



GENERAL VIEW OF LYDNEY DOCKS



COAL SHIPPING POINT, SHARPNESS DOCKS

Forest of Dean Collieries

CANNOP COLLIERY

SITUATION

AS will be seen by the aerial photograph, Cannop Colliery is situated amidst scenes of sylvan beauty of a type usually entirely detached from the general idea of collieries. When it became necessary to plan the mine, its position was fixed amongst the sturdy oak trees of the Forest, and in placing the shafts and erecting the buildings necessary, it was decided to preserve, as far as possible, the amenities of the situation. Notwithstanding, it became necessary to remove about three hundred oaks of about one hundred years' growth. It was possible, however, to preserve a number of these trees even amongst the Colliery buildings, and some are still standing after twenty-seven years.

HISTORY AND DEVELOPMENT

The coal seams of the lower measures of the Forest of Dean were but little developed before the year 1906, mainly on account of water difficulties. The Cannop Coal Company, Limited, was formed early in 1906 to win a large area on the western side of the Coalfield. Actual work commenced on July 9th of that year, and after overcoming the water difficulties the seam was reached in both pits about the end of 1909. In the meantime, coal from the same seam was placed upon the market from a development at a higher point by drift from the surface. This continued to function for several years until developments at the pits matured. The coal was proved to be of very superior quality, and the market absorbed all available supplies of the Rough Small and "Thro' and Thro'" for steam raising, and the Large for

household purposes. In the year 1908 a powerful electrical plant was installed to produce on the spot all the electrical energy required. From time to time this has been extended and kept in line with modern practice to meet the needs both under ground and on the surface of a colliery producing 1,400 to 1,500 tons per day. So far as is



CANNOP COLLIERY—
Aerial View

considered desirable, all underground and surface machinery is electrically driven. While the shafts are 205 yards in depth, some of the workings have extended to the deepest part of the Forest Coalfield, and are about 620 yards vertically from the surface. While the quantity of water pumped has been, and still is, considerable, it is so regulated that the coal seam is thoroughly drained in advance of the working places. Practically the whole of the coal is now worked dry, and in consequence of this it has been possible to erect a Dry-Cleaning Plant for dealing with the Smalls.

PITHEAD BATHS

The Colliery employs about 1,050 men and boys, and for their benefit an installation of Pithead Baths, with all the attendant amenities, is provided, including a Canteen, and is greatly appreciated by the men and their families.

PIT PONIES

An interesting feature about the Colliery is that the pit ponies are stabled on the surface, and are lowered and raised for their shifts in a specially constructed horse-box.

SCREENING AND DRY CLEANING PLANT

When the Colliery was first equipped, adequate screens and picking belts were installed, and these have been added to from time to time. During recent years users have required coals to be more scientifically sized and cleaned. In dealing with the smaller sizes advantage can be taken of the varying specific gravities of coal and foreign matter—such as shale. The separation can be effected by either water or pneumatic means. In many cases there appears to be objection to wetting the coal, and so the pneumatic process has come largely into vogue. For this purpose Cannop has recently installed a Dry-Cleaning Plant (shown by the second photograph), whereby the shale and dust are extracted, and the products are carefully and regularly graded in size and cleaned. The particular sizes dealt with in this manner are Doubles 2 in. to 1 in., Singles 1 in. to $\frac{1}{2}$ in., and Pearls $\frac{1}{2}$ in. to one-sixteenth of an inch. These sizes can also be mixed together in the form of Rough Small, 2 in. to $1/16$ th in. The analyses show these to be exceptionally clean and regular, and low in ash and moisture content.



PRODUCTS

The larger sizes, 3 in. by 2 in. Nuts and Large Coal, which are graded in size by machinery, are carefully picked by hand; both are suitable for gas-making and for domestic purposes, in the latter case lighting up easily and giving a great heat. The dry-cleaned sized coals and



CANNOP COLLIERY,
showing new Dry Cleaning Plant in operation

Rough Small are eminently suitable for gas-making (the yield of gas and therms per ton being very high), steam-raising, brick and cement making. Large quantities of these classes of coals are being used in the steel and tinplate works in South Wales, with excellent results, while in other parts of the country they are giving entire satisfaction for steam-raising purposes on chain-grate stokers. Copies of the analyses of the various grades may be had on request.

