

Science Staff of Professors in Oxford. As Magdalen College has under its new statutes added a Fellowship to the endowments of the Chair, we may congratulate the College on gaining another addition to its already long list of distinguished Natural Science Professors who are members of the Society. Profs. Westwood, Burdon Sanderson, Odling, Lawson, Balfour, Daubeny, Phillips, Brodie (now dead), were all members of the College.

On May 6 an examination will be held at New College to elect an Exhibitioner in Natural Science. The Exhibition will be given for proficiency in Chemistry and Biology.

At Magdalen College an open Demyship will be offered for Natural Science in June next.

THE University College (London) School "Old Boys" annual dinner will be held this year at the Holborn Restaurant, on Tuesday, February 19, at 7 p.m.; George Buchanan, M.D., F.R.S., in the chair.

THE Central Institution of the City and Guilds of London Institute in Exhibition Road is now approaching completion, and the Executive Committee are proceeding to appoint, in the first instance, four professors to the chairs of Chemistry, of Engineering, of Physics, and of Mechanics and Mathematics respectively. The salary attached to each professorship will be 1000*l.* per annum, with a prospect of increase depending upon the number of students in attendance. It is expected that the appointments will be made during the next few weeks. The Council of the Institute, at the request of the Duke of Buckingham and Chandos, have consented to lend, during the summer months, and pending the preparation of the fittings, a portion of the Central Institution to the Commissioners of the International Health Exhibition for the display of appliances for scientific and technical instruction and of the work done in technical schools here and abroad.

SCIENTIFIC SERIALS

THE *Journal of Physiology*, vol. iv. Nos. 4 and 5, December, 1883, contains:—An account of the discussion which took place in the Physiological Section of the International Medical Congress held in London, 1881, on the localisation of function in the cortex cerebri. Prof. Goltz of Strasburg, it will be remembered, exhibited a dog, and Profs. Ferrier and Yeo a monkey. The brains of these animals were handed over to a Committee, consisting of Dr. Klein, Mr. Langley, and Prof. Schäfer. The report of this Committee is preceded by a memoir on the normal structure of the dog's brain, by J. N. Langley (plates 7 and 8), and the report consists of a report on the parts destroyed on the right side of the brain of the dog operated on by Prof. Goltz, by J. N. Langley (plates 9 and 10); of a report on the parts destroyed on the left side of the brain of the same dog, by E. Klein (plate 11); and of a report on the lesions primary and secondary in the brain and spinal cord of the Macaque monkey exhibited by Profs. Ferrier and Yeo, by E. A. Schäfer (plate 12).

THE *Journal of the Royal Microscopical Society* for December, 1883, contains:—On some new Cladocera of the English lakes, by Conrad Beck (plates 11 and 12).—On an improved method of preparing embryological and other delicate organisms for microscopical examination, by Edward Lovett.—On the relation of aperture and power in the microscope, by Prof. E. Abbe.—On a new camera lucida, by Dr. Hugo Schröder.—On optical tube length, an unconsidered element in the theory of the microscope, by Frank Crisp.—Also the usual summary of current researches relating to zoology, botany, and microscopy.

THE *American Naturalist* for December, 1883, contains:—On the development of a dandelion flower, by John M. Coulter.—Notes on *Chaetonotus larus*, by C. A. Fernald.—Notes on the aborigines of Cooper's Creek, Australia, by E. B. Sanger.—Zoological gardens, a critical essay by Theodore Link.—The Copperhead, by Dr. R. E. Kunze.—Experiments with the antennæ of insects, by C. J. A. Porter.—On the position of the Compositæ and Orchidæ in the natural system, by J. F. James.—On the habits of certain sunfish, by C. O. Abbott.—Recent literature, and general notes.

Revue Internationale des Sciences Biologiques, October 15, 1883, contains:—Translations of Mr. W. S. Duncan's—Probable region of man's evolution, and of Prof. Huxley's—Living beings and the method of studying them; Dr. Hubrecht—on the

ancestral form of the Chordata; and Dr. W. G. Parker—on the people and language of Madagascar.

The number for November 15, 1883, contains:—An essay by Dr. Lanessan, on Buffon: his ideas, his rôle in the history of science, his work, and on the development of the natural sciences since his epoch, which essay is to serve as an introduction to a complete edition of Buffon's works, including his correspondence, to be shortly published by Le Vasseur, Paris.

Rendiconti del Reale Istituto Lombardo, Milan, December 29, 1883.—Reports on the work of the various physical, literary, ethical, mathematical, and political sections of the Institute during the year 1883, by the Secretary.—Meteorological observations made at the Brera Observatory, Milan, during the month of December, 1883.

