

to the aversion of Sir William Jones to zoological studies, and it was only about 1828 that the papers of Dr. Falconer, Col. Tickell, and others began to occupy an important position on behalf of zoology in the Society's transactions. With Indian botany, geography, and ethnology are connected many names of world-wide fame. With regard to chemistry, it may be said practically there is no chemical research in the Society's publications. Chemistry, as Baboo Bose explains, can only be studied in the laboratory, and until recently India had but few laboratories, and few competent men with leisure to devote to the subject. A curious statement, by the way, creeps into the account of Mr. Piddington, who studied Indian storms, and gave an account of every cyclone in the East between 1839 and 1851. Baboo Bose says his experience was most varied, and then quotes the following from some unnamed source:—"He was one of the few who escaped from the massacre of Amboyna." Now, as the massacre of Englishmen by the Dutch Governor of Amboyna took place in 1622, Mr. Piddington, if he was observing storms in India in 1850, could hardly have been in the Eastern Archipelago two centuries and a quarter previously. Many other portions of this volume, such as the chapters on coins, on ancient Indian alphabets, on the study of the languages and literature of India, and on the study of Indian antiquities, are of deep interest, but we have confined ourselves to the chapters on natural science.

The dominant feeling produced by an examination of this volume is one of satisfaction that so much has been done by this single society towards investigating the past and the present of (or, in the words of Sir William Jones, "man and nature in") our great dependency. For the most part this has been done by private individuals, but on more than one critical occasion the directors of the East India Company, in accordance with their generous traditions, came to the aid of the Society with large contributions; otherwise there appeared no way out of the difficulty except the dissolution of the Society and the abandonment of the works in which they were engaged. If this were the place it would be interesting to compare this method of practically leaving everything to private initiative, with that adopted by the French in Indo-China, of the Government undertaking a series of literary, artistic, and scientific investigations through competent specialists into a new possession. Notwithstanding the great and marked success of the Asiatic Society of Bengal, the French plan has advantages which cannot be overlooked.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE

CAMBRIDGE.—Among the more noticeable Natural Science Courses this term are Prof. Dewar's on Dissociation and Thermal Chemistry; Prof. Newton's, on Evolution in the Animal Kingdom; Dr. Gadow's on Human Embryology; Dr. Vines's, on the Physiology of Plants; and Prof. Macalister's, on the Peripheral Nervous System.

Prof. Hughes is lecturing on Methods of Geological Surveying; Dr. R. D. Roberts, on Principles of Geology; Mr. Marr, on Elementary Stratigraphy; Mr. T. Roberts, on Palæontology; and Mr. Hawker, on Elementary Petrology; all at the Woodwardian Museum.

Prof. Roy is lecturing on General Pathology, and also conducting a Practical Course in Morbid Anatomy and Histology.

Prof. Stokes is lecturing on Hydrodynamics; Prof. Cayley, on Higher Algebra; Prof. Darwin, on Orbits and Perturbations; Mr. Glazebrook, on Waves and Sound; Mr. Hobson, on Planetary Theory; Mr. Macaulay, on Theory of Structures; and Mr. Forsyth on Abel's Theorem. Numerous other courses on higher mathematics, open to the University, are being given by college lecturers.

We are glad to notice that Mr. A. Sheridan Lea, M.A., Lecturer on Physiology, and formerly Scholar, of Trinity College, has been elected to a Fellowship at Gonville and Caius College. Mr. Lea's work in connection with Prof. Michael Foster's "Text-Book of Physiology" is well known. Mr. Lea was placed in the First Class in the Natural Science Tripos in 1875, and has since been continuously engaged in the University teaching of Physiology.

Dr. S. Riechmann has been appointed assistant to Prof. Dewar, Jacksonian Professor.

Messrs. E. W. Hobson and A. R. Forsyth are appointed

Moderators, and Mr. C. H. Prior Examiner, for the next Mathematical Tripos.

King's College offers a Vintner Exhibition of 70*l.* per annum for Natural Science. The examination begins on December 10.

St. John's College offers several scholarships, exhibitions, and sizarships for competition on December 10. Candidates may offer any of the subjects of the Natural Sciences Tripos except Mineralogy, and may be elected on the ground of special proficiency in one only. Particulars will be furnished by the tutors.

A joint examination for Natural Science Scholarships at Emmanuel, Christ's, and Sidney Sussex Colleges will be held on January 5, 1886, and following days. The subjects are Chemistry, Physics, Elementary Biology, Geology, and Mineralogy. Further particulars will be given by the tutors of each college.

