

News and Views

British Industries Fair

THE 1937 British Industries Fair opened in London and Birmingham on February 15 and will remain open until February 26. The organizers tell us, as they have been able to tell us each successive year for many years past, that it is the biggest and most impressive fair that has yet taken place. There is no reason to doubt the claim; the record area occupied by the exhibitors' stands last year has been exceeded by more than 10,000 square feet. No doubt, over and above the increased number of exhibits due to the natural growth of industry and to the recent improvement in trade generally, the fact that this is Coronation year has had a considerable influence upon the record figures. There are more than 1,500 exhibitors detailed in the catalogue, of whom the largest number (78) are from London and the two smallest groups are from Glasgow (12) and from Edinburgh (7). No less than sixty countries are represented by their trade buyers. Holland heads the list, and other countries well represented are Germany, Belgium, France, Denmark, the United States, Sweden and Poland. Italy also is well represented, but Spain, which last year sent a strong contingent of buyers, is this year a notable absentee, for reasons which will be obvious. As before, the hardware and heavy industries section of the fair is held at Castle Bromwich, Birmingham.

OLYMPIA accommodates exhibits of what may perhaps be called the lighter industries, such as chemicals, glassware, leather, scientific instruments, foodstuffs, paper, toys and games, and musical instruments. The textile, furniture and allied industries have their exhibits at the White City. It should be noted that only goods manufactured or produced within the British Empire are permitted to be displayed, and no exhibitor may exhibit articles other than those of his own manufacture. We hope to publish in our next issue an article directing attention to the prominent features of the exhibits that can be regarded as being predominantly scientific. Meanwhile, it is of interest to note that the printers of NATURE, Messrs. Fisher, Knight and Co., Ltd., have installed at Olympia a complete printing works demonstrating block-making, type setting, machining and binding, and volumes of NATURE are being exhibited.

New Equipment for the Royal Air Force

THE publicity recently given in Parliament to the delay in the aircraft building programme scarcely gave due importance to one of its fundamental causes. This expansion in quantity required comes at a time when a radical change is taking place in aircraft constructional methods, made necessary by recent research having caused aerodynamic design to

demand a somewhat different exterior form. A continued increase in engine-power available, added to improvements in design reducing resistance and giving greater speed ranges, have enabled the speed of flight to increase so that up to 300 miles per hour can be contemplated for certain types of aircraft which constitute the quite normal equipment of the R.A.F. At such speeds as this, the air friction at the surfaces of the various component parts of the machine becomes a much greater proportion of the total resistance than at the lower speeds used hitherto. It now becomes vital to have both correct aerodynamic shape and smooth surfaces if reasonable efficiency is to be attained. In the past, most aircraft has consisted of girder frameworks taking the loads, covered by linen fabric the function of which was to give an airtight surface to react to the air pressure. It is not possible to avoid this cover sagging between its points of support to a certain extent, thus spoiling the correct aerodynamic form. Also the method of attachment, usually sewing, set up excrescences on the surface the roughness of which was appreciable. Thin metal sheeting, with flush riveting, is the obvious improvement upon this, but its weight is intolerable unless it can be made to take some of the induced loads, and allow the interior structure to be correspondingly lighter.

THE development of this conception has led to the use of 'stressed skin' construction in modern machines, in which both the wings, control surfaces, and the body are formed of strong and hard sheet metal, withstanding the majority of, and in some cases all, the loading. Although the theory of the design of such structures is now becoming fairly well known, the workshop practice of building them in quantities is by no means well advanced. The adoption of these new designs has necessitated the development of new workshop technique and the design and production of new tools and equipment, which has obviously been especially difficult for those firms that are still working on the older type of construction, which is by no means obsolete or even incorrect for certain types of slower-speed machines. It is probably not unfair to say that the speed-up in aircraft production that has taken place in some countries during the last few years began too soon, and has resulted in a large equipment of machines that are already obsolescent.

Dr. Thomas Midgley

THE Perkin Medal of the American Section of the Society of Chemical Industry has this year been awarded to Dr. Thomas Midgley, who has achieved world-wide fame for his discovery of tetra-ethyl lead as an anti-knock agent. This, it should be emphasized, was no chance discovery but the result of systematic

trial following a study of the periodic system, the final finding that the lead derivative would solve the problem being predicted beforehand. To-day 'ethyl' is added to seventy per cent of all the petrol used in America, and the increased horse-power thereby generated amounts to a very large figure. In a characteristic address given at the time of receiving the medal, Dr. Midgley told the story of his more recent discovery of a compound of carbon, chlorine and fluorine, CHCl_2F , to be used as a refrigerant, which is non-toxic and non-inflammable. Apparently he was told of the need for a new refrigerant over the telephone, and with the aid of two colleagues, the use of a chemical library and some deductions from the periodic table, arrived at the probability that the above fluorine compound might prove non-toxic and suitable. Small quantities were prepared from various samples of available starting material. The first batch was pure and proved non-toxic; in the others the raw material proved to be contaminated and gave toxic products, which, however, could be purified when this fact was realized, and became non-toxic. Three days' work sufficed to solve the problem and to give the refrigerating industry a new material which is expected will prove of outstanding importance in its development.

