

## Societies and Academies.

## LONDON.

**Geological Society, June 26.**—**R. O. Roberts:** The geology of the district around Abbey-Cwmhir (Radnorshire). This paper deals with an area of about 30 square miles in north-western Radnorshire. The rocks belong to the Bala, Valentian, and Wenlock Series. Only the lowest beds of the Birkhill Stage are exposed, and they are overstepped by the Tarannon Stage, which, over most of the area, rests directly on folded Bala rocks. The Bala rocks are exposed along the north-eastern extension of the Towy anticline; but, in this district, the anticlinal axis is partly replaced by an important strike-fault, which fades westwards. Subsidiary folds may be recognised within the Bala rocks. The axes of these folds are parallel to the general strike of the strata, although there is a change in the direction of pitch around Nantmel. The Bala rocks were folded in pre-Tarannon times, but broad shallow folds in the Tarannon and Wenlock rocks indicate that there has been a repetition of folding along the same lines at different periods.—**C. A. Matley and A. Heard:** The geology of the country around Bodfean (south-western Carnarvonshire). The area includes the prominent hill of Garn Bodfean (918 feet above O.D.) and a lesser hill, Moel y Penmaen. Most of the remaining ground is covered by drift. The country can be divided into two belts with reference to the dominant east-north-easterly strike. In the southern belt there is a volcanic series of submarine lavas and tuffs interbedded with ashy and argillaceous sediments. Fossils found at several horizons indicate a Lower Bala age. Garn Bodfean, in the northern belt, consists of a great mass of 'felted' and granular keratophyres and some quartz-keratophyres. It seems possible that the whole hill is a transported mass carried over the Nevin Shales by earth-movements. All the igneous rocks of the area are considered to be extrusive, with the possible exception of a basalt, which may be a sill. A detailed account of the petrography and tectonics of the area is given.—**G. H. Mitchell:** The petrography of the Borrowdale volcanic series of the Kentmere Area (Westmorland). The volcanic rocks are composed of both lava-flows and tuffs of intermediate composition, varying from basic andesites to rhyolites. The rocks are greatly altered, and this has led to difficulty in distinguishing between lava-flows and tuff-deposits, particularly when the former are brecciated owing to flow. The alteration of the rocks, as shown by the changes in mineral composition, together with the materials filling the vesicles, is considered. Much of the alteration may be referred to a variety of propylitisation.

## PARIS.

**Academy of Sciences, June 17.**—The president announced the deaths of Henri Andoyer, Charles Moureu, and Léon Lindet.—**Charles Moureu, Charles Dufraisse, and Joseph Robin:** Researches on rubrene. Study of the mechanism of its formation: description of an intermediate chlorine derivative. In the preparation of rubrene an intermediate compound of the composition  $C_{12}H_{29}Cl$  has been obtained by modifying the conditions of the reaction; that this is really an intermediate stage in the formation of rubrene is shown by the fact that it is readily transformed into rubrene without by-products.—**P. A. Dangeard and Mme. Mara Lechtova Trnka:** The phenomena of symbiosis in *Myrica Gale*. The tubercles frequently found on this plant are due to a bacterium, for which the name *Rhizobacterium Myrica* is proposed. Its relations with the cells of the *Myrica* closely resemble

