The circulation of the Institute's two journals, the *Journal of Scientific Instruments* and the *British Journal of Applied Physics*, increased during the year, and there was a further improvement in the advertisement revenue. The last three monthly issues of the 1953 volume of the *Journal of Scientific Instruments* were enlarged in order to reduce the delay in publication of original contributions, and provision has also been made for similar enlargement of the *British Journal of Applied Physics* during 1954 both to reduce delay in publication and to extend the scope of the *Journal*. The twelve issues of the Institute's *Bulletin* (issued to members only) included summaries of some of the meetings of the Education Group, the Board's reports on "Problems concerning the Education of Physicists" (afterwards re-issued as a pamphlet) and on "Summary of Salaries and Enrolments", in addition to a number of important articles based mainly on lectures delivered at meetings of the Institute. In the "Physics in Industry" series, a new volume entitled "Modern Mass Spectrometry", by Dr. G. P. Barnard, was published during the year, and the first four booklets in the new "Monographs for Students" series were issued.

The second convention of the Institute, held in Bournemouth during May 27-30, was attended by approximately 450 members and their ladies and guests; its agenda included the thirty-third annual general meeting of the Institute, a discussion on the education of physicists and twelve group meetings, at which twenty-three papers were read. Lectures were given by Sir John Cockcroft on recent advances in nuclear physics¹ and by Dr. A. C. Menzies on recent developments in applied optics², and Canon C. E. Raven gave an evening address on the impact of physics on science and religion³.

The Institute has seven branches in Great Britain, an Indian branch under the chairmanship of Sir C. V. Raman and an autonomous Australian branch with divisions in different States. In addition to the branches in Great Britain, there are seven specialist subject groups—electronics, electron microscopy, industrial radiology, industrial spectroscopy, stress analysis, X-ray analysis and education—which arrange their own programmes of scientific meetings and conferences. Seven specialist conferences were held by the various branches and groups, including a two-day meeting of the Industrial Radiology Group jointly with the Hospital Physicists' Association, and a conference of the X-Ray Analysis Group on film methods and microdensitometry and on identification by X-ray analysis. As in previous years, the Institute collaborated with the University of Bristol in a summer school and conference, held at Bristol during July 13-16, on the theory of the plastic deformation of metals, and it was also associated with a conference organized by the Clarendon Laboratory, Oxford, and held there during July 18-23, on the subject of ionization phenomena in discharges. The proceedings of the conference on "Static Electrification" which was held by the Institute at Bedford College, London, during March 25-27, have been separately published⁴.

The Institute has been represented on many joint committees and bodies, including committees of the British Standards Institution, the Royal Society and the Parliamentary and Scientific Committee, and further details are given in the annual report. The Faraday Society, the Royal Meteorological Society and the British Institute of Radiology, which together with the Physical Society form the four participating

societies of the Institute, have given notice of withdrawal from participation in accordance with the provisions existing in the constitution. The Physical Society is in a different position from the other three societies since its members are physicists, and will continue to have two seats on the Board of the Institute. In order to encourage members to support *Science Abstracts* and to enable them to continue to enjoy the privilege of purchasing copies of both *Physics Abstracts* and *Electrical Engineering Abstracts* at reduced rates in spite of increased costs of production, the Board has agreed to make a modest annual basic payment to the management committee of the abstracts from its publications account, and the Institute in return will be represented on the management committee.

This year the thirty-fourth annual general meeting of the Institute was held at the Institute's house in London on May 18, when the following were elected to take office on October 1: *President*, Sir John Cockcroft; *Vice-President*, Mr. G. R. Noakes; *Honorary Treasurer*, Dr. S. Whitehead; *Honorary Secretary*, Dr. B. P. Dudding; *New Ordinary Members of the Board*, Dr. K. A. G. Mendelssohn and Mr. H. P. Rooksby. Prof. W. E. Curtis and Dr. C. Sykes (past-presidents), Mr. O. W. Humphreys, Dr. T. L. Ibbs and Prof. F. A. Vick (vice-presidents), Dr. H. Barrell, Dr. N. A. de Bruyne, Dr. P. H. S. Henry, Mr. A. T. Pickles, Dr. W. H. Taylor and Mr. R. G. Wood continue to serve on the Board.

¹ *Brit. J. App. Phys.*, **4**, 289 (1953).

² *J. Sci. Instr.*, **30**, 441 (1953).

³ *Bull. Inst. Phys.*, No. 43, 75 (1953).

⁴ *Brit. J. App. Phys.*, Supp. No. 2 (1953).

FORESTRY IN BRITISH HONDURAS ANNUAL REPORT FOR 1952

THE annual report for 1952 of the Forest Department of British Honduras*, whence came the mahogany so well known in Britain during the nineteenth century, states that the Department reached thirty years of age in April 1952. The report furnishes abundant evidence of the vacillation of the authorities concerned as to the value of the Department and of the forests to the Colony. "Because of staff shortages and changes," says the report, "it was impossible to issue Forest Department Annual Reports for the years 1950 and 1951."

The Department's difficulties are mainly due to staff shortages. The post of conservator was vacant throughout the year, and two officers acted in the post. There were apparently three gazetted officers only on the staff at the end of 1952 (one on leave and one newly joined). It is scarcely surprising to read that the forest boundaries are overgrown and require reclearing and that the forest estate is at present inadequate and is also insufficiently secure: during 1952 the lease of large areas of land in the forest reserves to the Colonial Development Corporation for agricultural purposes was being negotiated. If this is the case, the legal position of the so-called forest reserves is obviously very unstable.

