

(each raised to 100%), Bushe-Fox, Kirby, Mossop, Foster Hill, Natural Science and Medicine: Shore, Rolleston, Seward.

Exhibitions.—Mathematics: Holmes, Middlemast, Pressland, Roseveare, Bushe-Fox, Foster, Flux. Natural Science and Medicine: Rolleston, Olive, Jones. Natural Science: Evans, Rendle, Lake.

Proper Sizarships.—Mathematics: Norris, Varley.

Hughes Prizes.—Mathematics: Love. Natural Science: Shore.

Wright Prizes.—Mathematics: Fletcher, Bakre, and Flux (equal).

Herschel Prize (for Astronomy).—Bushe-Fox.

Hockin Prize (for Electricity).—Not awarded.

The Hutchinson Studentship (NATURE, May 28, p. 90) was awarded to Ds. Rapson (First Class, Classical Tripos 1883-85, and Indian Languages Tripos 1885) to assist him in the prosecution of his studies in Sanskrit literature.

The next Adams Prize will be adjudged in 1887. The subject is Ellipsoidal and Spheroidal Harmonic Analysis, attention being particularly drawn to the reduction of the formulæ in this calculus to practical forms adapted to numerical calculation. Since, with the exception of spherical harmonics, this method has remained almost barren in physical investigations, actual illustrations of its utility are invited. The essays must be sent in by December 16, 1886, and any Cambridge graduate may compete. The successful candidate will receive 170*l.*; he must print the essay at his own expense.

The Mathematical Board recommend that four separate examiners be appointed for the final portion of the Mathematical Tripos, in the hope of inducing more specially qualified professors and specialists to undertake this advanced work.

The Annual Report of the Observatory gives a very satisfactory record of progress. Among the 3253 observations with the transit circle were 2442 of zone stars on 100 nights, the greater number at five or seven wires, and all read off with four microscopes. The reductions of observations are in a forward state.

At the Botanical Gardens during the past year the collection of insectivorous plants has been greatly improved. A number of new or rare species have flowered—some for the first time in this country. A speciality has been made of *Salvia*, and four species from this garden have been figured in the *Botanical Magazine*.

A grant not exceeding 100*l.* is to be made to C. S. Sherrington, M.B., of Gonville and Caius College, from the Worts Travelling Scholars Fund, to enable him to proceed to Valentia to investigate the experiments now being made by Dr. Ferrand on inoculation as a preventive against cholera.

SCIENTIFIC SERIALS

IN the *Journal of Botany* for May and June Mr. W. B. Grove continues his paper on "new or noteworthy fungi," which is well illustrated. Several new species are described, and one new genus, *Diplococcium*, near to *Cladotrichum*.—Mr. S. Le M. Moore identifies *Bacterium feridum*, Thin, found in association with profuse sweating of the soles of the feet, with the ordinary micrococcus of surface soil.—Mr. H. N. Dixon adds a new species to the British moss flora, *Catharinaea dixonii*, from Northampton.—Mr. R. D. Fitzgerald and Mr. H. N. Ridley describe new Orchids; and Rev. B. Scortechini a new genus of Myrtaceæ, *Pseudoerigenia*, from the Malay Peninsula.—Dr. H. Trimen sends some notes on the flora of Ceylon, and Rev. W. H. Purchas contributes notes on Dovedale plants.

Rivista Scientifico Industriale, May 15.—A new explanation of the red after-glow (continued), by Prof. Carlo Marangoni.—On the diathermicity of fluids, by A. Volta.—Some electric phenomena associated with rarefied gases, by Emilio Piazzoli.—Variations in the electric resistance of solid and pure metal wires according to the temperature (concluded), by Prof. Angelo Emo.