those in the tubercles of the Leguminosæ.—**de Possel:** The characteristic invariants of varieties in two dimensions with infinite connexion and the homeomorphy of discontinuous closed ensembles.—**J. Delsarte:** The group of conformal geometry in space of functions of summable square.—**G. Kolossoff:** The extension of a theorem of Maurice Lévy.—**A. Martinot-Lagarde:** An arrangement of an aerodynamic tunnel for the study of flow in two dimensions.—**I. Tamm:** The new theory of A. Einstein and the theory of quanta.—**G. Bruhat:** The notations of thermodynamics.—**E. Sevin:** The introduction of an electric charge vector. Application to the synthesis of the theories of electromagnetism, of light, and of gravitation.—**Pierre Daure:** The photometric study of the Raman effect.—**J. Gilles:** The ultra-violet bands of sulphur.—**Trajan D. Gheorghiu:** A method of photoelectric photometry with a variable source of radiation. The method described avoids the necessity of using two exactly similar photoelectric cells or absorbent standards, and an ordinary Heraeus mercury lamp can be used as the source of light.—**M. Mathieu:** Crystal constants of the compound  $K_2(PtBr_6)$ .—**E. Larroque:** The discovery of a Strombus horizon in the island of Djerba (Tunis).—**A. Demay:** The general structure of the Hercynian subdivision.—**Louis Dangeard:** The Bacteriaceæ of the Oolitic iron minerals. The facts observed, while not excluding the possibility of chemical action, confirm the hypothesis that the ferruginous bacteria play an important part in the formation of these iron minerals.—**P. Choux:** The Dideraceæ, Madagascan xerophytes.—**A. Guilliermond:** The development of a *Saprolegnia* in media containing vital colouring matters and the coloration of the vacuole during growth. A comparison of various colouring matters showed that neutral red is very slightly toxic for *Saprolegnia*: this develops nearly normally in the presence of small quantities of this dye which it accumulates in its vacuole.—**E. Chemin:** The variations of iodine in *Trailliella intricata*.—**Jules Amar:** The origin and destination of the cellular fats.—**Paul Dutoit and Christian Zbinden:** The spectrographic analysis of the ashes of the blood and of organs. Arc spectra from the ashes of the blood indicate the presence of thirteen elements, including silver, copper, manganese, titanium, and zinc. Examination of the ashes of various organs show a selective action of the pancreas on nickel, cobalt, and lead. The suprarenal capsules appear to retain tin, while zinc is abundant in the liver and kidney. Copper and silver disappear in tumours.—**L. Margailan:** The regularity of the variations of the characters of oils extracted from a given animal as a function of the point of withdrawal. The fats extracted from tissues taken from various points of *Delphinus tursio* show marked differences in composition. These variations are not irregular, the iodine absorption figure, for example, increasing from the nose to the tail.—**R. Fosse, A. Brunel, and P. de Graeve:** The application to urine of the biochemical determination of allantoin.—**E. Doumer:** Osmotic drainage.

## CAPE TOWN.

**Royal Society of South Africa, May 15.**—**A. L. du Toit:** The volcanic belt of the Lebombo—a region of tension. The belt of the Lebombo follows the thirty-second meridian for six degrees and is composed of Karroo Beds disposed in the form of a monocline sinking eastwards beneath the Cretaceous and younger deposits of the littoral. The volcanic rocks of which it is mainly composed consist of a lower group of basalts (and in the north of limburgites and alkaline basalts), a middle one of rhyolites and an upper one of basalts, to a maximum thickness of about 9000





