seniors during the first half-year. A text-book is used as the basis of instruction but much supplementary material is added in the form of lectures. In order to systematize the work this syllabus, which covers both text-book and lectures, was prepared.

The title is: "Syllabus of a Course on Meteorology", and meteorology is here considered in its broadest sense as the science which deals with all atmospheric phenomena. Some things are thus included which may not be found in all books on meteorology. The subject is divided into 13 chapters, of which the first eight are always treated in every book on meteorology. The last five are treated fully in some books and past over with a few words in others. The chapters are subdivided into sections and the sections into topics. References are given in the syllabus to the four following books: Davis, Elementary Meteorology; Moore, Meteorology; Russell, Meteorology; and Waldo, Elementary Meteorology. * * * No attempt has been made to give references to all the books on meteorology. The reasons for choosing these particular four were: (1) They seem to be the most complete modern text-books. (2) As far as is known to the author, whenever a separate text-book on meteorology is used in any school or college of the United States, one of these four is always chosen.

About forty-five periods are available for the course as given in Williams College, and this time suffices for covering the first eight chapters in detail, and for several lectures on the more important topics in the last five chapters. Davis's book is used at present as the text-book. Practical work in making observations, in deriving generalizations from meteorological statistics, and in making forecasts is required in connection with the course. Short essays or theses on special topics are also sometimes required.

The detailed outline of sections and topics of the first eight chapters was printed in the MONTHLY WEATHER REVIEW, July and April, 1905, Vol. XXXIII, pp. 324 and 159. The revisions since that printing have been very slight, and the most noticeable change is the addition of references to three other texts.

The titles of the chapters are as follows:

I. Introduction – the atmosphere.
II. The heating and cooling of the atmosphere.
III. The observation and distribution of temperature.
IV. The pressure and circulation of the atmosphere.
V. The moisture of the atmosphere.
VI. The secondary circulation of the atmosphere.
VII. Weather bureaus and their work.
VIII. Weather prediction.
IX. Climate.
X. Floods and river stages.
XI. Atmospheric electricity.
XII. Atmospheric optics.
XIII. Atmospheric acoustics.

We are informed by Prof. Charles S. Dolley, of the Department of Biology, Central High School, Philadelphia, Pa., that there is at that school "an opportunity for a competent young man to secure a very desirable position as instructor in physical geography, commercial geography, and the natural history of raw materials".

POPULAR METEOROLOGICAL LECTURES IN ENGLAND.

According to Nature, July 19, a series of popular lectures on meteorology has been given, during the past year, by Mr. W. Marriott, Assistant Secretary of the Royal Meteorological Society, under the auspices of the society itself. The lectures have been given before scientific societies, institutions, and schools; and a list of lectures for the coming season can be obtained by application to Mr. Marriott, at the rooms of the society, No. 70 Victoria street, London, S. W.

The eight lectures to be delivered during the season of 1906–7 will be illustrated with lantern slides. Their titles are as follows:

1. A chat about the weather.
2. Weather forecasting.
3. Rain, snow, hail, and thunderstorms.
4. The upper regions of the atmosphere.
5. Clouds, fog, and sunshine.
6. Climate and health.
7. Meteorology in relation to agriculture.
8. How to observe the weather.

It is so common for American universities to call distinguished Europeans to this country for short courses of lectures on special subjects that we earnestly hope some such institution, or the Chautauqua, will soon invite Mr. Marriott to deliver a course appropriate to an American audience. The popular lectures given in England can doubtless easily be supplemented by technical lectures on a subject with which Mr. Marriott is so familiar. It is always valuable to students to hear a subject treated by different men from different standpoints, and the courses of instruction in meteorology that are given at Harvard, Williams, Amherst, Chicago, and elsewhere would doubtless receive new interest if the students could also listen to Mr. Marriott.

Mr. Marriott has also published a little six-penny pamphlet, entitled "Some Facts About the Weather". From the last section of this pamphlet we learn that all who are interested in the progress of meteorology, ladies as well as gentlemen, are eligible for fellowship in the Royal Meteorological Society. Candidates must be personally known to at least one of the three fellows who recommend them for election. The annual dues are two pounds sterling, or ten dollars, with an entrance fee of five dollars or one pound sterling. Fellows receive the Quarterly Journal and other publications of the society without further payment.

