Papers may be sent direct to the chairman of the particular section for which they are intended, or to Dr. Alfred Reginald Allen, Secretary, 111 South 21st Street, Philadelphia, Pa.

THE ELIZABETH THOMPSON SCIENCE FUND

THE thirty-fifth meeting of the board of trustees was held in Boston, Mass., on February 2, 1910.

The following officers were elected:

President—Edward C. Pickering.
Treasurer—Charles S. Rackemann.
Secretary—Charles S. Minot.

The secretary stated that during the past year no reports had been received from the following holders of grants: 22, 27, E. Hartwig; 107, M. W. Travers; 117, E. Salkowski and C. Neuberg; 123, E. C. Jeffrey; 131, F. W. Thyng; 134, C. L. Alsberg.

The reports received from the following holders of grants were accepted as reports of progress: 98, J. Weinzirl; 109, A. Nicolas; 111, R. Hürthle; 119, J. P. McMurrich; 121, E. Debierne; 124, P. Bachmetjew; 133, J. F. Shepard; 136, H. Z. Kip; 137, C. H. Eigenmann; 138, Mme. P. Šafarik; 140, K. Guthe; 141, J. P. Patterson; 142, W. J. Hale; 144, G. A. Hulett; 146, M. Nussbaum; 147, J. Müller; 148, C. C. Nutting; 149, P. A. Guye; 152, W. D. Hoyt; 154, J. P. Munson.

It was voted to close the accounts of the following grants: 135, A. Negri; 139, J. Koenigsberger; 145, J. de Kowalski; 151, O. von Fürth; 153, W. Doberck, and to close upon receipt of publications the account of grant 143, awarded to Professor R. W. Wood.

The secretary stated that a fifth publication had been received from Professor E. Wiedemann, acknowledging the aid obtained through grant 127.

The trustees greatly regretted to be obliged to decline several applications which were highly deserving of aid.

It was voted to make the following new grants:

155. $300 to Dr. H. P. Hollnagel, Berlin, Germany, for a redetermination of the longer wave-lengths in the extreme infra-red portion of the spectrum, by an interferometer method.

156. $100 to Professor R. Thaxter, Cambridge, Mass., for further studies on the Laboulbeniaceæ.

157. $100 to Dr. L. Mercier, Nancy, France, to study the bacteria living symbiotically within various invertebrates.

158. $50 to Professor H. V. Neal, Galesburg, Ill., for a study of nerve histogenesis in *Squalus acanthias*.

159. $100 to Dr. B. M. Davis, Cambridge, Mass., for cytological and genetical studies on native species of Oenothera.

160. $50 to Dr. L. J. Henderson, Boston, Mass., for a research upon the use as indicators of aromatic nitro compounds which contain phenolic hydroxyl groups, or amino groups, or carboxyl groups.

161. $100 to Professor O. von Fürth, Vienna, Austria, for further studies on internal secretion.

CHARLES S. MINOT,
Secretary

SCIENTIFIC NOTES AND NEWS

INVITATIONS for the centennial celebration of the University of Berlin, to be held in October of this year, have been sent to the visiting professors who have represented Harvard University and Columbia University at the University of Berlin. These include Professors Theodore W. Richards and W. M. Davis, of Harvard University.

THE official delegation from the Geological Society of America to the eleventh International Geological Congress to be held at Stockholm, Sweden, in August of this year has been constituted as follows: Arnold Hague, Sc.D., U. S. Geological Survey, president of the Geological Society of America; Charles R. Van Hise, LL.D., University of Wisconsin; James F. Kemp, professor of geology, Columbia University; Frank D. Adams, D.Sc., dean of the faculty of applied science, McGill University, and Edmund Otis Hovey, Ph.D., curator of geology and invertebrate paleontology, American Museum of Natural History.

PROFESSOR HUGH D. REED has been appointed delegate from Cornell University to

the eighth International Zoological Congress at Gratz.

Sir Victor Horsley, F.R.S., has been elected a foreign associate of the French Academy of Medicine.

The faculty of the Agricultural College of the University of Minnesota has given a dinner in honor of Dr. A. F. Woods, the new dean of the college.

Professor W. B. Gregory, of Tulane University, has been elected president of the Louisiana Engineering Society.

The British secretary of state for the colonies has appointed Mr. W. D. Ellis, of the Colonial Office, to be a member of the advisory committee on medical and sanitary questions connected with the British colonies and protectorates in Tropical Africa.

