

and "reproductive" are used to indicate only that the specimens under consideration were deemed to be in or near spawning condition on the basis of gonadal development and/or full expression of secondary sexual characters.

FIN RAY COUNTS.—The dorsal, pelvic, and caudal fin rays showed only rare deviation from the counts of 8, 8, and 19 respectively, and detailed analyses were discontinued early in the study. The number of pectoral fin rays, counted only on the left side, proved to be of relatively little systematic value. *N. b. alegnotus* differs from other members of the *roseipinnis* complex in having slightly fewer pectoral fin rays; otherwise, *Lythrurus* species have usual counts of 13 or 14. The number of anal fin rays shows interesting patterns of geographic variation within species but is of limited use in distinguishing between species. The subgenus as a whole is characterized by high anal ray counts, usually 10-13. Certain populations of *N. roseipinnis* have the highest anal ray counts ($\bar{x}=12.1$) recorded for the genus.

SCALE COUNTS.—Counts of the body and caudal peduncle circumferential scales are written in the form 7-2-5=14, indicating seven scales above and between the lateral lines and five scales below and between the lateral lines. The dorsal component of the body circumference scale count was made around the body at the point, slightly in advance of the pelvic fin insertion, where the lateral line dipped to its lowest level.

Predorsal scales of *Lythrurus* species are small, partially embedded, and often nonimbricate. Furthermore the anterior dorsolateral area of the body is variably naked in *N. atrapiculus* and *N. roseipinnis*. In addition, breeding males of several species have thickened skin and enlarged tubercles on the nape, often extending along the notal ridge to the dorsal fin origin. These and other considerations make the usual predorsal scale count and the anterior dorsolateral scale count of Gilbert (1964) impossible to apply consistently in *Lythrurus*. Consequently, number of predorsal scale rows was used as an index of predorsal scale size. In making this count, previously applied in the genus by Bailey and Suttkus (1952), Suttkus (1955), and Suttkus and Clemmer (1968), the posteroventrally oblique scale rows crossing an imaginary line between the dorsal fin insertion and cleithrum were enumerated. The first row counted was the one including the first predorsal scale; the last row counted was the one including the first (anterior-most) lateral line scale. Single scales interposed between two otherwise regular rows were not counted. Two or more scales in a regular, oblique series were considered a row even if that series terminated before crossing the dorsal midline or the lateral line. This count is easily made, relatively objective, and consistently applicable to all species studied. However, be-