

Aug. 19, 1885.—Prof. A. J. CLARK, F.R.S., professor of materia medica in the University of Edinburgh.

We know something of the metabolism of the skeletal muscles, but practically nothing about the metabolism of cardiac and plain muscles. The latter group is, however, more important in certain respects than is the former.

The differences in function shown by the different types of muscles make it probable that their metabolic processes differ widely. Skeletal muscle is a very highly specialised tissue, whereas cardiac and plain muscles are somewhat less specialised. The metabolic processes of the latter group deserve, therefore, far more attention than they have hitherto received.

### Societies and Academies.

#### CRACOW.

Polish Academy of Science and Letters, May 4.—I. Neyman and E. S. Pearson: The problem of *k* samples.—W. Goslawski and L. Marchlewski: The absorption of ultra-violet radiations by certain organic substances.—K. Dziewonski and St. Pizoń: A new method of synthesis of dinaphthopyrone. Dibenzoxanthone can be obtained directly by the interaction of  $\beta$ -naphthol and carbanilide or thiocarbanilide.—Mlle. Bron. Młodzianowska: The earliest stages of the development of *Cysticercus fasciolaris* of the larva of *Taenia taeniaeformis*.—S. Skowron and T. Pawlas: Observations on the influence of gonacrine on the organism.

June 12.—St. Mrozowski: The hyperfine structure of the resonance line of mercury (2).—Ś. Szczeniowski and L. Infeld: The effect produced by a cloud of electrons on the structure of the de Broglie wave.—Mlle. A. Dorabalska: Microcalorimetric measurements of the period of polonium. The period found by this method was 137.6 days.—M. Hlasko: The differences between the conductivity coefficients of strong electrolytes in the same solvents.—M. Hlasko and W. Klimowski: The conductivity of certain mineral acids and the mobility of the hydrogen ion.—K. Dziewoński, W. Kahl, and Z. Olszewski: Study of the compounds derived from naphthalic acid. The synthesis of 3, 4-dihydroxynaphthalic acid.—E. Mnich: The phosphorus compounds of plants (6). The solubility of the phosphorus compounds of bean flour and the faculty of phytine of combining with protein substances which it contains.—Tymrakiewicz: The stratigraphy of the peat bog situated near Dublany, Olesko, and Opaki. Three climatic periods were shown by pollen analysis.—J. Jarocki and A. Demianowicz: The presence of a Ponto-Caspian amphipod, *Chaetogammarus tenellus*, in the waters of the Vistula.—L. Ejsmont: The identity of *Proshytera rossittensis* and of *Tanaisia fedtschenkoi* with some remarks on trematodes with united caeca.—J. Hirschler: Observations concerning the reciprocal influence of insects.—Z. Grodziński: The development of the blood vessels in the pectoral fin of fishes belonging to the genus *Salmo*.—F. Rogoziński: Experimental rickets (3). The influence of ammonium chloride on the mineral metabolism of the rachitic rat.

#### GENEVA.

Society of Physics and Natural History, May 7.—Albert H. Du Bois: Variations of the blood serum albumins under the influence of reticulo-endothelial blocking. In the rabbit, blocking the reticulo-endothelial system with 2 per cent Chinese ink by endovenous injection (1 c.c. per day) affects the proportion

of the blood serum albumins. The serin diminishes, the globulin increases, and the ratio serin to globulin tends to be inverted. Moreover, the colloido-osmotic pressure of the blood serum falls as a result of the loss of serin.—Ch. Eug. Guye: The lower limit of physico-chemical phenomena. A physico-chemical phenomenon is first defined as that of which the complete interpretation reduces in the final analysis to ideas of space, time, and matter, ideas which have been established by experiments on a macroscopic scale. In the field of intra-atomic and quantic phenomena, these ideas appear to lose all exact experimental meaning, and the question arises as to how far they can be rightly applied in a field which is not their field of origin. Planck's constant appears to limit physical chemistry on our scale; beyond this, all is mystery. It is a great temptation to find in this indefiniteness the origin or the causative principle of the organisation of life and thought. M. Guye recalls, moreover, in this connexion, that when a material system contains only a small number of molecules (micelles, filterable virus, etc.) the statistical fluctuations then assume considerable importance and the intimate nature of the individual molecular actions ought to be made clearer.—P. Balavoine: A formula for the determination of the alcoholic strength of brandy. The author gives a simple formula for determining the alcoholic percentage to 0.1 per cent in a liquid containing between 30 and 70 per cent of alcohol, and not containing more than 10 grams of extract (syrup, etc.) per litre.

