

## Calendar of Discovery and Invention.

July 10, 1817.—For his important discoveries on the polarisation of light, Brewster in 1815 received the Copley Medal. In his investigations he was led to the invention of the simple scientific apparatus, the kaleidoscope, which he patented on July 10, 1817. As a toy the kaleidoscope quickly gained immense popularity in England and America. Writing from London in May 1818, Brewster said, "You can form no conception of the effect which the instrument excited in London. . . . Infants are seen carrying them in their hands, the coachmen on their boxes are busy using them, and thousands of poor people make their bread by making and selling them."

July 11, 1861.—Kirchhoff's great paper "On the Solar Spectrum," containing his views of the true nature and the chemical constitution of the sun from his interpretation of the Fraunhofer lines, was read before the Berlin Academy of Sciences on July 11, 1861. To no one did Kirchhoff's work appeal more than to Huggins, who years afterwards wrote: "This news was to me like the coming upon a spring of water in a dry and thirsty land. Here at last presented itself the very order of work for which in an indefinite way I was looking—namely, to extend his novel methods of research upon the sun, to the other heavenly bodies."

July 12, 1770.—The spinning jenny constructed by Hargreaves and patented by him on July 12, 1770—an epoch-making invention—has been described as "the instrument by which (so far as we have any authentic and trustworthy evidence) the human individual was first enabled, for any permanently advantageous and profitable purpose to spin wool, cotton, or flax into a plurality of threads at the same time and by one operation."

July 12, 1771.—On this day H.M.S. *Endeavour* anchored in the Downs, after her three years' voyage round the world under the command of James Cook. In 1769, observations of the transit of Venus had been made, and this was followed by the circumnavigation of New Zealand and the survey of the Great Barrier Reef of Australia.

July 12, 1796.—In a letter to Sir Joseph Banks, dated July 12, 1796, Rumford offered £1000 to the Royal Society "to the end that the interest of the same may be by them and by their successors, received from time to time for ever," and the amount applied every second year as a premium to the author of the most important discovery which shall be published in any part of Europe during the preceding two years, on heat or on light.

July 13, 1897.—After his demonstrations in Bologna in 1895 and in England in 1896, Marconi, at the invitation of the Italian government, made experiments at Spezia, where, on July 13, 1897, radio messages were sent between a land station and Italian warships over a distance of 12 miles.

July 15, 1662.—The beginning of the "Royal Society of London for Improving Natural Knowledge" dates from July 15, 1662, when the first charter passed the Great Seal. Weld in his history says: "The first Charter is on four sheets of Vellum; it was drawn by Sir Robert Sawyer, then Attorney-General, and is remarkable for its clearness and legal terseness; the first sheet contains some remarkably handsome ornamental capitals and flowers, with a finely executed Portrait of Charles II. in Indian Ink with the initial letter C. The Great Seal of the Kingdom in green wax is appended to the Charter."

E. C. S.

## Societies and Academies.

LONDON.

Royal Society, June 30.—A. V. Hill, K. Furusawa, and J. L. Parkinson: The dynamics of 'sprint' running. By an application of the theory of dimensions it is shown that the speed of an animal, such as man, is limited by the inertial stresses to which the structures are subjected during movement. The 'viscosity' of the muscles is the chief factor. For experimental work it is necessary to employ maximal contractions. The case of submaximal contractions is theoretically discussed. A runner exerting maximal effort propels himself with constant force. The 'constants' of a given runner can be determined with very fair accuracy, and the work done, in running, against viscosity and resistance of the muscles can also be determined.

A. V. Hill, K. Furusawa, and J. L. Parkinson: The energy used in 'sprint' running. The mechanical work done against the viscous resistance of the muscles of the runner has been compared with the amount of oxygen used in recovering from the effort. The result shows a 'mechanical efficiency' of about 38 per cent. In a man running 200 yards, at top speed throughout, fatigue begins to appear after 70 yards, and by the end the speed has fallen by about 12 per cent. This fatigue is due to the enormous rate of expenditure of energy in running at top speed; one subject, who ran his first 100 yards in 9.88 sec., and his second in 9.57 sec., developing  $8\frac{1}{2}$  horsepower at his maximum velocity (11.46 yards per sec.) and liberating 4 gm. of lactic acid per sec. in his muscles.

