

Size Variations in Tetraonchinae

JOHN D. MIZELLE,¹ University of Notre Dame

In 1936, the present author observed that specimens of *Urocleidus ferox* from Lake Senachwine at Henry, Illinois, were almost twice the size of specimens of the same species from the same host, namely, the bluegill sunfish, from Lake Decatur at Illinois. This size discrepancy of species representatives from two different latitudes stimulated the author in 1940 to compare specimens of individual species from other localities of different latitudes. Observed Illinois specimens (l. 467 micra) of *Urocleidus principalis* averaged 227 microns longer than Tennessee members (l. 240 micra) of this species and *Actinocleidus articularis* from Illinois (l. 470 micra) likewise were longer by 209 microns when compared with Tennessee representatives (l. 261 micra). Later, in 1943, comparisons between specimens of individual species from Tennessee and Florida were made and similar differences were noted. *Actinocleidus flagellatus* from Tennessee (l. 388 micra) were 119 microns longer than Florida specimens (l. 269 micra) of this species; *Urocleidus chaenobryttus* from Tennessee (l. 598 micra) similarly were longer than Florida representatives (l. 325 micra) by 273 microns; and *Urocleidus grandis* from Florida (1.395 micra) were 92 microns shorter than members of the same species from Tennessee (l. 487 micra).

In every observed case where several specimens of a given species of Tetraonchinae were obtained from different latitudes and treated similarly with reference to killing and fixation, the more northern specimens were longer. The average widths of the northerly species representatives, except in one case, were as great or greater than those for the specimens farther south. In the exception noted, the northern forms were larger as shown by a greater value obtained when the average body length was multiplied by the average body width. It was interesting to note that the north-south variation for body size did not apply to individual structures such as parts of the copulatory complex, the anchors, hooks, and bars. In many cases these structures were larger in the smaller southern specimens.

Several points may be mentioned in regard to possible explanations for these size discrepancies. In the first place, fresh-water Tetraonchinae may possess developmental thresholds sufficiently high to prevent the expression of similar mean body sizes in representatives of a given species in different latitudes. Secondly, there may be a relationship between the size of the parasites and the size of the hosts involved. Again there may be a relationship between the numbers of parasites infesting a given host and the size of the parasites, that is, the size of the parasites may vary inversely as the degree of infestation. The age of the host may be

¹ Department of Biology, University of Notre Dame, Notre Dame, Ind.

important or the problem of food, of which nothing is known at present, may be a determining factor.

Obviously the problem may involve a combination of environmental factors which can only be determined by further work, some of which is under way at the present time.

References

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