

deep pools with little or no current. It is not unusual to fail to locate the species in extensive stretches of stream and then to find many individuals concentrated in one long, deep pool.

**TAXONOMIC STATUS.**—As pointed out above, the ranges of *N. b. bellus* and *N. roseipinnis* interdigitate in the lower Mobile Bay basin (Fig. 8). The two forms never have been collected together; and it is hypothesized that allopatry is maintained by strong habitat selection, interspecific competition, or some combination of these. Where their ranges abut, they are strongly differentiated in several characters, and apparently no significant gene exchange takes place between them. Thus available evidence strongly indicates that *N. b. bellus* and *N. roseipinnis* are valid biological species. This fact is basic to the consideration of the status of *N. atrapiculus*. Tempting though it might be, the taxonomic positions of these three closely related forms cannot be resolved by reducing them all to subspecies.

Should the pollution block in Old Town Creek (see above under Distribution and Habitat) ever be removed, *N. atrapiculus* and *N. b. bellus* would probably come into contact. The degree of reproductive isolation they would exhibit in sympatry would be an objective measure of their taxonomic status. For the present they apparently are maintained in allopatry by an uninhabitable section of stream, and the taxonomic and evolutionary position of *N. atrapiculus* must be judged on a subjective basis.

The difficulties of classifying *N. atrapiculus* relative to *N. b. bellus* and *N. roseipinnis* may be summarized as follows: (1) *N. atrapiculus* is allopatric from its two close relatives. (2) It is intermediate between and strongly differentiated from them in only one character complex, fin pigmentation. (3) In other characters it averages extreme in three, interjacent in eight, like *N. b. bellus* in one, and like *N. roseipinnis* in three. It is not strongly differentiated from the other two forms in any of these supplemental characteristics. (4) The overall aspect of *N. atrapiculus* is intermediacy between *N. b. bellus* and *N. roseipinnis*.

It has been suggested that allopatric populations of dubious status be classified as subspecies (Mayr, 1969). Within this philosophical framework *N. atrapiculus* would appear to be a logical candidate for subspecific treatment. However, the decision of whether to ally *N. atrapiculus* with *N. b. bellus* or with *N. roseipinnis* would have to be made arbitrarily. By emphasizing various combinations of characters, arguments might be made for associating it with either. But when all characters are considered, neither treatment could be objective or convincing.

The two remaining alternatives are to accord this form specific rank