effect of clouds is therefore to be explained by their high emissivity in the infra-red, whereby the radiant energy received from the earth is almost perfectly reëmitted.

MEAN ANNUAL TEMPERATURES FOR MEXICO AND CENTRAL AMERICA.

In the MONTHLY WEATHER REVIEW for April, 1908, we had the pleasure of publishing a very complete and careful table of mean annual temperatures for a number of stations in the various States of Mexico. The author of that table, Prof. Philip P. Calvert, has recently charted the data there presented and published a map showing the "Actual distribution of mean annual temperatures" in Mexico and Central America.[1]

This map extends from the latitude of Little Rock, Ark., to Mariato Point, Panama, and presents the temperature conditions of the region by means of a scale of colors which divide the country into six zones. Zone I includes that district probably having an actual mean annual temperature of more than 30° C., and the successive zones embrace differences of 5° C. up to zone V, whose mean annual temperatures are 15° to 10° C. and zone VI, whose mean annual temperatures are below 10° C. With regard to the character of zone I Professor Calvert says: "It should be added that the existence of zone I, with a mean annual temperature of more than 30° C., rests solely on the authority of the map of Senties and Reyes, that it is doubted by Señor Pastrana, and that I have not succeeded in finding any published records of temperature observations in the valley of the Rio de las Balsas for a period of more than two months." The colorings of the zones are not confined to the mainland but embrace a portion of the Bahamas, the coast of Cuba, and the whole of Jamaica. In bounding these zones the topography, as given on the latest and best maps, has been taken into account; but beyond a few general hachures, there is no attempt to represent on this map the topographic relief of the region, and no scale is given. The size of the map is 19.8 by 25.8 centimeters.

The sources of the data of this map are sufficiently indicated by the references given in the article in the April, 1908, REVIEW.—*C. A., jr.*

RECENT PAPERS BEARING ON METEOROLOGY AND SEISMOLOGY.

C. FITZHUGH TALMAN, Librarian.

The subjoined titles have been selected from the contents of the periodicals and serials recently received in the Library of the Weather Bureau. The titles selected are of papers or other communications bearing on meteorology or cognate branches of science. This is not a complete index of the meteorological contents of all the journals from which it has been compiled; it shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau. Unsigned articles are indicated by a ——

American geographical society. Bulletin. New York. v. 41. Feb., 1909.
Ward, Robert DeC. Pneumonia and weather. p. 104-105.

American journal of science. New Haven. 4th ser. v. 27. March, 1909.
Dike, P. H. Recent observations in atmospheric electricity. p. 197-209.

Engineering news. New York. v. 61. Feb. 11, 1909.
Eby, J. H. Still more about forests, snow, and stream flow. p. 162.

London, Edinburgh, and Dublin philosophical magazine. London. 6 series. v. 17. Feb., 1909.
Wright, C. S. On variations in the conductivity of air inclosed in metallic receivers. p. 295-318.

Science. New York. N. S. v. 29. Feb. 19, 1909.
Jochelson, Waldemar. The Riabouschinsky expedition under the auspices of the Imperial Russian geographical society. p. 303-305.

Scientific American. New York. v. 100. Feb. 27, 1909.
Fergusson, S. P. The exploration of the upper air by means of ballons sondes. p. 169-170.

Scientific American supplement. New York. v. 67. March 13, 1909.
Gilbert, G. K. Earthquake forecasts.—III. Future possibilities. p. 174-175.

Symons's meteorological magazine. London. v. 44. Feb. 1908.
Mossman, R. C. The cold period of May in Arctic and Antarctic regions, with special reference to 1903. p. 1-6.

Archives des sciences physiques et naturelles. Genève. Tome 22. 15, january, 1909.
Mercanton, Paul L. L'hygromètre à rameau de sapin. p. 93. [Abstract].

France. Académie des sciences. Comptes rendus. Paris. Tome 148. 1908.
Lacroix, A. Résumé de quelques observations de M. A. Ricci sur le tremblement de terre de Sicile et de Calabre de 28 décembre 1908. (25 jan.) p. 207-209.

Géographie. Paris. Tome 18. 1908.
Laloy, L. Le climat des iles de la Méditerranée. (15 octobre). p. 258-259. [Abstract of paper by Grand Duke Ludwig Salvator.].
Baillaud, B. Les observatoires de montagne. (15 décembre) p. 361-374.

Société belge d'astronomie. Bulletin. Bruxelles. 13 année. Dec., 1908.
Arctowski, Henryk. Les variations des climats. p. 398-401.
Nodan, A. L'origine solaire des cyclones et des tempêtes. p. 407-410.

