

these ancient æstuaries will be found in the third volume of the Geological Transactions.

The tract around Bovey Tracey in Devon, which exhibits several beds of wood-coal, alternating with the alluvial debris of granitic rocks, is another instance of such an æstuary.

The formation of peat bogs is another of the geological changes in actual progress. Dr. Mac Culloch in a most able paper published in the Edinburgh Philosophical Journal for 1820, has treated this subject in the most precise and satisfactory manner: he considers beat bogs as divisible (from the consideration of the vegetables which compose them, and the causes which concur in their formation) into the following varieties; mountain, marsh, forest, lake, and marine peat: in the progress of the work we shall have occasion to explain more fully, and to apply his principles. The formation of peat bogs often occasion, or at least materially contribute to, the partial filling up of lakes, the extension of marsh lands along the coast, &c. Much valuable information concerning these processes may be found in De Luc's Travels in the north of Europe.

The materials accumulated in alluvial districts are usually in a loose form, as sand, marl, and clay. The formation of compact rocky masses is of more rare occurrence; under favorable circumstances, however, and especially along the coast, sandstones are formed from the consolidation of the drift sand, and where the oxide of iron is present to act as a cement, the process goes on rapidly: the northern coast of Cornwall affords extensive examples of this process (see vol. 1 of the Cornish Geological Transactions). Captain Beaufort describes a line of petrified beach as extending along various points of the coast of Caramania; the same thing is common in the Bahama Islands, and the human skeleton brought from the beach at Guadeloupe, and preserved in the British Museum, was imbedded in a mass of this description*: it is unnecessary to add that marine remains are commonly dispersed through rocks of this description; occasionally comminuted shells form almost the entire mass, in which case the rock is of course calcareous: a near resemblance to some of the oolites may also be observed in these recent formations. Calcareous rocks are often also deposited from the waters of existing rivers or lakes in large masses. The celebrated Travertino of Rome is thus formed, and Germany affords some similar instances. The deposits of petrifying waters, such as the Baths of San Filippo, the stalac-

* "The occurrence of the *Bulimus trifasciatus*, a very common West Indian shell, in this mass, strongly indicates its modern formation."