

the coast of Maine about 1868; Dr. Dawson, however, states that he collected it on the shores of Nova Scotia at a much earlier date. I wish at present merely to put on record some additional data as to its recent progress along the coast. In 1873 it was collected in abundance at Saco, Maine, by the U. S. Fish Commission, and was found sparingly at Peake's island, Casco bay. In 1872 it was very rare at Provincetown, Mass., but in 1875 it was common there. In 1875 it was collected by the writer at Barnstable, Mass., on the shores of Cape Cod bay, in large quantities. In 1879 it had become exceedingly abundant at Provincetown. In 1875 our parties found two specimens only on the southern shores of Cape Cod, at Wood's Holl, but in 1876 it was found to be common there, and is now very abundant. The first specimen found so far westward as New Haven was obtained by Professor S. I. Smith during the past winter [79-80]. Other solitary specimens have since been obtained here by E. A. Andrews and by J. H. Emerton. It is at present exceedingly abundant at Newport, R. I."

It is spreading into the Gulf of St. Lawrence, too, finding probably a congenial habitat in the warmer water of Northumberland straits, which contain so many southern forms. J. F. Whiteaves found it at Souris and Charlottetown, P. E. I., in 1873.¹

Do not these facts afford an exceedingly strong argument that the shell has been introduced? Its rapid increase southward shows that a favorable habitat was there waiting for it—a much more favorable one than the Nova Scotia coast. The conditions which determine its spread were here at work a century ago, but it was not found anywhere in New England.

As has already been pointed out, no species of animal or plant can be truly indigenous to the two continents. It must either have originated in one and spread to the other, or it must have originated at some other point and spread to both. A shell such as we are considering, which is at present common to both continents must either have been introduced from one to the other by man's agency, or by purely natural means. If it can be shown that the natural means did not operate in this case, it would prove that man must have introduced it; and the stronger the probability of the former, the stronger will be that of the latter.

Winds or the agency of birds, so active in the distribution of plants, could hardly operate upon a shell or its young. Ocean currents seem to be the only method of conveyance. But by no means could either *L. litorea* or *L. palliata* directly cross the At-

¹ Report on deep-sea dredging operations in the Gulf of St. Lawrence.