	33.6	23.6	31.2	23.5	34.5	22.5
19	29.9	20.3	30.9	21.5	31.8	22.2	29	21.4	34.4	22.9	32.2	24.2	33.8	23
20	29.4	21.2	30.8	21.9	31.6	22.6	29.7	21.8	31.8	22	32.2	24.2	31.3	22.9
21	28	20.6	29.1	21.7	32	22.6	29.6	21.8	32.3	20.77	31.2	25	31.3	25.5
22	28.2	21.5	30.6	21.8	32.2	22.4	30	21.7	33	22	31.2	23.5	33.4	23
23	27.6	21.1	30.4	22.2	31.9	22.5	28.8	21.8	31.5	23.3	31	24	32.7	23
24	27.5	22.1	28.6	22.4	31.2	22.9	29.5	21.2	30.5	22	31	23.8	30.5	24.2
25	26.9	20.8	28.5	21.4	31.6	22	29.3	20.8	30.3	21.8	31	24.2	31.5	22.6
26	27.3	20.5	31.2	21.7	32.8	21.9	29.4	20.5	32.8	21.8	30	24	34.6	22.2
27	27.4	19.9	30.2	20.4	32.5	21.2	30.1	21.2	32.8	21.7	30.2	24.2	33	22.6
28	26.5	22.3	28.8	23.1	32.7	22.6	30.3	21.5	31.8	24	30.2	24.2	33.2	23.4
29	26	23	29.3	23.7	32.4	23	29.6	22	31.4	25.5	30.2	24.2	33.5	23.9
30	26.6	21.6	29.4	22.3	33.5	23.2	29.2	22	31.7	23.9	30.1	24	33.8	23.9
Mean	27.9	21.3	29.6	22.2	31.7	22.6	29.6	21.4	32.2	23.2	31.1	23.9	32.9	23.4

\* These minimum temperatures seem to be not very reliable, the differences between 6 a. m. temperatures and minimum temperatures being both too small and too uniform.

Maximum and minimum temperatures at the stations of the Weather Bureau, June, 1921—Continued

Day.	Buenavista, General Trias.		Cavite Naval Station, Cavite.		Manila.		Antipolo.		Balanga.		Malolos.		San Fernando, Pampanga.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	33.9	20.4	32.6	24.9	33.7	25	32.9	23	33.7	23	33.8	24.5	35	22
2	35.7	21.4	31	25.4	33.2	25	31.5	23	31.4	23.4	32.8	24.5	33.5	22
3	33.7	22.4	33	23	31.5	24.3	29.9	22.5	31.3	25.2	31.5	23.5	34	23
4	33.7	21.2	32.9	24	33.2	22.8	31.8	21.2	32.3	22.9	32.5	22.5	34	21
5	35.7	22.7	33.4	22.8	33.3	23.7	31.8	21.2	33.6	23.6	33.2	23	33	22.5
6	32.9	22.1	33	24.3	32.5	25.2	30.8	23.6	32.9	25	33.3	23.8	33	23
7		21.6	33	24.5	32.4	25.1	31	23.2	33.4	23.2	33.5	23.8	33	22.5
8		22.1	32.3	24.9	32.6	24.5	32.6	23.2	33.5	23.7	33.8	23.6	33	23
9		21.6	33	24	32.4	23.7	32	22.8	32.7	24.2	33.5	23.3	35.5	23
10		22.6	34	23.9	32.9	23.7	32.3	22.2	32.4	25	31.9	23.9	34	24.5
11	34.7	22	33.8	23.9	33	24.6	33.4	22.8	34	23.5	33.9	23.5	33	23
12	34	22.2	34.5	24	33.2	24.1	32.8	23.4	34.5	23.9	33.9	24.4	35	23.5
13	36.3	22.2		24.2	33.2	24.6	31.2	23.2	34.3	22.8	33.6	24.3	35	23.5
14	35.6	20.6?	32.2	23.6	29.8	24.6	28.4	22.7	32.2	24.1	28.6	23.5	30.5	23.2
15	30.3	22.3	31.4	23.9	31	23.7	31.2	22.8	33.1	23.5	29.9	23.4	30.5	23
16	29.2	22.4	29.6	23.6	31.1	24.5	29.2	23.2	31.5	24	30.5	23.4	32.5	23
17	29.6	22.3	33	23.5	29.6	24.2	29.3	22.3	27.9	23.5	27.6	23.3	28	23
18	29.8	22.2	33.4	23.6	32.4	23.6	32.6	22.1	31.7	23.5	30.3	23.5	32.5	22
19	32.6	22.2	33	23	33	24.2	32.5	22.5	32.3	24	32.3	23.3	32	23
20	31.6	22.4	33	23.8	33.5	24.1	31.8	22.3	32.3	24.4	32.2	23.6	33	23.5
21	32.3	20.8	32	24	33.3	23.8	32.8	22	33.1	23.7	32.2	23.3	33	22.5
22	31.9	22.1	33	23.5	32.4	24.2	33.9	22.7	33.4	23.7	32.2	23.6	33	23.5
23	32.7	21.5	32.5?	23.7	33	23.9	34	22.2	32.9	24.6	32.7	22.5	34	22
24	32.4	21.7	31	23.7	31.4	23.4	30.7	22.8	30.1	24.7	29.9	23.2	33	23
25	33.4	22	33	22.7	30.7	23	31	21.5	29.9	23.5	29.5	22.8	30.5	22.8
26	33.2	22.6	33.2	23	32.6	22.7	33.8	21.5	32.6	22.5	32.4	22.5	33	22.5
27	32.8	20.8	33	24	32.6	23.7	32.8	22.3	33.1	23.7	33	23.4	34	25
28	33.6	21.6		25.5	32.5	25.4	31.9	22.9	32.1	24.3	32.4	23.8	34	22.5
29	33.1	22.7	32.3	23.5	32.4	26.8	30.5	22	31.6	24.4	31.8	24.5	33	22
30	33.4	22.3	32.7	24	32.4	25.4	30.8	22.8	31.6	24.2	32.5	24.3	33	21.5
Mean.....	32.8	21.9	32.7	23.9	32.4	24.2	31.7	22.5	32.4	23.8	32	23.6	33	22.8

Day.	San Isidro, Nueva Ecija.		Iba.		Concepcion, Tarlac.		O'Donnell, Capas, Tarlac.		Tarlac.		Camiling.		Baler.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	35	24.4	32.1	24.1	36.3	20.3	36.2	21.4	34.8	22.6	33.3	22	36.1	25
2	33	23.9	32.1	23.8	35.9	22	35.9	21.2	33.6	23.4	34.5	23	34.3	23.2
3	31.6	23.2	27.9	23.8	32.1	23.4	34.2	21.9	31.2	22.8	30.6	23.2	33.5	23.2
4	32.9	22.9	30.3	22.6	32.8	21.7	36.2	21.1	29.4	21.8	32.5	23.2	35.3	22.7
5	32.5	23	31	22.5	37.6	20.3	33.1	20.7	31.8	22.2	33.8	22.7	35.5	24.2
6	33.4	24	30.5	24	33.6	23	32.2	21.4	32	22.2	33.5	22.7	35.7	24
7	33.6	24.4	31	23.5	33.5	23	33.7	20.7	34	22.4	33.3	23.7	35.1	23.2
8	33.4	23.9	31.7	24	34.3	23	33.2	21.6	32.4	23.4	33.8	23.8	32	23.2
9	33.4	23.4	31.3	23.9	33.7	21.1	33.2	22.2	35.2	22.6	33.5	23.8	32.9	22.5
10	31.6	24	31	23.6	34.1	23.1	33.2	21.5	35.8	23.2	34.3	23.2	32.8	24.2
11	33.8	23.5	31.4	23	34.7	22.3	33.7	21.2	34.4	21.6	34.5	22.3	33.7	23
12	34.5	24.5	31.9	24	35.2	23.9	33.2	21.9	34	23.4	33.5	23.5	34	23.9
13	33.2	24.2	32	23.5	34.7	23.2	33.2	21.4	35.2	22.8	34.4	22.3	33.4	24
14	28.4	23.8	30.9	23.2	30.1	22.7	33.2	21.2	34	23.4	33.5	23.8	31.5	23.8
15	30.5	23.8	30	23.8	30.8	23.6	33.2	21.2	34.8	23.2	33.8	22.4	30.9	23.7
16	30.4	24	31.1	23.6	31.5	23.8	32.2	21.2	31.6	22.8	31.3	23.2	33	22.9
17	27.7	24	28.5	22.5	32.5	23.4	32.2	22	32	23.2	31.3	21.8	31.3	23.1
18	32.5	23.6	30.9	23.4	33.6	22.7	32.2	21.1	29.2	22.6	32.3	22.9	33.8	23
19	32.6	24	31.8	24	32.8	22.3	32.7	21	32.8	22.2	33	22.2	34.2	22.8
20	31.5	24	30.8	24.1	32.9	23	32.2	21.8	33.4	22.8	34.5	22.8	30.9	22.3
21	33.5	23	31.5	22.9	35	22.9	34.2	21	35.2	22.2	34.5	22.5	32.8	21.9
22	33	23.6	31	23.6	33.8	20.8	33.2	21.5	34.8	22.1	33.5	23.2	33.5	22.3
23	33	22.6	31.5	23.5	34	22	33.2	20.9	35	23	33.8	22.6	33	23
24	30.8	23.7	30.9	23.6	34.1	23.5	32.2	21.8	32.8	22.8	32	22.2	33.2	23.8
25	30.3	23.1	30.4	23.2	31.1	23	31.5	21.7	32	22.4	32	23	31.4	24
26	33	22.6	31	23.5	34	22	32.8	20.2	34.2	21.6	34.5	22.5	32.7	22
27	34	23.5	31.4	24.2	34.8	23	33.7	21.7	32.4	22	34.5	22.5	34.9	22.8
28	33.1	24	31	24	34.6	22.8	33.7	21.8	34.4	21.2	33.3	21.5	34.6	25
29	32.3	24.5	30.6	23.5	34.6	21.7	32.9	21.7	29.8	22.6	33.5	23.5	36.7	26.3
30	32.4	24	31.5	23.9	34.8	21.1	32.2	23.4	31	23.2	33	23.2	35	26
Mean.....	32.4	23.7	31	23.6	33.8	22.5	33.3	21.4	33.1	22.6	33.3	22.8	33.6	23.5



Maximum and minimum temperatures at the stations of the Weather Bureau, June, 1921—Continued

Day.	Dagupan.		Rosario, La Union.		Tubao.		Bolinao.		Aringay.		Baguio.		Naguilian, La Union.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	33.8	25	33.9	22.2	33.8	24.2	32.5	25	35	24.8	23.3	16.2		
2	34.9	24.6	33.8	22.6	34.9	23.4	33.7	24.4	36	23	23.1	15.2		
3	30.5	24.1	28.5	22.6		23.5	28.3	23.5	34	22	19	15.2		
4	33.4	23.5	32.8	22.6	30	23.2	29	24.2	33.2	22.8	21.1	14.8		
5	33.4	23	32.8	22.2	33.7	22.4	32	23.2	36.8	22.8	23.3	15.2		
6	33.9	24.6	33.2	22.2	33.4	23.8	32	25.2	35	23.8	23.3	15.5		
7	34.7	24.4	33.4	22.5	34	23.1	32	25	35	23.8	22.9	16.2	33.5	24.4
8	34.4	24.9	33.2	22.8	33.3	23.6	32.4	25	34.8	22.8	22.8	15.7	33.1	22.7
9	35.4	24.1	33.4	21.8	33.7	22.2	34	25	35.8	22	23.1	15.6	33.1	22
10	34.3	24.6	33.4	23.5	32.8	22.2	32	23.8	34.8	23.8	22.3	15.8	33.1	23.5
11	35.2	23.8	32.6	22.2	33.7	22.2	32.5	25.3	35.2	23	23.7	16.3	33.4	23.1
12	33.5	25	32.9	22.5	32.7	22.6	31.7	24.5	34.8	23.8	23.1	15.7	32.4	23.7
13	33.7	25.3	32.4	22.4	33.2	23.8	32	25.7	34.8	24.2	23.5	16.4	33.1	24.2
14	32.7	24.2	31.4	22.2	33.4	22.7	32.5	26.1	33.2	22.8	23.6	16.4	32.4	22.4
15	31.9	24	31.2	23.4	33.7	22.9	32.3	24.7	33.6	23.8	19.8	16.2	33.1	24.3
16	33.9	24	31.7	24.2	34.1	24	33.4	25	35.1	25.5	21.1	15.8	31	25.6
17	29.4	23.8	29.3	23.2	34.2	24.6	29.3	23.7	33.6	24	18.3	15.7	30.7	24.4
18	34.4	23.8	32.4	23.9	32.6	23.1	31.5	24	35.5	23.8	22.1	16	32.1	22.8
19	33.4	23.5	32.7	23.8	33.3	24.7	33.7	24.5	35.5	24.2	23.6	16.2	34.5	22.6
20	32.1	23.6	30.6	23.1	32	24	32.8	24.7	35.2	23.8	23.3	16	33.2	23.5
21	35.9	23.3	34.9	22.1	32.5	22.4	33.5	25	35.8	22.8	25.3	15.4	33	22.8
22	34.6	23.2	33.8	23	33.7	23	32.7	24.2	36.2	22.8	23.3	16	34.9	22.7
23	34.7	23.8	32.6	22.8		23.4	34	24.1	34.8	23.8	24.8	16.5	33.5	21.9
24	34.3	23.3	31.8	21.9	34.2	22.6	33	24.7	34.8	22.8	25.1	15.6	32.8	22.1
25	32.4	23.9	33.8	22.1	33.3	23.3	33.5	24.5	34	23	22.7	16	33.4	22.7
26	34.3	23.4	34	23.2	33.4	25.4	33.2	24.6	36	24.8	23.8	15.3	34.8	22
27	34.4	24.3	33.8	23.5	34.3	24.4	33.5	24.7	35.8	23.8	23.2	15.8	33.6	22.5
28	32.9	24.8	33.9	22.2	34.5	23.3	32.2	24.7	34.8	24	22.2	15.3	32.6	22.6
29	33.2	23.3	33.6	23.8	32.1	24.6	30.7	24.5	33	23.8	18.8	15.9	31.9	23.8
30	31.9	23.8	32.8	23.4	34.2	22.4	32.4	24.5	33.2	23.2	19.6	15.2	31.3	23.8
Mean	33.6	24	32.7	22.8	33.4	23.4	32.3	24.6	34.8	23.5	22.5	15.8	32.9	23.2

Day.	Kapangan.		Atok.		San Fernando, La Union.		Echagüe.		Balaoan.		Tagudin.		Candon.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	25.8	15.8	22.5	16	33.3	25	34.8	22	33.4	24	32.3	24.3	30.5	26.1
2	24	16.4	23.6	15	33.4	23.8	34	22.6	34.1	24.7	32.4	23.6	32	24.9
3	23.2	16.5	22.6	15.8	28.7	23	30.1	22.3	32.1	23.6	29.5	23.3	33	24.4
4	24.9	17	21.4	15	29.9	23.4	34.2	22.2	30.5	23.2	30.4	24	32.5	24.4?
5	24	17.5	21.6	15	33.5	23.5	35	23.4	32.5	22.4	32.4	23	31.4	24
6	25	15.8	22.1	15.5	33.4	24.9	36.1	23.3	32.8	23.6	33.1	24.2	31.6	23.4
7	26.2	16.1	21.9	15.9	33.4	24.5	34.2	22.8	33.3	23.5	32.3	24	31.4	24
8	24.5	16.5	21.8	15.5	33.9	24.6	33.9	22.9	33.2	23	32.6	23.6	31.7	24.3
9	26	16.2	22	15.3	33.6	22.5	31	23.6	33.1	22.4	32.8	23.2	31.7	23.4
10	25.1	16.3	21.6	16.4	33	24.2	32.1	23.6	33.4	23.9	32.3	24	31.7	24.2
11	25.8	17.3	23.3	15.9	33.3	23.5	33.4	23.6	33.9	23.8	32.2	24.1	31.6	23.9
12	25.8	16.1	21	16.4	33.4	24.6	34.4	23.8	33.1	23.9	32.8	24.2	31.8	25.3
13	26.9	16.3	22.3	16.4	33.6	24.8	35.1	23.6	32.7	23.8	32.9	25.1	33	25.3
14	26	16.6	23.6	16	32.4	23.5	30	24	32.9	22.7	32.1	24.2	31.8	24
15	26.7	16.6	22.4	17	33.6	24.7	32.5	23.8	33.8	24.8	33.3	25.3	32.4	26.6
16	27.3	15.5	23.2	15.6	33.7	26.3	33.7	23.1	34.2	24.4	35.3	24.9	32.8	24.3
17	27.9	15.2	21.8	15.4	30.7	25.2	32	22.8	32.5	25.5	33.6	24.8	31.8	24.4
18	27.4	15.9	23.3	15.5	33.2	24.6	34.1	22.6	33.3	23.6	32.6	24.1	31.6	24
19	26	16.1	24.3	15.8	33.9	25	35.8	22.3	33.4	22.8	34.3	23.9	32.8	23.4
20	25.3	16.7	25.2	15.7	34	24.5	33.1	22.9	34.2	23.7	33.2	24.3	32.6	25
21	28.8	17.8	25.4	15	33.4	23.8	34.5	22.1	33.8	23.8	32.8	25.1	32	25
22	28.3	17.7	24.3	15.2	34.5	24	34.4	23.2	34.6	23	33.6	24	32.4	24
23	29.4	18	26	15.8	33.1	22.3	34.7	23.3	33.9	22.7	32.2	23.2	31.5	22.3
24	29.3	17	24	15.1	32.8	23	34.8	23.2	32.5	22.5	32.8	23.3	31.4	23.2
25	29.2	17	24.2	15	33.7	23.5	33.4	23.6	32.6	23	32.2	23	31.4	23.8
26	29	18	24.6	15.1	34.7	22.8	34.6	22.4	34.1	22.3	34.6	22.8	33.3	23
27	29.1	19	22.9	15.5	34.5	25	35.7	24.5	34.4	25	32	26	32.1	25.8
28	28.5	17	21.4	14.4	33.6	25	35.4	22.3	34.3	23	33	24.1	31.9	23.8
29	28.3	18.4	19.5	15.6	34	24.9	36.4	23.1	35.3	23.9	30.6	24.3	29.6	24.4
30	27.2	18.4	21.5	15.1	33	24.7	36.9	22.9	31.4	24.8	32.5	23.9	31.6	24.4
Mean	26.7	16.8	22.8	15.6	33.2	24.2	34	23.1	33.2	23.6	32.6	24.1	31.9	24.3

Maximum and minimum temperatures at the stations of the Weather Bureau, June, 1921—Continued

Day.	Vigan.		Bangued.		Tuguegarao.		Sinait.		Batac.		Solsona.		Laoag.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	28.6	23.5	31.4	24.5	35.4	24	33.5	24.3	34.9	23	33.6	22.7	31.7	24.6
2	32.1	22.8	33.1	23	35.2	22.9	32.5	23.3	31.7	24.1	31.6	23.3	31.2	23.6
3	28	23.1	27.7	23.1	30.5	23.5	30	23.3	28.3	23.5	27.7	23.5	27.4	23.4
4	28.4	22.6	30.1	24	34.4	23.8	30.4	23.1	31.3	23.4	31.3	23.7	31.2	23.2
5	31.7	23.1	32.8	23.8	35.7	24.2	31.1	23.1	32.9	23.5	33.2	23.9	33.1	24.2
6	31.9	24.2	33.7	24.2	36.6	24.4	32.4	23.9	33.2	24	33.3	23.5	33.2	24.4
7	31	24.8	32.5	24.6	35	23.8	32.4	24.9	32.8	24.2	34.2	23.2	32.6	24.3
8	32.7	23.9	34.7	24.3	34.2	24	32.2	24	33.9	24.5	33.2	23.5	33.7	24.4
9	32.4	23.6	34.9	24.2	34.2	24.2	34.4	23.9	33.4	24	34.1	23.4	33.6	24
10	32.4	24.6	35.2	24.3	35.2	24.8	33.1	23.5	33.4	24.3	34.2	23.1	33.2	24.5
11	32.8	24	34.2	24.3	35.2	24.3	32.8	24.4	33.1	24.5	33.3	23.6	33.1	24.1
12	32.6	24.4	34.2	25.6	35.2	25.1	32.6	24.8	33.1	25.4	33	24.2	33.6	25.2
13	32.4	25.1	34.4	24.7	35.6	25	32.3	25	34.2	24.5	32.9	23.6	33.1	24.4
14	34.7	24.2	35.3	24.9	31.3	24.3	35.5	24.1	34.7	24.3	34.2	23.6	35.1	24.4
15	33.5	26	35.8		34.2	24.2	33.9	26.1	34.5	24.1	33.1	25.2	32.7	25.7
16	34.8	24.8	35.2	25.6	35.6	24	33.4	23.3	33.3	24.2	33.9	23.7	33.7	23.6
17	32.3	25.4	33.8		37.1	24.2	33	25	33	23.3	33.3	24.5	33.9	24.6
18	31.7	25	33.4	24.4	35.7	22.8	32.3	24.1	32.4	24	32.9	23.5	32.9	23.8
19	33.8	25.5	34.7	24.3	36.1	23.6	34.2	24.3	32.4	23.5	33.3	23.5	34.1	23.6
20	31.9	24.9	33.4	24.9	32.7	23.5	34.2	25.1	34.7	23.7	34.9	23.7	32.7	24.7
21	33.4	23.9	33.7		36.5	24.4	33.2	24.3	34.7	22.1	31.6	23.5	32.2	23.9
22	33.2	22.8	35.2	24.3	37.2	23.6	32.6	23.9	33	23.9	32.2	22.3	32.8	24.1
23	32.5	23.2	33.5	22.8	35.2	23.2	33.3	22.5	32.9	23	34.1	22.2	33.2	23
24	33.2	23.7	33.7	23	36.4	23.7	33.2	23.3	32.9	23	34	22.7	33.4	23.5
25	31.9	24	33.7	24.4	35.6	23.6	33.4	24	33.7	23.8	32.7	23.7	32.4	23.2
26	33.2	24.4	34.5	23.8	36.7	24.1	32.7	23.4	31.7	22.9	33.6	23	33.2	22.6
27	32.1	24.6	33.4	25.2	36.8	26.2	33	24.8	33	23.9	32	23	32.3	25.1
28	31.5	25.1	33.5	24.4	36.7	24.6	33.1	25.1	32.7	23.9	33.5	23.1	33	24.4
29	29.5	24.5	29.6	25.1	37.7	24.9	32.6	24.5	32.7	24.8	32.4	24.4	30.7	24
30	31.5	24.9	32.4	25.3	38.2	23.5	30.8	25.1	31.6	24.8	33.6	25.1	31.2	25.9
Mean	32.1	24.2	33.5	24.3	35.4	24.1	32.8	24.1	33	23.9	33	23.5	32.7	24.1

Day.	Pasuquin.		Aparri.		Cape Bojeador.		Basco.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.6	25	33.9	24	29.7	23.8	29.3	24.5
2	30.5	25	30.9	23.5	28	22.4	25.6	23.9
3	27.5	23.7	27.8	23.1	26.2	22.7	26	22.5
4	31.2	23.5	32.4	23.8	29.1	22.5	30.4	23.5
5	32.8	23.6	32	23.8	30.4	23.6	31	25.9
6	32.6	24.1	33.4	24.6	30.8	23.5	30.8	25
7	33	24.5	32.5	23.9	31.2	25.7	30.3	25.5
8	34.5	24.6	33.5	24.2	32.7	25.8	31.6	24.8
9	34.1	24.3	33.4	24.6	32.9	25.8	31	24.5
10	33.9	24.9	31.5	24.8	33.3	25.3	31.3	24
11	33.6	24.3	32.9	24.4	32.4	25	31.3	25.4
12	33.6	25.6	33.7	24.9	32.3	24.2	30.8	27
13	33.2	24.6	32.8	24.4	34.3	25.7	31.8	24.7
14	36.9	24.7	31.4	24	34.4	24.3	32.9	24.6
15	33.3	25.1	32.6	24.4	31.5	25.7	31.3	25.8
16	33.3	24.1	34.7	24	33.5	23.6	32.2	25.2
17	33.9	24.7	34.5	23.7	33.4	25.9	32.9	26.2
18	32.7	23.9	33.6	23.5	32	25.2	32.8	25.2
19	33.8	24	33.9	23	32.4	24.6	32.9	25.1
20	33.1	24.6	33.5	24.1	32.5	25.4	32.3	25
21	32.3	24	32.6	24.1	30.8	23.2	32.3	25.1
22	32.9	24.5	34	23.3	31.1	25	33	26.6
23	33.5	23.6	33.2	22.8	33	23.9	31.5	24.9
24	33.3	24.1	34	23.6	31	24.5	33	24.5
25	32.8	23.6	34	24.4	31.1	23.7	32.8	26
26	32.7	23.5	35.2	24.8	30.3	26.7	33.3	28.1
27	31.7	23.4	32.1	25.4	30.7	24.8	31.3	24.9
28	33	24.7	34	24.5	30.5	25.4	31.1	27.2
29	31	24.7	35.3	25	29	23.2	31.9	27
30	30.7	25.7	35.8	25.5	29.2	24.4	30.8	25.9
Mean	32.8	24.4	33.2	24.1	31.3	24.5	31.3	25.3

## SEISMOLOGICAL BULLETIN FOR JUNE, 1921

By REV. MIGUEL SADERRA MASÓ, S. J.

*Chief, Seismic and Magnetic Divisions, Weather Bureau*

### EARTHQUAKES FELT IN THE PHILIPPINES<sup>1</sup>

- 1, 3<sup>h</sup> 30<sup>m</sup> [1, 11<sup>h</sup> 30<sup>m</sup>]. Basco (Batanes Islands). Earthquake of intensity III-IV.
- 2, 8<sup>h</sup> 00<sup>m</sup> [2, 16<sup>h</sup> 00<sup>m</sup>]. Bogo (N Cebu). Earthquake shock of intensity III.
- 3, 4<sup>h</sup> 16<sup>m</sup> 35<sup>s\*</sup> [3, 12<sup>h</sup> 16<sup>m</sup> 35<sup>s</sup>]. Lais (SE Mindanao). Earthquake of intensity II-III. The origin lay far away to the south, near the Moluccas, more than 1,500 kilometers distant from Manila. The Seismological Bulletin of Batavia places it towards Ternate Island.
- 4, 16<sup>h</sup> 29<sup>m</sup> 48<sup>s\*</sup> [5, 0<sup>h</sup> 29<sup>m</sup> 48<sup>s</sup>]. Samar Island and SE Luzon. Earthquake of intensity IV on NE Samar: Perceptible as far as Leyte, Sorsogon, Albay and Catanduanes. It must be considered as a strong aftershock of the earthquake of May 21st. The observer at Batag, on reporting this earthquake, remarks that there occur yet almost daily very light shocks since that date.
- 5, 10<sup>h</sup> 52<sup>m</sup> 02<sup>s\*</sup> [5, 18<sup>h</sup> 52<sup>m</sup> 02<sup>s</sup>]. Iba (W Luzon). Earthquake shock of intensity II-III. Origin in the China Sea, close to Zambales coast.
- 7, 1<sup>h</sup> 30<sup>m</sup> [7, 9<sup>h</sup> 30<sup>m</sup>]. Talacogon (E Mindanao). Earthquake of intensity III. It must have been of a very local character, because it was not recorded at Butuan, 50 kilometers distant.
- 9, 10<sup>h</sup> 37<sup>m</sup> 28<sup>s\*</sup> [9, 18<sup>h</sup> 37<sup>m</sup> 28<sup>s</sup>]. E Mindanao. Earthquake of intensity V-VI, felt through the southern and eastern portion of Mindanao, comprising the provinces of Agusan, Davao and Cotabato. Its origin presumably lay towards the SW end of the Agusan Valley, in the mountainous region which divides it from the center of the island. The intensity given by the ten stations which reported it, does not compare with the great N-S extension of over 400 kilometers of the shaken area. It was recorded at Batavia and Zikawei.
- 10, 17<sup>h</sup> 51<sup>m</sup> 51<sup>s\*</sup> [11, 1<sup>h</sup> 51<sup>m</sup> 51<sup>s</sup>]. Ilocos Norte (NW Luzon). Earthquake of intensity III. The epicenter probably lay to the east, in the central chain of Luzon.
- 12, 10<sup>h</sup> 30<sup>m</sup> [12, 18<sup>h</sup> 30<sup>m</sup>]. Ganassi (N Mindanao). Earthquake of intensity III. Distinct shocks noticed during two minutes.
- 14, 23<sup>h</sup> 37<sup>m</sup> [15, 7<sup>h</sup> 37<sup>m</sup>]. Lais (SE Mindanao). Earthquake shock of intensity III. Recorded at Butuan.
- 16, 19<sup>h</sup> 36<sup>m</sup> [17, 3<sup>h</sup> 36<sup>m</sup>]. Butuan (N Mindanao). Oscillatory earthquake, direction NW-SE, intensity III, duration 7 seconds.

<sup>1</sup>The intensity of earthquakes is given in the notation known as the Rossi-Forel scale. The time is that indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (\*). Otherwise the time is that noted by the observer who sent the report. All time indications are in Greenwich mean time (midnight=0<sup>h</sup>), insular time being added in brackets for the convenience of Philippine readers.

18, 8<sup>h</sup> 25<sup>m</sup> 40<sup>s\*</sup> [18, 16<sup>h</sup> 25<sup>m</sup> 40<sup>s</sup>]. Samar Island. Earthquake of intensity III. Origin the same of May 21st.

23, 19<sup>h</sup> 04<sup>m</sup> [24, 3<sup>h</sup> 04<sup>m</sup>]. Laoag (NW Luzon). Light earthquake shock of intensity II-III.

24, 0<sup>h</sup> 19<sup>m</sup> 28<sup>s\*</sup> [24, 8<sup>h</sup> 19<sup>m</sup> 28<sup>s</sup>]. E Mindanao. Earthquake of intensity III-IV, felt through the Agusan Valley and eastwards, to the Pacific coast. Its origin probably lay within the valley.

25, 15<sup>h</sup> 43<sup>m</sup> 10<sup>s\*</sup> [25, 23<sup>h</sup> 43<sup>m</sup> 10<sup>s</sup>]. Malita (SE Mindanao). Earthquake of intensity III. Recorded at Butuan.

30, 19<sup>h</sup> 00<sup>m</sup> [July 1st, 3<sup>h</sup> 00<sup>m</sup>]. Port Lebak (SW Mindanao). Earthquake shock of intensity III.

### RECORDS OF THE MICROSEISMOGRAPH

(Time: Greenwich mean. Midnight=0<sup>h</sup>. Instrument: Wiechert seismograph; 1,000 kilograms. AN:  $T_0=6.25$ ,  $\epsilon=2.906$ ,  $\frac{r}{T_0^2}=0.053$ ;  
 AE:  $T_0=6.18$ ,  $\epsilon=2.393$ ,  $\frac{r}{T_0^2}=0.042$ . Alluvium. 2.40 meters above sea level)

No.	Date.	Character.	Phase.	Hour.		Period.	Amplitude.		Remarks.
							A <sub>N</sub> μ	A <sub>E</sub> μ	
180	1	I	e	h.	m.	s.			
			F	8	57				
181	1	I	e	12	21				
			F	13	00				
182	1	Iv	eP	16	25	00			
			F		33				
183	1	I	e	19	44				
			F	20	12				
184	2	Ir	eP	7	13	23			
			PR <sub>1</sub> E		14	13			
			PR <sub>1</sub> N		14	17			
			PR <sub>2</sub> N		14	55			
			PR <sub>2</sub> E		15	14			
			S		19	05			
			SR <sub>1</sub> N		20	53			
			SR <sub>1</sub> E		21	10			
			SR <sub>2</sub> N		21	31			
			SR <sub>2</sub> E		22	04			
			L		23	20			
			ME <sub>1</sub>		25	23	16	17	
			MN <sub>1</sub>		26	49	12	22	
			ME <sub>2</sub>		28	51	12	22	
			MN <sub>2</sub>		29	03	12	24	
F		8	21						
185	3	Ir	eP	4	16	35			Felt at Lais (SE Mindanao).
			L		18	45			
			F		47				
186	4	IIv	eP	16	29	48			NE of Samar. Aftershock of the No. 185.
			L		30	54			
			ME		31	51	6	267	
			MN		32	06	6	413	
			F		17	48			
187	5	Iv	eP	10	52	02			Iba (W Luzon).
			L		52	21			
			F		58				
188	7	I	e	4	51	31			Central Celebes.
			F		5	08			
189	7	I	e	14	04				
			F		22				
190	7	Iv	eP	16	31	16			
			F		36				
191	9	IIv	eP	10	37	28			Eastern part of Mindanao.
			L		39	00			
			ME		40	37	6	98	
			MN		41	18	6	125	
			F		11	30			

Records of the Microseismograph—Continued

No.	Date.	Character.	Phase.	Hour.			Period.	Amplitude.		Remarks.
								AN μ	AE μ	
				<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>s.</i>			
192	10	I	e F	2 3	48 23					
193	10	IIv	eP L M <sub>E</sub> M <sub>N</sub> F	17 18	51 52 53 54 28	51 56 50 14				Ilocos Norte (NW Luzon).
							7 6		77 102	
194	10	Iv	eP F	19 20	49 08	09				
195	11	Iv	eP F	19	42 58	44				
196	13	I	e F	6 7	45 17	34				
197	13	Iv	eP F	16	17 22	42				
198	13	Iv	eP F	16 17	53 05	47				
199	14	I	e F	8 10	50 03	02				
200	14	I	e F	19 20	59 07	39				
201	15	I	e F	9 10	42 06					
202	16	I	e F	9	31 45					
203	18	Iv	eP L M <sub>E</sub> M <sub>N</sub> F	1 16 16 16 28	15 15 18 24	52				
							2 2		95 127	
204	18	Iv	eP L F	8	25 26 48	40 42				Aftershock of the No. 135.
205	20	I	e F	13	21 52					
206	23	I	e F	10 11	41 14					
207	23	I	e F	14	08 29					
208	23	I	e F	15 16	34 00					
209	23	Ir	eP L F	18 19	25 28 56	20 25				
210	24	Iv	eP L F	0 1	19 21 07	28 22				Eastern part of Mindanao.
211	25	Ir	eP L F	15 16	43 46 30	10 24				Felt at Malita (SE Mindanao).
212	28	Ir	eP S L M <sub>N</sub> M <sub>E</sub> F	14 15 19 19 19 15	10 58 44 50 56 13	22				
							8 7		120 133	
213	29	I	e F	4	00 19	35				
214	29	I	e F	18	08 45					

### TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS <sup>1</sup>

1, 3<sup>h</sup> 30<sup>m</sup> [1, 11<sup>h</sup> 30<sup>m</sup>]. Basco (Islas Batanes). Temblor de tierra de intensidad III-IV.

2, 8<sup>h</sup> 00<sup>m</sup> [2, 16<sup>h</sup> 00<sup>m</sup>]. Bogo (N de Cebú). Temblor de tierra de intensidad III.

3, 4<sup>h</sup> 16<sup>m</sup> 35<sup>s\*</sup> [3, 12<sup>h</sup> 16<sup>m</sup> 35<sup>s</sup>]. Lais (SE de Mindanao). Temblor de tierra de intensidad II-III. El epicentro se hallaba lejos al sur, hacia las Molucas, a más de 1,500 kilómetros de Manila. En el Boletín Sismológico de Batavia se supone el origen hacia Ternate.

4, 16<sup>h</sup> 29<sup>m</sup> 48<sup>s\*</sup> [5, 0<sup>h</sup> 29<sup>m</sup> 48<sup>s</sup>]. Isla de Sámar y SE de Luzón. Temblor de tierra de intensidad IV en el NE de Sámar. Sintióse también en las Provincias de Leyte, Sorsogón, Albay y Catanduanes.

Fué una réplica de mayor intensidad de los terremotos del 21 de mayo último. El observador de Batag al dar cuenta de este temblor, añade que todavía se repiten casi a diario sacudidas muy débiles desde aquella fecha.

5, 10<sup>h</sup> 52<sup>m</sup> 02<sup>s\*</sup> [5, 18<sup>h</sup> 52<sup>m</sup> 02<sup>s</sup>]. Iba (W de Luzón). Temblor de tierra de intensidad II-III. Originado en el mar de la China, cerca de la costa de Zambales.

7, 1<sup>h</sup> 30<sup>m</sup> [7, 9<sup>h</sup> 30<sup>m</sup>]. Talacogon (E de Mindanao). Temblor de tierra de intensidad III. Debió ser de carácter muy local, pues no se registró en Butúan, 50 kilómetros distante al N.

9, 10<sup>h</sup> 37<sup>m</sup> 28<sup>s\*</sup> [9, 18<sup>h</sup> 37<sup>m</sup> 28<sup>s</sup>]. E de Mindanao. Temblor de tierra de intensidad V-VI, sentido en toda la parte E y S de Mindanao, comprendida por las provincias de Agusan, Dávao y Cotabato. El origen parece se hallaba hacia el extremo SW del Valle del Agusan en la cordillera que lo separa del centro de Mindanao. Su intensidad en las diez estaciones de la región afectada que dieron noticia de él, no parece haber correspondido a la grande extensión de 400 kilómetros que, de N a S, tenía esta área. Sólo fué registrado en Batavia y Zikawei.

10, 17<sup>h</sup> 51<sup>m</sup> 51<sup>s\*</sup> [11, 1<sup>h</sup> 51<sup>m</sup> 51<sup>s</sup>]. Ilocos Norte (NW de Luzón). Temblor de tierra de intensidad III. El epicentro probablemente se hallaba al E en la cordillera central de Luzón.

12, 10<sup>h</sup> 30<sup>m</sup> [12, 18<sup>h</sup> 30<sup>m</sup>]. Ganassi (N de Mindanao). Temblor de tierra de intensidad III, distinguieronse varios choques durante 2 minutos.

14, 23<sup>h</sup> 37<sup>m</sup> [15, 7<sup>h</sup> 37<sup>m</sup>]. Lais (SE de Mindanao). Temblor de tierra de intensidad III. Registrado en Butúan.

16, 19<sup>h</sup> 36<sup>m</sup> [17, 3<sup>h</sup> 36<sup>m</sup>]. Butúan (N de Mindanao). Temblor oscilatorio, dirección NW-SE, intensidad III, duración 7 segundos.

18, 8<sup>h</sup> 25<sup>m</sup> 40<sup>s\*</sup> [18, 16<sup>h</sup> 25<sup>m</sup> 40<sup>s</sup>]. Isla de Sámar. Temblor de tierra de intensidad III. Réplica originada en el epicentro del 21 de mayo.

23, 19<sup>h</sup> 04<sup>m</sup> [24, 3<sup>h</sup> 04<sup>m</sup>]. Laoag (NW de Luzón). Temblor de tierra de intensidad II-III.

24, 0<sup>h</sup> 19<sup>m</sup> 28<sup>s\*</sup> [24, 8<sup>h</sup> 19<sup>m</sup> 28<sup>s</sup>]. E de Mindanao. Temblor de tierra de intensidad III-IV sentido en todo el valle del Río Agusan y hacia el E, hasta la costa del Pacífico. Su origen probablemente se hallaba dentro del valle.

25, 15<sup>h</sup> 43<sup>m</sup> 10<sup>s\*</sup> [25, 23<sup>h</sup> 43<sup>m</sup> 10<sup>s</sup>]. Malita (SE de Mindanao). Temblor de tierra de intensidad III. Registrado en Butúan.

30, 19<sup>h</sup> 00<sup>m</sup> [julio 1.º, 3<sup>h</sup> 00<sup>m</sup>]. Port Lebak (SW de Mindanao). Temblor de tierra de intensidad III.

<sup>1</sup> La intensidad de los terremotos se indica conforme a la conocida escala de Rossi-Forel. Cuanto a la hora de su ocurrencia, adoptamos la indicada por los sismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (\*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo medio de Greenwich (medianoche=0<sup>h</sup>). Para conveniencia de los lectores de Filipinas se añade también la hora insular.

THE GOVERNMENT OF THE PHILIPPINE ISLANDS

# WEATHER BUREAU

MANILA CENTRAL OBSERVATORY

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BULLETIN FOR JULY, 1921

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PREPARED UNDER THE DIRECTION OF

REV. JOSÉ ALGUÉ, S. J.

DIRECTOR OF THE WEATHER BUREAU

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BUREAU OF PRINTING  
1923





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**BULLETIN FOR JULY, 1921**



# METEOROLOGICAL BULLETIN FOR JULY, 1921

By Rev. JOSÉ CORONAS, S. J.

Chief, Meteorological Division of the Weather Bureau

## GENERAL WEATHER NOTES

**Pressure and temperature.**—The mean atmospheric pressure for this month in the Philippines is without exception higher than that of the preceding year especially in Luzon; but, as compared with the normal of July, is almost identical with it in the Visayas and Mindanao, and slightly higher in Luzon. The highest pressures were observed on the 29th, and the lowest on the 21st and 22nd when a severe typhoon was passing through the Batan Islands between Luzon and Formosa.

The mean monthly temperature throughout the Philippines does hardly differ from the normal of the month. The absolute highest and lowest temperatures for Manila were 33.7° C. and 22.0° C., having been registered on the 30th and 4th, respectively. The extreme monthly temperatures for Baguio were 24.6° C., 14.2° C. on the top of Mirador, and 26.3° C., 13.6° C. in the plateau near the City Hall.

### PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS OF THE WEATHER BUREAU FOR JULY, 1921

Station.	Pressure.						Temperature.							
	Mean.	Departure from July, 1920.	Departure from normal.	Highest mean.	Day.	Lowest mean.	Day.	Mean.	Departure from July, 1920.	Departure from normal.	Highest.	Day.	Lowest.	Day.
	mm.	mm.	mm.	mm.		mm.		°C.	°C.	°C.	°C.		°C.	
Zamboanga.....	758.18	+0.28	-----	759.99	31	756.80	21	26.1	-0.5	-----	30.6	5	21.5	10, 11, 22
Kolonie, Yap, Western Carolines.....	57.86	+ .99	-----	59.03	2	56.02	20	27	+ .4	-----	32.8	3, 12	22.6	1
Tagbilaran.....	57.57	+ .62	-0.05	60.01	29	55.16	21	26.7	-1.2	-0.6	32.7	11, 24	22	12, 13, 15
Surigao.....	57.41	+ .90	- .10	60	29	54.56	21	26.9	-1.4	- .5	33.1	25	22.6	1
Cebu.....	57.56	+ .83	+ .03	60.21	29	54.30	21	27.9	- .1	+ .4	33.2	10	22.9	4
Iloilo.....	57.38	+ .67	- .04	59.96	29	54.50	21	27.1	- .1	+ .3	33	31	22.3	4
Tacloban.....	57.43	+1.26	- .02	60.14	29	53.70	21	26.9	-1.1	- .4	34.3	25	22.5	13
Capiz.....	57.22	+1.08	- .07	60.03	29	53.46	21	27.1	- .4	0	34.6	24	22.9	5
Calbayog.....	57.58	+1.20	+ .15	60.36	29	53.46	21	26.7	-1.2	- .3	33	11	22.3	3
Legaspi, Albay.....	57.15	+1.56	+ .24	60.12	29	52.34	21	27.4	- .3	+ .1	34.7	28	23	3, 15
Atimonan.....	56.98	+1.68	+ .32	60.15	29	51.66	22	27.4	- .1	0	33.8	28	22.2	4
Ambulong, Tanauan, Batangas.....	56.51	+1.56	-----	59.48	29	51.61	22	27.3	+ .3	-----	35	15, 29	22.3	4
Daet.....	57.10	+1.86	-----	60.53	29	51.64	21	26.7	- .5	-----	33.6	28	21.5	15
Manila.....	57.04	+1.69	- .11	60.18	29	51.70	22	27	+ .1	0	33.7	30	22	4
San Isidro, Nueva Ecija.....	56.96	+1.76	+ .15	60.12	29	50.97	22	27	+ .6	+ .5	34.9	15, 30	22.1	5
Dagupan.....	56.67	+2.64	+ .36	59.97	29	50.70	22	27.7	+1.2	+ .7	35.6	14	22.9	4, 5
Baguio*.....	635.19	+1.99	+ .47	638.41	29	629.11	22	18.4	+ .3	+ .4	24.6	13, 31	14.2	5
Vigan.....	756.17	+2.36	+ .09	759.65	29	747.90	22	28.1	+1	+ .8	35.4	4	22.5	23
Tuguegarao.....	56.62	+2.91	+ .74	60	29	47.22	22	28.1	+ .6	+ .3	37.4	28, 29	22.2	15
Laosag.....	56.20	+2.72	-----	60.02	29	46.61	22	27.6	+ .7	-----	34.7	9, 15	22.3	23
Aparri.....	56.55	+2.89	+ .71	60.29	29	45.88	22	27.4	- .2	- .3	34.9	12	22.8	6

\* The barometric readings of this station are not reduced to sea level.

**Rainfall.**—The total monthly amount of rain is considerably below that of July, 1920, and the normal of this month in northern Luzon, while a great majority of our stations in southern Luzon, the Visayas, and Mindanao reported a monthly rainfall greater than both, that of the preceding year and the normal of July. In Manila 432.7 mm. of water fell

during the month, and 568.9 mm. in Baguio; these amounts differing from the respective normal by +16.4 mm. and -518.2 mm.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF JULY, 1921

Station.	Total.	Departure from July, 1920.	Departure from normal.	Days of rain.	Departure from July, 1920.	Departure from normal.	Greatest rainfall in a single day.	Day.	Station.	Total.	Departure from July, 1920.	Departure from normal.	Days of rain.	Departure from July, 1920.	Departure from normal.	Greatest rainfall in a single day.	Day.
	mm.	mm.	mm.				mm.			mm.	mm.	mm.				mm.	
Jolo	227.4	+153	+ 63	17	+ 6	+ 3	46.9	19	Sumay (Guam), Agaña	207.6	- 499.2	-150	25	- 4	+ 1	38.8	5
Malamau, Isabela, Zamboanga	549	+523.7	-----	19	+15	-----	93.2	17	Calapan	253.6	+ 112.9	+ 25	17	- 5	- 1	50.8	3
Zamboanga	253.9	+179.4	+143.6	18	+ 9	+ 6	71.6	16	Virac	214.1	+ 82.6	- 14.5	18	+ 6	+ 1	113.4	3
Davao	166.9	+106.3	- 21.9	13	+ 3	+ 3	22.4	8	Naga, Camarines Sur	448.4	+ 323.2	+202.5	21	+ 5	+ 3	186.4	3
Cotabato	341.8	+ 95.3	+ 64.6	22	+ 4	+ 5	62.2	21	Tigaon	381.6	+ 61.7	-----	23	- 1	-----	164.1	3
Cagayan	153.4	+ 12.8	+ 1.8	14	+ 3	0	32.8	12	Batangas	376.9	+ 74.2	+106.4	17	- 6	- 1	188.8	4
Butuan	200.3	+101.3	+ 75.3	21	+ 9	+ 7	51.6	31	Lucena	280	+ 138.6	-----	13	- 8	-----	120.4	4
Mambajao	364.3	+221.2	-----	17	+ 4	-----	155.4	17	Atimonan	339.3	+ 155.6	+117.4	17	+ 1	0	166.6	4
Dumaguete	163	+ 67.8	+ 23.6	21	+ 4	+ 7	31.2	18	Ambulong, Tana- uan, Batangas	268.8	- 125.9	-----	19	- 5	-----	75.7	4
Kolonie, Yap, Western Caroli- nes	220.1	-570.8	-189.4	25	- 2	0	44.7	14	Daet	319.4	+ 162.6	-----	20	+ 4	-----	152.8	3
Tagbilaran	295.1	+225.8	+ 57	20	+10	+ 6	124.8	17	Canluban, Ca- lamba	376.1	+ 52.2	-----	18	- 6	-----	123.6	4
Iwahig Penal Colony, Puerto Princesa	303.5	+162.1	-----	19	+ 3	-----	84.3	18	Paracale	332.1	+ 211.4	+ 56.7	11	+ 1	- 5	157.7	2
Surigao	212.2	+147	+ 66.1	18	+ 6	+ 6	50.8	28	Santa Cruz, La- guna	249.3	- 58.5	- 16.2	21	- 4	- 1	114.8	4
Maasin, Leyte	223.7	+ 24.9	- 22.1	8	- 1	- 2	76.4	17	Manila	432.7	- 270	+ 16.4	24	- 6	+ 1	180.2	4
Cebu	211.1	+149	+ 40.3	21	+ 7	+ 5	39.1	17	Antipolo	701.2	- 45.5	+ 72.9	24	- 6	- 1	355.6	4
Iloilo	330.9	-106.5	- 90.1	22	- 5	+ 2	66.6	22	San Isidro, Nue- va Ecija	305.7	- 348.1	- 65.2	19	- 9	- 4	86.9	4
San Jose de Bue- navista	405.6	-353.3	-162.5	21	0	- 2	61.5	23	Iba	471	- 621.9	-477.8	19	-11	- 7	60.7	24
Cuyo	440.6	+ 10.9	+ 50.5	24	+ 2	+ 1	67.1	30	Tarlac	244.7	- 614.6	-186.2	18	-11	- 5	102.6	4
Ormoc	407.2	+179.4	+120.5	24	+10	+ 6	92.7	3	Baler	254.1	- 113.6	- 54.2	14	- 6	- 1	102.1	4
Guian	158.2	+ 61.3	+ 6	17	+ 6	+ 2	21.9	6	Dagupan	336.8	-1,185.8	-252.4	20	- 6	- 2	61.2	17
Tacloban	150.2	+ 92.9	- 15.6	18	+ 8	+ 2	33.1	16	Bolinas	496.9	-----	-154.6	22	-----	- 1	81.5	21
Capiz	218.7	+ 95.1	- 82.6	25	+ 8	+ 6	52.3	23	Baguio	568.9	-2,181.7	-518.2	30	+ 1	+ 3	211.9	22
Borongan	259.7	+180.2	+ 72.6	22	+11	+ 6	40.4	16	San Fernando, La Union	318.4	- 840.1	-288.4	22	- 8	0	140.7	22
Catbalogan	374.6	+172	-----	24	+11	-----	56.4	25	Echague	135.5	-----	- 64.4	16	-----	- 1	39.4	18
Calbayog	344.9	+ 98.7	+124.9	28	+13	+ 9	52.3	16	Candon	384.8	-1,271.8	-337.7	15	-14	- 6	106.7	22
Masbate	250.7	+116.6	+ 64.2	18	+ 3	+ 1	46.2	12	Vigan	398.3	-1,262.3	-314.7	14	-12	- 8	112	22
Romblon	390.3	+134	+115.3	23	- 1	+ 3	71.4	12	Tuguegarao	115.7	- 262.3	-107.2	17	- 2	+ 3	46.7	24
Batag Light- house, Laoang	194.5	- 5.6	-----	21	+10	-----	29.5	16	Laoag	361.2	-1,165	-362.4	15	-11	- 6	151.4	22
Sorsogon	385.3	+281.6	-----	19	+ 7	-----	32.5	3	Aparri	158.1	- 295.4	- 24.9	13	- 6	0	40	21
Legaspi, Albay	603.4	+398.2	+260.1	24	+ 5	+ 6	224.3	3	Cape Bojeador	295.9	-1,076.9	-----	13	-11	-----	119.9	22
									Basco	260.9	- 220.3	- 21.1	21	+ 4	+ 3	117	21

DEPRESSIONS AND TYPHOONS

Our Weather Maps showed during this month two well developed typhoons in the Philippines, one in Japan, one depression or typhoon in the China Sea west of Luzon, and two or three more in the Pacific very far from the Philippines. The tracks of all these depressions and typhoons of July are published on Plate III.

The Manila typhoon: July 4. This typhoon was hardly shown by the observations of Guam and Yap. It is only with very slight probability, based on the winds prevailing at Yap in July 1, that we may suppose that the typhoon was formed on that day in about 12° or 13° latitude N and 132° or 133° longitude E. It seems, however, certain that it did not form east of the meridian 135, but rather to the west of same. In other words this typhoon belongs to the type of those that form nearer to the Philippines than to the Ladrone Islands. As the extent of the typhoon was rather small, its existence could not be noticed in our Weather Maps until the morning of July 3, when the first warnings were issued by Manila Observatory. The approximate position of the center at 6 a. m. of the 3rd was between 125° and 126° longitude E, 14° and 15° latitude N.

In the table below we publish some of the observations made in Manila during the typhoon. The center passed a few miles to the north of the city moving almost due west at 1.45 p. m. of July 4, when the barometric minimum 745.50 mm. was recorded. A gale from NW backing to SW and S blew for about six hours (from 11 a. m. to 5 p. m.) doing considerable damage to the city. The highest velocities of the wind recorded in the most violent gusts were 75 miles per hour at 1.28 p. m., and 63 miles per hour at 1.53 p. m. No

vortical calm was observed in Manila, but relative calm lasting from 20 minutes to 1 hour was reported from practically all the towns situated from 5 to 25 miles north of Manila. The greatest damage of the storm was done to the Provinces of Rizal, Bulacan, Pampanga, and Bataan. The center traversed Tayabas Province near Polillo and Infanta, the northern part of Rizal Province, the southern part of Bulacan, Pampanga, and Zambales Provinces, and the northern part of Bataan Province. The rate of progress of the typhoon while crossing the Philippines was 8 miles an hour.

HOURLY OBSERVATIONS TAKEN AT THE MANILA CENTRAL OBSERVATORY DURING THE TYPHOON OF JULY 4, 1921

Date and hour.	Pressure.	Wind.		Rainfall.	Remarks.
		Direction.	Force.		
July 4:	<i>mm.</i>		<i>m. p. s.</i>	<i>0-12</i>	<i>mm.</i>
1 a. m.-----	755.55	NNW	4.5	3	2.6
2 a. m.-----	54.85	NW	5.5	4	0.8
3 a. m.-----	54.45	NW	5.5	4	3.4
4 a. m.-----	54.06	NW	6.5	4	0.3
5 a. m.-----	53.45	NW	6.5	4	-----
6 a. m.-----	53.70	NW	8.0	4	0.3
7 a. m.-----	53.75	NW	7.5	4	1.5
8 a. m.-----	54.10	NNW	10.0	5	3.0
9 a. m.-----	53.66	NW	9.0	5	0.5
10 a. m.-----	52.98	NW	10.0	5	1.8
11 a. m.-----	51.71	NW	15.0	7	2.0
Noon-----	49.58	NW	18.0	8	1.8
1 p. m.-----	46.73	NW	29.5	11	0.8
2 p. m.-----	45.79	WNW	29.5	11	13.7
3 p. m.-----	46.84	SW	29.0	11	21.6
4 p. m.-----	49.59	S	26.0	10	41.1
5 p. m.-----	51.54	S	18.0	8	23.1
6 p. m.-----	52.97	SSE	16.0	7	15.2
7 p. m.-----	54.20	SSE	8.5	5	20.9
8 p. m.-----	54.75	SSE	6.5	4	9.8
9 p. m.-----	55.90	SSE	6.5	4	8.5
10 p. m.-----	56.45	SSE	5.0	3	5.1
11 p. m.-----	57.10	SE	5.0	3	3.8
Midnight-----	57.15	SEbyS	5.0	3	2.0

In the China Sea the typhoon increased its rate of progress and inclined northwest ward. It passed close to the Paracels in the early morning of the 6th; traversed the northern part of Hainan during the night of the 6th to the 7th; and entered Tongking in the afternoon of the 7th.

Some of the observations made on board the steamer *Phorus* on July 4 and 5 are contained in the following table. The steamer was near the center to the north in the early morning of July 5.

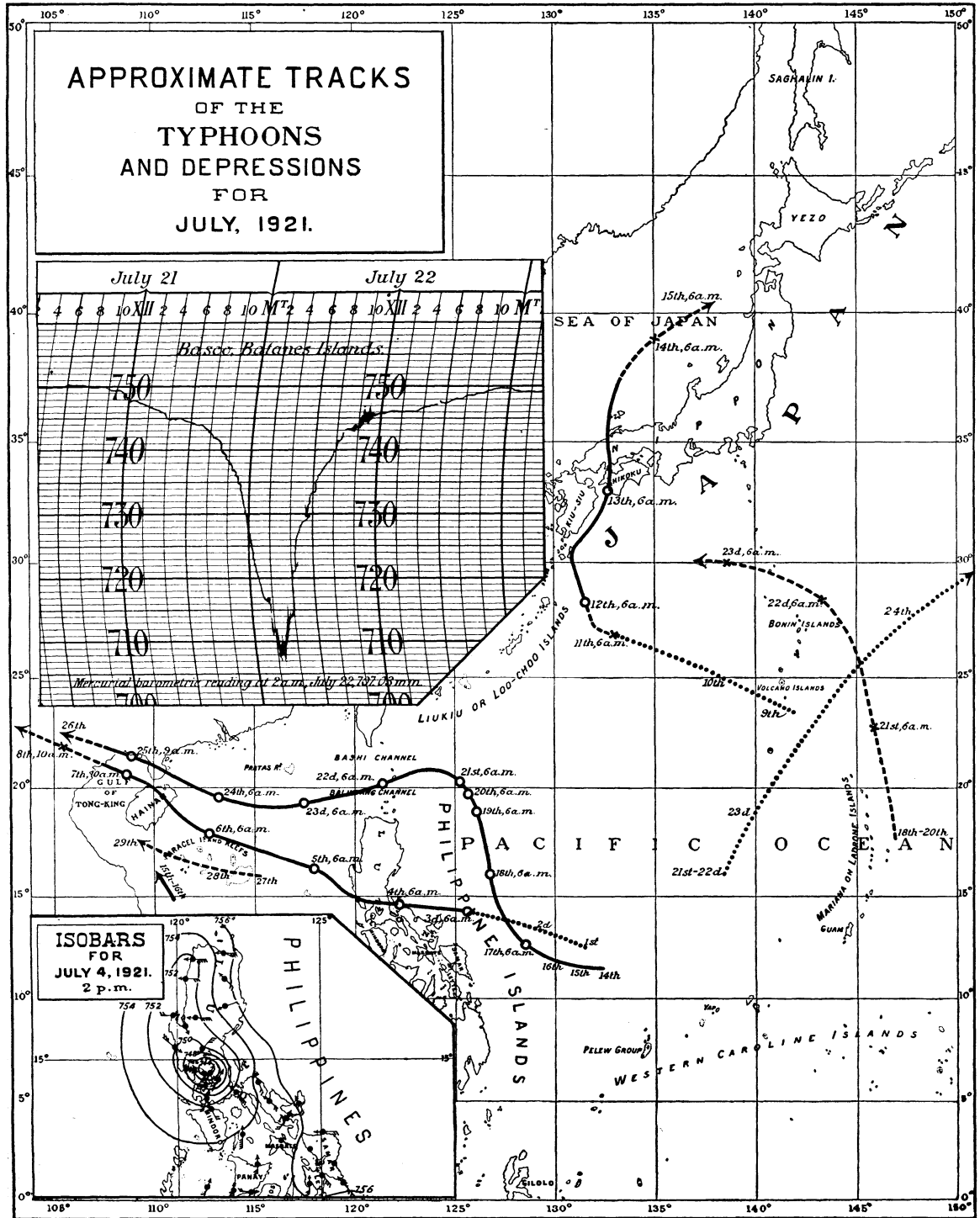
METEOROLOGICAL OBSERVATIONS MADE ON BOARD THE STEAMER "PHORUS" JULY 4 AND 5, 1921\*

Date and hour.	Position.		Pres- sure.	Wind.		Weath- er.	Date and hour.	Position.		Pres- sure.	Wind.		Weath- er.					
	Latitude N.	Longi- tude E.		Direction.	Force.			Latitude N.	Longi- tude E.		Direction.	Force.						
July 4:	<i>c</i>	<i>l</i>	<i>o</i>	<i>l</i>	<i>mm.</i>		<i>0-12</i>											
4 p. m.-----	17	30	117	25	753.10	NE'y	4-6	b c	July 5:	<i>o</i>	<i>l</i>	<i>o</i>	<i>l</i>	<i>mm</i>				
8 p. m.-----	17	07	117	41	52.84	NNE	5	b c	10 a. m.-----	16	28	118	42	753.35	SSE	9	or q	
Midnight-----	16	54	118	08	52.59	E'y	5-6	b c	Noon-----	16	28	118	42	53.86	SE	9	or q	
July 5:									2 p. m.-----	16	21	118	46	54.37	SSE	9-10	or q	
2 a. m.-----	16	43	118	17	50.05	ENE	7-8	c	4 p. m.-----	16	13	118	50	54.62	SE	9-10	or q	
4 a. m.-----	16	24	118	23	44.71	ENE	8-10	g u r q	6 p. m.-----	16	06	118	53	54.62	SSE	8	or q	
6 a. m.-----	16	36	118	31	47.00	SE	10-11	or q u	8 p. m.-----	16	00	118	56	57.16	SSE	7	or q	
8 a. m.-----	16	36	118	33	51.06	S	9	or q	10 p. m.-----	15	52	118	59	58.43	SSE	7-9	or q l	
									Midnight-----	15	44	119	04	58.94	SSE	8-6	or q l	

\* Furnished by Hongkong Observatory.

The Batanes typhoon: July 21 and 22.—This storm was one of the severest ever observed in the Batan Islands, and its track is a new confirmation of the possibility of typhoons moving to WSW (see track in Plate III).

Plate III.



The typhoon was apparently formed on July 14, between 11° and 12° latitude N and between 132° and 133° longitude E. It moved first slowly to W and WNW; but on the 16th it inclined NW and NNW between 130° and 127° longitude E and between 12° and 14° latitude N. After having moved almost due N on the 17th and 18th, it remained almost stationary on the 19th and 20th, with a rate of progress of less than 3 miles an hour on the 19th, and less than 2 miles an hour on the 20th. Its center was then situated between 126° and 125° longitude E and between 19° and 21° latitude N. While the typhoon was moving so slowly, it was inclining again westward.

On the 21st, when the center was to the E by N of Basco (Batan Islands) near 21° latitude N and between 124° and 125° longitude E, the typhoon began to move to W by S toward the Batan Islands. Very interesting observations were taken by our observer of Basco which are included in the following table:

METEOROLOGICAL OBSERVATIONS MADE AT BASCO, BATAN ISLANDS, JULY 18 TO 23, 1921

Date and hour.	Pressure.	Wind.		Rain, 24 hours beginning 6 a. m.	Remarks.
		Direction.	Force.		
July 18:	<i>mm.</i>			<i>mm.</i>	
6 a. m. ....	755.94	E	1	0	Rain before observation.
2 p. m. ....	54.92	NNE	1	0.5	Fog.
July 19:					
6 a. m. ....	54.17	NNE	1		Light rain at night.
2 p. m. ....	53.01	NNW	1	19.8	
July 20:					
6 a. m. ....	52.02	NNW	1		Rain at night.
2 p. m. ....	50.65	NW	1		Dense fog.
4 p. m. ....	50.19	N	1		Fog, coloration of clouds at sunset.
8.30 p. m. ....	50.43	N	1	6.4	Drizzling, light to gentle breeze at intervals.
July 21:					
6 a. m. ....	49.10	NNW	1		Rain at night.
8 a. m. ....	49.01	NW	1		Drizzling, light to gentle breeze at intervals.
11 a. m. ....	48.54	NW	3		Do.
Noon. ....	46.77	NW	3		Drizzling.
2 p. m. ....	44.64	WNW	5		Raining, moderate to fresh breeze.
3 p. m. ....	45.80				
4 p. m. ....	42.88	WNW	6		Fresh to strong breeze at intervals.
5 p. m. ....	42.99	NNW	6		Do.
6 p. m. ....	44.50	WNW	6		Do.
7 p. m. ....	44.10	WNW	6		Do.
8 p. m. ....	42.70	WNW	6		Moderate to strong breeze at intervals.
9 p. m. ....	38.65	WNW	6		Do.
10 p. m. ....	36.04	WNW	10		Strong breeze to whole gale.
11 p. m. ....	35.10	NW	10		Strong breeze to whole gale, wind veering to N at 11.30 p. m.
Midnight. ....	19.38	N	11	117.0	Strong gale to stormy wind.
July 22:					
12.30 a. m. ....	11.40	N	12		Wind began to blow continuously with hurricane and destructive force.
1 a. m. ....	8.56	N	12		Hurricane and destructive wind.
1.30 a. m. ....	8.10	N	12		Do.
2 a. m. ....	7.03	NE	12		Do.
4.30 a. m. ....	25.74	E	12		Do.
5 a. m. ....	29.14	E	12		Do.
6 a. m. ....	33.91	SE	9		Fresh breeze to strong gale, raining. Instruments transferred to another place between 7 a. m. and 2 p. m.
2 p. m. ....	46.57	ENE	1		Drizzling.
5 p. m. ....	48.01	ENE	1		Do.
7 p. m. ....	48.88	ENE	1	2.5	Do.
July 23:					
6 a. m. ....	50.64	ENE	1		
10 a. m. ....	51.11	ENE	1		
2 p. m. ....	51.38	W	1		Fog.

Our readers will see in Plate III the barographic record obtained at Basco. The barometric minimum was as low as 707.3 mm., although the real center did not pass over Basco, where no vortical calm was noticed, but a few miles to the south, where, according to a report from an old resident of the Batan Islands, the vortical calm was observed for about half an hour. Our observer at Basco sent the following report on the intensity and effects of this typhoon:

"This typhoon was very destructive. The one mostly affected is the Insular Government. The radio station composed of the tower and the four houses, was demolished to the ground. The Basco Elementary School and the High School were also demolished.

The Provincial Government building and the provincial jail, the public market, the convent and the church were partly destroyed.

"Our Bureau has lost the Wind Vane which had been just installed.

"Many people said that they rarely experience such a typhoon. Comparing it with the typhoon of August, 1911, they said that the one in 1911 was very strong, very much stronger than this, but due to the duration of this July, 1921, typhoon, they consider that of 1911 as only one half in strength."

The steamer *Naugus* was almost caught in the center of this typhoon in the China Sea on July 23. Very complete and interesting observations taken on board the steamer are included in a table below. The barometric minimum was 714.49 mm. and it was observed at 8 a. m. and 9 a. m. of the 23rd. The position of the *Naugus* at noon of the 22nd was 21° 30' latitude N and 118° 54' longitude E; and at noon of the 23rd, 18° 59' latitude N and 116° 44' longitude E. The winds were blowing with hurricane force from the N by E veering to NE from 2 p. m. of the 22nd until 11 a. m. of the 23rd. As the steamer was below 20° latitude N at the time of the barometric minimum, and the center of the storm passed close to the south, it follows evidently that the typhoon had moved inclined to WSW from the time it passed over the Batan Islands at 2 a. m. of the 22nd.

METEOROLOGICAL OBSERVATIONS MADE ON BOARD THE STEAMER "NAUGUS," JULY 18 TO 24, 1921

[Captain, Andrew C. Iverson]

Date and hour.	Position.		Pressure.	Wind.		Remarks.
	Latitude N.	Longitude E.		Direction.	Force.	
July 18: Noon	36 14	122 59	757.16	SbyE	0-12 4	8 a. m. to noon moderate breeze, choppy sea, clear with light clouds.
July 19: Noon	32 18	123 06	56.65	S	5	8 a. m. to noon fresh breeze, choppy sea, clear with light clouds.
July 20: Noon	28 27	122 46	55.64	SSE	4	8 a. m. to noon light SE'y swell, clear with light clouds.
July 21: Noon	25 09	120 37	53.86	ENE	3	Clear and partly cloudy with passing rain squalls.
4 p. m.			51.06	NE	7-8	12-4 p. m. fresh gale, rough following sea, partly cloudy.
8 p. m.			50.30	NbyE	8	Partly cloudy and slightly hazy horizon.
Midnight			50.81	N	8	Clear and partly cloudy, slightly hazy.
July 22: 2 a. m.			49.29			Midnight to 4 a. m., heavy sea, cloudy and hazy.
4 a. m.			48.78	NbyE	3	4 to 8 a. m., rough following sea overcast with passing showers
8 a. m.			48.78	NNE	3	of light rain, hazy, heavy SE'y swell.
Noon	21 30	118 54	47.76	Var.	2-4	8 a. m. to noon, heavy SE'y swell, cloudy and overcast, light rain and hazy.
1 p. m.			45.48			
2 p. m.				NbyE	12	1 p. m., wind suddenly struck ship with typhoon force.
3 p. m.			43.95	NbyE	12	1.20 p. m., tremendous high seas sweeping all over the ship continuously.
4 p. m.			43.70	NbyE	12	
5 p. m.			42.68	NbyE	12	
6 p. m.			41.16	NbyE	12	
7 p. m.			40.14	NbyE	12	7 p. m., heavy sea broke gangway. 7.30 p. m., wind shifted to NE.
8 p. m.			40.65	NE	12	4 to 8 p. m., wind typhoon force, tremendous high seas, overcast with heavy rain squalls.
9 p. m.			39.63			Wind shifted to N.
10 p. m.			38.62			8 p. m. to midnight, wind typhoon force, tremendous high seas.
11 p. m.			35.82			
Midnight			33.54	N	12	
July 23: 1 a. m.			31.00	NE	12	Midnight to 4 a. m., wind typhoon force with tremendous high seas, overcast with heavy rain squalls.
2 a. m.			27.44	NE	12	
3 a. m.			23.89	NE	12	
4 a. m.			23.88	NE	12	4 to 8 a. m., wind typhoon force, tremendous high seas, overcast with heavy rain squalls.
5 a. m.			20.84	NE	12	
6 a. m.			18.30	NE	12	
7 a. m.			15.76	NE	12	
8 a. m.			14.49	NE	12	8 a. m. to noon, wind typhoon force, tremendous high seas.
9 a. m.			14.49	NE	12	
10 a. m.			15.76	NE	12	
11 a. m.				NE	12	
Noon	18 59	116 44	36.08	W	12	Noon to 4 p. m., wind typhoon force, tremendous high seas, overcast with heavy rain squalls. Wind and sea moderating slowly.
1 p. m.				SW	12	
2 p. m.			38.62	SW	12	
3 p. m.			40.40	SW	12	1 p. m., wind hauled to SW with heavy rain squalls, overcast.
4 p. m.			41.67	SW	12	4 to 8 p. m., wind moderating to strong gale, high sea, overcast with rain squalls.
6 p. m.			43.70	SW	12	
7 p. m.			47.00	SSW	12-9	
Midnight			49.54	S	9	8 p. m. to midnight, strong gale, slowly moderating, heavy swell, overcast and cloudy.
July 24: 2 a. m.			49.54	S	5	South wind moderating.
4 a. m.			50.56	S	5	Midnight to 4 a. m., fresh breeze with large southerly swell.
8 a. m.			52.08	S	5	4 to 8 a. m., rough S'y swell, partly overcast and clear.
Noon	16 50	118 23	53.35	SSW	5	8 a. m. to noon, heavy swell, clear with light clouds.



The steamer *Loong Sang*, on her way from Hongkong to Manila, felt also the fury of the storm in the China Sea, the barometer having fallen to 735.57 mm. at 4 p. m. of the 23rd. The following table contains the observations made aboard this steamer on July 22 to 24:

METEOROLOGICAL OBSERVATIONS MADE ON BOARD THE STEAMER "LOONG SANG," JULY 22 TO 24, 1921

[Captain, Mr. H. Simpson.]

Date and hour.	Position.		Pressure.	Wind.		Remarks.
	Latitude N.	Longitude E.		Direction.	Force.	
July 22:	° ' / ° ' /		mm.		0-12	
5 p. m. -----	Waglan		749.54	WSW	1	Easterly swell.
8 p. m. -----	21 48	114 40	50.56	SE	3	Do.
Midnight. -----	21 15	115 00	49.79	NE	5	Swell increasing.
July 23:						
1 a. m. -----			49.29	NE	7	Swell increasing.
4 a. m. -----	20 40	115 15	46.49	N	7	Typhoon traveling west according Algue's barocyclonometer.
5 a. m. -----			45.78	N	8	Set in rain showers.
7:30 a. m. -----	20 00	115 30	44.21	N	9	Heavy rain and wind squalls.
9 a. m. -----			43.44	N by W	9	E by N swell and high sea from N.
10 a. m. -----			41.16	NNW	10	ENE swell and high sea from N.
11 a. m. -----			40.40	NNW	10	ENE swell and high sea from N. Typhoon direction W by S.
Noon. -----	19 12	115 30	39.13	NW by N	10	Very heavy rain squalls.
2 p. m. -----			36.08	N by W	11	Very confused cross seas.
4 p. m. -----	18 50	115 40	35.57	WSW	11	Lost NE swell. Terrific squalls.
6 p. m. -----			37.86	SW	11	Sea more regular.
7 p. m. -----			39.89	SW	11	Squalls decreasing in force and number.
8 p. m. -----	18 30	116 05	41.67	SW	11	
9 p. m. -----			44.21	SW by W	10	Weather improving.
10 p. m. -----			46.75	SW by W	7	Do.
July 24:						
6 a. m. -----	17 30	117 10	49.29	SSW	4	
10 a. m. -----			52.08	SSW	4-5	

When the typhoon was in about 115° longitude E, and between 19° and 20° latitude N, it began to move WNW, thus reaching the China north of Hainan during the night of July 24.

Other depressions or typhoons of less importance.—On the 9th a depression or typhoon appeared to the south of the Bonin Islands near 142° longitude E and 24° latitude N. It moved WNW until the 11th when it inclined northward to the east of the northern Loochoos. The center traversed the southwestern part of Japan on the 13th moving N.

Another depression or typhoon was shown by our Weather Maps on the 18th to 20th near the northern part of the Ladrone Islands in about 147° longitude E and 17° or 18° latitude N. It moved first northward, and then inclined westward on the 22nd near the Bonin Islands, filling up probably on the 23rd.

On the 21st to 22nd another depression or typhoon was noticed over 300 miles west of the Ladrone Islands; it moved northeastward between the Ladrones and the Bonins.

The Batan Islands typhoon, of which we have spoken above, left behind it a low-pressure area, which extended from the China Sea to the Pacific across northern Luzon from the 24th to the 26th. Finally, on the 27th a depression or typhoon was formed over the China Sea to the west of central Luzon, not far from 115° longitude E and 16° latitude N. It moved W by N until the 29th, when it probably filled up south of Hainan.

Whirlwind or very small typhoon near the coast of Indochina: July 16.—Thanks to the courtesy of the Chief of the U. S. Weather Bureau we are in possession of weather observations made on board the steamer *Anamba* in the China Sea on July 15 to 17. The captain reports a typhoon in latitude 15° 33' N and 110° 33' longitude E on July 16. The wind veered from N and NNE to ESE, SE, SSE, and SSW; and its force increased from 6 at 9 p. m. of the 15th to 11 at 4 a. m. of the 16th. The steamer *Euryalus* about 120 miles to the north of the *Anamba* reported a steady barometer with light to moderate winds from ENE; and as the typhoon, although less than 100 miles east of Indo-China, was not

shown by the observations made along the Indo-China coast, it follows that the body of the storm was of very small diameter. It was evidently a short-lived typhoon, and its track is very uncertain.

The observations made on board the steamer *Anamba* are given in the following table:

WEATHER AND BAROMETER RECORD OF TYPHOON EXPERIENCED BY STEAMER "ANAMBA" JULY 15 TO 16, 1921

[Captain, Mr. W. Fretwell]

Date and hour.	Position.		Pressure. mm.	Wind.		Clouds.			Sea.		Remarks.
	Latitude north.	Longitude east.		Dirac-tion.	Force.	Form.	Dirac-tion.	Wea-ther.	State.	Dirac-tion.	
July 15:	o / "	o / "			0-12						
4 p. m.			757.67	Var	1	Ci.-S. Cu.-N.	NE	ocqr	Moderate	SE	Friday 15th, light S'y to ENE winds, fine and clear weather till 2 p. m. when weather came in dull and overcast with heavy rain squalls and light variable airs and heavy SE swell to time of observations. 10 p. m., wind backed to NNE and increased to force 8 with fierce rain squalls and rough NE sea and threatening sky.
7.22 p. m. <sup>1</sup>	15 46 00	110 25 30	58.18	ENE	3	Ci.-S. Cu.-N.	ESE	ocqr	Moderate	SE	
8 p. m.			58.43	Var	3	Ci.-S. Cu.-N.	NNE	ocqr	Moderate	SE	
9 p. m.			57.41	NE	6	Ci.-S. Cu.-N.	NNE	ocqr	Moderate	SE	
10 p. m.			57.16	N	8	Ci.-S. Cu.-N.	NE	ocqr	Rough	NNE	
11 p. m.			57.16	NNE	8	Ci.-S. Cu.-N.	ENE	ocqr	Rough	NNE	
Midnight			56.65	NNE	9	Ci.-S. Cu.-N.	ENE	ocqr	Rough	NNE	
July 16:											
1 a. m.			54.87	NNE	9	Ci.-S. Cu.-N.	ENE	ocqr	Rough	NE	Saturday 16th, heavy typhoon force 11 with high rough sea and fierce rain and wind squalls. Overcast and gloomy sky till 4.30 a. m. when barometer stood at 746.75 mm. and wind veered from NE to ESE, and rough sea. 5.30 a. m., barometer rising and squalls less frequent and weather clearer. 8.30 a. m., wind SSW force 7 high sea, fine and clear weather: moderating. Noon wind SW force 6 and rough SSW sea. 4 p. m., wind SW force 6, fine and clear. 7 p. m., wind SW force 5, fine and clear weather.
2 a. m.			51.83	NNE	10	Ci.-S. Cu.-N.	ENE	ocqr	Rough	NE	
3 a. m.			50.81	NE	10	Ci.-S. Cu.-N.	ENE	ocqr	Very high	ENE	
4 a. m.			48.27	NE	11	Ci.-S. Cu.-N.	ENE	ocqr	Very high	ENE	
4.30 a. m.			46.75	NE	11	Ci.-S. Cu.-N.	E	ocqr	Very high	ENE	
5 a. m.			48.02	ESE	11	Ci.-S. Cu.-N.	E	ocqr	Very high	ENE	
6 a. m.			48.02	SE	10	Ci.-S. Cu.-N.	SE	ocql	Very high	ESE	
7 a. m.			50.05	SSE	10	Ci.-S. Cu.-N.	S	bcq	High	SSE	
8 a. m.			52.08	SSW	8	Ci.-S. Cu.	SSW	bcq	High	SSW	
9 a. m.			54.87	swbys	7	Ci.-S. Fr.-Cu.	SW	bc	Rather rough	SSW	
7.21 p. m. <sup>1</sup>	14 35 15	110 22 00	57.16	SW	5	Ci.-S. Fr.-Cu.	WSW	bc			

<sup>1</sup> Greenwich mean noon.

N. B.—On the 16th at 1.36 a. m., engines put half speed and hove to. Approximate set and drift of the vessel in typhoon about N 29° E 44 miles.

## NOTAS GENERALES DEL TIEMPO

**Presión y temperatura.**—La presión atmosférica media de este mes en Filipinas es, sin excepción, más alta que la del año pasado, especialmente en Luzón; pero comparada con la normal de julio es casi idéntica a ella en Visayas y Mindanao, y ligeramente mayor en Luzón. Las presiones más altas se observaron el 29; y las más bajas el 21 y 22, cuando un tifón intenso pasaba a través de las islas Batanes por entre Luzón y Formosa.

La temperatura media mensual apenas se diferencia de la normal de este mes en todo el Archipiélago. Las temperaturas máxima y mínima absolutas de Manila fueron 33.7° C. y 22.0° C., observadas los días 30 y 4, respectivamente. Las temperaturas extremas de Baguio fueron 24.6° C., 14.2° C. en la cumbre del Mirador, y 26.3° C., 13.6° C. en la llanura cerca del *City Hall*.

**Precipitación acuosa.**—La cantidad total de lluvia de este mes es considerablemente inferior a la de julio de 1920, y a la normal de este mes en el N de Luzón, al paso que una gran mayoría de nuestras estaciones en el S de Luzón, en Visayas y Mindanao han acumulado un total de lluvia superior, tanto a la lluvia mensual de julio del año pasado, como a la normal de este mes. En Manila cayeron durante el mes 432.7 mm. de agua, y en Baguio 568.9 mm., diferenciándose estas cantidades de sus respectivas normales en +16.4 mm. y —518.2 mm.

## DEPRESIONES Y TIFONES

En nuestros mapas del tiempo se han echado de ver durante el mes dos tifones bien desarrollados en Filipinas, uno en Japón, una depresión o tifón en el Mar de China al W de Luzón, y dos o tres más en el Pacífico muy lejos de Filipinas. Las trayectorias de todas estas depresiones y tifones del mes de julio pueden verse en la Lámina III.

**El tifón de Manila del 4 de julio.**—Las observaciones de Guam y Yap apenas indicaron este tifón. Solamente con alguna probabilidad, basada en los vientos que dominaron en Yap el 1.º de julio, podemos suponer que el tifón estuvo formándose en dicho día cerca de 12° ó 13° latitud N y de 132° ó 133° longitud E. Parece, sin embargo, cierto que no se formó al E del meridiano 135, sino algo al W del mismo meridiano. En otras palabras, este tifón pertenece al tipo de aquellos que se forman más cerca de las Filipinas que de las Islas Marianas. Como el diámetro del tifón era algo pequeño, su existencia no se pudo notar en nuestros mapas del tiempo hasta la mañana del 3 de julio, cuando el Observatorio de Manila envió los primeros avisos. La posición aproximada del centro a las 6 a. m. del día 3 era entre 125° y 126° longitud E, y entre 14° y 15° latitud N.

En la tabla que publicamos en el texto inglés damos algunas de las observaciones hechas en Manila durante el paso de este tifón. El centro pasó a pocas millas por el N de la Ciudad, moviéndose casi directamente al W, a la 1.45 p. m. del 4 de julio, cuando tuvo lugar la mínima barométrica 745.50 mm. Soplaron vientos violentos y huracanados del NW, rolando al SW y S, por unas seis horas (de 11 a. m. a 5 p. m.) causando bastantes destrozos. Las máximas velocidades del viento en las rachas más violentas fueron 75 y 63 millas por hora, registradas a la 1.28 p. m. y 1.53 p. m., respectivamente. No se observó calma vortical en Manila: pero en los pueblos situados de 5 a 25 millas al N de la Ciudad se registraron calmas relativas que duraron desde 20 minutos hasta una hora. Las provincias que más sufrieron las consecuencias del baguio fueron las de Rizal, Bulacán, Pampanga y Bataan. El centro del temporal atravesó la provincia de Tayabas, cerca de Polillo e Infanta, la parte N de la provincia de Rizal, la parte S de las provincias de Bulacán, Pampanga y Zambales, y la parte N de la provincia de Bataán. La velocidad del baguio mientras cruzaba el Archipiélago era de 8 millas por hora.

El tifón una vez en el Mar de China aumentó en velocidad y se inclinó al NW. Pasó cerca de Paracels en la madrugada del día 6, atravesó la parte septentrional de Hainán durante la noche del 6 al 7, y penetró en Tonking la tarde del día 7.

En el texto inglés publicamos algunas de las observaciones hechas a bordo del vapor *Phorus* los días 4 y 5 de julio. El barco se hallaba cerca del centro, por el N, la madrugada del 5 de julio.

El tifón de Batanes: 21 y 22 de julio.—Fué este tifón uno de los más intensos que se han observado en las islas Batanes; y la trayectoria seguida por el baguio es una confirmación de la posibilidad de tifones moviéndose al WSW (véase esta trayectoria en la Lámina III).

El tifón se formó aparentemente el 14 de julio entre  $11^{\circ}$  y  $12^{\circ}$  latitud N, y entre  $132^{\circ}$  y  $133^{\circ}$  longitud E. Se movió primero lentamente al W y WNW; pero el día 16 se inclinó al NW y NNW cuando el centro se hallaba entre los meridianos 130 y 127, y los paralelos 12 y 14. Después de haberse movido casi directamente al N los días 17 y 18, permaneció casi estacionario los días 19 y 20, con una velocidad de menos de 3 millas por hora el 19, y de menos de 2 millas por hora el 20. El centro se hallaba entonces entre  $126^{\circ}$  y  $125^{\circ}$  longitud E y entre  $19^{\circ}$  y  $21^{\circ}$  latitud N. Mientras el tifón se movía así tan despacio se inclinó de nuevo al W.

El día 21, cuando el centro se hallaba al  $E\frac{1}{4}NE$  de Basco (Islas Batanes) cerca de  $21^{\circ}$  latitud N y entre  $124^{\circ}$  y  $125^{\circ}$  longitud E, comenzó a moverse el tifón al  $W\frac{1}{4}SW$  en dirección a las islas Batanes. Las observaciones tomadas por nuestro observador de Basco son por demás interesantes, y van incluídas en el texto inglés.

Nuestros lectores podrán ver en la Lámina III la curva barográfica obtenida en Basco. La mínima barométrica fué 707.3 mm., a pesar de que el verdadero centro no pasó por el mismo Basco, donde no se observó calma vortical, sino algunas millas al sur, donde, según narración de un testigo residente por muchos años en las islas Batanes, se observó la calma vortical por una media hora. Nuestro observador de Basco, envió el siguiente report acerca de la intensidad y efectos de este tifón:

“Este tifón fué muy destructor. Los edificios más afectados fueron los del Gobierno Insular. Fué echada al suelo la estación radiográfica con su torre y cuatro casas. La Escuela Elemental de Basco y la Escuela Superior fueron asimismo destrozadas, así como también, aunque parcialmente la Casa-Gobierno, la cárcel provincial, el mercado público, el convento y la iglesia.

“Nuestra Oficina ha perdido por el baguio la veleta que acababa de instalarse.

“Muchos decían que rara vez habían experimentado un tifón semejante. Comparándolo con el tifón de agosto de 1911, decían que éste había sido muy fuerte, mucho más fuerte que el de este año de 1921; pero debido a la duración de este último, lo consideraban como de doble intensidad.”

El vapor *Naugus* estuvo casi en el centro de este tifón en el Mar de China el 23 de julio. En el texto inglés publicamos las observaciones muy completas e interesantes hechas a bordo del mismo. La mínima barométrica fué 714.49 mm. y se registró a las 8 y 9 a. m. del 23. La posición de *Naugus* a mediodía del 22 era  $21^{\circ} 30'$  latitud N y  $118^{\circ} 54'$  longitud E; y a mediodía del 23,  $18^{\circ} 59'$  latitud N y  $116^{\circ} 44'$  longitud E. Los vientos soplaron con fuerza huracanada del  $N\frac{1}{4}NE$  rolando al NE desde las 2 p. m. del 22 hasta 11 a. m. del 23. Como el barco se hallaba debajo del paralelo 20 al tiempo de la mínima barométrica, y el centro del baguio le pasó muy cerca por el S, se deduce evidentemente que el tifón se había inclinado al WSW desde que pasó por las islas Batanes a las 2 a. m. del día 22.

El vapor *Loong Sang* en su viaje de Hongkong a Manila sintió también la furia de este baguio en el Mar de China, habiéndole bajado el barómetro a 735.57 mm. a las 4 p. m. del 23. Las observaciones hechas a bordo de dicho barco, del 22 al 24 de julio, las incluímos en el texto inglés.

Cuando el tifón estaba en los alrededores de  $115^{\circ}$  longitud E y entre  $19^{\circ}$  y  $20^{\circ}$  latitud N, comenzó a moverse al WNW, llegando a la costa de China, al N de Hainán, durante la noche del 24 de julio.

Otras depresiones o tifones de menos importancia.—El día 9 apareció una depresión o tifón al S de las islas Bonins cerca de  $142^{\circ}$  longitud E y  $24^{\circ}$  latitud N. Se movió al WNW hasta el 11, cuando se inclinó hacia el N al E del N de Loochoos. El centro atravesó la parte SW de Japón el día 13, moviéndose al N.

Nuestros mapas del tiempo indicaron la formación de otra depresión o tifón del 18 al 20, cerca de la parte N de las islas Marianas, en los alrededores de  $147^{\circ}$  longitud E y  $17^{\circ}$  ó  $18^{\circ}$  latitud N. Se movió primero hacia el NW, y luego se inclinó al W el día 22, cuando se hallaba cerca de las islas Bonins, deshaciéndose probablemente el día 23.

Otra depresión o tifón se observó del 21 al 22 a más de 300 millas al W de las islas Marianas. Se movió hacia el NE entre Marianas y Bonins.

El tifón de las islas Batanes, del cual hemos hablado arriba, dejó detrás de sí un área de baja presión que se extendió desde el Mar de China hasta el Pacífico a través del N de Luzón del 24 al 26. Finalmente, el día 27 una depresión o tifón se formó al W del centro de Luzón, no lejos del meridiano 115 y del paralelo 16. Se movió al  $W\frac{1}{4}NW$  hasta el día 29, cuando se deshizo probablemente al S de Hainán.

Un remolino o tifón muy pequeño cerca de la costa de Indo-China: julio 16.—Gracias a la amabilidad del jefe del "Weather Bureau" de los Estados Unidos, poseemos las observaciones meteorológicas hechas del 15 al 17 de julio a bordo del vapor *Anamba* en el Mar de China. El capitán da cuenta de haberse encontrado con un tifón en los  $15^{\circ} 33'$  latitud N y  $110^{\circ} 33'$  longitud E, el 16 de julio. Los vientos rolaron del N y NNE al ESE, SE, SSE y SSW; y la fuerza de los mismos aumentó de 6 a 11 (Beaufort) desde 9 p. m. del día 15 hasta las 4 a. m. del 16. El vapor *Euryalus*, a unas 120 millas al N del *Anamba*, observó barómetros estacionarios con vientos frescos y bonancibles del ENE. Según esto, y como además no dieron indicios del tifón las observaciones hechas a lo largo de la costa de Indo-China, a pesar de hallarse el centro a menos de 100 millas de la costa, se deduce que todo el cuerpo del tifón hubo de ser de diámetro muy pequeño. Duró muy poco tiempo, y su trayectoria es muy incierta.

Las observaciones hechas a bordo del vapor *Anamba* las damos en el texto inglés.

METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY

[φ=14° 34' 41" N; λ=120° 58' 33" E; borometer above sea, 14.2 meters; gravity correction not applied, -1.72 mm.]

Day.	Pressure (mean).		Air temperature. <sup>b</sup>			Underground temperature.				Relative humidity (mean).	Vapor pressure (mean).	Radiation.		Evaporation. <sup>b</sup>			
			Mean.	Maximum.	Minimum.	0.25 meter.		0.50 meter.				1.50 meters.	2.50 meters.	Minimum on grass.	Maximum in sun. Black bulb in vacuo.	Free exposure (total).	Shelter (total).
						8 a. m.	2 p. m.	8 a. m.	2 p. m.			8 a. m.	8 a. m.				
1	757.29	27.8	32.3	24.6	30.4	31.5	30.7	31	30.3	29.6	79.7	22	23.1	66.6	3.7	2.7	
2	58.15	27.4	32.8	23.8	30.4	31.7	30.8	31	30.4	29.6	80.5	21.7	22.4	62	3.4	2.6	
3	57.10	26.1	31.6	23.4	29.7	31	30.6	30.8	30.3	29.5	85.1	21.3	22.1	59.8	1.7	1.5	
4	52.95	24.2	26.2	22	29	27.3	30.4	29.3	29.9	29	92.9	20.8	23.1	62.6	0	4	
5	57.61	25.9	30.7	22.7	25.6	27.3	27.5	27.8	28.9	29.3	85	21	22	62.4	1.7	1.4	
6	58.38	25.8	31.2	23.4	26.8	28	27.9	28.1	29.7	29.5	88.7	21.8	22.1	61.2	1	1.1	
7	58.45	26.2	32	23.5	27.5	28.8	28.3	28.5	30	29.6	87.8	22.1	22.2	68.4	2.9	1.6	
8	58.30	25.7	31.4	23.1	28.2	28.4	28.6	28.6	29.8	29.6	87.6	21.4	21.5	64.5	1.2	1.1	
9	58.22	25.7	30.2	23	27.6	28.5	28.6	28.7	29.7	29.5	88.5	21.7	21.4	54.9	1.4	1.1	
10	58.25	27.2	32.9	23.5	27.9	29.5	29.7	29	29.7	29.5	83.9	22.4	22.1	62.3	2.8	2.3	
11	58.56	27.3	32.4	23.3	28.8	30	29.2	29.3	29.7	29.6	81.5	21.8	21.3	64.4	2.6	2	
12	58.76	27.4	32.4	23.4	28.5	30	29.3	29.5	29.7	29.5	79.8	21.4	21.7	63.6	3.4	2.7	
13	58.65	27.5	33.1	23.2	29	30.6	29.5	29.7	29.7	29.5	75.9	20.4	21.3	62.3	4.2	3.3	
14	58.50	27	32.4	23.1	29.5	30.7	29.7	29.8	29.7	29.5	80.7	21.3	21.2	66.4	2.8	2.1	
15	58.05	27.6	33.2	23.1	29.4	30.7	29.8	30	29.7	29.6	77.1	21	21.3	59.8	3.7	2	
16	57.93	26.6	31.8	24.2	29.5	30.5	30	30	29.8	29.6	86.4	22.2	23.1	61.3	2.2	1.5	
17	56.97	26.8	31.1	23.6	29.3	30	29.8	29.9	29.7	29.6	84.6	22	22.5	62.4	2.4	1.7	
18	56.11	26.7	32	23.1	29.5	30.5	29.8	30	29.8	29.5	85.5	22.2	21.7	64	2.4	1.8	
19	55.15	26.8	30.7	23.4	28.8	30.1	29.7	29.9	29.7	29.5	83.4	21.7	23	64.7	2.9	2	
20	53.39	27	32.3	23.5	29.3	30.7	29.8	30.1	29.7	29.5	83.3	21.9	22.7	67	3.5	2.6	
21	52.39	27.7	31.3	24.6	29.7	31	29.9	30.2	29.7	29.5	79.7	21.9	23.6	66.5	5.3	3.6	
22	51.70	28.1	31	25.1	29.3	31.2	29.9	30	29.7	29.4	82	23.2	23.2	62.4	2.8	2.5	
23	53.76	26.6	30	24.7	29	29.3	29.8	29.8	29.7	29.4	87.4	22.6	23.1	57.2	1.7	1	
24	55.64	26.6	30.4	24.7	28.4	29.2	29.5	29.5	29.7	29.5	87.2	22.5	23.6	60.3	1.3	1.5	
25	57.06	27.3	31.7	25	28.6	30	29.3	29.6	29.7	29.4	85.6	22.9	24.3	60.4	2.9	2.5	
26	57	26.9	31.2	24.6	28.7	30	29.4	29.7	29.7	29.4	84.5	22.1	23.8	60.8	2.7	1.9	
27	56.01	27.3	33.5	23.6	29	30.6	29.5	29.8	29.7	29.4	83.8	22.3	22	67.1	2.8	2	
28	58.17	28	32.6	24.5	29.5	31	29.8	30	29.7	29.4	80.7	22.4	22.8	65.5	3.8	2.7	
29	60.18	27.9	33.6	24.2	29.6	31.3	30	30.3	29.8	29.5	82.8	22.8	22.7	62.8	3	2.5	
30	59.95	28.2	33.7	23.9	29.5	31.2	30.2	30.5	29.7	29.4	76.6	21.4	22	60.7	4.5	3.5	
31	59.63	28.2	33.5	23	29.8	31.1	30.3	30.6	29.7	29.4	76.1	21.3	20.8	61	4.7	3.3	
Mean Total	757.04	27	31.8	23.7	28.9	30.1	29.6	29.7	29.8	29.5	83.4	21.9	22.4	62.8	2.8	2.1	
Departure from normal	-0.11	0	+0.8	0							-1.6	-0.5		+12.1		64.5	

Day.	Wind.				Amount (mean).	Clouds.		Sunshine.	Rain, 24 hours beginning 6 a. m.		Miscellaneous.
	Prevailing direction.	Total movement.	Maximum hourly velocity.	Direction at the time of the maximum velocity.		Form and direction.			On the tower.	In the park.	
						Upper.	Lower.				
						Km.	Km.				
1	WSW	299	34	WbyS	0-10	Cl-S.	Cu. WSW	4	40		
2	SW	222.5	25	WSW	8.7	Cl.	Cu.-N. sw, s	7	00	15.5	15.5
3	WNW	223.5	23	WSW	7.6	Cl.	Cu.-N. NNW	4	30	55.9	57.2
4	SE	922	83	WNW	8.6	Cl.-S.	N. NNW	0	00	180.2	213.8
5	SE	234	16	SEbyE	10	Cl.-S.	N. S	0	00	1.1	1.3
6	SE	71	11	N	9.8	Cl.-S.	Cu.-N. E	0	30	7.4	7.5
7	WNW	101	17	NNW	8.2	A.-Cu. NW	Cu. E	2	35	21.4	23
8	SE	124	15		6.9	Cl. s, sebys	Cu. E	4	45	8.7	9.9
9	SE	77	8	NNE, NW	9.4	Cl.-S.	Cu., Cu.-N. sss	0	20		
10	NE, NW	124	18	NW	6.2	Cl. NE	Cu., Cu.-N. sss	6	50	1.1	8
11	E quad.	119.5	15	WNW	7.7	Cl. EbyN	Cu. E	5	20	.3	.3
12	E quad.	133.5	17	W	5.2	Cl.	Cu. E	7	40		
13	SE	188	14	SE	6.8	Cl.	Cu. E	6	50		
14	E	110	14	WNW	6.6	Cl.-S.	Cu. E	6	15	.4	.6
15	NE	189	16	W	4.1	Cl.	Cu. ENE	8	05	10.4	11.4
16	E quad.	169	25	W	7.9	Cl. NE, ENE	Cu. NNW	4	35	9.7	10.7
17	w quad.	147	14	WSW	9.1	Cl.-S.	Cu. NW	0	45	7.6	7.9
18	sw, wsw	205.5	19	SW	8.7	A.-Cu. EbyN	Cu.-N. nw, w	3	40	31.2	34.3
19	sw quad.	234.5	20	WSW	8	Cl.-S.	Cu. WSW	3	25	4.6	4.2
20	WSW	206	25	WSW	8.3	Cl.-S. ENE	Cu.-N. nw, wsw	4	50	2	2
21	WSW	485	39	SW	8.9	Cl.-S.	Cu., Cu.-N. wsw	3	30	.1	.1
22	WSW	863	59	WSW	9.9	Cl.-S.	Cu.-N. wsw	1	30	15.8	17.5
23	SW	400	33	SW	9.6	Cl.-S.	N. sw, wsw	0	50	30.9	33.3
24	SSW	370	42	WSW	9.8	Cl.-S.	N., Cu. sw	1	55	12.2	12.6
25	WSW	337	34	WSW	9.1	A.-Cu. NNE	Cu., Cu.-N. SW	1	05	12.4	13.7
26	sw quad.	274	26	SW	8.5	Cl.-S. NNW	Cu. SW	1	30		
27	SE	118	15	SE	5.6	Cl. SEbyE	Cu. SE, SSE	5	15		
28	WSW	179	20	WSW	4.6	Cl.	Cu. SE, SSE	10	00	.8	1
29	E	124	12.5	WSW	3.8	Cl.	Cu. NE quad.	9	30	2.5	2.6
30	E	162	16	WSW	2.9	Cl.	Cu. E	10	40	.5	.5
31	E	181.5	16	WNW	3.8	Cl.	Cu. E	10	35		
Mean Total		245	23.9		7.6			4	29	138	55
Departure from normal		-812.7			-0.3			-1	11	+16.4	

\* All the mean values given in this table are deduced from hourly observations.  
 \* These values are taken from instruments mounted in the Observatory Park, 1.5 meters above ground.

METEOROLOGICAL DATA FOR MIRADOR OBSERVATORY, BAGUIO\*

[ $\phi=16^{\circ} 25' N$ ;  $\lambda=120^{\circ} 36' E$ ; barometer above sea, 1,512.5 meters; gravity correction not applied, -1.65 mm.]

Day.	Pressure (mean). <sup>b</sup>	Air temperature at Mirador (on the top of the mountain).				Air temperature in the plateau near the City Hall.				Relative humidity (mean). <sup>c</sup>	Vapor pressure (mean). <sup>c</sup>	Radiation.		Evaporation.		
		Mean.	Maximum.	Hour.	Minimum.	Hour.	Maximum.	Hour.	Minimum.			Hour.	Minimum on grass.	Maximum in sun. Black bulb in vacuo. <sup>e</sup>	Free exposure (total).	Shelter (total).
	mm.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	Per cent.	mm.	°C.	°C.	mm.	mm.	
1	635.81	18.2	21.8	1.30p	16.3	3.00a	23.4	10.35a	16	1.50a	90.2	13.9	16.2	54.5	1.1	0.8
2	35.96	18.4	21.8	1.20p	15.6	4.45a	24.1	10.15a	15.1	4.40a	91.8	14.4	14.5	52.3	1.3	.7
3	35.47	17.7	22	0.55p	15.5	2.40a	22.9	1.00p	14.9	4.50a	90.8	13.7	15.2	53.5	1.2	.8
4	32.78	17.4	20.7	1.00p	15.1	11.15p	22.8	2.00p	15.2	12 m.n.	86.5	12.7	15.2	53.1	3.2	2.2
5	34.66	15.8	17.9	4.15p	14.2	5.55a	19.4	3.55p	14.6	6.00a	91.2	12.2	14.2	30	3.9	1.4
6	36.20	18	23.2	1.15p	15.5	5.30a	25	3.15p	15	5.05a	81	12.3	14.4	57.6	8.9	4
7	36.60	18.9	23.8	9.40a	15.3	8.10p	24.8	2.40p	15.3	11.00p	77.7	12.4	15.5	57.3	4.4	2.1
8	36.55	19.2	24.2	10.00a	16.3	4.00a	25.3	10.15a	15	5.10a	82	13.5	14.7	64.3	3.1	1.5
9	36.18	18.6	24.1	0.40p	15.7	4.35a	24.9	3.00p	14.7	5.05a	80	12.6	14	55	6.5	2.8
10	36.58	19	23.6	1.50p	15.7	4.40a	25.6	1.10p	15.6	5.00a	85.3	13.9	14.7	57.1	3.5	1.6
11	36.82	19.2	24.1	1.15p	15.6	4.15a	25	1.40p	14.6	5.50a	90.8	15	14.5	58.8	2.1	1
12	37.01	18.5	23.4	1.30p	16.1	5.55a	24.6	1.30p	15	5.00a	91.5	14.5	14.5	58.5	2.4	1.4
13	36.81	19.3	24.6	0.30p	16.2	5.55a	25.7	2.50p	14.9	6.00a	84.8	14	14.4	59.3	3.3	1.8
14	36.49	18.4	23.1	2.05p	15.5	4.15a	24.6	2.00p	14.6	5.25a	87.8	13.8	13.8	59	2.1	1.1
15	36.26	18.7	23.7	2.10p	14.7	5.55a	25	1.00p	13.6	5.00a	86.8	14	13	57.9	1.8	1
16	36.19	18.2	22.8	2.45p	15.8	5.55a	24.6	1.45p	15.3	5.35a	91.3	14.2	14	56.6	1.5	.7
17	35.23	18.4	21.9	11.55a	15.7	4.00a	23.3	11.40a	15.5	4.50a	93.7	14.7	14.8	52.7	.9	.8
18	34.31	18.3	21.5	10.20a	16.4	10.20p	23	0.35p	16.4	11.10p	93.5	14.6	14.7	53.2	.6	.4
19	33.40	18.2	22.6	0.10p	15.8	4.25a	23.2	1.50p	14.9	5.35a	92.8	14.4	14.8	61.1	1.6	1.1
20	31.91	17.5	22.4	1.00p	15.2	5.55a	23.4	1.40p	15	5.30a	95.8	14.2	14.3	56	1.1	.4
21	30.84	17.3	18.8	Noon	16	5.55a	19.9	0.30p	16.4	5.50a	97.5	14.4	15.5	43.5	0	0
22	29.11	17	18.2	1.10p	16	4.00a	19.3	0.30p	16.4	3.00a	99.2	14.3	16.2	36.8	0	0
23	31.76	17.4	19.3	11.10a	16.3	5.15a	20.5	3.15p	16.4	2.40a	91.5	13.5	15.7	45.5	.8	.5
24	33.48	17.8	20.2	1.30p	16.4	4.25a	21.6	1.00p	16.2	4.30a	97.5	14.8	15.4	45.5	.2	.1
25	35.04	18.3	22.5	11.30a	16.7	1.05a	23.9	11.55a	16.9	5.05a	95.5	15	16.4	60.8	.8	.5
26	34.85	18	21.1	10.45a	16.4	5.30a	23	11.00a	16.2	5.00a	97.8	15.1	15.4	45.3	.4	.2
27	34.23	19.3	23.9	2.45p	16.8	6.35a	25.2	0.20p	17	4.00a	87.7	14.5	16.6	55.3	3.4	1.5
28	36.25	19.7	23.8	3.25p	16.2	4.15a	25.3	0.45p	16.1	4.30a	84.5	14.4	15.5	55.8	4.3	2
29	38.41	19.3	23.8	1.00p	16.6	5.30a	26.3	11.20a	16.4	4.15a	92.7	15.4	15.5	58.9	2.3	1
30	38.26	19.9	24.3	0.45p	16.7	5.55a	25.6	15.9	15.9	-----	87.3	15.2	15.3	59.5	2.7	1.4
31	37.93	19.3	24.6	1.45p	16	3.00a	25.5	1.50p	15.1	6.05a	91.8	15.2	14.6	58.2	2	1.1
Mean	635.19	18.4	22.4	-----	15.9	-----	23.8	-----	15.5	-----	89.9	14.1	15	53.6	2.3	1.2
Total	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	71.4	35.9

Day.	Wind.				Amount (mean). <sup>c</sup>	Clouds.		Sunshine.	Rain, 24 hours beginning 6 a. m.	Miscellaneous.
	Prevailing direction. <sup>d</sup>	Total movement.	Maximum hourly velocity.	Direction at the time of the maximum velocity.		Form and direction.	Upper.			
		Km.	Km.		0-10.			h. m.	mm.	
1	W	297.1	29	SW	7.7	Ci.	Cu.-N. SW	1 50	2.5	●≡≡ p.
2	W quad.	211.1	24.6	W	6.9	Ci.	Cu.-N. SE	2 55	32.5	○ a. p. ●≡≡ p.
3	NW quad.	233	21.7	NW	8.3	Ci.	Cu.-N. WNW, NNW	2 05	10	≡≡ a. p. <≡≡ p.
4	E	872.1	72.1	E	9	Ci.-S.	Cu.-N. E	0 35	8.7	√ a. p.
5	E	1,018.2	67.6	E	9.4	Ci.-S.	Fr.-N. SE	0 00	1	√ a. d <sup>2</sup> p.
6	E	470.1	39.4?	E	8.1	A.-Cu.	Cu. ESE	3 45	.5	d <sup>2</sup> p.
7	E, W	233.4	23 ?	N	8.1	A.-Cu.	Fr.-N. WSW	3 35	44.2	● p.
8	E, W	270.7	17.7	W, S	5.4	Ci.	Cu.-N. E	3 45	16.8	≡≡ a. p.
9	E	306.7	26.8	E	8	Ci.-S.	Cu.-N. S	3 20	1.3	≡≡ a. p. <≡≡ d p.
10	E	364.3	29.5	E	6.7	Ci.-S.	Cu.-N. SE	0 15?	-----	d <sup>2</sup> a. p.
11	E	262.2	16.9	W	5.7	Ci.	Cu.-N. NNE	4 25	7.9	Ω <sup>2</sup> ≡≡ a. p.
12	E, W	272.9	21.2	W	5.3	Ci.	Cu.-N. SEquad.	5 05	21.1	● p.
13	E	319.3	20.9	E	5.1	Ci.	Cu. SW	5 50	4.3	<≡≡ a. p.
14	E, W	294.1	22.7	W	5.6	Ci., Ci.-S.	Cu.-N. SE	3 50	7.6	● p. <≡≡ a. p.
15	W quad.	207.2	19.1	SW	5.6	Ci.	Cu.-N. SW, S	6 05	9.2	<≡≡ a. p. <≡≡ p.
16	W, N	256.4	24.9	W	6.6	Ci.	Cu. ENE, NE	3 15	4.6	d <sup>2</sup> a. p. <≡≡ a. p.
17	W	-----	-----	-----	8.6	Ci.-S.	Cu. NNE	2 55	7.6	d a. p. <≡≡ a. p.
18	E, W	-----	-----	-----	8.7	Ci., Ci.-S.	Cu.-N. WNW	1 15	12.7	d <sup>2</sup> a. p. <≡≡ a. p.
19	NW quad.	266	20.9	W	7.4	Ci.	Cu.-N. n, wnw	2 30	.5	≡≡ a. p. d <sup>2</sup> p.
20	W, NW	375.8	21.4	NW	7.9	Ci., Ci.-S.	Cu.-N. WNW	1 45	16.7	Ω a. p.
21	W	671.5	48.3	W	9.6	Ci.-S.	N. WNW	0 00	68.3	≡≡ d <sup>2</sup> a. p. <≡≡ p.
22	SW	1,512.9	86.7	SW	10	-----	N.	0 00	211.9	≡≡ a. p. <≡≡ p.
23	SW	626.8	38.9	SW	9.6	Ci.-S.	Cu.-N. SW	0 00	9.9	√ a. d <sup>2</sup> ≡≡ a. p.
24	W	290	27.4	W	9.9	Ci.-S.	N.	0 00	34.4	≡≡ a. p.
25	SE quad.	209.2	18.8	E	8.4	Ci.	Cu.-N. SSE	1 40	21.8	d a. p. <≡≡ a. p.
26	E, W	230.2	18.2	W	9.1	Ci., Ci.-S.	Cu. S	0 30	8.4	d <sup>2</sup> a. p. <≡≡ a. p.
27	E, SE	373.9	24.3	SE	7.3	Ci.-S., Ci.	Cu.-N. S, SSW	5 45	1	<≡≡ a. p.
28	E	359.4	25.5	E	5.3	Ci.	Cu.-N. SEquad.	7 00	1.3	≡≡ a. p.
29	E, SW	235.7	14.8	SW	7.9	Ci., Ci.-S.	Cu.-N. SW, SE	4 00	.9	≡≡ a. p. <≡≡ p.
30	E quad.	314.5	20.4	W	4.4	Ci.	Cu. E	6 30	.5	≡≡ d p.
31	Variable	248.1	22	W	7	Ci., Ci.-S.	Cu.-N. ENE	5 10	.8	Ω <sup>2</sup> a. p. <≡≡ a. p.
Mean	-----	401.8	29.8	-----	7.5	-----	-----	2 53	-----	-----
Total	-----	-----	-----	-----	-----	-----	-----	89 35	568.9	-----

\* All the mean values given in this table are deduced from six daily observations taken at 2, 6, 10 a. m. and 2, 6, 10 p. m.  
 b The barometric readings of this station are not reduced to sea level.  
 c Maximum of hourly observations taken from 6 a. m. to 6 p. m.  
 d This element is based on hourly observations taken from a quadruple register, which gives only eight possible directions of the wind.  
 ? 5 hours missing.  
 \* 6 hours missing.

## DAILY RAINFALL AT THE STATIONS OF THE WEATHER BUREAU, JULY, 1921

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lapac Agricultural School, Siasi, Sulu †				mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Glan, Cotabato †		15.2		19.8		50.8	8.9	16.8		18.5	15.7					
Jolo, Sulu	3	2.1		3	8.9				5.4						6.3	
Buntung, Koronadal, Cotabato †				5.1	.5	6.9	8.1	.8	4	3.3	18.8	16	2.6		22.6	
Lais, Malita, Davao	12.7	55.1		11.4			5.8			10.2	11.6	5		1	21.6	
Malita, Davao	3.8	48		10.7						5.1	16.5	3.6			7.6	
Lebak, Cotabato		3	6.1	19	6.1	3.8		8.9	10.1	3.8	14.2	2.5	4.6	4.1	1.3	
Basilan Plantation, Kabunbatan, Isabela, Zamboanga †	4.1	30.5	57.1	1.3	3.8		4.6	10.4	1	13	11.7	24.3		2	26.4	
Padada, Santa Cruz, Davao †										2.5	33	2.5				
Basilan Plantation Office, Isabela, Zamboanga †		42.2	25.4	43.5	3.8		17.3	9.9		23.1	8.9	21.9		23.1	47.8	
La Union, Sigaboy, Davao †		30.5		1							25.4		39.1			
Paranglalap, Isabela, Zamboanga †		12.7	7.6	7.6	2.5			4.3		30.5	20.3	22.8	2.5	20.3	50.8	
Latuan, Isabela, Zamboanga †	12.2	10.2	3.8	3.8	4.6			13.2		18.3	17.8	32		19.8	55.9	
Buluang, Cotabato †	12.7	22.9	17.8					33		11.4	11.4	11.4			17.8	
Malamaui, Isabela, Zamboanga	1.5	24.6	37.3		7.4			27.7	5.1	5.3	16.5	26.2		43.2	58.4	
Pagsilaan Farm School, Mati, Davao †				7.6	2.5					5.1						
Zamboanga, Zamboanga		1.6		10.9	7.1				1	15.8	8.9	2.1			7.2	
Cagayan de Sulu, Sulu †		10.2	33.8	31.2	11.9				1	2.5	2.5	6.4	31.2	11.7	43.9	
Kidapawan, Cotabato †		78		3	25.4				25.4	77.5				3.8	6.4	
Davao, Davao	11.4			6.4	21.8				22.4	19.3	11.4	5.1		6.4		
Piang Agricultural School, Kudarangan, Dulauan, Cotabato †	.5							6.1	6.4	13.7	25.1	2.8	.8		5	
Pikit, Cotabato	2		1.3					29.7	37.1	.5	43.7	5.3	7.1	.8	1.3	
Cotabato Seed Station, Pikit, Cotabato †	2							20.3	21.6	33.5	5.3	6.9		2.5	12.7	
Awang, Cotabato †			13	15.5	3.3				26.9	26.4	26.7		35.6		26.7	
Sirib, Guianga, Davao †										2.3	5.6					
Kabakan, Cotabato †				2.5			48.3	22.9	5.1	15.2	5.1	5.1	5.1	2.5	10.2	
Bual, Dulauan, Cotabato		36.8		29				8.9	6.4	5.3	10.9	3.1		.3	1.8	
Cotabato, Cotabato	.5	2.8	.3	20.8			.3	18	1.3	10.4	35.6	11.4			3	
Mampising, Pantukan, Davao †	6.4	4.1			18.3			5.6	14	22.4	36.8		6.1	15.7	8.4	
Kabasaran, Buldun, Cotabato †							36.3	7.6	20.4	40.6	27.9	30.8	47	40.6	20.3	
Naganaga, Margosatubig, Zamboanga	8.9	16.5						1.8		14	50.8	13.2	21.1	6.3	26.7	
Banisilan, Banisilan, Cotabato †	12.7	10.7	1.3	2	27.5	22.9	25.4	50.8	8.9	1	13.2	26.7	27.7	12.2	24.7	
Malabang, Lanao			8.1	27.4	28.4		24.6	10.7	17	9.7	42.2	6.9	12.4	19.6	52.8	
Compostela, Monkayo, Davao †	41.7	8.1	4.3	5.1				5.6	4.1		12.2	1.3		25.4	4.3	
Malangas, Margosatubig, Zamboanga †	53.9	11.7		11.9		.5	3	10.7		27.2	22.9	17	11.7	7.4	55.4	
Lumbatan, Lanao †		31		2	47	2	20.3	12.7	18.8	6.6	33.1	12.2	6.6		1	
Cateel, Davao			4.1	.8	13.2					20.9	55.9	.8		.8		
Ganasi, Lanao	4.1	1		2.3	3.3	16	5.3	10.4	27.9	12.7	29.8	33.3	66.3	3.1	17.8	
Camp Kalao, Monkayo, Davao									1.3	3.3	2.5	2.8		6.1	7.9	
Managok Agricultural School, Linabo, Malaybalay, Bukidnon	12.7	43.2	20.3	15.2	19	33				8.9	.5	15.2	43.2	3.8	22.4	
Camp Keithley, Dansalan, Lanao	33.5	5.8		18.3	3	.8	2.3	20.6	1.3	5.6	33	22.1	3.6		39.1	
Verueta, Agusan	23.1			.8	3.6		11.1	22.4		4.3	12.2	.8		3.8	5.6	
Sindangan, Zamboanga †	39.1		8.1	29.2	20.6	8.1		11.7	13.5	.8	9.1	16.2			17.5	
Sumilau, Bukidnon	36.3	5.9	33.8				31	71.1	12.7		12.2	22.4	3.3		6.6	
Diklom, Tangkulan, Maluko, Bukidnon †		6.6	7.6	6.4			14	20.8		25.4	16.5	23.4	8.6	3	2.5	
Cagayan, Misamis			16.3	5.3				12.7		12.2	2.5	32.8			12.7	
Talacogon, Agusan		6.4	49.5	6.6	17.8		19.6	27.1	7.6	4.3	35	4.1				
Butuan, Agusan	.5	.5	18.5	3.6	3.8	7.4	5.4	1.8	5.6	4.9	12	20.1	.3	1.3		
Mambajao, Misamis	12.7			10.4			13.5	2.3		37.1	2	53.3			8.4	
Dumaguete, Oriental Negros				4.3			27.2	3.8	.8	4.1	.8	10.7		.8	13.2	
Kolonie, Yap, Western Carolines	2		.3		3.8	2.3	1.3	6.1	10.9	3	3.6	3.3	11.9	44.7	4.3	
Hacienda San Jose, Tanjay, Oriental Negros †							56.6			12.2					32.8	
Hacienda Palanas, Bais, Oriental Negros †						6.6	50.8	22.9		1.8	.8	9.9			12.7	
Hacienda Tamugon, Bais, Oriental Negros †		7.6	8.9		17.8		43.2	27.9	12.7	7.6		17.8				
Tagbilaran, Bohol					.3	2.5	16	9.9		10.5	1.8	22.9		4.3	28.4	
Iwahig Penal Colony, Puerto Princesa, Palawan	2	.8		5.8	3	3	.3		1.3			22.6	2	10.7	17.3	
Dalaguete, Cebu				4.3		.3	35.8	9.1		1	1.3	29			17.8	
Surigao, Surigao			.5	14.2	8.1		3.6	4.1		20.1	33.3	25.2			4.8	
Central Palma, Ilog, Occidental Negros			7.6	29.2				2.5				12.7		12.7		
Hacienda Naval, Himamaylan, Occidental Negros	6.4		45.7	6.9			11.4	21.3	5.8	3.8	2	17.8	3.8	5.6		
Biaong Cui's Farm, Barili, Cebu		.8		33		10.4		3.6	7.1	10.4	23.4	6.4			9.1	
Maasin, Leyte			23.9								9.4			16.2	16.8	
Binalbagan Estate, Binalbagan, Occidental Negros †	13.5		28.7	.3	10.2		.5	13.5	2.5	1.3	2.8	14.3	3.8	5.1	1.8	
Isabela, Occidental Negros	3	.3	28.7	5.1	.5		3	23.6	7.9	4.3	9.9	32.8	7.1	23.4	30.7	
Hacienda Tanolo, Hinigaran, Occidental Negros	12.4		27.7	8.9	9.1		3	6.6	.5		3	29	3.8	15.7	10.9	
Cebu, Cebu	11.2		7.9	13.2				28.7	1.3		4.3	4.8		.5	6.4	
La Castellana, Occidental Negros		.3	82	27.9	6.9		2	7.6	2		.5	10.7		21.3	5.4	
Hacienda Vallehermoso, Vallehermoso, Oriental Negros †								10.2		7.6	3	7.9	2		3.8	
Central Azucarera de La Carlota, La Carlota, Occidental Negros	1	1.8	62.5	.5	1.5		12.5	16.8	.6	.5		6.4	1	3	.3	

† Voluntary or cooperative station.



Daily rainfall at the stations of the Weather Bureau, July, 1921—Continued

Station.	Day of month.															Total
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Lapac Agricultural School, Siasi, Sulu†			10.1													135.6
Glan, Cotabato†		1.3	4.6		7.6	4.6		6.4		4.1			7.6			75
Jolo, Sulu	46.5		46.9											1.3	38.9	227.4
Buntung, Koronadal, Cotabato†	14.7	3.3	5.6	8.6		9.1				.5	1.5					80.4
Lais, Malita, Davao									29.7	3.8	3.3	22.9	4.8		4.3	183.4
Malita, Davao		.3							4.3	.5	4.6	1	14.7			114.4
Lebak, Cotabato	64	53.6	8.1	16.5	6.4	1.8				46	1.5	1.8			37.6	351.4
Basilan Plantation, Kabumbatan, Isabela, Zamboanga†	119.1	55.6	31.8			3.6				35.6	5.6	2.5				461.5
Padada, Santa Cruz, Davao†	45.7		7.6		5.1					27.9			5.1			129.4
Basilan Plantation Office, Isabela, Zamboanga†	109.3	47	37.3			5.1				31.7	4.3					501.6
La Union, Sigaboy, Davao†						70.4			90.7				4.3			351.8
Paranglalap, Isabela, Zamboanga†	55.9	43.2				38.1				55.8	15.2				12.7	402.8
Latuan, Isabela, Zamboanga†	81.2	35	42.7			2				55.6	33.6	18.3				480
Buluang, Cotabato†		10.2	2.5					17.8			6.6	14				189.5
Malamau, Isabela, Zamboanga	93.2	33	56.1			4.3				41.7	27.7	8.6				549.9
Pagsilaan Farm School, Mati, Davao†				2.5					2.5			5.1				25.3
Zamboanga, Zamboanga	56.4	3.1	18.4			4.3			.5	9.9	6.3	6.4			22.4	253.9
Cagayan de Sulu, Sulu†	2.8	5.1	1.5	7.6	7.4		1		.8	.5	32.3	2.3			12	259.6
Kidapauan, Cotabato†	29.5			20.3		2.5			31.7	18		34.8		4.3		360.6
Davao, Davao									13.7	21.1	20.1	5.3	2.5			166.9
Piang Agricultural School, Kudarangan, Dulauan, Cotabato†	10.9	31.5	9.1		4.3	4.6			1.3	11.7	6.3	58.4			2.3	197.6
Pikit, Cotabato	12.5	15.5	7.6	5.3	5.6	6.9			7.4	12.4	4.1	6.6				212.7
Cotabato Seed Station, Pikit, Cotabato†	13.7	6.4														124.9
Awang, Cotabato†	12.7		25.7		50.8	9.1				8.4			17.8			317.1
Sirib, Guianga, Davao†		1.3							1.3	3.9		.8	1	.8		17
Kabakan, Cotabato†	5.1	10.2	2.5	119.4					10.2							277
Bual, Dulauan, Cotabato	17.5	23.4	16.8		6.1	2.8	.8			18.3	13	43.7			1.8	249
Cotabato, Cotabato	57.7	52.3	23.6	8.6	62.2	13.7				8.6	.1	5.6			.3	341.8
Mampising, Pantukan, Davao†							8.1			62.2	4.6		56.9	13.7	23.9	307.2
Kabasaran, Buldun, Cotabato†	29.2	26.7	18.3	55.8	29.2	30.5	49		33.5	11.9	4.3	43.2	41.7			682.9
Naganaga, Margosatubig, Zamboanga	59.2	19.6	50.8		19.1	25.4		18.8	11.2	1	16.3	11.4		27.9		444.7
Banasilan, Banasilan, Cotabato†		1.5	26.2		1.3	22.3	25.9	39.4	34.3	10.2	.5			.5		405.1
Malabang, Lanao	50.8	75.7	73.2	70.4	96.8	14.7	31.5			7.1		32.5			63	823
Compostela, Monkayo, Davao†																112.1
Malangas, Margosatubig, Zamboanga†	22.6	16.3	58.9		36.1	15			2.8	5.6		5.1	2	.8	4.1	410
Lumbatan, Lanao†	8.1	53.1	44.2	56.2	37.4	19	63.9	.5	1.3	76.7	1.3	11.4			7.4	586.7
Cateel, Davao								.8	8.4	10.9	.8		61.5	6.6		185.5
Ganasi, Lanao	11.4	50	32.5	47.8	48.5	7.4	70.1			25.4		7.7		5.1	4.6	551.7
Camp Kalao, Monkayo, Davao	9.7	.8	.5						10.4	8.6	14.3	1.5		12.4		74.2
Managok Agricultural School, Linabo, Malaybalay, Bukidnon	54.6	3						38.1	20.3	3	20.3		.5		.5	400.3
Camp Keithley, Dansalan, Lanao	18	28.2	12.4	3.6	7.4	5.3			5.3	93.2	2.8	7.6	1.3	7.4	6.9	393.2
Veruela, Agusan	20.1	9.7	1.5						9.9	4.3	1.5		29	4.3	11.2	179.2
Sindangan, Zamboanga†	41.4	31	53.4	32.2	19.8	2.3			59.7			16		3	20	452.7
Sumilau, Bukidnon	64	12.7	3.8					4.6				19.3	4.3		12.4	356.4
Diklom, Tangkulan, Maluko, Bukidnon†	35.3	11.7										6.4		2	4.6	201.9
Cagayan, Misamis			6.6	5.8	2	1.8						12.7	.8			29.2
Talacogon, Agusan	59.2	11.7	11.4				4.6		18.8	3.8	2.5		5.1		10.2	305.3
Butuan, Agusan	1.8	.5					3.3					50	6.9	.5		200.3
Mambajao, Misamis	155.4	1.8	7.7	13.5	5	5.3	3.6					4.6		27.7		364.3
Dumaguete, Oriental Negros	4.3	31.2	5.8	15.2	6.7	3.6	3.6		.5			1	.5	24.6	.3	163
Kolonie, Yap, Western Carolines	1		20.6	39.1	.5	3.3	16.8	2.5				12.7	5.7	.3	19.8	220.1
Hacienda San Jose, Tanjay, Oriental Negros†	33.5	39.6	41.9	28.5	54.6	40.4	4.3							30		374.4
Hacienda Palanas, Bais, Oriental Negros†	8.4	34.3	5.6	68.6	85.9	16.5						1		24.1		349.9
Hacienda Tamugon, Bais, Oriental Negros†	35.6	38.1	55.8	50.8	58.4	28	10.2		7.6							428
Tagbilaran, Bohol	124.8	10.5	.3	8.8	6.3	3.6	.5				17.5	15		9.9	1.3	295.1
Iwahig Penal Colony, Puerto Princesa, Palawan	31.3	84.3	32.2	15.5	56.9	1				2.8		10.7				303.5
Dalaguete, Cebu	13.5	6.4	3.3	6.1	15.2	1						11.7	5.3	54.4		215.5
Surigao, Surigao	11.1	8.9	2.3	.5		2.3					1.8	50.8	.5	20.1		212.2
Central Palma, Ilog, Occidental Negros	1.3	60.9	73.2	45.7	48.3	22.9										317
Hacienda Naval, Himamaylan, Occidental Negros	8.4	121.9	66.3	111.8	25.1	4.1	5.1	6.6			12.5	59.7	5.1	16.8		573.9
Biaong Cui's Farm, Barili, Cebu	8.1	5.3	13.2									39.4	15.7			138.1
Maasin, Leyte	76.4		22.9											19	39.1	223.7
Binalbagan Estate, Binalbagan, Occidental Negros†	40.9	63.5	50.8	111	24.9	4.6	5.3	5.3		.5	.5	51.3	3.8	17.8	7.1	485.6
Isabela, Occidental Negros	6.6	69.8	72.1	85.9	44.4	3.8	2.8	3.3		1.8	1.3	73.7	15.2	28	6.4	605.2
Hacienda Tanolo, Hinigaran, Occidental Negros†	16.3	56.1	84.1	84.6	63	3.8	.8	1.3		2.3	1	57.9	2.1	15.2	1	520.1
Cebu, Cebu	39.1	.8	.8	5	1.3	5				14	1.3	3.8	31	36.4		211.1
La Castellana, Occidental Negros	8.6	69.1	69.6	64.3	63.3	5.3	7.4	.3		8.9	3.8	44.2	20.6	8.9		546.6
Hacienda Vallehermoso, Vallehermoso, Oriental Negros†			16.3	15.2	19	9.7	3			10.4		8.6	7.9	20.3		144.9
Central Azucarera de La Carlota, La Carlota, Occidental Negros	25.1	72.6	48.5	55.9	59.4	22.9	8.6	2.5		6.9	.5	104.1	5.3	11.7	.8	538.2

† Voluntary or cooperative station.

Daily rainfall at the stations of the Weather Bureau, July, 1921—Continued

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hacienda Canlaon, La Castellana, Occidental Negros	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
La Carlota Experimental Station, La Carlota, Occidental Negros†	1.8	38.1	7.6	11.4	26.2	22.3	66	46.7	128.8	46.8					13.5	
Mao Sugar Central, Santa Cecilia, Bago, Occidental Negros	1.5	54.6	18.3				20.1	29.4	.5	2.5	20.1		5.3	4.6	17.5	
Valladolid, Occidental Negros	2	35.8	6.9	2.3	1.5	20.1	10.6				21.6	0.5	3.3			
Central San Carlos, San Carlos, Occidental Negros†	1.3	27.9	10.7	3.6	5.8	7.2	5.1	.8			2.5					
Hacienda Refugio, San Carlos, Occidental Negros†				.3			.5		5.6		14.7		11.2	2.5		
San Joaquin, Iloilo			34.5	20.4		17.3	2.8	2.5	.5		8.6	16.5	4.1	.8	.8	
Murcia, Occidental Negros			19.6	8.6	23.9	1	14.5	13.7	12.2		6.9		3			
Bacolod, Occidental Negros			12.7	2.5	.8		14.7	11.2	.3	32.2	3.3	5.3				
Oton, Iloilo			22.9	5.8			10.2	17			35.3		5.8	4.6	9.1	
Iloilo, Iloilo			48.3	3				18.8			1	36.6		14.2	1	
Lapuslapus, Iloilo, Iloilo†			35.6	5.6				3.8			15.2	26.7	.8	7.6		
San Jose de Buenavista, Antique			50.8	9.2				2.3	5		57.4	1.3		.5	11.2	
Tuburan, Cebu			20.1				.5	6.4	14		1	18.3		2	32.5	
Leon, Iloilo	7.6		3				4.1	11.4			20.6	36.1	48.3		12.7	
Silay, Occidental Negros			44.7				2		4.3	2.5		.3	2.3	3.8	10.9	
Calag-itan, San Remigio, Antique			77.2	5.6		11.4	2	19.6	12.4			32.3		3.3	.8	
Hawaiian Philippine Co., Malibug, Silay, Occidental Negros†			41.1		5.1		3		8.9	4.1	1.3	1.8			12.7	
Cuyo, Palawan	2	47.2	19	13.2			61.5	28.5	1.5			28.4	1.6	40.6	3.3	
Lucena, Santa Barbara, Iloilo†			6.1	1.5							4.6	78.5		3		
Barotac Nuevo, Iloilo			7.6	1					5.6	12.7	34.5					
Central Victorias, Victorias, Occidental Negros†			26.7		8.1		21.6	5.1	32.8	49	27.7		6.9		24.1	
Hacienda Ilaya, Victorias, Occidental Negros			27.9	3			22.9		81.3	11.4	27.9				14	
Hacienda Bilbao, Manapla, Occidental Negros	5.6	7.4	2.5	21.6	8.9	40.1		18.6		6.6	31.7	4.3			11.9	
Janiuay, Iloilo	.8	6.4	1.3			20.3	.3	4.6	.5		53.9		2.5		3.3	
Cadiz, Occidental Negros				15	6.6	53.3		16.5				16	9.7			
Dingle, Iloilo	2.3	5.1	1.8			18.5			1		32		1.8	33.8		
Ormoc, Leyte	1.5	92.7	9.7		1.3	5.6	9.7		3.8	7.9	8.1	1	5.6	18.3	54.1	
Guiuan, Samar	.8	1.3	.5	7.1	21.9	14.7	9.4			21.8	8.9	18.3			17.8	
Bugasong, Antique		4.8	.3	2.1			2.8	.5			1		1.8	.5	5	
Bogo, Cebu	3.6		1.8		.8						8	1.8	9.9	1.8	2.3	
Dueñas, Iloilo†	2	10.6	1			18.8	3.8	40.6		5.3	44.2			47.8	63.2	
Bitaoagan, Passi, Iloilo†	3.8	13				15.2	15.8	5.1	3.3	1.5	33				5.6	
Tacloban, Leyte		3.3	13.2		5.6	12.4	9.1			4.4	18.2	3	6.6	8.6	38.1	
Dumarao, Capiz†		6.4		5.8				1.3		11.2	48.3		2.5		44.1	
Dao, Capiz†		5.1	1.8		2.3	11.5	3.3			50.8	46.9	2			2.5	
Culasi, Antique		34.3	5.8	11.4		1		1.8	.8		26.1		1.3	3	108.4	
Hacienda Amparo, Pontevedra, Capiz		.3	3.6			20.6	2.8		18	20.8	39.2	12.4	7.1	.3	1.8	
Capiz, Capiz	1	6.1	1.3		4.1	3.9	5.3	3.6	1.3	16.8	21.1	6.1	16.3		4.8	
Borongan, Samar		1.8	18.8	.8	8.3	24.4	29.7		2.3	20.1	31	14.5	.3		40.4	
Calivo, Capiz			17.8	8.9	.8		63.5	3.8	1.3	.8	26.7	58.5	6.1		16.5	
Pandan, Antique			59.7	17.3	2.5	8.9	1.5	7.9		8.1	4.8	62.3			13	
Catbalogan, Samar		37.6	9.4	1.5	6.6	4.1	2.3	36.1	.5	4.6	7.4	16.2	49.5	13.7	17.8	
Ibajay, Capiz		47.8	16	25.4	2.5	7.1	41.6		1.3	16	93.7				52.5	
Calbayog, Samar	2.1	14.7	46.3	26.8	21.3	6.9	.8	.3		14.7	5.8	.5	5.6	7.9	52.3	
San Jose Estate, Robles Camp D-17, San Jose, Mindoro†	18.8		69.8	26.9	6.4							8.9				
San Jose Estate, Tamaraw Plantation, San Jose, Mindoro†	11.7		74.2	59.4	21.3		7.9					11.4			6.6	
San Jose Estate, San Agustin, San Jose, Mindoro†	11.2		71.1	61.2	1.5							7.6	1.3		16.5	
San Jose Estate, San Jose, Mindoro†	4.1		95.8	56.9	4.9							8.9		12.7	.3	
Masbate, Masbate		4.1	35.6	11.9	1.5				3.3			46.2		13.7	30.2	
San Jose Estate, Tunnel D-12, San Jose, Mindoro†	5.1		78.7	75.7	12.7		2	.8				10.7		4.3		
Romblon, Romblon			43.5	48.3	.3	5.7	.3	12	10.5	1	6.9	71.4	3.1	2.5	32.3	
Batag Lighthouse, Laoang, Samar	6.1		28.2	1.3	3	14.2	8.9	12.9		1.5	3.6	11.2	21.8	3	10.7	
Irosin, Sorsogon	63.5	130.8	9.7			9.7	6.6			9.1	2.5				29.5	
Sorsogon, Sorsogon	1.5	82.5	5.4			9.7	16.3	4				36.3	3		28.7	
Bacon, Sorsogon		114.3	6.6	6.6	36.3	3.8	6.1			2.5	14	25.7			31.7	
Jovellar, Albay	6	185.9	8.9	10.2	3.3	2					1	32.3			40.4	
Legaspi, Albay, Albay	38.4	224.3	20.9	6.6	7.9	14.2	.8	.3	2.8	9.4	22.3	4.1	7.4	18.8	51.1	
Guinobatan, Albay	1.5	1.1	216.7	8.6	63.8	2.3	.8			1	9.2	3.6	24.7	.8	20.4	
Polangui, Albay	2.5	1	179.3	7.9			.8				1.5			3.8	19.3	
Bacacay, Albay			103.1	20.8	7.6									53.1	3.8	
Tabaco, Albay			90.9	8.9	10.2	15.5	.8		1.8		20.3	2.8	11.9	12.4	10.4	
Sumay (Guam), Agaña, Ladrone Islands	8.6	1	1.6	.3	38.8	1.6	.3		.3	3.8	3.1	10.2	25.2	8.9	25.4	
Iriga, Camarines Sur		.3	211.3	3.1	11.7	.3				8.4		.3			9.1	
Calapan, Mindoro			50.8	48.2	1.3	16.3	3.8	1		1	7.6	2.6	12.7	4.1		
Tiwi, Albay		22.9	2.5		2.3	2	2.3					5.1			4.6	
Pasacao, Camarines Sur	8.9	55.4	202.7	32	1.3	26.4					1.8					
Virac, Albay			113.4	13	27.7	.5	13.2	1.3	2.8	2		9.9		4.3	4.3	
Naga, Camarines Sur	2.3		186.4	24.4	7.6		25.2	5.3	1	1.3	22.1			3.3	45	
Tigaon, Camarines Sur	3	2.6	164.1	3.9	.8	5.8	7.1	3	.8			16.8	4.6	.8	7.6	
Baras, Albay			125.2									8.6			34.5	
Libmanan, Camarines Sur			120.9	41.9	22.8		10.1		1		11.2				3.3	
Batangas, Batangas			50	188.8	5.1			5.8	1.3	2.3		1		.5	13.7	
Ragay, Camarines Sur	16.8	4.6	52.3	116.8	15		4.8			2.5			2.3		2	
Calatagan, Batangas			49.3	180.4	2.1		13.8	3.3							68.3	
Balayan, Batangas			27.9	96.5		8.1			5.8					9.4	26.9	

† Voluntary or cooperative station.



## Daily rainfall at the stations of the Weather Bureau, July, 1921—Continued

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lipa, Batangas	mm. 3.8	mm. 74.2	mm. 142	mm. 3.3	mm. 2.8	mm. 7.4	mm. 5.6	mm. 7.4	mm. 3	mm. 23.1	mm. 6.4	mm. 14	mm. 3.8	mm. 0.3	mm. 11.9	mm. 5.3
Lucena, Tayabas	.5	39.6	120.4	20.3	5	16.5	2.3	38.1	2.8	3	8.6	11.4	5.9	3.8	1.3	38.1
Atimonan, Tayabas		74.4	166.6													3
Lian, Batangas		48.3	121.9													25.1
Nasugbu, Batangas	94	14	127			19.3	2.8	2.8	3		6.4		14			21.6
Ambulong, Tanauan, Batangas	2	44.4	75.7	4.3	4.6	1				8.6				0.3		11.9
Daet, Camarines Norte	1.8	152.8	47	1.8	4.1	19.1	12.5		.5	1.3	11.4		5.9	3.8		5
Mendez Nuñez, Cavite	2.6	53.3	175.5	6.9	3.3				1.3		3.8			1.3		4.3
Alfonso, Cavite		62.7	156.2											3.8		
Indang, Cavite	.5	54.1	116.1	4.1					.5	4.1				4.3		13.5
Canlubang, Calamba, Laguna	10.2	33.5	71.1	123.6	2.5		1		.8	27.4					.8	22.4
Silang, Cavite	10.2	3.6	61.4	64.5	27.4		1.3	10.7	1.5	2				2.8	66.8	4.8
Maragondon, Cavite		20.3	91.2	.5		2.5	.8		6.4	4.6		6.4		5.1	5.5	2.8
Paracale, Camarines Norte	30.5	157.7	95.3	17.3		2.3	6.6	2.3	4.6	1.3	.8					
Santa Cruz, Laguna		52.8	114.8													
Buenavista, General Trias, Cavite		7.1	50.8	74.2	4.8			6.9								3.8
Fort Mills, Corregidor, Cavite †		10.2	99.1	14.7				.5								2.3
Imus, Cavite	2	79.5	170.7	2.6			.8	6.9	.8	2.5						11.7
Alabang Stock Farm, Alabang, Muntinglupa, Rizal †	2		105.4	53.3	1.3			5.9		5.6						42.9
Cavite Naval Station, Cavite, Cavite †		1.5	69.8	165.6	2.3		6.1	5.6								5.1
Lamao Horticultural Station, Lamao, Limay, Bataan †			30.5	50.8												
Manila, Manila	15.5	55.9	180.2	1.1	7.4	21.4	8.7		1.1	3			.4	10.4	9.7	
Antipolo, Rizal	7.7	1.3	74.9	355.6	1.3	3.6	11.9	11.4	5.1	1	2			21.1	50.3	
Balanga, Bataan	1.5	1	17.5	180.6	2.8		.5				24.9			17.3	5.3	
Montalban, Rizal †	.5	.8	55.6	290.6	.5	.5	.5	3.3	3.6		17.5			1	54.1	7.8
Hacienda Pintong Sapang, San Jose del Monte, Bulacan †	1	27.9	78.7	359.2	.8	1.3	3.9	.3	4.8		.5	3.8		7.9	54.9	11.4
Mabayuan Dam, Olongapo, Zambales †		5.1	63.5	88.9	15.5					1.5	1					3
Malolos, Bulacan	2.3	8.9	*	162.6	*	*	*	12	21.8	10.7	1	1.8				6.6
Matulid, Angat, Bulacan †		.5	84.1	265.1	.3	.8		3.1	6.4			.5	7.1	6.4		23.9
Paila, Angat, Bulacan †	28.7															
Hacienda Carmencita, Gutad, Del Carmen, Pampanga †			19.1	94	.3									1.3		27.9
Pampanga Sugar Mills, Del Carmen, Pampanga †			15	180.3	1.3	11.4							1.3	47		1.3
San Fernando, Pampanga	.6	2.3	27.9	161.3	3.6	1.6			.8					6.6	3.8	.5
San Isidro, Nueva Ecija	15	30.5	36.5	86.9	7.4				.5						.5	2.3
Iba, Zambales	54.6	23.4	4.1	51.8	6.6		.5	1.8				25.9	1.5	16		.3
Concepcion, Tarlac	6.9	2.8	25.9	102.9	5.8	.8		5.3			3				2.3	19.8
O'Donnell, Capas, Tarlac		35.6	188					12.4				48.3				10.2
Hacienda Luisita, San Miguel, Tarlac, Tarlac †	6.1	3.8	10.2	141	16.8	11.7		13.5								3.8
Tarlac, Tarlac	1	3.6	5.8	102.6	8.6			7.6						4.8		1
Paniqui, Tarlac		2.3	9.9	49.5	6.3			14.2	2.5			1			6.6	2.8
Camiling, Tarlac	16.3		2.5	74.9	2.5		2.5								1.3	
Muñoz Agricultural School, Muñoz, Nueva Ecija †	7.6	27.7	25.4	33	47	1.3					5.8			1.3	2.5	3.8
Baler, Tayabas			30.5	102.1	18.3	40.3		3.8	25.7			11.9		2		3
Dagupan, Pangasinan	13.7	1	10.5	23.4	10.9		3						.8	11.9		10.7
Rosario, La Union	1.8	7.7	23.2	6.6		1	1		16.3			2.3				4.3
Tubao, La Union			24.1	3		14	4.6					1.3	.8	4.3		9.4
Itogon, Mountain Province	*	*	23.9	30.7	5.1	.5			23.6	6.1	5.1	30.7	2.5	21.1	47.5	19.3
Bolinao, Pangasinan	8.9	4.1	20.3	16.5	1.8	44.2	3.6		7.1		2.5	11.4				27.1
Aringay, La Union	1.3	2.5	8.9	2.5	10.2	3.8		3.8				1.3	1.3	.8		7.6
Baguio, Mountain Province	2.5	32.5	10	8.7	1	.5	44.2	16.8	1.3		7.9	21.1	4.3	7.6	9.2	4.6
Naguilian, La Union		5.6	7.4	2		42.7	9.4		3.8			11.2		6.9	.5	4.3
Kapangan, Mountain Province		41.4	10.4	2.3	.5	3.8	28.4		5.1		28.4	19.3	2.3	8.4	5.1	14.5
Atok, Mountain Province	21.1	37.3	22.6	4.8	.5	1.8	15		3.8	.5	9.4	8.1	2	31	52.3	21.3
San Fernando, La Union	.2	34.7	27.5	3	.7	10.7	6.1		5.3			.5				3.3
Echagüe, Isabela		1.3	30.7	4.5	10.1	.8		.3	1.1							6.6
Balaogan, La Union		10.9	21.1			7.1	20.8		2.5			10.2				2.8
Tagudin, Mountain Province		6.1	6.4	.1	.2	5.6	8.6		2.3		.3	27.7		1		3.6
Sagada, Mountain Province †	.5	37.3	4.3	6.6	8.4	17.8	1.3		2.3	6.4		2.8	1.3	7.9	.3	2.5
Bontoc, Mountain Province †		38.4		4.8	5.8		6.4						.3			8.1
Candon, Ilocos Sur		10.7	79.5			5.1	11.2		1.5						6.9	3.8
Vigan, Ilocos Sur		9.9	13.5			7.1						8.6	52.6		1	
Bangued, Abra	.3	17.8	1.8			7.1	3.3	3.6	2	4.8	.8	12.7		7.6	.3	10.9
Tuguegarao, Cagayan	4.8	5	11	1.5	13.8	1.5	2.8	4.3			.5					1.3
Sinait, Ilocos Sur		10.9	6.4			57.2	2.5						20.1	4.6		
Batac, Ilocos Norte	16.3	5.8	1.3			8.9	1.3		.5				2	11.7		27.9
Solsona, Ilocos Norte		42.2	2.3		2.3		25.4			5.6	1.3	11.4	16.3	21.8		39.8
Laog, Ilocos Norte		4.6	3.3			22.6	5.1		1.8	.8				2		1.3
Fasuquin, Ilocos Norte		12.7	18.3			1.8	1.5		1					3		.8
Aparri, Cagayan		1.5	11.4		12.7				.5							22.9
Cape Bojedor, Burgos, Ilocos Norte	1.3	2	.3				4.3			3.6				.3		
Basco, Batanes		32.8	7.6	11.9	.3	2.3		1	7.6	14		4.6		11.4	9.9	4.8

† Voluntary or coöperative station.

\* No observation.

\* Rain in 24 hours beginning 8 a. m.

Daily rainfall at the stations of the Weather Bureau, July, 1921—Continued

Station.	Day of month.														Total.
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Lipa, Batangas	8.9	3.3	1.8	3.6	3	40.9	9.6				2.5				
Lucena, Tayabas		34.3			2	9.9	2.6	0.3					16.8		
Atimonan, Tayabas			24.9	13.2	.5	1.3	6.1		1.5		.8			0.3	
Lian, Batangas	23.9	21.6	25.1	32.8		63.2	32.8		21.6					21.8	
Nasugbu, Batangas	31.2	48.8		48.5	5.6			66	27.9				3	11.2	
Ambulong, Tanauan, Batangas	6.4	11.6	.8	7.6	10.1	27.3	32	2.4			12.2				5.6
Daet, Camarines Norte			10.4	1		3	1.5		6.4	32.8				1.8	
Mendez Nuñez, Cavite	5.1	13.5	1.3	16	12.2	24.2	74.9	6.3	3.3			2.5	2		
Alfonso, Cavite	6.4	27.2	2.8	22.8	20.3	32	56.6	15	7.6			3	1.5		
Indang, Cavite	4.1	16.3	1.8	8.1	23.9	46.7	68.1	7.6	2			.8			2.5
Canluban, Calamba, Laguna	7.6	21.6	24.6	8	7.4	13.2	30.2	2.3			2.5				
Silang, Cavite			56.1	2.5	11.7	9.1	24.6	30.5	99.1	4.6					
Maragondon, Cavite	5.6	20.3		6.9	12.2	28.7	40.2	22.9	21.3					.8	
Paracale, Camarines Norte															
Santa Cruz, Laguna	10.2	2	.3	.8	7.6	3	14	6.1	14.2		1	1.3	.5		
Buenavista, General Trias, Cavite	11.9	11.9	9.6		21.1	24.9	2.8				4.6				
Fort Mills, Corregidor, Cavite †	3.8	3	1.3	6.9	11.9	12.7	11.4	10.2	21.1						3.6
Imus, Cavite	21.8	14.2	2.3	.8	3.8	23.3	13.4	15.8	9.7		3.3	5.6			
Alabang Stock Farm, Alabang, Muntinglupa, Rizal †	51.3	3.3	1	2.8	.5	18.5	14.5	13.9	1			20.8			
Cavite Naval Station, Cavite, Cavite	17	54.9	11.4	2.5	1.3	28.9	17.3	13.8	5.3		1.3	2			
Lamao Horticultural Station, Lamao, Limay, Bataan †	7.6	10.2	30.5			20.3	47	34.3	22.9						
Manila, Manila	7.6	31.2	4.6	2	.1	15.8	30.9	12.2	12.4			.8	2.5	.5	
Antipolo, Rizal	8.1	32.5	15.2	10.4	5.3	32.5	14.2	9.6	13			10.2			3
Balanga, Bataan		2	1		2.3	23.8	17.8	19.8	53.6						.3
Montalban, Rizal †	49.3	11.7	9.4	18.3	2.3	42.4	58.5	30	17.8	5.3		21.8	14		
Hacienda Pintong Sapang, San Jose del Monte, Bulacan †	30.5	37.8	18.1	15.2	.3	10.7	86.1	67.1	18.6				9.1		
Mabayuan Dam, Olongapo, Zambales †						66	58.4	73.7	182.9						
Malolos, Bulacan	6.1	35.6	.3	6.9		5.1	15	35	6.1	4.3			.8		
Matulid, Angat, Bulacan †	12.4	48.3	11	1.3	.8	5.6	36.6	93.8	17.5		32	5.1			
Pala, Angat, Bulacan †	47.2	20.8	2.3	16.8	.3	2.3	41.9	50.8	21.8		25.9	3.3			10.2
Hacienda Carmencita, Gutad, Del Carmen, Pampanga †				7.6		11.5	21.1	54.6		12.2			1		
Pampanga Sugar Mills, Del Carmen, Pampanga †	.8			12.2	3.3	2.5	11.7	39.4	4.3						
San Fernando, Pampanga	1.3	1.3				5.1	2.8	7.1	6.4						
San Isidro, Nueva Ecija	6.1	37.3	6.6	1.8	4.8	1.6	8.6	25.5	32.5		.3				1
Iba, Zambales	5.8			31.2	55.6	34.6	41.2	60.7	52.4	3					
Concepcion, Tarlac		1		2.8		1.3	1.3	5.1	78.2	7.9			2.8	3.3	
O'Donnell, Capas, Tarlac	6.4	17.8	1.3	12.7	10.9	9.4	2.8	17	2.3	10.9			.3	1.8	
Hacienda Luisita, San Miguel, Tarlac, Tarlac †		23.6				9.9		25.4	24.4	13.5			3.8		19.3
Tarlac, Tarlac		31.7	29.5		4.6		.5	16.8	12.2	9.9			2	1.5	
Paniqui, Tarlac	5.1			6.9		10.1	6.6	10.9	61.8						
Camiling, Tarlac	8.1	5.3			10.2	22.9	5.3	21.6	5.1					6.1	
Muñoz Agricultural School, Muñoz, Nueva Ecija †	18.3	66	11.9	5.1	6.4	4.6	8.9	3	17.8						
Baler, Tayabas		2.3					9.6			2.5	1.3		.8		
Dagupan, Pangasinan	61.2	52.3	3.5	14.5	23.3	30.5	6.9	18.3	32.3	2.3		5.8			
Rosario, La Union	3	16	13.2	57.9	38.1	74.7	6.4	21.1	21.8	2.8				1	
Tubao, La Union	2.5	10.2		60.7	19	34.3	81.2	5.6	19	5.6		6.4			9.4
Itogon, Mountain Province	5.8	39.4	5.8	3.8	17.6	101.9	9.7	34.3	8.1	5.6	2.5	9.4			b460.5
Bolinao, Pangasinan	61.5	1	49.2	12.2	81.5	21.6	21.5	54.3	35.5		2.5				8.6
Aringay, La Union	13.2	35.6	5.6	43.2	16.5	66.3	8.3	14.5	7.6	2.5	10.2	8.9			276.4
Baguio, Mountain Province	7.6	12.7	.5	16.7	68.3	211.9	9.9	34.4	21.8	8.4	1	1.3	.9	.5	.8
Naguilian, La Union	17	19.8		73.7	26.9	125.2	5.9	21.6	8.6	4.8	7.9	51.3		1.8	
Kapangan, Mountain Province	40.9	61.5		19	60.4	161	5.8	11.9	15.7	25.4	3	4.6	4.8	8.6	2.8
Atok, Mountain Province	25.7	32.3	2	14.2	62	179.8	5.6	32.7	15.7	55.6	2.8	7.4	5.1	.5	
San Fernando, La Union		1.5	.2	26.9	17.8	140.7	3.8	5.4	4.1	9.1	13.5	2.9		.5	
Echague, Isabela	.3	39.4	.8	.5	.5			13.3	11.2	9.1					
Balaoan, La Union			3.3	55.6	49	155.7	7.4	2.8	2.5	5.1	16.5	21.1		16.5	
Tagudin, Mountain Province	.3	3.8	11.2	39.1	54.4	161.5	6.6	4.4	1.3	7.4	5.1	3.8		8.9	
Sagada, Mountain Province †	6.9	1		9.4	63	77.2	.3	30.7	3.6	22.4	3.3	1.3		3.8	
Bontoc, Mountain Province †	.8			2.5	23.1	38.4		30.2	13.2	22.9					
Candon, Ilocos Sur	22.9			48.3	56.4	106.7	13.2	4.1		6.9				7.6	
Vigan, Ilocos Sur	4.1	2		45.5	50.9	112		29.4	59.7	2					
Bangued, Abra	1	3.6	.5	10.6	87.6	133.3	.8	13.4	14.7	14.5		1.3		5.1	
Tuguegarao, Cagayan				5.6	4.2	12.5	6.4	33.3	1.3	5.4					
Sinait, Ilocos Sur				6.4	11.7	172.8		11.7	18.3	10.4					
Batac, Ilocos Norte	22.1		3.6	13.2	50.8	157.5		6.9	.5	20.6				1.3	
Solsóna, Ilocos Norte	.3	1.5	9.4	14.8	107.2	85.9		6.6	58.9	49.3	5.6	4.1	3.3	21.6	
Laog, Ilocos Norte				49.4	77.2	151.4		1.3	.5	38.1				1.8	
Pasuquin, Ilocos Norte			18	6.9	23.9	173.2				7.6					
Aparri, Cagayan	3.8		7.7	8.3	40	18		29.2	1.5	.6					
Cape Bojeador, Burgos, Ilocos Norte			30.2	62.7	60.2	119.9	1	9.1	1						
Basco, Batanes	3.6	.5	19.8	6.4	117	2.5		1.3			1.3	.3			

† Voluntary or cooperative station.

<sup>a</sup> Rain in 24 hours beginning 8 a. m.

<sup>b</sup> 29 days of observation.

MAXIMUM AND MINIMUM TEMPERATURES AT THE STATIONS OF THE WEATHER BUREAU, JULY, 1921

Day.	Jolo.		Lais, Malita.		Malita.		Lebak.		Malamau, Isabela, Zamboanga.		Zamboanga.		Davao.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.*	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	29.7	24.7	31.5	22	31.7	23.1	32.1	24.1	30.3	24.4	29.6	24.3	31.3	22.3
2	30.2	24.2	30.6	21.9	31.8	22.4	32	23.8	30	23.5	29.1	23.7	30.2	21.4
3	31.3	23.8	30.9	20.8	32.1	21.9	32.1	23.4	29.7	23.2	30.3	23	31.7	22.8
4	30.2	23.7	29	20.2	27.8	22.2	31.5	24	30.3	22.5	29.3	23.5	30.2	22.1
5	31.1	23.8	31.4	20.9	31.9	21.8	31.3	24.1	30.5	23	30.6	22.5	31.6	22.6
6	29.5	23.6	31.5	21.1	32.3	22.3	31.4	23.3	30.7	24	29.2	22.9	31.2	21.9
7	29.6	23.3	32	21	33.3	22.2	31.8	24.4	31.8	24.1	29.2	23.5	31.2	22.5
8	29.1	22.9	31.6	21	31.6	22.2		24.4	29.8	23.7	28.8	23.5	31.1	23
9	28.9	23.2	30.8	22.4	31.4	22.9	29.7	23.8	30.3	23.5	29	22.8	31	21.9
10	30.5	22.2	31.5	22.5	31.7	22.2	31.4	23.1	31.3	22.8	29.4	21.5	32.2	23
11	30.8	22.5	29	21.5	30.4	23.1	30.8	23.6	30.5	20.8	29	21.5	31.7	22.5
12	29	22.8	29.5	22.5	31	22.7	30.6	24.1	28.9	22	27.3	22.5	30.7	22.5
13	29.3	22.3	30.5	20.2	32.7	21.1		23.4	30.7	22.7	28.3	22.3	29.9	21.5
14	30.1	23.8	31.4	20.5	33.1	21.7		22.8	29.8	23.3	28.7	23.9	31.6	21.5
15	29.2	22.9	31	23	29.7	23.4	29.7	23.5	29.3	23.5	28.5	24.5	29.7	22.5
16	29.6	23.3	31.5	22.5	29.7	23	30.3	23.4	27	23	26.3	22.6	31.2	23.4
17	30	24.3	31	21.8	30.8	22.8	29.1	23.4	24.7	22.5	25.5	22.1	30.7	22.9
18	29.2	23.3	31.5	22.5	31.6	23.6	28.1	23.3	27.7	21.7	27	22	29.7	22.5
19	29.5	23.3	32.5	22	32.5	23.3	28.7	23.3	28.3	22	27.8	22.4	31.2	22
20	31.5	22.7	34	21.7	33.9	23.4	30.2	22.4	30	21.4	28.2	24.8	31.2	22
21	31.1	25.7	32.5	21.4	33.4	22.7	30.3?	24.7	29.9	24.5	28.6	26	31.2	22.2
22	32.1	25.3	33.4	21.3	31.3	22.7	30.3	25.3	31.7	24.1	29.2	21.5	32.2	21.9
23	31.7	25.8	32	20.6	33.2	22.9		25.3	31.8	24	29.3	25	31.7	22.1
24	30.7	25.8	31.9	20.3	32.1	21.9	30.9?	25	32.5	23.8	30.3	23.4	31.3	22.9
25	30.6	25.4	31.2	23	32.6	24.1		24.6	31.9	24.5	30	23.7	31.2	24.2
26	30	25	31	22.4	32.1	22.1		23.9	30.3	23.8	28.4	23.5	31.2	22.1
27	30.7	23	28	22.8	29.6	22.7	26.1	22.6	29.8	22.2	30	22.7	27.5	21.7
28	30.7	24.7	30.3	22	32.8	22.8	30.8	23	28.9	22.8	28.7	22	30.9	22.4
29	30.9	22.8	31	22	32.5	22.1	30.2	22.7	30.3	24.3	30	23.3	31.2	22.2
30	31.1	23.2	30.6	22.8	32.3	23.1		24.7	30.7	24	30.5	23.8	29.7	22.4
31	30.8	23	29.4	21.6	32.6	22.2		24.9	30.7	23.6	28.5	23.6	31.2	22.5
Mean	30.3	23.8	31.1	21.7	31.8	22.6	30.4	23.8	30	23.2	28.9	23.2	30.9	22.4

Day.	Pikit.		Bual, Dulauan.		Cotabato.		Naganaga, Margosatubig.		Malabang.		Cateel.		Ganasi.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	22.2	33.4	20.9	31	23.6	33.5	22.5	21.4	31.2	22.5	30.5	18		
2	23.1	32	22.3	31.2	23.4	34	22.3	21.5	28.7	21.7	30	17.8		
3	23.1	32.9	21.4	31	23	33.7	22.2	22.2	31.2	22.2	29.5	17.8		
4	21.2	33	20.5	32.4	22.7	33.5	22.3	21.8	30.5	21	31.9	17.3		
5	22.4	33	21.7	32.7	23.6	33.3	22.2	21.5	31.4	20	31	16		
6	22.3	32.4	21.5	32	22.4	33.7	22.5	22.2	30.2	22.5	30	16.9		
7	23.1	33.7	22.3	33.2	23.9	34.3	22.3	22.8	31.5	21.5	30	19		
8	23	33.7	21.2	31.5	23.6	33.7	22.5	22.5	30.7	22	29.5			
9	22	33	21	31.5	23.4	33.3	22.7	22.8	31	22	30	18		
10	22.2	32.9	21.9	32	23.2	33.2	22.2	22.6	31	22.2	29.5	17		
11	22.2	32.5	20.8	30.8	23.4	34	22.3	21.8	30.2	21.9	30	18.8		
12	22.3	31.4	22.3	31	21.6	33.3	20.5	30	22	28	19			
13	21.4	32.3	20.2	31.4	22.1	32.7	21.2	22.8	31.6	21.9	30			
14	21.3	32.6	20.7	31.2	22.6	33.7	20.3	21.5	32.2	21.5	29.5	18		
15	23.4	31.1	22.9	31.5	23.5	33	22.5	21.6	29.7	21.5	27.5	17.3		
16	22.3	32.5	22	31.4	23.2	32.5	19.3	21.5	31.2	22.2	27.5			
17	23.3	30.7	22.9	29	23.6	33.3	20.5	22.8	31.4	22.5	27	18		
18	22.4	27.4	22.4	27.5	22.1	33.7	21.5	21.8	31.7	23	25.5	18.8		
19	22.1	29.4	21.8	30.4	22.6	31	22.7	22.4	31.8	26.3	26	19		
20	21.3	30.5	21.5	30	22	33	22.2	21.8	32.9	26	26	20		
21	22.2	31	22.2	30.1	23.6	33.5	22.3	22.8	33	27.1	25.5	19.3?		
22	22.1	30.5	21.6	28.6	23	33.3	21.7	22.4	34	27.2	27	19		
23	22.3	32	22	31.6	23.6	33.7	22.5	22.4	33.5	22.9	27	19		
24	22.3	32.4	21.5	30.5	23.1	33.5	22.2	22.8	32.2	22.3	27.5	18.3		
25	23.3	32.4	22.5	29.8	24	31.5	22.5	21.8	32.3	22.3	28.5	18.5		
26	22.4	33.5	22.2	30.5	23.4	32.5	21.5	21.6	30.6	22	30	19		
27	22.4	27.5	21.9	28.7	22.8	33.3	22.2	21.8	30.7	23.2	28	19.3		
28	22.3	32	21.6	29.4	23.2	32.2	22.3	22.6	30.9	23	29.5	19.5		
29	22	31.9	21.5	30.3	22.8	33	21.5	21.8	31	22.9	27.5	17.5		
30	23.1	33	22.8	31.4	23.4	33.7	22.2	22.4	31	21.7	29	17		
31	23.4	32.5	23	30	23.6	34	22.5	22.8	31.1	21.5	30	18.3		
Mean	22.4	31.9	21.8	30.8	23.1	33.2	21.9	22.2	31.3	22.7	28.7	18.3		

\* These minimum temperatures seem to be not very reliable, the differences between 6 a. m. temperatures and minimum temperatures being both too small and too uniform.

