

Minister for all it has done for the teaching of science. Many learned societies and kindred bodies were represented at the dinner, as were also teachers of science from abroad.

For the afternoon visits, several hitherto unopened doors admitted members of the Association to see the applications of science to many branches of human activity. Through the courtesy of the trustees of the British Museum, the Research Laboratory showed how antiquities are recovered, restored and reproduced. Scotland Yard showed conclusively that crime does not pay and has little chance of being undetected, while the demonstration of the evidence used in some recent cases were most convincing and spectacular.

Almost a thousand members thronged the Royal College of Science daily to see the exhibitions and to attend the lectures, so that a wealth of new knowledge has now gone back to the schools to bear fruit in the more highly stimulating teaching which will be given in the public, grammar and modern schools of Great Britain.

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## AMERICAN PHILOSOPHICAL SOCIETY

THE year book for 1949 of the American Philosophical Society\* includes, besides the reports of standing committees, list of members and auditor's report, several biographical memoirs, among which may be noted those on Dr. J. R. Angell, Dr. J. Hjort and Dr. F. B. Jewett. The library committee reports considerable progress in acquisitions, particularly in political and scientific pamphlets of the eighteenth century, in special collections of manuscripts and in the Indian collection and archaeology. The interlibrary loan service again increased, as did the work of the microfilm laboratory. The report from the committee on publications records that, with the exception of a few libraries from which no reply was received, back publications were shipped to all libraries on the foreign exchange list. A list of publications during the year is included. The report of the committee on research sets forth the principles adopted in making grants, and lists the ninety-five grants, totalling 76,596 dollars, awarded during 1949 from the Penrose Fund. Seven grants, totalling 22,000 dollars, were made from the Johnson Fund and one of 5,000 dollars from the Daland Fund.

Among the reports from recipients of grants, that from W. J. Luyten records satisfactory progress in the measurements of the proper motions of stars in the southern hemisphere, north of declination  $-40^\circ$ . H. H. Nininger's study of the oxidation products around Barringer crater has led him to offer a satisfactory explanation of the origin of metal-centre pellets and oxide droplets, and investigations of the structure and composition of Canyon Diablo meteorites strongly indicate that the outlying deposits have had a different origin from those which lie on or near the crater rim. V. F. Hess reports two new methods of determining the absolute intensity of cosmic rays in the atmosphere and the residual ionization in ionization chambers. Studies on snow melt are reported by J. E. Church, and the preparation and

reactions of oxygen fluoride are described by L. R. Brantley.

In the geological and biological sciences H. N. Andrews, jun., reports on studies of American coal balls in which a new species of *Botryopteris* has thrown light on the evolution of the frond. H. S. Cotton has studied a lake deposit in the Bradshaw mountains of central Arizona containing remains of Miocene or early Pliocene mammals. D. P. Costello's studies on the incidence of heteroploidy in salamander larvae and on the effects of low temperature on maturation and cleavage in fertilized eggs of *Chaetopterus* have involved four main lines of inquiry. One has indicated that *Triturus rivularis* is not well adapted to cytological studies by the methods used, and papers on two other lines of study are in preparation. J. F. Crow's study of the susceptibility to ether of *Drosophila virilis* and its near relatives, *D. americana* and *D. texana*, suggest that resistance is an expression of a general level of vigour which is high in the parents but is less in hybrid combinations because the mutually adapted chromosome sets of the parents are broken up in the recombinants.

Field studies of the genus *Sedum* in the Sierra Madre Oriental of eastern Mexico are reported by R. T. Clausen and have led to the main conclusion that the most closely related species do not occur at the same localities but in adjacent or remote regions. H. J. Dittmer reports on mycorrhizal relationships of subterranean plant parts with soil fungi, and J. Ewan on field studies on Rocky Mountain vegetation, while further ecological studies on stratification of the Arthropoda have been carried out by W. W. Dowdy. G. B. Heiser, jun., reports his studies on biosystematics of the annual sunflowers of eastern Texas and on chromosome numbers in the perennial sunflowers; and M. J. D. White is studying cytological material of various species of the grasshopper genera, *Trimerotropis*, *Circotetix* and *Aerochareutes*, collected in 1949 in west Texas, New Mexico, Arizona, Nevada, Oregon, Idaho, Montana, Wyoming and Colorado. W. Köhler reports on an investigation of direct currents which spread in the visual cortex under conditions of pattern vision, and J. L. Irvin and Elinor M. Irvin on a study of the interaction of 4-aminoquinolines and 9-aminoacridines with nucleoproteins. The antimalarial compounds quinaerine, 7-chloro-4-(1'-methyl-4'-diethylaminobutylamino)quinoline, and 6-chloro-9-(1'-methyl-8'-diethylamino-octylamino)-2-methoxyacridine interact with the nucleoprotein more strongly than with a less highly polymerized preparation of pentosenucleic acid from yeast, but the side chains of the last compound and of quinaerine do not appear to be essential for the interaction.

Among numerous researches in the field of the humanities on which reports have been received may be mentioned those of E. N. Harvey on the history of luminescence; I. B. Cohen's investigation of the work of Benjamin Franklin in relation to the development of physics and general scientific thinking and to the development of science in America; L. S. Cressman's field study of the archaeology of the Klamath Indian culture of Oregon and its position in the northern Great Basin culture; H. O'Neill Hencken's investigation of the prehistoric archaeology of the Tipasa area in Algeria; the work of H. L. Movius, jun., on Upper Palaeolithic material in France; and W. A. Ritchie's archaeological investigations in search of the earlier stages of the Curasco culture in southern Ontario.

\* American Philosophical Society. Year Book 1949, January 1, 1949-December 31, 1949. Pp. 467. (Philadelphia: American Philosophical Society, 1950.)