## 116 SHINGLE BEACHES AND THEIR FIXATION

as far north as the Wash. It may be expected to flourish anywhere on our shores, with the possible exception of the northeast coast, where preliminary trials have yet to be made.

As the primary object in view, in most cases, is the raising of the height of the beach, the planting must be regulated accordingly. We believe that a strip of Suæda, following the crest, and 7 yards wide, should meet all requirements. During the period of establishment the existing gullies on the lee slope by which the water runs off should be fenced across with brushwood at intervals to prevent transport of shingle. When the Suæda has reached its proper growth, and the crest has been raised, the gullies will go out of action automatically.

The crest being the most sterile part of a beach, and deficient in mud and humus, the ground will require preparation before the seed is sown. For this purpose mud should be brought from the marsh behind, spread on the surface to be planted, and beaten in. As seeding is prolific in certain years, and as the seed germinates readily, this method is to be recommended. The seeds should be sown not later than March, about a hundred to the square foot. About  $2\frac{1}{2}$  lbs. of seed should be ample for a strip 100 yards long and 7 yards wide. When sown, cover with a mulch collected from the drift line on the marsh. If desired, the plantation may be strengthened by putting in two or three rows of rooted cuttings, one foot apart, but this will add considerably to the labour and expense.

It is expected that the Suædas will be fully established within five years. To give the plantation the best chance of success, it may be desirable to erect to the seaward side of the strip a low temporary breastwork of wood, removable when the Suædas have established. If this be dispensed with as a whole, some protection should be provided along places where the crest drops appreciably—at spots, that is, where waves are prone to come over. There must be no traffic over the treated area, and if a path across the beach to the foreshore is required (either for pedestrians or haulage of boats), it should traverse the belt at an angle oblique to the shore line.

With a view to nursing the Suæda plantation during establishment, it is of advantage to encourage other plants, more