#### SYDNEY.

Linnean Society of New South Wales, April 29.—Frank A. Craft: The physiography of the Shoalhaven river valley. (1) Tallong-Bungonia. A topographic survey of the Tallong district reveals three major series of features—a peneplain level at 2200 feet, an incomplete peneplain or series of very flat valleys at 2000 feet, and deep gorges which come within 350 feet of sea-level. From consideration of the land forms it is concluded that the surface of the tableland was elevated to its present altitude by a series of uplifts, of which the most recent has been largely responsible for the formation of the deep gorges.—H. M. R. Rupp: Further notes on the orchids of the South Maitland coalfields, with description of a new *Dendrobium* from Bullahdelah. The occurrence is noted of *Calochilus cupreus* Rogers in New South Wales, and its confusion with *C. campestris* R. Br. is discussed. Several interesting teratological orchid forms are recorded, also a hybrid *Pterostylis ophioglossa* R. Br.  $\times$  *Pt. concinna* R. Br. The identity of *Pt. Mitchellii* Lindl. is considered, and a striking form at present included under *Pt. pusilla* Rogers is described as a new variety. The new *Dendrobium* from Bullahdelah is closest to *D. speciosum* Sm. and *D. Kingianum* Bidw.—H. L. Jensen: Contributions to our knowledge of the Actinomycetales. (1) A case of hereditary variation in the genus *Actinomyces*. A soil micro-organism (probably identical with *A. polychromogenes* Vallée) normally forms cells resembling corynebacteria or mycobacteria. A variant, appearing as long, branched filaments of an entirely *Actinomyces*-like character, arises spontaneously in cultures of the former type. Besides this, several other variants are produced, partly spontaneously, partly experimentally. The bearing of these and similar phenomena on the taxonomy of the genus *Actinomyces* and related genera is discussed.

May 29.—A. M. Lea: On Baridiinae (Curculionidae); mostly from New Guinea. The paper consists of descriptions of sixty-seven new species of weevils from New Guinea (including a new genus), Aru, Fiji, Malay

Peninsula, Java, and Queensland.—G. H. Cunningham: The Gasteromycetes of Australasia (11). The Phallales (pt. 2). Under the Clathraceae are placed eleven genera. The family is rearranged, and divided into three tribes upon the nature of the receptacle of the fructification. A new family is represented by the solitary genus *Claustrula* containing *C. Fischeri*. All genera and species are redescribed, their relationships shown and known collections in existence in herbaria of the world are listed.—Mary E. Fuller: The life-history of *Calliphora ochracea* Schiner (Diptera, Calliphoridae). This paper describes the morphology of the earlier stages of the blowfly *Calliphora ochracea* Schiner, and includes some observations on the biology of the fly. The natural breeding habits of the species are not known, but in captivity it has been induced to oviposit on fur covering meat. The hitherto unknown larvæ have been obtained in quantity, and numbers of adults bred through, giving the complete life cycle.—H. L. Jensen: A note on the systematic position of *Mycobacterium coeliacum* Gray and Thornton. This organism agrees morphologically with the genera *Mycobacterium* and *Corynebacterium*. The suggested transfer of it to the genus *Flavobacterium* is therefore not justified.

