EAST GERMANY'S CHANGING BROWN COAL INDUSTRY
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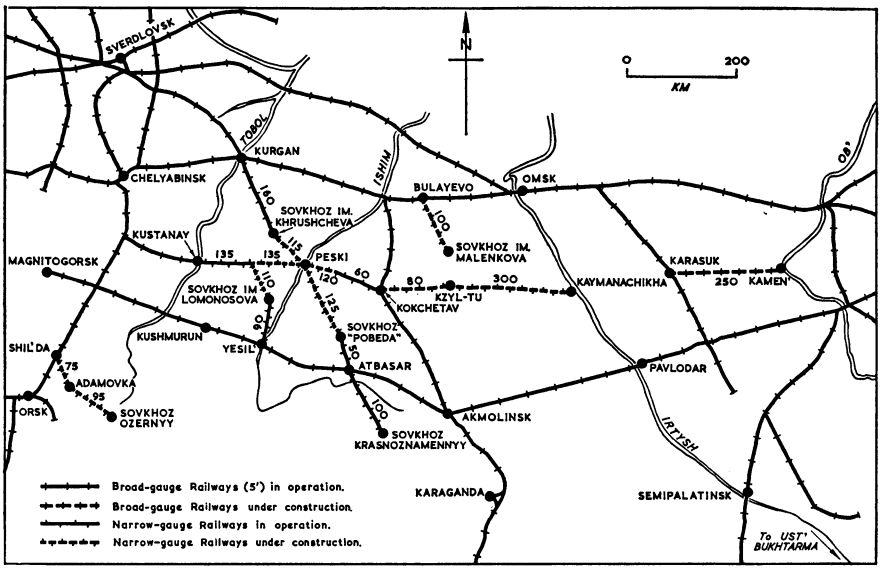

Railways in northern Kazakhstan, September 1955. Based on Osnovy Proektirovaniia Zheleznykh Dorog, Moscow, 1954. Distances along new narrow-gauge railways in kilometres.

from Peski to Kokchetav is to be 5 feet gauge; but this seems unlikely unless the Kokchetav-Kaymanachikha line, about 400 km. in length, is also to be broad-gauge. Another solution may be that the railways will be arranged with a third rail to enable trains of both gauges to use them. The Kokchetav-Kaymanachikha railway links the narrow-gauge railway centre and the principal junction at Peski with the Irtysh river. Kaymanachikha will become an important grain-shipping port, and its importance will increase after completion of the Ust'-Bukhtarma Dam above Semipalatinsk. This latter project will allow much larger river steamers than at present to sail beyond Semipalatinsk, thus linking the new wheatlands directly with the growing mining area of the Gorno-Altay and east Kazakhstan.

The future of the entire wheatlands project is in some doubt since the severe criticism of the results of the campaign in the virgin lands made by Mr. Krushchev early in 1956. This has been further strengthened by the recently announced resignation of Professor Lysenko, one of the originators of the scheme.

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EAST GERMANY'S CHANGING BROWN COAL INDUSTRY

The changes, following the division of Germany into "western" and "eastern" zones, in the economic geography of the German Democratic Republic (D.D.R.) or East Germany have mainly affected basic industry, including coal mining and power production. Information from East Germany is rather scanty; this note is mainly based on reports in the weekly economic paper, *Die Wirtschaft.*

Before the war, the area of the present East Germany relied for fuel mainly on its two brown coal fields, one west of the Elbe, in the neighbourhood of Halle and Leipzig, the other, less important, east of the Elbe in Lower Lusatia (see *Geography*, vol. xxxvii, 1953, pp. 18–29). Annual production was about 100 million tons, and all but a few million tons were consumed locally. For certain purposes, such as gas making, firing of railway engines and the making of metallurgical coke, bituminous coal of Carboniferous age was, however, either economically desirable or technically indispensable. In the early 1930s, about 16 million tons a year were brought in from the Ruhr or Silesia for such purposes, and a further 3 million tons obtained from the local bituminous coal mines of Saxony.

