

Sand's published scientific work is contained in about fifty original papers with subjects varying in scope from laboratory apparatus of his own design and construction to theoretical discussions in thermodynamics. He was thus both an able and skilled experimenter and a thinker of wide scientific outlook. Outstanding among his original investigations are the work on electrode processes including diffusion at electrodes and over-voltage, the development of vacuum-tight seals for leading in wires to silica and glass vessels, and various improved methods of electrochemical analysis. Particularly among these should be mentioned the separation of metals by control of electrode potential and the use of 'internal' electrolysis for determination of metallic elements in the presence of larger quantities of less noble metals. In 1939, 1940 and 1941 there were published successively the three volumes of his "Electrochemistry and Electrochemical Analysis", a work upon which he had spent many years of thought and labour and which summarized the state of electrochemical knowledge to that date.

To those who had the privilege of knowing him, Dr. Sand was a most amiable man. His former colleagues and research students particularly will remember his tolerant and kindly criticism, his balanced judgment and his unfailing help, which he gave freely to all those who brought their problems before him. He will be remembered and missed by many friends all over the world, and they will think with sympathy of his widow, and his only son who is now serving with the British Army overseas.

ARTHUR J. LINDSEY.

WE regret to announce the following deaths :

Sir Joseph Arkwright, F.R.S., honorary bacteriologist at the Lister Institute, on November 22, aged eighty years.

Prof. Charles F. Park, emeritus professor of mechanical engineering at the Massachusetts Institute of Technology, director of the Lowell Institute School, on September 25, aged seventy-five years.

## NEWS and VIEWS

### *The Times* and Freedom of the Press

How often do readers notice the serial number at the front of a journal? Yet this number is much more than a convenient means of identification used by publishers and printers; as is pointed out in an article in *The Times* of November 25, it indicates the intention of continuing to produce the journal at short intervals, so that the reader can follow the progress of events—it is a sign of continuous and watchful activity. *The Times* has given this service to Great Britain for the past century and a half, and it has now proudly inscribed the number 50,000 on the front page of its issue of November 25. As the years have gone by, *The Times* has grown in stature, under a succession of distinguished editors, until it is now an organ of international repute.

The leading article of the 50,000th issue rightly ends on the note of the freedom of the Press. One of the first acts of an authoritarian regime is to suppress the expression of contrary views; government by consent of the people, the very essence of democracy, requires a free Press, able to reflect and to guide public opinion. In times of war, a democracy must accept, however grudgingly, a considerable measure of dictation, including censorship of the Press. This suppression of facts in the interests of national security is an evil necessity under which every member of a democracy must chafe; particularly is this restriction of publication felt in scientific circles, where the free interchange of news and views is the life-blood of progress. *The Times*, with other journals, has accepted the necessity of censorship, but it declares in no uncertain terms its policy for the future: "As the war draws to an end and the shadow of military necessity recedes, the immediate task will be to ensure that every encroachment of authority shall be rolled back from a field of responsibility in which, in a free community, it can have no place". It will have the support of all who value democracy in carrying out this policy in the years to come.

### Communities and Industry

THE broadsheet "Location of Employment" issued by Political and Economic Planning is a timely contribution to the discussion of the fundamental questions in town and country planning on which early decisions must now be taken by the Government. The broadsheet attempts first to analyse the employment needs which are relevant to physical planning, and then considers how far those needs could be met on the scale of a community comprising not more than about 60,000 people. The conclusion is reached that a satisfactory variety of industry and occupation can usually only be provided for a group of communities, and not, as town-planners have often suggested, for each community separately. The important concept is not so much that of the community as that of the employment orbit, or the area in which any point can be reached within reasonable daily travelling time by the members of the community. For some communities it may be far better to improve communications with other places than to try to bring industry within the borders of the community. It should be possible for the majority of wage-earners to find work fairly near to their homes; many jobs in secondary and tertiary industries can be located in the community itself, and the broadsheet points out that the employment exchanges, by the use of judicious and flexible placing methods, can help in this. Secondly, the time taken up in travelling to work can be cut down by improving transport and by careful layout and correlation of the several communities.

Even when communities have been grouped in this way for purposes of employment, there may still be some which have no economic future by themselves and are so isolated that they cannot be combined in a larger region. Such communities, *Planning* considers, should be closed down. Again, the employment orbits suggested may not be suitable units for the industrialist. The advantages he requires may not always be provided therein; but it should be

possible to provide them in a region containing a number of such orbits. If there is movement of population from the congested cities, the 'overspill' is likely to be better accommodated and better employed if it is kept in close relation to a regional or sub-regional centre than if it is dispersed to independent new towns. Industrial development should be viewed on a regional scale, taking fully into account the existence of the traditional regions, and aiming at introducing new complexes of industry into these existing regions. The broadsheet points to several factors which increase the mobility of industry, but finally emphasizes the difficulty of applying the general principles indicated. Usually, in practice, the decision must be a balance between economic and social considerations, and close co-operation between the central Government and industrialists is needed.

