



Portrait of a Miner: One of More Than 750,000 in This Country

Tommy Shotton is a coal-miner. He lives in the small colliery village of Greenside, seven miles from Newcastle. He is working on the night-shift from midnight to 8 a.m. His life is typical of that of many thousands of British coal-miners.

COAL MINER

Coal is one of Britain's chief natural treasures. Coal-mining is one of the pillars of our industrial life. It gives employment to more than three-quarters of a million wage-earners. It produces wealth to the value of £170,000,000 a year.

WAITING. . . Ever since the shuddering summons of the hooter, urgent and fraught with foreboding, had sent them running to the pit-head. Waiting women, coats over their night-clothes, shawls over their heads, shivering with cold and with fear. Waiting for that winch to bring up its load, for the cage gates to open, for limp men, their gas-masks dangling round their necks, their clothes scorched, and a

look of men who had been through hell, to stagger out with stretchers. Waiting as they have waited all their lives as miners' wives, for that moment when their ever-present nightmare becomes a reality. Only those who have stood at the pit-head after a disaster and have watched the dry-eyed agony of these women can realise the human price of coal.

Once I saw an aged woman, in a drab miner's

cottage in the Scottish Lowlands, pick up the tongs to "mend" the fire. She was in her dotage and, with a far-away look, she mumbled over each lump, "Jockie," "Chae," "Wull," "Eckie." . . . Those black lumps of coal were the only monuments she could afford to her dead, to her men-folks who had died in "winning" coal.

Every day three miners are killed and over 400 injured in the bowels of the earth. In those



2 *Symbol of Coal-Mining: The Shaft with its Great Wheels*
Wherever coal is mined you see them. Over these wheels passes the cable carrying the cage—in which the miners descend hundreds of feet below the surface to dig out the debris of ancient forests.

black catacombs, into which the swift-dropping cage plunges each shift. To the pit-bottom, where hurtling tubs come careering down the slope to find the shaft level.

Edging along walls of the main "gates" or roadways, dodging into "funk-holes" as a fresh train of tubs come rumbling out of the darkness, the shift makes its way for, maybe, a mile underground before it reaches the coal face. In a modern pit they may have to climb over the conveyor belts which bring the coal, from the face, down the narrow "gates," to the tubs.

It is a nerve-wracking journey for a stranger—crawling and crouching in that alley where the pit props creak and the roof-beams groan as a thousand feet of earth presses down upon them.

The miners' lamps bob eerily ahead in the darkness, and sounds, muffled by the depth, take on an unearthly quality, even though it may be merely an argument about last Saturday's football match or the tub-boy whistling "The Lambeth Walk."

On either side there is the goaf or gob. As the miners have hewn their way into the pit-face, at each stage, the props have been pulled out and the rocks and rubble have "settled," leaving only a working space in front of the face, and the "gates" along which the coal travels and the safety roads down which the miners can escape in time of peril—if they are lucky!

The shift, stripped to the waist, attacks the coal face. The fireman, with his Davy lamp, has tested for the dreaded gas which would show its blue halo round the lowered flame.

A hole is bored through the coal, the charge is inserted. An enormous mechanical cutter with revolving teeth has undercut the face, much as the saw of a lumber-jack undercuts a tree.

The shot is plugged in with clay, wires are led from it.



3 *The Start of His Night's Work: The Miner Calls For His Safety Lamp*
First task of Tommy Shotton when he reports for work at midnight is to collect a token which he strings round his neck—identification in case of accident. Then he collects the safety-lamp—most valuable invention in the whole history of mining.



4 *Waiting to go Below*
A chat and a last smoke before the buzzer which summons them below. The man crouching is doing it for comfort—the result of his cramped work. The miner's crouch eases the stomach muscles.

The miners take refuge at a safe distance. The shot-firer presses his electric switch. There is a throat-choking rumble, and clouds of coal dust, which would be liable to cause terrible explosions but for the stone dust which the fireman liberally scatters.

That blast has dislodged the coal which the miner, proud of his skill, used to hew.

Mechanical conveyor belts are quickly installed along the coal face. The miner's job to-day, in a mechanised pit, is to shovel the coal on to that belt. This belt transfers the coal to another running at right-angles through the gob to the main roads, where it is tipped into the tubs which have been shunted underneath.

