

been cemented on may be removed by soaking, the tile cleaned and used again. The arrangement of invertebrate fossils mounted on these tiles in almost vertical series enables the collection to be seen at a glance and to be read with the facility of a printed page.

Above all things it should be borne in mind that no hard and fast rules can be laid down for the display of specimens, but that methods must be modified to suit the subject. The main effort of an exhibition series must be to attract, interest and instruct the public and for this purpose a small number of carefully chosen specimens, well installed and well labelled is to be preferred to a multiplicity of objects which fatigue the eye and by their very number prohibit careful examination. The student will always search for information. One great aim of a museum should be to impart knowledge to the visitor who is not looking for it.

F. A. L.

#### SCIENTIFIC NOTES AND NEWS.

MCGILL University has conferred its LL.D. on Professor Geo. F. Barker, of the University of Pennsylvania, on Captain Alfred T. Mahon, U. S. N., and on Mr. J. F. Whiteaves, of the Canadian Geological Survey.

THE Paris Academy of Sciences has elected Professor van der Waals a corresponding member in the place of Sir George Stokes who was recently made a foreign member.

Dr. W. J. HOLLAND, the director of the Carnegie Museum of Pittsburg, has been requested by the trustees of the Carnegie Institute to devote his entire time to the management of the growing departments of that institution. Director Holland is now the chancellor of the Western University of Pennsylvania and the Carnegie trustees are anxious that he should relinquish that position in order to devote his time to the administrative and scientific work of the Institute.

THE tenth award of the Riberi prize of 20,000 lire (\$4000) will be made by the Royal Academy of Medicine of Turin, on December 31, 1901, for the best printed or manuscript work, or the most important discovery, during the five years, 1897-1901, in experimental pathology, hygiene, or forensic medicine.

THE Danish Academy of Sciences has elected to foreign memberships Professors E. van Beneden, of Liège; W. Fleming of Kiel; H. Dohrn, of Naples; Th. Engelmann, of Berlin; R. Helmert, of Potsdam; L. Henry, of Lyons; M. Treub, of Buitenzorg, and H. de Vries, of Amsterdam.

MR. ALFRED L. KROEBER, fellow of Columbia University, has been appointed curator of anthropology in the Museum of the Academy of Sciences of California at San Francisco.

MR. R. H. YAPP has been appointed assistant curator of the Herbarium at Cambridge University.

SIR J. BARRY TUKE, known for his studies in mental disease, is a candidate for the vacancy in the parliamentary representation of the Universities of Edinburgh and St. Andrews, caused by the death of Sir William Priestley.

PROFESSOR A. A. MICHELSON of the University of Chicago, has been appointed commander of the First Ship's Crew, Illinois Naval Militia. He is a graduate of Annapolis and served in the navy for several years.

DR. JAMES M. SAFFORD, for many years professor of biology in Vanderbilt University and State geologist of Tennessee, will retire from active work at the close of the present session. Dr. Safford has done a great deal of field work throughout the State of Tennessee, and is also known as the writer of important scientific articles and a valuable work on the geology of Tennessee.

PROFESSOR KITASATO of Tokyo, has discovered a second bacillus which he considers to be an etiological factor in the production of plague. He has also produced a new plague serum.

PROFESSOR JACOB E. REIGHARD, of the department of zoology in the University of Michigan has established a camp on the Huron River near Geddes and is engaged in studying the habits of the dog fish (*Amia Calva*) in its natural surroundings. These are of special interest owing to the fact that after the eggs have been laid the male guards them and the young fish.

THE Council of the British Institution of Civil Engineers has made the following awards for

papers read and discussed before the Institution during the past session: A George Stephenson Medal and a Telford Premium to Sir Lowthian Bell, LL.D., F.R.S.; Telford Medals and Premiums to Mr. H. Dalrymple-Hay, Mr. B. M. Jenkin, Mr. F. W. Bidder, and Mr. F. D. Fox; a Watt Medal and a Telford Premium to Mr. J. Dewrance; a Crampton Prize to Sir Charles Hartley; and Telford Premiums to Mr. C. N. Russell and Mr. R. A. Tatton.

THE executors of estate of the late A. B. Bolton, of Chicago, have presented to the University of Illinois his entomological collection, which is said to be one of the most complete private collections in the world. It is valued at \$50,000.

THE death is announced, at the age of 73 years, of Mr. George Highfield Morton, author of publications on the geology of Lancaster and North Wales. He was awarded the Lyell medal of the British Geological Society in 1892.