Bulletin de l'Académie Royale de Belgique, April 4.—Crystallographic note on some specimens of calcite from the Carboniferous limestone of Bleton.—Note on the recent appearance of a school of whales (*Balena biscayensis*) on the east coast of the United States, by M. P. J. Van Beneden.—Account of the discovery of a gigantic Mosasaurian (*Hainosaurus*) in the chalk formation of Mesvin-Ciply near Mons, Belgium, by M. E. Dupont.—On Riccati's equation and its double generalisation, by M. J. de Tilly.—State of the vegetation during the month of

March at Liège and Longchamps-sur-Geer, Belgium, by Baron de Selys Longchamps.—On the presence of Condroz graywacke in the neighbourhood of Beaumont, Entre-Sambre-et-Meuse, by M. Michel Mourlon.—On the porphyries of Bierghes, by M. A. Renard.—On the tension of saturated vapours: a modification of the atomic law of Dalton, by M. P. de Heen.—The Roumanians in the Middle Ages: a historical puzzle, by M. A. D. Xenophol.

SOCIETIES AND ACADEMIES

LONDON

Royal Society, June 18.—"The Action of Tidal Streams on Metals during Diffusion of Salt and Fresh Water. Experimental Research, Part II. (Gravimetric)." By Thomas Andrews, F.R.S.E. Communicated by Prof. G. G. Stokes, Sec.R.S.

In a paper last session on "The Electromotive Force during Diffusion in Tidal Streams" (see *Proc. Roy. Soc.*, No. 232), the author recorded the electrical part of this investigation. The present communication contains the concluding gravimetric experiments of the research. The effects attending the diffusion of the salt and fresh water in tidal estuaries, on parts of the same metal, of known composition and general properties, were estimated in each case for a period of *one year*, during which bright plates of the following metals—viz., wrought iron (combined carbon, none), "soft" Bessemer steel (c.c. 0.15), "soft" Siemens-Martin steel (c.c. 0.17), "soft" cast steel (c.c. 0.46), "hard" Bessemer steel (c.c. 0.51), best cast metal, "No. 1" (c.c. 0.39), common cast metal, "No. 2" (c.c. 0.67), were constantly exposed to conditions of galvanic action similar to those obtaining in some tidal streams. The results demonstrate that electric disintegration of the nature alluded to in this and the former paper (viz., the galvanic destructive action on parts of even the same metal, arising from difference of electrical potential during diffusion between the surface and lower waters in a tidal stream) is, on comparison with other investigations by the author, apparently of much greater extent than the loss either from simple corrosion in sea water alone, or than that which ensues from the action on each other of dissimilar metals of this group (such as wrought irons, cast metals, and steels) in galvanic connection in sea water. Compared with simple corrosion in sea water only, the increase in loss varied from about 15 up to 50 per cent., according to the nature of the metals. The results of the experiments in this and the former paper indicate, therefore, that the tidal action on any vessel or metallic structure, of sea and fresh water whilst diffusing is (in the case even of the same metal thus exposed to the simultaneous action of top and bottom waters) considerably more destructive in its nature and character than the action of sea water alone. Moreover, the author has found it (in other experiments) extending over long periods to considerably exceed (in some instances varying from about 55 to 120 per cent.) the loss caused by galvanic action between dissimilar metals of the iron and steel group in circuit in sea water.

Geological Society, May 27.—Prof. T. G. Bonney, F.R.S., President, in the chair.—George Ormond Kekewich was elected a Fellow of the Society.—The following communications were read:—On the so-called diorite of Little Knott (Cumberland), with further remarks on the occurrence of Picrites in Wales, by Prof. T. G. Bonney, F.R.S., Pres.G.S. The Little Knott rock and its microscopic structure were briefly described by the late Mr. Clifton Ward, who named it a diorite, but called attention to its abnormal character. The author gave some additional particulars, and showed that, although the rock varies in different parts of the same outcrop, and is not one of the most typical representatives of the picrite group, its relations on the whole are with this rather than with the true diorites. He also called attention to the extraordinary number of boulders which have been furnished by this comparatively small outcrop, and discussed the relation of their distribution to the former extension and effects of ice in the Lake District. He briefly noticed the occurrence of additional boulders of picrite in Anglesey, and described specimens from two localities (Caemawr and Pengorphwysfa) where a similar rock has been discovered *in situ* by Prof. Hughes. Hence it is probable that the Anglesey boulders are derived from localities in that island, and not from Cumberland. From a re-examination of specimens collected by the late Prof. Sedgwick and Mr. Tawney, preserved in the Woodwardian Museum at Cambridge, the author showed that the rock must occur *in situ* in two localities in the Lleyan