

characteristic of Pliocene fossils. This is a confirmation of the geological and paleontological evidence as to the age of the fossil.

SOME time since Dr. Matteucci announced the discovery of selenium in the fumarole products of Vesuvius. He now adds, in the *Rendiconti* of the Naples Academy, bromine and iodine, found for the first time in these products, though their existence was theoretically probable.

FROM an Associated Press dispatch of October 15th, we note the following, dated Berkeley, Cal.: "Gold from silver is not an impossibility, according to Edmund O'Neill, associate professor of chemistry at the University of California."

J. L. H.

SCIENTIFIC NOTES AND NEWS.

THE AMERICAN SOCIETY OF NATURALISTS.

THE American Society of Naturalists and the affiliated societies will meet at Ithaca, N. Y., on December 28th, 29th and 30th. All the societies will assemble in Sage College at 1 p. m., on Tuesday, December 28th, when an address of welcome will be made by President Schurman. The chief meeting of the Naturalists in which the other societies join is on Wednesday afternoon, for which the following program has been arranged:

- I. Reports of Committees.
- II. Election of new members.
- III. Appointment of Special Committees.
- IV. Discussion. The Biological Problems of To-Day.

Paleontology, Professor H. F. Osborn, Columbia University.

Botany, Professor Wm. Trelease, Missouri Botanic Gardens.

Anatomy, Professor Burt G. Wilder, Cornell University.

Psychology, Professor J. McKeen Cattell, Columbia University.

Physiology, Professor Jacques Loeb, University of Chicago.

Developmental Mechanics, Professor T. H. Morgan, Bryn Mawr College.

Morphogenesis, Professor Charles B. Davenport, Harvard University.

(The time allowed each speaker will be limited to ten minutes.)

Special Papers.

In the evening there will be the business session of the Naturalists and the annual dinner of the societies, at which the President, Professor C. O. Whitman, will make an address. The Ithaca Hotel will be the headquarters, but there are many excellent boarding houses at the campus, and the University will provide a luncheon each day. The members of the local committee are: Chairman, Professor S. H. Gage; Secretary, Professor W. W. Rowlee; Professor G. C. Caldwell, Professor B. G. Wilder, Professor I. P. Roberts, Professor S. G. Williams, Professor R. S. Tarr, Professor P. A. Fish, Professor E. L. Nichols, Professor L. A. Wait, Professor E. B. Titchener, Professor G. F. Atkinson, Professor L. H. Bailey.

The officers of the Naturalists are: President, C. O. Whitman; Vice-Presidents, H. P. Bowditch, E. B. Wilson, W. P. Wilson; Secretary, H. C. Bumpus; Treasurer, John B. Smith; other members of the Executive Committee, elected from the Society-at-large, Leslie A. Lee, George H. Parker.

The other societies meeting with the Naturalists are: The Association of American Anatomists, The Association for Botanical Morphology and Physiology, The American Morphological Society, The American Physiological Society, The American Psychological Association, Section H. (Anthropology) of the American Association for the Advancement of Science. The New York State Science Teachers' Association will meet at Ithaca, December 30th and 31st.

GENERAL.

THE National Academy of Sciences will hold its winter meeting next week in Boston, beginning on Tuesday, November 16th.

A COPE memorial meeting will be held in the Hall of the American Philosophical Society, Philadelphia, this evening, under the auspices of institutions with which Professor Cope was connected. Addresses on the services to science by Edward Drinker Cope will be delivered as follows: Dr. Theodore Gill, Work in Fishes, Batrachia and Reptiles; Professor Henry F.

Osborn, Work in the Mammals; Professor William B. Scott, Contributions to Geology. The following delegates have been appointed to represent the cooperating associations on this occasion: A. S. Packard, National Academy of Sciences; William H. Dall, United States Geological Survey; Theodore Gill, American Association for the Advancement of Science; Henry F. Osborn, American Museum of Natural History; E. G. Conklin, University of Pennsylvania; Harrison Allen, Academy of Natural Sciences; William B. Scott, Wagner Free Institute of Science; William Pepper, American Philosophical Society.

REV. DR. SEARLE has resigned from the directorship of the astronomical observatory of the Catholic University of America, and Mr. Alfred Doolittle has been appointed to succeed him.

DR. W. v. BEZOLD, of Berlin, was awarded, on the occasion of its jubilee celebration, the gold medal of the Prussian Meteorological Institute.