R. G. Canti and F. G. Spear: The effect of gamma irradiation on cell division in tissue culture *in vitro*. The extent of inhibition of mitosis was determined by making counts of the total number of cells undergoing mitosis and expressing these counts as percentages of the total number of cells undergoing mitosis in the same number of unirradiated cultures of the same batch used as controls. For a given intensity of irradiation, there is a period of time of exposure which must be exceeded before any change in the number of cells undergoing mitosis is observed, and after this minimum time is passed the effect upon mitosis is sudden and well marked. Under the conditions of experiment, a longer time is required to bring about this biological effect with weaker intensities than would be expected from the physical determinations, and there is a minimum intensity of irradiation below which no such effect takes place.

A. N. Richards and J. B. Barnwell: Experiments concerning the question of secretion of phenosulphonephthaleine by the renal tubule. Phenol red applied to the surface of a decapsulated rabbit's or frog's kidney passes into the urine eliminated by it. When salt solution is made to flow from the ureter through the tubule to the capsule of Bowman, during perfusion of the renal portal system with phenol red solution, phenol red can be identified in the saline collected from the capsule. Complete obstruction of the circulation through the glomerulus does not prevent phenol red from entering the tubule and becoming concentrated there. When an excised frog's kidney is immersed in oxygenated phenol red solution, the dye passes into the tubule and becomes concentrated. These facts, which present the appearance of secretion of phenol red by tubule cells, are best explained by assuming diffusion of water and dye into the tubule at one level, active extrusion of water and retention of dye at another, and a fluid current within the tubule from one level to the other.

S. B. Schryver and H. W. Buston: The isolation of some undescribed products of hydrolysis of proteins (Part iv.). When gelatin is hydrolysed rapidly with sulphuric acid, it yields about 20 per cent. of its nitrogen in the form of diamino-acids; if, however, the gelatin is allowed to stand with acid in the cold for a day before hydrolysis, the diamino-acid content is increased to about 29 per cent. This increase is due mainly to the formation of *dl*-lysine; at the same time there is a slight increase in the amounts of arginine and active lysine. The *dl*-lysine is not formed by mere racemisation of active lysine, but must be formed from some precursor which only yields the base by the action of cold acids.

J. B. Cohen, with others: The therapeutic action of some bismuthyl derivatives of organic hydroxy-acids. The therapeutic action of several of these substances on *Spirochaeta Laverani* has been investigated. The action depends not only on the bismuth content, but also on the chemical constitution of the product under investigation, so far as the effect on mice infected with *Sp. Laverani* was concerned. The effect of bismuthyl saccharic acid and its sodium salt has been tried in human subjects, but these substances possess no great advantage over the bismuth preparations in general use. The main fact emerging from a chemical study of the bismuthyl series is the greater reactivity of esters over the corresponding hydroxy-acids.

T. S. P. Strangeways and Honor B. Fell: A study of the direct and indirect action of X-rays upon the tissues of the embryonic fowl. The destructive effect of a given dose of X-rays upon the tissues of an embryo is correlated with the age of the embryo irradiated. With the exception of a relatively small number of cells destroyed by the direct action of radiation, the death of the tissues in 6-day embryos is due to an indirect action. There is no evidence that the cells *qua* cells of a 6-day embryo are more susceptible to the action of X-rays than those of a 20-25-hour embryo. The degenerative changes induced in the tissues of 6-day embryos by X-rays are intimately related to cell metabolism, since they are inhibited or greatly retarded when metabolism is arrested by low temperatures. The lethal action of X-rays is not due to the formation of stable toxic products.

C. M. Yonge: Structure and function of the organs of feeding and digestion in the septibranchs, *Cuspidaria* and *Poromya*. The septibranchs are carnivorous and specialised for taking in and digesting large food particles, which, with water, are drawn in by the action of the septum, a highly muscular organ, striated in *Cuspidaria*, but not in *Poromya*. Water passes from the infra-septal cavity into the supra-septal by way of fine pores in *Cuspidaria*, and by two pairs of branchial sieves in *Poromya*. Labial palps are small, ciliated on inner side, muscular; they push food into the mouth. All cilia in infra-septal cavity carry particles *away* from mouth, either into supra-septal cavity or to posterior end of infra-septal. The oesophagus is wide and muscular, stomach long and cylindrical, lined throughout with thick cuticle, muscular and free from surrounding tissues; it acts as a gizzard. The digestive diverticula have unusually short and wide ducts and the tubules provide the only absorptive surface in the gut. All modifications of gut appear correlated with the type of food.

