

Sir John Richardson remarks, that the only species which is unequivocally common to the two continents is the pike (*Esox lucius*); and it is curious that this fish is unknown to the westward of the Rocky Mountains, the very coast which approaches nearest to the old continent.* According to the same author the genera of freshwater fish in China agree closely with those of the peninsula of India, but the species are not the same. "As in the distribution," he adds, "of marine fish, the interposition of a continent stretching from the tropics far into the temperate or colder parts of the ocean, separate different ichthyological groups; so with respect to the freshwater species, the intrusion of arms of the sea running far to the northwards, or the interposition of a lofty mountain-chain, effects the same thing. The freshwater fish of the Cape of Good Hope and the South American ones, are different from those of India and China, &c."†

Cuvier and Valenciennes, in their "Histoire des Poissons," observe, that very few species of fish cross the Atlantic. Although their statement is correct, it is found that a great many species are common to the opposite sides of the Indian Ocean, inhabiting alike the Red Sea, the eastern coast of Africa, Madagascar, the Mauritius, the Indian Ocean, the southern seas of China, the Malay archipelago, the northern coasts of Australia, and the whole of Polynesia!‡ This very wide diffusion, says Sir J. Richardson, may have been promoted by chains of islands running east and west, which are wanting in the deep Atlantic. An archipelago extending far in longitude, favours the migration of fish by multiplying the places of deposit for spawn along the shores of islands, and on intervening coral banks; and in such places, also, fish find their appropriate food.

The flying fish are found (some stragglers excepted) only between the tropics: in receding from the line, they never approach a higher latitude than the fortieth parallel. The course of the Gulf stream, however, and the warmth of its water, enable some tropical fish to extend their habitations far into the temperate zone; thus the chaetodons which abound in the seas of hot climates, are found among the Bermudas on the thirty-second parallel, where they are preserved in basins inclosed from the sea, as an important article of food for the garrison and inhabitants. Other fish, following the direction of the same great current, range from the coast of Brazil to the banks of Newfoundland.§

All are aware that there are certain fish of passage which have their periodical migrations, like some tribes of birds. The salmon, towards the season of spawning, ascends the rivers for hundreds of miles, leaping up the cataracts which it meets in its course, and then retreats again into the depths of the ocean. The herring and the haddock, after frequenting certain shores, in vast shoals, for a series of years, desert them again, and resort to other stations, followed by the species which prey on them. Eels are said to descend into the

* Brit. Assoc. Reports, vol. v. p. 203.

† Report to the Brit. Assoc., 1845, p. 192.

‡ Richardson, *ibid.* p. 190.

§ Sir J. Richardson, *ibid.* p. 190.