

farther:—let a ship be sunk there, and in a few years it will be completely covered with sand. Thus it is that the nucleus of shoals is formed. Sandy Hook is a deposit of this kind; the Hook of Cape Cod is another. There is, beside the tidal, another small current, which meets the other, and both together possess great force; and where two tides meet as they pass out, there will be a deposit. And if an island shore, that island will thus soon be connected with the main land. The deposit taking place at the mouths of harbours is generally an ocean deposit. Although often regarded as brought down by the rivers, being sand, its origin is at once developed. At Nantucket (continued Prof. Pierce) the land is preserved from being shut in by the force of the water,—which must find a passage; yet some parts of it, where there are irregularities in the shore, have gained upon the water, and partly surrounded it,—by which the enclosed lagoons are formed. On this theory of the tides, remarked Prof. Pierce, Lieut. Davis thinks he can explain the sand deposits all along our coast.—In connexion with this, Mr. Desor has made observations 'On the Distribution of the Marine Animals;' in which he endeavoured to account for the changes, existence, &c., of the different species. He observes that at different depths of the ocean, various distinct kinds are formed,—and judges that geological investigation may account for it.

This paper led to some discussion; in the course of which Dr. Dickeson related a remarkable incident, where, at the Island of Galveston, in 1839, a vessel from New Orleans was wrecked (at the south end), with a considerable amount of specie. The officers of the Custom House took immediate measures to recover the valuable cargo,—but in a very little time the workmen reported the vessel nearly covered with sand. A few weeks after, at the other end of the island—some 28 miles or thereabouts—some fishermen brought up some of the doubloons. They were arrested and imprisoned on a charge of robbing the wreck; their protestations of having really found the gold at so great a distance not being credited for a moment,—till scientific research convinced the authorities that the metal was really carried to that distance, of course, by the force of the current.

Prof. Agassiz read a paper on some Observations made by him on Lake Superior and other northern lakes,—with a view to ascertain the geographical distribution of fishes, and to satisfy himself whether they were indiscriminately distributed through all these lakes, or whether there were differences in the localities where found. On carefully

comparing, he found that the distribution is entirely different—that particular families are in some, and other families in another part, and that they never leave their peculiar locality. He finds that there are families in Lake Huron which are not in Lake Superior,—and some in Lake Superior which do not move down into the lower lakes, although the communication between them is always open and easy. The Professor considers that these fishes originate where they are found; and it is a singular fact that they are generally located in very similar positions with the fishes of Europe—yet, although they agree so generally with the European varieties, they are greatly different in zoological characteristics; so that there can be no transportation of the separate varieties from one country to another, and there is no connexion of the fresh-water fishes of Lake Huron with those of southern Europe—nor of Lake Superior with those of northern Europe. It is well known, from geological data, that North America is the oldest continental land upon earth. Is it not remarkable that animals now exist which are old-fashioned in their external zoological character—and that they should be of the same type with animals long since considered extinct? It is in North America where the garpikes live,—and the garpike is the only representative of the periods when that fish *only* lived. Among these fishes there are two types—one with smooth and the other with serrated scales [Prof. Agassiz explained by black-board diagrams]; the serrated scales have usually two dorsal fins. He found in Lake Superior a new fish, with spines upon the opercular bones, and all the scales hard and serrated, and what has never been before observed in hard-scaled fishes, it has like the salmon, an adipose or fatty fin.

A paper was read from Prof. Dickeson and Mr. Andrew Brown, of Mississippi, on the Sediment of the Mississippi River;—and Lieut. Maury read his views on the Currents of the Ocean, which are familiar to the readers of the *Athenæum*.—A committee was subsequently formed to address a memorial to the Secretary of the Navy, in reference to the Lieutenant's charts,—composed of Profs. Rogers, Henry, Pierce, Coffin and Alexander.—Prof. Agassiz delivered a dissertation 'On the Classification of Animals.'

The next meeting of the Association was appointed to be held at Cambridge, Massachusetts, on the 14th of August, 1849.

SCIENCE IMPEDED.—The political commotions in Italy have necessitated the postponement of the Scientific Congress for one year. That of Sienna will be in 1849, and that of Bologna in 1850.