

smaller scales; the presence of bright red breeding colors, especially on the fins; and the presence of masticatory surfaces on the pharyngeal teeth.

Nominal forms were added to the genus by Jordan (1877a), Jordan and Copeland (1877), and Jordan (1878). By the time Hay (1881) described three new species and briefly reviewed the group, eight nominal forms were included. Hay pointed out that the tooth characters supposedly distinguishing *Lythrurus* from *Notropis* (his *Minnilus*) were too variable to be relied upon as generic characters, and furthermore that genera defined on the basis of such characters appeared to cut across natural phyletic lines. For the first time he reduced *Lythrurus* to a subgenus of *Notropis*. Jordan vacillated between calling *Lythrurus* a genus (Jordan, 1882) and a subgenus (Jordan and Gilbert, 1883) until 1885 when he (Jordan, 1885b) followed Gilbert's (1884) lead in reducing all the then-recognized genera of shiners to subgeneric status under *Notropis*. Most workers have since maintained *Lythrurus* as a subgenus. The move by Jordan (1929) and Jordan, Evermann, and Clark (1930) to re-elevate all the subgenera of *Notropis* was never widely followed.

By 1885 the subgenus *Lythrurus* was constituted in essentially modern terms, except for the erroneous inclusion of *Notropis metallicus* Jordan and Meek (Jordan, 1885b). The single exception was the poorly known *N. fumeus*, which was maintained with species of the subgenus *Notropis* as late as 1930 (Jordan et al., 1930). Not until the name *fumeus* was revived were the ties between *N. fumeus* and *Lythrurus* appreciated (Ortenburger and Hubbs, 1926; Hubbs and Ortenburger, 1929) and established (Hubbs and Black, 1940).

DIAGNOSIS.—The subgenus *Lythrurus*, like most subgenera in *Notropis*, is not recognizable as a phylogenetic unit on the basis of a single or few diagnostic characters. Instead the group is diagnosed by a combination of characters.

Anal fin rays usually 10-13 (occasionally 9 in *N. ardens*); pectoral fin rays usually 12-15; lateral line scales usually 37-50; body circumference scales usually 26-38. Scales rather small, especially so predorsally; exposed area of scales on sides of body usually not notably deeper than long (except in some populations of *N. umbratilis*); scale imbrication moderate to strong except on anterior dorsolateral part of body, where squamation is reduced and imbrication weak or lacking. Mouth moderately large, terminal, and oblique; snout shape from moderately acute to bluntly rounded (latter condition typical of *N. fumeus*); eye moderate to moderately large, positioned laterally on head. Fins moderate to moderately large, with angles moderately acute and narrowly rounded; anterior rays of depressed dorsal fin usually exceed posterior