

THE DURHAM COALFIELD

THE fuel technologist, the mining engineer and the geologist will find material of interest in the Regional Survey Report on the Durham Coalfield*. The pressing needs of war have revealed serious defects in the organization and technical efficiency of British coal-mining, and the Minister of Fuel and Power has wisely decreed that the basis of any attempt to create an efficient and prosperous mining industry is a national stock-taking of the already depleted coal resources of Great Britain.

At an early stage in the report it is made clear that this coalfield has made, and will continue to make, a vital contribution to the national economy. Durham coals vary much in character; but this area is justly renowned for its coking and gas coals, described as "probably the best in Europe". In West Durham certain of the seams yield coal which produces an excellent metallurgical coke, hard in texture and low in sulphur and phosphorus—a coke in great demand for foundry and general metallurgical work. Emphasis is very properly laid on the fact that the seams yielding the best coking coals have but a limited life, and it is estimated that, at present rates of production and consumption, the total coking coal reserves will be extracted within seventy years. The conservation of these resources of coking coal is clearly a matter of first importance, and the report makes a significant reference to the considerable export trade prevailing in this class of coal in normal times. Almost the whole of the coalfield produces gas coals of good quality. Much of the coal required by the gas works of London and the south coast comes from Durham, and prior to the War, Durham coal was shipped to many of the European gas works.

There has been much speculation as to the probable life of the British coal seams; but it is certain that the regional surveys will provide data for reasonably accurate estimates. Since previous attempts to arrive at the coal reserves of Great Britain much information has been compiled by the Geological and Fuel Research Surveys, while the financial transaction involved in the nationalization of mineral royalties necessitated the preparation of proposals for working during the next thirty years, with an estimate of the reserves remaining in 1972. With certain reservations, the estimated reserves of the Durham Coalfield are given as 3,000 million tons. It appears that this is a conservative estimate; many thin and low-quality seams are not included in the figure, and it is also probable that there are further substantial reserves of under-sea coal. In 1938, the output was approximately thirty-three million tons, so that at this rate of production much of the Durham Coalfield will be exhausted in the next hundred years. Nevertheless, coal will continue to be produced from this area for a much longer period; seams not now regarded as a commercial proposition may well prove workable in the years ahead, "providing, as it were, a second harvest".

The conditions prevailing in the under-sea areas are of great importance to the coalfield. It is disappointing to read that there are deteriorations in certain seams as they pass seawards. The Durham Coalfield is apparently affected in the same way as the East Midland Coalfield, which suffers a marked deterioration in the seams underlying its eastward

extension. Exploration has been carried to a small distance beyond the three-mile limit, but it is expected that one or two of the better seams will be workable for a distance of six miles or more out to sea.

An astonishing feature of the report is the statement that some 738 million tons of coal have been sterilized for one reason or another. The bulk of this coal has been left in order to avoid damage to buildings by mining subsidence, and the report states that if arrangements could be made for supporting the surface by stowage, some 468 million tons of this sterilized coal might well prove economically workable. Since sterilized coal has not been included in the estimate of total reserves, and represents about 25 per cent of the latter figure, it is clear that the introduction of modern methods of stowage would result in a considerable addition to the resources of the coalfield. To obviate further undue sterilization of Durham coal, care is needed in the selection of sites for future houses and buildings.

The industrial life of this area is based on its high-quality coal seams, and any consideration of future prospects must take into account the possibilities of using coal as a basic raw material. Included in the report is a short account of the findings of the Coal Processing Industries Panel of the North-East Chemical and Allied Industries Development Committee. It is made clear that the establishment of new coal-processing industries will involve a very large capital expenditure, and that the success of any project of this nature will be dependent on adequate co-ordination. "The Gas-Grid Scheme, the extraction of olefines, methane and other gases, the production from these of chemicals and plastics, the conversion of coke to petrol, Diesel oil and other hydrocarbons, are all inter-related, and part of one comprehensive coal processing project."

The remainder of the report deals with the possibilities of de-watering a large tract of flooded coal in south-west Durham, the question of increasing productivity by further mechanization of the mines, and the housing requirements of the mining community. As a guide to the present position and future of the coalfield, the report is a document of major importance, of interest to all who believe that the future of Britain is dependent on the proper use of our remaining coal resources.

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REFORM OF THE PATENT LAW IN BRITAIN

DURING the past few years, there have been many allegations that monopoly rights created by patents for inventions are being used contrary to the public interest by large industrial corporations. One suggestion which has been mooted in Great Britain for rectifying this alleged abuse is that each patent shall be granted subject to the condition that any person may obtain a licence to work the invention on terms to be agreed with the patentee or, in case of disagreement, to be settled by the Comptroller-General of Patents. This suggestion, in its original form, has not met with general acceptance, and a modification of it is put forward by Prof. M. Polanyi in a pamphlet reprinted from the *Review of Economic Studies*, entitled "Patent Reform: a Plan for Encouraging the Application of Inventions".

Prof. Polanyi expresses the opinion that to grant all patents subject to compulsory licensing on terms

* Ministry of Fuel and Power: Durham Coalfield Regional Survey Report (Northern "B" Region). Pp. 48. (London: H.M. Stationery Office, 1945.) 1s. net.