

or on to banks, and for some weeks feed on these fish. When the Sand Lance again retires to deep water, the season of the small crustaceans has arrived, and these by tidal action, already described, and winds, are concentrated near the coast lines of Prince Edward Island, New Brunswick, the North and South shore of the Estuary and Gulf of St. Lawrence, and the shores of Cape Breton. On all these coasts the effect of the single and confluent tides dragging along the coast line and retarded by it, is to produce eddies, where the free swimming food concentrates. The course or direction of the different schools during the summer is thus dependent upon winds and tides, and their movements would, if correctly plotted, resemble long narrow ellipses adjacent to the coast, which are doubtless many times repeated.

At the approach of winter the different schools seek their winter quarters opposite and near to the places where they spawned in the preceding spring, as is the case of the schools on the Atlantic coasts. In these particulars their movements resemble those of different species of fish which feed and move in great schools in directions outlined by circles or ellipses throughout the period during which they are at the surface.

Sars has shown that this form of movement is taken by the Herring on the Norwegian coasts. ⁽¹⁾

The Mackerel are pursued by Cod and Hake, and these fish gather where offal is thrown over from vessels on which the Mackerel are cleaned. As a natural consequence the Mackerel avoid the sea areas where their enemies are congregated, and fishermen attribute the desertion of the mackerel-ground directly to the throwing of offal overboard. Cod, and probably Hake follow up the scent of offal or food of any description carried by currents with remarkable facility, as may be witnessed during the process of jigging for cod in calm and clear waters. On looking over the side of the boat, with a man engaged in jigging at the bow or stern, as soon as a fish is wounded merely by the jigger and blood flows from the wound, the creature may be seen to dart here and there in pain. The neighboring fish of the Cod tribe are attracted by the scent and follow the blood "tracks" against the current, hunting their wounded comrade to the death. A fish coming across the stream of scent, immediately follows it up, and it is thus that fish offal or bait thrown overboard in the open sea, or some distance from shore, gathers the fish on the course of the current. In harbors and confined or landlocked bays, where there is no constant strong current to carry off the results of decomposition, and where the sea-scavengers are not sufficiently numerous to consume it, the effect cannot fail to be extremely prejudicial to young fry and to fish spawn.

(1) See chart by Dr. G. O. Sars, in his Report for 1874.