THE Royal College of Physicians, London, has conferred the Baly Medal, given every three years for research in physiology, on Professor Schäffer, of University College, London.

QUEEN VICTORIA has conferred the Jubilee Medal upon Sir George Duffey, President of the Royal College of Physicians in Ireland, and upon Sir William Thomson, President of the Royal College of Surgeons in Ireland.

THROUGH *Nature* we learn that the Reale Accademia dei Lincei has recently elected the following associates and correspondents: National associate, in the section of zoology and morphology, Professor G. B. Grassi; correspondent, in the same section, Professor G. Fano; foreign associates in mathematics, Professors H. Weber and T. Reye; in mechanics, Professor G. H. Darwin; in mathematical and physical geography, Professor F. R. Helmert; in geology and paleontology, Professor A. Gaudry; in physiology, Professors H. Kronecker and O. Schmiedebeg.

DR. FOREL, professor of psychiatry in the University of Zurich and Director of the State Asylum for the Insane, has resigned these

offices, owing, it is said, to the attacks made upon him by the press for the part he has taken in combatting the use of alcohol.

SIR RUTHERFORD ALCOCK died in London on November 2d, aged eighty-eight years. He had been President of the Royal Geographical Society and had published works on geography and hygiene.

A MEETING of the general committee having in charge the arrangements for the next International Congress of Zoology was held on November 4th. It will be remembered that the Congress meets in Cambridge on August 23d under the presidency of Sir William Flower.

THE Royal Academy of Belgium offers a series of prizes for 1898, the subjects of which are published in the *Revue Scientifique*. Four questions are proposed in mathematics and the physical sciences and three in the natural sciences, for the best answers to which small prizes (600-800 francs) are offered. The essays must be presented by the first of August, 1898, and we understand that foreigners may compete, though the MSS. must be in French or Dutch. A prize of 1,000 francs for the best work in astronomy by a Belgian is also offered. Further details regarding these prizes may be obtained from the Secretary of the Academy, Palais des Académies, Brussels.

SIR JOSEPH NORMAN LOCKYER, accompanied by Dr. W. J. S. Lockyer and Mr. A. Fowler, of the Royal Astronomical Society, will leave London on December 10th for Colombo to observe the total solar eclipse of January 21, 1898.

THE success attending the recent expedition of Mr. J. B. Hatcher, of Princeton University, as reported in a recent number of *SCIENCE*, has led him to return to that country to continue his investigations in paleontology and geology. Mr. Hatcher will land at Punta Arenas, in the Strait of Magellan, and will proceed northward to Chubut. In addition to paleontological collections, Mr. Hatcher expects to secure collections of natural history and ethnology.

MR. F. W. W. HOWELL proposes to attempt the ascent of Mt. Everest next year, and is said to have the cooperation of the Royal Geographical Society and the government of India.

PROFESSOR LAWRENCE BRUNER, of the Uni-

versity of Nebraska, whose departure for Argentine to study the plague of locusts we at the time noted, has safely arrived and is engaged in studying methods of mitigating the plague.

THE Philadelphia museums have in working order their 'Laboratory of Tests and Technology,' to be operated in connection with the other work now being done by the Commercial Museum. The laboratory is maintained as an adjunct of the scientific department, of which Gustave Niederlien, now absent in Central America, is the chief. The work of the laboratories, however, is under the immediate direction of Dr. Louis J. Matos.

THE firm of Siemens & Halske, electrical engineers, celebrated last month the fiftieth anniversary of the foundation of the firm. The firm established a fund of 1,000,000 Marks for the benefit of its workmen and officers, and appointed a committee to consider the best use to be made of the money. Herr Wilhelm Siemens delivered a speech, dwelling upon the two guiding principles of the firm, namely, scientific research and perfection of work.

THE British government has declined to take part in the Florida Fisheries Conference, stating that, while greatly interested in the objects of the Conference, it is unable to send an official representative.

THE opening meeting and exhibition of the Röntgen Society was held in St. Martin's Town Hall on November 5th. Professor Sylvanus P. Thompson gave a presidential address.