Maximum and minimum temperatures at the stations of the Weather Bureau, July, 1921—Continued

Day.	Camp Kalao, Monkayo.		Camp Keithley, Dansalan.		Veruela.		Sumilau.		Cagayan.		Talacogon.		Butuan.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.9	20	27.3	19	33.3	21.5	27.4	18.1	32.3	22.1	33.2	22.1	33.1	22.8
2	30.9	21.4	27.3	19	28.3	22	27.7	17.8	31.5	21.8	32.8	23	31.6	22.5
3	31.5	22.1	28	19	32.3	21.7	29.1	18.3	33	21.7	32.8	22.4	33.4	23.3
4	30	22	28.8	19.2	31.8	22	29	17.3	31.5	21.5		21	32.1	21.4
5	31.6	21.9	27.3	18	31.3	21.6	29.5	17.8	31.3	21.3	32.5	21.1	30.6	21.6
6	30.2	20.9	28.3	17.5	31.8	22.5	29.8	18	32	21.5	31.7	22.2	31.1	22.4
7	31.7	20	28.4	18.4	33	21.5	30.1	17.1	32.7	21.6	32	22	32.6	22.3
8	31.9	20.9	27.4	19	32.8	22	29	17.5	32.1	22	32.5	21	33.6	22.4
9	32.9	20.1	27.4	18	33.3	22.5	29	18.6	32.2	21.2	31.2	22.3	31.6	22.9
10	32.4	20.9	28.4	18.1	31	22.2	30.2	17.1	32.2	22	33.1	21.7	33.4	22.2
11	32.4	19.6	26.9	17.6	30.9	23	29.4	18	32.5	21.3	32	22.1	31.9	22.2
12	31.9	20	27.1	18.4	31.6	23	28.5	20.4	30.4	22	32	22	33.2	22.5
13	32.2	20.9	26.9	18.6	32.3	22.7	28.2	17	31.5	20.4	32	22.1	29.4	21.8
14	33.1	20.2	27.8	18.7	33.7	21.6	29.6	17.5	31.5	21	32.1	22	31.6	22.2
15	31.2	21.1	27.8	18.2	32.5	21.5	28.6	18.1	31.6	22	32.4	23.1	31.2	22.6
16	31.9	22.2	27.8	17.6	31	21.2	27.8	18.4	31.6	21.8	31.5	23.2	31.2	21.9
17	33.1	21.2	25.8	18.7	31.8	21.8	25.5	19	32.5	22.1	31.8	23	31.4	23
18	31.2	21	25.8	19.9	31.5	21.6	27.4	18.4	31.2?	22	31.2	23.1	33.2	22.9
19	32.9	20.5	27	19.3	32	21.6	27.7	19.2	31.8	22.7	31.5	22	32.2	23.1
20	31.4	20	26.3	19	32.3	22	29.4	18.8	31.2	22.1	31.5	22	35.6	22.4
21	32.5	20.3	28.8	19.3	32.5	21.2	27.5	18.5	31.1	21.8	33.5	21	33.6	22.7
22	33.4	20.5	25.5	19	33.5	21	30.5	20.4	32	23	33.5	21	35.1	22.5
23	32.6	19.2	27.3	18.5	33.6	22	30.3	18.3	33.8	21.2	33	21.2	36.6	22.8
24	33.4	20.1	27.3	19.8	32.8	22.8	30	18.5	33.2	22.4	32.5	21	34.7	22.4
25	33.4	21.6	27.3	18.6	33.8	21.6	29	18.9	33.6	22.5	33.5	22	35.4	24.1
26	32.6	21.6	28.4	19.9	33.3	22.2	28.1	19.3	33.1	23	33.7	22.2	35.9	22.9
27	31.5	22	26	18.4	33.2	22.8	28	20.1	31.5	23.2	32.6	23	31.7	23.3
28	30.2	21.9	26.9	18.6	33.3	22	28.8	18.3	32.5	21.7	33	22.2	33.9	22.8
29	30.1	21	28	17.6	32.8	22.2	29.3	17.5	32.2	21	32.5	21.3	31.4	22.4
30	30.9	21.4	28	17.5	30.3	21	29	16.8	31.6	21.6	31.5	21.2	30.6	22.4
31	32.1	21.1	27.8	18.6	33.5	22	29.5	18.1	31.7	21.5		22	33.6	22.8
Mean	31.9	20.9	27.2	18.6	32.2	21.9	28.8	18.3	32	21.8	32.4	22	32.8	22.6

Day.	Mambajao.		Dumaguete.		Kolonie, Yap.		Tagbilaran.		Iwahig Penal Colony, Puerto Princesa.		Dalaguete.		Surigao.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.7	23.4	31.9	23.5	30.9	22.6	31.8	24.1	31	22.4		24.1	31.3	22.6
2	31	23	31.7	23.1	32	24.7	30.8	23.7	31.8	22.2		23.6	30.2	23.4
3	31.4	23.9	30.4	22.4	32.8	24	30.6	23.6	32.2	22		23.6	30	22.8
4	30.1	22.8	31.7	22.8	30.7	25.1	31.7	24.3	31.7	22		23.7	31.1	23
5	29.8	22	31.4	23.2	31.9	25.2	32	23	30.7	22		23.2	30.3	22.8
6	30.4	24.4	31.9	25.2	31.7	24.2	32	22.6	30.6	22.2		25	30.1	23.4
7	30.8	23.5	32.2	27.2?	31.8	24.8	31.3	23.2	30	22.3		26.1	31.2	23.7
8	30.4	23.3	30.2	23.4	32.4	25.2	29.9	23.3	30.8	22.2		23.6	31	23.1
9	30.4	23	30.7	25.1	32	24.3	32.1	22.4	31.6	22.4		24.3	32	23.4
10	31	22.9	31.6	23.9	31.4	24.8	32	23.2	31.7	22.4		24.9	31	23.8
11	31.1	23	31.6	23.6	32.2	24.7	32.7	23.6	32.2	22.2		25.6	28.8	23.4
12	29.8	23.9	30.3	25.5	32.8	24.3	31.4	22	31	22.8		25	32	23
13	28.7	22.1	30.1	23.3	32	24.8	30.3	22	29.8	22.4		23.3	29.3	23
14	31.9	23.1	30.8	23.2	27	23	31.1	23	30	21.5		23.7	30.8	23.8
15	30.7	23	31.4	23.8	29.1	23	29.8	22	31.5	20.5		23.4	30.5	23.6
16	30.5	23.4	28.8	23.5	30.8	24	32.4	22.9	32.8	22		23.2	31.1	24.7
17	30.4	22.3	29.6	24.2	31	24.2	30.3	22.2	30	21.8		24.3	30.4	23.7
18	30.5	21.5	27.5	23.2	31.2	23.8	29.9	23.7	26	21.5		23.3	29.9	23.8
19	30.2	23.2	27.9	23.3	32	24.8	28.5	23.2	29.7	22.5		23.5	29.8	25
20	30.9	20.4?	29.5	23.7	30.7	25	29.4	23.8	29.5	22.7		24.4	29.9	25.6
21	30.9	22.2	28.9	23.5	27.4	23	30.2	23.4	28.5	23		23.8	30.3	26
22	32	22.6	30.2	23.7	30.5	23.4	29.9	23.4	28.6	23.5		24.3	32	24
23	33.9	22.8	32.4	24.5	29.8	23	31.8	24.1	30.8	23.8		24.6	33	25.3
24	33.2	23.9	32.5	23.6	30.9	24.3	32.7	24.8	31.4	21.7		24.5	32.1	25.7
25	34.1	23.8	32.6	22.9	32	24.8	31.4	23.7	32.2	22		23.8	33.1	25.7
26	33.4	23.4	31.9	24	30.7	23.8	31.7	24.8	33.3	22.4		24.6	32	25.9
27	31.2	24.5	31.2	23.7	28.7	24	30.4	24.5	32.2	22.8		24.4	31.7	24.6
28	32.2	22.7	31.2	24.2	30.8	24.2	31.8	23.1	31.6	22.8		24.2	32.3	23.3
29	29.5	23.5	29.6	23.7	30	23.2	30.5	23	32	22.4		23.7	30.2	22.7
30	30.5	24.3	31.7	23.4	31.7	25.4	30.5	22.9	31.4	22.8		23.3	30.2	23.7
31	31.5	22.9	30.2	23.8	30.8	24.6	31.7	22.4	29.5	23.4		22.8	30.7	22.8
Mean	31.1	23.1	30.8	23.8	31	24.2	31.1	23.3	30.8	22.3		24.1	30.9	23.9

Maximum and minimum temperatures at the stations of the Weather Bureau, July, 1921—Continued

Day.	Central Palma, Ilog.		Hacienda Naval, Himamaylan.		Biaong Cui's Farm, Barili.		Maasin, Leyte.		Isabela, Occidental Negros.		Hacienda Tanolo, Hinigaran.		Cebu.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1.....	30.4	22.6	33.3	22.5	32.7	23.4	32	23.8	30.1	21.9	30.1	22	30.9	25.8
2.....	31	22.1	31.3	22.5	31.6	23.5	31.9	23.6	30.7	22.3	30.1	22.7	31.3	26.2
3.....	31	21.9	30.3	21.5	31.5	22.1	34.5	24.2	29.9	22	30.1	21.5	30.1	25.6
4.....	30.2	22.6	29.3	21	32.4	22.3	31.5	24	28.7	21.9	28	21.4	30.4	22.9
5.....	31	22.2	31.3	22	32.1	21.5	31.6	23.6	31	22	30.5	21	30.6	25
6.....	31	21.8	31.7	22.5	30.4	22.4	32.5	23.4	32.5	21.7	31.6	22	31.2	25.3
7.....	31	22.8	32.3	22.4	31.4	22	34	23.5	32.3	24.7	32	24	32.1	26.2
8.....	31.1	23.3	31.5	21.5	29.8	23	33	23.4	32.4	22.7	31.6	22.7	32.6	23.1
9.....	31	24.1	32.5	22.5	31.8	23.1	34	23.8	31.3	22.6	31.3	22.4	32.2	25.1
10.....	30		31.5	23	31.6	23.5	34	23.2	33.3	22.8	32.3	22.8	33.2	25.9
11.....	31	24	32.3	23.5	29.9	23	33.5	23	33.6	23.6	32.2	22.2	32.9	26.7
12.....	30	23.5	33.3	21.5	29.2	22.4	33.8	23.8	31.9	23.4	31.5	22.9	31.3	23.6
13.....	31.5		31.3	22.6	29.8	22.9	33	22.2	30.7	22.4	30.2	21	30.3	24
14.....	31.2	21.8	30.7	20.9	31.2	23.1	33	22.4	31.3	22.3	30.7	22	31.2	25.1
15.....	31.3	22.1	31.5	22	33.2	23.1	31.8	22.8	30.7	21.7	30.6	21.7	30.2	25.1
16.....	30	22.9	31.3	23.4	30	22.5	32.8	23	31.3	22.2	31.3	23	32.8	25.5
17.....	30.4	21.9	29.3	22.4	29.3	22.4	30.5	22.2	30.2	24.6	30.5	24.3	29.3	24
18.....	29	21.7	30.3	22.4	28	22.2	30	22.2	29.1	22.3	28.7	22.4	29.3	24.4
19.....		21.5	28.3	19.5	28.2	22	33	22.8	29.6	22.6	30	22.3	30.2	25.1
20.....	26.6		28.3	21	30.4	21.8	30.6	22.6	25.2	22.3	26.4	22.4	29.5	24.8
21.....		20.9	31.4	21.5	31.3	22.8	31.6	23.8	27.7	22.5	28	22.5	30.2	25.1
22.....	27.9	20.8?	32.3	22	32.5	22.4	32.1	24.2	31	24.6	30.6	23	30.2	24.9
23.....	29	21	32.5	22	34.4	22.6	33	23.8	31.2?	21.2	31.5	22	31	26.2
24.....	30.2	21.4	32.4	21.6	32.1	23.4	32.1	24	31.8	22.5	31.6	23	30.8	26.3
25.....	30.9	22	34	23	31.5	22.6	33.2	23	32.1	22.7	31.8	23	30.7	26.9
26.....	31.2	22.7		23	30.8	22.5	33	23.6	30.2	23.2	30.1	23	30.1	25.3
27.....		22.8	31.4	21.4	30.5	22.1	34.1	23.8	32.3	22.6	31.8	22.1	29.3	25.4
28.....	30	21.2	30.3	21.5	32.5	22.5	34	23.6	31	22.1	31.6	22	30.3	25
29.....	31	22.1	30.3	22.5	30.5	22.4	33	23		21.6	30.4	21.7	31.3	24.2
30.....	30.1	22	32.3	21.5	27.2	22	32.2	23.6	30.1	21.2	31.2	21.6	32.1	24.6
31.....	30.6	22.6	32.5	21.7	31.5	22.1	33.5	23.3	32.1	21.7	31	21.8	31.4	23
Mean.....	30.3	22.2	31.5	22	30.9	22.6	32.7	23.3	30.8	22.5	30.6	22.3	30.9	25

Day.	La Castellana.		Central Azucarera de La Carlota.		Hacienda Canlaon, La Castellana.		Maa Sugar Central, Bago.		Valladolid.		San Joaquin.		Murcia.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum. <sup>a</sup>	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1.....	32.2	22.5	30.3	22.8	32.3	20.5	30.6	22.2	32.3	23	32.2	23.1	30.2	22.6
2.....	32.5	22	31.6	23.4	33	20.6	32.3	22.4	35	23.3	32.6		30.9	22.1
3.....	31.4	21.5	30.7	22.8	30	21	31.3	22.3	34.5	23.4	31.3	23.3	29.7	22.2
4.....	31.2	21.5	28.6	22.8	27.5	20.6	29.1	21.4	33.3	22.6	31.7	22.7	29.6	21.1
5.....	31.3	21.5	31.8	22.1	30.3	19.6	32.8	21.1	32.3	22.2	32.8	24	30.7	21.8
6.....	32.8	21.5	31.9	22.8	29.9	20.6	33.9	21.6	33.2	22.4	32.3	23.5	32.5	21.6
7.....	32	22	31.7	23.3	30.6	20	33.5	22.6	35	22.6	32.6	25.8	32.7	23.2
8.....	32.2	22	31.8	23.2	28.1	20	33.2	22.3	32.3	23	31.9	24.6	32.6	21.6
9.....	32.5	22	31.9	23.3	29.5	21	32.1	22.5	32.5	22.3	32.6	24.1	31.1	21.5
10.....		22	33.2	23.5		19.9	33.7	22.3	33	22	33.7	24	31.8	21.6
11.....	33.4	22.5	33.1	23.4	26.1	20.5	34.1	22.5	34.2	22.3	33.3	24.7	32.7	22.4
12.....	32.7?	22.5	31.5	22.3	27.6	19.3	33	21.9	33.5	21.2	33.3	24.7	32.1	22.5
13.....	31	22.5	29.9	23.2	31.2	20.2	30.2	22.1	34.7	23.6	30.2	23.2	30.4	22.4
14.....	31	21.4	31.3	22.4	32	21.3	32	21.2	33.4	24.2	32.4	24	30.7	21.3
15.....	32.8	21.4	31.4	22.7	31.4	21.9	31.2	21.7	32.5	22.5	32.6		30.9	21.6
16.....	34	23	32.1	23.8	31.1	20.5	33.3	23.1	33.7	22.3	31.2	24.6	32.9	22.5
17.....	33	23.2	31.5	23.2	26.6	20.6	32.1	24	32.4	23.1	31.7	25.1	33.1	22.3
18.....	32.2	23.2	31.7	23.3	31.3	20.4	30	23	33	24.3	31.3	24.4	30.1	22.8
19.....	32.3	22.5	29.9	22.7	29.6	20.4	29.7	22.5	32.6	22.4	30.8	24.2	28.7	21.3
20.....	32.5	22.5	26.3	22.6	29.8	21.6	25.6	22.3	34.3	23.3	31.4	23.9	28.6	22.2
21.....	33.7	22.4	27.7	23.3	28.8	21.3	27.8	23.1	33.2	23.2	33.6	23.6	28.7	22.6
22.....	33.8	23	30.9	23.2	31.4	21.9	32.1	22.4	32.2	24.2	30.7	24.5	30.1	21.6
23.....	33	23.2	31.9	23.5	32.4	21.5	31.9	21.7	35.4	23.4	30.4	23.2	30.8	21.6
24.....	33.2	22.1	31.7	23	32.4	21.4	32.3	22.5	31.2	24.1	31.5	23.6	30.4	22.3
25.....	32.8	23	32.5	23.5	31.2	22.2	32.6	23.1	33.4	23.6	31.6	25.3	32.1	22.8
26.....	32.3	23	30.8	23.3	31.3	22.4	31.4	23	32.5	24.2	31.9	24.6	31.4	22.7
27.....	31.5	21	32.7	22.9	28	20.4	33	22.5	33.5	22.3	31.6	23.7	32.5	21.8
28.....	32.5	22	32.1	22.8	29.9	19.7	32.6	21.8	33.2	21.3	32.1	22.9	32.8	21.4
29.....	30.5	21.6	30.8	21.7	30.8	20.9	32	21.5	33.4	22.5	31.7	23.4		20.9
30.....	32		30.9	21.8	31.7	19.5	31.5	22.4	32.7	23.3	32.3	22.6	31.1	20.8
31.....		22.3	32.6	22	31.7	20.7	33.5	22.8	33.2	22.3	31.9		32.7	22.6
Mean.....	32.4	22.2	31.2	22.9	30.2	20.7	31.8	22.3	33.3	22.9	32	24	31.2	22

<sup>a</sup> These minimum temperatures seem to be somewhat too low.



Maximum and minimum temperatures at the stations of the Weather Bureau, July, 1921—Continued

Day.	Bacolod.		Oton.		Iloilo.		San Jose de Buenavista.		Tuburan.		Leon.		Silay.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.4	22.4	31	25.5	30.2	24.2	30.1	22.8	33.8	23.4	30.6	-----	30.5	24.4
2	31.6	23.2	31.7	24.1	31.4	24	31.1	23.1	32.3	24.2	31.3	-----	32.5	24
3	30.2	23.1	30.4	22	29.6	23	30.3	22.6	30.2	24	29.9	-----	29.5	24.1
4	27.8	22.6	26.7	24.1	26.4	22.3	26.3	21.6	30.5	23.8	26.8	-----	27.5	23.4
5	30.9	22	31.7	22	32	22.5	32	21.9	31.9	22.4	32.6	-----	30.6	23.4
6	32.3	22	33	24	31.2	24.5	32	23	31.4	23	32.8	-----	31	22
7	31.7	23.1	33.8	25.1	31.2	25.3	31.2	22.9	32.7	23.8	33.2	-----	28.4	22.7
8	31.9	22.6	32.3	23.8	31.4	24.2	31	23.8	31.4	23.3	32.9	-----	29.8	22.5
9	30.6	22.6	33	23.5	31.8	24.3	31.3	23.2	31.7	23.7	32.8	-----	27.5	23.5
10	31.2	22.4	34.4	24.4	32.6	24.5	32.2	23	33.1	23.6	33.9	-----	32	22.3
11	32.7	22.8	34.2	24.6	32.4	24.4	32	23.6	32.9	24.2	33.2	-----	31.4	23
12	31.2	23.4	32.2	24.8	30.8	23.9	31.8	23.1	32.7	24.3	32.9	-----	31.5	24.3
13	29.4	22.8	32.2	23.2	29.8	23.3	31.1	22.5	30.5	22.5	30	-----	29	24
14	30.6	22.1	31.4	23.7	32.3	24	31.4	23.4	31.9	23.3	32.2	-----	30	23.9
15	31.3	22.6	31.7	22.8	32.2	23.2	31.5	22.7	31.9	23.6	32.4	-----	31.5	24
16	32.7	22.4	32.2	23.1	32.1	23.8	31.4	23.1	33	24.3	31.5	-----	33	23.9
17	32.3	24.2	32.2	24.8	31.6	24.5	30.4	23.5	30.8	23.3	33.2	-----	30.6	24.4
18	31.2	23.7	30.4	24.2	30.6	26	28.8	22.3	31.4	23.6	-----	-----	30.2	24
19	29.7	22.9	30.1	25.7	30	24.3	29.6	23.2	30.3	24	30.7	-----	28.9	23.6
20	26.2	23	27.2	24.7	27.8	23.3	26.5	22.5	29.9	24	27.1	-----	27.5	23.7?
21	26.7	23.5	28.2	26	28	23.9	27.5	23.5	29.6	25.1	27.7	-----	28.9	23.5
22	30.6	-----	30.2	27.4	30.3	23.8	29.6	23.8	32.4	25.3	30.9	-----	29.6	25.9
23	31	22.9	29.7	27.7	30.6	22.8	30	22.6	32.7	25.3	30.3	-----	30.4	23.2
24	31.3	23.2	30.6	27	30.7	24	30.9	23.5	33.6	25.4	30.2	-----	31.5	24.4
25	32.8	23.7	31	26.7	31.2	25.9	31.5	23.5	33.9	25.3	31.4	-----	31.5	25
26	31.4	23.4	30.4	26.6	31.1	26	30.4	24	33.2	24.8	31.3	-----	30.6	24
27	31.9	22.9	31.2	26.7	31.3	24.9	31.5	22.6	32.8	23.3	30	-----	30	22.9
28	31.2	22.2	31.7	23.8	31.3	24.4	31.7	23.1	32.4	22.7	31.6	-----	30	23.5
29	30.7	21.6	32.5	-----	31.8	23.4	30.5	22.7	30.1	23.2	33.3	-----	30.5	22.5
30	30.9	22.2	32.9	22.9	31.6	23.4	30.8	21.8	32.3	23.3	32.5	-----	30.5	22.5
31	31.7	22.7	32.7	24	33	23.8	31.5	23.6	31.4	23.2	33.2	-----	31	24.1
Mean	30.8	22.8	31.4	24.6	30.9	24.1	30.6	23	31.9	23.8	31.4	-----	30.2	23.6

Day.	Calag-itan, San Remigio.		Cuyo.		Barotac Nuevo.		Hacienda Ilaya, Victorias.		Hacienda Bilbao, Manapla.		Januay.		Cadiz.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.4	22.3	30.4	24.1	31.2	23.1	30.5	22.4	32.1	22.8	32.4	22.9	33.5	21.8
2	22	22	31.4	23.8	31.3	23	30.2	23	32.5	23	33	22.2	31.2	22.1
3	21	21	29.5	23.7	31.1	22.8	30.3	22.8	31.4	22.6	28.2	21	31.3	21.9
4	22?	22?	26.2	23.3	28.2	22.6	29.2	22.8	31.3	22.8	29	22.7	31.7	22.8
5	22	22	30	23	31.7	22.4	30.8	22.6	32	22.9	33.5	-----	31.6	21.6
6	21.2	21.2	32	23.2	31.3	22.3	30.5	22.2	31.9	23.1	32.4	21.1	31	22.6
7	22.3	22.3	33.5	25.9	32.1	23.1	30.6	23.5	32.2	22.9	31.1	23.2	31.4	23.4
8	23.4	23.4	32	22.6	32.3	23.2	31	22.5	32.1	23.1	31.7	22.8	31.5	23.5
9	22.3	22.3	32	24.3	32.5	23.2	30.4	22.3	32.5	23.2	31.7	22.9	31.2	23
10	22.3	22.3	32.7	24	32.8	23.1	30.8	22.3	32	22.9	34	23.4	31.3	22.7
11	22	22	32.4	25	32.3	23.2	30.4	23.4	31.8	23	32.2?	22.8	31.7	22.8
12	22.3	22.3	32	26.7	33.3	23.2	30.4	23.5	31.5	22.7	-----	23	30.8	22.8
13	23	23	29.8	22.6	32.2	23.1	29.5	23	31.3	22.5	-----	22.4	29.6	23.2
14	21.2	21.2	29.8	23.4	32.3	23.4?	30.4	23.2	31.4	22.4	33.2	21.5	30.3	22.7
15	22	22	32	23.3	32.7	23.3	31.2	22.8	31.6	22.7	33.2	21.5	30.8	23.8
16	21.2	21.2	31.3	25.6	32.5	23.1	31.6	23.2	31.7	22.6	32.1	22.2	31.7	23.1
17	22.3	22.3	29.7	26.3	32.6	23.2	30.5	23.6	31.9	22.7	31.5	22.6	32.5	22.6
18	21.2	21.2	29.3	23.8	31.2	23.1	29.8	23.5	31.8	22.5	31.4	23.1	32	21.7
19	22.3	22.3	29.2	24.3	30.3	23.2	29.4	23.4	32	22.7	30.6	22.8	31.7	22.2
20	20.1	20.1	27.5	23.2	28.2	22.1	29.2	23.4	31.6	22.4	27.4	23	31.8	23
21	22.2	22.2	27.7	24.4	29.3	22.2	29.8	23.5	31.9	22.6	29	23.1	29	21.3
22	23.4	23.4	29	25.9	29.8	23.2	30.5	22.3	31.4	22.4	32.2	23.9	31.7	23.1
23	24?	24?	29.3	24.5	29.3	23.1	30.3	22.9	31.9	22.8	32.2	24	33	22.2
24	23.4?	23.4?	30.1	26.1	29.4	23.2	30.2	23.4	32.4	22.9	32.1	24.6	33.3	24
25	24.5	24.5	31	24.5	32.2	23.3	31.5	23.6	32.8	23	32.9	24.5	34.1	25.7
26	23.4	23.4	30.1	25.2	32.3	23.2	31.6	23.8	32.9	23.4	31.9	25	30.7	24.6
27	21.2	21.2	31	23.9	32.6	23.1	29.4	22.9	33.2	23.1	31.4	22.2	31.6	22.4
28	22.3	22.3	30.5	25.5	32.5	23.4	30.8	22.8	32.1	22.7	32.1	21.8	31.7	22.6
29	22	22	30.9	23.1	32.3	23.2	30.5	22.6	32.4	23	32.3	22.5	30	22.7
30	22.3	22.3	32	24.3	32.2	23.3	29.5	22.5	31.8	22.9	32.7	21.5	30.1	22.6
31	23	23	31.5	-----	32.6	23.1	31.5	22.4	33.1	23	33	23	30.7	23
Mean	-----	22.3	30.5	24.3	31.5	23	30.4	23	32	22.8	31.7	22.8	31.4	22.8

Maximum and minimum temperatures at the stations of the Weather Bureau, July, 1921—Continued

Day.	Dingle.		Ormoc.		Guiuan.		Bugasong.		Bogo.		Tacloban.		Culasi.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	32.2	22.4	33.7	23.4	31.8	27.6	31	22.5	33	22.8	31.9	24	30.5	23.7
2	33.2	23	33.4	22.6	30.9	24.2	31.2	23.5	32.8	22.6	33	24	31.3	23.1
3	30	22	32.4	22.6	29.4	25.5		22.5	31.7	22.8	28.9	23.5	29.1	23.9
4	31.5	22	30.4	22.8	31.4	24.8		21.5	29.8	23	28	23.1	27.3	22.9
5	32.6	21.1	32	22.5	31.8	22.5	31	21.5	31.6	23.4	31.1	23	31.4	21.2
6	32.7	21.5	30.9	22.2	32.5	24.1	31	22.5	32.5	23.5	31	24	32	23
7	32.4	20	32.9	22	32.5	24	31.5	24	32.2	23.6	32.9	23.7	32.8	24.5
8	31.1	23	32.5	22.5	32.2	22.5	30.5	24	32.3	23.8	32.6	23.6	32	24.1
9	30.3	23	33.1	22.4	31.7	23.5	31	24	32.4	24	32.2	22.9	32.5	24.2
10	33.5	23.2	33.6	22	32.8	22.8	31.5	22.2	33.2	24.2	34	24.1	32.5	23.7
11	33.5	23	33.7	22.2	32.8	24.6	32.2	22.3	33.1	24.1	33.9	23.4	33.3	25.2
12	30.6	23	31.9	23.9	31.8	23	32	24	33	24	32.4	23.6	29.5	23.8
13	29.2	22.4	31	23.5	31.3	24.2	30	23	32.6	23.2	30.6	22.5	30	23
14	32.8	23	32	22.9	32.5	24	30.2	23.2	31.5	23.3	32.2	22.6	31	23.3
15	32.6	22.5	32.3	22.1	33	23.1	30.8	23.2	31.8	23.6	33.2	23.1	33.6	23.6
16	34.3	21.6	32.4	22.1	31.2	25.8	31.2	23.2	31.2	23.4	31.8	23.6	31.3	24
17	32.1	23.5	29.1	22.9	32	22.5	31.2	23.2	31.2	23.7	29.2	22.9	30.3	22.8
18	33	23.5	29.5	22.7	30.6	26.5	31.2	22	31.3	23.8	30.6	23.4	30.2	22.6
19	32.2	23	32.1	23.4	30.5	26.4	29	22.5	30.4	24	30.7	23	28.9	23.2
20	31.6	22.2	31	24.3	31.2	27.2	29.5	22.5	30.6	24.6	32.1	23.4	28.5	23.3
21	30.8	23.2	31.1	25.4	32	27.2	28.7	22.5	30.9	24.7	31.1	23.9	29.2	24
22	31.2	23.5	30.6	25.6	31.5	27.3	30	25.5	31	24.8	33.3	24.8	29.7	24
23	30.3	23	31.9	26	31.2	27.2	30.2	25.5	32	24.6	34.1	24.4	29.7	23.3
24	31.5	24	32.6	25.8	31	27.7	30	24	33	24.7	34	24.7	31.9	25.7
25	32.5	24.2	34	24.7	31.4	26.5	32	22.5	32.5	24.4	34.3	23.9	32.4	25.9
26	31.5	23	32.9	23.4	30.4	26.1	31.8	23.5	32.3	24.6	31.6	23.9	30.7	23.5
27	31.8	23.1	32.5	24	30.5	24	32	23	31.7	23.3	34.2	23	32	21.7
28	34.1	23	33.7	22.4	32	25.5	32	23.2	32.2	23.4	34.1	23.4	32.1	24
29	32.2	22.2	34.1	23.6	32.5	24	31	22			32.1	22.9	31.7	24.7
30	33.2	22.2	31.5	23.1	33.5	24.1	31	22			32.3	24.2	30.5	23.1
31	33.1	22.7	33.4	23.1	31.8	24	31	23			33.6	23.4	30.6	23.2
Mean	32.1	22.7	32.2	23.3	31.7	24.9	30.9	23	31.9	23.8	32.2	23.6	30.9	23.6

Day.	Hacienda Amparo, Pontevedra, Capiz.		Capiz.		Borongan.		Calivo.		Pandán, Antique.		Catbalogan.		Ibajay.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	32.8	23.5	33	24.4	33.4	23.6	32.7	23.1	31.3	23.2	32.2	22.9	31.8	24.5
2	32.4	22.9	32.6	23.7	32.6	23.1	33.5	22.6	30.7	21.8	32.6	22.9	32.2	23.3
3	23	23.2	28.2	23.9	28.7	23.8	29.3	22.8	28.1	23.6	27.5	22.6	24.1	22.5
4	32.1	23.1	26.8	23	29.2	23.2	25.8	22.1	28.3	22.4	29.1	21.5?	25.8	22.5
5	31.2	22.4	32	22.9	30.7	22.8	31.3	21.5	33.3	21.5	32	22	31.3	21.8
6	31.1	22.5	32	23.5	30	23.1	31.3	22.7	33.3	23.9	30.6	22.5	31.8	22.6
7	31.3	23.5	33	24.2	31.3	23.4	32.3	24.6	34.8	25.1?	32	22.3	32.3	24.8
8	31.4	23.5	32.5	24	32	23.7	31.6	23.4	34.1	24.5	30.9	22.5	32.2	24.2
9	29.2	23.9	31.1	24.6	32.2	23.7	30.3	23.3	34.1	24	31.4	22	32	24
10	32.4	22.8	33	24.4	32.1	23.6	32.3	23.8	34.9	24.1	32.4	22	32.6	23.9
11	31.6	22.3	33	23.9	32.1	23.5	32.3	23.1	32.9	24.6	32.4	22.2	32.1	24.3
12	29.6	23.2	31.8	23.3	30.1	23.3	31.3	23.8	31.3	24.4	32	22.1	30.9	23.3
13	28.7	22.6	29.1	23	31.6	23.3	28.3	22.1	30.3	22.8	30.1	21.9	29.4	22.5
14	31.3	22.4	32.1	23.2	31.9	23.4	31.8	23.1	34	22.9	30.6	22.3	31.8	23
15	31.2	22.7	32	23.4	32.9	23.8	32.6	23.1	33.7	24.1	32.1	23	32.2	23.5
16	31.8	22.4	32.2	23.5	32.4	23.6	33.3	22.6	32.4	24.8	31.3	21.9	31.7	23.4
17	31.2	24	30.6	24.1	32.9	24.4	30.6	23.1	32.7	23.2	30.9	22.1	29.7	22.4
18	31	23.7	32	24	33.6	24.7	34.3	23.1	30.3	23.9	30.9	22	30	24
19	31.4	23.3	31.5	23.7	30.7	24.5	30.3	23.2	28.8	23.1	32.2	22	29	23.3
20	31.4	23.3	32	23.6	32.2	23.9	27.6	23.1	28.1	22.6	31	22	28.5	23.1
21	31.9	23.8	31.5	24.1	33	25.6	30.3	23.1	28.7	22.7	32	22	29.6	23.5
22	32.7	24.9	34	24.5	33.4	24.8	31.6	23.6	27.8	23.7	32.4	22	29.3	24
23	32.2	24.4	34	24.4	32.5	25.8	31.6	23.1	28.6	23.2	32.1	22	28.5	23.4
24	33	25.9	34.6	24.9	34	24.3	33.6	23.5	31	24.4	32.5	22	31.7	24.6
25	32.9	24.8	34.5	24.9	32.7	23.2	34.3	23.1	31.9	24.7	32.3	21.5	32.5	24.9
26	31	24.5	33	24.1	30.7	24.6	33.3	24.1	29.7	23.2	30.8	21.8	31.1	23.7
27	32.4	22.9	33.5	23.5	33.2	23.2	33.3	23.1	32.2	22.8	31.8	22.4	32.2	23
28	33	23	33	24	32	23.6	33.9	23.1	32.4	23	32.1	22.5	31.2	22.7
29	31.3	22.4	32	23.1	31.8	23.3	32.3	22.6	33	23.2	31	22.2	32.3	22.7
30	31.8	22.9	33	23.8	32.3	23.9	31.6	22.6	35.1	23.8	31.7	22.7	32.2	22.7
31	32.3	22.9	32.7	23.5	32.1	24	32.3	23.1	32.1	23.4	32.3	22.3	32.2	23.2
Mean	31.6	23.3	32.1	23.8	31.9	23.8	31.6	23.1	31.6	23.5	31.5	22.2	31	23.4

Maximum and minimum temperatures at the stations of the Weather Bureau, July, 1921—Continued

Day.	Calbayog.		Masbate.		Romblon.		Batag Light-house, Laoang.		Irosin.		Sorsogon.		Bacon.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	32.3	24.5	31.6	24.6	31.6	25.4	32.5	23.8	32.8	23.4	32	32.2	24.3	
2	32.4	23.7	31.6	25.5	32.7	23.9	31.2	23.2	34.3	22.5	31.3	31.5	22.9	
3	27.2	22.3	27	24.5	28.5	24.2	24.4	22.8	29.8	21.5	26.4	26.5	23	
4	28.8	22.9	27.6	24	26.7	23.1	28.8	22.9	27.7	22.6	27.5	29.9	22.4	
5	32.5	22.9	30.6	24.8	31.7	22.9	30.4	23.4	30.8	23	31.4	31	22	
6	29.8	22.6	30.6	24.2	31.5	23.2	29.9	23.2	29.5	22.2	30.5	30.2	22.7	
7	32	23.3	32	25.6	32.5	25.5	29.9	24.3	31.2	22.4	31.5	31.1	23.3	
8	31.3	23.1	31.6	25.2	32.4	24.5	30.6	23.8	31.5	22.3	32.4	31.8	23.4	
9	32.6	22.8	31.6	25.6	32	23.6	29.6	23.9	32.1	21.8	32	31.9	22.4	
10	32.7	23.4	33	26	32.7	23.4	31.1	24.7	32.3	24.6	33	32	23.5	
11	33	23.9	32.8	26.5	32.7	23.9	31.2	24.8	31.3	24	32.5	31.7	26.7?	
12	30.7	23.5	31	26.4	32.8	24.3	29.4	23.2	31	22.7	31.5	31	24.6	
13	30.7	23.7	30	23.4	30.8	22.3	30.3	24	30.6	23.2	31	30.7	23.4	
14	31.1	23.1	31	25	31.9	23.8	31.4	23.3	31.5	22.4	31.5	31	22.4	
15	32.8	23.1	31.8	24.5	32	23.7	31.4	24.1	34.4	21.7	32	31	22.8	
16	32.3	23.6	31.4	25.6	31.9	22.8	30.4	24.3	31.7	22.4	32	31.4	23.1	
17	31	23.4	31	24	31.1	23.3	29.3	22.9	31.8	23	32	31.6	23.1	
18	30.7	23.9	31	24.2	31.5	23.8	30.3	23.4	31.7	22.4	30	30.8	23.5	
19	29.3	24.6	30.4	24.2	31	24.4	29.7	24.3	31.4	23.7	29.7	30	22.9	
20	30.1	24.6	28.6	24.4	30.7	23.4	29.4	23.4	30.8	23.5	29.3	30	24.2	
21	30.5	25.9	30	24.2	29.7	24.4	30.6	23.9	30.5	23.9	30	28.6	24.5	
22	30.2	25.7	31.4	25.2	28.3	24.9	29.9	24.5	30	24.9	31.6	28.7	24.6	
23	31.4	26.6	31.2	25.2	31.1	24.2	30.6	24.4	33	24	30	30.8	24.8	
24	31.2	27.5	32	24	31	24.1	32	24.5	33.5	24.1	30.4	31.7	24.4	
25	31.6	26.3	31.8	25.2	31.7	26.7	31.2	24.8	32.9	23.8	30	31.8	25.8	
26	29.7	23.6	31	26.2	30.5	25.3	28.8	24.1	31	24.6	---	29.6	24.8	
27	31.6	24.1	32.4	25.4	32.4	24.9	31.5	23.6	33.5	23.4	31?	31.8	24	
28	32.5	22.9	32	25	32.4	23.8	31.3	23.1	35.3	22.6	32.9	32.2	24	
29	31.4	23.1	31	24	32.8	23.5	32	23.8	34.3	22.6	33.4	31.5	23.4	
30	31.9	23.7	31.8	26.4	32.8	22.2	31.9	25	31.9	23	32	31.3	23.1	
31	32.6	23.7	32.6	24.4	32	24.5	31	23.8	34.6	24	33	32.7	24.4	
Mean	31.2	23.9	31.1	24.9	31.4	24	30.4	23.8	31.9	23.1	31.1	30.9	23.7	

Day.	Jovellar.		Legaspi, Albay.		Guinobatan.		Polangui.		Bacacay.		Tabaco.		Sumay (Guam), Agaña.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	31.3	21.9	33.8	24.5	31.5	22.5	32.2	21.1	31.2	22.6	33.5	23.7	30.8	23
2	30.9	22.1	33.1	24.5	32	22.6	31.2	20.1	30.8	23.5	33.4	22.4	30.8	26
3	32.2	21.9	26.2	23	25.9	22.2	34.2	22	29.6	23.8	32.5	22.6	30.9	24.9
4	25.6	21.5	26.6	23.3	32	22.4	---	24	29.8	23.4	26.3	21.6	31	24.7
5	25.9	20.2	31.8	23.3	31.1	21.5	---	23	29.2	23.6	26.7	20.8	29.2	26
6	32.3	20.8	29.6	24	30.2	22.1	32	24	32.1	22.1	32.1	22.2	30.8	25.1
7	29.9	21.7	30.9	24.8	31.3	22.5	34.1	23	32.3	22.3	30.3	22.1	31.2	23.3
8	30.6	20.3	32.4	23.6	31.9	21.2	---	22	31.3	22.6	32.3	22	31.6	24.8
9	32.1	20.6	31.3	23.3	30.9	21.6	32	20.5	30.2	23	32.4	21.6	29.6	26.5
10	31	22.1	33.4	24.4	33.1	---	30.1	20.4	32.5	22.2	31.2	22.8	30.9	26.6
11	32.4	23.7	33.1	26	32.7	22.8	33.2	20.3	33.1	22	33.2	23.6	29.3	25.1
12	31.9	21.8	31.2	25.1	31.6	22.1	32.3	20.4	30.6	22.4	33.1	23	28.3	24.8
13	30.6	22.1	30.6	23.8	31	22.7	32.1	22.3	32.7	23.1	31.8	22	26.9	24.2
14	30.7	21.2	32.6	23.8	31.5	20.6	30.9	22.2	32.2	22.4	31	23	30.6	23.5
15	32.1	---	33.3	23	32.7	21.6	33.2	20.5	30.1	23.2	32.2	21	30.6	24
16	32.6	21.5	32.1	24.1	33.5	22.6	30.3	20.3	32.8	22.1	32.7	22	29.8	24.3
17	32.6	---	32	24.5	32.1	23.8	33.2	20.3	32.4	23.2	32.6	23.1	30.8	23.6
18	32.2	---	31.6	24.6	31.6	23.8	32.1	20.8	30.4	23.2	33.2	22.7	30.7	24
19	30.7	22.5	31.3	24	30.2	22.7	31.4	22.2	30.6	21.5	32.2	22.8	30.8	25.8
20	30.6	21.7	30.6	24.6	29.8	23	30.1	22.1	31.4	22.2	32	23.2	29.3	26
21	29.8	22.4	29.9	24.9	29.8	22.7	29.1	23.9	30.3	21.6	32.2	22.6	28.9	24.3
22	29.7	24.1	29.3	24.8	29.9	---	30.4	25.8?	30.5	20.5	30.1	24	30.3	24.4
23	33.8	23.7	31.1	25.1	31.1	24.5	29.4	21.2	30	22.3	31	23.8	30.8	24.1
24	29.8	23	32	24.6	30.3	23.7	30.2	24.2	30.1	22.4	30.6	24.6	30.8	24.4
25	30.1?	23.1	32.3	25.8	31.6	24.3	31.2	24.9	32.4	22.6	32.7	25	31.3	25.4
26	31.4	22.8	30.6	25.3	30.5	22.9	32.3	22.1	31.8	23.2	32.3	24.2	31.3	24.6
27	29.5	22.1	32.6	24.6	32.3	23.2	29.1	24.2	31.2	23.2	30.7	24.7	31.6	26.5
28	31	22.2	34.7	24.7	33	23.7	31.4	23.4	32.4	23.4	34	22.1	31.7	27.2
29	32.6	22.9	34.4	24.1	32.2	23.3	32.4	24.1	32.5	22.2	33.9	21.8	31.2	25.1
30	32	22.3	33.8	26	32.9	23.1	32.3	23.2	32.4	22.6	33	22.9	30	25.1
31	32.3	21.9	33.9	26.2	33.3	22.5	33.2	20.3?	32.3	22.8	33.2	22.1	30.8	26.2
Mean	31	22.1	31.7	24.5	31.4	22.7	31.6	22.2	31.3	22.6	31.9	22.8	30.4	25

Maximum and minimum temperatures at the stations of the Weather Bureau, July, 1921—Continued

Day.	Iriga.		Calapan.		Tiwi.		Pasacao.		Virac.		Naga, Camarines Sur.		Tigaon.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	33.5	22.6	33.5	23.8	33.2	23.5	33.4	23.7	33.9	23.1	32	23.7	29.5	24.4
2	34.1	22.8	33	22.5	33.6	23.6	33.1	22.6	33	23.2	32.5	23.8	32.3	22.5
3	27.2	22	31.5	22.5	31.8	22.4	34	24	27.5	23	25.9	23.4	24	22.5
4	28.1	22	29.5	22.5	31.6	22.3	33.4	25	29	22.4	24.6	22.5	24.5	22.4
5	32	20.7	30.5	22	31.8	22.6	34	25.4	31.6	23.2	32.2	22.4	29.5	22.3
6	30.2	22.1	31	22.5	32.9	23.4	32.7	25	31.5	22.7	29.4	22.3	27.3	22.5
7	30.8	22.4	31.5	24	32.6	22.4	32	24	32.4	23	31.6	23.1	30.7	21.6
8	32.9	21.6	31.5	24.8	33.4	23.6	32	24.3	32	22.1	31.6	22.8	32	21.5
9	31.6	21	31	23	33.2	23.5	31	23	31.5	22	32	22.4	30	21.6
10	30.1	22.1	31.5	23	33.6	24.2	31.4	22.8	32.7	23.4	33.5	23.6	32.2	23.6
11	34.1	21.8	32	25.5	31.4	23.8	31.5	22.4	32.7	22.5	32	23.2	31.5	23
12	34.1	21.4	32	25	30.9	22.4	32.8	23.6	31.9	22.3	33.1	22.1	31.6	21
13	32.9	22.1	30.5	23.4	29.2	21.5	31.2	23.5	32.1	22.4	31	23.1	28.9	23
14	34.1	21.8	31.1	23.2	32.2	22.5	32	22	32.6	22	32.2	22.6	30.5	21.8
15	30.3	20.3	32.5	23	31.8	22.8	33	23	31.6	23.4	32	22.1	30.2	20.6
16	33.6	21.6	31.5	22	32.1	22.2	33.9	24	33.8	22.7	32.2	23.4	31.5	22.4
17	32.6	23.4	32	25	32.2	22.3	31.1	22.1	33.4	22.6	31.9	23.1	31.4	23.4
18	31.8	23	31	24.5	33.8	24.6	31.4	21	32.5	22.2	32.1	23.7	29	22.4
19	31.6	22.6	31.5	23	31.4	23.2	32	21.1	32.5	23.1	31	22.9	29	23
20	30.6	23	31	23.5	31.3	22.4	32.9	22.7	32.4	22.3	31	24.5	29.1	24.5
21	30.5	22	30.5	23	30.8	20.2	32.4	22.8	33	23	30.9	23.7	29.3	24
22	30.3	23.2	28	23.5	31.6	22.2	32.1	22	31.2	24	30.4	25.6	27.7	24.9
23	29.2	24	28.5	23.5	31.8	22.4	32.2	22.6	31.5	24	29.5	24.8	27.9	24.5
24	30.9	24.8	31.5	23.2	33.6	24.3	33	23.1	33.7	24	32.1	24.5	31.5	24.8
25	31.8	23.9	31.5	24	32.6	23	32.4	22.7	34.3	23.3	32.1	25.5	31.5	25.1
26	32	22.4	31.5	24.5	31.8	22.8	31	20.2	30.3	23.8	31.6	25.5	28.5	23.7
27	31.4	23.1	32	23.4	32.4	23.8	32.3	22.9	32.6	23.7	32	24.8	32	24.6
28	31.3	23.1	32	23.5	32.2	24.2	33	23	33	23.9	33.1	24.6	32.4	23.4
29	32.5	23	32.5	23.5	32.6	23.6	32.1	23.1	34	23.1	33.9	24	33.1	22.7
30	33.1	22.8	32.6	24	31.4	23.8	31	22.8	33.3	22.4	33.9	23.8	33	22.8
31	33.4	22.6	31.9	24	31.8	23.4	33.7	22	33.4	22	33	23.1	33.5	23.4
Mean	31.7	22.4	31.4	23.5	32.1	23	32.4	23	32.3	22.9	31.5	23.6	30.2	23

Day.	Baras.		Libmanan.		Batangas.		Ragay.		Calatagan.		Balayan.		Lipa.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	31.4	24.4	32.7	24.4	32.3	24.4	32.7	21.8	32.7	21.8	32	22	31.8	22.1
2	31.3	26.5	32.9	23.4	31.7	23.6	33.6	21.7	33.6	21.7	32	22	31.7	21.9
3	31	24.2	31	23.3	27.7	23.9	32.3	21.6	32.3	21.6	31.7	22.5	29.3	21
4	27	25	23	25.1	23.5	25.2	27.8	21	27.8	21	27.5	22	25.1	22.2
5	29.9	27	22.2	30.5	22.9	29.3	30.2	21.2	30.2	21.2	30	22.3	27	21.4
6	30	25	22.5	32.7	23.3	30.3	32.6	22.2	32.6	22.2	32	22	29.8	21.6
7	29.8	25	24.1	32.6	24.9	31.3	33.2	23.6	33.2	23.6	31.5	22.5	29.4	22.9
8	30	25.2	23.5	33.9	23.4	32	33.2	21.4	33.2	21.4	32	23	30	21.9
9	30.8	25.9	23.1	31.4	23	32.2	32.4	21.6	32.4	21.6	32	24	31.4	21.3
10	30.8	25.2	23.7?	33.7	24.4	32.3	33.8	23	33.8	23	32	22.8	32.9	22
11	30.9	25.4	23.6	33	24.3	33.1	33.2	22.5	33.2	22.5	33	24	31.9	21.7
12	31	25.9	23.4	34	23.7	33.2	33.9	21.4	33.9	21.4	32.5	22.5	30.7	22.2
13	29.3	25.2	24.2	33.2	23.8	30.4	33.1	23.6	33.1	23.6	32	22.5	30.4	20.9
14	29.7	25.4	23.9	32.2	23.8	32	33.2	21.3	33.2	21.3	31.5	22	29.2	21.3
15	30.4	25.6	22.9	33	23	32.2	33.1	21.1	33.1	21.1	33	22	31.2	22
16	30	25	23.8	32.6	24.5	32.2	31.8	21.2	31.8	21.2	33	21.6	30.3	21.3
17	30.8	25	24.1	31.7	23.2	31	31.5	21	31.5	21	33	22	29.8	22.1
18	31	25.1	23.8	31	25.4	31.8	29.7	21.5	29.7	21.5	33	22	29.4	22.1
19	30	25.4	23.1	31.3	23.4	31	30.7	19.6	30.7	19.6	30.3	21.8	29.8	21.9
20	30.4	25	24.1	30.1	24.3	31.1	29.7	22.5	29.7	22.5	29	22.5	29	22.8
21	31	26.2	24.2	30.2	24.9	31.2	29.8	22.6	29.8	22.6	30.5	21.5	28.9	23
22	30.5	26	26.5?	28	24.8	30.2	28.7	23.1	28.7	23.1	29	22.5	26.7	22.9
23	29.2	25.6	25.8	29	24.1	29.2	29.8	21.3	29.8	21.3	30	23	28.3	22
24	30	26.1	24.8	32	24	30.2	29	22.5	29	22.5	30	23.5	29.4	22
25	31.3	25.5	25.8	32.4	24.7	31.3	32.3	23.2	32.3	23.2	31.8	24	30.3	21
26	30.2	26	24.9	30.4	24.7	30.2	30	21.4	30	21.4	30.5	23	29.7	21.3
27	30.9	26.3	24.8	32	23.2	32.1	32.9	21.7	32.9	21.7	32	24	30.2	21.5
28	30.5	26.3	24.2	33.2	24.2	31.3	33.3	21.8	33.3	21.8	33	25	30.4	22.8
29	31	26	24.2	33	24.3	32.2	33.1	22.4	33.1	22.4	33	26?	31.7	22.9
30	30.7	25.8	24.3	33.1	23.3	33	34	22.1	34	22.1	32.5	22.5	31.3	22
31	31	25.7	24.2	34.2	23	31.3	34.7	22.5	34.7	22.5	32	22.2	32.5	21.9
Mean	30.4	25.6	24	31.8	23.9	31	31.9	21.9	31.4	22.7	30	21.9	30	21.9

Maximum and minimum temperatures at the stations of the Weather Bureau, July, 1921—Continued

Day.	Lucena.		Atimonan.		Nasugbu.		Ambulong, Tanaun, Batangas.		Daet.		Mendez Nuñez.		Alfonso.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.3	21.9	33.6	25.2	32.2	---	32.2	23.8	33.1	24.1	28	20.9	---	21.6
2	31.5	20.5	33.6	23.5	32.2	---	32.3	23.3	32.7	23.5	27.5	18.9	---	20.1
3	31.5	21	29.9	23.4	31	---	31.2	23	27.4	22.9	28	20.9	---	21.7
4	25.5	21.5	24.9	22.2	26.9	---	27.3	22.3	25.1	22.4	22.5	20	---	21.4
5	29.5	22.6	30.4	22.4	29.9	---	30	22.9	29.7	22	25	20	---	20.6
6	30.5	21.2	30.1	22.6	31.5	---	32.2	23.2	30	21.9	26	20	---	20.5
7	30	23.4	29.9	25.9	32.1	---	32.1	25.2	30.4	23.4	27	21	---	22.3
8	30.7	22.9	30.5	24.6	32	---	32.8	24.7	31	23.4	28	21	---	21.1
9	31	21.8	30.4	24.8	32	---	31	23.1	30.5	22.7	26.5	19.9	---	21.2
10	32	22.3	31.4	23.4	32.3	---	31.1	23.9	31.8	22.5	29.5	21	---	20.6
11	31.7	23.2	31.8	26.8	33.2	---	33.7	23.8	31.1	24.1	28.5	20.5	---	22.2
12	32	22.9	31.2	26.2	33.9	---	34	24.9	31.5	22.8	28.5	20.5	---	22.1
13	31.5	22.6	31.4	23.8	33	---	33.1	24.4	29.4	23.7	28.5	20.9	---	22.5
14	32	22.6	31	25.8	34	---	32.7	23.9	30.9	22.5	28	20	---	21.4
15	32.5	21.9	31.8	23.5	33	---	35	22.7	31.6	21.5	29.5	19.5	---	19.6
16	32	22.1	32.3	24.2	31.9	---	31.7	23.8	31.9	23.6	28	20.5	---	22.1
17	30.7	21.5	30.7	23.8	32	---	31	22.8	30.5	24	28.5	20.2	---	21.7
18	30.5	22.5	31.8	24	30.9	---	30.2	23.8	32.1	23.2	27.5	21.5	---	22.4
19	32.2	22.5	33.3	23.9	31	---	31	23.2	30.9	23.7	27.5	21.5	---	20.9
20	31.2	21.9	32.1	23.3	30.1	---	30.2	24.3	32.2	23	27.9	21.9	---	21.7
21	30.2	23.2	30.7	23.7	31.6	---	30.2	25.3	32.3	22.7	26.5	21.9	---	21.6
22	28.4	24.1	29.5	25.6	29.2	---	29.3	25.2	31.4	25.7	25	21.5	---	21.8
23	28	22.4	28.8	24.5	28.3	---	29.3	24.9	31.2	24.6	24	21	---	22.2
24	30.5	22.6	32.8	24.7	28.9	---	29.8	25.3	32.2	24.5	25	19.8	---	21.6
25	30.7	22	32.2	24	32	---	31.4	24.6	31.8	24.2	28	21	---	22.5
26	31.5	21.9	31.3	24.4	30.6	---	30.7	24.9	31.3	24.5	27	20	---	---
27	30.4	22.2	31.9	24.4	32.6	---	31.5	23.8	32.7	24.1	29	20.5	---	21.1
28	31.3	25	33.8	25	33	---	32.4	24.9	33.6	23.8	29.5	21.2	---	21.5
29	33	23.2	32.8	23.6	32.3	---	35	24.8	31.8	22.9	29.5	20.5	---	21
30	32.6	22.7	32.9	24.4	33	---	34.4	24	31.7	24	28	20	---	21.9
31	33	22.4	33.1	24.7	33	---	33	23	32.6	23.8	30	19.5	---	20.6
Mean	30.9	22.4	31.4	24.3	31.6	---	31.7	24	31.2	23.4	27.5	20.6	---	21.4

Day.	Indang.		Canluban, Calamba.		Silang.		Maragondon.		Paracale.		Santa Cruz, Laguna.		Buenavista, General Trias.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	29.1	22.5	32.6	22.6	28.7	---	31.4	22.6	29.2	23	33.3	22.8	33	22.3
2	29.8	21	31.4	21.2	29	20.3	32.8	---	29	24	33.7	21.8	31.8	22.2
3	29.7	22.5	30.9	21.5	28.6	20.8	31.2	21.6	28.5	23.2	33.1	22.5	32.4	21.3
4	23.5	22.2	25.8	22.2	27	21.5	26.2	23.1	28	22	26.7	22.7	32.9	22.2
5	27.1	21.3	29.2	21.4	26.5	20.7	29.4	21.4	29	22.5	30.3	22.3	28.7	21.2
6	28.6	21.5	30.4	21.9	27.2	21.5	30.9	22.3	29.2	23	31.3	22.5	29.8	20.8
7	29.4	22.9	30.6	23	28.8	20.6	32.1	21.6	29.5	23.5	30.5	24	31.5	22.5
8	30	22	31.2	22	29.2	20.8	31.1	22.6	29.2	23	31.3	22.7	31.2	21.6
9	27.9	21.6	29.2	21.6	29	20.3	29.7	22.7	29	23.2	31	23	29.2	21.5
10	30.3	22.4	32	21.8	29.8	20	30.9	22.9	29	23.2	33.1	22.8	31.2	22.2
11	30.5	22.8	32.2	21.7	28.2	21.4	31.3	22.6	30	23.8	32.4	23	31.2	22.4
12	30.5	22.8	32.1	22	28.8	21.2	32	22.3	30	23.8	32.3	23.6	31.4	21.9
13	30.7	23.1	32	22.6	29.7	21.5	32.6	22.5	31	24	33	23.5	30.9	22.8
14	30.6	22.5	31.8	22.2	29.4	20.6	32.7	22.5	30	24	32.6	22.3	31.8	22.5
15	31.5	20.9	33.3	21.6	29.5	20.7	32.6	22.5	30	24	33.7	21.9	32.9	20.9
16	29.8	23	33	22.6	29.6	20.3	32	22.8	30	24	32.5	23.2	31.8	23.2
17	30.6	21.8	31	21.9	29.3	20.5	33.4	22.3	29.2	23.8	31.6	23.2	32.4	22.5
18	28.7	23	30.4	21.6	29	20.4	31	22.8	29.5	24	32.2	22.9	32.3	23.2
19	29.1	21.5	30	22	28.7	20.5	30.5	21.8	30	24	31.3	23.5	32.4	23.1
20	28	22.6	31.4	22.9	28.6	20.6	29.7	22.9	30	24	32.2	24	32.5	23.4
21	28	22.5	31	22.8	28.4	20.3	30.1	23.5	30	24.2	31.8	23.6	32.4	23
22	26.8	22.4	30.4	23.3	28.5	21.4	29.1	24.4	30.2	24	33.2	24.5	31.8	23
23	26.7	22.9	29.6	23.5	29	20.8	26.2	22.5	30.2	24.2	30.1	24	31.8	23.8
24	25.6	22.5	30.5	23.2	29.3	20.5	28.6	23.9	30.5	24.2	32.1	23.7	31.8	22.8
25	29.3	23.2	32.1	22.5	29.5	20.6	31.6	24.6	29.8	24.2	32.4	23.6	30.4	22.4
26	28.3	21.8	31	22.6	29.2	20.6	30.5	22.8	29.8	24	30.8	24.2	30.7	23.1
27	30.9	20.9	32	22	29	20.2	31.8	22.3	30	24	32.6	22.8	31.7	23
28	31.2	---	33.5	22.6	29.7	21.4	33.1	22.4	30	24.2	34.3	23.2	32.4	21.8
29	31.6	---	33	22.3	29.8	21.4	32.2	22.6	31	24.5	34.4	22.9	32	22.6
30	31	21.8	33.3	22.1	29.7	21	32.3	22.2	31	24.8	33.1	23.5	30.2	23
31	31	22	33.2	22.4	30	21.3	32.1	21.5	31	24.8	34	22.6	30.8	21
Mean	29.2	22.2	31.3	22.2	28.9	20.8	31	22.6	29.8	23.8	32.2	23.1	31.5	22.4

Maximum and minimum temperatures at the stations of the Weather Bureau, July, 1921—Continued

Day.	Cavite Naval Station, Cavite.		Manila.		Antipolo.		Balanga.		Malolos.		San Fernando, Pampanga.		San Isidro, Nueva Ecija.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	33.5	24.2	32.3	24.6	30.9	22.4	32.2	24	31.5	23.5	31.5	21.5	30.6	23.4
2	31.8	24	32.8	23.8	32.3	22.2	32	23.7	32	23.2	33.5	21.5	32.6	23.4
3		23.5	31.6	23.4	30.8	21.8	32.3	23.4	31.5	22.5	33	21.5	32.6	22.5
4	30	20.2	26.2	22	23.8	21.5	27.5	23.9	33	22.6	29	20	25.9	22.6
5	31.6	21	30.7	22.7	29.5	21	28.6	22.5	29.3	21.7			28.8	22.1
6	30	22.6	31.2	23.4	31.8	21.3	29.6	23.2	29.5	22.5	30.5	22.4	30.6	22.4
7	31.3	22.6	32	23.5	31.2	21.7	32.6	23.5	31	23	32.5	22.3	32.4	23.6
8	30	22.4	31.4	23.1	31.2	21.7	33.4	23.4	32.3	23.3	34	23.4	33.9	23.1
9	33	23.8	30.2	23	30.2	21.3	30.9	23.5	27.7	23.1	29.5	21.5	28.4	23
10	33	23.4	32.9	23.5	32.6	21.7	33.1	23.3	32.7	23	33.5	21.5	33	23.4
11	33.2	23.5	32.4	23.3	31.7	21.5	33.6	24.1	33.2	23.3	33.5	22.5	34.4	23.4
12	33	24.7	32.4	23.4	33.8	21.5	33.7	23.7	33	23.1	34	21.5	33.9	23.2
13	33.5	25	33.1	23.2	33.5	21.6	33.2	23.7	33.3	23	33	22.5	33.2	23.5
14	34	24.1	32.4	23.1	33.1	21	33.7	24	33	22.8	33.5		34.4	22.7
15	33.5	23.8	33.2	23.1	33	21.2	34.2	22	33.7	22	34.5	21.5	34.9	23.5
16	32.7	24.1	31.8	24.2	31.6	22.2	32.8	24.4	33.7	24.5	33	23	34.2	24.9
17	32.4	23.8	31.1	23.6	30.6	21.6	32.3	24.1	31.5	24.3		23.5	32.4	24.8
18	31	23.7	32	23.1	30.8	22.8	31.7	24.8	31.6	24	33	24	32.4	24
19	31.5	22.6	30.7	23.4	29.8	22.5	29.8	24.3	31.7	23	32	24.4	31.6	23.9
20	32.5	23.5	32.3	23.5	31.5	22	31.1	24.4	32	23.6	33	25.4?	31.1	23.6
21	31.2	24.7	31.3	24.6	30.5	22	29.1	25	31	23.4	31.5	21.5	30.9	24.2
22	29.2	25.5	31	25.1	29.5	22.8	31.3	24.5	31.9	24.5	32	25	31.2	24.6
23	30.1	23.3	30	24.7	27.7	21.6	30.1	24.8	30.7	23.8	31.5	23	31.9	24.6
24	32.6	24	30.4	24.7	28.5	23	29.3	24.8	28.7	24.5	30.5	24.5	28	24.3
25		24.3	31.7	25	30.9	23.8	30.6	24.6	30.8	23.4	31	24	29	23.4
26	32.5	23.5	31.2	24.6	29.2	22.6	31.3	24	30.9	24	33	23.4	30.4	24
27	33.6	23.7	33.5	23.6	32.5	21.6	33.1	24	32.1	23.6		23.5	32.1	24.1
28	34.7	25	32.6	24.5	33.5	22.9	33.3	23.9	32.9	24	33.5	24	33.1	24
29	35	24	33.6	24.2	33.8	22.6	34.7	24.1	34.7	24.4	35	24.2	34.6	24.4
30	34.6	24	33.7	23.9	33.8	21.6	34.8	24.5	34.8	24.7	35		34.9	24.4
31	33.5	23.6	33.5	23	33.9	20.8	34.8	24.8	34.5	23.6	34.5	23.5	34.6	22.9
Mean	32.4	23.6	31.8	23.7	31.2	21.9	32	24	31.9	23.4	32.6	22.9	32	23.6

Day.	Iba.		Concepcion, Tarlac.		O'Donnell, Capas, Tarlac.		Tarlac.		Camiling.		Baler.		Dagupan.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1		23.4	31.6	22	32.2	20.8	31.4	22.2	32.5	22.8	35	24.2	32	23.8
2	30.8	23.2	33.6	22.4	32.2	20.7	31.8	21.6	33.5	22.5	33.6	23	33.3	23.9
3	30.4	22.6	34.7	21.2	33.2	20	32.5	22.8	33	22.7	34.9	22.4	32.3	23.8
4	30.1	23.6	26.7	22.4	26.2	20.7	29	22	33.5	22.5	26	22.4	31.6	22.9
5	28	20.8	28.8	21.3	30.2	21.2	30.2	21.1	33.5	22.8	28.5	22.1	27.9	22.9
6	33.2	24.1	30.9	21.7	31.2	20.7	32.8	21.4	33	22	29.3	22.3	32.5	23
7	33	24	33.5	21.7	32.7	21.2	34.2	22	32	24	31.3	22	33.8	23.8
8	31.9	22.5	34.4	20.3	33.2?	20.7	35.6	21.6	33	22	32.2	22.3	34.4	23.2
9	31	22.4	29.4	20.9	28.7	21	32	22	34	22	31.5	22.7	33.1	23.7
10	32.7	24.5	34.7	21.9	32.7	20.4	32.4	21.8	33	24	31	22.6	35.4	23.5
11	32.8	23.3	35.3	21.5	33.7	20.8	35.4	22.2	34	23.5	31.9	22.7	34.7	24.1
12	32.2	23.6	34.6	22.9	33.2	21.2	36	22.8	34.5	22.7	32.3	22.3	34.9	24.5
13	34.2	23	34.6	21.8	32.9	21.4	35.6	22.6	33.8	22.8	31.9	22.9	35.3	23.9
14	32.4	23.5	35	21.6	32.7	21.7	36.4	22.2	34.3	23.5	32.6	21.8	35.6	23.2
15	32	23	35.6	22.6	33.7	21.6	36.2	22	34.5	22.5	33.4	21.9	33.5	23.4
16	31.7	24.2	34.6	24.5	34.2	21.9	32.4	24	33.3	23.5	31.6	23.8	33.6	25.2
17	31.5	23.5	33.6	22	31.7	21.7	34	22.8	33.5	22.5	31.9	23	31.5	25.7
18	31	23.6	33.6	22	31.7	20.9	32.8	21.8	33	24.5	33.2	23.9	33.3	23.1
19	29.1	24.3	33.1	22.7	31.1	20.7	32.8	22.8	31	22.7	32.7	23.5	32.1	23
20	30.1	23.5	33.6	21.2	31.7	22	31.6	22.4	32	22.5	33.7	23.5	31.8	24.4
21	27.9	23.5	32.6	20.1	29.6	20.6	29.6	23.4	33	23.5	32.3	23.5	30.1	24.9
22	30	24.5	31.1	23.9	29.6	22.9?	32.6	23.8	33.5	23.3	32.5	24.1	28.5	24.1
23	31.6	24.7	33.7	23.3	30.8	20.4	32.8	23	32.5	21.5	34.1	21	33.5	24.4
24	27.5	24.5	29.6	23.3	28.5	21.2	31.4	23.6	31.5	21.5	32.7	24.5	30.1	25
25	28.2	23.6	31.4	23.7	28.5	23.5	30.2	23.6	29.5	22.5	34.1	24.2	31.3	24
26	30	23.2	32.8	22.3	31.7	22.2	33.4	22.8	29.5	23.5	33	24	32.6	24.3
27	32	23.9	34.1	23.4	32.7	21.7	34.8	23.6	33.5	23.1	32.8	23.9	34	25
28	31.6	24.8	34.6	23.5	32.7	21.2	35	23.2	33.4	23.5	33.2	23.7	35.2	25
29	31.5	23.5	35.6	23.2	33.7	20.4	35.2	22.6	33.5	23.5	33	23.1	33.6	25
30	32.5	23.4	35.7	21.7	34.2	21.1	35.6	22.4	34	22.4	33.5	23.9	34.6	25.4
31	31.8	23.5	35.6	23.2	34.3	22.3	33.4	23.8	33.5	22.8	34.3	21.3	33.5	25.4
Mean	31	23.5	33.2	22.3	31.8	21.3	33.2	22.6	33	22.9	32.4	23	32.9	24.1

Maximum and minimum temperatures at the stations of the Weather Bureau, July, 1921—Continued

Day.	Rosario, La Union.		Tubao.		Itogon.		Bolinao.		Aringay.		Baguio.		Naguilian, La Union.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum. <sup>a</sup>	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	34.1	23.4	34.2	24.5			31.7	25	34.8	23.2	21.8	16.3	31.9	22.8
2	34	22.6	32.7	23.4			32.5	24.2	34.8	23.2	21.8	15.6	31	23.3
3	30.3	22.8	32.1	23		19	31.7	23.2	34	22.8	22	15.5	32.1	22.5
4	30.1	22	33.4	23.9	27.4	20	32	24.5	33.2	23.2	20.7	14.2	29.1	23.2
5	31.8	23.4	28.8	24.3	27.5	19	27.8	23.3	34	23.8	17.9	14.2	29.1	23.2
6	32	22.2	33.9	22.7	31	20	35.5	24.3	35.2	22.8	23.2	15.5	33.3	22.7
7	32.3	22.4	32.5	23.4	30	19	35.2	23.2	33.2	22.8	23.8	15.3	31.6	22.5
8	32.2	21	33.4	22.3	32.3	18	32	23	34.8	22	24.2	16.3	33.1	21.1
9	30	22.4	33.4	22.4	29.2	19	33.7	24.7	34.8	22.8	24.1	15.7	33	23.3
10	33.7	22.2	33.3	21.7	30	19.2	32.9	24.5	34.8	22.8	23.6	15.7	33.1	23.3
11	32.2	22	32.4		32	18.1	32.8	25.2	35	22.8	24.1	15.6	33.3	23.3
12	33.7	22.2	34.5		32.2	18.8	33	24.6	35	23.2	23.4	16.1	33	23.2
13	33.7	21.6	34.6	22.4	32	18.3	34.5	24.7	36	24	24.6	16.2	34.5	22.6
14	33.7	21.7	34	22.5	29.4	19.4	33	24.7	35.8	22.8	23.1	15.5	33	22.8
15	33.4	21.1	33.7	21.5	32.2	17.7	32	24	35.8	22.8	23.7	14.7	32.5	21.2
16	32.5	21	33.2		30.2	20	31.7	25.5	34.1	22.8	22.8	15.8	32.2	22.9
17	32.2	22.1	31.7	23.6	29	19.6	31.5	23.7	33	22.8	21.9	15.7	31.6	23.3
18	32.8	22.8	33.2	24.3	31	21.3	31.7	23.9	34	23	21.5	16.4	32.6	24.3
19	32.4	22.9	33.2	22.9	30.6		32.2	23.7	34	22.2	22.6	15.8	32.1	22.7
20	31.3	22.6	33.3	22.9	30	19.8	30.7	23.9	33.8	22.8	22.4	15.2	32	22.8
21	28.8	22.6	30.6	23.4	27.6	20	29.5	24.8	32	22.8	18.8	16	30.2	23.3
22	26.5	22.8	30.4	24.3	29	20.6	28.2	24.9	32	22.3	18.2	16	27.7	23.5
23	30.8	23.5	32.3	24.1	27.2	20.3	32.2	24.9	33	23.2	19.3	16.3	32.4	23.9
24	28.9	24.1	34.6	24	26.2		30.5	24.7	30.3	24.3	20.2	16.4	28.6	24.1
25	32.2	23.5	33.3		29	19	31.7	24.5	34	23.2	22.5	16.7	34.2	24.3
26	30.1	23.5	33.4	24.3	28	21	32.7	23.7	32.2	23.2	21.1	16.4	31.7	24
27	32.7	24.5	33.7	24.2	30.2		33.2	25	36.8?	23.2	23.9	16.8	33.6	23.2
28	33.8	24.5	33.3	24.4	30.4	20.4	34	24.7	34.8	24.2	23.8	16.2	35	23
29	33.9	24	34	24.2	31.4	20.4	32.8	24	35.8	24.3	23.8	16.6	32.8	24
30	33.8	23.1	33.9	23.9	32	20.2	32	25	35.8	24.2	24.3	16.7	33.2	24
31	33.9	23	33.4		32	19	31.8	27.8	35	23.8	24.6	16	32.6	23.2
Mean	32.1	22.7	33	23.4	30	19.5	32	24.4	34.3	23.1	22.4	15.9	32.2	23.1

Day.	Kapangan.		Atok.		San Fernando, La Union.		Echague.		Balaoan.		Tagudin.		Candon.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1		18.1	21.6	14.9	33.4	24.6	35.7	22.6	33.2	24	33	24.2	31.5	25
2		17.6	15	33	25	35.4	22.5	33.3	23.4	33.6	24	31.6	31.6	24
3		17	21.6	15	33	23	31.7	22.8	32.9	22.6	32.6	23.1	31.8	23.3
4		18.4	22.9	15	32.8	23.6	29.8	23.3	32	23.6	32.8	23.9	34.4	23.1
5		18.5	18.4	14.1	28.8	23.7	30.5	22.4	33.4	24.1	30.2	24.9	30.6	25
6		20	25.2	15.8	33.7	23.5	30.9	22.3	30.6	23.3	32.3	23.8	31.9	24.4
7		16.7	23.6	15.9	32.2	22.7	32.4	22.3	32.4	23.2	32.1	23.3	30.8	23
8		16.8	24.4	15	33.5	22.7	33.7	23.1	32.3	21.6	32.8	22.4	31.6	22
9		17.9	23.2	15.1	33.3	23	29.3	22.4	33.3	23.2	32.1	23.4	31.4	23.5
10		17.5	25.4	15.7	33.1	23.4	33.6	22.1	33.1	22.7	32.9	23	32.4	24
11		17	24.3	15	33.7	24.2	35.2	22.4	32.3	23	33.6	24	32.6	22.2
12		17.5	23.4	15.1	34.3	24.4	34.7	22.1	33	23.7	33.4	24.1	32.4	22.2
13		17	23.9	15.1	34.6	23.5	33.7	21.6	32.7	22.7	32.6	23.2	32.4	23.1
14		17.2	23.5	14.5	34.3	23.7	34	21.2	32.5	23.3	32.8	24.2	31.8	23.2
15		16	23.5	14	33.7	22.5	34.5	21.9	33.5	22	33.4	24	32.5	22.4
16		16.5	22.4	14.8	33.9	24	32.6	24.1	32.5	23.2	32.6	23.6	31.9	24.2
17		17	22.6	15	33	23.5	31.1	23.6	33.2	23.6	31.5	23.4	31.4	23.4
18		16	21.8	15.9	33.7	25.2	34.2	23.6	31.6	24.2	32.6	24.5	31.5	25.1
19		17.5	22.2	15.2	33.5	23.2	32.6	22.3	32.7	22.8	32.2	23.4	31.7	23.4
20		17.8	22	14.9	33.9	23.5	33.2	23	32.5	22.9	33.5	23.4	32.5	23.3
21		19	19.2	14.8	31.3	23.8	33.8	23.4	32.1	23.4	31.3	23.9	30.4	23.4
22		18.4	19.3	14.8	28.3	23.5	31.4	23	31.3	23.8	28	24.1	28	25
23		18.5	20.5	15	32.3	23.7	36.2	22.8	32.5	22.9	32.6	23.1	31.6	24.3
24		18.4	20.6	15.8	29.9	25.5	34.8	23.4	32.8	24.5	29.6	24	31.4	24.1
25		19	23.3	15.9	32.8	25	34.1	23.9	32.2	24.3	32.3	24.6	31.5	24.4
26		18.8	22.5	15.9	32.5	24	33.2	24	32.6	23.6	31.5	24.2	31.4	25
27		18.5	25.4	16	33.1	24	33.6	24.2	32.2	23.4	32.3	23.8	31.5	24
28		18.7	21.3	15.8	34.1	23.5	34.8	23.7	33.1	23.3	33.2	24.1	32.6	24.2
29		18.9	23.9	15	33.1	24	34.8	23	33.2	23.3	33.2	24.8	32.4	25.1
30		18	23.3	15	34	24.1	35.6	24.3	32.7	24.2	32.5?	24.8	33.4	24.2
31		17.4	23.6	15.6	34.3	24.4	34.6	22.8	33.2	24.3	33.1	24.4	32.4	24.3
Mean		17.8	22.6	15.2	32.1	23.8	33.4	22.9	32.6	23.4	32.3	23.9	31.8	23.8

<sup>a</sup> These maximum temperatures seem to be too high.

Maximum and minimum temperatures at the stations of the Weather Bureau, July, 1921—Continued

Day.	Vigan.		Bangued.		Tuguegarao.		Sinait.		Batac.		Solsona.		Laoag.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	31.8	25.8	32.4	25.5?	35.6	23.2	31.7	25.5	24.5	33.6	24.5	32.2	24.7	
2	32.2	23.7	33.8	24.3	34.8	23.2	32	24	32.7	23.8	33.6	21.5	33	
3	31.7	23.5	33.7	23.9	34	22.9	32.3	22.3	32.7	23	33.7	22.2	33.2	
4	35.4	23.8	35.6	24.5	30.6	23.9	33.5	24.3	32.7	23.9	33	23.6	34	
5	32.2	25.2	33.3		32.4	22.8	34.5	24.8	34.7	24.9	33.7	24.3	33.4	
6	31.7	23.5	33.8	24.5	32.5	23.2	32.4	24.9	33.4	24.4	34.1	24.6	33.2	
7	31.8	23.6	34.3		35	23.2	31.9	23.8	33.6	23.8	34.4	23.5	32.9	
8	32.5	23.5	34.4	22.6	36	22.8	32.7	22.8	32.7	22.6	33.6	22.4	32.7	
9	32.6	24	34.5	23.9	29.5	23.4	32.7	23.6	32.9	22.8	33.3	23	34.7	
10	32.5	24.5	34.9	25	35.3	22.9	33	24.6	34.9	24.7	34.1	23.1	33.2	
11	33	23.8	34.8	22.8	36.8	24.1	33.7	23.3	33.7	22.8	34.2	22.2	33.7	
12	32.7	24.5	34.3	23.6	36.5	23.3	33.8	23.3	33.6	23.8	34.2	23	33.3	
13	32.4	24.2	33.8	23.6	37	23.7	33.2	23.4	33	22.9	33.6	22.5	33.2	
14	32.4	23.1	34.5	23.4	37.2	24.3	33	22.6	32.7	22	33.2	22.1	33.7	
15	32.7	23.4	34.8	23.3	36.2	22.2	33.2	23.2	32.9	21.8	33.9	21.6	34.7	
16	33.5	25.3	34.4	25.1	35.5	24.2	32.8	22.8	33.9	22	33.5	24.5	34.1	
17	32.4	24.4	34	24	34.2	24.3	33.2	24.1	33.4	23.8	32.9	23.9	32.8	
18	32.6	24.5	34.2	24.5	35.8	23.2	34.3	24.5	32.5	23.9	33.9	23.3	33.7	
19	32.8	23.5	33.5	23.2	36	24.5	33.2	24.5	32.9	23.8	32.6	22.5	33.2	
20	32	23.7	31.5	23.6	35.7	25.4	32.2	25.2	32	23.9	31.3	23.5	30.2	
21	30.4	23.7	35	24.9?	33.7	24.2	32	24.7	32	24.8?	28.6	23.5	30.7	
22	28	22.8	26.6	24.5	29.8	24.2	31.2	25.5	30	24	25.8	24.2	27.6	
23	30.6	22.5	32.6	23.1	36.5	23.3	32	22.3	31.9	22.6	33.5	22.8	32.1	
24	30.4	24.2	31	23.9	36.7	23.6	32.8	25	32.9	23.8	32.5	22.5	31.4	
25	32.4	24	34.3	24.7	35	23.6	32.2	24.2	31.9	24.5	33.4	24.1	32.7	
26	31	24	33.6	25.1	33	25	32.5	24.8	32.4	24.6	33.3	22.7	32.2	
27	32.3	24	34	24.1	35.2	25	32.7	24.2	32.4	23.8	32.6	23.9	32.2	
28	32.7	24.9	34.6	24.6	37.4	24.3	33.2	24.6	31.9	23.8	33.9	23.7	33.3	
29	33	25.3	34.2		37.4	25.2	33.2	24.5	33.2	25.3	33.4	24.5	33.2	
30	32.9	25.2	35	25	36.7	25.5	33	25	32.9	24.8	34.4	24.2	33.3	
31	32.8	25.2	34.7	25.4	37.2	25	33.2	26	33.2	24.8	34.2	24.4	33.5	
Mean	32.2	24.1	33.7	24.2	35	23.9	32.8	24.1	32.9	23.7	33.1	23.3	32.8	

Day.	Pasuquin.		Aparri.		Cape Bojeador.		Basco.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	32.5	25	34.2	24.1	30.1	24.4	31.8	27.8
2	32.5	24.2	34	24.1	30.1	25	33.2	27.1
3	33.5	23.8	32.8	24	30.8	24.2	31.4	23.1
4	35.3	23.8	31.8	24	31.2	23.3	31.2	23.7
5	32.9		30.4	23.1	32.5	25.7	31.2	25.2
6	34.4	24.5	32.1	22.8	32.6	25.5	32.2	26
7	33.8	24.1	32.2	23.6	33.8	24.3	32.2	24.5
8	33.3	22.7	32.4	23.5	33.2	24.3	32.4	25.5
9	35.4	23.1	31.1	23.9	33.5	25	32.3	26.3
10	33.4	24.6	32.9	23.6	32.1	25.1	32.3	25.4
11	34	23.7	33.2	23.6	33.6	25.2	32.5	25.6
12	34?	23.5	34.9	24.4	32.7	25	33	24.2
13	33.7	23.2	34.5	24.5	32.6	24.6	32.3	24.5
14	33.6	23	33.5	23.5	34.4	24.7	32.8	25.7
15	35.7	22.5	30.7	24.4	32.2	24.6	31.6	24
16	34	24.8	32.6	24.9	34.6	25.2	32.3	24.4
17	34.1	24.4	31.2	24.4	33	24.8	32.5	24.4
18	34.2	23.6	31.5	24.5	33.1	25	32.1	25.2
19	33.5	23.1	31.5	23.9	34.3	25.2	30.9	25.3
20	31.2	24.7?	31	24	31.3	22.6	31	23.7
21	31.9	25.1	30.4	23.5	29.1	24.4	28.3	25.6
22		24	26.1	23.4	28.3	22.2	28	24.4
23	32.5	22.5	34.5	23.1	30.7	22.2	29.7	27.1
24	32	23.4	32.2	23.2	31	25.4	28.9	26.2
25	33.9	25	31.8	23.6	33	23.8	28.9	25.8
26	33	23.7	28.2	24.1	31.5	24.6	29.3	25.5
27	33.3	24	31.9	24.7	32.5	24.5	29	25.1
28	35.2	24.6	32.5	24.3	31.4	25.4	30	25.9
29	34.7	25	31.7	25.6	32.7	25.9	30.2	26.4
30	34.8	23.6	32.8	25.2	32.7	25.5	29.8	27.4
31	34.6	25.1	32.5	24.3	32.2	25.3	30.8	27.2
Mean	33.7	23.9	32	24	32.2	24.6	31.1	25.4



## SEISMOLOGICAL BULLETIN FOR JULY, 1921

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### EARTHQUAKES FELT IN THE PHILIPPINES<sup>1</sup>

2, 8<sup>h</sup> 36<sup>m</sup> 21<sup>s\*</sup> [2, 16<sup>h</sup> 36<sup>m</sup> 21<sup>s</sup>]. **Central Mindanao.** Earthquake of intensity III-IV, felt in the Lanao Province and NW portion of Cotabato. At 16<sup>h</sup> 54<sup>m</sup> [3, 0<sup>h</sup> 54<sup>m</sup>] occurred a second perceptible shock and at 18<sup>h</sup> 22<sup>m</sup> [3, 2<sup>h</sup> 22<sup>m</sup>] another earthquake of intensity IV and larger extension than the first. All these shocks were recorded by the seismograph at Butuan, where a previous shock from the same origin had been also registered an hour before. The origin seemingly lay in the Illana Bay, close to its N coast.

4, 0<sup>h</sup> 40<sup>m</sup> [4, 8<sup>h</sup> 40<sup>m</sup>]. **Bacon (SE Luzon).** Earthquake shock of intensity III.

4, 14<sup>h</sup> 22<sup>m</sup> 55<sup>s\*</sup> [4, 22<sup>h</sup> 22<sup>m</sup> 55<sup>s</sup>]. **Baguio (W Luzon).** Earthquake originated in the Pacific, south of Japan, and recorded all over the Globe; it was lightly noticed by some persons at Baguio and also at Butuan, N Mindanao.

5, 1<sup>h</sup> 26<sup>m</sup> 36<sup>s\*</sup> [5, 9<sup>h</sup> 26<sup>m</sup> 36<sup>s</sup>]. **Legaspi (SE Luzon).** Oscillatory earthquake, direction NNW-SSE, intensity III-IV; probably of volcanic origin.

8, 14<sup>h</sup> 16<sup>m</sup> 24<sup>s\*</sup> [8, 22<sup>h</sup> 16<sup>m</sup> 24<sup>s</sup>]. **Legaspi (SE Luzon).** Earthquake of intensity III-IV; felt through the greatest portion of Albay Province; local and of probably volcanic origin.

10, 7<sup>h</sup> 00<sup>m</sup> [10, 15<sup>h</sup> 00<sup>m</sup>]. **Basco (Batan Island).** Earthquake shock of intensity III-IV.

10, 17<sup>h</sup> 45<sup>m</sup> [11, 1<sup>h</sup> 45<sup>m</sup>]. **Cape Bojeador (NW Luzon).** Earthquake shock of intensity II-III.

11, 6<sup>h</sup> 03<sup>m</sup> 33<sup>s\*</sup> [11, 14<sup>h</sup> 03<sup>m</sup> 33<sup>s</sup>]. **SE Luzon and NW Samar.** Earthquake of intensity III, felt through northwestern and western Samar and Sorsogon Province; probable origin in the San Bernardino Strait.

13, 22<sup>h</sup> 12<sup>m</sup> [14, 6<sup>h</sup> 12<sup>m</sup>]. **Malita (SE Mindanao).** Oscillatory earthquake of intensity III.

15, 5<sup>h</sup> 58<sup>m</sup> 41<sup>s\*</sup> [15, 13<sup>h</sup> 58<sup>m</sup> 41<sup>s</sup>]. **W Luzon.** Earthquake of intensity III-IV, felt in the western provinces of Luzon situated south of seventeenth parallel. Its epicenter lay in the China Sea, close to the Zambales coast. The same day, besides two instrumental aftershocks, a second lesser earthquake occurred at 23<sup>h</sup> 47<sup>m</sup> 26<sup>s\*</sup> [16, 7<sup>h</sup> 47<sup>m</sup> 26<sup>s</sup>], felt only in the Zambales coast. Recorded at Batavia and Zikawei.

16, 6<sup>h</sup> 35<sup>m</sup> [16, 14<sup>h</sup> 35<sup>m</sup>]. **Surigao (NE Mindanao).** Earthquake shock of intensity II-III.

<sup>1</sup>The intensity of earthquakes is given in the notation known as the Rossi-Forel scale. The time is that indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (\*). Otherwise the time is that noted by the observer who sent the report. All time indications are in Greenwich mean time (midnight=0<sup>h</sup>), insular time being added in brackets for the convenience of Philippine readers.

18, 11<sup>h</sup> 14<sup>m</sup> 24<sup>s\*</sup> [18, 19<sup>h</sup> 14<sup>m</sup> 24<sup>s</sup>]. **E Mindanao.** Earthquake of intensity III-IV, felt chiefly in the southern portion of Agusan Valley. Probably of regional origin. Recorded at Batavia.

21, 0<sup>h</sup> 17<sup>m</sup> 04<sup>s\*</sup> [21, 8<sup>h</sup> 17<sup>m</sup> 04<sup>s</sup>]. **SE Luzon.** Earthquake felt with intensity III-IV in the Provinces of Camarines Norte and Sur, Albay, Sorsogon, and Catanduanes, chiefly on their coasts looking north and northeast. The epicenter lay in the Pacific towards the northern end of the Philippine Deep. Recorded throughout the world.

21, 12<sup>h</sup> 56<sup>m</sup> [21, 20<sup>h</sup> 56<sup>m</sup>]. **Lais (SE Mindanao).** Earthquake of intensity III; recorded at Butuan.

24, 19<sup>h</sup> 11<sup>m</sup> 29<sup>s\*</sup> [25, 3<sup>h</sup> 11<sup>m</sup> 29<sup>s</sup>]. **SE Luzon and N Samar.** Earthquake of intensity V-VI in NE Samar; felt also through the Provinces of Albay, Sorsogon, and Catanduanes. The origin lay not far from the NE end of Samar, in the Philippine Deep.

About two hours later at 21<sup>h</sup> 22<sup>m</sup> 55<sup>s\*</sup> [25, 5<sup>h</sup> 22<sup>m</sup> 55<sup>s</sup>] occurred a second earthquake of intensity VI-VII in NE Samar, which had a larger extension towards Luzon and Leyte Islands. During the interval between these two earthquakes almost continuous tremblings were noticed in Batag Island, the nearest land to the origin, which continued for some hours after the second earthquake. Recorded also in Europe. Both earthquakes had their origin in or very near the spot from which radiated the violent earthquakes, reported in the Bulletin for May, 1921.

#### RECORDS OF THE MICROSEISMOGRAPH

[Time: Greenwich mean. Midnight=0<sup>h</sup>. Instrument: Wiechert seismograph; 1,000 kilograms. AN:  $T_0=6.25$ ,  $\epsilon=2.906$ ,  $\frac{r}{T_0^2}=0.053$ ;  
AE:  $T_0=6.18$ ,  $\epsilon=2.393$ ,  $\frac{r}{T_0^2}=0.042$ . Alluvium. 2.40 meters above sea level]

No.	Date.	Character.	Phase.	Hour.	Period.	Amplitude.		Remarks.
						A <sub>N</sub> μ	A <sub>E</sub> μ	
215	2	Iv	eP F	h. m. s. 1 46 42 57	s.			
216	2	Iv	eP L F	8 25 28 26 05 34				
217	2	Iv	e F	8 36 21 49				Central Mindanao.
218	3	I	e F	5 14 33				
219	3	I	e L? MN ME F	14 56 49 59 30 59 32 59 34 15 38		5 5	76 66	
220	4	IIr	eP S L MN F	14 22 55 25 58 26 48 27 25 15 26		7	529	Felt at Baguio (W Luzon).
221	5	Iv	eP L F	1 26 36 27 19 37				SE Luzon.
222	5	Iv	eP F	19 15 23 18				
223	7	Ir	e L? F	10 53 11 02 46 12 25				
224	7	Iv	eP F	20 00 10 03				
225	8	I	e F	13 22 16 14 05				Central Java.
226	8	Iv	eP F	14 16 24 26				SE Luzon.



## Records of the Microseismograph—Continued

No.	Date.	Character.	Phase.	Hour.	Period.	Amplitude.		Remarks.
						A <sub>N</sub> μ	A <sub>E</sub> μ	
248	25	Ir	e	1 43 42	-----	-----	-----	W Sumatra.
			L?	48 08	-----	-----	-----	
			F	2 15	-----	-----	-----	
249	25	Ir	eP	19 29 38	-----	-----	-----	
			S	32 20	-----	-----	-----	
			L	33 00	-----	-----	-----	
			MN1	33 02	10	78	-----	
			ME1	34 19	11	59	-----	
			MN2	35 19	12	82	-----	
			ME2	37 12	12	96	-----	
250	29	I	e	0 40	-----	-----	-----	
			F	1 23	-----	-----	-----	
251	29	I	e	2 46	-----	-----	-----	
			F	3 12	-----	-----	-----	
252	29	Iiv	eP	15 06 28	-----	-----	-----	
			L	08 00	-----	-----	-----	
			MN	08 51	7	191	-----	
			ME	08 56	7	119	-----	
			F	45	-----	-----	-----	
253	30	Iv	eP	16 35 13	-----	-----	-----	
			F	42	-----	-----	-----	
254	31	Iv	eP	9 19 06	-----	-----	-----	
			F	26	-----	-----	-----	
255	31	I	e	10 00 16	-----	-----	-----	
			F	57	-----	-----	-----	
256	31	I	e	12 21	-----	-----	-----	
			F	42	-----	-----	-----	

TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS<sup>1</sup>

2, 8<sup>h</sup> 36<sup>m</sup> 21<sup>s\*</sup> [2, 16<sup>h</sup> 36<sup>m</sup> 21<sup>s</sup>]. Centro de Mindanao. Temblor de tierra de intensidad III-IV, sentido en la provincia de Lánao y en la parte NW de la de Cotabato. A 16<sup>h</sup> 54<sup>m</sup> [3, 0<sup>h</sup> 54<sup>m</sup>] ocurrió otro temblorcito más débil y un tercero a 18<sup>h</sup> 22<sup>m</sup> [3, 2<sup>h</sup> 22<sup>m</sup>] de intensidad IV y mayor extensión que el primero. Todos registrados en Butúan, donde una hora antes se registró además un choque de menor intensidad originado a la misma distancia. El epicentro parece se hallaba cerca de la costa N de la Bahía Illana.

4, 0<sup>h</sup> 40<sup>m</sup> [4, 8<sup>h</sup> 40<sup>m</sup>]. Bacon (SE de Luzón). Temblor de tierra de intensidad III.

4, 14<sup>h</sup> 22<sup>m</sup> 55<sup>s\*</sup> [4, 22<sup>h</sup> 22<sup>m</sup> 55<sup>s</sup>]. Baguio (W de Luzón). Terremoto originado en el Pacífico, hacia el sur del Japón, y registrado en todo el Globo; fué perceptible para algunas personas en la estación citada de Baguio y en Butúan, Mindanao.

5, 1<sup>h</sup> 26<sup>m</sup> 36<sup>s\*</sup> [5, 9<sup>h</sup> 26<sup>m</sup> 36<sup>s</sup>]. Legaspi (SE de Luzón). Temblor oscilatorio, dirección NNW-SSE, intensidad III-IV; probablemente de origen volcánico.

8, 14<sup>h</sup> 16<sup>m</sup> 24<sup>s\*</sup> [8, 22<sup>h</sup> 16<sup>m</sup> 24<sup>s</sup>]. Legaspi (SE de Luzón). Temblor de tierra de intensidad III-IV, sentido en gran parte de la provincia de Albay. Origen al parecer regional.

10, 7<sup>h</sup> 00<sup>m</sup> [10, 15<sup>h</sup> 00<sup>m</sup>]. Basco (Islas Batanes). Temblor de tierra de intensidad III-IV.

10, 17<sup>h</sup> 45<sup>m</sup> [11, 1<sup>h</sup> 45<sup>m</sup>]. Cabo Bojeador (NW de Luzón). Temblor de tierra de intensidad II-III.

11, 6<sup>h</sup> 03<sup>m</sup> 33<sup>s\*</sup> [11, 14<sup>h</sup> 03<sup>m</sup> 33<sup>s</sup>]. SE de Luzón y NW de Sámar. Temblor de tierra de intensidad III sentido en la parte W y NW de la Isla de Sámar y en la provincia de Sorsogón. Origen probable en el Estrecho de San Bernardino.

13, 22<sup>h</sup> 12<sup>m</sup> [14, 6<sup>h</sup> 12<sup>m</sup>]. Malita (SE de Mindanao). Temblor oscilatorio de intensidad III.

15, 5<sup>h</sup> 58<sup>m</sup> 41<sup>s\*</sup> [15, 13<sup>h</sup> 58<sup>m</sup> 41<sup>s</sup>]. W de Luzón. Temblor de tierra de intensidad III-IV, sentido en las provincias occidentales de Luzón situadas al sur del paralelo 17° N. El epicentro se hallaba en el Mar de la China, no lejos de la costa de Zambales. Registráronse dos réplicas instrumentales durante el día, y otro temblor de menor intensidad a 23<sup>h</sup> 47<sup>m</sup> 26<sup>s\*</sup> [16, 7<sup>h</sup> 47<sup>m</sup> 26<sup>s</sup>], perceptible solamente en las costas de Zambales. Registrado en Batavia y Zikawei.

16, 6<sup>h</sup> 35<sup>m</sup> [16, 14<sup>h</sup> 35<sup>m</sup>]. Surigao (NE de Mindanao). Temblor de tierra de intensidad II-III.

18, 11<sup>h</sup> 14<sup>m</sup> 24<sup>s\*</sup> [18, 19<sup>h</sup> 14<sup>m</sup> 24<sup>s</sup>]. E de Mindanao. Temblor de tierra de intensidad III-IV, sentido principalmente en la parte sur del valle del Río Agusan. Su origen al parecer se hallaba dentro del valle. Registrado en Batavia.

21, 0<sup>h</sup> 17<sup>m</sup> 04<sup>s\*</sup> [21, 8<sup>h</sup> 17<sup>m</sup> 04<sup>s</sup>]. SE de Luzón. Temblor de tierra de intensidad III-IV, sentido en las provincias de Camarines Norte y Sur, Albay, Sorsogón y Catanduanes, principalmente en las costas que miran al N y NE. Su origen se hallaba en el Pacífico hacia el extremo septentrional del abismo de Filipinas. Registrado en casi todo el Globo.

21, 12<sup>h</sup> 56<sup>m</sup> [21, 20<sup>h</sup> 56<sup>m</sup>]. Lais (SE de Mindanao). Temblor de tierra de intensidad III. Registrado en Butúan.

<sup>1</sup> La intensidad de los terremotos se indica conforme a la conocida escala de Rossi-Forel. Cuanto a la hora de su ocurrencia, adoptamos la indicada por sismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (\*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al medio de Greenwich (medianoche=0<sup>h</sup>). Para conveniencia de los lectores de Filipinas se añade también la hora insular.

24, 19<sup>h</sup> 11<sup>m</sup> 29<sup>s</sup>\* [25, 3<sup>h</sup> 11<sup>m</sup> 29<sup>s</sup>]. SE de Luzón y N de Sámar. Temblor de tierra de intensidad V-VI en el extremo NE de Sámar, sentido en gran parte de esta isla y en las provincias de Albay, Sorsogón y Catanduanes. El origen se hallaba en el abismo de Filipinas, al NE de la Isla de Sámar.

Dos horas después, a 21<sup>h</sup> 22<sup>m</sup> 55<sup>s</sup>\* [25, 5<sup>h</sup> 22<sup>m</sup> 55<sup>s</sup>] repitió con intensidad VI-VII al NE de Sámar, siendo perceptible en una extensión algo mayor que el precedente. Durante el intervalo que medió entre los dos, se sentían en la Isla de Batag, más próxima al epicentro frecuentes réplicas muy débiles, las cuales continuaron después del segundo terremoto por algún tiempo. Registrados ambos en Europa.

Estos terremotos se originaron en o muy cerca del sitio de donde irradiaron los descritos en el Boletín del mes de mayo, 1921.

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THE GOVERNMENT OF THE PHILIPPINE ISLANDS

# WEATHER BUREAU

MANILA CENTRAL OBSERVATORY

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BULLETIN FOR AUGUST, 1921

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PREPARED UNDER THE DIRECTION OF

REV. JOSÉ ALGUÉ, S. J.

DIRECTOR OF THE WEATHER BUREAU

MANILA  
BUREAU OF PRINTING  
1923





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**BULLETIN FOR AUGUST, 1921**

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# METEOROLOGICAL BULLETIN FOR AUGUST, 1921

By Rev. JOSÉ CORONAS, S. J.

Chief, Meteorological Division of the Weather Bureau

## GENERAL WEATHER NOTES

Pressure and temperature.—The mean atmospheric pressure for this month in the Philippines is slightly below both that of the preceding year and the normal of August. The highest pressures were generally recorded on the 1st, and the lowest on the 5th and 6th, when a typhoon was passing to the NE and N of Luzon.

The mean monthly temperature does hardly differ from the normal of this month throughout the Archipelago, although is slightly lower than that of August, 1920, in central and northern Luzon. The absolute highest and lowest temperatures for Manila were 33.2° C. and 22.5° C.: they were registered on the 1st and 16th, respectively. The extreme temperatures for Baguio were 24.4° C., 14.5° C. on the top of Mirador, and 24.7° C., 14.3° C. in the plateau near the City Hall.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS OF THE WEATHER BUREAU FOR AUGUST, 1921

Station.	Pressure.							Temperature.						
	Mean.	Departure from August, 1920.	Departure from normal.	Highest mean.	Day.	Lowest mean.	Day.	Mean.	Departure from August, 1920.	Departure from normal.	Highest.	Day.	Lowest.	Day.
	mm.	mm.	mm.	mm.		mm.		°C.	°C.	°C.	°C.		°C.	
Zamboanga.....	758.36	-0.14		759.78	1	756.73	31	26.2	0		31	17	21.8	12
Kolonie, Yap, Western Carolines.....	57.73	+ .23		59.03	10	53.96	2	26.8	-0.1		32.5	21	22.2	2
Tagbilaran.....	57.54	- .14	-0.43	59.15	1	56.27	30	27.4	- .3		33.9	13	21.5	3
Surigao.....	57.36	- .06	- .36	58.92	1	56.30	5	27.2	- .6	- .5	33.3	21	22.4	2
Cebu.....	57.53	- .10	- .21	59.22	1	56.30	19	27.7	- .1	+ .1	32.3	24	23	20, 29
Iloilo.....	57.49	- .08	- .18	59.06	1	56.04	5	27.2	0	+ .3	32.6	27	22.2	20
Tacloban.....	57.25	- .04	- .29	59.15	1	55.47	5	26.8	- .5	- .7	35.3	1	22.5	26
Capiz.....	57.05	- .29	- .44	58.94	1	55.35	5	26.8	- .3	- .2	34.9	14	22	27
Calbayog.....	57.34	- .18	- .18	59.19	1	55.33	5	27.4	- .1	- .1	34.6	26	22.8	26
Legaspi, Albay.....	56.68	- .31	- .35	58.79	1	53.90	5	27.3	- .2	0	33.8	1, 26	23.1	10, 29
Atimonan.....	56.45	- .30	- .24	58.88	1	53.53	5	27.7	- .3	+ .2	34.8	3	22.4	25
Ambulong, Tanauan, Batangas.....	56.21	- .34		58.38	1	54.19	5	26.9	- .1		32.4	2	22.3	8
Daet.....	56.47	- .29		59	1	53.12	5	27	- .2		34.7	21	22	8
Manila.....	56.77	- .28	- .51	59	1	54.52	5	26.4	- 1	- .6	33.2	1	22.5	16
San Isidro, Nueva Ecija.....	56.58	- .44	- .40	58.91	1	54.23	5	26.3	- .9	- .3	34.7	1	22.5	8, 16
Dagupan.....	56.21	- .34	- .34	58.62	1	54.08	5	26.6	- 1.4	- .3	34.7	1	22.5	23
Baguio <sup>a</sup> .....	634.53	- .69	- .38	637.33	1	632.64	6	17.5	- .6	- .2	24.4	2, 3	14.5	12
Vigan.....	755.52	- .81	- .71	758.51	1	752.77	6	26.8	- .9	0	33.6	1	22.1	6
Tuguegarao.....	55.22	- .54	- .47	58.13	1	51.61	5	27.6	- .8	+ .1	38	1, 2	23	6
Laog.....	55.43	- .62		58.62	1	52.08	6	26.5	- 1.1		34.7	31	22.5	26
Aparri.....	55.05	- .81	- .69	58.14	1	51.24	5	27	- 1.3	- .4	35.6	13	22.6	6

<sup>a</sup> The barometric readings of this station are not reduced to sea level.

Rainfall.—A great majority of our stations, particularly in Luzon, reported a monthly amount of rainfall greater than that of the previous year and the normal of this month. In Manila the raingauges collected during the month 1,000.8 mm. of rain, this amount differing from the normal by +598.5 mm., while the monthly rainfall of Baguio 1,848.7 mm. is also greater than the normal by 638.7 mm.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF AUGUST, 1921

Station.	Total.	Departure from August, 1920.		Days of rain.	Departure from August, 1920.		Greatest rainfall in a single day.	Day.	Station.	Total.	Departure from August, 1920.		Days of rain.	Departure from August, 1920.		Greatest rainfall in a single day.	Day.
		mm.	mm.		mm.	mm.					mm.	mm.		mm.	mm.		
Jolo	85.8	- 23.9	- 76.8	16	+ 3	+ 2	22.9	25	Calapan	132	+ 43.6	+ 2.3	15	+ 6	+ 3	26.7	14
Malamaui, Isabela, Zamboanga	174.3	+ 80	-----	15	+ 6	-----	58.7	3	Virac	118.7	- 48.6	- 24.2	6	0	- 6	50.8	29
Zamboanga	211	+115.9	+116.9	17	- 1	+ 5	70	2	Naga, Camarines Sur	219.3	+ 55.4	+ 51.2	15	+ 2	0	58	28
Davao	187.2	+ 33.3	+ 2.1	13	+ 7	+ 3	35.3	27	Tigaon	92.6	- 38.2	-----	20	+ 4	-----	19	31
Cotabato	246	+ 67.7	+ 9	19	0	+ 1	50.8	26	Batangas	249.7	+ 108.1	+ 53.7	14	- 1	- 1	47.7	15
Cagayan	212.5	+ 20	+ 38.5	15	+ 2	+ 1	33.3	28	Lucena	222.3	+ 131.6	-----	12	+ 1	-----	38.1	30
Butuan	154.6	+ 12.9	+ 47.8	16	+ 2	+ 3	46.7	29	Atimonan	100.1	- 97.1	- 53.5	13	+ 3	0	25.7	30
Mambajao	120.3	- 90.2	-----	10	- 9	-----	23.6	30	Ambulong, Tanauan, Batangas	459.3	+ 278.8	-----	16	+ 3	-----	107.9	15
Dumaguete	49.8	- 5.6	- 32.7	14	+ 1	+ 3	17.3	29	Daet	82.1	- 54	-----	14	+ 7	-----	25.7	28
Kolonie, Yap, Western Carolines	276.4	- 24	-106.7	19	- 3	- 4	110.4	1	Canluban, Calamba	453.8	+ 136.8	-----	19	+ 4	-----	158	15
Tagbilaran	150.2	+107.9	+ 32.8	11	+ 2	+ 1	61.8	3	Paracale	59.4	- 45.5	- 93.3	10	+ 6	- 3	12.2	13
Iwahig Penal Colony, Puerto Princesa	183	+ 43.4	-----	14	- 9	-----	67.3	31	Santa Cruz, Laguna	410.4	+ 156.4	+108.4	21	+ 5	0	76.5	15
Surigao	150.9	+ 50.9	+ 50.1	13	+ 3	+ 3	45.7	1	Manila	1,000.8	+ 678.3	+598.5	23	+ 3	0	246.3	15
Maasin, Leyte	409.1	+137	+186.9	15	+ 4	+ 4	120.4	30	Antipolo	1,016	+ 654.5	+296	25	- 2	- 2	253.2	15
Cebu	328.7	+296.7	+181.7	16	+ 6	+ 1	114.5	28	San Isidro, Nueva Ecija	471.5	- 7	+147.1	28	+ 5	+ 5	171.5	15
Iloilo	400.8	+194.6	+ 61.1	23	+ 2	+ 3	79.1	6	Iba	1,112.4	+ 724.2	+110.8	27	+ 2	0	195	15
San Jose de Buenavista	488.5	- 41.5	- 31.4	24	+ 2	+ 1	84.1	29	Tarlac	663.4	+ 372.8	+275.7	28	+10	+ 5	117.8	15
Cuyo	254.4	- 23.8	-119.2	23	- 2	0	89.9	29	Baler	263.6	+ 91.1	+106.1	9	- 2	- 3	120.1	31
Ormoc	253.4	+ 19.5	+ 2.4	19	0	+ 2	52.3	30	Dagupan	695.7	+ 578.4	+167.7	27	+13	+ 4	112.2	14
Guiuan	244.5	+156.3	+136	15	+ 4	+ 3	43.7	22	Bolinao	753.7	- 148.9	-----	24	0	0	102.4	16
Tacloban	200.8	- 6.7	+ 60.9	16	+ 2	+ 2	51.5	1	Baguio	1,848.8	+1,480	+638.7	29	+ 4	+ 2	272.7	14
Capiz	262.6	+133.2	+ 27.4	17	+ 3	0	75.7	26	San Fernando, La Union	811.2	+ 456.1	+107.9	22	+ 1	0	121.6	16
Borongan	188	+ 19.8	+ 52.5	14	+ 1	0	73.2	31	Echague	123.4	-----	- 79.8	16	-----	- 2	25.9	27
Catbalogan	210.3	- 46.5	-----	17	+ 2	-----	64.8	27	Candon	1,399.8	+1,179.8	+647.7	21	+ 3	0	268.7	19
Calbayog	158.9	-100.6	- 27.2	16	- 1	1	36.4	4	Vigan	1,521.6	+1,265.2	+802.5	22	+ 6	0	243.9	20
Masbate	171.3	- 10.1	+ 8.1	13	- 2	- 2	30.8	31	Tuguegarao	1,599.8	+ 131.6	- 42.9	22	+15	+ 8	28.7	24
Romblon	178.2	- 102	+ 1.7	14	+ 2	- 2	47.6	31	Laoag	1,244.1	+1,144.2	+424.9	20	+ 7	- 1	278.7	19
Batag Light-house, Laoang	122.5	- 79.6	-----	12	+ 2	-----	38.3	29	Aparri	222.3	- 27.3	- 14.9	19	+ 7	+ 3	54.3	5
Sorsogon	96.2	- 88.9	-----	10	- 1	-----	48.7	8	Cape Bojeador	718.5	+ 560.9	-----	22	+ 7	-----	168.9	21
Legaspi, Albay	156.3	-140.5	- 28.1	14	+ 1	- 3	54.3	30	Basco	410.7	+ 261.3	+ 29.8	23	+ 5	+ 4	96.5	5
Sumay (Guam), Agaña	337.8	-289.4	- 66.2	29	+ 5	+ 6	41.4	23									

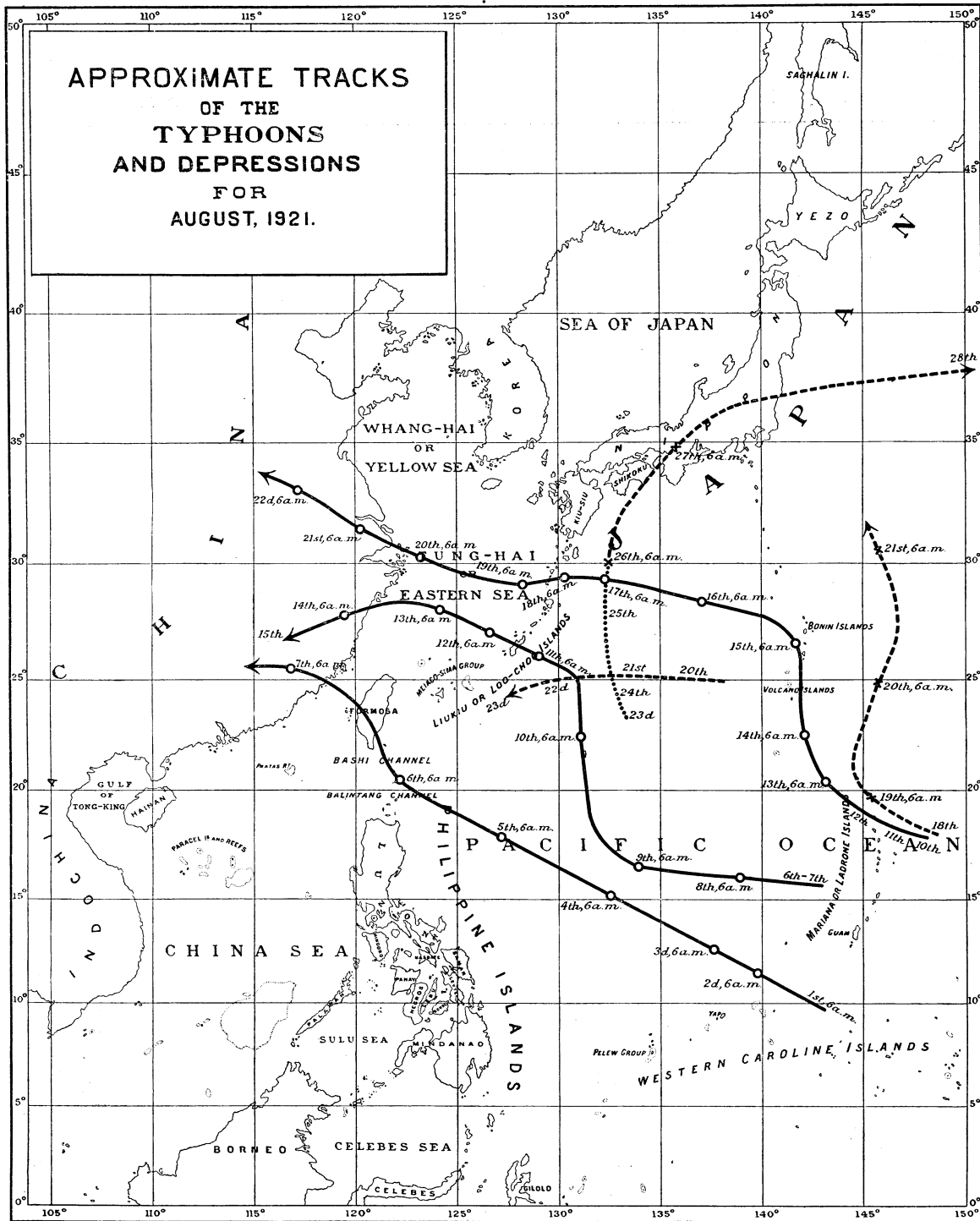
## DEPRESSIONS AND TYPHOONS

Although not a single depression or typhoon traversed the Philippine Islands during this month, yet very stormy weather prevailed over the Pacific between the Philippines and Japan for no less than 20 successive days, August 1 to 20, inclusive, owing to three severe typhoons which moved one after another from the Western Carolines or the Ladrone Islands to the China coast between Hongkong and Shanghai.

Once more we could realize in the three cases the great importance of the two daily weather reports we are receiving at present from our advanced stations of Yap and Guam. With these observations at hand, Manila Observatory was able to announce the first typhoon on August 2, four days before it reached Formosa; and the second and third, on August 8 and 10, 6 and 10 days, respectively, before they reached the China coast to the south of Shanghai. For the whole period of 20 days we were able to broadcast typhoon warnings by wireless and cable, following day by day the tracks of the three typhoons. These tracks, together with those of three other less important depressions or typhoons of the Pacific, are published in Plate IV.

**The Batanes and Formosa typhoon: August 1 to 7.**—This typhoon appeared in our weather maps as forming over the Western Carolines to the E of Yap and SSW of Guam, on August 1, near 10° latitude N and 143° longitude E. It moved practically to WNW until the early hours of the 6th when it took a NNW direction toward Formosa, crossing the southern part of that Island in the afternoon of the same day. The typhoon inclined again westward in the Formosa Channel, and during the night of the 6th to the 7th it entered China between Foochow and Amoy. According to the observations made at

Plate IV



Basco, Batanes Islands, the center passed close to the north of that station at 8 a. m. of the 6th, the barometer having fallen to 733.02 mm., although the force of the winds (backing from NNW to W and SSW) was not greater than 6 (Beaufort scale), and hence no much damage was done. Some of these Basco observations are given in the following table:

*Meteorological observations taken at Basco, Batanes Islands, August 5 and 6, 1921*

Date and hour.	Pressure.	Wind.		Rain in 24 hours beginning 6 a. m.	Remarks.
		Direction.	Force.		
August 5:	<i>mm.</i>		<i>0-12</i>		
6 a. m.-----	52.33	N	2	-----	Slight coloration of clouds.
10 a. m.-----	52.17	NNW	1	-----	
Noon-----	51.39	NNW	2	-----	
2 p. m.-----	49.28	NW	2	-----	Drizzling.
4 p. m.-----	48.04	N	2	-----	
6 p. m.-----	47.37	N	2	-----	Heavy rain before observation.
8 p. m.-----	46.17	NNW	2	-----	
10 p. m.-----	44.36	NNW	5	96.5	Gusty winds at intervals.
August 6:					
2 a. m.-----	38.97	NNW	5	-----	Gusty winds at intervals.
4 30 a. m.-----	34.99	NNW	5	-----	Do.
5 a. m.-----	34.26	NNW	5	-----	Do.
6 a. m.-----	34.18	NW	4	-----	Do.
7 a. m.-----	33.44	W	6	-----	Do.
8 a. m.-----	33.02	W	6	-----	Do.
9 a. m.-----	37.81	W	6	-----	Do.
10 a. m.-----	40.07	SSW	6	-----	Do.
11 a. m.-----	43.04	SSW	6	-----	Do.
2 p. m.-----	47.80	SW	2	-----	
4 p. m.-----	49.80	SSW	2	-----	Raining.
6 p. m.-----	50.27	SSW	1	-----	Drizzling.
8 p. m.-----	51.40	SSW	1	-----	Do.
10 p. m.-----	52.97	SSW	1	77.5	

From reports received from Taihoku Observatory, we know that the minimum barometric reading observed in Formosa during the typhoon was 731.5 mm. (corrected for gravity) as recorded at Taito, a station on the southeastern coast of the island. The losses caused by the storm throughout the island were: Persons killed, 3; injured, 28; houses totally wrecked, 1,029; partly wrecked, 2,890. The position of the center at 5 p. m. of the 6th was near 120° longitude E and 23° 40' latitude N.

The typhoon of the Loochoos and the Eastern Sea: August 6 to 14.—This typhoon was shown in our weather maps as forming on the 6th to 7th to the NW of Guam near 143° longitude E and 16° latitude N. It moved first almost due W for two days, then northward for nearly two days more until in the afternoon of the 10th it took a WNW direction toward the Loochoo Islands and the Eastern Sea. The center passed on the evening of the 10th very close to Naha, Okinawa Island, where the barometer fell to 721.4 mm. (corrected for gravity) at 6 p. m. of that day. Great damage was done to the island according to telegraphic reports received at Formosa. It took over two days for the typhoon to cross the Eastern Sea and reach the China coast between Shanghai and Foochow.

The steamship *Shinano Maru*, which had left Keelung on the 11th, encountered this typhoon in the Eastern Sea; she reached Moji a day and a half later after experiencing a heavy storm. Hurricane easterly winds were also experienced on the 13th in the Eastern Sea by the steamship *Aki Maru*, on her way from Nagasaki to Hong-kong, the minimum barometric reading observed on board having been 734.30 mm.

The typhoon of the Bonins and the Eastern Sea: August 10 to 21.—It is impossible in this case to ascertain whether this typhoon formed far to the east of the Ladrone Islands,

as we have no observations from the Pacific to the E or NE of Guam. Our weather maps of the 10th showed this typhoon to the NE or NNE of Guam near  $148^{\circ}$  or  $149^{\circ}$  longitude E and  $18^{\circ}$  latitude N. After moving slowly to WNW and NW from the 10th to 12th, it took on the 13th a straight northerly direction toward the Bonin Islands which it reached in the early morning of the 15th. The barometer fell to 730.5 mm. (corrected for gravity) at Chichijima, at 6 a. m. of that day (we do not know as yet the exact minimum observed during the typhoon). The approximate position of the center at that time was  $141^{\circ} 45'$  longitude E and  $26^{\circ} 30'$  latitude N. After traversing the Bonin Islands, the typhoon took suddenly and unexpectedly an approximate westerly direction, thus threatening the Eastern Sea and the China coast near Shanghai. The approximate positions of the typhoon at 6 a. m. of the 18th, 19th, and 20th are as follows:

August 18, 6 a. m.:  $130^{\circ} 20'$  longitude E,  $29^{\circ} 25'$  latitude N.

August 19, 6 a. m.:  $128^{\circ} 15'$  longitude E,  $29^{\circ} 05'$  latitude N.

August 20, 6 a. m.:  $123^{\circ} 15'$  longitude E,  $30^{\circ} 15'$  latitude N.

The typhoon entered China during the night of the 20th and passed a few miles to the south of Shanghai. According to the telegraphic reports published in Manila papers, the Blue Funnel liner *Glaucus* and the Messageries Maritimes mail steamer *Cordillere* went aground in the Yangtse River near Shanghai during the typhoon.

Three other Pacific depressions or typhoons of less importance: August 18 to 28.—The tracks of these three depressions or typhoons are not so certain and definite as those of the preceding ones. They are included, however, in Plate IV. It is also uncertain whether any of them had at any time the intensity and development of a severe typhoon. Two of these depressions or typhoons remained in the Pacific, while the third one traversed the central part of Japan in a northeasterly direction on the 27th.

## NOTAS GENERALES DEL TIEMPO

**Presión y temperatura.**—La presión atmosférica media de este mes en Filipinas es ligeramente menor que la del año pasado y que la normal de agosto. Las presiones más altas se observaron generalmente el día 1.º y las más bajas los días 5 y 6, en que un tifón pasaba por el NE y N de Luzón.

La temperatura media mensual apenas difiere de la normal de este mes en todo el Archipiélago, aun cuando es ligeramente menor que la de agosto de 1920 en el centro y norte de Luzón. Las temperaturas máxima y mínima absolutas de Manila fueron 33.2° C. y 22.5° C., las cuales se registraron los días 1 y 16, respectivamente. Las temperaturas extremas de Baguio fueron 24.4° C., 14.5° C. en la cumbre del Mirador, y 24.7° C., 14.3° C. en la llanura cerca del *City Hall*.

**Precipitación acuosa.**—Una gran mayoría de nuestras estaciones, particularmente en Luzón, registraron una cantidad de lluvia mensual mayor que la del año pasado y que la normal de este mes. En Manila los pluviómetros recogieron durante este mes 1,000.8 mm. de agua, cantidad que difiere de la normal en +598.5 mm., mientras que la lluvia mensual de Baguio llegó a 1,848.7 mm., resultando también mayor que la normal en 638.7 mm.

## DEPRESIONES Y TIFONES

Aunque ni una sola depresión o tifón atravesó las Islas Filipinas durante este mes, con todo predominó tiempo muy tormentoso en el Pacífico entre las Filipinas y Japón durante un período de no menos de veinte días, del 1.º al 20 de agosto, debido a tres tifones intensos que se movieron uno tras otro desde las Carolinas Occidentales o Islas Ladrones a la costa de China entre Hongkong y Shanghai.

Una vez más pudimos apreciar en estos tres casos la gran importancia de los dos telegramas diarios de observaciones que recibimos al presente de nuestras estaciones avanzadas de Yap y Guam. Con estas observaciones a la vista, al Observatorio de Manila le fué posible anunciar el primer tifón el 2 de agosto, cuatro días antes de desfogar en Formosa; y el segundo y tercero, los días 8 y 10 de agosto, 6 y 10 días, respectivamente, antes de penetrar en la costa de China por el sur de Shanghai. Durante todo el período de veinte días nos fué fácil enviar avisos de tifón por telégrafo sin hilos y por cable, siguiendo día por día las trayectorias de los tres tifones. Estas trayectorias juntamente con las de otras tres depresiones o tifones del Pacífico de menos importancia pueden verse en la Lámina IV.

**El tifón de Batanes y Formosa: 1.º al 7 de agosto.**—Este tifón se echó de ver en nuestros mapas del tiempo del 1.º de agosto como formándose en las Carolinas Occidentales al E de Yap y SSW de Guam, cerca de 10° latitud N y 143° longitud E. Se movió prácticamente al WNW hasta las primeras horas del día 6 en que se inclinó al NNW en dirección a Formosa, atravesando la parte meridional de dicha isla la tarde del mismo día. El tifón volvió a inclinarse al W en el Canal de Formosa, y durante la noche del 6 al 7 penetró en China entre Foochow y Amoy. Según las observaciones hechas en Basco, Islas Batanes, el centro ciclónico pasó cerca por el N de dicha estación a las 8 a. m. del día 6, habiendo bajado el barómetro a 733.02 mm., aunque la fuerza de los vientos (rolando del NNW al W y SSW) no fué mayor de 6 (escala Beaufort), y de ahí que no causase gran daño. Algunas de estas observaciones de Basco se dan en una tabla que va en el texto inglés.

Por las observaciones recibidas del Observatorio de Taihoku, sabemos que la mínima lectura barométrica observada en Formosa durante el tifón fué 731.5 mm., (corregida de gravedad) según se registró en Taito, estación situada en la costa SE de la isla. Las pérdidas causadas por el temporal en toda la isla fueron: Personas muertas, 3;



heridas, 28; casas totalmente destruídas, 1,029; parcialmente destruídas, 2,890. El centro del tifón se hallaba a las 5 p. m. del día 6 cerca de  $120^{\circ}$  longitud E y  $23^{\circ} 40'$  latitud N.

El tifón de Loochoos y del Mar del Este: 6 al 14 de agosto.—Este tifón se echó de ver en nuestros mapas del tiempo como formándose del 6 al 7 al NW de Guam cerca de  $143^{\circ}$  longitud E y  $16^{\circ}$  latitud N. Se movió primero casi directamente al W por dos días, luego hacia el N por otros dos días más próximamente, hasta que la tarde del día 10 se inclinó al WNW en dirección a las Islas Loochoos y al Mar del Este. El centro ciclónico pasó la tarde del día 10 muy cerca de Naha, Isla de Okinawa, en donde el barómetro bajó a 721.4 mm. (corregido de gravedad) a las 6 p. m. de aquel día. Grandes daños causó el tifón en aquella isla, según informes telegráficos recibidos en Formosa. Necesitó el tifón más de dos días para atravesar el Mar del Este y llegar a la costa de China por entre Shanghai y Foochow.

El vapor *Shinano Maru*, que había salido de Keelung el día 11, encontró este tifón en el Mar del Este, habiendo llegado a Moji con una demora de un día y medio después de haber sentido la furia del temporal. También el vapor *Aki Maru*, en su viaje de Nagasaki a Hongkong, experimentó vientos huracanados del E el día 13 en el Mar del Este, habiendo sido la mínima lectura barométrica observada a bordo 734.30 mm.

El tifón de Bonins y del Mar del Este: 10 al 21 de agosto.—Es imposible en este caso determinar si este tifón se formó más lejos al E de las Islas Ladrones, porque no contamos con observaciones del Pacífico al E o NE de Guam. Nuestros mapas del tiempo del día 10 indicaron este tifón al NE o NNE de Guam cerca de  $148^{\circ}$  ó  $149^{\circ}$  longitud E y  $18^{\circ}$  latitud N. Después de moverse lentamente al WNW y NW del 10 al 12, se movió el día 13 casi directamente al N hacia las Islas Bonins a donde llegó la madrugada del 15. El barómetro descendió a 730.5 mm. (corregido de gravedad) en Chichijima a las 6 a. m. de aquel día (no sabemos aún la mínima absoluta observada durante el tifón). En aquella hora la posición aproximada del centro del temporal era  $141^{\circ} 45'$  longitud E y  $26^{\circ} 30'$  latitud N. Después de atravesar las Islas Bonins, el tifón cambió repentina e inesperadamente su curso dirigiéndose aproximadamente al W, amenazando así el Mar del Este y la costa de China cerca de Shanghai. Las posiciones aproximadas del tifón a las 6 a. m. de los días 18, 19 y 20 fueron las siguientes:

Agosto 18, 6 a. m.:  $130^{\circ} 20'$  longitud E,  $29^{\circ} 25'$  latitud N.

Agosto 19, 6 a. m.:  $128^{\circ} 15'$  longitud E,  $29^{\circ} 05'$  latitud N.

Agosto 20, 6 a. m.:  $123^{\circ} 15'$  longitud E,  $30^{\circ} 15'$  latitud N.

El tifón penetró en China durante la noche del día 20 y pasó a pocas millas por el sur de Shanghai. Según los informes telegráficos publicados en la prensa de Manila, el barco *Glaucus* de la línea Blue Funnel, y el vapor correo *Cordillere* de las Mensajerías Marítimas, encallaron en el Río Yangtse cerca de Shanghai durante el tifón.

Otras tres depresiones o tifones del Pacífico de menos importancia: 18 al 28 de agosto.—Las trayectorias de estas tres depresiones o tifones no son tan ciertas y definidas como las de los anteriores. Se incluyen, sin embargo, en la Lámina IV. También es incierto si alguno de ellos llegó nunca a adquirir la fuerza y el desarrollo de un tifón intenso. Dos de estas depresiones o tifones permanecieron en el Pacífico, al paso que el tercero atravesó la parte central de Japón, moviéndose al NE, el día 27.

METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY\*

[ $\phi=14^{\circ} 34' 41''$  N;  $\lambda=120^{\circ} 58' 33''$  E; barometer above sea, 14.2 meters; gravity correction not applied, -1.72 mm.]

Day.	Pressure (mean). mm.	Air temperature. <sup>b</sup>			Underground temperature.				Relative humidity (mean). Per ct.	Vapor pressure (mean). mm.	Radiation.		Evaporation. <sup>b</sup>			
		Mean.	Maximum.	Minimum.	0.25 meter.		0.50 meter.				1.50 meters.	2.50 meters.	Minimum on grass.	Maximum in sun. Black bulb in vacuo.	Free exposure (total).	Shelter (total).
					°C.	°C.	°C.	°C.								
1	759	28.6	33.2	25	30.5	31.8	30.5	30.8	29.8	29.5	81.5	23.5	23.2	64	4.1	2.7
2	58.11	28.4	32.9	25	30.7	31.9	30.6	31	29.8	29.5	81.7	23.3	23.2	65.4	3.6	2.5
3	57.42	27.9	32	25.2	30.7	31.9	30.7	31	29.8	29.5	84.1	23.4	23.7	62	3.3	2.7
4	56.48	27.6	31.2	25.1	30.3	31.4	30.6	30.7	29.8	29.5	80.6	22.2	23.4	58.7	4.9	3.3
5	54.52	27.8	29.6	26.5	30.2	30.5	30.4	30.5	29.8	29.5	78.9	21.9	25.6	43.7	5.6	3.8
6	55.09	26.5	30.4	24.1	29.6	29.4	30.1	30	29.8	29.5	85.2	21.8	22.8	50.5	6	1.4
7	57.52	23.6	24.6	22.9	27.2	27	29	28.7	29.7	29.3	96.5	20.9	21.8	61.6	0	2.2
8	57.32	26.3	31.1	22.7	26.7	28.4	28.4	28.6	29.5	29.4	85.4	21.6	21.5	59.8	3.4	2.1
9	57.38	26.5	31.9	24	28.5	29.5	28.8	29.2	29.7	29.4	86.6	22.1	22.1	66.8	1.8	1.5
10	57.78	26.6	31.4	23.3	28.4	30	29.1	29.4	29.7	29.4	83.5	21.5	21.4	64.9	3.3	2.6
11	57.38	26.6	31.2	23.9	28.7	29.8	29.3	29.4	29.7	29.4	85	21.8	22	66.2	2.4	2.7
12	56.59	26.2	30.8	23.3	28.7	29.4	29.2	29.3	29.6	29.4	88.9	22.4	23.2	66	1	1.3
13	56.66	26.1	29.9	23.8	27.7	27.9	29	29	29.6	29.2	88.8	22.3	22.7	43.6	1.8	1.4
14	55.71	26.3	29.8	24.2	27.8	27.7	28.8	28.5	29.5	29.4	89.1	22.6	23.8	43.6	1	1.4
15	55.85	24.1	25.5	23.1	26.8	26.5	28.1	28	29.3	28.8	93.8	21	22	38	0	2
16	55.75	24	26.8	22.5	25.8	25.7	27.6	27.5	29.2	29.2	94.5	21	22	38	0	5
17	56.66	26	30.2	23.5	26	27	27.5	27.5	29.1	29.2	87.4	21.7	21.7	61.3	2.2	1.7
18	56.50	27.2	31	24.9	27.2	28.5	27.8	28	29.3	29.4	84.9	22.6	22.5	60.6	2.9	2.3
19	55.57	25.8	29	24	27.2	27.4	27.9	27.9	29	29.2	90.4	22.3	23	50	6	1.1
20	55.30	28	31.8	25.3	27.2	28.7	28	28.2	29	29.4	84.2	23.6	22.6	63.4	3.3	2.9
21	56.67	27.8	32	25.1	28.1	29.4	28.4	28.6	29.1	29.4	85.3	23.6	24	64.5	2.7	2.5
22	56.89	26.9	28.9	25.5	28.3	28.4	28.6	28.6	29	29.3	87.8	23.2	24.2	43.8	1	1.2
23	57	25.6	28.2	23.7	27.8	28	28.5	28.4	28.9	29.3	91.9	22.4	22.5	49.1	1.1	1
24	57.74	26	30.4	23.8	27.5	28.5	28.3	28.5	29	29.3	88	21.8	22.6	64.2	2	1.5
25	58.49	26.4	30.4	23	27.7	29	28.4	28.6	29	29.3	86.5	21.9	21.2	59.8	2.4	1.8
26	58.27	26.9	31.9	23.3	28	29.5	28.5	28.8	29	29.2	83.9	21.9	21.5	59.5	3.3	2.3
27	57.38	26.7	32.4	24.1	28.5	29.7	28.8	29	29	29.2	85.6	22.2	22.5	65.3	2.1	1.5
28	56.67	26.1	30.6	23.5	28.6	29.7	29	29	28.9	28.9	87.3	21.8	22	64.8	2	1.3
29	56.75	25.8	29.6	24.1	28.6	29	29	29	28.9	29.1	89.3	21.9	22.7	59.1	1	1
30	55.73	24.8	28.8	23.7	27.9	28.3	28.8	28.9	28.9	29	92.2	21.4	22.1	54	6	7
31	55.56	25.9	31.4	23.3	27.7	29.2	28.7	28.9	29	29.1	84.6	21	21.7	68.2	2.5	2
Mean Total.	756.77	26.4	30.3	24	28.2	29	28.9	29	29.3	29.3	86.9	22.1	22.6	57.4	2.1	1.8
Departure from normal.	-0.51	-0.6	-0.4	+0.2							+1.7	-0.3		-8.5		

Day.	Wind.				Clouds.		Rain, 24 hours beginning 6 a. m.		Miscellaneous.		
	Prevailing direction.	Total movement.	Maximum hourly velocity.	Direction at the time of the maximum velocity.	Amount (mean).	Form and direction.		Sunshine.		On the tower.	In the park.
						Upper.	Lower.				
1	WSW, E	233.5	24	WSW	0-10.	Ci.	Cu. SE, S	h. m.	mm.	mm.	
2	WSW	223	19	WSW	4.8	Ci.-S.	Cu. N	7 55			⊕ a. ⊕ p.
3	WSW	191	25	WSW	6.7	Ci.-S.	Cu. SE	4 50			⊕ a. p.
4	SW	425	35	SW	8.4	Ci.-S.	cu. w, wsw	1 45			⊕ a. p.
5	WSW	930	58	WSW	8.7	Ci.-S.	cu.-N. w, sw	0 10			⊕ a. p.
6	WSW	755.5	53	WSW	9.7	Ci.-S.	Cu.-N. W	0 00			⊕ a. p.
7	SE	111	10.5	NE	10	Ci.-S.	cu.-N. w, wsw	0 00	62	67.3	⊕ a. p.
8	SW	149.5	19	SW	5	Ci.-S.	N. WSW	0 00	71.3	76.3	⊕ a. p.
9	SW	122	19	SW	8.2	A.-Cu.	NW	9 15			⊕ a. p.
10	WSW	258	34	WSW	7.8	Ci.	Cu. NE	4 45	17.1	17.3	⊕ a. p.
11	SW	344	33	WSW	9.2	Ci.-S.	Cu. SSW.	3 25	1	2	⊕ a. p.
12	WSW	527.5	39.5	WbyS	8.8	Ci.-S.	cu.-N. wsw	1 20	15	15.9	⊕ a. d p.
13	WSW	504.5	56	WSW	9.5	Ci.-S.	N. SW	0 35	7	8.7	⊕ a. d p.
14	SW	609	45	W	9.7	Ci.-S., A.-Cu.	cu.-N. wsw	0 10	130.5	137.3	⊕ a. d p.
15	SW	390	37	SW	10	Ci.-S.	N. WSW	0 00	246.3	263.6	⊕ a. d p.
16	SSW	258	22.5	SW	10	Ci.-S.	N. WSW	0 00	89.8	90.2	⊕ a. d p.
17	SW, S	296	32	SW	8.8	A.-Cu.	W	2 45	3.6	4.8	⊕ a. d p.
18	SW	501	35	WSW	8	Ci.	cu.-N. wsw	2 25	38.1	39.6	⊕ a. p.
19	sw, wsw	371	31	W	10	Ci.-S.	N. WSW	0 00	44.1	47	⊕ a. p.
20	sw, wsw	471.5	33	WSW	9.1	A.-cu.	sw	2 55	7.7	8.1	⊕ a. p.
21	SW	418.5	32	SW	8.4	A.-Cu.	E	4 15	17.1	18	⊕ a. p.
22	WSW	420	41	W	10	Ci.-S.	Cu.-N. W	0 00	21.4	23.4	⊕ a. p.
23	SW	206	23	WSW	10	Ci.-S.	N. W	0 00	49.4	52.8	⊕ a. d p.
24	sw, wsw	291	37	WSW	8.4	Ci.-S.	cu.-N. wsw	2 30	16.9	17.3	⊕ a. p.
25	WSW	166	18	WSW	7.1	Ci.-S.	E	4 15			⊕ a. p.
26	W	165.5	17.5	SW	5.8	Ci. NNW	Cu. NNE	8 55			⊕ a. p.
27	sw, wsw	143.5	17.5	WNW	7.2	Ci.-S.	E	5 00	5	5	⊕ a. p.
28	SE, E	81.5	12.5	WbyN	8.8	Ci.-S., ENE	Cu.-N. E	3 00	4.6	5.1	⊕ a. p.
29	E	97	16	W	7.8	A.-cu.	ENE	2 15	6	5.9	⊕ a. p.
30	NE	49.5	11.5	W	9.5	Ci.-S.	Cu.-N. E	0 20	22.5	24.9	⊕ a. p.
31	ESE	229.5	20	SSE	9.1	A.-cu.	ESE	2 20	20.2	20.8	⊕ a. p.
Mean Total.		320.6	29.2		8.5			2 30	77 40	1,058.9	
Departure from normal.		+329.2			+0.6			-59 50	+598.5		

\* All the mean values given in this table are deduced from hourly observations.  
 \* These values are taken from instruments mounted in the Observatory Park, 1.5 meters above ground.

METEOROLOGICAL DATA FOR MIRADOR OBSERVATORY, BAGUIO\*

[φ=16° 25' N; λ= 120° 35' E; barometer above sea, 1,512.5 meters; gravity correction not applied, -1.65 mm.]

Table with columns: Day, Pressure (mean), Air temperature at Mirador (Mean, Maximum, Hour, Minimum, Hour), Air temperature in the plateau near the City Hall (Maximum, Hour, Minimum, Hour), Relative humidity (mean), Vapor pressure (mean), Radiation (Minimum on grass, Maximum in sun), Evaporation (Free exposure, Shelter).

Table with columns: Day, Wind (Prevailing direction, Total movement, Maximum hourly velocity, Direction at the time of the maximum velocity), Clouds (Amount, Form and direction: Upper, Lower), Sunshine (h. m.), Rain (24 hours beginning 6 a. m., mm.), Miscellaneous.

\* All the mean values given in this table are deduced from 6 daily observations taken at 2, 6, 10 a. m. and 2, 6, 10 p. m.
b The barometric readings of this station are not reduced to sea level.
c Maximum of hourly observations taken from 6 a. m. to 6 p. m.
d This element is based on hourly observations taken from a quadruple register, which gives only eight possible directions of the wind.

## DAILY RAINFALL AT THE STATIONS OF THE WEATHER BUREAU, AUGUST, 1921

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lapac Agricultural School, Siasi, Sulu †	16.5		16.5													
Glan, Cotabato †	5.3			3.8			21.1									13.5
Jolo, Sulu	1.3		4.6									4.1			9.1	
Buntung, Koronadal, Cotabato †	17.8	32.3	9.4	.3	4.6		2	2.3	6.4			1.3	6.1			
Lais, Malita, Davao	22.1	5.8					21.6	7.6	19	4.3						18.3
Malita, Davao		10.4				1.3	3.3	4.3	9.9							
Lebak, Cotabato	15.5	41.7	86.1	24.9	6.9		10.2	5.6	1.3				4.6	5.6		
Basilan Plantation, Kabunbatan, Isabela, Zamboanga †	27.7		43.2	10.4	1.3											
Padada, Santa Cruz, Davao †		6.4							21.6							
Basilan Plantation Office, Isabela, Zamboanga †	35.1		57.2	13	2.5											
La Union, Sigaboy, Davao †	100.8		1.3		1.8		55.9	2.8		60.7						
Paranglalap, Isabela, Zamboanga †			30.5	5.1						31.7	6.4				1.3	
Latuan, Isabela, Zamboanga †			35.1	12.7						6.4					12.4	
Buluang, Cotabato †			2.5				7.6		12.7							
Malamau, Isabela, Zamboanga	1.5		58.7	7.6	.8					10.4						
Pagsilaan Farm School, Mati, Davao †						12.7	10.2							7.6		
Zamboanga, Zamboanga	1.3	70	45.1	16.5						5.1					1.5	
Cagayan de Sulu, Sulu †	14		1								.8				41.7	9.1
Kidapauan, Cotabato †	27.2	6.4	28.2	8.6	8.4		3				40.6	4.1		19.8	7.9	
Davao, Davao		5.6					9.7		2.8	11.9						14.5
Piang Agricultural School, Kudarangan, Dulauan, Cotabato †		26.5	5.9	.5					3.3						3	.5
Pikit, Cotabato	3	27.9	4.1		1		.8			2						
Cotabato Seed Station, Pikit, Cotabato †		1.3		2.3			5.1	20.3	16	22.9	35.6	33			8.9	18.3
Awang, Cotabato †		9.9	16.5	28.2	24.1											
Sirib, Guianga, Davao †	.5	1	.5	.5			58.4		52.1	38.1		101.6				52.1
Kabakan, Cotabato †		27.9	2.5		7.1					2.5						
Bual, Dulauan, Cotabato		12.9	5.8					3	1.3					2	31.8	
Cotabato, Cotabato	.4	13.7	22.4	14	22.1	8.1	13.5	10.9								
Mampising, Pantukan, Davao †		7.6					18					81				
Kabasaran, Buldun, Cotabato †		22.9	25.4	7.6				26.7								
Naganaga, Margosatubig, Zamboanga		15.3	22.9			3.8			34.3	6.1						
Banisan, Banisan Cotabato †		1.8			1.3				14.5	.5			3.8			
Malabang, Lanao	63	24.9		20.3	75.7	2			16.8				14.7	3.8	82.3	47.8
Compostela, Monkayo, Davao †			11.9				17									
Malangas, Margosatubig, Zamboanga †	8.1	17.8	27.7	2.3		7.9	.5	.3	29	6.9					7.9	
Lumbatan, Lanao †	1	25.4	16.5	2.8	16.8	1				3.3						
Cateel, Davao	3.8	1	1.5				3.8	.8	1.3	5.8						
Ganasi, Lanao	2	11.4	53.8	4.8					5.1				2.8	18.7	6.4	
Camp Kalao, Monkayo, Davao				8.1		14	50.8	4.1	1			5.8				
Managok Agricultural School, Linabo, Malaybalay, Bukidnon	.5	1	1.8					4.1		11.2		30.2				
Camp Keithley, Dansalan, Lanao	.3	20.6	30.9	.8				22.6	22.8		.3				3	1.3
Veruela, Agusan	5.8	9.7	37.8				.8		18.3		2.8	7.1	8.6			
Sindangan, Zamboanga †			26.2	1.3			1.8		17							
Sumilau, Bukidnon		28.4	21.3	14.5		5.8			43.9	46.7	67.3	14	8.1		17.8	
Diklom, Tangkulan, Maluko, Bukidnon †		10.2	11.4	19.8	4.6	2.5	1.5		3.6	3	6.1	5.3	8.1			
Cagayan, Misamis	1		13.2	20.6		4.3				21.3	32.5	22.9				
Talacogon, Agusan	4.1		45.5				11.4		3.8	23.9	29.7	37.3				
Butuan, Agusan	5.8	1.8	16.3				.5		1.3	9.4						
Mambajao, Misamis	16.8			4.6					13.5							
Dumaguete, Oriental Negros			6.9	1.5	.3											
Kolonie, Yap, Western Carolines	110.4	24.4	13.7	16.1	1.5	29.6		2.4						.5		1
Hacienda Palanas, Bais, Oriental Negros †				5.1	37.6	6.4	1.5	2.3						8.9	7.4	
Hacienda Tamugon, Bais, Oriental Negros †					48.2		10.2									
Tagbilaran, Bohol			61.8		5.1	2.5										
Iwahig Penal Colony, Puerto Princesa, Palawan		4.3	3.5	3	5.8				5.1	28.2						3
Dalaguete, Cebu			26.7		4.3				1.3					.5		
Surigao, Surigao	45.7	.5	38.1					7.6	13.5		1.5					
Central Palma, Ilog, Occidental Negros					12.7	7.6	27.9	5.1	7.6						12.7	5.1
Hacienda Naval, Himamaylan, Occidental Negros			61	20.1	67.9	4.6	7.9	6.9	2.8	3.3						5.3
Biaong Cui's Farm, Barili, Cebu			31.7													
Maasin, Leyte	8.4	11.7	22.4	25.4	26.2	16			14.5							
Binalbagan Estate, Binalbagan, Occidental Negros †																
Isabela, Occidental Negros		.3	62	10	53.3	1.3	1.6	4.6	175.3	5.3				.3	7.4	.5
Hacienda Tanolo, Hinigaran, Occidental Negros																
Cebu, Cebu	27.7	2.6	44.7		17.6	.8			1.8	2.8				.5	11.7	7.4
La Castellana, Occidental Negros			20.8	33.5	48	7.1		16.8	3.3	1.3	2			4.3	9.1	3.3
Hacienda Vallehermoso, Vallehermoso, Oriental Negros †			35.6		14.5	5.8				3.8					8.1	
Central Azucarera de la Carlota, La Carlota, Occidental Negros			7.9	37.9	73.2	11.1	13	1.5	5.8	10.7	3.6	.5		5.1	6.4	3.3
Hacienda Canlaon, La Castellana, Occidental Negros		3.3		4.6			.8	19	9.1	14.7	19	12.2	1.3	33	3.8	49.8
La Carlota Experimental Station, La Carlota, Occidental Negros †	2.5		11.7	38.8	81.2	11.4	9.4	.3	.3	35.6	1.3		3.6	6.6	2.5	

† Voluntary or cooperation station.

a Amount of rain from the 1st to 9th.

Daily rainfall at the stations of the Weather Bureau, August, 1921—Continued

Station.	Day of month.															Total.	
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Lapac Agricultural School, Siasi, Sulu †		10.7										25.4				79.3	
Glan, Cotabato †	21.1	2.5				2.5	0.8	9.1	4.1				11.7			99.6	
Jolo, Sulu		4.3	1.8	0.5	0.3	.5	.8	18	22.9			.5	8.4	1	10.5	85.8	
Buntung, Koronadal, Cotabato †		4.3	42.5	18.8	2.5					2.5	16.8	8.2				176.8	
Lais, Malita, Davao											27.9	2.3			6.6	135.5	
Malita, Davao		.8								1	7.9	6.6		.5	7.4	53.4	
Lebak, Cotabato			17.8		3.3		.5		1	5.6	6.6	50.8	16.2		.8	305	
Basilan Plantation, Kabunbatan, Isabela, Zamboanga †		58.6	.8	3	3	5.3	30.5	56.2	60		38.3		7.4	3.3	4.3	353.3	
Padada, Santa Cruz, Davao †			10.2	5.1	3.8			10.2		19	16.5	19	14		14	139.8	
Basilan Plantation Office, Isabela, Zamboanga †		54.3			3.6	17.8	12.8	27.2	39.3		20.8		6.4	6.1	5.1	301.2	
La Union, Sigaboy, Davao †			2.5					98.8	96.8	45.5	43.7	56.9	10.7			578.2	
Paranglalap, Isabela, Zamboanga †		38.1			5.1	21.6		17.8	30.5		8.9	1.3	2.5	3.8	5	209.6	
Latuan, Isabela, Zamboanga †		22.9			8.6	10.7		8.1	21.3		12	2.5	2.5	5.1	26.4	186.7	
Buluon, Cotabato †			7.6		2.5		78.7		43.2		10.2	10.2				175.2	
Malamaui, Isabela, Zamboanga	.8	18.5			19.6	.5	1.3	6.9	9.4		16.8			2.5	19	174.3	
Pagsilaan Farm School, Mati, Davao †								7.6	15.3	5	10.2					68.6	
Zamboanga, Zamboanga		6.6	.5		3.1			7.2	9.9	10.9	2	.5	9.1	3.1	18.6	211	
Cagayan de Sulu, Sulu †		4.3	33		13.7	17.3		45.7	29.7		43.9	.3	36.5	15.2	6.9	313.1	
Kidapawan, Cotabato †	8.6						2.8			14			15.3	50.8		245.7	
Davao, Davao		6.4	3.8			5.6					35.3	19.3	26.4	32.2	13.7	187.2	
Piang Agricultural School, Kudarangan, Dulauan, Cotabato †		.5			26.4		1.3	15.2	2.5	9.1	3.6	1.8	43.4	2.5	3.6	149.1	
Pikit, Cotabato	31	21.1	1.3		17		2.8	29	5.6	9.1	8.6		33.5			198.3	
Cotabato Seed Station, Pikit, Cotabato †	13.5		28.2	15.2				15.7	8.9	.5	5.6	8.9				260.2	
Awang, Cotabato †					20.3		18.8	51.1		18	5.6	18.5	18		13.2	242.2	
Sirib, Guianga, Davao †		.3	63.5		22.9			23.1	28.4					152.4	34.3	629.7	
Kabakan, Cotabato †		2.5	27.9			2.5	12.7	5.1	2.5	35.6	7.6					129.3	
Bual, Dulauan, Cotabato		1	28.4		1.3		1	1.5	1.8	40.6	13.4	2.3	19.3		.8	175.3	
Cotabato, Cotabato			.8	.3	1.5			1.8	.3	50.8	9.1	48	19.3		8.2	246	
Mampising, Pantukan, Davao †					14			12.7	8.1	49	8.1	49	18.3	1.8	3.3	213.8	
Kabasaran, Buldun, Cotabato †				1.3			10.2	17.8	.3	58.4	25.4	20.6	44.4	6.4		267.4	
Naganaga, Margosatubig, Zamboanga		79.5		11.4	5.6			19.3			41.6	101.1	38.8	26.7	19.8	426.2	
Banisan, Banisan, Cotabato †	.8						10.2	7.6	2.5		1.3	1		1.5		46.8	
Malabang, Lanao		72.4	2.5	9.7	11.7			12.2		30	47.2	41.4	53.3	21.3		649.2	
Compostela, Monkayo, Davao †						6.9	6.6									42.4	
Malangas, Margosatubig, Zamboanga †		73.7	4.8		9.4	.8		21.9	5.1	13.7	101.1	64.5	52.6	45.9	10.4	512.3	
Lumbatan, Lanao †		2.5	10.7		88.9	17.5	4.1	3.3	16	12.4	15.2	14	24.4	.5		276.3	
Cateel, Davao				.8						1	49.8	8.1	1	6.6	6.3	91.6	
Ganasi, Lanao			9.7	5.8	42.9	1		4.3	71.1	31.3	20.8	17.3	36.4	4.6		350.2	
Camp Kalao, Monkayo, Davao				6.1		5.8	19.3	4.6	1.8	20.8	6.4	10.2	9.7		9.7	178.2	
Managok Agricultural School, Linabo, Malaybalay, Bukidnon	1	1.8	1.8	3	1	.5	.5	1		.5	5	1.8	9.9	12.7		84.8	
Camp Keithley, Dansalan, Lanao	7.6	40.9	18.3	2.3	14.5	.5	29.5	12.7	6.6	6.3	10.9	35.8	6.6	.8		238.2	
Veruela, Agusan			.8			14.7	32.8	8.4		.5	58.9	25.4	26.4	2	34.3	295.1	
Sindangan, Zamboanga †		3.3			8.9		3.8	3.3	3.8	20.1	45	38.1	14.5			187.1	
Sumilau, Bukidnon		9.7	32.3	15	7.6		34		11.4	14.2	12.7	25.2	15.7	19.8	9.9	475.3	
Diklom, Tangkulan, Maluko, Bukidnon †		5.6	6.9	7.6	10.4	1.5	1.3	1.8	3		6.6	6.6	6.1	2.5	7.6	143.6	
Cagayan, Misamis		17.5	15.7	2.5	2						33.3	4.6	9.7	11.4		212.5	
Talacogon, Agusan		24.6	30.2	6.9					6.9	12.7	7.4	29.7	11.9	42.7	19	347.7	
Butuan, Agusan			4.8	.8	10.9			3		.5	3.9	44.2	46.7	.3	7.1	154.6	
Mambajao, Misamis					7.6	15.7			18		4.3	2.5	13.7	23.6		120.3	
Dumaguete, Oriental Negros		1.5		.5				.8	2.3	.5	7.4	2.8	17.3	2	3	49.8	
Kolonie, Yap, Western Carolines	.5	7.4	1.3			10.9	4		18.6		1.3	8.1	.3	24.4		276.4	
Hacienda Palanas, Bais, Oriental Negros †					5.8			12.2	1.5	1				14	7.6	111.3	
Hacienda Tamugon, Bais, Oriental Negros †								10.2		7.6			5.1	22.9	17.8	122	
Tagbilaran, Bohol					7.6			17.5		17.3	10.9	15		.5	4.1	7.9	150.2
Iwahig Penal Colony, Puerto Princesa, Palawan				4.1	.3			2.8	5.6				23.1	26.9	67.3	183	
Dalaguete, Cebu					.5			2	16.3		6.9	.5	1	11.2	.6	71.8	
Surigao, Surigao								1.8			2.3	1.8	11.2	14.2	12.2	150.9	
Central Palma, Ilog, Occidental Negros			5.1						15.2	12.7						111.7	
Hacienda Naval, Himamaylan, Occidental Negros					14.5				17.8	2	15.7	11.4	11.2	3.8	4.3	260.5	
Biaong Cui's Farm, Barili, Cebu									28.4		8.9					69	
Maaasin, Leyte		8.9	12.7						22.6		7.6	34	36.6	120.4	41.7	409.1	
Binalbagan Estate, Binalbagan, Occidental Negros †						10.4			20.3	.8		45.7	18.5	2.1	4.6	305.9	
Isabela, Occidental Negros					3.8				31	1	26.9	6.6	14.3	3.5	2.8	235.6	
Hacienda Tanolo, Hinigaran, Occidental Negros			2							21.8	1	2.3	11	65.8	5.6	3.8	309.8
Cebu, Cebu				18.8		21.6			1.5	4.6	3	18.8	114.5	33.2	21.1	15.2	328.7
La Castellana, Occidental Negros					.3	11.9			6.6	18.3	32.5	13	45.7	2.6	1.3	281.7	
Hacienda Vallehermoso, Vallehermoso, Oriental Negros †										11.4	30.5	5.1	7.4	9.9	1.5	133.6	
Central Azucarera de La Carlota, La Carlota, Occidental Negros	.3		1.5		.3	4.1			11.7	19.8	5.8	11.7	16	31.7	4.3	2.6	289.8
Hacienda Canlaon, La Castellana, Occidental Negros			3.8			21.6				8.9			25.4			1.8	232.1
La Carlota Experimental Station, La Carlota, Occidental Negros †						3.3	2.3		1.5	41.4	23.6	22.8	9.9	21.6	6.1	1.8	339.5

† Voluntary or cooperative station.

## Daily rainfall at the stations of the Weather Bureau, August, 1921—Continued

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Mao Sugar Central, Santa Cecilia, Bago, Occidental Negros	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Valladolid, Occidental Negros	1.3	3.8	16.5	73.9	6.3			13.9	6.4				2.5	9.1	0.5	
Central San Carlos, San Carlos, Occidental Negros †	24.4		33.3	44.4	34	8.9	12.2	1.8	4.1	1	.8		0.8	1	20.3	
Hacienda Refugio, San Carlos, Occidental Negros †		54.1			11.7					2.3					13.7	
San Joaquin, Iloilo	2.6	20.3	6.9	19.1	16.8	28.5	1.8		5.1	11.7	3	6.6	.8		33.8	
Murcia, Occidental Negros	6.9				16.7	26.4			26.7	6.4				1.5	12	
Bacolod, Occidental Negros				5.6	37.1	22.6		.8	3	3.3	3.6			3.8	20.6	
Oton, Iloilo			4.6	4.8	12.7	134.6	4.6		48.2	12	5.6	6.4	4.6	30.6	1.5	
Iloilo, Iloilo			32	1	19	79.1	2		37.7	6.1	.3	.3		29.5	4.6	
Lapu-lapu, Iloilo, Iloilo †			14		25.4			2.5	1.3					40.6		
San Jose de Buenavista, Antique	1.3	52.6	35.3	26.1	22.3			18.3	18	3.8	7.1	5.8		11.1		
Tuburan, Cebu	1.3	19.8		14.2				1.3	.8				1.8			
Leon, Iloilo		7.1		47.8	13			13.5	8.6					3.8	15.2	
Silay, Occidental Negros				14.2	22.1			2.5	1	2.5			6.9	1.8	23.9	
Calag-itan, San Remigio, Antique		3.3	63.5	55.6	39.4	28.9	1	36.3	9.4	9.9	20.5	10.7	4.1	3.3	9.4	
Hawaiian Philippine Co., Malibug, Silay, Occidental Negros †					14.3	46.7		5.1	.3	3	.5		4.1	1.5	33	
Cuyo, Palawan		2.3	6.4	2.1	7.9	1.8	1.5	19	29.2	17.8	3.3	1.3	4.1		5.3	
Lucena, Santa Barbara, Iloilo †			2.3		3	15.3			2		3.8			1.3	4.1	
Barotac Nuevo, Iloilo			.8		19	12.7		1.5		10.6		20.3		1	4.8	
Hacienda Ilaya, Victorias, Occidental Negros					12.4	55.1		11.4							19.8	
Central Victorias, Victorias, Occidental Negros †					27.9	57.2		21.6							23.4	
Hacienda Bilbao, Manapla, Occidental Negros						4.3							2.5			
Janiuay, Iloilo		.8	13.3		10.2	4.3		1						3	2.5	
Cadiz, Occidental Negros	26.7		26.9		8.9				9.9							
Dingle, Iloilo			22.4		1	4.9		1.5						.8	3	
Ormoc, Leyte	4.3	5.6	19.8		22.4	3.3	1	5.8	14							
Guiuan, Samar	29.7	3.8	11.5		1.3			10.7	2.5	3						
Bugasong, Antique			33	96.5	61	76.2	10.2	7.6		15.2	25.4				22.8	
Bogo, Cebu	4.3	6.6	.8		1			4.3	18.6							
Ducñas, Iloilo †			13.7		2	3.6		20.6								
Bitaoagan, Passi, Iloilo †			21.3	4.3				30.7	1.3							
Sara, Iloilo	.3	1	1.8		2.5	4.8	2.1	12.7	12.2							
Taclaban, Leyte	51.5	11.9	4.3		3	1		5.1		9.1	8.6					
Dumarao, Capiz †	79.5		1.3	5.1	5.1			5.1	18.5							
Central Asturias, Buntog, Dumalag, Capiz			26.7	.3	5.6	5.9		11.2	27.4	.5						
Dao, Capiz †			7.6		3	5.6		1.3	3.8	1.5	6.3					
Culasi, Antique	4.3	1.3	4.8	85.9	32	40.9	1.8		38.9	70.6	5.3	19.6	4	3.8	19.4	
Mambusao, Capiz			1.3	3.3	7.4			1.3	2.3	2.3	.5				6.9	
Hacienda Amparo Pontevedra, Capiz			.8		2.5	5.1		8.4	10.5		4.8					
Capiz, Capiz	.5		13.8		2.3	.8		.3	7.4	5.8						
Borongon, Samar	16.5	17.3	7.9		1.8		.8	6.4		14.5						
Calivo, Capiz			14.2	13.7	8.9			16.8				4.6		10.7		
Pandan, Antique	7.9	5.1	16.5	58.4	29.2	46.7	14.3	46.3	1.8	48	6.6	3.8	14.7	1	27.2	
Catbalogan, Samar	7.6	14.2	29	26.1	1	8.9		5	8.6						7.6	
Ibajay, Capiz		4.6	28.1	22.1	53.6	10.2		4.1	22.6	1.3	12.4	7.7	7.2	4.9	11.2	
Calbayog, Samar	.6	9.4	2.1	36.4	.3	8		24.4	15.2							
San Jose Estate, Robles Camp D-17, San Jose, Mindoro †			98.3	27.9	17.3	3.8	9.4	33	10.2	9.4	10.2			25.1	3.8	
San Jose Estate, Tamaraw Plantation, San Jose, Mindoro †	29		73.7	31.7	27.7	30.5	33		16.8	7.9	10.7		9.4	10.9	22.6	
San Jose Estate, San Agustin, San Jose, Mindoro †			129.5	62.2	12.2	37.1	30.7		4.3	5.3	1.3	4.6	19.8	12.4	19.6	
San Jose Estate, San Jose, Mindoro †	7.6		53.3	38.9	26.1	50.8	47		5.8	10.4	6.8	4.6	15.5	40.6	.8	
Masbate, Masbate	1.5		1		5.6	21.4		1.3	27.2	25.6				.5	19.3	
San Jose Estate, Tunnel D-12, San Jose, Mindoro †			17.8	35.6	14.2	49	53.6		9.7	8.9	7.6	9.1		43.2	19	
Romblon, Romblon	.3				22.6		.3				6.9	6.5	.5	2.3	3.5	
Batag Lighthouse, Laoang, Samar		2	2.5		1	1		11.9	1.5	3.3						
Irosin, Sorsogon	1.5		1.3			7.6		29.2	33							
Sorsogon, Sorsogon		1.3	25.2	6.1	1			48.7	3.8	2.5			1.3		3.3	
Bacon, Sorsogon	.5					1.5		5.1	5.6	.5						
Jovellar, Albay	1.8		44	3.6	.3	3.9	.8	17.8	25.1	15.5	3.8	4.4		1.1	3.3	
Legaspi, Albay, Albay			10.9	1.8	1.8	12.5	1.3	13.7	46.5	10.7	2	2.8	.5	1.3	.3	
Guinobatan, Albay	3.5		26.4	1	4.6	1.6	4.3	.8	25.9	.8				7.6	3	
Polangui, Albay	17.3					19.8			52.8				2	1	17.3	
Bacacay, Albay			9.1		1.5	2.8	4.1	1.8	35.8	8.9	.5			1.5		
Bato, Camarines Sur			.8			.5		43.2	17.8	3.6			1.3		1.3	
Tabaco, Albay	.5															
Sumay (Guam), Agaña, Ladrones Islands	16	8.4	5.6	12.5	1.6	1.3	4.4		11.2	33.3	13.4	21.8	22.6	6.1	13	
Iriga, Camarines Sur	1.8		.5	5.1	7.3	22.6	11.9	19.8	9.1		1.5			.3	12.2	
Calapan, Mindoro				.8	24.1	8.9			1.5	.8		3.8	2.8	26.7	18.5	
Tiwi, Albay			21.1		38.9			2.5	5.6					6.4		
Pasacao, Camarines Sur								7.4	9.9							
Virac, Albay		4.6						.5	20.8	7.7				7.4	1.3	
Naga, Camarines Sur			1	1.3	23.4				4.8	.8				11.7	8.4	
Tigaon, Camarines Sur	15.5	3	.3	.3	4.3	11	.8	1	71.9		.6	1				
Baras, Albay																
Libmanan, Camarines Sur	6.1		1.5		11.7				7.1	13.7		10.7	11.2	6.6	3.3	

† Voluntary or cooperative station.