Out of the 875 freshmen whose names have appeared in the preliminary lists, about 104 have announced their intention of studying medicine in the University. A few more may be added when the results of the October Previous Examination are known. The Anatomy School is attended by over 130 students, for whom an exceptionally abundant supply of dissecting material is in hand. The Demonstration Lectures have to be repeated from lack of room; indeed, the necessity for increased accommodation in this department is becoming extremely urgent.

LONDON.—We have received a circular stating that "In view of the adjourned extraordinary meeting of Convocation (of London University) to be held on Tuesday, November 3, a number of graduates met on Wednesday last to consider the proposed scheme for the establishment of a Teaching University for London. As the result of their deliberations it was thought desirable that attention should be called to some of the more striking objections to the proposed scheme; and that, having regard to the grave importance of the questions to be submitted to the members of Convocation affecting the very existence of the University as at present constituted, they should be especially requested to attend on Tuesday next, and to give their support to Mr. Bone's amendment, to receive the report submitted by Lord Justice Fry, without adopting it 'en bloc.' Should this amendment be carried, the following resolutions, expressing what is believed to be the feeling of the majority of the graduates, will be moved:—(1) 'That Convocation, whilst affirming the general principles of the desirability of bringing the teachers and the examiners of the University into closer relationship with one another and with the Senate, and of modifying the constitution of the Senate in accordance with the previous recommendations of Convocation, and without giving to the teachers an undue share of representation on the governing body of the University, refers back the scheme to the Special Committee for further consideration.' (2) 'That the number of members on the Special Committee be increased by one-half.'"

SOCIETIES AND ACADEMIES

SYDNEY

Linnean Society of New South Wales, July 29.—The following papers were read:—A monograph of the Australian sponges, part 5, the Auleninæ, by R. von Lendenfeld, Ph.D. Several sponges from various localities in the Australian region have been included by the author in this new sub-family, the members of which are characterised by a very peculiar structure not met with in any other sponges. The new sub-family *Aulenina* is placed in the family Spongidiæ, and consists of the two new genera *Aulena* and *Halme*, with three species in all. The anatomy and histology of these is accurately described and illustrated by numerous plates. The Auleninæ form honey-combed or complicated reticulate structures; the cavities form a kind of vestibule and are simple in *Halme*, where an outer lamella surrounds the whole sponge, or subdivided into numerous small compartments, as in *Aulena*, where no outer lamella exists. Into the system of Vestibule-Lacunæ both the inhalent and the exhalent canals of the sponge open. The skeleton of *Halme* is composed of thick main fibres rich in sand, thin, simple and clean connecting fibres, and a hard cortex of sand cemented with spongiolin. The skeleton of *Aulena* is very peculiar. It consists of a regular network of fine horny threads in the joining points of which large sand grains are found. In the membranes of the Vestibule-Lacunæ of this genus nervous elements,

sensitive and ganglia cells have been discovered by the author. These and many other histological details are described in the paper, which dwells also on the morphological significance of these interesting new sponges.—On a sponge destructive to oyster-culture in the Clarence River, by R. von Lendenfeld, Ph.D. In this paper the author describes a new sponge, *Chalinula coxii*, which appeared some years ago on certain oyster beds in the Clarence River, and destroyed some of them completely.—Note on the Glacial period in Australia, by R. von Lendenfeld, Ph.D. The author draws attention to some further evidence of ice action in the Mount Lofty group near Adelaide, where some glacier-polished Siluro-Devonian rocks, with very well preserved striae, have been discovered and photographed.—Jottings from the biological laboratory of Sydney University, by William A. Haswell, M.A., B.Sc., F.L.S., &c., Lecturer on Zoology and Comparative Anatomy. This paper contains (1) some notes on an Australian species of *Bonellia*, which seems scarcely to differ from the European species, *Bonellia viridis*; and (2) some observations on aquatic respiration in fresh-water turtles.—On the supposed Glacial epoch in Australia, by Capt. F. W. Hutton, F.G.S., &c. The author discusses the phenomena which have been adduced as evidence for the former existence of a Glacial epoch in Australia, and shows that they are susceptible of a different interpretation. He distinguishes between a Glacial epoch, such as has occurred in New Zealand, in which, owing to various local, but only local, causes, ice-fields prevailed over much larger districts than at present, and a Glacial epoch, such as has been demonstrated in the Northern Hemisphere, which is the result not of variations caused and limited by local circumstances, but of alterations universal or cosmical in character. The Glacial epoch in New Zealand is regarded as anterior to the Glacial epoch of the North.

