vestigation of such states, but the admission is hardly prominent enough to prevent the reader from forming the notion that all hypnotic research is humbug and deception. Indeed, in the preface to the second edition, Mr. Hart goes so far as to say "Hypnotism, when it is not a pernicious fraud, is a mere futility which should have no place in the life of those who have work to do in the world." Such a statement entirely overlooks the large number of critically authenticated cases of the therapeutic application of hypnotism; it ignores the significant and important contributions to the understanding of psychological principles that have sprung from this study. As a popular fad or amusement such topics are certainly pernicious in the extreme; but it will hardly do to associate with this the painstaking and scientific investigations of able and discerning experts.

JOSEPH JASTROW.

SOCIETIES AND ACADEMIES.

ENTOMOLOGICAL SOCIETY OF WASHINGTON, JUNE 4, 1896.

MR. ASHMEAD exhibited a specimen of the genus Cardiochiles, of Nees, and announced its identity with Say's genus Toxoneura. It has priority and forms the type of a subfamily distinct from the Microgasterinæ.

Mr. Howard exhibited specimens of an adult and cocoon of *Attacus jorulla* Westwood, to which he had referred in a note in SCIENCE, of May 29th.

Mr. Schwarz exhibited specimens of *Atimia confusa* Say, a Longicorn beetle previously taken in the Lake Superior region, District of Columbia and northern Texas, the food habits of which were unknown until recently. He had found it attacking Juniper in the District of Columbia. He also exhibited specimens of *Lachnosterna cribrosa* from Texas.

Mr. Marlatt presented a paper entitled 'Notes on Texas Insects,' relating to some of the common insects of southwestern Texas which he had collected in April and May of the present year. The collecting had proved to be poor, owing to a severe protracted drought, and was only fair in such of the arroyos as had not been pastured by stock.

Mr. Schwarz presented for publication a paper entitled 'Notes from Southwestern Texas, No. IV; Food-plants and habits of some Texan Coleoptera,' in which he particularly described the coleopterous fauna of the Mesquite and Cactus. In discussing this paper Mr. Marlatt referred to the flowering Opuntias of the dry plains of Colorado and Kansas as affording extremely rich collecting fields, while the same plants in southern Texas did not offer the same opportunity to collectors. This was explained by Mr. Schwarz as due to the fact that the Mesquite and Opuntia flower simultaneously in Texas, and the former proves more attractive to the insects and draws them away from the Cactus. Some discussion ensued upon the superstitions regarding various insects pervading southwestern Texas, some of which were said by Mr. Schwarz to be probably of very ancient origin. Both the speaker and Mr. Marlatt referred to the dread of the inhabitants of the common *Pasimachus californicus* and *P. duplicatus*. These harmless ground beetles are known to the Mexicans as the 'cucurazza' and are supposed to be extremely poisonous, while in certain localities the English-speaking people know the Pasimachus as the 'shear-bug' and state that it is very injurious to grape-vines and vegetables by cutting young plants, a statement which is fully as erroneous as the one made by the Mexicans.

L. O. HOWARD,
Secretary.

CHEMICAL SOCIETY OF WASHINGTON.

THE eighty-eighth regular meeting was held Thursday, April 9, 1896. The Society was called to order at 8 p. m. by the President, Dr. A. E. de Schweinitz, with thirty members and ten guests present. The first paper was by Mr. V. K. Chestnut upon 'Some Vegetable Skin Irritants and their Chemical Composition.' The paper consisted of a review of the work of Dunstan and Miss Boole on croton oil, and of Pfaff on Toxicodendrol—a new oil-like body from the poison ivy, Rhus radicans; together with an account of some vesicating plants which have been but little studied. Specimens of this plant were exhibited, and the effect of an alcoholic solution of lead acetate as an antidote to

Rhus poisoning was illustrated by experiments carried out by the writer on himself. These experiments also showed conclusively that toxicodendrol was the vesicating principle of the poisonous species of Rhus.

Mr. Ewell read the second paper of the evening on 'The Effect of Acidity on the Development of the Nitrifying Organs,' by E. E. Ewell and H. W. Wiley. While it has been known for many years that active nitrification occurs only in the presence of some basic substance capable of neutralizing the free acid as fast as it can be formed, very little time has been devoted to the study of the exact degree of acidity that the nitrifying organisms can endure. As the authors had some forty samples of soil at their disposal during the last year for other purposes, it seemed wise to improve the opportunity to test the influence of acidity on the nitrifying organisms contained in the soils from various parts of the country. Tests were made with forty-four different soils, from twenty-two States and Territories. The results showed great uniformity in the relation to acidity of the organisms contained in the various soils. Excluding five tests in which no nitrification, and five tests in which it was excessive because of the calcareous nature of the soils used for the seeding of the cultures, the average amount of nitrogen nitrified was twenty parts per million; the minimum result of the thirty-four tests included in this average was eleven, and the maximum twenty-five parts per million. The tests are to be repeated with pure cultures of the nitrifying organisms of the same soils. This series of experiments was made as a study of the nitrous organisms only, but the results show that the organisms are not more sensitive to acidity than the nitrous organisms, the final product being nitrate in nearly every case.

