

the rocks for miles are clothed with them. On the sandy shores of the Gulf of St. Lawrence, the Fuci miss the rocks which afford them a substantial foothold, and are of rarer occurrence. The zone of the Laminarie extends from low-water mark to several fathoms in depth. They occur in greatest profusion on the Gulf of St. Lawrence coast, where, after a southerly gale, vast masses thrown up by the waves may be observed for miles along the shore. On the southern coast their occurrence is somewhat rare for a considerable distance east and west of St. John, probably owing to the strength of the tides which sweep them from their resting-places. Towards the mouth of the bay, however, they occur in greater abundance.

Only two forms of *Fucus* are common on the coast of New Brunswick, viz., *Fucus nodosus* (*Ascophyllum nodosum*) and *F. vesiculosus*. These two species form nearly the whole covering of tidal rocks in the vicinity of St. John, and westward to Passamaquoddy Bay. Dr. Harvey, in his introduction to the "*Nereis Boreali-Americana*," remarks on the poverty of species of *Fucus* on the north-east coast of America, compared with the northern coasts of Europe. Of the four species found in abundance in Europe, two of these, *F. serratus* and *F. canaliculatus*, had not been found in America at the time of Harvey's visit in 1850. The latter has not yet occurred here. The former is mentioned in the supplement to the "*Nereis*" as having been found at Newburyport, Mass., but has not since been detected there or at any other point on the New England coast. A specimen of this plant, collected at Pictou by Rev. Prof. Fowler in 1869, is in the Natural History Society's Herbarium in St. John. It has not yet been reported from the New Brunswick coast. Two other species of *Fucus* occur here, confined as yet to a single locality for each, although they may be expected elsewhere, as Dr. Farlow describes them as common on the New England coast, viz., *F. evanescens*¹ found at Frye's Island, and *F. furcatus* just below low-water mark on the flat shores on the north-west side of Miscou Island. These two species have not yet been reported from Nova Scotia.

Although the Fuci are excellent fertilisers, very little use is made of them in that respect in New Brunswick. Near the southern coast of the province they are used to a limited extent on grass lands. I noticed some fine fields of grass on Grand Manan, last August, where these plants had been used as a top-dressing. Applied fresh to the land after the grass has been cut, and kept moist by the fogs which prevail there, they rapidly decompose and melt into the ground. The experience of those who have used them for fertilising purposes goes to prove that they yield the best results when used fresh. Their value as fertilisers is diminished, if used for other than grass crops; or if carted for any considerable distance from shore, owing to the expense of conveying so bulky a material. In some countries (Ireland and Scotland), crops of potatoes are raised by their means, but the crops thus yielded, though abundant, are of coarse and inferior quality. The ashes of the Fuci contain a large quantity of carbonate of soda; and Dr. Harvey states that they were once cultivated on the shores of Scotland, where rocks were deposited to attract them to sandy or pebbly shores. The total amount of revenue, says the same author, derived by the proprietors of these kelp shores on the coast of Scotland, during the eighty years from A.D. 1720 to 1800, was £595,000. But this trade was long since destroyed by obtaining

¹ Quite as common at Eastport as *F. vesiculosus*, for which it might be mistaken." Farlow's Marine Algae of New England.