Fields,' by L. W. Reid; 'On Certain Properties of the Plane Cubic Curve in Relation to the Circular Points at Infinity,' by R. A. Roberts. The number contains a portrait of the venerable ex-mathematician, George Salmon, Provost of Trinity College, Dublin.

The Popular Science Monthly for February has for its leading article 'Huxley's Life and Work,' by Lord Avebury, being the first Huxley Memorial Lecture of the Anthropological Institute of Great Britain. 'Malaria,' by Geo. M. Sternberg, being the address of the President of the Philosophical Society of Washington, gives a *résumé* of our knowledge of this subject and brings it up to date. 'A Study of British Genius,' by Havelock Ellis, is based on the Dictionary of National Biography and this, the introductory paper of a series, explains how the selections were made and gives the names of those selected. 'The Weather *vs.* the Newspapers,' by Harvey Maitland Watts, is an excellent brief exposition of the main facts of weather phenomena and of the general misunderstanding by the press and public. A brief and interesting article on 'The Philippines Two Hundred Years Ago,' by E. E. Slosson, is culled from the writings of Father Dominick Fernandez Navarette and Dr. John Francis Gemilli Careri. 'The Prehistoric Tombs of Algeria' are described by Alpheus S. Packard. Charles L. Bristol treats of 'The York Aquarium,' and in 'Chapters on the Stars,' Simon Newcomb discusses their clustering, the Milky Way, and stars with waning brightness. Finally Oliver C. Farrington, in 'A Century of the Study of Meteorites,' gives a brief summary of our knowledge of these bodies. Discussion and Correspondence comprises two contributions that especially deserve to be read, the one 'A Defense of Christian Science' as a fine example of this peculiar style of 'scientific' writing; the other 'Mr. Tesla's Science,' for its temperate criticism of certain kinds of 'science.' The departments of 'Scientific Literature and the Progress of Science' contain much good reading.

Bird Lore for February opens with an article on 'Pelican Island Revisited,' by Frank M. Chapman, with numerous and admirable illustrations from photographs by the author. 'Elliott Coues on Audubon' is a verbatim report of an address delivered by Dr. Coues before the American Ornithologists' Union in 1897, and this is followed by "Three Letters to Audubon's 'Kentucky Lads'" (his sons Victor and John), contributed by Maria R. Audubon. 'An Adirondack Lunch Counter,' with illustrations, describes the habits of some of the winter visitors. The second series of 'Birds and Seasons' discusses the birds to be met during February and March in various sections of the country, and then comes 'The Christmas Bird Census,' giving a list of the birds noted on that day at various places from Massachusetts to California and Canada to Louisiana. There is an interesting paper, by C. William Bebee, of a pair of Bald Eagles in the New York Zoo, who built a nest and have placed therein a good-sized stone on which they sit. Reviews and the department devoted to the Audubon Societies complete the number.

The Vermonter, St. Albans, Vt., C. S. Forbes, publisher, begins the year in magazine form and proposes to print monthly articles on the history, science and mineral interests of Vermont. The February number contains an interesting article on the geology of Vermont by Professor Henry M. Seely, of Middleburg College.

THE University of Missouri is about to publish, under the editorship of Frank Thilly, professor of philosophy, a series of *University Studies*, containing contributions by members of the faculty and graduate students.

SOCIETIES AND ACADEMIES.

PHILOSOPHICAL SOCIETY OF WASHINGTON.

AT the 529th meeting held February 2, 1901, three reports were made of observations during the solar eclipse of May 28, 1900.

Professor S. P. Langley reported on the Smithsonian observations at Wadesboro, N. C., exhibiting many lantern slides of the apparatus used and superb photographs of the corona and sky. He stated that direct photographs were taken showing the moon 15 inches in diameter, and that the bolometric work, performed by Mr. Abbot, showed the heat from the corona to be only five eighty-fifths of that received from

the full moon. He dealt particularly with the interest that attached to further photography of the region of the sun independently of the corona, and pointed out that with a wider shadow track, such as might be expected in Sumatra in next May, there was reason to expect that stars as small as the ninth magnitude might be secured; and he showed that on a reasonable supposition as to brilliancy the diameter of such a body might be supposed to be something like the one one-hundredth part of that of Mercury, or in a rough way, one-tenth of a second on the solar disk. The observers were aided of course by irradiation in seeing this as a star, while on the surface of the sun he could say from a good deal of experience that such a body would be invisible.

The argument against the existence of a zone of such small bodies, from their never having been seen on the sun's face, was therefore inconclusive. He did not himself look forward with confidence to any new discovery being made in this direction, but he was encouraged by the opinion of a very competent adviser to think that the observation was worth repeating under better conditions. It was also desirable to repeat and extend the observations on the heat of the inner corona made at the late eclipse, and he had decided to send out a very small expedition to Sumatra in the immediate charge of Mr. C. G. Abbot, of the Smithsonian Astrophysical Observatory. The ultimate station in the interior of the island has not yet been determined.