Nachrichten von der K. Gesellschaft der Wissenschaften und der Universität zu Göttingen, December 1, 1883.—On the formation of isomeric derivatives of toluol, by Paul Jannasch.—On the irreducibility of linear differential equations, by Leo Königsberger.—On the polar repulsion, the coefficient of induction, and temperature of a magnet, and on the determination of the moments of inertia through bifilar suspension, by F. Kohlrausch.

SOCIETIES AND ACADEMIES

LONDON

Royal Society, January 10.—"Extracts from a Report on the Volcanic Eruption in Sunda Strait by Commander the Hon. F. C. P. Vereker, H.M.S. *Magpie*, dated Singapore, October 22, 1883." Communicated by Sir Frederick Evans, K.C.B., F.R.S.

. . . On the 18th inst. I entered Sunda Strait, passing east of Thwart-way Island. This island had been reported to be split by the eruption into several portions. This is incorrect.

The island is intersected by low valleys in several places; these being covered with tall trees did not show so prominently formerly as they do now. The whole of the vegetation having been swept away by the tidal wave, the island at a short distance off is apparently divided, the low necks joining the higher portions being only visible on close approach.

The surface of the Strait in this neighbourhood is covered with extensive fields of floating pumice-stone, often in one to two foot cubes, through which the ship easily forced her way. . . .

I inclose sketches which I trust will convey the general appearance better than a written description. The whole of the neighbourhood is covered with greenish yellow mud, and all traces of vegetation everywhere destroyed.

I communicated personally with the captain of the Netherlands frigate *Queen Emma* stationed on the spot, and was informed by him that the changes are considerably more extensive than was at first thought, and that Verlaten Island is still in a state of activity as well as Krakatoa itself.

From observation he thinks that another eruption is impending, but that Verlaten Island will be the centre of disturbance.

The Netherlands Government vessel *Hydrograaf* obtained a sounding of 100 fathoms without reaching bottom, in the centre of the group and off the cliff falling from Krakatoa Peak.

The two new islands are low mud and pumice banks, their configuration is continually altering, and I was informed that they are gradually subsiding. . . .

It is still impossible to examine Lampong Bay, but the pumice-stone is now beginning to float out.

The light on Fourth Point (Java) has been temporarily replaced by one of the 6th order, visible five miles, but beside this there are no signs of life on the Java shore. The whole coast is covered with the debris of trees, &c., demolished by the earthquake sea-wave, and over all lies a thick incrustation of volcanic mud.

During the height of the eruption a terrific whirlwind and a fierce south-westerly gale, apparently local, was experienced. . . .

Victoria Institute, February 4.—Mr. Ernest Budge, B.A., of the Oriental Department of the British Museum, read a paper upon a new and important inscription of Nebuchadnezzar the Great. Two copies of the same text had been brought to England by Mr. Rassam, one of which was much mutilated, but by a careful comparison of the texts Mr. Budge has succeeded in gaining a nearly perfect copy of the inscription. It related chiefly to the restoration of the fortifications of Babylon—the great walls, gates, and quays along the river bank, which had been thrown down by the conquering armies of Sowgon, Sennacherib, and Assurbanipal. It also stated the area of the citadel of Babylon

was 4000 square cubits. The inscriptions described the restoration of the famous temple of Belus, which was made "bright as the beauty of heaven," with gold, silver, crystal, and precious stones; the roof of the "house of the oracle" was of cedar wood, plated with gold. The King recorded the restoration of many other public and sacred edifices, and among others the Tower of Borsippa, known as the Tower of Babel, according to Babylonian tradition. In concluding the inscription, the King, in a most beautiful prayer, commended his pious works to the keeping of "Merodach, King of Heaven and Earth," to whom he prayed "for long life, fullness of glory, and a widespread dominion."

EDINBURGH

Mathematical Society, February 8.—Mr. A. J. G. Barclay, vice-president, in the chair.—A presidential address was delivered by Mr. Thomas Muir, F.R.S.E., on the promotion of research. Attention was drawn to the backward state of mathematical research in Scotland, particularly when compared with the activity of Germany in the same department. Some of the causes of this were discussed, and methods were suggested for bringing about a reform.—Mr. H. H. Browning, Glasgow, contributed a paper on illustrations of harmonic section; and Mr. Muir communicated a theorem regarding the area of a polygon of $2n$ sides.