B. K. Das: The bionomics of certain air-breathing fishes of India, together with an account of the development of their air-breathing organs. The post-larval development of the air-breathing organs in six genera of air-breathing fresh-water fishes, namely, *Clarias*, *Saccobranchus*, *Anabas*, *Ophio-*

*cephalus* and *Amphipnous*, is described. In *Anabas* and *Macropodus* the organ consists of an air-chamber, or secondary lung, situated on either side of posterior region of head, each of which lodges three vascular shelly labyrinthiform plates; in *Clarias* there are two vascular tree-like structures inside the air-chamber; *Saccobranchus* has a long tubular lung-like structure extending back from the gill chamber to the sides of body; *Ophiocephalus* has a vascular air-chamber situated on each side of head, whereas in *Amphipnous* there are two large 'bladders' resembling amphibian lungs and extending to a short distance behind the head.

(To be continued.)

Royal Anthropological Institute, June 14.—Sir Baldwin Spencer: Recent researches amongst the Arunta with special reference to the Alchera and Churinga beliefs. The chief features of the earlier work of the late F. J. Gillen and the author were (1) the demonstration of the fundamental importance of group relationship in regard to social organisation of the tribes, the existence of which in Australia had first been shown by Howitt and Fison; (2) the complex development of the totemic system and of the customs and beliefs associated with this; and (3) the existence of a theory of conception related to a belief in an ancestral spirit individual who voluntarily and without any necessary relation to natural processes reappeared in successive incarnations. The Rev. C. Strehlow, in charge of a Mission Station amongst the Arunta, has arrived at conclusions in regard to the significance of the Churinga and, more especially, of the Alchera belief, which are different from these. Recent inquiries have confirmed Spencer and Gillen's original account, so far as it went. The term Alchera is of somewhat vague and wide import. It is associated in the native mind with the far past times in which his ancestors came into existence, lived and died. Every individual has his, or her, Alchera. Its use by missionaries as the equivalent of god is wrong and misleading. The Churinga belief, according to which the spirit part of every individual is associated with one of these sacred slabs of stone or wood, is fundamentally as Spencer and Gillen described it. A great leader, Numbakulla, who appears in various forms in tradition, originally made everything. The original Churinga were split into two, with one of which a male and with the other a female spirit became associated. When the Alchera ancestor died his spirit part also split into two, one forming an everlasting Arumburinga, the other a Kuruma that continually undergoes re-incarnation.

#### MANCHESTER.

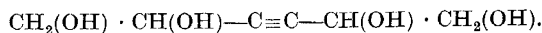
Literary and Philosophical Society, May 10.—A. Lapworth and E. N. Mottram: A survey of direct and collateral evidence bearing on some stereochemical inversions and cross-saturation processes. Bedo's view (*Compt. rend.*, 183, 750, 1926) that the oxygen atom in cyclohexeneoxide lies in the plane of the cyclohexane ring is not accepted. The theory which appears to be most nearly consistent with collateral evidence is that in each of the three steps: (1) cyclohexene to cyclohexene-halogenhydrin, (2) -halogenhydrin to -oxide, and (3) -oxide to -glycol involves a 'cross-reaction,' this term being used to include both 'simple stereochemical inversions' (such as, for example, the Walden inversion) and *trans*- or *cross*-addition processes. Oxidation of ethylenic compounds by means of permanganate is known to lead, in effect, to *cis*-addition of 2OH groups, whilst oxidation by hydrogen and other peroxides similarly leads to *trans*- or *cross*-addition. The authors criticise theoretical treatment

of the subject by Hilditch (*Trans. Chem. Soc.*, **129**, 1830; 1926 *et seq.*), and by Boesekin and Belinfante (*Rec. des Travaux Chimiques*, **45**, 917; 1926), as the glycols obtained from an ethylenic compound by *cis*- or *trans*-addition are, so far as is known, equally closely related to the original compound: they agree, however, with the authors last named in holding that, contrary to the views of Hilditch (*loc. cit.*), there is no evidence of any inversion when permanganate is used, but that a stereochemical inversion probably does occur at the breakdown of ethylene-oxides formed as intermediate products when peroxide is used.