THE London *Times* calls attention to the fact that M. Alphonse Milne-Edwards, whose death we were compelled to record last week, was the grandson of Mr. Bryan Edwards, M.P., the West India planter and historian, who settled at Bruges, and son of Henri Milne-Edwards, the eminent zoologist, who died in 1885. He was born in Paris in 1835, graduated in medicine in 1859, became professor at the School of Pharmacy in 1865, and in 1876 acted as his father's deputy as professor of zoology at the Jardin des Plantes. He was the colleague of Edmond Perrier in the deep-sea explorations of the *Travailleur* and *Talisman*, and was awarded the gold medal of the Geographical Society. In 1877 he succeeded M. Gervais in the Academy of Sciences, and in 1885 entered the Academy of Medicine. In 1891 he was appointed Professor of Zoology and Director of the Jardin des Plantes, and occupied a house there. His death is a great loss to that institution and to science. Among his numerous scientific works may be mentioned: '*Recherches anatomiques et paléontologiques pour servir à l'histoire des oiseaux fossiles de la France*' (1866-1872), '*Recherches sur la faune ornithologique éteinte des Iles Mascareignes et de Madagascar*' (1866-1874), '*Éléments de l'histoire*

*naturelle des animaux*' (1881-1882), '*Expéditions scientifiques du travailleur et du talisman pendant les années 1881, 1882, et 1888*,' and the papers on mammals and birds in Grandidier's '*Histoire physique naturelle et politique de Madagascar*.'

AN expedition to northern Labrador will take place this summer under the leadership of Professor E. B. Delabarre, of Brown University. It will sail from St. Johns, Newfoundland, about June 24th, and return toward the middle of September. Its aim is the exploration of the coast and interior as thoroughly as the time will allow. One or two scientific men might yet find a place on this expedition; an expert geologist would be particularly welcome. Application should be made at once to Professor Delabarre, 9 Arlington avenue, Providence, R. I.

MISS JOSEPHINE E. TILDEN and Miss Caroline Crosby, of the University of Minnesota, with Mrs. Henry Tilden, of Minneapolis, sailed from Vancouver, May 4th, for Honolulu and the islands of the South Pacific, for the purpose of collecting marine and freshwater algæ.

THE steamship *Windward* has been docked at St. Johns, Newfoundland, and will be thoroughly repaired. It will proceed thence to New York and afterwards to the Arctic regions.

A TELEGRAM has been received at the Harvard College Observatory from its Arequipa Station stating that the position of Eros on April 26, 21 h., 22 m., Greenwich Mean Time, was 15 minutes of arc preceding and 8 minutes south of the position given in the ephemeris by Daniel N. Jones, Jr., published in *Popular Astronomy* (January, 1900), p. 41. This appears to be in response to a letter which was sent to Arequipa on March 12th, asking Dr. Stewart to photograph Eros with the Bruce Telescope, and determine the correction to the above ephemeris.

THE Lick Observatory expedition to observe the total solar eclipse of May 28th, is located a short distance northwest of Thomaston, Ga. Thomaston is a village of about 1800 inhabitants, some 60 miles south of Atlanta. The observers from the Lick Observatory are astronomer W. W. Campbell and assistant as-

tronomer C. D. Perrine. After the instruments are mounted and adjusted, these observers will be joined and assisted by Professor A. A. Nijland, director of the Utrecht Observatory, Dr. J. H. Wilterdink, astronomer in the Leiden Observatory, and by about twelve professional and amateur astronomers from various parts of this country.

THE Western University of Pennsylvania will have an expedition in the field to observe the total eclipse of the sun, which occurs at the end of this month. The expedition will consist of Professor F. L. O. Wadsworth, the director of the Allegheny Observatory; Professor S. M. Kintner, of the Engineering School; Dr. J. A. Brashear, the noted instrument maker of Pittsburgh, and others. Dr. Holland, the Chancellor of the University, may be of the party.

PROFESSOR ORMOND STONE, director of the Leander McCormick Observatory, of the University of Virginia, will occupy a station for the observation of the eclipse, at Winsboro', S. C. His special aim will be to obtain means for studying characteristics of the filamentary structure of the inner corona, which was carefully observed by him, near Denver, during the total eclipse of July 29, 1878. The observations will be both photographic and visual. Dr. William J. Humphreys, of the same university, will occupy a station near the edge of the shadow, in order to study the 'reversing layer.'

THE Russian Government has established a station at Villa Franca, near Nice, for deep-sea explorations. A special yacht for the station has been constructed in Zurich.