Daily rainfall at the stations of the Weather Bureau, August, 1921—Continued

Station.	Day of month.															Total.	
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Maa Sugar Central, Santa Cecilia, Bago, Occidental Negros																	
Valladolid, Occidental Negros			28.2	13.2	17	15.5		42.4	30	1.5	1.8	65.5	48	12.5	38.1	457	
Central San Carlos, San Carlos, Occidental Negros †												21.8	3	7.6		103.8	
Hacienda Refugio, San Carlos, Occidental Negros †												17.5	2.8	11.7		124.2	
San Joaquin, Iloilo		16.3	5.6	2	1.3	1.3	1.3	1.3	4.6	1.8	25.7	5.1	58.2	50.8		333.1	
Murcia, Occidental Negros		15.7						2	7.9	9.4	3.3	14	14.7	11.2	7.9	182.7	
Bacolod, Occidental Negros		19		15				24.6	1.5	1.3	17.5	7.6	11.1	7.4	21.6	223.5	
Oton, Iloilo		6.9	6.4		4.6			3.8	3	4.1	49.3	3.8	17.2	10.2	24.1	406.6	
Iloilo, Iloilo		58.4	1		.8	1		24.1	2.3	1.6	3	2	16.8	33.1	49.4	400.8	
Lapu-lapu, Iloilo, Iloilo †		68.6			1.3			53.6	.8	3.8		2.5	6.4	20.3	49.5	294.4	
San Jose de Buenavista, Antique		1.8	10.2	35.1	29	2		38.6		3.8	1.5	23.8	84.1	22.9	32.2	488.5	
Tuburan, Cebu				1	.3							5.1	.3	5.6	5.1	55.1	
Leon, Iloilo								5.1	7.9	25.4			15	79.5		253.3	
Silay, Occidental Negros			5.1		8.9	68.1	.8	14.7	18.8	1.5		3.8	2.1	1.8	16.8	139.5	
Calag-itan, San Remigio, Antique		0.8		7.4				12.2	.5	7.1	16.8	12.4	39.3	14.2	31.5	515.3	
Hawaiian Philippine Co., Malibug, Silay, Occidental Negros †			6.1			.8		20.1	36.6	2	1	3.3	.3	1.4	4.3	132.1	
Cuyo, Palawan				15.5		3	4.5	.5				6.9	15.5	89.9	2.5	8.3	254.4
Lucena, Santa Barbara, Iloilo †							3	12.4		3.8			7.6	1.3	21.3	13.2	94.4
Barotac Nuevo, Iloilo							.8	17.5	1.3	10.7	26.7	3.3	12.2	5.8	3.6	162.8	
Hacienda Ilaya, Victorias, Occidental Negros						13.7				33.5	8.4	2			3.8	6.4	166.5
Central Victorias, Victorias, Occidental Negros †										52.3	6.4	3.8	1.8		20.3		214.7
Hacienda Bilbao, Manapla, Occidental Negros					2			7.6	17	6.4			3.8				43.6
Janiuay, Iloilo			1					1	13	5.3	2.5	8.4	.5	22.6	51.8		141.2
Cadiz, Occidental Negros					2.5	.5	2.8		36.1	3.8	37.6		11.2		21	25.9	174.3
Dingle, Iloilo								2.5	14.5	1.8	5	3	46.5	22.1	6.6	6	134.1
Ormoc, Leyte		14.5	2.8	24.6					10.7	.3	17	42.2	34.5	6.9	26.7	244.5	
Guiuan, Samar					43.7			20.3		15.2	10.2	20.3	73.7	7.6	20.3		581.5
Bugason, Antique					66												
Bogo, Cebu					8.9				1.5		2.5	17.8	14	26.5	31		137.8
Dueñas, Iloilo †					31	15.2	7.6	6.1	46.5	11.5	11.2	21.3	14	1.6	22.1		228
Bitaoagan, Passi, Iloilo †					24.1	14.8	26.9		52.1	7.6	34.3	44.5			26.4		288.3
Sara, Iloilo					3				26.7	22.4	4.3			28.9	2.8	15.7	158.2
Tacloban, Leyte								1	2.3	1.5	3	42.9	10.1	36.6	8.9		200.8
Dumarao, Capiz †					46.2	27.4		72.4	20.8	23.4		1.3	5.8	18.3			353.6
Central Austurias, Buntog, Dumalag, Capiz					22.8	3.6	.8	.3	15.7	14	.3	26.9		.8	15.8		178.6
Dao, Capiz †		11.2			5.1	10.2	1.3	2.8		39.4			2	5.1	19.1		125.3
Culasi, Antique				2.3		72.6		.8		.5	4.1	7.8	28.4	2	29.7		487.7
Mambusao, Capiz				19	55.4		.3			22.9	9.9	38.9	.3	38.1	17.8		221
Hacienda Amparo, Pontevedra, Capiz					33	10.2	4.3	12.7				1.8	19.6	46.5	10.9		173.1
Capiz, Capiz		5.8		39.3	.8		.8		75.7	7.9	.3	9.9	71.9	19.3			262.6
Borongon, Samar								20.6	.8			3.1	4.6	14.2	6.3		188
Calivo, Capiz										10.7	6.4		19.4	5.1	22.1		132.6
Pandan, Antique				.8	52.8	3.1	.5		.8	5	9.6	18.5	5.1	52.8			479.6
Catbalogan, Samar						1.5	.8	1.8	11	64.8	9.9	12.2	8.1	4.3	210.3		
Ibajay, Capiz				6.9	4.3	.8			.5	.8		1	1.1	50.3			255.7
Calbayog, Samar						.5			.5	5.4	6.9	30.1	7.2	8.1			158.9
San Jose Estate, Robles Camp D-17, San Jose, Mindoro †			49.5	1.3	17.8	20.3	2.5		17.8	49.5	2.5		7.6	52.1	63.5		532.8
San Jose Estate, Tamaraw Plantation, San Jose, Mindoro †		3.3		18.8	53.8	18.5	5.8						42.2	19.6	48.8	147.3	662
San Jose Estate, San Agustin, San Jose, Mindoro †		5.1		10.2	31.5	12.4	22.9						23.4	27.7	57.7	83.8	613.7
San Jose Estate, San Jose, Mindoro †		1		5.3	23.4	47.2	35.3	.3	1.3				2	99	7.4	41.4	139.5
Masbate, Masbate									8.1				10.7	15.8	21.8	30.8	171.3
San Jose Estate, Tunnel D-12, San Jose, Mindoro †		2.3		3.6		35.1	50.8					45.7	51.3	8.9	31	127	623.4
Romblon, Romblon										6.6	8.3	5.4	28.3	39.1	47.6		178.2
Batag Lighthouse, Laoang, Samar												3.6	18	38.3	10.2	29.2	122.5
Irosin, Sorsogon										1.5	7.6	3.5	29.2	9.4	25.2		149
Sorsogon, Sorsogon					3												96.2
Bacon, Sorsogon										1	7.4	2	98.6	2.1	33.8		158.1
Jovellar, Albay			.3		2	15				11.4	.3	.5	15.2	18	22.9		211
Legaspi, Albay, Albay					1				50.1				9.9	54.3	19.3		156.3
Guinobatan, Albay					1.8		2.3	.5	10.9	.3	.5	77.3	97.5	9.4	29.3		365.5
Polangui, Albay						17.5		8.1	1.8	38.6	8.6	15.7	8.7	17.3	43.4		245.4
Bacacay, Albay												50.3					140.2
Bato, Camarines Sur					.5	1.8	18.3		43.7	2.8	3.8	15	31.5	43.4			226.8
Tabaco, Albay						1					.8	4.6	14	10.2			99.6
Sumay (Guam), Agaña, Ladrone Islands		34.5	1.6	1.3	.3	6.6	41.4	13.9	9.2	10.7	5.4	2.6	13.2	21.8	2.1		337.8
Iriga, Camarines Sur							5.6	1.3		13.2	1	21.8	30.5	13.2	14.7		193.4
Calapan, Mindoro											.3	.3	2.1	13.2	22.4		132
Tiwi, Albay													4.6				12.7
Pasacao, Camarines Sur												4.1	6.1	21.9	48.2		216.8
Virac, Albay													50.8	38.1	7.9		118.7
Naga, Camarines Sur				1.8		1				5.6		58	15	49.8	24.7		219.3
Tigaon, Camarines Sur						.3						1.3	.6	3.3	19		92.6
Baras, Albay													38.8		59.2		170.9
Libmanan, Camarines Sur	1.3								3.6	6.1		5.6	92.5	37.1	16		234.1

† Voluntary or cooperative station.

Daily rainfall at the stations of the Weather Bureau, August, 1921—Continued

Station.	Day of month.																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	
Batangas, Batangas			2.3		2.5	19.8	15		16.8		mm.	13.2	11.7	13.6	47.7	19.3	
Ragay, Camarines Sur					3.8	8.6		12.2	42.7					36.6	14.5	6.1	
Calatagan, Batangas	4.3	0.3		7.6		70.9	47	2.3	1.5		2.6	54.9	12.2	46.2	128.3	31.5	
Balayon, Batangas			25.1	3.6	17.8	90.4	71.1		3.8			109.2	11.2	47.8	125.2	19.3	
Lipa, Batangas						46.2	42.9					11.4		14.3	66.5	3.3	
Lucena, Tayabas			3.3			17	.8		2.3	2.3			8.1	18.3	14.2		
Atimonan, Tayabas						2.8			17.5				1.3	2.6	3.6	1.9	
Lian, Batangas			74.9	9.1	26.7		83.8	32.3				152.9		7.6	189.3	121.2	
Nasugbu, Batangas			125.5	33.5	23.1		111.2			26.9	8.6					240	
Ambulong, Tanauan, Batangas				1.3	1		91.7	33.3		11.4			28.2	17.8	37.4	107.9	
Daet, Camarines Norte				.3			.8				5				5.1	1.5	
Mendez Nuñez, Cavite	8.6	26.7	4.8	24.9	6.9	92.2	25.1		30.8	8.9	3.8	38.9	18.3	52.6	127.5	9.6	
Alfonso, Cavite	6.9		5.1	34.3	9.2	98.1	19	1.3	93.2	13.2	4.1	86.4	23.1	72.4	234.9	14	
Indang, Cavite	9.1		.8	.3	5.3	111.8	51.1		32.6	10.2	.8	67	15.3	67.3	222.5	10.2	
Canluban, Calamba, Laguna			6.6			41.4	35.8		5.6			19.5	9.1	45.2	158	15.5	
Silang, Cavite	.8				45	51.5	47.5		2	2.5		14.7	17.3	43.5	192.8	20.4	
Maragondon, Cavite	9.4	5.3		3.6	5.3	75.9	84.8		3.8	2.5	5.6	86.1	50.8	49.3	238	96.8	
Paracale, Camarines Norte												3	12.2		5.1	2	
Santa Cruz, Laguna		3.3	15.7	2.3		64.3	6.8		17.8	.8	1	9.6		21.9	76.5	21.6	
Buenavista, General Trias, Cavite			3.8		9.7	57.7	34.8		1.1			13.4	47.5	54.6	111.8	48.3	
Fort Mills, Corregidor, Cavite†			2			94	97.8		25.4	9.9	7.9	35.6	52.8	73.7	125.7	57.2	
Imus, Cavite		3	4.1	.3	1.3	100.3	41.2		3.8	4.6	5.4	103.9	11.7	54.8	208.3	85.9	
Alabang Stock Farm, Alabang, Muntinglupa, Rizal†						78.5	17			26.4	6.6	.3	36.1	7.6	63.2	97.6	
Cavite Naval Station, Cavite, Cavite <sup>a</sup>	1.8	14.2	17	2.8	3	151.3	150.1		16.5	.8	5.6	75.7	17.8	81.1	273.3	42.7	
Lamao Horticultural Station, Lamao, Limay, Bataan†						279.4	43.3		7.6	17.8	17.8	68.6	53.3	228.6	243.8	40.6	
Manila, Manila						62	71.3		17.1	1	15	109.6	7	130.5	246.3	89.8	
Antipolo, Rizal			4.9	6.3	106.2	37.6			16.5	19	11.9	116	15.3	120.4	253.2	54.9	
Balanga, Bataan			3	4.8	166.6	111.8			2.8	6.1	15.3	95.7	19.8	110.3	274.1	120.6	
Montalban, Rizal†	3.8		4.6	24.9	147	12.2		10.7	29.4	3.3	17.5	66.1	12.9	129	234.5	79.5	
Hacienda Pintong Sapang, San Jose del Monte, Bulacan†	.5	.3	.3	.8	1.5	127.3	17	1	18.8	4.3	13.7	30.8	.8	151.4	200	100.8	
Mabayuan Dam, Olongapo, Zambales†				12.7	50.8	177.8	97.8			61	147.3	78.7	160	182.9	421.6	241.3	
Malolos, Bulacan					1.8	174.8	32.3		1.3	19.3	2.3	2.8	23.1	11	176	191.8	
Pala, Norzagaray, Bulacan†	.8	8.1	3.8	.5	1.5	177.3	23.4	36.3	54.9	20.3	29.9	30.7	22.1	141.7	261.6	63.5	
Hacienda Carmencita, Gutad, Del Carmen, Pampanga†					1.3	306.2	60.9	24.1	3.8	14	33.3	29.5	12.7	219.3	177.8	124.4	
Pampanga Sugar Mills, Del Carmen, Pampanga†	3.8			2.5	13.5	201.4	21.6	4.8		3.8	22.4	19.3	10.1	224.3	300.7	240.1	
Matulid, Norzagaray, Bulacan†			7.9	1.8	1	142.3	24.9	11.9	14.5	17.5	26.7	34.3	5.8	94.5	230.4	116.3	
San Fernando, Pampanga					3.8	53.8	19.3	25.4	.5	1.3		16	38.1	127	102.1	89.4	
San Isidro, Nueva Ecija	10.9		1	2	6.6	46.3	2.8	19	1	1	4.1	13.2	1	48.4	171.5	23.6	
Iba, Zambales		10.9	1.3	4	33.8	24.4	48		16.5	50.8	83.6	69	43.7	68	195	86.1	
Concepcion, Tarlac		10.9	2.3	6.4	1.5	87.9	8.6	3.3	3	2	7.1	17.6	2.5	84.6	198.7	44.2	
O'Donnell, Capas, Tarlac	.8	7.6			4.1	129.5	164.9	14.5	9.4	13.2	6.3	19.9	9.4	65.6	123.4	67.1	
Hacienda Luisita, San Miguel, Tarlac, Tarlac†		21.6	14	3.6		26.7	49.5	1.3	19.8			16	5.1	63.5	185.4	52.6	
Tarlac, Tarlac		37.8	.8	3.8	.5	49.3	15.3	1.5	90.4			8	20.8	8.9	48.8	117.8	
Paniqui, Tarlac					3.6	32.7	8.6	53.3	69.3	17.8		18.1	21.1	67.1	113.6	111.7	
Camiling, Tarlac					5.1	58.4	8.9	7.6	39.4			11.4	39.2	11.4	71.1	139.7	
Muñoz Agricultural School, Muñoz, Nueva Ecija†	7.6					.5							17.6	64	50.8	2.1	
Baler, Tayabas																	
Dagupan, Pangasinan			4.1	2.8	18.3	68.9	9.4	2.8	43.4	1.8	15	51.7	19	112.2	84.8	94.2	
Rosario, La Union				3.8	114.8	88.6	9.6	2.3	27.4	2	7.6	34	41.6	88.9	35.2	60.9	
Tubao, La Union				31.7	34	81.7	3.8	2	20.3	6.4	11.5	40.6	81.8	193.1	25.9	50.8	
Itogon, Mountain Province		4.3	12.7		23.9	52.8	.3	6.6	52.8	.8	10.7	22.1	35.8	112.3	25.4	57.7	
Bolinao, Pangasinan			8.6		27.2	87.6	50.3	1	22.1		19.6	55.6	23.8	60.4	92.2	102.4	
Aringay, La Union			1.8	.6	73.6	54.4	4.1	.5	30.5		21.6	45.5	29	125.7	21.1	94.8	
Baguio, Mountain Province		1.2	1.8		116.9	126.6	1.3	3.8	29.7	5.6	26.4	51.3	85.8	272.7	27.7	108.5	
Sablan, Disdis, La Union				16	119.4	87.6	2.5	4.6	27.2	41.7	27.5	27.9	46.8	143.5	19.8	104.6	
Naguilian, La Union				6.4	30	95.8	6.1		90.2	26.9	20.8	35.5	12.7	107	14.9	91.2	
Kapangan, Mountain Province	10.7	1.5			53.6	105.9	38.1	29.2	80.5	14.8	20.3	16.5	132.3	236.2	22.8	101.6	
Atok, Mountain Province	1.8	23.9	.5		69.4	100.4	.5	16.8	66	56.1	13.5	34.8	50.2	208.6	22.3	97	
San Fernando, La Union					3.6	39.4	5.3		56.1	7.6	22.4	38.4	23.3	119.5	23.6	121.6	
Echague, Isabela				.3				5.3	6.6	13.5	12.4					2.5	
Balaoan, La Union				2.3	62.5	77.2	3.6		41.9	47.8	8.9	48.2	13	108.2	14.5	103.1	
Tagudin, Ilocos Sur					28.2	79.9	1.4	.5	63.4	3.8	12.4	24.8	20	152	6.2	101.6	
Sagada, Mountain Province†	.8	1.5	1.3		46.3	15		2.3	2.8	13.5	30.7	21.1	13.2	65.8	4.4	40.1	
Bontoc, Mountain Province†	5.6	9.1	17		11.9	5.6		3	6.1	8.9	17.3	6.4	1.5	39.1		27.6	
Candon, Ilocos Sur					27.4	85.6			62	3	3.6	27.2	52.4	145.8	4.3	34.3	
Vigan, Ilocos Sur					3	51.9	.5	3.3		25.9	1.8	30.5	67.7	168.3	11.4	28.7	
Bangued, Abra					122.1	65.6		29.7	49.5	20.8	3	5.9	56.9	150.9	1.5	26.7	
Tuguegarao, Cagayan					21.3	1.8				3	8.9	5.6	5.1	3	1	2	
Sinait, Ilocos Sur					8.4	47			27.9	33.8	30.5	28.2	35.8	80.5	10.2	21.1	
Batac, Ilocos Norte				3	20.6	54.8			34.5	3	4.3	4.3	44.9	31	2.5	11.2	
Solsoma, Ilocos Norte		.5			49.6	72.6		6.4	31.5	2		3.6	18.8	27.5	.5	7.7	
Laog, Ilocos Norte	.3			.8	12.5	30.7		3	54.8	1.5		1.3	45.5	39.4	2.5	8.3	
Pasauquin, Ilocos Norte				1.3	29.5	11.2		.8		37.1	1.3	2.8	86.4	68.9		4.6	
Aparrí, Cagayan					54.3	2.5					11.7	.8	4.1	4.8		1.3	
Cape Bojeador, Burgos, Ilocos Norte				4.9	10.5	24.1				25.4	1.3	3.3	29.7	48.3	.3	29.4	
Basco, Batanes					96.5	77.5	.3	13.2			.3			.3	49.3	10.4	

† Voluntary or cooperative station.

<sup>a</sup> Rain in 24 hours beginning 8 a. m.



Daily rainfall at the stations of the Weather Bureau, August, 1921—Continued

Station.	Day of month.															Total.		
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.		
Batangas, Batangas						1.5		19			23.6		7.9	26.9	24.4	249.7		
Ragay, Camarines Sur													7.6	39.1	27.9	219.6		
Calatagan, Batangas				29.2	16	1.3				17.7	5.6	20.6	13.7	12.1		525.8		
Balayan, Batangas								21.6		13.5	39.3			30.5		634.2		
Lipa, Batangas					1.3	5.1				54.6	12.7	13.2	47.5	79.8		398.8		
Lucena, Tayabas										77.7		2.3	38.1	37.9		222.3		
Atimonan, Tayabas								12.4			3.1	3.6		25.7	18.1	100.1		
Lian, Batangas				8.6	8.6	17.3						22.4	78.7	2	20.3	858.7		
Nasugbu, Batangas	12.7		9.4			27.7		45.5				6.9	94.2	4.8	12.7	782.7		
Ambulong, Tanauan, Batangas						11.4		1.5				30.5		37.3	3.3	376.6		
Daet, Camarines Norte								10.2	7.4	.3	3	25.7	3.9	15.7	7.1	82.1		
Mendez Nuñez, Cavite	1.3	2.5	1.3	2.5		30.5	17.8	31.8		2.5	5.1	6.4	30.2	12.2	30.5	654.2		
Alfonso, Cavite	1.3	8.4	3.3		7.8	23.4	23.7	56.1			33	25.4	54.6	36.8	20.8	1,009.8		
Indang, Cavite		31	5.1	5	.5	15	41.9	19				3.6	14	36.3	82.6	188.8		
Canluban, Calamba, Laguna		3.8	2.8				1	3.6	6.4			13.2	11.6	31.5	1	42.2	453.8	
Silang, Cavite	1	2.5	5.1		.5	9.7	18.3	8.6				3.6	1.5	23.6	34.8	40.7	587.9	
Maragondon, Cavite	10.7	31.2	5.1		4.6	4.3	29.7	40.7				19.8	49.3		45	18	975.6	
Paracale, Camarines Norte								4.6		2		6.4	6.3	8.4	9.4	59.4	59.4	
Santa Cruz, Laguna						15.7	28.4	11.2				56.6	3.3	21.5	2.8	17.3	410.4	
Buenavista, General Trias, Cavite		.5	23.6	16			11.5	30.5	16.5	8.6			12.2	39.4	17.5	15	577	
Fort Mills, Corregidor, Cavite †	17.8	28.7	24.4	2.8	6.6	9.1	52.6	44.4				1.5	10.2	43.4	5.6	22.6	851.7	
Imus, Cavite	3.6	10.2	16		3	20.6	48.5	12.5			.3	1.3	36.8	4.9	24.7	21.8	832.8	
Alabang Stock Farm, Alabang, Muntinglupa, Rizal †		.5	10.7	16.8	.8	4.9	31	1.3				33	4.8	12.2	1.6	37.3	545.1	
Cavite Naval Station, Cavite, Cavite*	5.9	78.5	6.1		3.8	28.7	41.7	6.6					70.6	2.5	4.8	19.6	1,122.5	
Lamao Horticultural Station, Lamao, Limay, Bataan †	22.9		30.5	45.7	35.6	195.6	20.3	10.2				7.6	2.5	43.2	15.2	3.3	1,438.4	
Manila, Manila	3.6	38.1	44.1	7.7	17.1	21.4	49.4	16.9				.5	4.6	6	22.5	20.2	1,000.8	
Antipolo, Rizal	3.1	37.6	25.4	1.3	4.6	68	18.8	9.1				1.5	32	13.7	25.7	13	1,016	
Balanga, Bataan	39.1	75	43.2	18.6	8.6	20	111.5	4				.5	5.1	10.7	4.8	17	1,289	
Montalban, Rizal †	14.2	57.7	52.6	10.2	14.5	54.6	8.4	26.2				29.2	6.3	38.8	26.4	17.5	1,132	
Hacienda Pintong Sapang, San Jose del Monte, Bulacan †	8.6	32.3	34.1	1.8	18	11.1	21.4	35.3	9.4	15.7	4.3	50.8	12.2	31.7	6.4		962.4	
Mabayuan Dam, Olongapo, Zambales †	198.1	92.7	35.1	30.5	61	83.8	119.4	22.9					17.8	27.9	7.6	17.7	2,346.4	
Malolos, Bulacan	12.7	20.8	21.6	1.3	3.5	11.9	9.9	8	.3		.8	3	8.9		14.7	8.4	831.8	
Paila, Norzagaray, Bulacan †	22.1	18.1	33	.5	54.1	25.7	38.4	14.2	15			2.8	4.6	92	17.3	10.2	1,224.4	
Hacienda Carmencita, Gutad, Del Carmen, Pampanga †	50.8	44.2	18.3	18.8	16.2	10.4	48.5			11.2	.6	6.6		13.7	15.5	18.5	1,280.6	
Pampanga Sugar Mills, Del Carmen, Pampanga †	39.1	24.1	8.1	20.1	7.7	18.5	43.2		1.8				7.9	27.9	19.3	15	1,296	
Matulid, Norzagaray, Bulacan †	43.1	15.7	18.3	9.7	28.7	29.2	18.4	7.4	16.3			6.1	3.8	25.1	33	7.6	987.2	
San Fernando, Pampanga	16.3	20.9	2	1	3.8	2.6	20.9	2.5	2		.5	3.6	4.8	2	6.3	17.1	583	
San Isidro, Nueva Ecija	16.8	8.2	1.8		11.7	13.5	18.3	2	.3			21.9	8.1	5.3	8.9	2.3	471.5	
Iba, Zambales	45.7	43.3	10.3	20.9	14.7	56.6	90.5	7.4	6.6			44.7	11.7	7.4	22.9		1,112.4	
Concepcion, Tarlac	5.6	7.4	3.5	1		12.5	22.4	24.4	4.3	19.6	4.1	41.9	16	23.4	5.1	671.8	671.8	
O'Donnell, Capas, Tarlac	7.6	22.8	7.1	10.6	6.8	33.5	44.7	3.3	4.3	34.3	10.4	13.7	69.4	16.8	1.8		922.8	
Hacienda Luisita, San Miguel, Tarlac, Tarlac †	2.8		13.5			13.5	13.5	52.1	17.8			49.3	57.7	10.9			690.2	
Tarlac, Tarlac	10.1	4.6	6.1		4.1	34.6	17.8	60	10.5		2.3	4.3	35.1	12.2	15.2	5.6	663.4	
Paniqui, Tarlac †	11.7		5.1	2.8	12.7	26.2	22.8	24.1			12.4	4.3	33.5	21.3	2.3	2.5	738.5	
Camilig, Tarlac	25.4	1.3	1.3	7.6		22.4	38.1	5.1			11.4	21.6					595	
Muñoz Agricultural School, Muñoz, Nueva Ecija †	22.9	5.3	5.6		20.3	3	18.5	10.2			27.9	50.8			19.6	6.1	330.2	
Baler, Tayabas		1.3				2					1.3	21.1		53.3	63.7	120.1	263.6	
Dagupan, Pangasinan	22.9	13.2	3.6	4.6	22	40.1	37.6	.5	7.6			8	3.3	.5	10.6		695.7	
Rosario, La Union	31.5	6	27.4	35.3	54.7	64	49.4	13.2	8.6			5.1	1.5	11.4	9.7		779.2	
Tubao, La Union	32.7	6	44.2	34.3	30	124.2	16.7					2.3		5.1	9.1	14	2	904.2
Itoyan, Mountain Province	51	32.7	47.5	39.9	57.7	132.1	9.2	.5			5.1	26.1	37.3	20.6			7.6	887.5
Bolinao, Pangasinan	36.9	7.3	20	16.3	13.2	51.6	41.4		3.6			3	8.1	1				763.7
Aringay, La Union	33.8	19.1	35.3	26.9	41.1	96.5	17.8	1				.5	1	7.6	1.3	.5		785.6
Baguio, Mountain Province	111.4	146.1	137.8	70.5	100.9	215.8	16.3	18.2	13.1	8.4	30.9	32	81.2	1.3	5.6	1.848.8		1,848.8
Sablán, Disdis, La Union	42.9	41.1	66.8	36.9	73.4	116.8	8.6	9.9	1.3			2.5	5.1	29.7	33	.8		1,137.9
Naguilian, La Union	73.7	12.5	53.3	25.7	30.7	83.8	13		2.8				1.5	4.6	29.5	.8		869.4
Kapangan, Mountain Province	64.8	103.1	88.9	67.3	61.2	195.5	7.6	16.3	2.5	15.7	13	50.3	14.5	5.8	2	1,572.5		1,572.5
Atok, Mountain Province	66.3	87.8	101.6	68.6	97	277.7	16.5	7.4	12.4	6.9	44.5	40.6	35.5	64.3	19.1	1,708		1,708
San Fernando, La Union	53.6	13.8	23.5	49.8	36.4	99.8	15.6		10.4			3.9	36.6	7				811.2
Echagüe, Isabela			1.8			25.4	.5	1.5	.3			25.9	.5	8.5	7	11.4		123.4
Balaoan, La Union	36.4	26.4	16.3	31.7	108.9	209.8	12.4	6.4					6.6					992.7
Tagudin, Ilocos Sur	38.6	108.9	44.7	21	169.7	304	10.4	4.8	4.3				5.1	7.6	13.3	1.1		1,227.7
Sagada, Mountain Province †	25.4	39.4	26.4	11.2	48.5	130.1	7.6	7.6	11		1.8	8.6	10.4	52.6	12.2	2.6		654.2
Bontoc, Mountain Province †	1.8		10.9	11.4	38.9	97.3			1.3		7.1		10.9	38.4	2.3	1.3		380.7
Candon, Ilocos Sur	111.2	86.3	268.7	133.9	124	193.3	4.3	2.8					13	2.5				1,399.8
Vigan, Ilocos Sur	64.4	191.2	161.7	243.9	191.8	178.5	6.6	15	11.2				61	3				1,521.6
Bangued, Abra	123.5	261.1	294.6	307.3	229.3	236.2	5.1	44.2	2.6				7.1			4.6		2,048.2
Tuguegarao, Cagayan	13.2	1.8	15.1	1.9	6.5	4.1	22.8	28.7	1.8				1.3	7.1	1.8	2		159.8
Sinait, Ilocos Sur	137.7	52.3	154.1	228.8	222.2	142.7	2.5	27.4	2.5									1,293.6
Batac, Ilocos Norte	96.5	177.8	270.5	215.9	177.8	39.3		46					26.4					1,261.6
Solsóna, Ilocos Norte	59.2	164.6	344.2	106.2	72.2	60.4		87.4	1.6				45	10.4	.5			1,172.4
Laoag, Ilocos Norte	78.3	204.5	278.7	193.8	172	101.1	2.5	15.3										1,244.1
Pasiguin, Ilocos Norte	61.7	179.8	200.9	257.5	106.7	174		19				4.3						1,237.8
Aparri, Cagayan		17.8	38	28.8	14.2	3.6	12.2	2.6	8.4			.5	2.8	5		8.9		222.3
Cape Bojeador, Burgos, Ilocos Norte	25.9	41.1	48	105.8	168.9	128.8	1.5	5.1	.5			13	3	.1				718.5
Basco, Batanes	11.9	3.8	1.5	10.9	20.8	.3	5.6	6.6	4.8			2.6	43.4	12.4	14.7	7.9	15.7	410.7

† Voluntary or cooperative station.

\* Rain in 24 hours beginning 8 a. m.

MAXIMUM AND MINIMUM TEMPERATURES AT THE STATIONS OF THE WEATHER BUREAU, AUGUST, 1921

Day.	Jolo.		Lais, Malita.		Malita.		Lebak.		Malamaui, Isabela, Zamboanga.		Zamboanga.		Davao.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.*	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.5	23.2	32	21.8	33.7	22.5	23.4	23.4	30.8	22.8	28.5	22.3	30.5	23
2	30.5	23.5	31	23.3	30.9	23.7	23.6	23.6	30	23.5	28.7	23.4	28.7	23.8
3	30	24.2	29.5	21.6	31.5	21.8	22.3	22.3	29.3	24.3	28.4	23.5	29.2	22.3
4	30.6	23.1	30.5	21.9	32.4	22.4	21.5	21.5	29.5	21	27.5	22.3	30.2	22.3
5	31.1	24	31.5	21	32.8	22.7	22.6	22.6	31	22.5	29	22.1	30.7	23
6	30.1	25.2	31	22.4	31.8	22.7	23.7	23.7	31.3	23.7	29.9	23.9	30	22.5
7	29.8	23.9	31	21.5	31.5	22.5	23.5	23.5	30.2	23.8	29	23.2	31.7	23
8	30.7	23.8	32	22.5	31.4	22.6	23.4	23.4	31.5	24.2	28.6	23.4	29.9	22.5
9	30.8	25	30.6	21.4	31.5	22.7	24.2	24.2	31.5	24	29.5	24.5	30.6	23.4
10	32.1	24.4	32.6	21.8	31.5	22.4	23.2	23.2	31.3	23.6	30.5	23.5	31.2	23.2
11	30.8	23.6	31.5	21.7	31.4	22.1	23.6	23.6	31.3	23.5	29.7	22.8	30.6	22.5
12	29.5	22.7	31.8	20.9	31.2	21.9	24.3	24.3	32.3	23.1	30.2	21.8	30.7	22.4
13	31.5	24.2	31.5	20.6	32.1	22.2	24.1	24.1	32.3	23.5	29.5	23.2	31.8	21.6
14	32.1	24.4	32	21.7	32.6	22.7	24.1	24.1	33	23.4	30.5	23.5	32.6	22.6
15	31.5	24.6	32	22	32.8	22.7	24.4	24.4	32.3	23.7	30.1	23	31.5	24.1
16	30.8	24.3	31.9	20.2	32.7	21.4	23	23	30.8	23.5	30.2	23.9	31.2	24.1
17	32.1	23	31.6	21	32.6	22.3	23.3	23.3	32.2	22.5	31	23.3	31.2	22.5
18	31.1	22.6	31.4	21.8	31.3	22	25	25	31.5	23	29.8	23.5	31.2	23.5
19	30	24.1	30.6	20.6	32.4	22.9	23.6	23.6	30.5	22.2	29.5	23.4	30.7	23.5
20	29.6	23.8	32	22	30.8	22.5	22.4	22.4	30.8	22.6	29	22.8	30.7	22.6
21	29.6	24.2	31.6	22.5	31.8	22.6	22.5	22.5	30.9	23.2	29	23.7	30.7	22.5
22	29.4	23.6	32	20.9	32.1	21.9	23	23	30.2	22.3	29	23.4	30.7	22.1
23	29.2	22.6	32.5	21	32.3	22.6	24.4	24.4	30.7	23.5	30.5	23.6	31.2	22.5
24	29	23.9	32.3	22	31.3	23	24.3	24.3	29.5	23.5	28.7	22.7	31.1	22.4
25	29	22.4	32.2	22.1	32.3	22.6	24	24	30.5	22.5	30	22.2	31.2	22.9
26	29.5	22.3	32	22	32.6	21.9	23.2	23.2	30.3	22.8	28.5	22.9	31.2	22.4
27	29.6	22.8	32.3	22.8	32.4	22.6	23.1	23.1	28.7	23.2	27.8	23.8	30.7	22.9
28	29.5	23.6	32.5	22.6	28.9	22.3	22.5	22.5	29.2	23	28	22.9	29.7	23
29	29.8	23.6	30.6	21.5	29.2	21.8	23.5	23.5	31.8	23	29.6	23.1	29.7	22.4
30	29.9	23.2	31	22	31.7	22.4	22.6	22.6	31.5	22.2	28.5	23.2	29.7	22.5
31	29	23.7	31.1	20.6	31.4	21.8	23.5	23.5	28.7	23	29.5	23.2	31.2	22
Mean	30.3	23.7	31.6	21.7	31.8	22.4	23.4	23.4	30.8	23.1	29.3	23.2	30.7	22.8

Day.	Pikit.		Bual, Dulauan.		Cotabato.		Naganaga, Margosatubig.		Malabang.		Cateel.		Ganasi.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	22.4	31.5	22.7	29.5	23.4	22.2	34.2	22.2	31.5	22.8	31	22.7	26.5	19.3
2	23.4	28.4	22.2	28.9	23.5	22.5	33.5	22.5	23.5	23.5	32.7	23.5	27	18
3	22.1	27.5	22	26.9	22.5	33.7	22.2	22.2	22.8	30	20	27	17.3	17.3
4	21.4	30.5	21.6	28.5	22	34.5	22.5	22.5	31.8	21.8	32.1	22.8	27	19
5	22.3	29.3	22.2	30	22.4	34.3	23	23	30.4	22.4	32.2?	23.1	27	18.3
6	22.4	32	21.7	30	23	33.7	22.5	22.5	31.5	21.8	30.6	22.4	28.5	19.3?
7	23	32.3	22.2	29.8	23.2	33.5	22.2	22.2	30.8	22.5	31.5	22.2	26	17.3
8	23.4	32.7	23	30.4	23.2	34.2	22.5	22.5	31.6	22.8	29	22.4	25	18
9	23.4	31.8	22.5	29.9	23	34.5	23	23	30.8	22.3	31.1	23	29	19.8
10	22.3	33.4	22.4	30.3	23.3	33.5	23.5	23.5	30.8	22.4	31.2	23.3	29	17.3
11	22.4	33.5	22.6	30.4	22.5	33	22.5	22.5	30.8	21.8	31	22.7	29	17.8
12	22.3	33.5	21	30.4	23	33.5	23	23	31.5	22.5	31.2	22.3	29	17.8
13	22.1	33.4	20.7	30.7	22.8	33.7	23.2	23.2	30.6	21.6	31.7	21.5	29.5	20.8
14	23	33.3	21.7	31.5	23.4	34	22.2	22.2	30.6	21.6	31.5	22.5	26.5	20.3
15	22	31.5	21.5	30.5	23.5	34.5	22.3	22.3	31.4	22.5	31.4	22.5	27.5	18
16	21.2	32	20.2	30.4	22.4	33.5	20.5	20.5	31.5	22.8	31.9	21.9	26	18.3
17	34.6	22.1	34.3	20.8	30.8	22.6	33.3	21.5	30.8	22.6	33	21.5	30	18.3
18	35.3	24	34.4	23.6	30.9	24	34.2	22.2	31.8	22.8	32.3	22.6	31	19.3
19	32.1	22.4	32.1	22.2	29.2	23.4	33.5	22.5	31.6	22.6	32.7	22.7	29.5	17.3
20	33.5	21.1	32	20.5	29.6	22.5	34	22.2	30.8	22.6	32.6	22.5	30.5	18.3
21	32.9	22.2	32.6	21.9	30.5	23	33.7	22.5	31.4	22.8	32.2	21.8	30	17
22	32.1	22.1	31.7	21.6	29.5	22.2	34.5	22.5	30.8	21.8	31	21.5	29	19
23	33.3	22.4	33	21.5	29.2	22.3	33.5	22.3	21.8	21.8	31.1	22	29.5	18.3
24	32.3	22.2	33.2	22.3	30.8	22.5	33.2	21.5	30.8	21.6	31.8	23.2	29	18
25	32.2	23	33	22.3	30.8	23.2	33.7	22.7	31.5	21.6	31.8	22.7	29.5	18
26	33.1	22	33	21.7	31	22.9	33.3	22.2	30.8	22.5	31.9	22.4	29	19.5
27	32.1	22	30.2	21.7	28.5	22.5	33.5	22.5	30.5?	21.6	30.4	22.5	26	19.3
28	30	23	29	22.2	27.2	22.8	33	22.3	30.8	22.5	28.2	22.7	26.5	19
29	28.9	22	30.5	21.2	27.8	22.3	33.2	20.5	22.8?	22.8?	29.6	21.9	27	19.3
30	31.6	22	31	21.2	29.1	22.5	33.7	21.5	21.8	21.8	29.7	22.9	26	18
31	32.7	23.2	30.5	22.2	27.5	23.1	34.2	22.2	22.5	22.5	30	22	27	18.3
Mean	22.4	31.8	21.8	29.7	22.9	33.8	22.3	22.3	31.1	22.4	31.2	22.4	28.1	18.5

\* These minimum temperatures seem to be not very reliable, the differences between 6 a. m. temperatures and minimum temperatures being both too small and too uniform.

Maximum and minimum temperatures at the stations of the Weather Bureau, August, 1921—Continued

Day.	Camp Kalao, Monkayo.		Camp Keithley, Dansalan.		Veruela.		Sumilau.		Cagayan.		Talacogon.		Butuan.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	33.3	21	25.5	19.6	32	22.5	28.3	18	31.7	21	32.7	21	31.4	22.2
2	32	20	26.5	20.1	31.8	23.3	28.4	19.7	32.2	22.6	32.5	22.3	30.6	23
3	30	20.6	26.9	19.6	31.5	22.2	27.2	19.1	31.3	22.2	31.6	22	30.1	23.2
4	32.9	21.2	25.8	18.6	32	21.5	27	18.1	31	21.5	31	22.2	32.3	22.3
5	32.5	21.5	25.8	19.3	32.3	21.4	30.1	18.3	32.2	21.9	33	22.2	33.4	23.2
6	32.5	21.5	27.2	20.1	33.2	22.7	28.7	19	32.3	21.8	32.5	22.2	33.6	23.2
7	33.6	20.5	28.4	19	33.6	21	27.8	17.7	30	21.5	32.2	22.2	32.6	23.1
8	31.5	22.9	26.2	19.2	31	21.5	27	19.1	31.1	22	31	22.1	30.1	23.1
9	32.5	20.5	25.8	19.5	33.3	22.2	28.5	19	31	22.6	32.5	22.2	31.9	23
10	33.4	20.5	27.9	18.8	32.3	22.3	28.6	19	32.6	23	32.5	22.2	32.6	22.4
11	32	22.6	27.7	19	34.5	22.4	27.7	17.8	32.7	21.4	33.9	21.5	33.6	23.3
12	32.6	22.5	28.2	19.1	34.3	21.7	28.9	17.5	32.4	21	32.5	22.2	35.1	22.4
13	30.6	19.3	27.4	20.3	34.6	21.2	28.7	17.7	31.7	20.8	33.5	21	33.7	22.3
14	30.5	19.5	26.2	21.3	33.5	21.2	29.2	18.3	32.7	21.4	33.7	23	33.9	22.8
15	31.5	20.5	26.8	20.4	31.3	22.7	28	18	33.2	22	32.3	21.8	34.2	23.8
16	31.5	21.5	26.8	20.4	33.2	22.8	28	18.8	32.6	23.1	33.5	21.3	33.2	22.7
17	30	22	29.3	19	34.8	21.4	30.2	17.7	32.3	20.8	34	21	35.6	22.7
18	32	21.3	28	20	35.4	22.7	30.3	18.9	32.3	20.7	34.4	21.3	34.7	22.8
19	33.4	21.6	27.4	19.5	35.2	22.6	29.4	18	32.2	21.5	33.5	22	34.6	22.3
20	30.6	20.9	27.3	19	33.5	22	28.8	17.4	32.8	20.7	32.5	22.3	34.6	22.5
21	30.2	21.5	28.5	18.3	31.4	22.2	29	17.2	31.9	21	33.5	22.3	34.1	21.9
22	30.4	20	26.9	18.3	33.4	21.8	28.1	17.4	31.5	21.2	34	22.2	32.4	21.9
23	32.5	21.5	26.9	19.6	34.8	21.7	28	19	32.2	23.1	33.5	21.4	33	23.4
24	32.6	21.2	26.3	19.2	32.3	22.5	29.5	18.6	32.2	22	34	22.4	33.4	23.3
25	31.3	21.5	28.5	18.5	33.3	22	29	18.4	32.1	22.1	33.5	22	33.6	22.2
26	32.2	22.2	27.9	18	33.8	22.5	27.5	18.5	-----	22.3	32.3	23	31.6	23.2
27	31.5	19.2	26.5	18.6	31.5	22.8	25.5	18.5	30	22.2	32.4	23	32.4	23
28	31.5	20.1	26	19.1	32	22.6	26	19	31.2	22.5	32.5	23.2	32.4	22.9
29	32.5	20.1	25.5	19.3	30.5	22.5	25.6	19	31.2	21.7	32.5	22	31.2	22
30	31.3	20.5	26	19.5	32.5	22.5	26	18.8	30.3	22	32.3	23.4?	31.1	22.3
31	32.5	20.3	26	18.6	32.4	22.6	25.6	18.7	30.6	22	32.5	22.2	31.1	22.2
Mean	31.9	21	27	19.3	32.9	22.2	28.1	18.4	31.8	21.8	32.8	22.1	32.8	22.7

Day.	Mambajao.		Dumaguete.		Kolonie, Yap.		Tagbilaran.		Iwahig Penal Colony, Puerto Princesa.		Dalaguete.		Surigao.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.9	23.3	31.6	24.5	27	23.3	31.4	24.8	31.4	22.4	-----	23.9	30.6	23.2
2	31.6	22.9	31.2	23.9	26.7	22.2	30.3	25.3	31.8	22	-----	24.7	30.3	22.4
3	30.5	23.9	30	24.4	28	23.5	29.2	21.5	32.5	22.2	-----	23.5	28.4	24.6
4	31.3	23.9	30	22.8	29.7	23	30.4	22.6	31.4	22.7	-----	23	29.6	24.4
5	31.4	22.9	31.3	23.5	29.7	23.4	29.1	24.4	29	23.8	-----	25.3	29.9	25.3
6	32.4	24.6	30	24.9	30.3	22.9	30	23.8	32.2	23.7	-----	24.2	31.9	24.7
7	32.1	24.5	30.5	23	30.2	23	32.2	24.4	32.2	22.8	-----	23.4	30.5	23.5
8	30	25.4	31.8	23.5	30.3	23.8	30.9	25.1	31.8	22.2	-----	23.5	27.3	25
9	31.6	22.9	28.9	24.4	30.7	24.8	31.2	23.2	32.6	-----	-----	24.3	29.2	24
10	32.9	24.5	32.6	22.8	31	24.8	31.1	23.1	31.7	21.8	-----	24	31.6	23.8
11	33.5	24.9	32.7	23.7	30.2	24.6	33.4	24.4	33	21.2	-----	25.2	31.5	23.6
12	33.4	24.4	32.9	22.4	31	25.2	32.7	24.4	32.8	21.4	-----	24.5	32.2	25.9
13	33.1	24.4	35.1	22.5	31.7	25.8	33.9	24.6	-----	22.4?	-----	24.7	31.8	25
14	32.9	25.6	32.6	24.4	31.2	25.8	30.7	26.1	32?	22.2	-----	25.1	31.4	27.2
15	32.5	25.2	33.1	24.8	30.7	23.6	33.3	26.1	-----	21.4	-----	25.3	31.2	26.6
16	32.5	24.9	31.8	26.2	31.5	25	33.4	25.5	33	20.8	-----	25.2	32.2	24.5
17	31.6	23.4	34.1	21.8	32.2	24.6	33.3	24.5	32.2	22.8	-----	22.9	32.2	23.8
18	30	23.1	33	22.8	32	24.8	33.7	23.6	32.8	21	-----	23.6	32.8	23.4
19	32.5	22.9	32.9	23.3	31.7	22.8	33.2	24.5	32.6	21.5	-----	24.8	32.5	23.9
20	33.5	25.1	31.6	24.6	31.9	24.5	32.2	25.9	33	23	-----	25.3	33	25.7
21	30.6	23.1	32	24.5	32.5	24.2	32.4	25.7	32.4	21.4	-----	24.7	33.3	23.7
22	31.5	23.3	33.6	24.7	31	24.5	32.9	24.5	32.8	22.2	-----	24.9	32.1	24.6
23	31.4	24	31.3	24.2	30.9	23.8	31.6	24.7	32.4	22.4	-----	25.2	31.8	24.4
24	30.7	24.5	30.8	23.1	31.2	24	32.8	23.2	32.8	22.8?	-----	23	31.5	24.2
25	30.7	23.5	31.8	23	32	24.7	31.9	23.9	32.8	21.2	-----	23.7	31.8	23.8
26	29.8	22.9	31.3	23.4	30.4	22.5	31.3	22.7	32.4	22	-----	24.3	30	23.9
27	31.5	23	31.6	23.6	31.5	23.9	31.3	22.3	31.8	-----	-----	23.7	29.1	23.8
28	29.6	22.9	30.1	23.7	30.8	24.2	30.2	23.6	32	22.4	-----	23.5	29.9	23.3
29	32	23.4	29.8	23.8	29.8	23.7	27.9	23.8	32	22	-----	24.3	29.6	23.4
30	29.5	23.5	29.5	23.8	29.3	22.6	29	23.7	30.4	21.2	-----	23.5	30.2	23.3
31	27.9	22.7	27.2	23.4	31.7	24	29.5	23.1	32.8	23	-----	23.6	30.2	23
Mean	31.5	23.9	31.5	23.7	30.6	24	31.5	24.2	32.2	22.1	-----	24.2	31	24.3

Maximum and minimum temperatures at the stations of the Weather Bureau, August, 1921—Continued

Day.	Central Palma, Ilog.		Hacienda Naval, Himamaylan.		Biaong Cui's Farm, Barili.		Maasin, Leyte.		Isabela, Occidental Negros.		Hacienda Tanolo, Hinigaran.		Cebu.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	32.3	22.8	32.3	22	32.4	23.2	33.5	22.5	32.1	22.7	31.8	23	30.3	24.8
2	30.3	23	29.5	21.5	30	22.5	31.8	23	30.2	23.4	29.6	23.5	29.8	25.9
3	21.1	29.3	30.3	21	28.6	23.1	30.6	23.6	23.1	23.1	29.6	23	29.3	24
4	21.4	28.5	22.5	30	22.5	30	22.8	27.3	22.2	28	21.7	29.2	24.9	
5	21.1	29.3	22	28.2	22	30.6	23.6	28.9	22.5	28.1	21.7	29.2	24	
6	21.9	30	22.5	28.5	21.6	29.5	24	28.7	21.7	28.4	22	28.6	23.5	
7	21.4	30.2	22.5	30.5	21.8	32	23	28.4	22.7	28.5	22	28.7	25.6	
8	22	29.7	22.4	31.4	22	30.6	23.7	29.9	22.7	29.7	23.5	30.2	25.8	
9	22.2?	29.8	21.3	30.2	22.8	30.4	23.6	28.2?	22.2	28	22.4	27.8	25.5	
10	22	31.5	22	31.5	22.5	33.6	23	30.9	22.4	30.7	21.7	30.2	24.8	
11	22.9	31.5	22.2	32.1	22.3	33	22.6	31.4	22.5	31	22.1	30.4	26.8	
12	23.4	34.7	22.5	33.9	22.1	33.6	23.9	30.8	22.1	30.8	22.3	30.4	26.7	
13	22.6	31.9	23	33.5	22	34	23	31.2	21.8	31	22.5	30.4	27.1	
14	23	31.5	22.3	32.1	21.6	33	23.2	30.9	21.2	31.2	23.9	30.6	27.4	
15	22.6	31.5	22.7	32.5	21.5	33.5	23.8	31.1	21.7	28.5	22.3	30.4	27.5	
16	22.2	31.7	23	33	21.2	33.4	24	28.9	22.7	28.5	22.3	30.1	25.7	
17	23.6	33	22.5	34.8	21	33.8	23	31.7	21.7?	30.9	20.4	31.2	25	
18	23.2	32.2	22.2	35.1	22.1	34	23.6	31.6	22.2	31.5	22	31.1	26.3	
19	23.1	32	21.3	34.2	22.5	33	24.8	31.3	22.7	31.2	22.2	31.1	27	
20	22.4	31.5	21	32.2	23.6	32.4	24.6	31.7	22.4	31.5	22.7	30.4	23	
21	23	32	21.5	35	23.5	33.6	23.5	31.5	22.7	31.2	22.8	31.2	23.7	
22	23.7	31.3	21	32.5	23.6	33	23	31.2	23.3	31	22.5	31.3	25.8	
23	24.1	31.5	22	34.6	23.1	32	24	30.8	22.8	30.5	23.2	30.3	25.5	
24	23	31.7	20.7	35.2	23.1	33.8	23.4	31.6	21.3	31	21.2	32.3	25.7	
25	22	30.5	21	32	22.6	32.4	23.5	32.3	22.1	31.6	22	32.1	25.7	
26	21	32	21	30.5	20.5	33.6	23	30.9	21.8	30.6	21.8	30.2	25	
27		31.3	21	28.2	22.4	31.2	22.5	31.6	22.6	30.9	22.9	30.2	24.3	
28		21.4?	30	29.1	22.1	30	22.2	30.5	22.7	30.4	22.7	29.4	24.8	
29		22.6	29.3	21	29.3	21.5	30	22.6	27	22.6	27.1	26.3	23	
30		22.2	28.3	21.4	30.1	21.8	29	23	28.6	22.5	27.7	27.8	23.9	
31		21.8	28.3	21	29.8	22.1	31	22.4	26.1	22.7	27.8	22.5	23.4	
Mean		22.5	30.9	21.8	31.6	22.3	32.1	23.3	30.2	22.4	29.9	22.4	30.1	25.2

Day.	La Castellana.		Central Azucarera de la Carlota.		Hacienda Canlaon, La Castellana.		Maa Sugar Central, Bago.		Valladolid.		San Joaquin.		Murcia.		
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	
1	33.2	22.8	32.3	23.2	34.4	21.2	32.7	23.4	33.2	22.2	32.1	24	32.6	22.9	
2	33.6	23	31.8	23.9	34.6	20.6	29.2	23.6	33.5	22.3	33.1	24.6	27.9	22.7	
3	32.1	23.5	30.8	24.3	35	20.4	30.9	24.1	32.4	22.5	31.4	24.4	29.4	22.6	
4	32.6	22	28.3	22.9	35.1	21.6	28.5	22.4	33.5	21.7	28.6	22.4	28.2	22.7	
5	32	22.2	28.9	23	34.6	20.8	29.7	22.6	30.7	22.5	34.6	23.4	28.6	23.1	
6	32.5	21.8	28.4	22.3	32.7	21.8	32.8	21.2	31.2	23.8	28.6	24.2	29.7	22.3	
7	33.5	22.8	30.3	22.8	33.9	21.6	32.5	22.1	30.9	23.6	30	22.1	30	21.9	
8	33	23.2	30.4	22.9	34	22.9	30.1	22.9	31.4		31.9	24.3	31.1	22.5	
9	32	23	29.3	23.7	32.4	20	33.5	22.7	32.4	23.7	30.8	24.3	28.8	22.6	
10	32	22.4	31.5	22.7	32.7	20.3	31.6	20.6	31.2	21.4	30.4		31.9	22.4	
11	32.2	22.5	31.4	23.4	32.4	21	32.8	22.8	32.2	23.2	32.3	24.3	31.7	21.7	
12	32.5	22.4	31.8	23.7	30.8	20.5	31.7	22.4	31.4	23.2	32.4	24.4	31.4	22.6	
13	33	22.5	31.5	23.8	31.3	20.9	31.5	23.4	32.5	21.4	32.2	25.6	30.6	22.4	
14	32.8	23	31.6	23.7	29.4	20.9	33.5	22.9	33.2	21.5	32		31.7	21.6	
15	32.6	22.8	31.3	23.8	29.8	20.7	31	23.8	30.3	23.2	31.7	23.3	30.7	22.6	
16	30	23	29.8	23.4	31.9	21.4	32	23.1	30.7	24.2	34.2	23.5	29.2	22.7	
17	31.2	20.4	31.5	21.3	32.8	20.9	32.7	22.1	32.3		32	24.6	31.9	20.7	
18	32.4	21.4	31.8	22.8	32.5	22	32.3	23	33.4		31.6	23.9	32.8	21.4	
19	32.2	22.6	31.7	23.7	32.6	21	31.6	22.8	31.4		32.3	24.4	32.2	22.3	
20	32.2	22.3	31.9	23.2	33.8	21.8	32	22.6	32.4		21.3?	32.8	34	31.8	21.4
21	32.5	23	32	23.9	32.6	21	32.3	23.1	32.2		20.4?	32	23.6	32.3	22.7
22	33	22.8	31.4	22.8	34	20.8	31.8	22.2	30.5			31.8	25.4	32.9	22.4
23	30.7?	23	30.9	23.3	34.6	21.9	31.4	22.7	33.2		23.2	31.6	24.2	31.7	21.2
24	31.6?	21	31.9	21.2	34.5	21.8	31.8	21.2	32.7		21.2	32.1	23.5	33.7	20.8
25		21.2	31.9	22.3	33.2	21	32.3	22.2	32.3		20.6	32.7	23.6	33.4	21.3
26	32.3	21.8	32	21.8	33.8	21.3	32.7	21.2	32.2		19.9	31.7	23.2	31.3	
27	32.5	22.5	31.9	22.7	32.5	21.6	33.4	22.7	32.5		20.3	32.1	24.1	30.9	21.3
28	32.4	22.7	30.5	22.5	32.9	21	30.7	23	30.9		23.2	31	23.9	30.3	21.6
29	32.4	22.8	27.5	23	33.3	21.2	28	22.8	31.4		22.3	29.3	23	29.9	22.2
30	32.2	22.5	28.8	23	33.9	20.5	29	22.7	31.7		22.6	29.3	23.1	29.7	21.6
31	32.5	22.5	31.2	22.7	32	19.5	32.1	22.3	30.9		21.9	26.4	22.6	28.3	21.8
Mean	32.3	22.4	30.8	23	33	21.1	31.6	22.6	32	22.2	31.5	23.8	30.9	22.1	

\* These minimum temperatures seem to be somewhat too low.

Maximum and minimum temperatures at the stations of the Weather Bureau, August, 1921—Continued

Day.	Bacolod.		Oton.		Iloilo.		San Jose de Buenavista.		Tuburan.		Leon.		Silay.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	32.2	23.2	31	24.7	30.8	24.6	31.5	23.8	32.2	24.4	31.4	24.4	32	24
2	28.5	23.7	28.7	26.2	28.9	25.8	28.7	24.3	29.9	24.3	29	24.3	29	32.5
3	30	23.7	31.7	24.7	30	23.3	30	24	29.1	24.4	30.5	24.4	30.5	24.4
4	29.4	22.6	29.6	25.8	29.7	24.7	27.1	22	28.8	23	30.4	24.4	28.9	23.9
5	30.1	23.5	29.4	26.5	30.1	23	28.6	22.4	31.1	25.2	30	24.4	27	25
6	27.5	22	28.2	23.9	27.8	23.1	28.6	23.6	30.2	23.3	27.4	24.4	27	23.8
7	30.5	23.2	28.9	24.9	29.9	22.8	28.7	23.1	32.2	23.2	28.2	24.4	30	23.8
8	31.6	23.5	30.2	26.6	30.8	26.2	29.8	23.7	32.9	23.3	32	24.4	30.5	24
9	29.6	23.2	29.9	23.8	29.6	24.6	29.1	22.5	28.2	23.4	30.3	24.4	28.1	23.8
10	31.7	22.7	29.6	25.2	30.2	23.8	30.5	22.7	33.6	23.3	30.1	24.4	30.5	24.1
11	31.7	22.4	30.2	25.5	30.7	23.9	30.6	23.9	33.1	24.1	30.9	24.4	30.5	24
12	31.7	23	30.3	26.7	30.9	24.5	30.7	24.7	33.9	24.7	31	24.4	30.4	24.1
13	31.6	24.1	30.4	26.3	31.1	26.7	30.9	26.3	33.7	24.8	31.6	24.4	30.6	24.2
14	31.6	24.4	30.8	27.2	31.1	27.1	30.6	27	32.9	25.8	31.9	24.4	30.7	25.1
15	31.2	24.1	29.9	27.5	30.7	23	29.7	23.6?	33.5	25.8	29.8	24.4	28	24.9
16	29.7	23.1	29.3	27.2	29.7	26.1	29.4	23.6	32	25.4	28.1	24.4	29	24.3
17	31.7	21.8	30.4	26.9	30.9	25.5	30.8	23.4	35.3	22.1	31	24.4	30.5	23.1
18	31.9	22.4	30.7	25	30.7	25.4	30.6	22.7	34.9	23.2	31.1	24.4	30.5	24.9
19	32.2	23.3	30.7	26.6	31.2	22.8	31.1	23.8	35.3	24.2	31.7	24.4	31	24.2
20	31.6	22.4	30.4	26.8	30.8	22.2	30.5	24.1	35.1	24.6	31.7	24.4	31	23.8
21	32.2	23.4	30.2	26.4	30.8	24.2	30.5	23.6	35.3	24	31.3	24.4	31.5	24.3
22	32	23	31	26.4	31	25.4	31	23.8	34.4	24.7	32.8	24.4	31	24.1
23	31.2	23	30.2	26.4	30.6	25.3	30.5	22.7	33.2	24.9	31.4	24.4	30.5	23.9
24	32.7	21.3	31.4	23.2	31.1	23.8	29.9	22.2	33.3	23.3	31.7	24.4	31	23
25	31.2	22.7	31.2	25.6	30.6	23.8	30.5	22.1	33.3	24.2	31.8	24.4	32	23.4
26	31.1	21.7	32	23.2	32.2	23.6	30.5	22.7	33	24.1	32.6	24.4	31	22
27	31.1	22.7	32	24	32.6	24.6	30.8	23.4	30.9	23.5	32.7	24.4	32.5	24
28	29.9	23.2	29.8	23.5	30.2	23.9	29.5	22.5	30.7	23.7	30.6	24.4	29	24
29	28.9	22.9	28.7	23.7	29.1	23.3	27	22.1	29.7	23.6	30.4	24.4	30	23.9
30	30	22.5	28.6	24.8	29.2	23	26.5	22	32.6	23.3	29.3	24.4	29.5	23.3
31	26	22.6	26.2	24.6	25.7	22.5	26.9	22.5	30.2	23	31.8	24.4	25.5	23
Mean	30.7	22.9	30.1	25.5	30.3	24.3	29.7	23.4	32.4	24	30.7	24.4	30.1	23.9

Day.	Calagitan, San Remigio.		Cuyo.		BarotacNuevo.		Hacienda Ilaya, Victorias.		Hacienda Bilbao, Manapla.		Januay.		Cadiz.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.4	23.4	31	23.8	31.3	23.1	31.5	22.7	32.2	22.9	31.8	22.9	33	21.3
2	23	31.5	23.9	31.2	23	31.2	23.7	32.4	23	28.6	23.5	30	22	
3	24	30.4	25.6	28.8	23.1	30.8	23.6	31.9	22.9	30.2	22.9	29.1	21.8	
4	22.3	28.5	24.8	29.3	22	29.4	23.4	32.4	22.7	30.1?	22.4	30	22.4	
5	23	28.8	25.6	28.2	21.1	29	23.5	32.6	22.9	30.7	22.3	30.7	30.2	23.2
6	24	29.3	23.8	29.3	22.3	29.2	22.8	31.5	22.8	22.6	22.6	30.2	22.8	22.8
7	23.4	28.8	25.3	29.7	22.8	29.4	23.4	31.7	22.9	21	32.5	22.8	33.6	22.6
8	22.3	30.1	25	32.6	23.5	29.4	23.2	32.4	23.7	32.8	21.5	33.6	30.6	23.4
9	22.3	29.5	23.6	30.2	23.6	29.8	23.6	33.7	23.3	29.7	22.2	30.6	32.4	23
10	23.3	29.6	24.1	30.7	23.4	30.2	22.5	33	23.1	30.3	22.8	33	32.7	22.7
11	22.3	30.5	25.8	30.2	23.7	30.8	23.4	32.2	22.9	32	22.3	33	33.2	23.4
12	23.4	30.6	24.8	31.6	23.8	31.5	22.7	32.5	22.8	32.9	24	33.4	33.4	22.8
13	24	30.2	26	31.4	23.5	30.2	23.3	33	23.1	33.1	24.9	33.2	33.4	22.8
14	24.5	30.2	27.4	31	23.1	29.4	23.2	32.1	23	32.9	25	33.3	32.9	22.9
15	25	29.6	27.4	31.8	23.4?	29.8	23	31.7	22.8	31.1	25.5	31.6	31.6	22.8
16	23.4	29.9	25.5	29.2	23.2	30.7	23.6	32	22.9	29.5	23.4	31.7	31.7	23.3
17	21.2	30.5	24.3	31.2	23.5	30.6	22.8	32.4	22.8	31.6	22.6	34	20.5	21
18	22	30.4	25.8	32.3	23.6	30.6	23.7	32.5	22.6	32.1	22.3	28.6	23	22
19	22.3	30.9	27	32.2	23.5	31.2	23.7	32.7	22.8	33.6	23.1	28.6	21	21
20	23	30.5	26.6	32.5	23.5	30.8	23.4	32.9	23.3	31.2	23.1	35	22.7	22.7
21	24	30	24.4	33.2	23.4	31.4	23.4	32.6	23.4	32.7	23.2	31.2	23.2	23.2
22	23	30.6	26.4	33.3	23.7	31.4	22.4	32.1	23	34	22.5	31.4	23.8	22.2
23	22	30.5	25.3	31.4	23.2	30.6	23.2	31.8	22.8	31.8	20	31.3	22.2	22.2
24	22	31.4	24.3	31.2	23.1	30.8	22.5	31.5	22.9	32.4	21	32	22.3	22.3
25	21	31.5	25.3	32.2	23.4?	30.7	22.2	31.4	22.7	32.8	22.7	33.1	22.8	22.8
26	21.2	32	24.2	31.3	23.1	30.5	22.7	32.1	22.8	32.2	21.3	31.7	22.7	22.7
27	23	32.3	26	31.2	23.2	29.8	22.5	32.5	22.9	32.6	22.6	31.2	21.9	21.9
28	21.2	29.7	24.4	31.3	23.1	30.5	23.2	32.9	23.1	31.5	22.4	30.1	22.8	22.8
29	22.2	26.5	23.6	30.2	23.7	30.8	23	32.8	22.9	31.5	21.6	29.7	22.9	22.9
30	23.4	28.3	23.7	30	23.6?	30.2	22.8	32.6	23	29.6	22	31	22.5	22.5
31	22.3	28.1	23.4	27.1	23.2	31.2	22.5	32.4	23.8	25.2	22.5	31.2	23	23
Mean	22.8	30.1	25.1	30.9	23.2	30.4	23.1	32.3	23	31.4	22.6	31.7	22.6	22.6

Maximum and minimum temperatures at the stations of the Weather Bureau, August, 1921—Continued

Day.	Dingle.		Ormoc.		Guiuan.		Bugasong.		Bogo.		Sara.		Tacloban.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	32.1	23	33.6	23.2	31.5	24.1	30	22	32.2	23.8	33.9	24.1	35.3	22.6
2	28.8	24	30.2	23.6	31.2	25.2	30	21	30.1	23.6	29.3	25	28.8	23
3	30.4	24	30.2	24.4	29.2	25.8	31	23	29.4	24	30.3	24.3	28.1	23.8
4	30.1	23	29.8	23.1	28.8	24.5	31	21.8	29.8	23.8	31.1	24.3	29.6	23
5	31.1	23.5	29.5	24.6	30.6	27.3	30	21.5	30	23.5	32.3	24.1	31.2	23.2
6	28	22.4	30.6	23.5	29.8	26.4	30	22	31	23.1	28.8	23.6	30.7	23.4
7	30.4	23.5	32.4	23.4	31.5	25.5	30	21.5	30	24	29.5	23.6	31.9	23.1
8	32.3	22.8	32.6	23.9	29.5	25.7	31.5	23	29.6	23.8	33.7	23.6	29.9	24
9	29.5	23.3	28.9	22.4	29.4	24.6	30.5	22.5	29.5	23.7	33.3	23.6	31.1	23.5
10	31.2	23	32.2	22.2	30.3	26.7	30.5	22.5	30.5	23.8	31.9	24.1	33.9	22.8
11	31.2	23.4	32.8	23.6	30.8	24.3	31	23.5	32.9	23.9	33.3	24.1	32.9	23.4
12	32.2	23.2	32.9	24	31	27.5	31	24	33.1	24	33.3	24.9	33.7	23.2
13	33	24	33	25.8	32.3	27.7	31	23	33	23.8	33.3	26.3	34.1	23.9
14	32.1	21.7	33.2	26.3	31.5	28	30	24	32.5	23.6	34.3	25.3	34.3	25.3
15	31.2	20.6?	32.6	27.5	31.3	28	30	24.5	31.9	23.8	31.3	25.7	34.1	24.6
16	29.3	24.3	32.6	26.4	30.5	28	31	24	31.7	23.9	30.5	24.6	33.9	24.5
17	32.3	23	32.6	25	31.4	27.5	31	24	32.9	23.2	33.3	23.3	33.2	22.9
18	33.2	22.1	33.2	23	31.5	27.3	30.7	24.5	33	22.9	33.3	23.9	32.9	23
19	32.4	23.4	33.2	23.1	31.5	27.5	30.5	22.5	33.2	23.5	33.8	23.1	35.6	23
20	31.1	23.2	33.2	23.8	31	27.3	31	22.5	33.4	23.7	33.7	24.2	35.2	23.6
21	33	23.5	33	25.3	31.3	27.4	31	22	33.7	24	33.8	24.6	35.1	23.5
22	33	23	33	23	32	27.3	31	21.7	33.4	23.8	34.1	23.9	38.2	24.6
23	32.2	22.3	32.9	22.7	31	23.5	31.5	22.5	33	23.6	33.3	22.9	32.7	23.5
24	32.2	21.3	33.3	22.9	32	27.3	31.5	22	32.2	23.9	33.3	23.9	35.2	23.4
25	34.2	23.2	33.6	23.4	32.5	26.2	31	22	32.1	23.9	32.8	23.1	34	22.8
26	32	21.5	32.6	22.9	32.5	23.5	31	21.7	33	24	32.3	22.9	38.1	22.5
27	31.5	22.1	32.7	22.1	30.4	23.2	30	22.5	32.1	23.8	32.5	22.6	31.9	23.6
28	31.2	22.5	29.4	22.4	30.2	23.3	30	22	32	23.7	31.3	23.3	30.8	22.8
29	28	23.1	29.5	22.9	30	24	32.5	22	31.9	23.5	32.9	23.6	29.9	23.2
30	29.8	23.5	29	23.4	30.2	23.2	29	22	30.2	22.3	31.5	23.3	29.8	22.8
31	31	22.4	29.9	22.9	30.7	23.2	29	22	29.5	22	28.3	23.3	30.2	23.2
Mean	31.3	22.9	31.9	23.8	30.9	25.8	30.6	22.5	31.7	23.6	32.2	24	32.2	23.4

Day.	Central Asturias, Buntog, Dumalag.		Culasi.		Mambusao.		Hacienda Amparo, Pontevedra, Capiz.		Capiz.		Borongon.		Calivo.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	33.1	22.1	30.5	24.1	33.2	23.8	33.1	23.9	33	24	32.6	23.8	33.9	24.1
2	29.4	23.7	29.1	23.7	29.8	23.8	29.2	24.4	29.1	24.7	29.1	23.5	30.3	23.6
3	31.6	23	30.9	23.7	31.3	23.4	30.7	23.4	30.6	23.5	26.6	23.9	32.3	23.1
4	31.3	22.6	29.6	23.7	30.1	22.3	30.6	23.3	31.2	23.8	28.2	24.7	30.3	23.1
5	31	22.8	29.5	22.8	32.3	22.6	31.4	23.1	32.5	23.3	30.5	24.8	30.5	23.5
6	31.2	22.9	29.7	23.3	30.6	23.2	29.3	23.2	31.5	23.4	31.9	22.4	31.6	23.1
7	32.8	22.8	33.3	23	33.2	22.8	33.3	23.2	33.9	23.6	33.4	23.2	32.3	22.6
8	34.1	22.8	30.6	24.2	33.8	23	33.3	23.2	33.5	24.1	29.3	23.2	33.3	23.1
9	30.7	23.2	30.6	23.5	31.6	23.8	30.5	23.8	31.6	23.9	30.2	23.7	32.3	23.6
10	31.8	23.1	30.5	23.5	31.7	23.3	31.7	23.4	32.4	23.8	33.4	23.9	31.3	23.1
11	33.3	23.6	31.3	23.2	32.9	23.4	32.9	23.3	33.5	23.9	34.2	23.6	33.3	23.1
12	34.1	24.5	31.5	23.3	34.4	21.5	32.8	24	34	23	34	23.2	33.3	22.8
13	34.4	25.1	30.5	25.3	33.6	23.2	32.4	26.1	33.9	25.5	34.6	22.5	33.3	23.1
14	34.5	24.9	31.2	25.3	34.3	22.3	33.3	26.2	34.9	25.1	34.4	22.8	33.7	22.9
15	30.8	25.1	29.9	25.3	30.8	22.5	31.5	26.5	30.4	24.5	34	24.5	30.3	24.1
16	32.1	23.6	31.3	24	31.6	22.9	30.9	25.4	31.9	23.8	34.1	24.3	32.3	23.5
17	32.9	23.6	31.6	25.3	34.5	21.5	33.9	24.3	33.5	23.7	35	22.2	33.6	21.6
18	32.6	22.4	31.7	22.8	34.5	20.9	33.5	23.6	34	23.5	35.3	23.4	34.6	20.6
19	34.7	22.6	32.5	25.2	35	21.1	34	23.2	33.9	23.7	34.8	23.8	34.3	20.6
20	32.8	23.9	32	24.2	33.9	21.6	32.9	23	33.6	23.1	34	23	34.6	21.1
21	33.4	24.9	32.3	24.1	33.8	22.8	34	25	33	23.6	35.7	23.6	35	23.5
22	34.5	21.9	31.9	23.9	33.2	21.5	33.4	22.6	34	23.5	35.3	24.7	35	22.5
23	30.4	22.8	32.1	23.2	32.3	21.7	30.5	23.3	32.6	23.5	33	24.6	33.3	24.1
24	34.5	21.6	32	22.2	33.8	22.4	33.4	22.1	33	23.7	33.3	23.2	33.3	22.1
25	33.4	22.6	31.5	23.2	34	22.6	32.6	23.4	33	23.9	32.2	22.7	33.3	22.5
26	33.3	21.9	31.5	22.8	33.7	22.5	32.8	22.3	33	23.5	32.1	23.8	33.3	22.1
27	34.1	22.1	31.6	24.2	32.8	22.7	32.8	22.3	32.4	22	31.5	23.4	32.6	23.1
28	33.6	23.4	31.3	23.5	33	22.5	30.3	22.2	32.2	23.9	36.4	23.6	32.3	23.5
29	33.5	22.8	31.2	23.2	29	22.2	33	23.8	28	23.9	29.5	22.6	29.3	23.1
30	30.8	22.6	29.5	23.2	29.6	23	30.4	23.2	30.5	23.4	30.1	22.3	30.3	23.1
31	32	22.5	29.5	23.2	26.9	22.6	26.9	22.9	27.6	23	30.9	22.5	28.3	23.1
Mean	32.7	23.1	31	23.8	32.4	22.5	32	23.7	32.3	23.7	32.4	23.5	32.5	22.9

Maximum and minimum temperatures at the stations of the Weather Bureau, August, 1921—Continued

Day.	Pandán, Antique.		Catbalogan.		Ibajay.		Calbayog.		Masbate.		Romblon.		Batag Light-house, Laoang.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.8	24.7	32	-----	31.9	23.6	32.2	24	32.8	25.8	32	23.8	32	24.4
2	30	24	28.4	-----	30	23.3	27.3	23.9	29.4	25	30.4	23	27.4	24.1
3	31.4	-----	27.4	-----	30.8	23.9	29.2	23.7	31.6	25.4	33.2	23.4	29.3	24.4
4	27.9	23.4	28.9	-----	27.6	23.2	28.2	23.2	29.4	24.4	29.4	26.4	26.9	23.9
5	29.1	24	29.4	-----	29	23.7	29.6	25.9	29.8	27.5	30.1	25.9	28.9	25.4
6	28.7	23.7	30.5	-----	28.8	23.7	30	23.3	29	23	27.7	23.3	29.9	23.2
7	31	21.7	32	-----	30.2	22.3	31	23.1	30.6	23.4	30.6	24.2	30.9	23.4
8	33	23.4	30.8	-----	30.7	23.3	30.8	24.2	31	26.5	32.8	25.4	29.9	22.7
9	28.8	24.3	30.5	-----	30	24.7	31	23.8	30	24	31	24.3	29.7	23.3
10	30.5	25	31.6	-----	30.4	24.7	31.2	23.6	30	24	30.5	24.6	30.5	23.3
11	30.6	22.8	32.2	-----	30.8	22.6	31.9	26	31	24.2	31.5	25.2	31.3	23.1
12	30.7	24.1	32.9	-----	30.6	22.4	32.4	26.8	31.4	25.6	32	24.8	32.1	24
13	30.2	25.4	33	-----	30.6	25.3	32.1	27.4	31.8	27.4	32.6	25.2	32.1	24.5
14	30.7	26.4	33.5	-----	30.8	26.2	30.3	27.5	32.2	26.4	31.5	25.2	31.3	25
15	28.4	24.1	33.3	-----	29.5	24.2	31	27.5	30.4	25.6	31.5	26.2	31.6	25.6
16	30	25.1	31.9	-----	29.7	24.6	29.8	27	30.6	25.6	31.4	25.1	31.4	25.2
17	31.1	24.2	32.7	-----	31.2	23.3	32.3	26.1	32.5	26	31.7	25.2	33.6	23.4
18	31	25.2	33.1	-----	31.4	24.7	33	24.7	32.6	25.2	31.5	26.1	33.6	23.5
19	31.3	27.2	32.9	-----	31.3	26.3	32.4	27.3	32	25.8	32.4	26.3	33.1	24.4
20	31.8	27.2	32.7	-----	31.8	25.9	32.7	26.6	32.4	26	31.7	25.9	33.5	24.5
21	31.8	26.5	33	-----	31.4	26	33.4	26.5	32.6	26.5	31.3	26.3	33.8	23.9
22	30.5	23.9	32.8	-----	29.5	23.5	32.3	27.4	31	26.4	32.4	25.3	33	24.4
23	31.5	23.2	32	-----	30.3	23.6	31.7	26.6	31.4	26.5	31.1	25.7	32.3	24.4
24	31	22.4	32.8	-----	31.5	22.9	33	24.5	33.4	25.5	32.1	25.1	32.1	23.8
25	32.2	22.5	32.5	-----	32.2	24	33.4	23.7	31.4	25.2	32.7	24.7	33.3	23.9
26	32.4	23.3	32.8	-----	31.7	22.7	34.6	22.8	31.6	25.4	34	23.2	33	23.6
27	32.5	25	30.7	-----	31.8	23.9	32.9	23	32	25.6	32	23.8	33	24.2
28	30.4	24.3	29.4	-----	31.7	23.9	28	23.3	29.6	25.8	31.7	23	28.4	23.7
29	29.1	24	30.7	-----	28.5	23.9	30.9	23.4	30	23.6	30.2	23.1	29	22.5
30	27.3	23.4	30.4	-----	28.4	23.3	31.8	23.1	29.6	23.6	28.3	23	29.7	22
31	29.4	23.2	30.8	-----	29.4	23.2	31.1	23.3	28.8	23.5	29.2	22.8	29.7	22.7
Mean	30.5	24.3	31.5	-----	30.4	24	31.3	24.9	31	25.3	31.3	24.7	31.2	23.9

Day.	Irosin.		Sorsogon.		Bacon.		Jovellar.		Legaspi, Albay.		Guinobatan.		Polangui.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	34.4	22.5	32.1	-----	32	23.2	32.3	21.7	33.8	24.5	32.9	22.8	32.2	23.4
2	29	22.5	23.6	-----	29.7	23.1	32.6	22.5	30.4	24.6	30	-----	31.4	23.4
3	31.5	22.9	31	-----	32.2	22.9	28.9	21.4	32.9	25.3	33.3	-----	30.2	23
4	28.7	23.1	31.2	-----	28.6	24.3	31.4	22	29.6	24.9	30	23.3	32.1	21.2
5	30	25.4	29	-----	29.7	25.8	-----	23.5	30.6	25.7	29.6	23.8	29.1	24.2
6	29.2	23.2	23.9	-----	30.4	25.6	29.7	24.7	29.4	24.6	27.8	24.8	29.1	24.4
7	32.2	23	30.5	-----	32	23.5	28.6	22.5	31	24.5	30.5	23.4	29.1	21.1
8	31.5	23.6	31.4	-----	31.7	23.3	30.8	21.7	31.9	24.9	30.2	22.3	30.2	22.1
9	31.9	22.9	30.4	-----	31.1	23.4	31.7	21.6	30.8	23.6	30.2	22.8	31.4	23.4
10	31.6	22	30.5	-----	31	22.9	30.2	21.9	30.3	23.1	30.2	22.2	30.8	23.4
11	32.9	23.4	31.5	-----	31.2	24.5	30.2	21.8	31.4	24.6	31.3	22.6	30.7	22.4
12	33.4	24.3	31	-----	31.5	24.4	30.6	22.8	32.1	25	30.9	23.5	31.4	21.4
13	33.2	25.2	21.1	-----	31.9	25.2	30.4	23.6	32.8	25.7	31.9	24.6	31.5	21.3
14	34	25	31.4	-----	31.5	26.3	31.2	24.8	31.6	25.7	31	25	32.4	20.1
15	32	25.7	30	-----	30.6	26.3	31.4	23.6	30.3	24.2	30.3	24.2	31.4	21.6
16	34.2	25	31.5	-----	32	25	29.8	23.3	31.3	25.9	32.3	24.8	30.1	20
17	34.7	25	31.5	-----	32.5	25.4	30.7	23.2	33.3	24.9	32.3	23.7	31.4	21.6
18	34.5	22.6	31.6	-----	32.2	24.4	31.6	22.3	32.6	25.1	32.5	22.2	31.2	23.2
19	35	22.9	31.4	-----	32	25	31.6	21.4	33.3	25.1	32.3	21.8	31.4	24.1
20	35.1	24.1	30.9	-----	31.5	25.5	32	22.6	32.4	25.5	32.1	23.2	32.3	20.3
21	34.3	24	31.9	-----	32	25.5	31.2	22	32.5	25.4	32.5	23.2	32.5	22.3
22	33.8	23.8	30	-----	31.6	25.4	31.5	22.7	32.8	25.3	32.7	23.7	32.1	22.1
23	34.5	23.7	31.5	-----	31.4	24.5	31.3	23.5	32.4	25.1	32	23.8	31.5	22.6
24	34.6	22.9	31.7	-----	33	25.5	31.2	22.5	32.8	24.9	31.8	23	31.3	23.2
25	35.9	23	32.5	-----	32	24.7	31.7	22.1	32.9	24.1	30.4	23.2	31.5	23.2
26	35.5	22.8	-----	-----	31.9	22.9	30.7	21.5	33.8	23.6	32.4	22.3	31.4	24.1
27	33.5	22.6	-----	-----	31.2	22.9	-----	-----	33.2	24	31.7	22.7	32.6	23.5
28	31.3	22.5	-----	-----	29.4	23.3	31.9	21.3	30	24	29.9	22.5	30.3	22.1
29	31.8	21.6	-----	-----	30.2	21.9	29.9	21.2	31.9	23.1	29.3	21.4	30.2	22.3
30	28.7	22.9	-----	-----	29.2	22.4	29.8	21.8	29.9	23.3	28.9	22.2	29.1	23.1
31	29.4	22.9	-----	-----	30	22.5	27.9	22.3	28.9	23.2	28.3	22.8	29.1	23.5
Mean	32.7	23.5	30.9	-----	31.2	24.2	30.8	22.4	31.7	24.6	31	23.2	31.1	22.5

Maximum and minimum temperatures at the stations of the Weather Bureau, August, 1921—Continued

Day.	Bacacay.		Bato.		Tabaco.		Sumay (Guam), Agaña.		Iriga.		Calapan.		Tiwi.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	32.4	22.5	33.2	23.3	33.3	22.3	28	25.2	33.3	22	32.5	24	33.2	23.5
2	32.6	23.2	32.1	24.1	33.9	22.5	29.2	24.6	31	23	33.3	23.5	33.6	23.6
3	32.6	23.1	36.7	24	31.2	23.3	29	26	33.1	22	32.5	23.5	33.5	23.8
4	32.2	22.7	33.1	24.2	33.7	23.5	30.4	23.7	31.1	23.6	31	23.1	33.8	24.2
5	31.2	23.4	30.4	22.7?	30	24.8	30.9	23.7	31.2	23.4	31.1	23	33.6	24.6
6	32.6	23.9	30	25.7	30.4	23.7	30	24.2	30	23.8	31.5	24.1	31.8	22.4
7	31.2	22.3	29.3	25	30.9	23.2	30.7	25.9	30.6	22	29.4	22.8	31.9	21.4
8	32.4	23.6	30.4	23.9	32.3	23.3	31	25.2	31.4	23.3	31.4	23	33.6	24.2
9	33.2	23.4	31.3	23.5	33.2	21.8	29.8	27	32.6	22.8	33	22.5	33.4	23.6
10	30.4	22.6	30.3	23.3	31.5	21.5	29.8	23.5	31.3	22.5	31	23.6	32.6	24.8
11	32.1	23.5	30.6	24	31.9	22	28.8	24.1	30.4	23.1	31.1	24	32.5	25.5
12	33.2	22.6	30.6	25.9	32.2	24	28.5	24.8	33.2	21.8	31.6	24	33.2	24.4
13	32.9	23.4	30.7	26.2	32.7	24.8	29.6	23	31.4	23.6	31.5	23.6	31.8	22.4
14	33.2	23.7	31.3	27.7	33	25.2	29.3	23.4	31.6	22.9	30	23.6	33.1	23.5
15	33.1	23.2	30.7	26.6	32.2	24.5	30.4	24.9	30.4	21.8	27	23.5	31.4	22.2
16	33.2	24.3	30.8	27.3	30.2	24.8	29.8	24.2	31.4	23.6	28.6	23	32.8	24.8
17	33.4	23.7	31.4	25	31.3	23	30.8	25	32.4	24.2	32.5	22.5	32.8	24.6
18	32.9	23.9	31.7	24.8	33.2	22.3	30	25.6	32.3	24	33.3	23	31.5	22.4
19	31.6	23.8	31.9	27.2	32.9	20.1	28	23.5	32.1	23.8	32.5	22.6	32.8	23.6
20	32.1	23.6	31.7	25.5	33.4	25.2	30.7	24.7	31.6	24.7	31.6	23.5	32.6	25.2
21	31.7	24.4	31.3	24.9	32.3	25.8	31.9	23.4	30	23.6	32.5	23.1	32.5	24.8
22	33.2	23.5	31.4	25.7	33.2	25.3	30.5	25.5	32.9	23.5	31.5	24	32.3	24.6
23	33.4	23.8	31.9	24.4	32.5	24.8	29.8	25	31.6	23.4	32	23.4	32.2	24.2
24	33.4	23.7	31.3	24.4	33.1	24.7	29.3	23.7	33	23.4	32	23.6	31.8	24.5
25	31.5	22.8	32.4	23.6	33.4	24	29.2	24	32.2	22.3	33.5	22.5	32.6	24.2
26	32.8	22.6	31.2	23.2	32.2	22.7	30.7	25.6	33.1	21.8	33	22	32.8	25.2
27	33.6	23.9	32.9	24.1	33.7	22.9	30.8	23.7	32.6	21.7	33	22	32.8	24.4
28	30.9	23.8	32.8	23.8	33.2	22	30.5	25.8	31.6	21.8	32	23.8	31.6	23.2
29	30.1	21.6	32.9	22.9	30.6	21.6	29.2	24	28.3	21	30.5	24.5	31.8	24.4
30	30.5	21.8	30.2	22.8	31.3	21.8	29.6	23.1	28.6	20.9	30.5	23.1	31.5	22.4
31	30.2	21.9	29.8	22.9	30.2	21.4	30.2	23	30.7	21.8	29	22.8	31.6	23.2
Mean	32.3	23.2	31.3	24.6	32.2	23.3	29.9	24.5	31.5	22.8	31.5	23.3	32.5	23.9

Day.	Pasacao.		Virac.		Naga, Ca- marines Sur.		Tigaon.		Baras.		Libmanan.		Batangas.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	32.7	21.5	33.5	22	33	24.1	33.1	22.9	31	26	33.2	24.1	32.8	24.6
2	32.4	22	32.9	22.7	31.9	24.4	30.6	22.8	30.6	25.5	33.3	24.2	32.5	24.7
3	30.1	21	35.3	22.2	34.2	23.9	32.2	23.5	30.5	25	33.2	23.8	32.3	24.6
4	31	21.4	31.5	23	30	24.1	28.7	24	30	25	33.4	23.7	29.7	24.5
5	32	21.1	31.3	24	30.1	24.1	28.4	25.5	29	26	33.3	25.5	29.4	24.6
6	31.7	21	32.1	23	30	24.6	27.9	24.2	29.5	25.8	33.4	23.9	31.2	25.4
7	31.9	22	33.7	23.6	31.1	23.9	30.9	24.3	31	25.1	33.3	24.8	28.9	23.5
8	32.1	21.2	32.3	22.5	32	23.8	32	23	29.5	25	33.2	23.7	31.5	23.7
9	31	21.9	32.5	22.5	31.3	23.2	31	22.7	27.6	24.7	33.2	23.8?	32.5	23.9
10	30.1	22.1	32.6	22	31.2	22.6	31.1	22.9	26.4	24.8	33.3	23.6	30.8	23.5
11	32.2	22.4	33.6	22.5	31.8	24.9	31.2	25	30	25.6	33.2	24.5	30.5	24
12	32.7	22.8	33.8	24.8	31.9	25.5	31.1	25.2	31.3	27	33.5	24.4	30.3	25.8?
13	30	21.7	34.6	24.9	32.4	26	31.8	25.5	31	27.2	33.2	24.8	29.8	24.1
14	31.2	21.4	34.5	25.5	31.9	26.6	29.8	25.5	32.8	27.8	33.4	26.1	31.7	23.9
15	32	22.2	34	24.5	31.1	25.7	29.7	25	31.1	27.2	31.5	24.9	27.4	24.3
16	31	21	33	24.1	31.5	24.9	30.3	24.6	31.2	26.9	31	25.3	27.8	23.6
17	30	21.8	35.4	24	32.4	25.4	31.9	25.2	31.4	26.2	31.4	26	31.5	23.5
18	32.1	22.7	34.6	23.3	32.7	25	31.7	25.9	31.2	26	31.6	25.9	32.5	26.4
19	31	21.9	35.9	23.4	32.4	25.4	31.5	26	32	27.4	21.9	26	32	27.1?
20	30.9	21.6	35.5	23.6	30.6	26.2	29	25.7	31.9	27.1	31.9	26.2	31	26.4
21	29.8	21	34.9	23.5	32.4	24.6	31.9	25.6	31.3	27.4	32	26	32.7	25.4
22	30.1	21.5	35.5	23.3	33.1	25.3	32.3	25.5	32	27.3	32.1	25.3	30.5	25.5
23	31.2	21.2	34.1	23.5	32.3	24.6	31.2	25.3	32.4	27.5	32	25	31.1	24.6
24	31.8	21.4	35.7	23.1	33.6	24.4	32.9	24.9	31.2	26.3	32.1	24.2	31.3	23.8
25	32.4	21.2	36	23.1	33.4	23.8	32.7	23.9	31.1	25.4	32.9	23.7	32.2	22.5
26	33.2	23.6	36.2	22.7	34.2	23.5	34	22.7	31.8	25.8	33.8	23.5	32.2	22.8
27	32.4	22	32.7	22.5	33.9	23.1	33.7	22.5	31.4	25.6	33.9	23.2	32	24.3
28	33	22.4	30	22.9	30	23.4	30.6	22.5	31.1	24.9	33.8	23.3	31	22.7
29	32.9	22	32.1	21.6	32	22.8	32.2	21.5	29.5	24.8	33.9	22.9	31.1	23.5
30	34.6	22.7	29.7	21.8	31.5	23.1	30.4	22.6	29.4	24.3	33.9	22.8	29.5	22.4
31	34.9	23.8	30	21.7	29	22.6	27.8	22	27.7	24.4	34	22.4	27.7	23.3
Mean	31.8	21.9	33.5	23.2	31.9	24.4	31.1	24.1	30.6	26	32.9	24.4	30.9	24.3



Maximum and minimum temperatures at the stations of the Weather Bureau, August, 1921—Continued

Day.	Ragay.		Calatagan.		Balayan.		Lipa.		Lucena.		Atimonan.		Nasugbu.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	32.2	23.5	33.2	21.8	29.7	24	31.2	21.5	32.1	22.5	33.6	24.3	32.7	-----
2	31.7	23.3	32	21.8	32	22	30.8	22.6	31.7	22.4	33.1	24.6	32.5	-----
3	32.6	22.7	32.2	22.6	29.5	23.3	31.5	22.3	33	22.4	34.8	24.2	31.6	-----
4	30.3	23.6	29.8	22.5	29.7	22	28.3	22.5	30.5	22.5	32.2	24	29.9	-----
5	30.1	23.2	30	23	29.7	22	29.9	22.9	29.5	23.4	30	26.3	30	-----
6	29.7	24.1	29.9	23.6	29	24.5	29	22.7	29.6	22.9	31.7	25	29.9	-----
7	31.2	22.3	28.2	21.5	28.5	24	28.5	22.7	29.7	21.6	31.9	24.7	26.4	-----
8	32.6	22.5	31.7	20.7	31	23	30.2	21.5	32	21.9	33.8	24.6	30.5	-----
9	31.6	23.1	32.6	22.2	31.3	22.6	30.9	21.1	30.5	21.7	32.4	23.8	31.5	-----
10	30.1	23	32.3	23.8	31.4	22	29.4	21.5	30	21.6	30.2	23.3	31.7	-----
11	31.3	24	32.3	22.7	29	22.5	28.9	22.3	30.6	23	32.8	24.1	29	-----
12	31.2	25.1	30.3	22.6	29.5	23	28.7	23.1	31	23.6	31.8	25.4	30	-----
13	31.3	26.3	31	22.6	29.5	22.3	27.4	23.8	28.7	22.7	29.6	24.8	30	-----
14	32.2	21.6?	29.3	24	36	23.3	28.7	22.5	31.5	24.5	31.7	26	30.6	-----
15	36.1	22.7	27.8	21.6	28	20	29.3	21.9	26.1	23	26.7	24	26.3	-----
16	30.1	23	28.2	21	27	21.3	28.9	21.4	28.5	21.5	29.9	23.8	27.9	-----
17	31.2	24.7	31.9	23.5	31	25	29.3	22.5	31.4	20.9	32.4	23	31	-----
18	31.2	26.2	31.2	24	31.5	22	29.8	23	31.9	23	32.9	23.5	31	-----
19	31	-----	31.5	25.9	31	21.5	29.7	22.5	31	22.6	31.6	25.1	30.8	-----
20	31.2	21.1?	31.6	25.3	32	25	30.4	-----	31.3	22.4	31.9	26.6	30.8	-----
21	31.3	22.1	31.8	24.1	31.4	22.5	30.6	23.9	32.3	23.7	33.6	25.8	31.8	-----
22	31.7	22.1	29.2	22.1	30.5	22	29.6	22.1	30.6	23	32.7	26.4	31.5	-----
23	32.3	21.8	30.7	23	30	22.5	30.2	22	31.6	23.6	33.3	26	29.3	-----
24	30.1?	22.1	30.2	22.9	30	22	28.8	21.5	31.4	22.9	33	24.6	29.2	-----
25	29.6	22.5	32.1	21.6	32.3	22.5	30.3	21.1	32.5	21.5	32.8	22.4	31.5	-----
26	31.2	22.7	32.2	20.9	31.5	22	29.7	20.2	32.2	20.5	33.4	23.1	31.5	-----
27	30.3	23.5	31.7	22.3	31	24	29.6	21.6	32.7	21.9	31.9	23.6	31	-----
28	31.5	23.3	32.5	21.3	31.2	23	28.7	21.2	28.7	21	28.9	23.5	30.9	-----
29	36.3	-----	27.8	22.1	29	21	26.6	20.5	30.5	21.5	30.4	23.3	28.8	-----
30	27.2	23	30.5	21.3	29	22.6	27.9	20.3	29	21.5	28.3	23.2	30	-----
31	28.2	22.2	29.2	22.2	30.3	22.5	24.6	21	27.4	22	27.9	23.8	29.2	-----
Mean	30.9	23.1	30.8	22.6	30.2	22.6	29.3	22	30.6	22.3	31.7	24.4	30.3	-----

Day.	Ambulong, Tanauan, Bataan.		Daet.		Mendez Nuñez.		Alfonso.		Indang.		Canluban, Calamba.		Silang.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.5	24.3	32.6	23.5	29	20.2	28.1	21.6	30.2	22.1	33.1	22	30.2	21.8
2	32.4	24.4	33.5	23.5	29	21	27	21.9	30.6	22.9	32.6	22.6	29.5	21.5
3	31.8	24.7	33.5	23.1	27.5	20.5	27.5	23	28.9	23.3	31.6	22.8	29.1	21
4	29.7	24.9	32.1	24.3	26	19.9	25	21.7	28	23.4	30.6	23	28.8	20.3
5	29	27	30.7	23.5	24.5	20.5	25.5	21.6	26.7	22.4	29.4	23.2	28	21.8
6	29.7	24.2	30.7	24.5	25	19.9	24	21.5	26.5	22.5	30	22.2	28.4	22.2
7	26.3	22.6	33	23.9	24	19.8	23.5	21.1	25.3	21.7	25.8	21.2	28	21
8	30	23.3	33	22	29.5	19.5	25	21.1	29.6	20.8	32	21.4	29.1	20.7
9	30.3	23.3	32.6	23.6	26.5	18.9	24.6	20.6	28.7	21.9	31.6	22	29.2	21.5
10	30.7	23.2	31.7	23.3	28	19.9	27.9	21.6	29.3	22.2	31.4	21.5	28.8	21.4
11	28.8	26	33.6	23.6	25	20	24	21.6	26.5	22.4	30.9	22	28.1	21.6
12	29.1	25	32.5	24.8	25.5	20.9	23.5	22.1	26.9	23.3	30.5	22.6	29.2	21.5
13	29.7	24.7	33.3	25.6	25.5	20.2	24.4	21.1	27.1	22	29.6	23	29.5	22.3
14	29.1	24.9	32.5	23.7	25.5	21	24	22.6	26	23.9	30	23.6	28.2	22.5
15	25.8	23.9	31.8	22.6	24	19.8	23.2	21.1	23.9	21.8	25.2	22.2	28.5	22.4
16	28.2	23	32.5	23.6	24	19.9	24	20.6	25.2	21	27	21.2	28.5	21.6
17	30	26	33.1	24.5	28	21	26.7	22.3	27.2	22.9	31	22.6	28.2	21.1
18	30.3	25.5	33.8	24	26.5	21.5	26	22.2	28.7	23.2	32	22.7	28.2	22.1
19	29.8	26	32.5	24.7	26.5	21	24.6	22.5	27.5	22.6	31.5	23	28.7	22.7
20	30	27.4	31	24.8	27	21.9	26.2	22.6	28.6	23.7	32.8	23.2	28.3	23
21	30	26.8	34.7	24.8	27	21.5	26	22.6	28.9	23.6	32.5	23.1	29.2	23.2
22	29.2	25.4	34	25	27	21.5	26.6	21.8	28.5	22.8	32.6	22.9	28.8	21.8
23	29.3	24	34	25	25.5	20.5	24.5	22.1	26.5	22.3	31	23.3	27.5	22.2
24	29.8	23.7	34.6	23.1	26	21.5	25.7	21.7	27.8	22.2	31.2	22	27	22.5
25	31.4	22.4	32.7	23	27.5	19.5	27.8	20.1	29.2	20.9	32.2	20.6	28.7	20.8
26	31	23	32.9	22.5	29.5	19.5	27	20.1	30.3	21.5	32	21.8	29.1	21
27	31	23.8	32	23	27.5	19.9	28.5	21.1	30	22.4	32.9	22.4	28.9	21.2
28	29	22.7	29.6	23	27.5	18.9	26.5	20.6	28.8	21.2	30.4	21.8	29	20
29	28.8	23.7	32.7	22.4	27	19.9	24	20.8	28.1	21.7	30.8	22	29.7	20.4
30	28.2	23	28.6	23	25	19	23.5	20.9	26.5	21.4	28.4	21.8	28.2	21.3
31	27.7	23.4	30.1	22.4	24.5	20	24.2	20.7	25.8	21.8	28.1	22.2	28.1	20.5
Mean	29.6	24.4	32.5	23.7	26.5	20.3	25.5	21.5	27.8	22.3	30.7	22.3	28.7	21.6

Maximum and minimum temperatures at the stations of the Weather Bureau, August, 1921—Continued

Day.	Maragondon.		Paracale.		Santa Cruz, Laguna.		Buenavista, General Trias.		Cavite Naval Station, Cavite.		Manila.		Antipolo.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	32.5	22.9	30.2	23.5	34.2	23.9	32.3	22.5	33	24.8	33.2	25	33.7	23
2	32.2	23.6	30.5	23.8	33	23.8	32.7	21.6	31.1?	26.2?	32.9	25	32.8	22.8
3	32.2	23.7	30.5	24	32.6	24.2	32.4	23	32	23.7	32	25.2	31.7	23.5
4	30.3	21.6	30.8	24	31.6	23.6	31.2	22.7	29.5	23.2	31.2	25.1	30	23
5	30	23.9	30	23.2	29.3	24	32.1	22.5	30.5	22.7	29.6	26.5	27.2	23.7
6	29.3	23.2	30.2	23.2	31.1	23	28.7	22.3	28	21.2	30.4	24.1	28.2	22.2
7	28.1	22.5	31.2	24.2	28.5	22.7	25.8	21.7	32	21.5	24.6	22.9	25.5	21.2
8	31	21.1	31.5	24.5	32.1	21.7	31.2	20.7	32	21.5	31.1	22.7	31.3	20.9
9	30.7	21.8	31.5	24.5	32.1	23.5	29.7	21.6		24	31.9	24	30.9	22
10	32	22.8	30.2	23.8	32.5	22.7	30.2	21.5	30.6	23.5	31.4	23.3	30	21.9
11	29.7	21.9	30	23	31.1	22.9	29.2	21.2	31	23.6	31.2	23.9	29.3	22.3
12	29.1	23.6	30	23	32.2	24	29.4	22.9	30.6	23.8	30.8	23.3	29.4	22.7
13	29.1	21.9	30	23	29.4	23.5	28.7	22.4	28.5	22.5	29.9	23.8	27	22.3
14	28.3	24.3	30.2	23.2	30.8	24.8	27.9	22.4		23.1	29.8	24.2	27.9	22.2
15	25.6	22.7	30	23.2	27.6	23	24.5	21.5	31.5	22.5	25.5	23.1	24.6	21.9
16	28.5	22.3	30	23	27	22.4	26.5	21.2	30.5	21.2	26.8	22.5	25.2	21
17	31.6	23.3	30.2	23.2	31.3	21.5	29.9	22.7	31.3	22.4	30.2	23.5	28.9	21.8
18	31.2	23.9	30.5	23.8	32.5	21.9	30.5	21.2		24.3	31	24.9	30	23
19	31.2	22.3	30.8	23.8	31.5	24.3	29.2	22.2	31.5	22.5	29	24	27.7	22
20	30.7	24.9	30.8	23.8	32.6	25	30.4	23.4	32	23.8	31.8	25.3	30	23
21	31.5	24.6	31	24	32.8	24	30.5	23		24.4	32	25.1	30.3	23.2
22	31.1	23.9	31	24	31.8	24.6	29.7	22.8		24.5	28.9	25.5	26.8	23.5
23	28.3	24.5	31.5	24.2	30.6	23.6	27.4	23.2	30.5	23	28.2	23.7	26.8	22.6
24	30.9?	23.3	31.5	24.2	30.1	22.9	30.1	22.8	31.9	22.5	30.4	23.8	28.5	22.3
25	30.7	21.3	31	24.2	32.4	21.3	30.2	23	32.4	22	30.4	23	30.1	20.7
26	31.4	23.1	31.2	23.8	32.9	22.5	31.2	23	32	23.5	31.9	23.3	31.9	22.2
27	31.3	22.9	31.5	24	31.9	24.3	29.6	22	32.1	24.8	32.4	24.1	31.2	22.8
28	30.9	21.9	31.8	24	30.8	22.1	29.9	23.1	31.1	22.8	30.6	23.5	29.3	22.3
29	30.2	23	30.5	23.5	30.6	23.3	30	22.4	30	21.1	29.6	24.1	27.7	21.8
30	30.2	22.3	30.2	24	28	22.6	29.4	23.2	30	22.6	28.8	23.7	27.9	21.7
31	28.8	22.4	30.2	23.8	30.3	23.4	30.4	23.1		23.4	31.4	23.3	30.6	21
Mean	30.3	22.9	30.7	23.7	31.1	23.3	29.7	22.3	31	23.1	30.3	24	29.1	22.3

Day.	Balanga.		Malolos.		San Fernando, Pampanga.		San Isidro, Nueva Ecija.		Iba.		Concepcion, Tarlac.		O'Donnell, Capas, Tarlac.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	34.5	26.6	33.5	24.7	34.5	23.5	34.7	23	32.5	23.2	36.2	22.4	34.5	21
2	30.4	24.4	33.4	24	34	23	34	23.5	32.1	23.6	35.7	22	35	21
3	32.4	24.7	32.5	25	34.5	24.7	32.6	24.7	32	24.1	35.1	22.3	33.7	22
4	31	24.2		24.5	31.3	21.5	30.6	23.8	30.6	23.7	32.7	20.4	31.5	21.5
5	29.4	24		24.6	30.7	23.5	29.4	24	29	24.5	31.5	21.2	30.7	21
6	28.8	24.5	30	23.1	29.5	23.5	30.1	23.5	29.4	23.5	29.4	22.2	27.8	22
7	28.8	23.2	24	22	29.5	22	25	22.6	28	23.5	26.2	21.4	24.5	20.5
8	31.5	22.5	31	22.4	32.5	22	31.9	22.5	30.9	22.6	32.9	21.7	27.5	20.5
9	31.7	22.8	31.6	23	32.5	23	31.5	23.4	30.9	23.7	33.9	23.1	31	21.2
10	32	22.9	30.5	22.5	32	22.7	31.2	22.9	30.8	22.5	33.2	22.4	30	21
11	31.3	23.5	30	23.1	30.5	21	30.5	24.1	31.2	23.4	30.7	23	28	20.7
12	28.4	24.2	29	23.8	30.5	23.5	27.9	24.1	26.8	23.4	27.6	23.6	27	21
13	28.8	24	29.2	23.1	30.5	23	31	23.8	27.2	22.6	30.6	22.7	28.5	21.5
14	28	25.1	29.4	23.8	31.5	22.5	30	24.4	30.5	24.4	31.8	23.2	27.5	21.5
15	24.9	23.2	29.8	23.6	29.3	21.5	24.8	22.8	25.4	22.2	23.8	22.3	24.5	21
16	27.3	22.8	26.3	21.8	25	22.5	25.2	22.5	27.4	22.3	25.4	21.4	27.5	20.5
17	29.3	23.5	28.5	22.7	29.3	23	29.4	23.6	30.5	23.5	30.8	22.7	27.5	21.7
18	30.3	24.8	29.5	23.8	30	23.7	30.1	24.9	30	24.6	32.4	21.7	28.5	21.7
19	27	23.6	27	22.9	29	23.5	28.4	24	30.2	23.7	30.6	23.2	28.7	22.5
20	30.6	24.7	30.5	24	31	21.5	30.2	25	30	24.8	31.8	22.6	30	22.8
21	30.8	24.6	30.5	24.5	31.5	22.5	31.4	25.2	31.5	25.5	32.8	23.2	30	22.5
22	30.8	25.3	30	25	31		30.1	24.5	29.5	25	30.8	23.8	27.2	23
23	25.7?	24.2	29.5	24.4	30		29.8	23.7	26.5	23.5	28.6	22.8	27	21.5
24	30.5	23.4	30.3	24	31	22.5	30.5	23.1	29	21.9	31.6	20.9	27.6	21
25	31.1	23	30.2	23.1	31	22	31.1	23	30.1	22	32.2	20.8	28.7	20
26	31.3	23.2	32	23.5	32.5	21	32.4	23.3	30.4	22.5	34.2	21.7	33.1	19.5
27	33	24.1	33	24.3	33.5	23.5	32.6	23.5	30.8	24.3	34.2	23	34	21.5
28	32	24.1	32.7	22.7	32	21	31	23.5	30.5	23.5	33.4	22.7	33	22
29	32.4	24	31.1	23	32	22.5	31.8	23.6	30.1	22.9	33.5	22.4	30.7	21.5
30	30.7	23.7	30.1	23.5	32	23	29.9	23.9	29.4	23.6	31.6	22.1	30	21.5
31	31	23.5	30.2	22.6	30	22.5	29.4	23.1	33.2	23.1	31.9	23.5	30	21.3
Mean	30.2	23.9	30.2	23.5	31.1	22.5	30.3	23.7	29.9	23.5	31.5	22.3	29.5	21.4

Maximum and minimum temperatures at the stations of the Weather Bureau, August, 1921—Continued

Day.	Tarlac.		Camiling.		Baler.		Dagupan.		Rosario, La Union.		Tubao.		Itogon.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	35	23.4	34.5	21.9	34.9	22.7	34.7	25	33.9	22.8	34.4	22.7	32.7	19.8
2	32.2	23	35	22.8	35	23	34.3	25.5	34.4	22.8	34.5	23.4	32.8	19
3	32.8	23	34.5	23.5	34.6	24	33.4	25.5	33.5	22.5	33.4	23.8	33	19.8
4	32	22.8	33.4	23.8	34.9	23.3	32.5	25.2	31.2	22.5	33.9	23.7	30	19.4
5	30.5	22.6	32	22.5	31.7	23.4	31.1	24.9	27.2	23	28.2	23.7	27.3	19.9
6	29.2	23.2	30	23.5	32.6	25	27.8	22.9	25.6	23.1	28.4	23.7	24.6	19.9
7	28.6	22.4	29.5	20	30	22.9	25.5	22.6	27.7	22.3	27.8	23.6?	27.2	19.6
8	34	21.6	32.5	21.5	35.5	22.3	33.1	23.1	32.1	22.8	33.2	22.9	30.8	19.6
9	32.8	21.8	33.9	22.3	31.1	22.5	33.2	23.8	32	23.3	33.3	22.9	29.8	19.6
10	33.2	21.8	33.5	20.2	32.1	22.4	33.3	23.3	32.3	23.6	33.3	22.9	29.8	19.6
11	29.6	22.4	30.8	21.3	34.4	22.7	30.8	24.2	31.2	23.7	32.2	22.3	29.8	21
12	29.2	22.2	30	21.7	32.3	24.5	27.9	23.6	27.7	23	32.1	24.2?	29.3	20.6
13	30.4	22.6	30.5	21.5	34.8	24.2	27.9	23.2	28.4	22.9	32.1	23.7	30.4	19.8
14	28.8	22.4	31	22.5	34.7	25	30.6	24.1	29.5	23.8	33.6	23.8	25	20
15	27.2	22.2	31.8	22.5	32	23.9	25.3	22.8	29.5	23.1	29.2	23.7	23.7	20
16	28	21.4	31.5	23	29.3	22.4	27.1	22.6	29.5	22.8	30.8	22.8	29.8	19.7
17	32.4	22.6	31	22.5	32.4	23.2	30.5	23.6	29.7	23.3	30.6	22.8	29.6	19.6
18	32.8	22.8	31.5	23.5	34.3	22.7	31.4	24.5	30.6	23.8	30	24.5	29.3	19.6
19	31.8	23.1	31.5	22.2	33	20.7	32.3	25	29.2	24.9	29	25.8	20.7	20.7
20	34	23.2	32.5	22.5	34.5	24.7	33.9	25.1	29.2	23.5	29.8	24.4	20.2	20.2
21	34.6	23.8	33	23.5	35.6	22.5	29.2	24.9	29.8	23.8	29.9	24.6	20.7	20.7
22	27.4	23.4	30	23.8	33.3	25	27.6	24.1	29.6	24	26.6	24.6	20.8	20.8
23	27	22.4	30	21.4	35	23.5	27.1	22.5	28	23.2	24.8	23.7	20.3	20.3
24	25	21.6	30.5	21.5	34.5	23.8	30.7	22.9	28	22.5	30.2	21.9	18.7	18.7
25	30.2	20.4	31.5	22	34.9	23.7	31.3	25.5	31.2	21.1	30.5	21.6	17.7	17.7
26	33.5	21.8	31.5	21.7	33.6	22.1	32.5	23.5	32.2	21	32.8	24.6	17.8	17.8
27	35	23.2	33.5	22.5	32.5	23.4	32.9	24.8	32.2	21.2	32.9	24.6	21.1	21.1
28	34	23.2	33.8	22.4	31.7	23	32.3	24.4	32	21.9	32.7	22.4	18.6	18.6
29	32.4	22.4	33.5	22.8	32.4	23	32.3	24.4	31.3	22.2	32.4	23	18.6	18.6
30	30.5	22.4	34	21.4	28.8	22.5	32.9	24	29.9	22	31.7	23.2?	19.8	19.8
31	32	22.2	33.8	22.4	26.7	23.2	31.1	23.7	30.2	21.9	30.7	22.7	19.6	19.6
Mean	31.2	22.6	32.1	22.3	33	23.3	30.7	24	30.3	22.8	31	23.5	19.7	19.7

Day.	Bolinao.		Aringay.		Baguio.		Sablan.		Naguilian, La Union.		Kapangan.		Atok.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	32.5	24	26.2	23.8	23.8	16.7	21.8	33.6	22.9	20.5	16.5	24.8	15.4	15.4
2	32.4	27	24.4	17.7	24.4	17	22.1?	33.5	23	21	16	24.4	15	15
3	32.3	24.7	25.1	24.4	24.4	16.4	22	33.5	23.1	21.5	17.4	22.5	15.2	15.2
4	32	25.2	25.3	22.2	22.2	16.1	20	31.5	24	22.7	17	21.3	15.2	15.2
5	30.6	25.7	25	19.1	19.1	16.2	21	31.6	23.1	22.8	17.1	25.2	15	15
6	30.2	25.4	25.5	18.1	18.1	15	20	25.5	23.3	24	16.5	17.4	10.4?	10.4?
7	26.7	22.4	25	20.7	20.7	14.7	20	27.6	22.1	24.5	16	21.4	14.8	14.8
8	32.1	23	24	22.8	22.8	15.8	20	32.1	23.3	24.8	17	21.7	15.2	15.2
9	32	24.6	24	21.5	21.5	15.5	20.1	32.7	22.2	25	16.5	23.2	10.8?	10.8?
10	33.1	24.2	25.2	22.8	22.8	15.3	20	32.8	22.5	24.5	17	22.2	14.8	14.8
11	31.5	24	24.2	22.1	22.1	15.8	19	32.6	23.7	23.8	17.2	21.2	15.4	15.4
12	28	24	22.1	18.1	18.1	14.5	19.1	27.7	23.8	24	16.5	18.3	15.2	15.2
13	28.1	23.8	23	19.3	19.3	14.6	19.1	28.7	23	24.5	17.6	18.5	14.2	14.2
14	31.2	24.5	24	18.6	18.6	15.8	17.1	30.5	24.5	24.9	18	18.4	15	15
15	24.8	23.3	23.5	18.6	18.6	15.1	19	26	23.3	25.1	18.5	19.5	14.9	14.9
16	30	22.7	22	18.6	18.6	15.5	20	31.5	23	25	18	20.4	14.5	14.5
17	30	23.5	23.1	18.2	18.2	15.6	19	29.1	23.7	24.5	18.5	18.2	15.4	15.4
18	31.2	24.6	23.5	17.9	17.9	14.5	20	31.5	24	24	18.6	18.6	15.9	15.9
19	30.1	25.6	24.2	17.8	17.8	15	20	27.9	25	24.5	18	18.1	15.3	15.3
20	30.2	25.3	23	17.6	17.6	15.6	20	28.5	24.3	23.5	18.3	18.4	15	15
21	29.8	24.8	23.1	18.3	18.3	16.2	20	28.6	24.2	21.3	18.9	18.1	16	16
22	29.5	25.8	24.2	18	18	16.5	19	25.9	24.3	20.3	19	18.3	15.3	15.3
23	24.7	22.9	23.1	18.1	18.1	15	19	25.9	23.8	20	18.3	19.4	14.9	14.9
24	30.4	22.8	22.5	14.8	14.8	14.8	19.1	30.8	22.2	23	17.3	21.8	14.8	14.8
25	28.5	23.5	22	19.4	19.4	14.8	17.1	30.1	21.9	21.3	17	20.2	15.5	15.5
26	31	22.9	22	22.6	22.6	15.1	17	31.7	22	24.3	16.7	22.9	14.3	14.3
27	31.2	23.9	22.5	22.9	22.9	14.8	18	31.6	23.6	24	16.5	22.7	15	15
28	31.1	24.1	22	22.5	22.5	15.4	17	32	22.1	24	17.8	21.1	15.2	15.2
29	30.7	24.2	23	22.6	22.6	15.3	17.1	32.1	22.7	23.4	17.7	19.6	14.2	14.2
30	32.2	24	22.5	21.6	21.6	15.6	17.1	31	23.1	23.4	18	23.6	15.1	15.1
31	31.3	23.8	23.8	22.8	22.8	16	22	32	22.8	24	18	25.5	10.5?	10.5?
Mean	30.3	24.2	23.7	20.6	15.5	19.3	30.3	23.2	23.4	17.5	20.9	14.6	14.6	14.6

Maximum and minimum temperatures at the stations of the Weather Bureau, August, 1921—Continued

Day.	San Fernando, La Union.		Echague.		Balaoan.		Tagudin.		Candon.		Vigan.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	34.5	24.2	35.4	22.3	32.8	23.6	33.5	23.2	32.5	24	33.6	23.9
2	34.7	24.4	35.4	23	33.5	23.5	33.3	24.1	33.4	24	32.9	24.2
3	34.3	24.3	36.5	24.8	32.6	23.5	33.8	24.1	33.4	24	33.1	24.9
4	32.3	24.4	34.9	23.8	32.7	25.2	32.5	24.4	31.4	24.3	33.4	24.5
5	32.6	24.3	30	24.3	32.5	23.8	31.8	24.4	30.5	24.3	30.8	25
6	27.3	24	32.2	23.1	32.1	23.7	26.3	22.6	26.5	23.4	28.9	22.1
7	27.8	22.7	30.7	22.7	32.1	22.8	29.3	23	28.4	23.3	27.7	24
8	32.3	23.8	35.9	22.4	32.7	23.5	32	24.1	31.5	23.2	32.1	23.5
9	32.7	23.6	34.1	24.4	32.9	22.7	32.2	23.1	31.2	24	32	23.1
10	32.8	22.8	34.8	22.7	32.5	22	32	22.6	30.8	22.4	31.6	24
11	32.5	24.2	34.7	23.3	32.7	23.7	32.1	24.1	30.8	24.2	31	23.6
12	28	24	31.1	23.6	30.6	23.6	28.6	23.6	28.4	25	27.4	23.8
13	30.4	23.1	35.2	22.9	28.8	22.4	29.8	22.9	27.8	23	29	23.4
14	31	24.2	35.7	23.5	31	24.7	31.6	24.1	29.8	24	29.4	23.7
15	25.8	23.5	34.1	23.8	30.7	23.3	28.4	22.6	29.8	23.2	26.9	23.2
16	31.6	23.7	34.4	23.7	30.6	24.2	31	23.9	37.7	23.3	29.4	23.6
17	28.6	23.7	34.2	23.6	32.3	23.5	28.8	23.3	28.5	23.2	27.6	23.9
18	32	24.3	36.6	23.5	30.3	24.6	31	24.8	29.6	24	27.4	23.2
19	29.5	25	35.6	23.2	31.1	25.3	27.3	25.1	26.5	23.4	27.3	23.3
20	29.8	25	32	23.8	28.3	24.9	28.8	24.5	27.4	23.4	26.4	22.8
21	28.5	24.7	35.2	24.2	29.4	24.7	28.3	24.8	27.4	23.1	26.6	22.2
22	28	24.8	35.4	23.8	28.2	24.6	27.2	24.1	27.6	24	28.1	22.9
23	25.8	23.5	32.6	22.8	27.1	23.2	26.6	23.1	27.7	23	27.2	22.3
24	31.1	22.8	35.6	22.9	29.5	22.4	31.6	23.4	30.4	22.4	30.1	23
25	31.8	22.5	34	22.8	31.5	22.9	29.1	23.5	28.5	23.1	27.4	23.2
26	32.5	23	34.7	22.5	30.6	21.7	31.3	22.6	30.6	22	31	22.3
27	32.6	23.8	33.5	24	32.1	23.4	32.1	23.8	30.77	23.1	32	23.4
28	31.5	23.3	30.6	22.7	31.2	22.9	31.6	22.4	31.4	23.2	31.6	23.6
29	32.5	22.7	33.8	23	31.5	23.2	31.9	22.5	30.7	23.4	31.2	23.5
30	31.1	23.7	28.1	23.2	31.5	23.2	30.5	23.6	31.5	23.4	31	23.5
31	32	22.4	29.9	23	32	23.2	31	23.1	31.4	23.2	31.4	22.8
Mean	30.9	23.8	33.4	23.3	31.1	23.5	30.5	23.6	29.9	23.5	29.9	23.4

Day.	Bangued.		Tuguegarao.		Sinait.		Batac.		Solsona.		Laoag.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	35.7		38	24.6	33	24.3	32.9	23.5	34.5	23.7	33.9	23.1
2	35.8		38	24.9	32.8	25.5	33.4	24.9	34	22.4	33.5	25.2
3	35.2		37.4	24.8	32.5	25.4	32.9	24	34.1	23.1	33.6	24
4	33.5		35.4	25.3	32.2	24.3	32.9	23.9	34	23.3	33.2	24.1
5	35.9		33	23.2	32.5	24.5	32.9	24.6	30.4	24.4	31.7	24.7
6	27.8		30.6	23	32	22.5	30.5	22.9	31.4	23.2	28.2	22.6
7	28.4		31.1	23.7	29.2	23.7	28.3	22.8	30.8	22.3	29.7	23
8	34.2		35.2	23.7	32.9	22.6	31.2	22.6	33.4	22.1	32.8	22.6
9	33.2		36	23.2	32.5	24.1	34.4	23.8	33.2	22.9	32.4	23.6
10	32.8		37.8	24.5	32.8	23.4	31.9	23.6	32.5	23.5	32.1	23.9
11	32		36	23.8	32.7	23.6	31.5	23.9	32.2	23.5	31.7	24.4
12	29.37		34	23.3	30.8	23.8	31.2	23.6	31.8	22.9	30.7	24.1
13	31.2		34.7	23.8	30.9	23.2	33	22.6	32.2	22.5	31.2	23
14	28.1		35	23.4	30.5	23.5	31.5	23.9	30.5	24.1	30.5	24.1
15	27.6		35	23.8	30.8	23.4	30.6	23.4	31	23.9	29.1	23.6
16	30.7		33.2	24.2	31.1	24.6	29.4	23.5	30.5	23.5	29.2	22.9
17	28.2		34.2	24.2	31.6	24.9	30.5	23.4	29.5	23.4	29.7	23.1
18	28.9		35.2	24.8	30.5	23.1	30.1	23.5	33.2	23.5	27.7	23.2
19	26.4		31.2	23.7	30.2	24.2	27.9	23.6	29.1	23.3	28.5	22.9
20	25.9		27.4	23.4	28.2	23	29.8	22.8	26.4	22.8	26.3	22.9
21	26.6		28.6	23.4	26.9	23	26.9	22.6	26.9	22.9	26.8	22.7
22	24.8		28.7	23.4	26.9	23.1	28.7	23.9	27.4	23.5	27.9	23.2
23	28.8		32.4	23.1	29.3	23.4	28.7	23.9	30.4	23.2	29.2	23
24	31.8		35.8	23.4	29.1	23.2	28.9	22.9	32.1	23.3	32	23.1
25	29.7		33.8	23.6	31	23.3	31.9	23.9	30.1	23.1	29.4	23.2
26	32.9		34.6	24.2	32.2	22.1	31.9	22.2	31.9	21.5	31.9	22.5
27	33.9		35	23.7	30.2	23.2	31.3	23.4	32.3	22.7	32.2	23.6
28	33.2		33	24.1	31.3	23.2	31.7	23.5	31.6	22.5	31.6	23.5
29	33.2		33.6	23.5	30.5	23.6	31.9	23.5	31.4	23.5	31.7	23.6
30	32.4		30.6	23.7	32.2	24.5	30.5	23.8	31.3	23.9	31.2	24.1
31	35.3		30.6	23.5	30.6	24.3	31.2	22.4	34.5	22.5	34.7	22.9
Mean	31.1		33.7	23.8	31	23.7	31	23.4	31.4	23.1	30.8	23.4

Maximum and minimum temperatures at the stations of the Weather Bureau, August, 1921—Continued

Day.	Pasuquin.		Aparri.		Cape Bojeador.		Basco.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	35.2	23.6?	33.4	24.9	32.5	25.3	31.2	27.4
2	34.3	25.6	33.2	25.8	33.2?	25.8	31.2	27.1
3	34.5	24	32.1	25.2	32.5	25.2	31.8	27
4	34.5	23.4	32.5	25	32.2	25.7	31.4	27
5	33	25.2	31.1	23.4	30.8	24.9	31.3	25.6
6	33.3	24.1	27.3	22.6	28	21.4	27.6	25
7	30.6	23.4	31.8	23.4	29.1	24.2	29.4	24.2
8	33.3	23	31.1	24.1	32.7	25	29.1	27.2
9	33.3	23.6	31.6	24	32.4	24.7	29.2	26.4
10	34.2	24.3	31.6	24	31.4	24.3	31.2	25
11	31.6	24.5	33	24	29.8	23.3	30.8	24.5
12	31.3	24.4	34	23.5	29.4	23.8	29.8	27
13	32	23.2	35.6	24.3	30.1	23.9	30.3	27.5
14	30.7	24.6	33.6	24.1	29.2	23.6	30.5	27.7
15	30	23.7	34.7	24.4	28.4	22.7	29.8	25.5
16	29.3	23.5	32.9	24.7	26.2	22.5	27.7	24
17	29.5	23.6	34	24.6	28.9	22.6	29.1	25.4
18	29	23.7	33.7	24.8	27.9	23.6	29.8	24.5
19	28.5	23.8	28.4	23.9	26.9	23.5	30	25.6
20	26.5	23.5	27.8	23.2	26.1	23.2	28.6	25
21	27	23.1	28.5	23.3	25.8	22.5	27.9	23.9
22	28	23.7	27.2	23.5	27.5	22.4	30.5	23.9
23	29.3	23.4	32.8	23.2	28.2	22.7	29.3	26
24	30.3	23.7	33	23.4	29.5	22.6	30.3	26.3
25	29.5	23.5	32.8	23.3	27.8	22.5	29.4	25
26	31.2	22.5	31.6	22.8	30.1	23.5	30.5	25.6
27	32	23.4	32	23.8	31.8	24.6	31.2	24.5
28	31.6	23.7	31.3	23.8	31.9	23.9	29.9	23.6
29	31	23.4	29.5	23	30.3	23.3	30.6	23.8
30	31.5	24.6	32	23.3	31	23.2	30.8	24.9
31	35.8	22.5	30.7	23.6	30.7	24.4	30.3	24.4
Mean	31.4	23.7	31.8	23.9	29.8	23.7	30	25.5



## SEISMOLOGICAL BULLETIN FOR AUGUST, 1921

By REV. MIGUEL SADERRA MASÓ, S. J.

*Chief, Seismic and Magnetic Divisions, Weather Bureau*

### EARTHQUAKES FELT IN THE PHILIPPINES<sup>1</sup>

- 4, 20<sup>h</sup> 56<sup>m</sup> [5, 4<sup>h</sup> 56<sup>m</sup>]. Lais (SE Mindanao). Earthquake shock of intensity III.
- 5, 23<sup>h</sup> 30<sup>m</sup> [6, 7<sup>h</sup> 30<sup>m</sup>]. Calagitan (SW Panay). Local earthquake shock of intensity III-IV.
- 9, 3<sup>h</sup> 05<sup>m</sup> [9, 11<sup>h</sup> 05<sup>m</sup>]. Janiuay (SE Panay). Earthquake of intensity III. Local character as most of the shocks felt in this region.
- 12, 5<sup>h</sup> 35<sup>m</sup> [12, 13<sup>h</sup> 35<sup>m</sup>]. Fort Pikit (Central Mindanao). Earthquake shock of intensity III.
- 13, 7<sup>h</sup> 00<sup>m</sup> [13, 15<sup>h</sup> 00<sup>m</sup>]. Romblon Island. Earthquake of intensity III-IV. Probably the origin lay to the SW of Tablas Island.
- 14, 11<sup>h</sup> 37<sup>m</sup> [14, 19<sup>h</sup> 37<sup>m</sup>]. Surigao (NE Mindanao). Earthquake of intensity III, duration 3 seconds. Recorded at Butuan as of near origin, towards the Surigao Strait.
- 15, 11<sup>h</sup> 11<sup>m</sup> 22<sup>s\*</sup> [15, 19<sup>h</sup> 11<sup>m</sup> 22<sup>s</sup>]. NW Luzon. Earthquake of intensity IV, felt in Ilocos Norte and in the most occidental portion of Pangasinan. Seemingly its origin lay in the China Sea, some distance W of the north end of Luzon.
- 21, 18<sup>h</sup> 32<sup>m</sup> [22, 2<sup>h</sup> 32<sup>m</sup>]. Butuan (N Mindanao). Earthquake shock of intensity III-IV. Near origin, likely to the north in the Butuan Bay.
- 22, 1<sup>h</sup> 10<sup>m</sup> [22, 9<sup>h</sup> 10<sup>m</sup>]. Basco (Batan Island). Earthquake of intensity III-IV, duration 4 seconds.
- 22, 13<sup>h</sup> 34<sup>m</sup> 18<sup>s\*</sup> [22, 21<sup>h</sup> 34<sup>m</sup> 18<sup>s</sup>]. SW Mindanao. Earthquake of intensity IV, felt in the Provinces of Zamboanga, Lanao, and Cotabato. Somewhat distant origin in the Celebes Sea, SSW of Illana Bay. Recorded at Batavia. At 17<sup>h</sup> 25<sup>m</sup> [23, 1<sup>h</sup> 25<sup>m</sup>] a second shock, intensity II-III was noticed at Zamboanga, probably an aftershock. The seismograph of Butuan recorded during the 23rd three more disturbances of distant origin, which perhaps may also be counted as aftershocks.
- 25, 3<sup>h</sup> 48<sup>m</sup> 48<sup>s\*</sup> [25, 11<sup>h</sup> 48<sup>m</sup> 48<sup>s</sup>]. SE Luzon. Earthquake of intensity III-IV, through Sorsogon and southern part of Albay provinces. Local origin.
- 26, 13<sup>h</sup> 15<sup>m</sup> [26, 21<sup>h</sup> 15<sup>m</sup>]. Basco (Batan Island). Earthquake shock of intensity III.
- 29, 16<sup>h</sup> 30<sup>m</sup> [30, 0<sup>h</sup> 30<sup>m</sup>]. W Luzon. Earthquake of intensity II-III, felt in the southern portion of La Union Province, chiefly by the western towns located close to the foot of the Benguet mountain range. One hour later a second lighter shock was noticed.

<sup>1</sup> The intensity of earthquakes is given in the notation known as the Rossi-Forel scale. The time is that indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (\*). Otherwise the time is that noted by the observer who sent the report. All time indications are in Greenwich mean time (midnight=0<sup>h</sup>), insular time being added in brackets for the convenience of Philippine readers.

## RECORDS OF THE MICROSEISMOGRAPH

[Time: Greenwich mean. Midnight=0h. Instrument: Wiechert seismograph; 1,000 kilograms.  $A_N$ :  $T_0=6.25$ ,  $\epsilon=2.906$ ,  $\frac{r}{T_0^2}=0.053$ ;

$A_E$ :  $T_0=6.18$ ,  $\epsilon=2.393$ ,  $\frac{r}{T_0^2}=0.042$ . Alluvium. 2.40 meters above sea level.]

No.	Date.	Character.	Phase.	Hour.			Period.	Amplitude.		Remarks.
								$A_N$ $\mu$	$A_E$ $\mu$	
257	3	Iv	eP F	h. m. s. 22 33 34 36	s.					
258	5	Iv	eP F	12 26 37 28						
259	7	Iv	eP F	15 14 00 16						
260	9	I	e F	10 45 32 11 08						
261	10	Iv	eP F	5 23 56 27						
262	13	Ir	eP S L MN ME F	12 59 40 13 04 26 07 27 07 40 08 22 36		7 9	57 37		Savoe Sea, between Flores and Timor Islands.	
263	14	I	e F	13 38 20 57						
264	15	Iv	eP L MN ME F	11 11 22 12 16 12 25 12 25 22		3 3	169 98		Felt in Ilocos Norte.	
265	17	Iv	eP F	6 16 44 27						
266	20	Iv	eP F	13 27 00 29						
267	21	Iv	eP F	12 16 02 23						
268	21	Iv	eP F	21 33 19 35						
269	22	I	e F	4 12 5 03						
270	22	Iv	eP L F	13 34 18 35 55 57					Felt in southwestern part of Mindanao.	
271	23	Ir	e L ME MN F	10 01 34 07 44 07 53 07 55 48		7 8	54 50		SE Celebes.	
272	23	I	e F	11 24 12 26						
273	23	Iu	e? MN F?	20 41 21 17 00 52	18		5		Distance 10,800 Kms.? SW of Iceland.	
274	24	Iv	eP L ME MN F	3 34 14 35 00 35 12 35 13 48		4 4	49 40			
275	24	I	eP F	20 41 50 21 06						
276	25	Iv	eP F	3 48 48 4 08					SE Luzon.	
277	25	Iv	eP F	13 01 29 32						
278	26	Iv	eP F	11 02 44 04						
279	29	I	e F	15 11 32						
280	30	I	e F	16 16 52						
281	31	Iv	eP F	8 30 08 33						



TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS<sup>1</sup>

4, 20<sup>h</sup> 56<sup>m</sup> [5, 4<sup>h</sup> 56<sup>m</sup>]. Lais (SE de Mindanao). Temblor de tierra de intensidad III.  
 5, 23<sup>h</sup> 30<sup>m</sup> [6, 7<sup>h</sup> 30<sup>m</sup>]. Calagitan (SW de Panay). Temblor de tierra local de intensidad III-IV.

9, 3<sup>h</sup> 05<sup>m</sup> [9, 11<sup>h</sup> 05<sup>m</sup>]. Janiuay (SE de Panay). Temblor de tierra de intensidad III. De carácter muy local como todos los que suelen ocurrir en esta región.

12, 5<sup>h</sup> 35<sup>m</sup> [12, 13<sup>h</sup> 35<sup>m</sup>]. Fort Pikit (Centro de Mindanao). Temblor de tierra de intensidad III.

13, 7<sup>h</sup> 00<sup>m</sup> [13, 15<sup>h</sup> 00<sup>m</sup>]. Isla de Romblón. Temblor de tierra de intensidad III-IV. Seguramente el origen se hallaba al SW de la Isla de Tablas.

14, 11<sup>h</sup> 37<sup>m</sup> [14, 19<sup>h</sup> 37<sup>m</sup>]. Surigao (NE de Mindanao). Temblor de tierra de intensidad III, duración 3 segundos. Registrado en Butúan como temblor de origen cercano, hacia el Estrecho de Surigao.

15, 11<sup>h</sup> 11<sup>m</sup> 22<sup>s\*</sup> [15, 19<sup>h</sup> 11<sup>m</sup> 22<sup>s</sup>]. NW de Luzón. Temblor de tierra de intensidad IV, sentido en Ilocos Norte y en la parte más occidental de la provincia de Pangasinán. Su origen se hallaba al parecer en el Mar de la China, algo lejos al W del extremo norte de Luzón.

21, 18<sup>h</sup> 32<sup>m</sup> [22, 2<sup>h</sup> 32<sup>m</sup>]. Butúan (N de Mindanao). Temblor de tierra de intensidad III-IV. Origen cercano en la Bahía de Butúan.

22, 1<sup>h</sup> 10<sup>m</sup> [22, 9<sup>h</sup> 10<sup>m</sup>]. Basco (Islas Batanes). Temblor de tierra de intensidad III-IV, duración 4 segundos.

22, 13<sup>h</sup> 34<sup>m</sup> 18<sup>s\*</sup> [22, 21<sup>h</sup> 34<sup>m</sup> 18<sup>s</sup>]. SW de Mindanao. Temblor de tierra de intensidad IV, sentido en las provincias de Zamboanga, Lanao y Cotabato. Su origen estaba en el Mar de Célebes, algo lejos al SSW de la Bahía Illana. Registrado en Batavia. A 17<sup>h</sup> 25<sup>m</sup> [23, 1<sup>h</sup> 25<sup>m</sup>] ocurrió en Zamboanga otro temblor de intensidad II-III, el cual probablemente era una réplica. En Butúan se registraron además el día 23 otros tres choques, que tal vez representaban repeticiones.

25, 3<sup>h</sup> 48<sup>m</sup> 48<sup>s\*</sup> [25, 11<sup>h</sup> 48<sup>m</sup> 48<sup>s</sup>]. SE de Luzón. Temblor de tierra de intensidad III-IV, sentido en la parte sur de la provincia de Albay y en la de Sorsogón. De origen al parecer regional.

26, 13<sup>h</sup> 15<sup>m</sup> [26, 21<sup>h</sup> 15<sup>m</sup>]. Basco (Islas Batanes). Temblor de tierra de intensidad III.

29, 16<sup>h</sup> 30<sup>m</sup> [30, 0<sup>h</sup> 30<sup>m</sup>]. W de Luzón. Temblor de tierra de intensidad II-III, sentido en la parte sur de la provincia de La Unión, principalmente por los pueblos situados al pié de las montañas de Benguet. Una hora después se notó una repetición.

<sup>1</sup> La intensidad de los terremotos se indica conforme a la conocida escala de Rossi-Forel. Cuanto a la hora de su ocurrencia, adoptamos la indicada por los sismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (\*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al medio de Greenwich (medianoche=0<sup>h</sup>). Para conveniencia de los lectores de Filipinas se añade también la hora insular.



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THE GOVERNMENT OF THE PHILIPPINE ISLANDS

# WEATHER BUREAU

MANILA CENTRAL OBSERVATORY

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BULLETIN FOR SEPTEMBER, 1921

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PREPARED UNDER THE DIRECTION OF  
REV. JOSÉ ALGUE, S. J.  
DIRECTOR OF THE WEATHER BUREAU

MANILA  
BUREAU OF PRINTING  
1921



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**BULLETIN FOR SEPTEMBER, 1921**



# METEOROLOGICAL BULLETIN FOR SEPTEMBER, 1921

By Rev. JOSÉ CORONAS, S. J.,

Chief, Meteorological Division of the Weather Bureau

## GENERAL WEATHER NOTES

Pressure and temperature.—The mean atmospheric pressure of this month in the Philippines is slightly above that of the preceding year and the normal of September. The highest pressures of the month were observed on the 3rd, 16th and 17th, while the lowest took place on the 12th and 13th when a typhoon was passing to the NE and N of Luzon.

The mean monthly temperature does hardly differ from that of September, 1920, and from the normal of this month. The highest and lowest monthly temperatures for Manila were 33.8° C. and 22.7° C. They were registered on the 16th and 27th, respectively. The extreme temperatures for Baguio were 25.1° C., 14.6° C. on the top of Mirador, and 26.4° C., 14.0° C. on the plateau near the City Hall.

### PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS OF THE WEATHER BUREAU FOR SEPTEMBER, 1921

Station.	Pressure.							Temperature.						
	Mean.	Departure from Sept., 1920.	Departure from normal.	Highest mean.	Day.	Lowest mean.	Day.	Mean.	Departure from Sept., 1920.	Departure from normal.	Highest.	Day.	Lowest.	Day.
	mm.	mm.	mm.	mm.		mm.		°C.	°C.	°C.	°C.		°C.	
Zamboanga.....	758.73	+0.73	-----	759.62	16	757.26	1	26	-0.2	-----	31.6	13	21.4	11
Kolonie, Yap.														
Western Carolines	58.22	+ .41	-----	59.95	22	56.52	29	26.7	- .1	-----	33.2	16	22.4	17
Tagbilaran	58.11	+ .69	+0.23	59.30	16	57.13	29	27	+ .2	-0.2	33.8	24	22.2	1, 5
Surigao.....	57.96	+ .75	+ .14	59.09	16	56.67	12	27	- .3	- .3	33.3	15	22.3	9
Cebu.....	58.18	+ .74	+ .32	59.31	16	56.83	12	27.7	+ .1	+ .4	32.2	1, 7	23.3	5
Iloilo.....	58.16	+ .88	+ .39	59.16	16	56.87	13	27	+ .1	+ .4	32.2	2, 4	22.5	1
Tacloban.....	58.07	+ .96	+ .39	59.46	16	56.13	12	26.5	- .7	- .8	34.1	13	22.5	12, 19
Capiz.....	57.99	+ .85	+ .26	59.18	16	55.86	12	26.5	- .3	- .2	33.5	20, 24	22.5	1
Calbayog.....	58.17	+ .85	+ .53	59.57	16	55.75	12	26.6	- .2	- .3	33.3	16	22.5	2, 16
Legaspi, Albay.....	57.84	+ .85	+ .52	59.47	16	54.45	12	26.8	- .5	- .2	33.4	15	22.6	29
Atimonan.....	57.94	+1.01	+ .76	59.60	3	54.05	12	26.6	- .4	- .4	32.9	15, 17, 19	22.5	Various
Ambulong, Tanauan, Batangas.....	57.50	+1.03	-----	58.86	3	54.10	12	26.4	0	-----	32.8	29	21.8	27
Daet.....	57.93	+ .95	-----	59.68	3	53.64	12	26	- .5	-----	33.8	19	21	28
Manila.....	58.07	+1.09	+ .60	59.41	3	54.71	12	26.5	- .3	- .3	33.8	16	22.7	27
San Isidro, Nueva Ecija.....	57.98	+ .98	+ .62	59.26	17	54.44	12	26.6	- .1	+ .1	32.6	9, 10	22.5	16
Dagupan.....	57.63	+1.23	+ .67	59.07	17	54.12	12	27.3	- .1	+ .3	34.6	8	22.6	2
Baguio <sup>a</sup> .....	635.90	+ .89	+ .71	637.33	17	632.80	13	17.9	- .4	+ .1	25.1	9	14.6	2
Vigan.....	757.23	+1.27	+ .45	758.92	17	753.43	13	27.4	- .2	+ .4	32.9	30	22.5	28, 29
Tuguegarao.....	57.74	+1.37	+1.10	59.70	27	52.20	13	26.8	+ .2	- .3	36.2	10	21.4	28
Laoag.....	57.35	+1.58	-----	59.02	17	52.58	13	26.9	- .3	-----	33.9	10	20.5	28
Aparri.....	57.78	+1.42	+ .93	60.25	27	51.25	13	26.5	- .5	- .5	33.3	5	21.8	17, 28

<sup>a</sup> The barometric readings of this station are not reduced to sea level.

Rainfall.—A great majority of our stations in Luzon reported a monthly amount of rainfall below the normal of September, while in the Visayas and Mindanao the number of stations reporting a monthly rainfall greater than the normal is about the same as the number of those reporting a smaller amount. The monthly rainfall for Manila and for Baguio differ from the respective normals by -27.8 mm. and -250.6 mm.



RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF SEPTEMBER, 1921

Station.	Total.	Departure from September, 1920.	Departure from normal.	Days of rain.	Departure from September, 1920.	Departure from normal.	Greatest rainfall in a single day.	Day.	Station.	Total.	Departure from September, 1920.	Departure from normal.	Days of rain.	Departure from September, 1920.	Departure from normal.	Greatest rainfall in a single day.	Day.
	mm.	mm.	mm.				mm.			mm.	mm.	mm.				mm.	
Jolo	212.7	+ 76.2	+ 44.9	16	- 5	+ 2	59.7	30	Sumay (Guam),								
Malamaui, Isabela, Zamboanga	212.3	- 74	-----	12	- 3	-----	113.5	9	Agaña	426.8	+143.1	+ 41.7	23	+ 3	+ 1	98.6	17
Zamboanga	189.3	+ 71.9	+ 78.1	11	- 4	0	116.8	9	Calapan	91	-246	-140.8	23	+ 5	+ 5	19	27
Davao	106.8	- 90.3	- 77.9	10	- 2	0	21.8	26	Virac	457.8	+297.4	+258	16	+ 1	0	154	11
Cotabato	304.7	+ 91.7	+ 62.1	19	- 1	+ 2	53.3	26	Naga, Camarines Sur	359.2	+ 41.4	+ 94.6	26	+ 8	+ 8	137.4	10
Cagayan	227.1	-113.7	+ 22.9	17	+ 3	+ 2	73.9	26	Tigaon	417.4	+194.2	-----	25	+ 3	-----	66.3	26
Butuan	124.5	-244.2	- 31	16	- 6	+ 1	31.7	2	Batangas	252.6	- 50.7	- 44.7	24	+ 8	+ 5	45	7
Mambajao	361.8	+ 20.5	-----	19	+ 7	-----	125.4	26	Lucena	227.1	- 63.9	-----	19	+ 2	-----	71.6	7
Dumaguete	169.7	+ 29.2	+ 26.1	16	- 3	+ 2	33.8	9	Atimonan	441.6	+ 22.6	+157.5	27	+ 8	+ 9	74.1	10
Kolonie, Yap, Western Caroline									Ambulong, Tanauan, Batangas	183.3	-197.8	-----	15	- 4	-----	39.1	30
Tagbilaran	271.8	+ 65.7	- 36.1	23	+ 3	0	60	8	Daet	514.7	+219	-----	24	+ 9	-----	102.1	10
Iwahig Penal Colony, Puerto Princesa	145.9	- 25.7	- 30.5	12	- 3	0	55.9	4	Canluban, Calamba	253.2	-137	-----	21	+ 2	-----	41.9	21
Surigao	333.9	+ 45.2	-----	22	+ 3	-----	72.4	1	Paracale	193.3	- 14.4	- 64.9	13	- 7	- 4	84.6	30
Maasin, Leyte	201.2	- 65.5	+ 34.5	16	+ 3	+ 3	49.1	10	Santa Cruz, Laguna	345.2	+ 50	+ 47	24	+ 8	+ 2	62.8	26
Cebu	327.5	+ 17.8	+ 48.1	19	- 4	- 3	100.8	10	Manila	337.3	+ 9	- 27.8	24	+ 7	+ 3	69	10
Iloilo	259.7	+ 7.9	+ 75.8	15	- 4	- 1	73.9	27	Antipolo	335.8	+ 39.8	-152.4	25	+ 3	+ 1	43	4
San Jose de Buenavista	310	- 23.3	- 3.3	19	+ 1	0	67.8	4	San Isidro, Nueva Ecija	266.2	+ 58.7	- 41.6	22	+ 4	+ 1	54.7	11
Cuyo	305.8	-282.1	-189.6	21	+ 5	0	55.9	9	Iba	291.9	+ 85.2	-402.3	19	- 2	- 3	49.3	13
Ormoc	376.1	- 29.6	+ 11.5	26	+ 4	+ 4	66	10	Tarlac	128.3	-109.1	-190.3	12	- 3	- 7	26.4	24
Guiuan	244.4	- 37.6	- 28.9	21	+ 3	+ 3	114.8	10	Baier	357.4	+ 93.9	+ 51.9	13	0	- 3	115.3	8
Tacloban	152.5	- 94.5	- 53.2	14	- 1	0	41.4	4	Dagupan	199.1	- 11	-225.9	20	- 3	0	37.9	20
Capiz	211.3	+ 38.4	+ 57.1	20	+ 5	+ 4	33.2	10	Bolinao	169.3	-----	-351	15	-----	- 5	52.1	16
Borongan	198.1	-204.8	- 87.7	20	- 1	+ 2	57	4	Baguio	531.1	- 53.6	-250.6	28	+ 7	+ 3	55.9	12
Catbalogan	191	+ 35.4	+ 7.2	16	+ 3	0	35.5	10	San Fernando, La Union	193.7	- 61.7	-224.8	-----	-----	-----	62.7	10
Calbayog	290.5	- 52.2	-----	17	0	-----	89.9	11	Echague	208.6	-----	+ 7.7	19	-----	+ 1	48	21
Masbate	196.8	+ 28.6	- 66.2	20	+ 7	+ 1	68.9	10	Candon	173	-103.5	-249.4	13	- 3	- 4	50.8	18
Romblon	192.9	-132.1	+ 4.3	15	- 3	- 1	82.8	10	Vigan	146.2	-178.7	-335.9	12	- 1	- 6	53.9	12
Batag Light-house, Laoang	262.9	-231.9	+ 27.5	20	+ 3	+ 3	67.9	10	Tuguegarao	214.2	+ 27.5	- 35.8	15	+ 1	+ 3	54.6	4
Sorsogon	421.7	- 6.9	-----	18	+ 8	-----	106.4	10	Laoag	222.5	+ 38.7	-371.7	14	- 2	- 4	70.1	13
Legaspi	370.8	+ 67.2	+ 33.1	19	0	0	114.3	11	Aparri	352.6	- 5.3	+ 75.1	22	+ 5	+ 7	68.1	12
	284.3						72.6	11	Cape Bojeador	114.7	- 71.1	-----	15	- 1	-----	38.6	13
									Basco	209.8	- 80.6	-109.6	20	- 5	0	82.5	13

DEPRESSIONS AND TYPHOONS

Three typhoons and four depressions or typhoons were observed in the Far East during this month of September. Their tracks are published in Plate V.

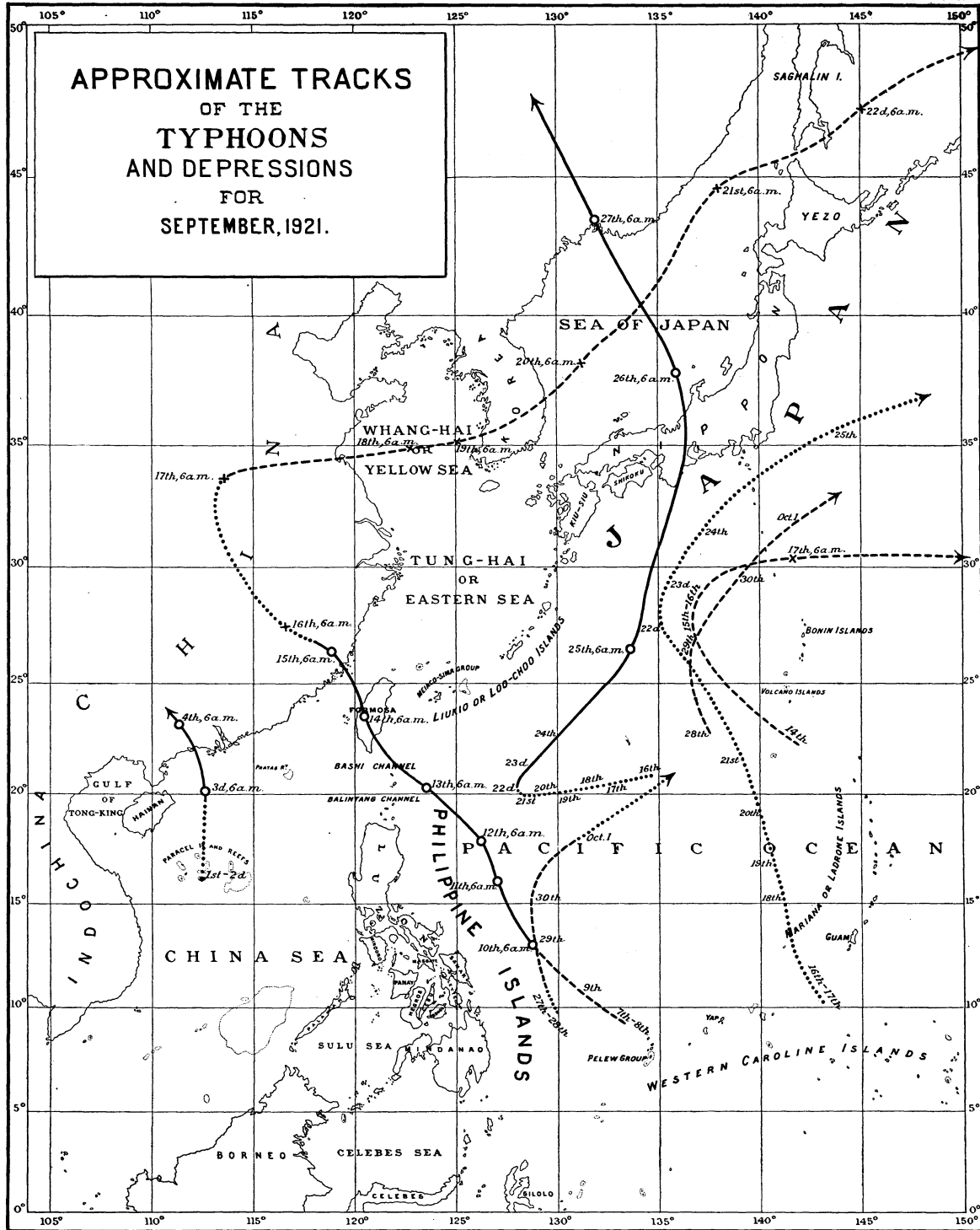
China Sea typhoon, September 1 to 4.—This typhoon was formed on the 1st of September in the neighbourhood of the Paracels in about 113° longitude E and 16° latitude N. It moved practically N first, and then to NNW, entering China about 150 miles west of Hongkong in the evening of the 3rd. The British steamer "Loongsang" experienced a gale from the southeast quadrant on her way from Hongkong to Manila on September 3.

Formosa typhoon, September 14.—This typhoon was noticed on our weather maps as forming on the 7th to 8th about 300 miles west of Yap near 133° longitude E and 9° latitude N. It moved first NW for two days, then to NNW for other two days and finally NW again on the 12th and 13th. In the afternoon of the 13th the center passed near to the N of Basco (Batanes Islands), the barometer having fallen to 742.66 mm. at 3 p. m. although no damage was done, at least to Basco. The typhoon traversed the southern and western part of Formosa and the northern part of Formosa Channel moving NNW. It entered China near Foochow during the night of the 14th to 15th. Once in China it partially filled up and recurved north and east over 300 miles to the W and WNW of Shanghai. The barometric minimum recorded in Formosa was that of Taito, 741.0 mm. (739.6 mm., gravity correction applied), at 12 midnight of the 13th.

Japan typhoon, September 25.—This typhoon seems to have formed on the 16th over the Pacific about half way between the Ladrone and the Loochoo Islands. It moved W or W by S and very slowly until the 22nd when it began to recurve very slowly north-



Plate V



eastward. The approximate position of the center at the time of recurving on the 22nd was  $128^{\circ}$  longitude E and  $20^{\circ}$  latitude N. The typhoon moved NE on the 24th, and NNE on the 25th, at the same time increasing extraordinarily its rate of progress. The center crossed Japan during the night of the 25th moving northward. Once in the Sea of Japan, it recurved northwest toward Manchuria. The approximate position of the typhoon center was as follows on the 24th, 25th, and 26th:

September 24, noon  $23^{\circ} 25'$  latitude N,  $130^{\circ} 40'$  longitude E.

September 25, noon  $29^{\circ} 05'$  latitude N,  $134^{\circ} 20'$  longitude E.

September 26, 6 a. m.  $37^{\circ} 45'$  latitude N,  $135^{\circ} 50'$  longitude E.

According to press dispatches published by the Manila papers much damage was done in Japan by the winds, rains and floods during this typhoon.

**Other less important depressions or typhoons.**—Besides the aforesaid typhoons there were in the Pacific four other less important depressions or typhoons, that recurved northeastward: one about 300 miles to the east of Luzon on the 30th, and the other three about 300 miles to the west of the Bonins on the 15th, 22nd, and 29th, respectively.

## NOTAS GENERALES DEL TIEMPO

**Presión y temperatura.**—La presión atmosférica media de este mes en Filipinas es ligeramente mayor que la del año pasado y que la normal de septiembre. Las presiones más altas del mes se observaron los días 3, 16 y 17, al paso que las más bajas tuvieron lugar los días 12 y 13 cuando un tifón pasaba al NE y N de Luzón.

La temperatura media mensual apenas difiere de la de septiembre de 1920 y de la normal de este mes. Las temperaturas máxima y mínima del mes en Manila fueron 33.8° C. y 22.7° C., las cuales se registraron los días 16 y 27, respectivamente. Las temperaturas extremas de Baguio fueron 25.1° C., 14.6° C. en la cumbre del Mirador, y 26.4° C., 14.0° C. en la llanura cerca del *City Hall*.

**Precipitación acuosa.**—Una gran mayoría de nuestras estaciones de Luzón registraron una cantidad de lluvia mensual menor que la normal de septiembre, al paso que en Visayas y Mindanao el número de estaciones que observaron una lluvia mensual mayor que la normal es casi igual al número de aquellas que observaron una cantidad menor. Las lluvias mensuales de Manila y Baguio difieren de sus respectivas normales en -27.8 mm. y -250.6 mm.

## DEPRESIONES Y TIFONES

Tres tifones y cuatro depresiones o tifones se observaron en el Extremo Oriente durante este mes de septiembre. Sus trayectorias pueden verse en la Lámina V.

**El tifón del Mar de China, 1 al 4 de septiembre.**—Este tifón se formó el 1.º de septiembre en las cercanías de Paracels cerca de 113° longitud E y 16° latitud N. Se movió prácticamente al N primero, y luego al NNW, penetrando en China a unas 150 millas al W de Hongkong la noche del día 3. El vapor británico "Loong-Sang" experimentó vientos duros del cuadrante del SE en su viaje de Hongkong a Manila el 3 de septiembre.

**El tifón de Formosa, 14 de septiembre.**—Este tifón se echó de ver en nuestros mapas del tiempo como formándose los días 7 y 8 a unas 300 millas al W de Yap cerca de 133° longitud E y 9° latitud N. Al principio se movió al NW durante dos días, después al NNW por otros dos días, y últimamente otra vez al NW los días 12 y 13. La tarde del 13 el centro pasó cerca por el N de Basco (Islas Batanes), en donde el barómetro bajó a 742.66 mm. a las 3 p. m. aun cuando no causó daño, por lo menos en Basco. El tifón atravesó la parte meridional y occidental de Formosa y la parte septentrional del Canal de Formosa, moviéndose al NNW. Penetró en China cerca de Foochow durante la noche del 14 al 15. Una vez en China se deshizo en parte y recurvó hacia el N y E a más de 300 millas al W y WNW de Shanghai. La mínima barométrica registrada en Formosa fué la de Taito, 741.0 mm. (739.6 mm., si se aplica la corrección por gravedad), a las 12 media noche del día 13.

**El tifón de Japón, 25 de septiembre.**—Este tifón parece haberse formado el día 16 en el Pacífico próximamente a la mitad de camino entre las Islas Ladrões y Loochoos. Se movió al W o W  $\frac{1}{4}$  SW y muy lentamente hasta el día 22 en que empezó a recurvar con mucha lentitud hacia el NE. La posición aproximada del centro al tiempo de la recurva, el día 22, era 128° longitud E y 20° latitud N. El tifón se movió al NE el día 24, y al NNE el 25, aumentando extraordinariamente al mismo tiempo su velocidad de traslación. El centro del temporal atravesó Japón durante la noche del día 25, moviéndose hacia el N. Al llegar al mar de Japón recurvó al NW en dirección a Man-

churia. La posición aproximada del centro del temporal los días 24, 25 y 26 era como sigue:

Septiembre 24, mediodía,  $23^{\circ} 25'$  latitud N,  $130^{\circ} 40'$  longitud E.

Septiembre 25, mediodía,  $29^{\circ} 05'$  latitud N,  $134^{\circ} 20'$  longitud E.

Septiembre 26, 6 a. m.,  $37^{\circ} 45'$  latitud N,  $135^{\circ} 50'$  longitud E.

Según despachos de la prensa publicados en los periódicos de Manila, los vientos, lluvias e inundaciones causaron mucho daño en Japón durante este tifón.

Otras depresiones o tifones de menos importancia.—Además de los tifones mencionados hubo en el Pacífico cuatro depresiones o tifones de menos importancia que recurvaron hacia el NE: el uno a unas 300 millas al E de Luzón el día 30, y los otros tres a unas 300 millas al W de Bonins el 15, 22 y 29, respectivamente.

METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY

[φ=14° 34' 41" N; λ=120° 58' 33" E; borometer above sea, 14.2 meters; gravity correction not applied, -1.72 mm.]

Day.	Pressure (mean). mm.	Air temperature. <sup>b</sup>			Underground temperature.				Relative humidity (mean). Per cent.	Vapor pressure (mean). mm.	Radiation.		Evaporation. <sup>b</sup>			
		Mean.	Maximum.	Minimum.	0.25 meter.		0.50 meter.				1.50 meters.	2.50 meters.	Minimum on grass.	Maximum in sun. Black bulb in vacuo.	Free exposure (total). mm.	Shelter (total). mm.
					8 a. m.	2 p. m.	8 a. m.	2 p. m.			8 a. m.	8 a. m.				
		°C.	°C.	°C.	°C.	°C.	°C.	°C.			°C.	°C.	°C.	°C.	°C.	mm.
1	757.56	24.2	27.3	23.1	27.7	27.6	28.6	28.7	29	29.1	93.3	20.9	22.4	31	0	0.5
2	59.09	26.5	32.4	22.9	27.3	29.3	28.4	28.5	29	29.1	83.1	21.2	21.8	57.7	2.8	1.9
3	59.41	26.5	31.9	23.4	28	29	28.6	28.7	29	29.1	84.3	21.6	22.4	51.3	2.4	1.5
4	58.66	26.3	31.4	23.1	28.5	29.3	28.9	28.9	29	29.2	86.8	21.9	22.6	54	2	1.3
5	58.05	26.7	31.2	23.5	28.3	29.6	29	29.2	29	29.2	84.3	21.8	22.3	46.2	2.2	1.8
6	58.39	26.2	31.8	24.1	28.6	29	29	29.2	29	29.2	89.4	22.5	23	49	1.2	1.1
7	58.40	25.7	29.9	23.8	28	29	28.9	29	28.9	29	88.7	21.6	22.8	42.4	1.2	1
8	57.74	26.3	30.6	23.8	28.3	29.6	28.8	29	28.7	29	88.2	22.3	22.8	51.8	1.8	1.4
9	57.91	26.9	31.9	24.5	28.5	30.1	29	29.2	29	29	86.8	22.7	23.6	54.1	2	1.5
10	58.06	26.1	32	22.9	28.7	29.3	29.1	29.3	29	29	87.3	21.7	22.7	51.9	1.2	1
11	56.85	26.5	32.5	23.1	28.1	29.3	28.9	29	28.9	29	87.1	22.2	22.4	44	2	1.7
12	54.71	27.1	30	24.3	28.1	29.3	28.8	29	28.9	29	84.6	22.5	23.2	46.2	3.4	2.8
13	54.94	27	30.2	24.6	28.2	29.3	28.8	29	28.9	29	84.8	22.4	23.3	46	2.8	2.2
14	56.92	26.8	30.3	24.5	28.3	28.8	28.9	29	29	29	88.9	22.1	23.1	46.5	.8	1.1
15	58.06	26.8	32.8	24.2	28.7	30.6	28.8	29.1	29	29	87	22.7	23.3	55.5	2.1	1.7
16	59.02	27.8	33.8	24.1	28.7	30.6	29.1	29.4	29	29	83.1	22.8	22.8	55.2	4	3
17	59.27	27	31.3	23.9	29	30.8	29.3	29.6	29	29	81.7	21.5	22.6	54.5	3.2	2.3
18	58.70	26.8	31.3	24.3	29.5	31	29.6	29.8	29.1	29	83.7	21.8	23.2	54	2.9	2.5
19	58.52	27.1	31.7	23.5	29.2	31	29.6	29.8	29	29	81.7	21.6	22	51	3.4	2.6
20	58.44	27.5	32	24.4	29	31	29.6	30	29	29	82	22.2	23.2	51.8	4.1	3.1
21	58.28	27	31.5	24.6	29.5	31.2	30	30.3	29.1	29	84.2	22.5	23.5	54.6	2.9	2.2
22	58.30	26.6	30.3	24.8	29.5	30.4	29	30.2	29.2	29	89.4	23	23.9	43.5	1.7	1.4
23	58.31	26.8	31.2	24	28.8	30.2	29.8	29.9	29.1	29	87.5	22.8	23.2	53	2.3	2
24	58.24	27.4	31.7	24.5	29	30.8	29.8	30.1	29.2	29	83	22.4	23.5	51.4	3.5	3
25	58.65	27.3	31.5	24.3	29.2	29.5	30	30.2	29.3	29.2	84.6	22.6	23	52.1	2.9	2.1
26	58.97	25.4	28.7	23.5	29	29.5	29.7	29.7	28.9	28.9	90.5	21.7	22.2	39.2	.5	.8
27	58.96	25.4	29.3	22.7	28	28.8	28.6	29.4	28.9	29	87.5	21	22	40.1	1.7	1.2
28	58.11	26.5	31	24.1	28.3	29.5	29.4	29.4	28.2	29	80.5	20.6	22.8	48.5	3.1	2.4
29	57.61	27.1	31.6	24.3	28.6	30.1	29.4	29.5	29.2	29	77.8	20.6	22.3	50.6	3.3	2.6
30	57.99	25	27.2	23.8	28.7	28.7	29.5	29.5	29.3	29	88.8	20.8	22.4	38.4	.6	.7
Mean Total	758.07	26.5	30.9	23.9	28.6	29.8	29.2	29.4	29	29	85.7	21.9	22.8	48.8	2.3	1.8
Departure from normal	+0.60	-0.3	+0.2	+0.3							-0.1	-0.5			-0.6	

Day.	Wind.			Clouds.		Sun-shine. h. m.	Rain, 24 hours beginning 6 a. m.		Miscellaneous.							
	Prevailing direction.	Total movement.	Maximum hourly velocity.	Direction at the time of the maximum velocity.	Form and direction.		On the tower.	In the park.								
					Upper.					Lower.						
Km.	Km.	Km.	0-10.			mm.	mm.									
1	SE	123.5	11	ENE	10				● a. p.							
2	NE	98.5	10.5	SSW	8.2	Cl.-S. E	N. SE	0 00	21.6	22.1	⊕ p.					
3	E	85.5	12	NW	8.3	Cl.-S. ENE	Cu. ESE	4 10								
4	E	97	13	W	7.5	Cl.	cu., cu.-NE	4 30	1.3	1.6	☉ p.					
5	SE	93	11.5	SSW	7.3	A-Cu. S	Cu. EbyS	1 45	.3	.4	☉ p.					
6	E	69	10	WSW	9.2	Cl.-S.	Cu.-N. SE	0 00	1.6	1.8	d a. p. ☉ p.					
7	NE, E	83	11.5	SSE	9.5	Cl.-S.	Cu.-N. E	0 00	4.2	4.5	● a. p. ☉ p.					
8	SE	91	13	W	6.6	Cl.-S.	Cu. NNE, E	4 15	.3	.3	d a. p. ☉ p.					
9	SE	83	12	WNW	7.4	Cl. ESE	Cu. E	3 10	.6	.5	☉ p.					
10	NE	145	19	NW	7.2	Cl.	Cu. NNE	4 05	69	72.4	☉ p.					
11	WSW	312	31	WSW	9.2	Cl.-S.	cu.-N. NWly	0 00	8.7	9.4	☉ p.					
12	WSW	443	38.5	WSW	9.7	Cl.-S.	Cu. WSW	0 00	12.4	13	☉ p.					
13	SE	471	34	WSW	9.5	Cl.-S.	cu.-N. wsw	0 00	3.5	3.8	● a. p.					
14	SW	130	14	SSW	9.8	Cl.-S.	cu., cu.-N. wsw	0 15	9.4	10.3	d a. p.					
15	E, SW	129	18	SW	8.2	Cl.-S.	Cu. SE	3 00	.6	.8	d p.					
16	SE, SSE	233	25.5	WSW	7	A-Cu. E	Cu. SE	5 05	.3	.3	d p.					
17	N, W	159.5	19.5	W	7.8	A-Cu. E, N	Cu.	3 30								
18	WSW	206.5	32	WSW	5.9	A-Cu. W	Cu. WSW	7 00	1.1	1.7	d a. p. p.					
19	NE, WSW	257	28	SW	4	Cl. SEbyE	Cu. W	10 00	13.3	14.5	☉ p.					
20	WSW	263	26.5	SW	4.8	Cl.	Cu. W	7 55			☉ p.					
21	N, SW	220	27	SW	7.3	Cl.-S. NW	Cu. W	3 45	16	16	d a. p.					
22	SW	165	18	SW	8.3	A-Cu. W	Cu. SW	1 25	26.7	26.9	☉ p.					
23	SW	282	25	SW	7.8	A-Cu. W	Cu. WSW	3 10	9.4	9.3	☉ p.					
24	SW	290	26	SW	4.9	Cl. NW	Cu. W	7 55	40.5	41.1	d a. p.					
25	SE, SW	187	20	SW	5.9	Cl.	Cu. W	6 40	51.1	56.1	☉ p.					
26	E	60	11	NW	9.7	Cl.-S.	cu.-N. wsw	0 00	18.4	19.5	☉ p.					
27	SE	76	8	SSW	9	Cl.-S. SE	Cu. E	0 00			☉ p.					
28	Variable	102	10	W	7.2	A-Cu. NE	Cu. E	1 45			☉ p.					
29	Variable	143	12.5	W	5.2	A-Cu. NW	Cu. N	6 40	21.6	21.6	☉ p.					
30	SE	69	10	SSW	9.8	Cl.-S.	Cu.-N. nw	0 00	5.4	6.3	☉ p.					
Mean Total		172.2	18.6		7.7			3 04								
Departure from normal		-2,382.1			0			92 15	337.3	354.2						

<sup>a</sup> All the mean values given in this table are deduced from the hourly observations.  
<sup>b</sup> These values are taken from instruments mounted in the Observatory Park, 1.5 meters above ground.

