

and development of centres and to consider applications for licences to set up such centres. The chairman and eight members are being appointed by the Minister, and four members each by the Milk Marketing Board, the National Farmers' Union, and collectively by the cattle breed societies.

### Therapeutic Trials Committee

VOL. 2, Nos. 3 and 4 of the *British Medical Bulletin* is devoted to certain drugs and their modes of action. Dr. F. H. K. Green, of the administrative staff of the Medical Research Council, describes the work of that Council's Therapeutic Trials Committee. In response to representations by the Association of Chemical Manufacturers, the Medical Research Council organized in 1931 a scheme for the clinical testing of new remedies, and the Therapeutic Trials Committee was set up as a disinterested intermediary between the manufacturers and the medical profession, some medical men having been reluctant to carry out tests at the request of commercial firms. It was agreed that foreign as well as British remedies should be tried out and also the products of academic as well as of commercial laboratories. Manufacturers desiring trials by the Medical Research Council must agree to certain conditions. The composition and nature of the substance to be tested must be fully revealed to the Council; manufacturers must not, without the Council's permission, arrange for other independent trials, and the Council is interested only in new substances which have not been therapeutically tested.

When a substance is to be tested, arrangements are made with clinicians of high standing to make tests, usually at more than one hospital, and the Council reserves the right to decide whether the results, favourable or not, shall be published or revealed only to the manufacturer. If a clinician's results are published, they are published under the clinician's name as a report to the Therapeutic Trials Committee. Since the scheme was organized in 1931, more than forty new substances have been tested clinically. Outstanding examples are the classical papers embodying the results of clinical trials of 'prontosil rubrum', which established the therapeutic possibilities in man of the first sulphonamide drug, which had been discovered in Germany; some of the earliest controlled clinical tests of sulphanilamide; trials of stilboestrol and other synthetic oestrogenic agents. During the War clinical tests of penicillin have been organized and are still going on, and British-made equivalents of important foreign pharmaceutical products are being tested. The control of infections of wounds and burns is also being studied. Ultimately, says Dr. Green, it is at the bedside that the clinical value of any new remedy is decided; but it is evident that the manufacturer, the medical man and the patient all stand to gain by the excellent work of the Therapeutic Trials Committee.

### The Ray Society

THE Ray Society was constituted at a meeting held on February 2, 1844. The report of the Council for the year 1943, which has just been circulated, states that it had been hoped to mark the centenary year by publishing a record of the Society's history; but the preparation of this had to be postponed until libraries are more accessible and times more favourable. It is regretted that it has not been possible to

issue any publications during the year, the lamented death of Prof. W. M. Tattersall having prevented the completion of his volume on the British Mysidacea, which, however, is now being prepared for printing by Mrs. Tattersall. A work by Dr. F. E. Zeuner on "The Pleistocene Period, its Chronology, Climate and Faunal Successions" is now in the hands of the printers. The Society has not hitherto published any works dealing primarily with geology, but the Council considers that the subject-matter of Dr. Zeuner's book is so intimately connected with questions relating to the origin and distribution of the existing fauna and flora that it will be of great interest to many members of the Society. Reference is made to the loss suffered by the Society in the death of Sir David Prain, who had rendered important and long-continued service as a member of Council, as treasurer (1932-37), as a vice-president and as a trustee for the Society's investments. The annual general meeting for the current year having been omitted with the consent of the members, the present officers and Council will continue in office.

### Sensitivity of the Human Eye

DR. SELIG HECHT, professor of biophysics at Columbia University, has recently made a tour of American colleges and universities, during which he has lectured to fifteen different Chapters of the Society of the Sigma Xi. His lecture gave some interesting data, arising from his own researches, on the sensitivity of the eye. Under the most favourable conditions, the smallest amount of light which the human eye can detect is 58-148 quanta, representing an energy of  $2-6 \times 10^{-10}$  ergs. This 58-148 quanta is the amount of light falling on the cornea, but only about 10 per cent (5-14 quanta) of this is actually absorbed by the retina; the rest is lost by corneal reflexion (4 per cent), absorption by ocular media (50 per cent) and passing on beyond the retina (36 per cent). In the particular experiments described, this 5-14 quanta were absorbed by an area of retina which contained about five hundred receptor cells (rods). It seems reasonable to suppose, therefore, that each quantum was absorbed by a separate receptor cell. Chemical studies have shown that one quantum of light changes (bleaches) one molecule of visual purple. The conclusion reached is that we can see a light when the energy from it is sufficient to bleach one molecule of visual purple in each of 5-14 separate receptor cells.

