

approval of Professor Hann, who has been consulted in regard to all of these matters. Every reference, the original of which is accessible in the Harvard College library or in the library of the Harvard College Observatory, has been looked up, verified and made as complete as possible. No apology is needed for the use of the Centigrade and metric system in such a book as this. For convenience, conversion tables, reprinted from the Smithsonian Meteorological Tables, are given in the appendix."

Professor Ward has also taken great pains to have the book rendered into good English, and in this matter he has had the skilled hand of Professor Henry S. Mackintosh to assist him.

He has also taken great pains to add new references; and the book is remarkably rich as a bibliography to modern literature on climatology.

The book is divided into two parts. Part I. deals with the 'Climatic Factors,' namely, temperature, moisture, cloudiness, precipitation, winds, pressure, evaporation, composition of the atmosphere and phenological observations. Part II. deals with solar or mathematical climate, physical climate, the influence of land and water on the distribution of temperature, the influence of continents upon humidity, cloudiness, precipitation and winds, the influence of ocean currents upon climate, the influence of forests on climate, the mean temperature of parallels of latitude and of the hemispheres, mountain climate, and finally geologic and periodic changes of climate.

No less than five chapters are devoted to mountain climate and the influences of mountains on climate.

No one familiar with Dr. Hann's writings need be told that he deals with the subject from a cosmopolitan standpoint which is rare even among the leaders in science, and he shows a surprising familiarity with the literature of every language. The translation seems all that one could wish.

H. H. CLAYTON.

SCIENTIFIC JOURNALS AND ARTICLES.

THE *Journal of Comparative Neurology* for April contains the following articles: 'The Fore-Brain of *Macacus*,' by Wm. Wolfe Lesem, a study of the superficial anatomy of the brain of the macaque monkey, with two plates. 'Brain Weights of Animals, with Special Reference to the Weight of the Brain in the Macaque Monkey,' by Edward Anthony Spitzka, including a tabulation of the brain and body weights of 204 specimens of mammalian brains. 'A Description of Charts showing the Areas of the Cross-sections of the Human Spinal Cord at the Level of each Spinal Nerve,' by Henry H. Donaldson and David J. Davis, an entirely new computation, including a comparison of the young and mature spinal cord and six different sets of curves. 'The Brain of the *Archæoseti*,' by G. Elliot Smith, a description of two casts of the brain cavity of this extinct cetacean, with four figures. There are twenty pages of book reviews, including a full summary of the researches of Professor Elliot Smith on the 'Phylogeny of the Pallium.'

SOCIETIES AND ACADEMIES.

ANTHROPOLOGICAL SOCIETY OF WASHINGTON.

THE work of the society for the winter has maintained the high level of former years, as shown by the importance of the papers presented and the enthusiasm displayed. At the meeting of November 4, 1902, Professor Lester F. Ward discussed 'Race Differentiation and Race Integration,' treating the subject from the social side, and in this connection Professor Holmes showed diagrammatically the beginnings of races and their final amalgamation.

Professor W. H. Holmes followed with a paper entitled 'The Search for Glacial Man,' reviewing the various discoveries and describing the recent find of human remains at Lansing, Kansas. The meeting of November 4 was devoted to sociology, and papers were read by Mr. Charles F. Weller, on 'How Citizenship is Molded in Washington Alleys and Shacks,' and by Dr. George M. Kober, on 'The Abuse of Medical Charities.' These

papers set forth in an interesting manner the efforts being made to promote good citizenship. On December 2 Dr. D. S. Lamb read a paper on Rudolph Virchow, Miss Harriet A. Boyd gave a résumé of the important discoveries of the past few years in Crete, and Professor Holmes presented examples of Central American sculpture.

The twenty-fourth annual meeting was held on January 6, 1903, and the following officers were elected:

President—Miss Alice C. Fletcher.

General Secretary—Walter Hough.

Treasurer—P. B. Pierce.

Councilors—Dr. G. M. Kober, Dr. D. S. Lamb and F. W. Hodge.

At the following meeting of the board of managers there were elected:

Secretary to the Board—J. D. McGuire.

Curator—Mrs. Marianna P. Seaman.

Councilors—Hannah L. Bartlett, J. Walter Fewkes, Weston Flint, J. W. B. Hewitt, J. H. McCormick, J. D. McGuire, J. R. Swanton and Edith C. Wescott.

Vice-Presidents of the Sections—D. S. Lamb, Frank Baker, W. H. Holmes, J. Walter Fewkes, George M. Kober, W J McGee and Lester F. Ward.