METEOROLOGICAL DATA FOR MIRADOR OBSERVATORY, BAGUIO

[φ=16° 25' N; λ=120° 35' E; barometer above sea, 1,512.5 meters; gravity correction not applied, -1.65 mm.]

Day.	Pressure (mean). <sup>b</sup>	Air temperature at Mirador (on the top of the mountain).				Air temperature in the plateau near the City Hall.				Relative humidity (mean).	Vapor pressure (mean).	Radiation.		Evaporation.		
		Mean.	Maximum.	Hour.	Minimum.	Hour.	Maximum.	Hour.	Minimum.			Hour.	Minimum on grass.	Maximum in sun. Black bulb in vacuo. <sup>c</sup>	Free exposure (total).	Shelter (total).
	mm.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	Per ct.	mm.	°C.	°C.	mm.	mm.	
1	634.72	15.8	16.7	11.15a	15.0	7.10p	18.6	9.10a	15.3	7.00p	97.5	13.0	15.0	28.5	0.5	0.2
2	36.73	17.5	20.8	0.25p	14.6	4.25a	22.4	11.50a	14.9	4.30a	83	12.3	14.2	48.8	5.9	2.2
3	37.22	18.9	24.6	3.00p	16	4.00a	25.2	3.05p	15.4	3.10a	77.5	12.5	15	56	6	2.5
4	36.63	18	22.5	9.45a	16	7.45p	24.9	9.35a	15.2	12 m. n.	89.3	13.8	15.5	55.1	3	1.4
5	36.04	18.6	24.7	0.30p	16	5.55a	26.2	0.30p	14.8	6.00a	86.3	13.7	14	58	3.3	1.7
6	36.23	18.5	24.1	10.30a	15.9	11.40p	25.8	11.05a	15.4	5.00a	87.3	13.7	14.8	58.2	2.2	1.1
7	36.81	17.9	22.6	10.50a	15.4	2.45a	25.2	0.10p	15.2	3.00a	89.2	13.6	14.6	57.2	2.7	1.2
8	35.80	18.5	23.6	11.55a	15.8	5.00a	25.8		15.6	6.10a	85.2	13.5	14.6	57.5	2.5	1.2
9	36.12	18.7	25.1	0.15p	16.2	5.00a	26.4	0.30p	16		88	14	15.1	58.5	3.3	1.3
10	36.22	18.3	22.8	11.15a	15.5	5.55a	25.2	0.10p	15.8	6.30a	92.3	14.4	14.6	58.2	1.3	.6
11	35.03	18.2	23.1	9.55a	15.3	5.55a	24.7	10.25a	14.9	6.15a	92.5	14.4	14.3	57.8	1.3	.5
12	33.03	18.2	22.1	0.50p	15.3	4.00a	24.2	0.35p	15.3	6.00a	92.2	14.4	14.1	57	1.3	.6
13	32.80	17.1	20.9	1.00p	15.6	5.30a	21.8	0.40p	14.8	5.35a	95.7	13.8	14.4	49.6	1	.4
14	34.49	18.2	22	0.45p	16.2	1.30a	24.4	0.25p	15.9	6.25a	91.5	14.2	15.5	50.1	1.5	.7
15	35.86	17.6	20.3	11.30a	16.3	5.55a	21.8	11.15a	16.4	12 m. n.	94.5	14.2	16	50.6	1.2	.6
16	37.07	18.1	24.6	1.50p	16.1	4.30a	25.4	1.40p	15.9	2.45a	89.2	13.8	15.3	53.3	2.9	1.4
17	37.33	18.1	22.6	1.10p	15.6	3.30a	23.8	1.15p	15.6	6.25a	84.3	13	14.3	56	2.4	1.5
18	36.37	16.9	21.8	0.20p	15.4	6.05a	22.5	1.00p	15.2	6.15a	93.3	13.4	14.6	55.7	1	.5
19	36.21	17.5	22.5	0.45p	15.3	3.30a	23.4	1.25p	14	4.40a	93.8	13.8	14.3	56.8	1.2	.8
20	36.15	18	23	Noon.	15.5	1.50a	23.8	0.25p	15	6.00a	94.7	14.5	14.2	61.3	1.3	.6
21	36.19	17.9	22.3	11.30a	15.7	4.00a	22.9	3.30p	15.6	4.20a	95.2	14.6	15.2	55.3	.6	.6
22	35.94	18.5	22.8	2.35p	16	2.30a	24.4	2.25p	15.2	7.00a	89.8	14.2	14	59.4	1.5	.8
23	36.10	18	22.4	1.10p	15.8	11.55p	24.8	2.30p	15	2.30a	92.5	14.2	14.4	59.2	1.2	.6
24	36.45	18	22.9	11.30a	15.5	5.00a	24.1	11.30a	15.3	5.10a	91.7	14.1	14	63.2	1	.5
25	36.45	18	22.6	0.15p	15	5.00a	24.2	1.45p	14.2	6.00a	90.8	14	13.4	59	2.1	1
26	36.53	18.6	23.4	1.45p	15.8	3.30a	25.3	10.10a	14.5	6.15a	89.5	14.3	13.7	61	2	.8
27	36.41	17.7	22.6	11.20a	16	3.10a	23.5	2.00p	16.4	5.35a	94.5	14.2	15.5	60.1	1	.4
28	35.78	17.6	21.5	1.10p	15.4	3.15a	24.3	11.05a	15	4.30a	91.2	13.6	14.2	58.3	1.1	.6
29	35.53	17.2	21.2	8.30a	14.8	5.00a	24.2	11.00a	14.2	5.45a	91.4	13.3	13.4	58.4	1.5	.9
30	35.74	18.1	22.9	10.50a	15.5	6.45p	25.1	10.30a	15.2	3.15a	85.7	13.3	14	58.5	1.3	.7
Mean	635.90	17.9	22.5		15.6		24.1		15.2		90.3	13.8	14.5	55.9	2.0	0.9
Total															59.1	27.9

Day.	Wind.				Amount (mean).	Clouds.		Sunshine.	Rain, 24 hours beginning 6 a. m.	Miscellaneous.
	Prevailing direction. <sup>d</sup>	Total movement.	Maximum hourly velocity.	Direction at the time of the maximum velocity.		Form and direction.				
						Upper.	Lower.			
1	E	542.8	38.3	E	0-10.	Ci.-S.	Cu.-N.	h. m.	mm.	● ≡ a. p.
2	E	400.9	27.7	E	10.0	Ci.-S.	S.-Cu. SE	0 00	15.7	○ a.
3	E	373.9	25.5	SE	8.3	Ci.-S.	SSW	4 05	3.3	● ≡ a. p.
4	E	305.4	22.2	E	8.4	Ci.-S.	Cu.-N.	3 05	22.2	○ a. p. ● d <sup>2</sup> p.
5	E	237.1	17.7	SE	7.1	Ci.	SSW	4 50	14.2	○ a. p. ● ≡ a. p. ● ≡ a. p.
6	E	247.7	18.7	SW	7.7	Ci.-S.	Cu.-N.	3 20	9.4	○ a. p. ● ≡ a. p.
7	NE, W	315.4	26.4	N	8.1	A.-Cu.	SSE	4 10	39.1	○ a. p. ● ≡ a. p.
8	E	325.4	24.6	E	6.9	A.-Cu.	ESE	4 25	42.1	○ a. p. ● ≡ a. p.
9	E, SE	256	19.8	E	3.7	Ci.	SSW	5 30	.5	○ a. p. ● ≡ a. p.
10	W quad.	257.5	20.1	SW	7.9	Ci.	E	2 55	25.2	○ a. p. ● ≡ a. p.
11	W	279.5	24.4	W	7.1	Ci.-S.	WNW	2 25	18.3	○ a. p. ● ≡ a. p.
12	W	395.5	31.4	W	9.3	A.-Cu.	SSW, S	3 30	55.9	○ a. p. ● ≡ a. p.
13	W	448.2	27.1	NW	10	Ci.-S.	WSW	1 05	8.6	○ a. p. ● ≡ a. p.
14	S quad.	180.3	16.1	SE	9.9	A.-Cu.	SSW	0 45	3.3	○ a. p. ● ≡ a. p.
15	E	229	17.1	E	9.9	Ci.-S.	SSW	0 30	12.2	○ a. p. ● ≡ a. p.
16	E	321.8	26	E	9.1	A.-Cu.	WSW	0 50	37.1	○ a. p. ● ≡ a. p.
17	W	277	19.6	W	9.1	A.-Cu.	SSW	3 10	2.3	○ a. p. ● ≡ a. p.
18	W	335.9	26.6	W	9.4	Ci.-S.	WNW	0 45	24.5	○ a. p. ● ≡ a. p.
19	W quad.	369.2	24.1	W	6.7	A.-Cu.	SSE	3 05	7.1	○ a. p. ● ≡ a. p.
20	W quad.	227.2	18.2	SW	7.1	Ci.	WNW	5 00	30	○ a. p. ● ≡ a. p.
21	W	208	17.1	NW	9.1	Ci., Ci.-S.	WSW	2 05	47.7	○ a. p. ● ≡ a. p.
22	W quad.	205.9	17.9	W	5.4	Ci.	W	5 15	20.1	○ a. p. ● ≡ a. p.
23	W quad.	269.6	21.4	W	5.4	Ci.	W, SW	3 20	2.1	○ a. p. ● ≡ a. p.
24	W quad.	272.2	18	N	7.1	Ci.	Cu.-N. wnw, sw	3 30	3.5	○ a. p. ● ≡ a. p.
25	W	174.4	11.9	W	6.9	Ci.	WNW	4 00		○ a. p.
26	W	192.7	18.3	W	6	Ci.	SW	4 35	26.9	○ a. p.
27	W E	*194.7	19.8?	W	7.4	Ci.-S.	Cu.-N. wnw, E	1 25	2.3	○ a. p. ● ≡ a. p.
28	E, SW	212.3	19.9	SW	7.1	Ci.	Cu.-N. WNW	2 00	4.3	○ a. p. ● ≡ a. p.
29	W	213.9	18	SW	6.6	Ci.	Cu.-N. NW, S	1 35	.3	○ a. p. ● ≡ a. p.
30	W	198.5	22.5	N	7.4	Ci.-S.	Cu.-N. NNE	1 30	52.9	○ a. p. ● ≡ a. p.
Mean		282.9	21.9		7.8			2 47		
Total		*8,488.1						83 20	531.1	

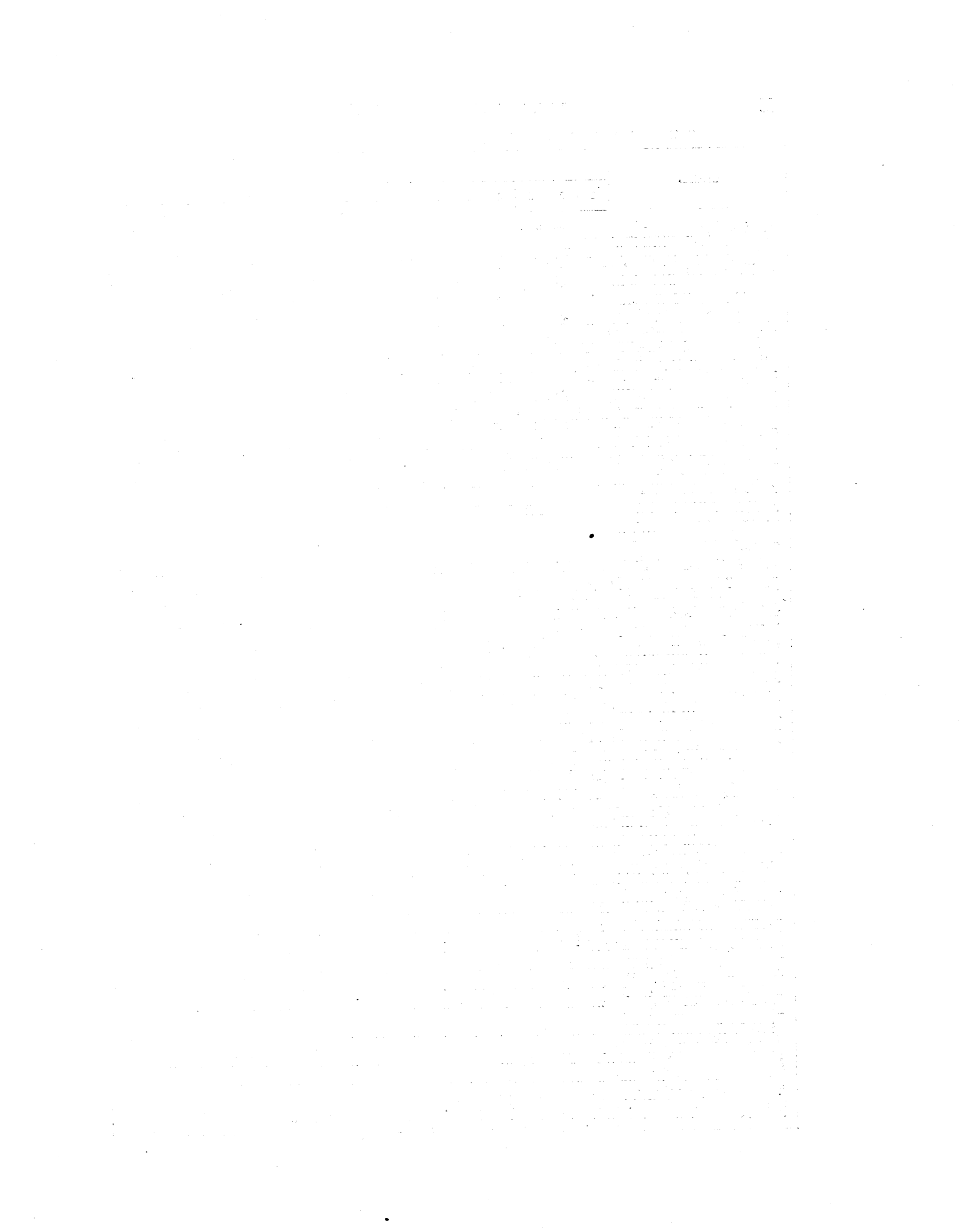
<sup>a</sup> All the mean values given in this table are deduced from six daily observations taken at 2, 6, 10 a. m. and 2, 6, 10 p. m.

<sup>b</sup> The barometric readings of this station are not reduced to sea level.

<sup>c</sup> Maximum of hourly observation taken from 6 a. m. to 6 p. m.

<sup>d</sup> This element is based on hourly observations taken from a quadruple register, which gives only eight possible directions of the wind.

\* 5 hours missing.



DAILY RAINFALL AT THE STATIONS OF THE WEATHER BUREAU, SEPTEMBER, 1921

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lapac Agricultural School, Siasi, Sulu †				76.2		6.4										
Glan, Cotabato †			3.8			2	0.8	5.1	65	12.7		4.1		3.8		
Jolo, Sulu		0.3	32.2	49	25.1		2.5		16.3	1.8	7.4			10.9	0.3	0.8
Buntung, Koronadal, Cotabato †		2.8		1.3				17.3		18.8			2.5	10.4		
Lais, Malita, Davao	9.1	24.9	5.8		1.3			3.8	44.1	7.9				1	10.2	
Malita, Davao	7.4	7.6	1			1.3	3	5.1	19.3	5						
Lebak, Cotabato	.8	19	10.1	11.9	24.9	6.6			27.4	37.8	28.9					
Basilan Plantation, Kabunbatan, Isabela, Zamboanga †		20.1	4.8	56.4	50.8		42.9	13.2	133.4	2.8	34.1				2.5	
Padada, Santa Cruz, Davao †		48.3	38.1	7.6	12.7	7.6		6.4	8.9	30.5						
Basilan Plantation Office, Isabela, Zamboanga †				50.8	54.6		19.8	9.7	159	20.1	8.6				6.4	
La Union, Sigaboy, Davao †			30.2	15.7	28.7		57.4	61.7		39.6						3
Paranglalap, Isabela, Zamboanga †	5.1			11.4	1.3			45.7	12.7	111.8		24.1				15.2
Latuan, Isabela, Zamboanga †	1.5		15.2	10.2	8.7		1	7.6	84	5.1	23.9					1.5
Buluan, Cotabato †	43.2	10.2					10.2		50.8	2.5		7.6				
Malamaui, Isabela, Zamboanga		4.8	9.4	17.8	9.9			10.9	113.5	12.7	15.2					.8
Pagsilaan Farm School, Mati, Davao †										5.1			177.8			
Zamboanga, Zamboanga	4.8	1	4.6	.8	.3		.8			116.8	11.6					3.6
Cagayan de Sulu, Sulu †	4.4	7.8		8.4	17.8	5.9	4.8	5	4.8			5	10.9		5.6	4.3
Kidapawan, Cotabato †	25.4	28.2	35.6	40.6	7.1			24.1		69.8	13.8					18
Davao, Davao			19.8	13.2					3	8.4			3.3	14.7		
Piang Agricultural School, Kudarangan, Dulauan, Cotabato †		20.6	41.9	38.1	13.2	.8	.5	3.3	29.2	46.3	15.3				2.8	13
Pikit, Cotabato		26.7	40.4	52.8	14	1.3	10.9	.5	11.7	39.2	8.9				3.6	
Cotabato Seed Station, Pikit, Cotabato †				16	11.9				11.4	24.1	21.6					2
Awang, Cotabato †		30.7	11.4	3.8		12.7				36.3	10.9	37.8	13.5			
Sirib, Guianga, Davao †	1.3	.8						38.1				9.1				
Kabakan, Cotabato †	5.1	10.2	30.5	27.9	53.3	20.3		10.2	5.1	35.6	27.9	15.2				
Bual, Dulauan, Cotabato	1.5	62.5	18.5	38.9	14.5			1.8	19.3	63.3	25.6					48.5
Cotabato, Cotabato	1	9.1	5.8	4.6	.8			4.1	3.6	52.1	45.8	43.4				8.6
Mampising, Pantukan, Davao †	21.6	1.8	5.8	6.9	.8	2	18.8		50.8	6.4		7.6			10.4	2
Kabasaran, Buldun, Cotabato †						.8	10.2	26.7	62.3	49.5	14.8	21.5		33	45.7	48.3
Naganaga, Margosatubig, Zamboanga	35.1			24.9	19		11.9	22.1	68.6	19					21.6	9.7
Banisilan, Banisilan, Cotabato †				2.5		6.9						1.5			1.6	
Malabang, Lanao			4.6	3	4.1	1.3	2.8		72.9	77.7	29.5	13.8			4.1	34.5
Compostela, Monkayo, Davao †					2.5				24.1							
Malangas, Margosatubig, Zamboanga †		4.6	16.3	64	31	8.9	2			17.3	10.2	10.9	3.6			7.9
Lumbatan, Lanao †	13.2	5.3	7.6	6.9	23.7	22.4	3	66	16	9.9	10.2	10.7			3.8	7.4
Cateel, Davao	1.5	4.1	1.5	1				9.4	5.6	4.6						
Ganasi, Lanao	4.3	16.8	49.8	11.9	26.4	38.1	8.4	3.6	9.1	10.4	17.8	32.8				
Camp Kalao, Monkayo, Davao			3.8					2.5	16.5				14.2	2.3		
Managok Agricultural School, Linabo, Malaybalay, Bukidnon	1.5	9.1	2.3	6.6	14	10.4	11.2	.6	1.5	71.1	.3	.5		42.4	1	
Camp Keithley, Dansalan, Lanao	11.2	13.2	.5	33	53.9	3.6	4.5	2.5	16	8.1	3.5	1.5		1.5	16	10.7
Veruela, Agusan	7.4	1.8	3.6		.5	5.3		1.5	22.4	5.1				.8	15	.8
Sumilau, Bukidnon	2.3	30.5	2.3	15.5	79.5	2.8		5.6	6.1	62.2				4.8		29.5
Diklom, Tangkulan, Maluko, Bukidnon †	4.1		4.8	6.6	7.4	7.9	9.4	1.8	17.8	13.2	16.3			2.5		
Cagayan, Misamis			21.6	3.3	4.1	3.3		13.8	25.1	13.5						5.6
Talacogon, Agusan			9.4	13	1.8	8.1	3	10.2	4.3	40.4	2.5		9.7		4.3	9.7
Butuan, Agusan		31.7	17.1	10.2	1.3	.5		2.5	2.5	1.8	.5	3.8		2	1.3	
Mambajao, Misamis	1.8	2.5	34.8	16	1.8		5.1	23.2	7.9	33.5	14.7					
Dumaguete, Oriental Negros	10.9	26.2	9.4	8.6	1.3	4.8		1.5	33.8	4.8	32.5	9.4			1	
Kolonie, Yap, Western Carolines	5.1		11.7		7.6	23.7	3.3	60	3.8			12.2	6.2		1.3	31.1
Tagbilaran, Bohol				55.9	17.9	.5			2.8		1.7	4.2	.3		18.3	1
Iwahig Penal Colony, Puerto Princesa, Palawan	72.4	34.3	4.1	1.5		8.4		3.8	7.1	18.8	14.5	5.3	2.1	15.7	3.3	
Dalaguete, Cebu		6.4			8.9	29.2	.5	9.7		8.6	1.3				16	
Surigao, Surigao	1.5	6.4		2.8		.5		5.9	15.5	49.1	11.7	2.1				
Hacienda Naval, Himamaylan, Occidental Negros		8.1		19.8	7.4	3			12.7	22.9	150.9	17.8	4.1			3.8
Biaong Cui's Farm, Barili, Cebu	21.6			16.3		3.6	7.9		8.6	6.4						
Maasin, Leyte				52.3					38.6	18.5	100.8					
Binalbagan Estate, Binalbagan, Occidental Negros †		4.6	.5	11.7	2.3			2.5	25.6	39.4	125	14	1.3			.3
Isabela, Occidental Negros	18	7.4	28	22.1	4.1	3.3	11.4		30	31.5	102.1	13.2	2.3		8.1	17
Hacienda Tanolo, Hinigaran, Occidental Negros	1		2.5	1.5	8.1		1		16.8	11.1	156.5	24.6	2			4.1
Cebu, Cebu		22.8	.8	55.9	20.8	.8		4.6	6	2.8	1.6	27.7				
La Castellana, Occidental Negros	16.8	3	4.6	9.1	4	.5	15.5		15.5	25.1	135.2	29.5				
Hacienda Vallehermoso, Vallehermoso, Oriental Negros †		4.6		16.3	9.7			6.4	1.5	5.1	16.5	4.8			2.8	
Central Azucarera de La Carlota, La Carlota, Occidental Negros	4.8	14.7	5.3	30.8	13.4	.5	1.8	5.3	7.1	14	128	17.8	5.6			10.2
Hacienda Canlaon, La Castellana, Occidental Negros	7.7	3.6		6.3	2.5		.3		13			8.9	4.3	.5		
La Carlota Experimental Station, La Carlota, Occidental Negros †	6.1	15	26.9	56.7	6.8	.5	5.1	8.4	31.3	15.5	95.5	18.3				2.3
Mao Sugar Central, Santa Cecilia, Bago, Occidental Negros	8.9	6.6	15.7		34.7			5.6	13.5	14.5	31.7	16.1				
Valladolid, Occidental Negros		2	3.1	5.1	6.9	5.1	2	.5	5.6	8.9	65.1	29.4	4.8			1
Central San Carlos, San Carlos, Occidental Negros †				50	23.4	1.3			8.6	6.6	19.8	5.6			29.2	
Hacienda Refugio, San Carlos, Occidental Negros †	7.6			62.2	21.6				14.5	5.6	21.3				8.9	
San Joaquin, Iloilo	.5		25.7	4.1	2.8	.8		.8	26.9	2.5	42.4	40.6	85.6	5.3	15	
Murcia, Occidental Negros		25.1	15.7	4.8			2.8	38.1	9.6	10.7	52.4	45.7				8.1

† Voluntary or cooperative station.



Daily rainfall at the stations of the Weather Bureau, September, 1921—Continued

Station.	Day of month.														Total.
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Lapac Agricultural School, Siasi, Sulu †															mm.
Glan, Cotabato †															32.6
Jolo, Sulu															99.8
Buntung, Koronadal, Cotabato †															212.7
Lais, Malita, Davao		54.9	9.1	13	2.5										209.5
Malita, Davao															121.5
Lebak, Cotabato				24.9		5.8	15.7								60.1
Basilan Plantation, Kabunbatan, Isabela, Zamboanga †															305.2
Padada, Santa Cruz, Davao †		7.6													409.3
Basilan Plantation Office, Isabela, Zamboanga †															196.9
La Union, Sigaboy, Davao †			68.3												391.4
Paranglalap, Isabela, Zamboanga †															366.8
Latuan, Isabela, Zamboanga †															259.1
Buluang, Cotabato †						2.5									163.8
Malamaui, Isabela, Zamboanga															129.5
Pagsilaan Farm School, Mati, Davao †															212.3
Zamboanga, Zamboanga															188
Cagayan de Sulu, Sulu †			1.3			3.8									10.9
Kidapawan, Cotabato †	30.5	6.1			17.8	45.7									189.3
Davao, Davao	15														162.4
Piang Agricultural School, Kudaranagan, Dulauan, Cotabato †	2.3														409.7
Pikit, Cotabato	12.2														106.8
Cotabato Seed Station, Pikit, Cotabato †							12.7								232.7
Awang, Cotabato †															248.4
Sirib, Guianga, Davao †			1.3	1											26.2
Kabakan, Cotabato †															112.4
Bual, Dulauan, Cotabato	2.5														210.4
Cotabato, Cotabato	1.3		.3		6.1										210.4
Mampising, Pantukan, Davao †	13.7	3.3													53.2
Kabasaran, Buldun, Cotabato †	8.1														243.8
Naganaga, Margosatubig, Zamboanga	4.3														243.8
Banisilan, Banisilan, Cotabato †					1.3										243.8
Malabang, Lanao				2											302.9
Compostela, Monkayo, Davao †	27.9														304.7
Malangas, Margosatubig, Zamboanga †	3.3														195.1
Lumbatan, Lanao †	3		26.2												453.1
Cateel, Davao	14														247.4
Ganasi, Lanao	6.6	7.9													16.6
Camp Kalao, Monkayo, Davao		3.8				5.1									320.3
Managok Agricultural School, Linabo, Malaybalay, Bukidnon	1	18.8	2.3	20.8	9.1										54.5
Camp Keithly, Dansalan, Lanao	3.8	9.9													239
Veruela, Agusan	55.9	71.1		2.5	10.4										245.4
Sumilau, Bukidnon	10.4					5.1									130.4
Diklom, Tangkulan, Maluku, Bukidnon †	3.8		4.6												269.1
Cagayan, Misamis				1.3	3										65
Talacogon, Agusan					1.8										344.7
Butuan, Agusan					29.7										334
Mambajao, Misamis	27.2				4.8										334
Dumaguete, Oriental Negros					18.3										327.5
Kolonie, Yap, Western Carolines	16.4	9.7	9.4	7.5	5.3										361.8
Tagbilaran, Bohol															169.7
Iwahig Penal Colony, Puerto Princesa, Palawan	8.1														271.8
Dalaguete, Cebu	1.5	10.9													145.9
Surigao, Surigao		.8	19.8												333.9
Hacienda Naval, Himamaylan, Occidental Negros															192.5
Biaong Cul's Farm, Barili, Cebu	17.5														201.2
Maasin, Leyte															357.7
Binalbagan Estate, Binalbagan, Occidental Negros †															88
Isabela, Occidental Negros	3.8		16.5	3.8											327.5
Hacienda Tanolo, Hinigaran, Occidental Negros															320
Cebu, Cebu		15.8													355.8
Hacienda Vallehermoso, Vallehermoso, Oriental Negros †	1		24.4	11.2											342.8
Central Azucarera de La Carlota, La Carlota, Occidental Negros															259.7
Hacienda Canlaon, La Castellana, Occidental Negros															392.8
La Carlota Experimental Station, La Carlota, Occidental Negros †	2.5	1.8		7.6											111.4
Mao Sugar Central, Santa Cecilia, Bago, Occidental Negros															111.4
Valladolid, Occidental Negros															390.6
Central San Carlos, San Carlos, Occidental Negros †															194.8
Hacienda Refugio, San Carlos, Occidental Negros †															413.1
San Joaquin, Iloilo	1.5														176.9
Murcia, Occidental Negros															258.9

† Voluntary or cooperative station.

Daily rainfall at the stations of the Weather Bureau, September, 1921—Continued

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Bacolod, Occidental Negros	2.8	17.5	0.5	4.3	6.4	1.3	5.1	0.8	21.6	19.8	6.1	41.4	0.5	mm.	mm.	mm.
Oton, Iloilo	4.6	2	18	7.6	2	3	2.5	4.6	23.3	63.5	18.3	4.1	3	5.8	1.8	
Iloilo, Iloilo	1	.5	67.8	25.4	1.3	7.1	4.9	.8	10.1	12.6	41.8	16.7	2.5	7.6	1	
Lapuslapus, Iloilo, Iloilo †			76.2			34.3	17.8		13.2	10.7	61	20.3	4	1		
San Jose de Buenavista, Antique			2.5	19.8	9.7			55.9	29.7	49.8	40.9	47.3				
Tuburan, Cebu	2.8	4.1	83.3	8.1	6.9	1.3	.3	62.3	16	6.6	.3			5		
Leon, Iloilo	1	31.2	58.4		6.8	10.2		11.4	74.2	58.4	16.5	10.9		4.6		
Silay, Occidental Negros		36.6		2.8	7.4	1.3	30	4.6	14	7.1	2	45.7		1.3	7.4	
Calag-itan, San Remigio, Antique		21.8	71.9	31	1	.3	7.9		34.3	70.6	154.4	92.7	36	56.9	4.1	
Hawaiian Philippine Co., Malisbug, Silay, Occidental Negros †		73.4		6.3	.5	4.1	51.3		14.5	5.8	2.5	44.5	2.3		1.8	
Cuyo, Palawan	.3	1.3	4.1	27.2	9.6	7.1	5.1	11.9	40.7	66	3	42.7	13.9	15.5	1.5	
Lucena, Santa Barbara, Iloilo †	9.7		7.6	4.6		12.7	9.4		4.1		50.8	12.2			8.3	
Barotac Nuevo, Iloilo	13.2	7.9	13.5	62.2	1.3	1.5	49	6.6	3.1	10.4	16.3	18.3	11.9	1.3	4.8	
Hacienda Ilaya, Victorias, Occidental Negros		66		3.8		2	29.2		3.8	19.9	3.8	25.1	2.5		5.1	
Central Victorias, Victorias, Occidental Negros †		129.5		2.5	8.9	1.8	6.4		4.8	27.2	35.1					
Hacienda Bilbao, Manapla, Occidental Negros	7.4	15.2			11.9	11.7			9.4	4.6	6.6	29.8		6.4	4.3	
Januay, Iloilo	2.3	6.6	3.6	56.6	4.6	.5	25.9		2.8	20.8	62	21.4	9.4	1	.3	
Cadiz, Occidental Negros	23.4	2.8		7.1	31.2	11.7		3.6		26.2					27.7	
Dingle, Iloilo		8.6	1.5	118.9	18.5	90.9		15	.8	2.1	5.6	23.9	14.8	5.8	1.3	
Ormoc, Leyte	.5	2.3	18.3	1	.8	5.3		13.5	2.5	5.1	114.8	15.7			12.2	
Guiuan, Samar		5.1	13.2	41.4	.8	3.6		1.5	1	33	26.4	8.9			2.8	
Bugasong, Antique					30.5	27.1		22.9		5.1	101.6	241.3	127	25.4	33	
Bogo, Cebu						38.1				43.2	104.4	7.1				
Dueñas, Iloilo †		4.1		27.7		76.7			4.8	3.8	45.7	17.5				
Bitaoagan, Passi, Iloilo †		14	2	22.9		47.2			1.8	8.1	58.4	15		5.6		
Sara, Iloilo		67.6	2.3	18.8	7.9	6.4		4.1	10.9	20.3	33	4.1		1.5	2.3	
Tacloban, Leyte	27.4		6.4	2.3		7.4	1.8	7.1	22.5	33.2	21.4			2.3	20.6	
Dumarao, Capiz †	18.3	20.8	3.8			18.5		27.7			30.2					
Central Asturias, Buntog, Dumalag, Capiz	.3	24.9	1.1	2.8	1	4.1	7.9		1.6	10.7	65.5	16.5	.8		12.5	
Dao, Capiz †	.8	40.6	2.3	8.4	20.8	18.8	27.9	9.7	2.5	13.2	30.5	13.2				
Culasi, Antique	1.8	4.1	1.8	8.1	1		7.4		43.2	170	77.2	66	56.4	14.5	1.8	
Mambusao, Capiz	21.6	29.2	2.3	27.2	4.1	3.3	7.9		12.9	13.7	42.7	18.8		2.3	15.2	
Hacienda Amparo, Pontevedra, Capiz		174	2	17.6	15.7	76.5	2			18.5	15.7	3.5	.3	2.5	53.1	
Capiz, Capiz	.3	24.9	2.5	57	10.9	3.6		.8	2.3	24.2	9.6	6.7		.8		
Boronggan, Samar	9.1	16.5	13.5	20.8	3.8			11.9	26.1	35.5	21.8					
Calivo, Capiz	21.6	14.2	1.3				1.8		15	22.4	21	8.9	18.5	7.6		
Fandan, Antique		8.9		9.2	6.4		8.4	.8	3.3	157.2	136.7	62.5	68.1	3.8	1.5	
Catbalogan, Samar		6.1	36		5.6		1	13.7	11.2	42.5	89.9				6.1	
Ibajay, Capiz		14.7	4.1	2.3	2.3	.5	.8		7.6	33.9	10.5	42.2	44.9	.5	11.9	
Caibayog, Samar		2.5	20.3	13	.3	.6	3.3	1.8	25.1	68.9	26.9	.3				
San Jose Estate, Robles Camp D-17, San Jose, Mindoro †	27.9					3				44.4	5	29.2	27.9			
San Jose Estate, Tamaraw Plantation, San Jose, Mindoro †	1.3			13.7		4.1	3.6		42.4	27.7	99.1	8.6	32.8	38.8	1.3	
San Jose Estate, San Agustin, San Jose, Mindoro †	25.4				36.6					73.7	130.8	1.8	8.9	20.1	19.8	
San Jose Estate, San Jose, Mindoro †	6.9	.5		3.3	6.1	19.6	2.5		2.8	21.3	60.9	3	30.2	33.3	.3	
Masbate, Masbate					1				2.3	82.8	35.1	5.6		.3		
San Jose Estate, Tunnel D-12, San Jose, Mindoro †	3.3		2.6	3.8	5.1	17.5	4.8	7.1	10.7	53.3	6.9	27.9	25.4		1.8	
Romblon, Romblon				4.1	2	38.5		.6	.5	67.9	12.2	23.3	15	5.7		
Batlag Lighthouse, Laoang, Samar	2.5	2.8	33.5	12.7	45.5			5.3	26.1	106.4	78	1			.3	
Irosin, Sorsogon	.5	1.8	5.3	7.4	31.8	23.7	7.4		4.8	23.8	29	9.9				
Sorsogon, Sorsogon					3.6	9.2			4.3	11	114.3	6.1			12.4	
Bacon, Sorsogon	2	34.8	19.6	17	4.6	1	3.3		6.6	13.5	70.1	4.3				
Jovellar, Albay	.5		.5	1.8	13	27.5	.3	6.4		6.8	55.6	9.4	4.5	1.3		
Legaspi, Albay, Albay			2.5		7.6	14	24.9	1.3	2.8	6.1	72.6	8.9				
Guimobatan, Albay	.5	10.2	4.1	1.5	18.6	31	16.5	.3	1	17	108.2	16	6.3		2.8	
Polangui, Albay	1.8	.8	2.5	12.4	13.7	13.3	2	7.4	3	16	91.5	16.5	4.3		.8	
Bacacay, Albay		53.8				11.7				33.8	35.1	9.1				
Bato, Camarines Sur	1.8	40.4	14.2	4.3	5.3	7.4	1.8	39.9	3.8	13.2	69.8	8.4	19.6			
Tabaco, Albay	1.8	33.5	3	22.1	10.7		10.7	1.3	5.4	12.7	54.3	7.4	2.3		2.5	
Sumay (Guam), Agaña, Ladrone Islands	2.8		5.3		1.5	17.8	17.8	25.9	.3		40.1			15.2	55.6	
Iriga, Camarines Sur		34	14.2		4.1	.5			26.9		8.1				.8	
Calapan, Mindoro	3.8	10.7	1.3	5.1	1.3	2.5	.8	.8		5.8	3	.5	2.3			
Tiwi, Albay		24.4	21.3		20.3		21.6	29	28.4							
Pasacao, Camarines Sur				59.7					66.5	30.7	65.5	.8			7.1	
Virac, Albay	12.7	2	29.7		79.5			5.8	12.7	23.6	154	62.2				
Naga, Camarines Sur	2	4.6	3.8		2.8	.5		3.1	.3	137.4	92.9	13	4	8.1	1	
Tigaon, Camarines Sur	4.4	2	51.6	1	13.3		1.3	2.3	.8	45.2	63.2	39.1	4.4		5.8	
Baras, Albay		51.8	71.8					29.4		53.8	98.6	9.1				
Libmanan, Camarines Sur	6.8		11.2	2	29.5			9.7		11.9	87.4	2.3	1.5	2.5	1.8	
Batangas, Batangas	10.7	.8	16.5	22.4	1.5	.5	45	19.1		21.8	2.5	1	1.3		1.3	
Ragay, Camarines Sur			.5	7.6	15.2	5.1	8.9	1.3		33	88.9		3.8	3.8		
Calatagan, Batangas	16.5			4.8	1.6	1.3	23.6		14.7	8.1			3.6	3.9		
Balayan, Batangas	3		2.5	15.7			18		48.8							
Lipa, Batangas	11.7		5.3		65	32							75.7	96.5		
Lucena, Tayabas	4.4			2.3	4.6	.8	71.6	1.3	2.3	16.8	6.6		5.1	6.4		
Atimonan, Tayabas	8.4		4.8	5.8	26.8	3	24.4	.5	29.8	74.1	14		15	3.6	41.4	
Lian, Batangas	39.4				5.6		7.1			22.9	20.8		5.6			
Nasugbu, Batangas	45.2			1.3	4.3	3.6	8.9	1	9.1	35.6	6.1		2.3	14.5		
Ambulong, Tanauan, Batangas	30.5		5.6	3.8			16.2	11.2		23.3					1.3	
Daet, Camarines Norte	3.4	1.8	3.8	.3	14	5.9		12.2	1.8	102.1	93.8	1.8	1.5		1.3	
Mendez Nuñez, Cavite	9.7			5.1	25.4	15.2	3.8	6.6		16	1.3	8.9	2.8	2.5	8.9	

† Voluntary or cooperative station.

Daily rainfall at the stations of the Weather Bureau, September, 1921—Continued

Station.	Day of month.														Total.
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Bacolod, Occidental Negros								2.5	3.3	27.2				25.9	188.8
Oton, Iloilo	2.5									5.8	79.2	17.8	22.9	3.6	288.3
Iloilo, Iloilo										46.5	26.5	18.8	18.6	1.3	310
Lapuslapus, Iloilo, Iloilo †								2.5	1.3		24.9	6.4	22.9	3	302.1
San Jose de Buenavista, Antique	7.9		0.5	0.5	8.9	3.3	2.5	9.7	3.8	2.8				3.3	305.8
Tuburan, Cebu										35.6	13.7	15.7		1.3	252.8
Leon, Iloilo	10.7		2.3							5.1	65.3	21.8	9.7		398.5
Silay, Occidental Negros		14				.3				1.3	2.5	1.5	2.5		71.1
Calag-itan, San Remigio, Antique			1.8	1			10.5	2.5	4.3	24.4	5.8	2.3	2.5	.5	1.5
Hawaiian Philippine Co., Malisbug, Silay, Occidental Negros †					1	.3				2.8	5.9	25.1	3.8		40.1
Cuyo, Palawan	35.1	2.8	6.6	14.5	5.3				8.6	1	6.1	21.6	.5		24.1
Lucena, Santa Barbara, Iloilo †										7.6	31.3	31.3	8.3		197.9
Barotac Nuevo, Iloilo	3.8									.5	8.4	33.8	.5	1.5	15.7
Hacienda Ilaya, Victorias, Occidental Negros	1.5				14					12.7	8.1	17.8			20.6
Central Victorias, Victorias, Occidental Negros †														23.6	20.6
Hacienda Bilbao, Manapla, Occidental Negros										26.2					31.7
Janiuay, Iloilo		9.4	6.3	4.3		6.9	2.3	4.8			7.4	2.5	4.1	19.8	175.1
Cadiz, Occidental Negros	19.6	2.3		16.5	4.3	4.3	.3			7.4	16.5	19		3.8	22.9
Dingle, Iloilo					3	14.7	.8			4.6	55.4	31.7		4.6	166.5
Ormoc, Leyte	1.3			.3					3.6	.3	41.7			3.6	.3
Guiuan, Samar										4.3	6.9			3.8	.8
Bugasong, Antique						12.7	2.5			10.2			5.1	10.2	
Bogo, Cebu										2		1.3			35.8
Dueñas, Iloilo †	31.7	1		3	10.7	17	17.3			32.5	31.3	10.2			373.1
Bitaoagan, Passi, Iloilo †		22.1	9.4	16		.8				22.9	35.6		5		39.9
Sara, Iloilo	12.7	10.4	8.6	22.6	26.9					11.9	20.8	22.9	4.3	.8	53.3
Tacloban, Leyte				14.2	2.3	4.6			1.5	17.7	9.7	24.7			2.3
Dumarao, Capiz †				46.5	51.6	2.6				10.7	69.3	10.9			7.9
Central Asturias, Buntog, Dumalag, Capiz		51.1	42.9	.3	6.1	.6	3.3			28.2	21.1	2.1		5.1	1.5
Dao, Capiz †				10.2		2		2.5		8.4	5.8	5.1	7.6	1.5	239.4
Culasi, Antique	2.3		6.9			4.8		4	10.4	22.1	24.1	11.4			12.7
Mambusao, Capiz				1.1	19.9			15.7	11.4	7.4	6.1	2.1	17.3		267
Hacienda Amparo, Pontevedra, Capiz				6.4	40.9	48		29.2	1.8	22.9	52.8	13.7	4.8	2.5	7.6
Capiz, Capiz								2.8	10.9	18.8	9.4	6.3	.3		2.5
Borongan, Samar				3.9		3				7.6	2.8		4.3	7.9	2.5
Calivo, Capiz						.8	1			5.8	22.9	2.5		.8	166.1
Pandan, Antique	19		4	22.9	11.2	10.9		6.9	.8	4.1	4.6	9.7	6.1	2	10.2
Catbalogan, Samar	.8		7.1	3.6				13.5	11.2	9.4	10.7				16.3
Ibajay, Capiz						2.5		5.6	.5	9.7	14				14
Calbayog, Samar				.5				5.3	.3	5.6	9.4	2.4	.3	8.9	1.1
San Jose Estate, Robles Camp D-17, San Jose, Mindoro †	19	7.6	3.8			2.5				3.8	22.9				
San Jose Estate, Tamaraw Plantation, San Jose, Mindoro †		2.5	4.6	9.7	1	57.9				23.4	5.1	1	3.3		
San Jose Estate, San Agustin, San Jose, Mindoro †		7.9	16.3	9.4	4.6	9.9	1	8.4		3.8	3.8				382.2
San Jose Estate, San Jose, Mindoro †		6.9	2.5	12.7	1.3	6.9	2.3	4.8	7.9	5.1	1.8	1	.8		244.7
Masbate, Masbate		1.3		.5		1.1		2	.5	26.4	15.7			14	4.3
San Jose Estate, Tunnel D-12, San Jose, Mindoro †		11.2		3.3	1	3.8				19		1.8			
Romblon, Romblon		.4						4.1	.5	40.5	19.6		8.6	11.7	262.9
Batag Lighthouse, Laoang, Samar									4.8	1.3	76	3.3	3.6	1.8	16.8
Irosin, Sorsogon	1		8.4	6.4				8.6	7.4	18.3	12.7		1.3	3.6	218.1
Sorsogon, Sorsogon			2.3	19.6	3.6	7.3		9.2	22.4	79.7	18.6			42.9	370.8
Bacon, Sorsogon	.8		2.5	18.3	17.8	2		6.6	47.5	10.7	24.1			33	340.1
Jovellar, Albay	12.9	.3	2.3	12.2	1.3	3.1	17.5	25.9	16.5	7.6	1	3.6	5.1		236.9
Legaspi, Albay, Albay				.5	5.3	2.8	17.3	26.6	54.7	25.2	.3	4.6	6.3		284.3
Guinobatan, Albay		2.5	9.1	.3	20.9	11.2	4.4	24.9	6.4	21.1	17.8		.5	2.8	355.9
Polangui, Albay		9.4	2.5	9.4	22.8	31.5	3.3	47.5	19.8	14	11.4		.3		5.1
Bacacay, Albay								19.8				52.3			215.6
Bato, Camarines Sur		57.4	3	.8	24.1	5.1	5.8	132.8	3.8	43.4	5.8	2.5	3.6		518
Tabaco, Albay				1.5	7.1	.8		7.9	4.6	87.1	7.1	.5		1.3	285.6
Sumay (Guam), Agaña, Ladrone Islands	98.6	6.4	.3	48	.8	23.9	14.8	.8	16		1.3		12.7	3.3	426.8
Iriga, Camarines Sur	61.4	3	26.9		15.8	26.2	30.4	30	3.5	41.1	13		1.3	1.8	356.2
Calapan, Mindoro		.3	.5			.3	6.1	16.8	.5	3.3	19	2.8	1.5	2	91
Tiwi, Albay															145
Pasacao, Camarines Sur								43.2	11.2				25.1		309.8
Virac, Albay						.3		5.1	2.8	50.3	3.8	.8		12.5	457.8
Naga, Camarines Sur	3.6	1			5.8	22.4	3.5	.5	8.2	9.9	5	2.3	22.6	.6	359.2
Tigaon, Camarines Sur		12.7		3.6	3.3	6.1	35.3	22.8	7.2	66.3	16.5	6.6	1.8	.8	417.4
Baras, Albay										52.8					367.3
Libmanan, Camarines Sur		1.5			2.5	11.7	5.1	8.6	5.3	46.5	3.6	3.6	19.3		275.6
Batangas, Batangas		3.8	3.8	4.6	3.3	7.9	1		12.4	30.5	1.3	6.9	7.6	26.4	252.6
Ragay, Camarines Sur		27.9			2	8.9				33	6.4	2.5	30.5		279.3
Calatagan, Batangas		20.3	10.2	12.5	18.6	49.8	2.3	.5	26.7	8.1	.8		111.8	11.2	350.9
Balayan, Batangas		7.6		7.6	18.3	21.6			41.4	15					199.5
Lipa, Batangas					1.3									1	6.4
Lucena, Tayabas					3.3	6.4			12.5	41.7	7.4	.3	17.3	16	227.1
Atimonan, Tayabas	.5	3.1	4.1	42.7	6.4			.5	27.9	1.3	47.7	11.9	2	18.8	441.6
Lian, Batangas					32					2.3				49	44.4
Nasugbu, Batangas			4.3					117.6	14						36.8
Ambulong, Tanauan, Batangas	1.3	.8		15.2	5.8					1.3	12.7			15.2	39.1
Daet, Camarines Norte	18.3	.5		13.9	8.2	10.9				3	88.4	59.8	17.5	32.4	18.1
Mendez Nuñez, Cavite		1.8	1.3	.8	16	15.7		.5		16	19	1.8		2.5	22.4

† Voluntary or coöperative station.

Daily rainfall at the stations of the Weather Bureau, September, 1921—Continued

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Alfonso, Cavite	16.5			5.6	7.1	4.5	6.9	5.1		19	3.8	10.2	4.3	11.7		mm.
Indang, Cavite	14		2.1	5.7	16	7.9	4.8	30.5		17.8	.5	5.1	.5	9.4	2.2	0.3
Canluban, Calamba, Laguna	16.2			4.1	3.8		8	14		33.8	.5	1		1	14.5	
Silang, Cavite	8.1		.6	6.9	41.9	11.4	14.5	3.3		66.8	1.6	2.5	3	8.4	1.8	
Maragondon, Cavite	12.7	3.3	19	7.9	2	5.3	13	1.3		62.2	2	5.1	2.5	13.7	4.8	.8
Paracale, Camarines Norte	5	.8					8.6	2	7.6	10.4						
Santa Cruz, Laguna	12.4	.5	1.3	47.5	.8		19.8	1.3	13.5	16.3	13.5	.3	.8	7.6	38.1	2
Buenavista, General Trias, Cavite	8.9			4.8		1.8				7.1	3.3	5.1		22.1	2.3	
Fort Mills, Corregidor, Cavite†	14.2	4.1			57.4	10.9	5.6			8.9	12.7	24.4	3.3	35.1		
Imus, Cavite	25.7			1.3		20.1	8.6			42.7	11.2	9.4	2.1	23.7	3.1	3
Alabang Stock Farm, Alabang, Muntinglupa, Rizal†	10.4			2.5		1	6.9	.5		1.5	49	.3	1.5	50.8		.8
Cavite Naval Station, Cavite, Cavite*	44.7					5.8	3.5		2.8	59.7	4.6	13.7		14.2	8.9	8.6
Lamao Horticultural Station, Lamao, Limay, Bataan†	24.1				1	1	1	1	8.6		9.1	6.4	16.3	20.3	.3	14
Manila, Manila	21.6			1.3	.3	1.6	4.2	.3	.6	69	8.7	12.4	3.5	9.4	.6	.3
Antipolo, Rizal	10.9		13.5	43		4.1	27.5	11.2	13.2	14.4	41.4	5.6	6.6	22.4	2	21.6
Balanga, Bataan	13.2	1.3		19.3		3.8	24.1	19.3	24.9	10.4	1	4.4	8.4	10.2	.3	.8
Montalban, Rizal†	8.4		3.6	5.8		18.3	5.1	16.2	.8	13.2	35.5	6.6	14	11.9	27.9	87.1
Hacienda Pintong Sapang, San Jose del Monte, Bulacan†	12.4		2.6	10.2		35.8	5.6	23.4	1	17.3	17.5	1.8	14.2	4.8	5.3	6.1
Mabayuan Dam, Olongapo, Zambales†					17.8			25.4	50.8	50.8	109.2	88.9	20.3	12.7	12.7	48.3
Malolos, Bulacan	10.7	9.7		1		1.3		9.4	42.7	2.5	7.1	11.9	20.3	1.5	6.1	
Paila, Norzagaray, Bulacan†	8.9	16.5	5.1	.8		7.4	2.8	26.6	1	13.5	35.6	4.6	25.2	7.6	10.9	43.4
Hacienda Carmencita, Gutad, Del Carmen, Pampanga†	22.1					49.8	23.9			13.5	10.4		42.9	15.5	12.7	2.5
Pampanga Sugar Mills, Del Carmen, Pampanga†	14			1.5		19.8	14.5	1.8		48.3	10.2	16.5	14.2	6.6	1.5	
Matulid, Norzagaray, Bulacan†	10.9					9.7	14.7	10.4	2	5.6	21.6	13.5	21.9	10.1	26.9	15
San Fernando, Pampanga	12.5				.8	7.6	3			116.8	10.4	2.8	18.5	12.9	.5	.5
Mitla, Porac, Pampanga†				4.3	1.1			59.7								
San Isidro, Nueva Ecija	14					30.2	10.9			2.5	54.7	.5	5	4.9	1.5	17.6
Iba, Zambales	21.1		16			13.8	4.3	27.2	12.2	.3	10.9	4.1	49.3	26.1	20.6	2
Concepcion, Tarlac	11.1			.8		7.1	9.4			1.5	55.9	1.5		10.2	2.3	1.5
O'Donnell, Capas, Tarlac		5.6	5.3		30	2.3	6.3	4.8	5.6	5.1	9.6	14	4	4.8	10.2	8.9
Hacienda Luisita, San Miguel, Tarlac, Tarlac†	9.7				1.3	13.7	1.3	1			34.5	2		11.7		2.5
Tarlac, Tarlac	14.5			.5		10.4	1				4.6			11.5	.5	
Paniqui, Tarlac	14			7.6	19.3	6.1		7.9			2.3		2.8	4.3	7.1	4.6
Camiling, Tarlac	19.1			30.5	29.2	7.6		40.6	17.8		4.6		12.7	12.7	15.2	
Muñoz Agricultural School, Muñoz, Nueva Ecija†				21.6				7.6	7.4		6.6	7.6	8.9	7.6		3.8
Baler, Tayabas	22.9		12.2		1.8			55.9	115.3					.2	12.7	
Dagupan, Pangasinan	7.1			.5	24.6			9.6		8	1.3	1	9.9	5.1	19.8	29.2
Rosario, La Union	5.1			3	43.2	20.6	5.9	10.4	9.4	9.7	4.3	30.7	12.4	11.9	47.5	8.1
Tubao, La Union	3.8			44.2	30.5			21.3			2.3	25.4	5.1	7.1	4.6	11.2
Itogon, Mountain Province	12.9			63	8.9	33	33	3.6		20.3	.8	10.2	6.1	5.1	18.5	7.1
Bolinao, Pangasinan	7.9			3.3	3			8.1			.5	19.3	11.4	16.5	5.8	52.1
Aringay, La Union	4.4	.8		2.5	13	45.7	5.1	8.1		2.5	5.6	34	2.5	7.9	2.5	11
Baguio, Mountain Province	15.7		3.3	22.2	14.2	9.4	39.1	42.1	.5	25.2	18.3	55.9	8.6	3.3	12.2	37.1
Sablan, Disdis, La Union	6.6	.3		20.1	2.5	179.1	3.3	8.4	22.9	5.1	16.5	10.7	26.2	1.8	3.6	21.3
Naguilian, La Union	5.3		16.3	4.8	92.7		4.1	7.6		46.5	.3	13.2	2	3.6	9.4	12.7
Kapangan, Mountain Province	102.6		27.9	31.2	30.7	18.8	27.2	51.6	34	102.6	30.2	76.7	2.3	13.3	26.7	12.4
Atok, Mountain Province	59.2		11.7	46.7	98	60.7	52.3	31.5	2.8	17.5	40.6	4.8	1	1.3	25.4	36.6
San Fernando, La Union	4.8		.6	.3	30.5		1.1	.5		62.7	.5					
Echague, Isabela	8.6		1	1	.6		2.3			23.1	23.1	7			38.6	16.8
Balaoan, La Union	4.6				23.6		2.3	2.8		3.3	3.8	16.3	18.5	13.7	23.6	31.2
Tagudin, Ilocos Sur	4.9				52.8		6.7	2.6	.5		.8	22.9	2.3	16.1	5.6	18.5
Sagada, Mountain Province†	11	1.1	18	30.7	25.9	39.6	6.3	28.4	5.8		.8	54.6	15.5	26.2	35.6	5.8
Bontoc, Mountain Province†	4.8	14.7	2	18.5	48.3	28.2	7.6	40.6			23.9	20.1	45	33	25.4	
Candon, Ilocos Sur	3.3				31.2		6.4	6.9		1.5	6.9	37.1		5.8	4.6	
Kagotungan, Pilar, Abra†					47.5	6.6		52.1	21.6		99.6	16.8	4.1	6.6		
Vigan, Ilocos Sur	1.5				1.8	1.5	2.3	25.9	1.4		53.9	32.9	1.8	18.6		
Bangued, Abra	3				3.8	40.6	2	27.2		12.4	6.4	90.2	29.7	2.3	5.3	
Tuguegarao, Cagayan	4.8	1		54.6	35.5	.5	1.1			1.3	9.1	51.3	8.9	2.6	33.2	5.6
Sinait, Ilocos Sur	24.1										45.7	27.6	2.8	5.3		
Batac, Ilocos Norte	7.6				1.3	2				8.9	96.5	26.2		5.6		8.9
Solsona, Ilocos Norte	1.3			10.2	16.3	1.8	40.9	7.1	2	6.6	.5	104.4	54.4	.3	37.6	58.4
Laoag, Ilocos Norte	1.6				.3	2.8		.3			11.7	47.8	70.1	4.1	5	63.5
Pasquin, Ilocos Norte	1.5										52.8	81				59.2
Aparri, Cagayan	11.3	2		4.5	15			3.3		17.3	1.5	68.1	67.8	6.8	8.9	
Cape Bojeador, Burgos, Ilocos Norte	10.2	.5		7.9								20.3	38.6	3.5	10.7	3
Basco, Batanes	8.4	2.6		23.4	4.6		7.6	1.5	2			32.8	82.5	12.7	1.8	1.3

† Voluntary or cooperative station

\* Rain in 24 hours beginning 8 a. m.

Daily rainfall at the stations of the Weather Bureau, September, 1921—Continued

Station.	Day of month.														Total.	
	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.		
Alfonso, Cavite	3	4.8	2.3	42.9	19.3	2.8	3	18.8	18	0.3	1.5	20.1	231.5			
Indang, Cavite	1.8	3.3	23.6	33.5	7.1	7.8	11.7	7.8	11.7	7.8	11.7	7.8	11.7	224.6		
Canluban, Calamba, Laguna	9.1	5.1	11.2	10.4	6.9	4.9	1.5	14.7	34	7.6	8.1	29.7	253.2			
Silang, Cavite	1	19.3	6.4	21.6	7.9	2.8	3	1.3	2.5	1.8	3.3	20.3	204.3			
Maragondon, Cavite	1	19.3	6.4	21.6	7.9	2.8	3	1.3	2.5	1.8	3.3	20.3	204.3			
Paracale, Camarines Norte	21.6	14.5	14.7	12.7	8.9	8	13.2	62.8	16.5	23.1	9.1	345.2	256.4			
Santa Cruz, Laguna	27.9	1.8	14.7	12.7	8.9	8	13.2	62.8	16.5	23.1	9.1	345.2	256.4			
Buenavista, General Trias, Cavite	1.8	19.3	6.4	21.6	7.9	2.8	3	1.3	2.5	1.8	3.3	20.3	204.3			
Fort Mills, Corregidor, Cavite†	1.3	19.3	6.4	21.6	7.9	2.8	3	1.3	2.5	1.8	3.3	20.3	204.3			
Imus, Cavite	1.3	19.3	6.4	21.6	7.9	2.8	3	1.3	2.5	1.8	3.3	20.3	204.3			
Alabang Stock Farm, Alabang, Muntinglupa, Rizal†	1	1.8	4.6	.5	30.5	51.8	30.5	22.1	10.9	11.7	1.3	6.9	6.6	311.1		
Cavite Naval Station, Cavite, Cavite <sup>a</sup>	1	1.8	4.6	.5	30.5	51.8	30.5	22.1	10.9	11.7	1.3	6.9	6.6	311.1		
Lamao Horticultural Station, Lamao, Limay, Bataan†	1.1	13.3	17	32	3.1	8.6	33	.5	1.1	3.3	.3	10.4	212.4	212.4		
Manila, Manila	3.6	13.5	.5	5.3	4.6	11.7	7.6	13.2	25.2	21.6	2.6	10.6	335.8	335.8		
Antipolo, Rizal	4.3	13	1.3	2.8	25.4	52.3	20.8	6.4	28.6	7.1	8.1	21.3	214.8	214.8		
Balanga, Bataan	4.3	13	1.3	2.8	25.4	52.3	20.8	6.4	28.6	7.1	8.1	21.3	214.8	214.8		
Montalban, Rizal†	3.3	30	1	2.5	53.3	3.3	3	89.4	12.9	.5	1.5	305.4	305.4	305.4		
Hacienda Pintong Sapang, San Jose del Monte, Bulacan†	33	.8	12.4	10.4	1.8	4.1	24.1	88.9	15.2	.8	5.6	4.6	437.9	437.9		
Mabayuan Dam, Olongapo, Zambales†	1.5	4.8	5.3	3.3	3	89.4	12.9	9.7	.8	30.2	7.6	258.2	258.2	258.2		
Malolos, Bulacan	1.8	3	2.3	1.3	46.2	8.1	6.4	53.6	2.3	67.3	11.5	3	184	184		
Paila, Norzagaray, Bulacan†	18	11.4	6.1	3.3	46.2	8.1	6.4	53.6	2.3	67.3	11.5	3	396.5	396.5		
Hacienda Carmencita, Gutad, Del Carmen, Pampanga†	1.8	3	2.3	1.3	46.2	8.1	6.4	53.6	2.3	67.3	11.5	3	194.7	194.7		
Pampanga Sugar Mills, Del Carmen, Pampanga†	18	11.4	6.1	3.3	46.2	8.1	6.4	53.6	2.3	67.3	11.5	3	396.5	396.5		
Matulid, Norzagaray, Bulacan†	18	11.4	6.1	3.3	46.2	8.1	6.4	53.6	2.3	67.3	11.5	3	396.5	396.5		
San Fernando, Pampanga	48.5	5.3	7.6	2.5	1.5	7.9	84.1	5.3	84.1	5.3	84.1	5.3	222.4	222.4		
Mitla, Porac, Pampanga†	2.3	17	16	3	10.7	2.8	5.3	50.8	18	.3	3	266.2	266.2	266.2		
San Isidro, Nueva Ecija	2.3	17	16	3	10.7	2.8	5.3	50.8	18	.3	3	266.2	266.2	266.2		
Iba, Zambales	25.4	6.1	10.4	31.7	13.7	.3	17.3	7.6	9.7	15.2	8.6	206.7	206.7	206.7		
Concepcion, Tarlac	25.4	6.1	10.4	31.7	13.7	.3	17.3	7.6	9.7	15.2	8.6	206.7	206.7	206.7		
O'Donnell, Capas, Tarlac	14.2	1.8	19	1.3	25.7	25.7	25.7	25.7	25.7	25.7	25.7	25.7	238	238		
Hacienda Luisita, San Miguel, Tarlac, Tarlac†	8	24.6	10.4	2.5	22.9	26.4	4.1	5.3	11.5	14.7	3.6	46	144.3	144.3		
Tarlac, Tarlac	8	24.6	10.4	2.5	22.9	26.4	4.1	5.3	11.5	14.7	3.6	46	144.3	144.3		
Paniqui, Tarlac	2.5	30.7	4.8	10.2	2.5	22.9	26.4	4.1	5.3	11.5	14.7	3.6	128.3	128.3		
Camiling, Tarlac	12.7	66	10.2	2.5	22.9	26.4	4.1	5.3	11.5	14.7	3.6	46	146	146		
Muñoz Agricultural School, Muñoz, Nueva Ecija†	35.6	27.9	7.6	1.5	18.5	114.3	6.6	6.6	6.6	6.6	6.6	6.6	159	159		
Baler, Tayabas	7.6	.8	37.9	11.7	3.8	2.5	18.5	114.3	6.6	6.6	6.6	6.6	357.4	357.4		
Dagupan, Pangasinan	4.3	13.7	1	2	72.1	8.1	6.4	53.6	2.3	67.3	11.5	3	199.1	199.1		
Rosario, La Union	37.8	3.8	1.8	48.3	38.6	.3	.8	23.1	9.1	13	.5	318.6	318.6	318.6		
Tubao, La Union	37.8	3.8	1.8	48.3	38.6	.3	.8	23.1	9.1	13	.5	318.6	318.6	318.6		
Itogon, Mountain Province	1.1	1.3	8.1	38.6	.3	.8	23.1	9.1	13	.5	318.6	318.6	318.6			
Bolinao, Pangasinan	9.9	6.9	9.6	14.2	.8	2	26.9	2.3	4.3	.3	52.9	531.1	531.1	531.1		
Aringay, La Union	11.2	30.4	1.3	9.7	42.9	.8	2	26.9	2.3	4.3	.3	52.9	531.1	531.1		
Baguio, Mountain Province	2.3	24.5	7.1	30	47.7	20.1	2.1	3.5	4.6	17.8	13.7	3	5.8	33	555.5	
Sablan, Disdis, La Union	.6	21.6	2.8	45.5	.5	10.2	3.8	5.1	3	2.5	22.9	22.6	9.7	299.5	299.5	
Naguilian, La Union	1	23.4	5.6	23.2	61.8	5.8	26.4	4.1	5.3	11.5	14.7	3.6	46	716.4	716.4	
Kapangan, Mountain Province	1	23.4	5.6	23.2	61.8	5.8	26.4	4.1	5.3	11.5	14.7	3.6	46	716.4	716.4	
Atok, Mountain Province	1	23.4	5.6	23.2	61.8	5.8	26.4	4.1	5.3	11.5	14.7	3.6	46	716.4	716.4	
San Fernando, La Union	1	23.4	5.6	23.2	61.8	5.8	26.4	4.1	5.3	11.5	14.7	3.6	46	716.4	716.4	
Echague, Isabela	128	1.3	1	.5	1.3	.5	1.3	.5	1.3	.5	1.3	.5	10.2	286.5	286.5	
Balaoan, La Union	128	1.3	1	.5	1.3	.5	1.3	.5	1.3	.5	1.3	.5	10.2	286.5	286.5	
Tagudin, Ilocos Sur	11.8	1	1	1	1	1	1	1	1	1	1	1	1	146	146	
Sagada, Mountain Province†	3.3	2.6	1.3	5.1	26.7	.3	9.4	.5	.8	4.1	359.2	359.2	359.2	359.2	359.2	
Bontoc, Mountain Province†	2.3	.8	2.8	8.9	.8	8.9	.8	8.9	.8	8.9	.8	8.9	.8	328.5	328.5	
Candon, Ilocos Sur	50.8	2.3	.3	12.7	.3	12.7	.3	12.7	.3	12.7	.3	12.7	.3	173	173	
Kagotungan, Pilar, Abra†	4.1	2.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	8.4	266.2	266.2
Vigan, Ilocos Sur	4.1	2.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	1.5	146.2	146.2
Bangued, Abra	4.1	2.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	1.8	226	226
Tuguegarao, Cagayan	4.1	2.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	4.4	214.2	214.2
Sinait, Ilocos Sur	4.1	2.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	16.5	122	122
Batac, Ilocos Norte	4.1	2.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.8	161.6	161.6
Solsona, Ilocos Norte	4.1	2.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	6.1	364.7	364.7
Laoag, Ilocos Norte	.3	7.1	.8	13.7	.5	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	7.1	222.5	222.5
Pasuquin, Ilocos Norte	.3	7.1	.8	13.7	.5	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	7.9	294.1	294.1
Aparri, Cagayan	87.9	3.8	9.6	42.8	3.6	1.8	28	2.8	1.1	.3	11.4	5.5	39.2	362.6	362.6	
Cape Bojeador, Burgos, Ilocos Norte	.5	4.3	4.1	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	6.9	114.7	114.7
Basco, Batanes	.5	12.2	.3	4.3	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	2.8	209.8	209.8

† Voluntary or cooperative station.

<sup>a</sup> Rain in 24 hours beginning 8 a. m.

<sup>b</sup> Amount of rainfall from 13 to 19.

MAXIMUM AND MINIMUM TEMPERATURES AT THE STATIONS OF THE WEATHER BUREAU, SEPTEMBER, 1921

Day.	Jolo.		Lais, Malita.		Malita.		Lebak.		Malamaui, Isabela, Zamboanga.		Zamboanga.		Davao.	
	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum. <sup>a</sup>	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.5	22.7	31.2	21	31.1	21.8	23.7	23.7	31.5	22.5	29.2	22.8	31.1	22.5
2	31	24.2	31.5	22.9	32.1	22.9	24.5	24.5	31.8	23.2	28.5	24	32.4	22.8
3	29.4	23.3	31	23.3	31.8	23.2	24	24	29.3	24.2	29.6	23.3	31.6	24.1
4	29	23.6	31.5	21.9	31.9	22.3	22.2	22.2	30.3	23.3	30	23.7	31.3	22.5
5	28.9	24.3	31.3	21.8	31.7	22.7	22.1	22.1	29.3	22.2	27.8	23.2	30.9	23
6	29.5	22.3	33.5	20.8	32.3	22.1	22.7	22.7	30.2	22.5	28.2	22.6	31.8	23
7	30.1	23	30.3	22	31.9	22.4	23.4	23.4	30	23.5	28.7	23.2	30.5	22.4
8	29.6	23.4	30.5	22	31.3	23	23.5	23.5	29.5	23	27.5	22.8	28.2	22.3
9	29	24.3	31.5	22.8	32.9	22.7	23.4	23.4	29.3	23	27.5	23.3	31.3	22.9
10	29.5	23.1	30.2	22.5	30	22.7	24.1	24.1	27	21.5	27.5	21.5	28.7	22.6
11	30	23.5	29.5	21.5	30.3	22	24.2	24.2	27.3	21.7	27	21.4	31.5	22.9
12	31.5	24.7	31	21.7	32.3	23.1	24.3	24.3	31.3	21.5	28.8	23.8	30.5	22.6
13	30.7	25.2	32.9	21.4	33	22.9	23.6	23.6	32.3	23.5	31.6	23.2	31.7	23
14	30.9	24.2	29.6	21.9	31.5	23	23.5	23.5	31.3	23	30	23.4	30.9	23.8
15	30.1	22.6	30.6	22.2	31.8	22.6	23.5	23.5	32.3	23.7	30.5	24.2	30.7	23.1
16	29.6	23.6	31.5	22	32.7	22.6	24.4	24.4	29.3	23.2	27.7	23.3	31.7	23
17	29.8	22.7	32	20.2	33.2	23.5	24.2	24.2	29.5	23	28.3	23.1	32.1	23
18	30.1	22.6	31.9	22	33.1	22.6	24.3	24.3	30.3	24	29	22.9	31.7	22.8
19	30.4	22.7	32.2	20.5	32.2	21.9	24.2	24.2	30.8	23.5	28.5	21.8	31.3	22.7
20	31	22.6	32.5	20.2	33.3	21.7	23.1	23.1	31	24	28.7	23.5	32.2	21.5
21	30.8	22.4	33	20.3	32.1	22.4	23.2	23.2	30.8	23.6	28.8	23	32.4	22.4
22	31	21.8	33.4	21	32.7	22.9	23.5	23.5	31.5	23.5	28.7	23	31.9	23.7
23	31	22.4	33.3	21.4	32.8	22.7	23.2	23.2	31.3	23.5	29	22.9	32.7	23.5
24	30.2	22.2	33.5	21.3	32.2	22.4	22.2	22.2	30.5	24	28.8	23	31.9	24.5
25	29.5	22.6	33.6	20.4	33.4	22.2	22.4	22.4	31.7	23.6	29.5	22.4	31.7	22.4
26	30.5	23.2	33	22.3	32.7	23.4	22.5	22.5	31.5	24	29.2	23.8	31.9	23
27	29.6	23.1	32.9	22	32.6	22.7	22.1	22.1	30.5	23.5	28.8	23	31.2	22
28	30	22.8	32.2	21.7	32.5	22.2	24	24	30	23.6	29.5	22.8	31.6	22.6
29	29.7	22.8	33.1	20.5	33.3	22.7	24.1	24.1	30.3	24.5	29.6	23.4	31.7	23.1
30	29.6	22.6	33.4	21.5	32.7	23	24.2	24.2	30.3	24.2	30	24	31.4	22.8
Mean	30.1	23.2	31.9	21.6	32.2	22.6	23.5	23.5	30.4	23.3	28.9	23.1	31.4	22.9

Day.	Pikit.		Bual, Dulauan.		Cotabato.		Naganaga, Margosatubig.		Malabang.		Cateel.		Ganasi.	
	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	33.8	22.2	33.1	21.6	30.5	22.8	33.5	20.7	30	22.5	30.1	21.8	30	18
2	34.4	23.1	34.3	21.5	30	23.1	34	22.3	30.8	22.6	31.3	23	30	18.8
3	33.9	23.4	32.4	21.4	28.8	23.6	33.7	23	30.8	22.2	30.7	23	30.5	19
4	33.3	22.7	32.8	21.4	30	23.3	34.5	22.5	31.5	23.2?	30.5	22.2	30	18.3
5	32.9	22.4	30.9	21.4	28.5	22.9	33.5	23	30	22.5	30	23	29.5	18
6	33.3	22.1	31.5	21.1	29.8	22.4	33.7	22.5	30.6	21.8	31.5	23.1	29	19.5
7	33.1	23.3	32.1	22.3	30	23.6	34	22.2	30.6	22.6	30.2	22.1	27.5	15.8?
8	29.6	23	29.1	22	29	23.2	34.2	23	30.6	22.6	26.2	22	28.5	17.8
9	32.1	23	32	22.9	30.1	23.5	33.3	22.2	30.6	22.5	30.1	21.5	29	17
10	28.8	22.3	29.8	22	28.9	23.3	33.7	20.5	31.2	22.6	30.8	22.1	30.5	18.3
11	29.4	22.3	28.7	22	27.7	23	34.5	21.2	30.8	21.9	29.7	22.6	29	19
12	31.9	21.4	30.5	21.2	28.8	22.6	34.3	22.2	30.8	22.2	30.7	21.6	28.5	19.3
13	33.5	22.4	32.2	21.5	30.1	23.1	33	20.5	30.5	22.5	32	21.4	29.3	19
14	31.2	23.1	32	21.2	30.8	22.3	33	22.2	31.6	22.2	31.5	22.5	29	19
15	32.7	23.2	33.6	21.4	32.4	23	34.2	22.2	31.8	22.2	30.1	22.7	28.5	18.5
16	33.4	24	32.5	22.7	31	23.6	34.5	23.3	31.5	22.5	31.5	22.5	30	19
17	33.3	24	32.5	23.3	29.9	24.3	33.7	22.7	31.4	22.2	31.7	21.6	29	19.5
18	33.2	23	32.5	22.5	30.4	23.6	34.5	22.5	30.8	22.5	30.7	21.6	28	18.3
19	33	23.2	33	22.3	30.8	23.2	34.7	23	31.4	22.8	31	21.6	27	19.3
20	33	23	32.6	22.1	30.7	23.8	35.2	22.5	31.4	22.8	31	22.2	30.5	18.3
21	33	23.1	33	22.4	31.5	23.9	34.7	22.5	31.4	22.5	31.2	22.4	26	17.5
22	34.2	24.3	33.1	23.2	30.9	24.1	35.2	22.2	31.5	22.8	31.3	23.4	27.5	18.3
23	34	23	33.4	21.9	31.2	23.9	34.5	22.5	31.8	22.5	31.6	22.6	28	19.3?
24	34.3	23	33.9	22.1	30.8	24	35	22.5	31.5	22.5	33	22.3	28.5	19
25	34.6	23.1	34	22	31.5	23.4	34.7	22.3	31.8	22.6	31.5	21.5	28.5	18.5
26	33.5	23.4	33.2	22.9	30.2	23.3	34.5	23.5	31.5	22.5	31.1	23	29	19
27	33.2	23	32.9	22.8	31	23.2	34.3	23	31.3	23.4	30.6	22.5	27	17
28	33.1	22.4	32.6	22.1	30.5	23.5	34.5	22.5	31	22.8	30.7	22.2	27	18.5
29	32.9	23.4	30.9	23	29.3	23.8	35.2	22.3	30.8	22.6	30	23.5	30	19
30	31.6	22.4	30.8	22	29.8	23.5	35	23.5	30.5	23.4	31	22	30	19
Mean	32.8	22.9	32.2	22.1	30.2	23.4	34.2	22.4	31.0	22.6	30.8	22.3	28.8	18.5

<sup>a</sup> These minimum temperatures seem to be not very reliable, the differences between 6 a. m. temperatures and minimum temperatures being both too small and too uniform.

Maximum and minimum temperatures at the stations of the Weather Bureau, September, 1921—Ctd.

Day.	Camp Kalao, Monkayo.		Camp Keithley, Dansalan.		Veruela.		Sumilau.		Cagayan.		Talacogon.		Butuan.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	32.5	22.2	28.5	18.4	32.2	22	30	17.3	31.8	21	32.5	22.4?	32.1	21.5
2	31.9	19	28.3	17.6	32.3	22.5	30.6	19	32.2	21.8	33.7	22.2	33.8	22.7
3	32.3	22	27.8	18.5	33	23.8	28.5	18.6	32	22.5	34	23.2	34.1	23.1
4	32.1	22	27.8	18.5	33.2	23	29.5	19.3	31.1	21.6	32	23	30.2	23.2
5	33.2	21.1	26.2	19.6	28.8	22.2	28.7	19.3	30.7	22.5	32	22.3	31.4	23.7
6	33.2	21.4	28	17.3	34.4	22.7	29	18.4	31.4	20.6	34	21.3	32.6	22.5
7	32.3	21	27.8	17.6	32	21.7	28.7	18.2	31.5	21.2	32.7	22	32.1	22.5
8	32.1	21.4	27.3	18	31.9	22.6	27.3	17.8	31.3	21.9	30	22.2	30.6	22.7
9	32	21.2	28.3	19.1	31.9	22.8	28	19.6	31	23	32.4	23.2	30.1	22.2
10	31.5	21	26.8	19	31.8	21	26.1	18.8	30.4?	21.5	32	22.2	31.7	22.2
11	32.5	21	24.9	18.7	31.3	22	27.4	18.5	30	21.9	33	22.1	30.4	22.5
12	33.7	19.9	25.4	19.8	32.2	21.2	29.2	18.5	32	22	33.7	21	33.2	22.7
13	33.6	21.6	27.3	21	33.8	21.6	28	18.5	34	21.5	34.2	21	34.1	22.7
14	32.7	22.7	28.3	19.3	34.5	21.8	30.4	18.3	32.2	21.5	33.7	21	33.8	23.1
15	31.9	21	29.3	18.1	32.2	22.7	30	18.1	31.8	21.5	31.5	22.4	32.9	22.6
16	32.3	21	28.2	17.7	33.8	23	29.2	18	31.9	21.1	33.5	21.4	34.5	23.2
17	30.9	21.1	28.2	18.4	33.3	22.2	29	17.9	31	22.3	33.5	21.4	32.4	21.9
18	33	20	27.8	19	34	21.2	29	18.6	32	21.9	32	21.2	33.1	22.9
19	33.6	21	27.3	18	31.4	21	29.3	18	32.3	22	33	22.2	33.8	22.7
20	34.4	21.4	27.7	18.9	33.8	21.7	29.4	17.7	32.6?	21.5	34.2	21.4	33.9	22.9
21	34	21	28.3	18.6	33.4	22	28.8	18	32.3	21.5	33.5	22.2	34.3	23
22	33	22.4	28.5	19.4	34.2	22.7	30	18.9	33	22	34.2	22.3	35.4	23.4
23	34	21.4	27.9	20.7	34.4	21.5	29.8	18.2	32.5	23	34	22.2	33.6	23.5
24	33.9	22.5	28.8	20	34	21.7	29.3	19.3	32.5	22	34.5	22.4	34.1	23.4
25	33	22	28.8	19.5	34.3	21.7	28.4	17.6	32.2	21.4	33.7	21.2	33.4	22.7
26	33.1	21.4	26.8	19.5	33.5	21.7	29.1	19.4	31.2	22.4	31.7	22.1	33.6	22.7
27	31.9	20	27	19	32.8	23	29.5	19	31.2	22	32.7	22.2	31.7	22.2
28	31.7	21	27	17.9	33.3	22.7	25.8	18.4	31.5	22	32.5	22.2	30.9	23
29	30.6	20.1	26.3	19.1	32.8	22.6	27.1	19.8	33.5	22.5	33	23	32.1	22.6
30	32	21	26.3	19.2	33.3	21.7	27.3	19.7	31.1	22.8	33.2	22.4	33.1	23.3
Mean	32.6	21.2	27.6	18.8	32.9	22.1	28.7	18.6	31.8	21.9	33.0	22.1	32.8	22.8

Day.	Mambajao.		Dumaguete.		Kolonie, Yap.		Tagbilaran.		Iwahig Penal Colony, Puerto Princesa.		Dalaguete.		Surigao.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	30	22.3	31.5	23.3	31.2	25	30.6	22.2	30.8	21.2	22.3	31.7	22.8	
2	30.5	23.2	31.9	23.3	32.6	24.2	32.2	23.1	31.6	23	25	32.1	23	
3	30	25	31	24	31.3	24.8	31	24.1	31.2	20.8	24.6	30.1	24.2	
4	29.8	22.9	30.9	24.2	31.6	24.2	29.2	23.6	33	21	24.6	30.2	24.1	
5	30	22.9	31.3	24.3	30.7	24.8	30.4	22.2	31.8	22	23	32	23.8	
6	29.4	22.8	31	22.8	32.7	24	31.3	22.6	32	21.4	23	31.9	23.9	
7	29	22.9	31.4	23.6	30.6	23.9	30.9	23	31.8	21.4	23.5	31.8	23.7	
8	29.5	23.6	31.1	23.4	30.3	23.2	30.8	23	30.8	22.2	23.2	31.5	23.1	
9	30.3	22.4	31.1	24	28	23.5	30.6	24.2	31.6	22	24.3	29	22.3	
10	28.8	23	29.4	22.9	28.1	22.8	28.8	23.5	32.4	22.7	24.3	27.4	23.4	
11	27.5	23.3	25.5	23.4	31.7	23.8	28.2	23.5	29.4	23	23.8	27.4	24.1	
12	31	23.8	30.6	22.9	31	23.8	30.3	23.7	29.8	23.2	23.5	30.9	24.3	
13	32.3	25.4	32.2	23.9	31.8	23.8	32.3	24.7	31.8	23.2	23.7	32.8	23.3	
14	31.4	23.1	31.4	23.7	31.5	23.6	31.5	23.7	31.4	22.4	23.8	32.1	23.6	
15	30.8	23.4	31.8	23.3	32.8	24.3	32.4	22.5	30.9	21.2	23	33.3	23.3	
16	30.8	24	30.9	24.3	33.2	24.8	31.7	23.9	32	21.2	24.4	32.8	23.5	
17	30.9	23.8	30.7	23.9	26.5	22.4	31.3	23.4	32.2	21.7	24.2	31.2	24.1	
18	31.9	22.9	32	24	29.1	23.1	32.2	23.3	31.8	21.4	24.8	31.6	23.2	
19	32	24.4	33	23.3	31.1	23.9	32.4	22.9	32	22	23.2	31.8	24.8	
20	31.9	25.3	33	23.5	31.1	23.8	32.7	23.7	32	21.7	24	31.3	24.5	
21	33.2	25.3	32.9	23.2	31.5	23.8	32.5	24.7	33	22.4	24.7	32	24.8	
22	32.5	24.4	31.9	23	31.8	23.8	32.7	23.9	32.2	21.7	24.2	32.6	25.1	
23	31.9	25.3	32.1	23.7	32	24.7	33.2	25	32.2	22	24.5	32.2	24.6	
24	31.9	25.3	32.9	23.2	28.5	23	33.8	24.6	31.9	22.2	23.9	32.7	24.2	
25	32.4	24.7	33	23.5	31.1	23.2	33.7	24.9	31.2	22	24	32.1	23.8	
26	31.3	23.9	32.6	23.4	31.7	24.1	30.7	23.9	31.2	22.4	25.4	31.1	22.4	
27	30.9	22.4	31.4	23.5	31.2	24	32.6	23.4	30.6	22.4	23.8	30.5	23.1	
28	28.9	23.3	31.6	23.2	31.5	23.8	31.5	23.1	31	23.2	23	30	23.4	
29	31.3	23	31.4	23.4	32	23.7	32	22.6	32.6	21.4	23.4	31.1	23.5	
30	31	23.6	32.2	23.7	32.7	24.7	32.9	23.4	31.6	22.2	24.2	30.5	25	
Mean	30.8	23.7	31.5	23.5	31.0	23.9	31.5	23.5	31.6	22.0	23.9	31.3	23.8	

Maximum and minimum temperatures at the stations of the Weather Bureau, September, 1921—Ctd.

Day.	Hacienda Naval, Himamaylan.		Biaong Cui's Farm, Barili.		Maasin, Leyte.		Isabela, Occidental Negros.		Hacienda Tanolo, Hinigaran.		Cebu.		La Castellana.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	31.7	21	29.2	22.1	32.6	23.2	32.3	22.7	31	22	32.2	23.8	32.8	22.3
2	32.5	23	30.5	22.5	34	23	33.7	22.4	32.6	23.1	32	23.8	34	22.6
3	31.7	21.4	30.2	22.1	33	23.4	30.1	22.4	30.5	24	31.5	24.8	32.5	23.8
4	30.5	21	30.5	22.4	34	23	30.8	22.8	30.5	22.5	30.2	25.4	32	22.7
5	29.5	21	31.4	22	33.3	22.8	30.7	22.4	29.2	22.5	30.2	23.3	32	22
6	31.3	21	31.2	21.5	32.8	22.2	31.1	21.8	31	22.1	30.6	24	32	21
7	31.7	21.4	31.5	22.1	34	23	31.8	22.6	31.5	23	32.2	25	32	22.1
8	31.3	22	30.3	22	34.2	23.2	31.2	22	31	22	31.9	25.3	33.6	21
9	31.3	22	28.4	21.5	32	22.2	30.7	22.7	30.7	23.2	29.2	24.7	33	23.5
10	28.5	21.5	27.5	22.1	30	22.4	27.7	23.2	28	22.7	29.5	25.3	32.5	23
11	25.5	21	27.8	21.8	28.8	22	25.1	22.2	26.5	22.7	27.7	25	32.8	21.5
12	28.3	22	28.4	22.1	30.6	23.2	27.2	23.2	28	22.5	29.8	23.7	31.5	22.5
13	31.5	22.5	30.5	22.5	32.5	24	32.5	24.1	30.5	22.4	30.2	26.4	31.6	21.8
14	31.7	22.5	30.3	21.7	34.5	24.1	31	22.1	31	22.4	31.1	26.8	32	21.8
15	31.7	21.5	32.1	22.1	34.4	23.6	31.7	22.6?	32	21.5	31.8	24.9	32	21.5
16	32.3	23	30.5	22.4	34	23.8	30.9	22	30.7	22.3	30.3	25.1	31.5	22.8
17	30.5	22.5	31.5	22.8	34.2	23.2	30.5	21.6	30.5	22	31.7	25	32	21.8
18	30.5	23	31.2	22.4	34.2	23.6	30.4	22.7	30.3	22.6	31.4	24.7	31.8	21.8
19	30.7	22.4	31.5	22.1	35.6	23.6	29.7	22.5	30.3	22.5	31.1	24.6	32	21.5
20	31.3	22.5	32.1	22.9	33.6	24	31	22.6	30.6	22	31.2	26	32.2	22.3
21	31.5	23	31.5	22.1	33.4	23.4	30.9	22.6	30.8	22.5	31.2	26	32.6	22.5
22	31.8	22.5	32	22.1	34.2	23.2	31.4	22.6	31.4	22.4	31.4	26.3	32.5	22.8
23	30.3	22	31.8	22.5	33.8	24.4	29.7	21.7	30.4	22.5	31.6	26.4	31.5	22.5
24	31.3	22.5	32.3	22.1	34	23.6	29.6?	21.5	31	22	31.8	26.2	32	21.5
25	32.3	23	30.5	23	33	23.5	31	22.3	31.4	22.2	31.2	26.2	33.2	21.7
26	29	22	32.5	22.7	34	23.6	28.7	22.2	31.3	23.5	31.6	24.5	31.4	23
27	30.2	23.5	30.6	22.1	32.6	22.6	30.3	21.3	30.1	21.8	31.2	24.1	31.5	21.5
28	30.5	22.5	30.5	22.4	31	22.2	31.2	22.6	31.1	22.5	29.8	24.2	32.5	21.8
29	30.5	22.5	30.1	22.5	33	22.6	30.8	22.1	30.9	22.5	29.4	24.8	31.7	22.5
30	32.1	22	31.4	23	32.4	22.5	30.7	22.3	31	23	31.2	26.1	31.5	22
Mean	30.8	22.1	30.7	22.2	33.1	23.2	30.4	22.3	30.5	22.5	30.9	25.1	32.2	22.1

Day.	Central Azucarera de La Carlota.		Hacienda Canlaon, La Castellana.		Maa Sugar Central, Bago.		Valladolid.		San Joaquin.		Murcia.		Bacolod.	
	Maximum.	Minimum.	Maximum.	Minimum. <sup>a</sup>	Maximum.	Minimum.	Maximum.	Minimum. <sup>a</sup>	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	31.9	22.4	31.2	20.1	33.9	22.5	33.2	19.2	31.4	23.1	31.6	22.3	31	22.5
2	32.3	23.2	29	20.9	33.8	22.9	31.9	18.9	32.7	24.4	32.3	21.7	31.7	22.9
3	30.3	23.3	30.9	21.9	32.4	23	33.2	20.7	32.5	24.5	30.9	22.8	30	22.6
4	31.9	23	31	22.5	32.8	22.7	32.5	19.7	32.9	23.1	31.8	22.6	31.1	23.1
5	31	22.3	31.6	21.9	31.4	22.1	31.2	21.7	31.7	23.6	31.9	22.3	30	23
6	31.8	21.9	32.2	21.4	32.6	21.2	32.2	21.3	30.4	23.9	32.3	21.9	30.7	21.7
7	32	23.2	31	22	32.9	21.9	33.2	22.4	32.2	22.4	32.2	21.6	31.2	22.7
8	31.4	22.2	31.5	20.7	33	22	32.5	19.5	31.6	24.3	31.7	20.9	31	21.5
9	31	23.3	33.8	20.8	31.2	21.8	31.9	21.8	31.8	22.4	30.8	22.2	30.6	23.4
10	27.8	23.4	32.6	19.5	28	22.7	30.2	22.3	32	23.6	30.7	22.2	27.4	23.4
11	27.7	23.7	32.4	21.5	29.5	23	29.2	23.2	30.1	22.9	27.8	21.7	28.9	22.8
12	28	22.9	32.3	21.9	29	22.9	29.8	21.3	32.4	22.9	27.4	21.3	27.7	23.1
13	31.4	22.8	31.7	21.5	31.7	21.9	31.9	19.8	28.1	23.5	30.4	22.2	31.3	22.7
14	31.7	23	32.2	21.9	32.3	23.3	31.5	21.5	29.7	22.6	31.3	21.3	30.9	23.5
15	32.4	21.7	32.6	22.3	33.2	21.7	32.3	19.7	31.2	24.6	32.9	21.9	32.6	21.5
16	32.7	23.3	31.5	21.5	33.4	22.6	33.2	22.4	32.3	24.2	31.9	22.1	30.8	22.4
17	30.3	22	32.1	21.9	30.5	21.4	32.8	19.8	30.9	23.9	32.1	21.4	31	21.9
18	31.4	22.8	31.8	20.5	31.5	21	33.5	20.5	32.9	23.1	32.3	21.9	32	22.4
19	31.8	22.8	33.5	20.9	32.1	22.1	32.8	21.5	31.5	24.1	32.7	22.3	32.9	22.2
20	31.2	22.7	32.1	20.9	32	23	33.5	20.3	32.4	24.4	33.1	21.8	32.4	22.5
21	31.7	22.6	31	20.6	31.6	23.1	32.2	21.2	32.7	24.1	32.8	22.7	32.2	22.9
22	31.4	23.2	31.5	21	31.5	22.7	33.5	21.6	32.7	24.2	32.9	22.4	32.2	23.2
23	31.7	23.2	31.7	20.9	32	23.2	33.4	21.3	33.3	24.5	31.8	22.5	32.2	23.6
24	32.1	22.8	30.8	19.8	31.7	22.3	32.2	20.9	32.2	24.1	32.7	22.6	32.4	23.2
25	32.5	23	32	21	33	22.8	32.4	21.3	33.6	24.2	32.5	22.8	32.4	22.7
26	29.5	23	28.3	21.3	31.2	22.6	33.2	22.2	31.4	24.6	31.1	23.4	30.9	22.2
27	31.3	21.9	32	21.2	32.5	21.4	32.2	22.7	31.5	23.1	29.3	21.3	31.2	21.8
28	31.9	22.3	29	18.9	32.7	21.7	33.4	21.4	31.6	23.1	31.2	20.8	31	22.1
29	31.8	23.2	30.9	20.7	33.8	22.2	33.5	21.9	30.1	23.5	31.9	21.3	30.9	21.9
30	32	22.6	31.1	21.4	32.5	21.6	32.5	22.7	32.5	24.6?	32.6	21.6	32.2	21.7
Mean	31.2	22.8	31.5	21.1	32.0	22.3	32.4	21.2	31.7	23.7	31.6	22.0	31.1	22.6

<sup>a</sup> These minimum temperatures seem to be somewhat too low.



Maximum and minimum temperatures at the stations of the Weather Bureau, September, 1921—Ctd.

Day.	Oton.		Iloilo.		San Jose de Buenavista.		Tuburan.		Leon.		Silay.		Calag-itan, San Remigio.	
	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.2	24.2	30.7	22.5	31.3	22.8	32.2	22.4	31	22.4	31.5	22.8	31.5	22.3
2	33.4	25.2	32.2	24.9	31.4	23.2	33.1	22.9	33.4	22.9	31.2	23.2	31.2	22.2
3	33	24.5	32	24.8	30.8	23.4	30.1	24.2	33.2	22.9	31	23	31	22.2
4	32	24.4	32.2	23	30.8	22.9	30.7	23.4	33.7	22.9	30.5	24.2	30.5	22.3
5	29	23.8	29.4	22.9	28.6	23.1	30.3	23.3	29.2	22.9	29	24.1	29	23
6	32.4	23.4	30.7	24	30.5	22.2	31.1	23	31.7	22.9	30	23.4	30	21
7	32	24.4	32.1	23	30.6	23.6	32	23.8	32.6	22.9	29.5	24.3	29.5	23
8	31.2	22.6	31.2	22.9	30	22.1	32.2	23.8	32	22.9	30	23.5	30	21
9	31.7	24.2	31.7	24.6	31	23.4	26.9	23.8	32.8	22.9	29.5	23.7	29.5	22.3
10	30.2	25.2	30.2	23.9	27.2	22	27.2	22.9	30.5	22.9	25.5	23.8	25.5	22.3
11	28.1	25.4	29	23.4	26	23.4	26.8	23.6	27.8	22.9	27	24	27	23
12	27.9	26.2	27.9	23	27.6	23.5	30.2	24.1	27.2	22.9	27	24	27.2	22
13	29.2	27.1	29.2	23.9	29	23.2	33.1	24.1	29	22.9	30.5	24.1	29	23
14	30.2	27.2	30.4	25.3	31.4	22.7	32.2	23.3	30.5	22.9	30	24.2	30	23.5
15	30.7	24.4	30.8	24.7	31.3	23.1	32.4	23	31	22.9	31	23.8	31	24
16	31.4	24.5	31.9	24.4	31.4	23.2	31.1	23.7	32.8	22.9	32.5	24.3	32.5	21.2
17	30.2	23.2	30.7	23.9	30.3	22.5	32.1	23.7	31.2	22.9	30.5	23.5	31.2	23
18	31.2	24.2	31	24.5	30.7	23.1	31.8	23.6	32.1	22.9	30.4	24	32.1	21
19	31.8	22.2	31.6	24	30.7	22.6	32.9	23.4	32.7	22.9	32	23.4	32	21
20	31.7	23.1	31.2	24.2	30.7	23	33.3	23.5	32.9	22.9	31.5	24	32.9	23.2
21	31.8	23	31.2	23.3	31	22.5	34.4	23.6	32.7	22.9	31.7	24.3	32.7	22.2
22	30.6	22.7	31.2	23.2	30.4	22.5	35.1	23.8	32.3	22.9	30.5	24.1	32.3	21.2
23	31.8	26.6	31.3	26.5	30.7	23.3	34.7	24.7	32.2	22.9	32	24	32.2	21.2
24	30.8	26.7	31.1	26.6	30.7	23.3	33.2	23.5	32.6	22.9	32.5	23.8	32.5	22.3
25	31.8	24.6	31.5	25.2	31	23.5	34.1	23.9	32.3	22.9	31	24.1	32.3	23
26	30.8	23.8	30.6	24.3	29.9	23.5	33.5	24.2	31.1	22.9	30.6	24.5	31.1	22.3
27	31	25.1	31	24	30.6	22.5	31.7	23	31.3	22.9	32.2	23.8	31.3	22.2
28	31.8	23	31	23.5	30.6	22.8	30.9	23.8	31.5	22.9	30	24	31.5	22
29	32.2	22.7	30.9	23.6	30.6	23.2	31.2	23.7	32	22.9	32	23.2	32	21.2
30	30.8	23.5	31.1	24	31.1	22.5	32.9	23.4	33.4	22.9	31.5	23	33.4	22
Mean	31.1	24.4	30.9	24.1	30.3	23.0	31.8	23.6	31.6	22.9	30.5	23.8	31.6	22.2

Day.	Cuyo.		Barotac Nuevo.		Hacienda Ilaya, Victorias.		Hacienda Bilbao, Manapla.		Janiuay.		Cadiz.		Dingle.	
	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30	24.7	32.3	22.9	30	22.5	31.5	22.9	35.1	22.9	30.1	22.3	30.1	22
2	32.5	23.7	32.3	22.9	29.6	23.2	31.1	22.7	32.3	22.9	31.1	22.2	32.8	23.5
3	31.2	24.3	29.2	22.9	29.5	22.4	31.9	22.5	32.3	22.6	31.6	23.4	31.8	23
4	31.4	26.5	31.1	22.9	30.6	23.2	31.3	21.9	31.5	22.8	30.1	22.4	31.6	23.5
5	28.7	23.1	31.1	22.9	29.5	22.3	32	22.9	21.1	22.9	31.4	22.3	30.3	22.4
6	31	23.3	32.3	22.9	31	23.2	32.3	23.4	32.9	21.9	31.3	22.4	33	22.3
7	31.7	25	32.2	22.9	29.8	23.8	31	22.4	32.6	21	32	23	32.5	23.3
8	30	24.7	31.4	22.9	30.4	23.4	31.6	22.9	31.7	21	31.6	22.8	32	20.3
9	31.7	24.2	29.2	22.9	30.5	23.2	31.8	23.2	31.7	22.4	29.3	22	30	22
10	27.7	24.9	28.1	22.9	30.6	23.5	31.2	22.7	28	22.5	29	22.8	32.1	23.5
11	27.8	22.9	28	22.9	30.2	23.3	31.5	23	29	22.3	31.2	22.6	29.7	23.2
12	27.6	23.2	27.2	22.9	30.5	22.5	30.2	23.1	27	22.5	32	23.5	28	22.6
13	28	24.6	30.2	22.9	29.2	23.5	30.4	21.5	28.7	22.8	32.1	22.8	28.6	22.9
14	28.2	24.4	31.2	22.9	29.8	22.5	30.8	22.8	30.8	23.5	32.2	22.8	31.5	24
15	30	24.3	31.3	22.9	29.5	22.4	31.5	22.9	21.1	22.9	31.6	22.9	32.2	23.3
16	30.7	23.9	32.2	22.9	30.6	22.5	31.4	22.5	31.7	22.5	31.8	23.3	32.8	23
17	30.6	23.7	31.4	22.9	29.4	23.4	31.8	22.7	32	21.8	33	21.7	32.6	22.2
18	30.5	23.8	32.2	22.9	30.2	23.6	32	22.9	31	23	33.1	21.2	32.4	23
19	30.5	23.7	31.3	22.9	31.5	23.8	30.8	22.7	32.8	20.6	28.9	22	33.2	22
20	28.5	25	31.5	22.9	30.6	22.4	30.6	22.9	32.1	21.9	34	22.6	32.8	23
21	30	25.2	32.2	22.9	30.2	23.3	31.8	22.6	32.3	20.8	31.2	22.9	33.1	21.5
22	30.6	23.3	32.5	22.9	30.4	23.7	32.2	23.1	32	21	31.2	23.9	32.2	21.3
23	30.7	25	33.2	22.9	31.6	23.3	32	23.2	32.2	21	31.5	23.9	31.9	23
24	30.6	26.8	32.3	22.9	30.4	23.2	32.2	22.8	30.4	21.8	31.4	23.3	32	23.2
25	31.7	24	32.3	22.9	29.7	23.4	31.2	22.9	31.7	22.6	32	23	32.8	22.5
26	30.6	24.6	32.2	22.9	29.8	23.2	30.7	22.7	31	22.1	32	23.1	32	22.7
27	29.4	23.6	29.1	22.9	29.4	22.2	31.7	22.9	31	21.9	31	22	31.4	23
28	31	23.6	31.3	22.9	30.8	22.6	30.9	23	32	21.8	30.7	22.4	31	22
29	31.5	25	29	22.9	31.8	22.6	30.7	22.9	32	22.5	30.6	22.8	28	22
30	31	23.3	31.3	22.9	30.6	23.2	30.4	22.5	31.6	20.9	33.2	21.6	32.1	20.8
Mean	30.2	24.3	31.0	22.9	30.3	23.0	31.4	22.8	31.4	22.1	31.4	22.7	31.6	22.6

Maximum and minimum temperatures at the stations of the Weather Bureau, September, 1921—Ctd.

Day.	Ormoc.		Guiuan.		Bugasong.		Bogo.		Sara.		Tacloban.		Central Asturias, Buntog, Dumalag.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
1	32.2	22	33	22.2	30	22	29.9	22.9	31.3	22.6	31.6	23.1	31.3	21.9
2	32.8	22.4	33.2	23.2	31	22.4	31.7	23.1	33.2	24.3	32.3	23	33.9	22.9
3	33.5	22.8	32.3	24.8	31	22.5	32.8	23.2	32.1	23.1	31	23.7	32.8	23.2
4	31.1	22.8	31.3	23.3	31.5	21	31.8	23.4	33.5	24.1	31	23.6	32.8	24.5
5	31.2	22.8	32.2	23.1	31.5	22.5	30	23.2	32.8	23.6	32.1	23.6	32.7	22.6
6	32	22.6	31.8	23.3	30.2	21.8	29.8	23.1	32.2	23.6	33	23.3	34.1	22.4
7	32.4	22.4	32.5	23.2	30.2	21	30.6	23.4	32.3	23.6	33.1	23.1	33.5	23.4
8	32.5	21.9	33	23.5	30	22.4	31.7	23.5	32.7	23.5	33.3	23.6	32.8	22.4
9	32.6	22.1	28.3	23.4	31	22.4	30.9	23.3	31.7	24.9?	26.7	23.5	32.8	22.4
10	27.6	23.1	28.4	23.8	---	---	22	28.2	23	31.8	23.4	26	32.8	22.4
11	26.5	23.3	27.7	24.4	30.2	22.5	27.5	23	31.7	23	25.7	22.7	28.3	22.2
12	29.9	23.6	30.5	25.4	27.2	20.4	26.6	23.2	32.3	---	30.6	22.5	28.1	21.9
13	31.8	26	31	26.8	29	23.4	29.5	23.5	28.9	---	---	---	30.2	22.9
14	32.4	24.8	32.8	27.6	31	22.5	31	23.7	29.8	---	34.1	23.9	32.2	24.3
15	32.9	23	31.3	25.8	32	22.2	32	22.2	32	---	33	23.9	33.8	23.9
16	32.6	22.1	32.5	23.2	32	22.2	32.1	23.8	31.8	24.1	33	22.9	33.8	23.9
17	32.2	22	32.3	23	31	22.4	33	23.9	32.5	---	32.9	22.9	31.9	22.9
18	32.8	22.2	31.7	24	32	22.4	33.1	23.9	31.5	23.6	33.1	22.9	31.9	22.3
19	32.1	22.5	31.8	25.3	32	22.4	33.2	24	32.1	23.1	33.2	23.5	33.7	24.2
20	32.5	23.1	31.7	25.2	30.5	22.5	33.3	24.1	32.6	23.3	32.7	22.5	33.6	21.6
21	32.6	23.4	31.9	25.5	31	22.2	33.3	24.2	33.5	22.6	31.9	23.5	33.7	21.9
22	32.5	23.3	31.8	24.8	30.7	22	33.4	24	33.7	22.9	33.1	24.4	30	21.7
23	33	24.1	31.8	27.7	30	22	33.6	24.1	32.9	24.1	32.9	23.6	33.2	22.2
24	32.9	23.3	32.3	27.8	31	22.2	33.5	24	33.5	---	33.2	24.4	32.8	22.9
25	32.9	23.9	32	26.8	31	22.4	32	23.5	33.5	24.1	32.2	23.6	32.5	22.8
26	32.9	23	31.5	24.5	31	22.5	29.5	23.2	30.8	23.6	32.2	23.4	33.3	22.1
27	31.6	23.1	31.5	24.1	31.5	22.5	29.3	22	29.3	23.6	31	23.2	30.8	22.7
28	31.4	22.3	30.8	23.7	31.2	22.4	30.5	23.1	31.2	23.1	33	23.1	32.4	22.8
29	31.9	22.4	32	23.3	30.5	22.4	31	23.3	31.3	23.3	33.2	23.6	31.7	22.9
30	32.8	23	32.4	25.5	31	22.4	30	23	32.2	22.6	32.4	23.1	32.8	21.6
Mean	31.9	23.0	31.6	24.6	30.8	22.2	31.2	23.5	32.1	23.5	31.9	23.3	32.2	22.7

Day.	Culasi.		Mambusao.		Hacienda Amparo, Pontevedra, Capiz.		Capiz.		Borongan.		Calivo.		Pandani, Antique.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
1	31.9	23.6?	31.3	22.3	31.5	22.4	31	22.5	31.1	22.5	29.3	22.6	31.5	22.6
2	31.5	23.2	32.8	22.9	31.5	23.2	32.9	24.3	32	22.9	31.3	23.1	34	22.2
3	32.9	24	32.2	23.7	31.6	22.8	32.5	24.2	30.4	24.2	31.3	23.1	34.1	24.1
4	31.4	24	31.7	23.6	30	23.8	31.5	23.2	31	23.5	31.3	23.6	33.3	24.3
5	31.5	23.9	32.2	22.9	32.9	23.3	32.5	23	31.5	23	31.6	23.1	29.9	23.7
6	30.3	22.8	33	22.3	30	22.4	32.5	23.1	31.4	22.6	31.6	22.1	31.5	23
7	30.4	23.7	33	23.7	32	23.4	32.1	22.9	31.6	23.4	31.6	22.1	32.1	23.7
8	30.5	22.2	30.9	21.2	31.4	21.3	31.1	22.6	32.2	23.3	31.3	22.1	31.6	23.3
9	31.5	23.2	31.7	22.6	31.4	23.3	32.5	23.9	26.8	23.6	31.6	23.1	33.5	23.7
10	30	23.2	26.5	23	31.3	23.6	27.2	23.8	28.8	22.9	32.6	23.1	27.6	24.4
11	30	22.7	28.2	22.6	32.8	22.5	27.9	23.2	25.8	23.4	28.3	23.1	27.3	23.5
12	29.5	---	25.5	22.2	32.2	22.4	25.5	22.9	31.2	23.9	25.3	22.3	27	23.4
13	31.5	23.2	30.5	23.2	29.9	25.5	31	24.5	33.7	24.4	28.3	23.1	27.1	24
14	32.3	23.2	33	23.2	32.2	25.4	33.3	24.7	33.1	23.4	31.3	22.1	30.3	23.2
15	---	23	33.6	23.4	33.3	23.4	32.9	23.6	32.6	24.1	31.5	22.3	32	23
16	31.5	23	32.3	23	31.2	23.9	33	24.1	32	23	31.3	23.1	31.9	23.2
17	30.5	23.2	31.5	22.4	31	22.8	31.5	23.9	31.6	22.6	31.3	22.3	31.4	22.5
18	31.5	23.2	33.1	22.5	31.7	22.5	33	23.4	32.6	22.6	32.6	22.7	30.4	23.3
19	32	23	33.4	21.8	32.9	22.2	33	22.8	32.6	23.3	33.3	22.1	30.4	23.4
20	30.5	23.7	33	22.7	33.4	22.3	33.5	23.6	35.2	22.3	32.5	23.1	30.2	24.2
21	31	23.6	33.9	21.7	33	22	33.2	22.9	35.1	23.5	33.3	22.1	30.2	24.5
22	30.5	23.3	33.1	21.4	32.4	22.3	33.1	23	34.7	23	33.3	22.1	30.1	24.7
23	31	23.7	33.1	22.3	31.6	22.6	33	24.5	34.4	23.9	33.3	23.1	30	25
24	---	24.2	33	22.9	32.7	23.1	33.5	24.2	33	23.9	32.3	23.1	30.4	24.9
25	---	24.2	32	22.7	32.5	23.7	31.5	23.1	32.6	23.6	33.3	23.6	31	24.9
26	31.3	22.8	32.8	21.9	31.3	22.5	32.4	22.9	33	23.5	33.5	23.1	31.2	23.2
27	30	22.9	28.4	22.8	32.2	23.3	29	23	31	23.8	31.3	23.1	---	23.7
28	31.6	22.7	31	23.2	29.6	23.1	32.1	24	33	22.6	31.3	23.1	32.9	23.2
29	32	24	31.6	23.3	30.8	23.1	32.5	24.1	32.4	22.3	31.8	23.1	32.7	23.7
30	32	24.2	31.7	21.6	32.1	22.3	32.6	22.6	32.8	23.4	32.3	22.1	30.5	23.7
Mean	31.1	23.4	31.7	22.6	31.7	23.0	31.8	23.5	32.0	23.3	31.5	22.8	30.9	23.7

Maximum and minimum temperatures at the stations of the Weather Bureau, September, 1921—Ctd.

Day.	Catbalogan.		Ibajay.		Calbayog.		Masbate.		Romblon.		Batag Light-house, Laoang.		Irosin.	
	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.2	22.3	30.7	22.3	31.9	22.9	29	23	29.6	22.7	30.1	22.2	31.9	22.2
2	31.5	23.5	31.7	23.5	32.8	22.5	32	24.8	32.4	22.9	30.7	24.1	32.1	23.4
3	31.5	23.5	31.6	23.5	32.8	23.4	31.6	25.8	32.5	24.5	29.9	23.6	30.6	23.1
4	30.8	23.8	31.4	23.8	31.6	23.4	30.8	25.4	32.4	24.1	30	22.8	30.9	22.3
5	31.9	23.3	30.8	23.3	31.5	23	31	25.4	30.4	23.6	29.9	22.8	33	23
6	32.5	22.8	31.3	22.8	32.5	23.4	31.4	24.6	30.6	23.7	30.6	23.2	32.2	22.5
7	31.5	23.2	31.2	23.2	32	23.3	30.6	25	32	23.4	31	23.5	32.2	23.2
8	30.6	22.5	31.1	22.5	31.4	22.6	30	25.8	31.5	23.6	31	23.9	31.8	22.9
9	27.3	23.1	31.8	23.1	28.6	22.8	30.6	25	32.5	23.6	26.2	23.1	31.2	22
10	27	23.1	28.7	23.1	27.2	23.8	29.4	25.4	30.4	24.2	28.5	23	28.3	23.2
11	26.6	23.3	29.4	23.3	25.5	24.5	26.6	24.2	28.2	23.2	24.9	23.8	25.3	23.4
12	30.4	23.7	26.8	23.7	28.2	25.4	27.4	24.2	28.3	24.3	27	23.3	26	23.5
13	32	24.8	27.4	24.8	31.3	26.8	29.6	25.6	27.5	24	33	23	30.6	24.8
14	33	23.3	31	23.3	31.6	25	31.6	26.6	29.9	24.7	32.4	24.5	32.2	25
15	32.5	22.4	31.7	22.4	33	23.6	32.6	24.6	31.5	23.2	31	24.1	32.7	22
16	32.9	23.3	31.8	23.3	33.3	22.5	31.6	25.4	32	22.8	32	23.6	33.3	21.2
17	31.5	22.8	30.7	22.8	31.9	22.9	29.6	25	32.7	22.7	30	23.6	32.7	20.9
18	31.8	24.2	31.3	24.2	32.1	23	31.8	25.2	32.6	23.1	30.5	23.6	32.3	22.8
19	31.9	23.3	31.1	23.3	33	26.8	32	25.6	33.5	23.3	31.3	23.7	31.2	23.4
20	31.9	24.3	30.7	24.3	32.4	24.4	30.8	26.5	32.5	23.5	31	23.7	31.8	23.2
21	32.5	24.2	30.2	24.2	32.5	24.7	31	26.5	32.2	24.4	31.2	23.6	32.3	23.1
22	32.1	24.3	31	24.3	32.3	24.3	31.6	25.5	31.9	24.1	31.5	23.6	32.3	23.7
23	32.2	30.3	30.3	30.3	30.6	25	31.4	26	30.9	25.8	30.6	24	32.3	24
24	31.9	24.7	31.3	24.7	32.2	24.7	31.4	26.5	31.5	24.9	31	24.2	32.2	24.1
25	31.3	24.6	31.5	24.6	31.6	24.7	30.8	25.5	32	24.6	30	23.1	31.6	23.7
26	29.3	23.4	30.9	23.4	29.3	23.8	30.2	25.2	31	23.8	26.2	23.5	30	22.5
27	29.5	23.6	28.6	23.6	27.7	23.7	27.6	24	26.8	23	28.6	22.3	28.7	23
28	31.3	23	30.7	23	31.4	23.3	30.2	24.2	31	23.5	29.6?	22.8	32.7	22.3
29	31.5	24	31.3	24	32.4	22.7	29.8	25.4	31.4	22.7	29.6	23.3	33.8	22.5
30	30.1	23.3	30.5	23.3	29.4	24.2	30.2	24.4	29.4	23.5	30	23.4	30	23.3
Mean	31.1	23.5	30.6	23.5	31.1	23.9	30.5	25.2	31.0	23.7	30.0	23.4	31.3	23.0

Day.	Sorsogon.		Bacon.		Jovellar.		Legaspi, Albay.		Guinobatan.		Polangui.		Bacacay.	
	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.6	22.4	30.6	22.4	32	20.6	30.3	23.1	29.3	22.2	28.5	24.1	30.1	22.3
2	31.2	22.4	31.2	22.4	31.4	21.6	32.4	24.8	32	21.3	28.4	21.4	30.7	22.7
3	30.5	23.4	30.5	23.4	32	21.6	32.4	25.3	31.6	22.9	29.2	22.1	29.3	22.3
4	30	22.5	30	22.5	29.8	21.7	30.5	25	30.7	22.8	31.2	23.1	30.7	22.9
5	31.4	22.8	31.6	22.8	31.4	21.7	31.3	24	31.2	22.6	30	23.3	31.2	23.4
6	32	22.3	30.4	22.3	31.2	21.9	32.3	23.4	31.2	22.9	31.1	23.4	31.4	23.6
7	31.5	23.3	31.5	23.3	32.1	21.1	33.3	23.4	31.6	22.2	31.4	23.1	31.8	23.6
8	32	23.7	31.6	23.7	30.8	21.5	31.8	24	31.9	22.6	32.1	23.2	30.6	22.3
9	32.1	22.4	30.8	22.4	31.9	21.2	32.4	23.8	31.5	23.2	31.5	23.2	31	23.5
10	30	23.5	29	23.5	30.9	22.5	30.3	24.1	29.9	23.7	31.4	22.2	30.2	23.4
11	26.2	23.1	26.2	23.1	31.7	22.4	26.3	23.7	26.6	23.2	30.1	23.6	30.1	23.1
12	27.1	23.4	28.8	23.4	31.2	22.2	26.5	23.5	29.2	23.1	31.4	23.2	30.2	23.2
13	29.9	24.6	30.2	24.6	28.6	23.8	30.6	25.1	29.3	24.1	29.1	22.3	29.3	22.4
14	31.4	24.6	31.4	24.6	30.2	21.8	31.8	24.5	31.4	22.8	29.1	22.5	29.4	22.7
15	32.1	23.1	32.1	23.1	32.2	21.3	33.4	23.8	32.3	22.2	31.5	23.5	29.2	22.5
16	30.4	21.9	32.1	21.9	31.2	21	32.6	23.1	32	22	32.1	22.4	30.6	23.2
17	30.4	21.8	30.6	21.8	31.3	20.4	32.4	23	31	21.5	32.1	23	31.2	23.4
18	31	22.4	31.5	22.4	30.5	20.8	33	24.7	31.4	22.6	30	22.1	30.2	23.2
19	31	23.9	31.6	23.9	31.2	21.8	33.3	24.6	32	23.1	31.5	23.2	31.4	23.9
20	30.5	23.4	31.6	23.4	30.6	22.4	31.9	24.5	31.9	23.3	32.3	23	31.9	23.1
21	30.1	23.5	30.2	23.5	30.3	22	31.7	25	30.9	22.9	31.5	22.1	32.6	23.5
22	30.4	24.3	31.3	24.3	31	21.4	31.8	24.9	30.9	22.8	31.4	20.4	32.7	22.3
23	30.5	25	30.9	25	29.7	22.7	31.3	25.1	30.3	23	31.4	23.2	31.9	23.6
24	31	24.7	31	24.7	31.5	22.4	31.2	24.8	30.7	23	30.1	22.3	32.6	22.8
25	30	28.6	30.7	28.6	22.8	21.3	30.8	23.9	30.3	23.3	31.4	23.2	32.9	23.6
26	29	28.5	30	23.1	28.5	21.8	30.8	23.9	29	22.8	30	22.3	30.4	22.6
27	31	22.6	28.9	22.6	28.3	21.3	29.2	23.3	28.2	22.6	30	23.2	31.2	22.9
28	31.4	22.1	29.9	22.1	30.4	21.5	31.3	22.9	30.3	22.2	28.2	23.1	31.9	23.8
29	31.2	21.2	30.5	21.2	31.7	23.8	31.8	22.6	31.4	21.3	29.1	23	30.8	22.8
30	30.5	23.4	29.9	23.4	30.1	22.5	29.9	24	28.7	23.4	31.1	23.1	30.8	22.6
Mean	30.5	23.2	30.6	23.2	30.7	21.9	31.3	24.1	30.6	22.7	30.7	22.8	30.9	23.0

Maximum and minimum temperatures at the stations of the Weather Bureau, September, 1921—Ctd.

Day.	Bato.		Tabaco.		Sumay (Guam), Agaña.		Iriga.		Calapan.		Tiwi.		Pasacao.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	28.6	22.2	29.4	21.7	30	24	31	22	29	23	31.6	23.4	33	22.5
2	29.1	22.6	30	22	31.7	24.8	29.6	22	30.5	22.5	31.8	23.4	32.8	22.1
3	29.5	23.5	32.2	21.5	30.8	26.4	30.8	22.8	31.2	22	31.6	22.3	33.2	22.9
4	32.2	23.1	32	23	31.4	26	32.6	22.6	31	24	31.9	23.6	32.9	23.2
5	30.6	23.3	31.4	22.7	31.4	26.6	29.7	21.6	31.5	22.6	31.8	23.4	33	22
6	31.9	23.6	31.9	22.4	30.8	26.4	30	22.4	31.5	23.5	32.8	24.2	33.1	23.1
7	31.8	23.7	31.8	22.1	27.5	24.7	32.4	22.8	31.5	24	32.6	24.6	34	23.7
8	32.4	24.4	32.2	22.5	29.3	23.6	31.8	22.1	30.5	23	32.9	24.8	33.2	22.8
9	32.3	23.7	32	22.1	30.8	23.7	30.3	22.6	31.4	23.2	32.6	24.4	33	22.9
10	32.4	24.3	32.2	22.3	30.5	24	33.1	22.8	32.5	23.6	31.6	22.1	33.4	22.6
11	29.8	23.7	30.6	22.6	29.7	24	32.4	22.5	28.5	23.6	31.7	23.2	34.2	23.8
12	27.6	23.9	27	22.8	31.3	23.5	33.4	22	31.6	23.5	32.6	23.3	33.2	24.7
13	27.9	25.1	27.3	23.7	31.3	24	33.1	22.8	32	24	32.8	24.5	32	23
14	29.8	25.2	30.3	24.7	30.4	24.5	33.6	22.9	31.4	24.4	31.6	23.4	33.7	23.2
15	31.2	24.2	33.2	22	29.8	24.2	33.1	22.8	32.5	24.5	31.8	22.5	31.8	22
16	32.4	23.4	33.6	21.9	31.7	25.1	31.3	22	32	23	32.9	24.5	31.2	22
17	32.5	23.3	32.9	21.9	29.2	24.5	29.1	22.8	31.5	23	33.8	24.6	33.4	23
18	31.2	24.1	31.4	23.3	28	23.2	32.1	23.1	33	23.4	32.8	24.5	32.1	22.1
19	31.9	23.5	32.2	23.4	30.6	25.5	33.3	23	32.5	22.8	33.6	25.4	32.7	23.3
20	31.6	24	33.3	24	30.7	24.6	33.6	22.2	32.3	22.1	33.4	24.4	34	23.7
21	31.8	24.1	33.7	25.6	28.3	23.5	33.3	22.6	31	23	31.6	23.3	33	22.8
22	31.6	24	32.2	24	27	23	31.8	22.6	34	23	32.6	24.4	32	21.7
23	31.4	24.1	32.8	24.8	28.2	23.5	32.6	20.4	29	21	31.8	23.4	32.9	21.6
24	30.9	25.1	32.2	25.3	29.3	23.2	32.1	23	32.5	23.1	32.8	23.8	30.4	21.8
25	31.3	22.7	32.3	24	28.3	23.7	30.3	22	32.5	23.4	32.4	23.6	32.8	22.7
26	29.8	24.3	31.2	24.2	30	23.7	31	23.1	32.3	23.5	32.4	23.2	34	23.8
27	28.4	22.8	30.2	22.4	30.6	23.7	29.5	22.1	33	23.4	32.4	24.4	33.7	23.8
28	28.3	22.9	29	22.5	30.8	24.6	32.3	22.2	31.5	23	32.6	24.6	33.1	23
29	29.4	22.4	30.3	21.3	31.3	24.5	31.4	20	31	23.2	31.8	23.8	33.8	22.7
30	30.6	23.8	32.2	22.5	29.6	25	33.1	23.3	27	23.2	32.6	24.6	32.7	22.4
Mean	30.7	23.7	31.4	23.0	30.0	24.4	31.8	22.4	31.4	23.2	32.4	23.9	32.9	22.8

Day.	Virac.		Naga, Camari- nes Sur.		Tigaon.		Baras.		Libmanan.		Batangas.		Ragay.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.4	22.5	27.5	22.6	27.6	22.4	28.4	24.3	22.4	22.4	26.7	23.3	30.3	23.1
2	32.9	22.6	32.3	22.1	33.1	22.9	28.1	24.8	22.5	22.5	31.5	22.6	32	23
3	31.5	23.9	31.5	23.9	32.5	22.5	30.8	25	23.5	23.5	32	22.9	31.4	22.2
4	32	21.2	32.5	22.6	31.9	22.1	29.1	24.8	23	23	30.7	23.3	31.8	22
5	31.7	22.1	32	23.5	31.7	22.5	29.9	24.8	23.1	23.1	31.5	23	30.3	22.1
6	32.2	21.7	31	23.8	32.2	23.2	30	25.2	23	23	31.5	23.9	30.7	22.8
7	33.1	21.8	32.7	23.5	32.5	22.4	30.2	25.8	23	23	31.5	23.3	31.3	22.6
8	32.3	22.2	33	23.7	32.8	22.8	30.1	26	23.1	23.1	31.2	23	31.8	22.2
9	32.9	22.5	32	23.5	32.6	22.9	30	26.4	23.2	23.2	31.4	23.5	32.2	22.1
10	32	22.3	28.2	23.4	29.6	22.9	29.2	25.2	23.2	23.2	32	23.7	31	22.5
11	26.5	23.3	25.5	23.5	25.5	23	28.8	25.6	23.4	27.8	23.9	26	26	22.3
12	29.2	22.4	27	23.8	25.9	23	27.4	24.4	23.5	30.5	22.8	27.7	27.7	22.7
13	31.5	24.2	28.7	23.5	28.1	24	28.2	25	24.6	30.7	24.9	29.2	26.7	22.7
14	31.3	24.4	30.7	24.5	31.7	24.5	29	26	24.6	31.1	24.6	30.3	24.1	21
15	32.9	23	33.4	24.3	32.1	24.3	29.8	25	23.8	31	24.5	31.6	23.3	23.3
16	32.8	22.2	34.4	23.7	33.1	21.7	31	25.1	23	33.8	23.3	30	22.6	22.6
17	33.1	22	33	23.7	31.1	21.9	30.4	24.2	23.1	31.3	23.9	31.4	25.1	21
18	33.5	23	33	24.1	32.2	22.5	30.6	24.8	25.1	32.2	24.1	32.2	22.3	23.3
19	34	22.5	33.5	23.8	32.3	22.9	30.9	25	23	31.6	23.8	31.8	22.5	22.5
20	34.3	22.7	33.5	24	32.1	23.1	31.4	25.2	24.2	31	24.1	32.4	22.0	22.0
21	33.4	23.1	32.2	24.5	31.7	24.1	31.5	25.2	25	31.1	24.3	31.5	23.1	23.1
22	34	22.8	32.5	24.1	31.2	22	30.9	25.4	23.2	30.3	24.7	30.2	22.1	22.1
23	32.7	24.2	30.9	24.5	30.2	24	31	25.8	24.2	29.8	24.2	30	24.1	24.1
24	34.4	23.7	32.5	23.7	32.5	24.5	31	25	24.1	31.5	24.3	31.8	23.2	23.2
25	31.4	22.7	30.8	23.8	28.1	23.1	31	24.1	23.3	31.8	24.7	30.5	23.8	23.8
26	30.9	23	30.4	24.1	29.4	22.5	29	24.9	23.6	31.2	24	28.1	23.1	23.1
27	29.4	23.3	27.4	23.4	27.7	22.9	27.4	24	22.9	31	23.7	28	23.1	23.1
28	30.3	22.1	30.1	22.7	29	22.3	28	24.8	22.4	31.7	23.7	29.4	22.1	22.1
29	33.3	21	30.6	22.5	31.7	20.7	28.9	24.5	22	30.8	22.4	30.2	21.1	21.1
30	30.3	23.5	26.9	23.7	26.3	23.4	30	25.6	23.4	26.4	23	27.2	23.3	23.3
Mean	32.0	22.7	31.0	23.6	30.6	22.9	29.7	25.1	23.4	30.9	23.7	30.4	22.9	22.9

Maximum and minimum temperatures at the stations of the Weather Bureau, September, 1921—Ctd.

Day.	Calatagan.		Balayan.		Lipa.		Lucena.		Atimonan.		Nasugbu.		Ambulong, Tanauan, Batangas.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	26	22.4	30	26.5	24.6	21.3	26	22.5	26.2	23.2	25.6	25.6	26.1	23.6
2	32	21.5	31.7	22	29.3	20.3	31.4	21.9	30.8	22.5	32	31.8	31.8	22.7
3	32.9	21.2	31.7	22	29.8	18.3	32.5	21.7	31.4	25.4	31.6	31.6	30.2	23
4	33.3	22.1	32	24	30.5	21.4	31.7	22.5	31.4	23.9	31.1	31.1	31.2	23.7
5	33.9	21.2	31.3	21	30.4	21.4	31.8	21.5	30.7	23.1	31	31	31.8	22.3
6	30.9	22.2	30	23	27.7	20.2	31.5	22.5	30.9	23.6	30.4	30.4	29.3	23.2
7	31	21.4	30.5	23	30.1	20.6	31.7	22.2	30.3	23.9	30.9	30.9	32.5	23.5
8	32.5	21.6	32.6	21.5	29.6	21.7	30.5	20.6	30.1	24.3	31.8	31.8	31.4	23.2
9	32.7	21.4	30.5	23	29.9	21.7	30.5	22.5	30.4	24.4	32.3	32.3	32.4	24.1
10	31	21.4	30	24	28.7	22.6	30.3	22.3	27.6	23.6	31	31	32.3	22.9
11	28.7	21.9	30.5	22	26.8	21.6	27.1	21.7	26.9	23.1	28	28	32.3	22.9
12	31.3	22.6	30	23	27.5	21.3	29.5	22.9	28.8	23.5	29.8	29.8	29.2	23.7
13	30.3	21.9	29.8	24	30.1	21.5	29.5	23.7	30.1	25.1	30.7	30.7	29.9	23.2
14	29.3	22.3	29.8	23	29.3	21.3	30.5	22.6	30.7	24.6	28.7	28.7	29.9	25.1
15	33.1	22.2	32	23.5	27.1	21.2	30.5	23.5	32.9	24.4	32.4	32.4	31	24.5
16	32.7	20.4	32	22.8	30.4	22.2	31.6	22.5	32.4	22.6	33.1	33.1	32.7	23.2
17	31.5	21.6	32	22	30.7	22.6	32	22.5	32.9	24.4	32	32	31.2	24.2
18	32.5	21.3	31.5	24	30.3	21.1	32.3	20.6	31.9	23.1	32	32	31.5	24.1
19	32.5	22.4	31	23	30.6	21.1	32.5	20.9	32.9	22.7	31.6	31.6	31.3	23.4
20	31.7	22.2	30	22.5	30.1	22.6	31.5	20.9	31.6	22.5	29.5	29.5	30	23.8
21	29.7	23.1	30	22	29.5	21.9	31.9	21	31.6	22.5	29.5	29.5	29.4	23.3
22	29.2	22.1	28	23.8	29.7	22	31.5	22.4	31.8	23.4	28.5	28.5	29.8	24.8
23	31.2	20.3	31	22	30.7	22.5	30.5	22	31.4	23.5	30.5	30.5	29.8	24.8
24	32	21.9	32	24	31.2	22.3	31.9	21.5	32.3	23.1	31.6	31.6	30.7	24.3
25	32.3	22.3	31.5	24	30.6	22.4	32	22	32.2	23.4	31.5	31.5	31.3	24.2
26	32.1	22.6	31.6	23	29.8	21	32.6	21	27.7	23.3	31.2	31.2	32	23.4
27	28.6	21.3	28.9	22	29.7	20.4	27	20.6	26.8	24.8	28.7	28.7	28	21.8
28	31.8	22.4	31	23	28.4	21.7	30	22.2	28.9	24.8	31.5	31.5	32.2	23
29	32.2	21.5	32	23	30.6	20.1	31	21.6	31.1	23.3	32.1	32.1	32.8	22.9
30	27.2	20.5	30	21.4	25.3	21.6	28	21.5	27	22.5	29.7	29.7	26.3	23.1
Mean	31.2	21.8	30.9	22.7	29.3	21.4	30.6	21.9	30.3	23.6	30.7	30.7	30.5	23.6

Day.	Daet.		Mendez, Nufiez.		Alfonso.		Indang.		Canluban, Calamba.		Silang.		Maragondon	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	28.5	22.7	23	20.5	23	20.9	24	21.7	25.9	21.8	29.5	20.7	25.5	22.5
2	30.8	22	28	19	28.6	20.9	30	21.8	30.6	21.5	29.5	21	31	22.2
3	31.1	23.5	26	18.5	27	20.2	30.2	22.4	31.2	21.2	28.5	21.5	31.7	21.9
4	32.1	22.4	25	21	24.1	21.5	30.3	22.6	31	22	28.1	20.6	30.2	22.5
5	32.7	22.9	26.5	20	26.1	20.1	28.2	21	30.2	21.6	27.8	20	29.6	21.7
6	30.8	23.5	24.5	20.5	26.2	21.1	28.4	20.9	30.4	22.1	28.9	20.4	30.6	23
7	30.8	23.5	26	20.5	25	20.8	28.7	21.4	30.6	22	29	20	29.1	23
8	31.1	23.5	25	20	26.5	21.1	27.9	21.4	30.9	21.6	29.2	20.5	30	23.2
9	31.2	22.5	27.5	19	28.8	21.2	29.6	22.4	32	22.2	29.5	20.3	32.3	23.1
10	29.1	23.7	24	20.5	26	21.6	29.7	22.5	32.2	22.5	30	20.8	31.3	22.6
11	26	23.7	25	20.5	25	20.2	26.8	20.5	28.6	21.8	28.3	20	30.2	22.5
12	27.2	23.5	25	21.5	25.6	21.7	28.9	22.6	30.7	22.1	29.2	21	31.3	22.8
13	29	24.5	25	21.5	26.5	21.5	27.7	22.5	30.8	22.8	29	21.6	30.2	23.9
14	30.8	24.8	23.5	20	24.5	21.2	27.8	22.4	30	22.9	28.7	21.4	29.1	23.5
15	33.7	24	25.5	20.2	26.5	21.1	29.4	22	31	22.6	28	21	30.6	23.3
16	32.5	22.7	28.5	20	29	20.6	31	21.7	33.1	21.4	29.1	20.5	33.2	22.4
17	32.2	23.6	27.5	20.5	27	21.6	28.8	22.8	31.6	22.5	29	20.7	30.8	23.4
18	33.5	23.7	26	21.5	28	22.2	28.1	22.4	30.5	22	29.4	20.6	34.7	23.1
19	33.8	23.7	28	21	27.3	21.3	29.4	21.9	31.9	21.7	29.5	20.8	31.3	22.3
20	33	23.1	26	20.5	26.5	22.2	28.5	22.3	32	22.5	28.5	20.7	31.1	23
21	32.4	23	24	20.5	26	21.5	27.7	22.2	31	22.7	28.6	21.4	30	23.1
22	31.8	22.4	25	21	25.2	21.8	26.4	22.5	30.7	23	28	21.2	29.6	23.2
23	30.2	23.4	25.5	21	27.4	21.7	29	22.8	30.3	22.6	29.5	21.2	31.5	22.4
24	32.7	22.9	28.5	21	28	21.7	29.4	22.5	31.2	22.2	29.4	21.5	31.4	23.7
25	31	24	25	20.5	25	21.6	29.1	22.2	31	22.1	29.7	21	31.6	23
26	27.8	22.8	25.5	21	26.2	21.4	28.4	22.4	29.8	22	29.4	20.8	29.2	23.6
27	27	22.6	25	20	25.5	20.5	26.3	21.4	28.7	21.8	28.2	21.4	28.2	22.6
28	29.1	21	27	20.5	27.5	21.5	28.8	22.2	30.6	22.4	28	21.3	31.1	22.7
29	30.5	21.7	28.5	20.5	28.5	21.3	30	22.3	31.9	21.9	29.5	21.4	31	23.1
30	25.5	23	24	20	23	20.6	26.8	23.2	26.4	21.6	29.3	21.2	30.6	22.5
Mean	30.6	23.1	25.8	20.4	26.3	21.2	28.5	22.1	30.6	22.1	29.0	20.9	30.6	22.9

Maximum and minimum temperatures at the stations of the Weather Bureau, September, 1921—Ctd.

Day.	Paracale.		Santa Cruz, Laguna.		Buenavista, General Trias.		Cavite Naval Station, Cavite.		Manila.		Antipolo.		Balanga.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	29	22	28	22.8	32.6	22.4	28.2	21.8	27.3	23.1	25.7	21.2	30	23.7
2	29	22.5	31.7	22.6	32.1	21.4	32	22.5	32.4	22.9	32.2	20.7	31.1	22.9
3	29	23	32.1	22.5	31.4	22.7	33	23	31.9	23.4	31.1	20.7	32.1	23.6
4	29.5	23.2	31.2	23.6	31.8	22	32	23	31.4	23.1	30.8	21.7	32.5	23.7
5	29.8	24	29.6	22.5	32.4	22.2	30.9	23.5	31.2	23.5	29.8	21.3	31.5	24
6	29.5	24	29.8	23	32.6	22.6	31.5	23.5	31.8	24.1	29.5	22.3	31.9	24.1
7	29	23	31.1	22	31.8	22.9	31	23.7	29.9	23.8	29.7	21.8	30.6	24.1
8	29	23.2	30	22.2	31.6	23.1	31.6	22.7	30.6	23.8	29.8	21.7	32.6	23.4
9	29	23.5	31.8	23.1	32.3	22	32.5	25	31.9	24.5	31.1	21.5	32.9	24
10	29	23.2	31.6	23	31.8	22	32	24	32	22.9	30.7	22	33.3	23.8
11	29	23.5	28.6	23	31.7	23	29.5	23	29.5	23.1	27.8	22.4	31.6	24
12	29	23.5	30	23.6	29.2	19.8?	30.5	25	30	24.3	28.2	22.2	30.8	23.5
13	29.2	23.5	31.9	24.1	29.5	22.5	30.5	23.2	30.2	24.6	28.8	22.5	29.4	24.5
14	30	23.8	31.7	23.5	28.9	22.2	29.5	22.7	30.3	24.5	30	22.7	27.9	24.2
15	30	24	32.3	23.8	29.7	21.8	31	23.5	32	24.2	32.8	22.3	31.9	24.1
16	30	24	33.6	22	32.2	21.7	33.5	24.5	33.8	24.1	33.6	21.8	32.7	23.5
17	30	24	32	23.4	31.6	21.7	31	24.5	31	23.9	30.8	22	31.3	23.8
18	30	24	31.6	23.3	29.7	22.2	32	25	31.3	24.3	30.2	22.8	31.5	23.5
19	30	24	32	23	30.7	22.2	32	24	31.7	23.5	30.8	21	31.6	23.1
20	30.2	24.2	31.3	23.5	30.2	21.6	31.5	24.5	32	24.4	30.8	21	31.4	23.1
21	30	24	32	23.5	29.6	22.2	31.9	24	31.5	24.6	31.5	22.7	31.4	23.6
22	30	24	31.3	24	28.7	22.4	32	24.6	30.3	24.8	29.5	22.7	30.3	23.5
23	30	23.5	31.7	23.7	30.5	21.8	31	23	31.2	24	30.5	23.1	30.8	24.5
24	30	24	32.6	23.6	30.5	22.2	32	23.7	31.7	24.5	30.9	22.3	31.9	24.1
25	30.5	24.2	32	24	31.4	22.2	32.5	23	31.5	24.3	31.8	22.8	32.6	23.5
26	30	24.2	29.2	23.7	28.5	21.8	32.6	22.6	28.7	23.5	28.4	22.6	29.7	24.5
27	29.5	23.2	28.1	21.3	27.4	20.9	28.5	22.5	29.3	22.7	29.3	20.7	29.6	24.5
28	29	23.5	30.6	23	30.2	21.6	32.3	23.7	31	24.1	30.2	22	31	23.4
29	29	23.8	32.3	23.5	30.7	21.5	32.5	24	31.6	24.3	31.1	22.2	32.8	24.5
30	29	23.8	26.5	22.2	29.6	20.8	-----	21.9	27.2	23.8	26.8	22	27.7	25
Mean	29.5	23.6	30.9	23.1	30.7	22.0	31.4	23.5	30.9	23.9	30.1	22.0	31.2	23.9

Day.	Malolos.		San Fernando, Pampanga.		San Isidro, Nueva Ecija.		Iba.		Concepcion, Tarlac.		O'Donnell, Capas, Tarlac.		Tarlac.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	24.8	22.2	29	21.7	25	23	24.5	23.3	24.8	22.4	31.4	21.6	28	22.8
2	30.5	22	30.5	22	30.4	23	29.8	22.5	30.2	21.9	32.2	21.7	31.2	21.2
3	31.5	23.5	32.3	23	31.9	23.1	31	23	31.1	22.9	32.2	21	32.4	22.2
4	32	24.3	33	23	30	23.6	30.5	23	33.3	21	30.2	20.9	32.8	21
5	31	24.5	32	22.7	30.4	24	31	22.5	33.7	23.5	30.6	21.5	32	21.6
6	31.5	24	32.5	22	30.6	23	30.9	23.3	33.9	22.9	-----	21.4	34.2	22.4
7	32.3	23.6	33	22.7	29.5	23.9	31	23.2	32.8	22.5	31.4	21.5	32.8	22.4
8	33.5	23	33	20.5	32.1	23.8	30.5	23.7	33.5	23.7	31.7	22.2	29.8	22.7
9	33.5	23	33.6	22.5	32.6	23.7	31.3	23.6	34	23.9	31.7?	21.2	35	23.4
10	33	24	34	23.5	32.6	24.2	31	23	34.7	23.2	32.3	22.4	34.2	22.4
11	30.5	22.6	33	23	31.4	23.6	30.6	24	34.7	23	32.7	22.2	32	22.8
12	30	23.5	31.5	22.2	30.1	23.5	30.5	23	32.7	22.6	30	19.4	32.6	22.9
13	28.5	23.5	31	22.2	28.1	23.9	30.1	24.5	27.5	23.7	30	20.2	31.8	23.2
14	28.3	23.5	27.5	23	27.4	24.4	28.4	23.8	26.8	23.2	30.8	20.4	29	22.8
15	31.5	24	30.3	23.5	30.7	23.9	29.6	23.7	30	22.9	30.5	21.1	29.4	22.6
16	32.5	24	33	23.5	32	22.5	31.5	24	33.7	23.9	30.6	21.6	34	22.9
17	31.5	22.5	31.5	22.5	31.4	23.5	28.8	23.2	33	22.4	31.5	22.3	32.2	22
18	31.5	23.5	32	22.5	30.9	23.5	30	23.1	33.1	22.8	31.7	22.3	32.6	21.8
19	31.5	23	33	22.5	31.5	22.8	30.4	22.1	33.5	22.4?	31.7	21.2	33	21.1
20	31.3	24.5	32	23	31.1	24	29.4	23	33.1	22.7	30.3	21.2	34.2	22.2
21	31.5	22.5	33	21	31.2	24.4	30	-----	33.5	22.2	31.7	22.2	29.2	22.6
22	31.5	24.5	32.5	22.5	31.1	24	30.1	22.5	33.1	22.6	33.2	20.8	32.8	21.9
23	30.3	25.8?	32.5	23.7	32.5	24.6	31	23.5	31.8	23.7	31.2	21.9	32	22.6
24	32	24.3	33	22.7	31.7	24.4	30.4	22.8	32	22.2	31.7	-----	28	22.1
25	33	24.3	33	22.8	32.3	23.9	31	22.2	34.3	22.9?	32.3	20.2	32.4	21.7
26	29	23.5	33.5	23.7	30.1	23.5	31.4	22.2	33.9	24.5	32.2	21.7	32.8	23.8
27	29.5?	22.5	33	23	30	24	31.3	24.1	30.1	23.4	31.7	22.2	32.2	22.6
28	31.5	23.4	32	23	31.1	24.1	31	23.3	33.1	22.9	31.7	20.9	33.6	22.6
29	33	23.5	33	23.1	32.4	24	31.1	23.5	34.3	21.5	32.7	21.2	33	22.2
30	27.1	24.7	29	24.4	28.7	24.6	30.2	23.2	32.1	22.7	32	21.2	30.2	23.2
Mean	30.9	23.6	31.9	22.7	30.7	23.7	30.3	23.2	32.3	22.9	31.5	21.4	32.0	22.4

Maximum and minimum temperatures at the stations of the Weather Bureau, September, 1921—Ctd.

Day.	Camiling.		Baler.		Dagupan.		Rosario, La Union.		Tubao.		Itogon.		Bolinao.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
1	31.5	22.2	25	22.7	26.3	23	31.4	23.3	30.7	---	---	---	26.8	25.2
2	32	21.5	28.9	22.3	29.1	22.6	29	22.1	---	---	---	---	28.7	23.3
3	31.5	23.5	29.2	22.5	33.9	23.8	31.6	22.1	---	---	---	---	18.7	33.9
4	34	22.5	31.1	22.6	33.4	24	32.4	22.2	32.8	---	---	---	19.3	31.2
5	32	23.5	30.5	23.1	33.9	23.9	33	21.4	33.2	---	---	---	18	31.8
6	34.5	21.5	30	22.9	33.4	23.5	31.6	21.8	33.2	---	---	---	19	33
7	32.5	23.5	31	23.5	32.9	24.3	32.3	22.5	32.9	---	---	---	19	31.4
8	33.5	23.5	29.7	22.5	34.6	24.3	32.2	22.2	33	---	---	---	18.7	33
9	34.5	21.5	31.1	21.5	33.7	24.3	32.4	23.67	33.5	---	31.3	---	19.4	31.7
10	32.5	22.6	32.5	22.5	32.4	24.4	31.5	22.2	32.6	---	31.8	---	19.3	31
11	33.5	22.5	33.3	23.6	33.7	24.4	32.5	22.2	32.8	---	30.9	---	19.3	32.3
12	32.5	23.5	33.4	24.1	32.3	24.2	31.5	21.9	33.2	---	29.8	---	19	31.7
13	32	22.5	30.2	23.8	30.5	24.9	31.7	23.2	31.9	---	28.6	---	20.3	31.1
14	32.5	22.5	31.4	24	30.7	24.5	31.5	23.2	28.9	---	27.1	---	20.8	28.8
15	30.5	22.5	31.7	24.5	32.3	24.2	30.1	---	32.2	---	25.1	---	20.9	30.7
16	34	22.3	31.5	22.3	34.4	23.9	32.9	25.6	32.9	---	30.3	---	20	32.7
17	32.5	20	31.7	23.7	31.9	23.7	30.9	22.2	33.4	---	30.2	---	19.8	31
18	32.5	20.5	34	22.7	31.7	24.3	30	22.2	31.7	---	29	---	19.4	29
19	34.5	21.5	32.8	23.7	32.6	23.4	31.8	21.9	31.6	---	31.3	---	17.5	31.5
20	32.5	22.5	33.9	24	32.5	23.9	31.9	22.3	32.1	---	30.2	---	19.2	30.7
21	33	21.4	33.7	23.8	31.1	24.1	31.2	22.3	32.9	---	30.7	---	19.9	30.4
22	33.5	22.5	32.8	23.1	33.3	24	31.9	21.4	31.9	---	30.1	---	18.5	31.2
23	34	23	32.9	23.9	33.3	25	32.3	22	32.4	---	31	---	20.1	31
24	33.3	22.7	32.2	22.4	33.3	24.1	31.7	21.9	32.6	---	30.2	---	18.1	31.5
25	34	23.5	30.5	23.5	33.3	24.4	32.7	21.5	33.1	---	30.7	---	18.3	31.1
26	32.5	23	30	23.3	34.5	24.2	33.9	21.7	---	---	30.8	---	18.7	31.8
27	32	20	29.9	22.5	32.9	23.5	31.4	22.2	34.1	---	31.2	---	19.4	33
28	33.5	22.5	31	21	33.5	23.7	31.7	22.3	32.6	---	30	---	19.5	31.4
29	33	22.5	32.2	21.1	32.7	23.3	32	22.2	32.5	---	30.8	---	18.4	23.5
30	33.5	23.5	27.6	23.3	32.9	24	32.2	21.2	32.6	---	29.6	---	18.7	32.3
Mean	32.9	22.4	31.2	23.0	32.6	24.0	31.8	22.3	32.5	---	30.0	---	19.2	31.2

Day.	Aringay.		Baguio.		Sablan.		Naguilian, La Union.		Kapangan.		Atok.		San Fernando, La Union.	
	Maxi- mum. <sup>a</sup>	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
1	27.2	16.7	23	15.4	---	---	27.9	23.6	24.7	18.5	23.7	15.2	28.3	24
2	32	23	20.8	14.6	---	---	29.1	22.5	22	17	21.6	14.9	28.5	23.3
3	33	22	24.6	16	---	---	34	22.5	24.5	17.1	25.1	15.5	33	23.5
4	32.2	22	22.5	16.3	---	---	32.7	23.5	23.3	19	23.3	15.8	32.7	24
5	33	21.7	24.7	16	---	---	32.8	22.5	24.3	17.3	25.3	14.3	33	23
6	33.2	22	24.1	15.9	---	---	32.6	22.2	24.5	18.2	25	15	32.9	23.1
7	32.3	22.1	22.6	15.4	---	---	31.9	22.6	25	18	22.8	14.8	33	23.4
8	33	22	23.6	15.8	---	---	33.1	22.6	25	18	23.2	14.6	33.3	23.5
9	35.3	22.2	25.1	16.2	---	---	32.1	22.6	25.4	19	24.2	15.1	32.7	23.6
10	29.2	22	22.8	15.5	---	---	31.5	22.6	25	19	23.4	14.5	32	23.8
11	33.2	22.4	23.1	15.8	---	---	32.8	22.6	24	18.5	23.2	14.9	33.5	23.8
12	33.5	23	22.1	15.8	---	---	31.5	23	24.2	18.6	20	15	---	23.4
13	32.2	23	20.9	15.6	---	---	31.6	23.6	23.3	18.7	20.2	14.7	---	---
14	31.3	23	22	16.2	---	---	31.6	23.6	24	18.9	23.9	15.6	---	---
15	31.2	23.1	20.3	16.3	---	---	31.6	24	23.3	19	21.4	15.6	---	---
16	34.2	22.4	24.6	16.1	---	---	32.1	23.4	24.5	18.5	25.5	16	---	---
17	34.2	23	22.6	15.6	---	---	32.1	23	23.7	18.5	22.9	15.1	---	---
18	34	22	21.8	15.4	---	---	30.9	23.6	23.3	18.5	22	15	---	---
19	32.2	22	22.5	15.3	---	---	31.6	22.4	24	18	22.5	14.8	---	---
20	32	22.5	23	15.5	---	---	31.6	23.8	24.5	18.5	21	15	32.5	23.2
21	31.2	22	22.3	15.7	---	---	31.6	24.3	25.3	19	22.4	15	31.8	24.3
22	33.3	21.5	22.8	16	---	---	31.6	22.5	24.1	18.2	21.5	14.9	32	22.8
23	32	22	22.4	16	---	---	32.1	23	24	18.4	22.4	14.5	32.1	23.7
24	32.2	22	22.9	15.5	---	---	17.1	32.5	22.4	18.6	22.6	14.2	32.3	23
25	34.3	22	22.6	15	---	---	17.1?	32.5	22.4	18.4	21.3	14.1	32.5	23
26	35.3	22	23.4	15.8	---	---	18	32.7	22.8	18.5	22.6	14	33	23
27	33.2	22	22.6	16	---	---	17.1?	32	24	19.5	21.5	15.8	32.3	24
28	35	22	21.5	15.4	---	---	17	32.7	22.3	19	21.6	14.4	32.5	23.6
29	34.2	21.4	21.2	14.8	---	---	19	32	22.8	18	22	14	33	23
30	35	21.4	22.9	15.6	---	---	19.1	31.9	21.7	23	17.5	14.7	32.5	23
Mean	32.8	22.2	22.5	15.7	---	---	17.9	31.9	22.9	24.1	18.4	14.9	32.2	23.4

<sup>a</sup> These maximum temperatures seem to be too high.

Maximum and minimum temperatures at the stations of the Weather Bureau, September, 1921—Ctd.

Day.	Echagüe.		Balaoan.		Tagudin.		Candon.		Vigan.		Bangued.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum. <sup>a</sup>	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	27.2	23.4	30.1	23.1	28.8	24	28.4	24.3	29.2	24.4	30.6	22.4
2	32	22	29.1	23	28.9	23.1	28.5	23.1	28.5	23.1	28.9	23.1
3	33.9	22.4	31.2	22.7	32.6	23.3	31.5	23.3	31.3	24.3	34.4	23.3
4	33.4	23	32.3	23.6	32.2	24	31.7	24.1	32.5	24	33.2	22.8
5	33	23.9	32.6	22.9	32.2	23.6	31.5	24.3	32.2	23.9	33.4	23.1
6	31.1	22.7	32.5	22.1	32	22.6	30.7	23	31.5	23.5	34.4	22.7
7	32.6	22.4	31.9	23.6	32	23.9	31.5	24.2	31.1	23.6	33.9	
8	32.5	22.9	32	22.7	31.9	23.1	31.5	24.4	32.2	23.4	33.8	22.3
9	34.8	22.9	32.8	23	32.5	23.1	31.8	23	32.1	22.8	34.4	23.1
10	33.9	22	32.1	22.8	32.3	23	31.8	23.1	32.3	23.5	34.5	22.6
11	32.5	23.8	31.2	23.2	31.6	23.9	31.5	24	32	23.7	33.1	23
12	33	23.2	32.5	22.3	31.8	22.9	31.4	23.2	31.8	24.6	33.4	23.3
13	31	23.6	31.2	24.2	30.3	24.1	29.4	23.3	27.1	22.8	26.2	22.3
14	32.2	23.2	30.1	24.3	31.9	23.9	30.4	25	29.3	24.4	30.3	23.3
15	33.4	23.6	32	23.7	31.4	24	30.7	24	30.9	23.2	32.3	24.1
16	33.5	22.7	31.6	23.2	32.3	22.9	32.4	23.4	31.8	23	33.2	22.7
17	32.6	22.1	31.5	23.3	32.4	22.9	31	23.2	31.8	23.6	33.6	23.1
18	33.2	22.2	32.2	23.9	31.3	24	31.4	24	31	23.3	33.2	22.5
19	33	22.2	31.6	22	31.4	21.9	30.7	22.2	31.7	23.3	33.3	22.4
20	33.8	22.5	31.4	22.9	31.6	23	31.4	23.3	30.6	23.7	33	23.2
21	32.6	23.6	31.4	21.9	31.8	24	31.5	23.4	31.5	24	33.9	
22	32.5	23	32.4	23.9	32	24	31.4	23.2	31.8	23.9	33.6	23.1
23	32.6	24	31.6	22.6	32.4	23.1	32	23.3	32.2	23.2	34.2	23.2
24	33.2	24.1	31.4	22.3	32.3	23.1	31.8	23.3	31.5	23.6	33.9	23.5
25	31.6	22.9	31.3	22.4	31.8	23.4	31.5	23	32.2	22.8	34.5	22.6
26	31.1	23	31.5	22.5	32.1	23.1	31.8	23.2	31.7	23.5		22.5
27	28.5	22	31.7	23.3	31.6	23.3	32.5	22.3	32.4	23.7	34.7	22.3
28	30.1	21.9	31.2	22.8	31.6	23.2	30.8	22.4	31.6	22.5	34.9	21.3
29	28.8	20.9	31.1	22.6	31.3	23	32.7	22	32.8	22.5	34.3	
30	30.2	22.1	32.5	22	32.6	22.8	31.4	23.1	32.9	22.8	34.9	22.3
Mean	32.1	22.8	31.6	22.9	31.7	23.3	31.2	23.4	31.4	23.5	33.2	22.8

Day.	Tuguegarao.		Sinait.		Batac.		Solsona.		Laoag.		Pasuquin.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	29.7	23.7	30.5	24.2	31.2	22.6	29.5	23.5	31.2	23.6	31.4	23.4
2	32.7	23.3	31.8	23.2	30.6	22.5	33.6	23.1	29.6	23.4	29.7	
3	35.8	23.3	32.7	25	30.9	23.6	33.2	23.2	32.5	23.8	32.5	23.9
4	35	22.7	32.8	23.6	32.5	23.5	33.1	23.1	32.5	23.7	32.5	23.8
5	33.6	22.2	33.2	24	31.7	23.5	32.7	23	32.5	23.9	33	23.3
6	34.3	22.6	31.8	24.2	32	23.5	32.4	23.3	32.2	24	33	23.9
7	32.4	23.8	32.8	24.6	32.2	23	33	23.5	31.9	23.2	34.3	24.4?
8	34.2	23.6	32.7	23.3	32	22.8	33.3	22.5	32.7	22.6	33.5	22.7
9	35.7	23.6	32.5	24	32.5	23	33.4	24.2	32.9	24.5	34.5	24.9
10	36.2	23.2	32.9	24.1	30.8	22.5	33.4	23	33.9	24.3	35.5	23.4
11	33.2	23.7	32.8	23.8	33	22.5	33.5	24	33.7	23.5	35.6	23.7
12	30.2	23.8	33.2	24	33.3	23.5	33.4	23.5	32.4	23.8	34.5	23.9
13	27.2	23.2	32	23.5	32.2	23.9	25.4	23.5	26.2	23.8	26.5	24.1
14	33.4	23.7	30	24.1	31.7	24	32	23.4	29.7	24.1	30	24.3
15	33.7	22.7	30.8	24.5	30.2	23.4	31.2	24.3	31	24.1	32.3	23.9
16	33.4	22.2	32.8	23.2	31.7	23	32.4	22.7	32.2	23.6	33.4	23.5
17	32.5	22.2	32.8	23.6	31.8	23.4	32.4	22.4	31.3	22.5	32	22.7
18	33.4	23.4	33	22.6	31.8	23	31.4	21.5	30.7	22.8	32	22.7
19	34.7	23.6	33	22.8	31.2	22.9	31.9	21.9	31.2	23.3	31	23.2
20	35	23.7	32.2	23.6	31.2	23	31.4	22.3	31.2	24.5	31.3	23.6
21	33.4	24	33	23.5	30.9	22.9	33.2	22.2?	32.5	24.1	33.5	24.5
22	32.8	23.8	32.5	23.6	32	22.9	32.9	23	32.3	23.1	33	25.7
23	34.8	23.7	33	23.8	32.4	22.8	32.2	22	32.2	22.9	32	23.7
24	34.2	23.1	32.8	23.7	31.9	23.5	31.8	22.3	31.2	23.6	30.8	
25	33.5	22.6	32.8	24.2	31.7	22.7	33.3	22.1	32.7	22.2	34.1	22.5
26	30.8	23	32.9	23.5	31	23.8	33.4	22.6	33.2	22.5	33.5	22.9
27	31.8	22	32.8	24.5	31.7	23.8	32.4	22.8	32.7	21.6	33.3?	23.6
28	32.4	21.4	33.2	23.5	31.7	23.5	33.9	20.5	33.4	20.5	34.3	21.9
29	28.7	21.9	32.8	23.6		22.9	32.4	21.3	31.5	24	32.5	23.5
30	29.8	22.5	32.9	24.4	31?	22.7	33.5	22.4	30.6	22.9	30	24.5
Mean	33	23.1	32.5	23.8	31.7	23.2	32.4	22.8	31.8	23.3	32.5	23.6

<sup>a</sup> These maximum temperatures seem to be too high.



Maximum and minimum temperatures at the stations of the Weather Bureau, September, 1921—Ctd.

Day.	Aparri.		Cape Bojeador.		Basco.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.
1	29.5	23.3	30.5	24.2	29.5	23.2
2	31	22.8	27.6	22.9	29	23.5
3	32.7	23.7	30.8	24.2	31.3	24
4	32.1	23.3	31.3	24.4	29.7	26.4
5	33.3	22.8	31.4	24.2	30.2	24.2
6	32.1	22.5	30.9	24.6	30.4	23
7	31.7	23.7	30	24.6	31.3	23.5
8	31.6	23.8	31.2	24.2	31	23.7
9	32.4	23.3	30.1	24.6	31.2	25.2
10	31.6	24	31.4	---	31.5	23.8
11	30.9	23.6	30.7	25.1	30.8	23.9
12	30.5	24.8	30.1	24.6	30.1	26.4
13	26	22.6	26	22.4	27.8	22.7
14	31.5	24.3	27.5	23	27.6	24.7
15	32.9	23	28	23.6	29.2	26.2
16	31.8	22.8	30.8	23.6	29.3	25.4
17	31.4	21.8	30.6	22.5	28.9	25
18	32	23.1	29.8	24.5	---	26.1
19	31.3	23.4	29.7	23.2	28.8	25.1
20	31	24.1	30.4	23.6	28.4	---
21	30.6	24.2	29.8	23	28.1	26.3
22	30.2	24.9	29.3	24.5	28.1	25.9
23	29.6	23.7	30.1	23.3	28	25.7
24	28.2	23.1	28.8	23.9	25.9	24.8
25	28.4	22.9	29.2	23.2	26.3	23.9
26	27.5	23.8	27.4	23.6	26.3	22.9
27	29.9	22.5	28.3	23.1	26.3	23.3
28	29.6	21.8	28.5	23.2	26.8	23.5
29	29.2	23	28	22.1	28.2	24.7
30	27	23.4	28.6	23.3	28	23
Mean	30.6	23.3	29.6	23.7	28.9	24.5



## SEISMOLOGICAL BULLETIN FOR SEPTEMBER, 1921

By Rev. MIGUEL SADERRA MASÓ, S. J.,

*Chief, Seismic and Magnetic Divisions, Weather Bureau*

### EARTHQUAKES FELT IN THE PHILIPPINES<sup>1</sup>

3, 0<sup>h</sup> 15<sup>m</sup> 07<sup>s\*</sup> [3, 8<sup>h</sup> 15<sup>m</sup> 07<sup>s</sup>]. **W Luzón.** Earthquake of intensity III, through the Ilocos Norte Province and the most occidental portion of Pangasinan. Distant origin in the China Sea.

7, 4<sup>h</sup> 05<sup>m</sup> [7, 12<sup>h</sup> 05<sup>m</sup>]. **Janiuay** (SE Panay). Earthquake shock of intensity III.

8, 23<sup>h</sup> 25<sup>m</sup> [9, 7<sup>h</sup> 25<sup>m</sup>]. **Janiuay** (SE Panay). Earthquake of intensity III, of larger extension than the preceding one but of similar local character. On the same date occurred two lesser repetitions at 14<sup>h</sup> 20<sup>m</sup> and 18<sup>h</sup> 00<sup>m</sup> [9, 22<sup>h</sup> 20<sup>m</sup>, 10, 2<sup>h</sup> 00<sup>m</sup>].

10, 10<sup>h</sup> 34<sup>m</sup> 06<sup>s\*</sup> [10, 18<sup>h</sup> 34<sup>m</sup> 06<sup>s</sup>]. **W Luzon.** Earthquake of intensity III-IV, felt in the southern part of the Mountain Province comprising Benguet, Amburayan and Lepanto subprovinces, Abra and Ilocos Sur.