PARIS.

Academy of Sciences, July 30.—Ch. Barrois, Paul Bertrand, and Pierre Fuyos: The coal measures of Anzin. The principal result of the palaeontological study of this field is the exact connection of the veins opened up at Anzin with those of the western end of the Pas-de-Calais, on the one part, and with those of Borinage, Limbourg and the Ruhr on the other part. Moreover, for the first time, the thickness of the Westphalian series at the Belgian frontier can now be fixed.—E. L. Bouvier: The Saturnia of Africa.—André Blondel: The regulation of governors with direct control furnished with dampers.—Léon Guillet: The addition of nitrogen to steels. Measurements of the hardness changes produced in various types of steel by the addition of nitrogen. The effects of various reagents on these steels were also studied.—Ph. Glangeaud: The origin of the fumarole mineral springs of Royat (Puy-de-Dôme).—Jean Effront: The synthesis of proteins by the saccharomycetes. In the course of the anaerobic life of yeast, the part of the sugar which serves for the synthesis of the proteins undergoes a preliminary decomposition without any carbon dioxide being given off and the whole of the carbon in the sugar remains in the yeast produced. If, on the contrary, the solution is strongly aerated, a certain quantity of the sugar is completely burnt and the sugar remaining is transformed into acetaldehyde, which furnishes the carbon for the synthesis of the proteins.—Charles Nicolle and Charles Anderson: The resistance of the pig to the virus of Spanish recurrent fever and the natural conditions of existence of this disease and of other spirochaetoses.—Paul Helbronner was elected *membre libre* in succession to the late Haton de la Goupillière.—S. Mandelbrojt: A particular class of integral series.—S. A. Gheorghiu: The growth of the denominator  $D(\lambda)$  of Fredholm.—Eugène Selivanowski: A class of ensembles defined by an enumerable infinity of conditions.—Basile Demtchenko: The stability of cavitations.—R. Swyngedaew: The reinforcement of the tension of a belt by the fact of its being wound on the pulley.—Émile Henriot: The resolution into two of a ray of light by the passage through a bent transparent plate. If a beam of light from a collimator falls on a bent plate with parallel faces, it is split up into two bundles, which, received in a telescope, give two images of the slit. If  $n$  is the refractive index before deformation,  $n_o$  and  $n_e$  the ordinary and extraordinary indices after deformation, it has been proved that  $n(n_o - n_e)/(n^2 - 1)^2$  is independent of the wave-length. This is in agreement with Havelock's law.—G. Balasse: Continuous spectra obtained by the electrodeless discharge in mercury vapour. From the experimental results described it is concluded that passing from a state of ionisation  $p+1$  to a state of ionisation  $p$ , this passage is accompanied by the emission of a continuous spectrum, and this is a certain criterion of this passage.—Mlle. St. Maracineanu: Researches on the radioactivity of lead which has been submitted for a long period to solar radiation.

Experiments carried out on the leaden roof of the Meudon Observatory prove that this lead, after prolonged exposure to the sun, possesses radioactivity.—Deslandres: Remarks on the preceding communication. These experiments probably prove the emission of a special radiation (possibly ultra X-rays) which is capable, by a kind of phosphorescence, of modifying the radioactivity of bodies or even of causing it. A repetition of these experiments by other persons and in other places is desirable.—Joliot: A new method of studying the electrolytic deposit of the radioelements. The electrode on which the substance is being deposited forms part of the wall of the electrolytic vessel and is sufficiently thin to be traversed by the radiation of the active body deposited. The radiation, liberated through the window thus formed, enters an ionisation chamber. The corresponding saturation current is proportional to the quantity of the active body deposited.—Victor Lombard: The permeability of nickel to hydrogen. The influence of the thickness of the metal. An experimental verification of the theoretical formula of Richardson, according to which the diffusion of gas through a metal is inversely proportional to the thickness of the metal.—Lespieau: The acetylenic erythrite



E. E. Blaise and Herzog: The constitution of the chlorides of the  $\alpha$ -acetoxyacids.—Max and Michel Polonovski:  $\beta$ -Pyridyl- $\alpha$ -pyrrolidine (normicotine).—Mlle. Jeanne Lévy and M. Sfras: The isomerisation of some ethylene oxides of the general formula  $\text{C}_6\text{H}_5-(\text{CH}_2)_n-\text{CH}=\text{CH}_2$ .—Marcel Sommelet: The



