

plant. According as the shingle is dormant or mobile, *Suæda* shows a great difference in habit.

On dormant shingle (e.g. the hook of a spit) the bushes acquire one or more thick principal stems, which may reach 2 inches in diameter. These generally show a strenuous and contorted growth.

On mobile shingle, that is to say, in positions where the plant is liable to be shingled over from time to time, the habit is entirely different. The shoots at all stages of development arrest the flowing shingle, at the same time being tilted forward. When overwhelmed they are prostrated, and new, erect-growing branches rejuvenate by the elongation of lateral buds, so that for each branch laid low a sturdy thicket appears (fig. 24, A). By the second year these buried branches become rooted, and independent of the original plant to which they belonged. As the process is repeated from time to time the area covered by the original bushes undergoes great extension, the ground being occupied by crowded besom-like complexes which retard and hold the shingle. The value of the plant depends on this unlimited capacity of vegetative rejuvenation when capsized and on its power of holding the shingle. In this way the level of the beach is materially raised where the bushes occur.

The history of the establishment of *Suæda* on an active beach is as follows:—Seeds brought to the drift line at the lee foot germinate during a period of quiescence. The seedlings, which, in seasons when seed is abundant, are very numerous, develop extensive tap-roots in the mud and humus occupying the interstices between the pebbles. They sometimes grow as thickly as twenty to thirty to the square foot. By the first summer the seedlings may be 6 inches high on the average, and by the second 9 inches to 1 foot, already sturdy and branched. In the absence of shingling over the plants continue to expand into rounded, much-branched bushes 3 feet in height after five or six years. In the event of shingling the plants are prostrated down slope and send up numerous branches to the surface in the manner already described. The result is that the upper layers of shingle are occupied by a plexus of horizontal branches which become rooted and function as rhizomes, whilst