study of the conflict for internal power in large-scale organizations.

In a joint contribution, Dr. Alastair Heron and Dr. P. H. Venables (Medical Research Council Unit for Research in Occupational Adaptation) described an investigation of the relation between psychological handicap and occupational adjustment. In this study, the third of a series, relatively objective techniques have been used both in the assessment of psychological handicap and in the evaluation of job-satisfaction and value to the employer. A particular feature of this inquiry was the use of various techniques within the same interview, to indicate the degree of consistency of the data obtained. Mr. Gussmann spoke of the Acton Society Trust's interest in large-scale organizations; this comes under the headings of the internal administrative problems, problems of public control, and problems of the effect on the individual in the organization. From an anthropological background, he is studying five gas-works, of very different sizes, in one particular area, to find out the effects of size of the works. Preliminary results suggest that systematic differences in indices, such as absenteeism, may be due not directly to sheer size but to 'black spots' being harder to control in a larger organization; or to apparently identical jobs in two organizations being inherently different because one organization is big and the other small.

Mr. R. N. Spann (Department of Government and Administration, University of Manchester) discussed the place of the case-study in research and teaching. Case-studies, he pointed out, are so various that the term is of little meaning; they differ enormously in detail of reporting, and whether the description is purely that of a contemporary observer or includes extensive interpretation. By contrast with the abundance of material about how politicians behave, there is a great lack of material about business administration. The most valuable narratives are by people who do not rationalize too much; some accounts of organizations, blinkered by adherence to 'principles of organization', become less and less revealing.

At the final session, Mr. R. G. Stansfield, who acted as chairman during the discussion sessions, summed up the conference. The people for such a conference could not have been found even five years ago; and another sign of the growth and integration of the social sciences in the study of what goes on in industry was the standard of the discussion and constructiveness of the criticism. Thanks were due to Dr. T. E. Chester, of the Acton Society Trust, and his staff for organizing the conference.

In retrospect, the conference seems to have met a real need in bringing together people who did not know of each other's work or—in some cases—each other's existence. It was suggested that social scientists spend much less time than do physical scientists in correspondence between research workers for the exchange of news and views; and those present expressed the future intention of mending their ways. Another live subject linked the scientific method and the problem of recording the results of research. It appeared to emerge that much of the controversy among social scientists about the scientific method (usually in terms of the believed practices of the physical sciences) is misconceived in terms of quantitative and other techniques; the real distinction is between scholars' attitudes of mind, scientific, philosophical, historical and so on. It was

suggested that the essential element in the scientific attitude is a distinctive sense of responsibility; including responsibility for seeking out all the relevant data, and for striving to take into consideration all possible alternative interpretations and theories. Especially, the researcher is responsible, in reporting his work, for ensuring that all necessary key details of situation, methods and observations are put on record to enable future workers to compare their results with his and to evaluate his conclusions. In this connexion it was recognized that in accepting this responsibility, the research worker must depend on an equally responsible attitude in the editors of scientific journals.

The interview is the research tool which, in one form or another, is used in all the researches which were described; but while some users appear to take this tool more or less for granted, others are intensely concerned with its techniques and conditions, and it would seem that a whole conference might usefully be devoted to considering knowledge about the interview and its use in the different disciplines of study. Last, but not least, was the sense which kept breaking into the discussion, that the studies which were described, of worker or management behaviour, or of industrial relations, were but stages towards the goal of study of the firm, of the organization, as a going entity; but this study remains for the future to grasp.

R. G. STANSFIELD

TEACHING OF MECHANICS IN BRITISH UNIVERSITIES

DURING September a series of informal discussions was held at the Department of Engineering of the University of Cambridge, under the auspices of Prof. J. F. Baker, to consider "the teaching of mechanics, vibrations and control". Representatives were invited from the departments of mechanical engineering of all universities and colleges of university standing in the United Kingdom; in very many cases the head of the department himself elected to attend, so that the fifty or so members of the symposium, as it was called, included a remarkably wide range of engineering teaching experience at this level. A few visitors from large industrial concerns were also invited, to represent the user's point of view.

The nine discussion-periods of an hour and a half each extended from "How much mechanics ought every engineer to know?", through the scope of courses at various levels, to the consideration of teaching techniques, laboratory work and the approach abroad. Each discussion was introduced by a speaker who suggested, as provocatively as he might wish, particular points on which he believed an exchange of views might be valuable. Prof. W. J. Duncan, for example, in opening the discussion of advanced teaching techniques, put in a plea for wider use of the concept of mechanical admittance; and Prof. W. A. Tuplin, of the postgraduate school of applied mechanics in the University of Sheffield, in introducing the subject of advanced and postgraduate courses, wittily described some experiences at this school.

A meeting such as this, which would be a mere commonplace in the United States, is something of an innovation in Britain, and it was most encouraging

to find just the same willingness here to admit that there is room for experiment and improvement in many directions. This attitude is particularly important in the branch of engineering under discussion, which has been taught longer than any other and is thus the most likely to lead its teachers to become static and unimaginative or, even worse, complacent about the present methods and courses.

