

pile of abstracts and papers just received from them. These form part of the volumes issued under the title of "Miscellaneous Papers of the University Observatory, Oxford," and include important papers on the measurement of star photographs, eclipse work, variable star discussions, and mathematical astronomy.

In his report of the work during the year ended April 30, Prof. Turner states that the work of replacing defective plates in zone 25° (the last Oxford zone) was completed, and the volume of measures ready for immediate publication. The question of making differential measures by photographic means of the places of the reference stars has long been under consideration, and an apparently satisfactory method is to be given an extensive trial.

METEOROLOGICAL REPORTS AND YEAR-BOOKS.

VIENNA Central Meteorological Office (1908).—The forty-fifth year-book (new series) of this important service appears in the same form as heretofore; it includes daily observations and monthly and yearly results in the international form for a number of stations, hourly observations for Vienna, and temperature and rainfall observations at other stations. Purely rainfall statistics are published by the Hydrographic Office, and observations in Hungary and elsewhere are also separately published. Observations of the upper air are actively carried on by manned and registering balloons. Weather forecasts were sent free to all post and telegraphic offices between April and November, in addition to the daily publications of the usual weather report (with chart). A separate appendix issued with this volume contains the results of thunderstorm observations in Lower Austria in 1902-5, by Dr. A. Defant. These include two maps showing the districts of the first appearance and final disappearance of the storms. The greater elevations of ground are seen to offer favourable conditions for the formation of the storms, and to promote their development in a remarkable manner. Very few storms originate in the more level districts; these check their development, and become the places of dissolution of the storms which approach from other parts.

Meteorological Office (1910).—Summaries of the results have been published of the geophysical and meteorological observations in continuation of the reports of the observatory department of the National Physical Laboratory, in accordance with arrangements made between H.M. Treasury and other authorities. The tables in this volume are given in the usual form, and include observations for Eskdalemuir, magnetic results for Falmouth and Valencia, and the customary table of recent magnetic values for observatories in all parts of the world. In the year 1911 Eskdalemuir will replace Kew with regard to magnetic observations. The following data for Kew are extracted from interesting notes drawn up by Dr. C. Chree:—mean westerly declination, 16° 3' 2"; inclination, 66° 58' 7"; horizontal force, 0.18503. Solar radiation observations with an Ångström pyrheliometer made between 11h. 30m. a.m. and 12h. 30m. p.m., expressed in gram-calories per square centimetre per minute, ranged from 1.105 in August to 0.575 in December; the absolute values were 1.296 in May and 0.484 in December. The largest seismograph disturbances occurred on January 22, amplitude (E.-W. displacement) >17 mm.; June 24, 11 mm., and December 13, 7.5 mm. Dr. Shaw states that the considerations of the most suitable forms for the future publication of the results obtained at the associated observatories, in view of international relationships, is now occupying attention.

Liverpool Observatory (1910).—The report of this valuable institution, maintained in great efficiency by the Mersey Docks and Harbour Board, appears in the same form as in previous years (NATURE, October 27, 1910). The annual means of the principal meteorological elements were practically normal; absolute maximum temperature, 77.3° in June (11.8° below the highest record); minimum, -5.9° in January (7.2° above the lowest record). An interesting experiment was made in the autumn, in connection with the determination of time, by observing the signals sent out by radio-telegraphy from the Eiffel Tower and from

the German station at Merddeck; the signals were received at Waterloo station with great clearness. The amplitudes and other details of the seismological disturbances of January 22, June 24, and December 13 agree closely with those recorded at Kew; in the first case the amplitude exceeded the width of the paper.

Norwegian Meteorological Institute (1910).—These valuable observations are published in two volumes, as in previous years:—(1) the year-book containing daily observations with monthly and yearly summaries according to the international scheme, and hourly readings for Christiania; (2) daily amounts of rain and snow with summaries, and normal percentages for as many years as are available. This volume is accompanied by maps showing the annual isohyets for each 200 mm. These give a clear idea of the great variation according to geographical position (see NATURE, July 28, 1910) which it is difficult otherwise to obtain from the great mass of tables. They clearly show the influence of the rain-bringing winds of the Atlantic, and of the configuration of the land. One of the tables, giving the values at selected stations in 1910 in percentages of the normal amounts, shows yearly differences ranging from 59 to 169 per cent. of the normal. We have also received a "summary of air-temperature and rainfall for 1909" in a very handy form, being an excerpt from a periodical publication.

