

low-water mark of the larger channels. The young plants are attached at one end to the soil particles, but as soon as they attain visible dimensions they are drifted to higher levels by the tide. Vast quantities of *Enteromorpha* are thus continually produced at lower levels, and make their way eventually to the drift line, generally rolled by the tide into ropes. Here they disintegrate into humus, and contribute to the maintenance of other plants in the way already described (cf. p. 111).

Rhizoclonium is a filamentous Alga found especially on the wetter parts of high marsh. In winter and spring it grows with the greatest luxuriance, and is of great importance in covering and anchoring the seed of the spermatophytes of the salt marsh. The annual plants in particular derive an evident advantage from their algal nurse.

Ulva latissima deserves mention here on account of the nuisance caused by its putrefaction on certain foreshores. This Alga has a thin, membranous, expanded thallus of variable size, often reaching 1 foot in length and 4 to 6 inches in width. To stones or rock it is fixed by its attachment disk, but on the sheltered, muddy foreshores of estuaries, where extensive mussel beds are present, *Ulva* may occur in vast quantities attached to the byssoid threads excreted by the mussels. These threads form a very favourable mechanism for the purpose, and in brackish estuarial waters contaminated by sewage, such as Belfast Lough, where mussels are widely distributed, the Alga flourishes with the greatest luxuriance between half-tide level and low-water mark. The ammonia from the sewage promotes the rapid growth of the *Ulva*, especially during the summer months, whilst the extensive mussel beds provide the necessary anchorage.

When in autumn the Alga becomes detached from its moorings it is heaped up in banks on the shore; it undergoes putrefaction, and by the evolution of sulphuretted hydrogen creates at times an intolerable nuisance.¹ Experiments on a fairly large scale show that the nuisance can best be mitigated by the

¹ See in particular *Royal Commission on Sewage Disposal*, 7th Report, Vol. II, Appendices, pt. i, 1911. For the botanical report on *Ulva* in relation to this nuisance, by Mr. A. D. Cotton, see *ibid.*, pp. 121-42.