WE learn from *Garden and Forest* that a State Forestry Society was organized at Raleigh, North Carolina, on October 21st, with fifteen members. The Society elected Mr. W. E. Petty, Carthage, President; Dr. C. A. Schenck, Biltmore, Vice-President; Professor W. W. Ashe, of the North Carolina Geological Survey, Secretary and Treasurer. The main object of the Society is to lessen forest fires in North Carolina, which are doing great injury to pine lands, especially in the southeastern part of the State, in the valley of the lower Cape Fear River. Methods of improving the condition of lumbered and deteriorated woodland will also be considered, and the re-establishment of waste and eroded agricultural lands in timber.

At the Wagner Free Institute of Science, Philadelphia, ten weeks' courses are now being given in the evenings as follows: Mondays, Professor S. T. Wagner, 'Engineering Materials;' Tuesdays, Professor W. B. Scott, 'Historical Geology;' Wednesdays, Professor R. E. Thompson, 'History;' Thursdays, Professor G. F. Stradling, 'Magnetism;' Fridays, Professor Henry Leffmann, 'Chemistry;' Saturdays, Professor Emily G. Hunt, 'Chapters from the Life of Plants.' These courses are now in session.

At a recent meeting of the Board of Directors of the American Chemical Society it was decided to appoint a committee of three, with Dr. Wiley as chairman, with power to take charge of a want column in the *Journal* of the Society. Members of the Society seeking positions, and, also, persons desiring to employ chemists, will be allowed a three and one-half inch advertisement free of charge.

A NEW building for the chemical laboratory of the University of Berlin is now in course of erection, at a cost of about \$250,000. It will contain four large laboratories, with desks for 250 students and 25 research rooms.

A PASTEUR Institute was opened in Sofia on October 18th.

PROFESSOR WILTSHIRE has presented to the mineralogical museum of Cambridge University his collection of minerals, which includes numerous specimens of high scientific value. The zoological museum has also been enriched by the addition of a collection of polyzoa presented by Miss E. C. Jelly, and of the skeleton of an elephant seal, the gift of Sir W. L. Buller.

THE New York *Evening Post* reports that Prince Roland Bonaparte has been paying the expenses of meteorological experiments made in the upper strata of the atmosphere with a balloon presented to the Central Meteorological Bureau by M. Balaschoff.

ESSAYS in competition for the Alvarenga prize of the College of Physicians of Philadelphia must be sent to the Secretary of the College by May 1, 1898. The value of the prize is about \$180 and the essay may be upon any medical subject.

THE publication of the *Academische Revue*, which has contained full news and valuable

discussions of university education in Germany, will, we regret to learn, be suspended, owing to lack of financial support. The *Hochschul-Nachrichten* will, however, be continued at a cost of 6 Marks per annum.

In the address on behalf of the faculties of the University of Chicago at the dedication of the Yerkes Observatory, described elsewhere in the present issue, President Harper gave details regarding the cost of the equipment. There was first of all the forty-inch objective, the greatest and last work of its maker, Alvan G. Clark. This objective cost, when finished, \$66,000; the equatorial mounting, and the dome and rising floor cost \$55,000 and \$45,000 respectively. To these there must be added, as distinct gifts, the 30-foot dome for the southeast tower which cost \$7,000, the 26-foot dome and mounting of the Kenwood telescope; likewise the stellar spectrograph, constructed by Mr. J. A. Brashear, costing \$3,000. Besides all these, the building with its piers for the instruments, its steam-heating plant, engines, dynamos and motors, the cost of which has been in round numbers \$135,000. Acknowledgment was also made of three additional gifts which had already come to the Observatory: The grounds on which it has been built, consisting of 55 acres valued at \$50,000, a contribution of Mr. John Johnston, Jr.; the instruments and equipment of the Kenwood Observatory, presented to the Yerkes Observatory by Mr. William E. Hale, and the gift of Miss Catharine Bruce, of New York City, of \$7,000, for a ten-inch photographic telescope with building and dome.

MR. H. C. COOPER writes us from Heidelberg calling attention to a curious exhibition of paternalism on the part of the University. All students doing laboratory work, and even attending experimental lectures in chemistry or physics, are *required* to take out an accident insurance policy covering accidents occurring in the exercises. Students entirely disabled are to receive \$500 per annum, with a corresponding allowance for lesser injuries. The risk is probably not as great as outsiders may suppose from this regulation, as the premium for lecture courses per semester is only two and a-half cents.

