

1938

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NATURAL HISTORY OF GONIABASTIS LIVESCENS (MENKE)  
IN DOUGLAS LAKE, MICHIGAN (Continuation)

A Summary of Research Activities and Future Work  
to be Carried On.

( Informal report )

One of the largest tasks of the research period was the measuring of more than 2,000 snails ( as gathered by the class in Natural History of Invertebrates ) . These snails were measured with the vernier caliper for both length and diameter at the lower end of the aperture. Product of length and diameter was used as a value for recording by graph size ranges in the snails.

Very small snails were not taken by the class, hence the range of sizes is not complete. These findings are to be embodied in a formal report which is to supplement the informal report.

Graphs prepared from measurements of very small snails and juveniles point very definitely to a three modal curve of size ranges, Not enough snails were collected in the juvenile groups to make the curves distinct enough to draw more than general conclusions. Curve of the very small snails was quite distinct. Owing to inability to keep in constant touch with the problem growth sizes studies have brought little to light. Indications point to the probability of three year life span at least.

As yet all efforts to isolate snails and determine time and place of oviposition have been unavailing. The finding of very small snails at any time during the duration of the session in certain areas designated as Station # 4 of last year's report, points more strongly than ever ~~that~~ to the laying of eggs in the loose sand. Also possibility of their being laid at least twice during the period from June to August, and perchance all the time.

Study of the spread of snails up the wide shoal along the former site of the Station indicates a more decided spread and a more established hold upon the area. Statements that the snails could not maintain themselves upon the broad ~~snaky~~ sandy shoal because of lack of support seems to be based upon unreliable evidence. Snails have been found all during the period of the session as far up the shoal as the site of the original flag pole. At present they have spread to the level of the dock in Old Ladyville area. While snails could be found all during the session at the edge of the declivity, at two particular times they have been abundant ~~at~~ in shallower water. The success of their further migration and the reasons for the success, if further successful, should be one of the important phases of next summers work.

Snails have been planted at two different times at regions in which they have never been taken before. Both were in the narrow shoal waters of North Fishtail Bay. The first, made in the third week of the session apparently was unsuccessful. If the snails succeeded they took to deeper waters as none were visible a few days ago.

A second planting, made in the last week of the session consisted of large snails (assumed to be adults) and miniatures. Both were planted a considerable distance from the site of the former plantings, one size group into a location. One of the first observations of next year should be for the success of the snails in the new locations.

Snails were also planted in quantities in Mumro Lake and Lancaster Lake at stations designated on map of formal report to be made up. Success of these plantings is unknown.

Attempts to determine sex of the snails and isolate known females to study oviposition were unsuccessful. This should by all means be continued.

Attempts to determine food habits, other than types of feeding locations were not successful. With a course in taxonomy, including that of the Blue-green algae, better success should be had another summer in the study of definite food preferences. Presence of snails, apparently not having migrated for a long period of time as judged by the marl encrustations upon them, indicates that in certain groups little traveling is done in feeding upon submerged logs. Presence of well polished individuals in the loose sand at any time during the period of the session, points to another group which wander over large areas while feeding. Whether or not these groups represent age groups, sex preferences, or nothing definite, is a matter for further investigation.

Relation of the snails to the deep water is still a matter of debate. Use of the Peterson dredge in the very early days of next session should give definite light upon the question.

In general the widely separated studies have given little clue to the unfinished questions of last year. The one biggest problem is to find the time and position and frequency of oviposition. It is to be hoped that study of the growth rates will cast some light upon groupings in such manner that life span may at least be determined within another summer's work.

A limnological study of the various habitats should by all means be started, as the snails are found in three definite and distinct types of habitat at present.

In summarizing, should say that the studies have been very disappointing. Lack of contact with the problem from day to day has no doubt accounted for the disappointing results of such studies as were carried. The most pressing problem for the next period of study is the question of time and place of oviposition, the keys which will unlock many facts pertinent to the completion of the life cycle.