At the meeting of January 20 a paper was read by J. Dyneley Prince and Mr. Frank Speck, on 'The Modern Pequots and their Language,' which was discussed by Dr. A. S. Gatschet, who remarked that this paper contains almost all we know about the vanishing Pequots. The general secretary read a paper entitled 'The Gypsy,' which brought out general discussion.

At the meeting of February 3, the retiring president, W. H. Holmes, delivered his annual address under the auspices of the Washington Academy of Sciences, the subject being 'A Genetic View of Man and Culture.' The scope of the science of anthropology was defined and the limitations and relations of its various branches considered. By means of diagrams, the genetic relations of the various groups of physical, mental and cultural phenomena were indicated, and the methods of research in the various fields and the manner of applying the knowledge acquired to the

elucidation of human history were discussed.

At the meeting of February 17 Dr. John R. Swanton's paper on 'The Religion of the Haida Indians' gave voluminous information on a subject almost entirely untouched, heretofore. The second paper, by Mr. C. A. Simms, described a wheel-shaped monument discovered by him in Wyoming.

At the meeting of March 4, under the head of varieties, Dr. G. M. Kober read an extract from *American Medicine* on 'Hereditary Pauperism'; Professor Holmes gave details as to the new museum building; the president, Miss Fletcher, read a letter from Dr. G. G. MacCurdy in response to an inquiry concerning the course of anthropology at Yale, and remarked on Dr. Codrington's observations on the stability of unwritten language based on the Solomon Islanders, whose vocabulary has had no change in 300 years; she also announced the death of Mrs. Mary L. D. Putnam, of Davenport, Iowa.

Professor L. F. Ward followed with a paper on 'The Cross-fertilization of Cultures.' He dealt with origins, tracing the course of two or several independent human nuclei up to the point of meeting and contact, which, according to circumstances, determined peaceful or warlike races. He traced the origin of the state through militancy by various stages until conquerors and conquered are united under a war chieftain who is depended on, thus giving stability. Then races mix on the line of contact between the conquerors and conquered, forming a people, and we have cross-fertilization of races. In discussion, Professor Holmes said that we can now almost safely go back along the lines marked out by Professor Ward and depict pre-man.

In the next paper, by Dr. J. H. McCormick, on 'Prehistoric Remains of Mobile Bay,' the ancient mounds and sites of historic interest in the locality were described.

At the meeting of March 17 the president read a communication from Mr. Hill Tout, giving the aims of the Ethnographic Survey of Canada, of which he is secretary, and commented on the plan.

Professor M. D. Learned, of the University of Pennsylvania, read a paper entitled 'An Ethnological Survey of the United States.' Professor Learned noticed the efforts of the Germans, English and Americans in this matter, and announced that a bill for an ethnographic survey of Pennsylvania is pending in Harrisburg. This bill grew out of a test survey called the Conestoga Expedition of 1902, through which a great mass of valuable material was gathered. Professor Learned said that the character of the investigation should be a culture census of the American people, and agreed that, owing to the magnitude of the task, it should be undertaken by the census office. The paper was discussed by W. H. Babcock, Dr. H. C. Bolton, George R. Stetson, Professor Alexander G. Bell, Mrs. M. C. Stevenson, Dr. D. S. Lamb and E. S. Hallock.

The paper by Dr. I. M. Casanowicz, entitled 'Græco-Roman Papyri in the United States National Museum,' described the making of paper from the papyrus reed, the size of the books in the collection, their character as accounts, ledgers, letters, etc. Translations of a number of these Fayum papyri were given.

At the meeting of March 31 the president announced that Professor Brigham, of Honolulu, had succeeded in taking phonographic records of the intoned 'olas' or sagas of the Hawaiians, from the few old men who preserved these sacred chants.

The paper of the evening, 'Indian Baskets: What they are and What they mean,' was presented by Dr. C. Hart Merriam. The subject was illustrated with numerous specimens from Dr. Merriam's large collection and by many lantern slides. It was pointed out that the basket-making tribes to-day are confined to the regions west of the Rocky Mountains. The materials, the forms and uses of baskets, the environment, the state of the art and other topics were discussed and the patterns, so far as they have been determined, were explained. Dr. Merriam said that he had found the butterfly pattern in use among widely separated tribes, who give it the same meaning.

WALTER HOUGH,

Secretary.

AMERICAN MATHEMATICAL SOCIETY.

A REGULAR meeting of the American Mathematical Society was held at Columbia University, Saturday, April 25. About fifty persons, including forty members of the society, attended the two sessions. The president of the society, Professor Thomas Scott Fiske, occupied the chair. The following new members were elected: Professor William N. Ferrin, Pacific University, Forest Grove, Ore.; Mr. Ernest H. Koch, Jr., MacKenzie School, Dobbs Ferry, N. Y.; Professor Norman C. Riggs, Armour Institute of Technology, Chicago, Ill.; Mr. K. D. Swartzel, Harvard University. Twelve applications for membership were received.