PARIS

Academy of Sciences, October 19.—M. Bouley, President, in the chair.—Remarks on the 209th volume of the "Connaissance des Temps" for the year 1881, presented to the Academy on behalf of the Bureau des Longitudes, by M. Faye.—Note on the establishment of a laboratory in the Institute for the measurement of the photographic plates obtained during the transit of Venus in 1882, by M. Bouquet de la Grye. Arrangements have been made, by means of which it is hoped that the calculations and measurements relating to 700 plates will be completed in fifteen months.—Note on the *Dinoceratidæ* discovered by Mr. Marsh in the Eocene formations of Wyoming, United States, by M. Albert Gaudry. These huge pachyderms, which seem most to resemble the European *Coryphodon* described by M. Hébert, are specially remarkable for the characteristic horny protuberances on the frontal region, whence their name (*δεινός*, terrible, and *κέρας*, horn). The skull is also distinguished by its small size, in this respect resembling that of a reptile, as well as of several other mammals of the Lower Tertiary epoch.—On the birational geometrical transformations of the *n* order, by M. de Jonquières.—Note on the fifth part of the topographical map of Algeria, presented to the Academy on behalf of the Minister of War, by Col. Perrier. This part comprises the six divisions of Jebel-Filfila, Bone, Wed-Guergur with Cape Rosa, Menerville, Medeah and Mostaganem to the scale of 1 : 50,000.—Note on the sub-lacustrine ravines of glacial streams, by M. F. A. Forel. During his recent surveys of Lakes Constance and Geneva, M. Hörnlmann has discovered that both the Rhine and the Rhone continue their course under the lacustrine waters through deep ravines excavated beneath the respective submerged deltas. That of the Rhine has been traced for a distance of four kilometres and to a depth of 125 metres below the lake, while that of the Rhone may be followed for over six kilometres from the mouth of the river with a depth varying from 200 to 230 metres.—On the origin and classification of meteorites, by M. Stanislas Meunier. The author discusses the objections urged against his views on the nature and classification of meteoric bodies, by M. Brezina in the "Meteoritensammlung des Mineralogischen Hofkabinetes in Wien," Vienna, 1885.—On the latitude of the observatory of Bordeaux, by M. G. Rayet. The mean latitude of this establishment, whose longitude was determined in 1881 at 11m. 26'44.5". W., is found to be 44° 50' 77" 23.—On the integrals of total differentials of the second species, by M. E. Picard.—Questions relating to a bundle of plane cubic figures, by M. P. H. Schoute.—On the torsion of prisms, by M. Marcel Brillouin.—Description of a new apparatus for measuring electric currents (one illustration),

by M. F. de Lalande. This apparatus, for which the name of "electric areometer" is proposed, dispenses with a permanent magnet, the source of so much error in other appliances, is highly sensitive and practically unaffected by changes of temperature, while its readings are unmodified by the neighbourhood of metallic bodies or even of powerful magnets.—On the theory of the transmitting electromagnetic telephone, by M. E. Mercadier.—Note on the electrolysis of the salts, by M. Ad. Renard.—Combination of the neutral carbonate of magnesia with the bicarbonate of potassa, by M. R. Engel.—On the adulteration of olive oil intended for consumption by the addition of sesame cotton and other oils extracted from seeds, by M. A. Audouy. The bichromate of potassa and nitro-sulphuric acid are proposed as reagents for determining the presence of these substances.—On certain peculiarities in the development of the teeth of the cachalot (spermaceti whale), by M. G. Pouchet.—On the process of development of *Epicauta verticalis*, by M. H. Beauregard.—On the part supposed to be played by the living tissues of wood in the ascension of the sap in large plants, by M. J. Vesque. The author contests the opinion of those physiologists who hold that it is impossible to explain by the aid of purely physical forces the ascension of water in plants over 10 metres high.—On a waterspout observed at Shanghai on August 21, by M. Martial.—Account of the same waterspout, by M. Marc Dechevreus.—Description of M. Buisson's new rifle, by Gen. Favé. For this weapon it is claimed that it can be fired from five to ten times in a minute by troops charging the enemy without stopping an instant to re-load. As many as a hundred rounds may be fired off in this way.

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