On returning home Wood's suggestion was carried out. After many attempts two fibers of glass, the one of colorless and the other of red sealing in glass, each having the same diameter, were prepared. This diameter was 0.079 cm. The red glass gave a slightly less sharply defined focal line. There is little if any absorption. By pushing the exposure, diverging discharge lines were shown at either end of the block focal line. This gives unmistakable evidence of the action of negative electrons.

On using a red rod of diameter 0.420 cm. the shadow picture showed white along the line of contact with the film. The absorption was then complete.

Francis E. Nipher

SOCIETIES AND ACADEMIES

THE ANTHROPOLOGICAL SOCIETY OF WASHINGTON

The 422d regular meeting, on October 13, 1908, was addressed by Major Charles E. Woodruff, surgeon, U. S. A., on "Anthropological Studies on the Effects of Light."

Major Woodruff briefly reviewed the various advances which have been made in the study of the effect of light on organisms. He gave special attention to the value of light in the treatment of tuberculosis. It was thought, said Dr. Woodruff, that fresh air, good food and abundance of light, were the three most beneficial things in the treatment of this disease. He had reached the conclusion that the last factor was harmful, and that the success of certain cloudy regions was due to the lesser degree of light; and that brilliant deserts increased the mortality to an alarming extent.

The paper was discussed by Professor McGee, Dr. Hrdlička, Dr. Lamb and others.

The 423d regular meeting, on November 10, 1908, was a memorial meeting for Professor Otis Tufton Mason, of the National Museum, whose death occurred on November 5. Appropriate remarks on his life and varied activities were made by Dr. Theodore Gill, Dr. F. W. True, Dr. Aleš Hrdlička, Mr. Charles K. Wead and several others. Dr. Hrdlička read from the autobiography which Professor Mason had prepared several months before his death.

At the 424th regular meeting, on November 24, 1908, Dr. Aleš Hrdlička gave a synopsis of the results of his investigations among the various Indian tribes of the United States for the International Congress on Tuberculosis.

Doctor Hrdlička visited the Winnebago, the northern Sioux, the Quinaielt, the Hupa and the Mohave tribes. Among all these peoples, Dr. Hrdlička describes the conditions as most appalling, giving rise to the belief that in a few years these tribes will be wasted to small remnants. The housing, food and personal habits are of the most primitive character, and there seems to be an utter disregard of all rules for the prevention of the spread of tuberculosis. Perhaps the most alarming conditions were found among the virile Sioux, who are rapidly succumbing to this dread disease. He held that in most cases the ultimate cause of the ravages of consumption among the Indians is due to the adoption of clothing, houses, food, etc., of the whites, and the lack of knowledge as to the communicability of disease.

The results of Dr. Hrdlička's researches will be published in the forthcoming report of the International Congress on Tuberculosis.

At the 425th regular meeting, on December 22, 1908, Dr. J. W. Fewkes read a paper illustrated with lantern slides on the excavation and repair work at Casa Grande, done by the Smithsonian Institution during the past two winters. The prehistoric settlement, of which Casa Grande is the best preserved building, was found to include several rectangular walled enclosures (compounds) in an area of several acres. Five of these compounds were excavated and repaired. Views were shown of mounds before excavation and others illustrated bird's-eye views of the same in their present condition.

The character of the repair work, especially the means adopted to preserve the walls from the elements was described and illustrated.

At the 426th regular meeting, on January 5, 1909, the following program was presented:

"Expedition to Sian-Fu, China, to Procure a Replica of the Nestorian Tablet," by Mr. Fritz Von Holm.

This tablet is dated A.D. 781 and contains an inscription of about 2,000 Syriac characters giving the part of Asia from which this body of Christians had come, a list of the benefits conferred on them by the Chinese emperors and other matters of historical importance. It was discovered in modern times in 1625 and set upon a stone pedestal in the shape of a turtle, but although visited occasionally, little care was taken of it until 1907, when the interest excited by Mr. Von

Holm's journey induced the officials to remove it to the Peilin or "forest of tablets," where it will be protected from the weather and its life prolonged many years. Mr. Von Holm recounted the interesting details of his expedition, the various difficulties which beset his work and the final deposit of the replica in the Metropolitan Museum of Art in New York. The lecture was illustrated by about forty excellent lantern slides.

