THE BLACKNOSE DACE (Rhinichthys atratulus)

by Vernon B. Hunt, Portsmouth, England

It is with some satisfaction that I have been able to witness the breeding habits of this fascinating little North American minnow. I have had the specimens in my possession for a number of years, having caught my first specimens in 1973. It was not until recently, however, that I was able to induce a spawning. The species' preferred habitat is fast-running streams with a gravel bottom, and only recently have I been able to supply them with constant artificial aeration.

This species will thrive quite well in still water, but it was only with the introduction of some degree of turbulence that my specimens showed any sexual interest. Until last year, I had regarded the male as an attractively marked fish--brown on top with a white underside, divided by a jet-black lateral band going the full length of the body, superimposed by a thinner, yellow to reddish line. The upper side of the body was also marked with a number of black specks. The female was similar, though without the color intensity around the lateral band, and the body was somewhat deeper. Although this species is very active at all times, and very fast-moving, it never really shows any nervousness.

Last summer, after a lengthy spell of almost constant brisk aeration, I observed a complete change of behavior in this species, and a marked change in the appearance of the males. My specimens were well into adulthood, having reached a length of 2½", and the males had developed a highly intense color. Their backs had changed from the usual dun brown to an iridescent golden yellow, and the sides were of similar coloration. The lateral band, instead of being an intense black, was a golden brown superimposed with red. The pectoral fins were deep orange. Two males were vigorously chasing just one female; how she could stand such continuous attention, I do not know.

She was naturally quite plump and had developed a short ovipositor about ¼" long. The chasing went the full length of the heavily planted 3' x 15" x 12" tank, but what appeared to be the actual spawning took place in the same spot--a clear area of gravel in a forward corner of the aquarium. The larger, more dominant male was a constant nuisance. Although not without difficulty, he was able to corner the female at frequent intervals, partially wrapping his tail around the caudal peduncle of the female with the sides of the fishes touching. There was a two-second trembling, during which time the ovipositor was inserted into the gravel. This was repeated time and again over a period of three hours. Following up on each occasion were the remaining Blacknose Dace. In view of what I have read about their bad habits during breeding, I knew perfectly well that they were look-

ing for a bonus feed, the eggs! This denizen of the North American streams and rivers is an avid egg-eater of the worst kind. Despite my frenzied efforts to siphon out what I assumed to be egg-laden gravel, the intruders were not distracted. I had scant reward; this rudimentary method of egg-collection was doomed to failure. One could hardly have expected anything else in the circumstances. I was left with a 10"x7"x7" tank containing 3/4" depth of gravel and probably nothing else in it.

I made an effort to search for eggs, but in size they are reportedly only 0.8 mm in diameter, pale yellow and transparent. I could not really hope to see any. I have no knowledge of the incubation period. My books were of no help; frustration was the ultimate result. I placed the prospective nursery tank in a sunny position, hoping the eggs might hatch if there were any, but no fry appeared. There were a couple of occasions later when the same two males sought the favors of yet another egg-laden female. Again I tried to save the eggs, but the net result was the same. The first of the spent females eventually died as a result of her previous exertions.

I will not again allow this species to breed communally. In the wild, the Blacknose Dace obviously does breed in that way, though dominant males are reputed to be territorial, fending off the attentions of all rivals. Communal breeding, however successful in the open waters of a river, is not workable for this species in the confines of a small home aquarium. It is obvious that I shall have to limit myself to one pair in a tank by themselves.

For the record, the water temperature was just touching 72°F. It was moderately hard, with a pH of 7.2. The gravel was fine, with a heavy growth of Sagittaria sublata natans. Other fishes in the tank were red shiners (Notropis lutrensis) and Fallfish (Semotilus corporalis).

Rhinichthys atratulus is found along the Atlantic seaboard, west through the Great Lakes drainage to North and South Dakota and then southward on both sides of the Appalachian Mountains to Georgia, Alabama, and Mississippi. In Canada, this species inhabits cool, clear streams from Nova Scotia to Manitoba, and is occasionally found in brackish water.

It has been known to grow to a length of 4", but the largest specimens I have ever seen in the wild have never been in excess of 3". To describe the fish fully, its body is elongate, slightly compressed , with the head triangular and broad. The mouth is slightly inferior, with an overhanging upper lip and two small, fang-like barbels. The snout is long. The dorsal fin is slightly posterior to the pelvic fins with the latter relatively small. The caudal is shallowly forked with rounded lobes. The scales are cycloid and small, and the lateral line is almost complete,and straight..

A frequently seen feature of the fish, not part of its actual anatomy, is the presence of an obscure nematode worm, Crassiphiala bulboglossa, which was observed in 1964 by a gentlemen called Houde. This parasite causes a disease called Black Spot.*

I have seen other fishes in the rivers and ponds of New Jersey afflicted with what I considered either the same ailment or something very much like it. The diseased fishes were Golden Shiners (Notemigonus crysoleucas) and Creek Chubs (Semotilus atromaculatus).

The Blacknose Dace is probably the commonest stream-dwelling fish in northern and central New Jersey. I was never at a loss finding any. One can never understand why such an easy-to-obtain little beauty such as this has not found its way into more fish tanks in that state as well as the many other states and provinces in which it occurs.

*See Letters to the Editor, AC, Dec. '83, Feb. '84, Mar.-Apr. '84.