11, 15<sup>h</sup> 25<sup>m</sup> [11, 23<sup>h</sup> 25<sup>m</sup>]. **Irosin** (SE Luzon). Subsultory earthquake of intensity IV-V; long duration. Most likely originated in the near Bulusan Volcano, active at present.

12, 13<sup>h</sup> 47<sup>m</sup> [12, 21<sup>h</sup> 47<sup>m</sup>]. **Maasin** (S Leyte). Earthquake shock of intensity II-III; recorded at Butuan.

12, 15<sup>h</sup> 19<sup>m</sup> 31<sup>s\*</sup> [12, 23<sup>h</sup> 19<sup>m</sup> 31<sup>s</sup>]. **SE Luzon.** Earthquake of intensity IV, felt in the provinces of Albay and Sorsogon.

13, 10<sup>h</sup> 49<sup>m</sup> 47<sup>s\*</sup> [13, 18<sup>h</sup> 49<sup>m</sup> 47<sup>s</sup>]. **SE Luzon.** Earthquake of intensity IV-V covering the same area of the preceding one. Their origin probably lay within the San Bernardino Strait near the Albay coasts.

18, 15<sup>h</sup> 14<sup>m</sup> [18, 23<sup>h</sup> 14<sup>m</sup>]. **Lais** (SE Mindanao): Earthquake shocks of intensity IV; recorded at Butuan.

22, 9<sup>h</sup> 17<sup>m</sup> 32<sup>s\*</sup> [22, 17<sup>h</sup> 17<sup>m</sup> 32<sup>s</sup>]. **S Mindanao.** Earthquake of intensity III-IV through Cotabato and the southern part of Davao provinces. The epicenter lay far away in the Celebes Sea, W of Sanguir group. Recorded at Batavia, 9<sup>h</sup> 19<sup>m</sup> 16<sup>s</sup>, and at Zikawei, 9<sup>h</sup> 19<sup>m</sup> 35<sup>s</sup>. It repeated one hour later with much less intensity, and again after five hours.

23, 19<sup>h</sup> 24<sup>m</sup> 42<sup>s\*</sup> [24, 3<sup>h</sup> 24<sup>m</sup> 42<sup>s</sup>]. **SE Luzon and W Samar.** Earthquake of intensity III-IV through the provinces of Albay, Sorsogon and W Samar. Its origin lay in the San Bernardino Strait.

25, 5<sup>h</sup> 49<sup>m</sup> 29<sup>s\*</sup> [25, 13<sup>h</sup> 49<sup>m</sup> 29<sup>s</sup>]. **W Luzon.** Earthquake shock of intensity III, felt in some towns of Benguet and Pangasinan Provinces. The origin probably must be sought in the China Sea.

28, 3<sup>h</sup> 42<sup>m</sup> 33<sup>s\*</sup> [28, 11<sup>h</sup> 42<sup>m</sup> 33<sup>s</sup>]. **Libmanan** (SE Luzon). Earthquake of intensity III, felt in the western portion of Camarines Sur.

<sup>1</sup> The intensity of earthquakes is given in the notation known as the Rossi-Forel scale. The time is that indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (\*). Otherwise the time is that noted by the observer who sent the report. All time indications are in Greenwich mean time (midnight=0<sup>h</sup>), insular time being added in brackets for the convenience of Philippine readers.

28, 6<sup>h</sup> 05<sup>m</sup> [28, 14<sup>h</sup> 05<sup>m</sup>]. Camiguin Islands. Earthquake shock of intensity III, of a very local character, seemingly volcanic.

28, 17<sup>h</sup> 10<sup>m</sup> 32<sup>s\*</sup> [29, 1<sup>h</sup> 10<sup>m</sup> 32<sup>s</sup>]. Samar and Leyte Islands. Earthquake of intensity V-VI, felt through these two islands; its local origin possibly lay near north Leyte; the shock was of limited extension. Recorded at Butuan and Zikawei.

29, 8<sup>h</sup> 55<sup>m</sup> 32<sup>s\*</sup> [29, 16<sup>h</sup> 55<sup>m</sup> 32<sup>s</sup>]. Iba (W Luzon). Earthquake shock of intensity II-III. Origin in the China Sea, off the Zambales coast.

30, 10<sup>h</sup> 21<sup>m</sup> 12<sup>s\*</sup> [30, 18<sup>h</sup> 21<sup>m</sup> 12<sup>s</sup>]. Samar Island and NE Mindanao. Earthquake of intensity III-IV; distant origin in the Pacific. At 14<sup>h</sup> 49<sup>m</sup> 48<sup>s\*</sup> [22<sup>h</sup> 49<sup>m</sup> 48<sup>s</sup>] occurred a second shock with the same intensity and seemingly from identical distant origin. Four instrumental shocks recorded later at Butuan may be reported to the same origin. The first of these quakes was also recorded at Zikawei, China.

### RECORDS OF THE MICROSEISMOGRAPH

(Time: Greenwich mean. Midnight=0<sup>h</sup>. Instrument: Wiechert seismograph; 1,000 kilograms.  $A_N: T_0=6.25, \epsilon=2.906, \frac{r}{T_0^2}=0.053$ ;  
 $A_E: T_0=6.18, \epsilon=2.393, \frac{r}{T_0^2}=0.042$ . Alluvium. 2.40 meters above sea level)

No.	Date.	Character.	Phase.	Hour.		Period.	Amplitude.		Remarks.
							$A_N$ $\mu$	$A_E$ $\mu$	
282	3	Iv	eP L F	<i>h.</i> 0	<i>m.</i> 15	<i>s.</i> 07			Felt in Ilocos Norte.
					15	48			
					27				
283	3	I	e F	9	04				Distant earthquake. From Omori's seismograph.
					50				
284	4	Iv	eP F	0	08	33			
					15				
285	5	I	e F	17	57	00			
					18	34			
286	5	Ir	eP S L ME MN F	20	04	45			
					09	00			
					11	00			
					11	45	8	46	
					13	01	9	52	
					22	06			
287	10	Iv	eP F	1	08	25			
					12				
288	10	Iv	eP F	1	17	04			
					23				
289	10	Iv	eP F	10	34	06			Felt in western Luzon. From Vicentini's seismograph.
					38				
90	11	IIIr	eP S L F	4	07	43			From Omori's seismograph. Central Java.
					13	09			
					17	01			
					7	02			
291	11	Iv	eP F	16	16	43			
					19				
292	11	Iv	eP F	21	40	30			
					45				
293	12	I	e F	5	21	07			From Omori's seismograph.
					46				
294	12	Iv	eP F	15	19	31			SE Luzon. From Vicentini's seismograph.
					24				
295	13	Iv	eP F	2	03	49			
					07				
296	13	I	e F	2	56				From Omori's seismograph. W Java.
					4	48			
297	13	Iv	eP F	10	49	47			Felt in southeastern Luzon
					55				
298	14	I	e F	23	45				
	15			0	21				

Records of the Microseismograph—Continued

No.	Date.	Character.	Phase.	Hour.			Period.	Amplitude.		Remarks.
				h.	m.	s.		A <sub>N</sub> μ	A <sub>E</sub> μ	
299	17	IIv	eP	1	09	03				125
			L		09	21				
			ME		09	26	4			
			MN		09	30	4	113		
		F		17						
300	19	I	e	8	58					
			F		9	13				
301	19	Iv	e	23	27	17				
			P		27	28				
			L		36	12				
	20	Iv	F		0	55				
302	20	Iv	eP	8	07	06				
			F		09					
303	20	Iv	eP	20	25	38				
			L		29	07				
			F		21	02				
304	22	Iv	eP	6	18	44				From Vicentini's seismograph.
			L		19	01				
			F		24					
305	22	I	e	9	17	32				Felt in southern part of Mindanao.
			F		36					
306	23	Iv	eP	19	24	42				Felt in southeastern Luzon and western Samar.
			L		25	23				
			MN		25	46	6	191		
			ME		26	10	5		84	
			F		37					
307	25	IIv	eP	5	49	29				Felt in Pangasinan and Benguet Provinces.
			L		50	00				
			ME		50	11	4		182	
			MN		50	16	4	261		
			F		6	02				
308	25	Iv	eP	15	30	53				
			F		33					
309	26	I	e	20	25					
			F		42					
310	26	I	e	21	20					
			F		36					
311	27	I	e	7	29	29				
			F		44					
312	27	Iv	eP	11	38	02				
			F		43					
313	27	I	e	16	28	34				
			F		17	20				
314	28	Iv	eP	3	42	33				SE Luzon.
			F		46					
315	28	IIv	eP	17	10	32				Felt in Samar and Leyte Islands.
			L		11	47				
			MN		12	17	6	233		
			ME		12	22	5		100	
			F		18	23				
316	29	I	e	6	25					
			F		44					
317	29	IIv	eP	8	55	32				Felt at Iba (W Luzon).
			L		55	56				
			MN		56	06	3	238		
			ME		56	06	3		234	
			F		9	10				
318	29	I	e	13	17					
			F		45					
319	29	Iv	eP	13	48	22				
			F		52					
320	30	Iv	eP	10	21	12				Felt in northeastern Mindanao and at Catbalogan.
			L		22	52				
			MN		23	25	6	69		
			F		11	12				
321	30	Iv	eP	14	49	48				Aftershock of the No. 320.
			F		15	03				

### TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS<sup>1</sup>

3, 0<sup>h</sup> 15<sup>m</sup> 07<sup>s\*</sup> [3, 8<sup>h</sup> 15<sup>m</sup> 07<sup>s</sup>]. **W de Luzón.** Temblor de tierra de intensidad III, sentido en la provincia de Ilocos Norte y en la parte más occidental de Pangasinán. Su origen se hallaba en el Mar de la China.

7, 4<sup>h</sup> 05<sup>m</sup> [7, 12<sup>h</sup> 05<sup>m</sup>]. **Janiuay (SE de Panay).** Temblor de tierra local de intensidad III.

8, 23<sup>h</sup> 25<sup>m</sup> [9, 7<sup>h</sup> 25<sup>m</sup>]. **Janiuay (SE de Panay).** Temblor de tierra de intensidad III; de más extensión que el precedente pero de semejante carácter local. El mismo día 9 hubo dos repeticiones de muy poca intensidad a 14<sup>h</sup> 20<sup>m</sup> y 18<sup>h</sup> 00<sup>m</sup> [22<sup>h</sup> 20<sup>m</sup>, 10, 2<sup>h</sup> 00<sup>m</sup>].

10, 10<sup>h</sup> 34<sup>m</sup> 06<sup>s\*</sup> [10, 18<sup>h</sup> 34<sup>m</sup> 06<sup>s</sup>]. **W de Luzón.** Temblor de tierra de intensidad III-IV sentido en la parte sur de la provincia Montañosa, comprendida por las subprovincias de Benguet, Amburayan y Lepanto, y en las provincias de Abra e Ilocos Sur.

11, 15<sup>h</sup> 25<sup>m</sup> [11, 23<sup>h</sup> 25<sup>m</sup>]. **Irosin (SE de Luzón).** Temblor de tierra susultorio de intensidad IV-V, duración larga; probablemente originado en el vecino Volcán Bulusan en actual actividad.

12, 13<sup>h</sup> 47<sup>m</sup> [12, 21<sup>h</sup> 47<sup>m</sup>]. **Maasin (S de Leyte).** Temblor de intensidad II-III. Registrado en Butúan.

12, 15<sup>h</sup> 19<sup>m</sup> 31<sup>s\*</sup> [12, 23<sup>h</sup> 19<sup>m</sup> 31<sup>s</sup>]. **SE de Luzón.** Temblor de tierra de intensidad IV, sentido en las provincias de Albay y Sorsogón.

13, 10<sup>h</sup> 49<sup>m</sup> 47<sup>s\*</sup> [13, 18<sup>h</sup> 49<sup>m</sup> 47<sup>s</sup>]. **SE de Luzón.** Temblor de tierra de intensidad IV-V, sentido en la misma región que el precedente. El origen parece se hallaba en el Estrecho de San Bernardino cerca de las costas de Albay.

18, 15<sup>h</sup> 14<sup>m</sup> [18, 23<sup>h</sup> 14<sup>m</sup>]. **Lais (SE de Mindanao).** Temblor de tierra de intensidad IV. Registrado en Butúan.

22, 9<sup>h</sup> 17<sup>m</sup> 32<sup>s\*</sup> [22, 17<sup>h</sup> 17<sup>m</sup> 32<sup>s</sup>]. **S de Mindanao.** Temblor de tierra de intensidad III-IV, sentido en la parte sur de la provincia de Dávao y en la de Cotabato. El epicentro estaba en el Mar de Célebes, algo distante hacia el W de la isla de Sanguir. Registrado en Batavia a 9<sup>h</sup> 19<sup>m</sup> 16<sup>s</sup> y en Zikawei a 9<sup>h</sup> 19<sup>m</sup> 35<sup>s</sup>. Repitió una hora más tarde con menor intensidad, y apenas perceptible cinco horas después.

23, 19<sup>h</sup> 24<sup>m</sup> 42<sup>s\*</sup> [24, 3<sup>h</sup> 24<sup>m</sup> 42<sup>s</sup>]. **SE de Luzón y W de Sámar.** Temblor de tierra de intensidad III-IV, sentido en las Provincias de Albay y Sorsogón y en la parte W de Sámar. Su origen parece se hallaba en el Estrecho de San Bernardino.

25, 5<sup>h</sup> 49<sup>m</sup> 29<sup>s\*</sup> [25, 13<sup>h</sup> 49<sup>m</sup> 29<sup>s</sup>]. **W de Luzón.** Temblor de tierra de intensidad III, sentido en algunas estaciones de las provincias de Pangasinán y Benguet. Su origen al parecer se hallaba en el Mar de la China.

28, 3<sup>h</sup> 42<sup>m</sup> 33<sup>s\*</sup> [28, 11<sup>h</sup> 42<sup>m</sup> 33<sup>s</sup>]. **Libmanan (SE de Luzón).** Temblor de tierra de intensidad III, sentido en la parte occidental de la Provincia de Camarines Sur.

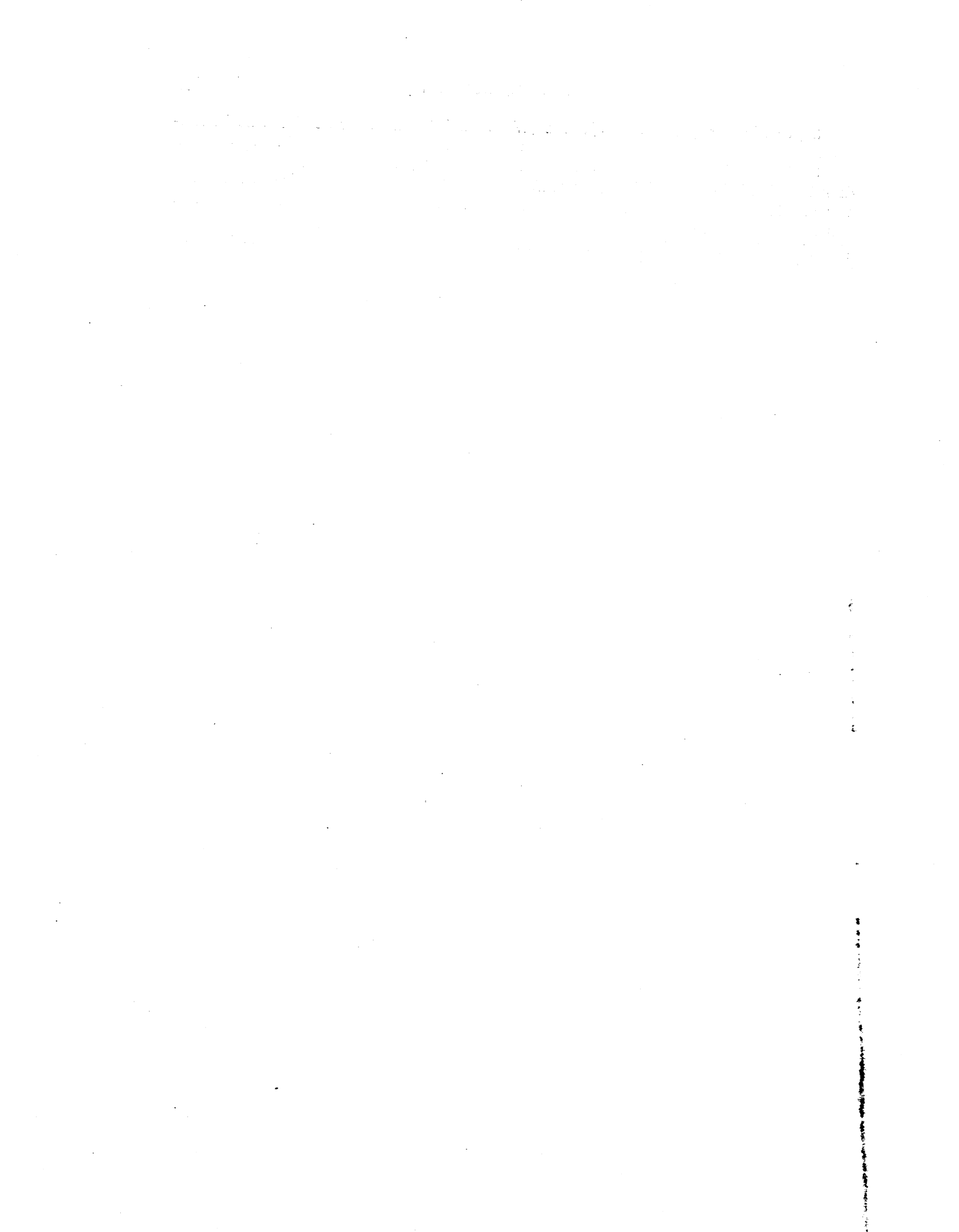
28, 6<sup>h</sup> 05<sup>m</sup> [28, 14<sup>h</sup> 05<sup>m</sup>]. **Isla de Camiguín.** Temblor de tierra de intensidad III, de carácter muy local, probablemente volcánico.

28, 17<sup>h</sup> 10<sup>m</sup> 32<sup>s\*</sup> [29, 1<sup>h</sup> 10<sup>m</sup> 32<sup>s</sup>]. **Islas de Sámar y Leyte.** Temblor de tierra de intensidad V-VI, sentido en buena parte de estas dos islas; su origen se hallaba muy cerca, probablemente hacia el N de Leyte; fué de extensión relativamente limitada. Registrado en Butúan y Zikawei.

<sup>1</sup> La intensidad de los terremotos se indica conforme a la conocida escala de Rossi-Forel. Cuanto a la hora de su ocurrencia, adoptamos la indicada por los sismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (\*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo medio de Greenwich (medianoche=0<sup>h</sup>). Para conveniencia de los lectores de Filipinas se añade también la hora insular.

29, 8<sup>h</sup> 55<sup>m</sup> 32<sup>s\*</sup> [29, 16<sup>h</sup> 55<sup>m</sup> 32<sup>s</sup>]. Iba (W de Luzón). Temblor de tierra de intensidad II-III. Su origen estaba en el Mar de la China, algo lejos de la costa de Zambales.

30, 10<sup>h</sup> 21<sup>m</sup> 12<sup>s\*</sup> [30, 18<sup>h</sup> 21<sup>m</sup> 12<sup>s</sup>]. Isla de Sámar y NE de Mindanao. Temblor de tierra de intensidad III-IV. Originado en el Pacífico algo lejos. A 14<sup>h</sup> 49<sup>m</sup> 48<sup>s\*</sup> [22<sup>h</sup> 49<sup>m</sup> 48<sup>s</sup>] ocurrió otro segundo temblor de igual intensidad en la misma región, originado a la misma distancia. De idéntico origen parece procedían, cuatro choques o réplicas registradas más tarde en Butúan. El primero de estos temblores se registró también en Zikawei.





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THE GOVERNMENT OF THE PHILIPPINE ISLANDS

# WEATHER BUREAU

MANILA CENTRAL OBSERVATORY

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BULLETIN FOR OCTOBER, 1921

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PREPARED UNDER THE DIRECTION OF  
REV. JOSÉ ALGUÉ, S. J.  
DIRECTOR OF THE WEATHER BUREAU

MANILA  
BUREAU OF PRINTING  
1923



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BULLETIN FOR OCTOBER, 1921



# METEOROLOGICAL BULLETIN FOR OCTOBER, 1921

By Rev. JOSÉ CORONAS, S. J.

Chief, Meteorological Division of the Weather Bureau

## GENERAL WEATHER NOTES

Pressure and temperature.—The mean atmospheric pressure for this month in the Philippines is slightly to moderately above that of the preceding year and the normal of October. The highest pressures were recorded on the 13th, while the lowest took place in the days 4th to 6th.

The monthly mean temperature differs very slightly from the normal of this month. The absolute highest and lowest monthly temperatures for Manila were 34.4° C. and 20.5° C.: they were registered on the 24th and 22nd, respectively. The extreme temperatures for Baguio were 25.2° C., 14.0° C. on the top of Mirador, and 26.8° C., 11.9° C. in the plateau near the City Hall.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS OF THE WEATHER BUREAU FOR OCTOBER, 1921

Station.	Pressure.							Temperature.						
	Mean.	Departure from October, 1920.	Departure from normal.	Highest mean.	Day.	Lowest mean.	Day.	Mean.	Departure from October, 1920.	Departure from normal.	Highest.	Day.	Lowest.	Day.
	mm.	mm.	mm.	mm.		mm.		°C.	°C.	°C.	°C.		°C.	
Zamboanga.....	758.65			760.71	13	757.04	28	26.1			32.7	31	21.7	1
Kolonie, Yap, Western Carolines.....	57.98	+0.42		60.51	13	53.48	4	27	0		33.1	29	22.8	6, 22
Tagbilaran.....	58.55	+ .46	+0.42	60.93	13	56.47	5	26.5	+ .3	-0.4	33.1	5	22.1	14
Surigao.....	58.50	+ .59	+ .36	60.84	12	56.14	5	26.3	- .5	- .7	32.6	31	22.6	12, 25
Cebu.....	58.67	+ .50	+ .33	60.99	13	56.53	4	27.6	+ .3	+ .4	32.9	15	23.5	25
Iloilo.....	58.71	+ .52	+ .49	60.94	13	56.63	4	26.8	+ .2	+ .1	33	6	22.1	25
Tacloban.....	58.77	+ .75	+ .41	61.03	12	56.14	4	26.4	+ .3	- .4	34.8	29	22.2	27
Capiz.....	58.89	+ .58	+ .44	61.45	13	56.55	4	27	+ .4	+ .2	33.1	8	23	27
Calbayog.....	59.07	+ .72	+ .60	61.40	13	56.56	4	25.9	+ .3	- .2	33.1	10	21.4	14
Legaspi, Albay.....	59.15	+ .82	+ .83	61.82	13	56.41	5	26.8	0	- .2	33.6	6	22.6	6
Atimonan.....	59.65	+ .94	+1.12	62.27	13	57.07	6	27.2	+ .7	+ .3	30.8	22	22.9	10, 26
Ambulong, Tanauan, Batangas.....	58.94	+ .89		61.70	22	56.31	6	27	+1.3		34.1	6	22.2	17
Daet.....	59.74	+ .94		62.48	13	56.95	6	25.9	+ .5		31	6, 7	21.7	7, 19, 28
Manila.....	59.55	+ .87	+ .92	62.30	13	57.08	5	26.3	+ .1	- .3	34.4	24	20.5	22
San Isidro, Nueva Ecija.....	59.55	+ .78	+ .99	62.31	13	56.91	5	26.7	+ .4	+ .3	34.4	24	20.5	26
Dagupan.....	59.21	+ .95	+1.02	61.99	13	56.65	5	27.8	+ .7	+ .5	35.3	23	21.5	26
Baguio.....	637.29	+ .92	+ .91	639.40	22	635.25	6	18.2	+ .4	+ .2	25.2	23, 28, 30	14	22, 26, 27
Vigan.....	758.89	+ .82	+ .72	761.48	13	756.36	6	28	+ .7	+ .7	34.3	26	22.1	23
Tuguegarao.....	60.33	+1.21	+1.53	63.71	13	57.50	6	26.1	+1	+ .1	35.8	20	19.4	24
Laoag.....	59.05	+ .99		61.93	13	56.44	6	26.7	+ .3		34.8	24	19.1	23, 27
Aparri.....	60.62	+1.43	+1.52	64.12	13	57.74	6	26.1	- .1	- .1	31.8	23	21.2	20

\* The barometric readings of this station are not reduced to sea level.

Rainfall.—Owing to a lack of depressions or typhoons near or over the Philippines during this month, there was also a lack of rain throughout the Archipelago, particularly in the western and northern part of Luzon, as it is shown in the table below. The monthly amount of rainfall for Manila was only 37.4 mm., its difference from the normal of October being -151.0 mm. That of Baguio was 115.6 mm., and its difference from the normal, -271.5 mm.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF OCTOBER, 1921

Station.	Total.	Departure from October, 1920.	Departure from normal.	Days of rain.	Departure from October, 1920.	Departure from normal.	Greatest rainfall in a single day.	Day.	Station.	Total.	Departure from October, 1920.	Departure from normal.	Days of rain.	Departure from October, 1920.	Departure from normal.	Greatest rainfall in a single day.	Day.
	mm.	mm.	mm.		mm.	mm.	mm.			mm.	mm.	mm.		mm.	mm.	mm.	
Jolo.....	216	+ 2.8	- 0.7	23	+ 1	+ 5	41.4	14	Calapan.....	104	- 53.9	-132.3	20	+ 3	0	23.4	25
Malamau, Isabela, Zamboanga.	303.1	+ 94.4	-----	22	+ 5	-----	48.3	4	Virac.....	404.7	-295.2	+ 52.2	26	+ 3	+ 4	59.4	30
Zamboanga.....	186.5	+ 1.8	+ 33.9	19	-----	+ 6	37.1	1	Naga, Camarines Sur.....	190.4	-204.8	- 60.4	23	+ 4	+ 7	25.4	4
Davao.....	192.9	- 1.8	- 44.5	15	- 2	+ 1	31.7	7	Tigaon.....	344	- 80.4	-----	23	- 4	-----	60.2	30
Cotabato.....	233.1	-111.5	+ 46.9	19	- 4	+ 2	59.9	1	Batangas.....	107.3	+ 25.4	- 90.4	12	- 3	- 5	32	1
Cagayan.....	226.5	+ 33.4	+ 45.9	18	0	+ 3	40.6	1	Lucena.....	94.5	- 34.6	-----	15	- 6	-----	23.6	26
Butuan.....	190.4	+ 8.6	+ 7.7	23	+ 2	+ 5	22.6	1	Atimonan.....	218.8	+ 11.7	-138.3	24	- 3	+ 8	30.2	26
Mambajao.....	316.2	+ 85.3	-----	16	- 3	-----	63.5	16	Ambulong, Tanaunan, Batangas.....	71.5	-155.8	-----	6	-12	-----	19.6	10
Dumaguete.....	161.4	- 25.2	- 39.4	20	+ 1	+ 3	29.5	25	Daet.....	506.1	-177.2	-----	24	- 3	-----	126.5	22
Kolonie, Yap, Western Carolines.....	258.3	- 3.7	+ .7	24	+ 6	+ 1	40	5	Canluban, Calamba.....	26.6	-140.3	-----	11	0	-----	6.6	2
Tagbilaran.....	189.2	+ 20	- 63.7	20	- 3	+ 4	34.1	1	Paracale.....	140.2	-136.1	-335.6	15	- 2	- 7	18.5	31
Iwahig Penal Colony, Puerto Princesa.....	349.4	+146.7	-----	17	- 3	-----	93.7	26	Santa Cruz, Laguna.....	25.8	-120.3	-204.1	8	-10	-12	6.6	31
Surigao.....	245.9	+ 72.7	- 2.5	20	- 5	+ 3	35.8	16	Manila.....	37.4	- 41.9	-151	13	- 2	- 5	9.2	5
Maasin, Leyte.....	150.6	- 60.5	- 70.6	8	- 1	- 3	35.1	24	Antipolo.....	71.6	-119.3	-167	11	-10	-10	16.8	5
Cebu.....	146.3	+ 15.1	- 60.2	19	- 6	+ 1	36.1	24	San Isidro, Nueva Ecija.....	122.7	- 43.2	- 56.4	10	- 8	- 5	51.8	7
Iloilo.....	146.7	- 57	-113.7	21	+ 2	+ 3	25.9	12	Iba.....	113	- 55.2	- 61.1	6	-11	- 8	50.8	6
San Jose de Buenavista.....	121.1	-139	-233.8	12	- 3	- 5	43.2	1	Tarlac.....	127.8	-168.6	- 51.4	11	- 4	- 3	43.3	3
Cuyo.....	180.5	-136.8	- 74	14	- 2	- 3	61.9	9	Baler.....	231.4	+ 28.2	-146.3	14	- 2	- 2	57.6	31
Ormoc.....	203.8	- 57.5	- 34.2	24	+ 3	+ 4	31.5	19	Dagupan.....	97	- 20.8	-----	9	- 2	- 4	38.4	8
Guiuan.....	434.9	+109.7	+117.9	25	+ 5	+ 4	105.9	18	Bolinao.....	28.7	-----	-142.4	6	-----	- 6	9.7	1
Tacloban.....	259.4	+ 31.5	+ 55	21	- 1	+ 2	33.8	3	Baguio.....	115.6	-176.3	-271.5	12	- 9	- 6	27.1	6
Capiz.....	312.1	- 4.8	-105.6	22	- 3	+ 1	58.4	1	San Fernando, La Union.....	2	- 57.6	-142.8	1	- 6	- 8	2	1
Borongan.....	473	+133.4	+149.1	27	0	+ 5	68.8	21	Echagüe.....	224.5	-----	+ 10.3	21	-----	+ 2	56.4	6
Catbalogan.....	346.6	+ 62.3	-----	24	0	-----	55.1	31	Candon.....	11.7	- 46.8	-162.2	1	- 3	- 8	11.7	1
Calbayog.....	232.6	- 47.8	- 31.8	24	0	+ 2	32.8	31	Vigan.....	2.5	-172.7	-162.6	1	- 2	- 8	2.5	1
Masbate.....	110.3	+ 2	- 28.8	18	+ 5	+ 3	22.1	31	Tuguegarao.....	24.6	- 59.7	-227.5	9	- 3	- 3	13.5	5
Romblon.....	252	+101.6	- 36.5	23	+ 1	+ 1	56.1	10	Laoag.....	4.6	- 44.8	-215.9	1	- 5	- 7	4.6	1
Batag Light-house, Laoang.....	523.4	- 27.7	-----	24	+ 1	-----	89.4	26	Aparri.....	190.1	- 13.6	-107.8	11	- 3	- 6	103.9	1
Sorsogon.....	461.8	+113.9	-----	22	+ 1	-----	62.2	10	Cape Bojeador.....	4.9	+ 5.9	-----	2	- 4	-----	4.6	1
Legaspi.....	289.7	- 40.5	- 40.3	18	- 1	- 1	65.1	31	Basco.....	231.7	+ 21.3	-112.6	8	-10	-12	53.3	28
Sumay, Guam.....	279.4	-159	- 63.1	26	- 2	+ 3	62.2	7									

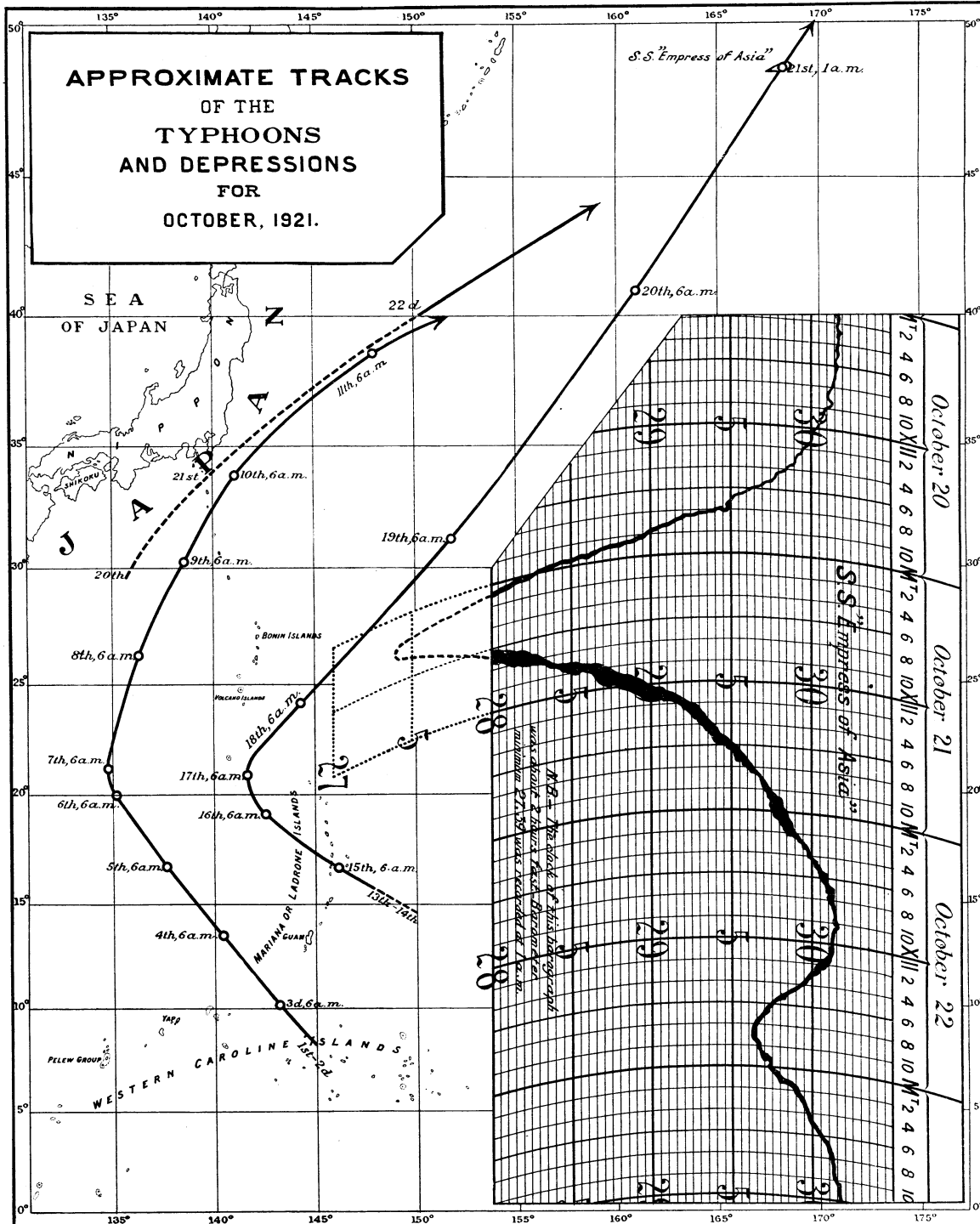
DEPRESSIONS AND TYPHOONS

There was not a single depression or typhoon traversing the Philippines during this month, and even of the four typhoons that were observed in the Pacific only one approached sufficiently near to influence slightly our weather in the Archipelago at the beginning of the month. This typhoon recurved northeastward to the E of Luzon on September 30, and hence its track was already given in our Bulletin for September.

Three distant Pacific typhoons.—The first of these typhoons formed on October 1 to 2 over the Western Carolines in about 145° longitude E and 8° latitude N. It moved northwestward passing about half way between Guam and Yap on the 3rd. On the 6th the typhoon began to recurve northeastward near longitude 135° E and latitude 20° N. The weather maps of Tokio show this typhoon moving NE to the E of Japan on the 10th and 11th. The steamer *Creole State* was under the influence of this typhoon between the Ladrone Islands and Luzon on October 4 to 8.

The second typhoon appeared eastnortheast of Guam on the 13th near 150° longitude E and 15° latitude N. It moved probably WNW first, then northwest, and recurved gradually to north and northeast to the south of the Bonins. The center was situated at noon of the 18th southeast of the Bonins in about 145° longitude E and 25° latitude N, moving northeastward. The *Steamer Empress of Asia* was in the center of this typhoon on October 21 in about 168° 3' longitude E and 48° 33' latitude N, with a barometric minimum as low as 695.69 mm. (27.39 ins.) Besides the *Empress of Asia*, three other steamers were most heavily involved in this typhoon: the Japanese Steamer *Kashima Maru*, the American S. S. *Steel Voyager*, and the British S. S. *Tyn-*

Plate VI.



*dareus*. As we see in the *U. S. Monthly Weather Review* for this month, "the typhoon continued its northeasterly movement to Bering Sea, where, on the evening of the 21st, a barometer reading of 28.60 inches (726.43 mm.) was recorded at St. Pauls, Pribilof Islands; and on the following day it was central over the Alaska's Peninsula, very much diminished in energy."

The observations and the barographic record obtained on board the S. S. *Empress of Asia* show that this steamer passed to the north of another not so severe typhoon in the evening of October 22 (barometric minimum 750.30 mm., 29.54 ins.). It was probably the same that started as a depression of little importance to the south of Japan and westnorthwest of the Bonins on October 20 (see Plate VI).



## NOTAS GENERALES DEL TIEMPO

**Presión y temperatura.**—La presión atmosférica media de este mes en Filipinas es ligera o regularmente mayor que la del año pasado y que la normal de octubre. Las presiones más altas se registraron el día 13, al paso que las más bajas tuvieron lugar los días 4-6.

La temperatura media mensual difiere muy ligeramente de la normal de este mes. Las temperaturas máxima y mínima absolutas del mes en Manila fueron  $34.4^{\circ}$  C. y  $20.5^{\circ}$  C., las cuales se registraron los días 24 y 22, respectivamente. Las temperaturas extremas de Baguio fueron  $25.2^{\circ}$  C.,  $14.0^{\circ}$  C. en la cumbre del Mirador, y  $26.8^{\circ}$  C.,  $11.9^{\circ}$  C. en la llanura cerca del *City Hall*.

**Precipitación acuosa.**—Debido a la ausencia de depresiones o tifones en, o cerca de, Filipinas durante este mes, se ha experimentado escasez de lluvia en todo el Archipiélago, particularmente en la parte occidental y septentrional de Luzón, según se echa de ver en la tabla que publicamos en el texto inglés. La cantidad mensual de lluvia en Manila fué sólo 37.4 mm., la cual difiere de la normal de octubre en  $-151.0$  mm. La de Baguio fué 115.6 mm., siendo su diferencia de la normal  $-271.5$  mm.

## DEPRESIONES Y TIFONES

Durante todo este mes no hubo ni una sola depresión o tifón que cruzara Filipinas, y aun de los cuatro tifones que se observaron en el Pacífico sólo uno se aproximó lo bastante para influir ligeramente en el tiempo del Archipiélago a principios del mes. Este tifón recurvó al NE por el E de Luzón el 30 de septiembre, y de ahí que su trayectoria se haya publicado ya en nuestro Boletín de septiembre.

**Tres tifones lejanos del Pacífico.**—El primero de estos tifones se formó del 1 al 2 de octubre en las Carolinas Occidentales en los alrededores de  $145^{\circ}$  longitud E y  $8^{\circ}$  latitud N. Se movió al NW pasando próximamente a la mitad de distancia entre Guam y Yap el día 3. El día 6 el tifón comenzó a recurvar al NE cerca de  $135^{\circ}$  longitud E y  $20^{\circ}$  latitud N. Los mapas del tiempo de Tokio indican este tifón moviéndose hacia el NE al E de Japón los días 10 y 11. El vapor *Creole State* estuvo bajo la influencia de este tifón entre las Islas Ladrones y Luzón del 4 al 8 de octubre.

El segundo tifón apareció al ENE de Guam el día 13 cerca de  $150^{\circ}$  longitud E y  $15^{\circ}$  latitud N. Se movió probablemente al WNW primero, luego al NW, y recurvó gradualmente al N y NE por el S de Bonins. El centro se hallaba al medio día del 18 al SE de Bonins en los alrededores de  $145^{\circ}$  longitud E y  $25^{\circ}$  latitud N, moviéndose al NE. El vapor *Empress of Asia* se halló en el centro de este tifón el 21 de octubre en los alrededores de  $168^{\circ} 3'$  longitud E y  $48^{\circ} 33'$  latitud N, registrándose a bordo de dicho vapor una mínima barométrica de 695.69 mm. (27.39 pulgadas). Además del *Empress of Asia*, otros tres vapores estuvieron seriamente envueltos en este tifón: el vapor japonés *Kashima Maru*, el vapor americano *Steel Voyager* y el vapor inglés *Tyndareus*. Según el *U. S. Monthly Weather Review* de este mes, "el tifón continuó moviéndose al NE hasta el Mar de Bering, habiéndose registrado en St. Pauls, Islas Pribilof, la noche del 21, una lectura barométrica de 726.43 mm. (28.60 pulgadas); y al día siguiente se hallaba en la Península de Alaska, pero muy disminuído en intensidad."

Las observaciones y el registro barográfico obtenidos a bordo del *Empress of Asia* demuestran que este vapor pasó por el norte de otro tifón no tan intenso como el anterior la noche del 22 de octubre (mínima barométrica 750.30 mm., 29.54 pulgadas). Era probablemente el mismo que comenzó como una depresión de poca importancia al S de Japón y WNW de Bonins el 29 de octubre (véase Lámina VI).

METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY<sup>a</sup>

[ $\phi = 14^{\circ} 34' 41''$  N;  $\lambda = 120^{\circ} 58' 33''$  E; barometer above sea, 14.2 meters; gravity correction not applied, -1.72 mm.]

Day.	Pressure (mean). mm.	Air temperature. <sup>b</sup>				Underground temperature.				Relative humidity (mean). Per ct.	Vapor pressure (mean). mm.	Radiation.		Evaporation. <sup>b</sup>		
		Mean.	Maximum.	Minimum.	0.25 meter.		0.50 meter.		1.50 meters.			2.50 meters.	Minimum on grass.	Maximum in sun. Black bulb in vacuo.	Free exposure (total). mm.	Shelter (total). mm.
					8 a. m.	2 p. m.	8 a. m.	2 p. m.								
		°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.			°C.	°C.	°C.	°C.	°C.
1	758.36	25.6	30.2	23.3	28	28.7	29.3	29.5	29.3	29	88.9	21.6	21.9	60	0.4	1.2
2	58.63	26.3	31.5	22.1	27.8	29.2	29.1	29.1	29.3	29	82.5	20.9	20.4	63.6	2.5	2
3	57.85	26.8	31.5	23.1	28.2	29.5	29.3	29.4	29.3	29	84.5	22	21.7	62.4	2.4	2
4	57.09	27.2	32.3	23.7	28.6	30.1	29.3	29.5	29.4	29.2	82.2	21.9	22.4	64.2	3	2.1
5	57.08	26.6	31.8	24	28.7	30.5	29.5	29.6	29.4	29.1	85.6	22.1	22.7	63.8	1.8	1.6
6	57.16	26.7	32.8	23.2	28.6	30.5	29.6	29.8	29.3	29.1	80.5	20.8	22.3	61.7	3.2	2.8
7	57.70	27	32.4	23.3	29.1	30.5	29.8	30	29.3	29.2	81.8	21.5	22.2	59.8	3	2.3
8	58.25	27.3	32.7	24.5	28.3	31	28.9	30.1	29.3	29.1	80.9	21.7	22.3	63.2	3.2	2.2
9	58.92	26.5	32	23.4	29.5	31	30.2	30.2	29.2	29.2	82	21	22.2	65.8	2.3	1.9
10	59.41	26.4	31.4	23.6	29.3	30.6	30.2	30.2	29.3	29.2	85.2	21.6	22.5	63	1.8	1.7
11	60.32	25.2	29.6	23.4	29.2	29.7	30	30	29.2	29	89.5	21.2	22.4	51.8	.6	.9
12	61.87	25.8	31.4	22.9	28.7	29.8	29.7	29.9	29.3	29.1	82.6	20.1	22.7	62.5	1.7	1.8
13	62.30	25.9	32.4	21.8	28.2	29.9	29.5	29.8	29.2	29	78.6	19.2	19.9	64	2.9	2.3
14	60.01	25.8	32.4	22.4	28.3	29.9	29.5	29.7	29.2	29	81.1	19.8	20.6	62.3	2.5	2.1
15	59.12	26.5	32	22.3	28.3	30.3	29.5	29.8	29.4	29.3	78.6	20.1	20.4	65.5	2.3	2
16	59.84	26.4	32.4	21.8	28.5	30.2	29.5	29.7	29.3	29.2	76.2	19.2	19.5	60.6	4.1	3
17	60.34	26.3	31.8	22.1	28.7	30.4	29.6	29.8	29	29.2	78.6	19.8	20	65	3.6	2.6
18	60.14	26.4	32.5	22.2	28.5	30.4	29.5	29.8	29.3	29.2	76.8	19.4	20	61.8	4.3	3.3
19	59.66	26.7	33.1	22	28.5	30.6	29.5	29.9	29.3	29.1	75.4	19.4	19.7	64	4.5	3.1
20	60.06	26.5	31.7	22.9	29	30.6	29.7	30	29.3	29.2	79.1	20.2	20.6	61	3.4	2.6
21	61.29	26	32	22	28.7	30.5	29.7	29.7	29.3	29.2	77.5	19.1	20	63.3	3	2.7
22	62.04	25.8	32.9	20.5	28	29.9	29.5	29.7	29.2	29.1	76.2	18.5	18.3	63	3.4	2.6
23	61.33	26.1	32.8	21.8	28.1	29.5	29.4	29.7	29.4	29.2	77.1	19	19.4	64	5.5	3.3
24	60	26.5	34.4	22.2	28.3	30.5	29.3	29.7	29.3	29.2	74.5	18.7	20.2	71.8	4.7	3.6
25	59.79	26.1	33.8	21.3	28	30.9	29.3	29.6	29.2	29.2	71.8	17.3	18.6	66	5.5	4.2
26	59.90	25.6	31.7	21.2	27.9	29.5	29.2	29.4	29.2	29.2	77.5	18.7	18.4	60.6	3	2.5
27	59.90	26.4	32.2	22.4	28	30	29	29.4	29.2	29.2	76.1	19.1	20.1	64.6	3.7	3
28	58.70	26	32.2	21.9	28	29.7	29	29.4	29.2	29.2	78.8	19.4	19.5	64.7	3.7	2.7
29	58.87	26.1	33	22.4	28.3	29.7	29	29.2	29.3	29.2	76.1	18.7	20.5	64	3.3	2.6
30	59.76	26.3	33.4	21.2	28	29.7	29	29.4	29.4	29.3	76.1	19	19	64	4.2	3.2
31	60.30	26.3	32.1	24	28.3	29.5	29	29.3	29.2	29.1	80.5	20.3	22.1	59	2.8	2.2
Mean	759.55	26.3	32.2	22.5	28.4	30.1	29.4	29.7	29.3	29.1	79.8	20	20.7	62.9	3.1	2.5
Total															96.3	76.1
Departure from normal	+0.92	-0.3	+1.1	-0.6							-4.1	-1.6			+19.6	

Day.	Wind.				Clouds.		Sunshine. h. m.	Rain, 24 hours beginning 6 a. m.		Miscellaneous.	
	Prevailing direction.	Total movement.	Maximum hourly velocity.	Direction at the time of the maximum velocity.	Amount (mean).	Form and direction.		On the tower.	In the park.		
						Upper.					Lower.
1	E	54	11.5	WNW	8.3	A.-Cu. NE	Cu. E	1 55	7.6	8.6	☉ a. p. ☽ p.
2	E	80	11	WNW	5.5	Cl. SSE	Cu. ENE	8 20	1.8	1.8	☽ a. p. ☽ p.
3	W quad.	133	15.5	W	4.8	A.-Cu. F	Cu. ENE, NE	6 20	.8	.8	☽ a. p. ☽ p.
4	E	91.5	12.5	WNW	4.6	Cl. NE	Cu. ENE	8 30	.3	.3	☽ a. p. ☽ p.
5	SE	121.5	16	W by N	4.8	Cl.	Cu. NE	6 35	9.2	10.4	d a. ☉ p.
6	NE, WSW	108	14	N	3.5	Cl. NW	Cu. ENE	10 15	5.1	4.6	☉ a. ☽ p. ☉ p.
7	SE	118	12.5	NE	6.1	Cl.-S. NE by N	Cu.-S. E quad	6 20			☽ a. ☽ p. ☉ p.
8	E quad.	116	14.5	WSW	5.2	Cl.-S. N	Cu. ENE	6 30			☽ a. ☽ p. ☉ p.
9	E	132.5	12.5	ENF	5.6	Cl., Cl.-S.	Cu.-N. F	5 25	4.9	5	☉ a. ☽ p. ☉ p.
10	NE, SE	107.5	14	NE	6.5	Cl.	Cu.-N. E	5 20	.6	.8	☉ a. ☽ p. ☉ p.
11	E	67.5	13.5	NE	9.7	A.-Cu. E	Cu.-N. F	0 05	2.2	3.1	☉ a. ☽ p. ☉ p.
12	ENE, E	57.5	10.5	NE	6.7	A.-Cu. NE	Cu. E	2 40	2.5	2.9	d a. ☉ p. ☉ p.
13	ENE, E	84.5	9.5	E	6.7	Cl.-S. NNW	Cu. E	4 45			d a. ☉ p. ☉ p.
14	NNE, E	86.5	11.5	N	5.2	A.-Cu.	Cu. FNE	5 00	1	.8	☉ a.
15	SE	110	11	WSW	5.6	Cl.	Cu. ENE, E	7 50			☉ a.
16	E	112	14	WSW	2.8	Cl.	Cu. NE	9 25			☉ a.
17	E, SE	129	12	W	4.5	A.-Cu. ENE	Cu. E	7 15			☉ a.
18	W	119	15	W	3.9	Cl. NE	Cu. E	9 45			☉ a.
19	SE	124.5	13.5	WSW	2.6	Cl.	Cu. E	10 15			☉ a.
20	E	118	15	W	3.2	A.-Cu.	Cu. E	7 35			☉ a.
21	E	108.5	13	WSW	4.2	A.-Cu.	Cu. F	8 45	1.3	1.1	☉ a.
22	E	105	13	NE	4.5	Cl. NW	Cu. F	7 40			☉ a.
23	ENE	114	15	E	4.8	Cl. SE	Cu. ENE	7 20			☉ a.
24	E	140	19	ESE	3.8	A.-Cu. E	Cu. ENE	8 25			☉ a.
25	E	163.5	21.5	E	3.2	Cl.-S. F	Cu. F	9 25			☉ a.
26	NE	114	13.5	NE	7.5	Cl. NW	Cu. E	3 25	1	.2	☉ a.
27	NF	111.5	13	SW	4.4	A.-Cu. NF	Cu. E	7 00			d a.
28	E	141	17	SE	4.8	A.-Cu. SE	Cu. E	8 00			d a.
29	SE	91	10	SE	6.4	A.-Cu. E	Cu. ENE	5 30			d a.
30	F	136	14.5	WNW	4.9	Cl.-S. NE	Cu. E	9 05			☉ a. ☉ p.
31	SF	111	13	ENE	8.2	A.-Cu. E	Cu. E	0 50			☉ a. ☉ p.
Mean		109.9	13.6		5.2			6 38			
Total		3,406						205 30	37.4	40.4	
Departure from normal		-1,840.3			-1.5			+40 33	-151		

<sup>a</sup> All the mean values given in this table are deduced from hourly observations.  
<sup>b</sup> These values are taken from instruments mounted in the Observatory Park, 1.5 meters above ground.

METEOROLOGICAL DATA FOR MIRADOR OBSERVATORY, BAGUIO\*

[φ = 16° 25' N; λ = 120° 35' E; barometer above sea, 1,512.5 meters; gravity correction not applied, -1.65 mm.]

Day.	Pressure (mean). <sup>f</sup>		Air temperature at Mirador (on the top of the mountain).				Air temperature in the plateau near the City Hall.				Relative humidity (mean). <sup>g</sup>	Vapor pressure (mean).	Radiation.		Evaporation.	
	mm.	°C.	Mean.	Maxi-mum.	Hour.	Mini-mum.	Hour.	Maxi-mum.	Hour.	Mini-mum.			Hour.	Mini-mum on grass.	Maxi-mum in sun. Black bulb in vacuo. <sup>c</sup>	Free exposure (total).
1	636.06	17.5	22.2	8.40a.	15.2	12 m.n.	23.5	10.00a.	14.8	3.00a.	95.2	14.1	14.3	55.8	1.3	0.8
2	36.58	18.3	21.8	2.00p.	14.6	0.40a.	25.3	0.10p.	14.2	0.35a.	86.7	13.6	13.4	55	2	1
3	36.12	18	22.1	1.15p.	15.7	5.15a.	24.2	4.30p.	14.6	5.10a.	92.8	14.2	13.8	55.2	1.3	.8
4	35.63	18.8	23.3	1.55p.	15.3	4.35a.	25	11.30a.	15	5.45a.	86	14	13.8	58.5	1.7	.9
5	35.58	19.2	24.6	1.45p.	15.5	3.50a.	25.5	2.00p.	15.2	4.25a.	87.2	14.5	14	59	2	1
6	35.25	18.2	22.6	11.30a.	16.5	6.05a.	23.2	11.50a.	16	6.10a.	94.7	14.5	14.2	56.5	1	.4
7	35.80	18.3	22.5	0.30p.	16.2	5.45a.	25	0.30p.	16	6.10a.	92.3	14.4	15.4	57	1	.6
8	36.17	18.5	23	0.10p.	15.6	5.55a.	25.2	1.15p.	14.8	2.15a.	91.5	14.4	13.7	60.8	2	1.1
9	36.69	17.9	23.5	0.25p.	15.8	2.20a.	24.9	11.45a.	15.3	1.10a.	95.5	14.6	14.8	61	1.3	.7
10	37.21	17.6	22.9	1.20p.	15.7	5.50a.	25.2	10.30a.	14.9	9.30a.	94.5	14.2	14.2	61	1.2	.6
11	37.52	17.1	21.6	10.25a.	15.6	5.00a.	23.8	9.30a.	15.1	6.20a.	93.5	13.6	14	59.2	.8	.4
12	38.80	17.5	22.8	10.30a.	14.6	5.55a.	24.4	11.00a.	13.9	6.15a.	89.2	13.2	13.6	57.8	3	1.3
13	39.39	17.7	23.9	11.40a.	14.3	1.30a.	26	11.50a.	13.2	6.15a.	85	12.8	12.4	58.1	4.2	1.8
14	37.73	18.1	22.7	9.50a.	14.8	3.00a.	25.3	10.30a.	13.9	3.45a.	85.7	13.2	13.1	57.6	2.6	1.3
15	36.97	18.8	24.5	10.15a.	15	4.30a.	26.8	0.40p.	13.4	5.30a.	82.5	13.2	12.5	55.1	2.6	1.3
16	37.45	18	22.6	10.45a.	14.9	6.00a.	24.8	10.20a.	14	6.00a.	91	14	12.9	61	1.8	1
17	37.98	18.8	23.2	10.10a.	14.8	5.30a.	26	11.35a.	14.1	6.00a.	86.8	13.4	12.9	56.8	2.5	1.3
18	37.98	18.2	23.2	1.15p.	15.1	5.55a.	25.3	11.10a.	13.9	6.30a.	89	13.8	12.3	60.3	2.1	1.3
19	37.43	18.7	24	0.30p.	14.7	4.15a.	26.1	Noon	13.9	6.10a.	86.3	13.9	13.4	58.4	2.2	1.1
20	37.78	18.4	22.4	0.20p.	15.8	6.00a.	24.7	1.00p.	15.6	6.00a.	86.5	13.7	14.5	56.5	2	1
21	38.64	17.9	22.8	0.25p.	14.5	5.30a.	26.6	11.10a.	13.8	5.30a.	87.3	13.4	13.5	56.1	4.1	1.9
22	39.40	18.5	24.6	11.55a.	14	2.00a.	26.6	0.30p.	11.9	3.20a.	73	11.7	13.2	54.2	9.5	4.4
23	39	18.8	25.2	1.00p.	14.8	3.35a.	26.8	1.20p.	13.4	6.00a.	71.7	11.7	13	52	8.7	4
24	37.86	18.7	25	11.15a.	15.1	4.30a.	26.4	11.45a.	13.4	5.30a.	66.8	10.7	12.5	54	8.3	4.1
25	37.42	17.8	23.7	10.45a.	14.2	3.05a.	25.6	11.40a.	12.7	2.30a.	72.8	11.2	11.8	56.3	4.9	2.8
26	37.62	17.8	23.7	10.50a.	14	4.50a.	26.2	11.45a.	12	5.00a.	73	10.9	11.6	55.5	6.8	3.2
27	37.42	18.2	24.6	10.45a.	14	5.40a.	26.4	Noon	12.3	6.15a.	71.7	11.2	12	54	5.5	2.8
28	36.40	18.1	25.2	11.40a.	15	4.30a.	25.8	0.25p.	13.2	5.15a.	80.5	12.4	13.6	56.8	3.8	2
29	36.56	18.4	25.1	11.40a.	15.5	2.00a.	25.8	11.45a.	14.2	5.00a.	82.8	12.9	14.2	56.2	3	1.5
30	37.59	18.7	25.2	0.05p.	15.7	5.55a.	26.8	Noon	14.6	5.45a.	83.2	13.2	14	57.2	5.4	2.8
31	37.95	18.2	22.3	0.35p.	15.7	0.50a.	24.8	1.15p.	14.4	5.45a.	77.7	12.1	14	45.8	9.2	4.7
Mean.	637.29	18.2	23.4		15.1		25.4		14.1		84.9	13.2	13.4	56.7	3.5	1.7
Total.															107.8	52.9

Day.	Wind.				Amount (mean). <sup>h</sup>	Clouds.		Sun-shine.	Rain, 24 hours beginning 6 a. m.	Miscellaneous.
	Prevailing direction. <sup>d</sup>	Total movement.	Maxi-mum hourly velocity.	Direction at the time of the maximum velocity.		Form and direction.	Upper.			
1	E	256	18	E	7.9	Ci.	Cu.-N. E	2 50	10.6	≡ <sup>2</sup> a. <sup>2</sup> p.
2	E quad.	229.27	16.4	W, N	6.7	A.-Cu.	Cu.-N. SW	0 40	15	≡ <sup>2</sup> p.
3	W quad.	189.5			6.1	Ci.	Cu.-N. E quad.	2 45	10.4	≡ <sup>2</sup> a. p. <sup>2</sup> p.
4		153.4			4.9	A.-Cu.	Cu.-N. E	4 25	21.1	≡ <sup>2</sup> a. ≡ <sup>2</sup> <sup>2</sup> p.
5	W	242.2	18.8	W	4.9	Ci.	Cu. SSE	4 55	2.3	≡ <sup>2</sup> a. ≡ <sup>2</sup> <sup>2</sup> p.
6	W	187.6	15.1	SW	7.3	Ci.-S.	Cu.-N. wnw, ssw	2 55	27.1	≡ <sup>2</sup> a. ≡ <sup>2</sup> <sup>2</sup> p.
7	W	224.2	20.6	NW	7.9	A.-Cu.	Cu.-N. WNW	1 30	6.1	≡ <sup>2</sup> a. ≡ <sup>2</sup> <sup>2</sup> p.
8	W, E	252.6	18.5	W	5.7	A.-Cu.	Cu.-N. WNW	4 40	5	≡ <sup>2</sup> a. d ≡ <sup>2</sup> <sup>2</sup> p.
9	W, E	245.7	19.8	W	5.6	Ci.	Cu.-N. wnw, w	3 20	4.3	≡ <sup>2</sup> a. ≡ <sup>2</sup> <sup>2</sup> p.
10	W, E	274.7	18.5	SW	6.6	Ci.	Cu.-N. WNW	2 40	7.9	≡ <sup>2</sup> a. ≡ <sup>2</sup> a. p. ≡ <sup>2</sup> <sup>2</sup> p.
11	E	240.5	20.1	W	6.6	Ci., Ci.-S.	Cu.-N. ssw, sw	2 15	5.3	≡ <sup>2</sup> a. ≡ <sup>2</sup> a. ≡ <sup>2</sup> <sup>2</sup> p.
12	E	303.7	17.7	E	6.3	Ci.	Cu.-N. E, wnw	4 10	5	≡ <sup>2</sup> a. ≡ <sup>2</sup> p.
13	E	278.4	19.1	E	5.1	A.-Cu.	Cu.-N. SE	4 00		≡ <sup>2</sup> a. p. ≡ <sup>2</sup> p.
14	W, E	257.4	19.6	E	6.6	Ci.-S.	Cu.-N. S quad.	2 50		≡ <sup>2</sup> a. ≡ <sup>2</sup> a. p. ≡ <sup>2</sup> p.
15	SE quad.	213.1	19.1	W	3.6	Ci.	Cu.-N. SE	4 45		≡ <sup>2</sup> a. ≡ <sup>2</sup> d <sup>o</sup> p.
16	NE quad.	224.3	20.6	W	6	Ci.-S.	Cu.-N. SE	4 45		≡ <sup>2</sup> a. ≡ <sup>2</sup> a. ≡ <sup>2</sup> p.
17	SE quad.	196.4	17.2	W	4.9	Ci.	Cu. SE	4 10		≡ <sup>2</sup> p.
18	E	204.2	17.9	W	6.4	Ci.	Cu.-N. SE, NW	3 53		≡ <sup>2</sup> a. ≡ <sup>2</sup> a. p. ≡ <sup>2</sup> p.
19	E, SW	242.4	18.3	SW	3.9	Ci.	Cu. SSW	5 45		≡ <sup>2</sup> a. ≡ <sup>2</sup> d <sup>o</sup> p.
20	E quad.	229.2	19.9	W	6.4	Ci.	Cu.-N. SE, NW	1 45		≡ <sup>2</sup> a. ≡ <sup>2</sup> a. ≡ <sup>2</sup> <sup>2</sup> p.
21	E, SW	220	16.7	W	4.7	Ci.	Cu.-N. ssw, SE	2 00		≡ <sup>2</sup> p.
22	E	296.7	23	E	1.1	Ci.	Cu. SE	4 15		≡ <sup>2</sup> a.
23	E	319.1	23.9	E	1.1	Ci.	Cu.	5 50		≡ <sup>2</sup> a.
24	E quad.	271	19.5	E	1.6	Ci.	Cu. E	6 35		≡ <sup>2</sup> a. ≡ <sup>2</sup> a. p.
25	E	383.9	26.6	E	4.9	Ci.	Cu. E	3 45		≡ <sup>2</sup> a. ≡ <sup>2</sup> d <sup>o</sup> p.
26	E	296.3	20.7	W	4.3	Ci.	Cu. E, N	6 15		≡ <sup>2</sup> a. p <sup>o</sup> p.
27	E	279	23.5	E	3.3	Ci.	Cu. E	7 10		≡ <sup>2</sup> p.
28	E	266.8	18.3	E	6	Ci.	Cu.	4 15		≡ <sup>2</sup> a. p. ≡ <sup>2</sup> p.
29	E quad.	214.7	18.2	E	5.4	Ci.	Cu. E	3 45		≡ <sup>2</sup> p.
30	E	287.5	19.6	E	3.7	Ci.	Cu. E	5 25		≡ <sup>2</sup> a. ≡ <sup>2</sup> p.
31	E	469.9	33.5	E	7.6	Ci.-S.	S.-Cu. E	0 00		≡ <sup>2</sup> p.
Mean.		256.4	20.0		5.3			3 49		
Total.		7,949.6						118 15	115.6	

\* All the mean values given in this table are deduced from six daily observations taken at 2, 6, 10 a. m. and 2, 6, 10 p. m.  
<sup>b</sup> The barometric readings of this station are not reduced to sea level.  
<sup>c</sup> Maximum of hourly observations taken from 6 a. m. to 6 p. m.  
<sup>d</sup> This element is based on hourly observations taken from a quadruple register, which gives only eight possible directions of the wind.  
<sup>e</sup> 4 hours missing.  
<sup>f</sup> 6 hours missing.  
<sup>g</sup> 10 hours missing.

## DAILY RAINFALL AT THE STATIONS OF THE WEATHER BUREAU, OCTOBER, 1921

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Lapac Agricultural School, Siasi, Sulu †	50.3					41.9	23.6						3	12.7		
Glan, Cotabato †																
Jolo, Sulu	13.3	6.6	2.3	8.6	3.5	15.7	8.1	3.3			0.6		5.1	41.4	2	
Buntung, Koronadal, Cotabato †	10.9	8.6	4.8	2.5		3.8	8.9	14	8.1							
Lais, Malita, Davao	3.8		6.9	17.5			2.5	2.3			5.8		10.2			1
Malita, Davao	7.1		1.3	6.9			1.8	4.8			4.6	2.3	0.8	9.4		2.3
Lebak, Cotabato	9.7	25.1	45.2	19.3	1	16	5.3						14.2	5.3	28	4.8
Lamitan, Isabela, Zamboanga																
Basilan Plantation, Kabunbatan, Isabela, Zamboanga †	34.5	33.5		96.8	5.1	18.3	14.2	4.8	32.8					39.6		
Padada, Santa Cruz, Davao †		13		25.4			8.9				20.3			12.4		
Basilan Plantation Office, Isabela, Zamboanga †	41.9	25.4	1.3	74.9	3.6	7.1	8.6	17.8	11.2		1.3			20.8		
La Union, Sigaboy, Davao †		39.9	56.9				33.8	18.3			30.2					
Paranglalap, Isabela, Zamboanga †																
Latuan, Isabela, Zamboanga †	57.1	25.4	1.3	36.8	12.7	2.5	3.8		24.1	10.2						20.3
Buluan, Cotabato †	39.1	26.7	1	41.9		16.6	4.1		7.1	7.9						3
Malamau, Isabela, Zamboanga	15.2	10.2	7.6		7.6	10.2										2.5
Pagsilaan Farm School, Mati, Davao †	34.3	27.9	1.8	48.3	25.1	31	7.9	2.5	10.2	1.3			.8	1		
Zamboanga, Zamboanga	37.1	32.5	1.8	20.6	6.4	10.1	4.8	1					7.4			1.3
Agayan de Sulu, Sulu †		17	6.3						21.3	15.2	.8	38.6		1.3		1.3
Kidapawan, Cotabato †	45.7				8.9				26.2	81.3					14.7	9.4
Davao, Davao			2.8				31.7	19.8	21.6	5.8	21.8		1	4.6	1.5	
Piang Agricultural School, Kudarangan, Dulauan, Cotabato †	6.4	1.3				1.8	6.4			2	2.8	2.5	49.3		1	4.3
Pikit, Cotabato	.5	14		2.8						5.1	1.5		30	1.5	.8	3
Cotabato Seed Station, Pikit, Cotabato †										30.5	29.2		1.8		2.8	2.3
Awang, Cotabato †	21.1	31.2	17.8										16.5	8.9	2.8	2.3
Sirib, Guianga, Davao †	.3	1.5					.8	27	2.5	.5	.8	.5				
Kabakan, Cotabato †				2.5									5.1	27.9		
Bual, Dulauan, Cotabato	17	1.3	.8													
Cotabato, Cotabato	59.9	14.5	15.3		.3	13	4.1	3	2	1.8	.8	6.4	22.1			2
Mampising, Pantukan, Davao †		5.3	4.1					19	29.2	5.6	.8	1.5	19.3	5.8	2.3	6.4
Kabasaran, Buldun, Cotabato †	22.9	54.1	2.1	2.5	33	21.1	26	26.9	1.8	16.5	5.3	8.4	15.7	2.5	1.3	.8
Naganaga, Margosatubig, Zamboanga	3.8	11.4		7.1	12.2	2	40.6	12.2		5.1					24.9	
Banasilan, Banisilan, Cotabato †		1.3	1.8		1		20.3	12.7	2.3	2		1.3	10.2	38.9		25.4
Malabang, Lanao	35.6	42.7	46.2	89.6	95.5	55.1	31	2								
Compostela, Monkayo, Davao †	5.1	3.8					24.6			19		10.7		27.9	10.7	
Malangas, Margosatubig, Zamboanga †	2.3	2.3							68.8		3.8	1.3	8.9		4.6	47
Lumbatan, Lanao †	.5	.5	7.6				2.5				25.4		20.3			3.6
Cateel, Davao	2.3		4.1				7.1				5.3					2
Ganasi, Lanao	8.4	3				5.6	5.8	18.8	6.4				7.4		22.9	5.1
Camp Kalao, Monkayo, Davao			7.6	6.9	9.4		12.7	15.2				5.1	7.6	11	.5	10.2
Managok Agricultural School, Linabo, Malaybalay, Bukidnon	26.4	1.3	1	5.3	4.3		.5		42.2	14.5	39.1		1	1.5	26.9	22.4
Camp Keithley, Dansalan, Lanao	37.1	18.8					17.6	6.9		3.3	6.3	.8	13.5	3.8	2.3	8.6
Veruela, Agusan	68.8				3.3	15	19.8	13.7	47.8	5.8	5.3	7.1	4.6	.8	5.3	60.7
Sumilau, Bukidnon	17	3.8	10.4		8.4	6.1	9.4	34	77.5	17.3	7.4	42.4	23.4	4.8		8.4
Diklom, Tangkulan, Maluko, Bukidnon †	25.9	28	18.5		8.4	5.3	4.8	10.4	12.7	2.3	2.8	3.8	6.4	3		3.6
Cagayan, Misamis	40.6	24.2	8.9		7.6		14	21.6	2.8	12.2	2		6.1	1.3		10.2
Talacogon, Agusan	22.6	84.4	6.4		4.3		4.3	49.3	12.2	8.1	11.7	18.8	15.3		22.9	12.2
Butuan, Agusan	22.6	12.7	6.1				.3	1.3	3.3	.5	20.3		2.8	5.1	7.1	2.5
Mambajao, Misamis	13.7	7.4	47.8					10.2				6.6	54.4			63.5
Dumaguete, Oriental Negros	1.3					1.8			5.1	2.3	17.8	1.8	10.9	.5	1.8	2
Kolonie, Yap, Western Carolines	8.9	14	4.4	8.6	40	8.1	29.7	1.1	.3	1	35.9	11.7		24.8	15.6	3.8
Hacienda San Jose, Tanjay, Oriental Negros †	5.1															16.5
Hacienda Palanas, Bais, Oriental Negros †				6.9		7.1	6.4				2.5	24.1			23.4	25.4
Tagbilaran, Bohol	34.1		2.5			1.3	1.8	18.3	5.1	5.8	.3	23.9				
Iwahig Penal Colony, Puerto Princesa, Palawan	2	29.7	6.9				9.6		.5			8.9	.5	21.4		1.5
Dalaguete, Cebu	45.7	5.3	1.5		.5			4.3	14	6.4	4.3	9.4	9.7		1	42.2
Surigao, Surigao	16.5	13.5	.8		.3			.8		5.8		.8				35.8
Central Palma, Ilog, Occidental Negros	2.5						12.7		10.2							
Hacienda Naval, Himamaylan, Occidental Negros	56.6	11.7	16.5						37.3		2.8					10.2
Biaong Cui's Farm, Barili, Cebu	44.2									31.5	2					
Maasin, Leyte	31.5		11.7							13.7	16					
Binalbagan Estate, Binalbagan, Occidental Negros †	74.4	5.3	49.5	.3					10.4		1.5					21.8
Isabela, Occidental Negros	23.4	3.6	50.8	1	1.8				36.1	6.3	52.1			21.6	1	58.7
Hacienda Tanolo, Hinigaran, Occidental Negros	57.4	6.4	29.7							8.9		.3				21.1
Cebu, Cebu	8.4	.5	1.3			3.8		4.6	.5		12	.8				32.8
La Castellana, Occidental Negros	75.7	24.4	17.5	9.4	16.8	2.3	4.3	2.5	41.4	40.4	8.4	12.2	3.9		.5	18.8
Hacienda Vallehermoso, Vallehermoso, Oriental Negros †	53.3	38.1		3					18.3	23.1	.5	1	2.3		13.2	10.2
Central Azucarera de La Carlota, La Carlota, Occidental Negros	51.6	2	3.6	2.8	3.3	.3		4.3	7.4	16	2.3	6.1	2.3		3.3	13.2
Hacienda Canlaon, La Castellana, Occidental Negros	1.5		8.4	.3		2.3		.3	26.4	.8	.3	.3	.8		.3	2.8

† Voluntary or cooperative station.

\* Amount of rain from the 4th to 9th.

Daily rainfall at the stations of the Weather Bureau, October, 1921—Continued

Station.	Day of month.															Total.
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Lapac Agricultural School, Siasi, Sulu†				4.3		16.5								34		186.3
Glan, Cotabato†						38.1		13								51.1
Jolo, Sulu	2.3	38.8	14.2	.3	0.5	2		4	22.6	3.8			2.5		14.5	216
Buntung, Koronadal, Cotabato†		50.8	7.6	6.4	8.1	13.7		2.8	3	4.8		3.8	6.4			171.5
Lais, Malita, Davao	.5				1	39.1		24.3	6.6			24.4		4.6		150.5
Malita, Davao	.8				1	8		18.6				6.1	4.3	.5		73.4
Lebak, Cotabato		4.3		5.3		14		25.9	6.6		4.3	1	9.4		4.6	249.3
Lamitan, Isabela, Zamboanga	3.8		14.2	3.6		28.2		4.6		33.5						87.9
Basilan Plantation, Kabunbatan, Isabela, Zamboanga†		64	21.6	1.3	5.1	20.3		5.1	92.7		4.3	5.3	3.8			503.1
Padada, Santa Cruz, Davao†	.3	1.3					7.4		.3			.5				90.4
Basilan Plantation Office, Isabela, Zamboanga†		53.4	46.2	2		30			3.8	90.2		6.6	5.1	3.6		454.8
La Union, Sigaboy, Davao†				15.2	20.3	53.3		56.4	59.2							383.5
Paranglalap, Isabela, Zamboanga†	2.5	43.1	20.3	3.8		24.1			8.9	55.9		11.4	6.3			370.5
Latuan, Isabela, Zamboanga†	1.3	11.7		2		33.5			5.1	40.9	.3	1	5.1			245.6
Buluang, Cotabato†	2.5				10.2	2.5										68.5
Malamaui, Isabela, Zamboanga	1.5	9.4	.8	2.5		35.6			4.3	43.7	5.1	.5	7.6			303.1
Pagsilaan Farm School, Mati, Davao†			2.5	10.2	5.1	5.1	5.1									76.3
Zamboanga, Zamboanga	5.6		3.6	2.1		10.2			1.8	1.3	10.5		7.1	1.3		166.5
Cagayan de Sulu, Sulu†	2.6	21.8	.5	15	3		7.6	7.7	40.7	7.7	9.4	3.3		4.1	3.3	243.6
Kidapauan, Cotabato†		1.3				1.8			10.4			36.8		22.9		237.8
Davao, Davao	8.1			2.5		11.4	11.7	17.3	24.1						5.1	192.9
Piang Agricultural School, Kudarangan, Dulauan, Cotabato†	7.6		5.8	19.8		28.4				18.3						155.7
Pikit, Cotabato	29	1.3	24.6	52.1		23.6			4.8	6.6		6.6	8.4			218.2
Cotabato Seed Station, Pikit, Cotabato†	4.6	33	25.4	55.9		12.7	1.5	5.6	15.2		3.8	4.8			4.1	242.1
Awang, Cotabato†				16.5		17.5		3	14.2			7.1			10.2	155.1
Sirib, Guianga, Davao†			1.8				1.5		26.4					1.8	3	63.5
Kabakan, Cotabato†																38
Bual, Dulauan, Cotabato	2			7.1		17.3			10.2	2.5			17.8		5.1	117.2
Cotabato, Cotabato	.5			25.1		6.6			46	3.6			3.3		4.8	233.1
Mampising, Pantukan, Davao†						12.2	7.3	3.3				12.7	2.5		8.1	131.9
Kabasaran, Buldon, Cotabato†		77	22.6	51.6	51.6	50.8	13.5									500.4
Naganaga, Margosatubig, Zamboanga			2.3	2	7.6				12.2		3.8					147.2
Banisan, Banisan, Cotabato†	7.6	1.3	2.5					3		1.5	2	27.2	10.2	1.3		173.8
Malabang, Lanao				5.3	4.6	14.2	17.3	12.2	38.6				11.7			501.6
Compostela, Monkayo, Davao†						43.7	25.9	64.5								246.3
Malangas, Margosatubig, Zamboanga†	30	9.7	34.3		4.6	12.7	9.1	26.6	26.7				25.7	8.1	10.2	336.7
Lumbatan, Lanao†	22.1			50.8	11.9		15	35.6	2.5	7.9	1.3	.8			18.5	226.8
Cateel, Davao	5.6					114	64.8	6.4			2.3	18.3	2.8	2.3		242.1
Ganasi, Lanao	8.6	4.8	15.7	10.4									3.8			126.7
Camp Kalao, Monkayo, Davao	1.5	2.3		5.1	.8	25.4	14	10.1	16.5				10.2		1.3	173.4
Managok Agricultural School, Linabo, Malaybalay, Bukidnon	24.9	12.2	.8	17.5	12.2	4.3	5.6	2.3	23.4	1.5	1.3			7.1	1.3	300.8
Camp Keithley, Dansalan, Lanao	4.1	2.5	2.3	8.4	1.8	12.5	1.3	13	22.4	1		5.8	1.3	9.4		204.8
Veruela, Agusan	2.5	3.3	.5		2.8	39.6	53.8	10.9	.5			9.4	10.9	28.2	3.8	425.2
Sumilau, Bukidnon	10.9	8.4	6.6	22.9	10.2	5.3	11.7	8.1	27.4					1	4.8	387.6
Diklom, Tangkulan, Maluko, Bukidnon†	4.3				5.3	5.1			5.8	9.7	13.7				4.6	184.4
Cagayan, Misamis				17.3	1	37.6	2.8	2.8	13.5							226.5
Talacogon, Agusan	4.3			28.4	44.2	32.8	51.5	47.5	17	10.7	3.8	6.6	2.6			521.9
Butuan, Agusan			.5		5.8	11.4	19	21.6	8.4	7.3	1.3	21.1	4.8	4.6		190.4
Mambajao, Misamis			5.6	16.3	6.4		7.1	25.9	19	14.2		16.3	1.8			316.2
Dumaguete, Oriental Negros	20.8	6.4		7.6	.5		2	7.4	29.5	19.8		3.8	18.3			161.4
Kolonie, Yap, Western Carolines				.8	3.8	21		5.5	11.6	2.6	1				1	258.3
Hacienda San Jose, Tanjay, Oriental Negros†	65.3	35				4.3			16	84.3	46.7		21.6	17.3		312.1
Hacienda Palanas, Bais, Oriental Negros†	41.1	27.9	3.6	22.4	3.8		1.5	7.1	96.5	30.7	10.4	5.6	7.1			353.5
Tagbilaran, Bohol	3.6		.8	1.8	1.8	4.1		9.4	11.2		1	11.4	19.8	31.2		189.2
Iwahig Penal Colony, Puerto Princesa, Palawan				7.6	9.9	9.6		18.3	1	93.7	81.8	46.5				349.4
Dalaguete, Cebu	.8			5.6		1.8	7.1	17.5	53.3	12.4	3.8	5.8				252.4
Surigao, Surigao	4.1		1	2	1.8	32.7	17.4	31.5	31.3	.8	2.5	26.9	19.6			245.9
Central Palma, Ilog, Occidental Negros	2.5	5.1						7.1	1.5	25.4						67
Hacienda Naval, Himamaylan, Occidental Negros				22.1	4.8			9.4	33			32.3			3.8	240.5
Biaong Cui's Farm, Barili, Cebu	34				20.8			32.5	7.4	11.4						189.6
Maasin, Leyte				19		8.4	15.2	35.1								150.6
Binalbagan Estate, Binalbagan, Occidental Negros†				4.6	3.8		3.6	4.8	.5	6.4	26.4					213.3
Isabela, Occidental Negros	2.3			18.8	6.1	1		2.8	14.7	6.1					8.4	332.6
Hacienda Tanolo, Hinigaran, Occidental Negros	.8			1.5	2			.5	3.3	2.5	.5	.8			.5	136.2
Cebu, Cebu	.8	5.1		2.3	5			5.6	36.1	1.3	.5	.5	24.4			146.3
La Castellana, Occidental Negros	9.9	.3			8.9			.5	3	4		1.5			4.6	311.2
Hacienda Vallehermoso, Vallehermoso, Oriental Negros†		.5			67.3	10.2	13.7	51.3	25.7		5.3		2.3			339.3
Central Azucarera de La Carlota, La Carlota, Occidental Negros	.5	2	1	2.6	13.4	13	.8	.8	1	1.3	8.9	65.7	4.6	4.4	.5	239
Hacienda Canlaon, La Castellana, Occidental Negros	6.4		1	.5		.5	1.8			4.8	8.7	.8				69

† Voluntary or cooperative station.

## Daily rainfall at the stations of the Weather Bureau, October, 1921—Continued

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
La Carlota Experimental Station, La Carlota, Occidental Negros †	54.4	18.3	-----	31.7	29	-----	-----	-----	11	11.9	17.3	32.8	35.9	0.5	-----	9.2
Mao Sugar Central, Santa Cecilia, Bago, Occidental Negros	62.7	8.9	31	.5	31.7	-----	-----	-----	12.1	4.1	-----	-----	-----	-----	0.8	69.3
Valladolid, Occidental Negros	51.3	-----	16.8	.5	91.4	-----	-----	1.5	4.6	4.1	-----	6.3	-----	-----	2	23.9
Central San Carlos, San Carlos, Occidental Negros †	-----	50.3	21.6	-----	-----	-----	-----	20.3	-----	-----	-----	-----	5.1	-----	-----	34.3
Hacienda Refugio, San Carlos, Occidental Negros †	-----	20.8	-----	-----	-----	-----	-----	5.1	-----	-----	-----	11.7	-----	-----	43.9	-----
San Joaquin, Iloilo	32.5	-----	-----	-----	-----	-----	0.3	-----	36.1	3.6	.3	-----	4.8	-----	2.8	33.5
Murcia, Occidental Negros	8.1	1.3	1.3	5.3	20.8	-----	-----	9.7	3.8	-----	10.7	5.1	-----	-----	12.2	5.3
Bacolod, Occidental Negros	50	1	.3	13.2	24.6	-----	-----	4.1	4.8	5.1	-----	26.9	-----	-----	27.4	3.8
Oton, Iloilo	97.5	-----	-----	3	2	-----	-----	15.2	18.3	-----	12.7	9.1	12	-----	45	31.2
Iloilo, Iloilo	7.1	-----	-----	9.4	1.3	-----	1.8	1	8.1	-----	5.4	25.9	7.6	-----	11.6	14.4
Lapuslapus, Iloilo, Iloilo †	7.6	-----	5	-----	1.3	-----	3	-----	7.6	-----	8.9	-----	-----	-----	17.8	-----
San Jose de Buenavista, Antique	43.2	25.4	-----	-----	13.5	-----	-----	.8	5.6	11.9	11.7	-----	-----	-----	-----	4.1
Tuburan, Cebu	17.8	39.9	18	34.8	6.9	-----	-----	-----	-----	1.8	5.6	8.6	1.3	1	13.7	40.4
Leon, Iloilo	20.6	9.7	-----	11.9	-----	14.7	-----	9.4	-----	93.5	-----	-----	3	1.8	-----	-----
Silay, Occidental Negros	42.7	-----	2.5	5.8	19.8	14.7	1.8	7.6	4.1	.8	1.3	-----	45	-----	101.6	13.2
Calag-itan, San Remigio, Antique	43.2	4.1	1.8	2.1	31	6.6	-----	-----	19.3	29.5	34.6	22.1	3	-----	4.6	5.1
Hawaiian Philippine Co., Malisbug, Silay, Occidental Negros †	37.8	.5	3.8	2.3	11.2	4.8	1	11.4	.8	1.8	-----	5	71.1	-----	73.5	44
Cuyo, Palawan	13.2	17.6	-----	22.4	10.4	-----	18.3	2.6	61.9	13.9	-----	4.3	-----	-----	-----	3.1
Lucena, Santa Barbara, Iloilo †	50.8	-----	-----	6.9	-----	-----	-----	-----	4.6	6.9	-----	-----	-----	-----	3.8	-----
Barotac Nuevo, Iloilo	52.8	4.9	24.4	8.9	-----	26.9	1.8	7.6	4.8	13	2.5	8.1	24.6	-----	6.1	17
Hacienda Ilaya, Victorias, Occidental Negros	38.4	-----	2.8	-----	11.7	-----	15.2	6.4	-----	7.9	-----	3.8	57.4	-----	85.1	12.7
Central Victorias, Victorias, Occidental Negros †	-----	4.8	-----	10.2	-----	-----	-----	17.8	-----	-----	-----	2	61.2	10.2	71.1	22.1
Hacienda Bilbao, Manapla, Occidental Negros	-----	-----	-----	14.2	2.5	-----	-----	-----	2.3	5.6	-----	19	4.8	8.9	22.1	19.6
Janiuay, Iloilo	15.7	30.8	5.8	.5	15	-----	-----	-----	9.9	.3	15	2.3	1	-----	2.8	9.9
Cadiz, Occidental Negros	14.2	1.8	-----	3.3	-----	-----	-----	-----	3.8	-----	9.9	-----	-----	-----	47.5	52.6
Dingle, Iloilo	66	5.8	43.7	25.2	18.8	7.3	31.7	9.4	2.8	1	8.6	2.8	5.1	-----	8.1	33.5
Ormoc, Leyte	12.2	5.1	.8	29.7	-----	-----	.8	18	23.1	3	.8	11.2	-----	-----	2.5	1.8
Guiuan, Samar	11.2	5.3	2.3	9.1	-----	-----	10.2	33	2.5	6.1	13.2	8	-----	-----	.8	7.4
Bugasong, Antique	-----	33	17.8	-----	5.1	-----	-----	-----	10.1	-----	10.2	5.1	-----	-----	-----	-----
Bogo, Cebu	85.8	.3	31.5	-----	-----	-----	7.4	-----	7.9	25.9	1	2	6.1	-----	-----	.5
Duñas, Iloilo †	46.2	-----	7.7	1.3	-----	26.4	-----	16.3	12.4	2.5	1.3	3.8	3.3	-----	13.7	23.1
Bitaoagan, Passi, Iloilo †	50.8	2.5	-----	3.3	-----	52.1	14	22.9	4.3	-----	8.6	4.3	-----	50.3	51.8	-----
Sara, Iloilo	86.9	-----	11.4	19.6	9.7	-----	-----	19.9	32	6.6	-----	7.1	38.6	-----	11.2	49.3
Tacloban, Leyte	22.5	-----	33.8	8.1	-----	-----	9.4	6.1	1.5	2.6	-----	19.3	-----	1	-----	4.1
Dumarao, Capiz †	77.7	-----	3	8.4	-----	-----	51.6	46.5	43.4	1.3	-----	4.3	23.4	-----	52.1	-----
Central Asturias, Buntog, Dumalag, Capiz	50.8	1.3	-----	.3	6.1	-----	-----	-----	51.1	22.1	-----	4.1	3.3	.8	17.8	80
Dao, Capiz †	50.8	-----	11.1	2.3	4.8	-----	-----	11.9	23.4	35.3	4.3	7.1	5.1	-----	19	62.2
Culasi, Antique	113.3	1	30.4	3.6	1.8	-----	-----	26.4	9.9	26.2	10.7	4.3	-----	4.3	100.6	-----
Mambusao, Capiz	51.1	10.9	.5	6.9	17.8	-----	-----	.3	11.4	61.8	2.5	1.3	13.7	2.8	42.7	103.4
Hacienda Amparo, Pontevedra, Capiz	5.1	1.3	-----	8.9	-----	-----	-----	13.7	7.4	50.6	11.9	14.3	11.4	35.8	25.1	61.2
Capiz, Capiz	58.4	-----	.8	18	31.7	-----	-----	30.5	3.8	36.4	9.7	3.3	1	.8	9.4	57.4
Borongon, Samar	5	7.6	9.6	-----	2.5	11.7	-----	35.6	3	1.8	36.6	-----	1.5	-----	64.8	1.1
Calivo, Capiz	37.4	-----	2	45.2	11.4	-----	-----	7.1	1	5.1	3.6	29.7	1.3	3.3	41.1	75.5
Pandan, Antique	19.8	5.8	.8	99.8	67.3	-----	1.8	18.5	72.7	3	1.8	26.7	-----	11.2	7.9	24.6
Catbalogan, Samar	7.7	19.3	4.1	3.3	-----	-----	-----	9.9	-----	6.3	1.6	-----	29	-----	10.5	5.3
Ibajay, Capiz	13.2	12.2	8.6	53.6	2.3	-----	-----	-----	8	-----	9.4	2	-----	1.3	36.8	-----
Calbayog, Samar	9.9	2.8	19.5	.3	-----	-----	-----	-----	12.2	-----	29.5	6.9	12.7	.3	14.7	6.1
San Jose Estate, Robles Camp D-17, San Jose, Mindoro †	-----	-----	5.1	-----	-----	8.9	-----	-----	-----	-----	4.9	-----	-----	.3	-----	-----
San Jose Estate, Tamaraw Plantation, San Jose, Mindoro †	3.6	16	15.2	5.8	19.3	-----	-----	7.6	13.7	-----	30.7	1	-----	5.9	-----	1.3
San Jose Estate, San Agustin, San Jose, Mindoro †	37.8	5.1	-----	-----	-----	-----	-----	17.8	-----	31	7.4	-----	11.4	-----	-----	-----
San Jose Estate, San Jose, Mindoro †	19.8	24.2	6.4	6.6	9.7	.3	-----	2	31	-----	42.9	1.8	-----	8.4	.3	-----
Masbate, Masbate	1.3	-----	-----	2.3	1.8	-----	-----	.5	-----	-----	-----	7.1	.3	1.3	14.3	-----
San Jose Estate, Tunnel D-12, San Jose, Mindoro †	48.3	15.5	5.6	-----	21.6	9.9	-----	9.9	53.3	-----	6.1	-----	11.4	1.3	-----	-----
Romblon, Romblon	1.8	1.3	8.8	1.5	.3	-----	2.8	7.8	8.9	56.1	17.5	35.8	9.9	8.1	-----	-----
Batag Lighthouse, Laoang, Samar	36.1	2	13	.8	-----	2.5	1	-----	50.8	37.9	15.5	4.1	7.1	20.5	1.3	-----
Irosin, Sorsogon	10.2	.3	14.9	34.3	.3	8.6	5.3	23.2	2	18.8	6.8	1.3	8.2	3.3	25.7	2.6
Sorsogon, Sorsogon	13.7	-----	-----	-----	-----	-----	-----	-----	79.2	14.2	4.3	11.4	-----	-----	18.3	1.8
Bacon, Sorsogon	22.6	-----	.5	.8	-----	-----	-----	-----	47	21.6	7.1	8.4	20.6	19	-----	-----
Jovellar, Albay	-----	6.6	-----	35.8	6.1	-----	-----	15.8	-----	16	4.9	6.1	.8	-----	-----	-----
Legaspi, Albay, Albay	-----	2.5	1	-----	-----	-----	-----	3.6	-----	28	1	10.7	9.2	6.4	-----	-----
Guinobatan, Albay	6.9	1.6	14	2.6	1.1	-----	10.7	2.5	.3	3	16	.8	3.3	2.5	4.4	-----
Polangui, Albay	-----	.3	2.3	17	.3	-----	-----	2	14.7	13.2	10.4	.3	3.3	22.1	5.1	-----
Bacacay, Albay	-----	17.3	-----	8.6	-----	-----	24.9	-----	55.1	-----	96.3	-----	-----	46.2	-----	-----
Bato, Camarines Sur	-----	1.3	-----	1.3	-----	1.3	-----	1	56.9	-----	7.1	-----	12.2	30.2	11.2	-----
Tabaco, Albay	5.6	6.3	14.5	1.3	2.3	-----	-----	-----	41.1	114	4.6	-----	21.1	23.1	28.5	-----
Sumay (Guam), Agaña, Ladrone Islands	26.9	34.3	24.4	5.3	4.8	.8	62.2	2.5	-----	18.8	.3	1.8	17.8	2.6	2.6	37.4
Iriga, Camarines Sur	-----	-----	2.8	1.5	1.8	-----	-----	3.8	4.6	4.8	17.8	-----	12.2	17.5	12.2	-----
Calapan, Mindoro	-----	2.5	-----	-----	-----	-----	1.3	2.5	4.6	9.1	3.5	1	9.4	15.8	-----	-----
Tiwi, Albay	-----	12.7	-----	-----	-----	7.9	-----	-----	-----	-----	18	-----	10.9	-----	-----	-----
Pasacao, Camarines Sur	-----	38.1	30.5	-----	-----	-----	-----	50.8	-----	48.5	-----	9.1	-----	8.1	3.8	-----
Virac, Albay	2.3	-----	6.1	18.5	-----	.8	-----	5.8	12.2	.5	50.5	19.6	18.3	27.7	44.5	-----
Naga, Camarines Sur	1.5	2.3	7.7	25.4	1.8	-----	-----	-----	16.8	17.5	19.1	.3	20	5.8	3.3	4.8
Tigaon, Camarines Sur	5.3	.5	12.7	-----	6.4	-----	-----	2.5	-----	39.6	-----	43.1	32.7	31.5	12.7	-----

† Voluntary or cooperative station.

Daily rainfall at the stations of the Weather Bureau, October, 1921—Continued

Station.	Day of month.															Total.
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
La Carlota Experimental Station, La Carlota, Occidental Negros †	9.9	1.3		1	30	2.5		0.5	2.5		25.6	2.5		11.9		339.7
Mao Sugar Central, Santa Cecilia, Bago, Occidental Negros			6.4	17.3					1.5	8.1	1	13.2				268.6
Valladolid, Occidental Negros		.5		.8	10.9			4.6	8.4				0.8			228.4
Central San Carlos, San Carlos, Occidental Negros †			3.8	3.3			19.3	38.1	20.1							216.2
Hacienda Refugio, San Carlos, Occidental Negros †	4.1		2.5	5.6	2.8	9.9	47.8	12.4	2.5				6.6	1.3		177
San Joaquin, Iloilo	.3							3.8	.5							118.5
Murcia, Occidental Negros					1.3	1.5		7.6	7.8		1.8					103.6
Bacolod, Occidental Negros								5.1	13			1.3	1		1.8	183.4
Oton, Iloilo				4.1	8.7	2.5	4.1	48.3	11.9				4.6			330.2
Iloilo, Iloilo					10.7	.5	3.5	20.8	7.4	.3	.5	2.5		6.4	.5	146.7
Lapulapul, Iloilo, Iloilo †						1.3		22.9	17.8		1			2.3	.5	97
San Jose de Buenavista, Antique					.5	2.3		1.3					.8			121.1
Tuburan, Cebu			1	1.5		.8		18.3	3.3					1.8	10.7	227.2
Leon, Iloilo			4.3				9.1		6.9				8.1		2.3	195.3
Silay, Occidental Negros		.5	4.6	29.2		4.8	2.5	24.2	101.6	2.5		2.5	14		3.8	451.1
Calag-itan, San Remigio, Antique				19.8	3.8	30		3.6	.5			6.4				271.1
Hawaiian Philippine Co., Malibug, Silay, Occidental Negros †		1.8	3	47	.5	14	8.9	39.3	71.9	8.2	2.3	40.6	19.3		8.9	530.2
Cuyo, Palawan			.8	8.4					.8	2.8						180.5
Lucena, Santa Barbara, Iloilo †				11.4	15.2			13.7	8.6			4.6		4.1		130.6
Barotac Nuevo, Iloilo	1			6.9	8.6	6.1	3.6	24.6	6.4	6.1		20.8		1.8		289.3
Hacienda Ilaya, Victorias, Occidental Negros	2.3	3.8	5.1	58.4	2	78.2	11.9	69.1	38.4	2.5	3.8	134.6	14		5.3	670.8
Central Victorias, Victorias, Occidental Negros †	9.7	10.7	6.6	34.8	3	13.2	61	72.4	36.3	22.1	9.4	226.1	19.8		17.8	743.1
Hacienda Bilbao, Manapla, Occidental Negros		23.6	17.3	27.7	7.8	81.8		52.1	40.9	18.6		35	2.3	.8	6.9	413.8
Januay, Iloilo				2.5	9.9			2.8	4.6	.3	1.3				2.8	135.2
Cadiz, Occidental Negros		25.7		31.7	23.9	31.2		31.7	40.4	25.7		9.4				352.8
Dingle, Iloilo			1.5	25.6	27	2		4.1	4.8	2	8.7		.5			346
Ormoc, Leyte		1	31.5		.8	17	13.2	13.7	1.3	.5		7.1	.8	4.1	3.8	203.8
Guiuan, Samar		105.9	28.7	4.6	4.6		51.3	78.5	11.7	4.3	11.7	5.6	8.6	12.4	4.1	433.9
Bugasong, Antique				3.8	10.7			6.9	4.4				2		1.3	81.3
Bogo, Cebu				1.5	35	5.1		12.7	7.6		42.2			3.3		197.5
Dueñas, Iloilo †				3	6.6			40.4	15.7	11.4	25.7					265.4
Bitogon, Passi, Iloilo †															3.8	297.1
Sara, Iloilo															6.6	259.4
Tacloban, Leyte	1	27.9	18.8	1	22.3		5.1	15.7	17			15.5			20.1	415.3
Dumarao, Capiz †			3	3			51.6	46								
Central Asturias, Buntog, Dumalag, Capiz		8.4	.5	19.1	12.5	1.8	.3	11.4	18.6	9.1	.8	35.6		.8	4.3	360.9
Dao, Capiz †		22.9		29	27.9	9.7		8.9	6.1	49		50.8		2.8	4.1	448.5
Culasi, Antique					8.4	8.9		7.4	7.7			9.1	6.9		9.1	390
Mambusao, Capiz		9.7		13.5	21.3	2.8	.5	9.4	4.3	49.5	2	21.3	.3	8.9	1.3	471.9
Hacienda Amparo, Pontevedra, Capiz		5.8	17.8	20.4	8.1	10.7	1	17.7	9.4	6.4		12.4	1.8		3.6	361.8
Capiz, Capiz		7.1	.3		.5			3.3	2.1	27.7	4.6			3.3	2	312.1
Borongan, Samar	8.6	15.7	5.6	5.1	68.8	2.5	33	43.6	18.3	15.8	29.5	19.5	7.9	1.5	16.8	473
Calivo, Capiz		23.4	4.1	27.4	10.5	.8		6.6	42.9	35.8	20.6	3.5		3.3	6.6	449.2
Pandan, Antique		2.8		13.7	24.6	6.1	7.6	21.8	16.5	33.8	12	18.5	.8	8.9	6.6	535.4
Catbalogan, Samar		4.3	9.9	13	36.6	40.1	9.7	20.1	9.7	12.2	.3	16.8	7.9	13.9	55.1	346.6
Ibajay, Capiz		2.3	.5	14	5.5	3.8		8.6	9.4	118.1	38.3	13.2	2.5	1.1	19.9	377.4
Calbayog, Samar			.3	1	2.9	1	1	27.6	13.8	13.3	.6	17.8	3.3	2.3	32.8	232.6
San Jose Estate, Robles Camp D-17, San Jose, Mindoro †					.5						.5					20.2
San Jose Estate, Tamaraw Plantation, San Jose, Mindoro †					8.1						2.3					130.5
San Jose Estate, San Agustin, San Jose, Mindoro †																110.5
San Jose Estate, San Jose, Mindoro †				.8											1.3	.8
Masbate, Masbate	1	.8			9.4			4.1	18.3	.3		12.4	5.1	7.9	22.1	110.3
San Jose Estate, Tunnel D-12, San Jose, Mindoro †					3				1.5							187.4
Romblon, Romblon		1.1		17.3	5.8			11.7	.3	4.7	2.7	36.8		6.5	1.8	252
Batag Lighthouse, Laoang, Samar			11.7	2.5	19.8			36.6	62.3	89.4	26.9	13.5	16.5	10.7	40.9	523.4
Irosin, Sorsogon	3.8	5.6	10.2	.3	34.3	1.3	1.3	102.4	38.1	45.2	13	50.3	34	53.1	69.3	628
Sorsogon, Sorsogon	1.8		1.5	3.8	2.5	24.1	7.6	25.4	49.3	33	8.9	40.4	17.8	44.7	58.1	461.8
Bacon, Sorsogon	.5	4.1	9.1	4.8		29.7	1.5	11.7	33.8	51.8	29.5	16.8	17	65.8	44.7	468.4
Jovellar, Albay		3	.3			4.1		7.4	28.2	1.8	2.3	14.7		27	58.1	289
Legaspi, Albay, Albay			2.8			19.5	2	24.6	36.3	17.5	21.8	7.7		30	65.1	289.7
Guinobatan, Albay		1.5	5.6			1.8	.3	11.4	23.3	5	2.3	2.8		32	63.5	219.2
Polangui, Albay		.8	2.5	2	.5	11.7	1.3	1.8	20.8	7.6	2	1.8		38.3	26.2	208.3
Bacacay, Albay			19.8			7.1		10.7	56.4		54.4		32.8	125	59.7	605.7
Bato, Camarines Sur						1	8.1		17.8	1.3		2		25.9	43.7	229.6
Tabaco, Albay		2.3	1.5	1.8	10.7	29.5	5.1	10.2	28.4	30.2	11.7	8.4		49	60.7	511.9
Sumay (Guam), Agaña, Ladrone Islands	5.6	1			3	6.3	.3	1.3	2.8	7.6	.5		1.1	7.4		279.4
Iriga, Camarines Sur	1.3	1.8			1.5	4.1	1.5		14	2.5				18.5	40.2	164.4
Calapan, Mindoro	.3		.5			3.8	3	.3	23.4	2.3	11.7	3.6	.3		5.1	104
Tiwi, Albay	16.8	7.4		2.5				28.2						124.7	84.8	313.9
Pasacao, Camarines Sur					14			22.1				17.3		11.2	9.7	263.2
Virac, Albay	1	3.8	1.3		1.8	6.6	4.3	22.1	27.7	19.1	33.8	1.5	2.8	59.4	12.7	404.7
Naga, Camarines Sur		5.6	.5			3.6	.8	16.5	4.3	2		6.1		9.7	15	190.4
Tigaon, Camarines Sur		4.6	3.8	4.1		10.1	.5	11	15.2	19.6	2	3.6		60.2	19.3	344

† Voluntary or cooperative station.

## Daily rainfall at the stations of the Weather Bureau, October, 1921—Continued

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Baras, Albay											108.7	20.3	31.7	81.3	123.2	104.1
Libmanan, Camarines Sur	3.8	3	20.8	3				2.5			63.5		20.8	15.3	2.8	
Batangas, Batangas	32	4.1	3.3		13			24.1		6.9	6.9			3.6		
Ragay, Camarines Sur	4.8		.5					8.6	11.7	8.4	10.5		1	8.9		
Calatagan, Batangas	1.3		4.3	1	10.2			17.8	3.6		1	.3				
Balayan, Batangas			30					73.2	9.4							
Lipa, Batangas			2.5				7.6	36.3	22.1	2.5						
Lucena, Tayabas		.5	2.8	6.1	7.1					7.6	.8		2.8	1.5		
Atimonan, Tayabas	.3	2.5	29.5	15.7	6.8	0.8		6.4	2	19.1	.8	3	2.1	18.4	5.6	
Lian, Batangas			5.6	35.6				2.8	24.1	10.4						
Nasugbu, Batangas	26.4				6.9			45.2					35.6			
Ambulong, Tanauan, Batangas							4.6	16	15.7	19.6						
Daet, Camarines Norte	6.9	9.1	15	10.4	1.5			6.8	3.8	45.4	21.8		5.6	14.5		
Mendez Nuñez, Cavite			15.2		5.1			14								
Alfonso, Cavite			6.6		.8	1.3		5.6			2.8			.8		
Indang, Cavite			6.6		1	4.8										
Canluban, Calamba, Laguna	1.3	6.6										2.5		2		1
Silang, Cavite	1.8		16		3.6											
Maragondon, Cavite	18				14	24.1	1.5			19.3	21.6		1			
Paracale, Camarines Norte	13.3	13.7	5		2		1.3						4.6	13.2	12.7	8.4
Santa Cruz, Laguna	1.3				1.3						2.5					
Buenavista, General Trias, Cavite			4.6		12.7						.8					
Fort Mills, Corregidor, Cavite†		1.3	13.5	1.5	33.8	15.7		1	1.3	3						
Imus, Cavite	1.8		4	.3	16					1.3	1.6	4.3				
Alabang Stock Farm, Alabang, Muntinlupa, Rizal†			10.2	.5	1		.5		.5	1.3	5.6					
Cavite Naval Station, Cavite, Cavite <sup>a</sup>		13	5.9		17.8					19.6	3	.5				
Lamiao Horticultural Station, Lamiao, Limay, Bataan†	2.3	2.3	16.8		37.6		4.8	.5			1					
Manila, Manila	7.6	1.8	.8	.3	9.2	5.1			4.9	.6	2.2	2.5		1		
Antipolo, Rizal	9.1	5.1		5.1	16.8		2.5	3.3	5.9	6.6	8.1					
Balanga, Bataan	1		1.3		26.4			.5	7.4	30.7	.3					
Montalban, Rizal†	5.8	3.8	1.8					12.7	8.9	22.8	19.8	8.2				
Hacienda Pintong Sapang, San Jose del Monte, Bulacan†	.5	.5	.3		2.8	4.3	16		4.8	9.1						
Mabayuan Dam, Olongapo, Zambales†				5.1		3.8										
Malolos, Bulacan			2		35.6	2.8	50.8			3.3	1.8					
Paila, Norzagaray, Bulacan†	.5	.3			13.2					.5	16.5					.3
Hacienda Carmencita, Gutad, Del Carmen, Pampanga†		15.7	2.3		3.6					3.3	1					
Pampanga Sugar Mills, Del Carmen, Pampanga†	3	6.6			19.6					3.6	11.4	.5				
Matulid, Norzagaray, Bulacan†	5.1	4.1	1	5.3	2.5		7.6				10.2					1
San Fernando, Pampanga		3.3	4.6		5.3		5.1				5.8					
Mitla, Porac, Pampanga†			4.3			40.4		12.4	6.4		6.4		1.3			
San Isidro, Nueva Ecija†	.8	20.9			31.8	2.5	51.8		7.9	.8	1					
Iba, Zambales	8.4	8.1			50.8					8.4						
Concepcion, Tarlac	9.1	6.9	5.1	.5	34.5	1	6.4	.3	15.2		1	23.4	.3			
O'Donnell, Capas, Tarlac	37.3	36.3	4.3		14.5	2	.8	17	6.4	8.6						
Hacienda Luisita, San Miguel, Tarlac, Tarlac†	49.5		11.4		21.3	3.8										
Tarlac, Tarlac	6.3	22.4	48.3	.8	5.1	6.1		33	3.3	1						
Paniqui, Tarlac	12.7	22.9			2	22.9		5.8	18.8	50.8						
Camiling, Tarlac		22.9				58.4		10.2	58.4	20.3	19					
Muñoz Agricultural School, Muñoz, Nueva Ecija†	7.6	8.6	6.6		25.4	26.7	9.1	14.2		25.4	22.9					
Baler, Tayabas					2.8	38.1	8.1	41.4	5.6	7.9	18.3			4.8		
Dagupan, Pangasinan	4.3				2.3	.5	2.3	38.4	18	29.2	1.5					
Rosario, La Union	9.4	3.5	1.3	1.3	5.6	1.8				3	49.8	20.6				
Tubao, La Union											3.3					
Itoyon, Mountain Province	26.2	.5	1.3	27.2	39.6	3.8	.5	2	1.8	4.8	.8	1.5				
Bolinao, Pangasinan	9.7					9.4				5.3	.5					
Aringay, La Union			2													
Baguio, Mountain Province	10.6	15	10.4	21.1	2.3	27.1	6.1	.5	4.3	7.9	5.3	5				
Sablan, Disdis, La Union	3.8	46.2	2.8	2.5	2	2.8	16.3			1	19.8	6.4	.8			
Naguilian, La Union	1.5	12.4	.8								4.1					
Kapangan, Mountain Province	2.5	15.2	13	16.6	10.2	15				2.5	3.3					
Atok, Mountain Province	14.5	30.7	30.2	4.6	17.5	13	.3			5.3	56.1	2.8	6.1		.3	
San Fernando, La Union	2															
Echagüe, Isabela	9.2	1.6	9.9	10.2	20.6	56.4	7.8	17.5	55.4	3	.5	7	2.3	1.5		.3
Balaoan, La Union	1						6.1									
Tagudin, Ilocos Sur	11.9					21.7										
Sagrada, Mountain Province†	34	.8	.3	.3	7.6	4.3				1	7.6	.3				
Bontoc, Mountain Province†	4.1	25.9		5.1	2.3	13.5										
Candon, Ilocos Sur	11.7															
Cagutungan, Pilar, Abra†	13.5															
Vigan, Ilocos Sur	2.5															
Bangued, Abra	11.7															
Tuguegarao, Cagayan	.3	1.3		4.3	13.5	1.5										
Sinait, Ilocos Sur																
Batac, Ilocos Norte	10.2															
Solsona, Ilocos Norte	11.2															
Laog, Ilocos Norte	4.6															
Pasquin, Ilocos Norte																
Aparri, Cagayan	108.9	2.3			59.4	7.6	1.1	4								
Cape Bojeador, Burgos, Ilocos Norte	4.6					.3										
Basco, Batanes																

† Voluntary or cooperative station.

<sup>a</sup> Rain in 24 hours beginning 8 a. m.



Daily rainfall at the stations of the Weather Bureau, October, 1921—Continued

Station.	Day of month.															Total.
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Baras, Albay	14.7		6.4	7.6	15.7	20.3	4.3	5.8	58.7	54.6	34.3	1.8	108.9	105.5	93	995.9
Libmanan, Camarines Sur		3.8		3.3		29.2	3.3	19.8	9.1	2.5				9.9	8.6	222
Batangas, Batangas				8.9	1.5		1									107.3
Ragay, Camarines Sur						56.4	22.9		50.8	4.8				3.3		192.6
Calatagan, Batangas		2.3			.3	.5									.5	43.1
Balayan, Batangas																112.6
Lipa, Batangas							4.8							3.6	2.8	82.2
Lucena, Tayabas					5.3	6.9	19.6	1		23.6				1.5	7.4	94.5
Atimonan, Tayabas		2.8	1			12.7	25	11.9	9.5	30.2		1.1		1.5	10.1	218.8
Lian, Batangas			11.2												2.3	106.2
Nasugbu, Batangas																114.1
Ambulong, Tanauan, Batangas										4.1					11.5	71.5
Daet, Camarines Norte		1.8	.8	1.5		126.5	25.2	60.9	9.4	39.6	5.3	16	.5	29.8	48	506.1
Mendez Nuñez, Cavite															1	35.3
Alfonso, Cavite															6.4	24.3
Indang, Cavite										2.3					5.1	19.8
Canluban, Calamba, Laguna	.8									3.5	.5	1		1.3	6.1	26.6
Silang, Cavite									3					2	6.1	32.5
Maragondon, Cavite															1	100.5
Paracale, Camarines Norte										4.6	3	8.9	14.2	16.8	18.5	140.2
Santa Cruz, Laguna						2.5	5.3			5				1.3	6.6	25.8
Buenavista, General Trias, Cavite																18.1
Fort Mills, Corregidor, Cavite †															1.8	72.9
Imus, Cavite															.5	29.8
Alabang Stock Farm, Alabang, Muntinglupa, Rizal †																19.6
Cavite Naval Station, Cavite, Cavite																59.8
Lamao Horticultural Station, Lamao, Limay, Bataan †					1.3					.1						65.3
Manila, Manila																37.4
Antipolo, Rizal				8.6											.5	71.6
Balanga, Bataan				5.8											.3	77.8
Montalban, Rizal †													3.3	.8		84.3
Hacienda Pintong Sapang, San Jose del Monte, Bulacan †																59.6
Mabayuan Dam, Olongapo, Zambales †																8.9
Malolos, Bulacan														8.6	1.8	106.7
Paila, Norzagaray, Bulacan †	.3									.3		.3		8.4	.6	41.2
Hacienda Carmencita, Gutad, Del Carmen, Pampanga †																20.3
Pampanga Sugar Mills, Del Carmen, Pampanga †																46.2
Matulid, Norzagaray, Bulacan †				.8	.5			.8	2.3	2.6		2.3		.8	6.4	51.9
San Fernando, Pampanga														10.4	16.8	74.6
Mitla, Porac, Pampanga †														2.5	13	39.6
San Isidro, Nueva Ecija														3.6	1.5	72.7
Iba, Zambales				8.9												122.7
Concepcion, Tarlac										.5				2.5	.3	113
O'Donnell, Capas, Tarlac																83.6
Hacienda Luisita, San Miguel, Tarlac, Tarlac †													1.3	2		127.2
Tarlac, Tarlac														.5	1	89.3
Paniqui, Tarlac				22.1											2.8	127.8
Camiling, Tarlac				76.2					19							160.8
Muñoz Agricultural School, Muñoz, Nueva Ecija †																294.6
Baler, Tayabas		37.3	3.8	.5										.3	57.6	146.8
Dagupan, Pangasinan									.5				.1	5.1		231.4
Rosario, La Union				.8												97
Tubao, La Union													11.9			109
Itogon, Mountain Province				3												3.3
Bolinao, Pangasinan													1.3	2.5		113
Aringay, La Union																28.7
Baguio, Mountain Province																2
Sablán, Disdis, La Union								7.1	14.2					33	*	115.6
Naguilian, La Union				30.2												188.9
Kapangan, Mountain Province				.3												19.1
Atok, Mountain Province				1				16.3	6.1	1.5	2.5					105.7
San Fernando, La Union				.8				4.1			31.7					218
Echague, Isabela									.3	1.5	.8	3.1		14.5	1.1	224.5
Balaoan, La Union																7.1
Tagudin, Ilocos Sur													19			52.6
Sagada, Mountain Province †									3.1	.8						60.1
Bontoc, Mountain Province †									3							53.9
Candon, Ilocos Sur																11.7
Cagutungan, Pilar, Abra †																13.5
Vigan, Ilocos Sur																2.5
Bangued, Abra																16
Tuguegarao, Cagayan									1.3	1.1	1			.3		24.6
Sinait, Ilocos Sur																0
Batac, Ilocos Norte																10.2
Solsona, Ilocos Norte																11.2
Laoag, Ilocos Norte																4.6
Pasquin, Ilocos Norte																0
Aparri, Cagayan								.5	10			.5	.5		.3	190.1
Cape Bojeador, Burgos, Ilocos Norte																4.9
Basco, Batanes								13.2	50.6	24.1	18	53.3	26	45.2	1.3	231.7

† Voluntary or coöperative station.    \* Rain in 24 hours beginning 8 a. m.    † 30 days of observation.    \* No observation.

MAXIMUM AND MINIMUM TEMPERATURES AT THE STATIONS OF THE WEATHER BUREAU, OCTOBER, 1921

Day.	Jolo.		Lais, Malita.		Malita.		Lebak.		Lamitan, Isabela, Zamboanga.		Malamaui, Isabela, Zamboanga.		Zamboanga.	
	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum. <sup>a</sup>	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.
1	29	22.6	34	21	33.3	22.4	23.5	29.5	21.1	29.3	23	27.3	21.7	
2	29	23.2	33.4	21.8	32.7	22.4	23.1	29.8	22	28.8	22	29.3	22.5	
3	28.8	23.6	32.5	23.5	32.6	23.8	22.7	29.9	22.6	29	22.2	29.6	22	
4	29.6	24	32.7	21.5	32.7	23.3	23.6	29.5	22.5	28.5	23.2	28.7	23.5	
5	29.8	23.5	31.7	21.3	33	22.8	24	29	21.6	29.3	22.2	27.4	22.5	
6	28.8	23.8	32.5	21.2	32.4	22.7	24	29.2	22	28.3	23.7	27.5	22.7	
7	29.5	22.5	32.6	21.5	32.1	23.1	23.8	29.9	21.6	29.5	23.3	28.9	22.5	
8	28.9	23.4	32	23	31.7	23	23.8	30.2	21.8	28.3	22.7	27.4	23.3	
9	29.2	22.2	32.2	23	31.6	22.9	23.6	30	21.7	29.7	23.5	28.8	22.5	
10	30.3	22.2	33	22.2	32.2	22.7	24.1	28.9	21.1	30.8	23.6	29	23.1	
11	30.3	22.4	32.5	22.9	32.1	22.8	24.1	30.3	21	31.3	24.5	20.6	23	
12	30.5	22.6	33	20.5	32.5	21.4	23.5	30.8	22.3	31.6	24.2	31.7	22.4	
13	29.6	22.7	33.1	22.5	32.8	23.2	23.6	30.8	21.5	31.8	24.2	29.5	23.5	
14	29.2	23.6	32.5	22.4	32.1	22.3	22.2	30.2	23	31.8	23.5	30.2	23	
15	29.5	21.5	33.8	21.2	32.5	22.9	23.4	31	21	30.8	23.5	29.4	23	
16	29.9	22.5	34	22.3	32.7	23.3	23.6	30.3	21.8	30.5	24	29.5	23.7	
17	29.8	23.4	32.5	21.2	31.7	21.9	23.4	30	22.4	31	23.5	29.2	23.5	
18	29.7	23.2	33.5	21.8	32.9	22.5	24.4	31.2	23.4	30.3	23.7	28.7	23.4	
19	29.5	21.8	33.5	21.1	32.9	22.5	24.4	30	21.2	30.5	23.8	29.4	23.4	
20	29.2	21.8	33.3	21.4	32.6	22.5	24.2	28	21.2	30.1	23.6	29	23	
21	29.6	21.5	31.5	21	30.1	21.7	22.7	30	22.4	31.3	22.8	29.5	22.8	
22	30	22.2	35.9	21.7	32.4	22.4	22.8	29.7	20.8	29.8	23.2	28.7	22.8	
23	30.3	23.2	25	23.5	25.5	23.7	22.4	29.2	20.5	30.3	22.2	32	22.3	
24	29.8	22.8	30	21.5	31.1	22.4	23.4	26.9	22.4	28.3	23.7	29.9	22.9	
25	29.6	22.6	31	20.8	31.6	21.7	23.1	28.8	23.4	30.3	22.2	31.2	23.3	
26	29.8	23.2	31.2	21.7	32.1	22.7	23.4	30.2	21.5	31.3	22.3	29.8	23.1	
27	30	23	31.9	22.5	32.6	23.2	23.1	29.7	22.1	31	23.5	31.5	23.4	
28	30.2	22.6	32	23.3	32.6	23.8	23.4	30.2	21.9	32	24	31.3	23.5	
29	30.3	23.8	31.9	21.8	32	22.7	25	29.8	23.3	31.5	24.5	30	23.5	
30	31	22.9	32.5	23.4	33.1	24.2	25	30	21.9	31.5	23.7	32.2	23.2	
31	31	23.5	31.5	22.5	32	24	23.4	30.3	22.6	32.3	24.5	32.7	24	
Mean	29.7	22.8	32.3	22.0	32.1	22.8	23.6	29.8	21.9	30.3	23.4	29.7	23.0	

Day.	Davao.		Pikit.		Bual, Dulauan.		Cotabato.		Naganaga, Margosatubig.		Malabang.		Cateel.	
	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.
1	32.3	22.8	30.3	22.3	29.9	22.2	27.2	23.1	34.3	22.3	30.5	22.4	30.7	21.3
2	32.2	22.5	31.6	22.1	30.4	21.7	29.1	23.5	33.7	20.2	22	22.5	32.5	22.1
3	30.7	23.4	32.5	23.1	31.4	23	28.5	23.4	34.5	22.5	31.2	22.8	32.5	22.4?
4	31.7	23	32	22.4	31.5	22.2	30.1	23.2	34.5	22.7	30.8	23.3	30	22.3
5	32	22.9	32.8	22.4	32	22	28.6	23.6	34.2	22.3	31.2	22.8	31.1	22.6
6	32.7	23.5	32.4	22.3	30.3	21.5	26.4	23.5	33.5	22.5	31.5	22.5	31.4	22.9
7	31.9	22.8	33.2	22.4	30.5	22.4	30	23.6	34	20.5	31.8	23.6	30.7	23
8	30.7	22.7	32.9	22.4	31.9	21.1	29.1	23.8	33.5	21.5	31.5	23.4	30.6	22.3
9	31.3	22.8	31.7	23	30.6	21.7	30.5	23.6	33	22	31.8	22.5	31	23.2
10	31.2	23	34.3	23.1	33.5	22.8	30.8	23.7	34.3	23	31.5	23.6	30.3	23
11	32.2	22.4	33.8	22.4	33	22	31	23.4	33.5	22.5	31.2?	22.8	31	22.5
12	31.7	21.9	33.8	22	33.6	21.9	30.9	22.6	33.7	21.7	31.2	22.6	31	22.1
13	32.2	22.9	34.5	24	34	22.8	31.2	23.7	34	22.2	22	22.8	31.5	23.6
14	31.3	22.5	33.5	21.4	32	21.6	30.5	22.6	33.7	22.5	30.5?	22.6	31	22
15	31.7	22.8	33.5	24	32.8	22.5	31	23.4	34.2	22.3	30.5	22.8	31	23.2
16	31.7	23	34.1	23.2	32.5	21.9	30.8	23.4	34.5	22.5	31.3	22.6	32	22.7
17	32.2	23	31.6	22.4	33	21.6	29.8	22.5	34.6	23	30.5?	22.5	30.4	23.2
18	31.9	22.4	33.6	22.1	33	21.6	31	23.6	35.2	22.5	30.8	22.5	31	21.5
19	31.7	22.5	32.7	22	33.1	22	31.2	23	34	22.2	22	22.8	31.1	21.5
20	31.7	22.4	33.2	22.3	33.4	21.7	30.6	23.4	34.3	22.5	31.6	22.8	30.2	21.5
21	31.1	22.1	32.8	21.4	32.4	21.5	30.8	23.2	33.7	22.7	31.2	22.6	31	21.2
22	32.7	22.9	33.6	22.3	33.1	21.4	29.9	23.4	33.5	20.2	22	22.8	32.2	22
23	30.5	22.3	27.1	23	27	21.4	28.2	22.8	33.5	21.7	30.2	22.6	25.6	22.5
24	30.2	21.5	32.9	22.2	30.9	22	29	23	33.7	22.2	30.5	22.8	28.1	22.1
25	30.7	22.5	33.1	22.3	32	21.9	27.8	22.6	33.5	20.5	31.2	22.8	28	21
26	31.7	22.5	33.3	22.4	33.4	22	30.8	23	33.3	23	31.4	22.6	29.6	21.5
27	32.7	22.9	33.9	23.4	33.7	21.4	31.2	23.5	34	21.7	31.5	22.8	31.2	22.1
28	33.2	22.7	33.7	23.1	33.5	21.4	31.1	23.6	33.7	22.2	31.6	22.8	31.5	22.6
29	32.4	23	33.3	24	33	21.3	28.6	23.8	33.5	22.5	31.4	22.6	30.5	23.5
30	32.5	22.4	34.3	23.3	33.8	21	30.2	24.1	34.3	22.2	30.6	22.5	31.3	23.2
31	33.7	22.9	34.2	22.2	33.5	20.2	30.8	23	33.5	22.5	31.8	22.8	31	23
Mean	31.8	22.7	32.9	22.6	32.2	21.8	29.9	23.3	33.9	22.1	31.1	22.8	30.7	22.4

<sup>a</sup> These minimum temperatures seem to be not very reliable, the differences between 6 a. m. temperatures and minimum temperatures being both too small and too uniform.

Maximum and minimum temperatures at the stations of the Weather Bureau, October, 1921—Continued

Day.	Ganasi.		Camp Kalao, Monkayo.		Camp Keithley, Dansalan.		Veruela.		Sumilau.		Cagayan.		Talacogon.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	29	19	33.1	20	26.8	17.7	33	21	29.3	19.2	22.2	33	22.5	
2	29.5	19	32.2	21.6	27.3	19.7	32.2	21.5	26.7	19.2	22.7	32.8	21	
3	27	19	32.5	21.3	25.4	19.2	30.9	22.3	26	19.3	22.1	33	22.2	
4	28	19.3	32.4	21	27.8	19.4	32.5	22	28.4	18.6	21.9	32.5	22.2	
5	29.5	18	32.6	21	25.5	20.5	33.8	22.7	28.5	18	21.8	33.5	21.4	
6	30.5	19.5	32.3	21.1	26.4	20.6	33.3	22.8	29.4	18.9	21.6	32.5	22.2	
7	30	19	32.2	20.7	27.8	20.9	33.2	22.2	27.5	18.7	22.5	33.7	22.2	
8	29.5	19.5	32.2	20.9	27.8	19.4	32.3	22.1	28.3	17.8	21.5	33.3	22.3	
9	28.5	19	32	20.9	28.3	19.3	32.1	22.2	29.2	17.6	21.3	33.5	22.7	
10	27.3	18.5	32.6	21	28.5	19.5	33.4	22.8	28	18.7	21.9	33.4	22.4	
11	28	19.5	33.4	21.9	27.8	19.1	32.8	21.5	28.3	17.3	21.6	34.1	22.1	
12	29.5	19.5	33.2	20.9	27.6	18.6	31.2	22	28.5	18.2	21.6	33.4	22.2	
13	29	19	31.6	21.2	28.3	18.7	30.5	22.4	28.8	17.5	21.8	30.7?	22	
14	28	18.5	32.2	20.4	28.3	18	32.7	22.8	29.4	18	21.6	34.2	22.2	
15	31.5	17.3	32.4	21	27.9	18.3	33.2	23.3	28.6	17.9	21.8	33.2	23.4	
16	28.5	16.8	30.4	21.5	29.3	18	33.9	22.3	29.3	18	21.6	33	21.4	
17	29.5	18.5	31.6	21	28	18.2	31.6	22.1	28.3	18.5	22.2	33.4	22	
18	29.5	17.3	33.7	21	28.3	19.6	33.2	22.2	29	18.9	22.7	33.7	22.4	
19	31	19.5	31.9	21.6	28.4	18.2	32.4	22.6	29.2	17.6	21.5	33.5	22	
20	28.5	19.3	31.6	22.5	27.9	18.9	32.2	21.7	29.1	18.6	22.6	33	22	
21	27.5	17.5	33.4	20.5	27.8	19	32.8	21.2	28	18	22	32.5	22.1	
22	29	18.3	31.2	19.2	27.8	18.1	30.7	22.2	28.6	20	21.4	33.2	22.8	
23	29.5	18.3	31.3	19.4	22.8	18.5	24	22.2	26	20	21.4	32.5	22.1	
24	28.5	19	30.2	21.6	26.7	19.3	26.6	22.2	25.5	19.5	21.9	32.5	22.1	
25	28	19	33	21	28.6	19.4	32.5	22	27.6	18.1	22	32.5	22	
26	29	19.5	32.2	20	29.1	19.1	33.2	23.2	28.5	19.6	21.5	33.5	22.1	
27	30	18.5	33.2	21	27.8	18.5	31.3	22.6	29	18.5	21.5	33.2	22	
28	29	18.5	33.4	21.2	27.8	18.5	28	21.6	30.5	19.2	21.8	31.7	22.3	
29	27	19	30.9	19.6	26	19.6	30.8	23.2	26.2	20.3	23.4	29.2	22.3	
30	28	19	31.5	20	28.5	19.1	32.2	23.4	31	18.7	21.8	31.6	22.3	
31	29	17.5	31.9	20.1	28.3	17.4	32	23.2	30.6	20.6	20.9	33.5	22.3	
Mean	28.9	18.7	32.2	20.8	27.6	19.0	31.8	22.3	28.4	18.7	21.9	32.9	22.2	

Day.	Butuan.		Mambajao.		Dumaguete.		Kolonie, Yap.		Tagbilaran.		Iwahig Penal Colony, Puerto Princesa.		Dalaguete.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	33.1	23	32.7	24	29	23.9	30.8	24.9	32	23.4	32.2	22.4	31.4	24.3
2	31.1	22.9	30.2	23.5	30.6	24.3	32.8	25.6	31.2	23.4	32	22	30.9	23.6
3	30.4	22.9	30.5	23.7	31.8	23.6	30.9	23.8	31.7	23.3	32.2	21.7	31	23.4
4	31.2	23.2	30.3	22.6	31.9	23.3	29.7	24	32	22.3	32.6	21.7	31.8	23.5
5	32.6	23.1	32.4	24.1	32.4	23.4	30.2	23	33.1	24.5	33	21.7	31.9	24.5
6	34.2	23.9	31.8	24	31.5	23.3	28.3	22.8	31.7	23.9	32.6	21.7	31.9	24.4
7	32.1	23.6	31.5	25	32.4	24.1	31.1	24	32.2	24.4	32.4	21.2	31.5	23.8
8	33.3	22.9	28.1	23.3	31.4	23.6	30.8	24.1	31.6	23.8	32.2	21.4	31.3	24
9	33.6	22.4	30.3	23	31.4	23.5	32.3	24.2	30.8	23	32.6	21.4	31.3	23.9
10	33.6	22.4	30.5	23.9	31.4	22.9	32.6	24.2	32.3	22.9	32.4	21.2	30.5	23.4
11	32.9	22.4	29.7	23.8	30.3	23.8	30.9	23.3	29.9	23.1	32.8	21.7	29.3	24.3
12	30.1	22	28.2	23.8	31.8	23.6	31.1	24.3	31.2	22.8	31.8	21.8	30.5	23.6
13	33.6	22.3	30	23.8	30.8	23.6	31.6	23.1	31.8	22.6	31.2	21.5	31.3	24.2
14	33.3	23	29.6	22.5	31.8	23.8	28.7	23.4	31.7	22.1	30	22	31.3	24.2
15	32.7	22.2	30.5	23.4	31.6	23.9	27.1	23.2	31.4	23.5	31.4	22.5	31.5	23.7
16	33.1	23	30.3	23.3	32.3	23.6	31.4	23.7	32.2	22.6	32	22.7	31.2	23.5
17	31.6	22.8	28.7	22.8	29.8	24	31.5	23.8	29.2	23.6	32.2	22	31.4	23.6
18	34.3	23.4	29.9	23	30.7	24.3	32.4	24.2	31.6	22.8	31.2	21.2	31.1	23.5
19	33.2	22.4	29.2	22.8	31.5	23.6	31.7	24.6	32.3	23.6	32	21.7	30.8	24.4
20	33.1	22.7	29.9	23.4	31.4	24.4	32.6	24.4	31.6	23.1	32.1	22	31.4	24.3
21	31.6	22.9	28.5	23.4	30.7	24.1	31.3	23.7	31.4	23.4	31.8	22.2	31.2	24
22	31.8	22.9	29.8	23.8	31.1	24.4	29.2	22.8	30.8	23.3	32	22.7	30.8	23.2
23	26.2	22.7	27.4	23.9	30.5	25	31.2	23.5	30.1	23.4	31.4	22.5	30.6	24.5
24	25.2	21.8	27.5	24.5	30.2	24.4	31.2	23.8	29.2	23.7	32.8	22	30.3	24.5
25	32.5	21.5	28.4	23.5	26.8	24.2	31.8	24.2	28.9	23.3	32.2	22	28.6	23.6
26	33.5	22.5	28.9	23.8	30.6	23.5	32.5	24	32.1	23.6	32.6	21.8	30	23.6
27	33.4	22	29.4	22.9	30.4	23.5	32.2	24.3	31.5	23.6	31.8	23.4	30.5	23.6
28	31.6	22.8	29.4	25.4	31.2	24.8	32.8	24.2	32.3	23	32.6	23.4	32	24.3
29	29.1	23.4	28.8	23.8	30.1	24.5	33.1	24.5	30.9	24.4	32.4	22	30.7	24.5
30	32.2	22.3	30	25.2	31.5	25.3	32.4	24.3	32.1	24	31.6	22	30.7	25.4
31	34.2	22.3	30.3	24.6	31.9	25.2	31.2	25	31.6	24.1	32.8	22.1	31.6	25.3
Mean	32.1	22.7	29.8	23.7	31.0	24.0	31.2	24.0	31.4	23.4	32.1	22.0	30.9	24.0

Maximum and minimum temperatures at the stations of the Weather Bureau, October, 1921—Continued

Day.	Surigao.		Central Palma, Hog.		Hacienda Naval, Himamaylan.		Biaong Cui's Farm, Barili.		Maasin, Leyte.		Isabela, Occidental Negros.		Hacienda Tanolo, Hiniganan.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.1	24.5	32.6	23.1	30.5	23	30.1	23.5	33	23	30.1	23.2	31	23.1
2	28.7	23.7	32.7	23.1	30.5	22	30	22.3	32.8	22.4	30.1	21.8	30.1	22
3	29.2	23.7	33	23.1	32	23	31.2	22.5	33	23	30.7	23	31.3	23.3
4	30	25.2	32.7	23.1	32.5	23	32.1	22.3	31.2	23.2	30.7	22.2	31.6	22.6
5	30.8	24.8	31.9	23.1	31.5	23.5	32.4	23	33	23	31.4	22.9	31.6	23.3
6	30.6	25.7	31.2	23.1	31.7	23	32.1	23.5	33	23.3	32.3	23.1	32.4	23.4
7	31.1	25.8	30.9	23.1	31.8	23.5	32.8	23.2	32.2	23.2	31.1	21.8	31.7	22.2
8	30.5	24.2	31	23.1	31.5	22	32.4	23.2	31.8	23	31.7	21.7	32.1	22.2
9	31.3	23.8	30	23.1	31.5	22	31.5	22.8	34	23.6	31.2	22.8	32.1	23.5
10	30.6	24.3	31.1	23.1	30.3	22	32	22.4	33.8	23.4	30	21.7	31.7	22.3
11	27.2	23.2	31.7	23.1	30.5	21.5	29.8	22.5	35	23	30.3	22.1	31.2	23.1
12	28.4	22.6	31.4	23.1	31.5	21.5	30.2	22.1	33.2	23	31.9	21.9	32.3	21.7
13	30.6	23.1	31.1	23.1	31.8	22	31	22.3	35	22.8	30.8	21.2	31.8	22.7
14	31.3	23.5	31.4?	23.1	32.3	22.5	31.6	22.5	34.2	23	31.9	21.7	32.6	22
15	31	23.4	31.3?	23.1	33.5	21.5	32.1	22.4	34.4	23.6	32	21.2	33.2	21.9
16	30.3	23.8	31.8	23.1	30.3	21.5	31.5	22.2	35.8	23	30.8	22.2	31.7	22.5
17	29.4	23.8		23.1		21.5	27.6	21.2	30.8	24	31.3	22.7	31.1	23
18	31.3	23.1	30.6	23.1	32.5	22	30.2	22.5	34.4	23	32.3	21.9	32.3	22
19	29.6	23.5		23.1	32.5	22	32.5	22.2	35	23.3	31.4	22.1	32.2	22.4
20	29.8	23.4	30.1	23.1	31.5	22	31.2	21.8	34	23.2	31.6	22.1	32.2	22.3
21	27.3	23.7	31	23.1	30.5	22.5	31.6	22.1	34.2	22.6	30.8	21.5	31.1	21.8
22	31	23	31.8	23.1	31.5	23	31.5	21.2	32	23.4	31.7	22.6	32.1	23.5
23	27.7	23.2	32	23.1	32.3	23.5	30.2	21	31.4	23.2	31.9	22.2	31.2	22
24	26.9	22.9	31.9	23.1	31.3	21.5	28.5	20.4	33	22.6	31	23.2	32.6	22.5
25	29.4	22.6	31.8	23.1	29.3	21	27.8	22	30.6	22.8	28.7	22.7	29.4	23
26	31.6	23.7	31	23.1	31.3	21	30.6	21.5	33	23.2	31	22.7	31.4	23
27	29.6	24	31.8	23.1	31.3	22	29.5	21.2	34.2	23	31.8	21.7	32.2	22.4
28	31.4	23.6	32.1	23.1	32.3	22	30.2	22.5	32.8	22.8	32.6	22.2	32.2	22.5
29	27.1	23.5	32.4	23.1	33.3	21.5	31.2	22.6	33	23	32.3	22.8	32.7	23
30	31.8	23.2	32.7	23.1	32.3	21	31	23	33.3	23.2	31.8	21.7	32.2	24.3
31	32.6	24.5	32.6	23.1	33	22	30.5	23.1	34	24	33.7	22.7	33	23.6
Mean	29.9	23.8	31.6	23.1	31.6	22.1	30.9	22.3	33.3	23.1	31.3	22.2	31.8	22.7

Day.	Cebu.		La Castellana.		Central Azucarera de La Carlota.		Hacienda Canlaon, La Castellana.		Mao Sugar Central, Bago.		Valladolid.		Murcia.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.2	25.2	32.2	21.3	31.6	22.5	31.1	21.4	33.6	22.8	32.5	21.4	31.6	21.1
2	31.4	24.7	32.6	22	31.3	23.2	32.1	20.9	31.6	21.9	33.2	21.2	30.7	21.2
3	31.6	25	33	22.5	32.2	23.7	29.3	21.9	33.2	22.4	33	20.5		22.4
4	30.2	25.5	33	22.6	31.9	23.5	33	21.4	32	22.6	33	23.2	31.8	22.1
5	32.4	25.6	32	22.6	32.5	22.9	32.9	21.9	33.1	23.3	33.4	22.7	32.1	22.3
6	31.2	25.6		22.4	32.7	22.9	31.3	21.6	33.5	22.7	34	23.4	31.1?	22.1
7	31.2	25	31.4	22	32.5	22.6	31.2	21.8	32.2	22.3	32.4	23.2	32.3	22.2
8	31.1	25.1	32.7	21.6	32.6	22.5	31.2	21.9	32.8	21.6	33.2	22.3	32.1	21.6
9	30.5	25	31	23	31.5	23.4	31.1	21.4	32	22.7	32.5	22.8	32.3	23.1?
10	31.7	25.4	32.2	21.3	31.6	22	29.3	21.9	31.5	21.2	32.7	21.5	31.3	
11	31.2	24	30.1	22	31.5	23.2	30	21.4	32.1	22.3	32.5	22.5	31.8	20.8
12	29.7	23.9	32.4	20.5	31.4	21.3	31.1	22.3	32.6	19.8	32	22.4	32.1	22.2
13	31.7	24.9	30.7	22.6	30.5	23.3	32	21.1	31.5	22.8	33.7	23.2	31.6	21.9
14	31.8	24.7		21.7	31.6	22.3	28.1	22.9	33.2	22	33.6	22.5	31.8	21.8
15	32.9	24.9	32.1	21.4	32.2	22.3	29.5	23.5	32.8	20.9	33.7	21.3	31.9	21.3
16	31	24.4	32	24.8	30.5	22.7	29.7	22.9	31.5	22.2	31.7	22.5	31.8	20.8
17	30.6	25.1	31.1	22.3	31.6	22.7	26.5	22.2	32.3	22.4	32.8	21.8	32.4	22.1
18	31.6	24.3	32.2	21.5	32.3	21.8	30.5	23	33.1	21.2	33.4	21.4	30.6	20.9
19	30.5	24.9	31.6	22	32.5	22.8	31.6	20.9	32.1	21.3	32.7	22.3	29.8	22.2
20	30.7	24.3	30.1	21.8	30.8	22	31.1	20.9	32.6	21	32.9	22.5	31.8	20.8
21	31.4	24.7	32.1	21	32	21.6	31	20.9	32.4	20.2	32.4	22.3	32.7	21.1
22	31.6	25.3	30.8	22.2	31.5	22.2	31.1	21.6	32.8	21.6	33.6	22.4	30.8	21.1
23	30.3	25.5	32.3	21.2	32.4	21.6	29.2	20.4	32.5	21	32	22.8	31.7	20.6
24	30.3	23.8	32.5	21.5	31.9	22.3	27.8	20.7	32.9	22.4	32.4	22.5	30.2	21.1
25	29.2	23.5	32.4	22.2	28.8	22.9	31	19.4	28.3	22.1	32.2	22.3	28.2	22.2
26	31.1	24.8	31.3	22.5	30.8	23.2	27.6	18.7	31	22.3	31.2	22.2	31.6	22.3
27	31.8	24.9	31.2	21.6	31.9	21.5	27.2	20.9	33	20.7	32.7	21.9	30.9	20.9
28	31.3	24.9	31.8	21.3	32.6	21.4	30.2	19.9	33.3	20.4	33.2	21.4	32.7	22.2
29	30.2	23.9	32.2	22	32.4	22.3	32	21	33.2	21.8	32.9	22.5	32.4	22.5
30	31.3	25.8	31.8	22.6	32	22.3	30.6	20.9	31.9	22.6	33.4	21.6	32.8	22.6
31	32.3	25.9	31.6?	21.8	32.8	21.6	31.2	20.7	32.8	21.4	32.6	20.3	32.4	22.2
Mean	31.1	24.9	31.8	21.9	31.8	22.5	30.4	21.4	32.4	21.8	32.8	22.2	31.6	21.7

Maximum and minimum temperatures at the stations of the Weather Bureau, October, 1921—Continued

Day.	Bacolod.		Oton.		Iloilo.		San Jose de Buenavista.		Tuburan.		Leon.		Silay.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.3	22.1	30.8	23.6	31.7	24	30.3	23.2	28.8	24.7	32.4	20.4	30.5	23
2	30.9	22.1	30.2	23.2	30.1	23.6	29.7	22	31.1	24	32.2	20.1	31	23.4
3	31.9	22.8	30.8	23	31.1	23.5	30.7	22.9	31.4	24.3	31.8	20.3	32	23.9
4	31.1	22.6	31.2	23.4	31.7	23.9	31	23.2	31.8	23.5	32.6	20.4	32	24
5	31.8	24.2	31.4	24.4	32.7	24.8	31	23.5	32.1	24.8	32.9	21.6	33	24.3
6	31.9	22.7	33	24.6	33	24.8	31	23.4	32	24.1	33.4	22	33.6	23.9
7	31.2	23	31.4	23.7	31.4	24.5	30.7	23	32.7	23.1	31.8	21.7	31.6	24.1
8	32.2	22.2	31.6	23.9	31.6	24	31.5	23.4	32	23.2	30.6	21.4	33	23
9	31.1	22.7	30.7	23.6	30.4	23.7	31	23.4	31.5	23.6	31.6	22.1	31	23.8
10	31.2	22.9	31	22.8	31.3	23.3	31.5	23	31.1	23.4	32	21.1	32	23
11	30.6	23.5	32	24	31.6	23.8	30.5	23.1	30.7	23.6	32.8	21.7	28	23.9
12	31.8	21.3	32.2	22.6	31.8	23.1	31	22.1	31.3	22.9	32	20.4	30.5	23.4
13	29.7	23.7	30.4	24.2	29.7	23.2	31.5	23.3	31.3	22.8	30.3	22.3	29.1	24.2
14	31.2	22.4	33	23.6	31.7	23.6	31.2	22.3	31.8	22.9	32.1	22.2	31	23.4
15	31.4	22.2	33.4	23	32	24.1	31	22.8?	32	22.9	33.2	20.4	30.5	22.4
16	30	23.2	28.9	23.6	28.4	23.2	29.5	22.7	28.7	24.1	30	22.3	30.5	21.5
17	30.8	22.8	30.2	23.6	30	23.4	31.1	23.3	31.5	24	31.4	22.2	30	23.5
18	31.7	21.9	32.8	22.8	31.2	23.5	31.4	22	32	24.1	32.5	21	30	23
19	31.3	23.2	32	24	30.4	24.3	31.5	23	31.1	24.3	31.3	21.1	30.5	24.4
20	30.1	21.3	32.2	23.1	30.9	23.6	31	22.7	30.7	23.5	32.3	20.9	30	23.7
21	31.7	22.6	30.4	23.5	30.7	23.8	30.9	22.5	31.7	24	31.4	21.3	30.5	22.8
22	30.7	22	32.2	24.2	30.2	24.3	31.5	22.5	32	23.2	33	23.2	30	24
23	31.7	21.9	31.2	24.7	31.2	24.7	31.5	22.4	32	22.9	30.9	23.4	30.5	22.4
24	31.6	23.9	31.4	24.4	30.4	24	32.3	21.2	31.1	24	32	23.1	29	24.5
25	28.1	22.7	28.8	22.7	28.2	22.1	30.1	22.7	29.6	23.3	30	21.1	28	23.4
26	28.8	23.6	30	23.1	29.6	23.3	32	23	31.7	23.9	30.1	22.2	28	23.4
27	30.9	21.2	32	23.8	30.8	23.8	31.5	22.8	31.3	22.7	32.3	22.2	30	23
28	31.6	23.2	32.6	23.7	30.9	23.9	31.8	22	31.9	22.8	33	22.9	30.5	24
29	31.4	23.4	31.6	24.6	30.7	23.5	31.5	24	31.9	23.4	32.2	23.1	29.5	23.8
30	31.1	23.4	33.2	24.2	31	24.3	31.9	21.7	30.1	24.4	30.8	23.3	30.2	25
31	32.1	23	33.8	24.8	32.2	24.9	32.3	23.1	31.7	23.5	33.1	23.4	31.5	25
Mean	31.0	22.7	31.5	23.7	30.9	23.8	31.1	22.8	31.3	23.6	31.9	21.8	30.6	23.6

Day.	Calag-itan, San Remigio.		Cuyo.		BarotacNuevo.		Hacienda Ilaya, Victorias.		Hacienda Bilbao, Manapla.		Januay.		Cadiz.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	22.3	22.3	31.6	23	29.2	22.2	29.5	22.2	31.8	22.9	31.4	23.3	30.5	22.7
2	22.3	22.3	28	23.1	29	22.2	30.4	23.2	32.2	23.2	31.2	23.3	31.7	23.2
3	23	23	31.5	23	27.8	23.8	30.2	23.8	31.9	23	32.7	21.2	31.4	23.5
4	21.2	20	30	24.1	30.1	23.2	30.4	23.2	32.4	23.1	32.2	21.5	31.8	23.4
5	22.3	22.3	30.4	24.7	32.4	23.5	29.3	23.5	32.3	22.9	33.4?	23.4	32	22.9
6	22.2	22.2	32	24.5	34.2	23	29.5	23	31.7	23.1	33.3	22.3	32	22.4
7	21.2	21.2	30.6	23.9	32.1	23.2	30.7	23.2	32.1	23	33	22.1	33.1	22.9
8	21	21	31.4	23.8	33.2	23	29.8	23	32.3	23.2	32.4	22.6	32	22.1
9	22	22	30.2	24	31.3	22.8	29.9	22.8	32.6	22.9	32.4	21.9	31.9	23
10	21.2	21.2	28.8	23.1	29.1	22.6	29.6	22.6	31.8	22.2	32.2	21.8	30.6	22.4
11	22.3	22.3	30	23.4	31.3	23.5	29.8	23.5	21.6	22	32.2	22	30	23.2
12	21.2	21.2	31.5	23	31.2	22.9	30.7	22.9	31.4	21.8	31.6	21.2	29.9	22.2
13	22.3	22.3	31	26.1	29.2	23.6	30.6	23.6	30.3	21.9	32.5?	23.6	30.1	23.4
14	21	21	31.1	26.3	32.1	23.9	29.4	23.9	29.9	20.8	32.5?	22.3	30.5	23.2
15	20	20	31.4	25.8	31.3	24	29.8	24	31.1	21.3	32.5?	21.3	30.7	23.2
16	22.3	22.3	29.7	26.1	28.5	23	30.5	23	31.6	21.1	29.1	23.6	29.9	22.3
17	22.3	22.3	31.1	25.8	31.2	22.4	30.6	22.4	31.3	21	29.1	22.6	30.1	22.4
18	20	20	31.5	26.3	31.5	23.3	29.4	23.3	31.6	21.8	32.7	20.6	30.2	23.4
19	22	22	32	26.3	31.2	23.3	29.7	23.3	31.4	22.2	32.1	22.3	30.1	23.2
20	20	20	31.2	25.4	31.1	22.6	30.8	22.6	30.5	21.9	31.7	21.5	30.7	22
21	21.2	21.2	31.4	24.4	31.2	23.2	29.4	23.2	30	21.8	30.4	22.2	29.7	22.1
22	22	22	31	26.6	31.3	22.5	30.9	22.5	30.2	21.7	31.7	23.3	29.9	22.9
23	21	21	30.6	26.6	30.2	22.2	29.7	22.2	29.9	22	31.5	24	30.7	23
24	20.1	20.1	30.5	26.2	29.1	23.4	29.9	23.4	30.5	22.1	31.5	24	29.2	23.6
25	22.3	22.3	30.5	26.3	28	23.3	29.8	23.3	29.4	22	31.5	22.3	27.9	22.7
26	21	21	32.5	25.3	30.6	23.4	30.8	23.4	29.8	22.1	31.5	22.4	30	22.9
27	21.2	21.2	31.2	25.3	29.4	23.7	29.6	23.7	29.9	22	30.6	22.5	29.2	22.2
28	20.1	20.1	31.5	25.8	31.2	23.7	29.4	23.6	30.1	21.9	31.5	22.3	30	23
29	23	23	31.3	26.3	30.2	23.2	30.4	23.2	29.6	22.1	31.8	22.2	30	22.6
30	20	20	31	26.7	30.1	23.3	30.8	23.3	30.2	22	31.4	24.5	30.1	22.9
31	22.3	22.3	32	26.5	31.3	23.4	29.6	23.4	30.4	22.3	31.4	24.5	31	23.4
Mean	21.5	21.5	30.9	25.1	30.6	23.2	30.0	23.2	31.0	22.2	31.7	22.5	30.5	22.8

Maximum and minimum temperatures at the stations of the Weather Bureau, October, 1921—Continued

Day.	Dingle.		Ormoc.		Guiuan.		Bugasong.		Bogo.		Sara.		Tacloban.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31	22	32.2	23.4	32.3	24.9	30	22	28.5	23.4	32	23.2	31.2	24.1
2	30.5	22.3	31.4	23.9	32.5	24.1	30.4	22.2	29.6	23.5	31.5	22.9	31.8	23.6
3	32.1	22.5	31.3	22	32.5	24.7	31.4	23	29.4	23.4	31.3	23.2	29.9	24.1
4	31.8	22	31.7	22.1	32.6	24.1	30.4	22.2	30.7	23.5	32.3	23.4	32.3	23.9
5	32.8	24	32.9	23.4	32	23.4	31	24	31	23.6	33	24.1	31.9	23.9
6	33	23.5	33.8	22.5	32	22.5	31.2	23	31.2	23.4	33.3		33.1	22.6
7	33	22	32.6	22.1	32.1	23	31.2	22	30.8	23.5	32.8	23.2	34.4	22.6
8	33	22.5	32.8	22.4	33	24	31	22	31.1	23.4	31.9	23.1	33	23.8
9	32.6	22.5	33	22.4	32	23.4	31	22.4	32	23.3	32.1	23.1	33	23.1
10	32.5	22.3	32.6	22	32.8	24	30.4	22.2	31.2	23.2	30.1	24	33.1	23.6
11	31.1	23.1	32.5	22	30.4	24.2	31	23.4	31.1	23.9	31.1		32.4	23.6
12	31.5	21.8	31.9	21.8	31.5	23.5	31.2	21.4	30.2	24	30.2	22.1	32	22.4
13	30.6	22.1	32.6	21	32.5	23.2	32	22.7	30.1	23.8	31.3		33.1	22.4
14	31.8	23	33.8	21	32.6	22.3	31.4	22	30	23.7	33.1	23.1	34.1	23
15	32.8	20	33.9	20.9	32.7	23.2	31.5	22	31.3	24.1	31.3	23.1	33.1	23.6
16	28.4	21.9	31	22.6	28.5	23.3	32	21.4	31.2	24	33.3		30	23.9
17	30.8	22.6	33.4	22.6	32	26.4	32.2	22	32	24.5	32.3	23.1	32.8	24.3
18	32.3	22	33.8	22.1	32.5	24	32	21.4	31.8	24.6	33.3	22.3	34.6	23.5
19	30.5	23.5	33.6	22.3	29.8	22.8	32	22.2	31.7	24.5	31.5	22.3	31.1	22.4
20	31.2	22.7	32.2	22.4	31.5	23.2	31	21.1	30.8	24	31.4	23.1	32.6	23.1
21	29.5	22.2	33.5	22	29.5	24		22.4	30.5	23.8	33.3	24.1	30.9	23.2
22	31.2	23	32.9	22	32	22.7	32.2	22	31.1	23.9	32.3	24.1	33	23.1
23	31	23.1	32	21.9	32.2	26.3	32	22	32	24	30.3	24.2	33.1	23.6
24	31.2	23	32.4	21.8	32.5	23	33	22.2	31.3	24.1	31.3	23.3	31.3	22.8
25	29.5	22.8	30.2	23.5	28.6	23	29.8	21	32.1	24	31.3	24.1	26.1	22.6
26	29.3	22	30.8	22.4	30.5	23.5	31.2	22	31.5	23.5	33.3		32.1	22.6
27	30	22.5	30.5	21.2	28.5	24	32	22.2	31	23	31.5	24.1	29.6	22.2
28	32	22	32.6	21.2	31.5	24	30	21	31.3	23.2	31.1	23.4	32.7	23
29	31	23	33.1	22	32	26.3	31	22.5	31.1	23.1	30.5	23.4	34.8	23.3
30	31.8	23.2	33.3	23.4	31.7	24	32	21	31	23.1	31.4	23.4	32.5	24.6
31	32.5	23.7	32.9	22.8	32.5	25.1		21	30.6	23	32.4	25	31.3	24.2
Mean	31.4	22.5	32.5	22.2	31.6	23.9	31.3	22.1	30.9	23.7	31.9	23.4	32.2	22.3

Day.	Central Asturias, Buntog, Dumalag.		Culasi.		Mambusao.		Hacienda Amparo, Pontevedra, Capiz.		Capiz.		Borongan.		Calivo.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	29.5	22	30.5	22.7	31.2	22.2	31.1	22.4	31.5	24.2	32	23.6	30.3	23.1
2	31.6	22.1	30	22.7	31.6	23	32.3	23.1	32.3	23.5	32.8	23.5	31.3	23.1
3	31.5	22.7	31	22.7	32.3	22.9	30.1	22.1	33	24.8	31.8	23.9	32.3	23.6
4	32.8	22.9	31.3	23.2	32	23	32	24	32.5	24	32	23.6	31.3	23.1
5	34.2	24.4	31.3	24.7	33	24.1	31.6	23.8	33	24.7	33	23.3	31.8	24.1
6	34.1	24	32	23.7	33.8	24.1	32	24.1	33	24.2	32.1	21.2	32.3	24.1
7	34.2	21.9	31.5	23.2	33	21.9	32.1	22.3	33	23.4	31.9	22.5	32.3	22.1
8	34.4	21.8	31.7	23.2	33.6	22.3	32.1	22.4	33.1	23.5	32	22.9	32.3	22.1
9	34.3	21	31.5	24.7	32.8	22.6	30.4	22.8	32	23.5	31.7	23.2	31.3	23.1
10	34.2	21.8	30.5	23.2	32.3	22.8	30.3	22.8	32	23.5	31.6	23.6	31.3	23.1
11	33.4	22.9	30.5	23.2	31.2	22.5	30.1	23	31	23.5	31	23	31.3	23.1
12	32.7	21.8	32	23	30	22	30.2	22.2	31.5	23.4	30.7	23.1	30.3	23.1
13	30.8	22.9	31.7	24.5	30.8	23.4	29.5	23.5	32	25.1	31.6	22	31.3	23.1
14	33.2	23.2	32.5	23.7	32.3	22.9	30.7	23.8	32.5	24.6	31.3	22.2	31.3	23.1
15	32.6	22.9	32	22.7	31.6	23.6	30.4	23.6	32.1	24.9	31.6	22.6	31.3	24.1
16	31.2	23.4	32.3	23.7	26.8	23.7	28.4	23.9	28.6	24.3	30.6	22.3	29.3	24.1
17	33.8	22	32.5	24.2	29.4	23.5	30.7	23.3	31.5	24.2	31.6	23.2	31.3	23.1
18	33.2	21.9	32.6	23.2	31.9	22.1	30.9	22	32.6	23.2	31.6	23.4	31.3	22.1
19	33.3	21.8	32	24.2	31.6	23.1	30.9	23.4	32	23.4	31.1	24	30.6	23.1
20	30.9	23.2	33	23.2	32.2	22.9	30.5	23.5	31.9	24.1	29.3	23.3	31.3	23.1
21	31.8	22.6	32	23.2	31.3	22.8	30.1	23.3	32	24.1	29.3	22.8	30.7	23.1
22	31.9	23	32.7	24.3	30.8	23.6	30.3	23.9	32.1	25	31.4	22.8	30.7	24.1
23	31.8	23	32	24.1	31.5	23.6	30	23.9	32	25.4	31.6	23.5	31.3	23.1
24	31.9	22.9	32	25	31.3	22.9	29.9	24.4	32	25.4	30.7	22.9	31.3	22.1
25	31.6	22.4	31.7	24.2	28.4	23	27.3	22.3	28.5	24.6	28.2	22.6	28.3	24.1
26	31.5	22.2	31.5	22.3	27.5	23.2	28.3	22.9	29.5	23.9	31.1	22.6	27.6	23.1
27	31.3	21.9	32.7	23	30.2	22.5	29.6	23	31.5	23	27	23.4	30.3	24.1
28	32.3	21.6	32.3	23.2	31.8	22.7	30.8	22.9	31.6	24.1	30.5	22.7	30.3	24.1
29	32.5	23.6	31.4	23.9	31.5	23.8	30.9	24.4	31.5	24.7	31.8	23.9	30.6	23.1
30	32.4	23.5	32.7	25	30.7	22.8	29.7	23.3	31.4	24.5	31.6	24.5	31.3	23.1
31	32.5	23	33.4	24	31	24.5	30.3	23.6	31.4	25	30.9	24.9	30.6	23.1
Mean	32.5	22.6	31.8	23.6	31.3	23.0	30.4	23.2	31.8	24.2	31.1	23.1	30.9	23.6

Maximum and minimum temperatures at the stations of the Weather Bureau, October, 1921—Continued

Day.	Pandan, Antique.		Catbalogan.		Ibajay.		Calbayog.		Masbate.		Romblon.		Batag Light-house, Laoang.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	30.3	22.7	29.4	°C.	30.3	22.7	28.4	23.5	30.0	25.5	31.4	23.6	28.1	24.3
2	31.3	23.4	30.4	-----	31.2	23.3	30	22	29.8	23.8	31.5	23.4	30.1	23.3
3	32	22.7	30.5	-----	31.1	23.3	29	23.2	30.4	25.2	31.6	23.6	30.8	24.8
4	33.1	24.2	31.6	-----	31.5	23.7	31.9	23.8	30.6	26	32.1	24.4	31.1	24.3
5	34.1	24.2	31.5	-----	30.8	23.7	31.6	23.3	30.6	25.4	31.8	24.3	31	24.6
6	32.5	24.2	31.9	-----	31.8	24.7	31.7	21.9	30.6	25.2	31.7	23	31.1	23.4
7	31.7	23.1	31.5	-----	31.6	22.4	32.2	23	30.6	26	32.3	23.8	31.2	24
8	32.1	22.5	32.5	-----	31.6	22.7	32.6	23.4	31.2	25	31.2	23	31.5	23.4
9	31.1	24.1	32.1	-----	31.7	23.7	32.6	23.8	31.2	24.6	32.5	23.2	31.4	24
10	31.6	23.8	32.2	-----	31.5	23.3	33.1	22.9	30.2	25.5	30.2	23.2	30.8	23.5
11	32.7	24.1	29.5	-----	32.2	23.5	32	22.7	30	25.2	29.6	22.7	29.5	22.4
12	32.7	24.2	30.5	-----	29.1	23	29.8	22.3	30.4	24.8	-----	23.1	29.2	23
13	33.3	24.2	31.2	-----	31.6	24.4	30.5	22.2	28.4	25.4	-----	23	30.2	23.5
14	32.6	25.1	31.5	-----	32.3	25.7	32.1	21.4	31	23.8	-----	23.7	31	23.4
15	33.4	24.1	31.7	-----	31.6	24.9	31.5	23.1	28.8	25.2	-----	23.9	28.6	24
16	30.1	24.4	30.9	-----	31	25.9	32.6	23.8	28.4	24	-----	22.9	30.4	24.2
17	32.2	23.9	31.5	-----	31.7	23.9	31.6	22.7	29.6	24.2	-----	22.2	30.5	24.5
18	33.5	24.4	31.6	-----	31.8	22.3	32.2	22.6	30.4	24.4	-----	22.9	30.5	24.2
19	33.1	24.7	30.1	-----	31.7	24.8	31.1	23	30.8	24.5	-----	23	30	24.6
20	33.3	23.6	30.1	-----	31.1	22.8	32.1	23.1	30.6	25	-----	23.7	30.2	24
21	33.5	23.7	30.4	-----	31.7	23.6	32.2	22.8	31	25.4	-----	23.8	30.1	23.6
22	32.5	23.4	31.5	-----	31.6	23.7	32.6	23.8	30.8	23.6	-----	24.7	30.2	23.4
23	32.8	23.6	30.9	-----	31.8	25.4	31.8	23	30.6	25.4	-----	25.4	31	25.1
24	32.3	25.3	29.5	-----	32.1	26.8	30	23	30.6	26.5	30.4	25	30	25.6
25	29.1	24.6	27	-----	29.6	24.6	24.1	22.4	26	22.6	28.2	22.7	26.5	21.8
26	29.1	23.4	30.6	-----	27.5?	23.6	31.2	22.6	29.6	24.2	28.2	25	29.6	22.3
27	35	24	28.2	-----	31	23.9	28.2	22.3	29.6	24.6	29.5	23.9	24.9	22.6
28	32.4	24.1	29	-----	31.1	24.6	31	21.8	30	24.8	31	24.7	29.1	23
29	31.2	24.6	31.2	-----	31.3	24.4	31.4	23.4	30.6	24.2	30.9	23.4	30	23.5
30	31.8	24.7	30.9	-----	31.7	26.3	30.1	24.1	30.6	24.4	28.8	23.8	27.9	24
31	32	25.1	28.9	-----	31.3	25.3	30.6	23.4	28.2	25.4	31.2	23.2	28.7	24.5
Mean	32.2	24.0	30.7	-----	31.2	24.1	31.0	22.9	30.0	24.8	-----	23.6	29.8	23.8

