

only three of the 486 were not studying for the degrees of the National University, of which the Cork University College is one of the constituent colleges. The report records that the city of Cork has made a grant of 150*l.* per annum to the college for the purpose of promoting the higher education of the working men of the city. Additions have been made to the physiological and pathological departments of the college to supply in some measure the accommodation for the large number of students now entering the medical faculty. Further additions are urgently necessary as soon as funds permit of their being carried out. A comprehensive list of books and papers published by members of the college staff during the session is printed at the end of the report.

A copy of Section X., Higher Education, of the Handbook of the Education Committee of the County Council of the West Riding of Yorkshire has been received. It gives full particulars regarding the scholarships and exhibitions offered by the committee for competition in 1918. The needs of every class of deserving student appear to be catered for. We notice among these numerous aids to the prosecution of higher education the county major scholarships, of the estimated value of 60*l.* to 65*l.* per annum, to be held at universities, university colleges, or other approved institutions; the county free studentships, covering tuition fees at the University of Leeds or the University of Sheffield; the county technological scholarships, value 60*l.* per annum, tenable for day courses or for combined day and evening courses at institutions where higher technical work is carried out; and county coal-mining exhibitions, covering tuition fees for full courses in coal-mining, or in electricity applied to mining, at the University of Leeds or at the University of Sheffield. There are also scholarships for qualified women desirous of specialising in midwifery and nursing, dairy work, horticulture, and other activities. Section IX. of the same part of the handbook will be published in its revised form next January; meanwhile the committee has issued a circular summarising the particulars respecting scholarships and grants available for persons intending in 1918 to adopt the teaching profession.

AMONG other papers included in the June issue of the *South African Journal of Science* is one by the Rev. J. R. L. Kingon on native education in the Transkei. Mr. Kingon refers to the national importance of educating the native, and urges that the plain fact of the matter is that the natives are determined to have education, and will resort to private schools if they cannot get encouragement from the authorities. More than sixty years of native education have produced a rich harvest and fully vindicated the efforts of pioneer workers in this field. A new situation has arisen in South Africa, the article points out, since the consummation of the Union. The responsibilities and dangers of the white men are greater, because of the millions of black men who are now subject to one central Government. Hitherto in the Orange Free State, the Transvaal, and Natal little has been done to educate the native. Again, owing to a defective system, education in the Transkei, which is taken as a typical example, is almost wholly literary in character, though agricultural education is receiving attention apart from the schools. But for the future, Mr. Kingon says, agricultural education must be given a large place in the schools; industrial education, at present a scandal, must be developed, and facilities must be provided for commercial education. From his experience in Transkei, Mr. Kingon insists that the introduction of a liberal and far-seeing policy of native education throughout the Union of South Africa would secure the future progress and stability of the Union.

NO. 2508, VOL. 100]

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, November 15.—Sir J. J. Thomson, president, in the chair.—E. E. T. HINCH: A new gyroscopic phenomenon.—A. P. LAURIE and C. RANKEN: Investigation into the imbibition exhibited by some shellac derivatives. The paper deals with experiments made on the substances obtained by boiling shellac with carbonate of soda or borax. These solid substances, very similar in consistency to gutta-percha, are found to expand rapidly when placed in water. The control of the expansion by the addition of soluble salts is not the same as in the case of gelatine, since, at any rate in a large number of cases, it does not seem to depend upon the nature of the salt, but simply upon the strength of the solution, the amount of the expansion increasing with the diminution of the strength of the solution. If the expansion is allowed to become complete in cold water, it is not possible to contract the mass again, but in the case of the expansion in a salt solution it is possible to get the mass to contract again by putting it into a stronger solution. Strong salt solutions are also found to precipitate the soluble portion of the shellac borax compound.—G. I. TAYLOR: Phenomena connected with turbulence in the lower atmosphere. In a previous paper by the author it was shown theoretically that a connection should exist between the rate at which heat is conveyed into the atmosphere by means of eddies, and the amount of retardation of the velocity of the lower layers of the atmosphere behind the gradient velocity due to the friction of the ground. In the present paper the amount of the turbulence over Paris is calculated from temperature observations taken on the Eiffel Tower. It is shown that the amount is the same as that calculated from observations of the change in direction of the wind between the bottom and top of the Eiffel Tower due to the friction of the ground. The daily variation in wind velocity which depends on the daily variation in turbulence is next discussed, and it is shown that the chief characteristics of the observed phenomena of daily variation are explained, both qualitatively and, so far as is possible, quantitatively by the author's equations.—E. G. BILHAM: The relation between barometric pressure and the water-level in a well at Kew Observatory. The water-level shows a well-marked response to changes of barometric pressure at all times of the year. Under similar conditions a given increase of pressure, δp , will depress the water-level in the well by an amount δu , which is proportional to δp . The value of $\delta u/\delta p$ varies with the mean level of the water, but is always negative. The validity of the equation $\delta u = a \cdot \delta p$ was established between limits given by $d p/d t > 0.5$ mb./hr., and the value of a was determined in the case of three groups of months representing high, intermediate, and low levels. The sensitiveness of the water-level to pressure was found to increase rapidly with the height of the water, the value of a for a height of 360 cm. above M.S.L. being four times as great as for a height of 200 cm. The change of sensitiveness appears to be entirely due to the change in the condition of the soil. The average value of a is 1.1 mm./mb. There appears to be no lag in the response of the well to changes of pressure, and under favourable conditions the most rapid fluctuations of pressure are shown on the water-level trace.