Société Ramond. Bulletin. Toulouse. 3 sér. 43 année. Juil.-Sept., 1908.
Marsan, François. Météorologie ancienne du midi Pyrénéen. p. 153-155.
Bouget, —., & Marchand, [E]. L'influence des couches inférieures de nuages sur la distribution des végétaux en altitude dans les Pyrénées. p. 221-222.

Akademie der Wissenschaften. Sitzungsberichte. Wien. Bd. 116. Jan., 1907.
Pernter, J. M. Zur Theorie der "schönsten der Haloerscheinungen." p. 17-48.)

Meteorologische Zeitschrift. Braunschweig. Band 26. Jan,, 1909.
Kassner, C. Bericht über die elfte allgemeine Versammlung und Feier des 25 jährigen Bestehens des Deutschen Meteorologischen Gesellschaft zu Hamburg am 28. bis 30. September 1908. p. 2-10.
Kahler, Karl. Registrierungen des luftelektrischen Potentialgefälles an nahe benachbarten Stationem. p. 10-17.
Jensen, Chr[istian]. Die gegenwärtigen Probleme und Aufgaben, welche mit dem Studium der atmosphärischen Polarisation verknüpft sind. p. 18-19. [Abstract.]
Köppen, W. Die Wechselwirkung zwischen der maritimen und der Landmeteorologie in deren Entwickelung. p. 19-21. [Abstract.]
Erk, [Fritz]. Technische Erfahrungen und wissenschaftliche Resultate von der Hochstation Zugspitze. p. 21-22. [Abstract.]
Rotch, A. L. Die warme Schicht der Atmosphäre oberhalb 12km. in Amerika. p. 22-23. [Abstract.]
Wegener, Alfred. Vorläufiger Bericht über die Drachen- und Ballonaufstiege der Danmark-Expedition nach Nordostgrönland. p. 23-24. [Refers to first photographs of mirage. Abstract.]
Schmauss, A. Gleichzeitige Temperaturen auf der Zugspitze und in der gleichen Seehöhe der freien Atmosphäre über München. p. 24. [Abstract.]
Coym, A[rthur]. Ueber absolute Strahlungsmessungen im Freiballon. p. 24-25. [Abstract.]
Schreiber, P[aul]. Ueber die Verwendung der Thermodynamik bei der Diskussion von Ballonbeobachtungen. p. 25-27. [Abstract.]
Börnstein, R[ichard]. Der öffentliche Wetterdienst, namentlich im norddeutschen Gebiet. p. 27-28. [Abstract.]
Köppen, W. Ueber die Guilbertschen Regeln für die Wetterprognose. p. 29-30.
Erk, [Fritz]. Zur Methodik des Unterrichtes in der Meteorologie. p. 31-32.
Möller, Max. Die Luftwelle hoher Schichten. p. 33.
Maurer, J[ulius]. Gebirgswinter und Lawinenfall. p. 33-36.
Krebs, Wilhelm. Seltene Polarisation des Himmelslichtes. p. 37-38.
Taudin Chabot, J. J. Zur Meteorologie der Kohlengrube. Unerkannte Probleme. p. 38-39.
——Ballonfahrt von ausserordentlicher Geschwindigkeit. p. 40-41. [Speed of 150 km. an hour attained in balloon voyage].
——Ernest Esclangon über die Dämmerungslichter. p. 44-45.

Prometheus. Berlin. 20. Jahrgang. 3 Feb., 1909.
Baumgart, Ludwig. Gott Brahams Blitzableiter. p. 277-279. [Protection from lightning afforded by banyan trees.]

Weltall. Berlin. 9. Jahrg. Februar 1909.
Wetekamp, W. Eigentümlicher Sonnenuntergang am Wattenmeere. p. 141-142.
Strömer, Carl. Neuere norwegische Untersuchungen über die Natur der Polarlichter. p. 145-153. [Illustrated. Includes chart showing geographic distribution of the aurora borealis.]

[1] As "Neuroptera, Map 1," in the volume "Neuroptera" of Biologia Centrali-Americani, edited by F. D. Godman. London, 1901-1908. 4to.; also as plate 26 in Proc. Acad. Nat. Sci., Philadelphia, October, 1908, p. 460-491. This article contains some discussion of the relations between temperature, rainfall, and insect life in Mexico.