Henry Crawshay & Co. Ltd.

LIGHTMOOR COLLIERY

LIGHTMOOR Colliery is situated on the eastern side of the Forest of Dean Coalfield, about $1\frac{1}{2}$ miles from Cinderford, fourteen miles from Gloucester, and about thirty miles from Bristol.

The L.M.S. & G.W. (Joint) Railway from Lydney runs past the Colliery and connects with the Lydney and Sharpness Docks, and a private loop line, the property of the Colliery, connects with the Bullo Branch of the G.W. Railway, which in turn communicates with the Gloucester-South Wales main line, thus affording alternative routes to all parts of the country.

The Lightmoor Colliery is in the Middle Series of the Forest of Dean Coal Measures, from which the very best House coal is produced.

Up-to-date Screening or Separating plants are erected on the surface, capable of dealing with eight hundred tons per day of eight hours' duration, the following grades being dealt with: Best Block, Double Screened, Single Screened, Cobbles, Nuts, Rough Small and Duff.

According to the Laws of Dean Forest, the granting of Lightmoor Colliery was made in the year 1832, and we may therefore safely assume that the Colliery has been active from eighty to a hundred years. Four Shafts were sunk, passing through the various House Coal Seams on the eastern side and rise of the Basin to a depth of approximately three hundred yards.

From the bottom of these shafts Cross-cuts were driven, intersecting the seams, where they were developed in their respective positions.

The Colliery is renowned for the splendid lay-out and roadways underground, and in every way is suitable for large outputs to its winding capacity.

The seams of coal extracted are known as Twenty Inch (or Smith Coal), Lowery, Starkey, Rockey and Churchway Highdelf, and all meet the requirements of

Lightmoor Colliery

a perfect House coal, the same covering an area of about one thousand acres respectively.

An average analysis of the seams produced, as ascertained by the West Ham Testing Laboratory, London, is as follows :



HENRY CRAWSHAY & CO.'S LIGHTMOOR COLLIERY

LIGHTMOOR COLLIERY LARGE HOUSE COAL

Volatile Matter		41'5
Ash		4'17
Fixed Carbon		54'33
Sulphur		1'06

101'06

Lightmoor Colliery supplies the undermentioned Markets : Bristol and District, Gloucester, Cheltenham, Severn Ports, Devon, Cornwall and Ireland.

Henry Crawshay & Co. Ltd.

EASTERN UNITED COLLIERY

The Eastern United Colliery is situated on the east of the Forest of Dean Coalfield, and is $1\frac{1}{2}$ miles from Cinderford, fourteen from Gloucester, and thirty-one from Bristol.



HENRY CRAWSHAY & CO.'S EASTERN UNITED COLLIERY

The Bullo Branch of the Great Western Railway runs alongside the Colliery, connecting it with the South Wales-Gloucester main line.

The Colliery is one of the group of Deep Gales or Steam Coal Collieries in the Coalfield, and contains the celebrated Coleford Highdelf seam, which is renowned and well known as a GAS and excellent STEAM COAL.

Great difficulties were encountered at this Colliery in overcoming water and geological troubles, but these are now well in hand, and the Coleford Highdelf Seam averages 4 feet 6 inches thick, more or less free from Faults, with a strong Rock Roof.

Eastern United and Northern United Collieries

The coal is of excellent quality, free from dirt partings—consequently, little difficulty is encountered from foreign matter being mixed with the coal in the operation of extraction.

This coal gives about 14,000 cubic feet of Gas to the ton, and yields an excellent coke.

A modern screen for separating has been recently erected, which produces several grades of coal, the sizes of which are suitable for the Market.

The Colliery is installed with Electricity throughout.

NORTHERN UNITED COLLIERY

(Also owned by Henry Crawshay & Co. Ltd.)

This Property has recently been acquired, and is one of the seven groups of Collieries amalgamated by the Dean Forest Mines Act, 1904.

It is situated at the north end of the Coalfield, about two miles from Cinderford, and one mile from Drybrook, and comprises an area of about 1,500 acres, the main Seam of which is the well-known Coleford Highdelf Steam Coal.

Operations are in progress for the development of this large undertaking, where an existing old Shaft has been re-opened, which several years ago extracted the Coal on the Rise or extreme north of the property.