*N*-alkylimines of benzophenone.—Louis Besson: The cooling of the air at sunset. Starting with twenty years' observations at the Montsouris Observatory, an empirical formula is developed giving the lowering of temperature three hours after sunset as a function of the temperature of the air and the pressure of aqueous vapour in the air.—F. X. Skupiński: The evolutive cycle in *Didymium difforme*. Cytological study.—É. Fleurent: The composition of fenugreek seed and the inconveniences of its admixture with wheats intended for grinding.—Maurice Fontaine: The mode of action of high pressures on the tissues.—Mme L. Randoin and R. Lecoq: The evolution of avitaminosis B in its relations with the constitution of the glucides in the food.—Georges Bourguignon and Mlle. Renée Déjean: Normal chroaxy of the vestibular nerve in man.—Javillier, H. Allaire, and Mlle. S. Rousseau: Nucleic phosphorus, phosphorus balance, and ratios in the course of growth.—M. and Mme. Enselme: Contribution to the chemistry of cancerous tissue. In cancerous tissue there is a notable increase in the nucleic phosphorus compared with the amount of phosphorus in the healthy tissue. Irradiation with ultra-penetrating rays tends to make this excess of phosphorus disappear.—Constantin Gorini: Pathogenic bacteria, mixed ferments of milk.—Raoul Bayeux: The mechanical element, decompression, and the biochemical element, hypo-oxygenation, in the genesis of pulmonary or blood lesions in animals in rarefied atmospheres. Experiments on rabbits in which the effects due to lack of oxygen and those due to low pressure could be examined separately.—G. Mouriquand, A. Leulier, and P. Sedallian: The diphtheric toxin and adrenaline of the suprarenals.

VIENNA

Academy of Sciences, April 28.—A. Müller and A. Sauerwald: The action of *p*-toluol-sulphamide on 1, 4-dibrom-*n*-butane and a new synthesis

of pyrrolidin.—H. Suida and H. Pröll: The composition of acetone oils.—P. Gross: The heat of dilution of electrolytic solutions.—W. J. Muller and E. Noack: The passivity of chromium.—B. P. Wiesner: The sexual cycle of the rat (v.). The secretion pause during the interval.—L. Schmid and G. Bilowitzki: Communications on inulin (iii.). Piperidin was used as a solvent to determine molecular weight by boiling-point methods.—F. Sigmund and G. Marchart: The behaviour of aldehyde-acetals during hydration after the method of Sabatier and Senderens.—R. Dworzak and P. Pifferling: Studies on *α*-brom- and oxyaldehyde.—O. Koller and K. Lohberger: Fish from the Thian-Shan.—M. Holly: Siluridae, Cyprinodontidae, Acanthopterygiae, and Mastacembelidae from Kamerun.—J. Kozeny: Capillary conduction of water in the ground, its rise, oozing away, and application to irrigation.—A. Paltauf: The colouring of living cell nuclei. Experiments with weak erythrosin solution on onions and with eosin on dahlia. Salts of magnesium and potassium favour intake of colour.—R. Andreasch: On acetoguanamin-sulphonic-acid and related bodies.—F. Werner and others: Miscellanea Sudanica, being part xxiv. of the scientific results of a zoological expedition to the Anglo-Egyptian Sudan.—G. Kirsch and H. Pettersson: Atomic disintegration by *α*-particles. (v.) On the question of the existence of atomic fragments of short range. (vi.) The disintegration of carbon. The fragments from carbon, at least in a large part, are hydrogen particles.—G. Stetter: Determination of the quotient, charge over mass, for atomic fragments from carbon, boron, and iron.—R. Holoubek: The detection of atomic fragments by the Wilson method.—E. Kainradl: Contributions to the biology of *Hydrolea spinosa*, with special consideration of the pericarp and seed development. The epithelial cells are a food store. A typical light germinator.

