

becoming an instrument for the accomplishment of the greatest amount of evil, and was therefore the *worst* thing in the world.

So in conclusion, the teeth like Æsop's tongues, occupying the same tenement, if *properly cared for and directed* aright, so that they be neither *irregular or defective*, may carry us to that period of life which Shakespeare calls the *seventh age*—Sans teeth, sans eyes, sans taste, sans every thing; but when not cared for and directed aright become instruments of slow torture and agonizing pain. until patience ceases to be a virtue, one by one they are removed or prematurely lost, suddenly transferring youth into old age.

I have endeavoured to show, from these few imperfect observations, that special agents affect these organs both in their construction as well as destruction; that a remedial treatment is desirable and possible; that the remedy lies to a great extent within the power of each individual; that the disease may be prevented, a healthy condition preserved, life prolonged, and instead of premature loss, they will continue as the Creator designed they should, co-extensive with other members of the body, endowed ordinarily with the same degree of perfection as other constituents which make up the human physical organization.

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ART. XI. ON THE GEOLOGY OF THE IRON DEPOSITS OF PICTOU COUNTY. BY REV. D. HONEYMAN, D. C. L., F. G. S., &c., *Director of the Provincial Museum.*

(Read April 8, 1872.)

ABSTRACT:

In the Appendix to Reports on the Pictou Coal Field, *Report of Progress of the Canadian Survey from 1866 to 1869, page 408*, Mr. Hartley says: "Several deposits of Specular ore were examined. These all occurred in a range of metamorphic rocks lying ten or twelve miles to the south of the Coal Field. Of the age of their formation 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 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 by Sir Wm. Logan and myself as occurring near the Pictou Coal Field at McLellan’s and McGregor’s Mountains and at Water’s Hill, and which are believed by Dr. Dawson to be of Devonian age. I 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*, pp. 568–70 are included in these series. These beds from which a large number of fossils have been collected by Mr. D. Fraser of Springville, are of undoubted Upper Silurian age.”

I would observe that the fossiliferous rocks referred to are of the same age as the rocks of McLellan’s Mountain, and that the fossils collected by Mr. D. Fraser, and the iron deposits, belong to two different series of rocks, and that the fossils are of undoubted Upper Silurian, and the iron deposits of Middle Silurian age.

I would here observe that the distinction I make is in accordance with the division of the Silurian system made by the Geological Survey of Canada. In their Geological Map this system is divided into Lower, Middle and Upper. It also agrees with that made by Professor Ramsay, Director of the H. M. Geological Survey. He divides the system into Lower, Intermediate and Upper.—Vide Memoir on the Geology of Wales.

The collection referred to, which I have examined, is from the upper part of the W. side of Anticlinal series, No. 1. It includes a considerable number of the *Lower Helderberg* fossils contained in my list, and also a few of the *Niagara* fossils of the same series. Vide *Transactions*, 1870–71, page 8—Upper Silurian. The Specular iron ore referred to lies in the south side of my Anticlinal series No. 4, in the *Metamorphic Clinton*, so that it comes to be of Middle or Intermediate Silurian age. I have elsewhere shown that this is the age of the strata containing the Limonite, or Brown Hematite which lies in the lower part of series No. 1, *i. e.* the series producing Mr. Fraser’s fossils.

Mr. Hartley by a singular process of reasoning, infers the probable Upper Silurian age of the Limonite from the probable Upper Silurian age of the Specular ore referred to, *vide Appendix*. Mr. Hartley in the quotation, evidently regards the lithological dissimilarity existing between the Specular iron bearing rocks and the supposed Devonian rocks of McLellan's Mountain and Waters' Hill as the result of difference of geological age.

On palæontological and stratigraphical grounds I have proved that all are of Middle Silurian age. Waters' Hill being the only possible exception. It is not difficult to account for the acknowledged lithological dissimilarity referred to.

On comparing the strata of *Clinton* age at Arisaig with those at Barney's River and French River, Merigomish, where the rocks in both cases are fossiliferous and nearly in an unaltered condition, we find great difference in lithological character. My (B) or Lower Clinton at Arisaig consists principally of homogeneous shales of black colour, leading people to infer the existence of coal. The same is their character at Sutherland's River. At Merigomish the same are greenish and soft.

At Arisaig (B and B') Lower and Upper Clinton are so different in their lithological aspect and palæontology, that I was disposed to separate them, but fortunately I discovered in (B) a nodule containing *Graptolithus Clintonensis*, *Hall*, the characteristic fossil of (B'), and consequently I designated the two respectively as Lower and Upper Clinton. At Merigomish (B & B') are lithologically similar, and are only distinguishable by their fossils, consequently we have reason to expect lithological diversity in the two sets of strata when metamorphosed.

This is precisely what Mr. Hartley observed at East River and McLellan's Mountain, and what he was unconsciously led to misinterpret.

The metamorphosed black slates containing the Specular iron ore have by their colour, led to a search for coal, as at Arisaig, while other appearances at East River, Waters' Hill, and McLellan's Mountain have some correspondence with the other lithological aspect of unaltered and fossiliferous strata of Clinton age.