

The Highways of the Birds

Ornithology

ALEXANDER WETMORE, in *The Migrations of Birds* (Harvard Press):

From previous statements it will be realized that there is infinite variety in the distances travelled by various birds in migration, and in the choice of the routes that are followed. In fact, the variety is so great that it almost seems as if the methods employed in migration by no two species exactly coincide. One species travels farther than another, one passes south and another southwest, one begins migratory movement early and another procrastinates, and so on in a highly varied assortment of differences. There are factors, however, that tend to throw floods of migration along certain lines and to leave other areas occupied to a less degree, so that there are certain general lines of migration that may be traced.

Much has been written about these paths of migration, and it is generally recognized that birds in migratory flight tend to follow lines of major topographic relief on the earth's surface when these tend in the proper direction. Lanes of migration may be relatively narrow, depending upon the habitat chosen by birds as a place to live, as exemplified by the knot, the purple sand piper, the surf-bird, and others which, except when on their breeding grounds, normally are found along sea-coasts, where their chosen home is bounded on one side by broad reaches of salt water and on the other by land or fresh water, both equally unsuited to furnish the food and haunt desired by these species and necessary to their well-being. The knot ventures somewhat casually inland, but the bulk of its flight is coastal. The others are strictly maritime in distribution except in their northern homes. These birds travel in narrow lanes from which there is no pronounced deviation.

In those species that migrate habitually overland the case is quite different, since here the migration path is broad and diffuse, with indefinite boundaries. Throughout the northern hemisphere, with the exception perhaps of such tremendous altitudes as are encountered on Mount Everest, there is in all probability no point at which migrants do not pass. In or over prairies or forested areas, mountains or valleys, deserts

or marshes, lakes or plains, we find migrant birds at some time during the year, or under proper conditions hear their calls as they pass overhead at night. It is true that there are lines of pronounced concentration in migration marked by some river valley, mountain range, or other feature, but such flight lines must not be visualized as narrow paths or arterial traffic lanes, similar to the highways of humans, designed especially to carry avian travellers north and south; they are merely favored passageways in one broad fly line that is continent wide in extent. It is only at such places as Point Pelee in Lake Erie, or Whitefish Point in Lake Superior, that there is any true semblance to a narrow lane.

It must be borne in mind then, in subsequent discussion that the lines of flight suggested are merely broad lanes in which migration tends to concentrate, or general tracts through which flight is particularly abundant. Quite often we find that early arrivals among birds are noted first at points in the concentrated lanes, and that only with the rush that marks the passage of the mass of individuals of a species do they appear at stations at the side. In some forms the first bird will be seen in the course of some broad north and south river valley, and it may be several days before there is a spread to points at either side. In other species movement may come on a broad front extending indifferently across the land, so that arrivals are noted simultaneously across the line of advance. . . .

To begin in the east, the first of the major north and south lines is one that leads directly south across the Atlantic Ocean from the coasts of Nova Scotia and Labrador through or past Bermuda, perhaps extending in part through the Bahamas and the larger West Indian Islands, to the Lesser Antilles, and then down the course of these small islands to the mainland of South America. No land birds are known to make the long sea flight that this journey entails, but it is a regular route in autumn for thousands of water-birds, of which the golden plover is the best example. The route seems to be used by many other shore-birds, which pass directly south without troubling to follow the eastern coast line of

the United States, as distance means little to these strong flyers. It is also the passage taken in part by such sea-birds as jaegers, and perhaps by the Arctic tern. As it lies at sea, it is known definitely only at the terminals or at the intermediate lands that offer points of observation. Some shore-birds that nest on the Arctic tundras of northwestern North America in autumn fly southeast to follow finally the sea road that has just been outlined.

Another regular lane extends down the eastern coast of the United States, restricted for some species to the immediate vicinity of salt water, while for others there is available inland a broad stretch of land along which minor routes of travel may be established. Many coastal points in this line are famous as points of observation both for land and water-birds as they offer a considerable diversity of natural conditions. The shore-birds that have been mentioned, so far as known, return north in spring by routes that carry them along or over the land, so that the outer sea lane is used apparently by few individuals in returning to the north.

From the interior basin that drains into Hudson Bay and the Arctic Ocean many birds converge in southward flight on the Great Lakes, and then pass directly south, as is the case with the blue goose, which travels from its breeding grounds somewhere in western Keewatin to this point and then drives south to the Gulf coast of Louisiana and Texas. Others from this same point, including ducks and geese, pass directly southeast toward the head of Delaware and Chesapeake bays and ultimately reach Currituck Sound and the coast of South Carolina. There is also migration among a few birds from the interior plains region to the southeast that brings such species as LeConte's sparrow to the coast of South Carolina.

Migrants that continue to wintering grounds beyond Florida and the Gulf Coast have now a choice of three travel lanes. One of these leads through Florida, Cuba, the Bahamas, Santo Domingo, Porto Rico, and the Lesser Antilles, to South America.

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