

ZOOLOGY

How Birds Migrate Baffles

Scientists still mystified by way in which birds, fish and insects find their way. Both their surroundings and their senses seem to be of basic importance.

► HOW MANY birds, fish and insects find their way in their travels and migrations is still a mystery to science, Dr. Donald R. Griffin, associate professor of zoology at Cornell University, told the Virginia Polytechnic Institute chapter of the Society of Sigma Xi in Blacksburg, Va. He spoke as a Sigma Xi national lecturer.

In the long distance migrations of fishes and birds both their surroundings and their senses seem to be of basic importance, he explained. Scientists still do not know with certainty either the environmental clue that is used by the migrating animal to maintain its bearings or the sensory mechanism called into play to convey into the central nervous system the relevant information that must somehow be derived from the environment.

Dr. Griffin studied bird navigation by following individual birds from aircraft and tracing in this way flights of 200 miles or more. The results demonstrate how complex such phenomena may be, and how easily one can be misled by attempts to erect theories in the absence of adequate evidence.

In a typical situation where birds had always been thought to fly a direct course to a distant goal, it turned out that they wandered extensively and deviated very widely indeed from the direct course. They appeared to be following flight paths that approximated large spirals and were suggestive of systematic exploration.

Scientists have found organs and structures in some animals, especially insects, which seem to be concerned with a directional sense that helps to orient themselves in their travels, Dr. Griffin said. A peculiar structure known as the pecten in the eye of birds is an example.

Bees have a form of celestial navigation that they use in their flights, while bats guide their flight through darkness with speed and precision by a sort of radar device. Bees use the position of the sun in the sky to guide their flight, Dr. Griffin explained, while bats emit cries of ultrasonic sound, inaudible to human ears, and listen to the echoes as they return from objects that lie ahead.

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NATURAL RESOURCES

Sulfur Shortage Continues

Critical chemical supply may become worse in 1952 as rearmament program gains momentum. Sulfur essential in making synthetic rubber, steel and fertilizers.

► CRITICAL SULFUR, essential in the making of synthetic rubber, steels, fertilizers and many other important products, will continue to be in short supply during 1952 as it was in 1951 although approximately 6,200,000 long tons were produced, it is predicted.

The shortage may become worse in 1952 as the rearmament program of the United States and its allies gains momentum, Langbourne M. Williams, Jr., president of Freeport Sulphur Company, predicted. Despite record production by the American brimstone industry, the discovery of a large new deposit and projects to develop three others, any significant increase in the overall supply of sulfur is at least a year away, he declared.

The newly discovered deposit at Garden Island Bay, La., near the mouth of the Mississippi River, will be the largest sulfur development anywhere in the world in

nearly 20 years, Mr. Williams stated. A production plant costing between \$10,000,000 and \$15,000,000 is being built by Freeport. It will produce about 500,000 long tons of sulfur a year but will not be in operation until late in 1953. Several other new deposits are under development by other companies but full needs for 1952 will not be met.

Of the 6,200,000 long tons of sulfur produced in 1951, 5,325,000 tons was elemental sulfur or brimstone from Gulf Coast salt dome deposits. Some 200,000 tons was sulfur recovered from refinery and sour natural gases, 400,000 tons was from the iron-sulfur mineral known as pyrites, and the remainder was obtained from smelter gases and other sources.

America's 1951 sulfur production would have met all domestic needs but it was not enough to meet both domestic and export demand. Friendly nations of Western Eu-

rope are dependent almost wholly on the United States for their industrial needs. To supply them, in part, approximately 1,300,000 long tons of Gulf Coast sulfur was sent them under government orders. Of this, the United Kingdom received 400,000 tons.

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NUTRITION

Peppers and Oils Blamed For Tourists' Sickness

► PEPPERS, TOMATOES and different oils used in cooking are to blame for much of the intestinal sickness and diarrhea suffered by travelers to Mexico, Spain and Italy, in the opinion of two physicians who report on the subject to the American Medical Association.

Germ contamination of food and drinking water is undoubtedly the cause of some of this often disabling sickness.

Reporting on such sickness in travelers to Mexico, Dr. L. Pellman Glover of Altoona, Pa., says:

"I have been there a number of times and have suffered from the complaint just as many times. It is most certainly caused in many persons by the peppers and tomatoes. When this food is not taken, there is no trouble. Liberal doses of bismuth constitute the best treatment."

The different oils used to prepare foods in Latin countries "has the cathartic effect of castor oil in many Americans," states Dr. Walter L. Bruetsch of Indianapolis.

In addition, he points out, herbs used in Mexican cooking act as a laxative.

"I have attended fellow travelers who were so ill they felt the end was near," Dr. Bruetsch relates.

A tourist in Italy who has been "plagued" by the "inconvenience" of this intestinal upset will suddenly be cured when he enters France. This, Dr. Bruetsch explains, is because food in France is mainly prepared with butter instead of oil. If the susceptible tourist goes on into Spain, he will promptly get sick again.

Physicians will find the reports of Drs. Glover and Bruetsch in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION (Jan. 12).

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