result being equal to that of an ordinary phonograph. Mr. Higgins, chief engineer to the Exchange Telegraph Company, has tested the apparatus over a line five miles in length. He reports that under favorable circumstances 'articulation is good, the impressions on the cylinder being as deep as the impressions made when speaking into an ordinary phonograph.' Large battery power was needed and a reinforcing current is required at the receiving and registering line.

In regard to the practical utility of the apparatus those who had experience with the telephone and the phonograph will be able to judge from the description here given. It would be most applicable in small offices where a limited staff is employed. Thus if the office is left without an attendant and a call is made the phonograph can be so set as to reply, "Mr. —— is out. The instrument is fitted with a telephonograph which will automatically take down any message you may send and Mr. —— will read it on his return." The arrangement of the mechanism is such that any number of messages up to an aggregate of 15,000 words may be taken in this way.

SCIENTIFIC NOTES AND NEWS.

SIR WILLIAM HUGGINS, the eminent astronomer, will succeed Lord Lister as the president of the Royal Society. The other officers of the Society will remain as at present with the exception of certain members of the council. They will be as follows: Treasurer, Mr. Alfred Bray Kempe; secretaries, Sir Michael Foster, D.C.L., LL.D., Professor Arthur William Rücker, D.Sc.; foreign secretary, Dr. Thomas Edward Thorpe, C.B.; other members of the council, Professor Henry Edward Armstrong, V.P.C.S., Mr. Charles Vernon Boys, Mr. Horace T. Brown, F.C.S., Mr. William Henry Mahoney Christie, C.B., Professor Edwin Bailey Elliott, Dr. Hans Friedrich Gadow, Professor William Mitchinson Hicks, Lord Lister, F.R.C.S., Professor William Carmichael McIntosh, F.L.S., Dr. Ludwig Mond, Professor Arnold William Reinold, Professor J. Emerson Reynolds, D.Sc., Dr. Robert Henry Scott, Professor Charles Scott Sherrington, M.D., Mr. J. J. H. Teall, Sir John Wolfe-Barry.

THESE officers will be elected at the anniversary meeting of the Society on November 30th, when medals will be presented as follows: The Copley Medal to M. Berthelot, For. Mem. R.S., for his services to chemical science; the Rumford Medal to M. Becquerel, for his discoveries in radiation proceeding from uranium; a Royal medal to Major MacMahon, for his contributions to mathematical science; a Royal medal to Professor Alfred Newton, for his contributions to ornithology; the Davy Medal to Professor Guglielmo Koerner, for his investigations on the aromatic compounds; and the Darwin Medal to Professor Ernst Haeckel, for his work in zoology.

LORD AVEBURY has given the first Huxley Memorial Lecture which the Anthropological Institute of London has established to commemorate Huxley's anthropological work.

F. H. SNOW, Chancellor of the University of Kansas and professor of organic evolution and entomology, has been given a year's leave of absence by the Board of Regents, on account of ill health.

DR. L. O. HOWARD, chief of the Division of Entomology, U. S. Department of Agriculture, has been elected an honorary member of the 'Allgemeinen Entomologischen Gesellschaft.' The other honorary members are: Fr. Brauer, Vienna; Charles Janet, Paris; Sir John Lubbock, London; A. S. Packard, Providence, R. I.; J. A. Portchinsky, St. Petersburg; M. Standfuss, Zürich; E. Wasman, Luxemburg; Aug. Weismann, Freiburg.

DR. RAMON Y CAJAL, the eminent histologist, has been awarded a pension by the Spanish Government, and additional funds have also been provided for the enlargement and maintenance of his laboratory.

YALE UNIVERSITY has conferred the honorary degree of M. A. on Professor H. S. Graves, director of the Yale Forest School.

PROFESSOR BEMIS, director of the New York State School of Ceramics at Alfred University, has been awarded a silver medal at the Paris Exposition for a collection of the economic clays of the United States.

Professor G. Frederick Wright, of Oberlin College, and Mr. F. B. Wright arrived at St. Petersburg on the 14th instant. It will be remembered that they were in the midst of the troubles in northern China.

Dr. N. L. Britton, director-in-chief of the New York Botanical Gardens, has returned from Europe, where he has secured a number of important collections and made arrangements for exchanges.

Llewellyn Le Count, assistant in engineering at Columbia University, died on November 15th at the age of twenty-two years. He was graduated this year from the school of applied science of the university.

The *Auk* records the death of Mr. Charles C. Marble until recently editor of *Birds*, a magazine of popular ornithology.

Applied science is deeply indebted to Mr. Henry Villard for his interest and faith in engineering works, especially the application of electricity before their commercial importance was commonly understood. Mr. Villard was also interested in pure science. Thus the Baudelier Expedition from the American Museum of Natural History to Peru and Bolivia was equipped by him in 1892, and he maintained it until 1894. The results of this expedition to the region of highest pre-Columbian culture in South America form the nucleus of the archeological collection that is now open to the public in the west gallery of the American Museum of Natural History. Mr. Villard also furthered investigations among the native peoples of the Columbia River Valley.