The Editor will be pleased to join in recommending those who desire to join either the Royal Meteorological, the French Meteorological, the Austrian, or the German societies. The publications issued by them are full equivalents for the annual dues.

RECENT ADDITIONS TO THE WEATHER BUREAU LIBRARY.

H. H. KIMBALL, Librarian.

The following titles have been selected from among the 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 loaned for a limited time to officials and employees who make application for them.

Agra and Oudh. Meteorological Reporter.
Annual statement of rainfall, 1905. [Allahabad.] [1906.] (13 pp.) f°.
Administration report. 1905–6. Allahabad. 1906. (4 pp.) f°.
Brief sketch of the meteorology of the United Provinces...1905. Allahabad. 1906. (7 pp.) f°.

Austria. K. k. Hydrographisches Central-bureau.
Jahrbuch 1903. Wien. 1905. v. p. f°.

Batavia. Kon. Magnetisch en Meteorologisch Observatorium.
Observations made at the Royal Magnetical and Meteorological Observatory, 1904. Batavia. 1906. xxxiv, 174 pp. f°.

Besançon. Université. Observatoire.
17me bulletin météorologique. 1901. Besançon. n. d. v. p. 4°.
18me bulletin météorologique. 1902. Besançon. n d. v. p. 4°.

Bibliotheca Geographica.
1902. Berlin. 1905. xvi, 531 pp. 8°.

Buitenzorg. Institut Botanique.
Observations météorologiques 1903–4. n. t. p. n. d. f°.

Cape of Good Hope. Meteorological Commission.
Report. 1901. Cape Town. 1902. xvi, 185 pp. f°.
Same. 1902. Cape Town. 1903. xv, 177 pp. f°.
Same. 1903. Cape Town. 1904. xiv, 197 pp. f°.
Same. 1904. Cape Town. [1905] 27; xv, 119 pp. f°.

Caspari, C[hretien] Ed[ouard].
Les recherches scientifiques à la Tour Eiffel. (Extr. Bull. Soc. astro., Par. Juillet 1906.) Paris. 1906. 9 pp. 8°.

Denmark. Danske Meteorologiske Institut.
Meteorologisk Aarbog for 1903. Kjobenhavn. 1904-5. v. p. f°.
Same. 1904. Pt. 1. Kjobenhavn. 1905. 143 pp. f°.
Same. 1905. Pt. 1. Kjobenhavn. 1906. 143 pp. f°.

Eiffel, G[ustave].
Les observations météorologiques du Weather Bureau de Washington. (Extr. Bull. Soc. astro., Par. Année 1906.) Paris. 1906. 27 pp. 8°.
Types généraux de comparaisons météorologiques appliqués à l'étude des stations de Beaulieu-sur-mer, Sèvres et Vacquey. 1905. Paris. 1905. 71 pp. f°.

Finska Vetenskaps-societeten. Helsingfors.
Bidrag till kännedom af Finlands natur och folk. 61 Häftet. Helsingfors. 1902. xxi, 303 pp. 8°.
Same. 62 Häftet. Helsingfors. 1903. 431 pp. 8°.

Oversigt . . . förhandlingar. 1901-2. Helsingfors. 1902. xxi, 266 pp. 8°.
Same. 1902-3. Helsingfors. 1903. v. p. 8°.

Great Britain. Meteorological Office.
First report of the meteorological committee . . . 1906. London. 1906. 154 pp. 8°.

Hérault. Commission Météorologique.
Bulletin météorologique. 1905. Montpellier. 1906. 140 pp. 4°.

Heredia, Gustavos.
Perturbaciones seismicas registradas en Puebla 1877-1906. Puebla. n. d. n. p. 8°.

Hessler, Adam.
Klimatologie Würzburgs in ihrer Entwickelung. Würzburg. 1906. [153]-239 pp. 8°.

Hjeltström, S. A.
Observationer på snöns temperatur, Bjästa 1885-6, Sundsvall, 1886-7, 1888. Sundsvall. 1906. 39 pp. f°.

Hungary. Magyar Kiralyi Orszagos Meteorologiai és Földmagnességi Intézet.
Die Erdbeben in Ungarn . . . 1903. Budapest. 1906. 43 pp. 8°.
Same. 1904. Budapest. 1906. 59 pp. 8°.
Same. 1905. Budapest. 1906. 28 pp. 8°.

