

the following minerals have been found in it more or less abundantly; sulphuret, carbonate, and phosphate of lead; anti-moniated lead ore; sulphuret, and carbonate of copper; sulphuret, carbonate and oxide of zinc; iron pyrites, hæmatitic iron ore, and also oxide of iron, disseminated in beds of ferruginous limestone associated with pearl spar and brown spar. Many varieties of common calcareous spar, arragonite, many varieties of fluor, selenite, carbonate and sulphate of barytes, sulphate of strontian, quartz crystals (Derbyshire and Bristol diamonds). Bitumen is also found filling cavities in this lime and associated with the vein-stones, particularly the elastic variety, though not so commonly as in the shale of the preceding series. If we include the minerals contained in the trap rocks, sometimes alternating in this series, we must add zeolite, onyx, and perhaps alabaster to this list.

(c) *Organic remains.** The animal remains preserved in the carboniferous limestone are strongly distinguished from those of the oolitic series and lias, belonging in a majority of instances to entirely distinct genera. These genera are very

The ores in Durham, Cumberland, and Yorkshire, are generally smelted by blast furnaces on the mines, as at Alston moor, Wear dale, Arkendale, Greenhoe hill, Grassington, &c.: in general these ores contain very little silver, and refining them is not much practised. Some lead is however refined for silver by the London Lead Company, and perhaps by some others, but I do not know to what extent.

In Derbyshire the lead ores are smelted by persons who own smelting-houses with reverberatory furnaces, and who buy the ores of the miners. There are not more than three or four of such now at work, and I do not know of any silver refinery.

Shropshire I know nothing of.

Devon. Huel Betsey lead mines ores, smelted on the spot, and silver extracted; produce 12 ounces per ton. Bernalston ores, smelted at Bristol, and silver extracted; 80 to 100 ounces per ton.

Cornwall. Sir C. Hawkins mine near St. Michael's, ores smelted and refined on the spot, produce of silver said to be 30 or 40 ounces per ton.—Huel St. Vincent silver mine in Calstock, it is said has produced 1000 lbs of silver in a very few months. Ore, Horn silver (Qu.) and native, refined on the spot.

Wales.—There are several lead smelting houses in Flint and Denbighshire (reverberatory furnaces). Lord Grovesnor's, M. Roskill's, and others near Holywell. Mr. Jones near Mold, Messrs. Hunt & Co. at Minera. Some smelt their own ores, and others purchase of the miner. Very little silver extracted.

Scotland—I do not know much about, but believe the ores are smelted at Lead Hills.

* We have to acknowledge the kind assistance of Mr. Miller, who has furnished several important additions and corrections to this list. The references, when not otherwise specified, are as usual to Sowerby's *Min. Conchology*. Martin's *Derbyshire Petrifications* has been cited for some species not yet figured in the former work.