RABIDA--THE MAD ONES

by William R. Kenney

There is a tendency among systematists to break up any large, unmanageable genus into several smaller ones. Unfortunately, in nature, genera do not come prepackaged into dozen lots of species. The unnatural partitioning of large genera serves to demonstrate the subtle interrelationships within such an assemblage; however, it serves no other useful purpose. The result is a nomenclatural system which is not reflective of the overall close affinity of the species concerned.

Fortunately, there exists a taxonomic mechanism which permits the expression of subtle affinities within a genus without the necessity of fracturing it. This is the subgenus. A subgenus need not (indeed, usually does not) clutter up the scientific name, but if its inclusion is desirable, it is sandwiched between the genus and species names in parentheses. Like the genus name, it is italicized (or underlined) and capitalized, resulting in the following configuration: Etheostoma (Catonotus) flabellare. In this example, Catonotus is the subgenus. For the remainder of this article, the subgenus under discussion will be a group of Ictalurid catfishes within the genus Noturus, the subgenus Rabida.

Rabida was originally described (at the generic level) by Jordan and Evermann in 1896. The name (from the Latin rabidus, meaning mad or furious) was an allusion to the stout, well-armed pectoral spines of the type species. The group has since been relegated to subgeneric status, and has come to include 15 species, typically stout-bodied and usually possessing strongly serrated, scimitar-shaped pectoral spines. Taxonomic work within the group is probably incomplete, as exhibited by the recent (1980) description of Noturus stanauli, the Pygmy Madtom, from the Duck River system in Tennessee.

Nearly every aquarist has had the experience of having the sluggish, secretive catfish in his tank become, after dark, a dangerous predator of his prized cyprinids, killies, or characoids. Nevertheless, the introduction of a catfish or two into a community tank has become commone practice due to the desirablility of including a bottom-feeding trophic specialist. The obvious safeguard is to ensure that the catfish doesn't have a mouth large enough to present a danger to diurnal specimens.

For the aquarist whose objective is to display a native fish community, this has been a chronic problem. Members of the genus Ictalurus, when small, fill this niche admirably, but quickly grow to present a clear and present danger.

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The obvious solution, were it not for the difficulty in obtaining specimens, is the subgenus Rabida.

In sharp contrast to the better-known Ictalurids, the subjects of this essay are attractively colored, mottled, or patterned, and do not attain a large size. With these endearing traits, it would not be surprizing to find the group highly prized by native-fish enthusiasts, but this is not the case. Rabida exists as a resource untapped--and to a large degree untappable--by the home aquarist.

Exemplifying this difficulty in obtaining specimens is Noturus trautmani, the Scioto Madtom. Known from only 17 specimens from one locality in central Ohio, it is among the rarest of extant freshwater fishes. Listed on the Federal Register of endangered species, it is fully protected by state and federal law. Such a species does not belong in the home aquarium.

Another example is Noturus baileyi, the Smoky Madtom. This species remained completely unknown until 1957 when five specimens were collected by poisoning incidental to a reclamation project on a medium-sized tributary to the Little Tennessee River. At the time of its description, the species was assumed to be extinct, but very recently a second population was discovered in an adjacent stream.

Presumed extinct is Noturus flavipinnis, the Yellowfin Madtom. Specimens collected from several widely scattered localities on the west slope of the Appalachians were not recognized as being specifically distinct until 1969. When these localities were revisited, it became obvious that they were no longer ecologically suitable for the species. The most recent specimen bears the collection date 1893. It is not yet officially assumed extinct, but rather is listed as threatened.

At the opposite extreme is Noturus miurus, the Brindled Madtom. This fish is broadly distributed in suitable habitat throughout the central United States. Only in those states on the fringes of its range is it specifically protected, though it may fall under the protection of general wildlife laws in others. Its color is described as yellowish-brown with dusky mottlings.

Since this species is one which we might ethically desire to collect, this is a good point at which to diverge for a moment to discuss collection techniques. Madtoms of this subgenus typically occupy riffly portions of streams with moderate gradient. They are nocturnal in habit (as might be expected) and are quite secretive by day. Some collection methods likely to yield a few specimens include the use of baited minnow traps left overnight, night seining

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with minnow nets, inspection of discarded beverage containers, and disruption of the rubble substrate after staking out a small seine across a riffle. Using this last technique, best results will be obtained by disturbing the area immediately upstream from the net. Fish will thus be less likely to find new shelter before being swept into the net by the current.

