

THE AMERICAN ASSOCIATION FOR THE
ADVANCEMENT OF SCIENCE
SECTION A—MATHEMATICS AND
ASTRONOMY

As both mathematics and astronomy were represented by national societies meeting in affiliation with the association, Section A confined itself to an afternoon session, which was held on Tuesday, December 31. Professor E. B. Van Vleck, of Wisconsin University, presided during this joint meeting of Sections A and B, the American Mathematical Society (including the Chicago Section), the American Physical Society and the Astronomical and Astrophysical Society of America. The meeting was attended by more than two hundred and fifty members of the association and affiliated societies.

In the absence of the retiring vice-president and chairman of Section A, Professor E. B. Frost, director of Yerkes Observatory, his address, entitled "The spectroscopic determination of stellar velocities, considered practically," was read by Professor J. A. Parkhurst. This address will be published in *Popular Astronomy*. The retiring vice-president and chairman of Section B, Professor R. A. Millikan, University of Chicago, presented an address entitled "On unitary theories in physics," which will appear in *SCIENCE*.

In addition to these two addresses the following four papers were presented during the session of Section A:

"Henri Poincaré as a mathematical physicist," Professor A. G. Webster, Clark University.

"Some general aspects of modern geometry," Professor E. J. Wilczynski, University of Chicago.

"Cosmical magnetic fields," Dr. L. A. Bauer, director of the Department of Terrestrial Magnetism, Carnegie Institution of Washington.

"Preliminary note on an attempt to detect the general magnetic field of the sun," Professor G. E. Hale, director of Mt. Wilson Observatory.

In the absence of Professor Hale his paper was presented by Dr. Bauer. The others were presented by their respective authors. Professor Webster's paper will appear in *SCIENCE*. Brief abstracts of the other three are as follows:

After discussing briefly the general relations between analysis and geometry, Professor Wilczynski considered the notion of a space of n -dimensions and showed how wide is the applicability of this idea even if we confine our attention to ordinary space, provided a suitable geometric form is chosen as generating element. His devel-

opments culminated in a general theorem which, as he claims, represents a fundamental unifying principle of geometry. This theorem may be stated as follows: The projective geometry of any analytic k -spread in a space of n -dimensions is equivalent to the theory of the invariants and covariants of a certain associated completely integrable system of partial differential equations. The paper will appear in the *Bulletin of the American Mathematical Society*.

Dr. Bauer made application of the results of his investigations on the origin of the earth's magnetic field, presented at the Pittsburgh meeting of the Astronomical and Astrophysical Society of America, and Section B of the association at the Cleveland meeting, to the possible magnetic fields of the sun and planetary bodies. A new mathematical method of analysis of the earth's magnetic field was briefly sketched. The paper will appear in *Terrestrial Magnetism and Atmospheric Electricity*, 1913.

Although some definite results have been obtained by Professor Hale, further observations will be required to prove conclusively whether or not the effects found are due to the sun's magnetic field. However, the present observations indicate that the north and south poles of the sun agree in magnetic polarity with those of the earth. As far as the strength of the field is concerned, a knowledge of the Zeeman effect for the lines in question is necessary to determine this. It happens that all of these lines are too faint in the spark to appear on the photographs, but another effort is being made to observe their behavior in the magnetic field.

The investigation is being pushed forward as rapidly as possible, in view of the quiet condition of the sun, since the appearance of sunspots, with their very powerful magnetic fields, will tend to introduce troublesome perturbations. The paper appeared in *Terrestrial Magnetism and Atmospheric Electricity*, Vol. XVII.

The following members of Section A were elected as fellows of the association: S. B. Barret, Harriet W. Bigelow, A. E. Burton, A. E. Douglass, S. Einarson, F. Ellerman, E. A. Fath, J. C. Hamilton, E. S. Haynes, W. A. Hurwitz, E. S. King, C. O. Lampland, F. P. Leavenworth, O. J. Lee, A. O. Leuschner, J. Lipke, C. P. Olivier, G. H. Peters, W. F. Rigge, D. Rines, E. Smith, T. Stephen, H. T. Stetson.

