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bands of whitey-brown micaceous sandstone. On the shore immediately underlying the beds in which the vein occurs, there are thick-bedded hard grey and whitey-brown feldspathic sandstones, with scales of silvery white mica. Associated with the sandstones are bands, from six inches to two feet thick, of blue and greenish-grey slate. These continue for about three quarters of a mile along the shore, nearly with the strike, when a massive diorite dyke cuts the beds nearly at right angles, without disturbing them beyond causing a slight curve in the strike. The dyke is 150 yards wide, and is succeeded by similar sandstones and finely cleaved slates for a quarter of a mile further. Some of the sandstones enclose pebbles of a grey quartzite. At the mine the beds dip S. 55° E. $< 60^{\circ}$, and at the end of the section about one mile to the north, S. 60° E. $< 60^{\circ}$. From the mine southward, there is a gradually ascending section, consisting of grey slates, olive-green slates, and grey sandy, and blue and black papyry crumpled slates. The highest beds in the section are the fine black earthy pyritous slates. The dip continues S. 60° E., but the angle gradually increases from 60° at the mine to 85° , and becomes vertical at the southernmost end of the exposure.

CAPE FOURCHU, DIORITES, CHLORITIC AND EPIDOTIC ROCKS.—IRON ORES AND EPIDOTE.

The rocks at Cape Fourchu Island, and thence to Yarmouth, consists of hornblende, chloritic, epidotic, and micaceous strata, with dark greenish and black slates; also massive crystalline epidotic diorites, with large enclosed patches of epidote rock. Near the extreme west point of the island, there is a thick bed of coarse conglomerate, on the weathered and sea-worn surfaces of which the pebbles are well seen; while in a fresh fracture they can with difficulty be distinguished from the matrix, (which is a greenish-grey micaceous schist,) except by a slight difference in colour. The pebbles are all flattened and more or less elongated in the direction of the cleavage-planes. They consist chiefly of a grey fine grained micaceous gneissic rock; some are of a brown-weathering feldspathic sandstone, and others of an epidotic rock similar to the immediately adjoining strata. The schistose beds occasionally contain crystalline grains of magnetic and of titaniferous iron ores, and epidote is often very abundant in them. This, from the weathering of the softer matrix, is left projecting in small lumps and irregular ridges over the exposed surfaces, giving these a singularly fretted and rough appearance. Veins and large lenticular masses of vitreous white quartz are not uncommonly associated with the more slaty beds. One very prominent mass of this kind is known as the Canoe. It lies in a joint nearly at right angles to the stratification, on the west shore of the island, and from a little distance, especially seaward, has the appearance of a large canoe stranded on the rocks. In the eastern part of Yarmouth, within the town-limit, there are some thick beds of massive grey or whitish-brown quartz rock, (with large irregular reticulating veins of white quartz,) interstratified with the green chloritic, hornblende and epidotic schists. On the road between Milton and Arandla (Church's map) similar chloritic and hornblende beds occur, and

also some bluish grey feldspar-porphyrises or felsites.

JEBOGUE POINT.—CHROMIUM.

At Jebogue Point there are several quartz veins from six inches to three feet thick, associated with black crumpled slates, and the rocks exposed are similar to those at Cranberry Head. Samples from one of the most promising looking of the above veins have been assayed by Dr. Hunt, but afforded no trace of gold, though containing a good deal of arsenical sulphuret of iron. It is reported in the neighbourhood that gold has been found in some of these veins, but no attempts have been made to work them.

To the north, at Cape Cove in the county of Digby, a few chains east of Cape St. Mary light-house, there is a small exposure of green chloritic rocks, like those at Yarmouth, associated with light grey quartz-rock, brecciated white, brown, and silicious schist, and black earthy pyritous slates. The green schists here contain imbedded white calc spar in considerable quantity. Their dip is S. 55° E. $< 80^{\circ}$,— 84° . In specimens of these green schists, and likewise of those from Yarmouth, Dr. Hunt has found traces of chromium. He remarks that in their general mineralogical characters, as well as in the presence of chromium, these rocks resemble the crystalline schists of the altered Quebec group of the Canadian Survey, and also similar schists referred to the Huronian series around Lakes Huron and Superior. In other respects the rocks of Digby and Yarmouth counties, above described, are not unlike the hornblende, epidotic, chloritic and other strata of certain divisions of the Quebec group, which, in connection with the facts above noticed, suggests the possibility that the former may occupy the position of the Quebec group. If so, we may hope to find a gradually ascending series in Nova Scotia from the Primordial Silurian slates at the Ovens in Lunenburg County, north-westward to the Upper Silurian and Devonian rocks of the northern parts of the counties of Annapolis and Digby, perhaps interrupted to some extent by the great central granitic band.

ALLUVIAL GOLD.

As regards alluvial gold-deposits, and the prospects in Nova Scotia of what is known in California as "placer" mining, I cannot do better than recommend the perusal of Mr. Hind's remarks in paragraph 6 of the prefatory letter addressed to the Hon. Robert Robertson, Commissioner of Mines, which accompanies his recent report on the Gold District of Sherbrooke. I fully concur in all the observations and suggestions made by Mr. Hind in this letter, and anything I can say respecting it, must be more or less a repetition of what has already been pointed out by him.

AUSTRALIA AND NOVA SCOTIA COMPARED.

In comparing the physical features of the Australian gold-districts with those of Nova Scotia, in their bearing on the question of the occurrence of alluvial gold, the principal difference appears to be the prevalence in the latter of long narrow lakes, pools and swamps in place of the similarly shaped dry grassy "flats" and flat-bottomed "gulleys," (often almost as level as