delegation from the National Geographic Society in an effort to persuade the Congress to hold its next meeting in Washington.

THE death is announced of Dr. Franz Neumann, the oldest active teacher in Germany. In 1826 he was called to the Professorship of Physics and Mineralogy in the University of Königsberg, and for sixty-nine years has been teaching and working in the same institution. Dr. Neumann was the first man in Germany to teach Mathematical Physics.

IT is stated that Professor E. E. Barnard and Professor Burnham have accepted positions in the Yerkes Observatory, Chicago.

PRINCIPAL PETERSON, who has accepted the Principalship of McGill University, in succession to Sir William Dawson, graduated at Edinburgh University in 1875, and afterwards gained an open scholarship at Corpus Christi College, Oxford. For two and a half years he acted as assistant to the Professor of Humanity in Edinburgh University. On the inauguration of University College, Dundee, in 1882, Mr. Peterson was unanimously appointed Principal and Professor of Classics and Ancient History.

MAJOR WILLIAM A. SHEPARD, for twenty-five years Professor of Chemistry in Randolph Macon College, died in Ashland, Va., on June 3d.

A STATUE of the late Professor Billroth was unveiled in the Hospital Rudolfinerhaus on April 25th.

SOCIETIES AND ACADEMIES.

GEOLOGICAL SOCIETY OF WASHINGTON.

THE following are abstracts of the communications presented at the thirty-fourth meeting, May 8, 1895 :

G. F. BECKER. 'Gold Fields of the Southern Appalachians.' This communication presented a summary of a report upon these gold fields, based upon field work of the last season, which will appear in the Sixteenth Annual Report of the Director of the U. S. Geological Survey, and will be issued in separate form very soon.

The geographical position, history and statistics of the known deposits were first given, followed by a discussion of the rock formations and the structural features of the regions in which the deposits occur. The gold-bearing veins and impregnations were then described, and a long list of the observed gangue minerals was given, with comments upon their significance. The secondary, or placer deposits, were also considered.

C. WILLARD HAYES. 'Notes on the Geology of the Cartersville Sheet, Georgia.' The region covered by the Cartersville sheet is in northwest Georgia, its northern and western borders being about thirty miles respectively from the Tennessee and Alabama lines. Its topography is dominated by two peneplains, the older preserved by the harder metamorphic and crystalline rocks on the eastern side of the sheet, and the younger developed on comparatively soft limestones and shales. The older peneplain shows a decided southward inclination from an altitude of 1,400 feet at the north edge of the sheet to 1,000 at the south edge. Above the peneplain rise a few monadnocks from 800 to 1,000 feet, while the larger streams have cut their channels several hundred feet deep within it. The lower peneplain has an altitude of between 800 and 900 feet, and a slight inclination toward the west. The two plains probably coincide a short distance east of this region, in the vicinity of Atlanta.

Two distinct groups of rocks are found in this sheet, separated by a profound fault. The rocks west of the fault are unaltered Cambrian and Silurian, while those to the east are crystalline and metamorphic, probably Archean and Algonkian. The most

striking structural feature on the sheet is the Cartersville fault by which the metamorphic rocks are superposed upon the unaltered Paleozoics. In the northern portion of the sheet the fault plane dips eastward at a low angle, in general less than 15°, the Cambrian limestone and shale passing under the black Algonkian slate and conglomerate which lie in open folds to the eastward.

In the vicinity of Cartersville the fault plane dips eastward much more steeply, probably not less than 75°. A short distance east of this portion of the fault is a large mass of granite, probably Archean, to which the change in the character of the fault is doubtless due. While to the north and south of this granite mass the sedimentary rocks were readily moved upon their bedding planes, so that they transgressed a long distance upon the Paleozoics, the absence of planes in the granite retarded movement at this point, causing a deep reentrant angle in the course of the fault. A further effect of the anchoring of the strata by this granite mass is seen in the abnormal strikes at its northern end. The sedimentary rocks have been carried past it toward the west, so that for a distance of fifteen miles they strike northwest, at right angles to the normal axes of this region.

ALFRED H. BROOKS. 'Notes on the Crystalline Rocks of the Cartersville Sheet, Georgia.' In this paper Mr. Brooks gave petrographical descriptions of the granites, diorite, gabbro and hornblende schist of the Cartersville district.

LESTER F. WARD. 'The Red Hills and Sand Hills of South Carolina.' The speaker considered these well known topographic features of a broad band crossing South Carolina, concerning which various opinions have been held, to be remnants of the Lafayette formation. He described localities where the red and white sands were observed to grade into, or alternate with, each other as parts of one formation. As this formation overlaps various older beds to the granite, the discovery of Eocene fossils by Tuomey at the base of certain hills may be understood.

