

FLY LINES.

BY GEORGE H. MACKAY.

'FLY LINES' and 'Lines of Flight' are so closely connected that it might seem reasonable to include them under one heading. Yet, judging from my observations of some of the water birds during their sojourn on the New England coast, I can say that Fly Lines do not convey to me the same meaning as do Lines of Flight, for the reason that the former appear to be influenced by the peculiar local surroundings and weather conditions of the locality where they occur, while I recognize as Lines of Flight those general migratory movements from north to south, and vice versa, over particular sections of the country or along certain coasts, in contradistinction to other portions where such movements do not occur. While it is true that in some instances Lines of Flight seem to change their character *temporarily* so as to very properly come under my interpretation of Fly Lines, I can scarcely say I have ever noticed Fly Lines (with one exception) to assume the definite character so distinctive of Lines of Flight during a migratory movement. I am free, however, to state, in regard to the above exception, that I have observed Scoters flying under the temporary local conditions of Fly Lines which I am certain embraced a migratory movement, as I shall have occasion to instance later on. It is of little importance, however, as far as the subject matter is concerned, whether one or both terms are considered as essential in defining such movements. Therefore permit me to use that of my title in describing what I desire to communicate, because it is the one with which I am most familiar.

The expression 'ocean lanes' is often applied to those invisible, broad, open ways traversed by the ocean steamships in passing to and from this country to Great Britain, and it seems fairly well to convey the meaning. Fly Lines are also invisible pathways, pursued not only by migratory but by sojourning water birds in New England. This unmarked temporary way is always subject to change, sometimes more than once in a day, as it is determined largely by weather conditions; but whatever the conditions,

when such a Fly Line is adopted, the birds will undeviatingly follow it, flock after flock, though no coming birds can be seen when the last flock is passing out of sight. As illustrations must necessarily be repetitions, they being much alike, I shall confine myself to only a few species out of a number which have come under my observation.

It took me a number of years to learn what Fly Lines were, or that there were such, or to recognize in them a regularity of movement under varying conditions. Afterwards I found it of great service during my shooting trips. I have heard people who had not given the subject especial attention express the view that birds in general fly aimlessly about, securing sufficient food for their daily wants, and getting out of harm's way when necessary. I can scarcely agree to such an opinion, my observations leading me to conclude that birds display a purpose in everything; it seems to me only necessary to study their habits to become convinced of this. Those who have had more or less experience as sportsmen on the coast find it not a difficult matter, in most cases, to distinguish, when far distant, species with which they are familiar by their appearance, manner of flight, and note, for each is characterized by ways and traits peculiarly its own, a knowledge of which often enables one to anticipate their movements. Notice, for example, a flock of Brant (*Branta bernicla*) gyrating in the air on some warm April or May day when the wind is southwest; does it mean anything? If you have studied them you will know that soon they will start on their line of migration, this first movement being indicative of the one which follows it. Should the early morning find you on the sea coast at the proper season and place, you will observe that the first few flocks of Scoters appear to pass in about the same line and headed in the same direction, as if moving from one definite point to another; and you will find that *this* will be their Fly Line while the same weather conditions prevail. It may seem that chance has so directed them, but wait and see, and you will become convinced that such is not the case. I have known these Scoters, when flying by the south side of Nantucket Island, at some distance from the shore, to change their course at a fixed though invisible point and turn in towards the beach at a given spot, and that all succeeding flocks would follow this line although none might be

in sight at the time the last flock passed. To many it would seem wild to wager that the next flock to appear would do likewise, yet such could be predicted with reasonable certainty, for it was their Fly Line for the time being.

I have also noticed flocks of American Golden Plover (*Charadrius dominicus*) leading along the headland on Nantucket Island, adjacent to the beach, until they reached a certain place on the shore, when their course would be abruptly changed, turning inland, without any apparent cause. At other times I have seen flock after flock lead inland and, on reaching a certain point, turn off and follow a slight, scarcely noticeable, depression in the land. As I interpret it, they pursued these courses in each instance because it was their selected Fly Line while passing from one portion of the island to another. Should they mount up into the air and circle several times, and then head south, you may say goodbye to that flock for at least a year, for they have started on their line of migration, this second movement being certain to follow the first.