Tufts College will open a small laboratory for marine biology at South Harpswell, Maine, next summer. The fauna there is very rich, and the locality is a delightful one in which to spend the summer. There will be opportunities for a few investigators. All inquiries should be addressed to Professor J. S. Kingsley, Tufts College, Mass.

The meeting of Naturalists of the Central and Western States at Chicago, last year, was so successful that a second meeting will be held at the Hull Biological Laboratories, University of Chicago, on Thursday and Friday, December 27 and 28, 1900, when it is expected that a permanent organization will be effected. The provisional program is as follows: *Thursday*, 10 A. M.—General meeting in Room 24, Zoological Building (furnished with a projecting lantern), for organization and reading of the more general papers. 1 to 2 P. M.—Luncheon at the Quadrangle Club. 3 P. M.—Discussion: State Natural History Surveys; methods, results, cooperation. 6:30 P. M.—Dinner at the Quadrangle Club. *Friday*, 9 A. M.—General meetings for reading of papers. At this time at least two sections, one in Zoology and one in Botany, will be formed, at which the more special papers will be read. The committee on the meeting is E. A. Birge, *Chairman;* C. R. Barnes, T. G. Lee, C. C. Nutting and C. B. Davenport, *Secretary.*

The New York section of the Society of Chemical Industry holds its next meeting on November 23d at the Chemists' Club, 636 W. 55th Street, instead of at the College of Pharmacy as hitherto. The usual informal dinner before the meeting will be held at the Hotel Grenoble, 7th Avenue and 56th Street.

The American Forestry Association will hold a meeting in Washington, on the morning of Wednesday, December 12th. The meeting will be primarily a business meeting. The Board of Directors will make its annual report and officers will be elected for the ensuing year. Members who are in the neighborhood of Washington are urged to be present.

The National Irrigation Congress is meeting in Chicago this week. In addition to special papers on the scientific aspects of irrigation and forestry, addresses have been arranged by Secretary Wilson, of the Department of Agriculture, General Miles and other prominent men.

It is announced from St. Petersburg that Baron Toll's polar expedition, under the auspices of the Imperial Academy of Sciences, is wintering in the Kara Sea, on the northeastern coast of Siberia. It will send an expedition to the Taimyr Peninsula next spring to establish an observation station.

It will be remembered that Benjamin Franklin bequeathed to the city of Boston $5,000,

the interest of which should accumulate for 100 years and then be used for public purposes. The period ended some six or seven years ago and there has been much difference of opinion as to the disposition of the fund which now amounts to $366,880. It appears, however, that a committee of the City Council and the managers of the fund have agreed to recommend that the money be used for the erection of a building to be known as the Franklin Institute, which shall be used for educational purposes, with special reference to artisans.

A NUMBER of American men of science were awarded gold and silver medals at the Paris Exposition. A circular has been sent them, in lieu of the medals, stating that these can be purchased—the gold medal for 600 fr. The value of the gold in the medal is not stated, but it probably allows a generous profit to the promoters of the Exposition. Electrotype blocks of the medals are also offered for sale at a cost that will allow somebody a profit of about 1,000 per cent.

ATTEMPTS have been made to sell a certain book by a person who styles himself 'President of the Natural Science Association of America,' and the name is now being used to promote the sale of mining stocks. There is probably no legal means of preventing the use of an honorable name for such purposes, but there should be some agency such as a committee of the National Academy of Sciences or of the American Association for the Advancement of Science that would prevent people from being deceived by the misuse of a name such as the 'Natural Science Association of America.'

PROFESSOR SMEDLEY, supervisor of the Chicago Board of Education's Department of Child Study has drawn, says the *Medical News*, the following conclusions from the examinations of the eyes of the school children: (1) Dull pupils have a greater number of eye defects than brighter pupils. (2) Defective eyesight causes dulness in the child. (3) The primary rooms in the public schools have the poorest light. (4) Boys have better sight than girls. (5) School life is responsible for many eye defects. (6) The first three years of school life increases eye defects one-third. (7) Of pupils whose sight is but one-tenth the keenness of normal, the number grows steadily larger from the beginning to the end of school life. (8) While in ordinary schools 32 per cent. had only two-thirds of ordinary keenness of sight, in one school 48 per cent. had that degree of eye defects. (9) Such defects undoubtedly were the cause of the presence of many of the pupils in that school. (10) Something must be done at once, at almost any cost, to save school children's eyes.