A new Shaft is being sunk, which will, it is estimated, reach the Coal at a depth of from 200 to 220 yards.

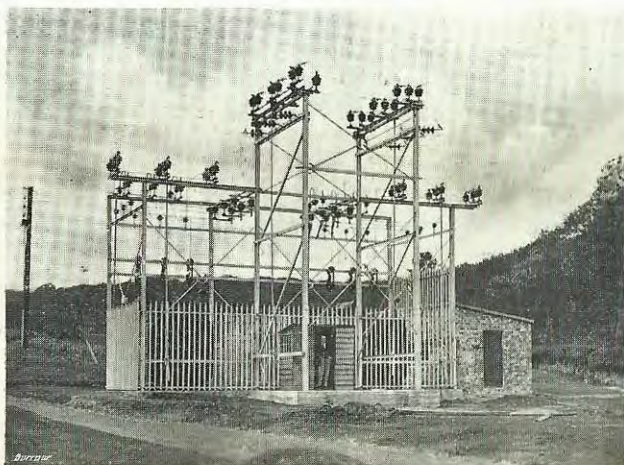
Roadways will then be driven from the bottom of this new Shaft to connect up with the existing Shaft (known as Hawkwell), which will serve as a spare and second outlet.

This Colliery will be equipped electrically throughout, the power being supplied by the West Gloucestershire Power Co.

The Winding, Screening and Haulage will be of the most modern and up-to-date type.



HENRY CRAWSHAY & CO.'s NORTHERN UNITED COLLIERY,
showing new Head Stocks before sinking commenced



HENRY CRAWSHAY & CO.'s NORTHERN UNITED COLLIERY
SUB-STATION

The Lydney and Crump Meadow Collieries Company Limited

HISTORY

THIS Company was incorporated in the year 1884, when it purchased the properties known as the Bilson and Crump Meadow Collieries, situated at Cinderford, which then comprised several coal Gales.

The winning of the coal from these areas was concentrated at the Crump Meadow Colliery, and for some years the Bilson Pit, familiar to the old inhabitants as "Old Tom," continued to be worked as an auxiliary pumping shaft, the pumping being done by a massive Cornish Beam Pump, which was first erected about the year 1830.

For more than forty years House and Gas Coals continued to be produced from the Upper Series Seams.

In 1904 an Act of Parliament was passed by which the Lower Series Seams were amalgamated into groups, each having considerable acreage, and the Company, seeing the exhaustion of their Upper Series Seams, acquired in 1909 the North-Western United area or Gale, which is situated on the north-west side of the Forest of Dean, and immediately re-opened the Arthur & Edward Colliery, Lydbrook, locally better known, perhaps, as the "Waterloo Colliery," from the fact that the shafts were originally sunk to the Coleford Highdelf Seam soon after the battle of Waterloo was fought.

UNDERGROUND

Although the "Waterloo" or Arthur & Edward Shafts are only approximately one hundred yards deep, the Coleford Highdelf Seam has been followed by "Dipples" to a depth of about 350 yards below the surface. The floor consists of hard fire clay, the coal is comparatively hard—a "parting," or line of cleavage, about two feet from the bottom being used for "Holing" when cut by hand labour.

This seam has an average thickness of 4 ft. 6 in., and about half of the present output is got by modern machine methods, and the remainder by manual labour.



ARTHUR AND EDWARD COLLIERY,
Lydney and Crump Meadow Collieries



THE SCREENS,
Lydney and Crump Meadow Collieries

In machine working, the coal seam is first undercut by electric coal cutters, the "faces" thus cut varying from sixty to one hundred yards in length. The coal after being undercut is loaded out on Conveyors, both the "Jigger" and Belt types being used. These Conveyors were supplied by the Mining Engineering Co. Ltd., from their Meco Works, Worcester.

The photograph on page 1 shows the loading end of a conveyor and the coal being delivered into pit tubs.

In the actual getting of the coal and conveying it to the surface there has been a steady substitution of machinery for hand labour, as also at the pit top, where the coal is conveyed along the surface incline to the Screens, which grade, clean and prepare it for the market.

