

## ORNITHOLOGY

# Tireless Travelers: Birds

**Birds on the wing are a sign of fall. Some fly in de-segregated groups; others are quite exclusive. Some fly 2,400 miles non-stop, use two ounces of fuel.**

By HOWARD SIMONS

► BIRDS, THE world's most seasoned and accomplished travelers, are once again heading southward across the United States.

This year, as in the past, a human radar net of ground observers will be looking skyward to witness a phenomenon that has fascinated man for nearly 3,500 years of recorded time.

From the time of Homer, Herodotus and Aristotle, who are credited with being among the earliest bird watchers to keep records, to the present, the why and the how of a bird's migration have remained a mystery.

The origin of bird migration dates back to prehistoric times, and scientists have never yet agreed on what exactly is the triggering mechanism.

One group of ornithologists credits the ice floe that covered the North American continent 25,000 years ago with forcing prehistoric birds to flee southward to seek food and shelter. When the ice receded, the birds returned. Therefore, this group believes, birds have been flying north and south every year from force of habit.

An opposing group of bird experts believes that all birds were living in the tropics, and that overpopulation forced them north to the virgin lands of North America after the ice disappeared.

Both groups believe that migration is now as habitual as drug addiction or smoking.

A new theory has been proposed that the amount of light and the length of day tell the birds when it is time to fly south and time to head north.

How the migrating birds find their way to and from their summer and winter homes is another puzzle, as yet unsolved. To say that the birds use "instinct" merely describes the phenomenon without explaining it. There are many arguments to disprove the theory that birds use familiar landmarks. They have been known, for instance, to find their way in fog.

## Magnetic Field a Guide

Some biologists have suggested that birds are guided by the earth's weak magnetic field. This theory would be stronger if all birds flew in direct north and south lines. However, each kind of bird has its own flight plan.

The problem of when birds migrate is principally one concerning the individual species. Although it is commonly accepted that the mass migrations are in early fall

and early spring, birds are migrating during almost the entire year.

Shore birds are known to begin their migration in July, while goshawks and snowy owls stay at home until midwinter. It is generally accepted that the birds migrating early, return late and those migrating late, return early.

Most small birds, such as rails, orioles, thrushes, warblers and many sparrows, prefer to do their migrating during the nights. It is not unusual, therefore, to find the woods full of birds one fine afternoon and completely abandoned the next morning.

Birds have been falsely credited with all but breaking the sound barrier in their flights. Although a single hunting duck hawk was once clocked at between 165 and 180 miles per hour, few birds average an air speed of 60 miles per hour. The common flying speed for most ducks and geese is about 45 miles per hour, and less for smaller birds.

Observers in the Himalayas have reported seeing storks and cranes some 20,000 feet above sea level, but for the most part, migration altitude is at 3,000 feet or lower.

## Segregation

Segregation is another aspect of migration. Crows, bobolinks and kingbirds fly in their own groups, while swallows, sparrows and blackbirds will travel in mixed groups. Age and sex also play a part in the segregation practices of birds.

In their trips north and south, birds will follow one of four general flyways, wide superairways. The four flyways are called the Atlantic, Mississippi, Central and Pacific.

Some of the smaller birds never travel the flyways, but migrate from their mountain retreats to the warmer valleys just a few miles away. Larger birds, such as ducks and geese, travel 3,000 miles or more.

Most waterfowl can travel 250 or 300 miles in a single, 10-hour day. The Arctic tern is undoubtedly the most energetic of the migrants, traveling 11,000 miles from the tundra of the Arctic to the frozen wastes of the Antarctic.

It has been estimated that more than 100 species of American birds defy the border patrol each year and spend their winters in the West Indies, Central America or South America.

The expense of fuel on these trips is a marvel of efficiency. The Golden Plover makes a 2,400 mile hop, non-stop, from Nova Scotia to South America twice a year. The total journey, one way, takes him 48

hours, and in this time he uses only two ounces of body fat.

To match this, man would have to build a thousand-pound airplane that could average 160 miles on a gallon of gasoline.

However, all is not a pleasure trip for the birds. Each year thousands never reach their destination. They fall prey to animals, reptiles and other birds. Storms take a significant toll, and man-made objects are the cause of still more deaths.

These migratory birds are now protected by law along their flyways, and migration this fall, as in the past, will be a welcome and imaginative sight, to Eskimos in the far north and to farmers and city-dwellers in the south.

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## Rare Trumpeter Swans Now Number 642 in U. S.

### See Front Cover

► THE RARE trumpeter swan's U.S. population now numbers 642 birds, it was announced by Secretary of the Interior Douglas McKay.

The 1954 census, conducted by the U.S. Fish and Wildlife Service and the National Park Service, showed an increase of 65 birds over the 1953 census total of 577. Two of the beautiful birds are shown on the front cover of this week's SCIENCE NEWS LETTER.

Thought to be extinct 50 years ago, the trumpeter swan numbered only 73 in 1935 when the Government established the Red Rocks Lakes Migratory Waterfowl Refuge in southwestern Montana in an effort to save the birds.

Although it has been unlawful to kill trumpeter swans since 1924, there was little done to protect them until 1935, when the Red Rocks refuge was set in operation. This year's census revealed that more than half of the present living birds, 355, were found at the Montana refuge.

A breakdown by states showed: Montana, 452; Wyoming, 130; Idaho, 45; Oregon, 8; Nevada, 7.

The trumpeter swan is a huge bird, white and tinged with a rusty color on its head. It reaches an over-all length of five feet. Because of its great beauty and size, the trumpeter swan was a favorite of reckless and remorseless hunters.

Science News Letter, October 9, 1954

Chicken *flavor* is diminished when the raw bird is soaked in cold water.

The booming chemical industry consumes about 68% of the 20,000,000 tons of *salt* produced annually; people eat only three percent of the output.