

relays to close call-bell circuits. They are of iridio-platinum wire, 3 mils diameter and 2 by 4 cm. dimensions; they have a frequency of 16 per second, and with a clearance of 2 mils .001 erg. per second is required to bring them into contact. This can be used at a distance of 10 kilometers with  $\frac{1}{3}$  ton of copper and would be little affected by the absorption; it has not, however, been adapted to the transmission of Morse signals. The power used by the telephone is more than 600 times the power used by the rectangle in this case. F. C. C.

#### THE BEQUESTS OF THE LATE PROFESSOR MARSH.

THE will of the late Professor Marsh leaves his entire estate to Yale University, with the exception of \$10,000 to the National Academy of Sciences. Its provisions are as follows: 1. The library which he had collected is to be placed in the Yale library, and all duplicates are to be given to the library of the Peabody Museum. 2. His home and the land surrounding it, nearly three acres on Prospect Hill, is given to the University to be used exclusively as a botanical garden 'and for no other purpose.' The garden is to be under the custody of a regularly appointed curator at a salary of \$2,000. The house is either to be used as the residence of the curator or as a botanical laboratory, as his executors may see fit. In case the corporation does not wish to accept the house and grounds for this purpose Professor Marsh orders that they be sold and the proceeds added to the residuary estate. 3. His executors are ordered to sell all his pictures, paintings, furniture, bric-à-brac, silver and Oriental collections, the proceeds to be turned over to the University. 4. The gift is made to the University of a collection of 2,000 orchids and of all of his greenhouse plants. If not needed by the University these may be sold for the benefit of the estate. 5. The bequest is made of all of his scientific collections in paleontology, geology, zoology and archæology, to be kept in Peabody Museum. 6. He gives to the National Academy of Sciences of Washington \$10,000 as a trust fund, 'the income to be used and expended for promoting original research in the natural sciences.' 7. The sum of \$30,000 which, by the

terms of the will of George Peabody, Professor Marsh was authorized to dispose of in his will, is left to the corporation of Yale 'to be expended by the trustees of Peabody Museum in preparing for publication and publishing the results of my explorations in the West.' 8. All the rest, residue and remainder of the property and estate real and personal, is given to Yale University to be used and expended by it for 'promoting original research in the natural sciences.'

The value of Professor Marsh's estate is said to be about \$100,000, but may not prove to be as much. It will be remembered that somewhat more than a year ago Professor Marsh gave his extremely valuable collections in paleontology and other sciences to the University. It is estimated that these were secured at a cost of about \$250,000. The Peabody Museum was given by Mr. George Peabody, Professor Marsh's uncle, through his influence. It should also be remembered that Professor Marsh never accepted any salary from Yale University.

#### SCIENTIFIC NOTES AND NEWS.

THE first Hodgkins gold medal given by the Smithsonian Institution has been conferred on Professor James Dewar, F.R.S., for his work on the liquefaction of air.

PROFESSOR HELMERT, of Berlin, has been elected a foreign correspondent of the Paris Academy of Sciences for the Section of Geography and Navigation. In the same section Père Colin, founder and director of the observatory at Tananarivo, Madagascar, was elected a corresponding member.

THE Paris Academy of Medicine has awarded its Lecaze prize (10,000 fr.) to Dr. Widal for his serum method of diagnosing typhoid fever.

It is proposed, says the London *Times*, that a portrait of the late Dr. John Hopkinson should be placed in the Hopkinson Memorial Wing of the Engineering Laboratory at Cambridge University, the cost to be defrayed by subscription. A chimney piece which Mrs. Hopkinson has presented for use in one of the principal rooms contains a panel in which such a portrait could appropriately be placed. Mr. T. B. Kennington, who painted a portrait of Dr. Hopkinson some years ago, has suggested that instead of simply

copying that picture he could produce a better representation of Dr. Hopkinson as he was shortly before his death by painting an original portrait based on a recent excellent photograph and following the coloring of the previous portrait. Subscriptions are limited to two guineas, in the expectation that a considerable number of Dr. Hopkinson's friends not resident in the University, as well as residents, will wish to contribute. Among those who have already subscribed are the Vice-Chancellor, the Master of Peterhouse, the Master of Trinity, Sir Benjamin Baker, Sir J. Wolfe Barry, Sir Frederick Bramwell, Sir Douglas Fox, Sir James Kitson, Sir G. G. Stokes, Sir William White, Lord Kelvin, Lord Rayleigh and Lord Lister. Professor Ewing is treasurer of the fund, and he will receive subscriptions, or they may be paid to the Hopkinson portrait account at Barclay & Co., Cambridge.

THE statement sent from Washington to the press to the effect that Dr. Thomas J. See had been designated Chief of the Nautical Almanac is incorrect. Dr. See has been assigned to duty as Assistant in the Naval Observatory, but has nothing whatever to do with the Nautical Almanac office.

THE funeral services of the late Professor Marsh were held in Battell Chapel, Yale University, on March 22d. President Dwight conducted the ceremonies, and Professor George F. Fisher, of the Theological School, read the commemorative address. The pall-bearers were Charles D. Walcott and Arnold Hague, of Washington; Professor Asaph Hall, Cambridge; Professor H. A. Barker, University of Pennsylvania; and Professors William H. Brewer, Addison van Name, Edward S. Dana and Mr. George F. Eaton, of Yale.