Wetter. Berlin. 26. Jahrgang. Jan., 1908.
Mylius, G. Ueber Böen und Gewitter. p. 1-10.
Lindemann, —. Die grössten Tagesmengen des Niederschlages im Königreich Sachsen von 1866 bis 1905. p. 10-13.
Joester, Karl. Die Föhnerscheinungen im Riesengebirge. p. 14-17.
Freyde, Otto. Der Wetterdienst in Winter. p. 21-24.
Woche. Berlin. 13. Feb., 1909.
Hennig, R. Die jüngste Ueberschwemmungskatastrophie. 266-267; 272-275. [Illustrated].
Zeitschrift für Luftschiffahrt. Berlin. 13. Jahrgang. 10 Feb. 1909.
Wendt, J. Die Drachenstation der Deutschen Seewarte 1907 und 1908.

RECENT ADDITIONS TO THE WEATHER BUREAU LIBRARY.

C. FITZHUGH TALMAN, Librarian.

The following have been selected from among the titles of books recently received, as representing those most likely to be useful to Weather Bureau officials in their meteorological work and studies. Most of them can be lent for a limited time to officials and employees who make application for them. Anonymous publications are indicated by a ——.

Baden. Zentralbureau für Meteorologie und Hydrographie.
Niederschlagsbeobachtungen . . . Jahrgang 1908. Karlsruhe. 1909.
Batavia. K. magnetisch en meteorologisch Observatorium.
Observations. . .v. 29, 1906. Batavia. 1908. xxxvii, 162 p. f°.
Regenwaarnemingen in Nederlandsch Indie 1907. Batavia. 1908. 392, 190 p. 4°.
Bauer, George.
Ein Beitrag zur Förderung des Unterrichts in der Meteorologie. Greifswald. 1908. 42 p. 8°. (Beilage zum Jahrbericht des Gymnasiums und der Realschule zu Greifswald. Ostern 1908.)
Bechtle, A.
Klima, Boden und Obstbau. Frankfurt a. Oder. 1908. xx, 557 p. 8°.
Belgium. Observatoire royal.
Annales. Nouvelle série. Physique du globe. Tome 4. Fasc. 1. Bruxelles. 1908. 138 p. f°.
Berliner Zweigverein der Deutschen meteorologischen Gesellschaft.
Jahresbericht. 1908. Berlin. 1909. 39 p. 8°.
Besson, Louis.
Sur la théorie des halos. Paris. 1909. 89 p. (Thèse-Faculté des sciences de Paris.)
Bürgel, Bruno H.
Wetter-Kalender und kritische Tage. . . 1909. Berlin. 1909. 96 p. 24°.
Calvert, Philip P.
Relations of the odonate fauna of Mexico and Central America to temperature, rainfall, vegetation areas and altitude. (*From* Proceedings of the Academy of natural sciences of Philadelphia, Oct., 1908. p. 473-491.) [Contains temperature chart of Mexico and Central America.]
Carnegie institution.
Year book. No. 7, 1908. Washington. 1909. vii, 240 p. 8°.
Congo. État indépendant.
Climatologie. Diagrammes et cartes pluviométriques du Congo. (*From* Bulletin official de l'état independant. N. 5, Mai 1908. p. 167-189. 8°.)
Costanzo, G , & Negro, C.
Sopra alcuni fenomeni di ionizzazione ottenuti con l'acqua piovana. Roma. 1908. 9 p. f°. (Estr. Memorie della Pontificia accademia Romana dei nuovi lincei. v. 26.)
Sulla formazione della pioggia. Milano. 1909. 22 p. 8°.
Craig, J. I.
The climate of ancient Palestine. Alexandria. 1909. 3 p. 4°. (Reprinted from the "Cairo scientific journal." no. 27, 1908.)
A meteorological expedition to Addis Abbaba in 1907. Alexandria. 1909. 5 p. 4°. (Reprinted from the "Cairo scientific journal," no. 27, 1908.)
Davis, W. M.
Practical exercises in physical geography. Boston. 1908. xi, 148 p. 12°.
Diaz, Severo.
. . . Un temporal de invierno. Primeros pasós en la meteorológia de precisión. México. 1908. 12 p. 8°.
Djebaroff, Iw. As. Th.
Ein Beitrag zur Wasserverdunstung des nackten und bebauten Bodens. Halle a. S. 1907. 152 p. 8°. (Inaug.-diss.-Halle. a. S.)
Ebstein, [Wilhelm].
Eisenach, seine Heilfaktoren und seine medizinische Bedeutung. Jena. 1906. ix, 104 p. 8°. ["Das Klima," p. 29-58.]
Egypt. Survey department.
Meteorological report. Parts 1-2. Cairo. 1908. 65; vii, 202 p. f°.

