

News and Views

Mr. W. T. Astbury

THE University of Lille has recently awarded a medal to Mr. W. T. Astbury, lecturer in textile physics in the University of Leeds, in recognition of the valuable work which he is carrying on in the Textile Industries Department of the University of Leeds in connexion with the investigation of the structure of animal fibres by means of X-rays. His recently published book on "The Fundamentals of Fibre Structure" shows great originality and has been very well received. Readers of NATURE will recall that much of Mr. Astbury's work has been described in letters and articles in our columns. Mr. Astbury received an invitation to deliver a lecture on this subject at a full session of the Thirteenth Congress of Industrial Chemistry which was held at Lille in September of this year. The University of Lille, in bestowing this honour upon Mr. Astbury, has wished to testify its appreciation of the value of his work in this field, and in particular to commemorate, in a tangible form, his contribution towards the success of the Congress at Lille.

Future of International Broadcasting

WE are afraid that next month will be an anxious time for the future of international broadcasting. Eight countries, including some not far distant from Great Britain, have refused to ratify the plan agreed to by the majority at Lucerne. It is highly probable that some of them will not accept the new wave-lengths suggested to them. Parts of the wave band of broadcasting will therefore become useless to many owners of receiving sets. The interference also is much increased by the excessive power used by many of the transmitting stations. Luxembourg, which uses the most powerful broadcasting transmitter outside Russia, is now at work on an unauthorised wave-length. Another difficulty, but not a serious one, is the use of broadcasting for advertising. The attempt to prevent this by the B.B.C. is neutralised to a certain extent by foreign transmissions. Several French stations will limit this in the future, but we suppose that Athlone will continue its advertisements of Irish sweepstakes, a practice forbidden in Great Britain. More objectionable is the increasing use of broadcasting in languages other than that of the country of the transmitting station for propaganda purposes. The new 500 kw. station of the Comintern at Moscow is apparently used for transmitting Communist propaganda in English, French, German and Italian at a strength which enables it to be heard by a small set almost anywhere in Europe. This may lead to retaliatory measures which will not improve the hearing of broadcasting. In Luxembourg and Alsace-Lorraine, the emissions are of necessity in both French and German. The *Electrician* of November 24 suggests that this demonstrates the impossibility nowadays of building a ring fence against new ideas and may possibly in the long run have a salutary effect.

New Wave-lengths for Broadcasting Stations

IN accordance with the Lucerne plan, a considerable redistribution of the wave-lengths allocated to European broadcasting stations will take place early in 1934. Recent issues of the *Wireless World* have given the first details of the scheme which has been organised by the International Broadcasting Union to effect a smooth and orderly change-over on the night of January 14-15, 1934. Broadcast listeners who are sufficiently interested have here a valuable opportunity both of calibrating their receivers and of following each broadcasting station on to its new wave-length. According to the arrangements described, all European stations will cease transmission at or before 11 p.m. G.M.T. on January 14. Then, one by one, according to special schedules now being prepared, the stations will resume broadcasting on their new wave-lengths. These will be checked systematically by one or other of the ten official control points which are under the direct supervision of the Union's own frequency-checking station at Brussels. Immediately a control station has completed its measurement of the frequency of a transmitter, the fact will be announced through one of five high-power stations specially selected by the International Broadcasting Union. To assist rapid identification, each transmitter will broadcast its name and country at least every two minutes during its transmission period. The transmissions will consist of gramophone records the titles of which will have been previously communicated to the control posts. Most British listeners will probably tune-in Radio-Paris, which will be announcing the progress of the change-over at the broadcasting stations in Belgium, France, Great Britain, Holland, Iceland, Ireland, Luxembourg, Morocco, Portugal, Spain and Switzerland. It is anticipated that this scheme will obviate the difficulties experienced in making changes under previous 'plans' due to the varying accuracies of the calibrations of wavemeters at individual broadcasting stations.

Electrical Interference with Radio Reception

AN outstanding difficulty in the engineering development of the reception side of radio broadcasting services arises from the operation of electrical machinery. Any device in which the electric current varies produces a parasitic current in the receiving set, often causing an objectionable noise at the loud speaker or headphones. In the case of television it produces mutilation of the picture. In a paper on this subject read to the Institution of Electrical Engineers on November 22 by Mr. A. Morris, the effects produced on the receiving set by a number of domestic electric appliances were shown both aurally by gramophone records and visually by a cathode ray oscillograph. Experiments indicate that in order to ensure high quality reception the ratio of signal to noise must be at least 40 decibels. Amongst domestic apparatus the chief offenders are vacuum cleaners, electric bells, vibrators, electric wiring and

high-frequency medical apparatus. Amongst small commercial apparatus are refrigerators, coffee grinders, dental drills, hair driers and clippers. Amongst large apparatus are generators, motors, flashing signs, traffic signals and overhead transmission lines. The interference due to traction plant for trains, trolley buses and electric trams is often serious. The petrol engines of automobiles and aircraft with coil or magneto ignition sometimes cause trouble. Experience shows that the amount of radio interference is becoming greater and its distribution more widespread. The remedy can be applied by the radio engineer in many cases at the receiving set, but the general level of the disturbance can be controlled only by suitable devices at the source. The present-day trouble is not primarily an electrical one, but is to find out a method of reconciling the economic aspects of the various interests concerned.