In 1945, with the loss of Silesia and the division of Germany, all but the small Saxony supplies were cut off, and the East Germans were faced with three major problems. They had not merely to restore the output of a war-shattered brown coal industry to its former level, but to produce about an extra 70 million tons a year, to make up for the loss of 16 million tons of bituminous coal. Secondly, technical advances had to be made which would enable brown coal to be used for purposes for which it had previously been considered unsuitable. Lastly, if East Germany's ambitious plans of industrial expansion were not to fail for lack of fuel, production had to be raised far above the pre-war level.

The immediate post-war period was one of great difficulty and hardship through fuel shortage, but since then expansion has been rapid. By 1953, brown coal output exceeded the 170 million tons which were the estimated equivalent of pre-war total fuel consumption, and in 1955, the last year of the five-year plan, production reached 200 million tons, 25 million tons short of the target figure. Briquette production was reported in 1954 to be double that of pre-war, which would mean 50–60 million tons a year. The supply of briquettes has lagged even more seriously behind the growing industrial demand than that of brown coal itself, and there has never been a sufficient quantity remaining after industrial requirements have been satisfied to meet domestic demand in full. The same is true of electricity; slow deliveries of electrical machinery, and acute shortages of constructional labour, have delayed the construction of power stations and caused load-shedding year after year. Only the supply of gas appears to have been reasonably satisfactory.

Progress has, however, been made in developing efficient means of substituting brown for bituminous coal. The technical problems of making gas for domestic and industrial purposes had, indeed, been solved before the war, with the *Lurgi* and similar processes for the complete gasification of brown coal. The electrification of the East German railways will also allow the substitution of high ash brown coal burnt in power stations for higher quality coal or briquettes carried on the engine. More revolutionary, if East German claims are correct, is the development of a process for making metallurgical coke from brown coal briquettes. This, it is claimed, will enable the East German iron and steel industry to become independent of imported coke supplies. Future relief may also be expected from the atomic generation of electricity based on the uranium of the Ore Mountains.

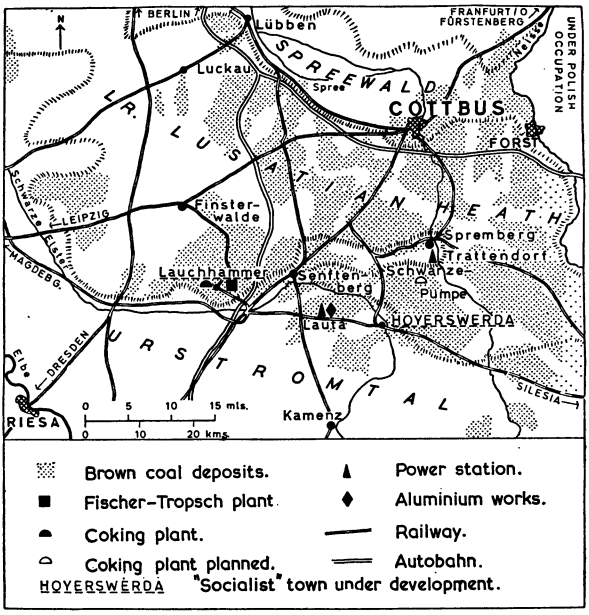
In spite of this history of expansion and technical change, the East German government has apparently decided that, unless fuel supplies can

be expanded at an even greater rate, the development of industry as a whole will be checked. Accordingly, it is proposing to make sweeping changes in the fuel and power industries during the next 15 years. The aim is not only to increase production, but to make a more economical use of brown coal by treating it as a raw material rather than as a fuel. Two main processes of coal utilization will be used. Coking will provide gas and by-products, as well as coke for the metallurgical and chemical industries. Complete gasification will augment gas supplies, both for fuel and for chemical production. The manufacture of briquettes will be increased only so far as is necessary for supplying the coking plants, and industrial and commercial consumers will burn not coal or briquettes but gas brought to them by a gas grid.