Ekholm, Nils.
Om lufttryckets ändringar och därmed sammanhängande företeelsen. (Ur Ymer, Tidskrift utgifven af Svenska sällskapet för antropologi, och geografi, Arg. 1908, H. 4.)
Elsner, Georg von.
Wissenschaftliche Ergebnisse der Expedition Filchner nach China und Tibet 1903-1905. IX. Band. Barometrische Höhenmessungen und meteorologische Beobachtungen. Berlin. 1908. viii, 236 p. 4°.
Fischli, Fritz.
Das Verhalten der meteorologischen Elemente und Erscheinungen in der Vertikalen. Bern. 1908. 129 p. 8°.
Fleming, J. A. An elementary manual of radiotelegraphy and radiotelephony. New York. 1908. xiv, 340 p. 8°.
Fortier, Samuel.
Climate of Orland [Cal.] and vicinity. (*In* Irrigation in the Sacramento valley, California. U. S. Office of experiment stations. Bull. 207.)
Fox, Chas. J. J.
. . . On the coefficient of absorption of the atmospheric gases in distilled water and sea water. Part 2: Carbonic acid. Copenhagen. 1909. 31 p. 4°. (Conseil permanent international pour l'explorations de la mer. Publications de circonstance no. 44.)
Fritsche, H.
Die mittlere Temperatur der Luft im Meeresniveau, dargestellt als Funktion der geographischen Länge, Breite und Jahreszeit. Meteorologische Publication 1. Riga. 1909. 144 p. 4°.
Germany. Deutsche Seewarte.
Deutsches meteorologisches Jahrbuch 1907. Hamburg. 1908. vi, 200 p. f°.
Gerosa, Giuseppe.
Elementi di meteorologia. . . Livorno. 1909. x, 316 p. 8°.
Grothe, Hugo.
Meteorologische Stationen in der asiatischen Turkei. (S.-A. Beiträge zur Kenntnis des Orients. Band 6, p. 149-154.)
Hecker, Alfred.
. . . Die gestrengen Herren. (Landwirtschaftliche Jahrbücher. Berlin. 1908. p. 711-729.)
Holland. Koninklijk nederlandsch meteorologisch Instituut.
Jaarboek. 1907. Utrecht. 1908. xxxiii, 256; 38 p. f°. (No. 97.)
Onweders, optische verschijnselen, Enz. in Nederland. . . 1906. Deel 27. Amsterdam. 1908. 121 p. 8°. (No. 82.)
Hungary. Magyar kiralyi orszagos meteorologiai és földmagnességi intézet.
Die Erdbeben in Ungarn 1900, 1901, 1902. Budapest. 1909. 91, x, 1 p. 8°.
Jensen, Chr.
Die gegenwärtigen Probleme und Aufgaben welche mit dem Studium der atmosphärischen Polarization verknüpft sind. Kiel. 1908. [166]-175 p. 4°. (Abdruck aus den Astr. Nachr. Nr. 4283. Bd. 179. November, 1908.)
Jersey. Observatoire St. Louis.
Bulletin des observations météorologiques. 15 année 1908. Jersey. 1908. 31 p. 4°.
Knörzer, Alb.
Die Temperaturmittel Würzburgs 1880-1903. Eichstätt. 1904. 16 p. 8°.
Krakau. Observatoryum.
Materyaly de klimatografii Galicyi zebrane przez Sekcye meteorologiczna w roku 1907. [Krakow.] 1908. 77 p. 8°.
Laflamme, C.
Notes de météorologie. Quebec. 1904. 15 p. 8°.
Lecornu, J.
Les cerfs-volants. Paris. 1902. iv, 240 p. 8°.
Leon, Luis G.
Los fenomenos del aire. Mexico. 1900. 409 p. 12°.
Loanda. Observatoiro meteorologico.
Resumo das observaçoes. 1905-1908. 4 sheets. 38 x 50 cm. (1907-1908: 50 x 65 cm.)
McAdie, A[lexander] G.
Mountain sites for observatories. (*In* Publications of the Astronomical society of the Pacific. v. 21. Feb., 1909. p. 13-18.)
Merzifun (Asia Minor). Anatolia college.
Meteorological records. 1908. 1 sheet. 36 x 24 cm.
Müller-Pouillet.
Lehrbuch der Physik und Meteorologie. 10th ed. 2er Band. Braunschweig. 1909. xxvii, 1189 p. 8°.
Mysore. Meteorological department.
Meteorology in Mysore. 1907. 15th annual report. Bangalore. 1908. xiii, 56 p. f°.
Navaro, Manuel Maria S.
Datos sobre los macrosismos españoles. (Boletin de la Real sociedad española de historia natural, octubre, 1908.)
Nowack, Jos. Fried.
. . . Den Zweifiern. Entgegung auf die Kritiken über meine "Wetterpflanze." 2d ed. Korneuburg. 1905. 94 p. 8°.