The principal rock is talcose slate, but it embraces numerous isolated formations of limestone, each of limited extent, which are supposed to have been protruded through the slates to the surface, differing in its origin from all other limestones in this State. Some very interesting considerations present themselves in reference to the origin of this limestone, which I forbear to enter into as not being within the scope of the present report.

It may be stated, however, that these intrusive limestones (whose area at the surface is often less than one or two thousand feet square) have a relation to the existence of copper ores, which accompany them.

In every case where I have observed the limestone, there are stains of carbonate of copper, and also, if those indications of copper be met with, we are sure to find the limestone in the vicinity.

The mining in that region proves that the copper has come up from beneath with the limestone. Its position is generally between the two rocks, but most abundant near the outer edges of the limestone. The several surface openings and shafts at the Dolohyde mine, near Liberty, have afforded fine opportunities to study the geological position of these ores. Correct views upon this subject are a necessary preliminary to successful mining operations.

A company some years since commenced operations at the Dolohyde mine, at first under very promising auspices, but the work was suspended after about one year. I am by no means disposed to consider the question of the availability of this mine determined by this circumstance. The difficulty has been occasioned by the system pursued in mining. The ore exists in what are termed *contact masses*, and not in *veins*, as is the case with all the British and German mines, and requires to be worked in a different manner.

The miners and mining captains are generally from England and Germany, and have learned their geology whilst mining in *veins*, and are not always sure guides in exploring *contact masses*.

The Dolohyde and other mines of that kind should be worked by pushing a vertical shaft in the slate to a considerable depth, with horizontal tunnels, (or levels, as termed by the miner,) extending to the limestone and around it. If the shaft be sunk on the edge of the limestone, (which has been acted on by atmospheric agents,) there would be a danger of caving in and burying the miners.

The oldest workings in that region were prosecuted about two and a half miles north of Liberty, from which point copper was obtained during the Revolutionary War. The mine was reopened about forty years ago, and subsequently the work was again suspended.