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TERRESTRIAL GASTROPODS AT THE UWM CEDAR—
SAUK FIELD STATION

A base line survey of the terrestrial gastropod fauna of the UWM Field Station near Saukville was conducted from June-September 1978 to complement other faunistic surveys conducted at this locality and to increase our information on the distribution of these mollusks in southeastern Wisconsin. To date there have been very few surveys of terrestrial gastropods in southeastern Wisconsin. In this survey 2975 specimens of 20 different identities were retrieved.

METHODS

Six meter by meter litter samples were collected and processed to retrieve gastropods. For each of the six samples, the following methods were used. At each site, an area 1m x 1m was marked off. With the edge of a trowel, all litter in the area, including approximately the top 1-2 cm of loose soil, was gathered into a plastic bag and labeled. In the laboratory, the litter was transferred to a cloth bag and air dried. After drying, a standard #40 screen was used in washing the material. After the soil had been thus washed away, each screen's contents were again dried. The dried material was then sorted for gastropods by placing a small amount of it into a 9 cm diameter petri dish and examining it bit by bit under a dissecting microscope. See Jaehnig (1971) for a detailed description of this methodology. Table 1 gives the six site localities which are specified according to points on the 100m grid system by which the maple-beech upland forest of the Field Station has been surveyed. All sample sites were in the upland forest except sample 5 which was taken from the first island along the bog boardwalk.

RESULTS

For density in numbers of individuals per square meter for each species collected see Table 1. Excluded from this table are the large number of fragments and juveniles that could not be identified. The highest density was 491/m² for *Punctum minutissimum* in the September 11 sample from upland forest. There were two species that appeared in all six samples: *Carychium exiguum* and *Strobilops labyrinthica*. Table 2 gives species diversity index figures for the six samples. The sample with the highest diversity was that taken on September 11, interestingly also the sample with the highest density for an individual species. Without further study, it cannot be determined whether this high diversity figure is due to seasonal or microhabitat effects. However, the figures found do give a good general indication of the degree of diversity which these terrestrial gastropod communities can exhibit.

DISCUSSION

This preliminary report has been prepared to highlight the opportunities in terms of further research that are available using the terrestrial gastropod populations of the UWM Field Station. The species richness and high densities found in this survey indicate a wealth of material for quantitative studies. A terrestrial gastropod community such as the one at the Field Station will display many fascinating interactions with the environment, in terms of position in the food web as well as community composition in relation to soil and habitat differences (see La Rocque, 1970, for summaries on the ecology of each species). Many researchers find that these organisms are excellent for studies of various aspects of environmental biology.

ACKNOWLEDGMENTS

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LITERATURE CITED

- Cox, G. W. 1972. Laboratory manual of general ecology. Wm. C. Brown, Dubuque, Iowa.
- Jaehnig, M. E. 1971. The study of gastropods: methodology. *Plains Anthropol.* 16 (54): 289-297.
- La Rocque, A. 1970. Pleistocene mollusca of Ohio. *Bulletin Ohio Geological Survey* 62 (4): 555-800.

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Table 1. Gastropod Density per Square Meter

	Sample 1 C1C2 D1D2 June 12	Sample 2 D1D2 E1E2 June 12	Sample 3 G4E G5W June 12	Sample 4 S of G4E G5W July 28	Sample 5 1st island July 28	Sample 6 B1S C1N Sept. 11
<i>Anguispira alternata</i> (Say)	1	22	6	16	0	26
<i>Carychium exiguum</i> (Say)	3	2	4	44	86	102
<i>Columella alticola</i> (Ingersoll)	0	0	0	0	0	26
<i>Columella edentula</i> (Draparnaud)	1	0	0	1	53	0
<i>Deroceras laeve</i> (Müller)	0	0	0	0	0	4
<i>Euconulus fulvus</i> (Müller)	1	0	2	0	0	22
<i>Gastrocopta contracta</i> (Say)	0	0	3	5	3	1
<i>Gastrocopta holzingeri</i> (Sterki)	0	19	0	4	404	206
<i>Gastrocopta pentodon</i> (Say)	0	0	1	0	231	12
<i>Guppya sterki</i> (Dall)	0	0	0	0	0	2
<i>Hawaiiia minuscula</i> (Binney)	0	10	0	0	0	0
<i>Helicodiscus parallelus</i> (Say)	0	1	0	2	118	1
<i>Mesodon</i> sp.	0	2	0	0	0	0
<i>Punctum minutissimum</i> (Lea)	0	43	0	0	180	491
<i>Pupilla muscorum</i> (Linné)	0	19	0	0	0	0
<i>Retinella indentata</i> (Say)	2	8	1	0	1	0
<i>Strobilops labyrinthica</i> (Say)	2	255	5	25	223	109
<i>Succinea</i> sp.	0	1	4	3	1	1
<i>Vertigo milium</i> (Gould)	0	0	0	2	149	2
<i>Zonitoides arboreus</i> (Say)	0	0	0	0	0	1

Table 2. Shannon - Wiener Diversity Index

$$D = 3.3219 (\log_{10} N - 1/N \sum n_i \log_{10} n_i) - \text{Cox, 1972}$$

Diversity Index, D	
Sample 1	2.477
Sample 2	1.790
Sample 3	2.794
Sample 4	2.279
Sample 5	2.807
Sample 6	3.813