## WASHINGTON, D.C.

National Academy of Sciences (*Proc.*, Vol. 17, No. 4, April 15).—Harvey Cushing: (1) The reaction to posterior pituitary extract (pituirrin) when introduced into the cerebral ventricles. A patient recovering from an operation for a tumour on the brain offered himself for the investigation. Injection of surgical pituitrin into the lateral ventricle of the brain caused pronounced flushing (vaso-dilatation) and excessive sweating (except of the skin over the bone flap) with drop of body temperature and metabolic rate. The effect is almost the reverse of that produced by intramuscular or intravenous injections, which cause blanching of skin and mucous membranes (vaso-constriction) and prompt evacuation.—(2) The similarity in the response to posterior lobe extract (pituirrin) and to pilocarpine when injected into the cerebral ventricles. These substances have very similar effects, suggesting a central autonomic stimulation chiefly of the parasympathetic division.—(3) The action of atropine in counteracting the effects of pituitrin and of pilocarpine injected into the cerebral ventricles. Whether given subcutaneously or previously injected into the cerebral ventricles, atropine appears completely to counteract the effects of pituitrin and pilocarpine injected into the ventricles.—Wilder D. Bancroft and S. F. Whearty, jr.: (1) Activation by charcoal. Chlorine and benzene in the presence of purified activated charcoal form ring-substitution products.—(2) Aromatic substitution products with fluorine. Gaseous fluorine gives substitution products with hexachlorobenzene.—Wilder D. Bancroft and J. E. Rutzler, jr.: Reversible coagulation in living tissue (2). Following up previous work on the coagulation of nerve protein by drugs and its peptisation by sodium thiocyanate, it is suggested that, in the absence of organic ailments, morphine addicts might be cured by the use of this salt.—R. E. Bowen: Movement of the so-called hairs in the ampullar organs of fish ears. Ecker recorded movements of the hair cells of *Petromyzon* in 1844; similar movements, at very varying rates, occur in the teleost *Ameiurus nebulosus*.—Charles W. Metz and Helen Berenice Smith: Further observations on the nature of the X-prime (X') chromosome in *Sciara*.—Tracy Yerkes Thomas: On the unified field theory (5).—Jesse Douglas: The least area property of the minimal surface determined by an arbitrary Jordan contour.—A. D. Michal:

Function space-time manifolds.—A. A. Bless: The composition of the interior of the earth. It is assumed that the temperature gradient in the crust extends to great depths; this leads to the view that dissociation of molecules takes place at great depths, and that the earth consists of the present crust with permanent gases, while the other elements form a core. It is also assumed that the composition of the earth as a whole is similar to that of the upper layers of the sun. The suggested ionisation of the core elements leads to a liquid core of high density, as required by seismic observations. The theory is put forward tentatively as a means of avoiding the hypothesis of a core of heavy metals, chiefly iron.—W. V. Houston and C. M. Lewis: Rotational Raman spectrum of CO<sub>2</sub>. The microphotometer curves show a rotation band of quiescent lines. Even rotational states alone are present, and the moment of inertia is  $70.2 \times 10^{-40}$  gm. cm.<sup>2</sup>.

