BIOLOGY

Computer Checks Salmon

➤ A HIGH-SPEED computer has taken a mathematical trip along a salmon's migration route to reveal the salmon's secret: The fish does not need any special "sixth sense" or navigating ability on the high seas to find its way back to the home stream. But once in the stream, the salmon uses smell.

A mathematical analysis of the facts of salmon migration shows that the fish's return to the stream's mouth is only by chance. Even with this gamble, about one out of every five survive, and make the upstream trip. The figure closely agrees with estimates obtained from tagged salmon, Dr. Saul B. Saila, marine biologist at the University of Rhode Island, Kingston, reported.

Dr. Saila spoke at the American Institute of Biological Sciences Symposium on Current Theories of Migration in Lafayette, Ind.

Information on migration distances, swimming rates, orientation mechanism and salmon endurance was collected from published scientific reports and fed into a digital computer. A program, which makes the computer "act" as a migrating salmon, was also inserted. By moving the mathematical "fish" haphazardly with little or no orientation, a realistic return, after a 1,200-mile trip at sea, of more than 20% of the fish, was obtained.

Thus the high degree of navigation or precise orientation proposed by many scientists seems "quite unnecessary," Dr. Saila said.

The trip from the feeding ground in the ocean to the stream's mouth is about half the distance to the area where the salmon spawns. In the stream, the fish does switch to its sense of smell and navigational ability to find its way, Dr. Saila emphasized.

Dr. Saila believes the computer has provided the first "working model" that combines all the known data on salmon migration. "The pattern of migration observed in nature is exactly what one would expect from analyzing the computer's data," Dr. Saila pointed out.

• Science News Letter, 80:191 September 16, 1961

Antibiotic Dissolves Clots

➤ A PENICILLIN-TYPE antibiotic that will dissolve human blood clots was reported at the American Institute of Biological Sciences meeting in Lafayette, Ind.

Dr. Michael A. Pisano, biologist at St. John's University, Brooklyn, N. Y., found that a little known fungus produces several potentially valuable enzymes, including one that dissolves blood clots. Dr. Pisano reported his findings to the Institute's Society for Industrial Microbiology meeting.

In laboratory experiments, enzymes produced from the fungus, *Paecilomyces persicinus,* dissolved blood clots stored in test tubes. Five different strains of the fungus were grown in various nutrient solutions to create the enzymes.

Other experiments show that the enzymes can also dissolve substances such as starch and gelatin, making the fungus highly valuable as an enzyme source for such industries as baking, brewing and paper products. Enzymes are commonly used in industry to tan leather and in making wine.

The next step will be to study the effects of antibiotic-yielding strains of the fungus on animals before testing on humans, Dr. Pisano said.

The *Paecilomyces* fungi are closely related to the penicillium fungi, from which the well-known penicillin is derived.

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How Fish Form Schools

➤ A SHARPSHOOTING biologist has used an old sniperscope to see how fish form schools in the dark.

Dr. Kenneth R. John of Franklin and Marshall College, Lancaster, Pa., has seen how fishes exposed to a certain amount of light banded together into tight compact schools. The sniperscope, which converts infrared or "invisible" rays into visible images, was used by the scientist for observing in darkness or poor light.

Dr. John studied a fish known as the Mexican banded tetra, whose response to light is considered typical of fish living in lakes and oceans.

While swimming in darkness, the fish moved about with little regard for each other. As light began to filter through the water, the fish formed schools. When the light was nearly a hundredth of a foot candle, all the fish had joined the school. This light is about equal to that of a white surface bathed in moonlight on a clear night.

Organisms that give off light considerably affect the fishes' ability to see and school, Dr. John told the American Society of Limnology and Oceanography meeting in Lafayette, Ind. By eliminating the light-giving (bioluminescent) organisms, the fish could only detect light at shallower depths, and formed schools at even lesser depths.

The meeting is sponsored by the American Institute of Biological Sciences.

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First Chicken Malaria

➤ THE FIRST CASE of chicken malaria has been recorded in the United States.

University of Wisconsin scientists found a malaria parasite in two separate poultry flocks during a routine survey of Wisconsin farms. The parasite is not harmful to humans.

No mysterious poultry disease epidemics have spread in the state yet, but scientists are closely watching for possible outbreaks. The disease is expected to lower production in infected flocks and kill the young birds.

The University of Wisconsin scientists are baffled as to what type of malaria organisms they are dealing with and how they are transmitted.

The parasite is probably transmitted by mosquitoes commonly found in Wisconsin and not by the species *(Anopheles)* that spreads human malaria. There is no known cure for chicken malaria.

Chicken malaria is a fairly common disease in Asia and South America. The transmission of the disease is very limited, requiring a tiny mite acting as a go-between to spread the disease. The parasite can not be spread to other livestock.

Drs. P. V. Krishnamurti, D. L. Peardon, A. C. Todd and W. H. McGibbon reported their findings to the American Institute of Biological Sciences, Lafayette, Ind.

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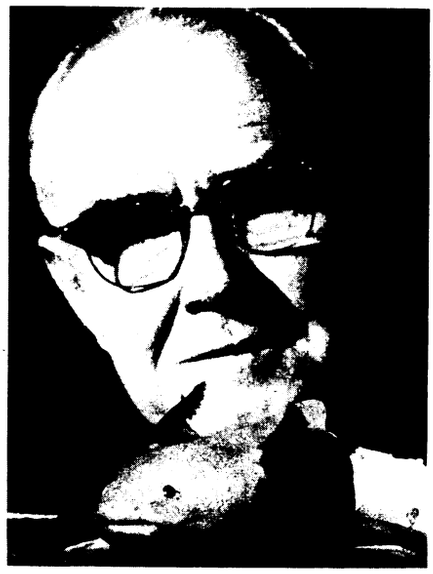

GENETICS AT WORK—Rufus R. Humphrey, of Indiana University, Bloomington, watches the Mexican salamander, the axolotl, whose eggs are being "fertilized" by transplanting nuclei from cells of axolotl embryos. The research was explained at the American Institute of Biological Sciences, Lafayette, Ind.

EDUCATION

Corridor Museum Makes Effective Teaching Tool

See Front Cover

➤ A CORRIDOR MUSEUM in the new science building of the State College, Terre Haute, Ind., allows exhibits to be readily seen by students passing by.

The blue-green glass wall that reduces glare was made from blocks produced by the Pittsburgh Corning Corporation to provide light for the "museum."

The exhibits, one of which is seen on the cover of this week's SCIENCE NEWS LETTER, are located on three floors and have already proved an effective teaching tool, because of steady student traffic in the corridors.

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