

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

assessing individuals before giving them training. Mr. Viteles does not suggest that training is the panacea for unemployment, but he does maintain that when the more fundamental problems are solved, and further knowledge of occupational trends is available, it will be of ever-increasing value.

Mimicry in Animals

ON November 24, Prof. G. D. H. Carpenter, Hope professor of zoology in the University of Oxford, delivered the second part of his inaugural lecture (see NATURE of November 25, p. 813). Dealing with the imitation of inedible or distasteful by edible species (Batesian mimicry), and the resemblances between inedible models (Müllerian mimicry or synaposematism), he laid stress on the fact that edibility and the reverse are not absolute but relative. The results of experiment accord well with theory, as is shown by Prof. Carpenter's own observations with monkeys, Moreton-Jones's with birds and Cott's with frogs. The fact of preferential feeding is well established. The polymorphism often shown by mimetic species is also in accordance with theory. It is evident that while models would gain, on the principle laid down by Müller, by diminishing diversity between their appearances, mimics on the other hand would find advantage by increasing it. Mimicry cannot be simply the result of coincidence due to a limited range of colour, nor can it be accounted for by supposing a parallel drift of variation. Mimicry might deceive an artist, not an anatomist. The only available key to the diverse phenomena of mimicry is the principle of natural selection.

Evolution in the Light of Past Ages

STUDENTS of life in the past have followed with interest a course of three lectures on "Palæobiology and Evolution", which have just been given at University College, London, by Prof. O. Abel, of the University of Vienna. The first lecture, delivered on November 24, dealt with the methods and aims of palæobiology. Prof. Abel stressed the importance of regarding even fossil animals as living creatures. Leaving aside the problems of phylogeny, with which palæontologists have so largely concerned themselves, he concentrated his discussion on what might perhaps be called the ecology of past ages. He showed how, from such evidences as tracks in the sand, fractured or diseased bones or small invertebrates imprisoned in amber, one can piece together a picture of the conditions of life and habits of animals now known only by their fossil remains. His second lecture was entitled "Palæobiology and Phylogeny"; in the third, a life-picture of the fauna of the Great Ice Age was presented.

Acquisitions at the British Museum (Natural History)

MAJOR P. H. G. POWELL-COTTON has presented to the Department of Zoology a collection of mammals, mostly large ungulates (including skins and skeletons), shot in the Sudan by him during his recent expedition in North-East Africa. This series of specimens is of exceptional interest as each one has a perfect skeleton, including a Sudani Giant Eland. There have been

two notable additions in the Department of Geology; one, a slab, 8 ft. high, containing a reconstructed group of palm leaves, from the Tertiary beds of Italy, presented by the Right Hon. Lord Rothschild; the other a small but select assemblage of British fossil vertebrates, collected by Mr. S. L. Wood, and presented by him, including Eocene mammalian and bird remains from the Isle of Wight and Liassic reptiles from Dorsetshire and Yorkshire. Presents to the Department of Minerals include crystallised sprays of native gold from the City Deep mine, Witwatersrand, from the directors of the Central Mining and Investment Corporation, Ltd.; and tektites (billitonites) from Billiton, Dutch East Indies, presented by Engineer R. J. van Lier. A large series of rocks and minerals has been collected for the Department by Mr. W. Campbell Smith in the United States and in Canada, and material was also selected by him from the duplicates of the United States National Museum and the United States Geological Survey.

COL. A. H. WOLLEY-DOD has presented his collection of British brambles (*Rubus*) to the Department of Botany. It comprises about one thousand sheets, most of which have been examined by critical workers in the group. Most of the specimens are from Cheshire. The plants collected by Mr. T. G. Tutin on the recent Cambridge expedition to British Guiana under Dr. G. S. Carter have been presented to the Department. There are about 900 specimens, well preserved and in good series, principally from the region of the Cuyuni River. A further 230 flowering plants from Tanganyika territory have been purchased from H. J. Schlieben. These have been identified by Dr. J. Mildbraed of Berlin.

Engineering Exhibition at Cardiff

THE Engineering Exhibition at Cardiff on November 22-December 2, held under the auspices of the South Wales Institute of Engineers, was the twelfth annual exhibition run by the Institute and, notwithstanding the depression in the mining industry of South Wales, the exhibitors staged some excellent examples of the latest developments of machinery and plant. Among the new features in the exhibits this year was a display by the Department of Scientific and Industrial Research. This exhibit included material for the survey of the coal seams of Great Britain which is being undertaken to determine their physical and chemical characteristics; a model coal cleaning plant in operation; exhibits illustrating recent progress in the carbonisation of coal and hydrogenation; pulverised fuel and the suspension of coal in oil. This combined research exhibit must have been of great value to those who are responsible for the mining industry in South Wales. Other special features of the exhibition were coal breaking and dry cleaning plants, steel girder arches and continuous steel lining for underground roads, electric plant, switchgear and mine signalling apparatus, woodwork machinery plant, mechanical stokers, electric welding plant, steel pit props, coal tar products for use on roads, an oxygen 'cutting'