THE Botanical Section of the American Association for the Advancement of Science, The Linnean Fern Chapter and The Sullivant Moss Chapter will be the guests of the New York Botanical Garden on Wednesday, June 27th. By invitation the Torrey Botanical Club will present a memorial program in honor of Dr. John Torrey in the lecture hall of the Museum, beginning at 10 a. m. The following features of this program have already been determined: 'Historical Sketch of Botany in New York City,' by Dr. T. F. Allen; 'Personal Reminis-

cences of Dr. Torrey,' by Professor T. C. Porter; 'Work of Dr. Torrey as a Botanist, with Bibliography,' by Dr. N. L. Britton; exhibition of letters, pictures and material illustrative of Dr. Torrey's work, by Mrs. Elizabeth G. Britton and Miss Anna Murray Vail; work of the Torrey Botanical Club, by the Secretary, Professor Edward S. Burgess. A large amount of interesting historical material has already been sent in response to the inquiry of the Secretary of the Section.

A SUMMER school of natural history has been established by professors of Beloit College on Madeline Island, Lake Superior. Courses in physiography are offered by Professor G. L. Collie; in geology by Professor Grant Smith, and in botany by Professor H. B. Densmore. The location of the school is very favorable for the study of these sciences. The courses will open on July 27th and will continue until August 30th, and the fee for tuition and materials, including the use of a microscope, is only five dollars.

THE international conference for the protection of wild animals in Africa, was opened at the British Foreign Office on April 24th, and was attended by plenipotentiaries of France, Germany, Great Britain, Congo Independent States, Italy, Portugal and Spain. A plan is advocated for the establishment of large reserves like Yellowstone Park, where wild animals may live under natural conditions.

THE need of protecting the larger wild animals is illustrated by a 'Note on the Word Bison,' in the *Bulletin* of the American Museum of Natural History, where Dr. J. A. Allen states that the American bison is practically exterminated in the wild state and its perpetuation depends upon the care and skill exercised to preserve the domesticated herds which, it is estimated, comprise between 300 and 500 individuals. There are possibly 20 bison in the Yellowstone National Park and not a dozen outside of it. About 50 of the Wood bison, the variety found in the vicinity of Great Slave Lake, are believed to be in existence. The paltry numbers given above are all that are left of the millions that once roamed over the west and northwest.

THE American Medical Association will hold its annual meeting this year in Atlantic City, New Jersey, on June 5th, 6th, 7th and 8th.

THE Third International Ornithological Congress will be held at Paris from June 26th to June 30th, as one of the series of meetings to be held in connection with the Paris Exposition. The President of the Congress is Dr. E. Oustalet; the Secretary-Treasurer, M. J. de Claybrooke, and Dr. Alphonse Milne-Edwards who has just died was the Honorary President. The members of the Congress will be the delegates from the French and foreign governments and those who may become members by the payment of a subscription of 20 francs, while zoological and similar societies may be represented by delegates. There are to be five sections as follows: 1. Systematic ornithology, anatomy, paleontology. 2. Geographic distribution, migration. 3. Biology, nidification, oology. 4. Economic ornithology, bird protection, aviculture, acclimatization. 5. Organization of the permanent international ornithological committee. The following is the provisional program under the various sections:

1. Systematic ornithology; classification; descriptions of new genera and species, nomenclature. Anatomy and embryology of birds. Paleontology; classification, descriptions of new genera and species, ancient faunas, relation of extinct to living species.

2. Geographical distribution of birds; existing faunas, species extinct within historic times. Migration. Accidental occurrence of exotic species.

3. Biology; habits, food, nidification, oology.

4. Economic ornithology; protection of useful species, destruction of injurious species, hunting. Acclimatization. Aviculture.

5. Organization and duties of the international ornithological committee. Election of new members.

THE International Anti-Tuberculosis Congress, attended by more than 1000 delegates, was opened in the San Carlo Theatre, Naples, on April 25th, in the presence of King Humbert, Queen Margherita, the Prince and Princess of Naples, and the Duke of Genoa. The delegates present represented the Governments of Germany, Austria-Hungary, France, Spain, Portugal, Sweden and Norway, Greece, Roumania, Russia, and the United States, and included the Duke of Ratibor and Professor Vir-

chow, from Germany, and Dr. Lannelongue from France. The first sitting of the congress was devoted to a discussion of the prophylaxis of tuberculosis.

THE Anatomical Society at Pavia held its annual meeting this year at Pavia from April 18th to the 21st, under the presidency of Professor Gustav Retzius of Stockholm. Among those who contributed papers were Professors Waldeyer, His, von K  lliker, Giacomini, and other well-known anatomists.