The red and white sands are associated with shales and clays, and Professor Ward believed that they were to be considered as a northeastern extension of the 'Red loam' (Lafayette) formation of the Gulf States.

WHITMAN CROSS,
Secretary.

NEW YORK ACADEMY OF SCIENCES.

THE section of geology met on May 20, and listened to the following papers:

J. F. Kemp, 'The Iron-ore Bodies at Mineville, Essex County, N. Y.' The history of iron mining in this district was briefly outlined by the speaker, and the early development of the enormous ore-bodies at Mineville was sketched. Their geological relations were then shown by means of a series of sections, about twenty-five in number, which had been prepared by the engineer of the companies operating the mines, Mr. S. B. McKee, assisted by the speaker. These sections had been drawn under the guidance of Prof. Kemp on panes of thin crystal plate glass about one-eighth inch in thickness and 21x33 inches. The glass is of such transparency that the entire series of sections came out very clearly and showed the relations of the ore-bodies with great vividness. The scale was one inch to the hundred feet, making thus twenty-five vertical sections, one hundred feet apart and extending nearly half a mile. It was at once apparent that Miller Pit, Old Bed, '21,' the Bonanza and the Joker ore-bodies were all really parts of one enormous mass which lies on a pitching anticline. Miller Pit and Old Bed are faulted from each other and from '21.' A trap dike intersects Miller Pit. In the field the relations are very confusing, and it can

not be stated that the model clears them all up, but it shows the broader features admirably and will be later described in greater fullness.

The speaker gave some further details of the geological relations of the ore and the character of the rocks as shown by drill cores. The presence of intruded sheets of gabbro in the gneisses was especially emphasized, and in particular their existence as proved by the cores, immediately beneath some thin beds or veins of ore. The paper was further illustrated by a large series of lantern slides of the mines.

The second paper, by G. van Ingen, on 'The significance of the recent studies of Mr. G. F. Matthew on Cambrian Faunas as published by the Academy,' covered practically the same ground as did Mr. Matthew's abstract printed in Science April 26, p. 452. Mr. van Ingen added many additional particulars based on his field experience in collecting the fossils, and also exhibited comparative sections of the Cambrian in both Europe and America.

The third paper, by W. D. Matthew, 'The Effusive and Dike Rocks, near St. John, N. B.,' was postponed on account of the lateness of the hour. It appears, however, in full in the Transactions of the Academy, and adds much to our knowledge of the Pre-Cambrian volcanic rocks of New Brunswick.

J. F. Kemp,
Recording Secretary.

SCIENTIFIC JOURNALS.

THE PHYSICAL REVIEW.

Vol. II., No. 6. May–June, 1895.

The Capacity of Electrolytic Condensers: By Samuel Sheldon, H. W. Leitch and A. N. Shaw.

This paper contains a description of experiments performed upon two types of Platinum—H_2SO_4 cells, which, when charged to potentials less than the E. M. F. of polarization, are found to act as condensers. The capacity of such condensers is dependent upon the impressed E. M. F. as well as upon the surface and character of the electrodes. By a method quite analogous to the 'ballistic method' of testing iron the authors have shown the presence of a very considerable hysteresis in the relation between potential and charge. The curves showing this relation present in fact a striking resemblance to the ordinary hysteresis loop. Considerable difficulty was met with in reducing the electrodes to an unpolarized condition, even with new specimens of platinum. Here also an application of magnetic methods was found useful, the cells being conveniently depolarized by reversals. The paper contains also an investigation of the effect of temperature and concentration upon the capacity. In spite of the large capacity of electrolytic condensers, the authors are of the opinion that the high temperature coefficient and low efficiency of such cells are prohibitive to practical usage.

Thermal Conductivity of Copper, I. By R. W. Quick, C. D. Child and B. S. Lanphear.

In this article is begun the description of observations made to determine the thermal conductivity of a bar of copper intended for use as a standard of length. The method used was that of Forbes. The measurement of the temperature at different points of the bar was made by a method different from that usually employed, and depended upon the variation in the resistance of a coil of fine copper wire, which could be shifted from point to point throughout the length of the bar. Results were obtained for the conductivity through a range of temperatures extending from 74° to 167°, the extreme values being 0.914 at the lower of these two temperatures and 1.024 at the higher. Observations at temperatures below 0° will appear in a subsequent article.