The section elected Dr. J. A. Brashear member of the council, Professor C. J. Fields member of

the sectional committee for five years and Professor T. F. Focke member of the general committee. On recommendation of the sectional committee Professor Frank Schlesinger, director of the Allegheny Observatory, was elected vice-president and chairman of the section, and Professor F. R. Moulton, University of Chicago, was elected secretary for five years.

G. A. MILLER,

Secretary of Section A

SOCIETIES AND ACADEMIES

THE ANTHROPOLOGICAL SOCIETY OF WASHINGTON

A SPECIAL meeting of the society was held December 3, 1912, at 4:30 P.M., in the New Museum Building, Mr. Stetson, the president, in the chair.

Mr. Wm. H. Babcock read a paper on "The Islands of Antillia," illustrated by lantern slide maps, taking the title of his paper from Peter Martyr's "Decades of the New World," where that author, in view of "the cosmographers," states that he believes these islands were what his contemporary, Columbus, had discovered. Peter Martyr's own sketch map of 1511 was exhibited, showing Florida as one of them under the name of Beimeni: also the maps of Beccaria, Bianco, Pareto and Benincasa, from 1435 to 1482, who may be among "the cosmographers" referred to. They show a group of four large islands roughly corresponding in size, arrangement and other respects with Cuba, Jamaica, Florida or Beimeni and Andros of the Bahamas, and bear on Beccaria's map the names Antillia, Reylla, Salvagio and Insula in Mar (Opposite Island or Island out Before, King Island, Savage Island and Island in the Sea). These are nearly as far west of the Azores as the latter are west of Europe and in such a location must be either the creatures of mere fancy or appurtenances of America. But it is not likely that mere guess-work could produce the remarkable correspondences of these great map islands with the reality, such an island group being altogether unique in the Atlantic.

Behaim's globe of 1492 contains an inscription to the effect that a Spanish vessel visited Antillia in 1414, more vaguely endorsed by another on the map of Ruysch (1508) which credits the Spaniards with finding Antillia long ago. That something of the kind happened in the first quarter of the fifteenth century may be inferred from the fact that Beccaria (1535) names the group collectively "The Newly Reported Islands," most likely borrowing this title legend from his earlier

map of 1426, although the fourteenth-century maps had contained no suggestion of Antillia and her consorts.

The other fifteenth-century maps named corroborate Beccaria, being very consistent in outline and arrangement so far as they go, although two of them give but three islands and Bianco shows only Antillia and a part of Salvagio, which he calls La Man de Satanaxio, but this last seems to be a case of mutilation. However, the Laon globe of 1493 shows only these two main (rectangular) islands.

A current map showed how naturally any craft entering and continuing in the great-sea-current which sweeps from the Azores and the other eastern islands westward to the Antilles would be carried to Cuba and her neighbors.

The Catalan map of 1375 and the Pizigani map of 1367 with its picture of St. Brandan blessing his Fortunate Islands of Porto Santo and Madeira, and the figures of a dragon and a dentapod, each carrying off a seaman from his ship as a warning against westward exploration, were also exhibited. They show the circular island of Brazil west of Ireland and the more southerly crescent-form Man or Brazir, both being important and persistent legendary islands: and the Catalan map in particular shows all the Azores approximately in their real grouping; but neither of them presents anything like the Islands of Antillia.

Dr. Philip Newton read a paper on the Negritoes of the Philippines, estimating their total number (full bloods) at 5,000, though by counting mixed-blood tribes and individuals the estimate is sometimes carried up to 25,000. They are distributed through numerous islands, though not reported from Mindoro. The greater number are on Luzon. There is no difference in them, except as their blood is mingled with that of neighboring races. They are not fishermen, but hunt and gather natural products, using in some districts poisoned arrows, the symptoms of poisoning being like those of strychnine. Their houses are made of upright poles connected by horizontal poles having cross pieces and leaf thatching. They are buried under or near these homes. They rarely bathe and their clothes (which are breech-clouts or aprons) are apparently never washed. Usually these are of cloth obtained in trade, but in some islands, for example Palawan, bark is used. Negritoes do not regularly practise agriculture, but will sometimes plant rice—and perhaps move away before it ripens. A skin disease is the most