each of the other chlorides, and the melting points of the mixtures are intermediate to those of the components, the intervals of crystallisation being so small as to be inappreciable. For the  $\text{CoCl}_2$  -  $\text{FeCl}_2$  mixtures, the angle of the rhombohedron remains unchanged at  $60^\circ$  and the magnitude of the side  $a$  varies from 7.05 A. for  $\text{CoCl}_2$  to 7.155 A. for  $\text{FeCl}_2$ . With the  $\text{FeCl}_2$  -  $\text{MnCl}_2$  mixtures, the angle of the rhombohedron varies from  $60^\circ$  to  $61^\circ 25'$ , the value of  $a$  from 7.155 to 7.20, and the ratio  $c : a$  from 2.45 to 2.37 in passing from  $\text{FeCl}_2$  to  $\text{MnCl}_2$ .—T. G. Levi: A new class of organic sulphur bases. When an alcoholic solution of aniline is added to a 20 per cent aqueous alcoholic formaldehyde solution into which hydrogen sulphide has previously been passed, heat is generated and 3:5-diphenyl - 1:3:5-dihydrothiazine is formed. Other aromatic amines form similar compounds, and analogous selenium derivatives are obtainable if hydrogen selenide is used in place of hydrogen sulphide.—Aldo Spirito: Observations on the regulative processes in relation to the development of the cerebral hemispheres in embryos of Anura (2).—C. Forti: Further investigations on the action of certain alkaloids on leucocytes isolated from the organism. Before causing the death of the cell, the hydrochlorides of cocaine, novocaine, and tuteocaine give rise to an arrest of its activity, that is, to a suspension of the cellular functions from which recovery is possible. The ease with which these compounds are eliminated or destroyed by the cellular protoplasm varies in degree with the different alkaloids.—U. Cassinis and L. Bracaloni: Normal alcoholemia during physical exercise. Experiments on eight individuals fail to furnish evidence that alcohol, even in minimal amount, is formed in the blood as a result of muscular work.—A. Galamini: The food value of legumes studied with albino rats. When rats are fed solely on raw beans, their urine becomes first neutral and then alkaline, the animals losing weight and dying more rapidly than when fasting. If the beans are cooked, the rats withstand the diet far better, although they lose in weight.—S. Goldberger: The action of pH on striated muscle. Experiments made on the lines of Trendelenburg's perfusion method with frog's muscle show that variation in the pH of the liquid (Ringer's) is not accompanied by modification of the latent time. With change of the pH from 5.8 to 9.0, the threshold value, the optimum stimulus, and the magnitude of the muscle contraction alter very little, any slight variations being only gradual. If the pH of the liquid is below 5.8 or above 9.0, the threshold value changes slightly in the first, and diminishes considerably in the second, half-hour, the degree of the diminution being greater in the alkaline than in the acid liquid. As regards the pH in the liquid after the perfusion, with initial pH values between 3.2 and 10.8, the muscle exhibits perfect equilibrating power, the Ringer's liquid having the pH 6.7 after perfusion, even when the experiment is continued for twenty-four hours. With higher or lower pH values, the liquid remains the same as before the perfusion.—R. Margaria: The alkaline reserve of sea-water. Experiments on the capacity of sea-water to fix carbon dioxide indicate that, although the reaction of the water is markedly alkaline, this is displaced, in the perfusion of surviving organs, towards the acid side solely by the presence of the carbon dioxide produced by the tissues and that, considering the pressure of the dioxide existing in the tissues, such displacement might be sufficient to make the pH value less than that of organic liquids. It cannot, however, be assumed that this phenomenon would actually occur, since the tissues have sufficient regulating power to enable them to confer their characteristic reaction on the perfusion liquids.

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## Official Publications Received.

## BRITISH.

Commonwealth of Australia: Council for Scientific and Industrial Research. Pamphlet No. 12: The Cattle Tick Pest and Methods for its Eradication. Pp. 23. (Melbourne: H. J. Green.)

Indian Journal of Physics, Vol. 3, Part 4, and Proceedings of the Indian Association for the Cultivation of Science, Vol. 12, Part 4. Conducted by Sir C. V. Raman. Pp. 451-536+ plates 22-24. (Calcutta.) 3 rupees; 4s.

Flora of the Upper Gangetic Plain, and of the Adjacent Siwalik and Sub-Himalayan Tracts. Vol. 3, Part 3: Palmae to Cyperaceae. Pp. ii+285-371. (Calcutta: Government of India Central Publication Branch.) 12 annas; 1s. 3d.

Indian Central Cotton Committee: Technological Laboratory. Technological Bulletin, Series A, No. 13: Technological Report on Samples of Punjab-American and Mollisoni (desi) Cottons grown in different parts of the Punjab in the Season 1928-29. By A. James Turner. Pp. 10. (Bombay.) 6 annas.

Astrographic Catalogue 1900-6. Sydney Section, Dec.  $-51^\circ$  to  $-65^\circ$ , from Photographs taken at the Sydney Observatory, New South Wales, Australia. Vol. 5: R. A.  $0^h$  to  $6^h$ , Dec.  $-52^\circ$  to  $-54^\circ$ , Plate Centres Dec.  $-53^\circ$ . By J. Nangle. Pp. ii+25. Vol. 6: R. A.  $6^h$  to  $12^h$ , Dec.  $-52^\circ$  to  $-54^\circ$ , Plate Centres Dec.  $-53^\circ$ . By J. Nangle. Pp. ii+92. (Sydney: Alfred James Kent.)

County Borough of Halifax. Third Annual Report of the Corporation Museums for the Year 1927-8. Pp. 18. (Halifax.)