Professor S. J. Brown, of the Naval Observatory, showed slides from some of the photographs taken by his party in North Carolina, those of the flash spectrum being specially interesting, and other slides from Mr. Burckhalter's photographs in which the outer portions of the corona had a progressively longer exposure than the inner parts.

Dr. L. A. Bauer reported on 'The Coast and Geodetic Survey, Magnetic Observations During the Late Eclipse.' Records from several stations within and without the belt of totality showed that at all of them the regular morning change of declination was interrupted very nearly at the time of totality and reversed in direction for half an hour to an hour, the average magnitude of the reversed movement being about 30 seconds, while the probable error of a reading is not over 3 seconds. At one station the intensity was observed, and here a similar reversal of the regular change was noted, amounting to three times the probable error of a reading, the intensity being diminished. No satisfactory explanation has yet been given of these reversals.

CHARLES K. WEAD,
Secretary.

BIOLOGICAL SOCIETY OF WASHINGTON.

THE 333d meeting was held on Saturday evening, January 26th, and was devoted to a discussion of the question of 'Former Land Connections between Asia and North America.' In introducing the subject F. A. Lucas said the questions to be considered were the existence and probable geologic time of such connections and their place, whether by way of the Aleutian Islands or across Bering Strait. The distribution of the North American sheep and brown bears, the presence of abundant and comparatively fresh remains of the northern mammoth, *Elephas primigenius* in the northwest, and the fact that the remains of a bison, *B. crassicernis*, were found in Alaska only pointed to a rather recent and brief land connection. Hints of a much earlier land connection were shown by the existence of a fossil *Nemorhedus* in Colorado and by the occurrence of the southern mammoth, *Elephas columbi*, from Oregon southwards and eastwards.

Theo. Gill said that the fossils and recent mammals pointed to a recent brief connection between the continents, but that a more ancient one was indicated by the distribution of certain fresh-water fishes. The pike, *Lucius lucius*, was common to Europe, Asia and America and the nearest allies of the American *Polyodon* and *Scaphirhynchus* were *Psephurus* and several relatives of *Scaphirhynchus* found in Asia. These fishes were of old types, while the existing Cyprinoid fishes so characteristic of the streams of North America did not occur in Asia.

W. H. Dall discussed the geology of the contiguous portions of Asia and North America, and described the hydrographic and climatic conditions existing in Bering Sea, saying that

owing to the depth of water and configuration of the bottom between the western Aleutian Islands and Asia no land connection could have taken place there. That even man could have crossed at this point on the ice was also out of the question, as the pack ice rarely reached even the easternmost islands of the chain. The speaker spoke of the conditions under which the excrement of the Mammoth was found in the body of land ice about Kotzebue Sound, as this showed that the animal actually traveled over the ice now in place. The water of Bering Strait was stated to be so shallow that it might readily have been filled with ice during the glacial period, and the Mammoth might have crossed over this ice bridge.

F. V. Coville discussed the character and distribution of the vegetation of the adjacent regions, stating that the absence of trees, common to the adjacent portions of Asia and North America, showed that there could have been no recent land communication of any long duration. The smaller plants pointed to a brief recent union of the continents.

L. Stejneger said that the genus *Alligator* of the southern United States also occurred in Asia, and the nearest relatives of the hellbender, *Cryptobranchus*, of the eastern United States were the giant salamanders of Japan and western Asia, and that these facts indicate an old land connection of long duration. The existence of a circumpolar fauna, which had been lightly treated by previous speakers, also appeared to Dr. Stejneger to corroborate the evidence of the reptiles and batrachians.

F. A. Lucas.

ANTHROPOLOGICAL SOCIETY OF WASHINGTON.

The 312th meeting was held on January 29th.

Dr. George M. Kober exhibited an antique German clock which he collected in Hesse Darmstadt. This clock, though only 125 years old, is closely patterned after the clock of Henry de Wyck (1364).

W J McGee gave an interesting account of his explorations in Sonora, Mexico, and in Southern Arizona. The search for the Tepoca Indians, relatives of the Seri, which was the principal object of the expedition, proved futile, the Tepocas recently having disappeared from their former location. Mr. McGee also visited the Cocopas living on the tide flats near the mouth of the Colorado in an isolated locality. It was observed that the Cocopas are not fishermen, though their situation offers great advantages for that pursuit. They practise agriculture in a primitive manner and make use of few introduced plants. These Indians are declining rapidly in number, the chief cause stated by Mr. McGee being the adoption of European clothing. Mr. McGee during this expedition found along the Colorado a new method of picture writing, pebbles having been removed from an even gravelly surface to form various designs.

