

A STUDY OF CHARACTERS FOR THE DIFFERENTIATION OF
TWO SPECIES OF MINNOWS OF THE GENUS *NOTROPIS*

BY

W. C. STARRETT

University of Illinois, Urbana, Illinois

ABSTRACT

Notropis whipplii and *N. lutrensis* are two species of Illinois minnows which are frequently confused and are often said to intergrade. These two species have been studied to determine to what extent internal characters are available for differentiation. It has been found that while the number of gill rakers tends to be distinctive for each species, there is some intergradation. In similar manner while each species has a characteristic pharyngeal tooth formula, some individuals show variations from the normal that tend to run the two sets of observations together.

Anatomical details to some extent confirm the statements of Forbes and Richardson concerning the intergradation of these two species. However, a statistical analysis of variability in number of pharyngeal teeth and in number of gill rakers for each species reveals the fact that each has a characteristic range of variability. This variation has no observable correlation with length of body. In *N. whipplii* the formula for pharyngeal teeth varies from 4-3 to 1, 4-4, 1, and in *N. lutrensis* from 3-3 to 1, 4-4, 1. The mean for the former is 1, 4-4, 1; for the latter 4-4. *N. whipplii* has 9 to 12 gill rakers in the lower limb, while *N. lutrensis* has 12 to 14 in the material studied.