

veloped; (2) moderately developed; and (3) strongly developed. Plus or minus signs were appended to the index when deemed appropriate. In addition, the body bars of *N. ardens* were counted. A count of 5-4 indicates five bars before and four bars behind the dorsal fin origin. The results of this analysis were only of general use, as these pigmentary features showed conspicuous ecological, geographic, sexual, and seasonal variation. Moreover *N. ardens* was bilaterally asymmetrical in position and number of body bars in about half the specimens studied.

Fin pigmentation patterns are important characters in the subgenus *Cyprinella* (Gibbs, 1957a, b, and other papers) and in the *hypselopterus-signipinnis-euryzonus* complex of *Notropis* (Bailey and Suttkus, 1952; Suttkus, 1955). The subgenus *Lythrurus* is divisible into two groups on the basis of the presence or absence of melanin deposits in fin interradial membranes (excluding from consideration the anterior basidorsal spot). Within the group possessing fin interradial pigment, the *umbra-tilis* complex is distinguished from the *roseipinnis* complex in having rather patternless suffusions of melanin in the fins of spawning males only. In the *roseipinnis* complex, fin melanin is present in both sexes year round (intensified during the spawning period), and deposition patterns are specific.

Details of fin pigmentation are important differentiating characters in the *roseipinnis* complex. Although present throughout the year, fin pigmentation is best and most uniformly developed in breeding material, to which the analysis was limited. Fin pigment was evaluated through an index derived by counting those anal and pelvic fin interradial membranes bearing melanin. An interradial membrane was recorded as pigmented if it was solid black or if it bore even a single melanophore that was not touching a ray. Pigment on the membrane in the branch of a ray was tabulated with the preceding interradial membrane; i.e., anal membrane number one was tabulated as being pigmented if there was pigment on the membrane between the first and second principal rays and/or if there was pigment on the membrane between the branch(es) of the second ray. The number of pigmented anal and pelvic interradial membranes were added to give a total index value.

A specimen of *N. b. bellus* with terminal pigment bands completely through its anal and pelvic fins might have a fin pigment index of 9 (pigmented anal membranes) + 7 (pigmented pelvic membranes) = 16 (total). The fin pigment pattern for a breeding male *N. roseipinnis* from the Pascagoula drainage might be as follows: (1) heavy pigment concentration in the tips of the first two anal interradial membranes, a few scattered melanophores in the third interradial membrane, and no melanophores on the following membranes; and (2) a few scattered