

the outbreak of the present War, much research had been done by the Industrial Health Research Board, but the results were only partially utilized.

Research in industrial health is not merely making an inquiry after something untoward has happened; yet this conception of research is found at times even in government departments. Research calls for much time and patient work, and should be done by people trained in its techniques. Then its initial application should be taken as seriously as the initial research: the attitude of mind of the research worker who prides himself on indifference to the application is out of place in these health problems. Finally, the results should be expressed not only for the research worker but also in a form that can be understood by people who are not specialists. In 1939, the lamentable lack of knowledge on the subject of industrial health had the same results as in 1914, though with less excuse. Medical men had little if any knowledge of the industrial conditions they were expected to understand. This should not be attributed to them as a fault, but as throwing into relief a defect in their training. We know that the total working environment, the social environment and the personalities of the people in authority, quite apart from home conditions, all play a part in determining the sickness absence of workers. It is therefore a definite move in the right direction that the trustees of the Nuffield Foundation have offered the Universities of Durham, Glasgow and Manchester, centres of large industrial populations, the financial means for the furtherance of teaching and research. It is also noteworthy that co-operation is suggested between the new departments and other departments such as science and engineering, the relevant Ministries and trades union officials, and the Industrial Health Research Board. Nor should research be limited to those technically called workers, that is, workers at the bench, but should include all those engaged in work of any kind. The grants, which are to be spread over a period of ten years, have been allocated as follows: £70,000 to the University of Manchester for a chair of industrial health; and £40,000 each to the Universities of Durham and Glasgow, at the former for the establishment of a new department under a university reader, and at the latter for a Sub-Department of Industrial Health in the present Department of Social Medicine.

Joint Council of Professional Scientists

THE Joint Council of Professional Scientists was established for the period of the national emergency, to voice the collective opinion of qualified men of science. It was originally a joint committee of representatives of the Royal Institute of Chemistry and of the Institute of Physics, which was set up for the purpose of fostering co-ordinated action in matters of common interest, and was developed by the co-option of a botanist, a geologist, a mathematician and a zoologist, there being no corresponding professional bodies to represent those branches of science. One of the representatives of the Royal Institute of Chemistry is a metallurgist of similar standing. The Council has now been working for two years. Among matters which have received, or are receiving, its attention are the proposal to urge the Government to establish a central scientific and technical board; the Ministry of Labour's announcement regarding the minimum number of hours to be worked in laboratories and factories; the influence, on professional standards, of war-time

university regulations governing the award of degrees; the conditions of service of professional men of science in the Colonial service; and the national policy regarding research and development work.

In June 1943 the Council was responsible for the issue of a statement on "The Place of Scientists in the Community". The views expressed were generally supported and given wide publicity, in the lay and technical Press, not only in Great Britain but also abroad. The Council has specially concerned itself with the resettlement of professionally qualified men of science after the War and with the various proposals which have been put forward for the proper utilization of their services. At the invitation of the Ministry of Labour and National Service, representatives of the Council gave evidence before the Ministry's Committees on "Higher Appointments" and on "The Further Education and Training of Demobilized Persons". Through the Joint Council, also, the Royal Institute of Chemistry and the Institute of Physics offered their continued co-operation with the Ministry in the resettlement period. The Council is also prepared to assist in the general resettlement of all who earn their living through their knowledge of any branch of natural science. Whether the Joint Council will continue in being when the national emergency no longer exists must depend on prevailing circumstances, and how far there may still be a need for professionally qualified men of science as such to voice their collective opinion on matters which concern the community in general, but especially themselves.

Fuel and Power Advisory Council

A Fuel and Power Advisory Council has been constituted as follows: Sir Ernest Simon (*chairman*), Mr. Geoffrey Crowther, Sir John Greenly, Dr. E. S. Grumell, Sir Harold Hartley, Prof. C. N. Hinshelwood, Prof. John Jewkes, Viscount Ridley, Sir Robert Robinson, Mr. Geoffrey Summers and Mr. R. N. Quirk (*secretary*). The terms of reference are: "To consider and advise upon questions, referred from time to time by the Minister to the Council, concerning the development and utilization of the fuel and power resources of the country in the national interest."

Higher Technical Education in Great Britain

IN a paper on "The Status of Higher Technical Education" published by the Association of Technical Institutions (Hon. Secretary, Loughborough College, Leics. 6d.), Dr. T. J. Drakeley, principal of the Northern Polytechnic, London, states that while on the Continent, "technical university studies are accorded the same status as university studies and both lead to the award of degrees, here, most of our best students, in fact most students have been discouraged from taking higher technical courses because of their apparent inferior nature"; consequently industry has received few trained men and has suffered the decline foretold by Lyon Playfair in 1852. Dr. Drakeley strenuously combats the foreign view (which is supported even by some British chemists) that "we do not possess the right temperament to maintain industrial progress", and claims that our ineffectiveness in the industrial field is due to our lack of appreciation of "the vast importance of technical training in the development of an industry—whereas we state that trade cannot be taught *within* a school, our foreign competitors realise that trade cannot be taught *without* a school".

