Limonite deposits are not found in the valleys of the main streams but are common in local depressions in the general upland surface where sink-hole topography is noticeable. As the glacial deposits are usually thicker over the ore deposits than in the surrounding region it is probable that depressions existed there before the glacial epoch.

**Occurrence**

All the limonite ore deposits of Northampton County are surficial. They are irregular in extent and either occupy pockets in the underlying rocks as much as 100 feet or more in depth, or follow certain strata that more readily yielded to solution or replacement. In the belt of iron mines along the slope of Morgan Hill certain strata were converted into iron ore more or less completely for about three miles, and the ore bodies consequently are parallel to the adjoining strata both in dip and strike. In other places, however, the ore formed irregular masses which bear little relation to the structure of the surrounding rocks, so far as can be determined. Usually, however, the greatest diameter of the ore body is parallel to the strike of the enclosing strata.

The position of the mountain ores near the base of the mountains formed of gneiss causes them in most places to have a surface cover of float rock from the higher ground, and consequently the ore appears at the surface in but few places. This cover may be so deep that the ore can be worked only through shafts.

In some places the valley ores are concealed by deep deposits of glacial material that render their discovery difficult, but most of the bodies of ore thus far worked were located by the float ore in the soil. Good ore in many mines was reached within a few feet below the surface. In some freshly plowed fields the soil in the vicinity of a body of limonite ore is a rich brown that can be easily distinguished at a distance. Most of the ore bodies in the limestone valleys have been discovered by sinking test pits in places where the soil was deeply colored and pieces of float ore were abundant. Bodies of workable ore have also been discovered by sinking test pits along the line of known deposits or in the vicinity of sink holes.

The ore has been found as much as 175 feet below the surface, which was approximately the maximum depth of the mountain ore mines, owing to the difficulty of keeping them free from water and also owing to the tendency for the shafts and drifts to be closed or rendered dangerous on account of the squeezing action of the clay associated with the deposits, which slowly moved downhill when saturated with water. It is probable that few of the bodies of limonite ore extend much below the ground-water level and that they scarcely