

number about 2000 species in the British flora, and of these not more than 30 occur between tide limits, some 20 only being really common. Though the species that occur on salt marshes are thus in point of numbers markedly inferior to those of the sand dune and shingle beach, they carpet the ground more densely.

It is hardly necessary to explain that these plants are able to thrive in saline habitats in virtue of the high sap concentrations which they oppose to the sea water, concentrations which are found to vary according to the degree of salinity of the ground. Sea water contains approximately 3 per cent of common salt, but during dry periods between the spring tides the soil water may undergo concentration, reaching a strength of even 6 per cent NaCl. On the other hand, if heavy rains follow the spring-tide cycle much of the salt will be washed out (especially where much sand is present), and the concentration may fall to 1 per cent NaCl. It was proved by T. G. Hill that halophytes are able to accommodate their sap concentrations to the rise and fall of salinity in the environment, and that these adjustments are even rapidly effected. Probably all plants show these adjustments within limits; what characterizes the halophytes being the high upward extension of which they are capable. A great feature of most halophytes is their succulence, a character they tend to lose when grown in ordinary soil. For the most part halophytes of the salt marsh are smooth and succulent, but this is not invariable, as the Sea Purslane (*Obione portulacoides*) is covered with scurfy, and the Sea Wormwood (*Artemisia maritima*) with woolly hairs.

In Appendix IV, p. 267, a fairly full list of British salt-marsh halophytes is given, with the addition of the restricted number of families to which they belong. The most important of these families is that of the Chenopodiaceæ, a family always represented wherever plants of the salt marsh or other saline soils occur. Next in importance come the Grasses, Crucifers, the Plantaginaceæ, and the Plumbaginaceæ. A few of these plants demand special mention from their importance in various ways. The occurrence of these plants, as with the Algæ, is zonal, that is to say, each has a definite and restricted vertical distribution