The third paper was on 'The Chemistry of the Cactaceæ,' by E. E. Ewell. Until very recently other species of cacti than *Cereus grandiflorus* and a few related species have generally been regarded as devoid of constituents of pharmacological value. These and other species have been used in medical practice in the countries in which they grow, but their use has rarely extended to the more civilized nations. Species of the genus *Anhalonium* have long been used for curative and ceremonial purposes by the Indians of Mexico and the southwestern parts of our own country. They found place in the Mexican pharmacopeia of 1842, under the name of 'pellote,' or 'Peyotl,' but have been omitted from the later editions. The dried aërial portions of species of *Anhalonium* figure in the commerce of our southwestern border under the name of 'mescal buttons.' The species of this genus have been the subject of scientific investigation by at least three groups of persons during recent years: First, a group of persons at Berlin, where the work was begun by Dr. L. Lewin, the crude material being supplied to him by Messrs. Parke, Davis & Co., of Detroit; second, a group of persons at the Pharmacological Institue at Leipzic, where the work has been conducted by Dr. Arthur Heffter; third, a group of persons in this country, centering in the Bureau of American Ethnology and including as associates the Division of Chemistry of the United States Department of Agriculture for chemical studies, Drs. Prentiss and Morgan for a study of physiological properties, and the Botanical Division of the United States Department of Agriculture for the settlement of botanical questions.

In this country the separation of the constituents of these plants, and the study of the action of the substances thus obtained, as well as of the crude materials, upon men and the lower animals, were begun in the autumn of 1894, but before receiving the paper of Heffter. *A. lewinii*, in the form of 'mescal buttons,' has served as the material for these studies. Anhalonin and a second alkaloid have been separated in considerable quantity. A complete chemical study of the constituents of the plant is in process, including those substances of interest to the vegetable physiologist as well as those of interest to the therapeutist. The paper was illustrated with specimens of the cactus of different varieties from the Botanical Gardens and the Department of Agriculture.

Mr. Mooney followed with a paper on 'The Mescal Ceremony among the Indians.' The mescal plant is a small variety of cactus, native to the lower Rio Grande region and about the Pecos River in eastern New Mexico. The

botanical name has finally been fixed by Prof. Coulter as *Lophophora Williamsii*. Mescal is the name by which it is known to the Indian traders, but it is not to be confounded with the other mescal (Maguey) of Arizona. The local Mexican name is *peyote*, a corruption of the original Aztec name, from which it would seem that the plant and ceremony were known as far south as the valley of Mexico, at a period antedating the Spanish conquest. Several closely related species are described by Lumholtz as being used with ceremonial rites among the tribes of the Sierra Madre. The dried tops, when eaten, produce such marked stimulating and medicinal results and such wonderfully beautiful psychologic effects, without any injurious reaction, that the tribes of the region regard the plant as the vegetable incarnation of the Deity, and eat it at regular intervals with solemn religious ceremony of song, prayer and ritual. The ceremonial and medicinal use of the plant was first brought to public notice by James Mooney, in a lecture delivered before the Anthropological Society of Washington in 1891, as a result of studies made among the Kiowas and associated tribes of western Oklahoma. As the ceremony is forbidden, and the trade in the plant made contraband upon the reservations, the investigation was a matter of some difficulty. In 1894 Mr. Mooney brought back a large quantity of the dried mescal, which was turned over to the chemists of the the Agricultural Department for analysis, and to Drs. W. F. Prentiss and F. P. Morgan, of Washington, for medical experimentation. The results thus far would seem to indicate that the Indians are right in asserting that they have discovered in the mescal a valuable medicine entirely unknown to science, and which will probably take its place in our pharmacopeia along with those other Indian remedies, quinine and coca. The ceremony and songs were briefly described by Dr. Mooney, whose full investigation of the subject will ultimately appear in one of the publications of the Bureau of American Ethnology.

Dr. Francis P. Morgan followed with a paper on the "Physiological Action and Medicinal Value of *Anhalonium lewinii* ('Mescal Buttons')." Dr. Morgan stated that the investigation had been intrusted to Dr. D. W. Prentiss, with whom he was associated. Experiments were tried and observations taken at regular intervals to determine the action of the entire button on the system. The most striking result was the production of visions of the most remarkable kind with the eyes elosed, and especially so in the dark. Changes of color were characteristics; tubes of shining light, figures, cubes, balls, faces, landscapes, dances and designs of changing colors were among the most persistent visions. They were hardly seen with the eyes open; in full dose no effect on the reason or will is noticed in most cases. There was direct stimulation of the centers of vision and dilatation of the pupils. About one quarter of the quantity, or three buttons, are sufficient to give the visions in the case of white men. Dr. Morgan detailed the experiences of different persons who had tried the experiments. In some cases there was slowing of the heart, from 75 to 45 beats, followed by a rise to normal; there is also inability to sleep, and a loss of the sense of time, hours seem to intervene between words. The physiological action is not identical with that of any known drug; it is unlike cannabis indica, cocaine, etc. The constituents of the mescal buttons are being experimented with, but the investigations are still incomplete. Anhalonine causes increased reflex irritability and convulsions, like strychnine. It is, however, evidently not the active principle. Another constituent has been isolated whose action is widely different. It does not cause opisthotonos nor tetanus, and has no action like that of strychnine. A third principle has also been isolated. The resin is supposed to be the active principle and will probably be of use in medicine. The experiments are still being conducted and will be detailed later on.

