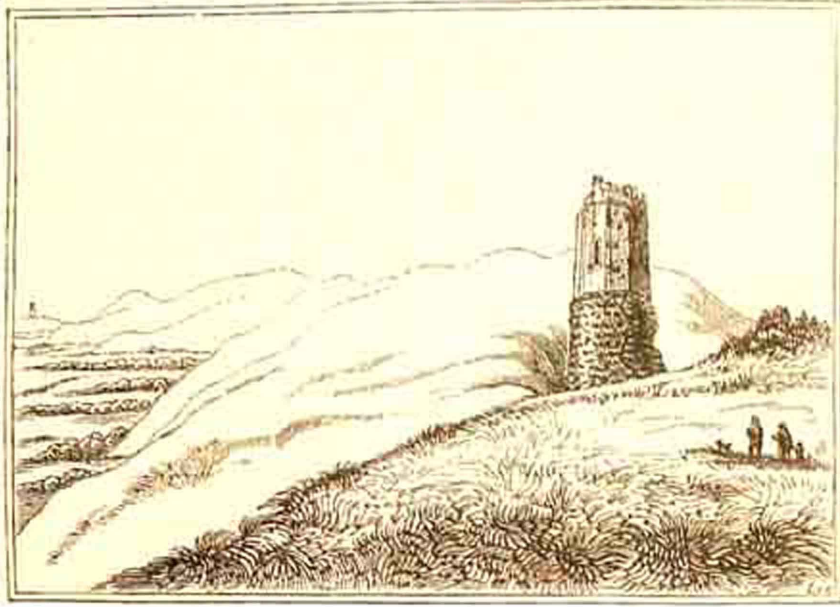


croaching on the sandhills, and had laid open on the beach the foundations of a house fourteen yards square, the upper part of which had evidently been pulled down before it had been buried under sand. The body of the church has also been long buried, but the tower still remains visible.

Fig. 20.



Tower of the buried Church of Eccles, Norfolk, A.D. 1839.

The inland slope of the hills of blown sand is shown in this view, with the lighthouse of Hasborough in the distance.

M. E. de Beaumont has suggested that sand-dunes in Holland and other countries may serve as natural chronometers, by which the date of the existing continents may be ascertained. The sands, he says, are continually blown inland by the force of the winds, and by observing the rate of their march we may calculate the period when the movement commenced.* But the example just given, will satisfy every geologist that we cannot ascertain the starting-point of dunes, all coasts being liable to waste, and the shores of the Low Countries in particular, being not only exposed to inroads of the sea, but, as M. de Beaumont himself has well shown, having even in historical times undergone a change of level. The dunes may, indeed, in some cases, be made use of as chronometers, to enable us to assign a minimum of antiquity to existing coast-lines; but this test must be applied with great caution, so variable is the rate at which the sands may advance into the interior.

Hills of blown sand, between Eccles and Winterton, have barred up and excluded the tide for many hundred years from the mouths of several small estuaries; but there are records of nine breaches, from 20 to 120 yards wide, having been made through these, by which immense damage was done to the low grounds in the interior. A few miles south of Happisburgh, also, are hills of blown sand, which extend to Yarmouth. These *dunes* afford a temporary protection to the coast, and an inland cliff about a mile long, at Winterton,

* De Beaumont, *Géologie Pratique*, p. 218.