UNIVERSITY AND EDUCATIONAL INTELLIGENCE

CAMBRIDGE.—The following courses of lectures are being delivered this term:—

Mathematics—Prof. Stokes, Optics; Prof. Darwin, Theory of Potential and Attractions; Trinity College, Mr. Glaisher, Theory of Errors, Mr. Ball, Higher Solid Geometry, Mr. J. J. Thomson, Dynamics of a Rigid Body, Mr. Rowe, Higher Integral Calculus and Abel's Theorem, Mr. Forsyth, Thermodynamics; St. John's College, Dr. Besant, Analysis, for Schedules II. and III., Mr. Pendlebury, Laplace's and Bessel's Functions, Mr. Webb, Elementary Rigid Dynamics; Pembroke College, Mr. Burnside, Hydrodynamics; Emmanuel College, Mr. Webb, Elasticity.

Physics—Trinity College, Mr. Trotter, Electricity and Magnetism, Mr. Glazebrook, Elementary Physics; Cavendish Laboratory, Mr. Shaw, Elementary Physics; St. John's College, Mr. Hart, Elementary Electricity, Practical Physics, Cavendish Laboratory; Advanced Demonstrations in Light and Sound; and Elementary Demonstrations in Optics and Electricity.

Chemistry—Prof. Liveing, Course of Examinations and Personal Instruction of those who have attended his general course in the last two terms; Mr. Main, General Course, including Carbon Compounds; Mr. Pattison Muir, Non-Metals, and Elementary Organic; Mr. Sell, Elementary Chemistry; Mr. Scott, Gas Analysis; Mr. Lewis, Catechetical Course.

Practical Chemistry—Demonstrations for 1st M.B. by Mr. Sell and Fenton; Demonstrations in Qualitative Analysis (Sidney College), Mr. Neville; Practical Courses at St. John's and Caius College Laboratories.

Mineralogy—Prof. Lewis; and two Courses of Elementary Demonstrations.

Mechanism—Prof. Stuart, Differential and Integral Calculus for Engineering Students; Mr. Lyon, Machine Construction and Heat; Mr. Ames, Surveying and Levelling.

Physiology—Elementary, Prof. Foster; Structure and Function of the Central Nervous System, Mr. Langley; Advanced Physiology of Respirations, Dr. Gaskell; Preparation for 2nd M.B., Mr. Hill.

Human Anatomy—Prof. Macalister, Anatomical Basis of Anthropology, Advanced; Demonstrations and Dissections.

Elementary Biology, Mr. Sedgwick; Morphology of the Vertebrata, Mr. Sedgwick; Mollusca and Tunicata, Mr. Weldon; Mammalia, Mr. Gadow.

Botany—Prof. Babington, Structural and Systematic; Morphology, chiefly Cryptogamic, advanced, Dr. Vines; Demonstration Lectures on Physiology, Mr. F. Darwin; Demonstrations in Systematic Botany, Mr. Potter.

Geology—Stratigraphy, Local, Prof. Hughes; General Course, Carboniferous to Recent, Dr. R. D. Roberts; Palæontology, Elementary, Mr. T. Roberts; Microscopic Petrology, Mr. A. Harker; Climatology, Mr. E. Hill; Metamorphism, Mr. Marr; Field Lectures, Prof. Hughes.

