

or, better, a horse hair, exhibits polarity, and will attract or repel a magnetic needle according as the north or south pole is presented.

It is usually mixed up with earthy matters, so that its yield is seldom more than fifty to sixty per cent.

It occurs in the north-western edge of the mica slates, (5a in the table) associated with chlorite slate. It has been mined extensively at several points in the vicinity of the forks of the Gunpowder River and near the Northern Central Railroad, and smelted at the Ashland Iron Works, near Cockeysville.

I have also noticed a locality of this ore near Jno. Scott's mill, about three miles north-west from Cockeysville, which has not yet been mined.

A variety of this ore, containing 18 per cent. of oxide of titanium, occurs north of Belair, near Deer Creek, which was worked some years since for the Harford Furnace. At the commencement there was a thick vein, but as the workings extended in depth the thickness diminished until the working was suspended. Supplies of ore for the furnace were obtained subsequently from the carbonate of iron near Baltimore, and the hematite from near Cockeysville.

I have long believed that the proprietors of the Deer Creek ore abandoned the work without fully determining the value of the mine. Veins of that kind, called *flat veins*, which are nearly parallel to the strata, are generally of very irregular thickness, and the miner should not be discouraged upon finding such to become very thin, or "pinch off," as it is technically termed. In Europe, where mining has been prosecuted for more than two thousand years, experience has shown that by pursuing them to greater depths they will be as thick, or thicker, than nearer the surface. No depth of mining has yet reached the bottom of one of these metalliferous veins.

The magnetic oxide also is mined near Sykesville, in Carroll county.

All the localities above cited are within the western portion of the metamorphic rocks, (No. 5,) whose position is indicated on the map accompanying the first report.

They are mostly in the mica slates which constitute the north-western portion of this geological division, and which range north-eastward through parts of Montgomery, Anne Arundel, Howard, Baltimore and Harford counties. It is characterized as a *metalliferous region*, because of the ores of iron and other metals it contains, and will be again referred to when we shall treat of the ores of copper and other metals.

Immediately north-west of this range we find a wide belt of talcose slates. The portion of this belt lying south-east of Parr's Spring ridge contains some deposits of hematite, and is without other ores of value. The portion between the summit of the