

drogen and chlorin, and in the reduction of silver and mercury salts. The action of light on nitric acid seems to be the only exception, but this is only an apparent exception, as the conductivity of nitric acid solution increases up to 32 per cent. when the maximum is reached, whilst the decomposition by light ceases when the concentration has fallen to 47 per cent.

J. L. H.

SCIENTIFIC NOTES AND NEWS.

THE anniversary meeting of the Royal Society will be held on Tuesday, November 30th, when the officers for the ensuing year will be elected. Lord Lister will be recommended for re-election as President.

THE new house of the American Society of Civil Engineers, 220 West Fifty-seventh street, erected at a cost of \$200,000, was formally opened on November 24th. Addresses were made in the new auditorium in the afternoon by the President of the Society, Mr. B. M. Harrod, of New Orleans, and there was a reception in the evening.

THE Danish Geographical Society has awarded its gold medal to Dr. Sven Hedin.

DR. GUIDO SCHNEIDER has been appointed Director of the Biological Institute recently established at Sebastopol.

THE death is announced of Professor Henry Calderwood, since 1868 professor of moral philosophy in the University of Edinburgh, on November 20th, at the age of sixty-seven years. He was the author of numerous publications on education and philosophy, among the more important of which were the 'Relations of Science and Religion' (1881) and the 'Relations of Mind and Brain' (1879), the latter being one of the first systematic treatises on physiological psychology.

THE *Athenæum*, in announcing the death, on November 1st, of the Rev. Peter Bellinger Brodie, of Rowington, in Warwickshire, at the age of 82, states that while a student at Cambridge, Mr. Brodie, like so many others, acquired an enthusiastic love for geology, under

the teaching of Professor Sedgwick. His name soon came to be identified with the study of fossil insects, and in 1845 he published a work on this subject. Mr. Brodie was elected a Fellow of the Geological Society as far back as 1834; and the Society recognized the value of his work by the award, in 1887, of the Murchison Medal. A selection from Mr. Brodie's extensive geological collections was acquired a short time ago by the British Museum.

WE regret also to record the following deaths among foreign men of science: Dr. G. H. Otto Vogler, aged seventy-five, a versatile writer on natural history; Dr. Johannes Frentzel, Director of the Biological Station on the Müggelsee, near Berlin, aged 88 years; Dr. L. A. Buchner, professor of pharmacology at Munich, aged eighty-four years; Professor Karl Müller, Director of the Experiment Station for Agricultural Chemistry at Hildesheim, and of Dr. Fr. Stohman, honorary professor of agricultural chemistry at Leipzig, aged sixty-five years.

THE report of the Commissioner of Patents upon the business of the Patent Office for the fiscal year ended June 30, 1897, shows that there were received within that year 43,524 applications for patents, of which 23,994 were granted, including reissues and designs. The number of patents which expired was 12,584. The number of allowed applications which were by operation of law forfeited for non-payment of final fees was 5,034. The total receipts were \$1,843,779; the expenditures, approximately, were \$1,026,644, leaving a surplus of \$317,135. The moneys covered into the Treasury of the United States on account of receipts from fees, etc., in patent cases, from July 4, 1836, in excess of the cost of the management of the Patent Office, amounted to \$5,093,614.

Nature states that an instructive fisheries exhibition, arranged to illustrate the fishing industries and the application of science to agriculture, has been opened in the Zoological Museum of the University College, Liverpool. The exhibits are fully described in a guide to the exhibition published by the authorities. There is a series of the food fishes of this district, with the more important food matters of each; also a series of useful and useless fishes

which compete with one another by eating the same food. Another exhibit contains specimens of the shell-fish of the district, showing stages in the life-history and growth, legal and illegal sizes, pearl formations and pearls. A case is devoted to a display of printed matter, photographs, drawings and lantern slides, illustrating the publications, both administrative and scientific, of the Lancashire Sea Fisheries Committee, and other work bearing upon the fisheries of the district. The drawings and sketches include a number made by Professor Herdman in illustration of his joint investigation with Professor Boyce on the diseases of oysters and the connection between the oyster and disease.

THE *Senckenbergische Naturforschende Gesellschaft* at Frankfort celebrated its eightieth anniversary on May 30th, and has now published its *Bericht*, giving an account of the celebration, including the official address by Professor Heinrich Reichenbach, the subject of which was 'A Review of the Progress of Biology during the Past Eighty Years.'

THE seventh International Congress of Navigation will be held at Brussels during July of next year.

THE Walsingham Medal for 1898 is offered at Cambridge University for a monograph or essay giving evidence of original research on any botanical, geological or zoological subject, zoology being understood to include animal morphology and physiology. The competition is open to graduates of the University who are under the standing of M. A. on October 10, 1898, on or before which date the essays are to be sent to Professor Newton, Magdalene College.

