



## XXXV. A brief account of the mineral productions of shropshire

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XXXV. *A brief Account of the Mineral Productions of Shropshire.* By JOSEPH PLYMLEY, A. M. Archdeacon of Salop, and Honorary Member of the Board of Agriculture\*.

THERE are mines of lead ore, of a good quality, on the western side of this county, which have been very productive. The bog mine, in the parish of Wentnor, and the white grit mine, in the parishes of Shelve and Worthen, adjoin the Superstones: they are high hills, with bare and ragged summits, resembling the ruins of walls and castles: they are a "granulated quartz, much harder than common sandstone, but apparently not stratified †." The bog mine has been worked to the depth of 150 yards; a solid lump of pure ore of 800 lb. has been gotten up there: the vein is in some parts three feet thick, and generally bedded in white spar. One ton of this ore will run 15 cwt. of lead, besides slag. Dr. Townson says, "these mines are in argillaceous schistus, and produce galena lead ore ‡, sometimes spatous § lead ore, and blende ¶." The ores at the white grit mine are the common galena and the steel-grained ores; sometimes the white spatous ore, and considerable quantity of black jack ¶. The ores from this mine are not smelted separately; they differ much in their product, and little experiment has been made to ascertain it. I have been informed that they produce from 10 to 13 cwt. of lead, besides slags, from a ton of ore, and rarely more ¶. At Snailbach, in the neighbourhood of the same hills, but nearer Shrewsbury, lead has been gotten for a long time. "The vein was in some parts four yards wide. The vein-stones are heavy spar, mixt with calcareous spar and quartz. The ore here is the common galena and the steel-grained, and sometimes the white spatous ore \*\*." It has been "worked

\* From *Plymley's General View of the Agriculture of Shropshire.*

† Dr. Townson,

‡ This is lead mineralized by sulphur, and is the most common lead ore. It is sometimes called potters' lead ore.

§ This term is not in Nicholson's Dictionary, or in the octavo edition of Kirwan: it means lead ore crystallized in the form of spar.

¶ Tracts and Observations in Nat. Hist. &c. p. 184.

¶ Mr. Pennant, in his *Welsh Tour*, vol. i. p. 447, says, "the lamellated, or common kind of lead ore, usually named potters' ore, yields from 14 to 16½ cwt. of lead from 20 cwt. of the ore; but the last produce is rare."

\*\* Dr. Townson's Tracts, &c. p. 183.

to the depth of 180 yards. The matrix of the ore is crystallized quartz and carbonate of lime. The ore is, 1. Sulphuret of lead, both galena and steel ore, which latter contains silver: 2. Carbonate of lead, crystallized: 3. Red lead ore\*: 4. Blende, or black jack †. Lead ore has been met with in many other places in this part of the county. As far west as Llanymynach lead is found in small quantities, and copper, which the Romans are supposed to have worked to a great extent. Tools, judged to be Roman, have been found in these mines, and some of them are preserved in the library of Shrewsbury free-school. In this hill the lead is met with in bellies of ore; that is, a small string leads often to a body of ore about four or five yards in diameter, but from which there is no vein issues that may lead the miner to the other bodies of ore remaining in the hill. Calamine, also, is here met with. The rock at Pimhill is strongly tinged with copper. Symptoms both of copper and lead appear also in the Cardington hills, many miles south-east of the spot we are speaking of, and not very far south of the centre of the county. "Lead is also found at Shipton, in the road from Wenlock to Ludlow, but never yet in sufficient quantities to reward the adventurers ‡." Full as far north of the centre, it is reported, in a MS. history of Bradford North (A.D. 1740), that "Henry Tenison, esq. got copper ore in his estate about Red Castle; but it lay so deep that it turned to little account:" and I believe we may apply the following paragraph, from the same MS., to many adventures in mining in this and other counties; for the author proceeds to say, that "the Rev. Mr. Snelson expected to find this hidden treasure at Weston, but had his labour for his pains, and his expense for his trouble."