Toronto Observatory (1909).—The results of this valuable series of meteorological observations are given for each month and the year, together with the average for the past seventy years: mean temperature, January, 1909, 26.5°; July, 67.8°; year, 45.9° (average, 45.1°); absolute maximum, 95.8°, in August (highest on record, 99.2°); minimum, -8.7°, on February 1 (lowest on record, -26.5°). Depth of snow, 69.1 inches (mean 66.0 inches); rainfall, 26.01 inches (mean, 26.86 inches). The sunshine during the year was 2068 hours, 44 per cent. of the possible amount. Mean westerly declination was 6° 59.4'; inclination, 74° 37.5'; horizontal force, 0.162988 dyne.

Bremen Observatory (1910).—The observations are published in the same form as in previous years (NATURE, October 27, 1910) as one of the valuable series of German meteorological year-books; it contains, in addition, results for the lustrum 1906-10, and for the thirty-five years 1876-1910, with hourly means for twenty years. The following data are for the 35-year period:—mean temperature: year, 47.7°; January, 32.9°; July, 62.6°; mean of absolute maxima for July, 82.9°; of minima for January, 11.3°. Rainfall: annual amount, 27.23 inches; maximum in twenty-four hours, 3.39 inches. Results of observations with pilot balloons are exchanged daily by telegraph with the aeronautical observatory at Lindenberg.

THE AMERICAN INDIAN LANGUAGES.

THE admirable volume referred to below¹ forms the first portion of a systematic account of the American Indian languages. It has been in preparation for many years, and has grown out of an attempt to prepare a revised edition of Major J. W. Powell's "Introduction to the Study of Indian Languages." The filling of the schedules contained in the "introduction" caused an accumulation of much linguistic material without throwing much light upon the morphology, the phonetics, or the psychological basis of the languages. In this new work special emphasis is placed upon the importance of an analytical study of the languages. The work has been rendered possible by the cooperation of numerous investigators under the auspices of various institutions, particularly the American Museum of Natural History and the University of California.

The subject is introduced by Dr. Franz Boas in a very able exposition of the principles of linguistics as applied to ethnological problems. Though written with especial reference to the problems of American ethnology, this will be found of much value to the general student. In dealing with the three factors of physical type, language, and

¹ "Handbook of American Indian Languages." By F. Boas. Part i. Pp. vii+1066. (Washington: Government Printing Office, 1911.) (Smithsonian Institution, Bureau of American Ethnology, Bulletin No. 40.)

culture, now so often found non-correlative, Dr. Boas does not consider that we are justified in assuming that in primitive communities these three phenomena were necessarily more closely associated than they are now. He recognises that mankind cannot be classified by any one of these factors alone.

In a section on the characteristics of language, Dr. Boas has an important chapter on phonetics generally, and discusses the way in which languages differ in expressing groups of ideas by the grouping of phonetic elements. He takes the sentence as the natural unit for the expression of an idea, and discusses the sentence and its components—words or particles, stems or affixes—especially with regard to the American languages. In these, owing to the close association of the phonetic elements in a sentence, it is not easy clearly to define the terms "word" and "sentence."

In dealing with grammar, Dr. Boas illustrates by means of American languages the nominal categories of gender, plurality, case and tense, and the personal and demonstrative pronouns and verb. This leads to the conclusion that in placing a language, phonetics, vocabulary, and grammatical concepts must each be considered.

In a section on classification the author deals with comparison, mutual influence, the origin of similarities by dissemination or parallel development, and the influence of environment and common psychic traits. Then follows a very practical section on the importance of linguistics as a means, as well as a part, of ethnological studies.

The introduction finally deals with the characteristics of American languages. Dr. Boas does not agree that all these are polysynthetic or incorporating, but points out their common features. He gives a list of fifty-five linguistic families which may be distinguished in North America north of Mexico.

The larger portion of the volume specially appeals to the student of American linguistics. It contains ten grammars of typical languages, each dealt with by a specialist in the group to which it belongs. Thus Dr. P. E. Goddard deals with Athapascan (Hupa), Dr. J. R. Swanton with Tlingit and Haida, and in collaboration with the editor with the Siouan (Dakota). Dr. Boas himself is responsible for the Tsimshian, Kwakiutl, and Chinook languages, Dr. R. B. Dixon for the Maidu, Dr. W. Thalbitzer for the Eskimo, whilst the Algonquian (Fox) is the joint work of Dr. W. Jones and Dr. Truman Michelsen. These works form an excellent preliminary to the detailed study of the several groups. A general plan of presentation is followed in the grammars, modified, however, by the characteristic morphology of the language discussed. Each and all of them will serve as models for future students.