At the Lister Institute of Preventive Medicine, London, Mr. H. R. Dean and Dr. G. H. Macalister have been appointed assistant bacteriologists and Dr. H. McLane, senior assistant in the biochemical department.

Dr. W. F. Hume has been appointed director of the Geological Survey of Egypt.

Dr. Walter Knoche, of Berlin, has been appointed director of the newly established Meteorological and Geophysical Institute of Chili, and at the same time professor of meteorology in the University of Santiago.

Professor James H. Tufts, of the University of Chicago, is giving at the Johns Hopkins University a course of ten lectures on modern problems of metaphysics and the theory of knowledge.

M. Emil Boutroux, professor of philosophy at the Sorbonne, Paris, is now lecturing at Harvard University on the Hyde foundation.

Dr. H. E. Crampton, professor of zoology at Barnard College, Columbia University, and curator of invertebrate zoology at the American Museum of Natural History, lectured at Vassar College, on March 9, on "Exploring the Islands of the South Seas."

Professor S. A. Mitchell, of Columbia University, on March 4 and 11, delivered lectures in Philadelphia on "Halley's Comet."

President Charles R. Van Hise, of the University of Wisconsin, is to deliver one of the principal addresses on the conservation of natural resources at the first Minnesota Conservation and Agricultural Development Congress, in St. Paul, Minn., March 16 to 19.

At the annual dinner of the Harvard Teachers' Association, on March 12, addresses on "The American College" were made by Professor J. McKeen Cattell, of Columbia University, and President A. Ross Hill, of the University of Missouri.

Sir J. J. Thomson will give the evening discourse at the Royal Institution on March 18, on the dynamics of a golf ball.

We learn from the *Geographical Journal* that a monument to the French navigator, Bougainville, has been inaugurated, with appropriate formalities, at Papeete, on the island of Tahiti, which island he visited a few months after its discovery by the English navigator Wallis. The proposal for the erection of the monument emanated from a French colonial official, a member of the Paris Geographical Society, by which body it was taken up with enthusiasm. The bust erected at Papeete was in part a copy of that in the possession of the Paris Society, but portraits preserved in the navigator's family were also utilized by the sculptor. The scheme received the support of the French government as well as of the municipality of Papeete, and the ceremony of inauguration was opened by a speech by M. François, governor of French Oceania. Two French and two British warships were present on the occasion.

Dr. J. A. Bergström, professor of pedagogy at Stanford University, previously professor of pedagogy and director of the psychological laboratory at the University of Indiana, died on February 28, at the age of forty-two years.

Dr. Charles F. Wheeler, botanical expert in the Bureau of Plant Industry, U. S. Department of Agriculture, formerly assistant botanist in the Michigan Agricultural College, died March 5, 1910, at the age of sixty-eight years.

THE death is announced, at the age of thirty-three years, of Mr. J. F. Ferry, known as an ornithologist, who had been connected with the Field Museum of Natural History and the U. S. Biological Survey.

MR. EDWARD SAUNDERS, F.R.S., eminent for his contributions to systematic entomology, died on February 6, in his sixty-second year.

M. PHILLIPPE THOMAS, known for his geological work in northern Africa, has died at the age of sixty-seven years.

DR. ARTHUR BORDIER, professor of natural history at the medical school of Grenoble, has died at the age of sixty-nine years.

THE scientific societies and universities of Australia are, as we have already noted, taking steps to arrange that the British Association for the Advancement of Science shall visit Australia in 1913 or 1914. An influential deputation, at the head of which was Sir John Madden, chancellor of Melbourne University, waited on the federal prime minister recently with a request for a federal guarantee up to the sum of £10,000. The prime minister is said to have expressed his personal approval.

A BILL has been introduced in the Ohio senate to appropriate $1,000 to organize and equip a Pasteur Institute for the treatment of hydrophobia at the Ohio State University, Columbus, and to appropriate $1,000 annually for maintenance.

IT is reported that Mr. Andrew Carnegie has offered to give a prize of $25,000 to the first student of the Carnegie School of Technology, of Pittsburgh, who will construct an aeroplane satisfying certain conditions.