Day.	Irosin.		Sorsogon.		Bacon.		Jovellar.		Legaspi, Albay.		Guinobatan.		Polangui.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	26.8	22.5	27.5	°C.	29.3	24.6	30.3	21.9	30.1	23.9	29.8	23.2	29.1	24.1
2	34	20.5	31.5	-----	31.3	21.9	32	20.8	32	23.5	30.9	22.2	31.1	23.2
3	31.3	21.3	31.5	-----	30.2	25.3	32	22	31.3	23.1	30.8	21.2	32.3	24
4	33	23.2	32.3	-----	30.5	22.8	31.6	21.2	32.3	24.1	31.9	23.1	26.5	23.2
5	33.4	21	32	-----	30.6	21.4	31.4	21	32.7	22.9	32.2	23.1	31.4	21.4
6	34.2	20.3	31.7	-----	31	22.5	31.9	19.6	33.6	22.6	32.8	21.2	33.2	24.1
7	34	21.5	32	-----	30.6	21.5	32	22	33.3	22.8	32.3	22.6	30.3	21.4
8	34.2	21.4	32	-----	30.5	21.8	31.6	21.1	31.7	23.4	31.3	22.4	32.3	24.1
9	31.8	22.5	32.3	-----	31	22.7	31.8	21.1	32.9	24	31.9	22.4	32.3	23.2
10	32.7	22.3	31.9	-----	30	23.1	30.9	21.5	31.6	23.8	31.3	22.2	33.2	22.1
11	30.3	23.1	30	-----	27.6	23.3	29.9	20.9	29.4	24.1	30	21.9	34.1	24.1
12	31.3	22.9	29.1	-----	28.2	23.5	29.9	21.3	29.3	22.9	30.3	22.3	31.4	21.4
13	30	22.8	29.1	-----	28.8	23.8	31.9	22	28.8	24.3	30.8	22.7	31.4	24.1
14	31.7	23.3	31.5	-----	30	24.3	31.2	22	31.2	23.8	31.6	22.6	29.1	23.2
15	29.4	22.7	-----	-----	29.7	23.3	29.8	21.3	28.6	23.4	30.2	22.8	30	23.2
16	29.8	23.1	31.5	-----	30.6	24.2	30.8	21.4	31.4	24	31.3	22.6	28.2	22.3
17	31	22.9	32	-----	30	24.6	30.7	18.7	31.9	23.9	31.6	20.2	32.3	26.4
18	29.8	22.2	31.2	-----	28.4	24.3	29.5	19.8	30.4	24.6	31.2	21.2	30.2	24.1
19	31.5	21.6	32.1	-----	30.7	24.3	31.6	20.1	32.4	25.4	31.8	20.5	29.1	24.4
20	31.1	22.6	31	-----	30.2	23.7	31.4	22.5	32.4	24.1	31.8	22.5	32.3	24.1
21	30.5	21.9	31.5	-----	30.6	24	30.9	18.8	32.3	25.6	31.8	20.2	32.5	23.4
22	31.9	23	28.9	-----	29	24.4	29.9	20.5	29.8	24.7	31.7	21.2	31.4	25.1
23	31.7	22.2	30.5	-----	30	23.4	31.2	20.4	31.1	24.2	31.8	22.8	29.1	23.2
24	32	23	31.5	-----	29.2	25.5	30.4	20.6	28.9	24.6	28.8	22.1	32.3	23.1
25	25.3	21.3	31.4	-----	27.2	22.7	28.6	21.3	27.3	23.4	27.2	22.9	30	23.1
26	30.1	22.4	29.2	-----	28.5	22.8	28.3	21.3	27.9	23.5	28.3	22.7	28.2	22.1
27	29.8	22.4	28.9	-----	27.1	23.4	27.7	21.8	27.8	23.3	28.8	22.7	31.4	23.1
28	30	22.4	29.9	-----	29.4	24.3	29.6	21	28.4	24.6	29.6	21.5	30.1	24.1
29	30.8	23.1	31	-----	30.2	24.6	30.4	22.1	31.8	25.1	31.3	23.4	29.2	20.3
30	26.7	23.3	26.9	-----	27.2	24.3	25.8	20.3	27.1	24.4	26.3	21.9	30.1	20.5
31	27.9	23.5	26.6	-----	27.9	24.9	25.9	21.6	27.5	24.9	26.3	22.3	25.2	23
Mean	30.9	22.3	30.6	-----	29.5	23.6	30.4	21.0	30.6	24.0	30.6	22.1	30.6	23.2

Maximum and minimum temperatures at the stations of the Weather Bureau, October, 1921—Continued

Day.	Bacacay.		Bato.		Tabaco.		Sumay (Guam), Agaña.		Iriga.		Calapan.		Tiwi.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.4	22.8	28.5	23.5	30.2	24	30.2	25.7	32.2	22.4	30.5	22.6	30.4	24.6
2	29.8	22.3	31.7	23.5	30	23	30	24.6	32.1	21.9	31.5	23.5	30.5	23.6
3	30.8	22.8	32.1	23.7	31.7	23.8	30	24	31	22.4	31	23.5	31.6	24.5
4	31.2	22.4	29.5	23.9	31.3	23.9	30.8	25.5	33.6	23.1	31.5	23.3	31.5	24.4
5	30.9	22.7	31.8	23.9	31.9	22.5	29.8	25	32.4	22.1	31.5	24	31.4	23.4
6	30.7	21.6	31.8	23.1	32.2	22.5	31	24.6	33.4	22.8	32	24.2	30.4	23.2
7	31.2	22.9	32.3	22.9	33	21.9	30.6	24.6	33.2	20.5	31	23.1	31.5	23.6
8	31.2	21.6	32.3	23.3	33	22.8	30.2	23.1	31	21.2	30.5	23.1	32.6	24.5
9	30.7	22.6	32.2	23	32.4	22.5	30.3	24.4	32.1	22.1	30.8	23.1	32.2	24.3
10	30.4	21.3	32.1	23.1	32.8	23	29.2	24.5	33	21.3	30.5	23.5	31.4	23.3
11	30.7	21.4	32.1	23.1	31.3	23	29.7	23.9	32	21.4	30.2	23	31.2	23.2
12	30.4	21.7	30.8	23	29	21.9	29.6	24	31.3	23.1	30.5	23.9	30.4	22.2
13	30.7	22.2	30.7	23.7	30.4	23.7	29.3	24.3	29.8	22.8	31	23.2	30.9	23.8
14	31.8	22.6	29.3	23.7	28.3	22.5	29.8	25.4	29.5	23.3	30.1	23.5	31.8	24.7
15	30.2	21.6	29.7	23.1	30.5	22.8	27.6	26.2	29.8	22.3	30.2	23	32.6	25.6
16	30.8	21.7	29.4	23.7	26.5	22.9	29.7	25.4	32.1	22.4	30.7	22.5	31.2	23.2
17	31.4	22.7	32.1	22	31	21.5	28.9	24.1	29.8	22.2	31	23.5	31.1	23.3
18	31.9	22.9	32.3	23.7	31.4	23.6	30.5	25	30.3	22.8	31	24	31.2	23.2
19	30.6	21.7	30.5	22.9	30	22.1	30.8	25	32.6	22.7	31.5	23.2	32.6	24.6
20	30.2	21.4	32.4	22.9	32.2	23	30.8	23.6	32.4	22	31	24	32.8	24.5
21	30.7	22.2	32.1	22.4	32.4	22.1	28.7	25.8	32	20.6	31.5	23	32.7	24.7
22	30.3	22.6	32	22.3	32.2	22.6	29.2	25.7	30	20.4	31	23.6	32.8	21.5
23	30.7	22.4	30.1	22.3	27.2	23	30.2	25.2	33.3	22.5	30	23	31.7	23.6
24	30.5	22.2	32.1	23.4	31.2	24.1	29	24.9	30	22.2	30	24	32.2	24.8
25	29.8	22.7	28.7	23.4	30.2	23.3	29	25.2	32.1	22.8	30.1	22.5	31.4	23.5
26	29.8	21.2	28.3	23.1	26.7	22.2	29	23.8	29.1	21.9	27.2	18.5	31.6	23.4
27	30.8	22.2	28.2	22.7	27.3	22.5	31	23.6	30	21.8	30	23	31.8	23.7
28	30.5	22.4	29.5	22.1	26.5	20.5	31.3	23.7	29.9	21.1	30	22.5	31.7	23.4
29	30.1	23.8	29.9	23.7	29.5	23.2	29.9	23.5	32.2	22.5	30	22.6	32.4	24.6
30	29.2	23.6	32	22.6	32	23.6	31.2	24.3	30.1	21	31	23	31.2	22.2
31	29.6	23.1	28.3	22.4	26.2	23	30.7	24.8	31.4	20.5	30.6	24.5	31.6	22.5
Mean	30.6	22.3	30.8	23.1	30.3	22.8	29.9	24.6	31.6	22.0	30.6	23.2	31.6	23.7

Day.	Pasacao.		Virac.		Naga, Ca- marines Sur.		Tigaon.		Baras.		Libmanan.		Batangas.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	32.9	23	30.2	22.9	31.9	23.6	32	22.8	30.8	26	23.5	23.5	30.5	24.6
2	33.8	23.7	32.5	23.7	31.2	23.8	32.1	22.7	30	25.4	23.6	23.6	31.6	24.5
3	33	23.4	31.5	23	30.2	24.4	29.7	24	29.3	25.6	23.5	23.7	30.7	24.4
4	32.7	22.8	31	23.3	31.3	23.7	32	22.9	29.4	26	23.8	23.8	31.4	24.3
5	32.4	21.9	32.2	21.4	31.9	23.5	31.8	22	30.9	25	23.8	23.8	31.4	24.3
6	32	21.8	31.1	21.9	31.5	23.6	32.2	22.9	30.1	24.2	23.2	23.2	32.5	24.7
7	33.7	22.2	32.4	23.4	31.9	23.5	32.5	21.4	30	24.2	22.8	22.8	32.2	24.7
8	33.6	22.7	32.5	22.6	31	23.4	31	21.8	30	24.3	23	23	31.8	24.6
9	33.8	22.8	31.7	21.8	32.9	23.2	32.7	21.9	29.6	24.1	24.8	24.8	31.8	24.5
10	33.2	22.1	32.5	21.6	32.6	22.8	32.9	21.6	30	24.8	23.2	23.2	32.5	24.4
11	33.4	22.6	29.6	22.2	31.5	23.1	30.9	22.4	29.1	24.9	23.2	23.2	31.6	24.3
12	29.1	24.1	30	21	31.2	23.1	30.6	22.6	27.8	25	23.2	23.2	31.5	24.2
13	31.9	22.7	27.7	23	30.4	24	28.2	23	28.3	24.3	23	23	33.2	24.1
14	32	22.2	30.6	22.3	27	23.5	25.9	23.3	26	24	23	23	31.9	24.0
15	33.7	22.4	27.5	22.1	29	22.5	26.6	22.5	26.9	23.9	23.2	23.2	31.4	23.9
16	33.8	22.7	32	22.3	30.9	23.9	31.2	23.3	29.7	26	22.9	22.9	32	24.8
17	34	24.2	31.3	20.6	31.1	21.3	31.8	20.1	29.9	24.3	21.9	21.9	32.9	24.7
18	33.9	23	30.9	22.2	30.6	23.6	29.2	23	29.2	23.8	23.4	23.4	32	24.6
19	32.7	24.4	32.3	22.1	31.5	22.5	32.2	21.5	29.5	24.2	22.8	22.8	32.4	24.5
20	31.2	23	30.3	22.9	31.4	23.4	31.6	22.5	29.8	24.8	23.3	23.3	32.5	24.4
21	32.7	23	32.4	22.3	32.5	21.1	32.7	20.7	29.5	24	22.1	22.1	30.7	24.3
22	31.9	24.7	28.8	23.7	30.6	21	28.3	21	29.7	24.1	22.7	22.7	32.7	24.2
23	32.8	25.2	32.3	23.6	28.6	23.7	31.3	23	28.9	23.2	22.7	22.7	31	24.1
24	32.9	25.4	30.5	23.1	28.4	24	28.9	22.7	28.8	25.2	24.2	24.2	32.1	24.0
25	31.9	25.3	29.3	22.5	29.7	23.5	27.6	23.1	28.1	24.5	23.2	23.2	32	23.9
26	32.7	23.1	29	22.7	26.4	23.2	26.2	22.2	26.9	24.1	23.2	23.2	32	23.8
27	32.9	23.7	28.8	21.3	28.1	23	26.9	22.3	26.8	24.2	22.5	22.5	31.7	24.7
28	32	23.2	31.1	21.1	30.3	21.2	31.2	21.3	27	24.5	22.9	22.9	32	24.6
29	31.6	23	30.4	23	32	22.1	31.6	22.6	28	25.1	23.2	23.2	32.5	24.5
30	33.7	23.8	28.3	22.5	27.6	22	25.2	21.8	28.9	24.9	23.1	23.1	33.1	24.4
31	32.4	22.9	28.5	23.4	25.5	21.1	26.6	21.5	29	24.3	23.1	23.1	31.6	22.5
Mean	32.7	23.3	30.6	22.4	30.3	23.0	30.1	22.3	29.0	24.6	23.3	23.3	31.9	24.3



Maximum and minimum temperatures at the stations of the Weather Bureau, October, 1921—Continued

Day.	Ragay.		Calatagan.		Balayan.		Lipa.		Lucena.		Atimonan.		Nasugbu.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1.....	31	22.1	32.1	20.7	31	21.5	30.5	21	30.5	22.4	30.6	24	31	-----
2.....	31.7	22	32.8	20.6	32	21	29.5	21.1	31.1	21	30.1	26	31.1	-----
3.....	31.4	22	32.2	19.4	31.3	22	29.4	22.1	32	21.5	29.4	25.4	34.4	-----
4.....	31.8	22.3	32.1	20.6	31	22	30.6	21.3	31.1	22.9	29.1	25.5	32.4	-----
5.....	31.8	23	32.6	21.1	33	23	31.6	21	29.1	22.5	27.9	25.2	32.2	-----
6.....	31.8	23	33.6	20.6	31	22.5	30.1	22.2	31.2	21.8	30.3	24.2	32.1	-----
7.....	31.6	21.2	33.3	20.7	31	23	29.7	21.3	31.7	21.5	30.1	25.8	31.6	-----
8.....	28.9	21.3	32.7	22	31	23	29.1	20.5	31.9	22.7	29.3	25	31.7	-----
9.....	31.2	20.3	32	20.7	32	23.3	29.6	21.5	31.3	22	29.2	24.2	31.9	-----
10.....	31.8	21.6	32.7	22.2	31.5	21.5	29.4	22.1	31.1	22	30.4	22.9	32.7	-----
11.....	30.5	22.1	32.4	20.3	31.5	22	29.8	22	29.8	22.4	28.1	24.9	31.2	-----
12.....	30.5	23.1	32.5	23.1	31.5	24	28.9	20.9	30.3	22.1	30.2	25	32	-----
13.....	30.5	23.6	32.8	22.1	31.5	23.5	30.9	19.8	30.3	22.9	29.9	25	31.5	-----
14.....	29.8	22.1	34.2	21.9	32	23.5	31.1	20.9	30.1	22.8	28.4	24.5	34.2	-----
15.....	30.3	22.6	32.2	21.6	33.5	23	32	21.5	29.5	21.5	29.6	23.7	33	-----
16.....	31.2	20.5	32.7	20.6	32.5	22	32.8	20.1	30.5	21.1	29.8	25.9	33	-----
17.....	31.3	21.7	32.2	20.2	33	23	31.2	19	30.7	22	30.2	25.9	33.1	-----
18.....	28.8	21.7	33.6	21.9	33.5	22	29.7	21.3	30.5	21	30.4	25.8	33.2	-----
19.....	31.4	21.1	32	20.6	32	22.5	30.9	20.2	31	22.3	30.6	26	33.5	-----
20.....	31.2	22.1	32.2	21.8	31.5	24	30.2	19.8	31	21.7	30.7	23.1	33.5	-----
21.....	30.8	21.3	32.8	21.6	32	22	29.9	20	30	21	30.6	24.3	32	-----
22.....	29.2	20.3	33.7	21.8	33	23	30.4	20.5	30.5	21.3	30.8	25.3	32	-----
23.....	29	23.1	31.8	23	32	24	29.7	21.3	28.7	21.2	27.9	23.6	31.8	-----
24.....	28.2	23.5	32.5	23	31.5	24.5	30.8	22.1	29.2	22.1	28.7	23.4	32.2	-----
25.....	29.2	22.2	32.4	20.2	32.5	23.8	30.3	22.6	29.5	22.2	28.9	25	32.5	-----
26.....	26.8	23.1	31.5	20.7	32	22	28.7	21	28	21.5	27.2	22.9	31.5	-----
27.....	29.2	22.1	32.2	20.6	30.3	23	30.6	20.7	29.6	21.4	29.7	24.5	32.8	-----
28.....	29	21.1	31.4	21.9	32	20.5	30.7	21.9	28.8	20.1	27.9	24.6	33.6	-----
29.....	31	22.1	32.2	23	31.5?	21	30.2	20.3	30	21	30.6	25.5	33.7	-----
30.....	29.6	21.1	31.9	20.6	32	22	29.7	19	30	22.1	29.8	25.9	34	-----
31.....	-----	22.2	31.7	20.5	32.5	24.8	31.6	21.4	28.1	22.5	27.9	24.6	33.2	-----
Mean.....	30.4	22.0	32.5	21.3	31.9	22.7	30.3	21.0	30.2	21.8	29.5	24.8	32.5	-----

Day.	Ambulong, Tanauan, Batangas.		Daet.		Mendez Nuñez.		Alfonso.		Indang.		Canluban, Calamba.		Silang.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1.....	31.5	23	30.3	22.2	25.5	20.5	26.5	21.3	28.8	22.2	29.6	21.2	29.5	21.7
2.....	32.2	22.4	30.6	23.6	28	20.5	27	22.7	30.1	21.2	31.4	21.5	29	21.2
3.....	32.3	23.5	30.5	24.1	27	20.9	26.5	21.4	29.7	21.7	31	22	29	21.5
4.....	33	23.5	30.6	23.7	28	20.5	28.6	21.1	29.8	22.2	31.9	20.8	29.5	20.6
5.....	33.8	24.1	30.5	23.8	27.5	21.5	28	22.3	30.2	23	31.4	22.3	30	20.1
6.....	34.1	24.9	31	22.6	29	20.5	29.5	21.1	30.7	21.8	32.2	22	30.1	20
7.....	33	24	31	21.7	27	21	28.5	21.6	30.3	22.4	31.5	21.9	29.5	20.3
8.....	32.4	23.6	29.2	22.6	26.5	21.5	27	21	31.3	22	32	22	30	19.7
9.....	32	23	30.6	22.5	27	21	27.5	21.6	30.4	22.3	31.6	22.7	30	19.5
10.....	31.2	23.3	30	22.9	27.5	20	27.6	21.6	30.1	22.2	31.4	21.5	30.4	19.4
11.....	30	23.7	29.4	23.5	26	20.5	26	21.7	28.4	21.9	29	22	30.3	20
12.....	31.8	24.7	30.5	23.3	26	20.2	26.5	21.5	28.3	21.9	30.6	21.9	30.3	20.3
13.....	32	24.1	30.2	25.7	26	20.2	27.2	20.7	28.8	20.7	31.4	22.7	30.2	20.5
14.....	32.7	24.6	27.2	24	27	21	28.2	21.2	29.2	21.9	31	22.2	30.5	20.5
15.....	32.4	23.9	29.7	23.4	27	21	29	20.6	29.5	22.1	31.7	22.5	30.5	20.4
16.....	31.7	22.6	30.2	22.5	27.5	20	28.5	21.4?	29.8	21	31.5	21.6	30	20
17.....	32	22.2	30.2	22	27	20.5	28.5	21.3	29.6	20.6	31.9	22	30.1	20.3
18.....	32.8	22.9	29.6	23.2	28	20.5	28.5	21.4	30.8	20.9	32.2	21.8	29.7	20.8
19.....	33.2	22.8	30.4	21.7	28	20.5	29.5	21	30.5	21.9	32.4	21.8	29.8	20
20.....	33.1	22.3	30.1	22.9	28	20.5	30	21.1	30.8	22	32.2	21.4	29.6	20.3
21.....	32	22.9	30	21.8	25.5	20.5	27.5	21.1	29.8	21.4	32	21	30	20.6
22.....	32.1	23.5	29.1	23	27	20.5	28.2	21.3	29.5	21.9	31.8	21.2	30	20.1
23.....	31.8	24.8	27.5	23	26.5	20.5	27.5	21.1	29	22	31.2	21.4	28	20
24.....	31.1	25	27.5	23	26.5	20.5	27.5	21.3	30.3	21.9	32	22.2	28.4	19.7
25.....	31.3	23.2	29.1	25	27	20	28.5	21	29.7	21.2	32.1	22.1	27.5	19.5
26.....	28.3	24	26.6	23	25	19	26.5	20.2	27.4	20.4	29.4	22.3	27.5	19.1
27.....	31.9	23.8	28.9	22.5	27	20.5	28	21.5?	29.5	21.8	31.6	21.6	27	20.5
28.....	30.8	22.4	27.5	21.7	25.5	19.9	27	21.2	29.4	21.7	30.6	21	27.8	20.2
29.....	31.5	23.7	30	23	26?	21.5?	28.2	21.3	29.3	22.2	31.5	22	27.4	20.4
30.....	32.3	22.9	28.6	21.9	28	20.5	29.2	20.7	29.8	21.6	32	21.8	27.5	20.7
31.....	29	24.8	27.6	23.5	25	21	27.5	22.1	27.7	22.8	29.8	21.6	27.8	20.1
Mean.....	31.9	23.6	29.5	23.0	26.9	20.6	27.9	21.3	29.6	21.8	31.4	21.8	29.3	20.3

Maximum and minimum temperatures at the stations of the Weather Bureau, October, 1921—Continued

Day.	Maragondon.		Paracale.		Santa Cruz, Laguna.		Buenavista, General Trias.		Cavite Naval Station, Cavite.		Manila.		Antipolo.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	30.3	21.6	29.2	23	29.8	22.5	30.2	22.2	32	30.2	23.3	29.9	21.7	
2	30.6	21.7	29.2	23	31.6	22	30.5	20.4	32	31.5	22.1	31.6	20.6	
3	31.4	22	29.5	23	31	22.5	30.9	20.3	33.5	31.5	23.1	31.8	21.5	
4	31.3	23	29.5	23	31.8	23.5	31.2	21.9	32.2	32.2	23.2	32.3	22.7	
5	32	23.2	30	23.5	30.8	24	31.2	22.7	34	24.4	31.8	32.7	22	
6	31.6	22.3	29.8	23.5	32.3	23	31.5	22.2	33.4	23	32.8	32.5	21.2	
7	31.5	22.4	29.8	23.5	31.5	22.5	31.2	22	33.5	23.5	32.4	31.6	21.3	
8	31.3	22.7	30	24	31.8	23.7	31.5	21.9	32.5	23.5	32.7	31.8	22.3	
9	31.2	22.2	30.5	24	31.2	23.7	31.5	20.9	33	23.7	32	30	21.7	
10	31.6	22.6	30	24	31.8	23.5	31.2	22.2	29.7	23.8	31.4	30.5	21.3	
11	29.7	22.7	30	24	30.8	23.3	29.5	21.9	32	24	29.6	27.3	21.8	
12	30.2	22.8	30	24	30.3	22.9	29.2	21.9	33	23	31.4	30.4	21.5	
13	30.8	21.7	30.2	24.2	31.6	23.3	29.7	19.5	32.5	23.6	32.4	31.5	20	
14	31.3	20.3	29	23	31.6	23.7	29.9	21.7	33	23.6	32.4	31.6	20.2	
15	31.8	21.6	29.2	23	31.6	23.5	29.7	20.7	34	23.7	32	32.8	21	
16	30.8	21.1	29.5	22.2	31.9	21.7	30.9	20.7	33	23.4	32.4	33.8	20.4	
17	31.3	20.9	29.8	23.8	32	22.4	30.8	21.2	34	23.6	31.8	32.6	20.4	
18	31.3	21.3	29.8	24	32.2	23	31.7	20.8	33.5	24.3	32.5	32.8	20.5	
19	32.6	21.8	30	24	32.6	21	31.5	21.2	33.5	23.9	33.1	32.8	20	
20	31.6	22.2	30	24	32.4	21.9	31.5	20.6	32.5	23.5	31.7	32	21	
21	31.5	21	30.2	24	31.8	21.5	30.9	21.2	33.5	24	32	32.8	20.2	
22	30.9	22.2	30	23.5	32	21.9	30.8	21.2	33.5	23.7	32.9	32.2	19.2	
23	30.8	21.1	30	23.5	30.7	23.2	30.7	19.8	34.7	23	32.8	32.8	20.3	
24	31.8	21.5	30	24	31.3	23.2	31.2	20.8	34	23.6	34.4	32.4	20.3	
25	32	19.3	30	24	31.6	23.7	30.5	19.6	34	24.6	33.8	32.8	20	
26	29.3	20	30.2	24.2	30.8	23.5	29.2	19.2	32.5	23.4	31.7	31.7	19.4	
27	31.7	21.8	30	24	31.3	22.2	30.9	20.7	33	23.4	32.2	33.5	20.3	
28	31.7	21.3	30	24	30.8	22.3	30.2	21.5	33.5	23.6	32.2	32.8	20.8	
29	31.9	20.5	29	23.2	31.3	21.8	30.2	21.2	34	23	33	32.7	20.7	
30	32.5	20.5	29	24	31.5	21.8	31.5	20.5	34	23.5	33.4	33.5	20	
31	31.1	22.5	30	24	29.1	23.7	30.4	21	-----	22.8	32.1	31.6	22.5	
Mean	31.3	21.7	29.8	23.6	31.4	22.8	30.7	21.1	33.2	23.5	32.2	22.5	32.0	20.9

Day.	Balanga.		Malolos.		San Fernando, Pampanga.		San Isidro, Nueva Ecija.		Iba.		Concepcion, Tarlac.		O'Donnell, Capas, Tarlac.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	31.8	22.5	31.3	23	32	22.7	30.7	22.9	31	23	33.6	22.6	32.6	20.4
2	32.6	23.2	33	22.3	32.5	21.5	31.4	22.5	31.5	22.6	33.3	20.7	32.1	20.2
3	33.4	23.1	33.9	23.5	33	22.7	32.4	23.4	31.5	23	34.1	20.9	32.7	21.2
4	33.8	24	33.5	24	34	23.4	33.5	24	31.9	24.2	34.6	23	33.2	22.2
5	34.1	24.2	33.6	23.9	34	23	33.6	22.8	32	23.9	35.1	23.6	34	22.1
6	32.9	22.5	32.7	21.5	33.5	21	32.4	23.3	31.5	24.5	34.3	22.7	32.9	22.1
7	33.1	22.6	32.9	21.7	33	22.7	32	21.9	31.2	22.3	34.6	22.2	32.7	20.7
8	33.1	24	33	22.6	33	-----	31.4	23	31.6	23.5	34.3	23.4	32.7	21.7
9	33.2	24.5	32.5	23.5	33	22.5	32.4	24	31.5	23.5	34.1	23.6	32.2	21.2
10	33	24.2	32.3	23.5	33	23	31.9	24.4	31.4	23.4	34.4	23.5	32.7	21.4
11	31.2	24.1	27	23.1	30	22.7	29.2	23.8	31	23.3	33.7	23.4	29.9	21.2
12	31.4	24.2	31	22.7	32	-----	31	22.4	32.5	23.2	33.6	22.2	30.9	20.7
13	32	22	31	21.4	33	20.7	31.1	21.8	32	21.8	33.4	20.2	31.2	19.2
14	32	22.3	31.6	22.2	32.5	-----	31.2	22.5	31.5	21.9	34.1	21	31.7	19.2
15	32.4	22.2	32	22	33	21.5	31.9	22	32.1	21.5	34.5	20.2	32.2	21.2
16	32.7	22.7	32.3	22	32.5	21.5	32.9	23.4	31.6	21.6	34.3	21.8	32.2	20.1
17	33.1	22.2	32.5	22.1	33	20.9	31.9	22.6	31.7	21.2	34.5	21	32.3	19.8
18	33.3	22.5	33	22.3	33	22.1	31.9	23.4	32	22	34.6	20.2	32.7	21.2
19	33.1	22.5	33	22.3	-----	22	33.4	23.5	31.4	21.8	34.8	21.7	32.2	21.2
20	32.7	22.5	33.5	23.5	32.5	23.7	32.1	24.1	31.7	22.5	34.5	21.7	32.4	20.7
21	32.7	22.6	32.5	22.2	32.5	21.7	31.6	22.2	32	22.2	34.4	21.5	32.6	20.7
22	32.6	20.9	32	20.5	32	19	32.2	20.8	31.6	20	34.5	19	32.2	17.7
23	32.4	21.8	31.5	21.5	32.5	21	32.8	21.5	32	20.6	34.4	18.2	32.6	21.7
24	32.6	22.5	32.5	21.6	32.5	21.1	34.4	21.9	32.4	21.5	34.5	18.4	32.2	20.6
25	32.7	21	32.3	21.6	32	19.6	33	21	31.9	20	35.1	19.2	32.2	18.7
26	31.4	21	31.8	20.5	32.5	19.1	33	20.5	32.1	20.1	34.8	21.9	32.2	17.2
27	32	22.2	32.7	21.9	32	-----	32.9	21.2	31.5	21	34.7	18	32.1	17.8
28	32.1	21.4	-----	21.3	32.5	20.7	32	21	32.2	21.3	33.7	18	31.2	17.8
29	31.8	21.7	-----	21.5	32.5	20.3	31.4	21.5	33.2	22.4	33.6	18.3	31.2	18.4
30	31.8	21	32.2	20	31.5	20	31.2	21	32.2	21.6	33.7	21.2	31.2	18.7
31	32.1	24	31.5	22.5	30.1	22.6	29.6	23.1	32.4	21.6	32	19.5	31.4	18.8
Mean	32.6	22.6	32.2	22.2	32.5	21.6	32.0	22.5	31.8	22.2	34.2	21.1	32.1	20.2

Maximum and minimum temperatures at the stations of the Weather Bureau, October, 1921—Continued

Day	Tarlac.		Camiling.		Baler.		Dagupan.		Rosario, La Union.		Tubao.		Itogon.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	29	22.4	33	22.5	31.2	22.7	32.9	23.8	30.4	22	32.1	22	30.1	18.1
2	31.2	22	34	23.3	31.9	21.5	33.7	23	31.7	21.8	32.9	22	31.2	18.3
3	33.8	20.8	33.5	23.5	33	22.1	33.7	23.9	22	22	33.3	22	30.9	18.6
4	34.2	22.4	34	23.5	32.6	22.5	34.7	24.7	33.3	22	34.6	22	32	18.6
5	34.8	22.7	34	22.7	32.5	23.8	34.8	24.6	34	22.1	34.4	22	31.9	18.2
6	34	21.8	33.5	22.3	31.9	21.9	34.1	23.2	31.6	23.4	34.4	22	31.9	18.9
7	34.4	21.4	32.5	20.7	33	22.1	33.7	23	34	22.1	33.8	22	31.9	18.9
8	33	21.2	33	20.7	32.3	23.1	34.4	23.5	34.4	22.5	34.9	22	30.4	19.1
9	33.4	22.8	33	20.5	30.5	22.5	34.1	23.6	33.2	22.7	34.7	22	30.5	20
10	32.2	22.5	32.5	23.5	30.5	23.4	33.8	23.2	32.7	22.8	34.9	22	30.2	19.3
11	31.6	22.6	32	20.2	32.1	23	32.9	23.8	32.9	22.5	33.9	22	30	19.5
12	32	20.7	33	22.7	30.9	21.8	33.6	23.2	32	21	33.1	22	30.2	17.8
13	31	20.3	32.5	22.4	31.7	21.7	33.9	23	32	21	33.3	22	31.1	17.1
14	32.6	20.6	33	22.4	31.4	23.4	33.5	23	31	20.9	32.8	22	31.3	16.8
15	34	20.4	33	21.3	31.5	21.5	34.4	22.9	32	20.5	33.9	22	31.2	17.1
16	33.8	21.5	33	21.7	31.5	22.1	34.4	33.8	32.2	21.1	33.9	22	30.6	18.3
17	33.4	21.4	33.5	21.5	31.8	22.5	34.8	23.1	32.7	21.1	34.6	22	31.1	17.6
18	34.4	22.6	33	21.7	31.3	23	34.7	23.5	33.6	22.5	34.1	22	31.3	18.8
19	34.5	21.7	33.5	22	30.5	22.5	34.8	23.3	33.7	22.6	34.1	22	31.9	19
20	34	22.8	33.3	21.7	31.7	22.4	34.9	24.2	32.7	22.6	33.9	22	31.4	20.7
21	34.2	21.6	33.5	21.5	31.6	22.4	35	23.1	32.9	22	34.2	22	31.3	19
22	33	19.2	33	22	33.3	20.4	33.8	22	33.9	24	33.1	22	31.8	15.2
23	34.6	20.3	34.5	20.7	32.2	21.7	35.3	22.3	34	24.4	33.7	22	32.5	15.7
24	34.4	20.8	34.5	20.5	32.8	21.8	34.7	22	33.1	20.1	33.7	22	31.6	16
25	32	20.2	34.5	21.5	35	22.1	34.8	22.3	33	21.5	33.6	22	30.9	15.6
26	31.8	19.8	33.5	20	35.5	20	34.3	21.5	32.9	22	33.3	22	31.6	15.2
27	33.6	19.8	34	21	34.3	19.6	34.4	21.7	33.3	24	34.3	22	31.9	15.3
28	33.2	20.5	33.5	21.5	31.5	23	34.7	23	32.3	20.6	33.6	22	31.7	16.9
29	33.6	20.2	33	20.5	32.5	22.1	34.1	22.1	32.4	21	32.9	22	31.8	17.6
30	32	19.9	33.5	20.7	33.5	20.4	34.8	22.1	32.5	20.3	34.1	22	32.1	18.3
31	33	22.4	34	20.5	29.8	23.5	33.8	22.8	33.3	20.2	34.1	22	29.5	18.3
Mean	33.1	21.3	33.4	21.7	32.1	22.1	34.2	23.1	32.8	21.9	33.8	22	31.2	17.9

Day	Bolinao.		Aringay.		Baguio.		Sablan.		Naguilian, La Union.		Kapangan.		Atok.	
	Maxi- mum.	Mini- mum.	Maxi- mum. <sup>a</sup>	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.7	25	35	21.7	32.2	15.2	17	17	32.6	22.1	24.4	17.5	21.6	14.4
2	32	23.5	34.2	22.2	21.8	14.6	18.1	18.1	32	23	24	18	23.6	14.4
3	32.3	24.1	34	22	22.1	15.7	17.1	17.1	33	22.8	25	18.5	22.1	14.3
4	31.6	24.8	35.3	22	23.3	15.3	18.1	18.1	33.1	22.5	23.5	17.5	22.6	15.1
5	32.8	27.5	36	22.3	24.6	15.5	18	18	33.5	23.6	25	17.8	22.3	14.5
6	32	25.1	36	23	22.6	16.5	16	16	33.2	24.2	24.5	18.5	21.7	15.3
7	32.5	23.3	35.5	22.5	22.5	16.2	18	18	33	23.5	24	18	21.6	15
8	32.5	24.6	33.2	22.5	23	15.6	18	18	33.9	22.6	24	18	22.4	14.3
9	32.7	24.7	36.2	22.2	23.5	15.8	17.1	17.1	32.6	22.7	24.3	18	21.7	14.2
10	33	23.7	36	22	22.9	15.7	18	18	33.5	22.1	24	18.2	23.4	14.4
11	32.8	24.5	36.1	22.3	21.6	15.6	17.1	17.1	32.6	22.3	23.5	18.5	21.7	14.1
12	32.4	24.1	36	21.3	22.8	14.6	17	17	33	22.1	24	18	22.2	13.9
13	32.7	23.2	36	21.2	23.9	14.3	16.1	16.1	32.1	22.9	25	17.5	22.9	13.8
14	32.5	23.3	36	21	22.7	14.8	17	17	33.1	21.1	24	16.3	22.3	13.2
15	33	22.7	34.2	21.5	24.5	15	16.1	16.1	33.5	21	26.5	17	23.8	13.9
16	33.6	24.2	34	21.3	22.6	14.9	17.1	17.1	33.6	22.5	26	18.5	22.8	13.8
17	33.8	24.2	34	21.5	23.2	14.8	17	17	33.5	22	25	17.5	23.7	13.5
18	33.5	24.3	36	22	23.2	15.1	17	17	33.1	22.6	23.6	17.8	22.9	14.2
19	33	23.7	36	22	24	14.7	17	17	33.4	21.2	23.5	17.5	24.2	13.4
20	33	24.5	36	22	22.4	15.8	18	18	34.4	23.5	22.5	18	21.8	15
21	33.3	24.3	35	22	22.8	14.5	17	17	33.6	21.9	23.5	17	22.1	14.1
22	33	23.5	36	21	24.6	14	17	17	32.8	20.7	23	16.2	24.2	12.8
23	33.5	22.6	34	20	25.2	14.8	16	16	33.3	20.1	23.2	14	24.8	13.9
24	33.2	23.2	36	21	25	15.1	16	16	34.1	20.2	25	15.3	24.6	13.6
25	33.4	23.2	35.5	21	23.7	14.2	17	17	33.5	20	24	14	24.4	12.6
26	32.5	23.2	36	20	23.7	14	16.1	16.1	32.9	20	25	15.5	24.4	12.6
27	33.2	23.4	35	20	24.6	14	17	17	33.1	20	25	15.5	23.3	12.6
28	33.2	23.2	36	21	25.2	15	16	16	32.7	20.5	25.2	16.5	25.3	13.9
29	33.2	23.2	34.5	21	25.1	15.5	17	17	32.6	21.3	24.3	18.1	22.9	13.8
30	33	23.5	35	21	25.2	15.7	17	17	32.8	21	26	17.6	23.6	13.9
31	33.4	24.1	35	22	22.3	15.7	17	17	32.8	21.3	25	17.5	22.7	12.4
Mean	32.8	23.9	35.2	21.6	23.4	15.1	17.0	17.0	33.1	21.8	24.4	17.2	23.0	13.9

<sup>a</sup> These maximum temperatures seem to be too high.

Maximum and minimum temperatures at the stations of the Weather Bureau, October, 1921—Continued

Day.	San Fernando, La Union.		Echague.		Balaoan.		Tagudin.		Candon.		Vigan	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	33	23.5	31.6	22.8	32.6	22.4	32.4	23.1	31.7	23	31.3	23.6
2	32.5	23.5	30.7	22.1	31.6	22.8	32.1	22.7	31.5	22.2	32.4	22.8
3	33.7	23.4	30.3	22.6	31.4	22.4	32.2	23	31.6	23.2	33.2	23.5
4	33.5	23.3	30.8	22.7	31.9	23.2	32.8	23.9	32.6	23	33.4	22.5
5	33.5	24	29.8	22.8	32.6	23.4	33	24.1	33.4	23.2	33.2	23
6	33.3	24	30	22.2	32.6	24.2	32	25	32.4	24	32.3	23.2
7	32.5	24	31.7	23	32.3	23.4	31.9	23.4	31.5	23.4	32.4	23.5
8	33.5	23.5	31.5	22.5	31.5	22.6	33.2	23.4	32.4	23	32.1	23.4
9	33.3	22.8	31.7	23.5	31.6	22.3	32.3	23.3	32.5	22.8	31.6	23.5
10	33.2	23.67	31.5	22.9	31.8	22.4	32.4	22.5	32.4	22.4	31.7	23.5
11	33.3	23.4	29.5	23	31.8	23.2	31.8	23	31.6	23.2	31.7	23.3
12	32.3	23	29.9	22.4	32.5	22.1	31.6	23	31.4	22.1	32.6	24
13	32.9	22.7	28.8	21.8	31.3	22	32.3	22.4	32.5	21	33.2	23
14	33.1	22.2	30	22.2	31.4	21.3	32.4	23	31.6	21.2	32.3	22.9
15	32.9	22.9	30.8	22.1	31.9	21.7	32.5	22.2	32.5	22.3	32.5	23.7
16	33.5	23	32	21.5	32.1	22.7	32.3	23.4	31.7	22.2	33.2	23.1
17	33.5	23	32.7	22	32.5	21.9	32.8	23	32.4	22.1	32.6	22.9
18	33.3	22.9	32.5	21.5	32.4	22.8	32.9	23.2	32.4	23.2	32.5	23.5
19	33.2	22.6	32.7	22.2	32.5	21.7	32.9	23.2	32.5	22.4	33.2	23.5
20	33.7	24	32.3	22.1	32.3	24.2	32.6	25	32.5	22.4	32.7	24.4
21	33.5	23.5	32.8	21.5	32.8	21.9	32.6	23.2	32.4	22	32.7	23.7
22	33.5	22	32.5	19.5	32.3	22.2	32.1	22.1	32	21.1	32.9	23.7
23	32.8	21.6	32.6	20.3	31.7	20.7	32.1	21.6	31.6	20.4	33.5	22.1
24	32.6	22	32.2	20.3	32.2	20.7	32.3	22	32.5	21.1	32.5	22.9
25	33	21.7	29	21.2	31.8	20.8	32.5	22	32.4	21.2	33.2	22.8
26	32.5	21	29	21.4	32.1	21	32.3	22	33.5	20.4	34.3	22.9
27	33	21.2	29.5	20.6	31.8	20.4	32	22.1	32.4	20.3	32	22.9
28	33.2	21.8	29.2	22.2	31.6	21.2	31.8	22.1	31.8	21	32.7	23
29	32.7	22.1	31.8	20.9	31.7	21.3	32.2	22	32.7	22	31.9	23.1
30	32.8	22.5	30.5	21.6	32.1	22.6	32.5	22.1	32.7	23	32.1	23.1
31	31.5	23	28.2	22.1	31.9	22.3	31.6	23.2	32.6	23	33.5	22.8
Mean	33.1	22.8	30.9	21.9	32.0	22.2	32.3	22.9	32.2	22.2	32.6	23.2

Day.	Bangued.		Tuguegarao.		Sinait.		Batac.		Solsona.		Laog.	
	Maxi- mum. <sup>a</sup>	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	34.2	23.3	33.6	23.4	32.7	23.3	32	20.6	33.2	24.1	30.2	24
2	34.8	22.1	31.4	23.3	32.5	23.9	31.9	22	33.2	22.5	32.7	22.7
3	35.2	23.6	31.6	22.9	33	23.5	33.2	22	34.1	22.3	33.6	23.7
4	35.9	22.5	31.4	22	32.9	24.1	32.9	22	33.9	22	33.2	21.5
5	36.8	22.6	29	23.2	32.8	23.8	33.5	21.6	34.9	22.5	33.6	24.6
6	35.8	23.2	29.6	23.3	32.7	22.6	32.8	23	33.9	22.6	32.9	25.3
7	35.4	22.8	30.9	23.1	33	23.1	31.9	22.9	33.5	22.6	33.3	23.7
8	35.7	22.4	32.7	22.5	32.8	23.8	31.8	22.6	33.9	20.9	33.5	21.5
9	35.5	22.6	33.3	23.6	32.6	22.6	33	22.5	33.1	22.3	33	21.8
10	35.8	22.6	33.1	23.5	33.2	23.8	32.9	22.4	33.4	21.9	32.7	22
11	35.3	22.4	28.7	22.5	32.8	22.5	32.8	22.7	33.5	21.6	33.9	21.7
12	34.8	23.2	30	22.8	33.6	21.6	33	20.6	32.77	21.7	33.6	21
13	34.5	21.8	31.3	22	34.2	21.5	33	20.4	32.4	20.3	33.2	21
14	36	21.4	32.9	22.1	32.5	23	33.4	20	34.3	20.5	34.7	21.1
15	36.3	21.3	34	21.6	32.6	22.5	33.5	20.7	34.4	20.5	33.6	20
16	35.8	21.1	34.3	20.5	33.1	23.8	33	20.9	33.9	20.3	33.2	20.9
17	35.9	21.5	35.6	21	32.5	22	33	21	34.1	20.1	33.2	21.1
18	35.2	20.2	35	22.2	32.8	22.5	33.4	20.5	33.9	20.3	33.2	22
19	36.4	22.5	35.2	21.6	33.1	23.5	33	19.9	34.4	20.5	33.3	21.2
20	35.2	22.5	35.8	21.1	33.2	23.6	33.5	21.5	34.3	20.5	33.3	21.6
21	36.6	22.3	35.4	21.2	33.2	22.6	33.2	20.9	34.8	20.6	33.6	21.5
22	37.2	20.5	34.2	21.1	33	22.4	33.3	19.7	33.57	20	34.3	19.5
23	37	20.1	34.2	20.6	33.1	23.4	34	19.3	34	19.7	33.7	19.1
24	36.5	20.3	34	19.4	32.5	22.5	33.7	19	33.9	19.8	34.8	19.4
25	35.9	21.8	29	22.4	33	23.6	34.9	19.9	35.6	19.8	34.6	20.6
26	35.4	20.2	29.8	21.3	33.2	22.5	34	19.6	35.2	20.4	34.1	20.3
27	36.8	22.8	29.8	19.6	33.2	22.7	33.2	19.4	35.2	19.5	33.7	19.1
28	37	21.7	31.7	23	32.6	23.6	33.8	21.7	34.7	20.5	33.9	20.5
29	35.9	22.2	33.5	21.6	32	22.3	33.6	21.9	34.2	21.5	33.2	21.7
30	37.3	22.1	32	22.9	33.2	21.8	33.2	21.5	35.4	21	33.5	22
31	37.2	21.7	32	22.5	32.8	22	33.9	21.4	35.8	21.4	34.1	21.4
Mean	35.9	21.9	32.4	22.1	32.9	22.9	33.2	21.1	34.1	21.0	33.5	21.5

<sup>a</sup> These maximum temperatures seem to be too high.

Maximum and minimum temperatures at the stations of the Weather Bureau, October, 1921—Continued

Day.	Pasuquin.		Aparri.		Cape Bojeador.		Basco.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
1.....	35.2	23.6?	26.8	22.9	25.7	23.3	28.2	24.4
2.....	33.6	25.6	30.4	25	28.7	23.2	28.5	23.8
3.....	34	25.1	29.5	25	28.3	24.2	28.8	24.1
4.....	33.9	25.4	30	25.5	28.6	23.8	28.6	23
5.....	33.8	25.8	28	23.5	28.4	24.2	28.2	24
6.....	33.6	25.6	29.4	23.8	27.7	24.2	27.8	23
7.....	33.8	25.5	28.9	24.5	28.6	23.6	28.5	23
8.....	35.7	23.5	27.4	23.1	28.7	23.5	28.3	24
9.....	35	22.1	29.1	23.5	28.7	23.7	28.2	23
10.....	34.5	22.6	29.6	24.1	28.5	23.5	28.4	20.6
11.....	34.3	22.7	30.2	25.3	28	23.6	28.4	23
12.....	33.7	25	28.6	24	28.9	23	27.7	22.6
13.....	33.3	25.1	30.1	23.2	28.7	23.4	28.4	22.7
14.....	35.2	24.9	29.7	24.3	28.5	23.5	27.2	22.6
15.....	34.8	21.2	30	22.3	31	22.7	29.2	21.7
16.....	34	21.9	29.9	21.8	30.2	23.9	29.5	19.1
17.....	34	20.7	30.5	21.8	32.1	23	30.4	21.5
18.....	34.5	21.9	30.4	22.9	31.3	23.5	31.3	22.7
19.....	34.6	21.7	30	22.9	31.2	23	30.8	20.5
20.....	35	22.8	30.4	21.2	31.4	23.4	31.5	21.2
21.....	35.9	21.7	31.4	21.9	31.1	23.2	31.5	20.4
22.....	37	20.7	30.5	22	30.1	23.6	29.8	21.9
23.....	35.4	-----	31.8	22	33.1	24.3	31.3	22.1
24.....	37	20.3	31.1	22.4	30.4	24.1	30.8	23
25.....	35.5	22.5	30.5	22.5	29.3	24	25.4	22.5
26.....	34.7	24.8	30.1	22.1	29.1	23.5	28	23.4
27.....	36.5	21.5	30.4	21.7	29.8	23.5	25.4	22
28.....	36.6	22.6	29.5	23.2	30.8	23	27.3	22
29.....	35.3	22.6	31.4	22.1	30.8	23.2	24.9	22
30.....	35.8	23	28.6	23.5	31.5	22.7	24.8	21
31.....	36.4	21.9	31.1	22.4	31.7	22.4	28.8	22.5
Mean.....	34.9	23.1	29.8	23.1	29.7	23.5	28.6	22.4



## SEISMOLOGICAL BULLETIN FOR OCTOBER, 1921

By Rev. MIGUEL SADERRA MASÓ, S. J.

*Chief, Seismic and Magnetic Divisions, Weather Bureau*

### EARTHQUAKES FELT IN THE PHILIPPINES<sup>1</sup>

1, 13<sup>h</sup> 25<sup>m</sup> [1, 21<sup>h</sup> 25<sup>m</sup>]. Butuan (N Mindanao). Earthquake of intensity III, long duration. Very slow oscillations, which in the locality are considered as reliable indications of approaching rainy weather within the next two days.

6, 1<sup>h</sup> 07<sup>m</sup> [6, 9<sup>h</sup> 07<sup>m</sup>]. Central Mindanao. Earthquake shock of intensity IV, felt chiefly in the southern part of Bukidnon Province, where it had its origin. It was also noticed in the nearest provinces of Agusan and Cotabato.

6, 12<sup>h</sup> 40<sup>m</sup> [6, 20<sup>h</sup> 40<sup>m</sup>]. Cotabato (SW Mindanao). Local earthquake shock of intensity II-III.

6, 13<sup>h</sup> 56<sup>m</sup> [6, 21<sup>h</sup> 56<sup>m</sup>]. Maasin (S Leyte). Earthquake of intensity III. Previously at 3<sup>h</sup> 45<sup>m</sup> [11<sup>h</sup> 45<sup>m</sup>] a similar local shock had been felt.

8, 4<sup>h</sup> 35<sup>m</sup> [8, 12<sup>h</sup> 35<sup>m</sup>]. Camarines Sur (SE Luzon). Earthquake of intensity III, felt in the central and western portion of the province.

8, 15<sup>h</sup> 18<sup>m</sup> [8, 23<sup>h</sup> 18<sup>m</sup>]. Maasin (S Leyte). Local shock of intensity III.

9, 1<sup>h</sup> 30<sup>m</sup> [9, 9<sup>h</sup> 30<sup>m</sup>]. Ganassi (N Mindanao). Local shock of intensity III.

11, 8<sup>h</sup> 44<sup>m</sup> [11, 16<sup>h</sup> 44<sup>m</sup>]. Bacon (SE Luzon). Local shock of intensity III.

12, 10<sup>h</sup> 30<sup>m</sup> [12, 18<sup>h</sup> 30<sup>m</sup>]. Lais (SE Mindanao). Earthquake of intensity III-IV. Recorded at Butuan.

15, 6<sup>h</sup> 58<sup>m</sup> 42<sup>s\*</sup> [15, 14<sup>h</sup> 58<sup>m</sup> 42<sup>s</sup>]. Ilocos Norte and Sur. Earthquake of intensity III. Apparently originated in the China Sea.

16, 1<sup>h</sup> 10<sup>m</sup> [16, 9<sup>h</sup> 16<sup>m</sup>]. Janiuay (SE Panay). Earthquake shock of intensity III.

21, 1<sup>h</sup> 44<sup>m</sup> [21, 9<sup>h</sup> 44<sup>m</sup>]. Butuan (N Mindanao). Earthquake shock of intensity II-III.

21, 4<sup>h</sup> 35<sup>m</sup> [21, 12<sup>h</sup> 35<sup>m</sup>]. Central Mindanao. Earthquake of intensity III-IV, felt through the southern portion of Bukidnon Province. Recorded at Butuan.

22, 5<sup>h</sup> 00<sup>m</sup> [22, 13<sup>h</sup> 00<sup>m</sup>]. Lais (SE Mindanao). Earthquake of intensity III. Recorded at Butuan.

22, 8<sup>h</sup> 25<sup>m</sup> [22, 16<sup>h</sup> 25<sup>m</sup>]. Irosin (SE Luzon). Local earthquake shock of intensity II-III.

28, 4<sup>h</sup> 19<sup>m</sup> 28<sup>s\*</sup> [28, 12<sup>h</sup> 19<sup>m</sup> 28<sup>s</sup>]. Candon (NW Luzon). Earthquake of intensity III. Probable origin in the China Sea.

28, 6<sup>h</sup> 56<sup>m</sup> 37<sup>s\*</sup> [28, 14<sup>h</sup> 56<sup>m</sup> 37<sup>s</sup>]. Camarines (SE Luzon). Earthquake of intensity IV, felt through Camarines Norte and the northern portion of Camarines Sur. The origin lay in the Pacific, north of both provinces.

<sup>1</sup>The intensity of earthquakes is given in the notation known as the Rossi-Forel scale. The time is that indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (\*). Otherwise the time is that noted by the observer who sent the report. All time indications are in Greenwich mean time (midnight=0<sup>h</sup>), insular time being added in brackets for the convenience of Philippine readers.

28, 8<sup>h</sup> 30<sup>m</sup> [28, 16<sup>h</sup> 30<sup>m</sup>]. Ganassi (N Mindanao). Local shock of intensity III.  
 30, 7<sup>h</sup> 51<sup>m</sup> 33<sup>s\*</sup> [30, 15<sup>h</sup> 51<sup>m</sup> 33<sup>s</sup>]. Lais (SE Mindanao). Earthquake of intensity III. Its origin lay outside of the island towards Celebes Sea. Recorded at Batavia.

## RECORDS OF THE MICROSEISMOGRAPH

[Time: Greenwich mean. Midnight=0h. Instrument: Wiechert seismograph; 1,000 kilograms.  $A_N$ :  $T_0=6.25$ ,  $\epsilon=2.906$ ,  $\frac{r}{T_0^2}=0.053$ ;  
 $A_E$ :  $T_0=6.18$ ,  $\epsilon=2.393$ ,  $\frac{r}{T_0^2}=0.042$ . Alluvium. 2.40 meters above sea level.]

No.	Date.	Character.	Phase.	Hour.	Period.	Amplitude.		Remarks.
						$A_N$ $\mu$	$A_E$ $\mu$	
322	1	I	e F	10 43 11 02	s.			Eastern Java.
323	4	I	e F	21 51 22 13				
324	6	I	e F	16 16 28	43			
325	9	I	e F	0 17 52				
326	10	IIr	eP S L M <sub>N</sub> M <sub>E</sub> F	2 11 25 15 16 16 23 17 27 17 34 3 23		10 9	582 308	New Guinea.
327	11	Iv	eP F	10 00 03				
328	12	Ir	e F	8 00 25				
329	14	I	e F	16 56 17 34	04			From Omori's seismograph.
330	15	Ir	e F	5 07 6 10	40			From Omori's seismograph.
331	15	Iv	eP F	6 58 7 04	42			From Vicentini's seismograph. Felt in Ilocos Norte and Sur.
332	19	Iv	eP F	5 19 23	32			
333	19	Iv	eP F	14 54 56	00			
334	20	Iu	e F	6 22 7 28				From Omori's seismograph.
335	20	I	e F	10 43 11 25				
336	23	I	e F	6 15 38	31			
337	23	Iv	eP F	11 54 58	33			
338	28	Iv	eP F	4 19 24	28			From Vicentini's seismograph. Felt at Candon (NW Luzon).
339	28	IIId	eP L F	6 56 57 7 12	37 10			From Omori's seismograph. Felt at Manila and Camarines (SE Luzon).
340	30	Ir	eP L? F	7 51 54 8 18	33 00			Felt at Lais (SE Mindanao).



TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS<sup>1</sup>

1, 13<sup>h</sup> 25<sup>m</sup> [1, 21<sup>h</sup> 25<sup>m</sup>]. Butúan (N de Mindanao). Temblor de tierra de intensidad III, larga duración. Oscilaciones muy lentas: en esta región consideran esta clase de temblores como precursores ciertos de lluvias dentro de uno o dos días.

6, 1<sup>h</sup> 07<sup>m</sup> [6, 9<sup>h</sup> 07<sup>m</sup>]. Centro de Mindanao. Temblor de tierra de intensidad IV sentido principalmente en la parte sur de la provincia de Bukidnón, donde parece se originó. Fué también perceptible en las vecinas provincias de Agusan, al E, y Cotabato, al S.

6, 12<sup>h</sup> 40<sup>m</sup> [6, 20<sup>h</sup> 40<sup>m</sup>]. Cotabato (SW de Mindanao). Temblor oscilatorio, intensidad II-III.

6, 13<sup>h</sup> 56<sup>m</sup> [6, 21<sup>h</sup> 56<sup>m</sup>]. Maasin (S de Leyte). Temblor de tierra de intensidad III. Había precedido otro choque a 3<sup>h</sup> 45<sup>m</sup> [11<sup>h</sup> 45<sup>m</sup>] del mismo carácter local.

8, 4<sup>h</sup> 35<sup>m</sup> [8, 12<sup>h</sup> 35<sup>m</sup>]. Camarines Sur (SE de Luzón). Temblor de tierra de intensidad III, sentido en la parte central y occidental de la provincia.

8, 15<sup>h</sup> 18<sup>m</sup> [8, 23<sup>h</sup> 18<sup>m</sup>]. Maasin (S de Leyte). Temblor de tierra local de intensidad III.

9, 1<sup>h</sup> 30<sup>m</sup> [9, 9<sup>h</sup> 30<sup>m</sup>]. Ganassi (N de Mindanao). Temblor de tierra local de intensidad III.

11, 8<sup>h</sup> 44<sup>m</sup> [11, 16<sup>h</sup> 44<sup>m</sup>]. Bacon (SE de Luzón). Temblor de tierra local de intensidad III.

12, 10<sup>h</sup> 30<sup>m</sup> [12, 18<sup>h</sup> 30<sup>m</sup>]. Lais (SE de Mindanao). Temblor de tierra de intensidad III-IV. Registrado en Butúan.

15, 6<sup>h</sup> 58<sup>m</sup> 42<sup>s\*</sup> [15, 14<sup>h</sup> 58<sup>m</sup> 42<sup>s</sup>]. Ilocos Norte y Sur (NW de Luzón). Temblor de tierra de intensidad III. Originado al parecer en el mar de la China.

16, 1<sup>h</sup> 10<sup>m</sup> [16, 9<sup>h</sup> 10<sup>m</sup>]. Janiuay (SE de Panay). Temblor de tierra local de intensidad III.

21, 1<sup>h</sup> 44<sup>m</sup> [21, 9<sup>h</sup> 44<sup>m</sup>]. Butúan (N de Mindanao). Temblor de tierra de intensidad II-III.

21, 4<sup>h</sup> 35<sup>m</sup> [21, 12<sup>h</sup> 35<sup>m</sup>]. Centro de Mindanao. Temblor de tierra de intensidad III-IV en la parte sur de la provincia de Bukidnón. Registrado en Butúan.

22, 5<sup>h</sup> 00<sup>m</sup> [22, 13<sup>h</sup> 00<sup>m</sup>]. Lais (SE de Mindanao). Temblor de tierra de intensidad III. Registrado en Butúan.

22, 8<sup>h</sup> 25<sup>m</sup> [22, 16<sup>h</sup> 25<sup>m</sup>]. Irosin (SE de Luzon). Temblor de tierra local de intensidad II-III.

28, 4<sup>h</sup> 19<sup>m</sup> 28<sup>s\*</sup> [28, 12<sup>h</sup> 19<sup>m</sup> 28<sup>s</sup>]. Candón (NW de Luzón). Temblor de tierra de intensidad III. Originado al parecer en el mar de la China.

28, 6<sup>h</sup> 56<sup>m</sup> 37<sup>s\*</sup> [28, 14<sup>h</sup> 56<sup>m</sup> 37<sup>s</sup>]. Camarines (SE de Luzón). Temblor de tierra de intensidad IV, sentido en Camarines Norte y en las costas septentrionales de Camarines Sur. El origen se hallaba en el mar al norte de ambas provincias.

28, 8<sup>h</sup> 30<sup>m</sup> [28, 16<sup>h</sup> 30<sup>m</sup>]. Ganassi (N de Mindanao). Temblor de tierra local de intensidad III.

30, 7<sup>h</sup> 51<sup>m</sup> 33<sup>s\*</sup> [30, 15<sup>h</sup> 51<sup>m</sup> 33<sup>s</sup>]. Lais (SE de Mindanao). Temblor de tierra de intensidad III. Su origen se hallaba fuera de la Isla de Mindanao hacia la región de Célebes. Registrado en Batavia.

<sup>1</sup> La intensidad de los terremotos se indica conforme a la conocida escala de Rossi-Forel. Cuanto a la hora de su ocurrencia, adoptamos la indicada por los sismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (\*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo medio de Greenwich (medianoche=0<sup>h</sup>). Para conveniencia de los lectores de Filipinas se añade también la hora insular.



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APR 22 1924

THE GOVERNMENT OF THE PHILIPPINE ISLANDS

# WEATHER BUREAU

MANILA CENTRAL OBSERVATORY

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BULLETIN FOR NOVEMBER, 1921

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PREPARED UNDER THE DIRECTION OF

REV. JOSÉ ALGUÉ, S. J.

DIRECTOR OF THE WEATHER BUREAU

MANILA  
BUREAU OF PRINTING  
1923



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**BULLETIN FOR NOVEMBER, 1921**

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# METEOROLOGICAL BULLETIN FOR NOVEMBER, 1921

By REV. JOSE CORONAS, S. J.

Chief, Meteorological Division of the Weather Bureau

## GENERAL WEATHER NOTES

Pressure and temperature.—The mean atmospheric pressure of this month for the Philippines is slightly below that of the preceding year and the normal of November. The highest pressures of the month were generally recorded on the 28th and 29th in the Visayas and Mindanao, and on the 20th, 21st, and 25th in Luzon: the lowest pressures were observed on the period 10th to 12th, when a typhoon was traversing the central part of the Philippines.

The mean monthly temperature does hardly differ from the normal of this month. The extreme monthly temperatures for Manila were 33.5° C and 21.6° C.: they were registered, respectively, on the 1st and 25th. The absolute highest and lowest temperatures for Baguio were 25.9° C., 14.0° C. on the top of Mirador, and 27.4° C., 13.1° C. in the plateau near the City Hall.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS OF THE WEATHER BUREAU FOR NOVEMBER, 1921

Station.	Pressure.							Temperature.						
	Mean.	Departure from November, 1920.	Departure from normal.	Highest mean.	Day.	Lowest mean.	Day.	Mean.	Departure from November 1920.	Departure from normal.	Highest.	Day.	Lowest.	Day.
	mm.	mm.	mm.	mm.		mm.		°C.	°C.	°C.	°C.		°C.	
Zamboanga	758.26			759.73	28	756.22	6	26.1			32.5	1, 2, 19	21.5	18
Kolonie, Yap, Western Carolines	57.54	+0.02		58.95	29	55.25	8	26.9	-0.3		32.8	26	23	8
Tagbilaran	57.84	+ .13	-0.28	59.58	28	55.26	10	26.3	+ .4	-0.1	32.2	17, 18	22.6	18, 29
Surigao	57.78	- .06	- .45	59.73	29	54.19	10	26.3	+ .8	0	32.5	15	22.3	16
Cebu	57.96	+ .03	- .39	59.65	28	53.93	10	27	+ .1	+ .2	32.7	17	22.4	10
Iloilo	57.93	+ .14	- .36	59.70	28	54.97	10	26.5	- .1	+ .1	32.3	23	22.1	17
Tacloban	57.85	- .13	- .66	59.89	29	51.54	10	25.9	+ .1	- .4	34.1	8, 13	22.2	9, 17
Capiz	57.88	- .22	- .85	59.85	29	53.20	10	26.5	- .4	- .2	33.5	14	22	28
Calbayog	57.96	- .40	- .57	60.18	29	50.23	10	25.9	+ .1	+ .3	32.7	29	22	18
Legaspi	58.15	- .51	- .64	60.11	29	52.50	10	26.5	- .4	- .1	33.6	16	21.9	27
Atimonan	58.63	- .49	- .68	60.77	20	52.91	11	26.4	- .1	- .1	32.2	15	22	28
Ambulong, Tanauan, Batangas	58.03	- .33		60.18	20	53.06	11	25.8	- .6		31.9	14, 30	21.4	25
Daet	58.69	- .60		60.82	20	53.63	11	25.9	- .1		31.6	16	21.7	29
Manila	58.65	- .39	- .69	60.68	20	53.21	11	25.5	- .1	- .3	33.5	1	21.6	25
San Isidro, Nueva Ecija	58.70	- .53	- .73	60.67	20	53.30	11	25.5	- .3	- .2	33.1	1	20	25
Dagupan	58.34	- .34	- .69	60.34	21	53.21	11	26.2	- .6	- .4	33.9	1, 5	20.4	25
Baguio	636.47	- .30	- .38	638.23	21	632.36	11	18.1	- .3	+ .2	25.9	7	14	18
Vigan	758.20	- .26	- .97	760.16	29	753.43	12	27.3	0	+ .4	36.7	3	21.7	21
Tuguegarao	59.93	- .25	- .47	62.47	24	54.83	12	24.9	- .1	- .1	33.6	3	19.3	21
Laosag	58.50	+ .04		60.75	25	53.79	12	26.6	+ .2		34.7	Various	19.2	3
Aparri	60.42	+ .04	- .42	63.17	25	55.08	13	24.9	- .4	- .2	31.8	23	20.2	21

\* The barometric readings of this station are not reduced to sea level.

Rainfall.—There was abundant rain in the Philippines during this month, the total monthly rainfall being practically in all our stations considerably greater than both the monthly total of last year and the normal for November. The greatest monthly amounts are those of Sorsogon, Daet, and Legaspi, all of them exceeding one thousand millimeters. The monthly

total for Manila is 288.7 mm., and that of Baguio 151.4 mm.: they differ from the respective normals by +157.8 mm. and +66.3 mm.

Although the typhoon centers that traversed the Philippines during this month were not very deep, yet, considerable damage was done by heavy rains and floods, particularly in the Visayan Islands.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF NOVEMBER, 1921

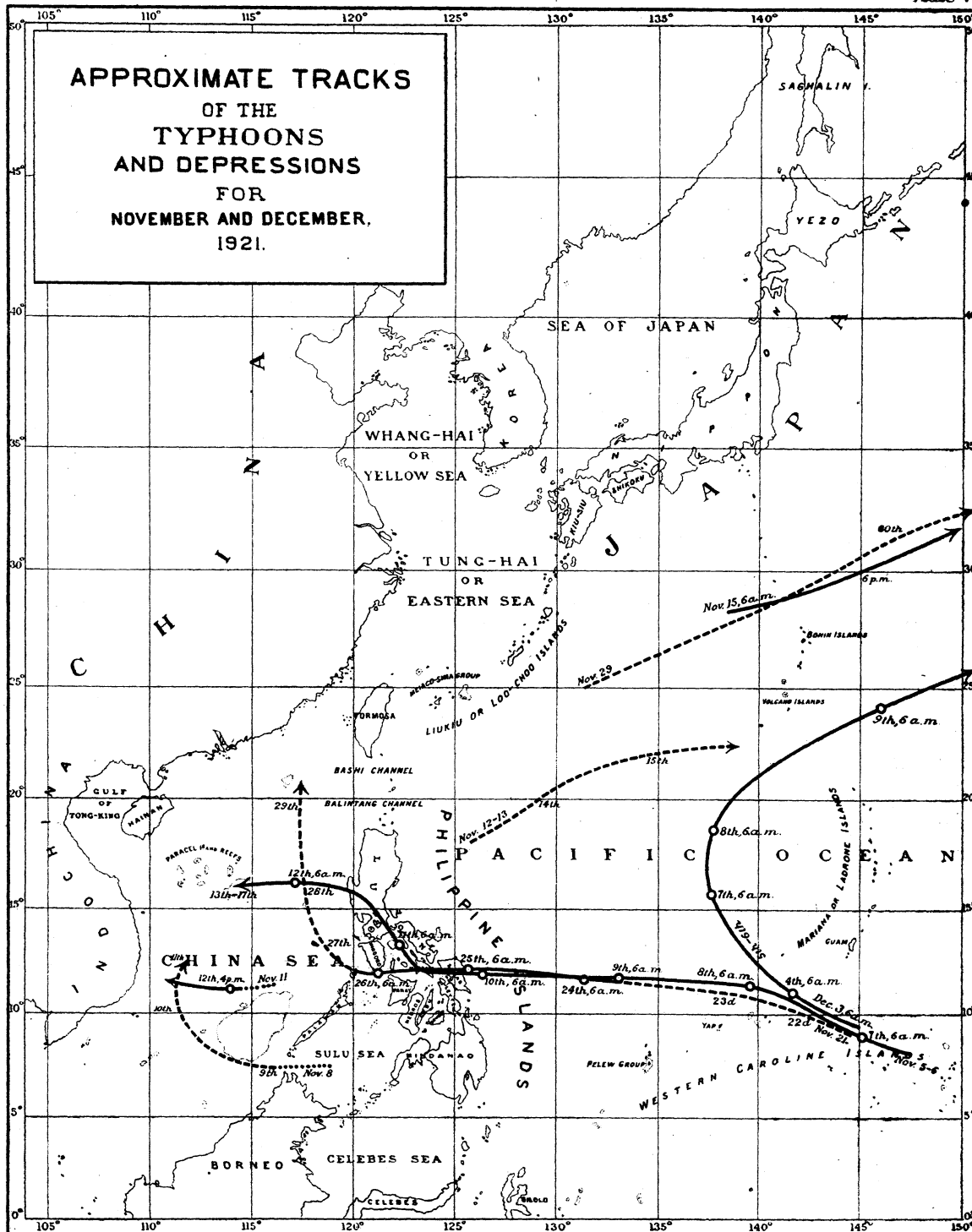
Station.	Total.	Departure from November, 1920.		Days of rain.	Departure from November, 1920.		Greatest rainfall in a single day.	Day.	Station.	Total.	Departure from November, 1920.		Days of rain.	Departure from November, 1920.		Greatest rainfall in a single day.	Day.
		mm.	mm.		mm.	mm.					mm.	mm.					
Jolo	327.2	+170.5	+136.6	19	-1	+3	105.2	7	Calapan	449.7	+291.1	+126.0	21	+2	0	138.1	10
Malamaui, Isabela, Zamboanga	337.6	+186.5	-----	17	+6	-----	120.1	10	Virac	638.5	+342.5	+246.8	19	0	-4	110.7	21
Zamboanga	198	+130	+100.1	15	+7	+4	49.5	10	Naga, Camarines Sur	632	+377.1	+360.6	24	+6	+7	88.5	25
Davao	146.8	+80.4	-1.7	11	+3	+1	32.7	6	Tigao	840.2	+610.1	-----	23	0	-----	145	21
Cotabato	242.6	+42.5	+36.6	16	-4	0	61	24	Batangas	417.6	+290.5	+243.7	19	+6	+5	86.1	11
Agayan	178.8	+68.6	+78	11	+2	+2	35.1	15	Lucena	769.8	+455.6	-----	22	+6	-----	109	23
Butuan	219	-85.9	-42	22	-5	+2	58.9	9	Atimonan	571.1	+224.4	+137.1	22	0	+1	80.8	25
Mambajao	160.4	-204.2	-----	12	-6	-----	32	1	Ambulong, Tanaunan, Batangas	495.2	+229.7	-----	17	+3	-----	72.4	11
Dumaguete	177.8	+31	+43.5	19	+4	+6	60.5	2	Daet	1,088.2	+570.6	-----	27	+2	-----	158.7	25
Kolonie, Yap, Western Carolines	354.3	+128.5	+126.5	23	-4	0	113.5	7	Canluban, Calamba	591.1	+345.4	-----	22	+6	-----	111.7	26
Tagbilaran	273.4	-125.2	+84.2	18	-3	+2	34.1	1	Santa Cruz, Laguna	461.4	+149.6	+231.7	23	+2	+3	71.7	11
Iwahig Penal Colony, Puerto Princesa	543.9	+302.6	-----	17	+3	-----	157.2	22	Manila	288.7	+165	+157.8	18	+5	+4	111.5	11
Surigao	370.3	-457.4	-49.4	21	-5	0	66	21	Antipolo	346.1	+229.1	+182.8	20	+7	+6	84.4	11
Maaasin, Leyte	508.4	-153.8	+181.7	10	-6	-2	150.7	9	San Isidro, Nueva Ecija	275.3	+204	+178.4	18	+4	+9	97	8
Cebu	272.3	+59.8	+125.9	19	+2	+4	60.8	9	Iba	252.5	+220.3	+192.5	16	+7	+8	91.2	11
Iloilo	386	+135.5	+204.7	20	+9	+5	98.1	10	Tarlac	194.9	+158.3	+112	15	+11	+7	50.3	8
San Jose de Buenavista	332.6	+131.5	+164.9	18	+13	+7	91.7	10	Baler	896	+496.4	+497.3	23	+7	+9	391.2	8
Cuyo	230	+120	+100.8	16	+10	+7	64.5	25	Dagupan	161.4	+140.2	+100.4	13	+8	+7	53.1	17
Ormoc	840.6	+561.7	+599.3	21	-1	+1	309	9	San Fernando	137.4	+89.3	-----	11	-----	+6	38.1	12
Guluan	651.7	-10.8	+204.3	20	-6	-5	255.1	9	Baguio	151.4	+109.1	+66.3	13	+7	+4	41.6	17
Tacloban	558.7	+138.4	+255.8	20	-2	-1	118.2	9	La Union	53.9	+9.5	+14.1	11	+5	+7	31	14
Capiz	777.4	+435.2	+475.1	25	+3	+5	283	10	Echague	482	-----	+239.7	22	-----	+4	103.2	8
Borongan	678.6	+69.2	+176.8	20	-5	-3	131.3	9	Candon	41	-96.3	-6.7	7	+1	+3	25.2	16
Calbagogan	847.3	+551.9	-----	20	-4	-----	247.6	9	Vigan	81.7	+35.4	+45.2	8	+6	+5	28.4	28
Catbayog	842.1	+530.8	+536	24	+3	+1	337.6	9	Tuguegarao	519.7	+382.6	+245.5	20	+8	+8	117	8
Masbate	509.1	+332.4	+295.6	21	+3	+5	129.6	9	Laog	68.8	+80.9	+32	12	+8	+7	21.1	28
Romblon	668.4	+337.1	+355.7	25	+3	+3	218.3	10	Aparri	545.7	+355.2	+255.4	24	+4	+5	135.6	8
Batag Light-house, Laoang	679.5	+131.6	-----	20	-3	-----	165.6	9	Cape Bojeador	244	+213.8	-----	17	+11	-----	52.3	12
Sorsogon	1,120.6	+614.1	-----	18	-6	-----	134.6	8	Basco	572.1	+357.9	+221.8	22	-1	0	104.1	28
Legaspi	1,050.1	+605	+656	19	-1	-2	126.2	8									
Sumay (Guam), Agaña	158	+65.9	-50.7	25	+5	+5	24.1	11									

DEPRESSIONS AND TYPHOONS

There were two typhoons in the Philippines during this month; two or three distant depressions or typhoons over the Pacific; and one depression and a small typhoon in the China Sea. Their tracks are published in Plate VII.

Typhoon of the Visayas and Luzon: November 10 and 11.—This typhoon appeared on our Weather Map of November 7 to the south of Guam in about 145° longitude E and 9° latitude N. Observations received later from the station of Jafan, Western Carolines, seem to show that the typhoon was already forming on November 5 to 6 in about 147° or 148° longitude E and 8° latitude N. With observations received from Yap, as compared with those of Guam, we could situate the center at 6 a. m. of the 8th between 139° and 140° longitude E, and between 11° and 12° latitude N, the typhoon having moved WNW since the preceding day. From the 8th it moved westward at a rate of progress of 17 to 18 miles per hour, which is considered extraordinarily high for low latitudes. Yet, when the typhoon crossed the Island of Samar on the 10th, its velocity was of only about 10 miles per hour; then it increased again to 15 miles per hour on the 11th, and finally it almost stopped moving after the 12th, remaining almost stationary for about four days since the 13th until it filled up on the 17th in the neighbourhood of the Paracels near 114° longitude E and 16° latitude N.





Our Weather Maps of the 9th showed clearly the typhoon to the E of Samar. The center reached that Island near to the north of Borongan at 9 a. m. of the 10th, and passed practically over Calbayog at 2 p. m. of the same day, the barometric minimum observed there being 742.47 mm. The approximate position of the center was therefore at 2 p. m. of the 10th about 12° latitude N, between 124° and 125° longitude E: its direction was then due west. Toward 10 p. m. an unexpected change in the direction of the typhoon took place; it began to move NW or NWbyN, and hence the typhoon came to pass to the N of Manila at about 2 p. m. of the 11th. Almost immediately afterwards it inclined again westward entering the China Sea in the evening of the 11th between Bolinao and Iba. We give herewith the position of the center on the 11th and 12th.

November 11, 6 a. m. 13° 15' latitude N, 122° 15' longitude E.

November 11, 2 p. m. 14° 55' latitude N, 121° 05' longitude E.

November 12, 6 a. m. 16° 10' latitude N, 117° 05' longitude E.

November 12, 2 p. m. 16° 10' latitude N, 116° 20' longitude E.

While the typhoon passed near Manila it was a very mild typhoon, rather a depression: but it seems to have increased again in intensity in the China Sea. Very many steamers had a very rough passage in coming to, or going out from, Manila. The Japanese steamer *New York Maru* was stranded on the 16th in the Paracels reefs 300 miles south of Hongkong.

We have been able to obtain so many observations from a good number of steamers plying in the China Sea west of Luzon on November 12th to 16th that it is impossible to entertain any doubt on the existence of this typhoon during these days in the neighbourhood of the Paracels.

One depression and a small typhoon in the China Sea: November 8 to 13.—A depression, probably of no great importance, made its appearance in the southern part of the Sulu Sea on November 8: it moved W on the 8th, recurved northward on the 9th and probably filled up on the 11th about 120 miles east of southern Indo-China.

While this depression was filled up, a small typhoon was apparently formed in about 116° longitude E and near 11° latitude N. This typhoon was clearly shown on the 12th by the steamers *Gwenetti* and *Wolverine State*, situated to the NNE and SW of the center, respectively, a gale from the NE quadrant being observed on board the *Gwenetti*, and a gale from W and SW on board the *Wolverine State*. The small typhoon moved probably westward, and filled up on the 13th before reaching Indo-China.

Two depressions or typhoons over the Pacific NE of Luzon and N. of the Bonins: November 12 to 16.—From the 12th to the 14th of November while the first typhoon of the month was in the China Sea west of Luzon, the observations from the eastern part of Luzon, from Formosa and the Loochoos gave clear signs of another depression or typhoon over the Pacific to the E of northern Luzon. It moved NE and ENE on the 14th and 15th. On the 15th a cyclonic center appeared to the WNW of the Bonins moving ENE. It is impossible to decide whether this was the same depression or typhoon which formed E of northern Luzon on the 12th to 13th: but the observations we have at hand would rather show that they were two different centers.

Typhoon of the Visayas: November 24.—This typhoon was shown in our Weather Map of November 21st, 2 p. m., in about 9° latitude N and 144° or 145° longitude E. It was very similar to the typhoon of the 10th, and the first part of the track almost identical to that of the former, but with a rate of progress much more regular and constant, as it moved from the 21st to the 26th, inclusive, at a rate of about 12 miles per hour. The direction of the typhoon was WNW in the 21st and 22nd, but it moved almost due west from the 23rd to the 26th.

The approximate positions of the center for 6 a. m. of the 22nd to 26th are as follows:

November 22, 10° 00' latitude N, 142° 05' longitude E.

November 23, 11° 00' latitude N, 138° 20' longitude E.

November 24, 11° 40' latitude N, 131° 20' longitude E.

November 25, 12° 05' latitude N, 125° 40' longitude E.

November 26, 11° 55' latitude N, 121° 15' longitude E.

In the afternoon of the 25th the typhoon, being to the west of Mindoro, began to incline to the N, and it finally filled up on the 29th, west of Balintang Channel near 20° latitude N and 117° longitude E.

The most remarkable feature of this typhoon were the heavy rains and consequent floods observed in some of the municipalities of the northwestern part of the Province of Capiz in the evening of November 25 and the following night when the center of the typhoon was passing a few miles to the north of Capiz Province. The number of persons reported perished in the floods amount to 165: 116 in Ibajay; 38 in Makato; and 11 in Malinao. There were possibly other casualties in other municipalities. Great losses to crops and properties were also reported caused not by the force of the winds, but rather by heavy rains and floods. The first news to reach our Office was contained in the following telegram received from our observer at Ibajay: "Strongest ever observed nine feet deep flood destroyed and washed away observatory outdoor instruments: it occurred November 25 evening." The following amounts of rain observed in 24 hours, from 6 a. m. of the 25th to 6 a. m. of the 26th, in some of the towns of northwestern Panay may give an idea of the floods caused by them: Pandan, 519.9 mm.; Calivo, 497.6 mm., Culasi, 373.4 mm. It is much to be regretted that we will never know the rainfall of Ibajay for that day, as the raingauge of that station was carried away by the tremendous flood that swept that town in the evening and night of the 25th.

Depression to the south of Japan: November 29 and 30.—The track of this depression can be seen in Plate VII.<sup>1</sup> It moved ENE from the east of the Loochoos to the north of the Bonins, and does not seem to have been of any great importance.

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<sup>1</sup>In this plate we include also the track of a typhoon of December, on which we will say a few words in our Bulletin of next month.

## NOTAS GENERALES DEL TIEMPO

**Presión y temperatura.**—La presión atmosférica media de este mes en Filipinas es ligeramente menor que la del año pasado y que la normal de noviembre. Las presiones más altas del mes se registraron generalmente los días 28 y 29 en Visayas y Mindanao, y los días 20, 21 y 25 en Luzón: las presiones más bajas se observaron durante el período de 10 a 12, cuando un tifón atravesaba la parte central de Filipinas.

La temperatura media mensual apenas difiere de la normal de este mes. Las temperaturas extremas del mes en Manila fueron 33.5° C. y 21.6° C., las cuales se registraron los días 1 y 25, respectivamente. Las temperaturas máxima y mínima absolutas de Baguio fueron 25.9° C., 14.0° C. en la cumbre del Mirador, y 27.4° C., 13.1° C. en la llanura cerca del *City Hall*.

**Precipitación acuosa.**—Durante este mes hubo copiosas lluvias en Filipinas, resultando prácticamente la lluvia total del mes, en todas nuestras estaciones, mucho mayor que la lluvia mensual del año pasado y la normal de noviembre. Las cantidades más grandes registradas durante el mes son las de Sorsogón, Daet y Legaspi, las cuales todas pasan de mil milímetros. La lluvia total del mes en Manila es 288.7 mm., y la de Baguio 151.4 mm., difiriendo de sus respectivas normales en +157.8 mm. y +66.3 mm.

Aun cuando los centros de tifón que atravesaron las Filipinas durante este mes no fueron muy profundos, con todo, las lluvias abundantes e inundaciones causaron daños de consideración, particularmente en las Islas Visayas.

## DEPRESIONES Y TIFONES

Durante este mes hubo dos tifones en Filipinas; dos o tres depresiones o tifones lejanos en el Pacífico; y una depresión y un tifón pequeño en el Mar de China. Publicamos sus trayectorias en la Lámina VII.

**El tifón de las Visayas y Luzón: 10 y 11 de noviembre.**—Este tifón apareció en nuestro mapa del tiempo del 7 de noviembre, al S de Guam en los alrededores de 145° longitud E y 9° latitud N. Observaciones recibidas más tarde de la estación de Jafan, Carolinas Occidentales, parecen indicar que el tifón ya se estaba formando del 5 al 6 de noviembre en los alrededores de 147° ó 148° longitud E y 8° latitud N. Según las observaciones de Yap, comparadas con las de Guam, se puede situar el centro ciclónico a las 6 a. m. del día 8 entre 139° y 140° longitud E, entre 11° y 12° latitud N, habiéndose movido al WNW desde el día anterior. Desde el día 8 se movió hacia el W con una velocidad de 17 a 18 millas por hora, velocidad que se considera extraordinariamente grande para tifones en bajas latitudes. Con todo, cuando el tifón cruzó la Isla de Sámar el día 10 su velocidad era sólo de unas 10 millas por hora; luego aumentó de nuevo a 15 millas por hora el día 11, y finalmente casi dejó de moverse después del día 12, permaneciendo prácticamente estacionario durante unos cuatro días, desde el día 13 hasta que se deshizo el día 17 en las cercanías de Paracels no lejos de 114° longitud E y 16° latitud N.

Nuestros mapas del tiempo del día 9 indicaban claramente al tifón al E de Sámar. El centro llegó a dicha isla cerca y por el N de Borongan a las 9 a. m. del día 10, y pasó prácticamente por Calbáyog a las 2 p. m. del mismo día, siendo la mínima barométrica observada en dicha estación 742.47 mm. Por tanto, el centro ciclónico se hallaba a las 2 p. m. del día 10 en los alrededores de 12° latitud N, entre 124° y 125° longitud E: su dirección entonces era directamente al W. Hacia las 10 p. m. tuvo lugar un inesperado cambio en la dirección del tifón: empezó a moverse al NW o NW¼N, y de ahí que el tifón viniese a pasar por el N de Manila a eso de las 2 p. m. del día 11. Casi inmediatamente después se inclinó de nuevo al W entrando en el Mar de China la tarde del día 11 por entre Bolinao e Iba. A continuación damos la posición del centro ciclónico para los días 11 y 12:

Noviembre 11, 6 a. m. 13° 15' latitud N, 122° 15' longitud E.

Noviembre 11, 2 p. m. 14° 55' latitud N, 121° 05' longitud E.

Noviembre 12, 6 a. m. 16° 10' latitud N, 117° 05' longitud E.

Noviembre 12, 2 p. m. 16° 10' latitud N, 116° 20' longitud E.

El tifón, mientras pasaba cerca de Manila, era sumamente moderado, más bien una depresión: pero parece que volvió a aumentar en intensidad en el Mar de China. Muchísimos barcos experimentaron un tiempo sumamente borrascoso al venir a, o al salir de, Manila. El barco japonés *New York Maru* embarrancó el día 16 en las rocas de Paracels a 300 millas al S de Hongkong.

Hemos conseguido tantas observaciones de un buen número de barcos que navegaban en el Mar de China al W de Luzón desde el 12 hasta el 16 de noviembre, que no es posible tener alguna duda sobre la existencia de este tifón durante los citados días en las cercanías de Paracels.

Una depresión y un pequeño tifón en el Mar de China: 8 al 13 de noviembre.—Una depresión, probablemente de no mucha importancia, apareció en la parte meridional del Mar de Joló el 8 de noviembre: se movió al W el día 8, recurvió hacia el N el día 9, y probablemente se deshizo el día 11 a unas 120 millas al E del sur de Indochina.

Mientras esta depresión se deshacía, un pequeño tifón se formó al parecer en los alrededores de 116° longitud E y cerca de 11° latitud N. Este tifón lo indicaban claramente el día 12 los vapores *Gwenetti* y *Wolverine State*, situados al NNE y SW del centro, respectivamente, habiéndose observado vientos fuertes del cuadrante del NE a bordo del *Gwenetti*, y del W y SW a bordo del *Wolverine State*. El pequeño tifón se movió probablemente hacia el W y se deshizo el día 13 antes de llegar a Indochina.

Dos depresiones o tifones en el Pacífico al NE de Luzón y N de Bonins: 12 al 16 de noviembre.—Desde el día 12 hasta el 14 de noviembre, mientras el primer tifón del mes se hallaba en el Mar de China al W de Luzón, las observaciones de la parte oriental de Luzón, las de Formosa y de Loochoos daban claros indicios de otra depresión o tifón en el Pacífico al E del norte de Luzón. Se movió al NE y ENE los días 14 y 15. El día 15 apareció un centro ciclónico al WNW de Bonins, moviéndose al ENE. Es imposible determinar si era la misma depresión o tifón que se formó al NE de Luzón el día 12 al 13: sin embargo, las observaciones que poseemos demuestran más bien que fueron dos centros diferentes.

El tifón de Visayas: 24 de noviembre.—Este tifón se echa de ver en nuestro mapa del tiempo de 2 p. m. del 21 de noviembre, en los alrededores de 9° latitud N y 144° longitud E. Era muy semejante al tifón del día 10, y la primera parte de su trayectoria casi idéntica a la del mismo, pero con una velocidad mucho más regular y constante, pues se movió durante el período de 21 al 26, inclusive, a razón de unas 12 millas por hora. La dirección del tifón era WNW los días 21 y 22, pero se movió casi directamente al W desde el día 23 hasta el 26.

La posición aproximada del centro del tifón a las 6 a. m. de los días 22 al 26 era como sigue:

Noviembre 22, 10° 00' latitud N, 142° 05' longitud E.

Noviembre 23, 11° 00' latitud N, 138° 20' longitud E.

Noviembre 24, 11° 40' latitud N, 131° 20' longitud E.

Noviembre 25, 12° 05' latitud N, 125° 40' longitud E.

Noviembre 26, 11° 55' latitud N, 121° 15' longitud E.

Por la tarde del día 26 el tifón, hallándose al W de Mindoro, empezó a inclinarse al N, y por último se deshizo el día 29 al W del Canal de Balintang cerca de 20° latitud N y 117° longitud E.

Los efectos más notables de este tifón fueron las copiosas lluvias y las consiguientes inundaciones que ocurrieron en algunos de los municipios situados en la parte NW de la provincia de Cápiz la tarde del 25 de noviembre y la noche siguiente, cuando el centro del tifón pasaba a pocas millas por el N de la provincia de Cápiz. El número de personas que, según informes, perecieron en las inundaciones asciende a 165: 116 en Ibajay; 38 en Makato y 11 en Malinao. Es posible que hubiese otras víctimas en otros municipios. También hubo grandes pérdidas de cosechas y propiedades causadas no por la violencia de los vientos, sino más bien

por las abundantes lluvias e inundaciones. La primera noticia que llegó a nuestra Oficina estaba contenida en el siguiente telegrama recibido de nuestro observador de Ibajay: "Mayor inundación nunca observada nueve pies altura destruyó y arrastró aparatos estación: ocurrió noche 25 noviembre." Las siguientes cantidades de lluvia observadas en 24 horas, desde las 6 a. m. del 25 hasta las 6 a. m. del 26, en algunos pueblos del NW de Panay pueden dar idea de las inundaciones producidas por ellas: Pandan, 519.9 mm.; Calivo, 497.6 mm.; Culasi, 373.4 mm. Es mucho de sentir que nunca podremos saber la lluvia de Ibajay en dicho día, pues el pluviómetro de dicha estación fué arrastrado por la tremenda inundación que barrió aquel pueblo la noche del 25 de noviembre.

**Depresión al S de Japón: 29 al 30 de noviembre.**— La trayectoria de esta depresión puede verse en la Lámina VII.<sup>1</sup> Se movió al ENE desde el E de Loochoos hacia el N de Bonins, y no parece haber sido de mucha importancia.

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<sup>1</sup> En esta lámina, hemos incluido también la trayectoria de un tifón de diciembre, de la cual hablaremos en el Boletín de dicho mes.

METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY\*

[ $\phi=14^{\circ} 34' 41''$  N;  $\lambda=120^{\circ} 58' 33''$  E; barometer above sea, 14.2 meters; gravity correction not applied, -1.72 mm.]

Day.	Pressure (mean). mm.	Air temperature. <sup>b</sup>			Underground temperature.						Relative humidity (mean). Per ct.	Vapor pressure (mean). mm.	Radiation.			Evaporation. <sup>b</sup>		
		Mean.	Maximum.	Minimum.	0.25 meter.		0.50 meter.		1.50 meters.				8 a. m.	8 a. m.	Minimum on grass.	Maximum in sun. Black bulb in vacuo.	Free exposure (total).	Shelter (total).
					8 a. m.	2 p. m.	8 a. m.	2 p. m.	8 a. m.	8 a. m.								
1	760.14	27.2	33.5	23.6	28.3	30.1	29	29.4	29.3	29.2	75.9	20	22.3	67.7	4.1	3.2		
2	60.23	26.3	31.8	22.2	28	29.2	29	29.2	29.1	29.1	74.1	18.5	19.5	58	3.2	3		
3	60.11	24.4	26.4	23.1	27.8	28	28.8	28.8	29.2	29.1	92.2	20.9	22	33	.2	.7		
4	59.69	25	28.4	23.5	27.4	27.8	28.5	28.5	29.2	29.1	87.2	20.4	22.5	40.6	1	1		
5	59.05	26.3	32.1	23.1	27.4	29	28.4	28.6	29.2	29.1	82.1	20.8	21.7	64.1	2.5	1.9		
6	57.98	26.2	31.4	23.3	27.7	29.2	28.6	28.8	29.2	29.1	85.1	21.4	22	62.4	2.7	1.8		
7	57.90	26.1	30.7	23.4	27.8	28.7	28.6	28.7	29.2	29.1	86.7	21.6	22.1	58.6	1.8	1.5		
8	58.24	26.9	33.4	23.6	27.7	29.4	28.6	29	29.1	29.1	84.4	21.9	22.2	63.5	2.6	2.3		
9	59.32	24.8	28.5	23	27.3	28.3	28.5	28.8	29	29.1	88	20.3	22.2	47	1.7	1.6		
10	57.39	23.8	25.1	22.7	27	27.2	28.4	28.3	29	29.1	87.5	19.2	22.3	31.7	.3	1.1		
11	53.21	23.6	26	21.9	26.3	25	27.8	27	29.1	29	93.3	20.2	21.3	45.5	0	.6		
12	55.32	25.8	30.4	23.7	25.6	26.7	26.7	27	28.7	28.9	86.2	21.3	22.1	60.5	1.4	1.2		
13	55.19	26.2	30.3	24	26.6	27.5	27.2	27.3	29	29.1	87.8	22	23.1	63.8	1.1	1.3		
14	55.14	26.7	32.2	24	27	28.5	27.5	27.8	28.9	28.9	87.9	22.7	23.2	62	1.2	1.1		
15	57.23	26	30.7	24.4	27.7	28.5	27.9	28	28.8	29	91.7	22.9	23.9	57.2	.1	.8		
16	58.95	25.4	30.4	23.5	27.3	28.5	28	28.2	28.7	29	90.2	21.7	22.2	67.2	1.2	1		
17	60.02	25.6	29	23.3	27.2	28.3	28	28.3	28.7	29	87.9	21.2	22.6	51.5	1.5	1.3		
18	59.94	25.4	30.4	22.9	27.2	28.5	28	28.2	28.5	29	87.3	21	21.8	55.8	1.6	1.3		
19	60.23	25.2	30	23	27.3	28.4	28	28.3	28.6	29	86.8	20.5	21.6	59.2	1.2	1		
20	60.68	25	31	21.7	27	28.5	28	28.1	28.7	28.9	82.9	19.3	20	62.8	2.5	1.9		
21	60.30	25.5	30.4	21.7	26.8	28.4	27.9	28.2	28.5	28.9	81.9	19.7	19.8	56.1	2.4	1.9		
22	59.75	24.4	27.2	22	27	27.2	28	27.7	28.5	28.9	91.2	20.7	22.4	45	0	.7		
23	59.63	24	27.4	22.4	26.4	27.1	27.5	27.6	28.4	28.8	92.9	20.6	21.2	38.5	0	.1		
24	59.88	25.3	30.4	22.2	26.3	27.5	27.5	27.7	28.7	28.9	76.3	18	21	57.5	5	4		
25	58.70	24.6	28.4	21.6	26	26.7	27.3	27.2	28.5	28.7	70.7	16.2	19.1	52.8	3	3.3		
26	56.18	23.4	24.9	22	25.5	25.7	26.8	26.8	28.3	28.5	91.3	19.5	21.2	43.3	2	.7		
27	58.32	26.6	32.5	23	25.7	27.7	26.7	27.2	28.3	28.7	80.5	20.7	21.3	60.4	2.8	2		
28	59.96	26.7	32.6	23	26.4	29.2	27.1	27.5	28.3	28.7	82.2	21.1	21.3	59.6	3	2.3		
29	60.37	26.4	31.4	23.1	27	28.7	27.5	28	28.3	28.6	84.8	21.4	21.1	58.6	2.5	1.8		
30	60.33	26.1	31.8	22.5	27.3	29.2	27.8	28.1	28.4	28.8	83.4	20.7	20.3	59.2	2.5	2		
Mean	758.65	25.5	30	22.9	27	28.1	27.9	28.1	28.8	28.9	85.3	20.5	21.6	54.8	1.8	1.6		
Total															53.3	48.4		
Departure from normal	-0.69	-0.3	-0.5	+0.7							+2.5	+0.2			-24.2			

Day.	Prevailing direction.	Wind.			Amount (mean). 0-10.	Clouds.		Sunshine. h. m.	Rain, 24 hours beginning 6 a. m.		Miscellaneous.
		Total movement.	Maximum hourly velocity.	Direction at the time of the maximum velocity.		Form and direction.			On the tower.	In the park.	
						Upper.	Lower.				
1	NE	151	17	E	3.8	A.-Cu. E	Cu. E	9 00			d a. ☉ p.
2	NE	190	22	NE	9.2	Ci.-S. ESE	Cu. E	0 00	2.3	2.5	☉ a. d p.
3	NE	96.5	11	NNE	9.9	A.-Cu. SE	N. E	0 00	2.5	2.9	d a.
4	N	59.5	7	NNE	10	Ci.-S.	S.-Cu. E	0 00	.3	.3	d a. ☉ p.
5	NE	89.5	14	WSW	6.4	A.-Cu. ESE	Cu. E	4 45		1	☉ a. ☉ p.
6	E quad.	91.5	12	WNW	8.7	Ci. S	Cu. E	1 45			☉ a. ☉ p.
7	E	74	9	WNW	8.3	Ci. SE	Cu.-N. E	0 35			☉ a. ☉ p.
8	SE	152	22	ESE	7.6	Ci.-S.	Cu. E	6 05	18.9	20.1	d a. ☉ p.
9	NNE	192	18	N	9.8	A.-Cu. ESE	Cu. ENE	0 00	4.1	4.7	☉ a. ☉ p.
10	NNW	320	20	NNW	10	Ci.-S.	Cu.N. E	0 00	16.3	17.4	☉ a. p.
11	NNW	633.5	47	WSW	10		N. N, wsw	0 00	111.5	122.5	☉ a. p. ☉ p.
12	SE	260	15	S	7.4	A.-Cu. S	Cu.-N. ssw	3 10	6.2	7.2	☉ a. d p.
13	SE	151.5	12	SW	8.4	Ci. N	Cu.-N. sbyw	3 20	6.7	7.1	☉ a.
14	SE	145	11.5	SE	8	Ci.-S. S	Ca., Cu.-N. ssw	5 05	6.2	6.6	☉ a. p. ☉ p.
15	E	104	10	NNW	9.1	Ci. E	Cu.-N. SE	1 40	10.6	10.8	d a. ☉ p.
16	E	104.5	15	SW	8.9	Ci.-S.	Cu.-N. ssw	1 05	7.6	7.9	☉ a. ☉ p.
17	SW	46.5	7	WNW	9	A.-Cu. ESE	Cu. SE, ssw	0 15		1	d a.
18	N	65	10	WNW	7.8	Ci.-S. E	Cu. NEbyN	1 35			d a.
19	SE	48.5	9	SW	7.8	A.-Cu. SE	Cu., Cu.-N. E	2 10	.9	1	d a. p.
20	W quad.	83.5	12	ENE	5.9	A.-Cu. ENE	Cu. E	5 50			d a.
21	NE	123.5	17	NNE	8.4	Ci.-S. E	Cu. E	2 30	14.8	16	d p.
22	NNE	101.5	16	NNE	9.9	Ci.-S. E	Cu.-N. E	0 00	18.7	19.8	☉ a. ☉ p.
23	NE	138	13	NNW	9.8	Ci.-S.	N. N	0 00	20.7	23.7	☉ a. ☉ p.
24	NE	250	22	NE	9	A.-Cu. E	Cu. ENE	2 15			☉ a. ☉ p.
25	NNW	330	29	NNE	9.4	Ci.-S. SE	S.-Cu. NNE, NE	0 00	12	14	☉ a. d p.
26	NNW	344	20	N	10	Ci.-S.	N. E, N	0 00	28.4	32.5	☉ a. p. ☉ p.
27	SE	224	15.5	ESE	7.6	Ci.-S.	Cu. SE	1 10			☉ a.
28	SE	123	12	SE	4.1	Ci. ESE	Cu. S	8 20			☉ a.
29	W	153.5	15.5	W by S	3.8	Ci.	Cu. E	7 10			☉ a. ☉ p.
30	NW	116.5	15	NW	3.6	Ci.	Cu. E	7 00			☉ a.
Mean		165.4	15.8		8.1			2 30			
Total		4,962						74 45	288.7	317.2	
Departure from normal		+127			+1.7			-85 07	+157.8		

\* All the mean values given in this table are deduced from hourly observations.  
 \* These values are taken from instruments mounted in the Observatory Park, 1.5 meters above ground.

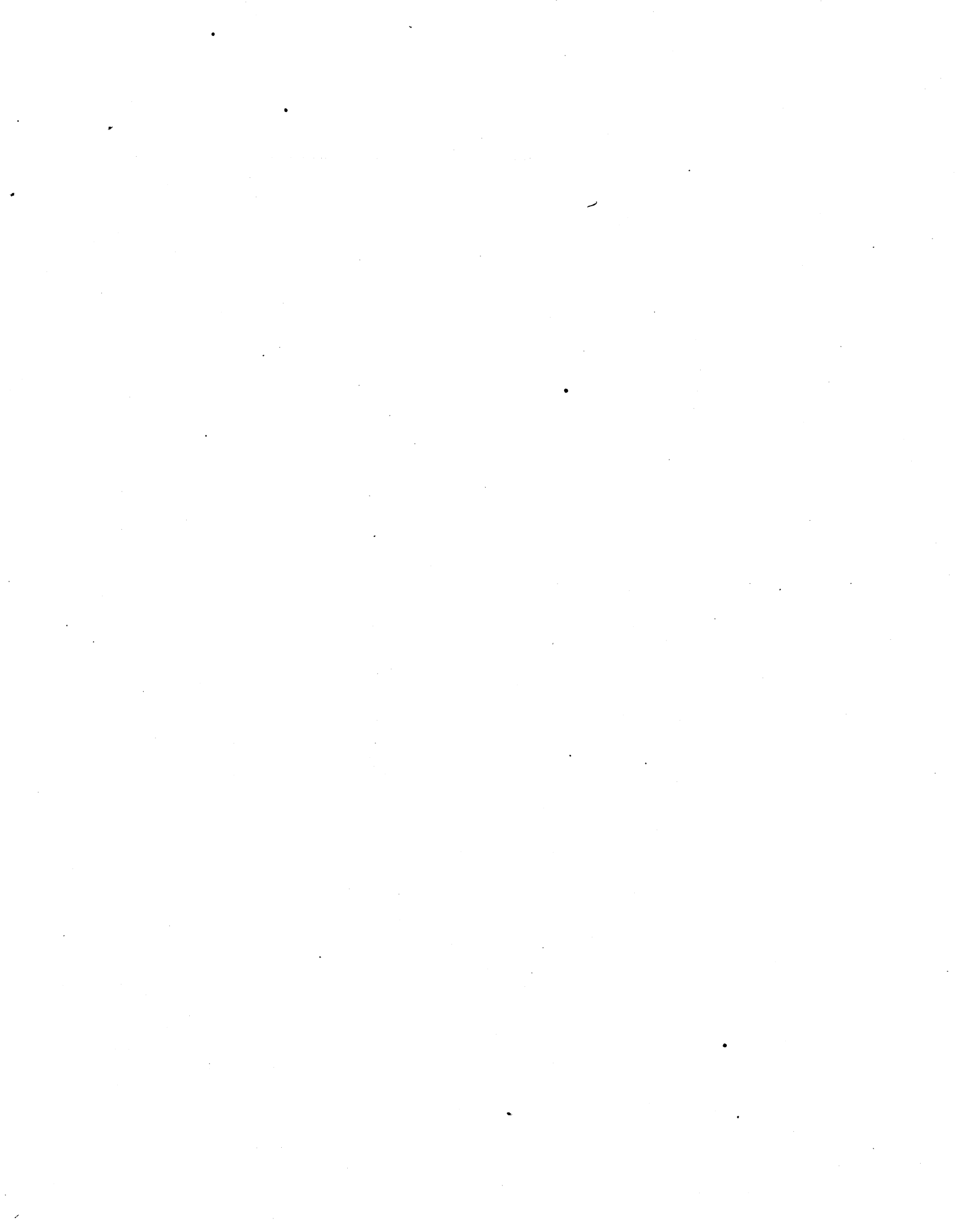
METEOROLOGICAL DATA FOR MIRADOR OBSERVATORY, BAGUIO

[phi = 16° 25' N; lambda = 120° 35' E; barometer above sea, 1,512.5 meters; gravity correction not applied, -1.65 mm.]

Main meteorological data table with columns for Day, Pressure, Air temperature at Mirador, Air temperature in the plateau near the City Hall, Relative humidity, Vapor pressure, Radiation, and Evaporation. Includes daily data from 1 to 30 and summary rows for Mean and Total.

\* All the mean values given in this table are deduced from 6 daily observations taken at 2, 6, 10 a. m. and 2, 6, 10 p. m.
b The barometric readings of this station are not reduced to sea level.
c Maximum of hourly observations taken from 6 a. m. to 6 p. m.
d This element is based on hourly observations taken from a quadruple register, which gives only eight possible directions of the wind.





## DAILY RAINFALL AT THE STATIONS OF THE WEATHER BUREAU, NOVEMBER, 1921

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lapac Agricultural School, Siasi, Sulu †	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Glan, Cotabato †	50.8	72.4	81.3	---	---	203.2	43.7	---	106.7	54.6	---	10.2	---	15.2	53.3	5.1
Jolo, Sulu	---	10.6	2.3	---	26.7	70.3	105.2	---	---	2.3	1.3	---	13.2	35.1	3.8	10.2
Buntung, Koronadal, Cotabato †	8.9	14	2.5	2.5	---	6.4	3.8	5.1	8.9	6.4	---	---	---	1.8	4.6	8.9
Lais, Malita, Davao	---	11.9	8	8.1	7.8	111	2.5	6.1	---	11.4	---	---	---	---	---	---
Malita, Davao	8	1.5	1.3	1.3	8.9	53.6	---	---	---	3	---	---	---	---	4.6	1
Lebak, Cotabato	12.7	43.9	9.7	74.2	4.6	7.1	76.5	29	74.7	200.4	25.2	4.6	---	71.1	94.3	14.7
Lamitan, Isabela, Zamboanga	---	96.8	---	4.6	---	19	35.5	---	---	42.9	8.6	---	3.6	2.5	5.1	---
Basilan Plantation, Kabunbatan, Isabela, Zamboanga †	---	31.2	4.6	15.2	14	26.7	66.1	---	---	76.2	19.6	18	4.1	---	---	---
Padada, Santa Cruz, Davao †	---	---	---	2.3	---	---	---	5	---	---	---	---	4.8	1.5	4.3	7.4
Basilan Plantation Office, Isabela, Zamboanga †	---	13.7	2.1	1.5	21.6	21.1	50.8	---	---	81.8	43.1	---	16.8	3.6	9.1	---
La Union, Sigaboy, Davao †	6.6	5.3	---	21.1	4.1	10.4	---	1.8	---	---	---	---	---	---	6.4	---
Paranglalap, Isabela, Zamboanga †	---	17.8	---	24.2	---	63.5	50.8	---	22.9	45.7	20.3	---	15.2	8.9	3.8	---
Latuan, Isabela, Zamboanga †	---	16.3	---	3.8	5.8	25.4	58.7	---	5.1	93.2	20.8	---	13	4.6	8.9	---
Buluang, Cotabato †	25.4	20.3	---	---	---	---	17.8	---	---	43.2	---	---	5.1	---	86.4	---
Malamau, Isabela, Zamboanga	---	15.2	10.7	2.5	17.2	23.4	64.5	---	1.5	120.1	23.9	---	17.5	10.4	16.8	---
Pagsilaan Farm School, Mati, Davao †	---	---	---	---	---	---	---	10.2	2.5	15.3	2.5	---	---	---	5.1	---
Zamboanga, Zamboanga	---	16.3	---	3	6	18.6	27.4	---	---	49.5	17.6	5	14.7	3.1	18.8	---
Cagayan de Sulu, Sulu †	---	38.1	5	---	42.2	3	---	---	---	36.3	---	---	---	---	---	4.6
Kidapawan, Cotabato †	---	8.6	---	7.6	---	9.9	17.5	---	---	---	7.9	---	---	---	---	---
Davao, Davao	2.3	---	---	24.1	1.8	32.7	---	---	---	---	21.1	---	---	---	23.6	---
Piang Agricultural School, Kudarangan, Duluan, Cotabato †	1.8	8.6	---	5.3	1.5	1.3	7.7	5.1	13.9	25.4	6.4	5	2.5	13.7	11.2	---
Pikit, Cotabato	---	1.8	---	15.2	2	2.3	15.8	5	---	31	1	6.6	---	4.6	14.2	---
Cotabato Seed Station, Pikit, Cotabato †	5.3	2	10.9	3	---	---	5.1	10.2	---	34.3	---	7.6	---	8.9	11.4	---
Awang, Cotabato †	---	---	11.7	13.2	4.8	20.6	14.2	---	11.4	21.1	---	---	24.6	10.7	20.3	---
Sirib, Guianga, Davao †	---	---	---	5	27.2	---	---	1.8	---	---	---	---	2	---	---	---
Kabakan, Cotabato †	---	---	---	25.4	---	2.5	7.6	5.1	---	55.9	---	---	---	10.2	2.5	---
Bual, Duluan, Cotabato	18.8	---	---	4.6	---	2.5	16.3	---	---	33.5	---	---	5.8	9.6	12.2	---
Cotabato, Cotabato	5.1	3.6	---	---	5.3	11.2	40.3	---	---	30.5	2	6.4	18.5	10.9	22.9	---
Mampising, Pantukan, Davao †	5.1	2.8	---	15.2	19	11.9	1.5	4.1	---	2	---	---	---	29.5	---	---
Kabasaran, Buldun, Cotabato †	5.1	---	---	16.5	22.1	13.4	27.5	21.6	55.9	23.2	8	1.3	25.4	34	10.4	---
Naganaga, Margosatubig, Zamboanga	---	62.2	---	---	---	---	52.3	---	---	26.7	35.6	28.2	47.8	---	21.6	---
Banasilan, Banasilan, Cotabato †	---	8	5	---	---	1.5	---	18.3	---	1.3	13.2	2	5	---	8	1.8
Malabang, Lanao	---	14.7	41.9	34.8	4.8	22.4	16	38.6	---	29.5	66.3	---	29.7	7.1	8.1	---
Compostela, Monkayo, Davao †	---	44.4	18.3	---	---	---	---	---	---	---	---	---	---	---	---	103.4
Malangas, Margosatubig, Zamboanga †	14.7	60.4	---	---	7.4	8.9	15.5	3	---	11.7	---	12.7	26.7	4.8	25.6	1.5
Lumbatan, Lanao †	---	2.5	43.7	24.6	30.5	8	4.1	63.5	---	37.8	12.4	5.3	15.2	10.2	6.9	43.2
Cateel, Davao	30.7	7.9	1.3	19.3	56.2	8.2	---	5.1	---	2	---	---	---	33	8.6	---
Ganasi, Lanao	---	---	---	4.8	1	9.1	---	---	---	---	10.4	10.4	20.3	11.4	49.5	---
Camp Kalao, Monkayo, Davao	---	---	---	---	5.1	31.7	---	5	---	1.3	---	3	---	---	---	---
Managok Agricultural School, Linabo, Malaybalay, Bukidnon	3	2.5	---	---	1.8	1.6	3.3	8	5	6.4	5.6	1.3	---	33.5	1.3	---
Camp Keithley, Dansalan, Lanao	5	6	2.5	5	10.1	3.8	2.3	21.8	4.8	3.9	3	3.3	---	1	39.8	2.8
Veruela, Agusan	15.2	6.1	11.1	7.9	39.6	8.4	---	---	---	1.3	39.6	---	---	111.8	16.8	---
Sindangan, Zamboanga †	7.1	28.4	2.8	2.3	5.1	16	3.3	30	12.9	37.6	7.9	---	3	---	---	---
Sumilau, Bukidnon	4.1	---	---	6.9	3.6	---	7.1	27.7	---	12.7	---	---	---	---	23.4	---
Diklom, Tangkulan, Maluko, Bukidnon †	---	6.6	---	3.6	---	---	---	4.8	25.4	20.1	---	6.9	---	---	12.1	---
Cagayan, Misamis	---	---	---	---	---	---	19.3	---	---	29.2	2	---	---	35.1	---	---
Talacogon, Agusan	10.9	3.1	8.6	5.1	2.3	7.6	2	---	---	6.1	2	6.3	2.5	---	22.9	---
Butuan, Agusan	14.7	7.6	2.8	16.3	1.8	1.3	6.9	5	53.9	3	---	---	---	8	21.8	---
Kabahian, Butuan, Agusan †	8	7.9	5.8	37.6	5.3	7.4	3	18.3	36.1	2.5	3	1.3	---	47.5	---	---
Mambajao, Misamis	32	7.1	7.4	---	---	---	19.3	---	27.5	11.4	---	---	10.7	---	---	---
Dumaguete, Oriental Negros	1	60.5	1	3	8	4.6	23.7	17.6	2.6	16.7	11.9	1.3	8	---	5	---
Kolonie, Yap, Western Carolines	8.1	4.3	10.3	7.4	1.1	25.9	113.5	4.6	---	9.9	12.9	15.4	73.2	2.2	---	6.6
Hacienda San Jose, Tanjay, Oriental Negros †	9.4	84.1	9.7	---	---	30.5	5.8	19.3	22.4	90.1	16.5	---	14.5	10.9	5.1	---
Hacienda Palanas, Bais, Oriental Negros †	6.1	52.9	5.8	4.3	8	50.8	12.7	2.8	7.1	35	29.2	---	4.1	16	7.1	---
Tagbilaran, Bohol	34.1	15.7	29.5	8.9	31.7	2.3	7.1	8	21.6	24.9	19.3	---	---	---	5	---
Iwahig Penal Colony, Puerto Princesa, Palawan	---	47.5	---	10.6	9.9	8	20.8	25.9	2	88.9	14.7	---	5.5	11.4	---	---
Dalaguete, Cebu	35.3	20.8	3.1	8	4.8	9.7	7.6	---	23.9	20.9	22.6	---	2.5	---	7.2	---
Surigao, Surigao	33	23.1	25.4	9.2	13.7	8.4	49	8	63.6	20.4	5	2	2.3	---	11.9	---
Central Palma, Ilog, Occidental Negros	---	---	45.7	---	7.6	7.6	---	8.1	17.8	31.7	29.3	2.5	7.6	7.6	---	---
Hacienda Naval, Himamaylan, Occidental Negros	3.8	---	16.3	10.9	26.1	---	21.3	16.5	73.7	72.3	14.7	---	7.6	7.9	---	---
Biaong Cui's Farm, Barili, Cebu	---	---	30.5	---	17.3	---	27.2	7.1	34	69.8	11.4	---	---	---	---	---
Maasin, Leyte	49	34.8	---	---	23.6	---	---	59.4	150.7	89.6	8.9	---	---	---	34.3	---
Binalbagan Estate, Binalbagan, Occidental Negros †	4.8	1.8	12.9	9.7	36.8	1	12.4	7.1	83.8	90.2	25.6	---	7.1	---	---	---
Isabela, Occidental Negros	1.8	1	3	5.1	18.3	5	20.1	27.5	51.3	81.8	32.8	3	6.1	5.4	---	---
Hacienda Tanolo, Hinigaran, Occidental Negros	1.3	1.5	18	12.7	15	7.1	12.4	13	90.4	99.8	21.1	3	2.5	1	---	---
Cebu, Cebu	30	13.4	3	17.9	8	3	23.2	---	60.8	41.6	1.8	---	7.6	15.5	16	---
La Castellana, Occidental Negros	2	3	---	3	5.6	8	18.3	36.3	118.9	186.2	19.1	5.4	3.8	8.2	---	---
Hacienda Vallehermoso, Vallehermoso, Oriental Negros †	6.1	5.3	3	---	10.2	5.1	50.8	---	31	61.5	5.6	---	---	5.1	---	---
Central Azucarera de La Carlota, La Carlota, Occidental Negros	5.1	4.8	6.4	21.8	38.6	8	13.5	13.7	49.2	174	54.4	4.1	5.3	3	---	---
Hacienda Canlaon, La Castellana, Occidental Negros	3.8	5.1	92.7	7.4	1.8	---	5	8.2	3	---	---	3	---	---	---	---
La Carlota Experimental Station, La Carlota, Occidental Negros †	5.6	---	20.6	20.4	45.8	24.4	11.7	16.8	46	181.3	48	10.9	4.8	---	---	---

† Voluntary or cooperative station.

Daily rainfall at the stations of the Weather Bureau, November, 1921—Continued

Station.	Day of month.														Total.	
	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Lapac Agricultural School, Siasi, Sulu †															mm.	191.6
Glan, Cotabato †	38.1					12.7			38.1	22.9	71.1				mm.	879.4
Jolo, Sulu	.5			3.8	3.6			1.8	1.8	8.9	18.1	.0.8		5.1	mm.	327.2
Buntung, Koronadal, Cotabato †				10.2	12.7		1.3								mm.	96.7
Lais, Malita, Davao	2.5				5.1								9.7		mm.	187.6
Malita, Davao				5	2						1		.8		mm.	77.6
Lebak, Cotabato					24.6			4.1			12.7	5.8	5.6	14.7	mm.	810.2
Lamitan, Isabela, Zamboanga					4.3					8.6	9.7	7.4			mm.	248.6
Basilan Plantation, Kabunbatan, Isabela, Zamboanga †										3	33.5	5.8			mm.	318
Padada, Santa Cruz, Davao †			8.7			4.1	.5		7.4		9.9				mm.	51.4
Basilan Plantation Office, Isabela, Zamboanga †							2			8.1		25.4			mm.	280.7
La Union, Sigaboy, Davao †											18				mm.	73.7
Paranglalap, Isabela, Zamboanga †								2.5		2.5	7.6	28.7			mm.	314.4
Latuan, Isabela, Zamboanga †						2.5		1.3		1	2.6	30			mm.	293
Buluang, Cotabato †									25.4	2.5	12.7				mm.	238.8
Malamau, Isabela, Zamboanga							1		3	2.3	2	5.6			mm.	337.6
Pagsilaan Farm School, Mati, Davao †		2.5	5	5.1	16.2										mm.	64.4
Zamboanga, Zamboanga	3.3							3.3	5.7	18.3					mm.	198
Cagayan de Sulu, Sulu †				2	69.6		31.7				17.8				mm.	245.8
Kidapawan, Cotabato †			3.8					2.8	2.5	4.8		20.3			mm.	85.7
Davao, Davao	11.9	8.6		5.8				3			11.9				mm.	146.8
Piang Agricultural School, Kudaranagan, Dulauan, Cotabato †				5				14.5	8.4	.8		1			mm.	130.1
Pikit, Cotabato	4.3							17.8		.5	1.5	.8	4.8		mm.	124.7
Cotabato Seed Station, Pikit, Cotabato †								21.3			4.1		10.2		mm.	134.3
Awang, Cotabato †				8.1				37.8							mm.	198.5
Sirib, Guianga, Davao †	1									30.7		.3			mm.	63.5
Kabakan, Cotabato †				5.1				27.9			20.3				mm.	162.5
Bual, Dulauan, Cotabato								21.3			2.3	1.3		23.6	mm.	162.2
Cotabato, Cotabato							4.6	61			10.4	2.3	1.3	14.7	mm.	242.6
Mampising, Pantukan, Davao †										2.8					mm.	107.4
Kabasaran, Buldun, Cotabato †	15.2	1.3			1.5	28.4	3.3	52.9	24.6	42.9	24.4	5.6	10.7	1.3	mm.	452.9
Naganaga, Margosatubig, Zamboanga			43.2			25.9									mm.	107.4
Banisan, Banisan, Cotabato †	8.6			10.2	3.8			3	19	5.6		12.7	8.6		mm.	541.5
Malabang, Lanao						13.2	43.7	32.5	59.9	6.6	3.8				mm.	112.2
Compostela, Monkayo, Davao †						62.2				21.6	74.9				mm.	473.6
Malangas, Margosatubig, Zamboanga †				4.3		17.8	1.3	3.8	8.4	10.7					mm.	324.8
Lumbatan, Lanao †	14	3													mm.	239.2
Cateel, Davao				5.1				4.1	4.3		7.9	4.6			mm.	327.5
Ganasi, Lanao		2						6.6	13	16	4.3	20.3	5.3		mm.	198.3
Camp Kalao, Monkayo, Davao				7.4	18.5	13.2		4.3			5.1	6.6		4.1	mm.	144
Managok Agricultural School, Linabo, Malaybalay, Bukidnon					1.6	.3	16.5	1			.5	20.6	3		mm.	105.1
Camp Keithley, Dansalan, Lanao					4.3		9.9	3	6.1	2.3	8				mm.	121.7
Veruela, Agusan		1.3		1.5	7.7	.5	19.8		3	2.5	7.9	1.8	5.6		mm.	306.7
Sindangan, Zamboanga †		6.1		1.5	2.3		2	5	6.9			5.3		20.3	mm.	201.3
Sumilau, Bukidnon				5.1			25.9	10.6	5.1	49	1.8	17.5			mm.	200.5
Diklom, Tangkulan, Maluko, Bukidnon †				7.1				11.2	7.4		5.8	8.4	10.2		mm.	134.7
Cagayan, Misamis				17	23.2			8.1	27.8	5.1	10.5	8.4	3.6		mm.	178.8
Talacogon, Agusan				13		15.2					2.5				mm.	110.4
Butuan, Agusan				3	14.2	12.7	43.7	5.8		.5				.3	mm.	219
Kabahian, Butuan, Agusan †				45.7	9.1	33.8	2	19.8		1.5	.3			1.8	mm.	292.2
Mambajao, Misamis				1.3	31.7	3.6	.8		7.6	3.8			1.8	1.8	mm.	160.4
Dumaguete, Oriental Negros					3.3	18	3.9		3.5						mm.	177.8
Kolonie, Yap, Western Carolines	.8	9.4		16	2.4	.8					3.3	.8	19.6		mm.	354.3
Hacienda San Jose, Tanjay, Oriental Negros †				6.1	32.5	18.6	35.1	34.1	20.5						mm.	465.2
Hacienda Palanas, Bais, Oriental Negros †				6.9	14.7	5.1		50.8	6.4						mm.	321.6
Tagbilaran, Bohol	3			27.6	2.5	21.6	2		15.7			7.6			mm.	273.4
Iwahig Penal Colony, Puerto Princesa, Palawan				11.9	23.6	157.2	74.6	36.1		2.5					mm.	543.9
Dalaguete, Cebu		1		27.7	5.1	13.2	13.5		8.7						mm.	223.4
Surigao, Surigao				23.1	66	.8	4.6	5.8	5.9			.8			mm.	370.3
Central Palma, Ilog, Occidental Negros				2.5	2.5	11.4			12.7			1.3			mm.	195.9
Hacienda Naval, Himamaylan, Occidental Negros		6.4	19.8	5.8					26.4						mm.	329.5
Biaong Cui's Farm, Barili, Cebu		50.7	33						6.4		11.5	11.4			mm.	310.3
Maasin, Leyte						46.7		11.4							mm.	508.4
Binalbagan Estate, Binalbagan, Occidental Negros †		17.3		.8					16.5			.8			mm.	323.6
Isabela, Occidental Negros				20.6	1.8	1.3	.3	4.6	.3	23.4	1.3	15.2			mm.	323.8
Hacienda Tanolo, Hinigaran, Occidental Negros		4.1	1.8	.8					18.5						mm.	326.5
Cebu, Cebu				2.6	1.3	.5	16.3	4.1	7.9						mm.	272.3
La Castellana, Occidental Negros			6.1	1.3	2.6		17.6	1.8	31.5	.5					mm.	466.6
Hacienda Vallehermoso, Vallehermoso, Oriental Negros †				4.3	14	11.4	3.8		7.6						mm.	224.8
Central Azucarera de La Carlota, La Carlota, Occidental Negros			2.3	4.3	3.3	26	10.2	1	21.5	1.5			4.1	.8	mm.	469.7
Hacienda Canison, La Castellana, Occidental Negros		.5	7.1			4.1		16.5	8.4		10.9	3.3	3	2.1	mm.	176
La Carlota Experimental Station, La Carlota, Occidental Negros †		1.5	21.6	7.1	6.4	12.7		2.3	5.6			6.6	1.8		mm.	501.9

† Voluntary or coöperative station.

Daily rainfall at the stations of the Weather Bureau, November, 1921—Continued

Station.	Day of month.																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Maa Sugar Central, Santa Cecilia, Bago, Occidental Negros	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	
Valladolid, Occidental Negros	5.6	4.3	81.5	2.8	12.9		7.4	.5	55.9	239.5	53.9	.8		15.5	3.8		
Central San Carlos, San Carlos, Occidental Negros †	18.5	7.6				27.9	37.3	21.3	40.6	71.1	3.3	1.8		3.3			
Hacienda Refugio, San Carlos, Occidental Negros †	17.3	8.1	10.9	5.3	11.2	29			55.9	75.7	2.5	1.3	8.4				
San Joaquin, Iloilo	3.8	.3	10.4			.3	2	2.3	13.7	98.3	41.6	11.7	34.5	2.3	2.3		
Murcia, Occidental Negros	27.9	3			15.7	1.3	3	7.6	58.9	120.2	44.5	7.1	7.1	8.1			
Bacolod, Occidental Negros	60.2	2.3	3.3	.8		1.8	40.1	7.1	58.2	211.6	60.4	5.1	.8	3.8			
Oton, Iloilo	6.6	5.1	1.3	4.3	3.6	5.1	17.8		66	71.6	32.6	1.8	28.4	13			
Iloilo, Iloilo	4.8	7.7	.3	2.3	1.3	5.1	12.2		78	98.1	46	6.6	16.3	11.2			
Lapuslapus, Iloilo, Iloilo †	5.6	14		.8	1.3	17.8	30.5		68.6	81.3	38.1	5	8.9	7.6			
San Jose de Buenavista, Antique	7.1	1.5	8.9	10.7	8.6	7.6	1	1.8	35.8	91.7	49.5	4.3	8.6				
Tuburan, Cebu	14.2	8.4			1.5				183.1	191.7	.8		.8				
Leon, Iloilo		2.3	9.1	5.1	11.7		38.6		67.1	33	39.1	41.9	81.8	25.4			
Silay, Occidental Negros	21.6	6.4	4.6	102.1	16.7	54.1	33.8	4.8	46.2	279.4	19.8	3.8	1.8	10.7			
Calag-itan, San Remigio, Antique	9.9		.5	10.2	21.8	1.3	4.3		18.2	30	206.7	88.2	3.8	8.1	11.2	2.1	2.3
Hawaiian Philippine Co., Malisbug, Silay, Occidental Negros †	19.8	8.4	5.1	128.7	35.6	22.6	25.4	7.6	90.7	188.2	35.8	5.4	.8	5.1			
Cuyo, Palawan		1.5	5.8		30.2		50.8	1.5	.8	28.4	2.3	3	8.4	11.2			
Lucena, Santa Barbara, Iloilo †	3	7.6		9.1	14.5		14.7	26.9	76.2	15.2	6.9		19.3	5.8			
Barotac Nuevo, Iloilo	10.2	1.5	.8	61	27.7	6.4			43.5	141	20.3	1.5	10.2	20.6			
Hacienda Ilaya, Victorias, Occidental Negros	8.4	25.4	9.1	47.5	26.1	14	38.1	8.4	104.7	191.3	27.4	3.8		3.8			
Central Victorias, Victorias, Occidental Negros †	17.5	29.2	11.6	52.9	31.5	11.4	17.8	48.2	122.1	261.6	40.7	2.5					
Hacienda Bilbao, Manapla, Occidental Negros		4.6	14.2		22.1	20.1	1.5		96	247.9	18.3	2	1.8				
Janiway, Iloilo	5	4.9	1.6	13.4	56.7	.8	14	1.3	49	139.2	24.2	22.8	41.7	6.3			
Cadiz, Occidental Negros	8.6	14	2.8		25.7				139.9	115.9	9.7						
Dingle, Iloilo	9.1	8.4	2.8	6.9	11.9	1.3			53.3	169.7	18.3	21.3	18.3	16			
Ormoc, Leyte	14.2	51.3	.3	4.3	2.3	11.4	1.5	6.6	309	207.2	.5		5.3				
Guianan, Samar	70.3	40.6	15	8.9	8.4	14.2	3	4.3	255.1	51.1	.5	26.7					
Bugasong, Antique					2.5	5.1			76.2	198	68.6	12.7		5.1			
Bogo, Cebu	10.4	31.2	17.3				2.5	9.1	174.5	285.4	1.8			.5			
Dueñas, Iloilo †	8.1	8.9	2	17.6	23.1				66.6	182.1	11.4	5.1	66				
Bitagan, Passi, Iloilo †	17.8	9.1	2	6.3	6.4	1			62	54.6	18.3	.8	16.5		1.3		
Sara, Iloilo	10.7	24.9			11.4		1.8	2	105.1	139.4	3	1.3	10.9	10.2			
Tacloban, Leyte	41.2	55.4	9.9	19	37.9	16.5	12.2	5.6	118.2	43.1	3.3						
Dumarao, Capiz †		28.5	18		28.4					22.1						36.3	
Central Asturias, Buntog, Dumalag, Capiz	8.9	53.3	17.5	45.4	27.5	24.4	8.4	15	60	102.6	15	1.1	7.9			3	
Dao, Capiz †	9.1	31	12.2	20.1	54.1	25.1	4.6	50.8	72.4	127	5.1				18.7	38.6	
Culasi, Antique	12.2	43.4	9.1	16.3	9.6	42	18	97.5	39.2	244.4	40.9	25.1	1.3	49.3			
Mambusao, Capiz	29.2	3.3	7.4	21.1	73.9	28.4	10.5	7.1	82.3	232.9	10.1	.3					
Hacienda Amparo, Pontevedra, Capiz	9.4	37.1	21.8	23.4	30	32.8	10.4	2	103.7	208.2							
Capiz, Capiz	22.9	33.6	1	6.1	1.1	24.9	2.5	4.1	113	233	3.5	.5	.3		11.5	39.9	
Borongon, Samar	36.1	7.6	17.8	13.5	62.7	71.4	38.9	42.2	131.3	12.4	1					5.8	
Calivo, Capiz	35	27.4	16.5		.8	2	32	44.4	74.2	191.5	13.2	8.4					
Pandan, Antique	66.8	21.3	15	25.2	16	8.1	51.8	85.3	114	213.1	55.1	6.1	1.8	5.6	.8		
Catbalogan, Samar	13.7	22.1	45.3	14	38.6	12.5	14.5	37.9	247.6	87.4							
Ibajay, Capiz	18	11.2	.8	.6		16.5	20.8	38.6	122.7	120.7	87.6	9.7	.8	5.3			
Calbayog, Samar	50.4	22.3	1.3	1.8	13.8	1.8	38.8	15.5	337.6	27.7	6.4	1	.8				
San Jose Estate, Robles Camp D-17, San Jose, Mindoro †	.3	.5			.5	.3	1.3	.8	2.5	110.5	264.2	17.8	15.2	12.7	19		
San Jose Estate, Tamaraw Plantation, San Jose, Mindoro †	3	4.8				7.1	3.3	7.1	9.4	148.4	164.1	25.1	17.8	12.7	31.7	2.8	
San Jose Estate, San Agustin, San Jose, Mindoro †	9.4	6.4				5.1	6.1	8.4	26.7	82.8	144.7	32.3	16.3	12.7	41.1	9.7	
San Jose Estate, San Jose, Mindoro †	8.6	5.8			.8	5.3	4.6	5.8	8.4	116.9	191.5	24.9	18.8	20.3	48	16	
Maabate, Masbate	78.5	31	8.9	2.8	.5	.5	2.5	13	129.6	38.8	4.3	.8				7.6	
San Jose Estate, Tunnel D-12, San Jose, Mindoro †	5.1	7.6			5.1	5.6			10.2	10.6	129.5	193	47.5		22.8	48.3	13.7
Romblon, Romblon	36	45.3	6	4.2	9.1	27.4	28.2	11	80.5	218.3	42.9	4.3	2.6	1.3	1.8		
Batag Lighthouse, Laoang, Samar	66.3	30.7	17.8	20.9	20.1	9.6	3.8	44.5	165.6	6.4	2.3					2	
Irosin, Sorsogon	159.3	46.3	20.3	38.4	18	38.8	4.1	118.3	207.2	120.4	6.4	2					
Sorsogon, Sorsogon	54.8	61.5	26.2	60.9	40.4	38.7	49.6	134.6	113.3	61	10.2						
Bacon, Sorsogon	31.7	70.9	18.3	44.2	41.4	85.6	104.9	156.5	87.1	49.3	9.1	.8					
Jovellar, Albay	40.8	81.2	16	34.3	1.3	29	18.1	38.1	122.7	55.9	12.5	7.6					
Legaspi, Albay, Albay	49.3	100.6	21.5	58.8	5.7	38.1	17.1	126.2	125.7	47.5	17.5	5.6					
Guinobatan, Albay	16	79.7	8.7	20.6	1	11.2	12.4	35	96	108	21.6	8.7				18.3	
Polangui, Albay	7.9	105.4	5.8	10.1	1	11.2	15.2	21.3	66.8	41.6	25.7	7.4	.3				
Bacacay, Albay	61.2	156.9	138.1	85.9	26.7	44.7	147.6	106.9	110.8	36.6	8.1						
Amuguis, Mulanay, Tayabas †	5.8	36.6	.3	.5		11.4	5.3	4.8	65	25.4	12.7	2.5	7.6	2.3		1.5	
Bato, Camarines Sur	15	93.7	3.8	20.3	.5	2.8	14	16.8	67.3	19.8	12.4	1.3					
Tabaco, Albay	23.2	86.4	9.7	52	9.1	39.1	79.2	80	94.5	33	9.1	2.5					
Sumay (Guam), Agaña, Ladrones Islands	6.8	.3	1.3	.3	2	6.4	16	4.1			24.1	8.7		3.8		.5	
Iriga, Camarines Sur	7.9	60.7	8.6	16.8		5.3	9.1	10.4	51.6	106.7	21.6	6.9		1			
Calapan, Mindoro		22.1	3.1	.6		7.6	3.1	10.7	46	138.1	43.4	13.7	1			15.2	
Tiwi, Albay				15.7	32			58.4	118.4								
Pasacao, Camarines Sur	3.3	9.9				2.8				86.6	49.8						
Virac, Albay	9.4	84.8	13.5	3.1	9.6	16	10.1	43.9	42.1	15	7.9						
Naga, Camarines Sur	10.2	79	5.6	7.3	1.5	4.8	.5	35.3	48.9	22	20.3	16.8	.5	.3		.5	
Tigaon, Camarines Sur	20.9	88.9	5.9	7.9	8.2	3.3	.5	50.3	73.9	19.3	17	6.3		1			
Baras, Albay	93.4	72.4	62.4	45.5	67.3	73.7	28.7		54.1	99.6	115.9	78.5	14.7	2.8		17.8	
Libmanan, Camarines Sur	23.9	108.7	15.2	4.8	5.8			17.8	68.5	30	17.3	2.5	2	2.5			

† Voluntary or cooperative station.

Daily rainfall at the stations of the Weather Bureau, November, 1921—Continued

Station.	Day of month.														Total.
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Mao Sugar Central, Santa Cecilia, Bago, Occidental Negros	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Valladolid, Occidental Negros				4.8	1.3			1	22.6	0.8		1.3	37.4		
Central San Carlos, San Carlos, Occidental Negros †				8.9	2				14.2						
Hacienda Refugio, San Carlos, Occidental Negros †				7.1	15.8	2.5	12.7	4.6	5.8						281.2
San Joaquin, Iloilo				8.1	8.1	1.3	9.7	4.3	8.9						266
Murcia, Occidental Negros				4.8	6.6			3.3	67.6	7.7					313.5
Bacolod, Occidental Negros				8.1	10.1	1.8		2.6	29.7	.8	0.8		16.3		374.6
Oton, Iloilo				11.1	43.5	2	.5	1.5	27.4	1.8		1.5		2.3	552.1
Iloilo, Iloilo				2.8	15.2	24.1	4.8	8.9	50.3	4.3					367.6
Lapuslapus, Iloilo, Iloilo †				6.4	4.1	25.7	10.9	1.6	42.3	5.1					386
San Jose de Buenavista, Antique				2.5	5.1	21.6			8	27.9					340
Tuburan, Cebu				24.1	3.8			.8	53.8	18					332.6
Leon, Iloilo				1	.8	6.1	16.3	15.5	31	25.6				2.5	499.3
Silay, Occidental Negros		10.2	8.1	14.7	20.8	5.3	7.9		55.4	14.5					492
Calag-itan, San Remigio, Antique				177.3	57.7	14	4.3	17.8				3.6			880.5
Hawaiian Philippine Co., Malisbug, Silay, Occidental Negros †				32	17	12	.5	4.5	2.8	110	15.5		8.9		616.8
Cuyo, Palawan				.8	1	333.3	125.3	33.8	4.8	18.5		.8	5.6		1,103.1
Lucena, Santa Barbara, Iloilo †					3.8	.5			64.5	16.8				.5	230
Barotac Nuevo, Iloilo				50.8	8.1	60.4				101.6	25.4				445.5
Hacienda Ilaya, Victorias, Occidental Negros				10.7	48.3	6.1	5.8	.5	51.6	1.5					469.2
Central Victorias, Victorias, Occidental Negros †					142.2	60.4	22.1	2	26.1						760.8
Hacienda Bilbao, Manapla, Occidental Negros				10.7	362.7	75.5	26.1	3.6	23.4		7.4				1,156.4
Janiway, Iloilo				12.2	98.5	70.7	7.3	5.1	17.8	3.8			23.9		667.8
Cadiz, Occidental Negros		4.1	3	9.7	60	1.5	12	60.7	2.3	1	.3				536
Dingle, Iloilo		7.9	15.3	27.4	102.7	6.4	32.3	4.1	63.5	1.5			12.7	1.3	442
Ormoc, Leyte	19.8		34.5	11.9	24.9	4	2.3	63.8	63.5		2				612.4
Guiuan, Samar		.8		8.4	37.9	37.9	55.4	3.8	8.4	1					840.6
Bugason, Antique				12.7	15.2		5.1		139.7	12.7			15.2		651.7
Bogo, Cebu				1.3	11.4			6.8	53.8	1					563.8
Dueñas, Iloilo †				2	36.6	55.4	8.9	12.7	7.4	57.7	20.8	2	4.8		607
Bitaoagan, Passi, Iloilo †	7.6			40.4	52.8	3.8	3.8	2.5	61.2		28.4	6.4			598.7
Sara, Iloilo				8.1	17.8	20.8		7.6	49.3	1.8					403
Tacloban, Leyte	1	6.1	5.8	10	52.4	7.9	53.9	40.4	18.9						426.1
Dumarao, Capiz †		70.6		41.4			3.8		74.2						558.7
Central Asturias, Buntog, Dumalag, Capiz				29	27.1	31.3	5.1	7.6	63	.3	9.1	.5	1.3		323.3
Dao, Capiz †				12.7	23.1	24.7		5.1	73.7		45.7	2.5	5.1		561.6
Culasi, Antique		14		16.8	63.5	60.1	19.8	8.2	373.4	13					656.4
Mambusao, Capiz			1.5	16.5	12.7	13	10.1	5.1	176.2		20.3				1,217.1
Hacienda Amparo, Pontevedra, Capiz									130.8			1.3	.5	3.3	746.4
Capiz, Capiz	19	3		5.4	3.6	3.3	2	2.3	133.7				12.4	1.8	639.1
Borongan, Samar				18.3	11.2	24.4	105.6	41.4	28.2	7.8			9.4	.5	777.4
Calivo, Capiz				3	13	3	18.1	3	6.8	497.6	1	.5			673.6
Pandan, Antique				1.3	3.8	36.6	50.5	37.8	4.3	519.9	3.6	.8		.5	996.1
Catbalogan, Samar				44.4	3.6	15.5	3.5	35	71.3	126.2			4.1	5.3	1,295.4
Ibajay, Capiz				9.4	5.1	15.2	4.3	2.3	1.1	(a)					847.3
Calbayog, Samar	1	.3		35.3	4.8	17.3	2	36.2	67.8	145.3			8.1	4.8	842.1
San Jose Estate, Robles Camp D-17, San Jose, Mindoro †				5.1	7.6	5.1		.5		55.9	22.8			7.6	550.2
San Jose Estate, Tamaraw Plantation, San Jose, Mindoro †				.5	21.8	14.2	.3	1.5		62	17.8	9.9		14	579.3
San Jose Estate, San Agustin, San Jose, Mindoro †				6.9	17.8	7.4		1.8		48	17.1	5.1			505.8
San Jose Estate, San Jose, Mindoro †	.3			22.6	11.9	8.9	8	3.1		54.4	15.3	1.8	.3	3.6	594
Masbate, Masbate	.3			16.5	13.9	13		35.1	23.6	37.1					509.1
San Jose Estate, Tunnel D-12, San Jose, Mindoro †				15	12.7					50.8		33		33.1	648.6
Romblon, Romblon		10	3.7	.6	4.9	1.3	15.3	.5	107.4	4.5			1.3		668.4
Batag Lighthouse, Laoang, Samar				23.9	6.6	19.5	44.2	61.2	114.5	13.7			6.4		679.5
Irosin, Sorsogon	4.8	1.8	9.6	15	74.4	37.3	205.8	71.9	38.9	.3	.5		6.4		1,346.7
Sorsogon, Sorsogon				5.6	9.6	85.1	97.3	117.6	57.6	96.6					1,120.6
Bacon, Sorsogon	3.3	2.5	1.3	16	94.2	62.2	139.2	35.1	61.2					2.3	1,117.1
Jovellar, Albay				1.3	31.8	50.8	102.4	38.1	64.7			4.1			750.7
Legaspi, Albay, Albay	1			13.5	52.1	90.7	111	75	93.2						1,050.1
Guinobatan, Albay	.3	.5		10.2	24.4	46.7	93.2	30.7	97	3.3	.3		.3	.3	744.4
Polangui, Albay		21.3		3.1	29.2	63.2	44.1	21.3	60.7	.3				22.8	585.2
Bacacay, Albay						116.8	119.1	88.3	15.7						1,263.4
Amuguis, Mulanay, Tayabas †				9.4	2.8	15.2	5.3	110.3	25.6	5.3					355.6
Bato, Camarines Sur				35.8	61.2	34.3	6.6	40.9							447.3
Tabaco, Albay		8.9		15.8	55.9	74.2	51.6	26.1	30.3	1.3		2.8	.8		835.5
Sumay (Guam), Agaña, Ladrone Islands	4.6	4	5.1	11.7	16.5	4.9	22.4	.3	9.1	3.3	1	.3	.5		158
Iriga, Camarines Sur		4.8			42.6	48.3	64.3	20.3	117.4					4.8	609.1
Calapan, Mindoro		16.3	8.3	.8	4.6	2.3	11.9	1.3	90.7	8.9					449.7
Tiwi, Albay					53.3	61		26.2	116.8	168.4					650.2
Pasacao, Camarines Sur									72.6						225
Virac, Albay		27.7		25.7	110.7	33.4	34.8	45.7	49.8				.3		633.5
Naga, Camarines Sur	4.8			2.5	82.5	50.1	75.7	8.6	38.5	.3					632
Tigaon, Camarines Sur	24.1	4.8	.8	5.6	145	79.5	84.1	28.4	36.8	77.7				65.5	840.2
Baras, Albay	4.6			21.1	52.6	157.7	126.8	104.3	86.1	5.3		2			1,386.3
Libmanan, Camarines Sur	6.1	4.1		3.8	72.2	60.4	112	13.2	37.6					7.4	665.8

† Voluntary or cooperative station.

\* The rain gauge was carried away by a flood in the evening of November 25.

Daily rainfall at the stations of the Weather Bureau, November, 1921—Continued

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Batangas, Batangas		13.2	0.5			1.3		25.1	47.2	60.2	86.1	10.9	1.5		1.3	15.2
Ragay, Camarines Sur	22.1	50.3	7.6						24.4							
Calatagan, Batangas		16.8	.3					8.4	10.9	56.4	71.6	24.6	22.1	10.2	19.3	3.1
Balayán, Batangas		12.4						18	66.5	26.7	38.9	20.8		20.3	6.4	3.6
Lipa, Batangas		25.7	1.8					17.3	72.9	108.7	175.2	20.8	5.8	2.3	16.3	46.5
Lucena, Tayabas	2	58.7	4.6	6.6		22.1	13	28.2	44.4	53.3	77.7		6.4		87.9	4.1
Atimonán, Tayabas		62.4	17	34.2	3.8	8.6	18	14	26.4	68.2	17	3.3	1.5		14	37.1
Lian, Batangas		1						17	61.7	14	3	7.4	9.6		7.8	24.1
Nasugbu, Batangas								11.4						165.1		
Ambulong, Tanauan, Batangas		50.8	2.3				3.8	26.9	40.1	48.8	72.4		6.9	1.8	63.5	24.3
Daet, Camarines Norte	4.8	75.1	40.1	97.4	8.9	38.4	67	98.1	52.1	33	5.1		1.3	.3	2.5	19.3
Mendez Nuñez, Cavite		35.6	2.5				9.4	2.8	20.3	44.4	61.3	86.1	7.6	11.4	37.4	20.8
Indang, Cavite		39.4	1.3				4.1		25.1	10.2	109.9	136.9	6.3	8.6	34.6	84.8
Canlubán, Calamba, Laguna	.5	55.9	4.1		4.6		8.6	4.1	13.2	22.8	61.4	97.8	3.3	10.6	9.4	37.4
Silang, Cavite		57.9	20.3				5.6	2.5	25.2	8.9	11.5		8.4	15.5	82.8	28
Maragondon, Cavite	9.1	3.3			1			15	21.1	43.6	167.2	7.6	10.2	1.8	11.7	5.6
Santa Cruz, Laguna		38.1	5.1	.8	7.2	19.3	12.7	12.5	17.3	22.3	71.7	1.8	3.1	4.6	14.5	31.2
Buenavista, General Trias, Cavite		9.4	4.1				4.3	18	13.7	17.5	68.1	4.6	9.2	11.2	71.9	37.6
Fort Mills, Corregidor, Cavite†		2						8.4	6.1	16.8	109.5	42.4	16.8	5.1	18.8	3.6
Imus, Cavite		2.5	1.8			1.1	.6	10.7	4.4	31	93.7	5.4	13.2	10.4	125.	16.8
Alabang Stock Farm, Alabang, Muntinglupa, Rizal†	5.1	2				3.3	1.5	13.3	5.6	38.3	62.5	.5	8.9	12.2	19.3	6.1
Cavite Naval Station, Cavite, Cavite		2.3	2				1.3	22.9	2.8	24.4	175.3	4.8	9.1	7.1	101.9	9.4
Lamao Horticultural Station, Lamao, Limay, Bataan†			3.8				.5	49.5	5.1	21.5	119.4	56.1	25.1	6.9	29.8	10.7
Manila, Manila		2.3	2.5	.3				18.9	4.1	16.3	111.5	6.2	6.7	6.2	10.6	7.6
Antipolo, Rizal		3	3.3	3	4.8	.5		23.9	11.4	22.9	84.4	.5	8.4	21.3	14.8	12.7
Balanga, Bataan		.8	4.8				1.8	32.3		14.2	146.1	32.7	36.8	3.3	9.4	26.2
Montalban, Rizal†		2.8	4.3	4.3	10.7	1.3		47	12.7	35	44.9	.5	10.9	20.6	45.7	72.9
Hacienda Pintong Sapang, San Jose del Monte, Bulacan†		13.5	9.2	.5	7.1		8.6	51.3	5.6	36.8	64.3	5.8	3.8	8.1	39.8	68.1
Malolos, Bulacan		.5	19.3		3.3		1.3	17.8	22.4	12.2	44.9	8.6	3.8	3.8	41.6	14.5
Paila, Norzagaray, Bulacan†	.3	14	23.7	8.4	2.1		1.5	33.5	14.4	40.9	54.6	3.8	10.9	25.7	22.7	132.4
Hacienda Carmencita, Gutad, Del Carmen, Pampanga†			13					81.3	61	83.8	83.8	73.6	17.8	17.8	12.7	12.7
Pampanga Sugar Mills, Del Carmen, Pampanga†			17					14	15.2	6.9	41.9	45.7	44.4	20.3	4.8	8.8
Matulid, Norzagaray, Bulacan†	4.3	22.1	23.7	3	7.4	.5	10.9	63.3	45	73.1	89.7	2.1	11.7	8.2	4.1	30.7
San Fernando, Pampanga	.3	13	11.7				2	13.5	20.3	7.6	24.3	17	6.4	8.2	6.1	10.2
Mitla, Porac, Pampanga†	4.8	12.7						26.2		46.5	57.4				15.2	40.1
San Isidro, Nueva Ecija		.3	7.9					97	9.1	7.6	16.3	.8	8.2	5.9	3.1	56.9
Iba, Zambales			.5					2.5	.5	1	91.2	71.7	31.8	4.8	1.8	10
Concepcion, Tarlac			5.1					40.9	7.9	3.8	18.5	20.8	16.3	2.8	5.3	57.9
O'Donnell, Capas, Tarlac			4.8					27.4	5.6	22.9	.8	.3	335.3	38.9	68.3	116.8
Hacienda Luisita, Comillas, La Paz, Tarlac†							85.3					32.8	7.6	9.4	25.4	2
Hacienda Luisita, San Miguel, Tarlac, Tarlac†						21.6		5.1		3	18.5	7.6	6.4	10.2	20.8	27.2
Tarlac, Tarlac	.8		9.1					50.3	3	3.1	15.7	18.1	22.8	11.4	.5	13.5
Paniqui, Tarlac			3.6					32.8		2	1.3	6.1	6.6	14.7		1.8
Camiling, Tarlac								22.9		1.3		7.6		20.3		
Muñoz Agricultural School, Muñoz, Nueva Ecija†	.5	1				.8		.8	.5	1.8	.8		14	2.5	3.8	
Baler, Tayabas	14.5	.2	47.5	8.4	6.1	1	16.8	391.2	3.1	12.7	31.8	8.1	1.1	108.4	4	
Dagupan, Pangasinan								12.5	.8		4.3	5.3	5.6	20.1	6.1	
Rosario, La Union					.8			24.4		2	1.8	.8	6.3	17.2	7.1	34.1
Tubao, La Union								16.2		.8	.5	.3		10.4	7.6	39.3
Itoyon, Mountain Province								26.7		5.1	12.7	47	26.7	30.5	3.8	2.5
Bolinao, Pangasinan								1.3		1.3	2.5	38.1	19.8	31.7		31
Aringay, La Union								10.7		.8	1.5		.8	16.8	17.8	21.8
Baguio, Mountain Province					1	1.3		21.9		5	7.1	19.1	14.2	26.9	1.5	
Bokod, Mountain Province	3	.3				2.5		32.7		2.3	42.4	9.9	10.9	5.3	1.3	
Sablan, Disdis, La Union	2.5				5.1			9.9		2.5	1.3	.8	3	9.9	11.7	58.1
Naguilian, La Union								8.4		1	.3	.8	1	16.8	1.3	18.3
Kapangan, Mountain Province	4.1					17.8		18.8		1.3	5.8	15.5	3.8	10.7	3.8	12.5
Atok, Mountain Province	5.6				3.8	70.8		24.9		1.8	10.5	5.3	8.1	7.9	2.6	.3
San Fernando, La Union								5.3		1.4			2	31	.8	.8
Echagüe, Isabela			1	11.7	.6	10.5	18.3	103.2	8.2	17.3	28.4		3.2	56.8	55.4	53.4
Balaoan, La Union	2.5				23.6			4.8	1		.5	16.3	.5	8.1	8.1	5.6
Tagudin, Ilocos Sur								23.9	19	10.2	2.5	6.7	17.8	2.5		
Sagada, Mountain Province†	3		.8	1	15		.5	30.7	6.1	8.6	34.8	12	23.1	13.7	.8	
Bontoc, Mountain Province†	2.5	1	1	3	19	2		1	33.8	16	37.8			25.2	1.5	.3
Candon, Ilocos Sur	2.8							1.8						1.8	5.1	25.2
Kagotungan, Pilar, Abra†					1					1.8		18.3	2	7.9	3.8	
Vigan, Ilocos Sur										1.3				7.6	5.1	7.2
Bangued, Abra					1.3			4.1				1.6	35.1	15.2	.8	
Tuguegarao, Cagayan				87.9	9.6	1.8	2	117	9.9	.5	74.9	4.8		62.8	3	10.4
Sinait, Ilocos Sur								3					22.9	8.4		
Batac, Ilocos Norte							4.8					1.5	1.8	11.7	47.8	
Solsona, Ilocos Norte				5.1	5.6			12.7				6.6	5.1	8.9	23.4	.3
Laog, Ilocos Norte				.8	1.3			8.1			1.8	3.6	.3	9.2	14	
Pasquin, Ilocos Norte			1.5					19.6		1.5	6.4		5.3	6.4		
Aparrí, Cagayan	1.3		2.5	85.6	66	18.6	11.4	135.6		2.6	9.6	100.4	38.4	3	17.8	3.8
Cape Bojeador, Burgos, Ilocos Norte				3.3	3.8			49	.5	12.2	39.9	52.3	10.2	3.3		
Basco, Batanes	86.4	2.8	16.3	9.4	7.4	.5	35.6	15.8	2.6	.3	43.2	87.1	26.2	2.5		

† Voluntary or coöperative station.    \* Amount of rain for the 13th and 14th.    † Rain in 24 hours beginning 8 a. m.

Daily rainfall at the stations of the Weather Bureau, November, 1921—Continued

Station.	Day of month.														Total.
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Batangas, Batangas	1.5	20.8	7.6		11.7	18.5	22.6		48	24.4					417.6
Ragay, Camarines Sur		82			156.2	65.3	124.9	105.4	121.9						710.1
Calatagan, Batangas		.3			6.1	.8	4.3		30.5	43					328.7
Balayan, Batangas		17.8			11.7		4.6	50.8		16.2			2		316.7
Lipa, Batangas					26.2				119.4	10.2					649.1
Lucena, Tayabas	1.5	29.3		2	100.1	20.6	109	3	77.5	17.8					769.8
Atimonan, Tayabas		15.2	3	1.1	61.8	13.8	68.9	1	30.8						571.1
Lian, Batangas				10.4		3.3	13.2		22.4	35.6					230.5
Nasugbu, Batangas											24.1				200.6
Ambulong, Tanauan, Batangas					12.7	16.8	54.6		27.9	40.6			1		495.2
Daet, Camarines Norte	3.8	7.7	4	8.9	89.9	154.6	64	25.5	158.7	1			2	24.7	1,088.2
Mendez Nuñez, Cavite	16.5				29.2	16.5	18.3		50.8	128.3			20.3		630.5
Indang, Cavite	19.6	3			30.7	16	16		107.4	66.5		6.1	20.3	1.8	748.6
Canluban, Calamba, Laguna	.5				40.4	23.7	25.2		38.1	111.7			3		591.1
Silang, Cavite	19.3				36.8	22.1	13	10.2	41.9	71.9		5.1	3.3		512
Maragondon, Cavite	1.3				22.6	9.7	9.4		21.6	113.8					478.4
Santa Cruz, Laguna			3.3		51.3	32.8	40.7	1	41.7	27.4		.5	1		461.4
Buenavista, General Trias, Cavite	6.9	3.8			30.5	5.4	17		53.3	79.5					466
Fort Mills, Corregidor, Cavite†		1			8.4	20.8	26.9	.3	8.1	40.9				5	336.4
Imus, Cavite	.5	9.7			25.9	9.4	19.6		18.3	38.6				8	439.7
Alabang Stock Farm, Alabang, Muntinlupa, Rizal†		4.6			38.9	10.1	13.5		35.3	30.2			1		318
Cavite Naval Station, Cavite, Cavite	.8	2			30	4.3	34	.3	36.8	12.5					483.2
Lamso Horticultural Station, Lamao, Limay, Bataan†					23.4	10.4	2		38.1	23.4					425.7
Manila, Manila			9		14.8	18.7	20.7		12	28.4					288.7
Antipolo, Rizal			1		40.6	12.7	22.4		28.4	26.1					346.1
Balanga, Bataan					7.1	19.6	26.5		11.4	12.2		.8			386
Montalban, Rizal†					28.7	20.3	28.4		23.1	31.5			5		477.3
Hacienda Pintong Sapang, San Jose del Monte, Bulacan†					10.9	23.1	70.1		50.5	11.6			16		504.7
Malolos, Bulacan	3.3	.5			24.6	5.8	35.1		14.5	4.8					268.1
Paila, Norzagaray, Bulacan†	.3				7.6	44.4	49.2	.3	14.5	81.3	.3				586.8
Hacienda Carmencita, Gutad, Del Carmen, Pampanga†				5.1		12.7	14.5	8.3	12.2	8.8	1.3				520.4
Pampanga Sugar Mills, Del Carmen, Pampanga†	1.8				5.1	3	11.9		5.3	25.9					267
Matulid, Norzagaray, Bulacan†		.5	.8		6.4	95.2	104.4		22.1	148.1			24.9		807.2
San Fernando, Pampanga	30.8				37.3	11.4			8.4				11.9		240.4
Mitla, Porac, Pampanga†	1.8							18.5		30.5	6.1			1	260.8
San Isidro, Nueva Ecija	2.3			.5		9.9	8.4		2	28.4			10.7		275.3
Iba, Zambales	1.5		6.9			4.9	15.2		1.8	6.4					252.5
Concepcion, Tarlac	1.5					4.3	1.8		1.3	25.9					214.1
O'Donnell, Capas, Tarlac	7.1	4.3				4.1	176.3	1.8		14.7	9.9				839.3
Hacienda Luisita, Comillas, La Paz, Tarlac†						6.9	5.8	21.8	.8		.5				218.1
Hacienda Luisita, San Miguel, Tarlac, Tarlac†	13.5		23.6									2.3			159.8
Tarlac, Tarlac	8.9				4.1	16.8				16.8					194.9
Paniqui, Tarlac	31.2		1.8		5.1	23.6				10.2					140.8
Camiling, Tarlac	36.8	40.6			10.2	7.6									147.3
Muñoz Agricultural School, Muñoz, Nueva Ecija†						3.8	7.6		5.1	15.2					58.2
Baler, Tayabas		47.5	.5		4.3	35	13			130.3	.3		.2		886
Dagupan, Pangasinan	53.1					9.4	10.9			10.4		21.1	1.8		161.4
Rosario, La Union	18.8		5.1			1.5	3.5			1.8	.5				125.7
Tubao, La Union	6.1		.8				.5								76.5
Itogon, Mountain Province	29.2														184.2
Bolinao, Pangasinan	6.6	1.8								1.3		2			137.4
Aringay, La Union	3	.3	1.3	3		1.8				.5					77.7
Baguio, Mountain Province	41.6		12.6			2.1				1.6					151.4
Bokod, Mountain Province	23.1	16.7	1			3.6	1.5			9.4					165.9
Sablan, Disdis, La Union	68.6	1.3	30.5	10.4		1.5	1	.8				1.5	6.9	33	255.3
Naguilian, La Union	30.2		1.3			.5						.5			80.9
Kapangan, Mountain Province	33	15.7	10.2								5.5				158.5
Atok, Mountain Province	10.7	7.4	7.4			1	.3		1.8						169.2
San Fernando, La Union	10.9					.4	.5			.5		.3			53.9
Echague, Isabela	1.3	2.4	1		14.1	27.5	14.6		3.3	49.4	5.4				482
Balaoan, La Union	1.5		1.5		.8				3						70.2
Tagudin, Ilocos Sur	15.7		12.7												111
Sagada, Mountain Province†	18.3	22.9	.8		.5	7.3	6.4	1.5	5.3	23.8		7.9			244.8
Bontoc, Mountain Province†	11.7	.8				19.9	13.4	2	11.9	14	18.5	3	.8		240.1
Candon, Ilocos Sur	1.8												3		41
Kagotungan, Pilar, Abra†	.5									.5		.5			36.3
Vigan, Ilocos Sur	24.9									.3		26.4	6.9		81.7
Bangued, Abra	1									1.1		3.6			63.8
Tuguegarao, Cagayan	2.8		1.3		37.1	22.6	.8		.8	59	10.7				519.7
Sinait, Ilocos Sur	50.8											20.3			105.4
Batac, Ilocos Norte	6.9	54.6										23.1			152.2
Solsóna, Ilocos Norte	37.1	12.4		.5	.5					.5	.3	23.4	.8		142.7
Laoag, Ilocos Norte	2.8										.5	21.1	5.3		68.8
Pasquin, Ilocos Norte		2.3										19.6			62.6
Aparri, Cagayan	22.9	1.3			8.8	5.3	12	2.7	10.5	9.7	7.6				545.7
Cape Bojeador, Burgos, Ilocos Norte		.3			.5	.8	1.8		2.5	5.1		35.6		22.9	244.7
Basco, Batanes				1.3	.5	11				42.6	40.7	104.1	34.3	1.5	572.1

† Voluntary or cooperative station.

\* Rain in 24 hours beginning 8 a. m.

MAXIMUM AND MINIMUM TEMPERATURES AT THE STATIONS OF THE WEATHER BUREAU, NOVEMBER, 1921

Day.	Jolo.		Lais, Malita.		Malita.		Lebak.		Lamitan, Isabela, Zamboanga.		Malamaui, Isabela, Zamboanga.		Zamboanga.	
	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum. <sup>a</sup>	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.2	23.6	33.4	23	33.8	23.7	23.1	23.1	30.6	22.4	32.3	24.5	32.5	23
2	30.3	23.6	27.6	23	28.2	24.4	23.3	23.3	29.5	21.8	30.8	24.5	32.5	23.2
3	30.2	23.1	31.9	21.8	32.7	22.5	23.4	23.4	29.2	22.9	30.3	23.5	32	23.1
4	30	23.1	32.9	23.1	32.4	23.5	23.6	23.6	29.8	22.4	29.8	24.3	28.6	22.9
5	28.8	24.2	28.5	23	29.1	23.8	23.4	23.4	30	23.8	28.5	24	29.4	24.5
6	28.6	24.2	24.8	23.5	24.5	23.6	23.3	23.3	30.7	23.3	29.3	23	29.5	23.7
7	28.5	23.2	29.1	22.5	30.7	22.7	23.1	23.1	26	23	25.8	22.7	27	22.1
8	32.4	23.1	33	21.6	32	22.6	24.2	24.2	29.1	22.3	29.8	22	29.5	24.2
9	32.5	23.2	31.6	22.4	32.3	24.3?	24	24	29.9	21.8	29.5	23.5	31	23.1
10	29.3	23.2	32.4	22.2	32.4	24.1	23.8	23.8	27.6	23.4	27.8	23	28.5	23.3
11	30	23.8	33	22.5	32	23	24.3	24.3	31.6	22.4	29.6	22.5	29.4	22.5
12	30.7	23	31.5	22.3	32.6	23.5	24	24	31.2	22.6	31.3	23.5	29.8	21.8
13	31.2	25	31.5	22.4	32.2	22.7	24.1	24.1	31.5	23.6	29.8	24.5	30.5	24.2
14	29	23	31.5	21.8	31.6	22.4	23.6	23.6	28.8	22.2	25.8	21	26.5	21.6
15	29.5	22.9	31.6	21	32.3	22.2	23.4	23.4	28.9	22.6	29.5	22.5	27.5	23
16	31.2	22.4	30.6	21.8	30.7	22	22.5	22.5	30.4	21.3	29.5	23	29.5	22
17	31	22	31.1	22	32	22.4	24.4	24.4	30.2	21.4	29	23.5	29.5	23.2
18	31.8	23.8	31.5	20.6	32.3	22.4	23.4	23.4	30.3	21	29	24.5	31	21.5
19	30.8	25	31.6	21.3	32.1	22.5	24.3	24.3	30.7	20.4	29	24.5	32.5	21.8
20	30.8	25.5	31.8	20.8	32.6	22.4	22.4	22.4	30.5	20.5	29	23.6	30.5	22.3
21	30.1	24.2	31.5	22.3	32.1	22.9	24.6	24.6	28	21.4	28.8	24.2	29	22.7
22	29.7	23.3	29.9	21.2	32	22.3	23.3	23.3	27.2	20.5	29	23.5	29	22.5
23	29.2	23.2	20	30.7	21.3	23	23.5	23.5	31.2	21.5	24	24	28.5	23.8
24	30.3	23.2	32.6	22	33.9	22.2	23.8	23.8	31	21.4	29	24.5	29.8	23
25	29.3	23	32.4	22.3	32.6	23.7	24.4	24.4	30.3	21.2	29	23.5	28.7	23.2
26	29	23.5	33	22.5	33.6	23.4	24.5	24.5	30	21.7	29	23.6	28	23
27	30.5	22.6	33.3	22.3	33.5	22.9	24.2	24.2	29.6	20.8	29	23.2	30.5	23
28	30.8	24.9	31.7	21.6	32.4	22.3	24.4	24.4	30.1	21.8	25.8	24	30.2	23.3
29	31	23.8	32.5	21.3	33.1	22.5	23.5	23.5	30.4	20.8	29	23.8	30	22
30	31	23.2	32	21.8	32.7	22.4	23.1	23.1	30.7	21.4	29	24	30.4	23
Mean	30.3	23.5	31.4	22	31.8	22.9	23.7	23.7	29.8	21.9	29	23.5	29.7	22.9

Day.	Davao.		Pikit.		Bual, Dulauan.		Cotabato.		Naganaga, Margosatubig.		Malabang.		Cateel.	
	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.	Maxi-mum.	Mini-mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	34.2	22.7	33.1	22.2	33	20.4	31	22.6	33.3	22.3	33	21.5	31.4	23.6
2	29.4	23.9	30.6	24	30.1	20.3	31.8	23.8	34	22.1	29	22.2	27.6	23.4
3	32.2	23	33.6	23.1	33.2	22	31.2	23.6	34.5	22.5	33	22.3	31.2	23
4	32.7	23.4	33.6	24	32.7	23.2	30.1	24	33.7	22.2	33	22.2	31	22.5
5	29.7	24.2	29.5	23.4	30.1	23.1	28.8	23.8	34.5	23	33	22.2	29.2	23.8
6	27.2	23.9	29.6	23	30.1	22.3	30.5	23.2	34.2	23.5	33	22.2	21.8	26
7	29.8	23	30.4	23.1	30.8	23.4	26	23.6	33.3	22.2	33	22.2	30.4	23.1
8	31.8	23	31.1	22.3	31.5	22.4	29.2	23.6	34.2	22.3	33	22.2	31.5	22.6
9	29.3	23.1	30.1	23.4	29.9	22.8	29.5	24	33.7	20.5	33	22.2	28.7	23.5
10	30.7	23.9	29.3	23.4	28.5	24.3	27.5	24.6	33.5	22	33	22.2	34	25
11	30.9	23.6	30.8	22.4	30.5	22.4	28.8	23.5	33.3	22.5	33	22.2	31.7	23.4
12	30.9	23.4	28.3	23.2	27.6	22.5	26.9	23.6	33.5	21.3	33	22.2	30.9	23
13	31.4	23	32.3	22.1	32.4	21.1	28	22.8	33	20.2	33	22.2	31.6	22.7
14	31.9	22.9	27.7	21.4	26.4	21	26.2	22.6	31.5	20.5	33	22.2	31	21.7
15	31.6	22.3	31.9	21.3	29.5	20.5	25.1	22.4	30.5	21.2	33	22.2	31	22.5
16	30.2	22.5	30.4	22.1	29.8	21.5	28.2	22.5	33.7	20.2	33	22.2	31.5	22.4?
17	31.7	23.3	32.5	22.2	31.6	21.2	29.8	22.4	34.7	22.3	33	22.2	31.4	22.1
18	32.7	22.5	32.9	22.1	32.5	21.9	29.4	23.2	34.5	23	33	22.2	31.7	21.5
19	33.2	22.8	33.8	22.4	33.6	21.5	29.2	22.9	33.7	22.5	33	22.2	31.2	21.3
20	33.2	22.8	34.2	22.2	33.2	20.4	30	22.6	33.5	22.2	33	22.2	31.4	21.8
21	31	23.5	32.3	22	32	21.3	29	23.2	34.2	23.5	33	22.2	31.3	22.5
22	30.4	23.1	32.6	21.3	32	20.6	28.7	22.6	33.7	23	33	22.2	30	22.4
23	31.7	22.5	33.3	21.4	32.6	20.7	28.5	22.4	33.3	22.5	33	22.2	30.4	22
24	31.6	23	32.3	23.1	31.9	21.7	29.3	23.7	33.5	22.3	33	22.2	32	23
25	31.7	24	31.5	22.4	30.8	22.5	29.6	23.2	34.5	22.5	33	22.2	33.4	23.6
26	31.5	22.6	32.9	22.4	31.3	21.9	27.1	23.4	35	22.2	33	22.2	31	22.1
27	33.2	22.3	33.3	22.3	32.6	21.8	30.2	23.3	34.5	23	33	22.2	31.8	22.3
28	31.2	23.3	32.3	22.3	31.8	21.7	29.6	22.9	33.7	22.5	33	22.2	30.5	22.8
29	32.6	22.8	32.5	22	32.8	21	30	23	34.5	22.7	33	22.2	31.4	21.5
30	33.1	23.5	33.3	22.4	33.6	21.9	30.1	23.4	34.7	23	33	22.2	30.6	22
Mean	31.4	23.1	31.7	22.5	31.3	21.8	29	23.2	33.7	22.2	33	22.5	30.9	22.7

<sup>a</sup> These minimum temperatures seem to be not very reliable.



