'Occurrence of Paleotrochis in Volcanic Rocks in Mexico,' by H. S. Williams.

'Origin of Paleotrochis,' by J. S. Diller.

'Association of Argillaceous Rocks with Quartz Veins in the Region of Diamantina, Brazil,' by O. A. Derby.

Goldschmidtite, a New Mineral,' by W. H. Hobbs; 'Hydromica from New Jersey,' by F. W. Clarke and N. H. Darton.

'Powellite Crystals from Michigan,' by C. Palache.

'Volatilization of the Iron Chlorides in Analysis, and the Separation of the Oxides of Iron and Aluminum,' by F. A. Gooch and F. S. Havens.

'Descriptions of imperfectly known and new Actinians, with Critical Notes on other Species, V,' by A. E. Verrill.

'Preliminary Note as to the Cause of Root-Pressure,' by R. G. Leavitt.

'Study of some American Fossil Cycads, Part III.,' by G. R. Wieland.

Professor L. V. Pirsson, who holds the chair of geology in the Sheffield Scientific School of Yale University, has become an associate editor of the *Journal* in the place of the late Professor Marsh.

After the close of the current volume, in April, the *Zoological Bulletin*, edited by Professors Whitman and Wheeler, of the University of Chicago and published by Messrs. Ginn & Co., will be continued under the title the *Biological Bulletin* and be published under the auspices of the Marine Biological Laboratory. The scope of the *Bulletin* will be enlarged so as to include General Biology, Physiology and Botany. It will further include occasional reviews and reports of work and lectures at the Laboratory. The *Bulletin* will be open, as heretofore, to scientific contributions from any source.

SOCIETIES AND ACADEMIES.

THE PHILOSOPHICAL SOCIETY OF WASHINGTON.

The 500th meeting of the Society was celebrated on April 15th by a dinner at Rauscher's. About fifty members were present. After coffee had been served, the President, Mr. O. H. Tittmann, in his usual felicitous manner, called on the past Presidents of the Society who had honored the banquet by their presence. Seven were present, namely, Newcomb, Harkness, Eastman, Dall, Clarke, Baker and Bigelow. Interesting remarks were made by each of these gentlemen, on the past history of the Society, its relation to present scientific progress, and its future sphere of usefulness. Informal intercourse was had for a short time after adjournment.

E. D. Preston,
Secretary.

ENTOMOLOGICAL SOCIETY OF WASHINGTON, APRIL 18, 1899.

Under the head of Exhibition of Specimens and Short Notes, Mr. Howard exhibited a vial full of specimens of a species of a *Peripatus* just received from some unknown correspondent in Trinidad.

Mr. Schwarz showed a specimen of *Chrysina erubescens* Bates. The determination he said was somewhat doubtful, but probably correct. The species is a distinct Central American form, but the specimens showed were found in Madera Canyon, south Arizona. The insect is probably a grape feeder.

Dr. Dyar showed specimens of *Megalopyge krugii*, Dew., collected by Mr. Busck in Porto Rico. The larva was described by Dewitz in his original communication, but so briefly that additional points were mentioned.

Mr. Howard asked whether Mr. Busck had been stung by this larva, and Mr. Busck replied that the first one which he found had fallen on the back of his hand and produced severe pain and inflammation which lasted for three days.

The first paper of the evening was read by Mr. Schwarz and consisted of a continuation of the Hubbard correspondence from the Southwest. The letter read at this meeting contained a discussion of the insect fauna of *Dasylirion wheeleri*. In discussion Mr. Pollard asked whether the agave and other large plants of that region have similar insect fauna. Mr. Schwarz replied that the agave is the only liliaceous plant of that region which has an insect enemy which attacks it when healthy. This is a lepidopterous larva of the genus *Megathymus*. The communication was briefly discussed by Messrs. Cockerell and Ashmead, Mr. Cockerell stating that two Coccids had been found upon the *Dasylirion*, but that both species

were also found upon yuccas. Mr. Ashmead said that the *Dasylirion* insects were very similar in character to the insects found in decaying palmetto in Florida.

The next paper was by Mr. Marlatt, and in the absence of the author was read by Mr. Benton. It was entitled 'Remarks on some recent work on Coccidæ.'

L. O. HOWARD,
Secretary.

THE WASHINGTON BOTANICAL CLUB.

THE fifth regular meeting of the Washington Botanical Club was held April 5, 1899, at the residence of Mr. Frederick V. Coville.

Professor E. L. Greene made some remarks on the occurrence of parthenogenesis in *Antennaria*, apropos of Juel's recently published investigations in *A. alpina*. He considered the phenomenon to be well established in several of our native species.

Mr. J. G. Smith presented a synopsis of a proposed revision of the genus *Sitanion*, a group of grasses long included under *Elymus*. He was able to segregate a large number of new species, chiefly from Western localities.

Mr. H. J. Webber gave some notes on the various forms of *Zamia* found in Florida. There are apparently two well-marked species, at least on the east coast, one confined to the northern, the other to the southern half of the State, while on the west coast occurs possibly a third. Neither of these species is referable to *Z. integrifolia* Jacq., a name under which the plants have been described in most text-books. Mr. Webber exhibited numerous photographs, pointing out remarkable differences in the shape and structure of the fertile spike.

The Club extended invitations to the Philadelphia Botanical Club and to the Torrey Botanical Club of New York to visit Washington for a series of botanical excursions during the last week in May.

CHARLES LOUIS POLLARD,
Secretary.

SECTION OF ASTRONOMY AND PHYSICS OF THE NEW YORK ACADEMY OF SCIENCES.