Similar in appearance to the Brindled Madtom, but lacking the dark tip to the dorsal fin, is the Mountain Madtom, Noturus eleutherus. This too is a reasonably widespread species, but not so much so as the Brindled, being absent from the southern portion of the Mississippi drainage. Again, this species is specifically protected only in those states on the fringes of its range.

Another widely distributed species is the Northern Madtom, Noturus stigmosus, found in a number of widely scattered localities beginning in Tennessee and spreading northeastward into the Ohio River drainage. The coloration of this species is presumably variable, as the original description states that it is pinkish, yellowish, or medium tan with markings varying from brown through dark gray to black. This presents all sorts of intriguing possibilities. The caudal fin is flamboyantly colored, yellowish white and marked with concentric subterminal bands.

Typical in the genus is the phenomenon of restricted geographical range, or endemism. A good example of this would be Noturus placidus, the Neosho Madtom, found in only one stream system in southeastern Kansas, northeastern Oklahoma, and southwestern Missouri. Not listed as endangered, the Neosho Madtom is carried on the federal lists as threatened, and is protected by two of the above three states. This situation is one commonly encountered by the collector wishing to acquire madtoms for his home aquarium.

Archetypical of the genus, in this regard and in others, is Noturus flavater, the Checkered Madtom. It is endemic to the Ozark Mountains of Arkansas and Missouri, where it is a common inhabitant of appropriate habitat. The coarse chert rubble that forms the substrate of many Ozark streams provides plenty of cover for the Checkered Madtom. This species is boldly patterned, with rectangular brown markings on a yellow ground color. A good illustration is available in Pflieger's Fishes of Missouri. The effect is not unlike that exhibited by several desirable tropical catfishes, such as the Barred Siamese Catfish, Leiocassis siamensis, the African Shovelhead Catfish, Parauchenoglanis macrostoma, and the South American Bumblebee Catfish, Microglanis parahybae. This remarkable example of evolutionary convergence leads one to believe that there is a high selective value for such

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coloration, at least for catfishes occupying riffle habitats.

Quite similar to the Checkered Madtom in its geographical distribution is the Ozark Madtom, Noturus albater. The color pattern is much the same too, except that here the ground color is white instead of yellow. This results in a color similar to that seen in such tropical catfishes as Synodontis brichardi, a rapids-dwelling species found in the Zaire River and in the tanks of well-to-do aquarists. Once again, selective forces resulting in convergence of evolution are presumed to cause this coincidence.

Aside from Noturus stanauli, Noturus taylori, the Caddo Madtom, is the most recently described member of the genus. It too is one of the central U.S. endemics. In this case, endemism is carried to an extreme, and the species is found only in the Ouachita Mountains of Arkansas. This fish appears to be less boldly marked than its Ozarkian counterpart. The Caddo Madtom is one of the smaller madtoms, reaching but 48mm in standard length. This fish is listed as threatened on the federal lists, but at least one Arkansas authority believes that it should be regarded as endangered.

Somewhat less restricted in its geographical range, but nevertheless threatened, is Noturus munitus, the Freckle-belly Madtom. This fish is spottily distributed through sundry river systems in Georgia, Alabama, Mississippi, and Louisiana, where it is generally protected. From the photo shown in Deacon et al. (1979), it appears to be a particularly attractive species. If so, we should hope that conservation measures currently in force produce the desired effect, so that we may look forward to the introduction of this fish as an aquarium subject.

Noturus furiosus, the Carolina Madtom, is the only member of the subgenus to be found on the east slope of the Appalachians, where it is endemic to North Carolina. There it is protected by state law. This too seems to be an attractively colored species.

Two more species complete the subgenus. Noturus hildebrandi, the Least Madtom, occurs in bottomlands along the Mississippi River in Tennessee and Mississippi. It is aptly named, reaching a maxium length of 47 mm. standard length. Noturus elegans, the Elegant Madtom, occurs at slightly higher elevations, in Tennessee, Kentucky, and Alabama. Either of these two species would make a valuable addition to the native community aquarium.

Of course, the subgenus Rabida is by no means the whole story of Noturus, but the remainder will have to wait until a subsequent article.

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