

Corona, Ala. Rt. 18, T15S, R9W, Sec. 27), 209 (Lost Cr., 0.5 mi. E Carbon Hill, U. S. Hwy. 78, T13S, R9W, Sec. 32), 210 (Lost Cr. 4 mi. E Carbon Hill, Hwy. 118, T14S, R9W, Sec. 2). Winston Co.: UAIC 3870 (Rock Cr., 1.5 mi. ENE Upshaw, ca. 1.0 mi. SW Co. Hwy. 41, T9S, R6W, Sec. 11), 3872 (Boone Cr., 1.5 mi. N Addison, ca. 0.5 mi. W Co. Hwy. 41, T9S, R6W, Sec. 28).

Notropis bellus: bellus x alegnotus

INTERGRADES

Notropis bellus. Howell, 1957:239-40, 243, 245, map 31 (UAIC 89 and 208, North R. and Hurricane Cr. systems).

Notropis roseipinnis. Howell, 1957:248, map 32 (UAIC 167, 168, 170, 206, 208, North R. system).

CHARACTERS.—On the basis of geographic location and morphological characters, populations at the Fall Line in the Black Warrior River system are considered intergrades between *N. b. bellus* and *N. b. alegnotus*. In meristic features, intergrades are most like *bellus* in caudal peduncle scales (Table 8), anal rays (Table 9), POM canal pores (Table 10), and IO canal pores before the dermosphenotic disjuncture ($\bar{x}=10.5$). Intergrades are intermediate in number of pectoral fin rays (Table 9). They are similar to *alegnotus* in the index of anterior dorsolateral scale reduction (Table 11). In morphometric characters, intergrades are most like *bellus* in caudal peduncle length and are similar to *alegnotus* in predorsal length and in having smaller fins. Intergrades are interjacent in body and head depth, prepelvic length, and upper jaw length. They are extreme in having a more slender caudal peduncle than either subspecies (Table 14).

Fin pigmentation of breeding adults in the intergrade populations is superficially similar to that of *N. atrapiculus* (Figs. 3C, 4E-11). Unlike *alegnotus*, the anal and pelvic fins of intergrades usually bear interradiial pigment; but unlike *bellus*, there are no terminal bands through the fins. Instead, interradiial pigment is well developed near the apex of the fin and becomes weaker posteriorly. Consequently fin pigment index values of intergrades are interjacent between those of the two subspecies (Tables 12, 13). In nuptial males the pectoral fin band typical of the nominal subspecies is absent, and dorsal fin pigmentation is intermediate and superficially similar to that of *N. atrapiculus*.

DISTRIBUTION AND VARIATION.—Intergrades are found in the North River and Hurricane Creek systems, western and eastern tributaries respectively of the Black Warrior River at Tuscaloosa (Fig. 7). Both of these stream systems lie almost precisely on the Fall Line. A single poorly preserved juvenile (CU 46500) from Yellow Creek, the next major Black Warrior tributary upstream from Hurricane Creek, is tentatively considered an intergrade, primarily on its geographical provenance.

The characters of *N. b. bellus* are relatively constant as far up the Black Warrior drainage as the Cypress Creek system, just southwest of Tuscaloosa, Alabama (UAIC uncat.). The next known upstream population of the species inhabits the North River. Carroll Creek, the lowermost tributary of the North River, has yielded specimens grading from almost pure *N. b. bellus* into typical intergrades, determined primarily on the basis of fin pigmentation. Otherwise the North River system appears