### Wood Preservatives and Termite Attacks

IN a recent pamphlet entitled "Effectiveness of Wood Preservatives in Preventing Attack by Termites" (U.S. Dept. of Agriculture. Circ. 683. By T. E. Snyder and J. Zetek. Washington: Gov. Printing Office. 10 cents) the opening paragraphs have a familiar ring to those acquainted with some of the more domestic troubles of early British rule in India and elsewhere in the tropics. "Wood has been classified," says the writer, "in the present global war as a critical structural material. Much of the wood to be utilized for the construction of the large number of necessary barracks and storage depots must be installed in the Tropics. Even in the event of a short War, past experience has shown that structures built to last for only short periods of service must be continued to be used long after the War is over. For the protection of wood from attack considerable research and investigation work

has been carried out for some years by several research organisations in the United States, e.g., Forest Products Laboratory of the U.S. Dept. of Agric.; Chemical Warfare Service of the War Dept.; California Termite Investigations Committee; the Western Union Telegraph Company and others." Various wood preservatives have been experimented with, and the writer of the pamphlet deals with them under three heads. Preservative oils, such as creosotes and combinations in petroleum or tar—especially adapted for penetration of timber to be used in contact with the ground. Water-soluble salts, such as zinc chloride, chromated zinc chloride and several proprietary preservatives, are for use as 'white' or clean pretreatments; they are ordinarily used above ground and the wood can be finished or painted after treatment. Certain toxic chemicals which are nearly colourless, dissolved in light petroleum oils, are adapted for the non-pressure immersion treatment of finished articles. The wood does not swell or shrink, dries rapidly, and is left clean, and after treatment it can be finished or painted. Many methods have now been devised for preserving wood, some simple non-pressure processes, others pressure processes requiring expensive equipment.

#### American Philosophical Society

THE American Philosophical Society Year Book 1942 covers the year January 1, 1942, to December 31, 1942, and, in addition to the minutes of the meetings and of the executive sessions, includes the reports of standing committees, the report of the Special Committee on Zoology in the Library of the Society, awards of prizes and a list of members. The report of the Committee on the Library refers to the study, in furtherance of the policy of selecting the history of American science and culture as one of the two or three major fields in which the Library should develop its holdings, by a committee of Dr. Conklin, Dr. Moore and the Librarian, of the possibility of building up a really great collection on the history of evolution. The report of the Committee on Research details the general principles adopted in regard to grants, requests for which have been fewer than previously because of the participation of many scientific men in research connected with the war effort. Increased demands are anticipated after the War, and the Committee has recommended accordingly that there should be no reduction in the amount assigned for 1943, but that any unexpended balances in the three funds for 1942 and 1943 should be carried over to be disposed of by the Committee after the War. Lists of grants from the Penrose Fund, the Johnson Fund and the Dorland Fund are included with brief reports from recipients of grants on their work. Obituary notices of members include some which will be of interest to British readers.

#### University of Leeds Library

THE report of the librarian of the University of Leeds for the session 1942-43 refers to the rapid growth of the Library as shown by the addition of 5,244 volumes during the year, 4,965 of which were added to the Brotherton Library, as well as 2,182 pamphlets and 8,051 periodicals (parts). The total holding of the Library is now 245,839 volumes and 11,007 pamphlets. In the Brotherton Library, 17,476 slips were added to the author catalogue and 2,800 cards to the subject catalogue during the year,

figures which are, in all, higher than any previously recorded. Although the inter-lending scheme was originally adopted by the Library Committee with reluctance, it is now generally agreed that the scheme has become of great national importance, and instances are quoted in the report of the lending of publications which proved of inestimable value. No further increase can be coped with in this respect if the staff continues to be depleted without efficient replacement. A thorough overhaul of the medical library has been commenced and extensive purchases made; but the problem of accommodation is more acute than ever. The use of the Holden Library also continues to increase, and when the rare books and series that have been removed from Leeds are returned there will be no more vacant shelf space. In spite of the fact that the rare books and manuscripts of the Brotherton Collection remain in places of safety away from the University, inquiries from outside have increased.

#### Repeaters in Submarine Cable Telephony

A PAPER read in London on May 11 before the Institution of Electrical Engineers by Mr. R. J. Halsay considers the problem of multi-channel carrier telephone working on submarine cables, to the permissible limits of attenuation, in relation to present-day practice, and examines the difficulties thereof. While it will be possible to obtain some small increase in the utilization efficiency of such cables by increasing the transmitted power, reduction of the permissible receiving level below the present limit of about -110 db. appears to be impracticable. Development has now reached a stage where the availability of submerged repeaters is essential to further substantial progress, and the design of such repeaters is engaging attention both in Great Britain and in the United States of America. Details of a repeater, laid by the British Post Office in the Irish Sea on June 24, 1943, are given in the paper, and it is believed this repeater is the first to be incorporated in a working cable system. It is suitable for depths down to about 200 fathoms, though at present it is laid in only 35 fathoms. By its use the number of circuits operable over the single cable has been increased from 24 to 48. The further development of repeaters for shallow- and deep-water operation is discussed, the ultimate objective being the provision of considerable numbers of inter-continental telephone circuits over submarine cables.

#### Institute of Industrial Administration

THE report of the October 1943 conference of the Institute of Industrial Administration has now been issued under the title "Management in Action". It includes papers by W. C. Puckey on "Organising for Production", by E. F. L. Breech on "The Personnel Function", by C. E. Holmstrom on "Marketing the Product", and by A. L. C. Chalk on "Financial Administration", together with Sir Cecil Weir's address "Industry After the War" and the presidential address by Viscount Davidson, and also reports of the discussions. The report emphasizes that the idea underlying all the papers is that management must be, first and last, an instrument of service to the community, and indicates that the Institute is facing the problem of the integration of industry and society as one of the first we must solve if we are to build a post-war social and industrial structure which gives full play to individuality and human values.