

WHY DO OUR BIRDS MIGRATE.

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It is insectivorous and "therefore" a migrant, is a common phrase in literature about migrants; it is the purpose of this brief paper to take the therefore out of of this sentence: to maintain that what a bird eats has nothing to do with the great bird movement from the south to the north in the spring and back again in the fall after breeding.

The Pennsylvania reed bird, the bobolink, doubtless stops at the reed swamps in Pennsylvania for refreshments on its way south; the South Carolina rice bird, another name for the bobolink, takes toll of the rice swamps; but no one thinks that the reeds or the rice are the cause of the migrations. Surely if they had not wings, they could hardly fly from the equator to Manitoba, but this does not make their wings the cause of the journey; nor is their food the cause.

It is stoutly maintained that climate is the cause. This, like wings and food, renders the journey possible; but it cannot in all cases cause it, for many water birds, like the gannet and the petrel, go to their breeding grounds from colder to warmer water and many from warmer to colder. They go to inhospitable, inaccessible rocks that they may nest in a place of safety, as I believe.

I was impressed at Wood's Hole in the summer of 1901 to see tern flying by in great numbers every morning. Later I visited their breeding grounds at Penikese; they were flying by Wood's Hole to get food for the day; they had not come to Penikese for food, for they came in such numbers that they overtaxed the fishing grounds for more than twenty miles to the eastward. They had not come for climate, for they had come from all available areas, colder as well as warmer. Perhaps it is admitted that they came to lay their eggs and rear their young safe from destructive mammals, including boys.

The facts about the blackpoll warbler sustain this theory almost as well as those about the tern, the gannet or any other water species.

The Blackpoll. It winters south of the equator and nests north of the Arctic Circle; its journey to its breeding grounds is a 10,000 miles round trip. It passes through Richmond about May 15 and returns September 15; its movements as it passes by us are deliberate. It cannot spend more than two months in its northern habitat; these must be very busy months. Nest making and family rearing are its chief business during these two months.

In a few minutes, or at least hours, the salmon prepares his nest and lays his eggs 1,000 miles up the Columbia from the Pacific, and we conclude he came for this.

In two months the blackpoll prepares its nest, lays its eggs, hatches its young, and rears them beyond the most critical periods of their existence, and starts back. Did it come to eat insects on the way, or to discharge this race duty? It is a ground nester; on or near the ground in that high latitude its eggs and family are safe from nest-robbing reptiles which abound in the warmer districts where it makes its winter home. Does it not make it wisdom's child, if it makes this long journey to nest in safety? If, as Aristotle said 2,500 years ago, the study of zoology is a study of fitness, it is real zoology to study the migrations of such birds as the blackpoll.

This argument applies to the water birds, which in countless numbers and numerous species fly over Indiana in early spring. The great majority of these nest on the ground near lakes and streams; some of them on floating islands in lakes, just the places where the eggs and young would be unsafe in their winter homes on account of reptiles.

The young of these birds swim almost from the shell, and would be reasonably sure to be eaten in southern waters.

The argument applies with almost the same force to all indefensible ground and low bush nesters, among which are the field sparrows, the vesper sparrow, dick-cissel, grasshopper sparrow, Savannah sparrow, bobolink, meadow lark, ground robin, brown thrasher, etc.

Nearly all our migratory birds show protective coloration, or sexual dimorphism; these are a confession of inability to take care of themselves or their homes, in fight. Those that exhibit sexual dimorphism are—

Bluebird,
 Robin,
 Redstart,
 Canadian warbler,
 Wilson's warbler,
 Hooded warbler,
 Yellow-breasted chat,
 Maryland yellow-throat,
 Mourning warbler,
 Connecticut warbler,
 Kentucky warbler,
 Prairie warbler,
 Pine warbler,
 Kirtland warbler,
 Black-throated green warbler,
 Blackburnian warbler,
 Blackpoll warbler,
 Bay-breasted warbler,
 Chestnut-sided warbler,
 Cerulean warbler,
 Magnolia warbler,
 Myrtle warbler,
 Black-throated blue warbler,
 Yellow warbler,
 Cape May warbler,
 Northern parula warbler,
 Parula,

Tennessee warbler,
 Orange crowned warbler,
 Nashville warbler,
 Golden-winged warbler.
 Blue-winged warbler,
 Prothonotary warbler,
 Black and white warbler,
 Summer tanager,
 Scarlet tanager,
 Dickcissel,
 Indigo bunting.
 Blue grosbeak,
 Cardinal.
 Towhee,
 Junco,
 American goldfinch,
 Redpoll,
 Purple finch,
 Pine grosbeak,
 Evening grosbeak,
 Baltimore oriole.
 Orchard oriole,
 Redwing,
 Yellowheaded blackbird,
 Cow bird,
 Bobolink,
 Humming bird,

fifty-four in all. The proof which all of them furnish is the same which the blackpoll warbler furnishes. They have, perhaps, come a less distance in all cases, and stayed a somewhat longer time.

All the balance of our migrating birds exhibit protective coloration, or are very inconspicuously colored—a confession of inability to protect the nest and an argument that birds migrate to protect it. A few conspicuous examples are:

Meadow lark,
 Vesper sparrow,
 Little brown creeper,
 Field sparrow,

Night hawk,
 Whippoorwill,
 Rails.
 Quail.

Our birds which build protected nests, or which are able to protect their nests are not migratory birds as a rule. I know of but one clear exception, the sapsucker. Our birds which build unsafe nests or which cannot protect them are migratory birds as a rule. I know of no exception that is clear. The Phoebe arrives when its food is scarce, and it leaves a land of plenty, a land of insects; food cannot be the attraction. That climate is not the compelling cause is shown by the fact that many birds arrive when the climate is very severe; it even kills thousands of them sometimes.

That birds are indigenous in the north; that they are migrating in the fall instead of the spring; that in the spring they are just going to their preglacial home; and that nostalgia is the real cause requires us to believe that birds have a way of preserving a record of their lost Atlantis that we do not possess, and may be dismissed as wholly psychological.

The salmon goes a thousand miles up the Columbia to spawn; the eel question has at last been solved; it goes to the deep sea to spawn. Sea-birds go to isolated rocks for the same purpose. It is the conclusion of this paper—there being no shred of evidence against it, and many weighty reasons for it—that our migratory birds go north for safety in nesting.