

## NEWS AND VIEWS

**Soviet Men of Science and the War**

FOR the second time in twenty-five years the whole world is plunged into war; and already it has brought death to hundreds of thousands and disaster and unhappiness to millions. Prof. P. Kapitza, in a broadcast from Moscow on July 6, said that he was speaking in particular to British men of science and intellectuals and he reminded them that he had worked for some time in Cambridge under Lord Rutherford where he made numerous friends and carried away many pleasant memories. He wished to discuss the relations of the War to science and culture. The attitude of Fascism to science is that of a woodcutter who uses his axe to disable people instead of to cut wood. It is actuated by non-sensical theories leading to the desire for a dominant race. This is the opposite to the outlook of the Soviet Union, which is working for race equality and for the use of science and cultural achievement for the raising of the standard of living and the advancement of knowledge. In keeping with this the whole population shows the greatest interest in science. People in Great Britain often ask what is the attitude of the Soviet Union towards the man of science in his work. He could say that he and his colleagues are encouraged, as in England, to carry out what work they wish.

The Soviet people show great interest in British science and literature. Works by Shakespeare, Bernard Shaw and Priestley are performed, and Dickens and Stevenson, to name but a few classical British authors, are widely read; and now in the War all Soviet scientific workers are giving every support possible to the struggle of the people to preserve their country and those things which are so dear to them, as well as to liberate the enslaved peoples of Europe. With the British Empire and the United States they have a common enemy, Fascism, and he appealed to British men of science and intellectuals to collaborate with their Soviet colleagues with whom they have so many ideals in common.

**New Building for the Soviet Academy of Sciences**

BEFORE the outbreak of hostilities, the main building of the new home of the Academy of Sciences of the U.S.S.R. had been started on the Krimsky Embankment of the Moscow River. The building was designed by the Soviet architect, Prof. A. V. Shchusev, who recently stated that this would be one of the largest buildings in the Soviet capital—755 ft. long, 328 ft. wide and 131½ ft. high. The new building will house the presidium of the Academy, twelve institutes, a library with a depository for four million books, and two exhibition halls. One of the features of the building is a round conference hall, 118 ft. in diameter, with comfortable seating accommodation for a thousand persons.

Connected with each of the two exhibition halls will be a semi-circular auditorium seating a hundred and fifty persons and specially fitted for demonstration lectures.

Each of the twelve institutes to be housed in the new building will have a meeting hall, a hall with cinema apparatus, laboratories and reception rooms. If circumstances permit, the major part of the construction work will be completed by 1943, when the presidium and the institutes of the Academy will begin moving into their new quarters. Alongside the main building will be erected a large depository for fifteen million volumes, and two museums—the History of the Earth and the History of Animal Life.

**Large Aircraft for the R.A.F.**

IT has recently been revealed that twenty Boeing "Flying Fortresses" (B-17.C.type), all of which have been flown across the Atlantic, are now in service with the Royal Air Force. The official R.A.F. title for these will be "Fortress 1". Further supplies of an improved design (B-17.E.) are under construction in the United States. These bombers, the largest at present in service, have a span of 104 ft. and a length of 68 ft. They are equipped with four engines of 1,200 h.p. each, supercharged, can maintain a speed of 305 miles an hour at an altitude of 25,000 ft., and have a ceiling of 36,000 ft. With speeds and heights of this order they can put up a reasonable defence against enemy fighters, and the problem of providing them with fighter escorts is simplified as their performance is comparable to that of their protectors. Particular attention has been paid to protective armament, the wide angle of fire over which the machine guns can traverse giving almost complete cover in any direction.

The load carried by these machines is 5,000 lb. over a range of 2,000 miles. This enables very large individual bombs to be carried, that are considered to be necessary for the destruction of certain types of targets not always susceptible to the effect of a similar total weight of smaller bombs, carried in a number of machines of less capacity. Also there is the tactical advantage of the relatively smaller requirement in trained personnel needed for the one large machine. The Minister of Aircraft Production, Lieut.-Colonel Moore-Brabazon, recently announced in Parliament that although these machines were the biggest in the world at the time they were made, we have now under construction "three types bigger than anything in America".