Lamprecht, Guido.
Die Minimummeteorologie. Bautzen. 1906. 8 pp. 4°.
Wetterperioden. Bautzen. 1897. 29 pp. 4°.

Mauritius. Royal Alfred Observatory.
Annual report of the director, 1905. n. p. n. d. 31 pp. f°.
Results of the magnetical and meteorological observations, 1904. London. 1906. v. p. f°.

Mill, Hugh Robert.
The rainfall of Suffolk. (Repr. "Water supply of Suffolk".) 1906. [13]-17 pp. 8°.
The rainfall of the East Riding of Yorkshire. (Repr. "Water supply of the East Riding of Yorkshire".) [1906.] [17]-25 pp. 8°.

Mississippi River Commission.
Stages of the Mississippi River and of its principal tributaries for 1905. St. Louis. 1906. lix, 75 pp. 8°.

Prussia. Königliches Preussisches Meteorologisches Institut.
Bericht über die Tätigkeit . . . 1905. Berlin. 1906. 37 pp. 8°.

Pyrénées-Orientales. Commission Mé'éorologique.
33e bulletin météorologique annuel 1904. Perpignan. 1906. 51 pp. f°.

Sommer, Emil.
Die wirkliche Temperaturverteilung in Mitteleuropa. Stuttgart. 1906. [125]-166 pp. 8°.

Southern Rhodesia. Statist.
Report on meteorology . . . 1903. Salisbury. 1903. 21 pp. f°.
Same. 1904. Salisbury. 1904. 8 pp. f°.

Southport. Meteorological Department. Fernley Observatory.
Report and results of observations. 1905. Southport. 1906. 30 pp. 8°.

Sutton, J. R.
The climate of East London, Cape Colony. (Extr. Trans. So. Afr. phil. soc. v. 16, Pt. 3. Aug., 1906.) 217-236 pp. 8°.

Vaucluse. Commission Météorologique.
Compte rendu 1905. n. p. n. d. 32 pp. f°.

RECENT PAPERS BEARING ON METEOROLOGY.

H. H. KIMBALL, 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 ——

Bulletin of the American Geographical Society. New York. Vol. 38. Sept., 1906.
—— Snow in the Sahara. [Note.] P. 557.

Journal of the Franklin Institute. Philadelphia. Vol. 162. Oct., 1906.
Henry, Alfred J[udson]. Weather forecasting from synoptic charts. Pp. 297-316.

Journal of the Meteorological Society of Japan. Tokyo. 25th year. July, 1906.
Uyeda, R. On the foehn at Kanazawa. (Jap.)

Nature. London. Vol. 74. Sept. 13, 1906.
Chree, C. Atmospheric electricity in Algeria. [Review of paper by Ch. Nordmann.] P. 505.

Proceedings of the American Philosophical Society. Philadelphia. Vol. 45.
Chamberlin, Thomas C. On a possible reversal of deep-sea circulation and its influence on geologic climates. Pp. 33-43.
Nipher, Francis E. The elimination of velocity effects in measuring pressures in a fluid stream. Pp. 77-81.

Review of Reviews. New York. Vol. 34. Sept., 1906.
—— The cost (in electricity) of a flash of lightning. P. 378.

Science. New York. New Series. Vol. 24. Oct. 19, 1906.
—— The fire ships of Bay Chaleur. [Note on work by W. F. Ganong.] P. 501.

Scottish Geographical Magazine. Edinburgh. Vol. 22. Oct., 1906.
—— The insolation of Switzerland. [Note.] Pp. 547-548.

Symons's Meteorological Magazine. London. Vol. 41. Sept., 1906.
—— Lambrecht's polymeter and hygrometer. Pp. 151-152.
Searle, G., and others. The recent great heat [Aug.-Sept., 1906]. Pp. 153-155.

Annales de Chimie et de Physique. Paris. 8 séries. Sept., 1906.
Villard, P. Essai de théorie de l'aurore boréale. Pp. 1-29.

Archives des Sciences Physiques et Naturelles. Genève. 1 période. Tome 23. 15 Sept., 1906.
Klingelfuss, Fr. Remarque sur un éclair en tourbillon. Pp. 270-273.
—— La fata morgana. Pp. 274-275.

Ciel et Terre. Bruxelles. 27 année. 16 août, 1906.
De Heen, P. Théorie des phénomènes électriques de l'atmosphère, basés sur les propriétés de l'état particulaire. Pp. 295-308.