The visiting members of the symposium lived and dined together in Pembroke College, and more than one formal social gathering was arranged during the three days.

It is hoped that the lead given by the organization of this symposium may persuade those in other fields to initiate similar informal meetings, for it was the universal opinion of those attending that the discussions and the personal contacts were both enjoyable and valuable. R. H. MACMILLAN

FOREST DEPARTMENT OF TRINIDAD AND TOBAGO

REPORT FOR 1951

THERE has been a steady progress in forest conservancy in Trinidad and Tobago, as is well revealed in the annual report for the year 1951*. The mora forests covering a large area, to which constant allusion was made in reports of a score of years or so ago, are now under conservative exploitation with plans of working coming into force. Reservation of forests is approaching completion; the total area of Crown forests is said to be 617,921 acres, and this is about 50 per cent of the area of the Colony, which has an average length of 50 miles, breadth of 37 miles and a total area of 1,862 square miles. The figures for Tobago are 26 miles by 7½ miles at the widest part and a total area of 116 square miles.

A regulation of the saw-mills in the Colony and the introduction of better equipment to reduce the great waste in conversion were undertaken during the year. Interesting silvicultural work in connexion with natural regeneration is being undertaken, and an extension of the annual teak-planting area has been sanctioned. The areas under the Forest Department are divided into the Northern and the Southern Divisions. In the latter is the largest forest in the region, the 'Trinity Hills Forest', now to be named 'Victoria-Mayaro Reserve', of 129,977 acres. The assistant conservator of forests is in charge of the division, assisted by a forest supervision ranger and forest guards. There is an excellent road system in Trinidad and a ten-year programme for feeder forest roads has been sanctioned, some of these latter to connect with some of the fine new roads of the oil company. Housing for the staff is making progress, and some excellent examples of wooden cottages for forest guards have attracted considerable attention. Climbing plants are giving trouble in the teak plantations, an inevitable pest in tropical forests. Shifting cultivation, with its resultant erosion, and the problem of the squatters in government forests are far from settled, but attempts were being made

to settle them in village gardens and also to develop a teak *toungya* scheme. The research branch was renewed in January 1951.

Private forestry is not new in Trinidad, for mahogany plantations were made during 1905-6 by private owners in the hills of the Northern Range, and they now contain trees of timber size with prolific regeneration beneath, which has ousted all other growth. The protection of local fauna has made considerable progress, and there is a small Game Department under the conservator of forests, with wardens. In addition, all forest officers are *ex officio* game wardens, and there are fifty-three honorary game wardens selected from the keen hunters, naturalists and estate owners in the Colony. As is common with some native populations, it is very difficult to enforce a close season, and in this connexion some amendments to the former laws are to be introduced. The revenue from the Department is increasing from sums received from game licences and so forth, and grants from these funds are to be made to the Zoological Society, when this has been incorporated, and to finance a zoo at the Botanical Gardens.

NUFFIELD FOUNDATION

REPORT FOR THE YEAR 1952-53

THE eighth report of the Nuffield Foundation covers the year ending March 31, 1953*, the fourth of the Foundation's second quinquennial programme, in which allocations against the year's income reached the record total of £713,696. Of this, £319,296 was for research in the United Kingdom—£155,686 for biological research, £54,460 for sociological studies and £109,150 for other scientific work. £26,400 was allocated for research in the British Commonwealth overseas and £36,000 for fellowships and scholarships, and £250,000 for the next five years was promised to the National Corporation for Old People. Under the programme for research on ageing, £25,000 was reserved for a Nuffield gerontological research fellowship, while from the Oliver Bird Fund for rheumatism grants amounting to £24,760 are to be met from the year's income and £18,626 from future income.

Three new grants from the Foundation's uncommitted resources or 'Free Fund' are all in the field of physics: these are to the Department of Mineralogy and Petrology and the Cavendish Laboratory, Cambridge, for a joint study of phase-relations and atomic structure of the feldspar group of minerals; to the Department of Physics of the Royal Cancer Hospital, University of London, for work on the application of physics to diagnostic problems; and a further £20,000 over five years for the appointment of further Nuffield Fellows to Lord Cherwell's low-temperature research group at the Clarendon Laboratory, Oxford. The Foundation has also purchased for £50,000 some special material for research, and £30,000 was allocated to complete the £200,000 promised for the radio-telescope at the University of Manchester.

Of the twenty-six new grants for biological research, seven were for immunological research and six for biophysical and biochemical research, three being in

* Forest Department, Trinidad and Tobago. Annual Administrative Report of the Conservator of Forests for the Year 1951. Pp. 28. (Trinidad, B.W.I.: Govt. Printing Office, 1952.) 48 cents.

* Nuffield Foundation: Report for the Year ended 31 March 1953 (Eighth Report). Pp. 109. (London: Nuffield Foundation, 1953.)