Owing to the illness of the President, Professor W. H. Holmes, the exhibition and unwrapping of a Peruvian mummy by Professor Holmes and Walter Hough was postponed.

Major Powell's important paper on 'Philology' occupied the greater part of the evening and was discussed by Albert S. Gatschet and Alice C. Fletcher. The paper is the fourth of a series of five on Demonomy, or human activities. Major Powell in a closely reasoned paper treated of language under the heads of emotional language, oral language, gesture language, written language and logistic language. His treatment of emotional language was especially attractive. He insisted that languages were formerly more numerous than now, the tendency being toward coalescence.

At the close of the paper the discussion was participated in by P. B. Pierce, Rev. Henry M. Baum, J. H. McCormick and W J McGee.

Walter Hough.

CHEMICAL SOCIETY OF WASHINGTON.

The regular meeting was held on January 10, 1901. The following officers were elected for the ensuing year: *President*, Mr. V. K. Chestnut; *Vice-Presidents*, Dr. W. F. Hillebrand, Dr. F. K. Cameron; *Secretary*, Mr. L. S. Munson; *Treasurer*, Mr. F. P. Dewey; *Additional Members of the Executive Committee*, Dr. H. N. Stokes, Dr. H. C. Bolton, Mr. E. E. Ewell, Mr. L. M. Tolman.

William H. Krug,
Secretary.

SECTION OF ANTHROPOLOGY AND PSYCHOLOGY OF THE NEW YORK ACADEMY OF SCIENCES.

A REGULAR meeting of the Section was held on January 28th. A paper on 'Certain Racial Characteristics of the Base of the Skull' was presented by Dr. A. Hrdlicka. The paper dealt with the middle lacerated foramen, the petrous portions of the temporal bones and the styloid. The author demonstrated the different stages of development of these parts in primates and at different stages of life in the whites, and the differences of those parts, fully developed, in the negroes, Indians and whites. In the adult whites the average middle lacerated foramen is large, the petrous portions appear considerably sunken (bulging of surrounding parts), the styloid is well developed. In the Indian the foramen is but a moderate size, in negro small, in apes absent; the petrous portions are less sunken in the Indian than in the white, on, or almost on, the level with the surrounding parts in the negro, bulging more or less beyond these in the primates; the styloid is in the majority of cases small in the negro and small to rudimentary in most of the Indians. Where the styloid is rudimentary, the vaginal process often plays a compensatory part. In whites all the mentioned stages of the parts described may be observed at different periods of life. Brain development accounts for the differences in the size of the middle lacerated foramen and the relative position of the petrous portions.

The second paper was on 'The Alsea Indians of Oregon' and was read by Dr. Livingston Farrand. The paper reported observations made by the author on the language customs and traditions of this tribe.

CHARLES H. JUDD,
Secretary.

DISCUSSION AND CORRESPONDENCE.

FREE SPEECH IN UNIVERSITIES

RECENT events in certain American universities have again raised the old question as to the right of the professor to freedom of speech. Sensational reports in the newspapers have loosened floods of sympathy for the alleged victims of tyranny, and the popular belief is that great wrong has been done. Whether this belief is correct or not, few men are in a position to know, for the complete evidence has not been made public, and in default of that no reasonable criticism is possible. But a discussion of the principles involved in such cases is in order, and, indeed, it seems to be most necessary.

That a university professor should be free to teach his honest convictions would seem at first sight to be a most reasonable proposition. But the rights of the teacher are not absolute; they are limited by the rights of the pupils and the rights of the institution in which he is employed. The institution must protect its own dignity and reputation; the student is entitled to protection against obvious error and against the wastage of his time; and to these rights the rights of the professor are subordinate.

Suppose for example that a professor of mechanics should spend his time in teaching his class the possibility of perpetual motion. Or that the professor of mathematics should try to demonstrate in the class-room the squaring of the circle. Or that the professor of astronomy should denounce the heliocentric theory of the solar system and adopt the mediæval teachings of Cosmas Indicopleustes. His right to freedom of teaching would avail him little, and he would be promptly invited to resign his position. The right of the professor to teach is conditioned by the right of the pupil to learn, and the latter right is entitled to first consideration. The teacher has no right to teach nonsense nor to waste the time of his students over his own personal vagaries. Irresponsible freedom of speech or of teaching is plainly inadmissible; a point which certain sentimentalists have failed to see.

The present controversy, however, has not dealt with obvious questions of truth or error, but with subjects which are still under discussion and unsettled. In sociology and economics we find the chief difficulties, and here the rights of the professor are not quite so clear. Still, the responsibility on his part remains, and it cannot be honestly evaded. If a professor of sociology, speaking in his class-room, should denounce the present institution of marriage