SCREENING ARRANGEMENTS

The points most vitally affecting the buyer of coal are the methods adopted for the handling and loading into truck, and in this respect a very efficient plant has been installed, which provides four separate picking belts or tables, two of them being of the bar type, and most effective for dealing with Large coal—3 in. and upwards, and Nuts 2 in. to 3 in. Two plated belts or tables deal with the coal below 2 in., the method of procedure being that the coal in the pit tubs is emptied by a revolving tippler to a jigger screen, which sorts the coal into the various sizes, Large or Round Coal, Large Nuts, Small Nuts and Small. The coal thus separated travels on the before-mentioned belts, which are manned by men who pick off all the dirt and inferior coal, the remaining clean coal being gently lowered down "lips" or shoots into railway wagons.

This plant enables the coal, when required as "Thro' and Thro'," to pass through the jigger screen and over the four belts, being graded into the separate qualities, while a cross-travelling belt receives the coal at the end of each table, conveying it across into one truck.

This method enables exactly the same care to be maintained when cleaning "Thro' and Thro'" coal as for the separate qualities of Large, Nuts and Small.

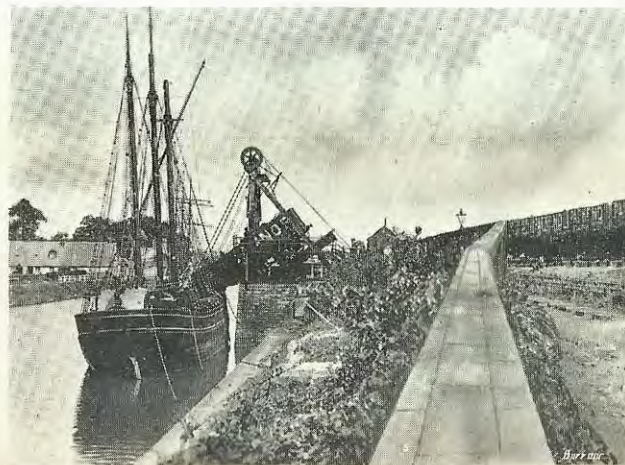
BUNKER COAL FOR SHIPPING

The demand for bunkers (more or less seasonal) by ships using the Port of Sharpness has been largely satisfied by Princess Royal Coals.

DOMESTIC

The large coal enjoys a demand for domestic purposes in its home market of the West of England, and is shipped extensively to the South of Ireland, which still calls for a red ash coal.

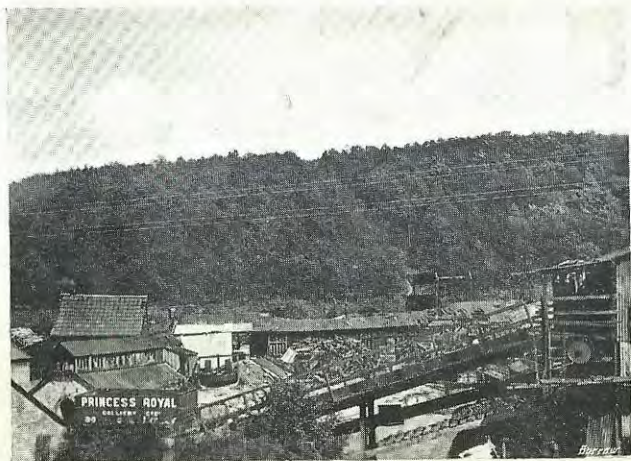
It is probable that with the growth of the demand for a smokeless fuel and home-produced oils and petrol, the Coleford Highdelf coal, with its high volatile content and other favourable characteristics, will be required for low-temperature carbonization, particularly if, as seems likely to be the case, the resultant rich gas is made available for internal combustion engines.



LYDNEY DOCKS,
showing Coal Shipping in progress

Park Colliery Company Limited

THE Norchard Colliery owned by the above Company is situated at Lydney, and works the Coleford Highdelf coal at the southern end of the Coal Basin. The coal is won by dipples from the surface, following the pitching of the coal to the deep. These roads are



PARK COLLIERY CO. LTD.
NORCHARD COLLIERY

equipped with endless rope haulage, and are driven in the Trenchard Seam—the deepest seam in the coalfield. Main cross drivages are taken from this seam to the Coleford Highdelf, which latter seam is worked exclusively now.

This Colliery has been worked for forty-five years, and its product has attained a very high name for its excellent qualities.