In discussing the relation between the universities and technical colleges of Great Britain, Dr. Drakeley directs attention to the fact that some of our major technological studies are not recognized for the award of degrees, and he suggests four ways in which the British problems of higher technological education might be solved, namely: (1) by transferring all existing technological studies to the universities and inaugurating new degree courses; (2) by conferring university rank on the major technical colleges; (3) by creating a national technological university with existing major technical colleges as the core; and (4) by establishing a non-university institution awarding the equivalent of a degree (for example, a diploma in technology) in approved technical colleges. He appears to favour the fourth of these alternatives owing to the time factor involved; "we must raise the status of technical education to that of university education . . . immediately, not only for the students coming forward now to study a technology but for the men on return from the Services". Readers of *Nature* will recall that the problem was discussed in some detail in these columns towards the end of last year and again in *Nature* of June 3, 1944, p. 663.

Skiagram

MR. W. McADAM ECCLES, consulting surgeon to St. Bartholomew's Hospital, London, has prepared a statement urging that an international effort should be made to agree on a standard term to be used for the photogram produced by X-rays. He quotes no less than nineteen words which have been used in connexion with "a negative produced upon a film sensitive to the action of X-rays". Chronologically they are:

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| 1. X-ray. | 8. Roentgenogram. | 14. Sciagram. |
| 2. X-rays. | 9. Actinograph. | 15. Shadowgraph. |
| 3. X-ray picture. | 10. Actinogram. | 16. Shadowgram. |
| 4. X-ray photograph. | 11. Radiograph. | 17. Skiogram. |
| 5. X-ray plate. | 12. Radiogram. | 18. Skiagraph. |
| 6. X-ray film. | 13. Sciagraph. | 19. Skiagram. |
| 7. Röntgen photograph. | | |

Mr. Eccles believes that two only of this collection of terms will bear scrutiny: they are 'skiagram' and 'X-ray film'. The latter is dismissed as being cumbersome and because one of the words used has alternative meanings. On the other hand, skiagram is etymologically sound (from the Greek 'skia' a shadow, and 'gramma' writing). It implies a 'shadow writing', which is a negative produced by X-rays. For some time it has been used in the scientific meaning, and it has never been used for any other purpose. Mr. Eccles therefore urges that the word 'skiagram' should be officially adopted as the standard term, so that it would be generally used in text-books, courts-of-law, medical reports, etc.

This is, of course, not the first time that reference has been made to the slipshod use of scientific terms generally and to the anomalies arising from the word 'radiogram' (see *Nature*, February 19, p. 218). The fundamental difficulty is that no body exists in Great Britain which is acknowledged as the authority on the use of scientific, or indeed other, words. Perhaps, indeed, it is foreign to the fluid character of the English language to accept direction in this manner. In the case of the word 'skiagram', however, with its relatively narrow field of use, it might well be considered by, say, the Physical Society, the British Institute of Radiology and the appropriate section of the Royal Society of Medicine, whether agreement might not be reached on the adequacy and appro-

priateness of the term, with the view of using it in these Societies' publications. Should it be adopted, no doubt its general acceptance would quickly follow.

Mechanical Properties of Matter

Two recent papers (*Proc. I. Mech. E.*, 151, No. 2; 1944) deal with the properties of materials, and are of particular interest. "A Renaissance of Mechanical Properties", by Sq.-Leader A. C. Vivian, is a plea for clarity in the terms describing the mechanical properties of metals, and demonstrates the fallacy of calculating stresses on a nominal basis instead of actual cross-sectional areas. The fundamental relationship between the factors stress, strain, temperature and loading-rate is discussed in detail, and a system of symbols is suggested for defining exactly the various properties of metals. "The Significance of Tensile and other Mechanical Test Properties of Metals", by Dr. H. O. Neill, is a critical consideration of the conventional quantities obtained from the tensile test, dealing particularly with the measurement of work-hardening capacity and plasticity. Attention is given to the various methods of plotting the results of tensile tests which enable these properties to be evaluated, and numerical data are given. The discussions on both these papers are included.

Earthquakes during July

DURING July 1944, twenty-seven earthquakes and earth tremors were registered by the seismographs at the observatory at Toledo, Spain. Those on July 17 (epicentral distance 112.5°), 19 (epicentral distance 119.1°), and 27 registered the greatest amplitudes at Toledo, whereas the shock on July 18 may have been a local tremor. At Wellington, New Zealand, during the same month, five strong shocks were registered. On July 10 the shock is thought to have originated south of the Kermadecs. On a basis of instrumental evidence received from thirteen other stations, the United States Coast and Geodetic Survey has estimated the epicentre of the shock of July 27 at 0h. 04.2m. G.M.T. to have been near 54.5° N., 166.5° W., which is in the Aleutian Islands, and the depth of focus to have been rather greater than normal. In New Zealand during July fourteen shocks were reported as having been felt. The greatest of these were of intensity 4 on the Modified Mercalli scale, and occurred on July 1 at Opotiki and Whakataane, and on July 11 at Karamea and Westport.

American Telephone and Telegraph Co.: Fellowships

THE American Telephone and Telegraph Company has established a trust fund to finance post-doctorate fellowships in physical science in honour of Dr. Frank B. Jewett, president of the U.S. National Academy of Sciences and vice-president of the Company in charge of development and research, who has just retired, having reached the Company's retirement age. Five fellowships will be awarded annually. The object is to stimulate and assist research in the fundamental physical sciences, and particularly to provide the holders with opportunities for individual development as creative workers. The fellowships provide an annual honorarium of 3,000 dollars to the holder and 1,500 dollars to the institution at which the recipient elects to do research. The fellowships will enable their recipients to devote themselves to research in pure science for a year or two following their doctorates. Since the purpose is to provide