

of the large order of the trilobites. Various other fossils occur along with it which resemble closely, but are not I think entirely identical with, those found in the Lower Carboniferous Limestone of other localities in the Province, but their exact nature is not yet made out. Specimens of the trilobite are sent for the Cabinet of the Institute, together with some of the fossils found in the same rock, viz: *Producta*, *Spirifer*, *Cyathophyl- lum*, *Encrinite*, *Fenestella*, etc.

King's College, Windsor,
February 23rd, 1863.

ART. X. — *On the occurrence of Littorina Littorea on the coast of Nova Scotia.* By JOHN R. WILLIS, Halifax, N. S.

I HAVE been induced to present for the consideration of the Nova Scotia Institute of Natural Science, the following brief remarks on the occurrence of this fine Littoral shell on such portions of Nova Scotia coast as I have been enabled personally to examine.

Some time since (Dec. 1857), I sent a large number of specimens, animals and shells, to the celebrated Dr. A. A. Gould of Boston, author of Reports on Invertebrata of Massachusetts, &c., and to Professor Stimpson, of the Smithsonian Institution, Washington, D. C., author of several valuable works on the Invertebrata of United States; both gentlemen expressed themselves astonished at the occurrence of this shell on the coast of Nova Scotia, and agreed in asserting that it had not been met with on any part of the eastern coast of the United States. Some time afterwards Professor Stimpson visited England in order to prosecute his researches among the British Mollusca, in the course of which, he ascertained, by carefully comparing our Nova Scotia species with that on the British coasts, under the same name, that there was not the slightest specific difference between them. On his return to Washington, via Halifax, I had the pleasure of a lengthy interview with him, and he informed me that he had found it nearly impossible to convince several eminent British Conchologists, that *Littorina Littorea* was ever collected on the coasts of Nova Scotia at all. He had managed to convince himself, however, by ocular demonstration of my veracity, for, on landing from the Steamer at Messrs. Cunard's wharf, it was the first thing he sought for, and, on one of the logs of the wharf, he

collected several specimens, which he showed me with no small gratification.

These circumstances naturally made me feel somewhat anxious to establish beyond a doubt, not only the identity of the partly disputed species, but to ascertain personally its veritable range around our coast. I was enabled last summer, 1862, through the great kindness of the Provincial Government, to visit, in the Revenue Cutter "Daring," a great portion of the northern and eastern coasts of Nova Scotia and Cape Breton Island; and determined to make this the special object of my voyage, I collected *Littorina Littorea* in company with the other usual Littoral species, at the following places: Halifax Harbor, Bedford Basin, Northwest Arm of Halifax Harbor, fine specimens, and very common; Beaver Harbor, common; Ship Harbor, common; White Haven, common; thence through the Straits of Canseau, common; St. George's Bay, common; Pictou Harbor, common; Sydney Bar, common; Louisburg, common; thence to Sable Island, where I have collected several specimens.

I have compared very carefully, ours, not only with the figure but with the description of the British species, in Forbes' and Hanley's "British Mollusca," and can discover no difference whatever, except an unimportant and inconstant shade of color; *our* specimens are, however, *much finer* than the one figured in the splendid work above referred to. There is then no doubt on my mind as to the identity of *Littorina Littorea*.

I have not yet examined the remainder of the northern, southern, or western portions of the Nova Scotia coast line, and am not therefore prepared to say that we have or have not a zone of the species around the whole coast; my simple opinion is that it *will* be found on all our coasts. Dr. J. Bernard Gilpin, A.B., M.R.C., of Halifax, informs me that he has met with it on the shores of the Bay of Fundy, Digby County; these facts are, I consider, conclusive proofs of its real occurrence on our coasts.

It may, perhaps, be said that, notwithstanding its occurrence and identity are proved, it may be, after all, only an imported species; if so, the same means which conveyed it from its original habitat across the boisterous Atlantic, would certainly have sufficed to carry it to hundred of other localities where it is unknown.

I regret that I am unable to procure any information with reference to the time when it was first noticed here, as there are no records of Natural History matters in the past history of the Province. Some of the *oldest inhabitants*, whose words I safely rely on, have assured me however, that they "have often picked the Periwinkle, the same as the English one,"

on the shores contiguous to Halifax, when they were only school boys. From all of the facts I am strongly inclined to the opinion that *Littorina Littorea*, is common (but not imported) alike to England, Nova Scotia, perhaps to Prince Edward Island, and Newfoundland; though why it should not be equally so, to the eastern shores of the United States, I am free to confess that I am at a loss to explain.

N. B. Since writing the above I have had an opportunity of carefully examining the Islands of St. Paul's and Scattarie, the extreme north and east portion of the Province, and at both localities I have collected very large and fine specimens in great abundance. I have also ascertained that it is very abundant in Shelburne Harbor, (the extreme southern coast of Nova Scotia) Lunenburg Harbor, and St. Margaret's Bay.

July, 1863.