THE trustees of Mr. Otto Beit's gift of £215,000 for the foundation and endowment of medical research scholarships met on February 23, and awarded the first set of the fellowships. *Nature* states that seventy applications were received—fifty-eight from England, three from Scotland, one from Ireland, one from Wales and seven from abroad. The following fellows were elected, and were authorized to proceed with the researches mentioned after their names: Mr. G. H. Drew, the zoological distribution of cancer and a systematic study of an experimental character on the mode of origin of neoplasms (tumors); Dr. F. W. Edridge-Green, various problems connected with vision and color-vision, especially in relation to the correct reading of signals on land and sea; Mr. E. Hindle, the morphology and treatment of protozoic blood parasites, especially *Sporochæta duttoni* and trypanosomiasis (sleeping sickness); Dr. T. Lewis, the mechanism of irregularities of the heart; Dr. G. C. McKay Mathison, (*a*) the nervous control of respiration and (*b*) the effect on respiration of changes in the chemical composition of the blood; (*c*) the mechanism of biliary secretion and its general effect in digestive processes; Dr. Otto May, clinical and experimental research on the lesions of peripheral nerves; Mr. E. Mellanby, the significance of the large excretion of creatin in cancer of the liver and its diminished excretion in cirrhosis of the liver, etc.; Dr. F. P. F. Ransom, the mode of action of caffeine, theobromine and allied substances on the muscular and nervous systems; Dr. S. Russ, the association of radioactivity with cancer; Dr. Ida Smedley, the processes involved in the formation of fat in the organism. The next election of fellows will be held about December 15 next. All inquiries should be addressed to the honorary secretary, Beit Memorial Fellowships for Medical Research, 35 Clarges Street, Piccadilly, London, W.

THE second session of the Biological Station of the University of Michigan will begin July 5 and continue for eight weeks, closing August 26, 1910. The station is located on the shores of Douglas Lake, Cheboygan County, in northern Michigan, and is particularly well located for field and laboratory courses in zoology and botany. The work of the station is under the supervision of Professor Jacob Reighard, head of the department of zoology in the University of Michigan, as director. The active staff will consist of Dr. A. S. Pearse, instructor in zoology in the University of Michigan and assistant director of the Biological Station; Assistant Professor Raymond J. Pool, of the

department of botany of the University of Nebraska and director of the Nebraska State Botanical Survey; Mr. Norman H. Stewart and Miss Lucie Harmon, assistants in zoology in the University of Michigan; Mr. F. A. Loew, professor of science in Central College, Indiana, will act as assistant in botany. The courses of instruction will include: the natural history of invertebrate animals, field studies in vertebrate zoology, zoology for teachers, special work in research in zoology, first course in field and forest botany, mycology, systematic botany of seed plants, advanced work in research in botany.

A REPORT on the feldspar deposits of the United States, by E. S. Bastin, has just been published by the United States Geological Survey as its Bulletin 420. The feldspars are among the most widely distributed minerals and are constituents of nearly all rocks. The decomposition of feldspar has yielded a large part of the clay of the soil; also the mineral kaolin, an essential material for making fine pottery. Most of the commercially valuable feldspar now mined is obtained from rocks known as pegmatites, the commonest variety of which is essentially a very coarse granite. Feldspar is mined and ground for use mainly by potters, but a portion of the product is used in the manufacture of emery and other abrasive wheels, to bind the abrading particles together, and small quantities are employed in making opalescent glass, scouring soaps, roofing material and poultry grit. Feldspars that are rich in potash are now the subject of experiments made to determine their value as fertilizers. The principal feldspar quarries in the United States are in New England and the middle Atlantic states, and the annual value of the product is now about half a million dollars. Mr. Bastin discusses the chemical and physical character of the feldspars, their geologic occurrence and origin, and the methods of mining and milling, and describes in detail the deposits worked at the numerous quarries.