PROFESSOR J. A. UDDEN, of Augustana College, Rock Island, Ill., writes us that Dr. N. O. Holst, of the Geological Survey of Sweden, has lately had two years' leave of absence from his work on the Survey for the purpose of studying the new gold fields in western Australia. After leaving this southern continent he visited New Zealand, China, and Japan, and then returned by way of Canada and the United States. He has seen the ancient Australian glacial deposit which is supposed to belong to the Permian age, and he says there can be no doubt but that it is an indurated boulder-clay. Its age may possibly be somewhat later than heretofore supposed, but not so much later as to detract from the importance of its bearing on the subject of geological climate. In the semi-desert, where Dr. Holst spent most of his time, the wind did not appear to him to be of any great importance as a geological agent, although dust storms are sometimes reported from the new towns on the border of the desert. One of the Australian geologists has lately made some interesting observations on what resembles a tidal action of the ground water in the sandy region in the interior. The water rises and falls at regular daily intervals, and the oscillations appear to be too great to be explained as resulting from the daily variations in atmospheric pressure.

A CORRESPONDENT writes to the London *Times* that the site of the prehistoric Celtic lake village near Glastonbury has been further excavated since July last, under the superintendence of the discoverer, Mr. Arthur Bulleid. The sites of the dwelling are marked by mounds. One of these contained the greatest depth of clay yet found, no less than 9 feet; the accumulation of successive hearths which were found necessary as the weight of the clay gradually compressed the peat beneath. This mound contained 300 tons of clay, all of which must have been brought in their boats by the inhabitants from the neighboring hills. Under the mound was found the framework of a loom with brushwood and wattlework to form the foundation. That the inhabitants were much engaged in spinning is clear from the fact that, in addition to other things connected with the craft, no fewer than forty horn and bone carding combs

have been unearthed. The number of broken bone needles and splinters of bone found in one mound seem to indicate that it was utilized as a needle factory. Another mound was very rich in fragments of pottery and other evidences of the manufacture of hardware. As usual, very few human remains were discovered, part of the skeleton of a very young child being all that was brought to light this summer. With the exception of the cracked skulls of a few unfortunate warriors, the remains of very young children have chiefly been found in past years, Mr. Bulleid being of the opinion that these primitive people conveyed their dead to the neighboring hills for interment. Parts of three broken millstones were unearthed, and in one mound a clay oven, measuring 2 feet by 9 inches. One glass article only was brought to light this year, a blue glass bead with a wavy line of dark blue running round it. Altogether the season's work has proved very interesting, and the British Association is so well satisfied with the discoveries made from time to time that at their Toronto meeting they renewed their grant towards the excavation fund.

A MUSEUM of Natural History and Anthropology was opened at Wernigerode on July 29th. It was planned by the late Prince Otto von Wernigerode and will be named after him. The Museum contains the mineralogical collections of Count Heinrich Ernst, Councillor Jasche and Dr. Döring, the herbarium of Dr. Sporleder, the zoological collections of Dr. Müller and the anthropological collections of Dr. Augustin and Dr. Friedrich.

THE last number of the *Journal* of the Marine Biological Association of the United Kingdom contains the annual report of the Director and of the Council for 1896-97. According to the notice in *Natural Science*, the Plymouth station continues to flourish and increase in utility under the direction of Mr. Allen. The Association is also fortunate in retaining the services of Mr. Holt, for the time being, as Honorary Naturalist. The Lords Commissioners of H. M. Treasury, in granting the usual £1,000 for the year 1897-98, have made it a condition that the Association will give all the assistance in its power to the Inspectors of Irish Fisheries in

investigations which they desire to be made on the habits and migrations of the mackerel visiting the Irish coast. This work has thus been begun, and the principal contribution to the new number of the *Journal* is Mr. Allen's report on the present state of knowledge with regard to the habits and migrations of the mackerel (*Scomber scomber*). Most of the other papers also have an important economic bearing. The large laboratory in the Plymouth station has been provided with a new flat tank, eight feet by five feet and eight inches deep, in which Mr. Garstang has been making observations on crustacea. The sea water supplied to the laboratory is still kept distinct from the general circulation in the show tanks, and is never returned to the laboratory tanks after it has passed through them. Experience shows that the theory of 'circulation,' as applied to aquaria, is illusory and in practice disastrous.