Finally, as can be well understood, no working plans are in force. Yet at its commencement the Department started under the most promising aus-

* British Honduras. Forest Department. Annual Report for 1952 (with Statistics in Standard Form for 1950 and 1951). Pp. 42. (British Honduras: Government Printer, 1953.)

pices: it was tentatively created for two years, and three technically trained forest officers were appointed. The fourth annual report of the then young Department (it had passed the two-year ordeal successfully) was issued in 1926 and was reviewed in *Nature* (119, 256; 1927). The following extract from this review merits reproducing: "... it is easy to see that the young department has already made good. So far, the work has been mainly devoted to assisting the several lumbering companies at work in the forests on government leases. In some respects the operations are proceeding on lines similar to the working of the Burmese forests by the British forest officers of earlier days. Obviously, however, the work of exploring the government forests, collecting topographical and other details, has been commenced (the superior staff now amounting to six), and it is hoped to be able to carry out the exploration of the practically unknown territory of the Western Highlands. . . . At the time of writing, a reliable base-line has been established between Vaca and the Rio Grande and a good general idea of the forests of this region obtained". That was twenty-seven years ago. The extracts from the present report already given indicate the history of the Forest Department since then and the ignorance on the part of the authorities of the value of the forest estate to the people and the Colony itself.

E. P. STEBBING

CAMBRIDGE UNIVERSITY EDUCATIONAL FILM COUNCIL

THE seventh annual report of the Cambridge University Educational Film Council states that Prof. J. F. Baker has succeeded Sir Lawrence Bragg as president and that two new vice-presidents, Mr. S. C. Roberts, master of Pembroke College, and Prof. J. A. Steers, head of the Department of Geography, have been appointed. With the use of a Merlin Gerin camera in the Department of Engineering, a number of 16-mm. ciné pictures at 4,000 frames per second of tensile specimens being broken have been obtained. Some medium-speed pictures, at 100 frames per second, of the operation of a new testing machine have been taken; cinematography is also being used in connexion with the flow of gases in internal combustion engines. Members of the Departments of Anatomy and of Physiology have collaborated in the making of a film, "The Behaviour of Dissociated Sponge Cells". The use of films in teaching has been maintained especially in the University Faculties and Departments of Anatomy, Archaeology and Anthropology, Economics and Politics, Engineering, Geography, Slavonic Studies and Zoology. In the Department of Education lectures on the use of visual aids continue as a regular part of the course. In a continuation of the film sessions for students of history, the films "Peter the Great", "Kameradschaft", "Day of Wrath", "Ivan the Terrible", "Journey into History", "Images Gothiques" and "Ange de la Paix" have been shown. The purchase of some 16-mm. editing apparatus has improved film-making facilities in the University. There remains, however, the need for a central cutting room, and an arrangement by which films may be processed within the University.

A proposal discussed between the Film Council and a member of the B.B.C. Television Service may greatly assist the making of films in the University.

Film-making facilities would be provided, and also a copy of any film used, in return for the provision of suitable science subjects for television programmes. The Film Council again urges that all the films made in Cambridge by the late Sir Joseph Barcroft should be traced and catalogued, and, where necessary, edited, copied and preserved. The Council has also recommended further Cambridge films for inclusion in the Scientific Film Library. Projection arrangements are much as they were a year ago, and there is still a lack of continuous 35-mm. projection facilities in the University.

EVIDENCE OF FIRE IN SOUTH AFRICAN CAVE DEPOSITS

DR. KENNETH P. OAKLEY

British Museum (Natural History)

IN 1947 great interest was aroused by Prof. Raymond Dart's announcement that evidence had been found at the Limeworks in the Makapansgat Valley, Central Transvaal, that *Australopithecus* was a user of fire. He based this conclusion on Dr. V. L. Bosazza's identification of fragments of a brown glass-like substance in the basal grey beds there which had yielded remains of this hominid. The vitreous material was regarded as having resulted from the action of fire in the presence of lime, phosphates and ash¹.

Some anthropologists have doubted these conclusions. There is no evidence that *Australopithecus* was a tool-maker, and on general grounds it appears most unlikely that the use of fire preceded the manufacture of tools. Moreover, three other possible explanations of the vitreous material in the Makapan deposit might be advanced: although siliceous and vitreous in appearance, it may have been produced by some chemical action not requiring a high temperature; even if the material is true glass, it may have been due to fires ignited by men living contemporaneously with *Australopithecus*; or it may have been produced by fires ignited at the mouth of the cave by some natural conflagration.

The second possibility certainly has to be taken more seriously now that there is evidence indicating that tool-making hominids (that is, 'men' in common parlance) were living contemporaneously with *Australopithecines* in South Africa². The idea that the vitreous material possibly originated through a natural conflagration might seem more far-fetched; but quite recently evidence has come from the Cave of Hearths, farther up the Makapansgat Valley, which shows that this, too, is at least a plausible hypothesis.

Through the courtesy of Prof. C. van Riet Lowe, I had an opportunity in March 1953 of visiting the Makapan sites in company with him and with Prof. and Mrs. Dart. At the Cave of Hearths, I was much impressed by the thickness (more than 4 ft.) of what appeared to be cindery ash forming the so-called basal hearth in the Upper Acheulean zone of the cultural sequence. This 'hearth' is generally regarded as the oldest proved evidence of the use of fire by Stone Age man in Africa. I was, however, puzzled by two features of the ash: (1) it appeared to contain no fragments of charcoal or burnt bone; (2) it rested directly on a clean surface of stalagmitic drip-