### Selection of Medical Students

In an earlier issue (*Nature*, 154, 315, Sept. 9, 1944) the possibility that intelligence tests might be used as aids in the selection of candidates who wish to undergo a medical training was discussed in relation to the proposals of the Goodenough Committee on Medical Schools and the Planning Committee of the Royal College of Physicians for the selection of medical students by personal interview rather than by examinations alone. Drs. O. G. Edholm and Q. H. Gibson (*The Lancet*, 294, Aug. 26, 1944) have now published the results of their work on examination results as intelligence tests. This work was done at Queen's University, Belfast, where second-year medical students have, for the past three years, carried out "an intelligence test, using Raven's Progressive Matrices" (J. C. Raven, *Progressive Matrices*, London, 1938). The scores obtained were compared with examination results. The students included 20 per cent women, and the average age of both men and women students was 19½ years. These authors conclude that "one of the most striking and important points which emerges from these results is the high mental ability of the average medical student, as measured by the matrix test". They quote the report of the Planning Committee of the Royal College of Physicians as saying that the average medical student of to-day is lacking in initiative and curiosity, with poor ability to arrange and interpret facts and little precision in the use of words. "If we accept this statement," these authors comment, "either unusually great ability is necessary to avoid these faults, or they are not primarily due to any lack of intelligence." Other critics of the mental ability of the average medical student might take this statement to heart.

More pertinent to the selection of future medical students is the conclusion of Drs. Edholm and Gibson that "a fairly rigid process of selection has already been applied by the time the student reaches his second year". This would seem to confirm the view expressed in *Nature* (*loc. cit.*) that "Selection can . . . be imposed too early, and the value of the natural selection of the medical school and the hospital can be underestimated". Discussing the question whether the matrix test would be valuable for the selection of medical students, these authors conclude that the results of previous examinations form a more reliable index of results in future ones. They find no reason to think that the medical students of Queen's University are not representative of the intelligence of medical students generally; but they think that further work should be done to show whether their

results are generally applicable. R. G. Inkster (*Roy. Acad. Med., Ireland*, Sect. Anat. and Physiol., March Meeting, 1944) obtained results similar to theirs; but he used an entirely different intelligence test. The authors do not wish to imply, however, that success in examinations is the only criterion of the satisfactory student.

### Spectrographic Discussion Group

THE Spectrographic Discussion Group was formed in 1941 as a result of approaches made to the various users of spectrographic equipment in the Glasgow area. It was considered that, in view of the extent to which industrial concerns and Government departments were applying spectrographic methods of analysis and the very rapid developments which were taking place in this branch of science, it would be of value if those directly interested in spectrography were able to meet at intervals and discuss the various problems which arose in the course of their work. Further, it was considered advisable that representatives of the principal technical institutions and of manufacturers of spectrographic equipment should have the opportunity to attend these discussions. The fundamental policy of the Group required the free interchange of ideas and co-operation in tackling any problems which arose as a result of discussion. Although originally confined to members in the Glasgow area, the success of the Group was such that, in a relatively short time, members representing concerns in Aberdeen, Sheffield, London and other parts of the country were admitted. Meetings of the Group are held in the Royal Technical College, Glasgow, at intervals of approximately six weeks. The chairman is Mr. S. D. Steele, of Babcock and Wilcox, Ltd., Renfrew, Scotland. It has always been considered of first importance that the nature of these discussions be informal, and that in no sense should the Group acquire the character of a society. In this respect it has been found necessary to limit membership to those directly interested in spectrography and also to control membership by invitation. The success of the Group and the progress made have been so marked that it is felt that groups of a similar nature established throughout Britain would be most beneficial.

### Long Ashton Research Station

THE annual report of the Long Ashton Research Station for 1943 has now been published. Several important changes in senior staff appointments mark the period covered, for Prof. B. T. P. Barker, director of the Station during its first forty years, has retired, being succeeded by Prof. T. Wallace, while Mr. A. W. Ling, though still remaining chief agricultural advisory officer in the Bristol Province, has been appointed principal of the Seale Hayne Agricultural College, Devon. The research work undertaken during the year continued to be closely concerned with current problems of the food production programme of the Ministry of Agriculture, and many useful results were obtained, only a few of which can be mentioned here. Tests made with apples, swedes, carrots and potatoes showed that ¼-1 per cent naphthalene-acetic acid exerts a delaying action on bud-growth, a fact which should prove of practical importance in preventing sprouting of stored potatoes, while an allied compound, naphthoxyacetic acid, sprayed at the rate of twenty parts per million, had a stimulating effect and increased the yield of Tardive de Leopold strawberries. Outstanding results have