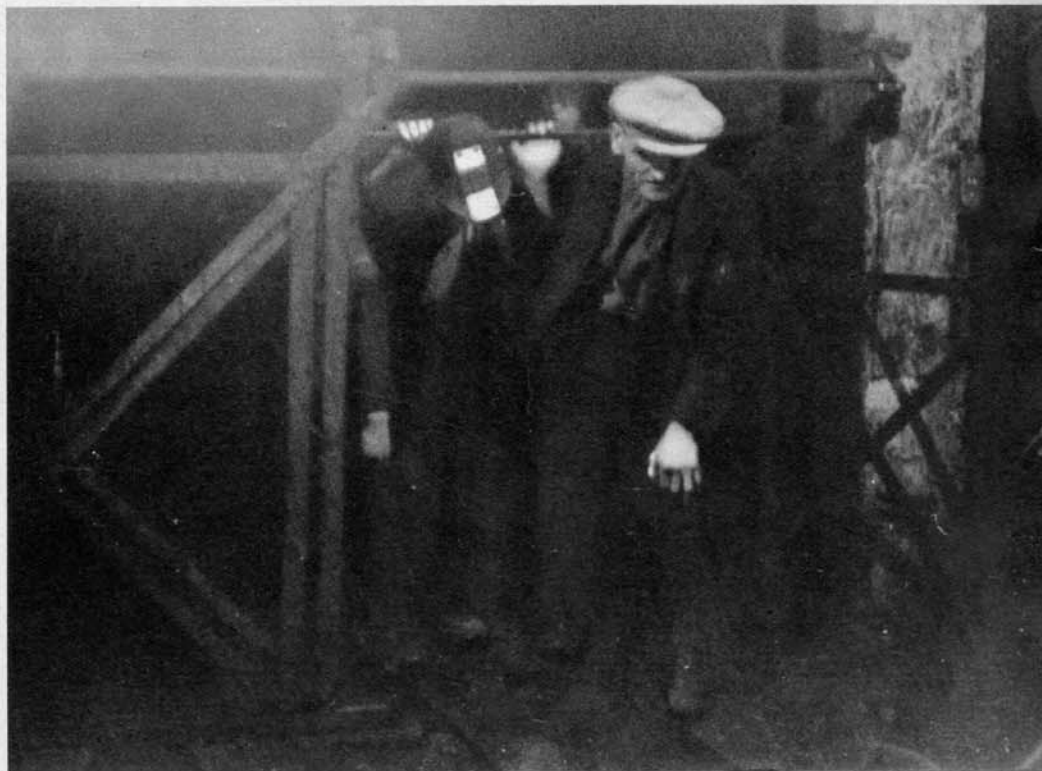
The tubs are locked on to a cable and are drawn, often without even the help of a pit pony, to the shaft. Mechanisation is spreading rapidly through the coalfields.

In the Midlands the average output for each man, not only those at the pit face, but above ground, and including the new technicians and electricians, increased by 2½ cwt. in five years.

That, in terms of man-power, represented the displacement of over 5,000 men.

The miner at the coal face is now loading over three times as much coal as the hand miner hewed. That looks like being doubled by new methods being employed.

There are in existence plans for a completely mechanised pit. Instead of the miner shovelling coal, the iron arms of a "harvester" will reach out, clutch the coal and draw it on to the belts. Then automatically it

