

## ORNITHOLOGY

# Wings Over America

Millions of birds from the tiny hummingbird to the mighty eagle are now filling the flyways migrating south for the winter, Vincent Marteka reports.

## See Front Cover

► BIRDS, the biggest globe travelers, are on the wing again.

From ice-clogged Greenland, the northern Great Plains, the forest carpets of New England and glacier-scoured lakes of Canada, millions of birds are leaving their summer homes and heading south for the winter. Prey and predator, friend and foe alike, the avian tide sweeps down coastlines, mountain ranges, river valleys and plains, triggered by an urge still cloaked in secrecy.

The birds cross the United States along heavily clogged migration routes. These rivers of air, known as flyways, drain birds from as far north as Greenland, Alaska and the Arctic.

## Seven Major Flyways

Bird experts recognize as many as seven major flyways: Atlantic Coast, Appalachian, Mississippi, Great Plains, Sierra Nevada, Pacific Coast and Cross-Country. Shore birds through the Atlantic Coast flyway, heading as far south as the grassy pampas of Argentina; gliding hawks effortlessly ride air currents down the Appalachian ridge, backbone of the Appalachian flyway; while countless thousands of ducks flock down the Mississippi River valley to winter in southern states along the Gulf Coast.

Other birds seem to imitate "wrong-way Corrigan" by bearing west to east from the pot hole regions of the Great Plains and from Canada, heading for southeastern coastal states.

The flock of snow geese, shown on this week's front cover, leap from the waters of Sacramento National Wildlife Refuge in California, a sanctuary on the Pacific Coast migration route.

Birds leave for their wintering grounds at various times. When most persons are still sweltering in the midsummer sun, the vanguard of the shore bird population is already threading its way south, unnoticed by the thousands of bathers thronging the Atlantic beaches. Swallows and swifts soon follow. The Canada goose, with its clarion call, is the true harbinger of fall, leaving its northern nesting grounds only when ice and snow choke off its food supply.

Accidents frequently take a heavy toll of migrants. Battering storms, towering lighthouses, bridges and monuments kill thousands each year.

Birds traveling along the coast on nights shrouded in fog are attracted by ghostly beams of light from a lighthouse. The avian "moths" crash helplessly into the lighthouse glass, or flutter around the light until they drop exhausted to the rocks or waves below.

Perhaps the worst tragedy during bird

migration occurred when three-quarters of a million Lapland longspurs, a sparrow-like bird that breeds on the Arctic tundra, died in a blinding snowstorm in Minnesota. Bewildered by the storm, the birds died from exposure, exhaustion or from flying into obstructions. They formed windrows on the frozen surface of two lakes, covering a small area of less than two square miles.

The feathered migrants travel at various altitudes. Birds associated with coastal marshes were once spotted passing over a scientific expedition near snow-clad Mount Everest at an altitude of 20,000 feet. When crossing extensive bodies of water, many migrants unerringly skim over the waves, on an invisible highway known only to them.

If you took a poll among the feathered travelers, you would generally find that the strong fliers preferred traveling during the day. The weaker, shy birds, such as rails and bitterns, find nighttime best, spending the day feeding and resting. Honking Canada geese, flying in a V-formation on a crisp fall day, are the most familiar daytime migrants.

Some birds migrate only short distances. A chickadee nesting on mountain slopes in the Rocky Mountains merely drops down into a sheltered valley for the winter. Others, such as ducks and geese, can log up to 500 miles in one day and a total distance of more than 3,000 miles. The golden plover, a colorful black, white and gold shore bird, reportedly can fly non-stop over the Atlantic from Nova Scotia to South America, 2,400 miles away.

The long-distance champion is the Arctic tern. Nesting as far north as the last ice-free patch of land in Arctic waters, the tern migrates in the fall across the Atlantic to European shores, and then south along the African coast to Antarctic waters. It returns in the spring up the South American coast, a total migration of about 25,000 miles.

Probably no other animal enjoys as much daylight as this winged world traveler without a suitcase, for Arctic terns live in the land of the midnight sun on both breeding grounds and winter home.

## Migration Theories

Why do birds migrate? Why is this tendency limited to a select club consisting of only about 15% of the world's species of birds? The key to the mystery has been out of man's grasp for thousands of years; in the end, it may be a complex combination of various theories that will open the door.

Migration is said to be an ingrained habit adopted by birds during ancient times. Some ornithologists believe bird migration began

in the Northern Hemisphere when glaciers blanketed much of the North American continent during the ice age thousands of years ago.

According to the theory, birds fled south from the advancing glacier and cold weather. When the glaciers finally began retreating each summer, the birds instinctively edged northward toward their ancestral home, only to be beaten back when winter arrived. By the time the ice age ended 10,000 years ago, the yearly trips were firmly established as a way of life.

Other ornithologists believe all birds originated in the tropics. A "population explosion" spilled some species northward in the summer where they bred successfully. Severe winters forced them back south, but the success of the previous summer prompted them to return north again the following spring.

## No Single Solution

Other theories have been proposed that seem sufficient to explain the migration of some species; however, all theories fail when offered as the one solution to all migration.

Perhaps the most challenging mystery of migration is how the birds navigate thousands of miles over barren plains or featureless oceans and return unerringly to the same spot where they spent the previous summer or winter. A mallard duck returned eight years in a row to the same nest, a box perched on a barn roof on a Nebraska farm. A flock of murrets flying in a dense soupy fog to nesting sites on Bogoslof Island in the Bering Sea overtook a ship heading by compass to the same point.

Scientists offer many possible explanations for this amazing ability, but here again no adequate answer exists. Random searching, built-in "compasses" for detecting directions of earth's magnetic poles, guidance by the sun and stars, and inherited memory are some possible solutions.

• Science News Letter, 82:191 September 22, 1962

## PUBLIC SAFETY

### Traffic Deaths Reaching Record High

► TRAFFIC DEATHS in the United States in the first six months of 1962 rose to an all-time high for the period. Preliminary reports indicate that accidental deaths in all other categories—at work, at home, and in public places—also will show increases in the first half of 1962, the National Safety Council reported in Chicago.

The motor vehicle accidental death toll rose to 18,120 in the first half, a rise of 1,210—or 7 percent—from the total of 16,910 for the same period a year earlier. If the present trend continues, traffic deaths for the year could top 40,000, the first time this figure has been reached in the country's history, the Council said.

• Science News Letter, 82:191 September 22, 1962