Gottfried Treviranus (1776-1837)

GOTTFRIED REINHOLD TREVIRANUS, the eminent physiologist, the centenary of whose death occurred on February 16, was born at Bremen on February 4, 1776. He studied medicine at Göttingen, and while an undergraduate wrote an essay on nerve power and its method of action. He qualified in 1796 with a Latin thesis on the reform of physiology, and settled in his native town where he was made professor of mathematics and medicine in 1797. The rest of his life was divided between the practice of medicine and scientific research, though the latter claimed most of his attention. His medical publications were of little significance, being chiefly concerned with the prevention of salivation in the mercurial treatment of syphilis and animal magnetism in Bremen. On the other hand, his biological work was of considerable importance, his principal publications of this kind being entitled "Biology or the Philosophy of Living for Natural Philosophers and Doctors" (6 vols., 1802-22) and "Manifestations and Laws of Organic Life" (2 vols., 1831-33). In addition to physiological research, he devoted special attention to microscopical anatomy of invertebrate animals, especially molluscs and insects. In collaboration with his brother, Ludwig Christian Treviranus, a well-known botanist and medical man of Bonn (1779-1804), he published four volumes of miscellaneous work on anatomical and physiological subjects (1816-20).

Auroral Display and Radio Disturbance

THE probable occurrence of an aurora on January 7, twenty-seven days earlier than the notable display on February 3, as recorded in last week's issue of NATURE (p. 277), is confirmed by Mr. W. N. Craig, of The Manse, Fortrose, Ross-shire. On January 7,

between 16½^h and 19^h U.T., Mr. Craig, who was listening on the 14 Mc. amateur band, found that reception from long-distance stations in South Africa and on the west coast of America, which was good at first, suddenly deteriorated at 18^h 40^m so as to render the signals practically unintelligible by "a very rapid flutter". At 19^h 30^m, Mr. Craig, on looking outside, found that a conspicuous auroral display was in progress. An arch extending from north-east through north to west was beginning to break up into a series of streamers, and at 19^h 45^m, after an apparent increase in auroral activity, a corona formed for a few minutes a little to the north-west of the zenith. The display then decreased rapidly, but was partially renewed as a quiescent arch extending from east-north-east to west-north-west from 22^h until after 23½^h. As mentioned in the previous note, the magnetic traces on January 7 recorded at the Greenwich magnetic station at Abinger show distinctive movements between 19^h and 20^h U.T. The extreme ranges, occurring at about 19^h 32^m, indicate a local increase in the intensity of the earth's magnetic field of about 130 γ accompanied by an easterly swing in declination of about 20'.

Science and Building Exhibition

THE Science and Building Exhibition which is to be held on March 1-25 at the Building Centre, 158 New Bond Street, London, W.1, is being arranged at the invitation of the Building Centre, by the Department of Scientific and Industrial Research. The object of the Exhibition is to illustrate the work being carried out by the various organizations controlled by the Department, or associated with it, of interest to the building industry. The exhibit provided by the Building Research Station will deal with such subjects as concrete, plastering materials, fire resistance, bituminous materials and building units for walls and roofs, an exhibit by the Fuel Research Station illustrates work on domestic heating. The Forest Products Research Laboratory is dealing with wood preservation, dry rot, resistance of timber to abrasion, timber seasoning and insect damage. Interesting exhibits are being shown by the National Physical Laboratory on illumination in buildings, acoustics and engineering investigations such as wind pressure on structures and mechanical tests on structural steels, etc. The exhibit by the Water Pollution Research Board and the Department's Chemical Research Laboratory deals with water softening, the removal of dissolved salts from water and contamination of water by lead. British marbles will be dealt with in an exhibit provided by the Geological Survey of Great Britain. The Industrial Research Council of the British Iron and Steel Federation will show models of steel-frame buildings intended for working-class flats, and the applications of foamed slag as an aggregate for lightweight concrete. An exhibit by the Non-Ferrous Metals Research Association deals with galvanizing and zinc coatings, and recent investigations on the frost-bursting of water pipes. The Cast Iron Research