THE United States Department of Agriculture has issued a circular by Mr. B. E. Fernow, Chief of the Division of Forestry, on recent legislation on forest reserves. It includes an account of the federal legislation to which during the year we have frequently called attention, and to legislation in Minnesota, Wisconsin, Pennsylvania and New York. In view of the importance of the action of the New York Legislature in enlarging the Adirondack Park, it may be well to give the constitution of the Commission of Fisheries, Game and Forests, under the law of April 25, 1895. This law is a comprehensive measure in which allied interests are brought under the control of a single board. The commission consists of five members appointed by the Governor with the consent of the Senate, the term of office being five years. The President, who is designated as such by the Governor, receives a salary of \$5,000 per year and traveling expenses, and devotes all his time to the work of his office. The remaining four commissioners each receive \$1,000 per year and traveling expenses. The board holds at least four meetings, on designated days, each year. It has a secretary at \$2,000 per year, and necessary clerical force. The duties of the board are to propagate and distribute food-fish and game; to enforce all laws for the protection of fish and game and

for the protection and preservation of the forest reserve. It has full control of the Adirondack Park and forest reserve, and is authorized to make rules for its care and safety. The commission appoints thirty-five 'fish and game protectors and foresters,' one of whom is known as chief, and two others as his assistants, the chief to have direction and control of the entire force. The chief forester receives \$2,000 per year and traveling expenses; the assistant foresters \$1,200 each; and the remaining foresters \$500 each; all having an extra allowance for traveling expenses and each of them to receive one-half of all fines collected in actions brought upon information furnished by them.

THE Cairo correspondent of the *London Times* writes: "The crime statistics for the first three quarters of this year, compiled by the Minister of the Interior, show a gratifying diminution, which is confirmed by the registers of the Ministry of Justice. The figure has fallen from 1,493 cases in the corresponding period of 1896 to 1,143—a decrease of over 23 per cent.; and robberies with violence, which constitute the most serious class of crime in Egypt, have diminished from 476 to 287, or nearly 40 per cent. The fact that the decrease is distributed generally over the country and has occurred steadily month by month shows that it is due, not to any accidental circumstances, but to better organization and control, and indicates a real advance in the state of public security throughout the country."

UNIVERSITY AND EDUCATIONAL NEWS.

PRESIDENT MCKINLEY will deliver the oration on 'University Day,' to be observed by the University of Pennsylvania, on Washington's Birthday.

THE Association of Colleges and Preparatory Schools in the Middle States and Maryland will meet this year at Vassar College, Poughkeepsie. On November 26th and 27th Professor Ralph S. Tarr and Mr Charles C. Wilson will introduce the discussion of science in the schools, which is assigned an important place on the program.

At the annual meeting of the Council of New York University, on November 1st, Chancellor

MacCracken presented a report covering the work of the University for the past twelve years. It appears that when Dr. MacCracken first became connected with the University, in 1885, the value of its property was only about \$600,000, whereas it is now nearly \$2,500,000. The gifts last year amounted to more than \$250,000.

THE Teachers' College, New York, shows a marked growth this year, the number of students being two hundred and forty-one, against one hundred and twenty-nine last year.

It is expected that a Hall of Physics will be built at Syracuse University next year, the sum of \$25,000 having already been subscribed for the purpose.

At the last meeting of the Board of Trustees of the University of Alabama Mr. George S. Wilkins (Princeton) was elected professor of civil and mining engineering, and Dr. John Y. Graham (Princeton) professor of biology.

DR. FRANK K. CAMERON, late associate professor of chemistry in the Catholic University of America at Washington, has been appointed research assistant in physical chemistry in Cornell University.

DR. WARNER FITE, assistant professor of philosophy in Williams College, has been appointed to a docentship in philosophy in the University of Chicago, and Mr. A. F. Buck and Miss Jane Downey have been appointed assistants in the psychological laboratory.

THE chair of philosophy and the chaplaincy of Lehigh University have been filled by the election of the Rev. Langdon C. Stewardson, rector of St. Mark's Episcopal Church, Worcester, Mass.

DR. MAX VON FREY, of Leipzig, has been called to the chair of physiology at the University of Zurich, and Dr. George Kraus to the chair of botany in the University of Halle, as successor of Professor J. von Sachs.

DR. MAX DESSOIR has been promoted to an associate professorship of psychology in the University of Berlin, Dr. Lothar Heffter has been made associate professor of mathematics at the University at Bonn, and Dr. Brikencajer