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_r^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.