

Another characteristic dune shrub is the Sea Buckthorn (*Hippophaë Rhamnoides*), also in possession of succulent fruits.

Dune plants as a whole tend to be deep-rooted, partly by rapid downward penetration at establishment—doubtless a response to the necessity of laying under contribution the moister layers of sand—partly from the piling up of sand brought by the wind. So extensive are their root systems that it is practically impossible in the ordinary way to dig up any of these plants intact. Only when a dune cliff is undercut by a high tide and falls in masses can plants with their subterranean systems entire be recovered from the *débris*. Practically any dune hill is penetrated everywhere, from base to summit, by roots and rhizomes.

An exception to these statements is afforded by the “ephemerals”, plants which arise from seed each year, germinating in the autumn or winter, flowering in March and April, and ripening their seed before the summer. These, unlike the perennials, are shallow rooters, and depend for their water supplies on surface moisture. In early spring the dunes are often gay with ephemerals, such as Whitlow Grass (*Draba verna*), Rose-leaved Saxifrage (*Saxifraga tridactylites*), Mouse-ear Chickweed (*Cerastium semidecandrum*), Early Forget-me-not (*Myosotis collina*), and others of like habit. Though present only for a limited time, these ephemerals play their part in helping to screen the soil, especially at a season when much of the other vegetation is still dormant. Furthermore, at their death their remains contribute humus to the dune soil.

With the complete stabilization of a dune Psamma and other pioneers lose their primeval vigour, cease to flower, and fall into a mangy-looking state. Sooner or later they die out, and the passage of the dune from the primary white phase to the grey secondary is complete. Dune pioneers flourish luxuriantly only so long as the sand about them is mobile. Under these conditions their green is of a deeper hue, and flowering spikes are freely produced. Whether the soil becomes depleted of an essential component, or whether the covering of the surface by other plants interferes with the aeration of the Psamma roots and rhizomes, or finally, whether deleterious secretion-products