**The Iraq Meteorological Service**

THE fourth annual report of the Director of the Meteorological Service of the Government of Iraq, for the year ending March 31, 1940, deals with a period during which a variety of causes operated to increase the difficulties in the way of the orderly

development of this infant service (Government of Iraq: Ministry of Defence: Meteorological Service. Annual Report of the Director, No. 4: Year ending 31st March 1940. Pp. 30. Baghdad: Government Press, 1940). Measures taken in previous years to provide the most efficient service of information about the existing and anticipated weather on the various air routes of civil aviation "blossomed and bore fruit towards the end of the year", to quote the report, an achievement which practically coincided in time with a reduced demand for such information resulting from reduced civil aviation on account of the War. In addition there were the minor disturbances of continuity arising from the transfer of the service from the administrative control of the Officer Commanding the Royal Iraq Air Force to the Director of Civil Aviation and from a change of directorship, although the latter did not occur until the fourth day of the last month of the period covered by the report, when Mr. J. S. Farquharson relieved Mr. J. Durward, the first full-time director.

But the greatest obstacle to progress in national meteorological organization remained, as in previous years, that of getting suitably educated staff of the right calibre willing to take up the openings that become available in the expansion of such a youthful service. A consequence of this was that several of the observatories were maintained single-handed without a day's respite—no mean achievement when the climate of Iraq is taken into consideration. The calling up for military service of some of the trained staff was a contributory cause of this state of affairs. As regards the work of the Service, the report shows that a large part of this consisted in the carrying out, in spite of the obstacles just referred to, of a fixed scheme of distribution of information for the benefit of aviation, and supplying answers to various climatological inquiries. In addition, the first three of a series of non-routine publications described as "Occasional Publications" were completed. Of these the first and third dealt with climatological statistics—principally monthly mean temperature and rainfall—while the second was concerned with administrative regulations.

#### Expansion of Electrical Industries in Canada

MR. JOHN R. READ, president of the Canadian Westinghouse Co., Ltd., gave an interesting broadcast in Canada on the vital part being played by the Canadian electrical industries in the war effort (Bull. Hydro-Electric Power Commission of Ontario). He stated that the Canadian worker has more electrical energy to call upon than anyone else in the world except the Norwegian. More than 80 per cent of the power used for all purposes in Canada is electric power, and to-day the electrical plants of the Dominion can produce some nine million h.p., more than five times the amount of electric power which was available for the service of Canadian industry during the War of 1914–18.

Enormous supplies of power and power equipment are required in the manufacture of explosives.

Because Canada has the power available, a total of 106 million dollars is being expended in creating great chemical and munitions plants in various parts of the country. A large new aluminium plant is now being constructed in Canada, representing an investment of about fifty million dollars, and capable of producing when completed enough aluminium a year for the construction of about fifty thousand military aeroplanes. This will be an installation of 700,000 h.p.

It is much the same story with respect to all those other metals vital in war—gold, copper, nickel, lead and zinc. Almost one tenth of all the electric power used in Canada is employed by the mining industry. Ample power supplies have made it possible for the mines to increase their production to meet war needs. One of the very striking differences between the present War and that of 1914–18 relates to communications. Since 1918, the whole new world of radio has emerged, and radio equipment makes possible the constant co-ordination of military action. Radio is also a vital link in the national life. Already scientific men of the industry have moved far in the fields of television, facsimile transmission, electron optics and extremely high frequencies. More than 60,000 Canadians are engaged in the electrical industry. Their wages and salaries amount to more than one hundred and ten million dollars a year. The electrical industry of Canada well realizes the task which war imposes, the duty which it owes to democracy, to Canada, and to the ideals of its founders.

#### The Gas Industry in War-time

THE seventy-eighth general meeting of the Institution of Gas Engineers was held in London on June 11 under the presidency of Mr. George Dixon of Nottingham. At the luncheon Mr. Oliver Lyttelton, then president of the Board of Trade, and Sir Peter Bennett, of the Ministry of Aircraft Production, spoke in complimentary terms of the resilience of the industry and its valuable services under present war conditions. The technical business consisted in the discussion of a symposium in "The Gas Industry, 1941 and After"—nine short papers on topics of current interest and importance. These revealed a strong movement for reorganization and administrative concentration of the industry which it is felt consists of an excessive number of producing and distributing units. The number of standards of calorific value is excessive, with consequent undue multiplication in patterns of appliance and their cost. The success of grouping small undertakings and the establishment of 'gas grids' in promoting the freer use of public gas supply was taken as an example to follow. There are obstacles to reorganization in an old industry consisting of numerous and sometimes small local units. If, however, desirable changes are not undertaken spontaneously, it was suggested that they might be enforced by national action to meet urgent and national needs. Coal carbonization industries with their production of liquid fuel may, under post-war economic conditions, acquire a new and greater importance.