

ABSTRACT

Affinities Of Some Freshwater Fishes Of The
Island Of Trinidad

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Four species of characin fishes Astyanax bimaculatus, Hoplias malabaricus, Roeboides dayi and Curimata argentea, chosen on the basis of their distribution patterns over the island of Trinidad, were examined for possible intraspecific variation between watershed populations.

Biochemical variation was examined by looking qualitatively at the disc gel electrophoretic patterns of general plasma proteins of the four species and lactate dehydrogenase isozyme patterns of Hoplias and Curimata. Morphological variation was assessed for Hoplias and Astyanax from counts of gill rakers and scales in longitudinal series. The meristic data was analysed by a d-test to see if any significant differences existed between populations.

Intraspecific variation was evident in the general protein patterns of all species with Curimata showing the least variation. For Astyanax, the Caroni, Chatham and Ortoire populations showed closest relationships with each other and also with the North Salybia population. The Moruga and North Oropuche Astyanax populations were similar to each

other but different from the other four populations. For Hoplias, the Chatham, Nariva and Moruga populations appeared closely related and were different from the Caroni and North Oropuche populations. The Caroni and North Oropuche Hoplias populations were most similar to each other. In the case of Roeboides there were no obvious affinities between pairs of populations, with all appearing to be equally closely related. Curimata showed the least interpopulation variation.

A non-parametric analysis of variance of the protein band mobility values of Astyanax, Hoplias and Roeboides gave X^2 values which showed the interpopulation variation to be greater for Astyanax and Hoplias than for Roeboides.

The LDH isozyme patterns showed minimal variation for the Hoplias samples and no interpopulation variation was detected for Curimata.

No significant differences between the populations were obtained for scale counts and gill raker counts for the two species examined, but there was a highly significant difference between the dorsal fin ray counts of Hoplias from Caroni and Hoplias from Nariva.

The results were interpreted from a zoogeographic point of view in an attempt to

explain the distribution patterns and general complexity of Trinidad's fresh-water fish fauna. The data lends support to Kenny's hypothesis of repeated colonisation of the island, by animals from the South American mainland.

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