THE trustees of the New York Public Library, Astor, Lenox and Tilden Foundations, have announced that the design submitted by Carrere & Hastings for the new library building, to be erected on the site of the Forty-second street reservoir, has been accepted, and the prize in the competition awarded to that firm.

IN addition to the relief map of the State and of the Catskill regions issued by the University of the State of New York, the Regents have authorized one of the Adirondacks and another

of Manhattan Island which will show its physical features before they were altered by civilization. The chief interest of this action is, however, in the notice to university institutions that duplicates of these relief maps will be made in quantity and furnished to the schools either for cash or as a part of their apportionment at a comparatively trifling cost, so that many schools can hereafter be provided with these valuable maps. 1,000 copies of the mushroom charts, the publication of which created so great interest that the edition was exhausted almost immediately, have been ordered by the Regents in chart form for wall use. Each institution will be entitled to one free in sheets or mounted on muslin and rollers by paying the cost of such mounting.

THE library of the late Professor Carl Vogt has been purchased by the *Senckenbergische Naturforschende Gesellschaft* of Frankfurt.

THE *Paris Conservatoire Nationale des Arts et M \acute{e} tiers* announces a series of public and free courses of lectures on the application of science to the arts. These lectures are given in the evenings and continue throughout the winter. The lecturers include M. J. Hirsch, M. J. Violle, M. Marcel Depr \acute{e} s, M. Th. Schloesing and other eminent French men of science.

AT the anniversary meeting of the New York Academy of Medicine, on November 18th, an address was given by Dr. Hermann M. Biggs on 'Sanitary Science, the Medical Profession and the Public.'

A REPORT by M. Descubes has been presented to the French Chambers of Deputies recommending the plan of connecting Paris with the sea by a maritime canal, proposed by M. de la G \acute{r} ie. The length of this canal would be 185 km., its width at least 35 m., and its depth 6.20 m. The cost is estimated at about \$30,000,000, and M. de la G \acute{r} ie is prepared to organize a company to construct the canal if it is allowed the right to collect tolls for ninety-nine years.

AT a recent meeting of the New York Library Club, Dr. John S. Billings described the method of disinfection of books by formalin vapor. He said, according to the *New York Medical Record*, that in some experiments made recently, at the laboratory of the University of

Pennsylvania, a saucer of formalin, a book which had been infected with the bacteria of diphtheria, another with scarlet fever, and another with erysipelas, were placed under a bell jar. The experiment showed that one cubic centimeter of formalin to three hundred cubic centimeters of space would thoroughly disinfect any book in fifteen minutes.

It is possible that the beaver will survive longer in Europe than in America. It is said that a few individuals are still to be found on the Elbe, the Rhine and the Danube, and Professor Collett, of Christiania, estimates, according to *Cosmos*, that there are now 100 individuals living in Norway, whereas the number in 1880 was estimated at 60. Professor Collett recommends that government protection be afforded to prevent their extermination.

DR. MAX SCHLOSSER has just issued his *Literaturbericht* of Anthropology and of the Living and Fossil Mammals for the year 1893—a quarto abstract of 82 pages, in fine type, containing critical notices and digests of all the contributions to these subjects during the year. This abstract is from the *Archiv für Anthropologie*, Band 24, and it is an invaluable aid to zoölogists and paleontologists in all parts of the world, especially because it gives the contents of many papers which are not accessible to readers on this side of the water.

DR. BERGER has published the original Italian text, with comments, of a manuscript discovered by him in the Vatican Library in the hand writing of Michael Angelo. It gives a series of prescriptions and treatments for diseases of the eye which it is supposed he collected in view of his own failing eyesight.

THE last issue of the *Masters of Medicine* series, published by Mr. Fisher Unwin, London, is 'William Harvey,' by D'Arcy Power.

THE *Atlantic Monthly* promises for next year a series of articles by Mr. John Muir, describing The Great Government Reservations, The Yellowstone Park, The Yosemite Park, and The Sequoia Parks; a series by Dr. T. J. J. See on the 'Origin of the Universe,' and a group of articles on modern psychology and its contributions to education, as also articles by Professor C. S. Sargent on the preservation of

the forests and by Professor D. G. Brinton on results of American archæological investigations.

MR. BERNARD QUARITCH, London, offers for sale a complete set of the 'Philosophical Transactions of the Royal Society' for £240. The set includes the 'Philosophical Collections' by Robert Hook, seven numbers complete, published in 1679-1682, during which time the Philosophical Transactions were interrupted, which were intended to supply the gap.