SOCIETIES AND ACADEMIES

LONDON

Royal Meteorological Society, April 16.—Mr. J. K. Laughton, M.A., F.R.A.S., vice-president, in the chair.—J. Y. Davidson and T. Wright were elected Fellows of the Society.—The following papers were read:—On the origin and course of the squall which capsized H.M.S. *Eurydice*, March 24, 1878, by the Hon. Ralph Abercomby, F.R.Met.Soc. It will be remembered that the *Eurydice*, which was a full-rigged corvette, when passing Ventnor in the Isle of Wight, running free before a westerly wind, with all sails set, was struck by a sudden squall from the north-west; and before sail could be shortened she went on her beam ends, and the lee ports being open, she filled and foundered. The author has investigated the character of the weather preceding and following the day in question, and finds that the squall was one belonging to the class which is associated with the trough of V-shaped depressions. The squall, which originated in the north of England, swept across the Isle of Wight at a rate of about thirty-eight miles an hour. The V-depression was of an uncommon class, in which the rain occurs after the passage of the trough, and not in front of it, as is usually the case. The weather generally for March 24 was unusually complex, and of exceptional intensity, and for this reason some of the details of the changes cannot be explained.—Waterspouts and their formation, by Capt. J. W. C. Martyr.—The weather forecasts for October, November, and December, 1883, by C. E. Peek, M.A., F.R.Met.Soc. This is a comparison of the weather indicated in the forecasts of the Meteorological Office with that actually experienced at Rousdon in Dorset.—On certain effects which may have been produced in the atmosphere by floating particles of volcanic matter from the eruptions of Krakatoa and Mount St. Augustin, by W. F. Stanley, F.G.S. In this paper were given details of a microscopical examination which had been made of some dust that fell, to the thickness of about two inches, upon the deck of the bark *Arabella*, in lat. 5° 37′ S., long. 88° 58′ E., at about 1000 miles from Krakatoa, and supposed to be from the eruption of that volcano. The dust under examination was contained upon a single microscopic slide. For the convenience of discussion of the subject the visible forms were separated into eight different kinds of particles:—(*a*) Small masses and single crystals of mineral matter visible by polarised light only. These were principally of augite and of certain felspars. (*b*) Very thin chips and scales of the above. (*c*) Very small masses of dense ordinary pumice. (*d*) Fractured chips of the above with one thin edge. (*e*) Light apparently *overblown* pumice in relatively large thin plates. (*f*) Fractured parts of *e*, but of larger bubbles traversed by seams upon which septa normal to the surface formerly existed. (*g*) Fractured parts of *e*, but of larger plates, with a thicker seam on one edge or on one corner only. (*h*) Thin glassy plates of *e*, formerly of relatively much larger size. These are of equal thickness throughout, and generally with one hollow surface. The particles *a* and *b* form only about half to one per cent. of the mass, the whole of the remainder being of the different forms of pumice described. The particles *g* and *h*, as being much the lightest in proportion to their extent of surface, were most dwelt upon. These particles, which the author termed *bubble-plates*, are of irregular, angular forms. They measure under the microscope, in different directions, from about ·5 to ·05 mm. The thickness of the plates is fairly uniform, varying between ·001 and ·002 mm. When there is a seam on one edge, the plate is smaller, and thickens towards the seam. By taking the interior part of a large mass of pumice and breaking it up into fine dust, some similar forms may be discovered. These plates being of quite transparent, volcanic glass (obsidian), they are invisible under the microscope, by direct light; but being placed in a medium of higher refractive power, as Canada balsam, they become clearly defined under oblique illumination, above a spot lens, with careful adjustment. Mr. Stanley suggested that these thin plates were from overblown bubbles of volcanic glass such as forms the mass of pumice; that most probably they were projected from about the centre of the volcanic chimney, where they could maintain a melting temperature until they reached the higher atmosphere; under which conditions the internal steam in each separate bubble would expand in volume through release of external pressure until the bubbles burst in the very thin fragments shown. These thin forms of bubble-plates, having great surface in comparison with their very small masses, were such as were eminently adapted to float in atmospheric currents to great distances. As such particles would descend with their convex sides downwards, they would also be especially adapted to reflect the sun's rays, when the sun sank to the horizon, whereas when the sun was at greater altitude his rays would pass through them nearly unobstructed. It was therefore proposed that the after-glow so often observed since the eruptions of Krakatoa and Mount St. Augustin was possibly due to reflection from these thin plates.

DUBLIN

Royal Society, March 17.—Section of Physical and Experimental Science.—Howard Grubb, M.E., F.R.S., in the chair.—On the success of an instrument for completing the optical adjustment of reflecting telescopes, by G. Johnstone Stoney, M.A., D.Sc., F.R.S., vice-president of the Society. The author had been astronomical assistant to the late Earl of Rosse, and while in charge of his observatory became impressed with the importance of increasing both the degree of accuracy and the facility with which reflecting telescopes can be adjusted. At the Cheltenham meeting of the British Association in 1857 he described an instrument designed to attain these ends, but had no opportunity of testing its performance till two years ago, when a twelve-inch mirror came into his possession of exquisite defining power, figured by the late Mr. Charles E. Burton, B.A., F.R.A.S. This mirror is mounted as a Newtonian telescope.

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