In congratulating the Bureau of American Ethnology and the editor and writers of the present volume on such an excellent account of the languages, one regrets to find that several of the grammars deal with languages which are largely spoken in Canada, and that neither the British Government nor universities have any place for similar detailed studies of the native languages of the Empire. When will any of these provide for the student such matter for study as is to be found in the systematic issue of the instructive and interesting volumes of the American Bureau or in the valuable collections of native texts published by such institutions as the Universities of California or Columbia?

SIDNEY H. RAY.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

MR. G. E. NICHOLLS, of the zoological department of King's College, London, has been appointed professor of biology at Agra College, University of Allahabad.

THE chemical laboratories of the Athens University were destroyed by fire on August 28. A *Times* correspondent estimates the damage at 80,000l.

It is announced in *The Popular Science Monthly* that Prof. L. H. Bailey has tendered his resignation of the directorship of the New York College of Agriculture to the trustees of Cornell University.

NO. 2184, VOL. 87]

AN offer by Mr. Andrew Carnegie to erect at a cost of 15,000l. three suburban branch libraries in Manchester has been accepted by the Manchester Library Committee. The offer is to be considered at the next meeting of the City Council.

AT the forthcoming celebration of the quincentenary of the foundation of St. Andrews University, the honorary degree of LL.D. will be conferred upon the following men of science:—Sir T. Clifford Allbutt, K.C.B., F.R.S.; Sir Thomas Barlow, Bart., K.C.V.O., F.R.S.; Prof. A. Crum Brown, F.R.S.; Major P. A. MacMahon, F.R.S.; Prof. R. Meldola, F.R.S.; Prof. W. H. Perkin, F.R.S.; Prof. W. J. Pope, F.R.S.; Lieut.-Colonel D. Prain, C.I.E., F.R.S.; Prof. R. Saundby; Prof. Sir J. J. Thomson, F.R.S.

THE London Inter-Collegiate Scholarships Board announce that combined examinations in anatomy and physiology, and in arts and preliminary scientific subjects, will be held on Tuesday, September 19, for Medical Entrance Scholarships and Exhibitions of an aggregate total value of more than 17000l., tenable at University College, King's College, and in the Medical Schools of Westminster Hospital, St. George's Hospital, London School of Medicine for Women, University College Hospital, and King's College Hospital. Particulars and entry forms may be obtained from the deans of the respective medical schools, or from the secretary of the Board, Mr. A. E. G. Attoe, University College, Gower Street.

A CIRCULAR letter (No. 24) prescribing new regulations for the Royal Navy Medical Service has been issued by the Admiralty. The changes in the organisation and conditions of service take effect, where not already in operation, as from July 1, 1911, except when otherwise stated in the letter. It being considered essential for the scientific development of the Naval Medical Service that it shall possess a School of Medical Instruction and Research situated in the vicinity of London, where it will be in touch with the principal civil medical schools and with the Army Medical School at Millbank, it has been decided to establish a Naval Medical School at the Royal Naval College, Greenwich, in close proximity to the "Dreadnought" Seamen's Hospital and the London School of Tropical Medicine, and in a position, therefore, to carry out its educational and scientific work in close connection with those establishments. There are already in existence at Greenwich excellent chemical and physical laboratories, and the additional laboratories required for medical research will be provided in the college buildings and furnished with the necessary equipment and scientific apparatus. There will be specially appointed to the Naval Medical School as the nucleus of the instructional staff a professor of bacteriology and clinical pathology, and a professor of hygiene. When the structural alterations in that part of the building which has been selected for the purpose have been completed and the school is ready for use, a proportion of the instructional work now carried out at Haslar will be transferred to Greenwich, and such of the instructional staff and equipment as may be considered advisable will be removed to that establishment. It is not proposed, however, that the laboratory at Haslar shall be dismantled. A certain amount of instructional work must still be carried out at that establishment, and at least one medical officer will be retained there for the instruction of acting surgeons. When the Medical School at Greenwich is opened, the first two months of the course for naval surgeons will be passed at that establishment, this period being devoted to the study of tropical medicine, bacteriology and clinical pathology, hygiene, and skiagraphy. The remaining four months will be passed at Haslar, as at present.

THE technical colleges throughout the country are now issuing new prospectuses giving details of the courses of work which have been arranged for the forthcoming session. The prospectus of the Municipal Technical Institute, Belfast, for example, is a volume of 350 pages, provided with excellent illustrations of the laboratories, work-