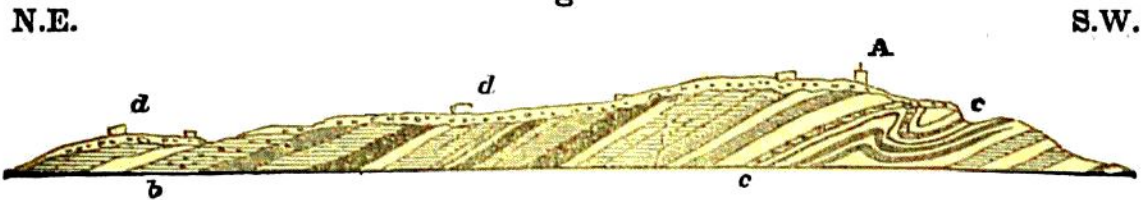


entire thickness must be very great, exceeding 2000 feet. The clays predominate over the sands. In the black beds containing lignites coniferous wood is abundant, and amber is said to have been found. The organic remains prevail at intervals in various strata, but I extracted most of them from a bed of green sand (*b*),

Fig. 6.



Section at Gayhead.

- | | |
|--------------------------------------|----------------------------------|
| A. Lighthouse. | b. Greensand with sharks' teeth. |
| c. Osseous conglomerate with walrus. | d. Drift. |

near the north-eastern end. They consisted of casts of shells, teeth of large sharks, the vertebræ of a dolphin, and of a whale of great size. I also discovered a tooth referred by Mr. Owen to the canine tooth of a seal.

Together with these, I found numerous nodules of the shape of kidney potatoes, from one to two inches in diameter, smooth externally, which I presume to have been coprolites. They have been analysed for me by my friend J. Middleton, Esq., F. G. S., and found to contain no less than 50 per cent. of phosphate of lime, the constitution of the latter being such as is peculiar to organic substances. They also consist of fluoride of calcium, chloride of sodium, and other elements. These coprolites, therefore, seem closely analogous in composition as in age, to those found by Professor Henslow in the Suffolk crag of Felixstow, and which accompany the bones of sharks and cetacea.

Near the lighthouse there is a great fold in the beds, where they are so bent as to have twice a north-easterly and once a south-westerly dip. One of these