The new plans involve a major alteration in the location of the East German mining and allied industries. The older centre of brown coal mining, west of the Elbe, has now only 20 per cent. of East Germany's remaining reserves. Attention has therefore turned to the less-developed Lower Lusatian field, containing 60 per cent. of the remaining reserves. This field lies beneath the lonely heathland of Lower Lusatia, one of the sandy low plateau blocks into which the North German Plain is divided, and also extends beneath the bordering pro-glacial channel (*Urstromtal*) to the south. Up to the late war, the district concentrated on the supply of briquettes, chiefly to Berlin, and on the manufacture of electricity at public power stations such as Trattendorf. Industry based on brown coal was not as extensively developed as west of the Elbe, although some coal was used in the glass and pottery industries. The first World War saw the establishment of the Lauta aluminium works, the second the building of the plant for the synthetization from brown coal of motor spirit and chemicals, by means of the Fischer-Tropsch process, at Schwarzheide, east of Lauchhammer.

In this relatively thinly populated area, a new industrial complex is being created. The existing open coal pits are being extended, and new ones developed, with the aim of raising production from about 60 million tons a year in 1953 to 107 million tons in 1960. The power station at Trattendorf is being enlarged, and at Lauchhammer, a village of 600 inhabitants in 1946, the first plant for the production of metallurgical coke from brown coal has been erected. In the autumn of 1955, this *Mátás Rákosi* plant was said to have produced its first million tons of coke. By-products, including tar, benzene and phenol, are processed at nearby installations. Gas is already being delivered by means of an 8-mile pipe-line to the Fischer-Tropsch plant at Schwarzheide, and another line is being constructed to serve the steelworks at Riesa, on the Elbe. Meanwhile, 1,000 workers are engaged in site preparation at the tiny hamlet of Schwarze Pumpe, south of Spremberg. Here, in the years 1956–64, the East German state plans to build three coking plants side by side, each with its own briquetting plant, power station and other installations.

Apart from their fundamental importance for the industrial geography of East Germany, all these changes, and others to come, will have an increasing impact upon the Lower Lusatian landscape of heaths and forests. The little village of Lauchammer, we are told in *Die Wirtschaft*, has in the last four years taken on the appearance of "a modern socialist town," and Hoyerswerda is to be similarly extended. Here, the old town is to be given a



processional way and shopping centre "like the Stalinallee in Berlin," and by the end of 1956, 1,000 new houses are planned. Whatever may be the political future of East Germany, these changes in the pattern of industry, population and settlement will remain as permanent features of the geography of the country.

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URANIUM IN THE COMMONWEALTH OF AUSTRALIA

Radioactive mineral occurrences have been known for many years in some of the Australian states but, except for those in South Australia, early discoveries were of mineralogical interest only. In 1906 veins containing davidite—an oxide of iron, titanium and uranium—were discovered at Radium Hill, and secondary uranium minerals at Mt. Painter in the same state. A number of companies made intermittent attempts to exploit these deposits up to 1941 but their ventures failed: the deposits were too remotely situated and the ore too difficult to treat to allow competition in the then restricted market for radium.

Interest in the uranium deposits of the continent arose in the closing years of the second world war when supplies were needed for immediate use by the United Kingdom and the United States of America. It first centred on the known deposits in South Australia, where the detailed investigation by the Mines Department of that State of the uraniferous lodes, occurring in rocks of Archaeozoic age, began in 1945. Additional radioactive deposits have recently been found in the State, principally at Crocker's Well, where a new mineral, absite, which contains oxides of uranium, thorium, titanium and rare earths, occurs in a deeply weathered breccia zone resulting from shearing of Archaeozoic rocks. Simultaneously with the exploration and development of the lodes at Radium Hill, the Commonwealth Scientific and