Maximum and minimum temperatures at the stations of the Weather Bureau, November, 1921—Continued

Day.	Ganasi.		Camp Kalao, Monkayo.		Camp Keithley, Dansalan.		Veruela.		Sumilau.		Cagayan.		Talacogon.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	28.5	19	31.6	19	28.5	18.5	31.6	22.7	31.5	19.4	32.3	21	33.4	21.3
2	27.5	18.2	32.9	20.2	25.3	20.3	28.5	23.2	25.9	23.2	25.9	22.8	33.4	23
3	28.5	18	33.2	19	28	20	31.4	23.6	28.7	18.3	31.1	22.6	33	23
4	29	18.5	33.4	19.9	27.8	19.6	31.7	22	29.1	18.4	31.5	22.1	32.4	23.5
5	30	18.8	33	21.6	27.8	19.6	28.3	23.7	26.1	18.8	30	22	28	23.2
6	27.5	17	29.3	21.9	27.3	19.7	26.3	22.9	28	19.9	31.4	22.6	27.2	23.4
7	28.5	18.5	32.1	21.9	26.8	20.5	32	22.8	27.1	18.9	29.5	22.5	32.5	24
8	29.5	17.5	32.1	21.6	28.5	21.5	22	22	28	18	31	21.2	32.5	23.4
9	29	18.5	32.5	21.5	23.8	19.8	23	23	28.7	20	28.5	23.3	31.1	23.2
10	30	18	30	22.6	24.3	20	29.6	22.5	28.6	18.8	28.1	21.6	31.2	21.4
11	29	17.5	32.5	22.5	26.3	20.6	31.6	23.2	28.9	19.3	31.1	22.8	31.7	21.5
12	29.5	18	31.2	21.4	24.3	21.5	30	22.2	27	19.2	29.2	22.4	29.7	23.3
13	30.3	19	33.5	21.9	25.5	21.5	33	22.7	29.8	18.7	33.2	21.9	33.2	23.2
14	31	18.3	32.3	20.5	24.8	21.1	31.6	21.7	28.8	18.8	32.5	23.5	32.2	22.2
15	28	17.5	34	20.9	24.8	21.1	33.9	22.2	27.1	19.2	31.5	22.7	33.2	23.4
16	29.3	17	31.5	21	25.8	17.8	31.3	22	28.1	18.3	31	21.2	31.9	23.3
17	29.5	17.5	32.2	21.9	26.3	17.7	32.2	22.4	27.8	18.2	31.5	21.6	32.7	22.2
18	30	18.5	33.1	20.2	26.2	15.7	32.2	21.6	27.8	17.3	31	20.4	32.4	22
19	28.5	18	32.9	21	26.3	16.6	32	22.4	28.8	16.4	31.47	20.5	33.2	21.4
20	28	18	33.2	20.9	26.8	17.4	32.5	22.4	27.9	17.9	---	21.5	32.7	21.4
21	28.5	17.5	29.5	22.5	25.5	19	29.5	23.2	26	18.4	28.5	22	30.2	22.2
22	29.3	18	33.2	21.8	27.3	19.1	32.4	22.2	27.5	18.5	29.77	21.5	32	22.2
23	30	19.5	32.2	21.4	26.3	18.2	31.5	22.7	25.5	17.2	---	20.9	32	23
24	30.5	19	32.3	21.3	25.4	18.3	31.5	22.6	25.4	19.7	30?	21.9	31.4	22.4
25	29	18	32.1	21.5	26.1	20.1	31.6	23	25.4	18.5	29.5	22.5	32.8	21.4
26	28	18.3	34.4	20.9	25.8	21.3	33.9	22.2	27.6	19.2	31.6	22.2	33.8	21.4
27	29.5	18.5	32.4	21	23.3	18	33	22.7	30	17.4	31	22.2	32.9	23
28	27.5	18.5	32.8	21.5	27.5	17.9	31.8	23.2	29.5	18.2	---	21.2	32.3	21.3
29	28	19	32.8	22.5	26.9	17.4	32.5	22.2	28.7	17.4	30.5	21	33.4	22.2
30	29	19.5	33.5	21.2	26.9	18.5	32.2	22.8	28	18	29.9	21.8	33.2	22
Mean	29	18.2	32.3	21.2	26.3	19.2	31.3	22.6	27.9	18.5	30.5	21.9	32.1	22.4

Day.	Butuan.		Mambajao.		Dumaguete.		Kolonie, Yap.		Tagbilaran.		Iwahig Penal Colony, Puerto Princesa.		Dalaguete.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	33.9	22.2	29.9	25.8	31.8	25.7	30.8	25	31.8	23.7	32.6	22.3	31.5	26.5
2	28.4	23.1	27	24.3	27.4	24.9	31.6	25	27.7	24	32.8	22.4	27.6	24.6
3	31.9	22.8	29.1	24	31	23.4	31.7	24.3	31.2	24.6	30.4	22.4	30.9	25.4
4	33.6	23.4	29.4	24.4	31.5	25.5	31.7	25.1	31.3	24.9	31.8	22.8	31.3	25.3
5	28.4	23.2	28.8	24.9	31.1	26	30.8	24.3	30.8	24.4	29	23.5	30.5	25.1
6	29.2	23.2	28.5	25.3	30.9	25.4	30.9	24.9	31.2	24.3	29.6	22.4	30.8	24
7	33.6	23.8	29.4	24.4	29.5	24.1	31.9	24.4	30.5	24.4	31.8	22.4	30.7	24.7
8	31.9	22.8	29.9	22.5	31	23.7	29	23	31.4	23.8	32	23.5	30.7	24.3
9	27.2	23.4	27.6	24.3	29.4	24	31.6	24	28.3	23.1	31.8	22	29.3	25
10	31.4	22.7	27.8	22.8	26.3	23.4	31.8	24.8	25.6	23	32.4	23	26.9	23
11	31.1	23	29.3	24.9	27	23.5	30.6	24.1	27.7	24.2	32.6	23.6	28.2	23.6
12	30.6	23.3	28.3	23.2	28.1	23.1	27.7	23.1	27.5	23.7	30.2	23	27.7	24.1
13	33.7	23.2	31.9	24.5	32.1	25.6	28.7	23.3	31.8	24.9	29.4	23.5	31.3	23.4
14	32.2	23.4	30.2	22.8	30.7	24.3	31.5	23.9	30	25	30.2	22.4	29.5	24.9
15	33.2	23.5	31.6	24.8	29.6	24.4	31.4	24.6	30.8	25.4	31.8	23	30.5	24.7
16	32.1	21.8	31.3	25.1	31.4	21.9	31.2	24	30.7	24	32.2	22.4	30.9	23.2
17	32.5	22	---	22.6	30.9	22	31.5	23.1	32.2	22.7	32.6	19	31	22.7
18	31.6	21.9	---	22.2	30.8	22.5	31.8	23.9	32.2	22.6	32.4	19.8	31.5	23
19	32.6	22.3	29.3	23	30.9	24.1	30.6	23.7	31.7	23.5	32.2	20	31.2	22.6
20	32.6	22.1	---	24	31.4	24.5	28.9	23.8	30.3	22.8	32	22	30.6	23.2
21	29.3	23.1	---	24.9	29.8	24.4	30.7	23.8	28.2	23	32	22.2	29	22.7
22	30.6	21.8	26.3	23.8	28.2	23.7	30.2	24.2	27.7	23.3	32.4	23	27.7	23.8
23	30.7	22.5	23	23	29.3	23.4	31.4	23.8	31.1	22.8	32.7	22.8	30.3	23
24	30.1	23	24	31.4	28.7	24.3	31.6	24.8	29.6	22.9	32	23.6	30.5	22.9
25	31.1	23.2	29.5	---	28.7	23.4	31.7	25	27	24.3	29.8	22.2	27.7	24.3
26	34.1	22.4	30.2	24.9	30.1	24.4	32.8	24.3	31.2	24.9	31.1	23.2	30.2	24.6
27	33.1	22.5	---	23.4	31.3	22.9	31.9	24.2	31.7	23.9	32	21.4	30.9	22.9
28	32.9	22.7	---	23.3	30.8	23.9	31.6	25.1	30.9	23	32.6	22	31.5	23.2
29	33.4	22.6	---	24.4	30.9	23.8	29.9	23.3	30.6	22.6	32	22.2	30.8	23.5
30	34.1	22.4	29	24.9	32.1	25.1	30.4	23.9	31.3	23.2	31.6	22.7	31.6	24.4
Mean	31.7	22.8	29.3	24	30.2	24	30.9	24.2	30.1	23.8	31.6	22.4	30.1	24

Maximum and minimum temperatures at the stations of the Weather Bureau, November, 1921—Continued

Day.	Surigao.		Central Palma, Ilog.		Hacienda Naval, Himamaylan.		Biaong Cui's Farm, Barili.		Maasin, Leyte.		Isabela, Occidental Negros.		Hacienda Tanolo, Hinigaran.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.7	23.5	30.8	22.8	34.5	22.5	31.5	22.4	31	23.6	33.3	23.2	33.1	23
2	27	24.6	30	22.5	29.5	22.5	31	21.8	31	23	27.3?	22.8	27.6	23.9
3	30.1	24.4	30.4	23	31.5	22	30.2	22	33	23	31	22.7	31.5	23.5
4	30.3	24.5	30	22.8	31.3	22.5	31.5	22.6	32.4	23.2	32.7	22.7	31.6	22.6
5	28.2	24.7	30.5	23	31.5	22	32.5	22	30	23	31.6	23	31.1	23.1
6	29.8	24	30.3	22.9	32.4	23	30.1	22.6	30	22.2	32.6	22.8	30.5	22.9
7	30	24.3	29.5	23.1	30	23	31.2	23	31.4	23	29.2	23.5	29.8	23.8
8	30.4	23.9	31	23.2	32	23	26.5	22	31	23.1	31.8	23.1	31.8	23.8
9	28	22.8	29	22.6	28.5	20	30.5	22.5	28.8	22	27.5	23.2	28	22.5
10	27.5	23.4	28.1	22.1	27	20	25.2	21.5	26.8	22	25.8	21.7	26.2	22
11	28.7	23.9	28.3	22.2	28	21	24.5	21.2	32	22.4	26.3	21.7	27	22.2
12	27.4	24	29	22	29.3	21.5	26.4	20.8	31.4	22.2	28.6	21.9	28.5	20.5
13	30.8	23.4	30	22.5	31.5	22	27.4	21.5	31.2	22	22.2	22.2	32	22.6
14	29.4	24.2	30.2	23.1	31.5	22	30.5	21.2	32	22.8	29.8	22.4	30.8	23.2
15	32.5	23.6	30.5	23	31.5	23.5	31.2	22.2	32.4	23.2	30.7	23.1	30.6	23
16	30	22.3	30.1	23.1	30.9	23	32.4	22.5	32.8	23.6	30.8	21.2	31	22
17	30.3	22.8	30.5	22	30.8	23.2	31.5	22	34	23	30.8	21.5	31	20.8
18	30.4	22.9	30.9	22.9	31.5	22	32	22.8?	34.2	21.6	31.1	21.8	31.5	20.8
19	29.9	22.7	30.6	22.9	31.3	22	32.3	21.6	34.4	21.5	31.9	21.4	31.5	22
20	29.3	23.4	30.4	22.4	30	21	29.5	20.5	31.8	21.4	30.7	21.7	31	21.3
21	25.9	23.4	29.5	21.6	30	21	27.5	22.1	32	22	22.1	22.1	29.5	22
22	28.2	23.8	29.5	23.5	29.3	22	26.1	22.3	32.2	22.2	28.8	22.4	28.7	23
23	27.6	23.8	30.5	22.5	30	22	29.1	23	34	22.1	29.8	22.6	31	23.8
24	28.8	23.9	30	22.1	30.2	23	28.4	22.5	28	22.4	27.1	21.4	31	22.6
25	28.2	24.7	28.8	23	28.3	22	28.5	22.4	30.6	22.1	28.8	21.2	27	23
26	31.3	24	30	23.1	28.5	22	31	23	33	23.6	31.8	20.5	28.8	23.2
27	30	23.2	30.6	23	32	20.5	30	21.5	35	23.6	31.8	20.7	32	20.8
28	30.3	23.8	31	22	33	22	31	20.5	35.5	22.8	29	21.3	31.5	21
29	31.5	23.7	30	22.5	33.9	22.3	31.5	20	35.8	22.9	29.3	21.3	32	21
30	31	24.1	31	22.1	33.4	22.5	31.2	21.2	36	22.6	30.9	21.4	31.6	22.6
Mean	29.5	23.7	30	22.6	30.8	22	29.7	21.9	32.1	22.6	30	22.1	30.3	22.4

Day.	Cebu.		La Castellana.		Central Azucarera de La Carlota.		Hacienda Canlaon, La Castellana.		Mao Sugar Central, Bago.		Valladolid.		San Joaquin.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	32.3	23.8	33.7	21.9	34.3	21.7	29.6	20.5	32.6	21.8	33.2	23.6	33.9	25.9
2	27.4	23.8	33	23.8	27.8	23.7	32.1	20.7	33.1	21.4	30.2	22.4	33.6	25
3	31.7	25.8	32.8	22.8	31.8	23.3	27.5	20.3	33.8	22.2	32.2	23.8	32.6	26
4	31.3	25.4	32.6	22.9	32.1	22.9	28.3	21.4	33.4	22	33.4	24.2	32.5	23.8
5	31.2	25.7	32.1	22.5	31.4	23.4	30.7	21.7	31.4	21.5	32.2	24.1	33	25.2
6	31.3	25.1	32.8	22.3	31.9	22.9	31	22	33.2	22.2	31.3	23.2	32.7	25
7	31	24.5	33	23.2	30.6	24.2	31.3	20.9	32.5	22.7	30.9	24.4	30.6	24.9
8	30.7	25.2	31.8	23.1	32.9	22.8	29.3	21.5	32	22.4	32.3	24.7	30.8	25.3
9	28.2	23.7	31.2	22.1	28	22.6	28.6	20.4	28.5	21.3	29.4	22.4	28.7	24.4
10	27.4	22.4	33	21	26.2	21.8	30.1	21.2	25.5	21.2	28.7	22.3	25.5	21.8
11	28.2	25.6	32.2	21.4	27.7	22.6	30.6	19	27.1	21.1	30.2	21.7	27.6	22.1
12	28.2	25.4	32.5	22	29.8	22.7	31.1	19.5	30.3	22.2	32.8	23.6	28.1	23.9
13	30.6	25.8	33.2	22.6	32.7	22.6	31	20.2	32.7	22.1	32.4	22.7	31.7	25.5
14	28.6	23.9	33	22.8	31.3	23	31.7	19.4	31.3	21.7	31.2	23.7	30.3	24.6
15	29.2	24.5	31.2	23.2	31.7	24	31.8	18.7	30.9	22	31.7	22.4	31.7	24.6
16	30.1	25	21.6	31.9	22.5	30.7	20.2	32	21.4	30.7	22.5	31.6	24.1	21
17	32.7	23.9	18	31.8	19.9	31.1	19.2	32.2	19.4	31.4	21	32.1	22.7	22
18	32	23.9	20.2	32.1	21.4	31.6	20.8	33.1	20.6	32.2	21.9	31.7	22.9	23
19	31.4	24.2	29.4	20.7	32.2	21.6	28	21	33	20.2	32.4	21.7	32	23.6
20	31	23.9	30.7	19.8	29.5	20.9	29.5	20.2	31.5	19.5	31.7	22.2	31.8	23
21	28.4	24.3	32.7	20.9	27.8	22.8	30	21.3	30	22	29.8	23.9	31.5	23
22	28	24.5	32.2	22.8	28.3	22.9	31	20.7	28.2	22.4	30.2	22.4	30.6	23.5
23	29.1	24.6	31.2	22.5	29.9	22.6	30.3?	20.5	30.7	21.6	31.7	23.7	31.3	25
24	29.6	24.6	33.2	21.5	30.3	22.4	30.7	20.4	29.9	21	32.2	23.2	30.8	22.9
25	27.2	24.9	32.5	23.5	26	23.9	30.8	20.5	26	22.8	29.6	24.4	27.5	23.4
26	30.1	25.2	30.3	22.6	29.7	23.7	30.8	20.6	29.7	22.5	29.2	23	29	23.3
27	32.4	24.4	20.8	31.9	20.8	31	19.5	33.3	20.3	32.4	21.2	31.9	24.2	21
28	32.3	24.5	30.4	20.8	31.2	21.3	29.9	20.4	31.4	20.4	32	21.9	32.1	23.1
29	31.3	24.6	31.7	20.7	31.7	21.3	20.6	30.8	20.5	33.2	21.7	32.6	22.9	21
30	31.6	25.6	31.5	21.5	32.8	22.1	20.9	33.4	20.9	32.9	22.4	32.2	22.6	21
Mean	30.2	24.6	32.1	21.8	30.6	22.5	30.4	20.5	31.1	21.4	31.5	22.9	31.1	23.9

\* These minimum temperatures seem to be too low.

Maximum and minimum temperatures at the stations of the Weather Bureau, November, 1921—Continued

Day.	Murcia.		Bacolod.		Oton.		Iloilo.		San Jose de Buenavista.		Tuburan.		Leon.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	33.4	20.4	32	23.3	32.7	24.6	31.6	24.7	32	22.6	31.2	23.3	31.8	24.5
2	31.4	20.3	26.7	23.5	26.9	23.6	26.7	23.3	28.4	25	26.8	24	28.9	22.3
3	31.9	21.3	31.4	24	32.9	24.4	32	24.1	31.6	22	31.8	24.8	32.3	23
4	31.7	20.5	31.3	23.9	32.8	24.8	31.2	24.8	30.5	23	32.3	24.5	31.9	23.5
5	30.5	22.3	30.6	23	32.4	24.7	31	25	30.7	23.5	30.2	24.5	32	23.3
6	32.4	20.5	31.9	23	31.7	24	31	23.4	30.6	23.3	33.1	23.9	31.8	22.4
7	30.6	20.3	29.5	24.9	28.6	24.6	28.7	24.4	28.8	24	32.3	25.3	28.6	23.4
8	30.1	21.4	31.2	22.8	30.5	24.4	31.4	24.5	31.7	24.3	31.7	24.4	31.5	22.1
9	28.4	20.3	27.9	22.3	28.7	24.7	28.9	22.8	26	23.4	27.2	24.5	29.8	22
10	28.8	20.2	25.4	21.3	26.8	22.8	26.2	22.2	26.1	21.8	26.3	21.8	25.6	20.5
11	28.9	20.1	26.7	24.3	27.9	25.7	28	23	27.6	22.2	29.1	21.4	26.8	20.9
12	29.9	21.3	29.7	22.1	27.9	25	28.2	22.9	27.7	23.4	29.8	23.4	27.7	23
13	31.8	21.4	32.4	23.6	28.7	26.6	31.1	23.5	31	25.3	33.1	22.9	29.4	22.9
14	29.9	20.7	30.5	22.4	29.3	26.8	30.3	24.1	29.7	25.7	31.7	23.6	29.9	23.3
15	31.6	21.6	31.9	22.7	29.7	26.9	30.8	24.7	31.3	26	32	24.7	30.3	22.5
16		21.2	31.7	22.7	28.7	25.8	30.7	24.8	30.7	23.6	31.8	22.5	30.7	21.4
17	33.4	21.6	31.6	20.2	28.6	21.6	30.7	22.1	30.5	21.4	31.5	22.2	31.8	19
18	31.5	20.4	31.1	21.3	28.4	23.4	31.6	23.8	30.5	22.2	31.7	23	32	20.6
19	32.4	20.3	31.2	21.2	29.2	22.6	31.7	23.1	30.8	22.7	31.8	23.5	32.6	21.2
20	32.8	20.3	31	22.6	28.4	23.5	30.3	23.5	31	21.8	30.5	24.3	31.4	22.4
21	29.4	20.8	27.6	23.5	28.6	24	30.2	23.6	30.7	22.4	28.1	24	30.8	22.5
22	27.9	22.3	27.4	22.9	28.4	23.6	28.3	23.4	30	23	27.7	24	29	22.2
23	26.9	22.3	28.9	23.3	28.2	24	30.3	24	30.9	22.5	28.1	22.9	31.5	23.2
24	29.4	22.7	29.3	23.1	28.6	23.6	29.4	23.5	30	22.4	27.6	23.9	29.4	23.9
25	28.8	20.2	26	24.3	27.7	23.6	27.7	23.7	27.1	24.4	25.4	24.5	28.1	21.4
26	31.7	21.7	28.8	22.6	27.9	24.7	28.8	22.7	27.7	23.6	31.2	23.8	28.3	21.8
27	31.4	20.3	31.2	20.2	30.4	22.6	31.5	23	31.2	21.7	30	21.8	31	20.8
28	30.3	20.2	30.2	21.2	30.6	22.8	32.3	23.4	31	22.6	31.3	22.4	33	21
29	32.4	22.4	31.5	21.8	30.4	22.8	31.3	23.5	31.7	22	31.8	23.3	32.8	21.4
30	32.4	21.6	31	21.9	30.5	23	31.8	23.4	30.4	21.7	31.1	23.2	33	21.5
Mean	30.8	21	29.9	22.7	29.4	24.2	30.1	23.6	29.9	23	30.3	23.5	30.4	22.1

Day.	Silay.		Calag-itan, San Remigio.		Cuyo.		BarotacNuevo.		Hacienda Ilaya, Victorias.		Hacienda Bilbao, Manapla.		Januay.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.5	24.9	34	22.1	32.5	26.8	30.1	23.1	30.4	23.3	30.4	21.8	30.8	24.8
2	26.3	24.8	29	22.3	29	26	29.2	23.1	30.2	23.4	30.5	22	26.6	22.3
3	30.8	24.5	33.3	23.1	32.3	25.6	32.2	23.6?	30.5	23.6	30.7	22.1	31.5	24.3
4	29	24.9	32	22.3	31.1	26.5	32.8	24.5?	30.7	23.5	30.5	21.8	29.8	24.5
5	28	24.6	32	22.3	31.7	26.9	31.5	23.4	30.4	23.8	30.9	22.2	30.8	24.7
6	30.5	25.8	34	22	30.7	24.6	31.7	23.6	29.8	23.5	30.4	21.9	32	24.3
7	29	24	33.1	23.1	30.3	26.3	30.2	24.1	30.4	22.4	30.8	22.1	29.3	24.4
8	27.5	24.5	32.3	24.4	30.7	25	33.2	24.3	30.8	23.4	31.2	22.3	29	23.3
9	27	23.8	26.4	23.1	30	24.7	25.2	23.8	31.6	22.2	29.8	22.1	29	24.5
10	27.5	22.6	22.3?	21.6	26.5	24.5	23.2	21.6	29.5	20.2	29	21.2	25.2	21.8
11	26.8	24.5	26.1	22.1	28	23.5	23	21.6	30.5	23	29.4	20.8	26.5	21.5
12	28.5	24.5	29.3	23.1	29.8	25.6	30.3	23.5	30.3	22.4	29.7	21.1	28.8	23
13	31	24.5	30.3	22.4	30.7	24.7	31.3	24.5	29.7	23.3	31.2	22.5	29.4	24.3
14	29.2	24.4	30.2	24.2	29.6	25.9	29.7	23.7	30.7	23.8	31.1	22.4	30	23.5
15	29.1	24.5	31	24	30.4	25.3	31.2	24.2	31.2	23.2	31.7	20.2	31.2	24.5
16	30.5	23.5	31.2	23.3	30.5	25.7	31.3	24.3	31.5	23.5	31.8	19.9	31?	23.9
17	32.5	21.5	31.3	20.1	31.6	23.7	32.1	22.4	30.6	23.5	31.9	21.1	31.8	20.6
18	31.5	23.2	31.3	22.1	31.5	25.6	32.3	23.3	31.5	23.2	32.3	22.3	32.5	21.3
19	31.7	23.4	31.5	21.5	31.2	25.5	28.1	22.6	30.5	22.6	32.4	22.6	33.2	20.3
20	31.5	23.5	30.5	21	30	26.5	27.4	23.4	30.6	23.4	32.5	22.7	31.2	22.7
21	27.3	24	30.8	22.6	30	26.2	29	23.3	31.3	23.5	31.6	22.9	28.6	23.5
22	25.3	24	30.6	23.1	29.5	24	28.6	23.2	30.6	21.8	30.5	21.2	29.3	22.5
23			30.1	21.2	30	25.6	28.1	23.4	30.5	23.4	30.8	20.8	30.5	23.2
24	26.5		30.1	22	29.9	25.6	29	23.4	30.6	22.5	31	21.9	27.7?	23.2
25	25		27	22.1	27	26.3	27.2	22	30.3	23.5	28.5	21.8	27.4	24.5
26			28.9	23.3	27	22.5	29.2	22.9	29.7	23.4	30.2	21.4	28.4	22.4
27	32.5		32.1	21	31	24.9	33.3	22	30.5	22.5	30.5	20.3	32.6	21.2
28	30.5		31	21.5	32	23.5	33.5	22.6	30.6	23.2	30.8	19.6	32.6	21.5
29	31.3		31.7	21	31.1	23.3	31.2	23.2	31.2	23.5	30.5	20.1	32.5	21.4
30	31.2		33	21.1	31.1	24.9	32.2	23.3	31.4	23.4	30.7	20.3	32.8	21.7
Mean	29.2	24.1	30.5	22.3	30.3	25.2	30.1	23.3	30.6	23.1	30.8	21.5	30.1	23

Maximum and minimum temperatures at the stations of the Weather Bureau, November, 1921—Continued

Day.	Cadiz.		Dingle.		Ormoc.		Guiuan.		Bugasong.		Bogo.		Sara.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.1	24.1	33.2	23.4	33.6	22.8	32	25	33.4	24	30.6	23	32.4	24.2
2	27	22	26.8	22.8	30.8	23.4	29.4	23.3	33.2	24	30.4	22.7	31.2	23.1
3	30.3	24.1	32.1	23.1	31.7	23.9	32.5	25.2	33.2	22	30.5	22.9	31.8	24.1
4	31.3	23.6	32.2	24	31.9	23.9	32.6	25.3	31.4	21.4	31	23.2	31.3	24.1
5	30.6	23	30.8	24	30.9	23.5	32.6	25.4	31.2	22	31.2	23.8	32.2	25.1
6	30.1	23.2	32.1	23.5	33.2	23.6	32.7	24.8	31	23.4	31.3	24	31.4	25.1
7	30.2	24.1	31	24.3	30.7	23.6	32.6	24.8	29	23.4	31.5	24.3	31.3	24.8
8	29.8	23.8	32.3	23.8	32.9	23.6	33	25	32	23.3	31.6	24.5	32.5	24.6
9	29	23.6	28.1	24.2	29.9	23.9	28	24	29?	23.2	30	24	32.7	24.3
10	28.7	22	24.5	21.6	26	21.7	29	22.7	31.2	23?	29.5	23.6	28.3	22.1
11	27.8	21.2	26	21.5	28.6	22.4	30	24.8	32	24.2	29.6	23.8	30	22.1
12	30	23.2	28.1	21.5	29.6	25.4	28.5	23.2	32	22	29.8	23.6	33.3	23.6
13	33	23.2	30.9	24.3	32.9	25.4	31	25.8	30.4	22	30.1	23.9	33.3	24.1
14	30.9	24	30.1	23.4	32.6	23.9	30.2	26.3	31	23.2	31	24	33.3	24.1
15	31	21.8	31	23.8	31.2	24.1	30.8	27	30.4	24.2	31.2	24.1	31.3	24.1
16	30	24	31.4	24	32.1	25.1	31.2	26.7	30.2		31.2	24	32.3	24.1
17	33.6	24.2	32.1	21.3	32.6	22	32.4	22.3	30.2	21.4	31.3	23.7	33.3	23.1
18	31.7	21.9	33	22.2	32	20.9	32.4	22.3	30.4	23	31.2	23.6	32.3	23.5
19	30.2	23.8	32	21.5	32.9	20.9	32.6	22.7	31		31.3	23.7	32.3	22.6
20	30.1	24.2	30.2	22.8	32.7	21.2	31.2	23.3	29?		31.8	23.8	30.8	24.1
21	30.2	22.7	30.2	23	28.9	23	30.4	23.7	29	22	31.6	23.9	30.4	22.3
22	27.9	22.9	32.1	23	28.1	23.5	29.4	23.2	30	22.4	31.8	23.8	29.8	23.6
23	28.2	24.2	29	22.5	28.3	23.4	27.4	23.5	30.2	23	31.5	23.7	29.3	23.4
24	28.8	24.3	28	22.8	27.7	22.8	29.4	23.5	30	22	30	23.6	29.2	23.6
25	26.9	22.1	26.2	23.5	27.7	23	29.5	25.2	30	22.4	27.1	23	29.7	23.9
26	30.2	22.4	27.8	22.8	31.2	23.5	32.2	24	30	22	29.4	23.2	30.3	22.3
27	30.1		32.6	21	33.4	21.4	32.5	23	30.2	21.5	31	23.5		
28	30.1	20.6	32.9	21.4	33.3	21.1	33	23.1	31.4	22	31.5	23.6	32.3	22.1
29	30.2	21.8	30.9	22.8	33	21.9	33	23.4	30.2	20	31.6	23.6	32.3	22.9
30	30	23.2	32.1	22.5	32.7	21.5	32.8	23	30.2	20	31.8	23.7	31.3	23.8
Mean	29.9	23.1	30.3	22.9	31.1	23	31.1	24.2	30.7	22.5	30.8	23.7	31.5	23.6

Day.	Tacloban.		Central Asturias, Buntog, Dimalag.		Culasi.		Mambusao.		Hacienda Amparo, Pontevedra, Capiz.		Capiz.		Borongan.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	32.9	24	29.1	22.8	32.5	24.3	31.2	23.9	29.5	23.5	31.9	24.9	31.3	24.7
2	25.4	22.8	26.4	22.5	31.5	24.7	27	22.8	26.3	22.8	26.7	22.8	28.2	24.9
3	31.2	23.9	31.8	23.1	31.7	24.6	31.4	23.3	30	24	31.1	24.4	31.7	25.1
4	32	24.4	31.6	24.6	31.5	24.2	31.7	24.1	29.7	25.1	31.5	25.4	31.6	25
5	30.1	24	32.4	24.5	31.9	24.3	31.1	24.8	30.1	24.2	32.4	25.5	31.6	25.1
6	29.4	24	32.3	22.4	33	23.1	31.9	23.4	30.2	24.1	32.1	24.8	30.5	23.6
7	30.4	24	32.4	23.3	31.8	24	30.5	24.2	29.3	25.2	31.5	25.6	31.4	24.2
8	34.1	24.7	32.9	23.6	31.5	24.4	32.2	23.2	31.7	23.4	31.5	24.9	32	24.6
9	26	22.2	28.2	24.3	31	23	27.1	23.9	27.3	24.2	28.5	23.6	26.4	23.8
10	26.9	22.4	27.8	22.8	30.4	23.3	24.8	22.8	28.3	22.2	25.5	22.4	28.4	25.4
11	28.2	23	28.1	22.6	30	22.3	26.8	22.4	28.2	23.5	28.5	22.9	30.5	24.2
12	28.4	23	29.9	22.5	30.2	23	31.1	23.2	30.1	23.6	32	23.8	31	23.2
13	34.1	23.3	31.2	22.9	31.5	22.7	32	24.8	31.7	24.7	32.8	25.1	33.6	22.7
14	32.3	23.1	31.7	23.5	30.5	25.2	32.8	24.3	31.4	26.2	33.5	24.5	32.5	24.1
15	32.9	23.6	32.9	24.8	32.5	24	33	23.4	32.5	25.7	31.6	24	31.9	22.2
16	33.2	22.4	33.1	23.8	31.5	23	33.2	22.1	33	22.9	32	23.9	32.6	23.3
17	33.6	22.2	33.2	22.9	30.5	22.7	32.8	22.6	31.7	22	32	23.4	31.2	22.3
18	32	22.9	32.4	22.1	31	23.2	31.8	22.3	31.5	22.5	31.5	23.9	31.9	22.1
19	33	23.4	32.3	22.2	30.5	22.7	32.2	21.8	31.3	24.2	31.6	24.4	31.6	22.3
20	28.4	23	32.4	22.8	31	25.7	31.3	24.2	29.1	24.1	31.1	23.9	30.2	23.6
21	27.3	22.4	30.5	23.1	31	24.2	29.5	23.1	29.3	24	31	25	30.7	23.4
22	27.1	22.4	27.2	22.6	30.5	23.7	27.4	24	30.1	24.3	28	24.9	27.3	24.1
23	24.9	22.8	28.8	22.9	30.5	23.2	28.6	23	31.3	23	29.6	24	26	23.1
24	26.9	23	28.9	23.3	30.5	23.7	28	23.4	31.9	24.3	29	24.5	27.1	22.8
25	26	22.6	25.6	23.4	30.3	24.2	25.7	23.5	30.1	24.1	26.4	22.6	27.3	24.8
26	32	23.1	24.2	22.8	29	22.7	29	22.3	28.7	22.8	29.1	22.9	32	23.2
27	33	22.9	33.6	22.1	31	22.1	32.4	22.1	31.1	21.2	31.9	22.4	31.3	22.7
28	32.2	22.6	33.6	21.3	31	23.2	32.4	21.3	31.1	21.4	31.8	22	31.1	23.1
29	33.1	23.2	32.5	22	30.5	22.2	31.8	22.1	30.7	23	32	23.2	31.6	22.6
30	32.1	23.4	33.1	22.8	31.4	22.7	32.6	22.7	31.2	23.1	31.9	24.2	31.3	23
Mean	30.3	23.2	30.7	23	31.1	23.5	30.4	23.2	30.3	23.6	30.7	24	30.5	23.6

Maximum and minimum temperatures at the stations of the Weather Bureau, November, 1921—Continued

Day.	Calivo.		Pandan, Antique.		Catbalogan.		Ibajay. <sup>a</sup>		Calbayog.		Masbate.		Romblon.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.3	24.1	31	24.1	32.5	29.7	29.7	25.5	31.5	23.8	29	23.8	30	24.5
2	27.3	23.1	27.1	23.5	26.5	28.2	28.2	26.3	23.7	26.3	23.7	26.4	23.2	26.4
3	30.3	23.1	31.3	23.7	29.8	30.7	23.5	29.8	23.9	30	24.4	29.5	29.7	24.5
4	30.3	25.1	31.8	25.7	30.5	31.8	26.5	29.9	24.1	29	25.2	29.7	29.7	24.5
5	31.3	26.1	32.4	25.2	30.4	32.1	26.3	30.7	23.7	29.4	25.5	31.2	25.2	24.5
6	31.3	23.1	32.1	24.5	30.2	32	24.8	31	23.7	30.8	25.4	31	24.6	24.5
7	30.3	26.1	30.5	25.1	30.5	31.4	25.3	31.3	23.8	31	25.4	30	23.9	24.5
8	31.3	23.1	32.8	24.4	32.1	31.4	24.1	31	24.2	31.4	24.8	30.2	25.2	24.5
9	26.3	23.1	27.6	23.6	25.5	26	23.2	24.9	23	27.6	24.4	27.3	23.2	24.5
10	25.3	23.1	26.3	23.8?	26.7	25.9	23.4	26.6	23.3	29.2	22.5	26	23.5	24.5
11	26.3	23.1	27.4	22.7	30.7	27.3	23.6	28.9	24.6	29	23.2	26.4	23.3	24.5
12	31.3	22.1	30.3	24.6	28.9	30.2	23.7	28.8	24.7	29.6	25.2	30.3	23.5	24.5
13	32.3	23.1	31.1	25	32.6	31.6	24	32.1	23.5	30.8	25.4	31.3	24.5	24.5
14	32.3	24.1	30.1	25.2	31.9	30.7	25.2	32.6	24.5	31.2	25.6	30.8	24.5	24.5
15	33.3	23.1	30.5	24.3	34	30.8	24.3	32.4	24.6	30.8	26.4	30	25.9	24.5
16	31.3	21.1	31.6	22.3	31.5	30.7	23.3	32.5	23.3	31.6	25	30.8	24.2	24.5
17	31.3	21.1	32	22.8	31.5	31.2	22.2	32.1	23.2	30.4	24.4	30.3	23	24.5
18	31.3	22.1	32.1	23.1	31.5	30.6	22.7	32	22	29.6	24.4	30.9	22.8	24.5
19	30.3	22.1	31.7	22.2	30.6	30.3	22.4	30.2	22.6	29.4	24	29.3	23.5	24.5
20	31.3	24.1	31.9	24.6	30	30.4	25.2	29.5	23.6	28.2	25.2	29.2	22.6	24.5
21	30.3	23.1	31	24.6	28.8	31	24.3	29	22.8	27.8	24.6	29.7	24.2	24.5
22	28.3	24.1	26.1	24.4	26.9	27.5	24.9	25.3	23.4	26.6	24	27.5	23.8	24.5
23	28.3	23.1	27.1	23.9	24.9	29	24.3	24.8	22.7	26	23.6	26.7	23.9	24.5
24	28.3	25.1	28.3	24.2	26	28	24.7	26.1	22.7	27.6	23.8	27.6	23.6	24.5
25	25.3	24.1	26	24	25.9	24.1	26.1	24	24	26.8	24	25.8	23.8	24.5
26	29.3	22.1	28.1	21.6	30.8	32	32	23.8	31.4	23.8	31.4	23.8	23.9	24.5
27	31.3	21.1	32.2	21.6	31	32	32	22.8	30.8	22.4	31.5	22.6	21.6	24.5
28	31.3	22.1	30.9	22.1	31.5	32.3	32.7	22.5	30.8	24.4	30.8	21.9	21.6	24.5
29	31.3	22.1	32.4	23.6	31	32.7	32.7	22.5	31	24.4	30.7	22.7	22.7	24.5
30	31.3	22.1	32.7	23.5	31.7	32.1	32.1	23.3	30.4	24.2	31	22.8	22.8	24.5
Mean	30	23.2	30.2	23.9	29.9	29.9	24.2	29.9	23.5	29.5	24.4	29.4	23.8	24.5

Day.	Batag Light-house, Laoang.		Irosin.		Sorsogon.		Bacon.		Jovellar.		Legaspi, Albay.		Guinobatan.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	28	23.6	28	23.8	29	28.8	25.3	27.3	22.8	27.9	25.3	23.8	23.5	23.5
2	28	24.8	26.9	23	28.9	29	23.9	31.1	22.3	27.4	23.5	27.2	23.8	23.8
3	29.8	24	28.6	22.9	29.6	29.7	22.6	30.1	21.2	30.3	24	31.9	22.6	23.8
4	28	24.5	29.8	24.3	28.6	28.1	24.3	27.8	22.3	27.9	25.1	27.8	23.2	23.8
5	30	25.1	29.5	23.6	31.6	30	24.4	30.3	22.7	30.5	24.5	31.3	23.4	23.8
6	29.7	23.5	30.4	23.9	31.4	30.5	24.4	30.2	22.8	30.2	25.1	31.8	23	23.8
7	30.2	25	30	24.3	31	30.2	24.5	29.4	22.8	29.8	25	30.7	24	23.8
8	30.4	24	30.2	24.8	31.5	30.5	24.4	30.2	22.5	30.3	24.5	30.8	24.2	23.8
9	26.7	24.5	27	22.3	29	28.1	22.8	29.8	22.4	29.3	23.9	29.6	23.2	23.8
10	27.5	23.5	27.2	21.9	27.8	28.1	24.6	27.2	22	27.7	24.2	26.7	23.8	23.8
11	29.7	22.8	29.7	22.6	29.5	29.3	23.4	28.1	22	29.3	24.1	27.3	23.2	23.8
12	28.8	23.7	28.8	24.6	28.5	31	24.5	29.8	23	29.8	23.3	29.1	24	23.8
13	31.8	24	33.3	24.6	31	31.6	23	30.4	20.9	31.6	23.6	30.8	22.6	23.8
14	31.8	24.2	32.4	23.3	31.1	31.6	24.6	30.7	22.6	31	25.2	31.5	24.2	23.8
15	32.4	23.6	34	25	31.6	31.9	24.7	31.5	22.7	32.8	24.9	31.8	24	23.8
16	31.4	23.4	34	23	31.1	31.5	23.9	31.4	21.3	33.6	24.5	31.9	22.2	23.8
17	30.4	24.2	32.5	22.5	31.4	30.2	22.8	29.9	21.3	30.3	23.2	30.7	22.1	23.8
18	30	23	33.2	20.8	32	30	21.5	31.7	19.8	31.8	22.1	31.8	21.7	23.8
19	29	24.5	32.2	21.8	30.5	23	29.5	31	20.3	30.5	23.1	31.2	22	23.8
20	29.1	23.6	29	23.5	30.5	28	25.4	29	20.9	29.5	24.7	29.1	22.3	23.8
21	28.4	24	26.3	23.1	28.5	28	23.4	28.6	20.8	28.8	24	28.5	22.6	23.8
22	25.6	22.5	26.1	22.1	28.5	26.9	22.8	24.5	21.7	26.1	22.9	26.3	22.7	23.8
23	25.6	23.2	28.5	22.3	26.5	27.5	23.4	24.6	21.4	27.3	23.3	25.7	22.5	23.8
24	25.9	22.8	27	22.4	27	27.1	23	27	21.3	27.2	23.6	27.3	22.1	23.8
25	26.1	24	26.8	20.5	26	30.4	24.5	26.3	23.8	27.8	24.2	30.6	23.9	23.8
26	29.4	24.3	31.4	22.2	31.4	31.4	23.5	30.6	22.3	31.4	24.3	31.6	21.2	23.8
27	30.3	24	35	21.1	32.5	30	21.7	31.8	19.6	31.5	21.9	31.6	21.2	23.8
28	30	24.4	33.3	21.3	32	30.4	22.6	31.1	20.2	31.3	24.1	31.6	21.6	23.8
29	30.4	24.3	33.3	21.8	31.6	30.1	22.8	31.4	20.3	31.8	25.6	31.5	21.5	23.8
30	30.3	24	33.6	22.5	32.5	30.9	23.4	31.4	19.5	31.8	22.4	31.8	20.8	23.8
Mean	29.2	23.9	30.3	22.9	30.1	29.7	23.6	29.5	21.6	29.9	24	29.8	22.8	23.8

<sup>a</sup> The thermometer shelter was destroyed by the typhoon of November 25.

Maximum and minimum temperatures at the stations of the Weather Bureau, November, 1921—Continued

Day.	Polangui.		Bacacay.		Bato.		Tabaco.		Sumay (Guam), Agaña.		Iriga.		Calapan.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1.....	28.2	22.3	29.5	22.4	28.3	24	27	24.1	29	26.4	29.9	22.2	30.7	24
2.....	29.1	23.3	27.2	24	28.7	23	27.8	23.1	30.6	25.7	29.2	22.2	28	24.5
3.....	30.5	24.1	27.8	23.6	28.5	22.6	26.5	22.1	30.4	26.5	30.2	21.9	29.5	23.5
4.....	31.4	23.2	27.6	23.2	30.2	24.2	30.5	24	30.4	24.8	29.9	22.8	28.5	24.8
5.....	32.5	24.1	27.4	23.7	28.2	23.9	28	23.4	30.8	26	32.1	22.9	30.7	24.7
6.....	32.3	23.2	29.2	23.2	31.9	23.7	31.4	23.1	29.2	26.2	32.3	21.9	30.8	24.5
7.....	31.4	24.1	29.1	23.1	31.3	24.5	31	24	29.8	26.2	30.8	22.2	30	24.4
8.....	30	24.1	29.7	23.2	29.9	24.6	29.2	23.7	30.4	25.8	31.1	23.6	30.5	25
9.....	32.4	24.1	29.2	24.2	31.2	24.1	30.9	23.1	30.3	25.5	30.3	23.1	23	23
10.....	30.1	23.2	29.7	23.7	29.4	23.8	29.8	24.2	30.1	26.1	28.9	22.9	26.5	23
11.....	26.4	23.2	28.2	23.4	27.1	23.6	27.3	23.7	28.7	26.3	28	23.2	26	22
12.....	29.3	20.4	29.7	23.7	29.2	23.9	29	23.9	30	25.6	30	23	26.6	23
13.....	30	24.1	30.2	23.2	29.7	23.7	29.2	24	30.3	24.6	32.1	23.1	29.5	23
14.....	31.4	22.3	31.5	22.3	31.3	25.3	33	24.8	30.2	23.7	31.6	24	30.5	23.5
15.....	31.4	24.1	31.8	22.6	31.4	25	33	24.9	30.4	25.6	32.2	24	30.6	24.3
16.....	31.4	23.2	31.7	22.8	31.7	23	32.7	22.5	30.5	24.1	31	21.5	30.5	23.6
17.....	31.2	24.1	32.4	22.6	31.4	23.4	32.8	22.3	30	25.5	31	21.8	28	23
18.....	32.1	22.2	32.6	21.2	31.3	23.1	32.2	21.5	30.2	24.8	32.1	21	31	23
19.....	32.1	23.2	32.2	21.6	31.9	23.5	32	23.2	29.4	26	31.2	21.3	29	23.6
20.....	31.4	23.1	32.4	21.7	30.5	23	30.7	23.6	28.9	25.5	30.2	21.3	29.5	23.5
21.....	29.1	23.1	32.8	21.9	30.4	23.6	30	22.2	29.2	24.2	29.7	22.1	30.5	24
22.....	29.1	22.9	27.2	23.5	29.7	23.3	28.4	22.4	29.6	24.1	27.6	22	29	24
23.....	26.4	23.1	27.9	23.2	29.7	23	26.5	21.8	29.1	25.2	26.5	22.3	29	23.5
24.....	25.5	22.1	27.8	23.6	27.5	22.5	27	22.3	30.3	25.1	27.8	21.5	29.5	23.6
25.....	27.3	22.3	29.2	23.3	27.3	23.5	26.5	23.6	29.4	26	29.4	22.7	27.5	24
26.....	29.2	24.1	29.5	22.4	31.7	23.8	26.3	22.4	30	25	31.9	22.3	30	22.5
27.....	31.4	22.3	30.7	21.4	31.6	23.4	31.8	21	29.9	26	32.2	20	30.5	23
28.....	32.3	23.1	31.2	21.5	31.5	22.7	31.3	21.7	30	25	32.1	20.2	30	22.8
29.....	31.4	23.2	31.4	21.2	31.6	23.3	32.2	22.1	29.7	25.7	31.9	21.1	30.6	21.8
30.....	31.2	23.2	31.5	21.4	31.9	23	31.6	21.7	30.3	25.5	31.8	20.5	30.5	22
Mean.....	30.2	23.2	29.9	22.8	30.2	23.6	29.9	23	29.9	25.4	30.5	22.2	29.4	23.5

Day.	Tiwi.		Pasacao.		Virac.		Naga, Ca- marines Sur.		Tigaon.		Baras.		Libmanan.	
	Maxi- mum.	Mini- mum.	Maxi- mum.*	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1.....	30.4	22.2	32.5	22.2	31	24	30.1	23.9	27.7	23.5	28.8	25.9	28.9	24.9
2.....	30.2	22	32	22.2	28	22.9	25.6	23	26.1	22.3	28	24.3	28.4	22.6
3.....	31	23.5	31.9	23.5	32	22.9	29.1	23.2	30.1	22.8	28.4	24.9	28.4	23.4
4.....	31.8	22.2	33.2	22.2	31.5	23.8	26.5	23.5	27.7	23.4	29	25.2	28.4	24.9
5.....	31.9	23.6	33	23.6	31.5	24	30.7	24.2	31.6	22.4	28.6	26.1	28.4	24.1
6.....	31.8	23.6	32.7	23.6	31.6	21.5	30.5	23.6	31.2	21.7	28	26	28.4	23.2
7.....	32.8	23.7	31.9	23.7	31.4	23.5	30.5	24.2	31	23.9	29	26.3	28.4	23.2
8.....	32.4	23.2	31	23.2	31.4	24.9	31.8	24.8	31.7	24.4	29	26.6	28.4	24.9
9.....	30.4	22.6	33.7	22.6	31.3	23.3	29.1	24.2	29.3	23.5	28.2	25.1	28.4	23.3
10.....	30.2	22.3	33.2	22.3	29.9	23.7	26.2	24.1	25.3	23.4	29.9	25	28.4	23.8
11.....	32.8	24.5	32.6	24.5	29.5	23	27.7	24.2	26.4	23.2	28.2	25.2	28.4	24
12.....	32.6	24.3	31.9	24.3	31.5	23.2	29.7	24	27.3	23.5	28.4	25	28.4	24
13.....	31.8	23.5	33.7	23.5	31.4	22.1	31.6	24	30.6	23.4	28.1	24.9	28.4	23.9
14.....	31.9	23.6	34.9	23.6	32.5	22.5	32.8	24.9	31.7	24	29	25.8	28.4	23.8
15.....	31.8	23.4	32.7	23.4	31.8	22.7	32.9	25	32.2	25	29.7	26	28.4	24
16.....	32.5	24.5	31	24.5	34	22.2	31.7	23.5	31.5	22.6	30	25	28.4	23.6
17.....	32.4	24.4	30	24.4	32.2	22.4	32.5	23.5	30.6	22.5	28.7	24.9	28.4	23.4
18.....	31.9	23.8	33.4	23.8	32.5	21.1	31.8	22.5	31.7	21.1	28.9	25.1	28.4	22.8
19.....	31.3	23.2	34	23.2	32.6	22.4	30.9	23.9?	30.2	22.6	29.6	25	28.4	22.9
20.....	31.5	23.1	33.7	23.1	32	22.5	30	23.1	31.3	22.3	29.8	24.2	28.4	22.8
21.....	32.4	24.2	33.5	24.2	31.2	22	29.6	23.5	29.1	23.2	28	24.1	28.4	24.2
22.....	31.2	23.1	32.1	23.1	28	22	29.7	23	24.2	22.6	26.4	24.4	28.4	22.9
23.....	31.3	23.1	32.7	23.1	28.4	23.3	24.8	23	26.2	22.5	26.6	24.2	28.4	22.8
24.....	30.4	22.1	32.9	22.1	28.5	21.9	24	23	26.2	22.2	26.9	24.9	28.4	22.6
25.....	30.2	22.4	31.8	22.4	29.5	22.5	25.5	24	25.2	23	27	25	28.4	23.5
26.....	29.8	22.2	31.9	22.2	30.4	23	31.9	24.1	30.2	23.6	27.6	25	28.4	23.9
27.....	30.6	23.2	31.8	23.2	31.3	22.1	31.9	22.3	31.3	20.6	29.2	25.2	28.4	22.3
28.....	30.7	23.4	32.6	23.4	31.5	21	33.1	21.8	31.7	22.5	30	25.2	28.4	23.1
29.....	32.9	24.8	31	24.8	32.4	21.3	31.9	23	31.9	22.4	30.2	25.3	28.4	23.2
30.....	32.8	23.6	32.8	23.6	32.4	21.2	32.6	23.6	32	20.8	30.1	24.9	28.4	22.8
Mean.....	31.5	23.3	32.5	23.3	31.1	22.6	30	23.6	29.4	22.8	28.7	25.1	29.4	23.6

\* These maximum temperatures seem to be too high.

Maximum and minimum temperatures at the stations of the Weather Bureau, November, 1921—Continued

Day.	Batangas.		Ragay.		Calatagan.		Balayan.		Lipa.		Lucena.		Atimonan.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1.	33.1	24.1	27.5	20.1	32.9	21.8	31	23	31	21.9	29.5	22	29.4	25.7
2.	29.5	23.6	29.4	21.1	30.8	20.5	30.5	23.3	27.3	20	27.2	22.6	27.6	24.1
3.	29.7	23.6	29.1?	23.9	29.5	21.4	30	24	27.5	22.5	28.3	22	27.9	24.8
4.	30.8	23.9		22.5	30.2	22	30	23	28.9	22.6	27.5	22.5	26.8	24.4
5.	32.5	23.5	31.2	22	32.2	21.9	32.5	23	30.5	21.7	29.7	22.9	28.4	24.9
6.	33.4	23.3	31.2	22.5	32.2	23.5	30.6	20?	30.6	21.6	30	22.9	29.6	25.5
7.	30.7	23.7	31.3	23.6	30.2	22.8	30.5	24	31.3	22.5	28.5	22.6	27.4	24.9
8.	32.2	25.1	31.4	24	32.7	23.8	30	25	29.7	21	31.2	23.6	30.9	25.1
9.	30	23.2	30	24.1	27.3	22.2	28.5	22.5	28.5	21.3	28.5	22.4	28.4	24.2
10.	26.3		26.2	23.9	24.7	21.4	30.5	23	23.6	21.3	25.6	21.8	27.5	24.3
11.	26.4	22.1	27.8	24.1	26.1	20.7	27.5	22	25.4	20.4	24.9	23.5	26.8	23.8
12.	28.6	23.2	28.2	23.1	27.7	22.2	27.5	22	27	22	28.7	21.4	30.6	22.9
13.	30.3	23	30.2	23.9	30.1	21.2	29.7	23	29.2	22.1	30	23.5	30.8	24.7
14.	30.4	23	30.4	24	31.2	22.1	31.5	24	30.6	21.7	29.7	22.6	31.4	24.7
15.	31.9	23	29.8	25.1	29.8	22.7	31	24	29.9	21.4	30	22.9	32.2	24.3
16.	30.1	22.8	30.7	23.5	29.6	22.2	30	23	29.2	21.6	29.7	21.4	28.9	23.6
17.	29.5	22.7	31	22.6	31	21	31	22.5	29.1	21.4	28.9	21.8	27.9	23.1
18.	31	22.6	31	22.3	31.2	21.3	30	23.5	27.3	22	29.5	20.4	28.4	22.4
19.	29	22.5	29.7	23	30.2	21.7	31	24	28.2	21.4	28.6	21.5	28.9	23.9
20.	31.2	22.5	30	23.9	31.5	22	31	25.5	28.7	20.6	28.7	21.5	28.2	24.8
21.	30.4	23.3?	29.4	23.1	30.8	20.7	31.5	22	28.9	21.4	28.4	22	27.6	24.6
22.	28.5	22.2	25.2	22.9	30.2	21.1	29.5	22	27.6	21	28.5	21.1	26.6	23.1
23.	28.9	23	24.5	23	28.2	21.9	30	24	27.7	20.4	26.5	21.4	26.4	23.4
24.	30	21.9	25.3	22.2	29.2	22	30	23	26.4	21.3	28	21.4	27.7	23.4
25.	26.5	21.6	27.8	22.1	27.7	18.6	27.1	19.5	26	20	26.4	22.9	27	23.9
26.	31	23.2	29.4	23.2	28.7	20.2	29.5	21	27.8	20.5	28.5	22.1	29.1	23.5
27.	31.5	22.5	31.2	22	29.8	22.3	31.3	22	28	21.1	29.5	22.1	31.4	22.6
28.	31.8	23.1	31.2		31.4	22	31	23	29.9	20.4	31.3	21	30.2	22
29.	31.2	22.2	31.2		32.1	18.6	31	22	29.4	20	31.5	19.4	30.2	23
30.	31.1	22.2	31.2	21	31.8	20.2	32	22?	30.3		32.1	21.9	29.9	24
Mean.....	30.2	23	29.4	23	30	21.5	30.2	22.8	28.5	21.3	28.8	22	28.8	24

Day.	Nasugbu.		Ambulong, Tanauan, Batangas.		Daet.		Mendez Nuñez.		Alfonso.		Indang.		Canluban, Calamba.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1.	31.2	21.5	31.4	24.6	29.1	24.7	27	21.5	28.7	21.2	29.5	22.3	30.8	22.5
2.	31.5	20	28.6	23.1	27.3	24.2	25	21	26.9	21.9	27.4	22.4	29	22.1
3.	31.9	21	27.4	23.2	28.7	24.5	24.5	20.5	25.3	21.1	25.2	21.9	26.6	22.6
4.	31	21.5	28.4	25.2	26.3	23.5	25	20.5	26.1	21.7	26.4	22.3	28	22.4
5.	31.4	21.7	31.6	25	29.8	23.7	26.5	21	28.8	22.1	29	22.7	30.1	22.3
6.	30.9	21.1	31	24.2	30	23.5	27	21	28.3	22	29.3	22.7	30.6	22.5
7.	30.6	21.1	30.8	24.7	29.7	24.8	27	22	28.8	22.6	29	23.3	30	22.7
8.	30.8	19	30.8	24.7	29.5	23.7	25.5	20.5	25.8	21.6	26.3	21.8	28.8	22.2
9.	30.9	18.5	28.4	23.7	26.8	23.8	27	20	21.8	20.4	22.5	21.2	24.9	21.9
10.	31.8	21.3	24.9	23.2	26.8	23.8	27	20	21.8	20.4	22.5	21.2	24.9	21.9
11.	31.3	22.1	26	22.7	29.4	24.2	22.5	19	23.3	19.6	24.1	20.2	25	20.2
12.	30	21.5	27.7	23.9	29.7	24.1	23	20.5	24.9	21.1	26.8	21.4	29	22.3
13.	29.6	19.7	29.5	23	30.5	24.2	27	21	27	21.4	29	22.9	29.8	22.3
14.	30.9	18.3	31.9	24.5	31.1	24.4	27	21	29.3	22.7	30.4	22.6	30.4	22.4
15.	29.9	23.8	30.7	23.8	31.5	24.1	27.5	21	29	22.7	29.3	22.2	30	22.9
16.	32.5	21.9	28.8	23	31.6	22.9	24	20.5	27.4	21.4	28.3	22	29	21.2
17.	32.5	22.6	29.4	23	30.1	22.1	26	20.5	27.1	21.1	27.2	21.8	29.6	21.6
18.	33.1	22.1	30.7	23.1	30.6	22.2	26	19.5	26.4	20.3	28.4	21.4	29	22.1
19.	32.7	22.2	29.2	23	29.1	23.1	25.5	20	27.3	21.1	27.4	21.8	28.6	22
20.	32.6	21.4	30.3	23.7	29	24.2	26	20	27	20.6	27.7	21.3	29.7	21.9
21.	32	21.7	29.7	24.2	30	24.2	25	20.5	26.3	20.4	26	20.8	29.2	21.8
22.	31.5	23.3	26.5	23	26.4	22.4	25.5	20	24.7	20.7	24.8	21.5	26.2	21.6
23.	32.1	23.2	25	23.2	27.5	22.4	25.5	20.5	24.3	20.8	24.4	21.3	25.8	21.4
24.	32.1	22.3	28.1	23.2	29	24	24.5	20.5	25.5	20.9	26	21.2	28	21.8
25.	31.2	21.5	25.2	21.4	26	23.7	23	17.5	23.8	19.4	24.4	18.9	26.1	19.4
26.	29.6	21	26	22.8	29.6	23.5	24.5	20.5	23.8	19.7	23.2	20.4	26.3	20
27.	31.9	20	30.3	24	31	22.1	26	20	26.8	21.4	27.8	22.2	30.1	21.6
28.	32.6	21.9	31	23	30.5	22	27.5	20.5	29.7	21.6	29.8	22.3	31	21.9
29.	33.1	21.9	31.6	21.9	30.2	21.7	27.5	19.5	28.3	19.6	29.1	20.9	31.6	20.3
30.	32.8	22.6	31.9	23.7	30.2	22.5	27.5	19.5	27.5	19.9	28.4	21.6	30.9	20.8
Mean.....	31.5	21.4	29	23.5	29.3	23.5	25.6	20.4	26.6	21.1	27.2	21.7	28.8	21.7

Maximum and minimum temperatures at the stations of the Weather Bureau, November, 1921—Continued

Day.	Silang.		Maragondon.		Santa Cruz, Laguna.		Buenavista, General Trias.		Cavite Naval Station, Cavite.		Manila.		Antipolo.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	28.8	20.5	33.4	23.6	30.7	23.3	31.7	21.4	34	24	33.5	23.6	33.4	22
2	28	20.6	30.3	22.5	29.1	24.7	29.8	20.2	32.6	24.3	31.8	22.2	33.7	20.5
3	28.4	21	27.1	23.2	27.6	23.3	26.2	21.5	27	23	26.4	23.1	26.5	22.5
4	28	20.4	28.5	22.5	28	24.1	27.5	21.5	28.6	23.1	28.4	23.5	27.5	21.9
5	27.7	20.4	32.2	22	30.8	23.5	30.5	21.5	32	23	32.1	23.1	33.8	22
6	28	20.5	30.7	22.4	30.7	23.4	29.7	22.2	31.5	23.3	31.4	23.4	32.3	22.1
7	27.5	21	31.9	21.6	28.7	23.4	29.4	21.7	31.4	23.5	30.7	23.3	32.4	21.5
8	27.1	21.7	28.7	23.1	31.7	24.4	30.9	22.5	33.5	23.7	33.4	23.6	34.2	21.3
9	27.5	20	25.4	22.3	30.6	24	28.4	21.6	29.2	22.5	28.5	23	29.6	22
10	27.7	20.3	25.8	21.7	29	23	30.2	21.4	26	22.8	25.1	22.7	24.7	21.3
11	27.5	20.8	28.1	22.7	25.8	22.7	29.2	20.5	28	22	26	21.9	23.8	20.2
12	27.8	20.5	30.3	22.6	30.6	22.5	28.9	21.6	29.5	22.1	30.4	23.7	30	21.7
13	28.4	21	32.1	23	30.1	23.6	30.2	21.4	30.5	22.4	30.3	24	31	22.5
14	28.5	21.3	31.4	23.2	31.6	24	30.5	22.4	31.7	21.5	32.2	24	32.8	22.9
15	27.8	21.8	30.3	23.2	31.8	23.7	29.7	21.9	30.4	21.7	30.7	24.4	30.8	23.2
16	27.4	20	29.4	22.9	31.3	23	28.7	21.5	30	22.6	30.4	23.5	29.4	22.2
17	27	20	28.2	22.9	30	23	27.8	21.3	29	22.5	29	23.3	28	21.5
18	27.7	20.1	29.1	22.8	29.5	22.6	29.2	22.2	30	23	30.4	22.9	29.5	20.6
19	27.8	20.5	29.4	22.3	30.4	22.9	29.2	21.8	30.9	23.9	30	23	29	21
20	27.5	19.5	29.7	20.9	29.6	22.4	29.2	20.2	31	23.2	31	21.7	30.7	20.2
21	28.5	20	28.1	21.2	29.1	23	27.5	20.2	29.6	22.6	30.4	21.7	31	20.1
22	28	20.3	27	22.5	27.3	22.7	26	21.5	27.6	22.5	27.2	23	27	21.6
23	28.3	20	31.5	22.5	27	22.9	25.7	20.5	27.6	23	27.4	22.4	26.3	21.1
24	28.7	19.8	29.4	22.4	29	23.5	28.5	20.7	31	22.6	30.4	22.2	30.5	20.5
25	27.6	19.5	27.3	19.3	28	24	25.7	16.9	28	23	28.4	21.6	26.3	18.3
26	27.4	19.4	25	21.7	28.5	22.6	27.9	21.3	27.5	24.9	22	22.2	26.2	21
27	28	19	30.3	21.9	31.2	24	29.7	20.2	31.9	24.4	32.5	23	30.9	22.2
28	28.6	20	30.6	22.1	32.6	22	30.7	21.9	33.1	23	32.6	23	32.8	21
29	28	20.7	30.5	22.4	31.8	22	29.7	22.2	33.1	24.3	31.4	23.1	31.5	21.3
30	28.2	19.5	30.3	22.5	31.8	21.8	30.8	20.7	32.5	24	31.8	22.5	31.2	21.2
Mean	27.9	20.3	29.4	22.3	29.8	23.2	29	21.2	30.3	23	30	22.9	29.9	21.4

Day.	Balanga.		Malolos.		San Fernando, Pampanga.		San Isidro, Nueva Ecija.		Iba.		Concepcion, Tarlac.		O'Donnell, Capas, Tarlac.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	33.3	23.5	30.3	20.5	32.5	22.1	33.1	23	31.2	22.6	35.3	21.2	32.9	21.7
2	32	22	31.2	21.5	31.5	19.6	31.6	21.5	32.3	22.6	34.2	18.2	31.5	19.7
3	24.8	22.8	30.6	22.2	30	22.1	26	23	26	23.8	35.3	22.2	24.7	21.6
4	28.8	22.7	21.5	28?	21.1	27	22.2	33.9	21.2	30	30	20.2	29.2	19.9
5	32	23.4	21.5	32	22.2	30.9	22.6	31.6	21.9	31.6	34.4	18.4?	31.7	19.7
6	31.9	22.7	32	23.5	32	22	31.9	21.9	31	22.3	32.1	19.2	31.2	19.7
7	30.7	23.3	31.5	22.2	32	21.6	32	22	31.4	21.8	34	20	32.2	19.9
8	33.9	23.4	29?	21.5	32.5	21	31	22.5	32	23.6	34.6	19	31.2	21.4
9	27.8	22.9	31.5	22	32.5	21.5	23	22.4	30	23.3	34.1	18.5?	29.7	19.7
10	26.3	22.5	28.7	21.3	30.5	21.6	25.4	22	30	22.5	32.8	19.7	27.2	19.4
11	25.5	22	27.5	20.7	30	21	26.6	21.5	26.2	22.5	27.8	20.9	27.1	21.4
12	30.9	23.5	28.6	22.8	30	23	29.9	23.8	30	23.2	30	21.9	31.1	22.4
13	29.7	24	29	23.2	29.5	23	28.2	23.8	28.3	23.5	28	23	27	21.1
14	30.3	24	23.2	31.5	23	30.2	30.2	23.4	30.4	23.3	29	21	26.7	21.8
15	31	24.5	24	29	24	27.8	24	28.6	23.9	28.4	22.6	22.6	26.6	22.3
16	29.3	24	28.5	22.4	30	22.3	29.9	23.3	29.6	23.5	30	20.9	28.2	20.7
17	30.1	23.2	30	22.5	30	22.5	28.2	23	30	22.8	30.7	21.9	29.2	20.2
18	30.8	22.7	22	30	20.5	28	22.1	29.1	22.5	29.6	20.4	28.7	20.2	20.2
19	31.3	23.6	30.1	22.7	31	21	30	23.4	30.6	22.6	31	21.3	31.2	22
20	31.1	22.5	30.1	22	30	20.2	30.1	21.4	30.1	21.1	32.8	19.7	30.7	19.5
21	31.8	21.7	26	21.5	31	20.3	31	21	30.9	20.5	32.9	19	31.7	18.7
22	27.8	23.9	27.1	22.7	28	21.4	26.4	23.2	26.3	22.9	28.2	19.3	26.2	20.9
23	27.7	22.6	28.1	21.5	29.5	21	28.6	22.2	30	22.2	32.5	21.2	29.2	18.9
24	30.3	22.2	29.2	21.1	32.5	21	30	21.3	30.5	21.6	31.6	20.7	30.7	19.1
25	28.5	22	29.5	19	29.5	18.7?	28	20	30.2	19	29.7	17.2	29.2	17.2
26	26.3	22	29.1	19.5	29	18?	26	21.5	25.6	22.8	25.5	20.2	29.3	18.3
27	30	23.3	21.8	34.5	20.5	31	22.1	30.5	23.4	31.5	20.3	29.3	19.6	19.6
28	31.9	23.6	23	32	23.2	30.9	22.9	31	24.8	32.7	22.4	31.3	23.1	23.1
29	32.6	22.3	23.2	32.5	20.8	31.4	22.5	30.4	20.9	33.2	17.7?	31.7	19.4	19.4
30	32.1	22.6	22.8	33.5	22	31	23.5	30.7	20.6	32.6	20.4	31.7	19.3	19.3
Mean	30	23	29.4	22	30.9	21.4	29.3	22.4	29.9	22.4	31.5	20.3	29.6	20.3



Maximum and minimum temperatures at the stations of the Weather Bureau, November, 1921—Continued

Day.	Tarlac.		Camiling.		Baler.		Dagupan.		Rosario, La Union.		Tubao.		Itogon.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	33.5	21.5		20.3	33.2	23.7	33.9	23.5	34.3	20.6	34.9	22.9	29.5	19.3
2	31.8	20.4		20.8	30.3	22	33.8	22	32.2	20.8	32.5		33	17
3	28	21.2		21	30.2	23	28.6	22.7	32.1	20.4	30.1	22.9	31.5	19.3
4	30.2	20.7		21.5	29.9	22.5	32.5	22.5	32.3	21	34.1	22.9	27.9	20.6
5	32.8	21.6			32.6	22.5	33.9	23.5	32.5	21	33.2	23.4	29.7	20.8
6	32	21.8		21.5	33	23.4	32	23	32.7	21.1	32.9	22.5?	30.4	18.2
7	34	20.9			35	22.5	33.7	22.9	32.8	21	33.5	21.5	32.3	17.5
8	29.2	22.6		20.7	30	24.5	29.8	24.1	32.3	20.9	28	23.3	32.5	20.5
9	31.4	21.1		20.7	29.9	22	30.9	22.6	26.7	22.1	30.1	23.3	29.5	19.5
10	28	20.6		20.5	29.5	23	30.1	22	27.4	21	28.7	22.9?	29.2	17.3
11	29.6	21.6		21	28.5	21.6	29.2	23.5	29.2	22.1	30.1	23.1	27.8	20.5
12	29.2	22.8		20.5	31.5	23.5	31	24	28.2	22.2	32.2	24.6	29.7	20.9
13	28	22.4		21	31.1	23.8	27.5	23.4	29.8	22	32.2	26	25	20.5
14	29.8	21.8		20.5	29.5	23.9	29.6	23	30.2	22.8	28.8	22	23.6	18.6
15	30	23.2		20.5	28.9	23.9	29.7	24	30.3	23.2	30	24.5	24.4	20.9
16	28	22.2		21	28.3	23	33	23.4	30.3	23	31.2	23.8	28.6	19.5
17	30.8	21.8		21.3	31	22.1	30.1	22.9	30.4	22.6	28.9	23.1	28.7	17.2
18	31.2	20.9		21.9	34	21.7	31.6	22	30.5	21	32	20.7	29.5	18.4
19	32	22.4		21.7	30.7	22.6	32.7	23.1	30.8	22.4	31.9	23.9?	29.3	20.2
20	32.6	20.8		22.5	33	22.7	33	22.2	31.1	21.5		20.9	30.4	17.2
21	32.2	19.6		20.7	33.5	21.9	32.3	21.5	30.5	20	32.2	21.3	30.5	17.2
22	28	22.1		20.8	30	23.1	29.3	23.7	31	21.1	32.4	23.1	30.1	19.2
23	31.2	21.6		20.8	28.7	22.5	32.2	22.5	30.5	21	28.4	22.3	28.6	20.1
24	31	20.6		20.7	29.1	22.1	32.6	22	30.4	20.5	32.5	21.7	28.4	17.9
25	29	17.8		20	30	20.2	31.5	20.4	30.3	19.9	32.6	20.4	32.5	15.2
26	27.4	21.4		22	29	22.4	27.4	23.5	30.3	21.1	31.9	21.6	30.8	20.6
27	32.5	21.6		21.7	30	23.5	31.3	23.2	30.4	21.3	32.6	22.9	27.4	20.5
28	32.8	22.4		21.8	30.2	22.5	33.5	23.5	31.6	21.6	33.4	24.8	29.8	20.2
29	33	20.4		21.5	31	21.9	31.2	22.4	32.4	21.1	31.8	21.9	29.4	17.9
30	32	21.6		22	31.4	22.5	30.9	23.8	32.6	21.1	31.9	21.7	31	17.7
Mean	30.7	21.4		21.2	30.8	22.7	31.3	22.9	30.9	21.4	31.6	22.8	29.4	19

Day.	Bolinao.		Aringay.		Baguio.		Bokod.		Sablan.		Naguilian, La Union.		Kapangan.		
	Maximum.	Minimum.	Maximum. <sup>a</sup>	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	
1	32	23			23.7	15.8	29				33.7	22.8	24	16	
2	32.5	23.7			25.7	14.7	31.2	15.8			18	32.3	21.8	25	15.5
3	31.2	22.7	35.8		20.2	16.4	30.3	18.1			19	29.6	22.5	24	16
4	33.5	23.5			21.2	16.4	26.5	19.6			17	33.6	22.2	25	16.5
5	32.8	23	37.3		25	16.2	27.4	18.4		15.1	33.3	23.3	24.3	16.5	
6	32.4	24.6	35.2		24.6	16.2	29	16.2		17	33.5	22.2	24	16.5	
7	32.5	24	34.2		25.9	16	29.9	15.5		15.1	33.3	21.2	25	17	
8	31.5	24.6	35		19.4	16.5	30.2	18.4		17	28.5	22.5	24	19.5	
9	31.6	24.2	35.2		21.9	15	22.1	17.2		17	30.5	22.5	24.5	18.5	
10	31	23.2	32.2		21.3	14.7	27.7	15.8		17	30.1	22.1	23.7	18.5	
11	31.2	24.6	31.4		22.7	16.6	25.6	18.1		16	30.6	22.6	24	18	
12	31	25	32?		20.9	16.3	27.3	18.3		17.1	34.5	23.5	24.3	19	
13	28.2	24.2	35.2		18.6	15.9	23.4	18.7		18.1	30	24	22.4	19	
14	29.1	24.1	33.2		18.4	16	22.9	17.8		16.1	29.6	21.1		18.5	
15	30.5	25.1	29		21.9	16.8	25.7	19.2		18	31.1	23.8	23.3	19	
16	31.5	24.7	32.6		22	16.2	26.4	18.1		18	31.6	23.8	22.8	19	
17	30	23.8	34		20.8	14.5	29.9	17.4		17	30.5	23.2	21.3	18	
18	31.2	22.8	34		21.6	14	27	16.7		17	31.6	20.3	21.2	16	
19	31.6	24.3	33.2		19.9	15	28.5	18.9		17	31	23.1	23	18	
20	31	22.2	32.5		23.4	14.8	29	15.7		16	31	20.7	23	16.5	
21	30.3	22.2	33		24.7	15.4	30.7	14.7		16.1	32.1	20.5	24	16	
22	30.5	24.5	33.2		19.7	16	23.5	19.1		17	29	22.5	21.5	18	
23	30.5	21.9	33.2		22.3	15.2	25.2	18		18	31	21.6	23	16.5	
24	31.4	23	32.5		23.9	15	27.7	17.6		17	31.5	21.6	23	16.8	
25	29.2	21.2	32		23.9	14.6	26.7	19		17	30.2	20.2	22.3	14	
26	27.5	25.8	33		20	17	25.2	20.9		17	27	21.1	22	18.3	
27	31.2	24.2	33		22.2	16.4	28.5	19.8		16	31.6	22.2	24.5	20	
28	32.5	25	35		22.6	16.2	27.9	17.6		16	34.5	21.6	24	19	
29	29.9	24.1	35		23.3	15.3	29.2	16.5		18	31.6	22	24	17.5	
30	29.7	25.2	33.2		22.8	15.3	29.8	17.4		17	31	22.1	24.3	17.5	
Mean	31	23.8	33.7		22.8	15.7	27.4	17.7		17	31.3	22.2	23.5	17.5	

<sup>a</sup> These maximum temperatures seem to be too high.

Maximum and minimum temperatures at the stations of the Weather Bureau, November, 1921—Continued

Day.	Atok.		San Fernando, La Union.		Echagüe.		Balaoan.		Tagudin.		Candon.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	24	14.9	32.8	24.5	30.2	22.9	32.5	23.3	33.2	24	33.7	23.3
2	23.6	14.1	31.7	23	30.5	20.9	32.5	22.6	31.6	23.6	31.6	23.4
3	21.5	16.3	30.1	23.2	27	22	31.4	22.1	31.2	22.6	32.6	21.2
4	23.8	17	33.5	23	26.6	22	31.3	23.2	32.5	24	32.7	23
5	23.3	16.1	33	24.5	29.2	22.3	33.5	23	32.6	25.3	33.4	24.4
6	23.2	15	32.5	23.3	31.4	22.8	32.2	22.2	31.6	23	31.8	23.1
7	24.8	14.7	32.6	22.1	31.2	22.8	31.5	21.4	32.2	22.5	32.4	22.3
8	20.2	16.2	29.8	23.5	28.8	23.7	32.2	23.1	29.1	24.6	31.5	23.1
9	23.8	15.1	31	23.5	26.2	22.3	31.7	23.2	32.9	23.5	33.4	24
10	23.3	14	30.8	22.5	25.8	22	32.4	22.1	29.3	23	33.7	22.4
11	21.7	15.4	31.8	23.5	26.4	21.5	30.9	22.6	31.6	22.9	32.4	23.4
12	21.2	16.4	34	24.5	30.8	22.9	31	23.6	32.5	23.9	32.8	24.2
13	19.4	16	30.9	25.1	31	22.5	32.1	24.4	30.6	24.8	30.8	24.2
14	21.5	15.6	28.9	22.4	28.5	22	30.3	22.2	30.5	23.1	31.6	23
15	21.6	16.5	30	24	28.5	23.3	29.4	22	30.3	23.1	31.4	24.2
16	21.7	16.1	31.6	24	24.5	22.7	30.3	24	30.3	24	29.5	24
17	19.8	15.2	30.4	23.4	28	21.5	30.9	23.5	31.5	24	31.4	23
18	21.6	13.2	30.5	21	31.2	22.2	31.6	20.6	32	22	30.7	22.2
19	19.8	15	31.6	24.4	29.2	20.8	30.7	23	31.3	22.1	31.4	23.1
20	24.6	14.2	31.6	21.5	29.8	21.7	31.3	21.1	31.9	21.9	32.6	22.4
21	24.4	13.2	31.3	21.6	30	20.8	30.7	21.3	32.3	22	32.8	21.2
22	20.4	16.1	30.5	23.2	28.3	22.4	31.2	22.7	32.4	23.9	29.8	23
23	22.8	14.5	30.3	22.4	26.6	21.6	30.5	21.4	30.9	21.8	31.5	21.1
24	22.8	14.2	31	22.4	28.5	20.7	30.6	22.3	31.3	23.3	33.5	21.2
25	22.7	13.1	30.8	21.3	24.8	20.2	31.2	19.3	32.2	20	31.5	23.2
26	20.7	16.1	27.8	22.8	24.2	20.8	31.4	21.9	27.3	22	30.4	24.2
27	22.8	16.3	32	23	29.5	22.4	30.3	22	32.5	23.1	32.8	22.2
28	24.6	16.1	32	24	31.7	21.4	31.6	21.6	33.6	22.7	31.8	22.1
29	23.2	14.2	31	23.2	31.7	21.8	32.4	22.2	31.6	24	30.4	24.2
30	23	14.3	30.5	22.5	32.2	21.5	30.8	22.5	31.3	22.9	30.4	23
Mean	22.4	15.2	31.2	23.1	28.7	21.9	31.3	22.3	31.5	23.1	31.9	23

Day.	Vigan.		Bangued.		Tuguegarao.		Sinait.		Batac.		Solsona.	
	Maxi- mum.	Mini- mum.	Maxi- mum. <sup>a</sup>	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	32.6	23.4	37.7	22.6	33.1	23.5	33.2	22	34.4	21.7	36.1	21.7
2	33.7	24	35.5	22.6	33.2	21.5	33.8	22.5	34.8	21.9	35	22
3	36.7	23	36.1	20.4	33.6	20.3	33.6	21.3	34.6	19.4	35.2	19.5
4	35.4	26.6	34	21.6	29.6	22.4	34.6	23.8	34.4	21.5	34.5	22.6
5	33.8	25.9	35.4	23.6	27.2	22.4	36	23.6	33.9	21.3	34.1	23.1
6	32.1	23.4	36.4	22.3	29.9	22.7	35.1	22.9	34.2	21.5	34.4	21.9
7	32	23.6	37.2	22.5	30.8	22.5	33.7	23	33.2	21.4	34.8	22.5
8	32.4	24.6	35	25.6	25.6	22.5	34	24.5	32.9	21.9	32	23.2
9	32.6	23.2	32.5	25.8	22.1	22	34	22	32.8	21.7	32.1	22.5
10	32.1	22.3	31.1	25.6	20.8	22	34.2	22.4	32.4	21.5	30.3	23.4
11	29.7	22.7	31.9	24.7	28.4	21.8	33.1	24.1	32.2	23.4	32.6	23.5
12	32.1	24.7	35.6 <sup>7</sup>	25.8	31.5	23.3	29.1	23	34.3	23.9	31.4	26.5
13	31.3	23.7	33.2	23.6	32.6	23.4	31	23	33.4	22.8	31.4	22.5
14	30.8	22.7	34	22.5	31.7	23.4	31.2	23	31.9	20.9	33.4	22.3
15	30.7	23.2	32.6	23.9	28.3	23.5	34.1	23.5	31.9	23	32.7	24.2
16	30.3	23.6	34	25.6	22.2	22	32.4	23.1	32.9	22.5	32.2	23.2
17	31.1	23.1	33.7	22.2	27.7	21.9	31.2	24	32.5	22.3	31.8	22.3
18	30.1	22	33.4	29	22.2	22	31.9	22.7	31.3	22.4	31.9	22.3
19	31.9	23.2	33.7	29.2	21.3	20.2	30.2	23	30.9	22	32.1	21.5
20	30.7	22.2	33.6	20.6	30.2	21.4	31.2	21	32.3	20.1	31.5	20.4
21	31.6	21.7	35.8 <sup>7</sup>	19.5	30.6	19.3	33.3	21.5	32.2	20.1	32.8	19
22	29.7	23.4	29.3	26.3	28.6	22.1	32	23	31.6	22	28.4	23
23	31.3	23.4	30.5	25.6	28.3	22.1	32	22.5	30	20.9	30.9	22
24	32.2	23.8	32.5	24.8	28.5	21.7	32.1	21.5	31.5	24	30.4	23.5
25	30.9	23.5	30.3	23.5	25.8	20.6	33	20.5	31.4	22.9	29.9	24
26	27	22.5	29.5	24.3	24.2	21.7	31	22.7	30	21.9	29.2 <sup>7</sup>	25
27	31.4	23.5	35.5	24.1	27.6	22.6	32.8	23.8	29	21.9	31.8	24.7
28	32	23.2	35.1	21.9	32	22.1	31.7	22	31.9	21.3	33.1	21.3
29	29.9	23	32.6	23.7	32.1	22.1	32.2	23.1	32.3	23.3	31.3	23.8
30	29.7	22.6	33.2	22.2	32.4	23.4	32.7	21	30.9	22	32	21.5
Mean	31.6	23.4	33.7	23	29.3	22.1	32.7	22.7	32.4	21.9	32.3	22.6

<sup>a</sup> These maximum temperatures seem to be too high.

Maximum and minimum temperatures at the stations of the Weather Bureau, November, 1921—Continued

Day.	Laoag.		Pasuquin.		Aparri.		Cape Bojeador.		Basco.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1.....	34.7	22.5	36.1	23.5	30.2	23.7	31.2	22.3	27.9	23.9
2.....	34.7	22	36.8	22.3	30.4	22.5	30.7	22.2	28.4	22.3
3.....	34.7	19.2	36	20.5	31.2	21.5	31.1	24	28.4	24
4.....	34.7	23.4	35.6	27.5?	29.2	23.8	29.5	23.5	24.8	22.4
5.....	32.3	24.2	32.4	24.8	26.2	22.8	26	21	24.6	22.4
6.....	34.5	22	36.6	25.2	26.5	23.2	28.7	22.2	27.2	21.7
7.....	34.5	23	36.8	23.6	29.1	22.1	29.8	20.6	25.5	23.4
8.....	32.7	24.8	37	26.7?	27.1	23	25.9	22.8	24.4	20.2
9.....	30.6	23.2	30.5	24	25.6	22.2	26	-----	22.5	19.4
10.....	29.8	23	29.7	23.4	25	21.1	26.5	-----	23.9	19.5
11.....	29.9	23.5	29.7	23	25.4	23	26.3	-----	24.3	15.7?
12.....	31.7	25	31.4	24.3	28.2	23	23.8	-----	24.3	15.4?
13.....	31.4	23.1	31.8	23.4	31.4	23.6	28.2	22.3	29.1	20.9
14.....	32.7	23	32	23.4	28.9	23.6	26	23.3	24.5	23.4
15.....	33.2	23.6	31.3	24.7	26.5	24	26.4	22.5	25.4	21.6
16.....	34	23	33.4	25	25.9	23.7	26.6	21.8	25.5	20.7
17.....	31.2	22.2	36?	22.1	26.4	22.4	29.7	21.9	26.5	20
18.....	30.2	23	32.3	23.4	26.4	22	28.8	22.9	27.3	20.2
19.....	32.2	21.9	33.7	21.7	29.4	22.2	28.3	22.5	26.3	22.3
20.....	32.7	20.1	33.4	20.7	28.4	21.9	29.6	22.6	27.4	23.4
21.....	32.7	20	34.7	20.4	29.5	20.2	28.8	21.7	-----	23.5
22.....	29.4	22.2	29.7	25.4	28.2	23.8	28.3	20.6	26.2	22.7
23.....	31.2	24.5	32	25	27.2	22.9	28	-----	25.4	22.1
24.....	32.6	22.5	33	25.5	28.9	23	29	-----	25.3	23.1
25.....	29.2	23.5	29.5	23.9	26.2	22	27.6	-----	25	22.4
26.....	28.7	23.7	29.5	23.7	24.5	22	25.2	-----	23.3	20
27.....	31.2	24.1	32.3	23.5	26.4	23.1	28.3	-----	26.3	21.2
28.....	33.2	22.5	33.7	22.7	31.8	22.3	29.5	23.7	28.4	23.4
29.....	30.7	23.6	30.4	23.7	30.1	23.2	30	23.1	27	23
30.....	30.9	22.4	31.3	22.7	30	23.7	29.1	23.2	26.8	22.5
Mean.....	32.1	22.8	33	23.7	28	22.7	28.1	22.4	25.9	21.6



## SEISMOLOGICAL BULLETIN FOR NOVEMBER, 1921

By Rev. MIGUEL SADERRA MASÓ, S. J.

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### EARTHQUAKES FELT IN THE PHILIPPINES<sup>1</sup>

2, 4<sup>h</sup> 24<sup>m</sup> [2, 12<sup>h</sup> 24<sup>m</sup>]. Cuyo Island. Oscillatory earthquake, direction N-S, intensity III-IV, duration 10 seconds.

9, 2<sup>h</sup> 44<sup>m</sup> 55<sup>s\*</sup> [9, 10<sup>h</sup> 44<sup>m</sup> 55<sup>s</sup>]. Baguio (W Luzon). Earthquake shock of intensity II-III. Its origin apparently lay eastwards, possibly in Nueva Vizcaya or in the deep valley of the Agno River. It repeated on the 10th at 1<sup>h</sup> 17<sup>m</sup> [9<sup>h</sup> 17<sup>m</sup>].

11, 6<sup>h</sup> 06<sup>m</sup> [11, 14<sup>h</sup> 06<sup>m</sup>]. Irosin (SE Luzon). Local shock of intensity III. Repetition at 17<sup>h</sup> 34<sup>m</sup> [12, 1<sup>h</sup> 34<sup>m</sup>].

11, 16<sup>h</sup> 25<sup>m</sup> 27<sup>s\*</sup> [12, 0<sup>h</sup> 25<sup>m</sup> 27<sup>s</sup>]. W Luzon. Earthquake of intensity IV-V, felt through the mountainous eastern portion of La Union Province and the Baguio region. It repeated with less intensity two hours later. The epicenter apparently lay in the vicinity of Santo Tomas block mountain.

14, 7<sup>h</sup> 00<sup>m</sup> [14, 15<sup>h</sup> 00<sup>m</sup>]. Kapangan (W Luzon). Local earthquake shock of intensity III.

22, 10<sup>h</sup> 22<sup>m</sup> 00<sup>s\*</sup> [22, 18<sup>h</sup> 22<sup>m</sup> 00<sup>s</sup>]. W Luzon. Extensive earthquake of intensity IV-V, felt along the western portion of Luzon between parallels 14° and 18° N. Lighter repetitions occurred at 21<sup>h</sup> 11<sup>m</sup> 54<sup>s\*</sup> [23, 5<sup>h</sup> 11<sup>m</sup> 54<sup>s</sup>], 23<sup>h</sup> 11<sup>m</sup> [23, 7<sup>h</sup> 11<sup>m</sup>] and on the 23rd at 10<sup>h</sup> 00<sup>m</sup> [18<sup>h</sup> 00<sup>m</sup>]. Its epicenter seemingly was located in the northern portion of the Zambales range.

26, 16<sup>h</sup> 51<sup>m</sup> [27, 0<sup>h</sup> 51<sup>m</sup>]. Maasin (S Leyte). Earthquake of intensity V-VI. Slightly felt at Cebu; recorded at Butuan.

28, 20<sup>h</sup> 28<sup>m</sup> [29, 4<sup>h</sup> 28<sup>m</sup>]. Maasin (S Leyte). Local earthquake shock of intensity III-IV.

29, 4<sup>h</sup> 50<sup>m</sup> [29, 12<sup>h</sup> 50<sup>m</sup>]. Ilocos Norte (NW Luzon). Earthquake of intensity III, felt in the central portion of the province.

<sup>1</sup>The intensity of earthquakes is given in the notation known as the Rossi-Forel scale. The time is that indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (\*). Otherwise the time is that noted by the observer who sent the report. All time indications are in Greenwich mean time (midnight=0<sup>h</sup>), insular time being added in brackets for the convenience of Philippine readers.

RECORDS OF THE MICROSEISMOGRAPH

(Time: Greenwich mean. Midnight=0h. Instrument: Wiechert seismograph; 1,000 kilograms.  $A_N: T_0=6.25, \epsilon=2.906, \frac{r}{T_0^2}=0.058;$   
 $A_E: T_0=6.18, \epsilon=2.393, \frac{r}{T_0^2}=0.042.$  Alluvium. 2.40 meters above sea level.)

No.	Date.	Character.	Phase.	Hour.			Period.	Amplitude.		Remarks.
				h.	m.	s.		$A_N$ $\mu$	$A_E$ $\mu$	
341	7	IIIr	eP	16	02	04			Off Southeast Mindanao.	
			S		04	30				
			L		05	04				
			MN		05	16	8	963		
			ME		05	33	8		749	
			F	17	38					
342	8	Iv	e	10	11					Aftershock of the No. 341.
			F		23					
343	9	IIv	eP	2	44	55			Felt at Baguio (W Luzon).	
			L		45	17				
			ME		45	32	5	300		
			MN		45	40	5	591		
			F		59					
344	11	I	e	6	12	58				From Omori's seismograph. Aftershock of the No. 341.
			F		27					
345	11	Iv	eP	16	25	27				Western Luzon.
			F		31					
346	11	IIIr	eP	18	38	33			From Omori's seismograph. Off Southeast Mindanao.	
			S?		41	12				
			L		41	54				
			F	21	02					
347	13	I	e	13	56	34				Aftershock of the No. 346.
			F		14	40				
348	13	Iv	eP	16	34	37				
			F		40					
349	14	I	e	7	52					Aftershock of the No. 346.
			F	8	12					
350	15	I	e	2	18					
			F		43					
351	15	IIu	cP	20	45	04			Central Asia.	
			S		51	55				
			L		58	59				
			F	21	55					
352	16	Iv	cP	4	42	00				
			L		42	29				
			F		49					
353	16	Ir	e	14	43	06			From Omori's seismograph. Aftershock of the No. 346.	
			L		46	15				
			F	15	37					
354	17	Ir	eP	4	55	51				
			L		58	44				
			F	5	23					
355	17	I	e	5	45	43				
			F		59					
356	17	IIr	eP	7	52	46			Aftershock of the No. 346.	
			S		55	04				
			L		55	43				
			ME		56	15	6	110		
			MN		56	59	6	191		
			F	9	28					
357	18	IIr	eP	2	35	17			Aftershock of the No. 346.	
			L		38	19				
			F	3	47					
358	18	I	e	5	06	41				
			F		40					
359	20	I	e	6	21					
			F		36					

## Records of the Microseismograph—Continued

No.	Date.	Character.	Phase.	Hour.				Period.	Amplitude.		Remarks.
				h.	m.	s.	s.		A <sub>N</sub> μ	A <sub>N</sub> μ	
360	20	I	e	11	57					From Omori's seismograph. Central Celebes.	
			F	12	10						
361	22	III <sub>d</sub>	iP	10	22	00				Felt at Manila and western part of Luzon. The maxima and end lost by the force of the shock.	
			L		22	30					
362	22	II <sub>d</sub>	eP	21	11	54				From Omori's seismograph. Felt at Manila. Aftershock of the No. 361.	
			L		12	19					
363	28	I	e	2	41					From Omori's seismograph. Aftershock of the No. 346.	
			F	3	04						
364	29	II <sub>r</sub>	eP	2	47	27					
			L		49	45					
			MN		50	12	5	134			
			M <sub>E</sub>		51	05	6	124			
			F	3	17						

### TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS<sup>1</sup>

2, 4<sup>h</sup> 24<sup>m</sup> [2, 12<sup>h</sup> 24<sup>m</sup>]. Isla de Cuyo. Temblor oscilatorio, dirección N-S, intensidad III-IV, duración 10<sup>s</sup>.

9, 2<sup>h</sup> 44<sup>m</sup> 55<sup>s\*</sup> [9, 10<sup>h</sup> 44<sup>m</sup> 55<sup>s</sup>]. Baguio (W de Luzón). Temblor de tierra de intensidad II-III. Su origen se hallaba al parecer, hacia el E, seguramente en la provincia de Nueva Vizcaya o en el profundo valle del Agno, que la separa de Baguio. Repitió el día 10 a 1<sup>h</sup> 17<sup>m</sup> [9<sup>h</sup> 17<sup>m</sup>].

11, 6<sup>h</sup> 06<sup>m</sup> [11, 14<sup>h</sup> 06<sup>m</sup>]. Irosin (SE de Luzón). Temblor de tierra local de intensidad III. Repitió a 17<sup>h</sup> 34<sup>m</sup> [12, 1<sup>h</sup> 34<sup>m</sup>].

11, 16<sup>h</sup> 25<sup>m</sup> 27<sup>s\*</sup> [12, 0<sup>h</sup> 25<sup>m</sup> 27<sup>s</sup>]. W de Luzón. Temblor de tierra de intensidad IV-V, sentido en la parte montañosa oriental de la provincia de la Unión y en la región de Baguio. Repitió con menos intensidad dos horas después. Su origen parece se hallaba en la región del monte Sto. Tomás.

14, 7<sup>h</sup> 00<sup>m</sup> [14, 15<sup>h</sup> 00<sup>m</sup>]. Kapangan (W de Luzón). Temblor de tierra local, de intensidad III.

22, 10<sup>h</sup> 22<sup>m</sup> 00<sup>s\*</sup> [22, 18<sup>h</sup> 22<sup>m</sup> 00<sup>s</sup>]. W de Luzón. Extenso temblor de tierra de intensidad máxima IV-V, sentido en toda la parte occidental de Luzón desde el paralelo 14° a 18°. Repitió con menor intensidad a 21<sup>h</sup> 11<sup>m</sup> 54<sup>s\*</sup> [23, 5<sup>h</sup> 11<sup>m</sup> 54<sup>s</sup>], a 23<sup>h</sup> 11<sup>m</sup> [23, 7<sup>h</sup> 11<sup>m</sup>] y por último el 23 a 10<sup>h</sup> 00<sup>m</sup> [18<sup>h</sup> 00<sup>m</sup>]. El epicentro probablemente se hallaba en la parte N de la cordillera de Zambales.

26, 16<sup>h</sup> 51<sup>m</sup> [27, 0<sup>h</sup> 51<sup>m</sup>]. Maasin (S de Leyte). Temblor de tierra de intensidad V-VI. Sintióse también muy débilmente en Cebú; registrado en Butúan.

28, 20<sup>h</sup> 28<sup>m</sup> [29, 4<sup>h</sup> 28<sup>m</sup>]. Maasin (S de Leyte). Temblor de tierra de intensidad III-IV.

29, 4<sup>h</sup> 50<sup>m</sup> [29, 12<sup>h</sup> 50<sup>m</sup>]. Ilocos Norte (NW de Luzón). Temblor de tierra de intensidad III, sentido en la parte central de la provincia.

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<sup>1</sup> La intensidad de los terremotos se indica conforme a la conocida escala de Rossi-Forel. Cuanto a la hora de su ocurrencia, adoptamos la indicada por los sismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (\*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo medio de Greenwich (medianoche=0<sup>h</sup>). Para conveniencia de los lectores de Filipinas se añade también la hora insular.



## MINDANAO EARTHQUAKES, NOVEMBER 7 AND 11, 1921

On the 7th at 16<sup>h</sup> 02<sup>m</sup> 04<sup>s</sup>\* [8, 0<sup>h</sup> 02<sup>m</sup> 04<sup>s</sup>] a very extensive and violent shock was felt through eastern Mindanao and Visayas, which marked the beginning of an exceedingly disturbed period lasting until the end of the month. The most affected portion of Mindanao extended from the eighth parallel southwards along the coast and district of Caraga, to San Agustin point. Isoseism VII included a portion about 200 kilometers long on the coast and nearly a hundred westwards to the interior. Isoseism III embraced, to the north the Visayan Islands and extreme SE of Luzon, to a distance of 600 kilometers from Caraga, while northwestwards the shock was scarcely felt at distances of 400 kilometers. After this violent shock tremblings were frequent; the same conditions prevailed on the 9th. The 10th was rather quiet, but on the 11th perceptible shocks increased considerably in number, apparently as forerunners of the second violent earthquake which occurred at 18<sup>h</sup> 38<sup>m</sup> 33<sup>s</sup>\* [12, 2<sup>h</sup> 38<sup>m</sup> 33<sup>s</sup>]; this was stronger (VIII) and somewhat more extensive than the previous one. Numerous aftershocks continued to the 15th, when only three were noticed. The seismographs at Manila, about a thousand kilometers distant, recorded only one on the 14th at 7<sup>h</sup> 52<sup>m</sup> [15<sup>h</sup> 52<sup>m</sup>]. On the 16th their number increased again, and even more on the 17th. These two days occurred two shocks recorded through the Far East, at 14<sup>h</sup> 43<sup>m</sup> 06<sup>s</sup>\* [22<sup>h</sup> 43<sup>m</sup> 06<sup>s</sup>] and on 17th at 7<sup>h</sup> 52<sup>m</sup> 46<sup>s</sup> [15<sup>h</sup> 52<sup>m</sup> 46<sup>s</sup>] respectively. On the 18th after a strong shock at 2<sup>h</sup> 35<sup>m</sup> 17<sup>s</sup>\* [10<sup>h</sup> 35<sup>m</sup> 17<sup>s</sup>], recorded at Manila and Zikawei, the disturbance ceased rapidly.

The preceding observations show three different periods of disturbance, which appear more distinctly in the following records of Butuan, some 190 kilometers from Caraga, and in a list of shocks received from Baganga, only twenty kilometers to the north of the same town.

Days	Butuan (records)	Baganga (shocks)	Days	Butuan (records)	Baganga (shocks)
7-8	8	4	14	10	6
9	7	3	15	3	3
10	3	0	16	6	6
11	16	4	17	12	28
12	38	33	18	12	5
13	12	5	19	1	

Undoubtedly neither the records of Butuan, being at such a distance, nor the list of Baganga give the approximate number of aftershocks but only the strongest. It seems that the amplitude of the earth motion was diminishing very rapidly; at Cateel, some 70 kilometers north of Caraga, only fourteen were noticed during the same period. Nearly the same number of shocks extended their perceptible waves farther towards central Mindanao; they occurred on the 8, 11, 12, 13, 14, 15, 16, 17, and 18. Later to the end of the month only some isolated shocks occurred on the 20, 21, 27, and 28.

**Effects of the shocks.**—Due to the lightness of the constructions of this country, principally in such a distant and little advanced regions, as Caraga District, the damage sustained by dwellings and other structures was of little consideration. The press

reported that the vault of the church at Manay had been destroyed, but the chapel of that town consisted rather of a wooden hall roofed with corrugated iron: moreover it was in very bad repair. Some native houses were wrecked by the shocks and in some cases their wooden pillars sunk in cracks open in the soil. Numerous crevasses and landslides occurred along the coast and the near hills, due to the steepness of the high limestone banks and cliffs prevailing on that coast, some being previously undermined by the cutting effect of the waves. The most unusual effect of the second earthquake was a tide-wave which invaded the few bays with low lands there existing. Manay being the one which sustained greater loss in structures and crops.

**Epicenter.**—It was in the Pacific some distance from the SE coast of Mindanao, in the southern part of the Philippines Deep. The records of Manila, Butuan, Zikawei, and Batavia place it N of the group of Talaut. Its meizoseismic area must have had great extension, but it was almost entirely under the sea. All the reporters of the most affected portion of Mindanao described the shocks as sudden vertical jerks, apparently under their feet; but such impression may be explained, remembering the great depth the sea has close to these coasts. The second earthquake seems to have originated farther to the south and west: it displayed greater intensity and consequently had somewhat larger extension in our Archipelago. The tide-wave was also noticed in great Sanguir Island. Both violent earthquakes were recorded around the globe.

## TERREMOTOS DE MINDANAO DEL 7 Y 11 DE NOVIEMBRE, 1921

A 16<sup>h</sup> 02<sup>m</sup> 04<sup>s\*</sup> del día 7 [8, 0<sup>h</sup> 02<sup>m</sup> 04<sup>s</sup>] se sintió en la parte oriental de Mindanao y Visayas un extenso terremoto, el cual fué el principio de un período sísmico que duró hasta los últimos días del mes. La parte de Mindanao más castigada fué la costa SE o de Caraga, desde el paralelo 8° N hacia el Sur hasta el cabo de San Agustín. La isosisma VII comprendía unos 200 kilómetros de la costa SE y poco más de 100 kilómetros hacia el oeste o interior de la isla. La última isosisma, de intensidad III, se extendía por el N hasta el extremo SE de Luzón, 600 kilómetros distante de Caraga; mientras que en dirección al W y NW apenas se sintió a distancias de 400 kilómetros. Al terremoto siguieron algunas réplicas; continuaron también el día 9, contándose tres más perceptibles y otras tantas muy débiles. El 10 puede decirse que fué de calma; si hubo réplicas fueron pocas y débiles. El 11 aumentó considerablemente su número, como precursoras del segundo gran terremoto que sobrevino a 18<sup>h</sup> 38<sup>m</sup> 33<sup>s\*</sup> [12, 2<sup>h</sup> 38<sup>m</sup> 33<sup>s</sup>], más violento (VIII) y de alguna mayor extensión que el del día 7. Siguiéronle numerosas réplicas, las cuales fueron disminuyendo en número e intensidad hasta el 15, en que se notaron solas tres. En Manila no se registró más que una el 14 a 7<sup>h</sup> 52<sup>m</sup> [15<sup>h</sup> 52<sup>m</sup>]. Aumentó de nuevo su número el 16, y más todavía el 17, con dos terremotos registrados en todo el Extremo Oriente, los cuales tuvieron lugar a 14<sup>h</sup> 43<sup>m</sup> 06<sup>s\*</sup> [22<sup>h</sup> 43<sup>m</sup> 06<sup>s</sup>] del 16 y 7<sup>h</sup> 52<sup>m</sup> 46<sup>s\*</sup> [15<sup>h</sup> 52<sup>m</sup> 46<sup>s</sup>] del 17. El 18, después de una fuerte réplica a 2<sup>h</sup> 35<sup>m</sup> 17<sup>s\*</sup> [10<sup>h</sup> 35<sup>m</sup> 17<sup>s</sup>], registrada en Manila y Zikawei, se fué restableciendo la calma casi completa.

Las observaciones que preceden indican que hubo tres máximos o períodos distintos de actividad, los cuales aparecen claros en los siguientes registros del sismógrafo Wiechert de Butúan, a unos 190 kilómetros distante de Caraga, y en una lista de temblores recibida de Baganga, distante sólo unos 20 kilómetros.

Días	Butúan (registros)	Baganga (temblores)	Días	Butúan (Registros)	Baganga (temblores)
7-8 -----	8	4	14 -----	10	6
9 -----	7	3	15 -----	3	3
10 -----	3	0	16 -----	6	6
11 -----	16	4	17 -----	12	28
12 -----	38	38	18 -----	12	5
13 -----	12	5	19 -----	1	-----

Puede darse por seguro que ni los registros de Butúan, estando tan distante, ni la lista de Baganga representan el número aproximado de las réplicas, sino el de las más intensas. Parece que la amplitud del movimiento disminuía muy rápidamente con la distancia; así en Cateel, 70 kilómetros distante al N de Caraga, solamente se experimentaron 14 temblores durante todo el período; casi el mismo número anotaron en otros sitios distantes hacia el centro de Mindanao. Estos ocurrieron los días 8, 11, 12, 13, 14, 15, 16, 17 y 18. Después, hasta fines de mes, hubo réplicas aisladas los días 20, 21, 27 y 28.

Efectos de los terremotos.—Debido a la edificación ligera de este país, sobretudo en provincias apartadas y poco adelantadas como es la región de Caraga, los daños cau-

sados en las viviendas y otras construcciones fueron de escasa importancia. Se dijo haberse hundido la *bóveda* de la Iglesia de Manay, pero no existía tal bóveda, puesto que la Iglesia allí existente era una construcción de postes de madera y cubierta de planchas de hierro; además estaba en mal estado de conservación. Varias casas quedaron destrozadas y de alguna se dice que sus postes se hundieron en las grietas abiertas en el terreno. De éstas se citan muchas a lo largo de la costa y en las colinas vecinas, pero conviene tener en cuenta que dicha costa es en general muy escarpada, formada de bancos de caliza muy elevados sobre el actual nivel del mar y las colinas cercanas muy empinadas. Lo más notable y extraordinario fué la ola o *tsunami* que invadió el día 11 las pequeñas bahías de bajas playas, como por ejemplo la de Manay, donde causó algún daño en casas y plantaciones situadas en terrenos playeros bajos.

**Origen de los terremotos.**—Indudablemente se hallaba en el Pacífico, algo lejos de las costas SE de la isla de Mindanao, en la parte sur de la gran fosa de Filipinas. Los sísmogramas de Manila, Butúan, Zikawei y Batavia lo colocan hacia el N de la isla Talaut. Su área mezosísmica debió tener sin duda bastante extensión pero casi toda ella estaba dentro del mar. Los observadores de la costa de Mindanao están todos contestes en que los movimientos eran cortos y bruscos como producidos debajo de sus piés; pero conviene recordar las grandes profundidades del abismo submarino a lo largo de dichas costas. Es probable que el segundo terremoto, ocurrido el día 11, tuvo su origen algo más al S y W. Fué, como hemos dicho antes, más intenso y de mayor extensión que el del 7 y el que causó la ola, no sólo en las costas de Mindanao sino también en el gran Sanguir, según se apunta en unas observaciones recibidas de Batavia.

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THE GOVERNMENT OF THE PHILIPPINE ISLANDS

# WEATHER BUREAU

MANILA CENTRAL OBSERVATORY

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BULLETIN FOR DECEMBER, 1921

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PREPARED UNDER THE DIRECTION OF

REV. JOSÉ ALGUÉ, S. J.

DIRECTOR OF THE WEATHER BUREAU

MANILA  
BUREAU OF PRINTING  
1923



BULLETIN FOR DECEMBER, 1921





# METEOROLOGICAL BULLETIN FOR DECEMBER, 1921

By Rev. JOSÉ CORONAS, S. J.

Chief, Meteorological Division of the Weather Bureau

## GENERAL WEATHER NOTES

**Pressure and temperature.**—The mean atmospheric pressure for this month in the Philippines is slightly higher than that of the preceding year and the normal of December. The highest pressures were generally recorded on the 11th and the lowest on the 20th and 21st.

The mean monthly temperature is almost identical with the normal of this month in all our stations throughout the Archipelago. The absolute highest and lowest temperatures of Manila were 32.9° C. and 17.4° C., the former having been registered on the 17th and 20th, and the latter on the 8th. The extreme temperatures for Baguio were 25.8° C., 10.8° C. on the top of Mirador, and 28.2° C., 10.0° C. in the plateau near the City Hall.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS OF THE WEATHER BUREAU FOR DECEMBER, 1921

Station.	Pressure.							Temperature.						
	Mean.	Departure from December, 1920.	Departure from normal.	Highest mean.	Day.	Lowest mean.	Day.	Mean.	Departure from December, 1920.	Departure from normal.	Highest.	Day.	Lowest.	Day.
Zamboanga	mm. 758.15	+0.24	-----	mm. 759.90	11	mm. 755.83	20	°C. 26.1	+0.1	-----	°C. 33	25	°C. 20.5	12, 13
Kolonie, Yap, Western Carolines	57.30	-----	-----	59.31	14	53.95	6	26.6	-----	-----	32.1	12	21.1	19
Tagbilaran	58.55	+ .37	-0.01	60.71	11	55.81	20	25.5	+ .2	-0.5	31.2	1, 11, 12	19.4	9
Surigao	58.66	+ .44	+ .10	60.90	11	56.13	20	25.5	- .1	- .3	30.7	25, 26	21.6	10
Cebu	58.80	+ .34	+ .09	60.86	11	56.05	20	26.6	0	0	31.7	1	21.5	9
Iloilo	58.89	+ .32	+ .25	61.28	11	55.79	20	25.8	+ .1	- .2	32.6	21	20.2	9
Tacloban	59.11	+ .49	+ .04	61.19	11	56.41	20	25.2	- .2	- .7	33	1	20.4	9
Capiz	59.41	+ .48	+ .14	61.62	11	56.35	20	25.9	- .3	- .4	32	1	21.5	12
Calbayog	59.48	+ .44	+ .44	61.75	11	56.62	20	24.8	+ .1	- .4	31.8	1	17.5	11
Legaspi	59.78	+ .40	+ .29	61.94	11	56.82	21	25.8	- .1	- .4	31.8	1	20.6	9
Atimonan	60.56	+ .65	+ .47	62.50	10	57.22	21	25.6	0	- .2	29.6	1, 2	20.9	8
Ambulong, Tanauan, Batangas	59.70	+ .51	-----	61.44	10	56.54	21	25.1	- .2	-----	32.7	1	17.2	8
Daet	60.59	+ .56	-----	62.60	10	56.99	21	25.2	0	-----	30.2	21	19.1	11
Manila	60.42	+ .56	+ .12	62.45	11	57.27	21	24.4	- .1	- .7	32.9	17, 20	17.4	8
San Isidro, Nueva Ecija	60.52	+ .50	+ .31	62.48	11	57.32	21	24.8	+ .3	- .3	32.8	21	17	10, 11
Dagupan	60.15	+ .72	+ .38	62.20	11	57.22	21	25.9	+ .1	- .1	34.6	16	18.4	11
Baguio*	637.39	+ .49	+ .21	638.47	11	635.13	21	17.1	0	- .3	25.8	17	10.8	10, 12
Vigan	759.85	+ .67	- .01	761.73	11	756.93	21	26	- .2	- .2	33.8	25	19.2	30
Tuguegarao	61.91	+ .75	+ .49	64.44	26	58.43	21	23.6	+ .1	- .2	32.2	31	16.1	10
Laoag	60.20	+ .90	-----	62.22	11	56.95	21	24.6	- .3	-----	33.3	16	15.5	12
Aparri	62.33	+1.	+ .45	65.10	26	58.93	21	23.5	- .4	- .2	30.3	16	17.9	7

\* The barometric readings of this station are not reduced to sea level.

**Rainfall.**—The total amount of rainfall for this month is below the normal of December in a great majority of our stations particularly in Luzon. The monthly total rainfall of Manila was 54.5 mm., an amount which differs from the normal of December by -7.7 mm. and from the total of December, 1920, by -63.4 mm. The monthly total of Baguio, 44.4 mm., is also 8.1 mm. below the normal.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF DECEMBER, 1921

Station.	Departure from December, 1920.				Days of rain.	Departure from December, 1920.				Days of rain.	Departure from December, 1920.						
	Total.	mm.	mm.	mm.		Total.	mm.	mm.	mm.		Total.	mm.	mm.	mm.			
Jolo	161.8	+ 7	- 5.2	17	+ 4	+ 1	53.9	19	Calapan	112.7	- 339.6	- 101.5	24	- 2	0	29	13
Malamau, Isabela, Zamboanga	118.6	+ 96.4	- 60.5	3	- 3	- 3	112	6	Virac	387.2	+ 57.3	- 32.8	23	+ 3	- 1	119.6	13
Zamboanga	33.6	+ 9.7	- 60.5	7	+ 1	- 3	17.8	29	Naga, Camarines Sur	334.5	+ 210	+ 55.6	18	0	+ 1	111.8	13
Davao	171.8	- 4.6	- 18	17	+ 3	+ 6	27.9	6	Tigaon	431.8	+ 114	- 11.1	25	- 2	- 2	105.4	13
Cotabato	53.5	- 48.8	- 63.8	9	- 7	- 4	25.4	4	Batangas	75.1	- 26.8	- 26.2	6	- 3	- 5	44.9	4
Cagayan	93.2	+ 40.1	- 14	10	+ 1	- 1	31.2	2	Lucena	290.9	- 32.4	- 21	21	0	- 5	64.5	4
Butuan	161.1	- 107.9	- 124.5	23	- 5	+ 1	38.9	13	Atimonan	387.9	+ 25.1	+ 3.6	30	+ 7	+ 6	49.7	20
Mambajao	491.7	+ 380.7	- 22	22	+ 7	- 1	103.7	6	Ambulong, Tanauan, Batangas	12.2	- 87.9	- 3	3	- 9	- 11.4	13	
Dumaguete	161	+ 110.6	+ 20.3	19	+ 3	+ 3	42.5	13	Daet	421.8	- 38.2	- 26	26	- 1	- 68.4	13	
Kolonie, Yap, Western Carolines	310.6	- 101.4	- 27	27	- 3	+ 3	60.4	18	Canluban, Calamba	25.4	- 169.1	- 9	9	- 10	- 6.6	14	
Tagbilaran	99.1	- 60.8	- 60.4	19	0	- 3	13.5	25	Paracale	102	+ 46.4	- 338.8	16	+ 4	- 8	14.2	25
Iwahig Penal Colony, Puerto Princesa	167.2	+ 45.3	- 11	11	- 1	- 1	72.9	22	Santa Cruz, Laguna	26.5	- 183.4	- 119.6	10	- 9	- 8	3.8	13
Surigao	716.9	+ 276.6	+ 167.1	25	+ 3	+ 2	140.8	28	Manila	54.5	- 63.4	- 7.7	12	- 3	0	35.8	22
Maasin, Leyte	532.6	+ 403.6	+ 203.5	12	+ 5	0	114.3	19	Antipolo	25.9	- 185.6	- 82	6	- 10	- 7	8.9	22
Cebu	98.9	+ 45.2	- 43	14	+ 1	- 3	17.5	17	San Isidro, Nueva Ecija	9.5	- 51.7	- 36.3	3	- 10	- 5	7.9	2
Iloilo	41.8	- 124.4	- 73.5	9	- 9	- 5	14	26	Iba	2	- 41.3	- 24.8	3	- 1	- 2	1	22
San Jose de Buenavista	11.3	- 42.1	- 44.6	6	- 4	- 3	2.5	14	Tarlac	13.2	+ 1.3	- 22.7	3	- 2	- 2	6.4	22
Cuyo	85.4	- 168.5	+ 13.9	4	- 4	- 1	47.8	14	Baler	235.1	- 110.1	- 114.4	8	- 11	- 7	149.6	1
Ormoc	189.2	+ 55	- 1.7	17	+ 1	- 2	48.3	13	Dagupan	3.6	+ 1.6	- 15.3	1	- 1	- 3	3.6	8
Guiuan	522.5	+ 172.7	+ 49.3	24	- 3	- 2	125.2	13	Bolinao	0	- 11.4	- 0	0	- 4	0	0	0
Tacloban	447.5	+ 248	+ 95.4	21	+ 3	- 2	63.9	14	Baguio	44.4	- 7.7	- 8.1	3	- 7	- 3	36.6	22
Capiz	210	+ 72.4	- 25.8	19	- 4	0	88.9	26	San Fernando, La Union	0	- 15.3	- 8.1	0	- 2	- 2	0	0
Borongan	707.2	+ 87.9	+ 86.4	25	- 4	- 2	102.6	2	Echague	74.3	- 71.8	- 14	14	- 5	32.3	3	
Catbalogan	568.9	+ 324.3	- 20	20	0	- 2	192.6	26	Candon	0	0	- 9.2	0	0	0	0	0
Calbayog	325.4	+ 128.6	+ 44	25	+ 1	+ 2	66.6	26	Vigan	0	0	- 6.1	0	0	- 2	0	0
Masbate	279	+ 153.9	+ 62.6	20	+ 4	+ 3	38.3	23	Tuguegarao	89	- 38.2	- 57.4	10	0	0	36.1	2
Romblon	165.3	- 150.1	- 65.7	22	0	+ 1	19.8	20	Laoag	10.5	+ 6.4	- 8.5	2	0	0	10.2	15
Batag Light-house, Laoang	454.3	+ 30.4	- 19	19	- 3	- 3	98.5	13	Aparri	137.2	- 212.3	- 111.4	13	- 5	- 6	26.9	21
Sorsogon	497.4	+ 101.6	- 20	20	- 3	- 3	71.9	13	Cape Bojeador	19.3	- 33	- 8	8	+ 2	- 5.1	29	
Legaspi	430.7	- 41	- 37	24	- 3	0	71.1	13	Basco	207.3	- 19.1	- 160.9	20	+ 4	- 4	62.3	29
Sumay (Guam), Agaña	71.6	- 70.1	- 65.8	17	- 9	- 1	22.4	3									

DEPRESSIONS AND TYPHOONS

There was only one real typhoon observed on the Far East during this month. Its track was included in Plate VII together with the tracks of the typhoons for November (See Monthly Bulletin of November, 1921).

This typhoon appeared on the 3rd of December to the south of Guam in about 145° longitude E, between 9° and 10° latitude N. It moved WNW and NW between Guam and Yap on the 3rd and 4th. On the 5th it inclined more to the north; and on the 8th it recurved northeastward, while it increased extraordinarily its rate of progress. On the 9th the center could be seen SE of the Bonins near 146° longitude E, between 24° and 25° latitude N. The steamer *Granite State* was not far from the center of this typhoon when in about 138° longitude E and near 17° latitude N. Some of the observations taken on board of this steamer are given in the following table:

METEOROLOGICAL OBSERVATIONS MADE ON BOARD THE STEAMSHIP "GRANITE STATE,"  
DECEMBER 6 TO 9, 1921

(Captain, Wallis)

Date and hour.	Position.		Baro- meter.	Wind.		Remarks.
	Latitude North.	Longitude East.		Direction.	Force.	
December 6:			<i>mm.</i>		<i>0-12.</i>	
Noon -----	18° 34'	146° 25'	757.2	SE	3	
December 7:						
6 a. m. -----			54.1	SSE	3	Overcast to clear and partly cloudy, heavy showers.
Noon -----	17° 31'	141° 02'	53.6	SE	4	Weather partly cloudy, heavy swell from south.
4 p. m. -----			50.8	SSE	6	
8 p. m. -----			51.1	SSE	6	
Midnight -----			48.3	SE	8	At 12.37 a. m. heavy rain squall.
December 8:						
2 a. m. -----			47.8	S by W	8	Between 2 and 3 a. m. barometer 746.75 mm.
3 a. m. -----			47.2			Heavy SSW'y sea.
6 a. m. -----			48.3	SSW	8	
8 a. m. -----			49.8	SW	8	Wind hauled to SW.
10 a. m. -----			51.3	SW	7	
Noon -----	16° 36'	136° 50'	51.6	SW	6	Weather overcast, passing rain squalls, heavy cross sea.
2 p. m. -----			51.1	SW	5	Overcast, cloudy, moderate heavy NW'y sea and swell.
4 p. m. -----			51.6	SW	4	
6 p. m. -----			52.1	W	2	Clear, partly cloudy, light rain showers, moderate NW'y swell, small sea.
10 p. m. -----			54.9	W	2	Partly cloudy, small sea.
December 9:						
6 a. m. -----			54.9	N	3	Clear, partly cloudy, passing showers.
Noon -----	14° 43'	131° 52'	56.4	NNE	3	

Besides this typhoon, a low-pressure area of little importance appeared on the 12th over the Pacific between the Western Carolines and the Philippines, and traversed the southern part of the Philippines on the 14th.

## NOTAS GENERALES DEL TIEMPO

**Presión atmosférica y temperatura.**—La presión atmosférica media de este mes en Filipinas es ligeramente mayor que la del año pasado y la normal de diciembre. Las presiones más altas se observaron generalmente el día 11, y las más bajas los días 20 y 21.

La temperatura media mensual es casi idéntica a la normal de este mes en todas nuestras estaciones del Archipiélago. Las temperaturas máxima y mínima absolutas del mes en Manila fueron 32.9° C. y 17.4° C., habiéndose registrado la primera los días 17 y 20, y la última el día 8. Las temperaturas extremas de Baguio fueron 25.8° C., 10.8° C. en la cumbre del Mirador, y 28.2° C., 10.0° C. en la llanura cerca del *City Hall*.

**Precipitación acuosa.**—La cantidad total de lluvia de este mes es menor que la normal de diciembre, en una gran mayoría de nuestras estaciones, particularmente en Luzón. La lluvia total del mes en Manila fué 54.5 mm., cantidad que difiere de la normal de diciembre en -7.7 mm., y de la lluvia total de diciembre de 1920, en -63.4 mm. La lluvia total de este mes en Baguio, 44.4 mm., es también menor que la normal en 8.1 mm.

## DEPRESIONES Y TIFONES

Durante este mes no hubo más que un verdadero tifón en el Extremo Oriente. Su trayectoria se incluyó en la Lámina VII juntamente con las de los tifones de noviembre (véase el Boletín Mensual de noviembre de 1921).

Este tifón apareció el día 3 de diciembre al sur de Guam en los alrededores de 145° longitud E, entre 9° y 10° latitud N. Se movió al WNW y NW entre Guam y Yap los días 3 y 4. El 5 se inclinó más al N; y el día 8 recurvó hacia el NE, mientras aumentaba extraordinariamente su velocidad de traslación. El día 9 el centro ciclónico se podía ver al SE de Bonins cerca de 146° longitud E, entre 24° y 25° latitud N. El vapor *Granite State* se halló no lejos del centro de este tifón cuando estaba en los alrededores de 138° longitud E y cerca de 17° latitud N. Algunas de las observaciones hechas a bordo de este vapor las damos en una tabla que va en el texto inglés.

Además de este tifón, un área de baja presión de poca importancia apareció el día 12 en el Pacífico entre las Carolinas Occidentales y Filipinas, y atravesó la parte meridional de nuestro Archipiélago el día 14.

METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY\*

φ=14° 34' 41" N; λ=120° 58' 33" E; barometer above sea, 14.2 meters; gravity correction not applied, -1.72 mm.]

Day.	Pressure (mean). mm. °C.		Air temperature. <sup>b</sup>			Underground temperature.				Relative humidity (mean). Per ct.	Vapor pressure (mean). mm.	Radiation.		Evaporation. <sup>b</sup>			
			Mean.	Maximum.	Minimum.	0.25 meter.		0.50 meter.				1.50 meters.	2.50 meters.	Minimum on grass.	Maximum in sun. Black bulb in vacuo.	Free exposure (total). mm.	Shelter (total). mm.
						8 a. m.	2 p. m.	8 a. m.	2 p. m.								
1	760.51	25.8	31.5	22.6	27.2	29	27.8	28.1	28.3	28.7	87.6	21.5	20.4	58	2.1	1.6	
2	60.45	25.4	31	21.9	27.2	29	28	28.3	28.3	28.7	86.6	20.7	19.9	61.7	1.9	1.6	
3	60.61	25.6	31.4	22.5	27.2	28.7	28	28.2	28.3	28.7	85.5	20.2	20.9	62.9	2.1	1.8	
4	60.94	24.4	27.2	23	27.3	27.5	28	28	28.3	28.9	87.3	19.8	19.8	63	2.1	1.9	
5	60.79	24.4	29.2	20.7	26.8	27.8	27.9	28	28.3	28.9	87.3	18.1	19.8	63	2.2	1.8	
6	60.71	23	29.6	19.3	25.3	27.4	27.3	27.7	28.2	28.6	80	15.7	16	63.4	2.2	2.4	
7	59.93	22.4	28.8	18.5	25	27.7	27.2	27.5	28.2	28.5	79.3	15.8	15.8	57	2.9	2.7	
8	59.78	22.3	29.4	17.4	24.8	27.7	26.7	27.3	28.2	28.5	80.3	15.9	14.6	61.2	3	2.4	
9	61.13	22.2	27.2	18.5	25.5	26.7	26.8	27.1	28.3	28.6	85.4	16.9	15.6	54.9	1.3	2.6	
10	62.31	23.2	29.7	19.4	25.3	27.8	26.7	27.3	28.2	28.5	74.7	15.4	16.7	62.4	3.4	2.5	
11	62.45	22.8	29.4	17.8	24.5	27.5	26.5	27	28.2	28.5	78	15.9	15	62.4	3.4	2.3	
12	62	23.5	28.9	20.2	25.7	27.4	26.7	27	28.3	28.6	77.5	16.3	17.2	54	2.8	2.6	
13	61.65	23.6	28.6	20.1	25.5	27	26.7	27	28.2	28.5	77	16.5	17	54.6	3.3	2.6	
14	60.95	24	28.2	21.7	25.7	26.5	26.7	26.8	28.2	28.5	84.4	18.6	20.1	57.1	1.6	1.1	
15	60.95	25	32.3	21.4	25.7	27.6	26.7	27	28.2	28.6	82.7	19.1	20	63.6	2.4	2.4	
16	60.88	25	32.2	20	25.3	27.8	26.7	27.1	28.2	28.6	79.2	18.4	19.6	63.2	3.1	2.4	
17	59.91	25.5	32.9	21.4	25.8	28.6	26.8	27.1	28.2	28.5	82.4	19.6	18.6	64.3	3	2.2	
18	59.59	25.3	32.4	20.8	26.3	28.5	27	27.5	28.1	28.7	77.7	18	18.3	61.8	4.6	3.6	
19	58.68	24.9	31.4	20.1	25.7	27.7	26.8	27.3	28.1	28.5	77.6	18	17	60	3	2.6	
20	57.73	25.8	32.9	22	26	28.5	27	27.4	28.1	28.6	73.3	17.6	19.2	65.8	4.6	3.9	
21	57.27	25.6	30.9	22.7	26.6	27.9	27.2	27.4	28.1	28.6	75.9	18.3	19.7	56.6	2.5	2.5	
22	57.86	25.3	32.3	23.1	26.7	28.6	27.3	27.6	28.1	28.6	86.5	20.6	20.7	64.3	1.8	1.5	
23	59.15	25.6	30.4	22.6	26.8	27.8	27.4	27.6	28.1	28.6	80.3	19.4	21.7	56.3	2.7	2.2	
24	60.29	24.7	30.3	21	26	28	27.2	27.5	28	28.5	78.9	18	18.4	62.5	2.9	2.3	
25	60.79	25.4	31.4	22	26.4	28.1	27.4	27.5	28.1	28.6	75.1	17.9	19.1	65.2	3.3	2.7	
26	61.65	24.4	29.4	21.7	26.5	27.2	27.5	27.4	28	28.5	80.2	18	19.5	53.7	2.5	2.1	
27	61.42	24.7	31.4	20.6	26.1	28	27.1	27.5	28	28.5	75.2	17	19.7	60.7	3.3	2.6	
28	60.96	23.9	30	19	24.9	27.7	26.8	27.3	28	28.4	79.5	17.2	16.9	60	3.2	2.4	
29	61.21	23.8	29.9	19.8	25.5	27.7	26.8	27.2	28	28.4	81.7	17.7	17.9	62.5	2.7	2.5	
30	60.48	23.8	29.5	19.4	25.7	27.5	26.8	27.2	28.2	28.5	79.7	17.2	18.5	62.3	2.9	2.3	
31	60.09	24.7	31.4	19.8	25.6	27.7	26.7	27.1	28	28.5	82.6	18.9	18	60.3	3	2.1	
Mean	760.42	24.4	30.4	20.7	26	27.8	27.1	27.4	28.2	28.6	80.2	18	18.5	60.4	2.7	2.2	
Total															84.5	69.2	
Departure from normal	+0.12	-0.7	+0.4	-0.5							-1.3	-1.2			-0.6		

Day.	Wind.				Clouds.			Sunshine. h. m.	Rain, 24 hours beginning 6 a. m.		Miscellaneous.
	Prevailing direction.	Total movement.	Maximum hourly velocity.	Direction at the time of the maximum velocity.	Amount (mean). 0-10.	Form and direction.			On the tower.	In the park.	
						Upper.	Lower.				
1	E	118.5	13	W	3.8	Ci.	Cu. E	7	45		⊥ p.
2	NE	84.5	11.5	W	4.8	Ci.	Cu. ENE	6	35	0.7	0.7
3	NE	136	17	NE	6.4	A.-Cu.	Cu.-N. E	6	15	2.3	2.5
4	NE quad.	63	7	NE	9.8	Ci.-S.	N. E, N	0	00	8.7	9.1
5	N	83	8	SSW	7.2	A.-Cu., Ci.	Cu. ENE	1	55	1	1
6	NE	97.5	10	NE	4.1	Ci.	Cu. ENE	6	10		
7	NE	121.5	15.5	WNW	4.6	Ci. sw by s	Cu. ENE	7	10		
8	E	123	13	W	3.3	A.-Cu. ESE	Cu. E	8	25		
9	NE	76	10	W	7.1	A.-Cu.	Cu. E	2	55	1.5	1.5
10	NE	128.5	13	W	3.4	Ci.	Cu. E	8	25		
11	E	124	13	WSW	2.5		Cu. ENE	8	35		
12	NE	103.5	10	NE	5.9	A.-Cu. E	Cu. E	3	05		
13	NE	167	20	NE	8.5	Ci. SE	Cu. ENE	1	10	1	1.3
14	N, NNE	172	18	N	9.5	Ci.-S	S.-Cu. E	0	25	1.6	1.7
15	NNE	137	19.5	E by S	6.5	A.-Cu.	Cu. E	5	45	2.5	2.5
16	E quad.	138	21	ESE	7.2	Ci.	Cu. E	5	25		
17	E quad.	118	19	E	5.7	Ci. ENE, SSE	Cu. E	6	05	1	1
18	E	175	21	E	4.8	Ci.	Cu. E	7	00		
19	NE	162	14	NE	7.3	Ci.	Cu. E	4	25		
20	NE	169	15.5	NE	3.8	A.-Cu.	Cu. E	8	25		
21	NE	127	16	NE	8.2	A.-Cu.	S.-Cu. E	2	10	3	4
22	NE	111	13	W	7.9	A.-Cu. SW	Cu. E	4	55	35.8	36.9
23	W	89	12	WSW	7.6	A.-Cu. ESE	Cu., Cu.-N. E	2	50		
24	N, NW	100	12	SW	4.9	A.-Cu. E	Cu. ENE	5	35		
25	N	161	17	NNE	7.9	A.-Cu. E by N	Cu. E	4	20	9	9
26	SE	101	17	ESE	9	A.-Cu.	Cu.-N E	1	15		
27	SE, E	150	15	ESE	3.8	A.-Cu.	Cu. E	6	00		
28	W, WNW	137	15	WNW	2.2	Ci.	Cu. E, ENE	8	20		
29	W	116	11	W	4.2	Ci.	Cu. E, ENE	6	30		
30	W	108	13	W	4.2	Ci.	Cu. E	7	00		
31	W	127.5	13.5	WNW	4	A.-Cu.	Cu. E	8	00		
Mean		123.4	14.3		5.8			5	14		
Total		3,824.5						162	50	54.5	57
Departure from normal		-899.4			-0.4			+8	28	-7.7	

\* All the mean values given in this table are deduced from hourly observations.  
 \* These values are taken from instruments mounted in the Observatory Park, 1.5 meters above ground.

METEOROLOGICAL DATA FOR MIRADOR OBSERVATORY, BAGUIO\*

[ $\phi=16^{\circ} 25' N$ ;  $\lambda=120^{\circ} 35' E$ ; barometer above sea, 1,512.5 meters; gravity correction not applied, -1.65 mm.]

Day.	Pressure (mean). <sup>b</sup>		Air temperature at Mirador (on the top of the mountain).				Air temperature in the plateau near the City Hall.				Relative humidity (mean).	Vapor pressure (mean).	Radiation.		Evaporation.		
	mm.	°C.	Mean.	Maximum.	Hour.	Minimum.	Hour.	Maximum.	Hour.	Minimum.			Hour.	Minimum on grass.	Maximum in sun. Black bulb in vacuo. <sup>c</sup>	Free exposure (total).	Shelter (total).
1	638.10	18.8	23.7		Noon	15.4	6.30a.	26.3	2.20p.	15.0	6.15a.	87.8	14.1	13.8	58.0	3.2	1.6
2	38.11	18.4	23.6		11.40a.	15.2	5.45a.	26.3	1.00p.	14.8	3.45a.	86.7	13.5	13.7	53.2	2.6	1.5
3	38.14	18.7	24.2		11.15a.	15.2	2.00a.	27.2	0.50p.	14.1	4.30a.	77.8	12.3	13.3	53.5	5.6	2.8
4	38.33	18.8	24.4		11.10a.	15.7	12 m.n.	26.6	1.30p.	15.2	12 m.n.	82.3	13.2	14.5	59.1	2.9	1.5
5	37.76	17.8	23.7		10.15a.	13.6	12 m.n.	25.6	0.45p.	13.5	10.55p.	82	12.2	13.2	59.9	4.9	2.5
6	37.02	15.5	21.8		11.10a.	11.7	5.50a.	24.3	0.50p.	10.6	6.30a.	78	10.1	10.2	51.8	4.8	2.4
7	36.08	14.7	20.1		0.30p.	12	5.50a.	22.2	1.30p.	11	6.30a.	86.3	10.7	13	53.3	2.2	1.1
8	35.91	14.3	19.3		9.10a.	11.5	5.55a.	21	0.10p.	11.1	6.00a.	87.5	10.6	9	52.8	2.6	1.2
9	37.20	14.3	19.6		0.35p.	11.3	3.30a.	21.4	0.40p.	10.2	5.30a.	88.3	10.6	9	51	3.5	1.6
10	38.26	14.9	22.7		11.55a.	10.8	5.45a.	23.3	2.30p.	10.2	6.00a.	84	10.4	9.6	59.6	4.3	2
11	38.47	15.5	21		11.20a.	11.8	2.30a.	23.2	1.00p.	10.4	5.50a.	79.2	10.4	9.7	51.5	4.2	2
12	38.18	15	21.2		0.10p.	10.8	5.45a.	23.3	1.10p.	10	6.20a.	84.2	10.6	12.57	54.2	4.2	2.1
13	38.24	16.3	22.9		0.50p.	11.7	5.05a.	23.3	1.45p.	10.9	4.00a.	73.8	10	10.3	51.3	7.5	3.5
14	38.22	17.7	23.7		1.00p.	15	1.25a.	25.2	0.45p.	14	0.05a.	72.7	11	14	52.9	10.2	4.3
15	38.23	18.2	22.6		1.00p.	15	4.30a.	24.9	0.40p.	15.2	4.45a.	70.7	11	13.6	53.7	11.8	6.8
16	37.93	18.1	22.7		1.35p.	15.7	6.45a.	25.1	2.50p.	15.4	6.30a.	57.2	8.7	14.5	51.3		
17	37.45	18.6	25.8		11.50a.	15.7	12 m.n.	28.2	0.30p.	14.5	6.00a.	68	10.7	13.3	53.1	8.4	4
18	37.16	18.2	25.2		2.30p.	14.7	6.30a.	27.1	2.40p.	13.3	12 m.n.	75.2	11.4	13.6	51.4	9.2	4.8
19	36.34	18.1	24.9		0.30p.	14	2.20a.	26.7	1.05p.	11.8	6.20a.	70.3	10.7	11.4	53.8	7.6	3.9
20	35.43	17.6	24.4		11.00a.	15	3.30a.	26.1	11.50a.	14.9	4.00a.	80.8	12.1	12	57.8	4.5	2.4
21	35.13	18.5	23.2		9.50a.	14.2	2.30a.	26.3	2.35p.	12.6	6.00a.	71	11.3	11.7	52	6.1	2.8
22	35.59	18.4	24.4		1.00p.	15.8	12 m.n.	26	1.35p.	15.7	7.00a.	81.5	12.8	15	54.6	2.8	1.8
23	36.55	17.4	23.6		11.55a.	13.7	12 m.n.	25	0.30p.	13.4	12 m.n.	86.3	12.7	13.5	61	3.5	2
24	37.36	16.8	23.6		0.10p.	13	1.15a.	25	1.10p.	12.1	6.30a.	81.2	11.4	10.7	51.5	5.3	2.6
25	37.97	17.1	22.2		0.30p.	13.8	3.00a.	24.5	0.10p.	13	5.20a.	73.2	10.4	12.7	50	9.3	3.6
26	38.32	16.4	21.6		2.25p.	13.5	4.00a.	24	0.15p.	13	5.00a.	76.8	10.4	12.2	52	8	3.7
27	37.92	17.1	23.2		11.40a.	13.6	6.30a.	25.6	Noon	13	7.00a.	78.3	11.3	12.5	54.4	3.1	2.1
28	37.57	16.2	21.3		11.20a.	12.4	6.30a.	23.6	0.15p.	11.7	6.30a.	88	12	10.8	50.8	2.4	1.4
29	37.33	16.8	21.4		1.55p.	13.6	5.55a.	23.7	2.00p.	12.7	6.15a.	87	12.3	11.7	53.3	2.3	1
30	37.19	17	22.6		11.15a.	13.1	5.55a.	25.3	0.50p.	13	2.30a.	82.3	11.7	11.8	52.1	5.7	2.8
31	37.25	17.8	24.2		10.10a.	15	0.50a.	25.4	11.15a.	14.4	0.05a.	86.8	13.1	13.7	56.2	2.3	1.6
Mean..	637.39	17.1	22.9		13.7			24.9		12.9		79.5	11.4	12.3	53.9	5.2	2.6

Day.	Wind				Clouds.		Sunshine.	Rain, 24 hours beginning 6 a. m.	Miscellaneous.
	Prevailing direction. <sup>d</sup>	Total movement.	Maximum hourly velocity.	Direction at the time of the maximum velocity.	Amount (mean).	Form and direction.			
1	E quad.	Km. 225.4	Km. 16.4	W	0-10.	Ci.	h. m. 6 55	mm. 5.8	D <sup>2</sup> a. ≡ <sup>2</sup> a. p. ∩ <sup>2</sup> p.
2	N	202.9	13.1	N	3.4	Ci.	4 45		D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
3	E, SE	232.8	20.9	E	4.6	Ci.			D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
4	E	260.1	20.4	E	7.6	A-Cu.	E		D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
5	E	266.6	15.6	E	4.9	Ci.	E, NNW	3 40	D <sup>2</sup> a. ≡ <sup>2</sup> a. p. d <sup>2</sup> p.
6	E	289.2	18.7	E	3.6	Ci.	E, SW	2 10	D <sup>2</sup> a. ≡ <sup>2</sup> a. p. d <sup>2</sup> p.
7	NW quad	235	18.8	W	4.6	Ci.	W	3 10	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
8	E	241.1	20.7	E	4.1	Ci.	E	2 20	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
9	E	261	27.2	E	5.7	Ci.	E, SSE	0 40	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
10	E	273.2	20.1	E	4	Ci-Cu.	E, SSE	3 35	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
11	E	268.7	21.9	SW	4.3	A-Cu.	E	3 25	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
12	E	290	18.8	E	3.9	Ci., Ci-S.	E	4 15	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
13	E	325.8	24.7	E	6.3	Ci.	SE, E	3 10	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
14	E	420.3	28.5	E	7.6	Ci-S.	E	1 55	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
15	E	815.8	57.1	E	3.4	Ci.	E	3 15	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
16	E	822.5	59.5	E	.3	Ci.	E	3 40	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
17	E	302.5	34.4	E	.6	Ci.	E	4 45	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
18	E	335.9	24.1	E	2.1	Ci.	E	6 45	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
19	E, SW	262.2	19.6	SE	2.4	Ci.	E	6 05	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
20	E	305.5	24.7	E	6.7	Ci.	E	4 45	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
21	E	193.6	14.7	SW	3.9	Ci.	E	7 45	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
22	E, SW	226.8	18.5	E	8.6	Ci-S.	E	3 55	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
23	E	276.1	17.2	E	5.6	Ci-S.	E, SSE	3 50	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
24	E	319	24.6	E	3.6	Ci.	E	5 05	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
25	E	559.1	29.8	E	.6	A-Cu., Ci.	E	3 30	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
26	E	506.3	28	SE	4.1	A-Cu.	E	3 20	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
27	E	274.4	20.3	E	5.3	A-Cu. wsw, SE	E, NNW	5 30	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
28	E	247.4	16.1	W	4.1	Ci.	E	4 25	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
29	E, SW	229.9	16.7	SW	5.3	Ci.	E	5 00	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
30	E	309.8	32.4	E	2.4	Ci.	variable	5 15	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
31	E	313.2	32.7	E	4.6	Ci.	SSE, SE	4 15	D <sup>2</sup> a. ≡ <sup>2</sup> a. p.
Mean..		325.6	24.4		4.3		4 11		
Total..		10,092.1					44.4		

\* All the mean values given in this table are deduced from six daily observations taken at 2, 6, 10 a. m. and 2, 6, 10 p. m.  
<sup>b</sup> The barometric readings of this station are not reduced to sea level.  
<sup>c</sup> Maximum of hourly observations taken from 6 a. m. to 6 p. m.  
<sup>d</sup> This element is based on hourly observations taken from a quadruple register, which gives only eight possible directions of the wind.



## DAILY RAINFALL AT THE STATIONS OF THE WEATHER BUREAU, DECEMBER, 1921

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lapac Agricultural School, Siasi, Sulu †						20.8										
Glan, Cotabato †	37.6	5.1		12.7									55.9		76.2	
Jolo, Sulu			8.1	2.8	44.7	17.5	3.8	0.3								
Buntung, Koronadal, Cotabato †			33	7.6	11.4			10.7					5.3	21.6	5.1	
Lais, Malita, Davao			6.4	4.3		20.8	1	3.3					8.1	36.6		
Malita, Davao			17.5	1.8		4.3	1.3	1.8							78.7	.3
Bojelebung Farm School, Isabela, Zamboanga †	26.2			3	7.6	30										
Lebak, Cotabato	2.8	7.1		10.7	5.8	3.8	7.1	7.4	5.6						1	
Lamitan, Isabela, Zamboanga					6.9	48.8									2.5	
Basilan Plantation, Kabunbatan, Isabela, Zamboanga †						73.4										
Padada, Santa Cruz, Davao †			9.9			4.8	1			6.9			10.2	2.3	.5	
Basilan Plantation Office, Isabela, Zamboanga †					.5	63.2									1.5	
La Union, Sigaboy, Davao †		3.6	3.3		.5	2.8	.3	6.1				2.8				
Paranglalap, Isabela, Zamboanga †						44.4										
Latuan, Isabela, Zamboanga †						44.7									2	
Buluan, Cotabato †	7.6	10.2														48.3
Malamaui, Isabela, Zamboanga						112									2.3	
Pagsilaan Farm School, Mati, Davao †							2.5	25.4	12.7							
Zamboanga, Zamboanga	.3		.5		.5	6.1	6.4								2	
Cagayan de Sulu, Sulu †			6.6	7.6	30.8	55.6										
Kidapawan, Cotabato †			8.9	16.5	48.3	15.2							13.2	22.9	3.6	
Davao, Davao		3.6		21.8	23.6	27.9	8.6	7.4					1.8		6.6	
Piang Agricultural School, Kudarangan, Dulauan, Cotabato †	10.7			1.5	33.5										36.1	7.1
Pikit, Cotabato				28.2		2									2.5	4.3
Cotabato Seed Station, Pikit, Cotabato †			15.7		21.1											
Awang, Cotabato †	30.7			8.1	8.6											
Sirib, Guianga, Davao †	1		2			52.6	.8								45.7	
Kabakan, Cotabato †	2.5					7.6										
Bual, Dulauan, Cotabato	16		5.8		41.4	3									45	5.3
Cotabato, Cotabato				25.4	2.5	3									12.4	.8
Mampising, Pantukan, Davao †		7.4	27.7	16.3	2.5	95.5	9.1								8.1	7.6
San Pedro, Caraga, Davao †				11.7				26.9							31.7	4.3
Kabasaran, Buldun, Cotabato †		8	25.4	8.9	1.3	21.1	16.5	50.8								
Naganaga, Margosatubig, Zamboanga		62.2					52.3			26.7	35.6	26.2	47.8		21.6	
Banasilan, Banasilan, Cotabato †	11.4	3	1.3	1.3		2.5		7.6								
Malabang, Lanao					16	55.4								30	19.8	
Compostela, Monkayo, Davao †				17	6.4							50.8	27.9	5.1	12.7	
Malangas, Margosatubig, Zamboanga †			1.3	39.6	5.8	32.2	9.1								26.2	2.3
Lumbatan, Lanao †			2.5	3	19.8	35.6						3.3			7.9	
Cateel, Davao				31	1	17.5						8.7			21.6	35.5
Ganasi, Lanao			9.4	11.9		9.1	27.9	7.3	1						4.6	
Managok Agricultural School, Linabo, Malaybalay, Bukidnon	50.3	1.3	3	28.7	1.5	31.7	1.6						7.6		3.8	5.6
Camp Keithley, Dansalan, Lanao				12.4	14.2	12.7	33	2.3	.3				1.3	1.3	4.1	.5
Veruela, Agusan	1.3	.5	11.4	14.2	15.2	3.3	1.5						29.7		4.8	27.1
Sindangan, Zamboanga †		10.9		6.9	21.4	22.4							3	3.8	11.2	3.8
Sumilau, Bukidnon			3.3	36.3	13.7	23.6							19.6		34	3
Diklom, Tangkulan, Maluko, Bukidnon †			6.4		7.4	8.1		6.9					16.8		4.6	
Cagayan, Misamis		31.2		1.8	5.8		5.3						9.4		2	
Talacogon, Agusan	.8		3	3.8	10.2	2				3			2.8		2.8	14
Butuan, Agusan	22.1	4.6	2	5.6	2.3	20.1						1.5	38.9	5.1	.8	8.2
Kabahian, Butuan, Agusan †	24.4	3.8	11.9	.5	32.8	33.5						6.9	26.4	.5	3.8	5.8
Mambajao, Misamis	5.6	46	1.5	15	81.3	103.7	6.4		2.8		3.6		23.4	1	61.2	
Dumaguete, Oriental Negros	13.5	8.1		2.8	13	6.4							42.5	16	3.3	16
Kolonie, Yap, Western Carolines	20.3	4.9	2.8	2.1	27.6	6.9	6.6	2.5	5.4	1.7		15.7	29.5	1.1	8.6	10.2
Hacienda San Jose, Tanjay, Oriental Negros †														4.8	13.7	
Hacienda Palanas, Bais, Oriental Negros †		9.4		8.9	12.2	2							8.1	5.1	20.3	
Hacienda Tamugon, Bais, Oriental Negros †												7.6	5.1	12.7	71.1	5.1
Tagbilaran, Bohol	1.5		.3	1.3	9.7	.8							12.3	3.6	13.3	1.3
Iwahig Penal Colony, Puerto Princesa, Palawan	3							.5					.8	2	6	5.1
Dalaguete, Cebu		6.4			8.6								6.4	9.9	57.7	.5
Surigao, Surigao	8.9	41.7	48.9	14.7	13.9	22.1		.5		22.4		7.4	51.1		15.8	42.9
Central Palma, Ilog, Occidental Negros					14.5									4.6	17.8	33
Hacienda Naval, Himamaylan, Occidental Negros					16.8									5.8	23.6	
Biaong Cui's Farm, Barili, Cebu		13.9	15.2		37.6	11.4							76.4		10.7	22.1
Maasin, Leyte				26.9	26.2											
Binalbagan Estate, Binalbagan, Occidental Negros †		2.5			18.3								1	2.5	11.9	
Isabela, Occidental Negros	25.4			.5	23.6								1	3.1	3	
Hacienda Tanolo, Hinigaran, Occidental Negros		1.5	1		12.4								1	.5	2.5	
Cebu, Cebu				.8	.5								11.7	2.5	15.8	
La Castellana, Occidental Negros	6.1		.8		23.9	.3							2	.8	3	
Hacienda Vallehermoso, Vallehermoso, Oriental Negros †		7.6		3	5.3								18.7	2.3	8.4	

† Voluntary or cooperative station.



Daily rainfall at the stations of the Weather Bureau, December, 1921—Continued

Station.	Day of month.															Total.
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Lapac Agricultural School, Siasi, Sulu							12.7					7.6				41.1
Glan, Cotabato †		86.4			15.2											289.1
Jolo, Sulu		.3	53.9	8.4		9.2	4.1		0.5	3.6	1.5	1.3	0.5	1.3		161.8
Buntung, Koronadal, Cotabato †	2.5	2	19	17.8												136
Lais, Malita, Davao	32	37.1	7.9				16.3		7.9	12.2	9.9					203.8
Malita, Davao	14.5	34	29.2				8.9		2.3	7.1	7.1			.8	5.1	214.7
Bojelebung Farm School, Isabela, Zamboanga †						5.6										72.4
Lebak, Cotabato													5.6			56.9
Lamitan, Isabela, Zamboanga				30.9		43.9										133
Basilan Plantation, Kabunbatan, Isabela, Zamboanga †				34.8			6.1									114.3
Padada, Santa Cruz, Davao †	7.1	2.1				12.4	9.7						12.7			79.6
Basilan Plantation Office, Isabela, Zamboanga †				23.6			5.1									93.9
La Union, Sigaboy, Davao †	4.3	10.2	.5										1			35.4
Paranglalap, Isabela, Zamboanga †				21.6												66
Latuan, Isabela, Zamboanga †				7.3												54
Buluan, Cotabato †	5.1															71.2
Malamaui, Isabela, Zamboanga				4.3												118.6
Pagsilaan Farm School, Mati, Davao †	12.7	5.1	25.4	14	7.6	27.9										133.3
Zamboanga, Zamboanga													17.8			33.6
Cagayan de Sulu, Sulu †		67.3	46.7	33.5	8.6						10.7	6.9	34.3			308.6
Kidapauan, Cotabato †		4.1		2.8			36.6						7.6			179.7
Davao, Davao	5.3	16.5	8.6				13.7	3.8			2.5	3.6	10.9		5.6	171.8
Piang Agricultural School, Kudarangan, Dulauan, Cotabato †															8.4	97.3
Pikit, Cotabato		.8		2.8			2.8					.5				43.9
Cotabato Seed Station, Pikit, Cotabato †															5.6	42.4
Awang, Cotabato †					10.2											57.6
Sirib, Guianga, Davao †	.8						2						1.8	.5		107.2
Kabakan, Cotabato †																10.1
Bual, Dulauan, Cotabato								3.3				2				121.8
Cotabato, Cotabato		.3						1				7.1			1	53.5
Mampising, Pantukan, Davao †	12.4	21.1			32	1.5							15.2		13.2	269.6
San Pedro, Caraga, Davao †	48.3	90.7	24.4								12.4			2.5		252.9
Kabasaran, Buldun, Cotabato †												.3	1			126.1
Naganaga, Margosatubig, Zamboanga			43.2		25.9											341.5
Banisilan, Banisilan, Cotabato †					5.6			1		12.7		1.3				47.7
Malabang, Lanao	.5														34.3	156
Compostela, Monkayo, Davao †	12.2	19.6	11.4													163.1
Malangas, Margosatubig, Zamboanga †	1.3						3.3								5.8	126.9
Lumbatan, Lanao †	10.4					2	22.4						3			109.9
Cateel, Davao	58.9	68.1	27.2	1	1		.8	24.6	15.5	15.7	10.7		6.1		26.9	374.8
Ganasi, Lanao														3		74.2
Managok Agricultural School, Linabo, Malaybalay, Bukidnon	1.5	1	17.8				2.5		2	.8	.8	6.9			3.3	171.7
Camp Keithley, Dansalan, Lanao		.5	2.5	35.3		.8				1		4.6	.3	.3		127.4
Veruela, Agusan	19.1	19.8	12.2	1.3	.8		1.3	2.1	42.4	6.6	10.7	4.1	8.9	8.6	7.7	254.6
Sindangan, Zamboanga †			26.7	3.8					6.1			10.2				130.2
Sumilau, Bukidnon			10.7	28.2	5.6	15.8								5.1		198.9
Diklom, Tangkulan, Maluko, Bukidnon †			12.7	13.7	15.5	5.8								4.1		102
Cagayan, Misamis			3.6				22.9					1.5			9.7	93.2
Talacogon, Agusan	8.9	35.5	9.6	.8					9.7	.8	4.3	16		.5		125.1
Butuan, Agusan	.8	9.9	10.2	4.8	12.7	.8	3.5		.3		1	4.6		.8	.5	161.1
Kabahajan, Butuan, Agusan †	5.8	8.9	10.2	10.4		15.5	3.3	1.8		.8	.3		2.5		.3	210.1
Mambajao, Misamis	2.3	3.8	23.3	11.2				3.6			3.8	76.7	10.9	2.8	1.8	491.7
Dumaguete, Oriental Negros	3	2.8	1.5	3.8		.8			3.6		5.6	11.2	3.8	3.3		161
Kolonie, Yap, Western Carolines	3.8	60.4	27.9	44.3	13.8	1.6	.8	1	3.4			.8	2	4.9		310.6
Hacienda San Jose, Tanjay, Oriental Negros †		21.6	10.4						6.1							56.6
Hacienda Palanas, Bais, Oriental Negros †		22.9	3.8				.8		7.1	14.8		4.1				119.5
Hacienda Tamugon, Bais, Oriental Negros †		30.5					5.1		12.7	5.1		10.2				165.2
Tagbilaran, Bohol	8.4	1.4	1.8	.8			7.6		13.5	.5	7.1	2.1		11.8		99.1
Iwahig Penal Colony, Puerto Princesa, Palawan			11.7	2	17.5	72.9	45.7									167.2
Dalaguete, Cebu	12	20.3	4.8				2.5		20.8	18	4.8	6.4		1		130.1
Surigao, Surigao	39.3	75.8	51.4	.5			2.8	10.1	15.5	1	55.2	140.8	2.6	28.1	3.5	716.9
Central Palma, Ilog, Occidental Negros	20.3	3.8	1.3				2	21.8	6.4	12.7						138.2
Hacienda Naval, Himamaylan, Occidental Negros	3.8		3.6				11.2	29.2	6.1	6.6						106.7
Biaong Cui's Farm, Barili, Cebu	27.2		12.7	15.5				23.9	37.6	1.3				1.3		198.9
Maasin, Leyte	58.6	72.4	114.3					25.1		33	43			23.9		532.6
Binalbagan Estate, Binalbagan, Occidental Negros †	5.8	.5	.5				3.9	12.7	20.3	3				1		83.9
Isabela, Occidental Negros	16	4.1	.5				9.9	14	2.3	10.4			.5			114.3
Hacienda Tanolo, Himigaran, Occidental Negros	1.5	4.3	.8				1.5	4.1	1.8	1.3						34.2
Cebu, Cebu	17.5	11.2	2.1				2	3	15	13.7				1	4.8	98.9
La Castellana, Occidental Negros	2.3	15.7	.8		.5	26.2	.3	25.6	.5	1.6						110.4
Hacienda Vallehermoso, Vallehermoso, Oriental Negros †	6.4	38.1	.8	1.5			1.3	.3	2.3	6.6	.5			4.3		102.4

† Voluntary or cooperative station.

Daily rainfall at the stations of the Weather Bureau, December, 1921—Continued

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Central Azucarera de La Carlota, La Carlota, Occidental Negros	0.3		1.5	1.6	20.3								2		5.8	
Hacienda Canlaon, La Castellana, Occidental Negros				1									2.5	26.7	7.9	
La Carlota Experimental Station, La Carlota, Occidental Negros†		0.8	5.6		10.1								3.8		2.3	
Maa Sugar Central, Santa Cecilia, Bago, Occidental Negros		.3	1	1.3	25.6								3	.3	2.3	
Valladolid, Occidental Negros		3		2	22.8									3.6	.5	
Central San Carlos, San Carlos, Occidental Negros†		16.3	5.1	4	3								15.8		10.9	2
Hacienda Refugio, San Carlos, Occidental Negros†		11.4		10.9	5.6								13.7			
San Joaquin, Iloilo					2.5			0.5							3.3	
Murcia, Occidental Negros		.3	.8	6.9	14.3								2	2.3	4.1	5.6
Bacolod, Occidental Negros		16.8	11.9	7.6	22.6								3.8	4.1	4.1	
Oton, Iloilo		1.5	2	3	10.1									1.5	4.6	1.5
Iloilo, Iloilo				.3	8.4									1.3	4.1	5
Lapustapus, Iloilo, Iloilo†				.5	1.5								1.3	.5	7.6	2.5
San Jose de Buenavista, Antique					1.5									2.5	2	
Tuburan, Cebu		3.6	1.3	3	5.1		0.8					2.3	44.5	7.1	4.3	2.5
Leon, Iloilo					4.1									1	2.5	
Silay, Occidental Negros			6.1	4.6	5.8	5.3			1.5				7.6	33.3	30.5	7.6
Calag-itan, San Remigio, Antique				2.8	3.8								2.3	4.3	17.3	
Hawaiian Philippine Co., Malibug, Silay, Occidental Negros†		14.2	4.4	5.4	10.4	6.9			.8	3.8		.5	6.1	19	21.8	21.1
Cuyo, Palawan					1.3									47.8	27.2	
Lucena, Santa Barbara, Iloilo†	1.5	8.2		4.6		5								3	8.1	
Barotac Nuevo, Iloilo	6.6	3.5	2.3	.3	1					1				6.9		.3
Hacienda Ilaya, Victorias, Occidental Negros		10.4	3.8	7.6	8.4	3			1.3	4.6			6.4	15.2	6.6	14
Central Victorias, Victorias, Occidental Negros†			3.6	4.5	24.3	3.3						3.8	8.4	20.3	12.7	4.1
Hacienda Bilbao, Manapla, Occidental Negros	2.5		2.3			7.6							24.1	68	10.2	2.5
Janiuary, Iloilo	.3	4.6	12.5	4.3	6.4								1.5	5.1	11.7	
Cadiz, Occidental Negros					13.7	6.9				3.3			14	23.6	6.9	
Dingle, Iloilo	28.4	1.3	8.1	3.3	4.1								1.3	7.1	18.3	
Ormoc, Leyte	7.1	6.1	3.6	13.5	8.9								48.3	30.5	2.3	1
Guiuan, Samar	7.4	33.8	28	34.6	23.9	4						15.2	125.2	48	2.3	6.3
Bugason, Antique				5.1	5.1										43.2	
Bogo, Cebu		.8	9.7	7.6									26.9	16.2	1.8	.3
Duenas, Iloilo†	4.3		12.7	6.9	8.1								2.8	6.1	2.3	
Bitaoagan, Passi, Iloilo†		2.5	82.3	27.2	15.2				1.3	2			5.8	10.2	5.8	
Sara, Iloilo		3.8	4.8	4.8								4.6	2	24.2		
Tacloban, Leyte	17.6	7.1	38.1	38.3	11.1	6.1			3.8				52.1	63.9	11.9	4.1
Dumarao, Capiz†	1.3	1.3	1.8				2.8					1.3		2.3		5.8
Central Asturias, Buntog, Dumalag, Capiz		3.6	20.1	19.6	4.8	1.5	.3					2.6	2.8	26.4	5.3	1.8
Dao, Capiz†		12.7	5.1	7.6	1.8	1.3		1.3					.8	25.4	17	2.5
Culasi, Antique		2.5	.8	3	6.6							.3	.8	34.8	14.5	3
Mambusao, Capiz		15.5	8.9	16	2.8	.5			1.3	1.8		.8	2.8	38.6	11	2.5
Hacienda Amparo, Pontevedra, Capiz		5.1	10.2	14	8.9	1.3			1.8	1.8		5.3	2.5	20.8	.5	16.8
Capiz, Capiz		47.4	15.5	3.6	2.9						0.3		2.4	21.4	.8	3
Borongan, Samar	8.9	102.6	29.5	96.7	48.3	1.5							75.7	29.9	1.3	15.7
Calivo, Capiz	3.8	3.5	11.7	4.3	6.1	1				3.3	1.5		2.3	10.1	5.3	4.8
Pandan, Antique	.8	9.9	4.6	13.7	22.6			.5	8.9				1.8	61.2	20.4	12.7
Cathalogan, Samar	12.5	14.2	2.1	15	8.9								72.9	95.3	3.6	1.6
Ibayay, Capiz	1		5.1		6.8			1.3	19.3				1.3	17.7	14	11.4
Calbayog, Samar		6.4	1	19.8	49.5	.3	.3		.3			1.3	3.1	48.6	26.9	4.6
San Jose Estate, Robles Camp D-17, San Jose, Mindoro†															1.5	.8
San Jose Estate, Tamaraw Plantation, San Jose, Mindoro†															14.2	5.8
San Jose Estate, San Agustin, San Jose, Mindoro†															18.8	11.2
San Jose Estate, San Jose, Mindoro†	.8		1.8										.5	13.5	16.8	
Masbate, Masbate		10.2	4.6	10.1	25.4		3.6						11.7	18.8	27.7	3.6
San Jose Estate, Tunnel D-12, San Jose, Mindoro†			2.5										7.6			
Romblon, Romblon	11.7	16.8	3.1	2.4	3.9			5.6	.8				7.1	17.3	19.1	1.3
Batag Lighthouse, Laoang, Samar	2.3	17.3	2.3	24.3	54.1	4.3						1.8	98.5	61.7		
Irosin, Sorsogon		13.7	15.5	44.5	19.3					1.6		.8	2.8	39.4	36.6	3
Sorsogon, Sorsogon		37.1	6.6	20.3	27.7	2.6						71.9	43.9	5	6.9	
Bacon, Sorsogon	.5	25.9	22.6	23.9	14.2	1.3			4.8	.5	1.8	1.5	85.1	42.1	2.1	3.8
Jovellar, Albay	.3	2	4.3	12.9	2.8								47	63.3	1.3	4.6
Legaspi, Albay, Albay		1.5	2.8	33.7	12.5	.5			8.9			.8	71.1	61.7	.6	9.4
Guinobatan, Albay	4.9	4.6	2.3	34	9.4							.3	46.5	15	.3	2.3
Polangui, Albay		8.4	6.9	17.7	7.9				2.5				44.5	16.5		4.1
Bacacay, Albay				24.9	13.2								66.6	72.1	12.4	15.7
Amuguis, Mulanay, Tayabas†				20.3										27.9	21.1	7.6
Bato, Camarines Sur		9.7	2.5	19.8									48.3	14.7		
Tabaco, Albay		5.8	5.1	53.3	34.5	5.1		1.3	21.8			1	91.5	36.3		2.3
Sumay (Guam), Agaña, Ladrone Islands		17	22.4	1	4.3	6.1	.8			1.8		.6		1.3		
Iriga, Camarines Sur		5.3	7.4	18.5		5							46	5.6		3.6
Calapan, Mindoro		3.3	.3	12.5	3		.3	.3	5.1	10.2			29	19.8	3.3	2.3
Tiwi, Albay		10.9		17.3										23.6		14.5
Pasacao, Camarines Sur			27.9	67.8									75.9	27.9	9.7	

† Voluntary or cooperative station.

