

the merciless ocean; extensive sands, dry at low water, are to be seen in their stead."*

Pennant describes Spurn Head as a promontory in the form of a sickle, and says the land, for some miles to the north, was "perpetually preyed on by the fury of the German Sea, which devours whole acres at a time, and exposes on the shores considerable quantities of beautiful amber."†

According to Bergmann, a strip of land, with several villages, was carried away near the mouth of the Humber in 1475.

Lincolnshire. — The maritime district of Lincolnshire consists chiefly of lands that lie below the level of the sea, being protected by embankments. Great parts of this fenny tract were, at some unknown period, a woody country, but were afterwards inundated, and are now again recovered from the sea. Some of the fens were embanked and drained by the Romans; but after their departure the sea returned, and large tracts were covered with beds of silt containing marine shells, now again converted into productive lands. Many dreadful catastrophes are recorded by incursions of the sea, whereby several parishes have been at different times overwhelmed.

So great is the quantity of mud suspended in the tidal waters of the rivers entering the Wash, that the accumulation of soil by "warping," wherever the force of the winds and currents can be checked, is surprisingly rapid. Thus, for example, when a portion of the old channel of the Ouze, containing 800 acres, was deserted by an alteration of the drainage, it was warped up, without any artificial aid, to the height of twenty-five feet in five or six years.‡

Norfolk. — We come next to the cliffs of Norfolk and Suffolk, where the decay is in general incessant and rapid. At Hunstanton, on the north, the undermining of the lower arenaceous beds at the foot of the cliff, causes masses of red and white chalk to be precipitated from above. Between Hunstanton and Weybourne, low hills, or dunes, of blown sand, are formed along the shore, from fifty to sixty feet high. They are composed of dry sand, bound in a compact mass by the long creeping roots of the plant called Marram (*Arundo arenaria*). Such is the present set of the tides, that the harbours of Clay, Wells, and other places, are securely defended by these barriers; affording a clear proof that it is not the strength of the material at particular points that determines whether the sea shall be progressive or stationary, but the general contour of the coast.

The waves constantly undermine the low chalk cliffs, covered with sand and clay, between Weybourne and Sherringham, a certain portion of them being annually removed. At the latter town I ascertained, in 1829, some facts which throw light on the rate at which the sea gains upon the land. It was computed, when the present inn was built, in 1805, that it would require seventy years for the sea to reach the spot: the mean loss of land being calculated,

* Arct. Zool. vol. i. p. 13. Introduction.

† Ibid.

‡ Ibid. p. 9.