PROFESSOR GRASSI has just published, says the *Lancet*, another note in the *Rendiconti della R. Accademia dei Lincei*, describing some observations made by him in September of last year and during the past summer at Grosseto with the object of controlling the results obtained last year in July and August by Professor Koch's expedition. The latter, it may be remembered, found very few *anopheles*, but a very great number of *culices* in this city, although malaria was very prevalent, and from this fact he considered it likely that *culex pipiens* is also an agent in the propagation of malaria. Professor Grassi, on the contrary, has found *anopheles* very abundant in the same houses where Koch had noted malaria the previous year, and he concluded from this that Professor Koch's party were inexpert at the work of looking for mosquitoes and that their search was not made in the proper places, which are the entrances of houses and outhouses, and not in the bedrooms. He found that the favorite time for the *anopheles* to feed at Grosseto was the thirty or forty minutes immediately after sunset, and to a much less extent, the same time before sunrise. They take long flights in search of food and like to go away shortly after feeding, for which reason they may be said to change every twenty-four hours, at least during the warm weather, only very few (about 1 per cent.) being consequently found infected in the height of summer. As the weather becomes colder they remain longer and a large proportion (about 8 per cent.) are found infected. The infected insects are apt to be conveyed passively over long distances and so spread infection to fresh localities hitherto exempt. *Anopheles* are found in some places where no malaria exists as, *e. g.*,

along the Lake of Como. Their larvæ live freely in salt water, and seaside places, though usually exempt, are not invariably so. Professor Grassi, in conclusion, confirms the observations of Christophers and Stephens on the occasional presence in the salivary glands of the *culex* of bodies which resemble, but which he does not believe to be, sporozoites. He calls them pseudo-sporozoites.

A PAPER on the metric system read by Mr. Rufus C. Williams, president of the New England Association of Chemistry Teachers, has been published in a pamphlet by the Decimal Association of London. It gives a very clear account of the advantages of the metric system. Mr. Williams reports that under the Government the system is used in the following cases:

1. In the Department of the Coast and Geodetic Survey, the meter was adopted as the standard in the beginning and has been so used ever since.

2. In the Agricultural Department, in all scientific work in chemistry, etc.; and, in the Natural History work metric measurements are exclusively used.

3. The Post Office Department uses it for foreign mails to metric countries, but not for domestic. Postal cards are of metric dimensions, and certain coins have been made to metric weights and measures.

4. In the Department of Surgeon-General of the Army and also that of the Navy, all contracts for medical supplies embody the metric system, and all containers—boxes and bottles—are of metric dimensions.

5. Regulations for U. S. Marine Hospital Service, 1897, made its use compulsory.

6. In Cuba and Porto Rico the Government uses the system exclusively in all official and domestic work. These countries adopted it years ago.

UNIVERSITY AND EDUCATIONAL NEWS.

MR. ANDREW CARNEGIE proposes to erect and furnish buildings for a polytechnic school in Pittsburg, giving it an endowment fund of $1,000,000. The city of Pittsburg is to furnish the site.

THE amendment to the constitution of the State of California, permitting Leland Stanford Jr. University to receive bequests from those not citizens of the State, and permitting the legislature to exempt part of the property of the University from taxation, was adopted at the recent election.

WE recorded last week the partial destruction by fire of the N. Y. State Veterinary College of Cornell University. It appears that the damage to the building, which is estimated at $30,000, is covered by insurance. The departments of histology and bacteriology, however, lost equipments valued at $25,000 and collections that can scarcely be replaced. The loss of Professor Gage's collections, made in the course of twenty years, is especially serious. It is thought possible that the fire originated in the lamps of incubators in the department of bacteriology which were kept burning all night.

PROFESSOR GEORGE J. BRUSH, of Yale University, has given $1,000 to a special fund for the Sheffield Scientific School. The general funds of the school have been increased by a gift of $2,500 from an anonymous donor. The university has also received the following gifts and bequests: $5,000 from Mrs. Isaac H. Bradley, the income of which is to be devoted to a course of lectures on some subject connected with journalism, literature or public affairs; $700 by the will of the late James Campbell, of the medical faculty, to maintain the senior prize, provided for by him since 1888 and known as the Campbell gold medal; $1,000 from Mrs. H. F. English for the Alice Kimball English prize fund in the Art School and $1,000 from ex-President Dwight for the general funds of the Art School.

JAMES MILLIKEN, the Decatur (Ill.) banker and philanthropist, has added $400,000 to his gift to the proposed industrial school to be established in Decatur. He had previously given $316,000. Citizens gave $100,000, and the Cumberland Presbyterian churches of Illinois, Indiana and Iowa will give $100,000.

A COMPOUND engine to be placed in the boiler house erected by President Morton in connection with the Carnegie Laboratory of Engineering has been presented to the Stevens Institute of Technology by the Stevens family at Hoboken.

DR. A. KOSSEL, professor of physiology at the University at Marburg, has been called to Heidelberg.