Its output is now won from workings of similar depth to its larger neighbour, Princess Royal, as indeed the whole

Park Colliery

of its underground workings are physically united to the latter for ventilation and other services.

The Colliery is very heavily watered, and has pumping plant installed to deal with a winter quantity of three thousand gallons per minute. Its average quantity is 1,500 gallons per minute—about thirty-eight tons of water per ton of coal won.

All the plant is electrically driven, getting its power from the West Gloucester Power Co., whose power station is close by, and who take their coal supply by conveyors direct from the colliery screens.

The Colliery is equipped for an output of about 100,000 tons per annum, the present tonnage being little more than half this quantity, going into the same markets as those described for Princess Royal.

This colliery is the only one in the coalfield working minerals under private land, all the coalfield, except the extreme southern end, being under Crown land.

WRITE TO
W. D. Barnett & Co.

36 VICTORIA STREET,
LONDON, S.W.1.

FOR PARTICULARS OF, &
DELIVERED PRICES FOR

**Forest of Dean Highdelf
COAL**

Telephone:
Victoria 3553.

Telegrams:
"Narbett, Sowest,
London."

THE
Dunkerton Coal Factors
LIMITED

DUNKERTON, BATH

Also at Exeter, Hereford, Poole, Plymouth and Salisbury.

Sales Agents for

FOREST OF DEAN COALS

drawn from the well-known Collieries

CANNOP, EASTERN UNITED, Etc.

GAS, HOUSE AND INDUSTRIAL
COALS.

Write for prices.

Phone: Radstock 60 & 61.

Telephone: LYDNEY 103.

PARKEND 22.

The Yorkley Coal Company

**COAL & TIMBER
MERCHANTS**

Specialists in Pitwood and all kinds
of English Timber.

May we send our representative to see you and quote prices?

LYDNEY - - - GLOS.

D. Morgan Rees & Sons
LIMITED

Telephone:
Whitchurch 591-2.

Telegrams:
"Nurope, Cardiff."

Makers to the Admiralty.

Directors: D. MORGAN REES, E. W. T. REES, N. T. REES.

London Office:

34 & 35 Norfolk Street, W.C. 2 (Telephone: Temple Bar 4532).

Wire Rope and Wire Manufacturers
WHITCHURCH, CARDIFF

WIRE ROPES

*specially constructed for
Mining purposes including*

**WINDING, SINKING, HAULAGE
AND BALANCE ROPES**

Also for

Suspension Bridges, Cableways and
Aerial Ropeways. Transmission
of Power, Tramways, Railways,
Timber Hauling, Ploughing, Oil
Wells, Cranes, Hoists, Lifts, etc.

GALVANISED ROPES

FOR HAWSERS, CARGO FALLS, ETC.

**LARGE STOCKS OF SHIPPING ROPES KEPT
FOR IMMEDIATE EXECUTION OF ORDERS**

Edgar Jarrett & Co.

LIMITED

BREAM (Forest of Dean)

GLOUCESTERSHIRE

HOUSE, STEAM &
GAS

COALS

WELSH
ANTHRACITE

AND
SMOKELESS STEAM.

□

GAS AND FURNACE COKES

Telephone:
Parkend 8.

Telegrams:
"Jarrett, Bream."

Thomas Silvey & Co.

COAL MERCHANTS

AND

SHIPOWNERS

PRINCIPAL AGENTS FOR

CANNOP COLLIERY

Producing the celebrated Highdelf
Steam, Manufacturing and Gas
Coals. Dry Cleaned and Sized
Coals for Mechanical Stokers a
speciality. Also Screened Large
and Nuts for Household purposes.

CARGOES TO ANY PORT

TRUCKLOADS TO ANY STATION

MIDLAND ROAD, BRISTOL

Telephone: 25445
(3 lines).

Established over
60 years.

FOREST OF DEAN COALS

Renwick, Wilton & Dobson
LIMITED

CONTRACTORS

FOR

FOREST OF DEAN
GAS, HOUSE & STEAM
COALS

FIRST-CLASS VALUE AND
SERVICE

OFFICES AT

BRISTOL - Cheese Lane

Telephone: Bristol 20632.

CHELTENHAM - Promenade

Telephone: Cheltenham 3674.

NEWBURY - 6 Fir Tree Lane

Telephone: Newbury 698.

