

lateral line, live in upland streams of the riffle-pool type, usually with clear water, hard bottoms, and moderate to fast current. *N. alborus* and *N. altipinnis* occupy roughly intermediate conditions in the periodically turbid streams in the Piedmont province along the central Atlantic slope.

The SO canal pores are modally 8 in all forms of the subgenus. The ST pore count is modally 2,2 in most species except when reduction of portions of the canal creates anomalous counts. The IO pore counts of all forms are quite similar, with only *N. b. alegnotus* showing any departure from the norm. The POM canal exhibits the greatest intra- and interspecific variation in pore counts. Cephalic lateral line pores are moderate to moderately large in species of *Lythrurus*. The largest pores are in the upland species *N. lirus*, and the second largest are in the lowland species *N. fumeus*.

PIGMENTATION.—Details of pigmentation are of primary importance in the systematics of certain *Notropis* groups. The following pigmentary characters are of special significance in the subgenus *Lythrurus*: (1) anterior basidorsal spot, (2) pigment on fin interradi al membranes, (3) darkened scales on sides of body, (4) bar- or chevron-shaped markings on body, (5) lip and chin pigmentation, (6) midlateral stripe on body, (7) pigmentation of scale pockets on anterior dorsolateral part of body, (8) cleithral pigment, and (9) extension of pigment below lateral line. Characters (2), (3), (4), (8), and (9) exhibit their maximal and most consistent development during the breeding season; and for these characters, only specimens in breeding condition are considered in detail.

In this genus of over 110 species, an anterior basidorsal spot is found only in two species of *Lythrurus*, *N. ardens* and *N. umbratilis*. This spot is located on the dorsal fin at its anterior insertion and is formed by a concentration of melanophores over the rays and interradi al membranes. It is not to be confused with a concentration of pigment on the body at the bases of the first one or two dorsal rays. The latter type of spot is developed in several other species of *Notropis*.

Despite its uniqueness, the anterior basidorsal spot apparently has not been a stable character during the evolution of *Lythrurus*. *N. lirus* does not retain the spot of its relative *N. ardens*, and all forms of the *roseipinnis* complex lack the spot seen in the related *umbratilis* complex. Even within the *umbratilis* complex, there is geographic variation in the development of the spot, suggesting that it is in the process of being lost for the third independent time.

An attempt was made to evaluate quantitatively the chevron-shaped markings and bars present on the sides of the body in some members of the subgenus. An arbitrary index was established as follows: (0) no bars or chevrons present; (1) one or the other of these markings weakly de-