Coal of an excellent quality is gotten on the eastern side of the county, particularly in the parishes of Wellington, Lilleshall, Wrockwardine, Wombridge §, Stirchley, Dawley,

\* Mr. Aikin says this ore was discovered in these mines by Raspe, a German. Mr. Nicholson, in his Chemical Dictionary, 1795, remarks that this ore had not then been found, except at Catharineburgh, in Siberia. I do not know that these two red lead ores have been ascertained to be precisely the same, or that any difference between them has been discovered.

† *Vide* Aikin's Tour, p. 203.

‡ Mr. William Reynolds.

§ In this parish Mr. W. Reynolds, about ten years ago, put in practice an idea he had conceived some years before, of uncovering the strata of ironstone and coal which lay near the surface, so as to get the whole of the

ley, Little Wenlock, Madeley, Barrow, Benthall, and Broseley, and which “ promise a lasting and plentiful supply \* for the great iron manufactures in that neighbourhood, for domestic use, and as an export to other counties by the river Severn, on or near the sides of which they lie.” South of these works, and on the other side of Bridgenorth from them, coal appears again. It may be found in most parts of the hundred of Stottesden; but the roads in general are an obstruction to its being removed. South again of these, and of the Clee hills, are very valuable coal-works, in some of which the canal, or kennel coal, is found. Mr. Pennant, in his Voyage to the Hebrides, remarks, that the name is probably *candle* coal, from giving a light that supersedes, in poorer houses, the use of candles; and the bishop of Llandaff, in his Chemical Essays, has the same idea, supported by the circumstance, that in the northern counties candles are called cannels. The south-west parts of this county have not yet been proved to contain coal; and the inhabitants purchase, at a great expense of land carriage, coal from the Clee hills, or from collieries in the west parts of Shropshire: such there are west and south-west of Shrewsbury. Again, on the west and north-west borders of the county, coal of a good quality is gotten. Out of fifteen hundreds, the following large proportion of ten are known to produce coal: viz. Oswestry, Ford, Shrewsbury, Bradford South, Brimstry, Wenlock, Cundover, Munslow, Overs, and Stottesden. Mr. William Reynolds has favoured me with the following lists of strata in five different collieries in the eastern district. His name will add an interest and value to the communication in the opinion of all those who have the pleasure of knowing him.

*Strata in Lightmoor Wimsey Pit.*

			Yds.	Ft.	In.
A good loam, and mixed soil	-	-	6	0	0
Pale blue clunch	-	-	16	0	0
Dark gray rock, not very strong	-	-	5	0	0
Sky blue clunch	-	-	2	1	6
Three stinking coals, divided by pale blue earth,					
two inches between each	-	-	1	1	6

the strata of ironstone and coal, clay, &c. to a certain depth; when, in the old method, large quantities both of ironstone and coal were unavoidably lost, and which never afterwards would be of any use to the proprietor or occupier of the mines. This method is now followed in other works, where the strata lie sufficiently near the surface.

\* Edw. Harries, esq.

Strong

	Yds.	Ft.	In.
Strong clod mingled, pale blue and red -	16	0	0
Brown rock, called the stinking coal rock, -	7	1	0
Three stinking coals, divided by pale blue earth, four or five inches between each -	3	0	0
Blue clunch - - - -	4	2	0
Red clunch, pale - - - -	4	0	0
Rough rock, so called from being full of dark brown hard pebbles and ironstone -	7	0	0
Bind, a pale blue clod - - - -	14	0	0
Stone clod, ditto, in which lies a bed of iron- stone called ballstone - - - -	5	0	0
Black slate - - - -	0	1	0
Coal called top coal, exceeding good fuel -	1	1	0
Top coal tough, a dark blue earth, and a very heaving measure - - - -	0	1	0
Clod called the foot coal - - - -	0	1	0
Slumbs, black slaty earth, and a heaving mea- sure - - - -	2	0	0
Coal called the three-quarter coal - - - -	0	2	0
Rotch, dark gray hard rock - - - -	0	2	0
Coal called the double coal - - - -	1	0	0
Dark gray clod, will fire from its own nature	2	0	0
Coal called yard coal - - - -	1	0	0
Black, a black slate coal and rock mixed -	2	1	6
Clod, a pale white, in which lies a bed of iron- stone called - - - -	2	0	0
Flan, a dark slate - - - -	0	0	6
Coal called upper flint coal - - - -	1	1	6
Upper flint, a dark gray rock - - - -	7	1	0
Pinny measure; a pale blue clod, in which lies a large quantity of small balls of ironstone called pennystone - - - -	5	1	6
Stinking coals; three beds divided by three or four inches of dark brown earth - - - -	0	1	9
Pale blue clod - - - -	2	0	0
Coal called the silk coal - - - -	0	1	2
Clunch, of a dark blue - - - -	5	1	6
Coal called the silk coal, divided by a few inches of gray earth - - - -	0	1	6
Clunch of a dark blue, with coal in the middle, seventeen inches thick: the coal is called silk coal - - - -	3	1	10
Coal called the two foot coal (feet) - - - -	0	2	0
Lintseed earth; dark brown, a very shuttle measure	0	1	2
A black slate - - - -	0	0	6
6		Coal	

