

INVESTIGATIONS OF THE MARINE ALGAE OF NOVA SCOTIA XV. *LOMENTARIA ORCADENSIS* (RHODOPHYTA, CHAMPIACEAE)¹

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The marine red alga *Lomentaria orcadensis* is reported for the first time from Canada. Plants were collected in August approximately 8 m below mean sea level, and were tetrasporic.

Species of the marine red algal genus *Lomentaria* Lyngbye are plants of the temperate North Atlantic and Pacific Oceans (Kylin 1956). In eastern Canada, the only prior record of this genus is the warm-water species *L. baileyana* (Harv.) Farl., which occurs in estuaries and embayments of the Gulf of St. Lawrence (Edelstein et al. 1967; in herb. Atl. Reg. Lab., NRCC), a disjunct northern extension of its range in the western Atlantic. The more northerly affiliated *L. orcadensis* (Harv.) Coll. ex Taylor, although reported to occur in eastern North America from North Carolina to Maine (Searles & Schneider 1978; Sears 1970; Taylor 1957), has hitherto not been observed on our coast. This report provides the first Canadian record of *L. orcadensis*.

Lomentaria orcadensis (Figs 1, 2)

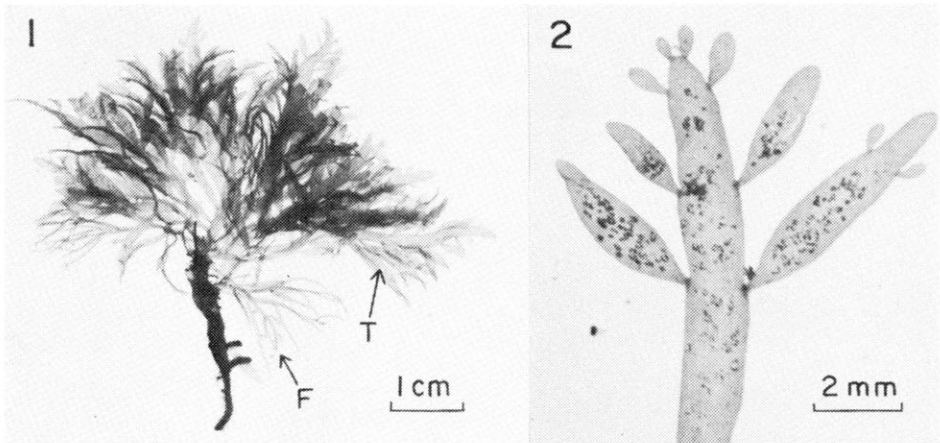
Plants densely tufted, to 3.8 cm tall, morphologically and structurally as described by Taylor (1957); frequently with localized fusion of adjacent branches; shaded branches occasionally filiform (Fig 1), later developing typical flattened morphology; all plants with tetrasporangia. On *Phyllophora truncata* (Pall.) Zinova, 8.2 m below mean sea level, Pinkney Point, Yarmouth Co., N.S. (Lat. 43°42' N, Long. 66°04' W), 22 August 1978. Herbarium reference: NRCC 8173.

In view of the reported distribution of *L. orcadensis* in the northwestern Atlantic (Sears 1970; Taylor 1957), it is not surprising to find this species in southwestern Nova Scotia. Rather, it is curious that *L. orcadensis* has not been observed in this area before now, particularly as it is apparently a plant of colder water than is the more familiar species, *L. baileyana*. The substantial stature of the Nova Scotian specimens suggests that the potential limit of distribution of this species in North America may lie even farther north. Moreover, the absence of sexual stages, which characterizes the northern limits of some species of Rhodophyta (Dixon 1965), is usual if not universal in *L. orcadensis* (Dixon 1973). It remains to be seen whether *L. orcadensis*, normally a rather uncommon species, is adventive in our waters.

The filiform morphology occasionally manifested in lower axes is reminiscent of *L. baileyana*. However, all instances of this phenotype displayed some localized compression of branches, transitional to the normal flattened appearance of *L. or-*

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cadensis. Nevertheless, it is conceivable that *L. baileyana* may coexist with *L. orcadensis* in southwestern Nova Scotia, as this area has previously yielded several other Rhodophyta with southern affinities (Edelstein et al. 1973; Wilson 1978; in herb. Atl. Reg. Lab., NRCC).



Figs 1, 2. *Lomentaria orcadensis*, NRCC 8173. Fig 1. Habit of a plant with tetrasporangia (T) and several atypical filiform branches (F). Fig 2. Enlargement of a branch with tetrasporangia, from the plant in Fig 1.

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