Sectional meetings of the society were held at Northwestern University, April 11, and at Stanford University, April 25. Reports of these meetings will appear separately in SCIENCE.

The university subscriptions in support of the *Transactions* which have expired have been renewed, except that Wesleyan University now takes the place of Princeton in the list of supporting institutions.

While the activities of the society are concentrated on the promotion of mathematics as a science, it is inevitable that through its large and representative membership it should ultimately exert a considerable and beneficial influence on the teaching of mathematics in schools and colleges. As a scientific body, the society does not promulgate official views on any subject, but merely furnishes a forum for discussion. That it does not endorse any particular conclusion is not, however, by any means inconsistent with the collection and digestion of useful information. At present three several committees of the society are actively engaged in the preparation of reports on requirements in mathematics for the master's degree, on college entrance requirements in mathematics, and on desirable relations of the society to the teaching of elementary mathematics, respectively. The society has recently been greatly interested in a movement, foreshadowed in Professor E. H. Moore's presidential address (*vide* SCIENCE, current

volume, pp. 401-416), which is taking effective shape in the organization of associations of teachers of mathematics throughout the country. On April 11-12 the Central Association of Teachers of Mathematics and Science was formed at Chicago, Professor Moore and other members of the society actively cooperating. At a meeting held in Boston on April 18 the Association of Teachers of Mathematics in New England was organized. This meeting was opened by an address, by President Thomas S. Fiske of the society, on 'Methods for improving the teaching of mathematics.' Other similar associations will probably soon be formed. It is precisely through such associations that the society can best exert a real influence on the teaching of mathematics.

The following papers were read at the April meeting:

H. E. HAWKES: 'On non-quaternion number systems in seven units.'

B. O. PEIRCE: 'On families of curves which are the lines of certain plane vectors, either solenoidal or lamellar.'

E. W. BROWN: 'On the variation of the arbitrary and given constants in dynamical equations.'

L. P. EISENHART: 'Congruences of tangents to a surface, and derived congruences.'

H. F. STECKER: 'Least distance in the non-euclidean plane.'

L. E. DICKSON: 'Fields whose elements are linear differential equations.'

SAUL EPSTEIN: 'On linear differential congruences.'

R. S. WOODWARD: 'The deviation from the vertical of falling bodies.'

EDWARD KASNER: 'The automorphic groups of the manifolds defined by a general and a symmetric determinant.'

C. H. SISAM: 'On some directrix curves on quintic scrolls.'

L. I. NEIKIRK: 'Groups of order p^m which contain cyclic subgroups of order p^{m-3} .'

I. M. SCHOTTENFELS: 'On the simple groups of order $8! / 2$.'

E. B. WILSON: 'The so-called foundations of geometry.'

The American Physical Society was in session simultaneously with the Mathematical Society. While it was found impracticable to arrange a joint session, several members of the Physical Society attended the presentation

of Professor R. S. Woodward's paper. In the evening twenty-five members of the two societies dined together and continued the discussion of the outlook for the better teaching of mathematics, a topic of mutual interest and importance.

The next meeting of the Mathematical Society will be the summer meeting, which, with the Fourth Colloquium, will be held at the Massachusetts Institute of Technology, Boston, beginning August 31. F. N. COLE,

Secretary.

DISCUSSION AND CORRESPONDENCE.

THE PROPOSED BIOLOGICAL LABORATORY AT THE TORTUGAS.

THE need of a first-class marine laboratory for research in the tropical Atlantic is so apparent and so pressing that I hope that no apology is necessary for a few practical suggestions that are the result of a personal acquaintance with the station that seems, from the replies to Dr. Mayer's enquiries, to be the one most favored by the zoologists who have been consulted. Without any intention of belittling the claims of any other situation, there are certain important advantages that can be urged in favor of the Tortugas that seem to render this station far and away the most advantageous for the best work along marine biological lines. These may be summarized as follows:

1. The unexcelled fauna. It seems to me that there is hardly a doubt that at no point in the vicinity of our southern coast are the conditions more favorable for profuse marine life than here. Some years ago an expedition from the University of Iowa examined with some care several regions in the West Indies and Florida keys, including the island of Eleuthera, Cuba, Key West and the Tortugas. While any one of these stations would afford abundant material for investigation, the preeminence can confidently be claimed for the last of these points. As asserted by Dr. Mayer, the northern edge of the Gulf Stream seems to very materially excel the southern, especially in the matter of pelagic life.