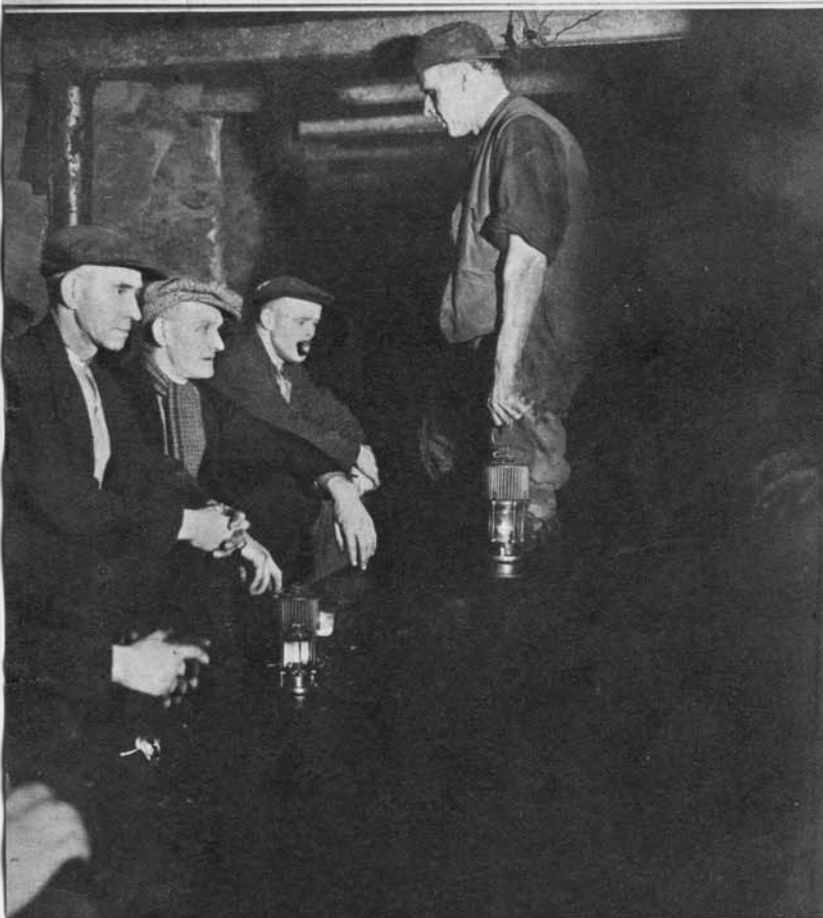


5 *500 ft. Below Ground He Comes Out of the Cage*
The 500 ft. journey has taken them only a few seconds. Over 100 men are working on the night shift. As they leave the cage their places are taken by the stone-men, who have been blasting away the stone so that the miners can get at the coal.



The Men Make the Journey to the Seams in Tubs

6 A set—a series of ten tubs—carries the men to the seams, until the roof becomes too low for further travel. They cover the rest of the way at a crouching walk. The whole mine is a network of passages radiating out from the shaft, following the seams of coal.



The Deputy Assigns Them Their Positions

7 At the junction of two seams the men meet the deputy. He has been here two hours already. His is the responsible task of seeing that the proper air-supply is being received and that there is no risk of subsidence.

will be tipped into the tubs, and without human agency taken to the pit-bottom.

By a system rather like the scoops on a mud dredger, the tubs will be taken to the surface, tipped on to the screens, and returned to the mine. The dwindling staff underground will gradually be confined to the shot firers, electricians, mechanics, steel workers (installing metal props), goaf packers and road makers.

In Russia, they are going even further. They have sunk pits, set fire to overlying seams and have carbonised the lower seams, just as

in a gas works retort, and have drawn off the gas and tar, as though it were an oil well.

The advent of the "Iron-Man" fills the miners with misgiving.