THE following announcement has been made by the British Foreign Office: The Secretary of State for Foreign Affairs has received a despatch from Sir H. MacDonell, her Majesty's Minister at Lisbon, containing the following information regarding the facilities which will be granted by the Portuguese government to foreign astronomers visiting Portugal in May next for the purpose of viewing the total eclipse of the sun. A communication has been made to the Lisbon press, stating that, on the occasion of the eclipse of the sun in May, when a number of foreign astronomers are expected to visit Portugal, owing to its favorable geographical position for observation, customs facilities will be granted for the admission of scientific instruments, books, etc., which such visitors may desire to bring with them. Astronomers from abroad will be exempt from payment of the usual custom duties on production at the custom-house, on arrival of a certificate drawn up by the astronomical society to which they may belong, setting forth their names, and describing the instruments and books which are to be imported. This certificate, however, should be legalized by the nearest Portuguese Consulate before starting. Further, it is announced that the Ministry of War has informed the Ministry of Education that all the military authorities of the districts of Vizen, Aveira, Guarda, Castello Branco, and Coimbra will afford any possible assistance to astronomers during the observations, and that tents will be lent to observers, on a request being addressed to the Ministry of War in Lisbon to that effect. A Government notice has now been published in the *Official Gazette*, stating that the King has nominated a Royal Commission for the purpose of assisting

in every way those who may come from abroad for scientific observations, and for superintending arrangements generally. This commission will sit either at the Royal Observatory, Lisbon, or at the Society of Geography, Lisbon; its president is his Excellency Señor Marianno de Carvalho.

#### UNIVERSITY AND EDUCATIONAL NEWS.

THE Ohio Legislature with only three dissenting votes has placed a special tax on property for two years of one-twentieth of a mill on the taxable property of the State for the Ohio State University. This will yield \$90,000 a year, which will provide a building for the department of physics and one for the college of law.

It is reported in the daily papers that the Rev. F. H. James of Oakley, Kans., having inherited a large sum of money, will endow a Methodist University in Kansas City with \$1,000,000. It is also stated that he has also given \$300,000 for a college in Oakley. It is to be hoped that these reports are correct.

THE University of Wales has received a bequest of £5500 for the foundation of scholarships from the late Mr. Price Davies.

THE summer school in practical mining of Columbia University will be conducted by Professor Robert Peele at Cripple Creek, Colo. After five weeks spent in the mines the student will have two weeks work in geology with Professor Arthur Hollick.

*Nature* states that the report of the Advisory Committee appointed to inquire into the best manner for providing for scientific and commercial training respectively in connection with the new University of Birmingham has just been issued. It will be remembered that Mr. Andrew Carnegie and an anonymous donor each promised a gift of 50,000*l.* toward the establishment of these two departments. The committee have made inquiries as to facilities for the teaching of science in its application to industries, and they report that, in their opinion, no such teaching, complete as they contemplate it, and as it must be, if it is to be successful, exists in any college in Great Britain. In making their recommendations, the committee have had in

view the object of the teaching of science in its application to industry, coupled with such technical instruction in handicrafts as will enable the students to complete their course in the University itself. It is proposed that the facilities already provided in Mason University College should be supplemented by chairs of mining, metallurgy, engineering, and applied chemistry. The scheme submitted contemplates the introduction of a complete equipment for the treatment of metals by heat and a small plant for treatment by electricity, as well as the necessary outfit for testing metals. Shops would be provided for manual training, and it is recommended that the machines used should be of the best and most modern type of English, American, and foreign manufacture. The committee further recommend the acquisition of 25 acres of land in the outskirts of Birmingham on which to build the University, their estimate of the total cost being 155,000*l.*

PROFESSOR C. S. PROSSER has been made acting head of the Department of Geology in Ohio State University.

THE following fellows have been appointed at the University of Pennsylvania: Zoology, J. R. Murlin and Miss R. A. Vivian; pedagogy, I. B. McNeal; mathematics, U. S. Hanna; biology, Miss C. B. Thompson; sociology, Miss C. Kimball.

PROFESSOR LUDWIG BOLTZMANN, of Vienna, has accepted the call to the chair of physics in the University of Leipzig.

M. MOISSAN has been appointed professor of inorganic chemistry in the Paris School of Pharmacology in the place of M. Riche who has retired.

MR. J. F. HUDSON, of Oxford University, has been appointed mathematical lecturer at University College, Bristol, in succession to Mr. J. F. McKean who has been appointed a mathematical lecturer at the Royal Naval Engineering College, Devonport.

DR. MEYER has qualified as docent in physics in the University of Vienna, and Dr. Oppenheim as docent in theoretical physics in the German University of Prague.