Seconnet Point, Rhode Island, is separated from the Newport shore by the Seconnet River, which at its mouth is four and a quarter miles wide. I have here watched many migratory movements of the three varieties of Scoters in the spring as they passed on their lines of flight northward. When the wind is southwest, whether blowing hard or almost calm, at a certain undefined place off the Newport shore they will turn and pass on up the river for a mile or more, then again turn and come out around Seconnet Point, resuming here their regular line of flight as before. There is no apparent reason why they should adopt this out of the way course, rather than the straight one directly across the mouth of the river, which would be their direct line of flight; yet do this they will, and for the time being it seems to be their adopted Fly Line under the conditions as stated, but not otherwise. I instance this to explain what I intend to convey by lines of flight changing their character temporarily into Fly Lines. The same is true of the Golden Plover (*Charadrius dominicus*) at times when they pass over Nantucket Island without stopping. The American Crow (*Corvus americanus*), Black-bellied Plover (*Charadrius squatarola*), Knots (*Tringa canutus*), Turnstones (*Arenaria interpres*), Eskimo Curlew (*Numenius*

borealis), Hudsonian Curlew (*N. hudsonicus*), the Greater Yellowlegs (*Totanus melanoleucus*), Yellowlegs (*Totanus flavipes*), also some of the land birds, and many of the Ducks, as the American Eider (*Somateria dresseri*), Oldsquaw (*Clangula hyemalis*) and others, when sojourning in a locality, and at times during migration, follow a definite Fly Line.

To exactly define the Fly Line of sojourning birds is not always easy, for, as I have remarked, each day is a rule unto itself according to the prevailing weather conditions; it therefore may require a longer or shorter period of observation, but when it is known to the experienced sportsman the birds are very apt to suffer. Temporary Fly Lines which may form a part of lines of a migratory flight, as also lines of flight proper, are comparatively easy to ascertain, being in almost all instances governed by wind and weather, but not invariably so. Fly Lines of sojourning birds are not seemingly always governed by the weather conditions, the objective point sought sometimes causing exceptions by reason of location, nearness to buildings, intervening hills, etc. It might appear, on viewing some large marsh where all was apparently good ground, that one location would be as favorable as another for the birds to fly over; such a conclusion would be a mistaken one, for though it may have an area of a thousand acres there may be only two or three places that can be called *good*, for the reason that, owing to its topography, direction of wind, etc., conditions may arise which may cause Fly Lines to touch only in certain places, other portions of the marsh being passed over but little by the birds. To the inexperienced it is again merely chance which directs such movements of birds, but the close observer sees purpose, and, the cause being known, the result can be predicted.

Why is this? And what is it that causes the above results? As my explanation must necessarily be based on my individual experience, which, while it has covered a number of years on the coast, is nevertheless only the result of one person's observations, which may or may not be modified by more extensive data, I am compelled to present an explanation which is not altogether satisfying even to myself. Consequently I offer it simply as a contribution to a subject on which little thus far has been written.

It would seem, especially during inclement, windy weather, that most creatures shrink from a struggle with the elements, for a variety of reasons; as a result their movements are deflected to leeward. But such conditions are not essential, for I have noticed similar results during ordinary weather when there was but little wind, the position of the Fly Line being changed perceptibly. Such changes are apparently brought about by the wind coming from a different quarter, the Fly Line being deflected almost invariably to leeward, even though there may be scarcely wind enough to make a ripple on the water. I interpret it that the birds are enabled to fly in the direction they wish to go with greater ease by so changing their course. It would also seem that some sojourning birds, after becoming accustomed to certain localities, evince a preference for particular routes by their continuous use when passing to and from places they are accustomed to frequent, thus adopting what I designate as their Fly Line. In instances where salt water Ducks are in the habit of frequenting ponds having an opening into the ocean, they usually show a preference for passing in and out over such opening, apparently feeling safer when flying over the water. Should there be no opening they are apt to select the narrowest part of the beach separating the pond from the ocean, over which to cross, regardless of the wind. The topography of certain localities also has much to do with influencing the direction of the Fly Lines of some of the water birds when passing over the land. The American Golden Plover (*Charadrius dominicus*) especially will follow undulations, and shape its course so as to follow the depressions and valleys. These illustrations, I think, indicate that the movements of some of the water birds are not left to chance, but actuated by purpose.

It is not to be inferred that Fly Lines are easily discovered, though sought after with perseverance, for the reason that their location, favorable weather conditions, and time of flight, are usually matters of conjecture; hence unless one is a good deal in the field, as well as on the alert, instances may occur which will escape the observer's notice. In thus directing attention to the subject, and communicating what I have gleaned, I desire to assist others who may be interested in the matter by giving them the aid of my own experience.



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