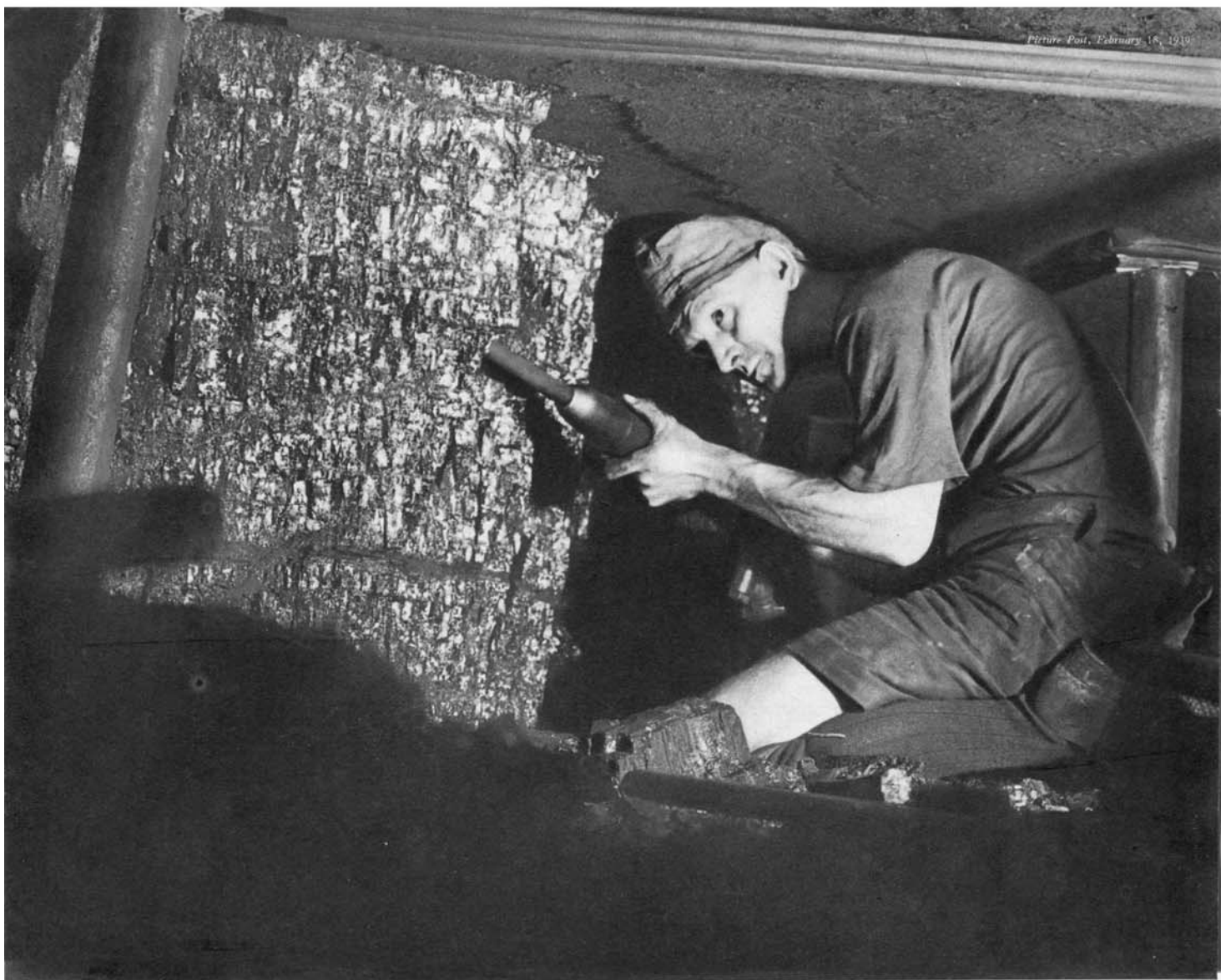
Although, remembering those haggard women at the pit-head, it might be argued that humanity should be on the side of the machines which bring more men out of the darkness of the earth, there is the miners' livelihood, even with the risk of death and disablement, to be considered.

There is that precious pay-packet, uncertain enough as it is, averaging, for all the British



The Deputy Makes Out His Report

8 By the light of a safety lamp Mr. Clough, the deputy, has written up his report. Every miner is free to examine this report before he goes to his appointed position.



9 *One of the Chief Sources of Our National Wealth and Greatness: the Coal-miner at Work*
Surrounded by steel props which support the roof, crouched into a few feet of space, Tommy Shotton gets down to his job of drilling coal from the face with the aid of his "windy pick" (pneumatic drill). Mechanisation in British mines has steadily increased. In 1937, 57 per cent. of the total output was cut by machinery, compared with only 13 per cent. in 1920. 51 per cent. was dealt with by mechanical conveyors and loaders below ground.

miners, about £2 16 0 a week, with all allowances.

There are the mining communities, grim and drab, and overshadowed by satanic slag-heaps, but still the homes of hundreds of thousands of families.

Since the war the number of miners employed has dropped from over a million to barely 800,000 insured workers, and of these one out of eight is unemployed to-day.

That decline cannot be laid wholly at the door of mechanisation. The demand for coal has declined by over 80,000,000 tons a year since before the war. Part of it is due to the decline of the export trade, and part to the enormous development of oil as a fuel.

But there is also the increasing efficiency in the use of coal itself. This efficiency is shown at its best in the modern power stations where 80 to 90 per cent. heat-value is extracted from the coal.

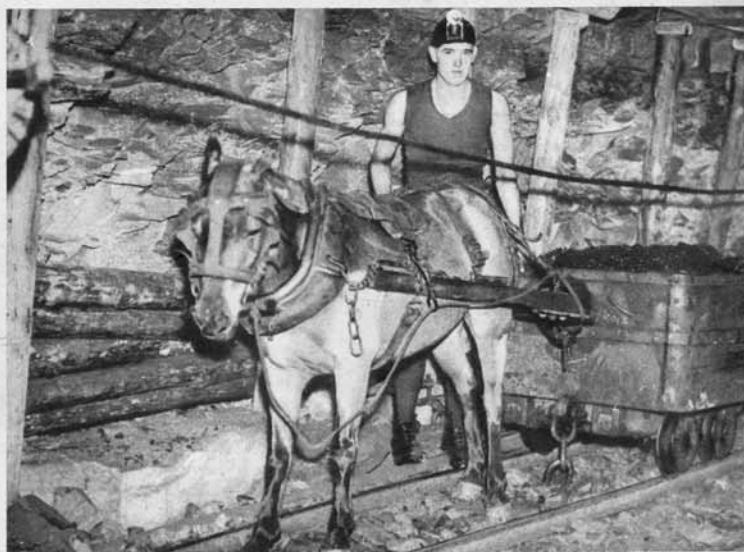
This compares with the efficiency of the average domestic fire, which is only about 20 per cent. That means that out of every ton the heat of 16 cwt. goes up the chimney.