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	Yds.	Ft.	In.
Coal called the best coal	0	1	6
Black bass, or slate	0	0	6
Coal called the middle coal	0	2	9
Dark brown stony clod	1	0	6
Coal called clod coal	0	1	8
Clod, of a pale blue	1	1	10
Coal called little flint coal	0	2	2
Little flint; a rock of a dark gray, mixed with pebbles and ironstone	16	0	0
	154	1	4

Die earth, a pale blue hard clunch: this measure continues the same to the depth of more than

100 0 0

So far I have proved on the rise of the work. How much deeper it is, we know not.

*Strata at Wombridge, at the Pit next the Engine.*

	Yds.	Ft.	In.
Earth and catbrain, of various thicknesses	4	0	0
Top rock	7	0	0
Bind bass	0	1	6
Bind	4	0	0
Ballstone and earth	2	2	0
Short earth	3	0	0
Top coal bass	0	1	0
Top coal	1	2	0
Top coal and poundstone	0	1	0
Slums	0	1	6
Foot coal	0	1	0
Three-quarter coal	0	2	3
Rock	1	1	4
Double coal	2	0	0
Double coal poundstone	0	1	6
Yellow stone, earth and stone	2	0	0
Yard coal	1	0	0
Yard coal poundstone	0	1	0
Quiest-neck	0	1	0
Blue flatstone, earth and stone	1	1	6
Pitcher basses	1	1	6
Flint coal rock	3	2	0
Flint coal roof	3	0	0
Flint coal	1	1	6
	43	2	7

*Strata*

*Strata in Madeley Field.*

	Yds.	Ft.	In.
Suppose the soil, clay or sand, may be, in general, about	8	0	0
Stinking coal rock	7	0	0
Ditto clod, blueish-gray	1	0	0
First stinking coal	0	2	0
A tough pricking	0	0	4
Second stinking coal	0	0	4
A strong clod, darker than the first	3	0	0
Freestone rock, containing plum-puddingstone	7	0	0
A clod much like the first	1	0	0
Top coal	1	0	0
Basses or blacks	1	2	0
Blackstone, earth and ironstone	0	1	0
Bottom coal	1	0	0
Great flint and ironstone	5	1	6
Prenny measure and ditto	2	0	0
Third stinking coal	0	1	0
Pricking	0	0	2
Upper clunches	3	0	0
Sill coal or big coal	0	0	7
Two foot rock	6	0	0
Two foot coal	0	1	6
Lower clunches	2	1	6
Little ganey coal	0	1	0
Pricking	0	1	0
Ganey stone	0	0	9
Ganey coal	0	1	6
A clunch	2	0	0
Best coal	1	0	0
A bass	0	0	4
Middle coal, or randles	0	2	0
A clod	0	0	6
Clod coal	0	1	8
Pricking	0	0	6
Clod coal, poundstone	1	1	0
The hard-man, with little flint coal—ironstone in it	0	2	6
Little flint coal	0	2	0
Little flint coal, rock with crawstone in it, and its measure a little coal for a pricking half inch thick	7	0	0
	67	2	8
Underneath			

Underneath is a clayey earth called die earth, of an unknown thickness.