THE annual report for the year 1909 of the Philosophical Institute of Canterbury, New Zealand, presented to the annual meeting held last December, is abstracted in *Nature*, which states that during the year the publication of the results of the expedition to the sub-Antarctic islands of New Zealand was steadily proceeded with under the editorship of Dr. C. Chilton. The reports upon the work will consist of two quarto volumes of about 400 pages each, and will be illustrated with numerous plates (some colored), photographs and text-figures; they will be accompanied by a large colored map of the Antarctic and sub-Antarctic regions, showing the ocean depths as ascertained by recent expeditions. Work in botany has been carried on by Dr. Cockayne during the past two years. Although a great deal has been done in the way of establishing sanctuaries and national parks in order that the native fauna may be preserved for all time, the importance of placing on record their present ecological condition can hardly be overestimated. It is hoped that at some early date the government may see its way to authorize Dr. Cockayne to proceed further with the botanical survey of the Dominion. Largely owing to the representations of the institute, combined with those of the Otago Institute, the position of the memorial to the late Sir James Hector has been made satisfactory. Owing to the action of the government in granting a generous subsidy, ample funds will be at the disposal of the committee for establishing a memorial that will be worthy of Sir James Hector's long and distinguished service to the cause of science in New Zealand. Observations in connection with the Arthur's Pass Tunnel were continued throughout the year. Temperature readings have been taken every ten chains and specimens collected. Early last year a committee was formed for the purpose of investigating systematically the artesian system of Christchurch and the neighborhood. The committee has held several meetings, and has taken preliminary steps for ascertaining the extent, depth and geological relations of the water-bearing strata, and for the examination of physical, chemical and biological properties of the water obtained from them. Two papers by Dr. Farr and Mr. D. C. H. Florance, on the radium emanation con-

tained in the artesian water and on the effect of the water as it comes direct from the well on trout and other fish, have already been laid before the institute. A committee was appointed to consider the Animals' Protection Act, and to suggest amendments with the view of giving more effective protection to the native fauna of the Dominion. A conference was held with a similar committee appointed by the Canterbury Acclimatization Society, and a number of recommendations were made which received the approval of the council. It is intended to submit the proposals to other institutes for their consideration, and if they meet with approval to bring the matter under the notice of members of parliament and of the minister for internal affairs. It is hoped later to send a party to the Chatham Islands for purposes of scientific investigation.

IN reclaiming the Great Valley of California the removal and control of mining débris in the rivers play a very important part. It is estimated that the bed of Yuba River alone contains three hundred million cubic yards of this débris. By these deposits the low-water stage of this stream was raised 15 feet at Marysville between 1849 and 1881, and the stream bed near this place is now 13 feet above the level of the surrounding farm land, so that it has been necessary to build large dikes or levees along the river. For four years the United States Geological Survey has been studying this débris problem, as it has been called, and in connection with the study a hydraulic laboratory was built at the University of California, Berkeley, Cal., for the experimental investigation of the laws of transportation of sand and gravel by water. This investigation has outgrown the narrow limits of the laboratory, and it is proposed to continue this work on a much larger scale in connection with one of the projects of the United States Reclamation Service. In a preliminary report now in preparation the apparatus and methods employed will be described and the results obtained will be discussed in detail. The results will be expressed by formulas and represented graphically by curves. Relations connecting the discharge, slope and load will be given for eight sizes of sand and gravel and for artificial and natural mixtures. The experiments include stream transportation, in which the stream bed is sand or gravel—a self-made bed—and flume transportation, in which the bed is wood or metal, as in sluicing. The accuracy and the applicability of the results to practical problems will be discussed and the data that have only an indirect bearing on the débris problem will be presented in three appendixes. If means are provided for the use of the larger apparatus and the much larger water supply that will be available in connection with the reclamation project some of the data thus far obtained will be tested and the relations connecting the factors of transportation will be extended so as to make them more directly applicable to problems of stream control and economic sluicing.

UNIVERSITY AND EDUCATIONAL NEWS

COLUMBIA UNIVERSITY has received an anonymous gift of $350,000 for the erection of a building for the faculty of philosophy, which has charge of the graduate work in philosophy and languages. The university has also received anonymously $15,000 for work in agricultural education.

A ZOOLOGICAL laboratory is to be erected at the University of Pennsylvania, at a cost of about $250,000. In making the announcement on university day, Provost Harrison stated that it would be "the most complete biological laboratory yet erected."

BY the will of Mrs. Mary A. Richardson, Tufts College receives $40,000 for fellowships.

AT Columbia University William B. Fite, Ph.B. and Ph.D. (Cornell), professor of mathematics at Cornell University, and H. E. Hawks, A.B. and Ph.D. (Yale), assistant professor of mathematics at Yale University, have been appointed professors of mathematics. George B. Wendell, B.S. (Massachusetts Institute), Ph.D. (Leipzig), professor in the Stevens Institute, has been appointed professor of physics. Charles H. Burnside, of the University of Wisconsin, has been ap-