Railways use 2,000,000 tons of coal less than they did before the war. Electricity has doubled its demand for coal, but it has trebled its output from that coal.

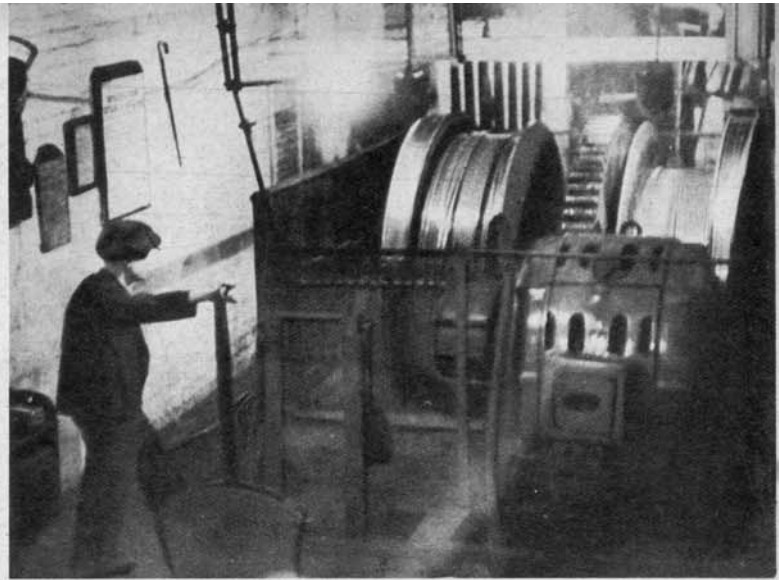
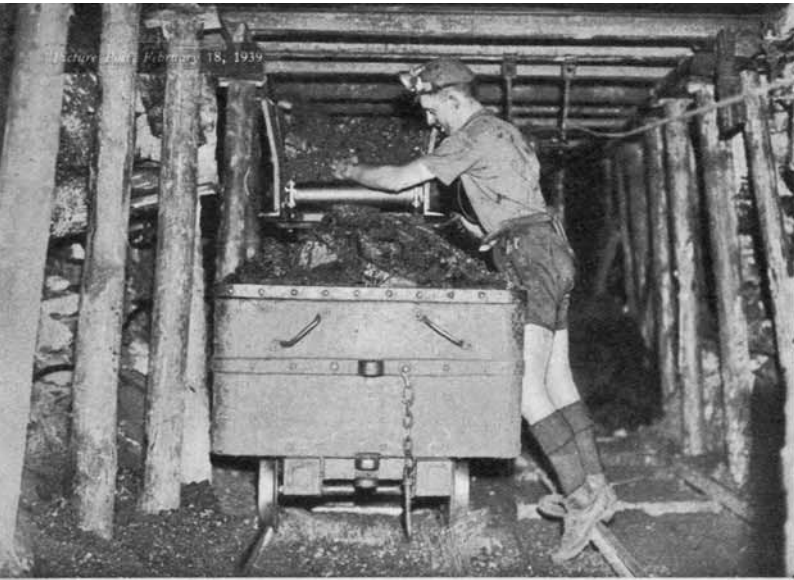
All things considered, the demands upon coal seem likely to decrease rather than to increase. But that does not mean that the importance of coal to this country is diminishing. On the contrary, it is increasing. But its importance will begin at the pit-head and not at the pit-bottom—it will cease to be just the black lump the miner handles, and become the Aladdin's Cave of the chemist.

Government experts have prepared a "Doomsday Book" of our coal reserves. They have surveyed only a quarter of our coalfields, but they have found, and identified, enough coal to last us until A.D. 2080—£30,000,000,000 worth of black wealth in the vaults of Britain. New industries, with a vista stretching far into the future, can come from that coal.

