CHAPTER VII

Shingle Beaches and their Fixation

We now come to the subject of shingle beaches, with special relation to their protection and utilization by planting. In the last two chapters attention has been directed to the construction and growth of sand dunes and to the methods that are employed in stabilizing them, so that the principles involved in their control might be rendered plain. In the case of shingle we are on less trodden ground—without the guidance of established practice to lead us. Nevertheless certain principles are clear, and enough has already been done in the way of observation, comparison, and experiment for the formulation of methods of procedure. At the same time the methods being in the experimental phase they are everywhere liable to modification and improvement.

Whilst sand dunes arise from sand blown on to the land above tidal limits by the wind, shingle beaches are the work of the waves, and more especially of heavy on-shore gales. With the recurrence of gales they undergo increment, the shingle being shot over the crest and scattered on the lee side as the waves run off. Substituting the force of the waves for that of the wind, there is some analogy between shingle beaches and sand dunes, subject to the limitations defined in Chapter III, pp. 36, 39.

The Main Types of Shingle Beach.—Shingle beaches arise on our coasts when suitable materials from the modern waste of the shore, or that of remote geologic ages, such as flints, find their way into the zone of littoral currents. Here they are kept continually on the move by the waves, whilst, in obedience to