Zoological Society, November 6.—Dr. A. Smith Woodward, vice-president, in the chair.—Lieut. F. F. LAIDLAW: Some additions to the known dragonfly fauna of Borneo, with an account of new species of the genus *Cœliccia*.—Dr. G. A. BOULENGER: The use of the names Plesiosauria and Sauropterygia.—Dr. J. C. MOTTRAM: Some observations upon concealment by the apparent disruption of surface in a plane at right angles to the surface.

PARIS.

Academy of Sciences, November 5.—M. Camille Jordan in the chair.—H. Douvillé: The lower Eocene of Aquitaine and its fauna of Nummulites.—E. L. Bouvier: The classification of the Eupotamonea, freshwater crabs of the family of Potamonidae.—G. Lemoine: Free agricultural education. An account of the institutions giving free agricultural teaching in France, most of which are due to private initiative.—W. de Tannaenberg: A functional equation and spherical unicursal curves.—E. Camichel, D. Eydoux, and M. Gariel: The strokes of an hydraulic ram: calculation of the pressures at any point in the pipe.—A. Véronnet: The absorption of water on the moon and planets. If the constitution of the moon is analogous with that of the earth, it is both possible and probable that the rocks of the moon's crust have absorbed all the water by slow diffusion.—P. Mercanton: The magnetic state of the Greenland basalts. Under certain conditions, the magnetometric examination of a specimen of lava containing magnetite, the geographical orientation of the specimen having been carefully determined, may indicate the direction of the terrestrial field at the time of cooling of the lava. But the cases in which the theoretical conditions are perfectly fulfilled are rare, and much discrimination is required. Some basalts from Disco (West Greenland), like certain diabases from Isfjord, in Spitsbergen, possess a magnetisation in the sense opposed to the magnetic field existing to-day.—P. Mahler: The amount of nitrogen in oxidised coals. Samples of Decazeville coal, from the Combes outcrop, show varying states of oxidation, the calorific values ranging between 8000 and 5200 calories. Analyses of eight specimens are given; the nitrogen content is not much altered by the oxidation.—E. Maury: The present conditions and remote origin of the Triassic lignites of the Maritime Alps.—J. Deprat: The presence of the Permian at Hongay, and the structure of the edge of the Rhætian of the Tonkin coast in the bays of Along and Fai-tsi-long.—M. Mirande: The metachromatite and the chondriome of Chara.—L. Roule: The habitat of the tunny-fish (*Orcymus thynnus*) and its coast displacements in the western French Mediterranean.—F. Mesnil and M. Caullery: A new type of evolutive dimorphism in a polychetal Annelid, *Spio martinensis*.—M. Marage: The form of intralaryngeal vibrating air.—J. Wolff and B. Geslin: The diastatic degradation of inulin in chicory root.

BOOKS RECEIVED.

Organic Evolution. By Prof. R. S. Lull. Pp. xviii+729. (New York: The Macmillan Co.; London: Macmillan and Co., Ltd.) 3 dollars.

Volcanic Studies in Many Lands, being Reproductions of Photographs taken by the Author, Dr. Tempest Anderson, the Text by Prof. T. G. Bonney. Second series. Pp. xv+88. (London: J. Murray.) 15s. net.

