

Science Museum Classified Lists of Historical Events

A VALUABLE new series of inexpensive pamphlets, under the general title of "Classified Lists of Historical Events", has been issued by the Science Museum, London, the first being on "Mechanical and Electrical Engineering, including Energy Conversion, Transmission and Storage; Atomic Energy; Pumping, Blowing and Compressing Machinery; Explosives and Ordnance", compiled by G. F. Westcott (pp. 40. London: H.M.S.O., 1955; 2s. net). The lists contain the dates of the principal scientific discoveries and their authors, from the earliest times to the present day. The references are naturally very much fuller for the past hundred years than for earlier ones. The compiler has had to contend with a most difficult problem of selection and classification, and it would be only too easy to disagree with the items chosen for mention or omission in a particular list. It is satisfactory that experimental and development work is not allowed to take entire precedence over analytical and theoretical work, and it is also good to see that, for the most part, the events noted are the successful applications rather than the suggestions that never came to commercial fruition. The compiler requests ideas for improvement, and one such suggestion is that two indexes should be added: a name index and a subject index, giving against each entry the dates on which the person or object is mentioned. This would be a great asset to the use of these lists; it would not be too formidable to compile, and would not require alteration in subsequent editions.

New Germanium Phototransistor

THE introduction by Mullard, Ltd., of a germanium phototransistor, type *OCPT1*, which is similar in form to a conventional low-power junction transistor, opens up new possibilities for compact, inexpensive, light-operated devices. The phototransistor is sufficiently sensitive to operate a relay of normal type directly. It is of the *p-n-p* alloy type, and for most applications the base is left floating so that only two connexions to the phototransistor are required. The dark current at 25° C. is less than 300 μ amp., while the light current, for a sensitive area of 7 sq. mm., can be of the order of 4 m.amp. The spectral response ranges from the visible into the infra-red region, with a peak at 1.55 μ and a cut-off at 2 μ . The phototransistor is not suitable for use above 40° C., and the optical cut-off frequency (that is, the maximum frequency of response when the light source is chopped or otherwise interrupted) is in the region of 3 kc./s. The overall size, including the glass envelope, is 15 mm., and its small size, together with its low voltage operation and other characteristics, make it particularly suitable for tape and punched-card reading in addition to most industrial control applications such as photoelectric counters, speed measurement, liquid-level controls, edge detection in paper-making and textiles, etc., and burglar alarms.

Oil in the Karroo Series, South Africa

COMMERCIAL oil developments in the Union of South Africa have often been mooted in the past, especially in the Karroo rocks; but it has hitherto proved to be misguided optimism. Memoir 45 of the Geological Survey (pp. 130. Pretoria: Department of Mines, 1953; 10s.), which has only recently been received, gives results of a comprehensive field-

examination of oil possibilities in this series. The conclusion is reached that results rule out the areas mapped as likely sources of petroleum. The main evidence of possible occurrence of oil in southern Karroo is the presence of 'pseudocoal', a solid product apparently derived from hydrocarbon distillation at a temperature not more than 400° C., found in joints and veins in sediments. But pseudocoal is as elusive a surface indication as crude oil is itself in the Union. When it is categorically stated that "it is hoped that the present description of the results obtained by the State will discourage future waste of private money and energy that could be diverted to more profitable uses", then it would appear that the swansong of Karroo oil has at long last been realized.

Latex of Apocynaceae

A COMPREHENSIVE study has been made by J. van Die of some aspects of latex-particle formation in species of the order Apocynaceae (*Ann. Bogorienses*, 2, 1, 1-214; 1955). The latex-coagulate, comprising all the particulate matter in a latex, has been analysed in some forty species of about twenty-five genera. Like latex-coagulates in general, these latices have been found to contain only a few types of compounds, these being closely related chemogenetically, such as the polyisoprene hydrocarbons (rubber and gutta), triterpenes and fatty acids, which all appear to be built up enzymically from acetate carbon via acetoacetate. Little is known about the origin of cinnamic acid, which is found occasionally in latex-coagulates. Since the particles may represent some 40-90 per cent of the constituents of dry latex, it is inferred that their formation is quantitatively one of the most important functions of the latex cell. The composition of the coagulate varies little from one part of a plant to another, and this is also true for the average degree of polymerization of the polyisoprene. Only *cis*-polyisoprene (rubber) has been found in the plants examined. The acetone-soluble substances of the latex-coagulates have been analysed by column chromatography. They consist in all cases of triterpenyl esters and triterpenols. Digitonin-precipitable compounds were never found, so that phytosterols form less than 1-2 per cent of the unsaponifiable substances present. From the analyses it is concluded that acetate carbon is the precursor of the particles. They are built up by the particle-forming centres into polyisoprene, triterpenols and fatty acids. In some cases, latex-particle compositions can serve as an indication of the systematic relationships of species and forms which are difficult to distinguish morphologically (for example, *Plumiera*), but, generally speaking, they cannot be used for tracing connexions between individual genera.

National Research Council, Canada: Members

THE following have been appointed new members of the National Research Council, Canada, for three years from April 1: Prof. I. McT. Cowan, professor and head of the Department of Zoology, University of British Columbia, Vancouver; Prof. J. H. L. Johnstone, head of the Department of Physics and dean of the Faculty of Graduate Studies, Dalhousie University, Halifax; Prof. R. B. Miller, professor of zoology in the University of Alberta, Edmonton; and Prof. B. W. Sargent, professor and head of the Department of Physics, Queen's University, Kingston. Two other members have been reappointed for a further term of three years: Prof. R. F. Farquhar-