### Official Publications Received.

#### BRITISH.

The National University of Ireland. Calendar for the Year 1927. Pp. viii+326+428+173. (Dublin.)  
 Memoirs of the Asiatic Society of Bengal. Vol. 8, No. 6: Chemistry in Iraq and Persia in the Tenth Century A.D. By H. E. Stapleton, the late R. F. Azo, and Prof. M. Hidayat Husain. Pp. 315-417. 5.1 rupees. Vol. 9, No. 3: Geographic and Oceanographic Research in Indian Waters. By R. B. Seymour Sewell. Pp. 51-129. 2.18 rupees. (Calcutta.)  
 Union of South Africa: Department of Agriculture. Reprint No. 80: Weeds of South Africa, Part 4. By K. A. Lansdell. Pp. 35. (Pretoria: Government Printing and Stationery Office.) 3d.  
 Canada. Department of Mines: Mines Branch. Abrasives: Products of Canada, Technology and Application. Part 2: Corundum and Diamond. By V. L. Eardley-Wilmot. (No. 675.) Pp. v+51. 15 cents. Abrasives: Products of Canada, Technology and Application. Part 3: Garnet. By V. L. Eardley-Wilmot. (No. 677.) Pp. vii+69. 20 cents. (Ottawa: E. A. Acland.)  
 Union of South Africa: Department of Mines and Industries. Geological Survey, Memoir No. 25: A Bibliography of South African Geology for the Years 1921 to 1925 (Inclusive). Authors' Index. By Dr. A. L. Hall. Pp. 117. (Pretoria: Government Printing and Stationery Office.) 5s.  
 Medical Research Council. Seventh Annual Report of the Industrial Fatigue Research Board to 31st December 1926. Pp. 28. (London: H. M. Stationery Office.) 9d. net.  
 Quarterly Journal of Experimental Physiology. Vol. 17: Sutherland Simpson Memorial Volume. Pp. viii+210+25 plates. (London: Charles Griffin and Co., Ltd.) 30s.

#### FOREIGN.

Methods and Problems of Medical Education. (Seventh Series.) Pp. iv+99. (New York: The Rockefeller Foundation.)  
 Report of the Aeronautical Research Institute, Tôkyô Imperial University. No. 24: Studies on Inflammability of Hydrogen. By Yoshio Tanaka and Yûzaburo Nagai. iii. Influence of Di-ethyl Selenide on the Limits of Inflammability of Hydrogen-Air Mixtures. Pp. 265-273. 0.20 yen. No. 25: Studies on Inflammability of Hydrogen. By Yoshio Tanaka and Yûzaburo Nagai. iv. Influence of Hydrogen Selenide on the Limits of Inflammability of Hydrogen-Air Mixtures. Pp. 275-284. 0.20 yen. (Tôkyô: Koseikai Publishing Office.)  
 The Carnegie Foundation for the Advancement of Teaching. Twenty-first Annual Report of the President and of the Treasurer. Pp. vii+250. (New York.)

Proceedings of the United States National Museum. Vol. 69, Art. 5: Catalogue of Human Crania in the United States National Museum Collections. The Algonkin and related Iroquois; Sioutan, Caddoan, Salish and Sahaptin, Shoshonean, and Californian Indians. By Ales Hrdlička. (No. 2631.) Pp. 127. (Washington, D.C.: Government Printing Office.)  
 Koninklijk Magnetisch en Meteorologisch Observatorium te Batavia. Jaarverslag 1926. Pp. 30. (Wetvered: Landsdrukkerij.)  
 Proceedings of the United States National Museum. Vol. 70, Art. 4: A Taxonomic and Ecological Review of the North American Chalcid-Flies of the Genus *Callimome*. By L. L. Huber. (No. 2663.) Pp. 114+4 plates. Vol. 71, Art. 7: Orthopteroid Insects from the Maritime Province of Siberia. (On the Insect Fauna of the Maritime Province of Siberia.) By A. N. Caudell. (No. 2679.) Pp. 7. Vol. 71, Art. 8: Larger Foraminifera of the Genus *Lepidocyclus* related to *Lepidocyclus* mantelli. By T. Wayland Vaughan. (No. 2680.) Pp. 5+4 plates. (Washington, D.C.: Government Printing Office.)  
 Smithsonian Institution: United States National Museum. Contributions from the United States National Herbarium. Vol. 26, Part 2: The Piperaceae of Panama. By William Trelease. Pp. v+15-50+vii-viii. (Washington, D.C.: Government Printing Office.) 10 cents.  
 Ministry of Agriculture, Egypt: Technical and Scientific Service. Bulletin No. 73: A Rapid and Accurate Means of Estimating Nicotine in Tobacco and Tobacco Extracts. By Dr. R. R. Le Geyt Worsley. Pp. 5. (Cairo: Government Publications Office.) 2 P.T.

