

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—The recent discussion on the proposed new buildings for anatomy and physiology disclosed that the Financial Board do not consider that the whole plan can be proceeded with at present. They hold that only £10,000 is available; but this is because it is proposed to diminish the annual contributions from the Colleges for some years. It appeared to be agreed that the lecture-room or middle block could be best dispensed with if absolutely necessary, the blocks of physiological and anatomical class-rooms and dissecting-rooms being most essential. Prof. Foster mentioned that the labour of conducting the practical classes in physiology was so great as to leave no time for research, and to strain the health of himself and his demonstrators almost to the point of breaking down. The present buildings not only limited but spoiled their work.

The adjudicators of the Hopkins Prize in connection with the Philosophical Society have recommended that it be awarded to Sir William Thomson for his mathematical researches upon the theory of the tides, and other important investigations in mathematical physics.

The General Board of Studies has issued a report deprecating the proposed diminution of College contributions, and showing that that proposal will destroy any chance of appointing new teachers, or increasing the small stipends now paid to University lecturers and readers, or of making any payments in aid of research. A great number of detailed needs for all the departments are specified, the scientific Boards being well represented. The Reader in Botany and the Lecturer in Animal Morphology and others are strongly recommended for immediate increase, and a capital expenditure of £30,000 is needed for museums, laboratories, lecture-rooms, &c.

The following is the subject for the Adams Prize to be adjudged in 1891:—The motion of a satellite about a spheroidal planet, and the reaction on the planet. The ordinary approximation is supposed to be inadequate, either because the ellipticity of the planet is too great, and the distance of the satellite too small, or because the obliquity of the orbit is too great. It is also desired that the influence of a distant disturbing body (such as the sun) may be taken into account in so far as is found practicable. The successful candidate will receive about £170, but is required to print the essay at his own expense.

The report on the local examinations of last December states that in chemistry the answers were on the whole satisfactory, but chemical calculations were in general inaccurately performed. In heat, the juniors answered badly, the senior boys better, but many of the senior girls were quite ignorant of the subject. In statics, dynamics, and hydrostatics, the juniors had not grasped the elementary ideas, while the seniors did better, except in the arithmetic of calculations. The answers seem to show that these physical subjects are not suitable for juniors. In electricity and magnetism, taken only by seniors, the boys did well. The botanical answers varied greatly at different centres, and questions on flowering plants were much better answered than those on cryptogams. In zoology the elements were known, but many answers were very wordy and irrelevant. Several seniors described the structure of a Vorticella rather well, but also named and described the mouth-appendages of a crayfish (the specimen being before them) likewise as a Vorticella.

SCIENTIFIC SERIALS.

American Journal of Science, March.—Some determinations of the energy of the light from incandescent lamps, by Ernest Merritt. Two series of experiments are described, which have been carried out for the purpose of determining what portion of the energy supplied to a lamp is given off as light, and what proportion is wasted practically as dark heat. In the first, based on Melloni's calorimetric method, the light is separated from the dark heat by passing the radiations to be measured through a thin layer of water, or, better still, through a solution of alum in water. The energy of the dark heat, which is almost entirely absorbed, is then measured by the rise in temperature of the water, and that of the light by a thermopile. In the second process the calorimeter was abandoned, and a cell, 1 decimetre thick, containing a strong solution of alum, was used for absorbing the dark heat. The light, after passing through this cell, was allowed to fall on a thermopile, and the deflection

was observed. Then the alum cell was removed, and the deflection corresponding to total radiation was observed, the ratio of the two deflections giving the ratio of the light energy to the total energy. This being determined by electrical measurements, the energy of the light could be calculated.—On the ophiolite of Thurman, Warren County, New York, with remarks on the *Eozoon canadense*, by George P. Merrill. This ophiolite, a kind of verdantique marble, is found to be an alteration, or metasomatic product after a mineral of the pyroxene group. Its constitution promises to throw some light on the Eozoon problem.—On the origin of the deep troughs of the oceanic depression; are any of volcanic origin?, by James D. Dana. A general survey of the oceanic regions leads to the inference that volcanic action can only have had a very subordinate part in determining the origin and position of the great marine depressions. Their source must be sought still less in superficial causes, such as erosion, but rather in the interior agencies of primordial development. The paper is accompanied by a bathymetric map of the Pacific and Atlantic, based on the recent charts of the British and United States Hydrographic Departments.—Description of a problematical organism from the Devonian, at the Falls of the Ohio, by F. H. Knowlton. These puzzling organisms, here provisionally named *Calcisphaera lemni*, from the collector, have been submitted to various American and European palaeontologists, and the evidence both for and against the view that they are a fruit of Chara, is given in detail.—Papers are contributed by George H. Williams, on the geology of the Island of Fernando de Noronha (part 2, petrography); by S. L. Penfield, on some curiously developed pyrite crystals from French Creek, Delaware County, Pennsylvania, and on some crystallized bertrandites from Maine and Colorado; and by J. S. Diller and J. E. Whitfield, on dumortierite from New York and Arizona, peridotite from Kentucky, and gehlenite occurring in furnace slag in Pennsylvania.

THE *Memoirs of the Novorossian (Odessa) Society of Naturalists*, vol. xiii. fasc. 1, contain a series of papers on the late L. Cienkowski, by P. Boutchinsky, W. Zalsensky, L. Richavi, G. Sadkowsky, and S. Karwatzky, being full reviews of the late Professor's extensive scientific work, and giving a full bibliography of his contributions to science.—The next papers of importance are: on the rainfalls in South-Western Russia, by A. Klossovsky; on the copulation of the nuclei of cells during the sexual processes of Fungi, and on the absorption of water by the overground parts of plants, by W. Chmielevsky; on the Jurassic beds of Orenburg and Samara, by I. Sintsoff, being revised lists of fossils found in various parts of these provinces; on the action of methylene-iodide upon the ether of malonic acid, by S. Tanatar; and on the influence of the medium, and especially of temperature, upon *Planorbis vertia*, by Mary Balashova.

SOCIETIES AND ACADEMIES.
LONDON.

Royal Society, March 7.—“On the Cranial Nerves of Elasmobranch Fishes. Preliminary Communication.” By J. C. Ewart, M.D., Regius Professor of Natural History, University of Edinburgh. Communicated by Prof. Burdon Sanderson, F.R.S.

This paper contains a short account of the cranial nerves of *Lamargus microcephalus* and of *Raia batis*, and it is especially shown that in connection with the roots of the trigeminal and facial nerves there are altogether five large ganglia—one of them apparently representing two ganglia—and that in connection with the vagus there are three separate ganglia in *Lamargus* and six in *Raia*. It is further pointed out that the nerve to the lateral line arises by a special root quite distinct from the rest of the vagus complex, and that it is provided with a separate ganglion, and also that the mucous canals of the head and trunk, together with the numerous ampullæ of the sensory tubes, are either supplied by nerves belonging to what is termed the facial complex or the lateralis division of the vagus complex.

Attention is especially directed in *Lamargus* to the following facts: (1) that the ganglion of the ophthalmicus profundus lies only very slightly in front of the ganglion (Gasserian) of the trigeminal; (2) that there is no connection between the oculo-motor nerve and the ophthalmicus profundus ganglion; (3) that the ciliary nerves spring from the trunk of the ophthalmicus profundus some distance in front of its ganglion; (4) that neither in