

occasionally approaching chalcedony. The plates are separated by thin calcareous seams, presenting a ribbon-like appearance.

In the vicinity of the disturbed parts, the chert sometimes passes into chalcedony and agate, and small cracks are filled with anthracite, which is also found forming the centre of minute globules, enclosed in a silicious matrix.

Higher up in the series, the argillaceous slates become interstratified with argillaceous sandstones, in such an altered condition that it is often difficult, at first sight, to say whether the latter may not be trap layers. Calcareous bands occasionally occur of sufficient purity to be called limestone. Interlaminated masses of trap are found near the base and overlying the summits. They are composed of a black hornblende and greenish-white, horny-looking feldspar, in no instance assuming an amygdaloidal character, but occasionally presenting a porphyritic appearance. It exhibits a sub-columnar structure, and the crowning overflow of trap communicates a peculiar aspect to the whole region occupied by this formation. It attains a thickness of nearly 2000 feet, and, where it comes to the lake, rises in bold, overhanging cliffs.*

"Beginning at Pigeon Bay—the boundary between the United States and the British Possessions"—according to Prof. Mather, who has kindly placed his notes at our disposal—"we find the eastern portion of the peninsula lined with bold, rocky cliffs, consisting of trap and red granite. The latter is composed of red feldspar and quartz, with no mica, and is intersected by heavy dykes of trap, and veins of trap and calc-spar, containing iron pyrites. The whole southern shore of the bay, wherever examined, presents this character.

The falls of Pigeon river, eighty or ninety feet in height—are occasioned by a trap dyke which cuts through a series of slate rocks highly indurated and very similar in mineralogical characters to the old grey-wacke group. Trap dykes and interlaminated masses of trap were observed in the slate near the falls. These slates, brown and grey in color, form beds of stratified rock, nearly horizontal in position, around the granite, exhibiting no marks of derangement or upheaval through which the latter rocks emerge like islands.

Both of these rocks are traversed by dykes, belonging to a common system.

The base of nearly all the ridges and cliffs between Pigeon river and Fort William is made up of these slates, and the overlying trap. Some of the low islands exhibit only the grey grits and slates. Welcome islands in Thunder Bay display no traps, although, in the distance, they resemble igneous products, the joints being more obvious than the planes of stratification, thus giving a rude semi-columnar aspect to the cliffs."

At Prince's Bay, and also along the chain of islands which line the coast, including Spar, Victoria and Pic island, the slates with the crowning traps are admirably displayed. At the British and North American Company's works, the slates are traversed by a heavy vein of calc-spar and amethystine quartz, yielding grey sulphuret and pyritous copper, and galena. From the vein, where it cuts the overlying trap on the main shore, considerable silver has been extracted.

At Thunder Cape, the slates form one of the most picturesque headlands

* Vide Report before referred to, pp. 13-14.