Physical Investigations of Psychical Phenomena

It has been suggested on several occasions that the time has come for the critical and objective study of certain psychical ('para-normal') phenomena by the accredited experimental methods of physics, physiology and psychology. How these methods may be applied to such a problem as, for example, telekinesis (the movements of objects without physical contact but in presence of an entranced 'medium') has been investigated in Paris by Dr. Eugène Osty, working with infra-red rays (see NATURE, November 25, p. 801). These curious effects have also been studied by Mr. Harry Price at his National Laboratory of Psychical Research in London. Fortunately, research into such para-normal happenings requires no belief in the truth or falsity of spiritualism; it is the outcome of the unprejudiced study of very special phenomena by the methods of the modern laboratory. Prof. Fraser-Harris, writing from The Athenæum, Pall Mall, S.W.1, informs us that an effort is to be made to endow and equip an institute for the critical study of psychical phenomena by the *objective* methods of registration. The promoters of the scheme realise that such things as the nature of the trance-state of a teledynamist, the 'direct voice', and materialisations ('ectoplasm') are now amenable to be investigated by delicate instruments and by exquisite methods which were non-existent a generation ago. Photography by ultra-violet light and by infra-red rays, the reception and transmission of sounds and voices by the microphone and gramophone, are sufficient to indicate that science is equipped as never before to attack problems apparently the most mysterious. It is hoped that funds may be forthcoming to make it possible to endow and equip an institute of psychical research worthy of the importance of the subjects to be investigated. Our own view, however, is that such an institute should be attached to the psychological department of a university or college, or to a responsible scientific society, and not be under the control of a private governing body. If established under such auspices it might maintain the reputation of Great Britain as the traditional home of genuine, unfettered and fearless research.

Pictorial Representation of Data

ONE of the characteristics of scientific management in modern industry is the use which is made of graphical methods. The importance of the pictorial representation of facts and data has also been widely realised by the various movements aiming at the prevention of accidents whether in industry or in the streets. It is, however, only within the last ten years that pictorial representations have been fashioned on definite scientific principles, and the value of the pioneer work of the Mundaneum Institute, Vienna, is now becoming widely recognised. During the last decade, under the leadership of Dr. Otto Neurath, basic principles for visual presentation have been developed. Charts or illustrations constructed on these lines reveal what is most essential at a first glance; the important details stand out on a second glance and more exact details are evident to a third glance. The method has been applied with conspicuous success to technical and to social facts and data, and the work of the Mundaneum has become known through a series of publications such as *Gesellschaft und Wirtschaft*, *Technik und Menschheit*, *Die Bunte Welt* and *Bildstatistik*. Branches have now been established in Amsterdam and London (c/o World Association for Adult Education, 16, Russell Square, W.C.1) through which the services offered, including the preparation of charts, the loan of exhibits, issue of publications and provision of material, and advice on principles of visual presentation may be more accessible. The new technique provides an international cultural factor of high importance, but if its full advantages are to be reaped, its introduction into different countries should proceed on uniform lines under the guidance of the Mundaneum itself.

Unemployment and Training Schemes

AN article on "Training and Unemployment" by Mr. Morris S. Viteles appears in the *Human Factor*, 7, No. 9. Mr. Viteles points out that the feeling of economic insecurity consequent upon unemployment and fear of unemployment is responsible for a great deal of the individual maladjustment in industry at the present time. Training schemes applied to entrants have tended to increase their efficiency and stability. At the same time, injustice has been done to workers of many years' standing, who are not given the benefit of this aid to efficiency, on the assumption that their experience makes it unnecessary, and that they would resent it. The writer advocates the training of older workers as well as new, and also the incorporation of instruction in allied tasks and processes into every training scheme—so that the mobility and adaptability of the workers within any given organisation unit may be at a maximum. Considerable increase in the worker's sense of security would follow, since he is good for more than one job. The chief psychological problems involved are those concerning the nature of motor skills and the probability of a general underlying factor; the transference of skill; and the possibility of accurately