## FOREIGN.

Proceedings of the United States National Museum. Vol. 76, Art. 3: Descriptions of New Species of Foraminifera of the Genus *Discocyclina* from the Eocene of Mexico. By Thomas Wayland Vaughan. (No. 2890.) Pp. 18+7 plates. Vol. 75, Art. 12: A New Liver Fluke from a Monkey and New Parasitic Roundworms from various African Animals. By J. H. Sandground. (No. 2783.) Pp. 11+2 plates. Vol. 75, Art. 13: Bugs of the Family Miridae of the District of Columbia and Vicinity. By H. H. Knight and W. L. McAtee. (No. 2784.) Pp. 27. Vol. 75, Art. 21: A New Species of Trematode Worms belonging to the Genus *Haustorium* from Rabbits in Texas. By Asa C. Chandler. (No. 2792.) Pp. 5. Vol. 75, Art. 23: A New Species of Mosquito from Montana with Annotated List of the Species known from the State. By Harrison G. Dyar. Pp. 8. (No. 2794.) Vol. 76, Art. 2: A Revision of the Two-winged Flies of the Genus *Procecidochares* in North America with an Allied New Genus. By J. M. Aldrich. (No. 2799.) Pp. 13. Vol. 75, Art. 26: Two New Species of Polychaetous Annelids from the Argentine Coast. By A. L. Treadwell. (No. 2797.) Pp. 5. Vol. 75, Art. 20: Tapeworms of the Genera *Rhabdometra* and *Paraiteira* found in the Quail and Yellow-billed Cuckoo. By Myrna F. Jones. (No. 2791.) Pp. 8+1 plate. Vol. 75, Art. 22: *Pagereinus*, a New Crinoid Genus from the American Devonian. By Edwin Kirk. (No. 2793.) Pp. 4+1 plate. (Washington, D.C.: Government Printing Office.)

## CATALOGUES.

Bulletin of Development covering the Thirty Months ending December 31st, 1928. Pp. 67. (London: Adam Hilger, Ltd.)

Apparatus for Radiology: High Tension Transformer Units. (Publication No. A/29.) Pp. 16. (London: Newton and Wright, Ltd.)

Heat Treatment Bulletin. No. 42: The Heat Treatment of High Tensile Aluminium Alloys. By A. R. Page. Pp. 8. (London: Wild-Barfield Electric Furnaces, Ltd.)

## Diary of Societies.

## PUBLIC LECTURE.

FRIDAY, JULY 26.

BRITISH INSTITUTE OF PHILOSOPHICAL STUDIES (Annual General Meeting) (at Royal Society of Arts), at 5.30.—Sir Oliver Lodge: Beyond Physics.

## CONGRESSES.

JULY 26 AND 27.

WOMEN'S ENGINEERING SOCIETY (Annual Conference of Women Engineers) (at Bedford College for Women).

Friday, July 26, at 8.—Lady Moir: Presidential Address.

Saturday, July 27, at 2.30.—Miss D. D. Buchanan: Some Modern Bridges: A Brief Description of their Construction (Lantern Lecture).

AUGUST 4 TO 9.

GENEVA INSTITUTE OF INTERNATIONAL RELATIONS.

Monday, Aug. 5, at 10 A.M.—K. Zilliacus: The Structure and Working of the League of Nations.

At 8.30.—E. J. Phelan: The Future of the International Labour Organisation.

Tuesday, Aug. 6, at 10 A.M.—Norman Angell: The Economic Causes of War.

At 8.30.—Henri Rolin: The Peaceful Settlement of all Disputes.

Wednesday, Aug. 7, at 10 A.M.—Prof. J. L. Briery: The Contribution of Law to Peace.

At 5.30.—H. S. Grimshaw: The Problems of Native Labour.

At 8.30.—The Unreadiness of Public Opinion.

Thursday, Aug. 8, at 10 A.M.—Arnold Forster: The Freedom of the Seas and the Outlawry of War.

At 3.—W. T. Layton: Reparations and Debts.

At 5.30.—G. A. Johnston: Industrial Relations.

Friday, Aug. 9, at 10 A.M.—A. E. Zimmern: The Preparation of Public Opinion.

At 3.—Prof. S. de Madariaga: The Monroe Doctrine and the League of Nations.

At 5.30.—Prof. C. K. Webster: The Far East.