A MEETING of the Section was held on April 10th, Professor M. I. Pupin, the Chairman of the Section, presiding.

A paper was read by Dr. A. S. Chessin on 'The Temperature of Gaseous Celestial Bodies.' The author said, in brief, that, in view of some extravagant and baseless assertions which have appeared lately in both scientific and popular periodicals with regard to certain supposed laws of temperature in gaseous celestial bodies, it seemed proper to state the true condition of our knowledge in this direction. Dr. Chessin showed that what Dr. See assumed, in a recent article, to be a 'fundamental law' of nature, namely, the formula RT = a constant, in which T = the absolute temperature of the gaseous body and R = the radius, was neither a 'fundamental' nor 'any law' at all; in fact, the formula is the result of erroneous and superficial calculations. Dr. Chessin also gave an account of the work done by others on the question of the temperature of heavenly bodies, particularly referring to the investigations of A. Ritter, in Wiedemann's Annalen for 1878. He showed how far from applicable to actual facts most of these theoretical discussions and calculations are, and he drew the conclusion that at this stage of our knowledge it would be but an idle speculation to formulate any law which may govern the changes of temperature in heavenly bodies. He called attention to one interesting case discussed by Ritter in his theoretical investigations, a case in which when γ, or the ratio of the specific heat at constant pressure to that at constant volume, is greater than 4/3, we could have a pulsating condition of the gaseous body about a condition of equilibrium. A *résumé* of Ritter's work appears in Exner's Repertorium for 1884. Betti, of Pisa, has discussed the same problems and obtained the same results.

In the discussion Professor Pupin said that in the contraction of a heavenly body the work done by gravitation might be an excessively small fraction of the total work done by all the forces, including the so-called forces of chemical affinity, which we usually consider are due to electrical forces. But we cannot at present base any calculations on these, as we know so little about them.

Professor Rees said that if astronomers cannot yet solve these problems, it is because they cannot get the proper knowledge from the physicists on the physical parts of the question.

Mr. W. C. Kretz read a paper on the 'Positions and Proper Motions of Stars in Coma Berenices from Rutherfurd Photographs.' Rutherfurd took fourteen photographs in the years 1870, 1875 and 1876 of the cluster in Coma Berenices. The positions of these stars on the plates were measured with a Repsold measuring machine, and the reduction was made by the method worked out by Professor Jacoby. Great precautions were taken to eliminate all possible errors. The positions obtained were compared with those obtained by Chase with the Yale heliometer in 1892. In this manner a catalogue of the positions and proper motions of twenty-four stars was obtained, which was the object of the research.

Wm. S. Day,
Secretary.

THE NEW YORK SECTION OF THE AMERICAN CHEMICAL SOCIETY.

The regular monthly meeting of the New York Section of the American Chemical Society was held at the Chemists' Club, 108 West Fifty-fifth street on Friday evening, April the 7th; Dr. Wm. McMurtrie presiding, and about sixty-five members present.

The following papers were read: 'The Toxic Action of Sodium Fluoride,' by H. B. Baldwin. 'The Chemistry of the By-Products of Coke Ovens,' J. D. Pennock. 'Notes on the Chemistry of the Carbides,' J. A. Matthews. 'The Distribution of Alkali in Montana,' F. W. Traphagen and W. M. Cobleigh; read by Mr. Cobleigh.

Mr. Baldwin said that, owing to the now somewhat extended use of sodium fluoride in the arts and as a preservative and insecticide, there is considerable liability of accidental poisoning from the substance. Several cases are cited with the symptoms observed, the most prominent of which are nausea and vomiting within a few minutes. One case resulted fatally from an unknown dose, probably about ten grams. Five grams produced serious results in another case. The author took several experimental doses and was made ill by 0.25 gram. A case is also cited where about 50 grams were taken with complete recovery. The literature of the substance as a toxic agent is very meagre, but experiments have been made by several German and French investigators. Shultz found that by subcutaneous injection the lethal dose per kilogram of body weight was for rabbits 0.2–0.4 gram, for dogs 0.3 gram and for frogs 0.005–0.006 gram. Sodium fluoride should be classed among the less violent poisons and ought to find a place in works on toxicology.

The paper of Messrs. Traphagen and Cobleigh was an interesting description of the distribution of alkali in Montana with analytical data.

Professor Matthews gave a classification of the carbides thus far known, according to their methods of preparation and properties, and described their commercial development, beginning with carborundum, of which in 1895 the production was about 300 pounds per diem. Last July the daily output was 4,300 pounds and over. It is said to be harder than emery and lighter. It has been successfully used in plate-glass grinding, as well as for all ordinary purposes. Recently it has been put to an entirely new use, that of furnishing silicon to steel, being a substitute for ferro-silicon where the addition of some carbon is not objectionable.

The calcium carbide industry was also reviewed, and several uses other than for preparation of acetylene were mentioned, as follows: Drying alcohol and other organic liquids, absolute alcohol being easily prepared by its use; to deoxidize and carbonize iron, and as a reducing agent in fire assays. Moissan has used it as a reducing agent in the preparation of other carbides.

Mr. Pennock's paper gave interesting particulars out of the construction of the coke ovens at Syracuse, N. Y., with details of the percentages of bye-products, composition of the gas, tar, etc., closing with lantern views of the exterior and interior of the buildings, showing the retorts and other important parts of the plant.

Durand Woodman,
Secretary.

DISCUSSION AND CORRESPONDENCE.

MESSRS. LEHMANN AND HANSEN ON TELEPATHY.

To the Editor of Science: One or two of your readers may possibly remember a small exchange of words between Professor