WILDLIFE

House Wren Returns To North for Summer

See Front Cover

➤ A WELCOME SIGN OF SPRING is the arrival of the little brown house wren from his southern winter vacation. The wren, shown on the cover of this week's SCIENCE NEWS LETTER, reaches the Washington, D. C., area around the first of April; ten days later it reaches the environs of Philadelphia while another ten days are needed for it to reach New York.

The first task to be accomplished is the building of the nest for the summer home. Later the female lays six to eight pinkish chocolate-spotted eggs that soon hatch into a nestful of hungry fledglings.

The wrens are desirable tenants as they swarm over the tree where they build their nest, devouring spiders, caterpillars, beetles, cutworms, weevils, ticks and plant lice in huge amounts.

Science News Letter, March 30, 1957

METEOROLOGY

Tritium Can Help Chart Water's Circulation

➤ AN H-BOMB INGREDIENT, the triple-weight hydrogen known as tritium, can be used to chart the world's water circulation, the American Meteorological Society meeting at the University of Chicago was told.

A sharp increase in tritium concentration is one method by which scientists detect hydrogen bomb explosions anywhere in the world.

Dr. Friedrich Begemann of the University of Chicago's Enrico Fermi Institute for Nuclear Studies said tritium makes an "excellent atmospheric tracer" because it acts with oxygen to form water. Tritium's radioactivity is easily detected for about 12 years, and is too low to pose a health hazard.

In nature, tritium is thought to be produced by cosmic ray bombardment of air and by direct emission from the sun. After the first Operation Castle H-bombs were exploded three years ago this spring, the world's tritium content doubled.

There is now an average of a million of these atoms among the trillion trillion atoms in each cubic centimeter of water.

Because of the secrecy surrounding Operation Castle, Dr. Begemann said, scientists missed a good opportunity to study world-wide weather patterns, since the tritium stayed in the atmosphere 40 days before dissipating to ground and ocean waters.

Dr. Begemann has been able to use the tritium concentration to study the water circulation rates for the northern Mississippi Valley. He found that 52% of ocean water vapor rains out by the time it reaches Chicago.

His studies also showed that the average rain over Chicago is composed of two-thirds ocean water vapor and one-third reevaporated ground water.

Tritium was discovered in nature in 1951 simultaneously by Dr. Willard Libby, University of Chicago chemistry professor now on leave as a member of the Atomic Energy Commission, and Profs. Faltings and Hartech in Germany.

Science News Letter, March 30, 1957

Questions

ARCHAEOLOGY—When did great movements of ancient Americans occur? p. 198.

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BIOCHEMISTRY—What part of the plant acts as the "photobattery"? p. 197.

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PHYSICS—How is synthetic radioactive fallout produced? p. 198.

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PUBLIC HEALTH—Why is the nation faced with a shortage of polio vaccine? p. 200.

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ZOOLOGY—Which is the most intelligent of the invertebrates? p. 202.

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