PARIS

Academy of Sciences, February 4.—M. Rolland in the chair.—Note on the necessity of establishing a branch of the Observatory outside of Paris, by Admiral Mouchez.—On a new application of the mercurial level suggested by M. Renouf for calculating the altitude of the stars at sea when the horizon is invisible, by Admiral Mouchez. This ingenious contrivance, which is available on land as well as on sea, almost completely removes the difficulties hitherto experienced in obtaining altitudes within 4' or 5' at night or in foggy weather. The apparatus, made by M. Hurlimann, mechanician, has been for some time in use on board the Transatlantic steamers plying between France and the United States. M. Mouchez describes it as much simpler and more exact than any other system hitherto invented.—On an optical phenomenon observed during a fire that broke out at Joly on January 31, by M. E. Chevreul. For three-quarters of an hour the light of the street gas presented the complementary colours of the light of the fire, that is, from yellow-green to green and bluish, the sensations being referable at once both to the simultaneous and successive contrast, according as the observer beheld both lights simultaneously, or one only at a time.—On Faraday's law regarding an electric current traversing a series of electrolysable salts during the same time, by M. Berthelot. The author argues that Faraday's law is in general more simply expressed by means of the equivalents than by the atomic weights, both for the electro-positive and for the electro-negative elements.—Reply to M. Richet's remarks on the method of anaesthesia by means of the titrate mixtures of chloroform and air, by M. Paul Bert.—Curves registered by the mareograph established at Colon (earthquakes at Santander, Guayaquil, Chios, &c.), by M. de Lesseps. The curves recorded on October 13 and 14, 1883, appear to have indicated the underground disturbances caused by the earthquakes that occurred on those dates at Santander on the Atlantic, Guayaquil on the Pacific, Chios in the Mediterranean, and elsewhere. Yet nothing abnormal was registered by the mareograph of the island of Naos, Gulf of Panama.—On the quantities forming a group of nonions analogous to the quaternions of Hamilton, by M. J. J. Sylvester.—*Résumé* of the meteorological observations made during the year 1883 at four points in the Upper Rhine and Vosges districts (Colmar, Munster, Schlucht, and Thann), by M. G. A. Hirn. Referring to the recent twilight effects observed at these stations, the author feels justified in concluding that the particles, whether gaseous or in the form of dust, lit up by the solar rays, were situated, at least to a large extent, beyond the terrestrial atmosphere, in any case at elevations where no traces have ever been observed either of cirrus or vapour of water.—On the late twilight phenomena, by M. de Gasparin. The author considers that the chief features of these phenomena were their rapid appearance from fifteen to sixteen minutes after sunset, and their constant recurrence in a given place for a period of sixty-six days.—On an instrument capable of producing in the same telescope the images of two stars at the moment when they are at the same altitude, and of further determining by a single observation the astronomic time of

the place, its latitude, and exact position for the whole horizon, by M. Ch. Rouget.—On biquadratic involutions, by M. C. Le Paige.—On a class of abelian functions and on a hyperfuchsian group, by M. E. Picard.—Note on the exact number of variations obtained in the multiplication of the integral polynome $f(x)$ by the binome $x + a$, by M. D. André.—Transelementation of glyoxal into glycolic acid, by M. de Forcrand.—On the thermal properties of the numerous oxichlorides of mercury, by M. G. André.—Researches on the formation of the crystallised fluoride of antimony and its dissolution either in pure water or in solutions of fluorhydric acid, by M. Guntz.—On the heat of transformation of the prismatic oxide of antimony into octahedric oxide, by M. Guntz.—On the liquefaction of hydrogen, by M. S. Wroblewski. From the results already obtained, the author supposes that the temperature required for the complete liquefaction of hydrogen is about that which may be obtained by means of boiling oxygen.—On a case of isomerism of chloronitrous camphor, by M. P. Cazeneuve.—On the segmentary organs and the podocyst of the embryos of the slug family, by M. S. Jourdain.—On the Tongrian deposits at Longjumeau, Department of Seine-et-Oise, by M. Stan. Meunier.—On some freshwater formations of the Tertiary period in Algeria, by M. Ph. Thomas.—On the influence of oxygen under increased pressure on the cultivation of *Bacillus anthracis*, by M. J. Wosnessenski.—On the cause of the twilight effects of 1883, by M. G. Tissandier. Accepting M. Angot's assumption that hypotheses inapplicable to the year 1831 must be rejected for 1883, the author shows that the atmospheric conditions of both years resembled each other in every respect. The circumstances attending the eruptions in the Sicilian waters in 1831, when the volcanic island of Pantellaria made its appearance, were completely analogous to those of the Krakatoa eruption in 1883. On both occasions the optical phenomena were immediately preceded by igneous disturbances ejecting into the atmosphere vast quantities of gaseous products and fine dust. Hence the probability that volcanic eruptions were due the optical manifestations in both years.—On the twilight effects of the last few months, by M. Perrotin. This author also argues that the twilights of 1831 prove nothing against, but rather confirm, the volcanic theory adduced to account for those of 1883.

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