TECHNICAL FISHERIES SESSION

A NOTE ON THE RESULTS OF FEEDING FIRE ANTS TO BLUEGILLS AND REDEAR SUNFISH

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Following newspaper headlines in April, 1960 such as "Dying Fish Population Laid to Fire Ants," and "Wholesale Deaths Among Fish in Alabama Ponds are Believed Work of Deadly Fire Ants," numerous requests for information were received by fisheries personnel at Auburn University. Since no pertinent data were available, tests were set up in aquaria to determine the effects of feeding imported fire ants, *Solenopsis saevissima richteri* Forel, to fish.

A total of 14 bluegills and 3 redear sunfish was placed in separate glass aquaria each containing 40 liters of water. The total lengths of the fish varied from 6 to 7 inches, and the weights between 0.10 and 0.15 pound. For a period of 2 weeks these fish were fed earthworms, commercially produced for fish bait, several times each day to get them accustomed to eating feed as it was dropped into the aquaria.

For a period of the next 2 weeks, living fire ants were dropped into the aquaria periodically each day. The ants were observed carefully to determine if the fish ate them. The majority of the fish ate no fire ants. After 15 to 20 minutes the uneaten ants were removed from the aquaria to prevent them from crawling out and becoming scattered in the laboratory. After repeated offerings of ants, several fish began feeding upon them sparingly, but the majority ate less than 10 ants during any one day. During this 2-week period only 2 bluegills ate more than 10 ants in any one day; one ate 45 and the other 60. These 2 individual fish were observed carefully for the next 10 days. Each fish appeared very healthy and showed no ill effects from having eaten the fire ants.

Since these fish ate relatively small numbers of ants voluntarily, forced feeding was used to determine the effects of larger numbers of ants upon the fish. Fire ants for these tests were immobilized with carbon dioxide, counted, and then placed in size 00 gelatin capsules with the aid of a small funnel. A small hole was made in each end of the capsules so the ants could get air. The ants recovered from the effects of the CO_2 in about 5 minutes. A total of 100 ants was placed in each capsule. The wingless form was used in all tests.

Two fish, one bluegill and one redear sunfish, were each fed 100 fire ants a day, 5 days a week, for 4 weeks. Therefore, each fish was fed a total of 2,000 ants. Two other fish, one a bluegill and the other a redear sunfish, were fed 200 fire ants a day for the same period. Each of these fish was fed 4,000 ants. Four blugills were used as controls and were fed empty capsules for the same period. Forced feeding was accomplished by placing the capsule in the back of the fish's mouth and forcing it past the esophagus into the stomach with the aid of a plastic rod. The fish received no other feed during the test period.

All fish were observed for a period 10 weeks following the feeding period. None of the fish died or showed any ill effects from forced feeding of either 2,000 or 4,000 fire ants. It is concluded from these tests that it is highly unlikely that imported fire ants are harmful when eaten by bluegills or redear sunfish.

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