

ICHTHYOLOGY

Schooling Fish Must See

Vision plays dominant role in the schooling of fish, although other senses may contribute. Only in tuna schools do individual fishes act as leaders.

► **FISHES THAT** cannot see one another will not school, nor even form into aggregations, reports Dr. James W. Atz, ichthyologist of the New York Zoological Society.

Vision plays the dominant role in fish schooling, although other senses like touch, hearing and smell may have lesser parts, Dr. Atz told the meeting of the American Society of Ichthyologists and Herpetologists in New York. He presented to the group a review of what is now known about the schooling phenomenon.

A true school of fish is a group in which all individuals are facing in a common direction, parallel and regularly spaced, and moving at a uniform speed. Aggregations are groups in which fishes are attracted together but without uniform spacing or direction.

There may be cases of "false schooling," when aggregations of fishes line up in the same direction in response to a water current. In an experiment with sunfish, *Lepomis*, an aggregation of the fishes all lined up regularly when a current was

started in their tank, but the group broke up as soon as the flow was stopped.

One popular theory explains fish schooling to work essentially this way: 1. Two or more fishes swim towards each other when they come into visual range; 2. they line up in parallel paths to keep each other in the desired close range while on the move or in a strong current; 3. a certain antagonism, however, may act to keep them at a minimal distance apart.

Another idea is that schooling fishes use one another as visual reference points, to help locate themselves in the empty space of water. Typical schooling fishes are usually those of the open sea, where there is practically nothing—except another fish—for a constantly moving fish to fix upon to give him a sense of location.

In general, fishes in the center of a school are much closer together than those nearer the edge. With the exception of tuna schools, there are no reports that individual fishes act as leaders of schools.

Science News Letter, May 16, 1953

PUBLIC HEALTH

One-Shot Syphilis Cure

► **THE HALF-CENTURY** old dream of a "magic bullet" to cure syphilis with one shot seems to have been achieved with a new form of penicillin, first of the so-called mold remedies. The new penicillin is called Bicillin by its manufacturer, Wyeth Laboratories of Philadelphia.

Its safety and efficiency in a test group of 125 patients was reported by Dr. Clarence A. Smith, assistant chief of the Public Health Service's venereal disease division, at a symposium on venereal diseases in Washington.

Because Bicillin contains another chemical besides penicillin, the penicillin remains in the blood for a month or longer. That means that one dose can take the place of the many doses of regular penicillin otherwise required to rout the syphilis spirochetes completely.

The need for repeated visits to doctor, clinic or hospital in the past has been one of the big drawbacks to efforts to cure patients and wipe out syphilis. Too many patients, after the first treatments relieved symptoms, just did not return to complete the cure.

Of the 125 patients given one dose of Bicillin, 94% had negative blood tests a year after treatment, Dr. Smith reported. Of the six percent found positive, some were traced to new infection.

The drug protected babies from congenital syphilis when given to their mothers during pregnancy and it was effective in secondary as well as primary syphilis.

Another year at least of follow-up observation is needed, Dr. Smith said, before results of Bicillin treatment can be called conclusive.

The chemical added to penicillin to make it long-acting is N, N-1 dibenzylethylene-diamine.

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