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UNUSUAL PATHOGENICITY OF A COMMON METACERCARIA OF FISH

The common white grub, *Posthodiplostomum minimum,* has been reported from many species of North American freshwater fishes (Hoffman, G. L., 1967, Parasites of North American Freshwater Fishes, Univ. Calif. Press). It develops to an adult in the intestine of herons. The eggs pass into the water with the feces of the heron and develop into miracidia which infect snails of the genus *Physa.* Many cercariae are produced which infect many species of fish; however, some subspecies (strains) infect only certain fishes (Hoffman, G. L., 1958, Expl. Parasit. 7(1): 23-50).

The effect of this parasite on fish has not been studied adequately. Experimentally it has been shown that cercariae can kill fish (Hoffman, G. L., 1958, *op. cit.).* Cercariae of a species of trematode closely related to *P. minimum* have been reported to kill fish in nature (Styczynska-Jurewicz, 1959 Polskie Arch. Hydrobiol. 6(19): 105-116). Smaller numbers of metacercariae accumulated over a longer period of time probably cause no serious damage (Lewis and Nickum, 1964, Prog. Fish-Cult. 26(3): 121), although R. O. Smitherman (1964, Dissert. Abst. 25(3): 2115) reported a reduction in growth rate, increased mortality, and an increase in serum albumin and globulin from such an exposure.

At the National Fish Hatchery, Edenton, N.C., each of 18 ponds was stocked with 25,000 striped bass *(Roccus saxatilis)* fry in June, 1968. In July, many deformed but few dead and moribund fish, 7 to 8 cm long, were seen in one pond. Gross examination showed marked exophthalmus and extensive swelling of body musculature. Many metacercariae were found in the orbit of the eye and in the swollen muscle tissue. Few metacercariae were present in the visceral cavity, and none were seen in the liver or kidney. The latter three locations are the usual sites for *P. minimum.* Since no other pathogens except a few *Diplostomulum flexicaudum* were found, it is probable that the damage was caused by *P. minimum* in these unusual locations. When the pond was drained September 16, only 150 of the original 25,000 fish were recovered.

We do not know why the fish in one pond were more severely affected than those in the others. It could be due to different densities of snail population or the feeding habits of the herons. *Physa* sp., the first intermediate host, was present in the ponds and herons were seen in the area. The water supply was from Pembroke Creek, which could have contained infected snails A program to control snails is planned for the future.

Morphologically, this trematode could not be distinguished from *P. minimum centrarchi* Hoffman, 1958. Since there are numerous centrarchids in the area it is likely that this was *P. m. centrarchi* demonstrating different tissue affinities and eliciting unusual responses in an unrelated host. The condition is somewhat similar to that produced by an experimental massive infection of *Pimephales p. promelas* with *Ornithodiplostomum ptychocheilus* as reported by G. L. Hoffman (1958, J. Parasit. 44(4): 416-421).

Summary

The metacercaria of *Posthodiplostomum minimum centrarchi* Hoffman, 1958, is reported from an unusual host, *Roccus saxatilis,* from North Carolina. Although few dead or moribund fish were observed, there were many deformed fish, few of which survived. The metacercariae were in the musculature and orbit of the eye instead of in the usual location in the centrarchid hosts.

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