

protective plants has dropped, each year to have the walls cleared of coarse herbage. This may be done either with the scythe and reaping-hook, or by fire. If the walls are stripped in this manner every season the result is a growth of a close tenacious mat of vegetation, which acts as an admirable protection. If the vegetation be allowed to grow rank and rampant, the result is that light and air cannot penetrate properly to the bank, and rough bushes alternate with bald and unprotected patches of embankment. This is a double disadvantage, as if the larger shrubs are uprooted they leave dangerous cavities in the bank. No trees or shrubs should be allowed on a sea bank. Every autumn, therefore, the surface of the bank should be scarified of superabundant vegetation, so that the minute vegetable growths may have a chance of establishing themselves and forming a dense sward. The travel of sheep consolidates a bank, but horses and cattle should, if possible, be kept away, as they tear down the edges of a bank and their hoof tracks leave dangerous pockets for disintegration. Rats and rabbits are the bane of sea-walls, and a merciless warfare has to be carried on against them, as they are the frequent cause of serious casualty.

In some districts, where the ground is of a silty character, the backs of walls are planted with lucerne, but from the protective point of view species of *Triticum* grass and the more wiry maritime plants are the most effective. One of the most dangerous practices is the construction of the delph too near the toe of the wall. This renders the ground sodden and may set up dangerous subsidence. The width of the foreland should be 30 feet, and the foreland should be laid at an inclination of $1\frac{1}{2}$ inches in the foot to the delph, so that drainage may freely escape into the ditches. It must be borne in mind that all freshly-constructed earthwork shrinks and settles. It is therefore advisable, when a wall is retopped, to form the apex to a level 6 inches above standard height. On a well-constructed wall, and barring casualty, a wall so topped will in two or three years have settled to standard height and will probably not require serious repair for several years longer.

It is hardly necessary to say that in no department of engi-