## Official Publications Received.

## BRITISH.

- Journal of the Royal Statistical Society. New Series, Vol. 94, Part 3. Pp. 359-486+xiii. (London.) 7s. 6d.  
Trinidad and Tobago. Minutes and Proceedings of the Sugar Cane Investigation Committee. Part 21. Pp. 269-331. (Trinidad: Government Printing Office.)  
Transactions of the Institute of Marine Engineers, Incorporated. Session 1931, Vol. 43, No. 6, July. Pp. 261-304+xlii. (London.)  
Experimental Researches and Reports published by the Department of Glass Technology, The University, Sheffield. Vol. 13, 1930. Pp. 288. (Sheffield.) 7s. 6d.  
Department of Scientific and Industrial Research. Building Science Abstracts. Vol. 4 (New Series), No. 6, June. Abstracts Nos. 960-1140. Pp. 187-222. (London: H.M. Stationery Office.) 9d. net.  
South Australia: Department of Mines. Mining Review for the Half-year ended December 31st, 1930. (No. 53.) Pp. 147+3 plates. (Adelaide: Harrison Weir.)  
Royal Commission on the Civil Service, 1929-31. Report. (Cmd. 3909.) Pp. viii+252. (London: H.M. Stationery Office.) 3s. 6d. net.  
The Annual Report of the Gresham's School Natural History Society. Pp. 39. (Holt.)  
Annals of the (Mededelingen van het) Transvaal Museum. Vol. 14, Part 3, July 28. Pp. 221-250+plates 3-8. (Pretoria.)  
Imperial Bureau of Animal Genetics. Bibliography on the Biology of the Fleece, 1931. Pp. 32. 2s. 6d. Bibliography on Fur Breeding, 1931. Pp. 37. 1s. Quarterly Journal, Vol. 2, No. 1. Pp. 24. Quarterly Journal, Vol. 2, No. 2. Pp. 25-48. Quarterly Journal, Vol. 2, No. 3. Pp. 49-72. (Edinburgh and London: Oliver and Boyd, Ltd.)

## FOREIGN.

- Journal of the Faculty of Science, Imperial University of Tokyo. Section 2 (Geology, Mineralogy, Geography, Seismology), Vol. 3, Part 4. Pp. 185-204+plates 11-13. (Tokyo: Maruzen Co., Ltd.) 0.60 yen.  
Journal de la Société des Americanistes. Nouvelle Série, Tome 22, Fasc. 2. Pp. xiv+249-543+planches 31-40. (Paris.)  
U.S. Department of Agriculture. Leaflet No. 78: Hints on Bobcat Trapping. By Stanley P. Young. Pp. ii+6. (Washington, D.C.: Government Printing Office.) 5 cents.  
Smithsonian Miscellaneous Collections. Vol. 82, No. 17: The Types of Lamarck's Genera of Shells as selected by J. G. Children in 1823. By A. S. Kennard, A. E. Salisbury and B. B. Woodward. (Publication 3112.) Pp. 49. (Washington, D.C.: Smithsonian Institution.)  
Report of the Aeronautical Research Institute, Tôkyô Imperial University. No. 72: On the Yield Point of Mild Steel. By Fujio Nakaniishi. Pp. 83-140. (Tôkyô: Iwanami Shoten.)  
U.S. Department of the Interior: Geological Survey. Bulletin 819: The Wasatch Plateau Coal Field, Utah. By Edmund M. Spieker. Pp. vi+210+33 plates. 1.30 dollars. Bulletin 825: Microscopic Determination of the Ore Minerals. By M. N. Short. Pp. vii+204+11 plates. 60 cents. Professional Paper 165-E: The Kaolin Minerals. By Clarence S. Ross and Paul F. Kerr. (Shorter Contributions to General Geology, 1930.) Pp. 151-180+plates 39-43. 15 cents. (Washington, D.C.: Government Printing Office.)  
Proceedings of the American Academy of Arts and Sciences. Vol. 65, Nos. 1, 2 and 3: Southern Paiute, a Shoshonean Language, by Edward Sapir; Texts of the Kaibab Paiutes and Uintah Utes, by Edward Sapir; Southern Paiute Dictionary, by Edward Sapir. Pp. 730. (Boston, Mass.) 7.50 dollars.  
Journal of the Faculty of Science, Hokkaido Imperial University. Series 1: Mathematics. Vol. 1, No. 1, September 1930. Pp. 45. Series 2: Physics. Vol. 1, No. 1, September 1930. Pp. 75. Series 4: Geology and Mineralogy. Vol. 1, No. 1, September 1930. Pp. 111. (Sapporo.)

## CATALOGUES.

- Livogen. Pp. 2. (London: The British Drug Houses, Ltd.)  
Hanovia Ultra-violet Light Equipment for Scientific and Commercial Use. Pp. 16. (Slough and London: The British Hanovia Quartz Lamp Co., Ltd.)