

these various sources by far the most important is the tidal drift. This reaches both sides of the bank, and is liable to include seed derived from both near at hand and far away. Though the great majority of shingle plants are, when growing, intolerant of sea water, in which respect they agree with the plants of the sand dune, the seed is so well protected by its coat that salt water does not penetrate, and thus is just as serviceable as fresh water as an agent of dispersal. Nor is it absolutely necessary for seeds to float to reach the drift line. In shallow estuaries, in addition to the floating or surface drift, there is also a bottom drift, which reaches the same destination.

In the following enumeration is named a very small selection of the plants which thrive naturally on shingle in Britain, and which promise to perform some useful function in relation to our object. With these are added notes drawn up to indicate the special rôles which they play on mobile shingle. It is, of course, understood that the plants will only establish naturally on the habitat from seed during intervals of quiescence.

*Rumex trigranulatus* (Sea Dock). This plant is one of the commonest and most characteristic of shingle plants, often occurring with a density of one per square foot. A perennial, establishing freely from seed, it develops a long fleshy tap-root, descending vertically into the shingle a foot or more deep. Its leaves remain near the ground, partly protected by the dead leaves of the previous season, except at the time of flowering, when the stem elongates. In obstructing or retarding the movement of shingle it has an appreciable value, particularly when it grows through continuous mats of *Silene maritima* or *Arenaria peploides*, towards which it acts as a *point d'appui*. Its bulky underground organs are further of value in manuring the shingle, thus providing food for other plants. Odd as it may appear in a plant growing within a few yards of high-water mark, the Sea Dock is not a halophyte; that is to say, the living tissues of its foliage, &c., are not organized to withstand wetting by sea water. In the event of a summer gale driving fine spray over the beach at the time of flowering, the shoots and inflorescences collapse, hanging brown and dead in a few days' time. However, the permanent system of the plant survives