"Remarks on Nestorianism," by Dr. I. M. Casanowicz.

This address was largely in illustration of the paper preceding, and consisted in a brief review of the past history and present condition of the Nestorian sect. Unlike most Christian bodies, Nestorians were fostered by both Persians and Arabs, and at the zenith of their power under the latter the Catholicos, or supreme head of the Nestorian Church, had under him twenty-five metropolitans, each of whom in turn was over not less than five bishops. Nestorians penetrated to China, Ceylon and India, where they were found by the Portuguese and are known as Christians of St. Thomas. At the present time a portion of the Nestorians of southwestern Asia have united with Rome, while those who still maintain their independence, numbering about 70,000, have been the object of labors by Protestant missionaries from England and America.

AT the 427th regular meeting, on January 19, 1909, Mr. Juul Dieserud presented a paper on "The Scope and Content of the Science of Anthropology." Mr. Dieserud was originally led to take up this problem in cataloguing scientific works, first at the Field Columbian Museum, Chicago, and later at the Library of Congress. His attitude was, therefore, that of the librarian and not of the working anthropologist, and was governed by a study of the attempted classifications of professional anthropologists as compared with the actual works requiring classification. It followed closely, though with elaboration in many points and condensation in others, the course of his argument in his book bearing the same title.

The paper was discussed at some length by Professor McGee, Dr. Fewkes, Dr. Swanton and Dr. Folkmar.

WALTER HOUGH,
Secretary

THE GEOLOGICAL SOCIETY OF WASHINGTON

AT the 210th meeting of the society, held on Wednesday, November 25, under informal communications, Mr. Ernest A. Shuster described briefly the original boundary stones of the District of Columbia.

Regular Program

The International Geographic Congress: Mr. DAVID T. DAY.

The Correlation of Sections Lithologically Similar: Mr. WILLIS T. LEE.

A geologic section of the coal-bearing rocks of the Grand Mesa coal field of central western Colorado, hitherto referred to the Mesaverde, was shown to be strikingly similar to the section, in the Raton coal field of New Mexico, of rocks hitherto referred to the Laramie. The evidence on which the correlations have been based is not conclusive and attention was called to the desirability of reexamining it in the light of new evidence. The recently discovered facts likely to influence the revision of correlations are: (1) a line of unconformity discovered a year ago (1907) in the Grand Mesa field separating the coal-bearing rocks into an upper and a lower member; (2) a similar line of unconformity discovered during the present season (1908) in the Raton field separating the coal-bearing rocks into two formations and (3) the stratigraphical evidence and fossil plants collected from both formations apparently indicate that the unconformity in the Raton field represents a period of erosion comparable to the post-Laramie erosion in the Denver basin.

Coon Butte or Meteor Crater: GEO. P. MERRILL.

The region of Coon Butte, near Canyon Diablo, is underlain by a light gray to buff Carboniferous (Aubrey) limestone some 200 feet in thickness, this by a light gray saccharoidal sandstone of not above 500 feet in thickness, and this, again, by a red-brown sandstone of undetermined thickness. These rocks lie nearly horizontally and are little disturbed.

The crater was described as roughly circular in outline and nearly 4,000 feet in diameter. The crater rim at its highest point is 160 feet above the level of the plain and the present bottom some 350 feet below. The rim is composed wholly of sharply upturned edges of the limestone, covered with fragments of the same, as well as fragments of the underlying sandstone, in sizes varying from microscopic to those weighing thousands of tons. Exteriorly the crater rim slopes gradually away to the plain. Interiorly the broken edges of the upturned limestone form steep,

and often perpendicular, walls. Borings made from the crater bottom vertically downward to a maximum depth of some 1,100 feet pass through a comparatively thin layer of lake bed material and talus (rarely 100 feet in thickness) into a zone of rock flour composed of the shattered granules of sandstone, and thence, at depths of about 650 feet below the crater bottom, into firm red-brown sandstone. No traces whatever were found of the ordinary volcanic products, as lava or scoria, excepting such small particles as had drifted from distant sources.