Also at

TORQUAY, BIRMINGHAM, SWANSEA, LONDON,
NEWCASTLE, DARTMOUTH, Etc.

Sales Service & Specialists
for

FOREST OF DEAN
HOUSE, GAS &
INDUSTRIAL
COALS.

COAL and
COKE
FACTORS.

THRUTCHLEY & CO. LTD.
Manchester, Liverpool, London, Cardiff, Swansea and Bristol.

Shippers

Fuel for all
purposes. By
Rail, Road or Sea.

WESTERN AREA OFFICES:
IMPERIAL BUILDINGS,
CARDIFF

Telegrams & Telephone: 7330.

28 BALDWIN STREET,
BRISTOL.

Telegrams & Telephone: 25776.

• DEAN FOREST •

COAL COMPANY

**COAL FACTORS AND
COLLIERY AGENTS**

ESTABLISHED 1870.

All Classes of FOREST of DEAN HOUSE,
HIGHDELF GAS and STEAM COALS.

ALSO WELSH ANTHRACITE, STEAM,
SMITHY, MIDLAND, YORKSHIRE, Etc.

COALITE, Large and Graded Coke,
Patent Fuel.

Head Office:

CINDERFORD, GLOS.

Phone: Cinderford 4. Grams: "Dean Forest, Cinderford."

London Office:
41 Regent's Park Rd.
N.W.1.

Phone - Primrose 2317.

Shipping Office:

LYDNEY

Phone - Lydney 96.

Telephone 16.

Telegrams: "Bowson, Cinderford."

THE NEW BOWSON COAL COMPANY

**COLLIERY AGENTS, SHIPPERS
& CONTRACTORS**



Coals obtained from the
following principal
Collieries

EASTERN UNITED,
LIGHTMOOR, PRINCESS
ROYAL, CANNOP AND
ARTHUR & EDWARD.

CINDERFORD

W. H. Immins
& Co.

COALWAY,
COLEFORD

COLLIERY FACTORS
CARBIDE IMPORTERS



TIMBER & CEMENT MERCHANTS
NETTLEFOLD'S BOLTS & NUTS,
SCREWS, HARDY PICKS, TOOLS,
FILES, SHOVELS

CORRUGATED SHEETS
STEAM PIPE & FITTINGS
ACETYLENE PIT LAMPS
PAINTS, OILS, GREASE
WIRE ROPES
TRAM NAILS, DOGS



'Phone: - - COLEFORD 11

FOREST of DEAN COAL



Excellent Gas, House and Steam Coals

Comparing well with Yorkshire and the Midlands, for the two former, and taking first place, as regards the latter.

We testify thus after an experience of over 20 years of the Coals named, taking price and quality into account.

The Grades of coal offered are Large, Cobbles, Nuts, in House Coals and Large, Through and Through 3" and 2" rough small in Steam Coals.

:: Prices on Application ::

Prompt Loading of Wagons with every care and attention.

I. W. BALDWIN & CO.

Sole Proprietor:
IVO W. BALDWIN, J.P., MINING AND CONSULTING ENGINEER

— OAKLEIGH, DRYBROOK, Glos. —

FOREST OF DEAN AND
HIGHDELF COALS



by
RAIL
or SEA



Ask . . .

BAKER and KERNICK Ltd.

to quote you for

GAS, HOUSE and STEAM
COALS

We charter ships and personally
superintend all our own shipments
at Lydney Docks

ADDRESS:

DOCKS - LYDNEY

Phone: Lydney 113. Grams: "Bakernick, Lydney."

HEAD OFFICE:

BUTE DOCKS, CARDIFF

Phone: Cardiff 4708 (3 lines). Grams: "Bakernick, Cardiff."

Bunker Coals—Welsh Coal By-Products

SULLY & CO. LTD.

COAL PROPRIETORS AND
STEAMSHIP OWNERS

ESTABLISHED 1826

Agents for all

FOREST OF DEAN
HOUSE, STEAM & GAS COALS

ANTHRACITE COALS
GAS, FOUNDRY AND
FURNACE COKE.

LYDNEY, GLOS.

TELEPHONE LYDNEY 8.
TELEGRAMS "SULLY, LYDNEY."

Head Office:

BRIDGWATER

TELEPHONE BRIDGWATER 20.
TELEGRAMS "COAL, BRIDGWATER."