N. B. This measure is found to consist of stratifications, and appears to have been lifted up like the upper measures; and though this circumstance is not perceived at first, or when it is exposed to the day, yet, on sinking some yards into it, it is very perceptible.

*Strata in Slaneys Dawley Deep Work.*

	Yds.	Ft.	In.
Soil and loose rock	-	3	2 0
Yellow, blue; and red stuff, with stones	-	5	1 6
White clunch, with pieces of white rock	-	10	0 0
Gray rock	-	1	1 6
Yellow cloddy stuff	-	5	1 6
White clunch, or rocky stuff	-	3	0 0
Gray rock	-	3	2 5
White clunchy stuff	-	1	1 6
White rock	-	0	1 6
Pitchy rock	-	14	2 0
Bass and coal	-	0	0 6
Blue tough stuff	-	0	1 0
Coal	-	0	1 5
Blue clunchy stuff	-	6	0 5
Red ditto ditto	-	2	0 0
Blue ditto ditto	-	1	0 8
Red ditto ditto	-	2	2 0
Blue ditto ditto	-	9	2 8
Coal	-	0	0 6
Blue clunch	-	0	2 6
Fleece of white rock (casing)	-	0	0 6
Blue clunchy hard stuff	-	8	1 8
Coal	-	0	2 0
Blue clunchy stiff hard stuff	-	4	1 1
Red ditto, very strong	-	2	1 9
Hard, very hard white rock	-	0	1 9
Mingled red and white strong stuff	-	2	2 1
Very hard white rock	-	1	1 10
Rock, red and white, hard	-	3	2 11
Ditto, very hard and white, with spar	-	0	0 6
Hard white rock	-	4	1 0
Yellowish stuff, called the callimancha earth	-	5	0 5
White rock	-	0	1 7
Mingled red and white, and grayish stuff	-	3	2 9
Bass	-	0	2 0
Stone clod	-	0	2 6

Ironstone,



				Yds.	Ft.	In.
Ironstone, supposed the logs	-	-	-	0	0	5
Clod	-	-	-	0	1	8
Coal, mixed with rock	-	-	-	0	2	0
Flint coal, or bottom coal	-	-	-	0	1	3
				116	0	3

We see then, that in the first-mentioned coal pit, no coal was found within much less than 30 yards of the surface, and that then three small layers of bad coal only were gotten: that after sinking near 24 yards deeper, three other layers of the same coal were procured, but that the first vein of good coal lay 92 yards beneath the surface: that this vein was 4 feet thick: that none of the veins appear to have been more than 5 feet thick: and that in 154 yards, and more, regularly worked, or above 254, taking in the whole experiment, 13 yards 2 feet of coal were found. In the second pit specified, the coal appears to have been met with in little more than 21 yards from the surface. One of the veins proved 6 feet thick; and in sinking somewhat less than 44 yards, above 7 yards thickness of coal was discovered. In the third pit specified, the sulphureous or bad coal was met with in 16 yards from the surface, and good coal in less than 28 yards; no vein exceeded 3 feet; and the aggregate in almost 68 yards was not quite nine yards of coal. In the fourth pit specified, the first unmixed coal was 50 yards from the surface; and in sinking above 116 yards, it does not appear that here was any vein thicker than 2 feet; and the aggregate of unmixed coal measured only 5 feet 2 inches in thickness.

[To be continued.]

### XXXVI. *On Metallic Sulphurets.* By Professor PROUST\*.

**M**ETALS, says Berthollet, may combine in proportions exceedingly various with sulphur; and the combinations they thus form have different properties, according to their proportions, &c. Considering the generality with which Berthollet establishes this opinion, there is reason to be astonished that he should have neglected to lay before the reader the facts on which it seems to rest. Silver, mercury, platina, copper, antimony, arsenic, lead, tin, bismuth, &c.

\* From *Journal de Physique*.