On the Eves of the World. By R. Farrer. In two vols. Vol. i., pp. xii+311+illustrations and map. Vol. ii., pp. viii+328+illustrations and map. (London: E. Arnold.) 30s. net.

The Conduction of the Nervous Impulse. By Dr. K. Lucas. Revised by E. D. Adrian. Pp. xi+102. (London: Longmans and Co.) 5s. net.

Lloyd's Diagram for Calculations. By H. G. Lloyd. (London: E. and F. N. Spon, Ltd.) 2s. 6d.

The Yearbook of the Universities of the Empire, 1916 and 1917. Pp. xiii+412. (London: H. Jenkins, Ltd.) 7s. 6d. net.

Origenes y Tendencias de la Eugenia Moderna. By J. Bonilla. Pp. 96. (Liverpool: Daily Post.) 3s. 6d. net.

NO. 2508, VOL. 100]

Cotton and other Vegetable Fibres: Their Production and Utilisation. By Dr. E. Goulding. Pp. x+231. (London: J. Murray.) 6s. net.

The Anatomy of Woody Plants. By E. C. Jeffrey. Pp. x+478. (Chicago: University of Chicago Press; London: Cambridge University Press.) 4 dollars net.

The Cambridge University Calendar for the Year 1917-18. Pp. xxvi+1065. (Cambridge: At the University Press.) 8s. net.

Originality: A Popular Study of the Creative Mind. By T. Sharnol. Pp. xvi+304. (London: T. Werner Laurie, Ltd.) 15s. net.

DIARY OF SOCIETIES.

THURSDAY, NOVEMBER 22.

ROYAL SOCIETY, at 4.—Special General Meeting to receive the Annual Report of the Council.—At 4.30.—Bactericidal Properties conferred on the Blood by Intravenous Injections of Diamino-acridine-sulphate: C. H. Browning and R. Sulbransen.—The Pelmatoporidae, an Essay on the Evolution of a Group of Cretaceous Polyzoa: W. D. Lang.

INSTITUTION OF ELECTRICAL ENGINEERS, at 6.—Gas-firing Boilers: T. M. Hunter.

FRIDAY, NOVEMBER 23.

PHYSICAL SOCIETY, at 5.—Some Problems of Stability of Atoms and Molecules: Prof. J. W. Nicholson.—Uses of Certain Methods of Classification in Optics: T. H. Blakesley.

MONDAY, NOVEMBER 26.

ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—The Geography of the Italian Front: Dr. Filippo De Filippi.

ROYAL SOCIETY OF ARTS, at 4.30.—Land Settlement within the Empire: Sir John McCall.

WEDNESDAY, NOVEMBER 28.

ROYAL SOCIETY OF ARTS, at 4.30.—Aerial Transport after the War: G. Holt Thomas.

FRIDAY, NOVEMBER 30.

INSTITUTION OF MECHANICAL ENGINEERS, at 6.—"Thomas Hawksley" Lecture: Heat Engines: Captain H. Riall Sankey.

CONTENTS.

PAGE

Class-books on Elementary Chemistry. By C. A. K.	221
American Gunnery	221
Isaac Barrow. By G. B. M.	222
Our Bookshelf	223
Letters to the Editor:—	
On the Theory of Magneto-ionisation.—Prof. Augusto Righi, For. Mem. R.S.; The Writer of the Note	224
The Introduction of the Word "Magnetron."—Dr. George F. Stradling	224
An Optical Phenomenon.—J. W. Giltay	225
The Nickel Industry. By Prof. H. C. H. Carpenter	225
Studies in Infant and Child Mortality. By R. T. H.	226
Baron Dairoku Kikuchi. By Dr. C. G. Knott	227
Notes	228
Our Astronomical Column:—	
Orbits of Comets	232
The Iron Arc as a Source of Standard Wave-lengths	232
Cape Observatory Report	232
The Classification of the Brittle-stars. By F. A. B.	233
Atmospheric Pollution. By J. B. C.	233
Meteorological Persistence. By W. W. B.	234
The Shortage of the Supply of Non-phosphoric Iron Ore. (With Diagrams.) By Prof. W. G. Fearnside	234
University and Educational Intelligence	238
Societies and Academies	239
Books Received	240
Diary of Societies	240

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