A. C. PEALE,
Secretary.

CHEMICAL SOCIETY OF WASHINGTON.

THE eighty-ninth regular meeting was held Thursday, May 14, 1896. President Dr. de Schweinitz in the chair; twenty-three members present. Messrs. Mayville W. Twitchell and Charles N. Forrest were elected to membership. The Society adopted an address to the

Senate of the United States, protesting against the enactment of any legislation upon the subject of vivisection. The following papers were read: 'Practical Analytical Accuracy,' by Frederic P. Dewey; 'A new Mode of Formation of Tertiary and Quaternary Phosphines,' by P. Fireman; 'Metaphosphimic Acids,' by H. N. Stokes.

The Society adjourned until November.

A. C. PEALE,
Secretary.

ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, JUNE 2.

PROF. EDWARD D. COPE made a second report on his study of the remains of extinct animals found in the Port Kennedy Bone-Fissure. Five species of reptiles and three of birds had been found while forty species of mammals, the distribution of which was given, had been determined. *Megalonyx Wheatleyi* is represented by at least fifty-five individuals, the cave bear being of the next most frequent occurrence, remains of twenty-five individuals having been collected and twelve of the mastodon, the latter mostly young. *Mylodon* is not included in the list, although a trace of its presence was found on the occasion of an earlier exploration. Evidence was at hand that *Megalonyx dissimilis* had been founded on the lower teeth of *M. Jeffersonii*. An evolutionary series of the teeth of *Phenacodus*, *Fiber*, *Isodelta* and *Microtus* was described. A porcupine formerly regarded as distinct may belong to an existing species. Four species of skunks of two distinct genera, one of them new, *Osmotherium, rectangulare*, were described. A tooth formerly described as belonging to a hyæna must be referred to *Uncia Merceri*. The horse of the collection is *Equus complicatus*. Other species indicated by the remains were described and classified. Only seven of the forty-eight species determined can be said to be the same as existing forms. The opossum and raccoon are entirely absent, although abundantly present in the Post-Champlain caves. A Tennessee cave had recently been proven by Mr. Mercer to be intermediate between that at Port Kennedy and those of more recent date. It contained no remains of man.

The age of the Port Kennedy Fissure was debated by Messrs. Heilprin and Cope.

Dr. Harrison Allen described an interesting skull of a young Sandwich Islander from which some of the teeth on the left side had been knocked out at maturity, probably in commemoration of the death of a chief. The superior maxilla of the edentulous side exhibits osteoporosis and the temporal muscle was evidently weakened. Other evidences of the effect of disuse even after maturity had been attained were pointed out, furnishing an important illustration of the effect of nutrition and external agencies on structure.

Mr. F. J. Keeley exhibited microscopic preparations of a fragment of supposed jade taken from a carved Mexican figure in the Museum of the Academy and others of genuine jade for comparison. The Mexican mineral was found to possess none of the characters of true jade. The subject is of importance from an ethnological point of view.

EDW. J. NOLAN,
Recording Secretary.

NEW BOOKS.

Elementarcurs der Zootomie in fünfzehn Vorlesungen. DR. B. HATSCHEK and DR. C. J. CORI. Jena, Gustav Fischer. 1896. Pp. viii+103. M. 6. Pp. 50.

Sporozoenkunde Ein Leitfaden für Aerzte und Zoologen. DR. VON WASJELEWSKI. Jena, Gustav Fischer. 1896. Pp. vii+162. M. 4.

Lehrbuch der ökologischen Pflanzengeographie. DR. EUGEN WARMING. Berlin, Gebrüder Borntraeger. 1896. Pp. xii+412.

The Magnetic Circuit in Theory and Practice. DR. M. DU BOIS, translated by DR. ATKINSON. Longmans, Green & Co., London, New York and Bombay. 1896. Pp. xviii+366.

The Gypsy Moth. EDWARD M. FORBUSH and CHARLES H. FERNALD. Boston, Wright & Potter Printing Co. 1896. Pp. xii+495+c.

Indiana, Department of Geology and Natural Resources. W. S. BLATCHLEY. Indianapolis, State Printer. 1896. Pp. vi+520.

Missouri Botanical Garden. Seventh Annual Report. St. Louis Mo., Published by the Board of Trustees. 1896. Octavo pages 1–209, plates 1–66, and 6 unnumbered plates.