<sup>a</sup> Amount of rain for the 12th and 13th.

Daily rainfall at the stations of the Weather Bureau, December, 1921—Continued

Station.	Day of month.															Total.	
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Central Azucarera de La Carlota, La Carlota, Occidental Negros	mm.	15.7	1.1		9.4		2		6.3	30	0.8					98.8	
Hacienda Canlaon, La Castellana, Occidental Negros								.8	1.1					10.2		50.2	
La Carlota Experimental Station, La Carlota, Occidental Negros †		14	8.1	1.3	4.1		2	14.3	5.3	2.5						74.2	
Maa Sugar Central, Santa Cecilia, Bago, Occidental Negros		2.3	1.6	1.5		1	1.6	11.7		3.5						57	
Valladolid, Occidental Negros		6.4				14	2.8	4.8		1.3						61.2	
Central San Carlos, San Carlos, Occidental Negros †	1.5	42.1	4.3	1				3.8				2.3			6.6	137.2	
Hacienda Refugio, San Carlos, Occidental Negros †	12.7	25.9						3.6		18.8						102.6	
San Joaquin, Iloilo		4.3	.3							5.1						16	
Murcia, Occidental Negros	3.8						9.4		7.9							77.4	
Bacolod, Occidental Negros		4.8	3.3	.5			16.5	6.9		10.4				.5		109.7	
Oton, Iloilo		9.1				1			3	7.9	3.8					49	
Iloilo, Iloilo		9.2							1.5	14	2.5					41.8	
Lapuslapus, Iloilo, Iloilo †			1.8	1.5						7.6	1.3	5.1				27.9	
San Jose de Buenavista, Antique		11.9	3.3			1	2.3	1.3	4	10.4	.3	.3	1.8	8.1		11.3	
Tuburan, Cebu		2.8								6.4						119.2	
Leon, Iloilo	11.5	26.7	3.3				3	2	2.3	25.1	13	2				16.8	
Silay, Occidental Negros		.3	5.4	1.8				30.8	.8	3.8	2.1					191.2	
Calag-itan, San Remigio, Antique																75.5	
Hawaiian Philippine Co., Malibug, Silay, Occidental Negros †	1.5	16.8	1.5		.3		1			5.6	10.2	7.1	.3	.8	.8	160.3	
Cuyo, Palawan						9.1										85.4	
Lucena, Santa Barbara, Iloilo †		5.6								7.6	9.1					52.7	
Barotac Nuevo, Iloilo		1.3					7.7	4.8		6.6				.3		42.6	
Hacienda Ilaya, Victorias, Occidental Negros	3.3	14.5	1							3.8	11	15			17.8	147.7	
Central Victorias, Victorias, Occidental Negros †	6.9	38.9								22.1	13.5				7.4	173.8	
Hacienda Bilbao, Manapla, Occidental Negros			5.8	1.3	4.3	6.1	2.3		5	8.1	5.3		2.8	3.8	1.8	163.8	
Januay, Iloilo			5.3			12.5			9.2							73.4	
Cadiz, Occidental Negros		6.4			28.7			8.1	22.9							134.5	
Dingle, Iloilo		1.3				31.5		12.5		3.6	7.1	1.8				129.7	
Ormoc, Leyte	.8	4.1	14.8					7.3		8.9	24.4	.5			7.1	189.2	
Guiuan, Samar		31.3	63.7	29.8	11.4			2.5	8.1	7.8	7.9	2.3	3	6.1	14.8	5.1	522.5
Bugasong, Antique			7.6					5.1	2.5							68.6	
Bogo, Cebu		5.6	5.1		.8	2				4.1	45.8		.5	4.1		131.3	
Dueñas, Iloilo †	1.8					49.3	6.3			18.5						119.1	
Bitaoagan, Passi, Iloilo †		7.1	.5	3.3	2.5		3.6			9.9	53.3					232.5	
Sara, Iloilo		1.8	.8			6.9									1.3	55	
Tacloban, Leyte	4.1	25.7	37.9	23.8	17.8			4.8	2.5	33.7	32.6		.8	13.5		447.5	
Dumarao, Capiz †	7.9							2.5	30.5		38.1					99.4	
Central Asturias, Buntog, Dumalag, Capiz	12.2	32.8	3	2.1	.5	.3	3.3		7.4	82.6	12.7			2		247.7	
Dao, Capiz †	1.8	5.1	11.2	.8	1.3	6.4	3.8		1.5	2.5	94.5	2.5			7.6	214.5	
Culasi, Antique	3.8	8.9	18.5	27.2	.3		7.4	.3	3.8	19.5	.3	.3				156.6	
Mambusao, Capiz	.3		10.4		9.1		7.4	6.1	2.8	70.9	.5			5.1		215.1	
Hacienda Amparo, Pontevedra, Capiz	4.3	16.5	4.3	3.3	1.3		2		13.4	117.8	2.3			13	.8	268	
Capiz, Capiz		.3	1.3	5.6	4.3		4.6	1.3	4.1	88.9	2	.3				210	
Borongon, Samar	6.1	41.7	68.5	38.1	7.9		1.3	.5	23.9	64.8	9.1	.5	17.2	17	.5	707.2	
Calivo, Capiz			80.7	1	102.6			6.1	7.1	10.1	26.6				4.8	5	297.2
Pandan, Antique	3	1.3	44.2	38.1	12.7			9.9	9.9	10.7	33.5	4.1	3.1		4.3	28.9	361.8
Catbalogan, Samar		18.5	21.4	17.5	1			45		26.7	192.6			5.3	5.6	568.9	
Ibajay, Capiz			8	15	21.8	.8	1.8	5.3	3.1	13.9		.8		1.3	1.8	143.8	
Calbayog, Samar	.5	9.4	22.2	15.5			4.6	7.9	10.4	66.6	1.8		.6	21.3	2	325.4	
San Jose Estate, Robles Camp D-17, San Jose, Mindoro †					.3											2.67	
San Jose Estate, Tamaraw Plantation, San Jose, Mindoro †			.5		34.3					.3						55.1	
San Jose Estate, San Agustin, San Jose, Mindoro †																30	
San Jose Estate, San Jose, Mindoro †					16.5											49.9	
Masbate, Masbate	5.9	2.5	8.6	8.6	11.4		38.3	30.2	21.9	30.8	1.8			3.3		279	
San Jose Estate, Tunnel D-12, San Jose, Mindoro †					8.9		3.8									22.8	
Romblon, Romblon		1	13.2	19.8		7.6		4	8.4	15.8	6.2	2.5	.9		4	165.3	
Batag Lighthouse, Laoang, Samar		1.3	30.5	17.5	1.8		13.7	12.7	59.9	26.9			16.5		6.9	454.3	
Irosin, Sorsogon	7.6	5.8	35.5	29.5	1.5		32.9	39.7	42.9	40.1	15.7	.8		7.3		549.1	
Sorsogon, Sorsogon			60.7	21.1			37.1	38.1	50.5	23.9	25.9	4.1	1.5	14	3	497.4	
Bacon, Sorsogon	3.8	2.8	58.4	30.2		16.3	34	41.4	25.9	25.9	31	1.8	1.8	18	4.6	526	
Jovellar, Albay	.8	3.8	29.2	8.1		3	5.3	6.4	17.8	3	1.3			3		225.2	
Legaspi, Albay, Albay	17.8	8.4	58.7	17.9	2.8	6.3	1.8	27.9	54	15	4.1			5.9	6.6	430.7	
Guinobatan, Albay	.3	1.5	18.5	5.4		1.5	1.6	11.2	19.1	2.5				1	2.5	184.7	
Polangui, Albay		3	30.2	8.9	17.8		8	3	26.7	6.9				13.2	.5	219.5	
Bacacay, Albay		60.4	14.2				31	35.5	18.3							364.3	
Amuguis, Mulanay, Tayabas †								6.1					15.7	3.6		102.3	
Bato, Camarines Sur		18.8	5.6	4.6		2.5		3.8	20.3					1.8	.5	153.9	
Tabaco, Albay	1	5.8	50.8	14.3	1.3	7.4	11.4	40.9	65.8	10.2		1.8		13.2	6.4	488.3	
Sumay (Guam), Agaña, Ladrone Islands			.3	4.3		.3	.8		.3			5.5	3		1.8	71.6	
Iriga, Camarines Sur			8.9	7.6	9.1		6.4	8.9		.5						135.9	
Calapan, Mindoro	1.3		1.3	1.5		.3	2.3	2.5	3	3.5		2	1.5	3.8		112.7	
Tiwi, Albay				35.8	41.7	39.6			53.3							236.7	
Pasacao, Camarines Sur	22.1							57.9	19.8							309	

† Voluntary or cooperative station.

## Daily rainfall at the stations of the Weather Bureau, December, 1921—Continued

Station.	Day of month.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Virac, Albay	8.2	3.3	13	14.5	0.8	0.8						0.3	119.6	2.8	1.8	10.9
Naga, Camarines Sur	2.8	13.2	21.3	67.3	3.3	3		0.8					111.8	4.5		3
Tigaon, Camarines Sur	12.7	22.4	24.2	38.6	11.2	2.8	0.5		2.3				103.4	9.9	1	3.8
Libmanan, Camarines Sur		10.2	22.9	24.4	1			3	2.5				98	14.2		
Batangas, Batangas				44.9					1				11.7	10.7	4.3	2.5
Ragay, Camarines Sur				55.4	5.3								60.4		23.6	3.6
Calatagan, Batangas	26.9										0.3		1.8	4.3	2.3	3
Balayan, Batangas															7.1	
Lipa, Batangas	7.9													40.6	10.4	5.8
Lucena, Tayabas	4.1	3	39.4	64.5				3.3	6.9		4.1	3	40.6	36.8	6.1	5.3
Atimonan, Tayabas	11.4	2.3	43.1	33.2	.8		6.9	4.8	11.7	0.5	4.6	1.8	33.3	42.7	3.3	4.3
Lian, Batangas	8.6															
Nasugbu, Batangas																
Ambulong, Tanauan, Batangas													11.4		3	5
Daet, Camarines Norte	.5		56.9	41.4	.5			5.3	10.4	.5	1.8		63.4	36.6	7.1	12.7
Mendez Nuñez, Cavite		2.5	1.3	1.8									5.1	4.8		2.3
Alfonso, Cavite		1.8	2.8										4.1	3.8		2.8
Indang, Cavite				1.5									2.3	4.1	3.6	
Canluban, Calamba, Laguna		3.6	1	2.8									3	6.6	3.6	2.5
Silang, Cavite													1.5	10.1		
Maragondon, Cavite				2.8									2	6.4		
Paracale, Camarines Norte	10.7	9.9	8.9	6.8	4.8	1.3		4.8			4.1					
Santa Cruz, Laguna		2.5	3	3.6					.5		2.5		3.8	3.3		
Buenavista, General Trias, Cavite			3.6											6.4		
Fort Mills, Corregidor, Cavite†											7.9					
Imus, Cavite		.3	.8	12.2							.5		1.5	.5		
Alabang Stock Farm, Alabang, Muntinglupa, Rizal†				8.9					1.3			.8	3.6	1.6		
Cavite Naval Station, Cavite, Cavite			4.5	4	.8				.8				2.8	1		
Lamao Horticultural Station, Lamao, Limay, Bataan†	4.6												1.3			
Manila, Manila		.7	2.3	8.7	.1				1.5				1	.6	2.5	
Antipolo, Rizal			2.5	6.1				7.1	.5				.8			
Balanga, Bataan																
Montalban, Rizal†	2.3	3.6	11.4	6.6									1	2		
Hacienda Pintong Sapang, San Jose del Monte, Bulacan†	7.9	1.3	3.6	4.1									5.3	1.3		
Malolos, Bulacan			3.6									2.5				
Paila, Norzagaray, Bulacan†		1.3	11.7	3.8									4.8	6.3	.3	1.3
Hacienda Carmencita, Gutad, Del Carmen, Pampanga†																
Pampanga Sugar Mills, Del Carmen, Pampanga†	2.8	.5												.8		
Matulid, Norzagaray, Bulacan†		6.3	12.2	3.8					1		3		5.4	23.1	22.3	12.2
San Fernando, Pampanga														2		
Mitla, Porac, Pampanga†	.8	1.3	1													
San Isidro, Nueva Ecija		7.9	.8											.8		
Iba, Zambales														.5	.5	
Concepcion, Tarlac	1															
O'Donnell, Capas, Tarlac																
Hacienda Luisita, Comillas, La Paz, Tarlac†																
Hacienda Luisita, San Miguel, Tarlac, Tarlac†																
Tarlac, Tarlac	2														4.8	
Paniqui, Tarlac		5.3														
Camiling, Tarlac																
Muñoz Agricultural School, Muñoz, Nueva Ecija†																
Baler, Tayabas	149.6		69.1											4.3	.5	.2
Dagupan, Pangasinan								3.6								
Rosario, La Union																
Tubao, La Union																
Itogon, Mountain Province																
Bolinao, Pangasinan																
Aringay, La Union																
Baguio, Mountain Province		5.8														
Bokod, Mountain Province	2.5															
Sablan, Disdis, La Union										26.2						
Naguilian, La Union																
Kapangan, Mountain Province		10.4									2.5					
Atok, Mountain Province		5.8								1.8						
San Fernando, La Union																
Echagüe, Isabela	2.9	3.3	32.3	4.2	1.3			1.6	5.9		3.6			3	4.8	
Balaoan, La Union																
Tagudin, Ilocos Sur																
Sagada, Mountain Province†	1	1.3	1.3												1.3	
Bontoc, Mountain Province†		1.5	2.5													
Candon, Ilocos Sur										1						
Kagotungan, Pilar, Abra†																
Vigan, Ilocos Sur																
Bangued, Abra																
Tuguegarao, Cagayan		36.1	1.6	.5				6.7							32.7	
Sinait, Ilocos Sur																
Batac, Ilocos Norte															11.4	
Solsona, Ilocos Norte															8.9	
Laoag, Ilocos Norte										3					10.2	
Pasquin, Ilocos Norte															7.4	
Aparri, Cagayan	3.4	19.5	2.8				4.3								18.5	
Cape Bojeador, Burgos, Ilocos Norte	2.8	2.6	.5				14.3	22		1.3	10.4					
Basco, Batanes	5.1	17.5	.5	.8		1.5	7.9	3.6				27.4	4	.5	3.3	9.6

† Voluntary or cooperative station.

\* Rain in 24 hours beginning 8 a. m.

Daily rainfall at the stations of the Weather Bureau, December, 1921—Continued

Station.	Day of month.															Total.
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Virac, Albay	3	2	29.2	32.2	7.6	0.8	61.4	32.7	4.3	6.4	31.3	0.3			387.2	
Naga, Camarines Sur	3	6.4	7.1	6.8	1	13	37.8	33.8							334.5	
Tigaon, Camarines Sur	.5	5.6	11.2	6.8	.8	26.9	19.5	58.4	58.9	5.1	1			2.3	431.8	
Libmanan, Camarines Sur	3.8	12.7	14.2	24.7		6.1	11.4	86.8	41.6					1.5	379	
Batangas, Batangas															75.1	
Ragay, Camarines Sur		9.4	7.9			3.3	47.5	46.2	1.6						264.2	
Calatagan, Batangas	2.5					9.1									48	
Balayan, Batangas						11.4									18.5	
Lipa, Batangas	14.2	6.1					5	1.3							86.8	
Lucena, Tayabas	8.7	1	4.8	31.7			7.9	18.3	2.3	1.3				.5	290.9	
Atimonan, Tayabas	3.5	2.3	3.8	49.7	.5	1.5	2.3	34.2	40.2	7.4	5.3	7.6	0.8	18.3	387.9	
Lian, Batangas				2.3			4.6								15.5	
Nasugbu, Batangas															0	
Ambulong, Tanauan, Batangas															12.2	
Daet, Camarines Norte	3.4	2.1	8.8	67.9	13.5	2.3	9	16.2	32.6	.5	2.3	4.4	4.1	12.6	421.8	
Mendez Nuñez, Cavite															17.8	
Alfonso, Cavite									.8						16.1	
Indang, Cavite															11.5	
Canluban, Calamba, Laguna				1.5					.8						25.4	
Silang, Cavite															11.6	
Maragondon, Cavite														1.5	12.7	
Paracale, Camarines Norte		6.9	2.3	5.3	8.4		6.1	4.5	14.2	3					102	
Santa Cruz, Laguna	2.3			2					3						26.5	
Buenavista, General Trias, Cavite															10	
Fort Mills, Corregidor, Cavite †	3.3		.5			2								1.8	15.5	
Imus, Cavite	.5							1.8						.3	18.4	
Alabang Stock Farm, Alabang, Muntinglupa, Rizal †						3.3		3							22.5	
Cavite Naval Station, Cavite, Cavite <sup>a</sup>					1.3	9.4				1					25.6	
Lamao Horticultural Station, Lamao, Limay, Bataan †															5.9	
Manila, Manila	.1				3	35.8		9							54.5	
Antipolo, Rizal						8.9									25.9	
Balanga, Bataan	1.5		.5												2	
Montalban, Rizal †			2.5			14.2									43.6	
Hacienda Pintong Sapang, San Jose del Monte, Bulacan †			2												25.5	
Malolos, Bulacan					1.3		.5								7.9	
Paila, Norzagaray, Bulacan †			3.6											2.5	35.6	
Hacienda Carmencita, Gutad, Del Carmen, Pampanga †						12.2									12.2	
Pampanga Sugar Mills, Del Carmen, Pampanga †															4.1	
Matulid, Norzagaray, Bulacan †	12.9	.5	7.6	.5	3	1.5									109.9	
San Fernando, Pampanga	1.3														3.3	
Mitla, Porac, Pampanga †															3.1	
San Isidro, Nueva Ecija															9.5	
Iba, Zambales						1									2	
Concepcion, Tarlac					1.5										2.5	
O'Donnell, Capas, Tarlac						15.2					7.4				22.6	
Hacienda Luisita, Comillas, La Paz, Tarlac †															0	
Hacienda Luisita, San Miguel, Tarlac, Tarlac †															0	
Tarlac, Tarlac						6.4									13.2	
Paniqui, Tarlac						46.5									51.8	
Camiling, Tarlac															0	
Muñoz Agricultural School, Muñoz, Nueva Ecija †															0	
Baler, Tayabas	2										10.9	.3			235.1	
Dagupan, Pangasinan															3.6	
Rosario, La Union															0	
Tubao, La Union															0	
Itogon, Mountain Province															0	
Bolinao, Pangasinan															0	
Aringay, La Union															0	
Baguio, Mountain Province						36.6									44.4	
Bokod, Mountain Province						1.8									4.3	
Sablan, Disdis, La Union															0	
Naguilian, La Union															0	
Kapangan, Mountain Province															0	
Atok, Mountain Province						22.6	15.2								12.9	
San Fernando, La Union															45.4	
Echagüe, Isabela	1		2.5			3.8	4.1								0	
Balaoan, La Union															74.3	
Tagudin, Ilocos Sur															0	
Sagada, Mountain Province †										1.3					0	
Bontoc, Mountain Province †															6.2	
Candon, Ilocos Sur															5	
Kagotungan, Pilar, Abra †															0	
Vigan, Ilocos Sur															0	
Bangued, Abra															0	
Tuguegarao, Cagayan	7.4				3.3			3		3					.1	
Sinait, Ilocos Sur															89	
Batac, Ilocos Norte															0	
Solsona, Ilocos Norte															11.4	
Laog, Ilocos Norte															8.9	
Pasquin, Ilocos Norte															10.5	
Aparrí, Cagayan					26.9	2.3	7.4	7.9						.5	11.7	
Cape Bojeador, Burgos, Ilocos Norte					.9										137.2	
Basco, Batanes	1.5		.3	.5	6.1	8.1	1.5	41.4	6.3	2.5		2.5	5.1	62.3	19.3	
															207.3	

† Voluntary or cooperative station. \* Rain in 24 hours beginning 8 a. m. <sup>b</sup> 30 days of observation. \* No observation.

MAXIMUM AND MINIMUM TEMPERATURES AT THE STATIONS OF THE WEATHER BUREAU, DECEMBER, 1921

Day.	Jolo.		Lais, Malita.		Malita.		Lebak.		Lamitan, Isabela, Zamboanga.		Malamaui, Isabela, Zamboanga.		Zamboanga.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum. <sup>a</sup>	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.1	23.2	32.2	22	32.6	22.5	31.6	23.4	31	20.4		23.6	30.2	22.5
2	31.3	23	32.8	21.7	33.4	22.7	30.5	23.5	30.1	20.5		23.8	31.5	22.6
3	30.8	23	32	21.3	33.4	22.4	30.8?	23.1	30	20.3		24.2	29.7	22.5
4	29.5	23.6	31.8	21.8	31.4	22.2	31.3	23.5	29.4	21.2		24.2	31.6	22.9
5	29.8	24.3	31.1	22.5	31.6	22.7	31.9	23.7	29.5	23		24.5	28.9	24
6	29.5	22.6	31.8	21.8	31.4	22.4	31.6	23.5	29	22.5		23.6	29	23
7	29.8	23.8	30	22.2	31.1	22.2	31.2	23.3	29.8	23.1		22.6	30.3	22.5
8	30	23.2	30.3	22.5	30.4	22.6	31.4	24	30.2	21.3		22.4	30.8	21.8
9	30	23.8	30.5	21.8	31.4	22.2	30.9	23.3	29.1	20		23	28.7	20.9
10	30.2	23.6	31.4	20	30.9	21	30.1	23.2	29.1	18		22	31.4	20.9
11	30.2	22.6	31.3	20.5	31.2	21.6	31.1	23.5	29.3	18		23	29.8	21.5
12	30.2	22.8	31.6	22.3	32.1	23.9	31.5	23.9	29.1	18.4		22.5	29.5	20.5
13	30.5	24	33	20	30.9	21.4	30.4	24.1	30.2	18.2		22.6	28.5	20.5
14	30.5	23.2	33	21	32.4	22.2	31.4	24.4	30	20.3		23.2	29.2	22
15	29.5	22.5	32	22.6	32.6	22.9	31.6	23.4	30.2	19.4		23	30.5	22.7
16	29.5	22.3	30	22.5	30.3	22.4	32.1	23.7	29.2	21.6		24	28.8	23.2
17	29	22.8	30.1	21	29.6	22.5		23.5	30	21		24	32	22.9
18	30	22.3	28.1	22.4	27.7	22.7	31.2	23	30.5	20.4		23.5	31.7	23
19	30	23.6	26	23	26.7	22.7	32.2	23.1	29	22.4		24	29.7	23.5
20	30	22.5	29.3	21.9	29.4	22.5		23.5	28.5	21.2		23.8	31.3	23
21	30.5	22.3	30.5	21.4	31.4	22.1	30.2	24	31	20.3		23.4	30.2	23
22	29.5	22.5	31.5	21.3	31.4	22.5		24.1	29.6	21.1		23.2	30	23.4
23	29.8	22.3	31.1	22.2	31.7	22.9		23.1	30	21		24.2	31.2	23.5
24	30.2	22.5	31.3	22.5	31.1	23.5	30.3	23.2	30	21.5		24	29	23.2
25	29.8	23.5	31.6	22	32.3	24.7	31.6	23.1	30.1	21.4		23.2	33	23
26	29.5	23.6	31.1	22.4	32.2	22.7	32.1	23.4	30.4	21.6		24.4	32.5	23.3
27	29.2	23.4	30.8	22.8	30.4	23.3	32.2	23.3	30	21.5		23.8	32	23.2
28	29.7	23.5	31.6	20.8	31.9	22.1	31.2?	24.5	31	20.1		24.2	32.7	23.3
29	29	23.5	29.9	22.4	31.7	23	31.6	24.1	30	21.8		23	32	24
30	29.5	23.6	30.2	21.8	30.4	22.8	31.2	24.2	29.5	23.2		24	32.6	23.1
31	29.5	22.3	30.5	21.9	31.4	22.4	30.7	23.3	29.7	20.3		23.6	28.5	22.2
Mean	29.9	23.1	30.9	21.8	31.2	22.6	31.3	23.6	29.8	20.8		23.5	30.5	22.6

Day.	Davao.		Pikit.		Bual, Duluayan.		Cotabato.		Naganaga, Margosatubig.		Malabang.		Cateel.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	33	22.5	33.3	22.4	32.9	22	29.6	22.8	33.3	22.3		21.4	31.1	21.4
2	33	22.6	32.3	22.3	31.3	21.9	29.4	23.2	34	22.1		22.4	31.3	21.8
3	31.2	23.4	33.2	23.1	32.7	22	28.8	23	34.5	22.5		23.5	29.9	23.1
4	31	23.4	33.7	23	32.4	21.9	30.1	23.3	33.7	22.2		22.6	30.6	22.3
5	31.4	22.8	31.1	23	32.2	21.7	29.9	23.5	34.5	23		22.8	30.6	23.1
6	30.7	22.5	32.7	23	31.8	22.1	29	23.4	34.2	23.5		22.6	29.6	23.1
7	30.4	22.5	31.7	22.1	31.7	22.1	28.6	23.5	33.3	22.2		22.5	29.3	22.3
8	30.4	21.6	32.2	22	31	21.5	29.1	23.3	34.2	22.3		22.5	30.1	22.2
9	30.9	21.9	32.2	21.3	32.3	20.3	29.6	22.8	33.7	20.5		22.6	29.9	21.9
10	31.2	21	32.6	21.3		20.4	30.1	22	33.5	22		21.4	30.6	20.6
11	32.1	22.3	33.4	20.4	32.5	20.2	30.3	22.1	33.3	22.5		22.4	30.7	21.3
12	32.2	22.8	33.4	22.2	34	20.1	30.5	23	33.5	21.3		21.8	30.2	
13	30	21.5	30.9	20.3	33.8	20.1	30	21.3	33	20.2		22.2	25	21.1?
14	31.2	21.5	33.1	23	33	21.3	29.1	22	31.5	20.5		21.8	29.5	21.6
15	31.7	22.5	34	23.2	33.9	21.7	30.4	23.3	30.5	21.2		22.5	30.9	21
16	30.3	23.9	31.5	23.2	29.5	22.6	28.3	23.8	33.7	20.2		21.6	30.5	21.1
17	29.2	22	28.3	21.2	28.9	21.1	28.2	22.7	34.7	22.3		21.8	27.4	21.1
18	28.6	23	30.5	23	30.5	20.9	28	23.4	34.5	23		22.2	27.5	21.8
19	26	22.5	28.5	22.4	29.8	21.3	28.5	22.8	33.7	22.5		22.6	23.8	22.2
20	28.7	22.5	32	22	30.7	21.3	30	23.3	33.5	22.2		22.5	26.5	22.5
21	31.2	22.5	33.5	22.2	33.2	22.1	29.5	23.2	34.2	23.5		22.5	29.5	21.8
22	31.2	22.9	33.1	22.4	33.9	21	29.9	22.8	33.7	23		22.8?	29.8	21.5
23	31.7	23.5	33.1	23.2	33.7	22.2	30.8	22.6	33.3	22.5		21.8	30	22.5
24	31.7	23	33.8	22.2	33.6		31	23	33.5	22.3		22.2	30.1	22
25	32.2	22.3	33.9	21.4	33.2	20.6	29.1	22	34.5	22.5		22.5	30.4	22.7
26	33.2	22.5	33.3	22.2	33.1	21.9	30	23.9	35	22.2		22.6	30.6	22.8
27	31.5	22.4	33.9	21.4	33.4	21	31.9	23.6	34.5	23		22.2	30	22.5
28	31.7	22.5	33.7	21.4	33.5	21.5	30.2	22.6	33.5	22.5		22.5	31.6	22.5
29	31.7	22.3	33.3?	20.4	33.4	19	31.5	21.9	34.5	22.7		22.8	29	22.1
30	31.2	22	33.1?	20	32.7	18.5	31	21.4	34.7	23		21.8	29.8	21.6
31	31.7	23.4	33.3	23.4	34	23.4	31.8	23.4	33.5	22.2		22.6	29.9	22.1
Mean	31	22.5	32.5	22.1	32.4	21.3	29.8	22.9	33.7	22.2		22.3	29.5	22

<sup>a</sup> These minimum temperatures seem to be not very reliable, the differences between 6 a. m. temperatures and minimum temperatures being both too small and too uniform.

Maximum and minimum temperatures at the stations of the Weather Bureau, December, 1921—Ctd.

Day.	Ganasi.		Camp Keithley, Dansalan.		Veruela.		Sumilau.		Cagayan.		Talacogon.		Butuan.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	28.5	18.5	26.8	17.6	31.7	22.3	26.3	16.6	21.5	32.2	21.2	33.4	20.9	
2	29.5	18.5	25.4	17.4	32.6	21.3	28	17.3	31	21.3	32.4	21.4	29.8	
3	30.8	19	24.9	19.4	31.2	23.1	26.5	19.4	27.8	23	30.9	22.3	29.4	
4	29	19	24.5	19.6	32.3	22.5	26.5	19.1	29.5	22.8	31.4	22	28.3	
5	30	19.5	25.8	19.6	31.8	21.7	27.6	18.6	30.2	23	32	22.4	31.4	
6	29.5	19	25.2	19.7	30.3	23	27	18.8	28.3?	22.4	29.9	22.2	28.6	
7	29.8	18.5	23.2	19.3	29.2	22.7	26	18.9	28.8	22.6	29.6	22.2	29.6	
8	28	18.3	24.7	17.8	29	21.5	25	18.7	27	21.8	28.4	21.2	28.9	
9	28.5	18	24.4	15.9	30.5	22	26.8	17	28.6	20.4	30.3	21.2	30	
10	28	18.5	24.8	14	30.7	19.5	27.1	13.8	30.1	17.8	31.2	22.4	30.6	
11	28.5	18.5	24.3	17.6	31.4	20.5	27.1	15.6	---	---	31.4	20.2	30.1	
12	29	18.3	23.8	16.6	31	21	27.5	16	29.6	20.4	31	20	31	
13	29.3	19	24.9	14.8	24.6	20.4	24	15	28.5	19.8	---	19.6	28.2	
14	28	19	27.7	18.1	31.8	20.6	28.4	17	29.3?	20.8	---	19.2	31.5	
15	28.5	18.3	26.9	18	31.3	21	29.7	17.2	30.2	21.1	32.9	21.4	31.6	
16	27.3	19.5	24.7	18.9	29.8	22.7	27	18.1	29	21.7	36.3	22.2	29	
17	29.5	19	24.9	19.3	26.5	20.7	26.7	19.8	28.4	21	29.7	21.1	29.4	
18	28.5	19.3	24.3	18.9	28	22.5	26.4	20.3	27.9	21.6	29	21.3	28	
19	29.4	18	22.4	19.4	23.8	22	28.9	20.4	25.9	21.9	25.4	22.2	24.5	
20	28.5	18.3	26.3	16.9	27.5	22.5	27.1	17.6	28.8?	20.9	28.4	21.3	29.1	
21	30.5	19.5	28	18.7	32.8	22.5	26.9	19.2	30.5	22.6	32.8	22.2	32.6	
22	29.8	18	28.4	18.2	35.2	22.4	28.6	19.2	31	22.7	33.7	22.3	35.6	
23	28.5	18.3	26.9	20.6	31	23.6	28.5	19.4	30.9	22.8	33	22.3	33.2	
24	29	18.5	26.5	18.3	30.7	22.8	28.5	18.4	30.6	21.7	31.9	22.4	32.4	
25	28	18	26.7	17.4	31	22.8	29.8	18.8	31.2	20.9	32.2	22	33.9	
26	28	18	27.2	18.4	31	22.7	28.2	19.8	32.4	22.6	31.9	22.3	35.1	
27	28.3	19	26	17.1	23.4	22	28.4	19.7	31.9	19.2	30.8	21.4	31.6	
28	29	19.5	25.5	18.6	31.5	23	29.5	20.6	30.2	21	31.1	22.1	28.3	
29	28.5	19	25.4	18.9	28.8	22.4	28.5	15.8	29	20	31.9	21.3	30.1	
30	29.5	18	24.9	17.8	30	22	28.4	15.8	29.6	20.3	31.9	20.4	31.6	
31	28	18	26.7	17.7	30	22.7	29	19.7	29.5	21.5	30.1	22.2	31.9	
Mean	28.9	18.6	25.6	18.1	30.1	22	27.4	18.1	29.5	21.3	31	21.5	30.5	

Day.	Mambajao.		Dumaguete.		Kolonie, Yap.		Tagbilaran.		Iwahig Penal Colony, Puerto Princesa.		Dalaguete.		Surigao.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	29	23.4	31.3	23	32	25	31.2	22.8	32	22	31	23	30.1	23
2	30.6	23.4	30.6	23.4	31.2	23.3	30.7	23	32.6	22.2	---	23	28.1	23.4
3	26.4	23	29.6	24.5	32	23.1	30.2	23.3	32	22.2	29.8	24.5	25	23.1
4	27.4	23.8	29.9	24.3	28.7	23.6	30.5	22.9	32	22.2	29.2	22.4	26.1	22.8
5	28	23.5	30.3	24.7	30.7	24	29.3	23	32.4	22.2	29.5	24.3	28.6	24.2
6	26.4	23.4	29.8	23.7	29.6	23.9	30.8	23.4	32	22.5	30	23.7	26	23.5
7	28	22	29.1	23.4	29.9	24.9	29.7	21.9	32.6	21.8	29.7	24.7	28	23.4
8	26.5	23	29.5	22.5	31.7	25	28.3	20.5	30.6	22.4	29.5	22	27.3	21.9
9	28.3	22.6	29.1	20.8	31.7	24.4	30.6	19.4	30.8	21	28.5	20.3	28	21.8
10	28.5	21.7	30.1	22	29.2	23.8	30.4	20.2	32.2	21.8	28.9	21.9	28.2	21.6
11	27.5	22.2	29.4	22.6	31.8	23.7	31.2	20.5	30.8	20	28.9	22.3	27.6	22.8
12	28.1	22.4	30.3	23.2	32.1	23.9	31.2	21.3	30.6	19	29.3	22	28.4	24.8
13	27.3	22.3	30.1	23.9	30	24	28.5	21.9	32	19.5	29	22.8	26.5	23.1
14	26.9	23.5	28.4	23.6	30.5	24.1	26.5	22.7	31.6	21.4	27.9	23.4	30.2	23.5
15	28.5	22.5	29.8	23.2	30.7	24.4	30.5	22.5	30.8	22.2	30.2	23.9	30	23.8
16	27.8	22.5	28.5	23.6	30.8	23.2	28.4	22	31.4	22.8	28.8	24.3	27.7	23.4
17	27.6	24.5	29.5	25	29.7	23.2	29.7	22.8	31.8	21.6	27.9	24.8	25.7	22.8
18	26.9	25	28.8	23.9	29.7	23.9	30	22.3	31.6	21.2	28.4	23.9	27.6	23.7
19	25	23.8	26.9	24.2	26.8	21.1	26.3	22.7	32	21.4	26.3	23.5	24.4	22.9
20	27.9	23.2	29.1	24.2	30.1	22.8	29.3	22.4	32	22	28.8	23.8	29	22.9
21	28.8	23	30.3	24	30.4	23.5	30.3	23.1	32	22	30.3	24.4	28.3	24.1
22	29	22.7	29.8	24.3	29.8	23.8	31.1	22.7	31.4	23	30.5	24	30.2	24
23	29	23.9	30.6	23.4	30.8	24	30.4	23	32	22.2	30.8	24	29.5	23.4
24	28.8	24.2	30.3	25.2	30.5	24	31	22.5	32	22.2	30.3	24.3	30.2	23.9
25	29.8	24.3	29.2	25	30.8	24.2	30.4	22.5	32	22.7	30	24.7	30.7	24.4
26	29.4	25.4	30	23.8	30.8	23.7	30.1	23	30.6	22.2	30.2	23.7	30.7	24.3
27	28.3	23.9	29.6	24.7	30.4	23.9	30.5	21.9	32	23	29	24.5	28.2	24.1
28	26.3	23.8	28.7	24	29.4	23.5	29.2	23.2	32	22.4	29.5	24.2	25.6	23.7
29	27.6	22.6	28.4	23.6	31	23.2	29.7	22.7	32.2	22.2	29?	24	28	23.3
30	29.3	23.9	29.3	22.9	30.4	23.1	29	22	32	21.2	28.7?	24	27	23.6
31	28.4	23.4	29.9	24.2	30.4	23.7	30.4	22.8	32	22.2	29.6	24.9	29	23.5
Mean	27.8	23.3	29.6	23.7	30.4	23.7	29.9	22.3	31.7	21.8	29.3	23.6	28.1	23.4

Maximum and minimum temperatures at the stations of the Weather Bureau, December, 1921—Ctd.

Day.	Central Palma, Ilog.		Hacienda Naval, Himamaylan.		Biaong Cui's Farm, Barili.		Maasin, Leyte.		Isabela, Occidental Negros.		Hacienda Tanolo, Hinigaran.		Cebu.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.9	22	32	22.6	20	20	34	21.4	31.6	20.3	32.2	22	31.7	24.5
2	31	22.2	31.3	21.5	22	22	31	21.8	31.3	19.7	31.8	20.3	31.3	24.7
3	30.6	21.4	30.5	22	23.5	23.5	29.6	22.2	27.5	22.2	30.3	22	28.8	24.6
4	30	21	30.9	23	20.5	20.5	21.4	29.8	21.4	29.8	21.7	31	20.1	28.7
5	31	22.3	31	22.1	22.1	22.1	31	21.8	28.2	22.6	28.7	23.7	30.4	25.4
6	30	23.6	30	23	23	23	33	21.9	29.3	21.7	29.5	22.5	30.5	25
7	30	22.4	31	23.1	21.6	21.6	34	21.5	29.5	21.5?	30.5	20.5	30.2	23.8
8	29.8	22.6	31.5	23.5	20	20	35	21.6	29	20.1	30.5	19.6	29.7	23
9	29.5	20.5	32.5	24	21	21	36	19	30.8	18.2	31	18	29.3	21.5
10	30	20	32.1	23.5	20.5	20.5	33.2	20.1	30.3?	17	31.8	16.4	29.2	23.2
11	29.8	20	32	22.1	21	21	34.4	19.5	31	17	31	16	31.1	22.3
12	30	20	31.9	20.9	21.5	21.5	32	20.4	31.1	18.3	31	17	30	23.3
13	29.5	20.8	31	21	20.5	20.5	30	22	31.1	20.2	27.7	21.6	28.2	23.3
14	29	21	32	22	20.3	20.3	35	21.6	27.3	21.6	27.6	21	28.8	23.8
15	31	22.4	31.1	22.1	20.2	20.2	32.2	22	31.9	20.8	33	21	30.2	24.2
16	30	22	31.2	23	20.5	20.5	32	21.8	30.3	22.1	31.1	22.2	29.5	23.8
17	31	22.2	31.3	22.9	20.6	20.6	30	22.5	31.1	21.9	32.5	22.5	28.5	24.8
18	31	21.2	30	20	20.1	20.1	27.5	22.6	30.3	21.9	32.5	22	29.9	23.9
19	29	21.4	29.9	20.1	19.8	19.8	30	20.6	28.4	22.5	29	22.8	26.4	23.6
20	29.2	22.5	30.6	21.2	21	21	34	21.4	31.5	22	33	22.1	30.1	23.9
21	31	22.6	33	23	21.5	21.5	32	21.6	31	21.7	32	21.7	29.7	24.9
22	30.5	22.5	33.1	23.2	21.1	21.1	34.4	22	31.8	21.5	32	21.5	31.5	24.5
23	30.6	22.2	32	22.7	22.2	22.2	33	22.1	31.3	22.2	32.5	23	31.3	24.7
24	31	22.4	29.5	20.2	22.1	22.1	33.2	22.4	25.4	21.7	30.7	23.8	30.3	25
25	29	21	29.9	21	22	22	35	22.4	31.3	20.6	31.2	22.5	30.6	24.8
26	30	21.4	31	21.2	21.8	21.8	34.2	22.6	29.8	22.7	29.5	21.7	30.4	24.3
27	31	22	31.1	22	20.6	20.6	34	22.2	31.3	21.2	32.2	22.3	29.3	24
28	29	22.8	32	23	21.3	21.3	31.4	22	29	22.5	32	20	30	25.1
29	29.3	22	32.4	23.1	21.5	21.5	32	21.8	30.2	23.2	30.5	22.6	30	24.5
30	30	22.6	32.1	22.5	20	20	31.4	21	31.2	21	31	22	31.6	23.6
31	30	23	32.4	23	21.1	21.1	32.5	22	31.8	22.4	31.5	23	30.2	24.7
Mean	30.1	21.8	31.4	22.2	21.1	21.1	32.5	21.6	30.3	21.1	31	21.2	29.9	24.1

Day.	La Castellana.		Central Azucarrera de La Carlota.		Hacienda Canlaon, La Castellana.		Maa Sugar Central, Bago.		Valladolid.		San Joaquin.		Murcia.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.4	20.9	32.2	22.2	18.7	18.7	33.1	21	33.4	21.5	32.2	22.7	30.7	21.9
2	32.6	20.5	31.7	19.8	19.9	19.9	32.5	19.1	32.8	20.2?	31.1	21.5	30.1	21.8
3	30	22.8	28	22.5	19.8	19.8	29.4	22.4	31.2	23.7	31.3	23.1	32.3	21.1
4	32	20.1	29	20.6	19.4	19.4	29.6	19.9	30.9	22.3	32.4	23.1	31.9?	21.2
5	30.5	22			18.2	18.2	27.8	22.8	30.7	23.8	30.8	24.5	31.9	21.6
6	30	21	29.3		17.7	17.7	29.3	21.8	31	23.3	31.3	24.1	32.6	21.7
7	28.6	20.2	29.2	20.4	18.3	18.3	30.2	19.7	31.2	21.2	31.4	24.1	29.8	20.2
8		18.5	28.7	19.8	18.6	18.6	29.3	19.4	31.5	20.7	31.2	21.1	29.9	20.1
9		17	30.3	18.1	18.9	18.9	30.7	17.5	32.4	18.2	30.1	20.2	30.1	21.5?
10		16.5	30.2	17.2	18.9	18.9	31.7	17	32.8	19.8	30.2	22.4	30.2	21.7
11		15.8	30.8	16.3	18.4	18.4	31.3	17.2	31.5	21.3	31.3	20.5	30.4	
12	27.8	16.8	30.8	17	17.2	17.2	30.3	17.8	32.4	18.9	32.1	20.4	32.5	22.5?
13	30.8	19.3	30.3	20.2	17.3	17.3	31.1	22.2	32.2	22.2	30	21.8	29.9	21.7
14	29.8	19.5	27.8	21.3	17.5	17.5	29.7	21.7	30.2	22	28.6	25.5?	31.5	21.3
15	30.4	20	32.3	21	21.3	21.3	33	21.2	31.2	21.2	30.4	24.9	31.7	20.3
16	30.5	20.2	30	20.6	20.5	20.5	31.2	20.2	31.6	21.4	31.7	23.7	30.5	20.6
17	31.8	20.6	31.5	21.3	19.5	19.5	32.3	21.8	32.4	22.4	31.9	24.5	30.7	21.5
18	32.8	22	32	22	18.4	18.4	32.2	22.8	32.2	23.3		25.3	32.4	21.6?
19	31.5	22.5	29	22.5	18.9	18.9	29.1	22.4	30.2	22.4	30.1	24.5	32.8	22.9
20	31	21.8	32.2	22.4	18.4	18.4	32	22.1	32.4	22.9	31.3	25.6	32.9	20.6
21	30.6	21.5	30.9	21.8	19.1	19.1	32.2	21.4	32.8	21.2	31.5	23.2	30	
22	31.8	21	31.3	21.6	18.9	18.9	33.7	21.5	32.5	22	30.3	24.1	31.4	20.6
23	32.5	21.8	30.4	22.5	17.4	17.4	31.6	21.8	32.7	22.3	31.8	24.9	32.9	22.9
24	29.5	22.3	28.5	24.1	20.1	20.1	29.4	24	32.2	21.4	30.5	23.6	32.8	22.8
25	31.2	19.8	31	20.3	19.5	19.5	31.5	20.2	32.6	23.2	31.5		31.9	20.4
26	31.4	21.5	27.3	22.8	19.5	19.5	29.5	23.2	32.5	23.4	30.6		30.4	21.3
27		21.5	31.4	21.6	19.7	19.7	31.5	21.8	31.7	22.7	30.4		32.5	20.9
28	32.5	20	31.3	22.5	19	19	31.2	22.9	32.3	22.4	32.1		32.9	21.9
29	31.5	22.8	29.5	23.2	21.3	21.3	31.4	23.1	32.8	22.2	31.6	23.9	32.7	20.6
30	32.5	21.6	29.4	21.2	19.9	19.9	30	21.6	31.9	23.4	31.1	22.6	32.9	20.7
31	31.5	22.3	32.4	23.1	21.5	21.5	33.2	22.7	31.7	22.8	31.4	22.2	32.5	20.9
Mean	31	20.5	30.3	21	19.1	19.1	31.1	21.1	31.9	21.9	31.1	23.2	31.5	21.8

\* These minimum temperatures seem to be somewhat too low.



Maximum and minimum temperatures at the stations of the Weather Bureau, December, 1921—Ctd.

Day.	Bacolod.		Oton.		Iloilo.		San Jose de Buenavista.		Tuburan.		Leon.		Silay.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.6	21.6	30.2	22.7	31.2	23.8	30.4	21.8	31.8	22.5	33.2	20.5	32.5	
2	31.9	21.9	29.6	23.4	30.4	23.5	30	20.6	30.2	22.3	31.3		30	
3	27.2	23.1	29.5	24.4	30	23.8	31.3		22	28.6	23.2	29.7	21.9	25.6
4	28.7	22.4	29.1	23	30.1	23.4	30.9	21.6	27.2	23	30	22.5	28.2	
5	26.6	23.5	27.8	24.2	28.2	23.9	30.5		23	28.2	24.4	28.3	21.4	26
6	29.1	23.4	29.8	23.2	29.6	23.1	30.5	21.4	28.5	25	29.4	22.6	28.4	
7	29.2	20.6	29.9	21.5	29.1	21.1	29	20.6	28.7	24.6	28.8		19.4	28.4
8	29	20.1	30.2	20.3	29.6	21	29.8	19.7	29.1	22.7		20	28.4	
9	29.7	19.1	30.4	19	29.8	20.2	29.5	18.5	29.6	20.8	33.5		28.4	
10	29	21.3	29.1	21.7	29.5	21.6	29.9	18.3	30.2	19.6	29	20.9	27	
11	29.6	19.1	30.2	20.8	30.2	21	29.3	17.9	29.8		30.1	21	29	
12	29.4	21.5	30	21.2	29.6	21.2	30	17.2	29.5	20.3	29.9	20.8	30.7	
13	26.6	22.7	28.2	22.6	28.9	22.7	29.6	19.8	25.7	24.3	29.7	22.9	26.1	
14	27.9	22.2	26.2	23.6	27.2	23.2	27.3	22.8	30.3	22.2	27.2	22.9	27	
15	31.4	22.4	29.6	23.8	30.4	23.7	30	21.6	31.5	22.8	31.2	22.8	30	
16	30.3	22.6	31.2	22.7	30	23.1	30	21.6	29.2	21.6	31.1	22.3	29.5	
17	30.6	24.1	28.8	23.8	31.1	23.9	32.6	21.3	30.7	23.4	31.8	22.1	28.2	
18	30.4	23.7	29	23.9	30	24	31.9	21.5	30.9	22.4	31.2	23	29.2	
19	28.4	23	29.2	23.7	28.4	23.9	29.7	22.9	26.8	23.5	29.4	22.9	27	
20	29.9	23.3	30.2	23.8	29.7	23.6	31	22.5	29.8	22.9	30.9	22.2	29	
21	30.5	22.3	30.4	23.2	32.6	23.8	30.3	21.9	29.8	22.7	32.7	22.3	29	
22	31.9	21.8	30	22.8	32.2	23.6	30.6	22	30.7	23	32.9	20.5	31.8	
23	30.2	23.1	30.2	23.2	30.7	23.8	31.4	22.3	30.2	23.8	31.3	20.6	31	
24	29	24	30.6	24	30.7	23.5	30.4	22.3	28.7	23.4	30.5	23.1	29	
25	30.4	23.7	31.6	23.4	31.6	23.3	31.7	21	30.2	22.4	31.3	21.9	28.5	
26	27.4	24.4	26.6	24	28.3	23.2	30.4	21.8	28.5	22.4		22.6	26.2	
27	29.6	22.9	28.8	22.8	29.7	22.9	31.1	21.1	29.9	23.5	30.1	21.9	28	
28	29.7	23.5	31.6	23.2	30.1	23.2	30.4	19.5	28.7	21.8	31.3	22.9	28.5	
29	29.2	23.7	29.8	24	30	23.8	30.5	20	28.2	24.4	30.1	23.2	28	
30	29.4	23.2	30	22	29.1	22.5	31	20	28.4	23.4	31.5	22	28	
31	29.8	23.8	31	22.4	30.4	23.2	30.5	21.7	31.6	23.3	31.4	23.3	30	
Mean	29.5	22.5	29.6	22.8	29.9	23	30.4	21	29.4	22.7	30.6	21.9	28.6	

Day.	Calag-itan, San Remigio.		Cuyo.		Barotac Nuevo.		Hacienda ñaya, Victorias.		Hacienda Bilbao, Manapla.		Janiuay.		Cadiz.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	32.3	21.1	30.7	25.9	27.9	23.3	31.5	23.4	30.4	21.6	32.7	20.8	30.2	23
2	30.3	19.8	30.6	25.9	31.2	22.6	30.4	23.3	30.7	21.9	30.3	21.6	30	24.1
3	32	19.9	29.1	26.2	27.4	22.2	30.4	23	31.4	22.1	28.9	24.1	29.9	25.2
4	31.1	20.9	29.9	26	30.1	23.2	31	23.7	31.2	21.1	30.2	22	30.1	23
5	32	22.3	29.5	26.3	28.2		30.6	22.8	31.6	22.3	28.1	22.5	29.8	23.2
6	32.4	21.1	28.5	25.8	30.1	23.8	29.8	23.2	31.4	22.7	29.1	22.9	29.7	22
7	31.1	20.1	28.5	24.8	29.2	21.6	30.5	22.6	31.1	22.5	29	21.2	28.6	22.1
8	31.2	19	28.8	24.6	29.1	21?	29.8	23.5	30.9	21	29.1	19.3	28.6	23.3
9	30.6	17.6	28.9	24	29.2		30.5	23	32.1	21.4	29.6	17.3	28.5	20.6
10	30	16.8	29.7	24.3	27.8	21.1	30.5	22.5	31.7	21	28.4	19.8	28.7	21.6
11	30.8	15.8	29.1	24	30.2	21	30.6	23.4	31.6	20.8	29.8	19.6	29	23.1
12	30.4	15.6	29.2	24.6	30.1	21.3	30.3	22.9	30.5	21.6	29.1	20.3	28.7	22
13	30.6	19.1	29.1	25	29	22.1	30.9	23	30.2	21.7	28.3	20.1	26.8	21.7
14	26.6	22	28.1	25	28.1	23	30.3	22.4	28.7	21.6	28.4	24.4	27	22
15	31.6	20	30	22.5	30	23.1	30.5	23	29.3	21.2	30.6	24.4	29.7	22
16	30.1	21	30.1	22.8	29.3	22.6	29.7	23.3	29.6	21	31.2	21.9	28.9	22.2
17	32	21	30.3	25.7	29.1	23.2	29.4	23.7	30.3	20.8	30.3	24.5	28.8	24.3
18	31	21	30.6	25.9	30.1	23.5	30.6	23.2	30.5	21.2	29.6	24	28.5	24
19	32	22.3	28.5	26.3	30.3	23.1	30.7	23.2	30.7	21.4	30.1	24.4	27.8	23.3
20	32.1	21.6	30.6	25.2	31.2	23.2	31.3	23	30.4	21.2	31.5	24.1	28.9	24
21	31.6	21.5	31	25.8	31.4	23.4	30.8	23.2	30.2	21.3		21.7?	28.7	23.2
22	31.6	21	30.5	24.5	32.5	23.5?	30.4	23.4	30.6	21.4	32.4	21.8	29.5	23
23	31	21.2	30	23.8	28.2	23.4	30.7	22.6	30.7	21.5	28.7	24.3	29.1	22.4
24	31.6	21	29.3	25.9	31.1	23.3	30.4	23	30.6	21.4		22.8	29.5	23.1
25	32.3	19	30.4	25.6	30.3	22.8	29.6	23.4	30.2	21.8		24.5	29.3	22.7
26	30.6	20.1	30.2	25.6	30.1	23.9?	29.4	22.3	29.7	21.7	29.5	22.5	30.1	23.1
27	31.6	21.1	29	25.3	30.3	23.2	30.3	22.7	29.4	21.4	30	22.7	29.3	22.8
28	32.3	18.9	29.3	25.1	30.8	23.1	30	23	29.8	21.7	30.5	22.4	28.8	22.6
29	32.4	19.1	29.1	25.3	30.3	23.9	31	23.2	30.2	22.1	29.9	24.5	29	24.4
30	32.6	18.6	29.1	24.9	30.5	22.4	31.2	23.6	30.5	22		22.3	28	23.4
31	30.6	21	30	25.4	30.8	23.3	30	23.4	30.8	22.2	32.3?	24.2	27.7	22.8
Mean	31.2	20	29.6	25.1	29.8	22.8	30.4	23.1	30.6	21.6	29.9	22.4	28.9	22.8

Maximum and minimum temperatures at the stations of the Weather Bureau, December, 1921—Ctd.

Day.	Dingle.		Ormoc.		Guiuan.		Bugasong.		Bogo.		Sara.		Tacloban.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.8	22.2	33.2	20.2	32.7	22.8	30.4	21.4	32	23.5	31.3	22.9	33	22.6
2	31	21.1	32.7	19.8	31.3	23.6	30.4	21.2	31.6	23.2	31.3	22.3	29.4	23.2
3	28.5	22.8	29.4	21.5	27.7	23.5	30.2	21	30.1	23.4	29.1	23.1	27	22.8
4	30.1	22.7	29.4	23.5	29.2	23.4	30.4	21.4	29	23.2	29.5	23.1	27.2	23.3
5	28.5	23.6	29.5	23.6	30.5	23.4	29	21.2	28.2	22.9	28.3	22.9	27.7	23.3
6	30	23	30.3	22.9	31	23.8	31	22	28.5	22.9	29.6	23.6	28.3	22.5
7	29.2	21	31.1	19.2	30.4	22.2	30	20.3	29.1	23	29.6	28.5	29	21.5
8	29.7	19	30.4	19	30.3	22.3	29.5	20	30	23	29.3	20.1	29.9	22
9	30.3	18.2	31.3	18.1	31.2	22.3	29.5	17.5	30.4	23.2	29.3	20.1	29.9	20.4
10	28.5	19.8	31.9	17.9	31.3	24.5	29.5	18.5	30.8	23.3	28.5	20.6	31.1	20.6
11	31.2	19.8	31.5	17.5	30.5	22.8	30.5	20	30.8	23.5	29.9	20.2	30.1	20.6
12	29.9	20.1	31.5	17.3	28.6	23	30.2	17	30.9	23.1	29.8	21.1	28.3	21.5
13	28.5	21.6	30.5	19	26.8	22.2	29.5	21	30.6	23	29.3	22.3	24.9	21
14	28.1	22.8	30.5	22	32	22.4	27	22.2	29.2	22.9	28.3	22.6	31.9	22.2
15	30.7	22.2	31.4	22.9	31.8	22.3	30.2	21.7	29.3	23	29.4	22.2	29.8	22.8
16	31.2	21.8	29	22.8	30.9	25.1	30	21.4	29.6	23.4	30.8	21.1	30.2	22.5
17	30.1	23.1	30.2	22.9	31.2	25	32	21.5	30.8	24.2	30	24.3	30.9	23
18	30.9	23	32.1	23.1	31	25.8	32.4	21	30.7	24	28.3	22.5	31.2	22.3
19	29	23.8	31.9	23.3	27.8	22.5	29	---	30.5	24	29.3	23.1	25	22.8
20	30.5	22.6	31.5	22.4	31.2	22.7	30.2	---	29.9	23.7	29.4	23.1	30.2	22.5
21	31.8	23	31.5	22.4	29.5	23.3	30	21.7	30.1	23.3	30.3	23.9	28.7	23
22	33.2	23	31.9	22.4	30.4	22.2	30.2	22.5?	30	23.1	31.8	23.1	31.2	22.8
23	30	23.8	32.6	21.9	31.3	22.4	31.2	21.5	30.1	23.4	30.5	22.6	31.1	23
24	30	23.2	33.1	22.4	31.6	22.5	31	21	30.4	24.2	30.3	22.5	32.8	23.2
25	31.1	22.5	33.2	22.6	31.7	24.6	31	21.5?	30.8	24.1	30.3	22.4	31.7	23.2
26	28.1	23.2	31.8	22.4	30.2	24.6	31	21	31	24	30.5	22.3	29.8	23.3
27	30.2	23	29.9	22.7	30.3	25.3	30	20	30	23	30.2	22.9	30.5	23.3
28	30.5	22	31.5	22.3	31.2	25.2	30.6	20	29.9	23.3	30.2	22.9	30.5	23.3
29	30.4	23.2	31.6	22.9	29.4	23.7	31	20	30.6	23.7	29.8	24	28.5	23
30	29.1	22.2	31.5	22.8	30.6	22.3	30.5	20.4	29.8	23.6	29.3	22.5	31.2	22.5
31	32	22.8	32.7	22.9	31.3	23.3	30	20.2	30	23.5	30.3	22.5	30.4	21.4
Mean	30.1	22.1	31.3	21.5	30.5	23.4	30.2	20.7	30.2	23.4	29.8	22.4	29.6	22.4

Day.	Central Astu- rias, Buntog, Dumalag.		Culasi.		Mambusao.		Hacienda Am- paro, Ponteve- dra, Capiz.		Capiz.		Borongan.		Calivo.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	33.1	22.6	31.5	22.7	32	22.2	30.2	22.4	32	23	31.1	22.2	31.3	23.1
2	32.5	21.9	32	23.2	31.3	21.9	30.2	22.5	31.5	23.4	28.7	23.5	31.3	23.1
3	32	22.8	32	24.7	28.4	22.9	27.9	22.4	29.5	23.5	26.8	22.6	30.1	24.1
4	29.4	22.9	32	24.7	29.5	22.8	28.9	23.5	30.1	25.5	28.3	23.2	30.3	24.1
5	29.8	22.8	32	24.7	26.4	23.4	26.9	23.4	28	24.1	29.3	23.6	27.3	25.1
6	29.7	22.3	31.5	25.1	29	23.8	28.5	24.6	30	24.1	29.3	23.2	29.3	25.1
7	29.4	21.5	31	23.2	28.8	22	27.9	23.3	29.5	24.4	30.4	19.5	29.3	23.1
8	29.5	20	31	22.7	28.6	20.4	28.3	21.7	29.5	23	30.3	19.4	29.3	23.1
9	29.4	19	30.7	22	29.8	19	28.4	19.9	30	22.4	30	19.1	29.3	20.1
10	29.8	19.6	30.5	21.2	29.3	19.7	28.5	20.4	29.9	23.1	29.7	20	29.3	23.1
11	29.9	19.5	32	23.7	29.8	19.5	28.8	19.5	30.1	22.5	---	18.8	29.3	20.1
12	29.7	18.8	32	20.2	28.4	19.6	27.6	20.5	29.5	21.5	---	---	28.6	21.1
13	28.8	18.9	31.5	23.2	28.8	22	28	22.4	30	23.8	30	20.5	29.3	22.1
14	30.1	22.5	31.5	23.7	26	22.9	26.3	22.9	26	22.6	30.4	23.3	27.3	23.1
15	30.2	22.4	31.4	22.7	---	22.4	28	22.7	30	22.7	30.8	23.7	29.3	23.1
16	31.5	21.3	31	23.7	31.9	21.3	29.4	20.9	30.5	22	29.5	23.1	30.3	24.1
17	31.7	23.3	32	24.2	31.8	25.2	29	24.3	30.1	24.5	29.8	25.8	29.3	24.1
18	31.6	22.6	31.6	24.7	30	25.8	28.9	24	30.6	24.5	29.7	25.8	29.3	25.1
19	31.8	22.8	31.5	23.8	30.3	22.8	28	22.6	28.4	23.5	27	23.6	29.3?	23.1
20	28.9	22.9	30.5	24	29	23.1	28.8	23.2	29.4	23.9	29.8	24.3	29.3	23.1
21	30.3	23.4	30.5	22.1	29.4	23.7	28.1	22.4	29.5	24.5	29.2	24.2	30.3	24.1
22	31.4	23.2	30.5	22.7	31.4	23.4	30.3	22.3	31	24.3	30.3	22.5	31.3	23.1
23	32.8	22.6	30.5	23.3	30	22.9	29.8	22.7	30.4	24.5	30.6	22.8	30.3	23.1
24	30.6	23.6	30.5	25	28.1	23.6	28.4	24.1	28.9	24	31	23.3	28.3	23.1
25	30.8	23.4	31	22.7	29.6	22.4	28.6	23.2	30	23.5	31.1	25.5	29.3	24.1
26	29.9	22.8	31	24.7	25.3	23.8	---	23.3	25.7	23.4	27.4	24.7	29.3	24.1
27	29.4	22.5	30.5	24.1	28.8	22.7	28.3	23.9	29	23.4	29.6	25.2	28.3	24.1
28	29.6	22.1	31.5	24.2	29.4	21.5	28.2	22.2	29.6	23.5	30.1	25.3	29.3	24.1
29	30.5	22.9	31.2	22	30	23.2	29	23.7	30.1	24.4	28.2	23.6	29.3	24.1
30	30.4	21.6	30.5	24.7	28.4	22.4	27.9	23.3	30	24.2	29.6	22.1	29.3	23.1
31	30.1	23	30.5	24.2	30.8	22.9	29.2	23.1	30.4	24.4	30.5	22.9	29.3	23.1
Mean	30.5	22	31.2	23.5	29.3	22.3	28.5	22.6	29.7	23.6	29.6	22.9	29.4	23.3

Maximum and minimum temperatures at the stations of the Weather Bureau, December, 1921—Ctd.

Day.	Pandian, Antique.		Catbalogan.		Calbayog.		Masbate.		Romblon.		Batag Light-house, Laoang.		Irosin.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	33	23.6	31.2	29.2	31.8	21.7	30.8	24.4	30.9	22.7	30	23.4	31.8	21.5
2	32	24.4	29.2	27.3	31	22.1	30.4	25.2	30.4	23.2	28.6	23.4	30	22
3	31.2	24	27.5	25.1	29.2	22.8	27.8	23.2	29.8	23.3	28.3	23.4	29.9	22.5
4	30.7	24.7	27.3	25.1	28.1	23.1	27.8	24.4	30.3	23.3	28	23.4	28.4	22.6
5	28.6	24.6	26.3	25.1	25.1	23.1	26.8	22.8	28	24	26.1	23	26.5	23
6	29.8	22.3	29.6	28.4	28.4	21.8	27.8	24.8	28.8	23.5	27.2	22.3	30.5	21.9
7	29.6	22.3	29.2	28.3	28.3	21.1	27.4	23.5	28.3	21.8	27.5	21.4	29.7	19.5
8	30.2	22.3	29.5	29.6	29.6	19.4	27.8	23.4	29	20.8	27.4	23	30.1	20.1
9	29.3	21.4	29.2	29.4	29.4	18.4	28	21.5	28.8	19.5	28.5	22.7	29.6	19.5
10	29.8	22.3	30.5	30.2	30.2	18.9	28.8	21.5	29.2	22.9	28.5	23	28.1	20.8
11	30.9	22	29.5	28.2	28.2	17.5	28	23.8	29.3	20.2	28.8	22.4	31.7	20.5
12	30.1	21	29	28.7	28.7	20.4	27.8	24	28.8	21.1	27.8	23.4	28.1	21.9
13	30.2	23.6	26.2	26.1	26.1	22.9	26.8	23.6	27.2	23.4	24.9	22.5	28.3	21.9
14	26.3	24	26	26.5	26.5	22.6	26.4	22.8	26	23	26.9	22.1	28.4	21.5
15	29.9	23.4	31	30.6	30.6	22.9	28.8	23.6	27.3	23.5	29.3	24.3	28.8	23.5
16	30.2	23	30	30.1	30.1	20.9	29.4	22.8	28.8	22.7	29	24.5	29.2	23
17	30.3	24	30.3	30	30	22.8	29.4	24.2	29.3	24.2	28.4	24.9	28.5	24.6
18	32	24.7	31	30.8	30.8	22.2	29.6	23.8	29.9	23.6	28.6	24.6	29.2	23.8
19	27.8	24.1	26.5	26.4	26.4	23.1	27	23.8	28.2	24.2	27.4	23.8	27	22.9
20	29.1	23.7	29.6	28.1	28.1	22.7	27.8	23.8	26.3	23.5	28.2	22.4	27.9	22.9
21	32.3	24.1	29.3	28.6	28.6	22.8	28.8	23.5	27.8	22.9	28.3	22.7	32	22
22	32.3	23.7	30.4	30.7	30.7	23	29.2	23.5	29.7	22.2	30	23.7	32.3	22.1
23	29.6	24.9	30	30.3	30.3	22.5	26.8	25	30	23.4	28	23.7	30.7	22.2
24	28.3	23.8	30.8	31.2	31.2	22.8	26.6	23.5	27.6	24.3	29.3	23.9	25.4	22.1
25	30.2	24.8	31.6	31.4	31.4	23	27.4	23.2	28.2	23.9	29.3	24.4	27.6	22.5
26	26	24.1	25.2	25.2	25.2	23.5	26.4	23.2	25.8	23.7	26.6	22.7	25.7	22.8
27	28.8	23.5	30.9	30.3	30.3	22.5	29	23.6	29.1	23.6	28.3	23.4	27.3	23
28	30.8	23.9	31.4	31	31	20.9	27.8	24.4	29.2	23.3	27.4	24.3	28.2	23.3
29	30.3	23.6	29	30.1	30.1	21.9	28.6	24.5	29.4	23	28.4	24	30.9	24.3
30	29.1	24	30	29.7	29.7	22.4	27.4	23.4	29	22.8	29	23.3	30.2	21.3
31	30	24	31	31	31	21.9	29.6	24.5	29.3	23.6	28.9	24	29.3	22.9
Mean	30	23.6	29.3	29.3	29.3	21.9	28.1	23.7	28.7	22.9	28.2	23.4	29.1	22.2

Day.	Sorsogon.		Bacon.		Jovellar.		Legaspi, Albay.		Guinobatan.		Polangui.		Bacacay.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31	22.5	31.3	19.8	31.8	22.6	30	22	32.3	23.1	31.2	21.6		
2	31	25.4	30.6	18.8	30.4	25.5	29.6	20.3	32.2	22.4	32.2	21.3		
3	30	23.1	28.6	20.7	28.4	24.4	28.5	23.7	30	22.3	31.8	21.4		
4	28	23.7	29.9	19.9	29	24.5	30	22	30.9	22.3	31.7	21.8		
5	27.5	23.9	26.6	22.4	27.7	23.8	25.8	23.7	32.3	20.2	29.3	22.3		
6	28.9	23.4	27.4	20.3	27.1	23	27.2	22.5	33.2	24.1	29.4	22.4		
7	28.5	22.7	28.6	15.7	28.8	22.4	27.8	20.2	29.6	23.2	29.1	21.2		
8	29.5	23.6	28.8	15	29.3	21	29.1	18.3	29.6	20.1	29.3	21.4		
9	30.3	23	29	15.3	28.8	20.6	29.3	17.2	24.3	20.1	29.2	21.9		
10	29.5	22.4	29	19.87	28.9	22	29.3	19.6	29.1	20.4	29.3	21.8		
11	29	23.6	29.6	15.9	29.6	22.9	29.8	18	27.3	23.2	28.2	20.2		
12	25.1	22.5	29	18.2	29.4	24.2	28.3	19.2	30.1	22.1	29.4	21.6		
13	27	22.7	24.9	19.9	26.2	22.7	24.5	22	29.1	22.1	28.3	22.8		
14	30.5	22.3	26.8	20.7	26.9	23.2	26.7	21.8	25.5	22.1	27.9	23.2		
15	30.5	23.8	29.6	21.3	30.8	24.4	29.8	23.3	30.1	23.3	29.9	21.4		
16	29	24.4	29.6	20.3	28.8	24.3	30.8	22.2	30.2	24.1	29.7	21.5		
17	29.5	24.9	29.8	21.7	29.9	24.4	30.3	23	30.1	20.2	29.9	21.7		
18	30	24.5	29.8	21.9	29.9	24.8	31.3	22	30	23.2	29.7	21.5		
19	29.5	24.1	28.6	22.3	29.3	22.8	30.3	23.2	30	24.1	29.2	22.6		
20	29.5	22.5	28	21	27.8	23.2	29.3	22.5	29.1	22.1	28.5	22.7		
21	30.9	22.5	29.8	20.4	29.3	22.6	30.6	21.4	27.8	20.3	29.8	22.7		
22	30.5	22.6	31	21.4	29.7	23.4	30.5	23	30.3	23.2	29.7	22.3		
23	29.5	24.4	30.1	21.8	30.3	23.9	29.1	22.7	31.4	24.1	29.1	22.9		
24	30.5	23.5	28.4	21.5	28	24.1	27.8	23.8	29.1	24.1	29.7	22.7		
25	30.5	23.9	28.4	23.2	27	23.9	28.1	22.9	27.3	23.2	29.2	22.5		
26	29.6	23.7	26.6	22.4	26.3	23.4	26.6	22.6	29.2	23.2	29.1	22.7		
27	28.9	23.6	28.4	21.4	27.8	23	28.3	23.1	29.3	24.1	29	22.5		
28	30.5	23.5	29	18.3	28.7	23.6	29.3	19.7	30	21.2	29.2	22.9		
29	29.5	24.5	29.6	17.9	29.6	24.1	29.3	18.9	28.2	20.7	29.3	22.7		
30	29.5	23.8	27.6	17.8	28.8	24.1	27.1	19.1	29.2	20.6	29.1	22.5		
31	30.5	22.9	28.4	19.7	29.9	23.3	29.8	21.6	25.3	20.3	29.2	22.4		
Mean	29.5	23.5	28.8	19.9	28.8	23.4	28.9	21.5	29.5	22.3	29.5	22.1		

Maximum and minimum temperatures at the stations of the Weather Bureau, December, 1921—Ctd.

Day.	Bato.		Tabaco.		Sumay (Guam), Agaña.		Iriga.		Calapan.		Tiwi.		Virac.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.5	22.9	31.5	21.5	29.8	25.5	31.1	21	30.5	22	31.8	22.8	30.7	21
2	31.6	22.7	31.7	22.5	28.7	26	31.3	20	30.3	22.1	32.9	23.7	32.1	20.6
3	31.5	23.4	31.8	23.5	26.8	23.5	31	22	30.5	24	30.6	22.7	29.8	22.2
4	30.1	23	29.2	23.2	29.8	25.4	31.3	22.2	28	24.5	31.3	23.2	31.5	22.5
5	30.1	23.5	29.3	23.4	29.5	25	30	22.1	30	24	31.6	23.2	29.5	22.3
6	28.3	23	27.2	22.2	30.8	25	28.6	21.7	28.5	23	32.4	24.4	28.6	21
7	27.8	20.7	26.4	20	30.5	24.5	29.1	19.2	28	20.5	32.7	24.5	30	20
8	27.5	19.3	28.5	18.2	30.3	25	30.2	17.6	28	18	33.4	25.1	31.4	18.7
9	28.9	18.5	29.6	18.5	30.4	24.2	30.3	16.9	28	19.5	33.2	25.2	30.7	18.2
10	29.3	21.1	29.1	20	30.2	24.4	29.6	21	28.5	22	32.5	24.4	31	19.2
11	28.8	19.8	28.5	20.2	29.2	24.6	30.3	18.2	28	20.5	30.7	22.6	31.2	19
12	30.3	20.4	30	21.3	28.2	25	29.6	19.9	27.5	20.5	30.5	22.2	30.5	20.5
13	29.1	22.4	29.5	22.8	29.6	25	26.5	21.2	28	22.5	30.2	22	27.5	21.5
14	29.8	22.6	25.3	21.5	29	25.6	28.6	21.1	27	22.5	30.1	21.6	28.3	23
15	28.1	23.8	26.2	23.3	28.7	24.8	31.4	23.1	29	22.5	30.9	22.6	30.7	23
16	30.4	22.7	30.2	23.1	29.3	26	32.3	22.8	29	23	31.9	21.2	31	22.7
17	30.3	22.6	30	22.4	29.3	26	32.6	22.2	29.5	24	31.8	23.7	30.6	22.2
18	30.3	22.2	30.5	22.1	28.7	25.8	31.3	23.3	29.5	23.5	32.7	23.5	32.2	23
19	29.3	22.9	30.9	22.3	29.7	25	31.6	22.1	29.5	23.5	32.7	23.4	30.9	22.8
20	30.1	22.8	29.4	22.7	28.7	25.5	28.6	21	29	24.5	30.6	23.3	29.6	22.6
21	29.3	23.2	27	21.8	29.1	24	30.4	21.2	29.5	24	30.3	22.2	31	22.5
22	31.2	23.5	30.4	22.2	29.8	25.8	31.4	21.5	30.5	23.5	30.1	22.1	31.6	22.3
23	30.5	23.5	30.3	22.4	29.5	25.2	29	22	30.5	24.5	29.8	22	31	22.4
24	29.3	23.7	28.5	23.3	29.7	23.8	29.8	23.1	30	22.8	30.8	23.3	28	22
25	29.2	23.6	28	22	28.6	24.7	32.6	22.1	26.1	23	30.9	23.5	28.3	22
26	28.6	23.4	27	22	29.2	24.6	31.3	22	27.5	23.5	31.5	24.1	29.4	21.7
27	28.3	22.8	26	22.1	27.7	24.9	30.4	21.2	27.5	24.5	32.7	24.4	30.3	21.5
28	29.2	21.4	28.9	21.3	28.7	24.1	30.3	20.1	29	23	31.3	24	29.5	20.5
29	28.7	21.6	28.2	21.5	28.7	24	30.4	19	29	23	31.2	23.2	30.8	20.9
30	29.6	21.6	30	21.1	28.7	25	28.5	19.2	28.5	22	30.5	22.2	29.9	21.7
31	27.5	22.6	27	21.5	29.7	25	30.4	20.1	29.5	22	30.7	23.3	30.7	21.5
Mean	29.5	22.3	28.9	21.8	29.2	24.9	30.3	21	28.8	22.7	31.4	23.2	30.3	21.4

Day.	Naga, Cama- rines Sur.		Tigaon.		Baras.		Libmanan.		Batangas.		Ragay.		Calatagan.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum. <sup>a</sup>
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.9	22.9	31.7	21	30	24.8	22.3	31.1	22.4	30.8 <sup>a</sup>	22.1	32	19.2	
2	30.9	21.4	31.5	20.5	29.9	24.9	23.1	31.9	21.7	31.2	21.2	31.7	20.3	
3	29.9	23.5	30.1	22.6	28.6	24.2	23.4	32	21.6	22.2	22.3	31.7	22.7	
4	30	23.5	28.2	22.5	27.1	24.5	23.2	26.7	23	29.5	23	30.2	22.6	
5	27.4	23.1	27.2	22.9	27.8	24.6	23.3	30.6	22.1	27.4	23.4	30.2	20.2	
6	28.4	22.7	27.6	22	27.1	23.1	22.9	29.4	19.8	27.9	21.3	29.2	21	
7	28.1	19.9	27.5	19.5	27	22	19.2	28.7	17.8	27.8	16.5	29.2	18.7	
8	28.8	20.2	29.8	19.3	26.8	21.2	19.9	29	17	28.2	18.2	30.5	16.1	
9	28.8	20.1	28.6	18.7	26.6	21.4	20.2	29.5	17.8	29.1	19.2	29.5	18	
10	29.1	20.5	29.6	19.4	27.1	21.2	20.4	29.1	18.3	28.2	18.1	29.4	20	
11	29.2	19.1	30.5	18.8	26.7	22.1	19.3	30	18	29	18	30	20.2	
12	28.7	21.4	29.3	19.7	27.2	24	22.1	29	19	28.4	18.9	28.6	20	
13	24.5	22.4	23.9	22.1	27	23.9	22.2	29.1	19	25.3	22.4	29.3	20.7	
14	26.6	22.6	27	21.8	27.9	23.3	22.2	29.3	19.5	27.2	21.9	29.5	20.8	
15	31.6	23.5	30.5	23.3	27	24.8	23.6	31.1	19.5	30.7	23.4	32.3	21.9	
16	30.5	21.7	30.1	21.5	29	24.2	23.3	31.2	22	29.7	24.3	30.2	21.1	
17	30.7	21	31.2	21.3	28.5	24	23.2	31	22.2	29.4	21.3	30.9	22.2	
18	32	21	30.6	21	28.8	25.2	23.3	31.3	22.5	30	21.4	31.5	22.2	
19	30.3	23	27.7	22.5	29.7	25.1	22.6	31.5	22.1	28.2	21.3	30.4	20.9	
20	26.9	23.1	26.7	22.8	28.3	24	22.3	31	21.9	28.6	22.6	31.1	22.2	
21	32.4	22	29.4	21.5	28.4	23.4	22	31.4	21.9	30.1	23.6	30.8	20.7	
22	31.9	23.5	31.1	21.9	28.4	25.6	22	31.4	23.3	30.4	23.6	31	20.5	
23	25.8	24.1	27.2	23.2	29.3	25	23.6	29	23.3	28.6	23.6	30.4	22.1	
24	29.5	23.7	29.2	23.2	27.1	24.8	23.4	30	21.2	28.9	23.8	30.7	21.9	
25	28.3	23.4	26.6	23	27.2	24.1	23.2	27.8	22.5	27	23.9	28.2	22.5	
26	27	23	25	22.7	26.3	23.2	22.9	28	23	27.1	23	28.3	22.2	
27	28.5	22.6	28.2	21.9	26.1	23.2	22.9	29	23	30	22.4	30	21.4	
28	29	20	28.5	20.3	26.9	23.9	22.1	31	22	28.4	20.5	30.5	21	
29	29.5	19.5	30	19.1	26.8	23.2	21.9	30	20	28.9	20.1	31.2	21.1	
30	28.8	22.5	26.6	20.9	27.3	33.8	23.1	30.5	21	28.8	20.7	30.3	20.5	
31	30.3	22	30.1	21	27.1	23.4	22.1	31.5	20	30.6	20.9	30.5	19.5	
Mean	29.2	22	28.7	21.4	27.7	23.7	22.3	30.1	20.9	28.8	21.3	30.3	20.8	

<sup>a</sup> These minimum temperatures seem to be too low.

Maximum and minimum temperatures at the stations of the Weather Bureau, December, 1921—Ctd.

Day.	Balayan.		Lipa.		Lucena.		Atimonan.		Nasugbu.		Ambulong, Tanauan, Batangas.		Daet.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum. <sup>a</sup>	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
1.....	30	22	30.7	20	30.5	20.5	29.6	23.5	31.5	21.2	32.7	22.7	29.6	22.3
2.....	32	22	29.7	21.3	29.9	21.7	29.6	24.8	32	20.5	31.2	23.1	29.2	23.1
3.....	32	22.5	29.3	21	29.5	21.6	28.9	24.6	31.8	22	30.4	23.2	29.1	23.3
4.....	30	22	25.4	21.1	26.5	21.7	26.3	23.5	29.6	22.1	26.2	24.1	26.5	22.8
5.....	31	21.5	27.6	20	28.1	21.6	27.6	24.2	31.7	21.5	29	22.6	28.2	23.2
6.....	29	20	26.7	19.8	27	19.1	26.8	24.4	30.2	20.2	27.8	19	28.1	23.3
7.....	28	21	27.6	18.9	26.5	17	25.9	22.9	29.5	19	27.7	17.3	27.8	22.4
8.....	28.5	22	28.7	17.4	26.5	14.9	26.5	20.9	29.8	17	28.2	17.2	28.3	20.9
9.....	29	20	27.4	17.7	26.4	16.3	26.6	21.7	30	17	28.5	19.2	27.6	20.5
10.....	29	20	27.5	18.1	27	18.5	26.3	22.7	31	20.7	27.9	21.2	28.1	21.7
11.....	30	22	28.7	18.6	27.5	18.8	26.4	23.8	31.7	22	28.8	20.6	28	19.1
12.....	29	23	28.1	19.7	26.9	18.9	26.7	22.5	30	20.8	27.4	21	28	22.4
13.....	29.5	22	27.5	18.4	27	19.5	26.2	23.6	30	21	28	24	26	23
14.....	30.5	21	29.4	19.6	27	19.4	25.9	22.8	27.7	21.7	27.5	23.1	27.4	22.3
15.....	31.3	22	29.4	20	29.2	20.6	29.1	24.3	25.8	23.7	30.3	24.1	29.1	23.6
16.....	30.2	23	28	20.4	29.2	19.9	29.4	23.9	32	23	30.2	23.8	28.8	23.6
17.....	31	19.5?	29.7	21	28.4	20.5	27.6	24.2	31.9	24	30.5	23.8	28.8	23.6
18.....	29	23	28.6	21.1	28.5	20.5	28.3	23.7	33	23	30.3	23	29.1	24.1
19.....	31	20?	28.3	20	28.5	21.3	27.1	24.4	32	23	28.4	22.9	28.6	23.8
20.....	32	24	30	22	28	20.6	27.4	24.1	32	22.8	30.2	23.5	27.5	22.9
21.....	29.5	24	29	21	29	20.6	26.5	23.3	32	23	30.2	23.1	30.2	23
22.....	30	21	29.8	21.3	28.7	20.4	26.8	23.2	31	24.6	31	22.9	29.5	22.8
23.....	31	24	27	20.6	27.2	21.1	26.7	24	32	23	29.4	24.3	27.4	23.3
24.....	30	22.5	27.6	20	27.8	21.1	27.1	23.7	31.6	22.7	29.9	23.7	28.3	23.3
25.....	30.2	21.5	28.7	21	25	21	25.8	23	32	23.6	26.7	23.5	26.3	22.9
26.....	28.5	20.3	28.6	21.1	25.5	20.7	26.1	22.6	32	24	26.2	22.5	27.5	22.9
27.....	29	22	27.7	20.4	27.5	21.3	26.9	23.7	31	22.1	28.8	22.4	27.3	23.2
28.....	30	20	29.6	19.6	28	20.5	27.4	23.4	31.6	23.2	29.9	21.8	27.8	22.8
29.....	30.5	20	29.5	21	28	20.7	27.3	22.9	32.6	21.7	31	21.1	28.1	22.8
30.....	30	20.3	28	20.1	28	20.7	26.4	23.8	31.6	21.7	29.2	21.2	28	23.3
31.....	31	21	30	20	30	19.8	28.4	23.5	31.7	20	30.2	22.2	29.5	21.9
Mean.....	30.1	21.6	28.5	20.1	27.8	20	27.2	23.5	31	21.8	29.2	22.2	28.2	22.7

Day.	Mendez Nuñez.		Alfonso.		Indang.		Canluban, Calamba.		Silang.		Maragondon.		Paracale.	
	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.
1.....	28.5	19.5	28.7	19.2	30.1	20.9	31.2	20.8	29.1	19.5	30.1	21.8	29.8	23.8
2.....	25.5	20.5	28	20.7	28.3	20.4	30.1	20.6	29.8	19.1	29.6	20.6	29	23
3.....	25.5	20.5	27.7	21.2	27.8	20.4	29.9	21.4	27.8	19	30	22.4	29.2	23.8
4.....	24.5	20.5	24.3	21	24.2	21.6	27.4	21.9	28	19.2	26.2	21.7	29	23.2
5.....	25.5	20.5	26	20.8	26.5	21.8	28.4	22	27.5	19	29.5	21.8	28.5	23.8
6.....	24.5	18.5	25	19.8	25.6	19.8	27.5	20.1	26	18.7	29.2	19	28.7	23.9
7.....	25	17	24.6	17.8	25.9	17.3	27.2	16.8	26.7	18	28.9	22.4	28.8	24
8.....	25.5	15.5	25.4	15	26.4	16.1	27.8	15.5	26.3	17	27.8	16.3	29	24.1
9.....	23.5	17	25.9	17.6	26.4	18.5	27.4	17	26.4	17.1	27	15.9	29.5	24.5
10.....	24.5	17.5	25.7	18.2	26	18.5	28.2	19.9	27.3	16.7	28.1	17.7	30	24.8
11.....	25	17	25.5	18.2	26.7	18.8	28.4	18.8	26.4	17	28.7	17.7	29.9	24.5
12.....	23	17.5	24.6	17.8	25.4	18.3	28.1	18	26	17.1	29	17.1	30	24.1
13.....	24	17.5	25	18.8	26.3	19.5	27.6	20	26.2	17.5	28	18.2	31	24.5
14.....	22.5	18.5	24	19.6	25.4	20.1	26.4	20.2	26.8	18.8	27.4	20.2	30.5	24.5
15.....	26	21	27.3	21.2	27.9	21.8	29	21.8	25.8	18	30.5	20.3	30.7	24.8
16.....	25	20.5	26.1	21.2	27.5	21.5	28.1	22	25.7	18.4	30.2	21.3	30.9	24.7
17.....	25	20	27.8	21.4	27.9	21.8	29	21.8	25.6	18.1	30	21.5	31	24.9
18.....	27	19.5	27.3	20.7	28.3	21.2	29.4	21.4	26.4	18	30	18.1	31.8	25
19.....	26	18.5	26.3	19.3	27.9	19.4	29.1	19.9	26.3	17.3	29.7	19.7	30	24.2
20.....	25	20	27.3	20.1	28.4	20	29.6	20.5	26.8	17.3	30.6	20.4	30.2	24.5
21.....	26	19.5	26.8	20.2	27.3	20.8	29.8	20.2	25	17.6	28.4	21.3	30.2	24.1
22.....	26.5	20	28.3	20	29	20.6	29.9	21	25.7	17.4	30	20.6	30	24.5
23.....	25	20	26.9	21.6	27.8	22.4	29	21.8	25.6	18	30.3	22.1	30.3	24.8
24.....	25	19.5	26.9	20.4	27.5	20.9	28.9	21.3	25.1	18.5	30.2	21.3	30.1	24.5
25.....	25	15.5	25.3	20.5	26.2	21.4	27	21.9	26	18.5	28.9	20.2	30	24.8
26.....	24.5	18.5	25.3	20.1	25.5	20.8	28.2	21.4	26	18	29.1	21.2	31	25
27.....	24	19	26.4	19.6	27.3	20.3	28.6	21.8	25.3	17.4	30.2	21.7	31.2	24.8
28.....	26	18	27.2	19.2	28.3	19.9	29.4	19.2	25	17.8	29.1	18.1	31	25
29.....	25	17.5	26.5	19.5	27.4	19.8	29.2	19	24.6	16.7	29.1	19.6	31.1	25.1
30.....	25	17	26.4	19.2	27.4	20	28.9	20.6	24.3	16.8	29.5	20.6	31.3	25.2
31.....	26	19.5	27.8	19.8	29.1	20.7	29.6	21.2	25	16	29.4	20	31.8	25.2
Mean.....	25.1	18.9	26.3	19.7	27.2	20.2	28.7	20.3	26.3	17.9	29.2	20.1	30.2	24.4

<sup>a</sup> These minimum temperatures seem to be too low.

Maximum and minimum temperatures at the stations of the Weather Bureau, December, 1921—Ctd.

Day.	Santa Cruz, Laguna.		Buenavista, General Trias.		Cavite Naval Station, Cavite.		Manila.		Antipolo.		Balanga.		Malolos.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.7	21.9	30.5	21.2	32.5	23.8	31.5	22.6	31.6	21.7	32.3	22.7	33.1	22.8
2	30.8	22	29.7	20.2	32.2	23	31	21.9	32.5	20.5	32	22.3	32.3	23.4
3	31.1	22.5	29.7	20.9	32	22.6	31.4	22.5	31.8	21	31.6	23	31.8	22.8
4	27.1	22.5	26.2	20.9	27.5	22.8	27.2	23	26.4	21.5	29.7	23	31.5	22.5
5	28.8	23.7	28.5	20.7	30	21.9	29.2	20.7	29.6	20.7	30.7	21.5	31.5	21.2
6	28.1	22	27.7	18.2	30.5	21.2	29.6	19.3	30	18.5	29.6	18.5	31.6	18.2
7	28	18.7	27.4	16.7	29.7	20.7	28.8	18.5	29.6	17	29.6	18.2		18.3
8	27.6	17	28.2	16.2	30.4	24.1	29.4	17.4	28.2	16.6	30	18.2		18.1
9	27.9	19	27.7	17.7	27.5	20.1	27.2	18.5	27.3	17.3	29.2	18.1	27.2	17.5
10	28.5	19	27.9	17.2	27.8	20.2	29.7	19.4	30	18.2	30.1	19	30.6	17.5
11	28.5	19	28.2	17.2	30.5	20	29.4	17.8	30.2	17	30.1	17.6	30.6	17.5
12	28.1	20.2	27.7	17.7	29.5	20.5	28.9	20.2	29	18.2	30.5	20	31.2	19.6
13	27.6	21	27.2	18.2	29.5	21.5	28.6	20.1	29.7	19	28.8	19.7	28.5	19
14	27	22.3	26.7	19.7	29.7	21	28.2	21.7	28.8	20.2	28.1	21.2	30	19.3
15	30.3	24	29.5	20.7	31.5	22.2	32.3	21.4	32.2	21.2	31.5	21.2	33	19.9
16	30.5	23.5	29.5	16.2?	32	21.6	32.2	20	31.9	20.2	31.8	20	32.5	20.6
17	29.8	23.5	29.7	20.2	32	22.1	32.9	21.4	32.5	20.6	32.6	21.7	31.5	20.5
18	30.2	21.6	29.3	19.2	32	21.8	32.4	20.8	32.4	20	32.1	22.6	31	20.3
19	28.1	21.9	29.3	18.7	30	21.8	31.4	20.1	31.8	19.2	30.8	20.5	31.8	19
20	29.2	23	29.7	19.7	33.5	22.4	32.9	22	32.2	20.2	31.3	22	32.8	20.6
21	29.1	22	29.7	19.2	30.5	23	30.9	22.7	30.5	20.7	31.6	21.9	34	21.5
22	29.7	23.1	29.7	20.4	32.5	23.6	32.3	23.1	31.4	21.4	32.3	22	34.4	23
23	28.7	23.8	29.7	22.3	30.6	23.2	30.4	22.6	31.7	21.7	31.8	23.9	31.9	23
24	29	23.3	29.3	19.6	31	22.5	30.3	21	31.8	19.8	30.3	21	31.1	19.8
25	26.4	23	29.2	20.7	30	23	31.4	22	32.2	21.8	29.3	22.2	30	21.4
26	27.7	22.5	29.9	20.3	30	22.6	29.4	21.7	29.1	20.8	28.6	22	29	21.9
27	28.5	22.4	28	20.5	31.1	22.3	31.4	20.6	30.7	20	31	22.8	32.4	21.2
28	28.8	21.3	29.5	17.7	30.5	20.9	30	19	32.5	18.4	30.8	19	31?	18.2
29	29.7	21	29.5	20.7	31	23.5	29.9	19.8	30.5	18.8	30.8	19.7	30.5	19
30	28.8	21	29.5	19.8	31	22	29.5	19.4	30.8	17.7	30.8	19.6	31	18.8
31	30.9	21.3	29.9	18.8	32	23	31.4	19.8	31.5	18.8	31.1	19.5	31.5	18.3
Mean	28.9	21.7	28.8	19.3	30.7	22.1	30.4	20.7	30.7	19.6	30.7	20.8	31.4	20.2

Day.	San Fernando, Pampanga.		San Isidro, Nueva Ecija.		Iba.		Concepcion, Tarlac.		O'Donnell, Capas, Tarlac.		Tarlac.		Camiling.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.*	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31?		31.5	22.5	30.4	21.5	32.8	19.7	30.9	19.2	32.8	21.7	33.5	22.5
2	32.5		31.7	22.4	30.5	21.6	33.4	20.1	31.4	20.3	32.2	21.3	33.3	22
3	31.5		31.4	22.5	30.9	21.5	32.8	18.7	32.1	20.4	32	20.7	34	21.5
4	32		31	22.9	31.1	23.6	32.4	20.7	31.1	20.2	32.8	21.4	33	21.8
5	29.5		29.6	21.4	31.2	21.9	31.9	19.7	30.3	19.2	31.4	20.3	34	21.7
6			29.4	18.5	31.2	22.1	30.6	16.7	30.5	16.3	30.4	17.8	33.5	20
7			29.4	17.9	29.2	21.3	30.4	15.4	30.1	17	30.6	17	34.2	19.5
8			29.3	18.4	29	17.5	30.1	15.9	29.8	16.2	31	17.8	34	19.8
9			29.2	18	30.1	17.9	30.1	16	29.9	16.3	28.8	16.9	34	18.5
10	28.2?		29.3	17	30	21	29.8	16.1	30.2	16.4	31	16.6	34.5	18.5
11	30		30	17	30	19.5	31.4	16.2	29.7	16.3	31.4	16.2	34	19
12	29		29.9	19.5	31.5	18.5	31.4	17.1	30.1	17.8	31.4	17.8	33.5	19
13	28		28.7	19	29.1	18.1	29.9	15.2	30	17.5	30.6	17.2	33	18.5
14	28.5		27.1	21.1	29.7	21.7	28	16.7	30.1	18.1	28	17.6	33	19.5
15	31		30.4	22.3	32	22.1	31.7	19.3	30.1	18.4	31	20.9	33	21
16	31.5		31	20	33.6	22.8	33.2	18.2	30.1	18.3	32.5	19.9	32.5	21
17	31		31.4	21	31.4	21.5	33.5	16.9	31.9	18.5	32	19.7	32.1	21.6
18	32		30.5	20.4	31	22.9	33.1	15.2	30.8	20	33.4	18.2	34.5	21
19	31		31.4	18.4	31.4	18.5	32.8	17.6	31.2	16.7	32	17.9	32.4	20
20	32		31.6	21	30.5	21	33	18.1	31.7	17.4	32.9	19.8	33.4	20
21	31.5		32.8	20.6	30.3	19.5	32.5	20.7	31.8	17.6	34	19.9	33.6	20.8
22	31		31.9	22.8	31.2	21.6	31.9	22.3	32.2	17.9	32	21.5	33.4	20
23	30.5		30.6	22.7	30	23	32.4	18.2	30.7	18.2	31.2	22.3	33.3	21.5
24	31		30.9	19.8	31.1	22.6	32.5	18.7	30.5	18.9	32.6	19.2	33.3	21.8
25	30.5		31.8	19.6	30.6	22.4	31.3	18.4	31.3	18.9	31	20.8	32.5	21.5
26	29.5		30.9	20.4	31	22	30.8	20.6	31.7	19.6	32.4	22.2	33	20
27	30		29.4	20	32.5	22.9	31	17.7	31.8	19.7	32.2	21.6	32	21.5
28	31		31.1	17.9	30	20	32.5	18.4	32	20.2	31.8	17.4	33.5	19.5
29	31		30.6	19.2	30.5	19.1	32.1	17.1	32.2	21.4	31.4	18.6	33	19.5
30	30.5		30.4	18.5	31	19.4	32.2	18	30.2	20.5	32	18.9	33	19.5
31	30.5		31	19.4	29.8	18.8	32.4	15.7	30.3	19	31.8	17.8	32.8	21
Mean	30.5		30.5	20.1	30.7	20.9	31.7	17.9	30.9	18.5	31.6	19.3	33.3	20.4

\* These maximum temperatures seem to be too high.

Maximum and minimum temperatures at the stations of the Weather Bureau, December, 1921—Ctd.

Day.	Baler.		Dagupan.		Rosario, La Union.		Tubao.		Itogon.		Bolinao.		Baguio.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	31.6	22	30.9	22.8	31.9	20.5	32.3	20.9	31.2	18.2	29.7	21.5	23.7	15.4
2	30.5	22.1	32.7	23.1	32	20.5	32.3	21.6	31.8	17.8	30.6	22.6	23.6	15.2
3	30	22.9	34.2	23	32.5	26.4	33.9	20.6	31.8	17.5	30.6	23.3	24.2	15.2
4	29.5	22.3	34.5	23.2	32.5	20.3	33.8	23.1	31.6	18.7	31.6	23.2	24.4	15.7
5	29.2	23.9	32.9	22	32.6	19	33.7	21.3	30.5	18.5	31.2	22.4	23.7	13.6
6	30.5	18.3	32.2	21.4	31.6	18.5	31.9	19.2	29.4	14.3	30.7	22	21.8	11.7
7	31.5	17.7	30.9	19.4	30.8	17.5	30.3	17.3	28.2	14.5	30.2	20.6	21	12
8	29	17.5	30.7	21	30.3	16.5	30.3	17.4	28.7	14.1	28.9	24.7	19.3	11.5
9	28.8	18.8	31.3	19	29.9	17.1	30.5	17.4	28	13.7	29.5	20.4	19.6	11.3
10	30.4	17.4	31.9	19	30	17.5	31.1	18.3	29.5	13.6	30.3	20.3	22.7	10.8
11	29.9	17.5	31.8	18.4	30.2	17.6	31.1	17.3	28.7	13.3	29.6	19.2	21	11.8
12	29.9	20.3	31.7	19.3	30.1	17.3	31.2	17.9	29.6	13.7	30	20.4	21.2	10.8
13	28.1	20.3	30.3	20.2	30.2	17.2	30.5	17.5	28.9	14.5	29.7	19.7	22.9	11.7
14	27.8	20.9	31.3	21.1	28.5	17.3	31.7	20.6	28.9	18.2	30.5	21.5	23.7	15
15	28.5	22.8	34.4	21.5	33.7	19.5	33.2	20.3	30.3	19.2	30.8	22	22.6	15
16	33	24	34.6	22.1	33.8	19.5	33.9	17.6	31.1	15.9	31.6	22.3	22.7	15.7
17	31.6	23.9	34.2	21	33.5	19.5	33.7	18.9	32.3	15.9	32.1	20.6	25.8	15.7
18	29.5	23.3	34.1	21.9	32.7	19.3	34.2	18.3	32.1	16.5	32.8	21.6	25.2	14.7
19	34	19.8	32	20	32.6	19.1	32.5	17.8	32.2	15.5	30.8	20.6	24.9	14
20	29.9	22	32.7	21.5	32.4	19.3	32.7	19.6	31.7	16.2	30.9	21.5	24.4	15
21	29.8	21.1	31.2	20.9	32.2	19	30	20.6	31.9	14.8	30.2	20.3	23.2	14.2
22	32.5	22.3	31.3	23.5	32	19.1	32.8	19.2	31.6	19.6	29.7	26.3	24.4	15.8
23	33	23	32	22.5	31.7	19.2	32.9	21.7	30.1	17.3	32	24.5	23.6	13.7
24	29	21.9	32.5	20.7	32.3	18.6	31.9	19.1	31.2	15.2	30.5	21.2	23.6	13
25	29	22.6	33.6	20.9	32.2	18.3	32.3	19.4	30.1	16.2	31.5	21.2	22.2	13.8
26	29	23.1	33.3	21.3	32.6	18.3	32.1	18.9	30.2	16.3	32.7	21.2	21.6	13.5
27	31.6	21.7	32.4	21.9	32.9	18.2	32.9	20.3	30.1	16.9	32	22.3	23.2	13.6
28	31.6	20.5	32.1	20	31.2	17.6	32.1	19.3	30.7	16.9	30.7	22	21.3	12.4
29	29.1	21.5	31.3	20.5	31.6	18.8	32	19	30	16	29.1	23.6	21.4	13.6
30	32.3	21.3	33.1	20.8	31.9	18.2	32.5	19.1	30.1	15.2	31.2	22.9	22.6	13.1
31	28.5	21.8	31.7	20	32.1	17.6	32.7	18	30.5	15	31.4	20.6	24.2	15
Mean	30.2	21.2	32.4	21.1	31.8	18.6	32.3	19.3	30.4	16.1	30.7	21.8	22.9	13.7

Day.	Bokod.		Naguilian, La Union.		Kapangan.		Atok.		San Fernando, La Union.		Echague.		Balaoan.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
1	30.7	17.4	31.7	21	25	17	23.2	14.3	31.4	21.6	31.5	23.6	30.5	21.6
2	30.7	16.5	32	21.2	25	17.5	21.5	14.2	31	22	29.1	22.5	30.6	21.9
3	28.2	17.4	32.5	20.8	25?	16.5	24.3	14.2	31.9	20.2	26	22.1	30.9	20.8
4	29.3	19.3	33	22	24	18	24	15	31.8	22.8	28.1	21.9	32.1	21.7
5	29.4	15.3	31.1	21	23.3	16.5	21.8	14.5	31	21.8	26.5	21.1	31.3	20.6
6	27	12.2	31	20	24	15.5	21	11.2	30.3	20.3	27.5	18.8	30.7	19.3
7	26.7	11.5	29.1	18.3	23	16?	18.7	9.8	29.5	18.8	28	18.1	29.3	18
8	26.8	12.5	29.7	17.1	21.3	14	19.2	10.2	29.9	17.8	28.1	18.5	28.4?	17.3
9	26.6	12.5	29.6	17.5	21	13.5	20	11.3	29.3	18.3	24.8	18.8	29.4	18
10	27.2	13	30.3	17.5	20.5	14	20.2	9.9	29.5	19.8	25.4	17.9	28.1	19.8
11	27.8	11.1	30	18	22.5	13.3	21.2	11	29.5	18.8	27.5	18.9	29.4	18
12	26.6	12.4	30.2	18.2	21.3	13.5	20.9	11	29.7	19.2	28.2	19.6	29.3	18
13	25.4	11	30	17.2	23.5	13.2	22.3	11	29.4	18.5	24	18.3	30	17.4
14	28.2	12.2	30.5	21	24	13.1	23.4	15.1	29.8	20.7	24.5	20.2	29.6	20.3
15	28.2	19.7	33	20.5	25	17	25.2	16	31	21.3	28.6	21.2	30.3	21.3
16	29.5	17.3	32.6	17.3	25	17	25.3	14	31	19.7	31.4	21.3	30.8	19.2
17	30.7	17	33	17	25	16	24.9	14	30.8	19.8	30.2	20.6	31.2	18.2
18	31	18.2	33	18.2	24	16.1	26.4	14.1	31.5	20.2	30.4	21.8	32.1	19
19	30	18.4	32	18.4	25	14	24.2	13.5	30.5	19.5	29.4	20.1	31.2	19.5
20	30.4	19.5	31.8	19.5	25	14.5	24.2	13.5	30.5	20.3	29.4	21.4	30.6	19.2
21	31.9	19.1	31.3	19.1	25	14.5	23.9	14	30.5	20.2	27.4	20.2	30.8	19.3
22	30.5	22.8	33.8	22.8	24.5	15	21.9	15.1	30.8	23	28	22.4	30.3	22.5
23	28.6	22.8	32.5	22.8	24	16	22.9	14	31.2	22.6	28.3	20	31.4	22.1
24	29.2	19.7	31.1	19.7	23	14.5	23.8	13.5	30.6	20.4	27.6	20.6	31	19.8
25	28.7	19.2	32.1	19.2	25	16.5	22.4	14.5	30.7	20.6	27	20	30	19.4
26	28.9	18.4	31.1	18.4	24	16.5	24.4	14.5	30.3	20	27.1	19.6	30.5	19.7
27	28.2	20.2	31.6	20.2	25	17	22	11.8	30.2	21	27	19.2	29.9	22
28	28	20.4	31.4	20.4	24	16	22.4	12	30	20.2	29	18.1	29.4	20.1
29	29.6	19	31.4	19	24	16	20.4	12.4	30	19	27.5	20.2	30	19.1
30	29.7	19.3	32.1	19.3	25.3	16.9	21	12.2	30.5	20.6	29.1	20.5	29.5	19.9
31	28.3	18.4	31.5	18.4	25.5	17	23.6	14.2	30.6	19.3	31	19.8	29.8	19.2
Mean	28.8	19.4	31.5	19.4	23.9	15.6	22.6	13.2	30.5	20.3	28	20.2	30.3	19.7

Maximum and minimum temperatures at the stations of the Weather Bureau, December, 1921—Ctd.

Day.	Tagudin.		Candon.		Vigan.		Bangued.		Tuguegarao.		Sinait.		Batac.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.*	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	31.6	22	31.6	21	30.7	21.8	35.5	21.2	31.2	23.2	32.6	22.3	31.9	22.3
2	31.3	22.1	31.7	22	30	21.6	34.1	21.3	29.3	22.5	33.1	21.5	31.8	20.5
3	32	22	31.4	21	33.1	22.2	33.1	24.5	28.2	22.5	33.3	22.5	30.9	20.9
4	32	23	31.4	20.4	31.8	21.7	33.5	23.7	29.5	22.2	33.5	21.9	31.6	19.9
5	31.3	21.2	32.6	21.1	32.4	21.4	31.8	23.1	28.4	19.6	32.2	20.1	30.9	20.6
6	31.1	20	30.2	20	29.9	22.5	32.4	21.7	27.8	18.9	33.2	21.1	31	20.5
7	30	19	30.4	17.2	29.4	20.6	33.1	16.7	28.4	17.4	31.8	22.8	30.9	19.2
8	30.6	18	30.4	19.1	30.3	19.5	31.4	19.9	27.2	18.5	32.8	22	31	20.6
9	29	18.4	29.8	20	29.8	20.6	29.7	21.7	24.7	18	33.5	21.8	28.4	16.9
10	30	18.2	30.5	18.2	29.4	21.5	32.4	19.2	27.5	16.1	32	17.5	---	16
11	30.4	20	30.6	18.4	29.9	20.2	33.5	16.9	27.2	19.6	33	19	31.9	16.9
12	30.6	19.8	32.6	18	29.8	20	32.7	17	29.6	18.4	32.1	18	31	15.2
13	30.1	19	30.7	17.2	30.5	19.4	32.7	---	26.8	17.4	33.5	22	31	15
14	30.3	22	31.6	21	30.9	22.8	33.5	22.9	28.9	21.2	32.5	22.5	32.2	15.7
15	31.1	23	33.4	22.2	31.6	24	34.5	24.1	24.7	21	31.6	20.8	33	20.6
16	31.3	21	30.8	19	31.6	21.9	37.3	18.6	31.2	20.6	32.7	22.7	---	19
17	31.3	21	30.7	18.2	31.1	21	36.1	18.8	31.5	21.5	33.6	22.4	33.2	19
18	31.3	20.6	30.7	18.1	32.4	21.4	36.7	19.3	30	21	33.4	22.8	33	20.2
19	30.5	21.4	30.8	19.2	29.6	20.6	36.4	---	28.6	20.3	31.8	20.1	31.4	19
20	30.8	21.1	30.8	19.5	30.9	21	35.8	---	27.8	20.3	32.3	20.6	31.5	19.7
21	30.8	21	31.7	19.3	30.4	21.1	35.3	---	30.7	19.8	31.4	19.6	31	19.2
22	31.6	21	32.5	19.3	30.3	22.3	34.4	---	27	21.9	32.5	18.1	32.5	17.2
23	31.1	20.6	32.8	22	31.5	19.9	33.2	22.1	29.4	20.7	31.6	18.6	32.4	17.9
24	31.2	21.2	31.5	19	30.8	21.4	34	21.9?	27.2	20.2	33	20.8	32.5	16.9
25	30.3	20.6	32.5	20.4	33.8	23.6	33.4	22.5	25.9	19.6	32.6	22.3	32.9	16.6
26	30.1	21	30.4	19.2	32.7	24.6	32	22.9	28.1	19.8	31.8	22.4	31.5	16.5
27	30.1	21.2	30.8	19.2	29.9	22.2	34.4	19.8	30	19.4	32.3	21	31.9	16.9
28	30.6	20.5	31.4	---	29.2	20.3	34.2	20.4	30.5	19.5	34	22.4	32.5	17
29	30.3	21.1	30.8	19.1	28.8	20.9	35.1	---	30.2	19.9	33.6	21.8	31.2	18.4
30	30.3	21	29.8	19.4	29.5	19.2	32.5	---	30.8	19.4	30.7	22.5	30.4	16.9
31	31.2	21	31.4	19.4	29.9	20.1	35	19.4	32.2	20.4	32.6	21.5	31.6	19.9
Mean	30.8	20.7	31.2	19.5	30.7	21.3	33.9	20.8	28.7	20	32.6	21.1	31.6	18.4

Day.	Solsona.		Laoag.		Pasuquin.		Aparri.		Cape Bojeador.		Basco.	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
1	32.4	21.6	32.1	22.4	32.5	22.4	28.6	22.8	28.9	22.4	24.9	22.5
2	32	21	30.7	23.9	30.7	24.1	26.1	23	26	22	23.4	20.4
3	31.2	20.8	33	24.4	32.3	24.5	27.8	22.6	27.2	21.1	24	19.5
4	31.9	22.6	33.1	22.5	32.3	24.5	28.6	23.2	26.8	22	25.6	21.9
5	32.1	22	31.2	19	30.8	24.3	28.9	23	26.4	21.8	25.6	22.1
6	31.8	21.9	31.7	17.2	32.2	---	28.2	19	27	20.7	25.4	21.6
7	30.4	16.3	29.7	16	32	---	27.4	17.9	28.8	20	---	18.1
8	30.1	18.5	29.4	18.1	29	20	24	18.7	25.3	19.4	22.4	19
9	29.1	19.8	29.8	18.7	29	20.5	26	19.5	24.6	19	23.5	20.4
10	30.2	17.1	31.7	16.4	---	---	22	18.5	26	20.8	24.8	18.9
11	31.2	17.6	30.7	17.4	30.5	20.4	24.5	20	26	20.5	25.8	20.4
12	30.4	15.5	31.7	15.5	32.3	17.4?	27	18.3	26.5	20.5	24.1	20.2
13	31.1	15.3	32.2	16	32.5	23	27.5	18.6	27.1	21	25.9	19.5
14	31.9	20.8	32.7	20.5	34	21.6	27.9	20.8	26.8	22.7	25.7	20.4
15	31.5	22.5	28.2	22.2	27.8	23.4	25.5	23	25.5	22.5	26.8	21.6
16	32.2	19.7	33.3	19.8	34.8	20.3	30.3	21.2	30.6	22.7	26.6	---
17	33	18.8	32.3	19.4	32.6	19.8	29.2	21.3	31.3	22.5	27	23.5
18	32.4	20.5	30.7	21	32.3	20.5	30	21.3	31.3	22.3	27.5	22.7
19	33.6	18.6	36.8	19.9	33.2	20.2	27.8	20.6	27.6	22.3	26.8	21.2
20	33.5	18.7	32.2	20	34.5	19.6	28.6	21.2	28.4	22.7	28	20.4
21	32.4	18.4	32.1	20	34.2	20.5	27.6	20.8	27.6	21.1	26.9	20.3
22	32.3	21.6	31.1	23.4	31	24.6	25.5	22.5	26	22.5	24.8	21.6
23	31.2	18.3	32.7	19.9	32.5	23.6	26.9	21.8	26.1	21.2	24.4	20.6
24	31.2	17.5	31.3	18.4	30.5	23.9	25.5	20.8	25.2	20.5	22.2	19.6
25	30.9	19.2	32.7	17.9	32	23.4	25.2	20.9	25.3	20.8	23.1	18.9
26	30.5	21.8	31.8	18	32.6	23.6	25	20.3	26.2	20.5	23	19.3
27	32.1	17.5	31.1	17.5	32.5	20.1	26.9	19.6	30.3	21.5	25.1	20.8
28	31.9	18.7	30.2	19	31.5	20	28	20.2	27.8	21.6	25.9	20.1
29	31.2	19.4	29.4	19.7*	30.5	20	27.8	20.6	25.5	20.6	24.1	20
30	32.2	17	31.6	17.8	33.7	19.5	27.2	21.1	27.1	20.5	25.5	19
31	31.9	17.5	31.2	18.9	32	19.6	30	19.8	28.6	22	27.5	21.3
Mean	31.6	19.2	31.4	19.4	31.9	21.6	27.3	20.7	27.2	21.3	25.2	20.6

\* These maximum temperatures seem to be too high.



## SEISMOLOGICAL BULLETIN FOR DECEMBER, 1921

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### EARTHQUAKES FELT IN THE PHILIPPINES<sup>1</sup>

1, 10<sup>h</sup> 19<sup>m</sup> [1, 18<sup>h</sup> 19<sup>m</sup>]. Irosin (SE Luzon). Local earthquake shock of intensity II-III.

4, 12<sup>h</sup> 12<sup>m</sup> [4, 20<sup>h</sup> 12<sup>m</sup>]. Ganassi (N Mindanao). Earthquake of intensity III. Recorded at Butuan.

10, 1<sup>h</sup> 29<sup>m</sup> 00<sup>s\*</sup> [10, 9<sup>h</sup> 29<sup>m</sup> 00<sup>s</sup>]. Romblon Island. Earthquake of intensity III-IV. The origin probably must be located near Tablas Island, where these last years shocks occurred very often.

11, 19<sup>h</sup> 19<sup>m</sup> [12, 3<sup>h</sup> 19<sup>m</sup>]. NE Mindanao. Earthquake of intensity III-IV, felt chiefly in the Surigao peninsula and north portion of the Agusan Valley. Origin seemingly insular.

16, 2<sup>h</sup> 42<sup>m</sup> 40<sup>s\*</sup> [16, 10<sup>h</sup> 42<sup>m</sup> 40<sup>s</sup>]. Guam (Mariana Islands). Earthquake of intensity III-IV; recorded also at Osaka, Japan, few seconds before Manila.

18, 2<sup>h</sup> 00<sup>m</sup> [18, 10<sup>h</sup> 00<sup>m</sup>]. Ganassi (N Mindanao). Earthquake shock of intensity III. This was the first of a series of shocks which occurred on the 19th, 5<sup>h</sup> 57<sup>m</sup>, and on the 20th, 12<sup>h</sup> 50<sup>m</sup>, 13<sup>h</sup> 00<sup>m</sup>, 20<sup>h</sup> 30<sup>m</sup> and 20<sup>h</sup> 45<sup>m</sup>, all of them very local, probably volcanic. In this volcanic region of Lanao Province exist several cones with some remnant activity.

21, 6<sup>h</sup> 09<sup>m</sup> [21, 14<sup>h</sup> 09<sup>m</sup>]. E Mindanao. Earthquake of intensity III, felt along the Agusan Valley, through an extension of about 100 Kms. but nowhere the shock surpassed intensity III.

21, 12<sup>h</sup> 55<sup>m</sup> [21, 20<sup>h</sup> 55<sup>m</sup>]. Central Mindanao. Earthquake of intensity III, felt on the eastern portion of Lanao and western of Cotabato provinces. Rather shallow origin, probably in the Lanao volcanic region.

22, 1<sup>h</sup> 56<sup>m</sup> 45<sup>s\*</sup> [22, 9<sup>h</sup> 56<sup>m</sup> 45<sup>s</sup>]. Leyte Island and NE Mindanao. Earthquake of intensity III-IV, felt through Leyte, S Samar, Cebu, Bohol, and NE Mindanao. The epicenter lay near south Leyte. Recorded at Batavia.

22, 21<sup>h</sup> 32<sup>m</sup> 55<sup>s\*</sup> [23, 5<sup>h</sup> 32<sup>m</sup> 55<sup>s</sup>]. Butuan (N Mindanao). Earthquake of intensity III. Origin far off in the Pacific; it must have been slightly felt also on the eastern coast of Mindanao.

27, 19<sup>h</sup> 19<sup>m</sup> 00<sup>s\*</sup> [28, 3<sup>h</sup> 19<sup>m</sup> 00<sup>s</sup>]. W Luzon. Earthquake of intensity IV. Origin in the China Sea: it was felt along the Zambales coast and very slightly at Baguio.

<sup>1</sup> The intensity of earthquakes is given in the notation known as the Rossi-Forel scale. The time is that indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (\*). Otherwise the time is that noted by the observer who sent the report. All time indications are in Greenwich mean time (midnight=0<sup>h</sup>), insular time being added in brackets for the convenience of the Philippine readers.

27, 22<sup>h</sup> 18<sup>m</sup> 53<sup>s\*</sup> [28, 6<sup>h</sup> 18<sup>m</sup> 53<sup>s</sup>]. **E Mindanao.** Earthquake of intensity III, felt in the Agusan Valley. Insular origin: extension of shaken area and other characters similar to that occurred on the 21st. Recorded at Batavia.

28, 12<sup>h</sup> 01<sup>m</sup> 28<sup>s\*</sup> [28, 20<sup>h</sup> 01<sup>m</sup> 28<sup>s</sup>]. **Balanga (W. Luzon).** Earthquake of intensity III in the southern portion of Zambales range.

29, 3<sup>h</sup> 08<sup>m</sup> 36<sup>s\*</sup> [29, 11<sup>h</sup> 08<sup>m</sup> 36<sup>s</sup>]. **Panay Island.** Earthquake of intensity III-IV, felt along a zone extending from Antique Province eastwards through central Iloilo Province to western Negros.

30, 13<sup>h</sup> 07<sup>m</sup> [30, 21<sup>h</sup> 07<sup>m</sup>]. **Lais (SE Mindanao).** Earthquake shock of intensity III.

RECORDS OF THE MICROSEISMOGRAPH

[Time: Greenwich mean. Midnight=0<sup>h</sup>. Instrument: Wiechert seismograph; 1,000 kilograms. AN:  $T_0=6.25$ ,  $\epsilon=2.906$ ,  $\frac{r}{T_0^2}=0.053$ ; AE:  $T_0=6.18$ ,  $\epsilon=2.393$ ,  $\frac{r}{T_0^2}=0.042$ . Alluvium. 2.40 meters above sea level]

No.	Date.	Character.	Phase.	Hour.	Period.	Amplitude.		Remarks.
						A <sub>N</sub> μ	A <sub>E</sub> μ	
365	1	Ir	e	h. m. s.	s.	-----	-----	From Omori's seismograph.
			L	10 54 30				
366	2	I	F	11 00 00	-----	-----	-----	
			e	5 25				
367	7	Ir	F	11 46	-----	-----	-----	
			eP	17 31 00				
368	7	I	L	18 33 40	-----	-----	-----	Taruna (Great Sangir Island).
			F	18 05				
369	8	I	e	18 44 09	-----	-----	-----	From Omori's seismograph. Japan.
			F	19 08				
370	10	Iv	eP	12 36 04	-----	-----	-----	Felt in Romblon Island.
			F	13 05				
371	15	Iv	eP	1 29 00	-----	-----	-----	
			L	7 49 20				
372	15	Iv	L	50 31	-----	-----	-----	
			F	57				
373	15	Iv	eP	11 59 09	-----	-----	-----	
			F	12 04				
374	16	Ir	eP	20 47 16	-----	-----	-----	Felt in Guam Island.
			L	2 42 40				
375	18	IIu	MN	46 56	-----	-----	-----	N of South America.
			ME	47 04				
376	19	Iv	F	48 03	6	98	-----	
			F	3 27	6	41		
377	19	Iv	eP	15 48 25	-----	-----	-----	
			S	15 57 55				
378	20	Iv	L	16 12 58	-----	-----	-----	
			F	17 31				
379	21	IIv	eP	7 29 29	-----	-----	-----	
			F	7 34				
380	22	Iv	eP	18 28 55	-----	-----	-----	
			F	18 32				
381	22	IIv	eP	2 42 54	-----	-----	-----	Origin near S Leyte Island.
			F	2 46				
382	22	IIv	eP	7 03 19	-----	-----	-----	
			L	7 03 35				
383	22	IIv	MN	03 44	4	166	-----	
			ME	03 44	4	238		
384	22	IIv	F	03 44	-----	-----	-----	
			F	03 17				
385	22	IIv	eP	0 56 21	-----	-----	-----	
			F	0 59				
386	22	IIv	eP	1 56 45	-----	-----	-----	
			L	1 58 00				
387	22	IIv	MN	58 48	9	106	-----	
			ME	59 21	8	79		
388	22	IIv	F	2 46	-----	-----	-----	

## Records of the microseismograph—Continued

No.	Date.	Character.	Phase.	Hour.			Period.	Amplitude.		Remarks.
				<i>h.</i>	<i>m.</i>	<i>s.</i>		$A_N$ $\mu$	$A_E$ $\mu$	
382	22	Iv	eP F	21	32 38	55			Felt at Butuan (N Mindanao).	
383	23	IIv	eP L MN ME F	5	13 14 14 14 28	41 01 05 05				
							3	309		
							3	439		
384	27	Iv	eP F	4 5	59 02	44				
385	27	IIIId	eP iL	19	19 19	00 15			Felt at Manila and along Zambales (W Luzon). Maxima and end lost by the force of the shock.	
386	27	I	e F	22	18 36	53			From Omori's seismograph. Felt in Agusan Valley.	
387	28	Iv	eP F	12	01 04	28			From Vicentini's seismograph. Felt at Balanga (W. Luzon).	
388	29	Iv	eP F	3	08 14	36			Felt at Antique and Iloilo Provinces (Panay Island).	
389	29	Iv	eP L ME MN F	6	50 50 50 50 54	22 34 37 40				
							2	56		
							2	113		
390	30	Iv	eP L MN ME F	7	47 47 48 48 54	35 56 12 14				
							3	167		
							3	97		
391	30	I	e F	10 11	50 44					

### TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS<sup>1</sup>

1, 10<sup>h</sup> 19<sup>m</sup> [1, 18<sup>h</sup> 19<sup>m</sup>]. Irosin (SE de Luzón). Temblor de tierra local de intensidad II-III.

4, 12<sup>h</sup> 12<sup>m</sup> [4, 20<sup>h</sup> 12<sup>m</sup>]. Ganassi (N de Mindanao). Temblor de tierra de intensidad III. Registrado en Butúan.

10, 1<sup>h</sup> 29<sup>m</sup> 00<sup>s\*</sup> [10, 9<sup>h</sup> 29<sup>m</sup> 00<sup>s</sup>]. Isla de Romblón. Temblor de tierra de intensidad III-IV. Seguramente el epicentro de este sismo se hallaba cerca de la isla de Tablas, de donde apenas se reciben noticias, y son frecuentes estos últimos años las perturbaciones sísmicas.

11, 19<sup>h</sup> 19<sup>m</sup> [12, 3<sup>h</sup> 19<sup>m</sup>]. NE de Mindanao. Temblor de tierra de intensidad III-IV sentido principalmente en la península de Surigao y parte N del valle del Agusan. Su origen fué al parecer insular.

16, 2<sup>h</sup> 42<sup>m</sup> 40<sup>s\*</sup> [16, 10<sup>h</sup> 42<sup>m</sup> 40<sup>s</sup>]. Guam (Islas Marianas). Temblor de tierra de intensidad III-IV. Registrado también en Osaka, Japón, pocos segundos antes que en Manila.

18, 2<sup>h</sup> 00<sup>m</sup> [18, 10<sup>h</sup> 00<sup>m</sup>]. Ganassi (N de Mindanao). Temblor de tierra de intensidad III. Con este sismo comenzó una serie de ligeros temblores, que ocurrieron el 19 a 5<sup>h</sup> 57<sup>m</sup>, el 20 a 12<sup>h</sup> 50<sup>m</sup>, 13<sup>h</sup> 00<sup>m</sup>, 20<sup>h</sup> 30<sup>m</sup> y 20<sup>h</sup> 45<sup>m</sup>, todos de carácter muy local, seguramente volcánico. Existen en esta región volcánica de Mindanao algunos conos todavía algo activos.

21, 6<sup>h</sup> 09<sup>m</sup> [21, 14<sup>h</sup> 09<sup>m</sup>]. E de Mindanao. Temblor de tierra de intensidad III, sentido a lo largo de la parte N del valle del Agusan en una extensión de poco más de 100 Kms. sin que en ninguna parte pasase de perceptible.

21, 12<sup>h</sup> 55<sup>m</sup> [21, 20<sup>h</sup> 55<sup>m</sup>]. Centro de Mindanao. Temblor de tierra de intensidad III, sentido en la parte oriental de la provincia de Lanao y occidental de la vecina de Cotabato. Originado seguramente en la región volcánica de Lanao: fué de carácter muy superficial.

22, 1<sup>h</sup> 56<sup>m</sup> 45<sup>s\*</sup> [22, 9<sup>h</sup> 56<sup>m</sup> 45<sup>s</sup>]. Isla de Leyte y NE de Mindanao. Temblor de tierra de intensidad III-IV, sentido en las islas de Leyte y sur de Sámar, Cebú, Bohol y NE de Mindanao. Su origen debía hallarse cerca del sur de Leyte. Registrada en Batavia.

23, 21<sup>h</sup> 32<sup>m</sup> 55<sup>s\*</sup> [23, 5<sup>h</sup> 32<sup>m</sup> 55<sup>s</sup>]. Butúan. (N de Mindanao). Temblor de tierra de intensidad III. Su origen estaba algo lejos en el Pacífico y debió ser perceptible también en las costas orientales de Mindanao.

27, 19<sup>h</sup> 19<sup>m</sup> 00<sup>s\*</sup> [28, 3<sup>h</sup> 19<sup>m</sup> 00<sup>s</sup>]. W de Luzón. Temblor de tierra de intensidad IV. Originado en el mar de la China; sintióse en toda la costa de Zambales y muy débilmente hacia el N en Baguio.

27, 22<sup>h</sup> 18<sup>m</sup> 53<sup>s\*</sup> [28, 6<sup>h</sup> 18<sup>m</sup> 53<sup>s</sup>]. E de Mindanao. Temblor de tierra de intensidad III, sentido en el valle del Agusan. Origen al parecer regional. Área y caracteres semejantes al del día 21. Registrado en Batavia.

28, 12<sup>h</sup> 01<sup>m</sup> 28<sup>s\*</sup> [28, 20<sup>h</sup> 01<sup>m</sup> 28<sup>s</sup>]. Balanga (W de Luzón). Temblor de tierra de intensidad III, en la parte sur de la cordillera de Zambales.

29, 3<sup>h</sup> 08<sup>m</sup> 36<sup>s\*</sup> [29, 11<sup>m</sup> 08<sup>h</sup> 36<sup>s</sup>]. Isla de Panay. Temblor de tierra de intensidad III-IV, sentido en una zona que comprendía la parte central de las provincias de Iloílo y Capiz y el NW de Negros.

30, 13<sup>h</sup> 07<sup>m</sup> [30, 21<sup>h</sup> 07<sup>m</sup>]. Lais (SE de Mindanao). Temblor de tierra de intensidad III.

<sup>1</sup>La intensidad de los terremotos se indica conforme a la conocida escala de Rossi-Forel. Cuanto a la hora de su ocurrencia, adoptamos la indicada por los sismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (\*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo medio de Greenwich (medianoche=0<sup>h</sup>). Para conveniencia de los lectores de Filipinas se añade también la hora insular.

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**APPENDIX TO THE MONTHLY BULLETINS  
FOR 1921**

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**ANNUAL SUMMARY OF METEOROLOGICAL DATA FOR MANILA  
DEDUCED FROM TWENTY-FOUR DAILY OBSERVATIONS  
DURING THE YEAR 1921**

Month.	Pressure.		Air temperature.									
	Mean.	Departure from normal.	Mean.	Departure from normal.	Mean maximum.	Departure from normal.	Mean minimum.	Departure from normal.	Absolute maximum.	Day.	Absolute minimum.	Day.
	mm.	mm.	°C.	°C.	°C.	°C.	°C.	°C.	°C.		°C.	
January	761.24	+0.06	24.6	-0.2	30.8	+0.7	20.2	-0.1	32.7	10	17.4	9
February	59.57	-1.65	25.4	+2	30.7	-1	21.6	+1.3	33.8	28	17.8	17
March	59.84	-0.67	26.8	+2	33.1	+0.6	22.2	+0.9	35.3	2, 24	20.4	12
April	59.61	+0.25	27.4	-0.7	33.7	-0.3	22.4	-0.3	35.5	25	19.7	2
May	57.93	-0.38	28.5	+1	34.6	+0.9	24.2	+0.3	36.9	14	20	1
June	57.20	-0.63	27.4	-0.4	32.4	-0.1	24.2	+0.2	33.7	1	22.7	26
July	57.04	-0.11	27	0	31.8	+0.8	23.7	0	33.7	30	22	4
August	56.77	-0.51	26.4	-0.6	30.3	-0.4	24	+0.2	33.2	1	22.5	16
September	58.07	+0.60	26.5	-0.3	30.9	+0.2	23.9	+0.3	33.8	16	22.7	27
October	59.55	+0.92	26.3	-0.3	32.2	+1.1	22.5	-0.6	34.4	24	20.5	22
November	58.65	-0.69	25.5	-0.3	30	-0.5	22.9	+0.7	33.5	1	21.6	25
December	60.42	+0.12	24.4	-0.7	30.4	+0.4	20.7	-0.5	32.9	17, 20	17.4	8
Annual	758.82	-0.22	26.4	-0.2	31.7	+0.3	22.7	+0.2	36.9	V, 14	17.4	I, 9-XII, 8

Month.	Wind.				Relative humidity.		Vapor pressure.		Cloudiness.		
	Prevailing direction.	Velocity.			Direction at the time of the maximum velocity.	Mean.	Departure from normal.	Mean.	Departure from normal.	Mean.	Departure from normal.
Total.		Departure from normal.	Hourly maximum.								
		Km.	Km.		Per ct.	Per ct.	mm.	mm.	0-10	0-10	
January	NE	4,849	-328.6	26	NNE	75.2	-2.9	17	-1	5.7	+0.2
February	NE quad.	4,874.5	-440.3	37	NE	76.6	+2.5	18.3	+0.8	6.1	+1.1
March	SE	5,520	-1,209.9	26	ESE	74.3	+2.7	19.1	+1	4.9	+0.4
April	SE	5,922	-883	28	SE	71.8	+1.9	19.2	-0.2	4	-0.1
May	SE	5,475	-1,375.9	25	SW	74.2	-1.8	21.1	-0.5	5.4	-0.3
June	WSW	6,328	-373.3	40	W	82.7	+1.7	22.3	0	7.4	+0.4
July	E quad.	7,593.5	-812.7	59	WSW	83.4	-1.6	21.9	-0.5	7.6	-0.3
August	WSW	9,939	+329.2	58	WSW	86.9	+1.7	22.1	-0.3	8.5	+0.6
September	SE quad.	5,166.5	-2,382.1	38.5	WSW	85.7	-0.1	21.9	+0.5	7.7	0
October	E	3,406	-1,840.3	21.5	E	79.8	-4.1	20	-1.6	5.2	-1.5
November	E quad.	4,962	+127	47	WSW	85.3	+2.5	20.5	+0.2	8.1	+1.7
December	NE quad.	3,824.5	-899.4	21	E, ESE	80.2	-1.3	18	-1.2	5.8	-0.4
Annual		67,860	-10,089.3	59		79.7	+0.1	20.1	-0.3	6.4	+0.2

Month.	Evaporation.		Sunshine.		Rainfall.					
	Free exposure, total.	Under shelter, total.	Total.	Departure from normal.	Total.	Departure from normal.	Greatest in a single day.	Day.	Rainy days.	Departure from normal.
	mm.	mm.	h. m.	h. m.	mm.	mm.	mm.			
January	124.3	85.7	159 55	-22 53	0.3	-25	0.3	31	1	-4
February	114.4	79.3	146 45	-48 21	44.5	+33.3	43.6	3	3	0
March	154.6	108	209 00	-26 48	8.7	-9.3	4.8	14	4	+1
April	170.9	119.1	234 10	-27 04	28.4	-4.6	24.4	12	6	+2
May	162.7	110.4	222 40	-6 15	59.8	-45.6	31	6	8	-2
June	92.1	73.7	146 40	-22 18	328	+89.7	90.9	24	24	+8
July	85.4	64.5	138 55	-1 11	432.7	+16.4	130.2	4	24	+2
August	66.1	55	77 40	-59 50	1,000.8	+598.5	246.3	15	23	+1
September	68	54.4	92 15	-40 04	337.3	-27.8	69	10	24	+4
October	96.3	76.1	205 30	+40 33	37.4	-151	9.2	5	13	-4
November	53.3	48.4	74 45	-85 07	288.7	+157.8	111.5	11	18	+5
December	84.5	69.2	162 50	+8 28	54.5	-7.7	35.8	22	12	+3
Annual	1,272.6	943.8	1,871 05	-290 50	2,621.1	+624.7	246.3	VIII, 15	160	+16

## CATALOGUE OF PHILIPPINE EARTHQUAKES, 1921<sup>a</sup>

Date.	Time of occurrence. (Greenwich mean time).	Place.	Probable origin or epicenter.		Approximate extension of the shaken area.		Intensity (Rossi-Forel).	Remarks.
			$\phi$	$\lambda$	Longer axis.	Shorter axis.		
	<i>h. m.</i>		$^{\circ}$	$^{\circ}$	<i>Kms.</i>	<i>Kms.</i>		
Jan. 2	15 58	Ormoc (W Leyte) .....					III	
5	10 00	Nasugbu (SW Luzon) .....					III	
8	1 10	Ganassi (N Mindanao) .....					III	
13	18 19	Ilocos Norte and Sur (NW Luzon) .....			200	100	III	Origin, China Sea.
19	4 45	Irosin (SE Luzon) .....					III	Registered at Manila. Origin near Masbate Island.
21	14 45	Aguan Valley (E Mindanao) .....	8.0 N	125.8 E	150		III-IV	
24	13 17	Glan (S Mindanao) .....					III	
26	10 40	SE Luzon .....			150	150	IV-V	Registered at Manila. Origin near Isarog Volcano. Repetition, intensity III, at 12h 34m.
Feb. 29	17 15	Vigan (NW Luzon) .....					III	
5	8 56	Butuan (N Mindanao) .....					III-IV	Registered at Manila. Origin in the Pacific.
7	9 24	Ormoc (W Leyte) .....					III	
10	21 03	Cabo Bojeador (NW Luzon) .....					III-IV	
12	18 33	Butuan (N Mindanao) .....					IV	Repeated at 10h 14m. Regional origin.
14	1 04	SE Mindanao .....			200	200	III-IV	Registered over the world. Distant origin towards Moluccas.
14	9 00	Calbayog (NW Samar) .....					II-III	
27	8 54	Panay Island .....	10.8 N	122.4 E	80	80	III-IV	Registered at Manila. Volcanic origin.
Mar. 4	14 02	Tigaon (SE Luzon) .....					III	Registered at Manila. Origin near S Masbate Island.
11	22 13	SE Luzon .....			400	200	III-IV	Registered at Manila and Butuan, Origin in the Pacific.
13	0 15	Talacogon (E Mindanao) .....					III	Registered at Manila, Butuan and South America.
14	23 05	Guam (Mariana Islands) .....					III	Registered at Manila, Butuan and South America.
18	2 30	Camarines Sur (SE Luzon) .....					III	Origin, Isarog Volcano.
18	13 13	Camiguin Island (N of Mindanao) .....					III-IV	Registered at Butuan.
22	9 04	Butuan (N Mindanao) .....					III	
28	16 44	S Luzon .....	13.7 N	121.1 E	100	100	V	Registered at Manila. Five Aftershocks, intensity III-IV.
29	20 55	Samar and Leyte Islands .....	11.0 N	125.4 E			IV	Registered at Butuan.
30	14 59	Camiguin Island (N of Mindanao) .....					III	Registered at Butuan.
Apr. 2	12 43	Ganassi (N Mindanao) .....					III	Volcanic origin.
4	12 04	Camp Keithley (N Mindanao) .....					II-III	Registered at Butuan.
6	12 24	Lais (SE Mindanao) .....					IV-V	Registered at Manila. Origin, off Sarangani Island.
7	3 03	Legaspi (SE Luzon) .....					III	
12	19 35	Davao (SE Mindanao) .....					III	
14	20 45	Lais (SE Mindanao) .....					II-III	
24	22 40	Central Mindanao .....	7.8 N	125.2 E	150	150	V	Registered at Butuan.
May. 5	23 57	Naga (SE Luzon) .....					III	
6	15 50	Lais (SE Mindanao) .....					III	
8	18 33	Tabaco (SE Luzon) .....					III	
10	0 19	Ormoc (W Leyte) .....	10.7 N	124.5 E			IV	Small extension; shallow origin.
10	13 58	Lais (SE Mindanao) .....					III	Registered at Butuan. Origin near Sarangani Islands.
10	18 12	Catbalogan (W Samar) .....					III-IV	
11	6 51	Atimonan (E Luzon) .....	14.0 N	122.4 E	100	100	II-III	Registered at Manila.
12	3 48	Lais (SE Mindanao) .....					III	Registered over the world. Aftershock at 13h 09m.
14	1 02	Paracale (SE Luzon) .....	14.6 N	122.6 E			III	Registered at Manila.
14	3 12	Butuan (N Mindanao) .....					III	
14	13 18	Guam (Mariana Islands) .....					III	
17	8 21	Baguio (W Luzon) .....	16.0 N	120.8 E			II-III	Registered at Manila.
21	6 44	Samar Island .....	12.8 N	125.3 E	500	200	IV-V	Registered at Manila. Very numerous aftershocks.
21	8 43	SE Luzon and E Visayas .....	12.8 N	125.3 E	1000	800	VII-VIII	Numerous and quite perceptible aftershocks on the 22nd and 23rd, lighter to the 18th of June. Registered over the world.
21	15 39	Samar Island .....	12.8 N	125.3 E			VI	Recorded in the Far East.
21	20 26	Benguet (W Luzon) .....	16.4 N	120.7 E	100	80	III-IV	Registered at Manila.
23	21 56	Ilocos Norte and Sur (NW Luzon) .....	18.0 N	119.7 E	200	100	III-IV	Registered at Manila. Foreshock at 10h 55m.
24	7 35	Surigao (NE Mindanao) .....					III	Registered at Butuan.
28	19 22	SE Mindanao .....			250	140	III-IV	Registered in the Far East and Europe. Origin, off the SE coast of Mindanao.
June 29	15 55	Batac (NW Luzon) .....					III	
1	3 30	Basco (Batanes Islands) .....					III-IV	
2	8 00	Bogo (N Cebu) .....					III	
3	4 17	Lais (SE Mindanao) .....					II-III	Registered at Manila. Origin far away in the Moluccas.
4	16 30	Samar Island and SE Luzon .....	12.8 N	125.3 E	350	200	IV	Registered at Manila.

<sup>a</sup> See explanation in Monthly Bulletin of the Weather Bureau for December, 1910, page 445.



## Catalogue of Philippine earthquakes, 1921—Continued.

Date.	Time of occurrence. (Greenwich mean time).	Place.	Probable origin or epicenter.		Approximate extension of the shaken area.		Intensity (Rossi-Forel).	Remarks.
			$\phi$	$\lambda$	Longer axis.	Shorter axis.		
June 5	<i>h. m.</i> 10 52	Iba (W Luzon) -----	o	o	<i>Kms.</i>	<i>Kms.</i>	II-III	Registered at Manila. Origin in the China Sea, off the Zambales coast.
7	1 30	Talacogon (E Mindanao) -----					III	
9	10 37	E Mindanao -----	7.5 N	125.4 E	400	240	V-VI	Registered in the Far East and Central America.
10	17 52	Ilocos Norte (NW Luzon) -----	18.4 N	121.0 E			III	Registered at Manila.
12	10 30	Ganassi (N Mindanao) -----					III	
14	23 37	Lais (SE Mindanao) -----					III	Registered at Butuan.
16	19 36	Butuan (N Mindanao) -----					III	
18	8 26	Samar Island -----	12.8 N	125.3 E			III	Registered at Manila.
23	19 04	Laoag (NW Luzon) -----					II-III	
24	0 19	E Mindanao -----	8.2 N	125.9 E	180	100	III-IV	Registered at Manila.
25	15 43	Malita (SE Mindanao) -----					III	Registered at Manila and Butuan.
30	19 00	Fort Lebak (SW Mindanao) -----					III	
July. 2	8 36	Central Mindanao -----			160	160	III-IV	Registered at Manila and Butuan. Aftershock at 16h 54m; repetition, intensity IV at 18h 22m.
4	0 40	Bacon (SE Luzon) -----					III	
4	14 23	Baguio (W Luzon) -----					II-III	Registered over the world. Very distant origin in the Pacific.
5	1 27	Legaspi (SE Luzon) -----					III-IV	Registered at Manila. Probably volcanic origin.
8	14 16	Legaspi (SE Luzon) -----					III-IV	Registered at Manila. Probably volcanic origin.
10	7 00	Basco (Batanes Islands) -----					III-IV	
10	17 45	Cabo Bojeador (NW Luzon) -----					II-III	
11	6 04	SE Luzon and NW Samar -----	12.8 N	124.6 E	200	100	III	Registered at Manila.
13	22 12	Malita (SE Mindanao) -----					III	
15	5 59	W Luzon -----			350	150	III-IV	Origin in the China Sea, near the Zambales coast. Aftershock at 23h 47m. Recorded in the Far East.
16	6 35	Surigao (NE Mindanao) -----					II-III	
18	11 14	E Mindanao -----					III-IV	Registered at Manila. Epicenter S Agusan Valley. Recorded at Batavia.
21	0 17	SE Luzon -----	14.6 N	124.5 E	300	120	III-IV	Registered over the world.
21	12 56	Lais (SE Mindanao) -----					III	Registered at Butuan.
21	19 11	SE Luzon and N Samar -----	13.0 N	125.3 E	320	200	V-VI	Light frequent aftershocks.
24	21 23	SE Luzon, Samar and Leyte Islands -----	13.0 N	125.3 E	400	300	VI-VII	Recorded over the world. Some aftershocks.
Aug. 4	20 56	Lais (SE Mindanao) -----					III	
5	23 30	Calaguitan (SW Panay) -----					III-IV	
9	3 05	Janiuay (SE Panay) -----					III	
12	5 35	Fort Pikit (Central Mindanao) -----					III	
13	7 00	Romblon Island -----					III-IV	
14	11 37	Surigao (NE Mindanao) -----					III	Registered at Butuan.
15	11 11	NW Luzon -----					IV	Registered at Manila. Origin in the China Sea, off the Ilocos and Bolinao coasts.
21	18 32	Butuan (N Mindanao) -----					III-IV	Origin Butuan Bay.
22	1 10	Basco (Batanes Islands) -----					III-IV	
22	13 34	SW Mindanao -----					IV	Registered at Manila. Aftershock at 17h 25m. Origin, Celebes Sea. Recorded at Batavia.
25	3 49	SE Luzon -----					III-IV	Registered at Manila. Regional origin.
26	13 15	Basco (Batanes Island) -----					III	
29	16 30	W Luzon -----					II-III	Local origin, S Benguet Province.
Sept. 3	0 15	NW Luzon -----					III	Registered at Manila. Origin in the China Sea, off the Ilocos and Bolinao coasts.
7	4 05	Janiuay (SE Panay) -----					III	
8	23 25	Janiuay (SE Panay) -----					III	Local shallow origin. Aftershocks in the following day at 14h 20m and 18h 00m.
10	10 34	W Luzon -----	17.0 N	120.8 E	180	100	III-IV	Registered at Manila.
11	15 25	Irosin (SE Luzon) -----					III-IV	Probably volcanic origin.
12	13 47	Maasin (S Leyte) -----					II-III	Registered at Butuan.
12	15 20	SE Luzon -----					IV	Registered at Manila. Origin, San Bernardino Strait.
13	10 50	SE Luzon -----					IV-V	Registered at Manila. Origin, San Bernardino Strait.
18	15 14	Lais (SE Mindanao) -----					IV	Registered at Butuan.
22	9 18	S Mindanao -----			280	160	III-IV	Registered at Manila, Zikawei and Batavia. Origin in the Celebes Sea. Light aftershock one hour later.
23	19 25	SE Luzon and NW Samar -----			250	100	III-IV	Registered at Manila. Origin, San Bernardino Strait.
25	5 49	W Luzon -----					III	Registered at Manila. Origin in the China Sea.
28	3 43	Camarines Sur (SE Luzon) -----					III	Registered at Manila. Origin in the Pacific near N coast of Camarines.

## Catalogue of Philippine earthquakes, 1921—Continued.

Date.	Time of occurrence. (Greenwich mean time).	Place.	Probable origin or epicenter.		Approximate extension of the shaken area.		Intensity (Rossi-Forel).	Remarks.
			$\phi$	$\lambda$	Longer axis.	Shorter axis.		
Sept. 28	6 05	Camiguin Island (N of Mindanao.)	o	o	Kms.	Kms.	III	Local origin.
28	17 11	Samar and Leyte Islands	11.7 N	124.6 E	200	130	V-VI	Registered at Manila, Butuan and Zikawei.
29	8 56	Iba (W Luzon)					II-III	Registered at Manila. Origin, off the Zambales coast.
30	10 21	Samar Island and NE Mindanao.					III-IV	Registered at Manila and Zikawei. Distant origin in the Pacific. Repetition, intensity III-IV at 14h 50m.
Oct. 1	13 25	Butuan (N Mindanao)					III	Local origin.
6	1 07	Central Mindanao	7.8 N	125.2 E	300	250	IV	
6	12 40	Cotabato (SW Mindanao)					II-III	
6	13 56	Maasin (S Leyte)					III	Foreshock at 3h 45m.
8	4 35	Camarines Sur (SE Luzon)					III	
8	15 18	Maasin (S Leyte)					III	
9	1 30	Ganassi (N Mindanao)					III	
11	8 44	Bacon (SE Luzon)					III	
12	10 30	Lais (SE Mindanao)					III-IV	Registered at Butuan.
15	6 59	Ilocos Norte and Sur (NW Luzon.)					III	Registered at Manila. Origin in the China Sea.
16	1 10	Janiuay (SE Panay)					III	
21	1 44	Butuan (N Mindanao)					II-III	
21	4 35	Central Mindanao	7.8 N	125.2 E			III-IV	Registered at Butuan.
22	5 00	Lais (SE Mindanao)					III	Registered at Butuan.
22	8 25	Irosin (SE Luzon)					II-III	
28	4 19	Candon (NW Luzon)					III	Registered at Manila. Origin in the China Sea.
28	6 57	Camarines Norte and Sur (SE Luzon).	14.8 N	123.5 E	210	80	IV	Registered at Manila.
28	8 30	Ganassi (N Mindanao)					III	
30	7 52	Lais (SE Mindanao)					III	Registered at Manila and Batavia. Origin in the Celebes Sea.
Nov. 2	4 24	Cuyo Island					III-IV	
7	16 02	E Mindanao and Visayas	6.2 N	127.2 E	800	400	VII-VIII	Registered over the world. Numerous aftershocks.
9	2 45	Baguio (W Luzon)					II-III	Registered at Manila. Origin towards Nueva Vizcaya. Repetition on the 10th at 1h 17m.
11	6 06	Irosin (SE Luzon)					III	Repetition at 17h 30m.
11	16 25	W Luzon	16.3 N	120.6 E	150	100	IV-V	Registered at Manila. Repetition at 18h.
11	18 39	E Mindanao and Visayas	5.5 N	126.8 E	800	400	VIII	Registered over the world. Tide wave SE Mindanao and Sanguir Island. Numerous aftershocks until the 18th.
14	7 00	Capangan (W Luzon)					III	
14	7 52	E Mindanao	5.5 N	126.8 E			IV	Registered at Manila. Aftershock.
16	14 43	E Mindanao	5.5 N	126.8 E			IV-V	Registered in the Far East. Aftershock.
17	7 53	E Mindanao	5.5 N	126.8 E			V	Registered in the Far East. Aftershock.
18	2 36	E Mindanao	5.5 N	126.8 E			V	Registered in the Far East. Aftershock.
22	10 22	W Luzon	15.6 N	120.2 E	430	200	IV-V	Aftershocks at 21h 11m 54s, 23h 11m and the following day at 10h 00m.
26	16 51	Maasin (S Leyte)					V-VI	Registered at Butuan. Very local character.
28	20 23	Maasin (S Leyte)					III-IV	
29	4 50	Ilocos Norte (NW Luzon)					III	
Dec. 1	10 19	Irosin (SE Luzon)					II-III	
4	12 12	Ganassi (N Mindanao)					III	Registered at Butuan.
10	1 29	Romblon Island					III-IV	Registered at Manila. Origin near Tablas Island.
11	19 19	NE Mindanao			130	90	III-IV	Insular origin.
16	2 43	Guam (Mariana Islands)					III-IV	Registered at Manila, Batavia and Osaka, Japan.
18	2 00	Ganassi (N Mindanao)					III	Repetitions on the 19th at 5h 57m, on the 20th at 12h 50m, 13h 00m, 20h 30m and 20h 45m. Volcanic origin.
21	6 09	E Mindanao			100	60	III	Insular origin in the Agusan Valley.
21	12 55	Central Mindanao			140	140	III	Origin, N Illana Bay.
22	1 57	Leyte Island and NE Mindanao.	10.2 N	125.8 E	300	250	III-IV	Registered at Manila and Batavia.
23	21 33	Butuan (N Mindanao)					III	Registered at Manila. Origin in the Pacific.
27	19 19	W Luzon			200	80	IV	Registered at Manila. Origin in the China Sea some distance from Zambales coast.
27	22 19	E Mindanao					III	Local origin in the Agusan Valley. Recorded at Batavia.
28	12 01	Balanga (W Luzon)					III	Registered at Manila. Origin, S Zambales range.
29	11 09	Panay Island	11.0 N	122.5 E	140	100	III-IV	Registered at Manila.
30	13 07	Lais (SE Mindanao)					III	

## NUMBER OF EARTHQUAKES FELT IN THE PHILIPPINES FROM 1903 TO 1921

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1903	12	5	8	8	15	13	9	24	10	12	17	8	141
1904	22	10	10	9	6	8	11	5	11	15	4	6	117
1905	14	8	12	11	10	8	12	10	11	16	8	12	132
1906	13	6	5	12	6	11	9	9	9	11	5	7	103
1907	13	7	10	14	22	17	14	16	5	5	15	7	145
1908	17	6	11	6	13	9	5	11	8	10	15	11	122
1909	11	8	9	13	12	5	12	12	14	10	5	9	120
1910	13	13	14	12	23	18	22	8	12	21	23	17	196
1911	12	14	21	13	17	15	13	27	29	19	16	18	214
1912	14	21	28	16	15	18	22	15	15	14	12	12	202
1913	9	18	25	5	15	15	12	13	11	7	8	10	148
1914	15	17	12	10	5	11	14	12	13	10	13	14	146
1915	11	14	12	11	14	15	18	12	12	14	12	14	159
1916	13	15	12	7	8	8	15	18	20	15	7	5	143
1917	6	11	13	12	11	11	7	12	12	17	21	13	146
1918	12	17	8	12	19	11	16	14	11	13	20	14	167
1919	12	11	16	8	8	16	17	15	13	11	11	13	151
1920	19	11	12	7	15	10	8	18	8	18	12	9	147
1921	9	7	10	7	20	16	16	13	17	19	15	15	164

The number of violent and destructive earthquakes (VII to X) during these years was 44. The year 1913 figuring with 6, 1907 with 5, 1915 and 1919 with 4 each and 1910, 1917, 1918, 1920 and 1921 with 3. Their monthly distribution is the following: January 4, February 1, March 4, April 6, May 5, July 3, August 2, September 5, October 3, November 6 and December 5.

## NUMBER OF SEISMIC DISTURBANCES RECORDED AT MANILA FROM 1903 TO 1916

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1903	21	20	13	15	16	6	16	16	8	13	9	14	167
1904	15	19	11	19	17	35	25	18	16	26	18	18	237
1905	30	23	18	22	22	29	28	9	24	26	14	29	274
1906	30	17	22	27	13	35	11	14	14	86	21	26	316
1907	16	12	21	32	35	17	19	15	21	14	43	14	259
1908	16	14	23	15	20	12	14	15	9	108	25	24	295
1909	21	24	24	22	25	14	26	15	20	6	13	7	217
1910	20	17	20	17	17	21	19	11	12	18	15	29	216
1911	16	19	30	22	24	30	31	35	30	28	28	22	315
1912	27	16	30	24	23	35	27	35	20	20	31	34	322
1913	44	20	37	61	42	25	22	41	36	24	13	6	371
1914	22	35	30	48	25	23	24	20	22	26	32	22	329
1915	27	19	21	32	38	33	28	28	30	24	27	31	338
1916	37	46	43	38	37	28	31	28	31	39	22	17	397
1917	31	27	27	35	47	34	39	33	27	43	38	25	406
1918	62	35	32	30	22	37	64	68	45	34	48	53	530
1919	37	31	42	44	47	45	42	23	48	20	24	17	420
1920	30	35	17	25	48	40	30	34	32	47	15	19	372
1921	19	23	37	20	80	35	42	25	40	19	24	27	391

Since April 1911 a more sensitive Wiechert's seismograph has been in use.

## NUMBER OF SEISMIC DISTURBANCES RECORDED AT BUTUAN, MINDANAO, FROM 1916 TO 1921

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1916	70	81	98	80	91	85	105	82	86	85	60	97	1,020
1917	89	105	70	86	102	69	81	111	77	99	154	115	1,158
1918	101	75	71	51	42	-----	64	468	292	117	133	151	1,565
1919	117	63	212	67	64	37	140	64	79	63	63	57	1,076
1920	87	73	54	40	58	31	74	141	65	87	94	70	924
1921	77	86	69	42	93	44	52	39	59	62	154	56	833

The high figures of August, November and December 1917, August to December 1918, March 1919, August 1920 and November 1921, are due to aftershocks following great earthquakes. From the 15th of May to the same date of July 1918 the seismograph did not work.



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	Jan- uary	Feb- ruary	March	April	May	June	July	Aug- ust	Sep- tember	Oc- tober	No- vember	De- cember
Meteorological Bulletin by Rev. José Coronas, S. J.:												
General weather notes.....	11	47	79	107	135	167	197	235	269	305	337	377
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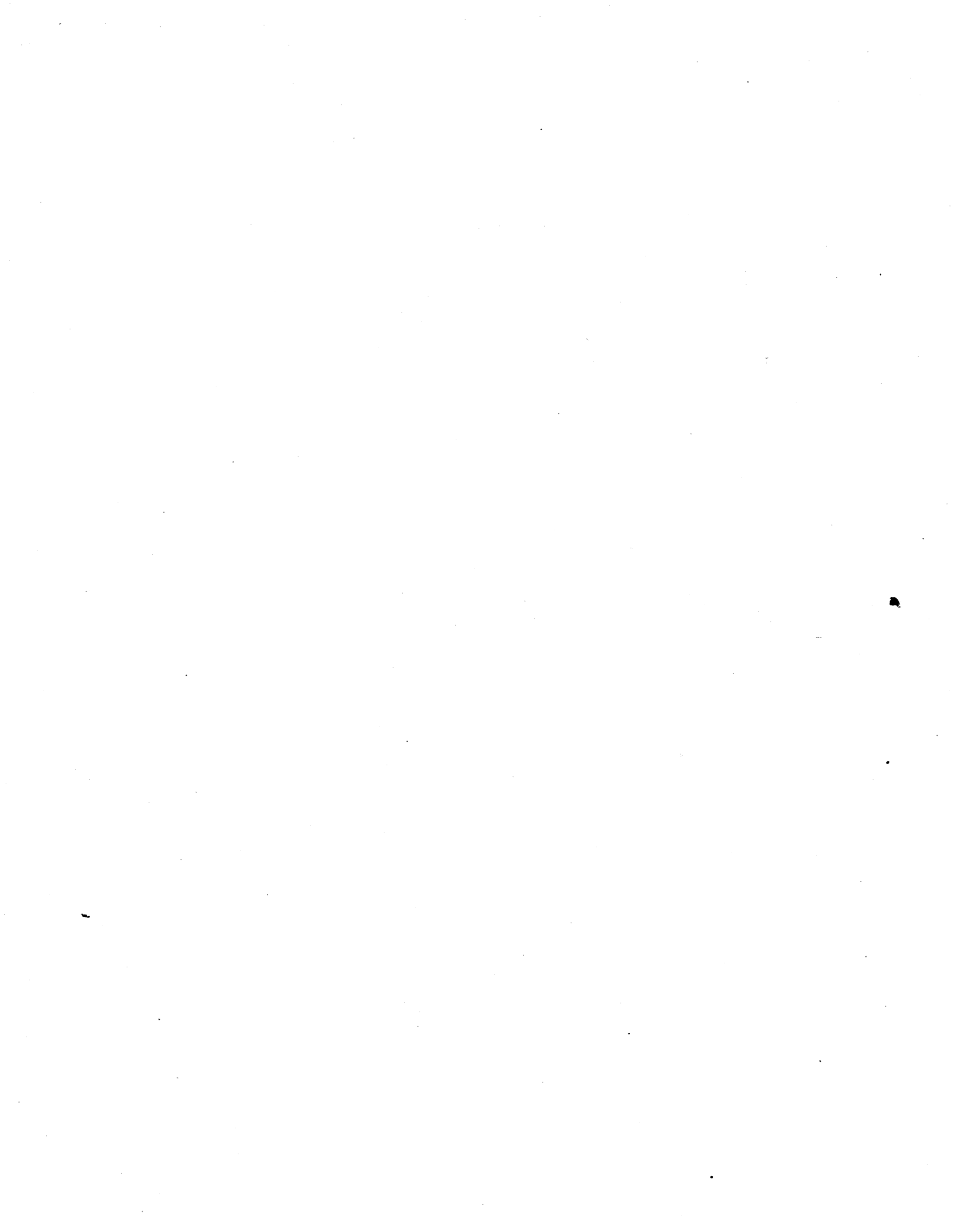
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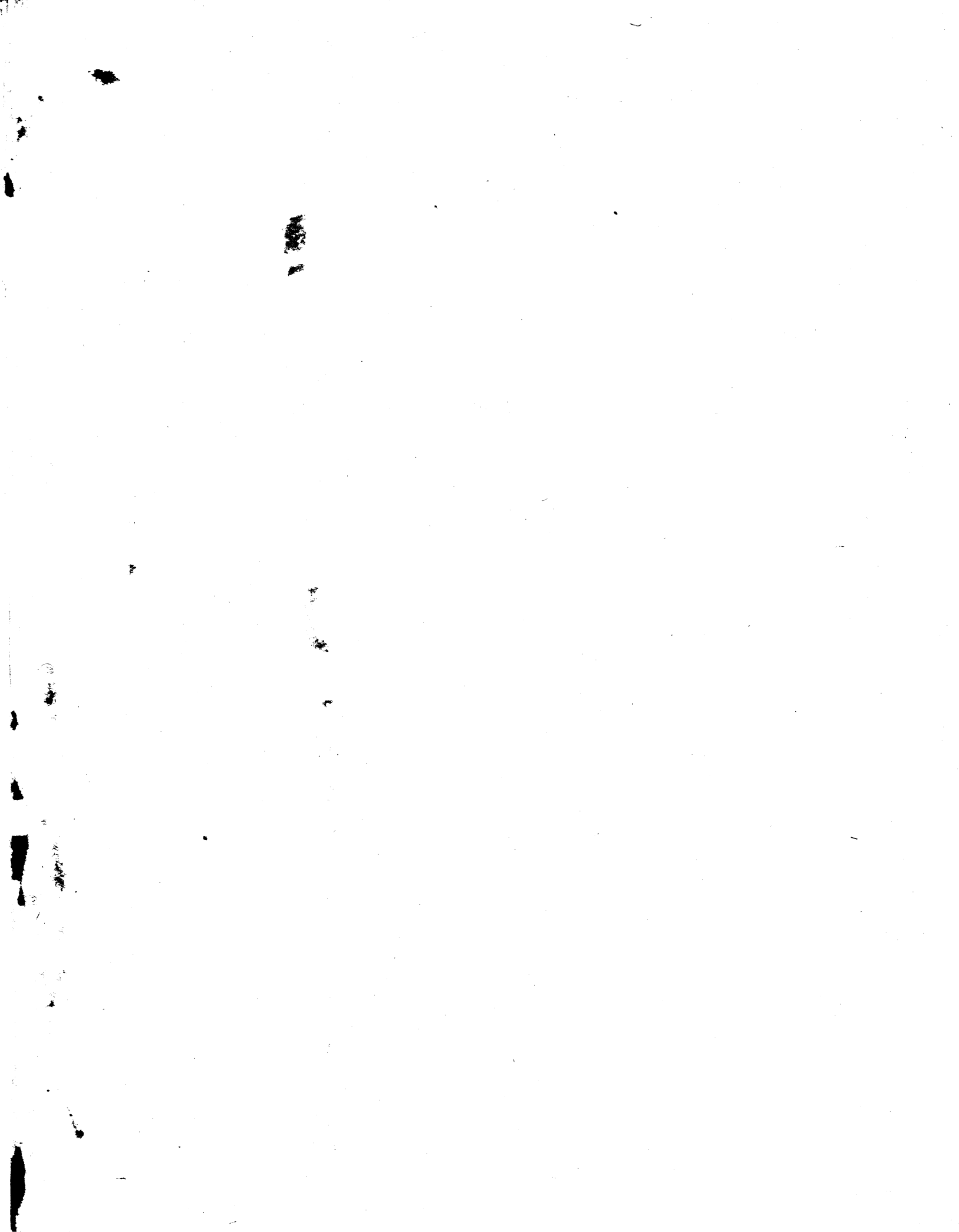
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