While not committing himself definitely to the theory of origin through impact of a gigantic meteorite, and while pointing out the seeming objections to such an hypothesis, the speaker showed that nevertheless no other conclusion seemed possible. Not merely had the borings in all cases reached a firm rock bottom, but the detritus thrown out, or now occupying the crater bottom, was wholly of the nature of the lime-and-sand stone (and its derivation products) forming the upper 800 feet of the strata.

The paper was illustrated by lantern slides.

At the 211th meeting of the society, held on December 9, 1908, Mr. F. E. Matthes presented the following paper: "The Glacial Character of the Yosemite Valley."

The glacial character of the Yosemite Valley is essentially a graded one—most pronounced at the upper end, gradually fading downvalleyward and ultimately vanishing at the lower end. This finds its explanation in the circumstance that the valley lay close to the periphery of the glaciated zone of the Sierra Nevada. Only the strongest glacial floods pushed any distance beyond the lower end of the valley. Most of the ice floods were of moderate volume and either barely reached its lower end or did not advance more than half way down the valley. The lower portion of the Yosemite has, therefore, been invaded by ice only at considerable intervals, and then by glacier ends mostly. Its glaciation has been feeble and stream erosion has ever had the upper hand in its fashioning. The upper half of the valley, on the contrary, has suffered frequent and relatively vigorous ice erosion and has consequently acquired a much more typical glacial aspect.

The gradation of the glacial character of the Yosemite is interrupted and obscured by a variety of aberrant sculptural features. These are explained by the selective action of the ice on rock-masses of widely different degrees of fissility. The granites of the Yosemite region are noted for their extreme and abrupt structural variations; they range in character from the schistose to the massive. The ice work in the valley was consequently subject to the controlling and directive influences of these exceptionally diverse structures. Again, the relative potency of these structural controls was the more marked because of the moderate size and disrupting power of the ice masses involved.

At the close of Mr. Matthes's address the sixteenth annual meeting of the society was held for the purpose of electing officers, and the following officers were elected for the ensuing year:

President—Mr. George Otis Smith.

Vice-presidents—Mr. M. R. Campbell and Mr. T. W. Stanton.

Secretaries—Messrs. Philip S. Smith and F. E. Matthes.

Treasurer—Mr. C. A. Fisher.

Members at Large of the Council—W. C. Mendenhall, Geo. W. Stose, Geo. H. Ashley, E. S. Bastin, L. C. Graton.

Ralph Arnold,
Secretary

THE CHEMICAL SOCIETY OF WASHINGTON

The 187th regular and 25th annual meeting of the Washington Chemical Society was held at the Cosmos Club, Thursday evening, January 14, 1909. President Walker presided, and the attendance was 80.

Two papers were read, viz.:

"Technical Analysis of Water," by R. B. Dole, of the Geological Survey.

"Prevention of Dust on Highways," by Prevost Hubbard, of the Division of Public Roads.

The report of the secretary showed that 84 new names had been added to, and 42 names removed from the list of members during the past year. The membership of the society is now over 230. A proposed amendment to the by-laws, changing the time and manner of holding the election of officers, was submitted. The election of officers resulted as follows:

President—P. H. Walker.

First Vice-president—G. H. Failyer.

Second Vice-president—W. W. Skinner.

Secretary—J. A. LeClerc.

Treasurer—F. P. Dewey.

Extra Members of the Executive Committee—H. C. P. Weber, M. X. Sullivan, H. E. Patten, H. C. Gore.

J. A. LeClerc,
Secretary.