THE Open Court Publishing Company, Chicago, propose issuing a series of life-size portraits of eminent philosophers and men of science, should the advance subscriptions warrant the undertaking. They have prepared a preliminary list of sixty-two philosophers and psychologists and offer this set for \$7.50. We trust that this very reasonable price, and the value of the work already done in this direction by the Open Court Publishing Company, will secure a sufficient number of subscriptions to lead them to publish the series, and to follow it as they suggest with series of mathematicians, physicists, biologists, etc.

It is perhaps worthy of note as indicating tendencies of scientific development that of the thirty-six philosophers given in the series drawn up by the Open Court Publishing Company all are dead except one, whereas a large proportion of the psychologists are now living. The list of psychologists is as follows: Cabanis, Maine de Biran, Beneke, G. E. Müller, E. H. Weber, Fechner, Helmholtz, Hering, Aubert, Mach, Stumpf, Munk, Exner, Wernicke, Steinthal, Brentano, Paul Janet, Ribot, Taine, Fouillée, Binet, Bain, Romanes, C. Lloyd Morgan, Bastian, William James. The omission of Wundt's name from the list is probably through inadvertence. In the English names biology is emphasized at the expense of psychology. The names of Ladd and Hall should be added to give America its fair representation.

THE Smithsonian Institution is about to print, in its *Miscellaneous Contributions*, a work entitled 'List of Recorded Earthquakes on the Pacific Coast, 1769-1897' (illustrated), by Edward S. Holden. The data are derived from a similar list of recorded earthquakes, 1769-1888 (with a very considerable number of additions

and a few corrections), which was issued by the University of California in 1888, and from the annual publications of the Lick Observatory (printed in the *American Journal of Science*, the *Publications of the Astronomical Society of the Pacific*, the *Bulletins of the United States Geological Survey*) since that date. The annual records referred to have been compiled by Messrs. Holden, Keeler and Perrine from observations at Mt. Hamilton, and from miscellaneous reports of earthquake shocks. They have been thoroughly sifted and revised in the present work, which is believed to contain all trustworthy data on the subject of Pacific coast earthquakes since 1769.

IN a monograph entitled 'A revision of the American Lemnaceae occurring north of Mexico,' printed in advance from the Ninth Annual Report of the Missouri Botanical Garden, Mr. C. H. Thompson, in continuation of his studies of ligulate Wolffias, published in the Eighth Report, has now brought together, in concise form and with good keys, a synopsis of the entire Order Lemnaceae, as represented in our flora, each species, in addition to a good description, being represented by excellent figures illustrating its habit and structural details. The paper should stimulate increased study of this interesting group of aquatics, the smallest of flowering plants.

WE understand that subscriptions toward the purchase of the paleontological collections of the late Professor Cope for the Philadelphia Academy of Natural Sciences are far from reaching the needed sum. A recent issue of the Philadelphia *Ledger* contains an editorial urging the importance of securing these collections. It remarks:

"The public spirit of the citizens of this city should not make it possible for the collections to be taken elsewhere, as they embrace many of the specimens on which Professor Cope based his original descriptions, and this type material is simply priceless, since it cannot be duplicated. If through the liberality of those interested in the progress of science the Academy of Natural Sciences be placed in possession of this material, that institution will then have in its museum the type collections of Leidy and Cope, two of

the greatest authorities on the monsters of the pre-historic world."

SIMULTANEOUSLY with the starting of the railroad at Buluwayo, says the New York *Tribune*, comes the news of the discovery of coal in large quantities in the immediate neighborhood of the place, the prospectors having been able to ascertain that the coal fields in question cover an immense area, extending, indeed, to the Zambesi river. It is this discovery, destined to play so great a rôle in the commercial and industrial development of the southern portion of the Dark Continent, that has led Cecil Rhodes to decide to continue the railroad without delay to the Zambesi river, which will then be in uninterrupted railroad communication with the Cape. Apart from their commercial importance the coalfields may contain fossils of great scientific interest.

UNIVERSITY AND EDUCATIONAL NEWS.

A NEW University was opened at Jassy, Roumania, on November 2d, addresses being made by the king and by the queen of Roumania.

By the will of the late Julia Bradford Huntington James a trust fund left by the late Ralph Huntington was released, and it appears that the Massachusetts Institute of Technology and the Boston Museum of Fine Arts will each receive about \$100,000.

THE Root Hall of Science and the Benedict Hall of Languages of Hamilton College were dedicated on November 16th. The buildings are both of stone and each cost about \$30,000. The Hall of Science is the gift of Mr. Elihu Root, of New York, in memory of his parents, his father having been professor of mathematics in Hamilton College. His brother, Oren Root, now holds the same chair.

ARRANGEMENTS are being made to build a science hall at Ripon College, costing \$30,000. Five subscriptions of \$2,500 have already been received.

ROCKFELLER HALL, the new recitation building given to Vassar College by Mr. John D. Rockefeller, at the cost of \$100,000, was dedicated on November 19th. Dr. G. Stanley