#### CATALOGUES.

The Thomas Gas Meter for the Accurate Measurement of Gas. Pp. 24. (London: Cambridge Instrument Co., Ltd.) (List No. 151.)  
 Siemens Electrical Distance Thermometers. (Pamphlet 840 A.) Pp. 12. Siemens Electrical Pyrometers and Thermometers. (Leaflet 2050.) Pp. 4. (London: Siemens Bros. and Co., Ltd.)

### Diary of Societies.

#### SATURDAY, JULY 9.

BRITISH MYCOLOGICAL SOCIETY (Phytopathological Meeting) (at the Research Station, East Malling, Kent), at 11.30.—R. G. Hutton: General Account of the Station and its Activities.—At 12.—Demonstration of Reversion in Black Currants, by Mr. Hatton and Mr. Anos.—At 1.30.—Dr. H. Wornald: Brief Outline of the Pathological Problems under Investigation at East Malling.—1.45 to 3.45.—Tour of Egham Field and Great East Field, and Examination of Specimens, Cultures, etc., in the Laboratory. Features of pathological interest include examples of 'Die-back' in Plum Trees, various Raspberry Diseases, Walnut Bacteriosis, Spraying Experiments against Raspberry Anthracnose, and Apple Spraying Experiments, etc.—At 4.30.—General Discussion.  
 HARVEIAN SOCIETY OF LONDON (at Star and Garter Hospital, Richmond), at 4.30.

#### SATURDAY, JULY 16.

INSTITUTION OF MUNICIPAL AND COUNTY ENGINEERS (Eastern District Meeting) (at Guildhall, Cambridge), at 2.

#### CONGRESSES.

##### JULY 11 to 16.

ROYAL SANITARY INSTITUTE (at Hastings).  
 Monday, July 11, at 5.—Sir William Joynson-Hicks, Bart.: Inaugural Address.  
 Tuesday, July 12, at 10 A.M.—Meetings of Sections, and Conferences as follows:—Sanitary Science and Preventive Medicine, Representatives of Sanitary Authorities, Engineers and Surveyors, Health Visitors.  
 At 8 P.M.—Sir William H. Willcox: Chronic Rheumatism in its Relation to Industry (Lecture).  
 Wednesday, July 13, at 10 A.M.—Meetings of Sections, and Conferences as follows:—Sanitary Science and Preventive Medicine, Personal and Domestic Hygiene, Hygiene in Industry, Authorities of Health Resorts, Sanitary Inspectors.  
 Thursday, July 14, at 10 A.M.—Meetings of Sections, and Conferences as follows:—Engineering and Architecture, Maternity and Child Welfare, including School Hygiene, Veterinary Hygiene, Medical Officers of Health.  
 Friday, July 15, at 10 A.M.—Meetings of Sections, and Conferences as follows:—Engineering and Architecture, Maternity and Child Welfare, including School Hygiene, Hygiene of Food, Veterinary Hygiene.  
 At 8 P.M.—Film illustrating The Treatment and Training of Crippled Children, by Sir Henry Gauvain.  
 Saturday, July 16.—Excursions.

##### JULY 18 to 22.

ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION (at Royal College of Physicians and the University, Edinburgh).  
 July 19.—Dr. H. C. Marr: Dante and Rabelais: An Account of Two Medieval Physicians, with a Summary of their Philosophy.  
 July 20.—Dr. W. Hunter, Sir William Willcox, Sir Berkeley Moynihan, Dr. C. H. Bond, Dr. H. A. Cotton, Dr. T. C. Graves, Lieut.-Col. J. R. Lord, Dr. W. F. Menzies, Dr. A. Meyer, and Dr. D. C. Watson: Discussion on Chronic Sepsis as a Cause of Mental Disorder.  
 July 21.—Dr. Ivy Mackenzie, Dr. J. G. Greenfield, Dr. R. M. Marshall, Dr. G. Riddoch, and others: Discussion on Epidemic Encephalitis.  
 July 22.—Prof. G. M. Robertson and others: Discussion on Points in the Lunacy Commission (England) Report—(1) What legal facilities are required for treatment? (2) How far is judicial intervention necessary? (3) What safeguards against improper detention are inadequate?