DR. PHILIPP J. J. VALENTINI, a student in ancient Mexican and Central American history, and author of numerous publications, died March 16th, at St. Luke's Hospital, New York. Dr. Valentini's interpretation of the Mexican Calendar Stone placed him among the foremost American archaeologists. He was born in Berlin in 1828, and received a careful training in philology from his father, an Italian teacher of languages and author of the first German-

Italian dictionary. In 1854 Dr. Valentini went to Costa Rica, and there founded the seaport of Puerto Limon under government auspices. Learning of the obscurity of the Spanish colonization of Costa Rica, he returned to Germany to search for manuscript historical evidence. His first results in this line brought for him the recognition of Ph.D. from Jena. Later Dr. Valentini returned to Central America, where, continuing his investigations, he made many expeditions to Guatemala and other parts of Central America. In this work he received government encouragement, but political disturbances prevented his Spanish and German texts from being published by the government. Recognizing that to thoroughly understand Spanish conquests the pre-Columbian peoples must be studied, he began work upon the glyphs of the stone monuments and codices. Thirty years ago he came to New York to make use of the greater library facilities here, and since that time has been prominent among students of Americana. The American Antiquarian Society of Worcester has published many of his papers. His most recent publication is 'A Study of the Voyage of Pinzon,' printed in German in 1898. The major part of his notes and MSS. remain unpublished.

HARLAN I. SMITH.

DR. OLIVER MARCY, professor of natural history in Northwestern University, and dean, died at Evanston, Ill., on March 19th. He was a Fellow of the Royal Geographical Society, a member of the American Ornithologists' Union, and of other scientific societies.

PROFESSOR GUSTAV WIEDEMANN, professor of physics and chemistry in the University of Leipzig, well known for his contributions to electricity and magnetism, has died.

MAJOR J. EVANS, professor of pathology in the Calcutta Medical College, died on March 13th from the plague. He is believed to have contracted the disease while engaged upon the *post-mortem* examination of a plague patient.

AMERICAN men of science should see that the decimal system of weights and measures is maintained in Cuba, Porto Rico and the Philippines. It is the first principle of colonial gov-

ernment to respect the customs of the native peoples, and we certainly should not fail to do this in a case where their customs are better than our own.

AN appropriation of \$170,000 has been passed by the Massachusetts House for the extermination of the Gypsy moth.

THE German Reichstag has made a grant of 60,000 Marks for Professor Robert Koch's approaching expedition to the tropics to investigate the nature and origin of malaria.

It is said that Mr. Andrew Carnegie is prepared to give the Pittsburg Carnegie Library \$1,000,000 endowment and \$500,000 additional for improvements when the city authorities have appropriated \$3,500,000 for Shenly Park.

By the death of Mrs. A. H. Colson a bequest of \$25,000 for the library of Stafford, Conn., becomes available.

THE Ohio State University announces for the summer of 1899 the maintenance of a lake laboratory at Sandusky, the purpose of which is to provide laboratory facilities to any who may wish to engage in the study of the numerous forms of life there accessible. No courses of instruction are designed and no laboratory fees are charged, the special purpose being to provide opportunities for investigation. Still, the opportunities for mutual improvement among a circle of earnest workers, by comparison of methods, discussion of results and exchange of ideas, are too evident to need mention. The variety of life accessible is unsurpassed, as the lake, river, extensive bays and marshes afford a basis for life conditions of great richness. The laboratory is provided with tables, aquaria, boat and other essentials, and necessary seines, dredges, nets, etc., will be available when needed. Rooms and board may be had convenient to the laboratory at very moderate prices, and as, aside from the attractive locations along shore, the beauties of Kelley's, and Put-in Bay Islands are readily accessible by boat the opportunities are most favorable to combine a few weeks of earnest study with the recreations of a summer outing. Each investigator will be expected to provide his own microscope, microtome and such special appliances as he may need in his particular investi-

gation, unless otherwise arranged, but will be supplied with the usual reagents, glassware, etc., and will be given entire freedom in the matter and method of his investigation, except for such necessary arrangements concerning use of boat, assignment of table aquaria, etc., as may be necessary to secure equal advantages to all. The laboratory will be open from June 15th to August 15th, or, possibly, till September 1st, if desired by a number of workers. Advanced students, instructors or any persons qualified to use the facilities offered are cordially invited to avail themselves of the opportunity here provided. Further particulars may be had by addressing Professor Herbert Osborn, Department Zoology and Entomology, Ohio State University, Columbus.

#### UNIVERSITY AND EDUCATIONAL NEWS.

WE recently announced that Mr. Robert S. Brookings had offered to give \$100,000 to Washington University, St. Louis, on condition that \$400,000 be subscribed by others. This sum has now been given and the \$500,000 has been added to the endowment fund of the undergraduate department. This is in addition to the \$450,000 given for buildings within the past six weeks as described recently in this JOURNAL.

THE Woman's College, of Baltimore, will receive between \$25,000 and \$50,000 as the residuary legatee of the late George R. Berry, of that city.

THE Teachers' College, Columbia University, will erect, at a cost of \$350,000, a building for its model school, the Horace Mann School. This will give, in its present buildings, more ample accommodations for the regular courses.

SIX new scholarships of \$100 each have been established in the Sheffield Scientific School of Yale University. They will be awarded to members of the graduating class who stand highest in scholarship.

MR. W. J. BLANKINSHIP has been appointed professor of botany in the Agricultural College of Montana.

MR. R. C. MACLAURIN, Fellow of St. John's College, Cambridge, has been called to the chair of mathematics in Victoria College, New Zealand.