Imagine a city of coal. The houses built of coal; the windows glazed from coal; furniture made from coal; heated from coal; illuminated with coal. The



10 *The "Putter" and His Pony*
The "putter" with his pony and tubs is the intermediary between the endless belt conveyor, which works right up at the face, and the giant hauler which drags the sets of tubs to the shaft-bottom.



11 The "Putter" Loads a Tub

Coal from the face travels 90 yards along the mechanical conveyor to be loaded into tubs by the putter. Before the tubs are pulled away by his pony, he marks each tub with a token so that it will be credited to the men who hewed it.

12 The 250 h.p. Hauler Winds the Tubs In

Each of the tubs holds half a ton of coal. It takes eight minutes for the coal to come from the hewer to the tubs. Four tubs at a time are pulled by the pony to the point where the giant hauler can drag them to the shaft bottom.

men and women are clothed from coal. They eat coal and drink coal. The women are fragrant with the exotic perfumes of coal. The roads are made from coal. The traffic is driven by power from coal. Aeroplanes fly overhead at fantastic speeds propelled by coal. It is a city of rainbow colours, all from coal.

But above all, it is a city without smoke. For it is from the smoke, our black heritage from the Industrial Era, which pollutes and poisons our atmosphere and destroys our health and our buildings, that this "Coal Jerusalem" will come. By carbonising our coal to produce either gas or smokeless fuel we

can salvage new industries from the tar. The buildings in our imaginary city could be built of breeze-blocks, cased in bakelite, which is a coal resin familiar to us as ashtrays, telephones and desk ornaments. And they could be any colour you like, through the synthetic dyes from coal tar. The windows

would be of "Perspex," a transparent resin now used to encase the turrets of bombers and to make lenses for spectacles and binoculars. The furniture would be made from resin. The heating and lighting would be either gas or electricity from stations using coal.



13 "Bait-Time": 500 Feet Below the Surface Coal-miners Eat Their Simple Meal

Water and bread and jam was their meal. No miner eats much underground. The crouching position in which the men must work causes heartburn if the stomach is full. Nothing fried is ever eaten down below or just before going down.



14 The Night Shift On Its Way Home

Just after eight o'clock sees the night shift on its way home. Other men have taken their places at the face. At many mines there are now pit-head baths, and the men bathe and change before going home. In others they still have to take their bath at home.

The Du Pont Company of America is developing a £2,000,000 factory to produce "Nylon," an artificial silk made from coal resin. The threads are seventy-five times as thin as natural silk. They are so strong that stockings will not ladder, and yet are so "sheer" that woman will find them irresistible, and so cheap that Japanese dumping cannot compete.

Innumerable scents come from coal. Synthetic beer can be produced from coal chemicals, and the Germans claim to have made edible products from coal.

Tarmac gives us our roads. The cars would be driven with hydrogenated petrol from coal—the waste which goes up the average domestic chimney represents two barrels a year! The aeroplanes would be flown on toluene, also from coal. Even our dental plates can be made

from tar resin. And British Government chemists have now produced a wax from coal which can be made into soap.

Coal gives us valuable drugs, including prontosil, the greatest drug discovery of our generation, which has saved thousands of mothers from death from child-bed fever, and in its variations has proved a life-saver in meningitis, pneumonia and other diseases.

But the catalogue seems as limitless as the possibilities of the new industries which the chemist can give us from that lump of black magic.

New industries, which if developed at the pit-head where they belong, would bring lasting prosperity back to the depressed coal areas, would bring life back as well to the dying valleys of South Wales, and the stricken villages



15

A Rest By the Fire Before His Bath

A bath, then food, then sleep. Waiting for his bath the miner takes up his natural position—the crouch, either on his heels or on a low seat.



16 *Washed and Clean, the Miner Gets His Breakfast*
After the bath comes breakfast. Then Tommy goes to bed for four hours. He gets up for dinner—his main meal of the day—then goes to bed again for another four hours. This arrangement leaves the evening free for social life, which in Greenside is divided between "the Pack Horse" and the Greenside Institute.



17 *Social Life: Evening in the Institute*
The Institute is a centre sponsored by the mining company and run by a committee elected by the miners. Here the men play games and read.

of Durham and Scotland. The young people fleeing by the hundred thousand, from a hopeless future, would return. Machine displacement would be compensated by work in new factories.

And we would have a coal Jerusalem in Britain's green and smokeless land.

RITCHIE CALDER.



18 *Before He Starts Again*
They work side-by-side below ground, meet face-to-face over the chess-board.