

Ecological comparison of the three species of *Gyraulus (Torquis)* in North America

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Introduction

The genus *Gyraulus* is a large group of very small species of freshwater snails belonging to the pulmonate family Planorbidae. One of the these group the subgenus *Torquis*, contains some of the smaller members of the genus, and includes one of the most widespread and common of the North American freshwater snails, *G. (Torquis) parvus*.

An unusual characteristic of the subgenus *Torquis* is the occurrence of polyploid (tetraploid) species ($n=36$, $2n=72$), which have exactly twice the number of chromosomes found in most other members of the family Planorbidae. Polyploid is rare not only in mollusks, but also in animals in general.

Adaptation to different habitats is a well known product of evolution, or it is a condition which preceded evolution (*i.e.*, speciation). That sibling species as closely related as *Gyraulus parvus*, *G. circumstriatus* and *G. huronensis* live in the same area would seem to indicate *a priori* that they live in different niches or have different ecological requirement.

Therefore, this study was necessary to make careful observations of the habitats of the *Torquis* snail that distributed in North America.

Materials and Methods

A survey of freshwater habitats favorable to mollusks in northern Michigan was made to find localities where *Gyraulus (Torquis)* species occur. These water bodies included lakes, ponds, ditches, swamps, bogs, seepage areas, temporary wood

pools, small streams, large streams, etc. They were searched by the usual methods for freshwater mollusks, *i.e.*, by inspecting every possible place a snail might be located.

Results and Summary

The habitats of the three species of *Torquis* were found to be strikingly different. *Gyraulus parvus* was found in quieter habitats; in small lakes, ponds, swales and road-side ditches (often but not always in perennial waters). *Gyraulus circumstriatus* was found in more ephemeral habitats; temporary wood pools, intermittent streams, transient seepage areas. *Gyraulus huronensis* was found in the Great Lake shore.

It seems clear that the three *Torquis* species do not compete with others for the same resources. Each has evolved to exploit the resources of its own peculiar habitat without interference from the other species. Such habitat differences between the three species would help prevent gene flow between them.

References

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