

Portage Lake are worked almost exclusively upon beds, the strike and dip of which are parallel with that of the enclosing rocks. Such beds are not, however, altogether absent in other districts of the copper region, where they have been called 'ash beds,' but it is in the Portage Lake district that they occur most frequently, and are mined most successfully. The rocks with which they are interstratified are principally what are called traps and greenstones, together with conglomerates and sandstones. They maintain a general strike of N. 20° to N. 40° E., and have a dip of 50° to 60° north-westward.

In attempting to describe these rocks more minutely, I shall begin with those lying immediately west of the great cupriferous bed on which the Quincy, Pewabic and Franklin mines are situated, and proceed then to notice those lying to the eastward, which are, geologically, lower lying rock.

The rock which is observed at the side of the road leading past the Quincy mine to the Pewabic, and which lies several hundred feet west of the cupriferous bed, is distinctly of a compound nature, but all its constituent minerals are not large enough to be accurately determined. Conspicuous among them is a dark green chloritic mineral, the grains of which vary from the smallest size to one fourth of an inch in diameter. In the latter case they are irregularly shaped, with rounded angles, but they are never quite round or amygdaloidal. They frequently consist in the centre of dark green laminae. The mineral is very soft and has a light greenish-grey streak. It fuses readily before the blow-pipe to a black magnetic glass, and it would seem to be the preponderating mineral in the rock. The other constituents are in very fine grains, and consist of a reddish-grey feldspathic mineral, with distinct cleavage planes, and closely resembling it, light greenish-grey particles but whether of a feldspathic, pyroxenic or hornblende nature could not be determined. The prevailing colour of the rock is dark greyish-green. Hydrochloric acid produces no effervescence with it, even when in a state of fine powder. Its specific gravity is 2.83, and the magnet attracts a very small quantity of magnetite from its powder. The colour of the powder when very fine is light greenish-grey. When ignited it loses 3.09 per cent. of its weight and changes to a light brown colour. When digested with nitric acid, and then afterwards with a weak solution of caustic potash (to remove free silica) it experiences, including the loss by ignition, a loss of 46.36 per cent. This consists of