

mation, I cannot speak with certainty, but it is probably Upper Silurian; the rocks consist of quartzites, of light and dark green, purplish, brown and black colours, and slates highly altered, generally of a black colour and giving a white streak. The quartzites are sometimes coarsely granular, but as a rule, compact and fine grained. This formation appears quite distinct in lithological character from the series which has been described in the Reports of Sir William E. Logan and myself, as occurring near the Pictou coal field, at McLellan's and McGregor's Mountains, and at Waters' Hill, and which are believed by Dr. Dawson to be of Devonian age.

Age of including rocks.

I have made no attempt to obtain fossils in these rocks, nor has any bed been observed likely to contain them, at the few localities examined; but it seems probable that the fossiliferous beds mentioned by Dr. Dawson in his *Acadian Geology*, (pages 568-570), as occurring near Springville, are included in this series. These beds, from which a large number of fossils have been collected by Mr. D. Frazer of Springville, are of undoubted Upper Silurian age.

Fossiliferous beds.

The specular iron appears to exist in true fissure-veins, but of no considerable size, at any locality which I have seen. In many cases the rocks holding it appear to be much shattered, and the specular iron, with a compact granular quartz as a veinstone, appears to fill the fissures, which are often confined to a particular bed of rock, and sometimes so numerous that the entire bed contains a large per centage of the ore, and may be considered as a single deposit. The most important deposit of this class which I have observed, occurs on the west side of the East Branch of the East River about three and a-half miles above Springville, on the lots of John McDonald and Archibald Thompson. Here the specular iron seems to exist over a considerable area, some portions being quite pure, but as the deposit is opened by two shallow pits only, it is impossible to state its size, or exact relations to the including rocks. The minor veins are often of several inches in thickness, and are included in a light greenish-drab granular quartzite, which they traverse in the most irregular manner. A sample of this ore was taken by me, which appeared to represent an average of what might be mined, provided all the larger lumps of quartzite taken out in mining were rejected. This sample gave on analysis:—

Character of the deposits.

Sesquioxide of iron.....	65.14
Silica.....	32.50
Hygroscopic moisture.....	.91
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	98.50
Total amount of metallic iron..... per cent.	45.60
Specific gravity .....	4.607

Analysis.

From the amount of silica present this ore would require a considerable amount of limestone as a flux, or it could be advantageously smelted