Comptes Rendus de l'Académie des Sciences. Paris. Tome 143. 10 Sept., 1906.
Störmer, Carl. Les expériences de M. Villard et sa théorie des aurores boréales. Pp. 408-411.

La Géographie. Paris. Tome 13.
Chevalier, Aug. L'île de San-Thomé. [Climate.] Pp. 257-274.
Lemoine, Fréderic. Les cyclones de Tahiti de mai 1905 et février 1906. Pp. 486.

Revue Néphologique. Mons. Sept., 1906.
Monné, A. J. La nébulosité à Nijkerk. Pp. 65-66.
B[racke], A. Jours d'orage et jours de grêle à Brême, 1829-1868. Pp. 66-68.

Illustrierte Aëronautische Mitteilungen. Strassburg. 10 Jahrgang. Okt., 1906.
—— 25 Jahre Geschichte des Berliner Vereins für Luftschiffahrt. Pp 329-380.

Meteorologische Zeitschrift. Braunschweig. Band 23. Sept., 1906.
Hopfner, Friedrich. Ueber die Grösse der solaren Wärmemengen, welche in gegebenen Zeiten beliebigen Breiten der Erde zugestrahlt werden Pp. 385-395.
Hopfner, Friedrich. Die tägliche solare Wärmestrahlung auf einer in beliebiger Breite fest gegebenen Flächeneinheit. Pp. 396-401.
Osthoff, H. Der Mammato-Cumulus. Pp. 401-408.
Krebs, W. Der Ponape-Taifun vom 20. April 1905. Pp. 411-413.
—— Jährliche Niederschlagsmengen zu Toronto 1845 bis 1903 und Wasserspiegelschwankungen des Ontario-Sees. P. 413.
Hann, J[ul'us]. Sutton: Ueber den täglichen Gang des Barometers zu Kimberley. Pp. 417-418.
Hann, J[ulius]. Temperaturabnahme mit der Höhe auf Spitzbergen. Pp. 418-419.
Hegyfoky, J. Die Frühlingsankunft der Vögel und die Witterung in Ungarn im Zeitraume 1894-1903. Pp. 419-421.
Kerner, Fritz v. Abnahme der Bodentemperatur mit der Höhe im Prologgebirge in Dalmatien. Pp. 421-422.
Prager, —. Ueber die Genauigkeit der graphischen Darstellung des täglichen Ganges der Temperatur. Pp. 422-425.
Hann, J[ulius]. Klima von Perpignan. Pp. 425-427.
—— Zum Klima der Sahara. P. 427.
Hann, J[ulius]. Täglicher und jährlicher Gang der Verdunstung in Südindien. Pp. 428-429.
Hann, J[ulius]. Gang der Bodentemperatur zu Tacubaya (Mexico). P. 430.
Hann, J[ulius]. Täglicher und jährlicher Gang der Bodentemperatur in Tokyo. P. 430.
—— Grösste Tagessumen des Regenfalls auf Ceylon. Pp. 431-432.
Hann, J[ulius]. Regenverhältnisse von Hongkong. P. 432.

Naturwissenschaftliche Rundschau. Berlin. 21 Jahrgang. 20 Sept., 1906.
Hellmann, G[ustav]. Verwandlung von Fahrenheitgraden in Centesimalgrade und umgekehrt. P. 487.

Das Wetter. Berlin. 23 Jahrgang. Sept., 1906.
Hecker, Alfred. Die Geschichte der Wettertelegraphie und der Wettervorhersage unter besonderer Berücksichtigung des landwirtschaftlichen Witterungsdienstes. Pp. 193-197.
Lindemann, —. Die meteorologische Station auf dem Fichtelberg 1891-1905. Pp. 197-201.
Klengel, Friedrich. Die Niederschlagsverhältnisse von Deutsch-Südwestafrika. Pp. 202-206.
—— Wetter-Plaudereien. Pp. 210-212.

Hemel en Dampkring. Den Haag. 4 Jaargang. Sept., 1906.
Smits, P. J. Wolken-waarnemingen te Batavia gedurende de jaren 1903-1905. Pp. 73-77.
Hiesink, C. W. De invloed der maan op de onweders. [The influence of the moon on thunderstorms.] Pp. 78-79.