

electronic work, there was also displayed in another room the success so far achieved in attempting to answer the simply stated question: How can one ensure free movement of mercury drops in sealed glass tubes such as are used in rocker contacts on electrical relays, etc., so as to avoid faulty make-and-break?

Studies on the gas permeability of thermocouple sheaths, performance specifications for electric ovens, fluid flow of liquids and gases, and the use of pneumatic (air-jet) gauges for observations on the curvature and thickness of lenses, provided further evidence of the wide scope of the Association's activities.

There were many indications of the flexibility of the broad divisional organization of the laboratories, supported by excellent drawing-office and workshop facilities. One learned that all divisions contribute to the information and liaison services, partly by providing background for the Information Department in dealing with technical inquiries, and partly by visits to member firms to study works procedures, to discuss immediate practical problems, and to seek advice about investigations being carried out by the Association. It is noteworthy that heads of divisions and senior staff generally are expected to spend some 20 per cent of their time in such visiting.

It would seem that those member firms which enter into active membership of the British Scientific Instrument Research Association in all its aspects may benefit exceedingly.

ALLEGHENY OBSERVATORY, UNIVERSITY OF PITTSBURG

A SHORT account of the origin and development of the Allegheny Observatory of the University of Pittsburg (pp. 12; from the University) has been compiled by Theodora M. Lauterbach, which makes very interesting reading. The appearance of Donati's Comet in 1859 aroused a new interest in astronomy, and a group of Pittsburg business men soon organized the 'Allegheny Telescope Association' and made plans for the purchase of a large telescope. This 13-in. refractor was made by Fitz, of New York, and was installed in the new building complete with dome, on a hill in the old city of Allegheny which later became part of Pittsburg. In 1867 the Association presented the telescope and building to the Western University of Pennsylvania—now the University of Pittsburg—and in the same year Samuel Pierpont Langley went to Pittsburg as professor of astronomy and director of Allegheny Observatory. Under him, and through financial assistance from William Thaw, a Pittsburg industrial leader, the equipment in the Observatory was greatly improved.

John A. Brashear, a former mill-worker, who had shown a wonderful aptitude for making lenses, and who was encouraged in this work by Langley, played a prominent part in the development of the Observatory. When James E. Keeler, who succeeded Langley in 1891, resigned in 1898 to take up the directorship of Lick Observatory, Brashear became temporary acting director until the following year, when F. L. O. Wadsworth took charge. During the latter's period as director, most of his time was devoted to supervising the construction of the buildings and instruments for the new Observatory, and with Brashear's assistance

their efforts were rewarded by the laying of the foundation stone in October 1900. In 1912 the new Allegheny Observatory was dedicated and presented to the University of Pittsburg, and Dr. Frank Schlesinger was appointed director.

The account describes the excellent work of Schlesinger and the succeeding directors—Curtis, Jordan and others—and, as the author says at the end of this interesting brochure, "The Observatory's location serves well for uninterrupted research, and it is through research that Allegheny Observatory has helped to make the University of Pittsburg known throughout the world". The publication contains thirteen photographs of directors, instruments, and portions of the Observatory buildings.

NUFFIELD FOUNDATION ANNUAL REPORT

THE seventh report of the Nuffield Foundation covers the year ending March 31, 1952*, and is the third in the current period of the present programme, during which allocations totalling £620,311 have been made for fundamental research in the United Kingdom; of this, £189,261 is for biological and £189,950 for sociological studies, and £110,000 is reserved for research overseas in the Commonwealth, of which £40,190 has been allocated in Australia, £12,712 in New Zealand and £18,500 in South Africa. The cost of existing schemes to the end of the quinquennium is estimated at the £498,892 already set aside, while £112,921 has been devoted during the current quinquennium to the continuance and extension of projects in medicine, science and the care of old people begun in the first programme. From the Oliver Bird Fund, £114,000 has been used or reserved for research in rheumatism.

By thus reserving in advance from current income £1,504,849 of £1,596,042 allocated in grants for the quinquennium, the Foundation seeks to assure itself of future freedom in the event of any fluctuations either in income or objectives and opportunities. For the advancement of research in the United Kingdom the Foundation has been concerned chiefly to stimulate studies in biology and sociology and, outside these two fields, any other research of real importance or promise which lacks the funds required for its full development. For financing projects of this latter type, the Foundation has set aside a sum which is termed the 'free fund', the use of which is essentially unplanned, and from this fund grants totalling £241,000 have been allocated during the past year. The greater part of this is to meet the Foundation's commitment to share with the Department of Scientific and Industrial Research the cost of the steerable radio telescope at the Jodrell Bank Experimental Station of the University of Manchester. This grant will avert the postponement of the project because sufficient public funds could not be made available. Grants from the same fund have been made to the University of Cambridge towards the cost of sinking and lining a borehole at or near the geophysical laboratories for experiments and measurements deep into the earth's crust, and towards the construction, during the next five years, of a new and improved high-speed electronic calculating

* Nuffield Foundation. Report for the Year ending 31 March 1952. Pp. 162. (London: Nuffield Foundation, 1952.)