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ANNOTATED LIST OF STONEFLIES (PLECOPTERA) FROM STEBBINS GULCH IN NORTHEASTERN OHIO

Martin A. Tkac and B. A. Foote¹

Stebbins Gulch is situated within property owned by The Holden Arboretum in northwestern Geauga County, Ohio, approximately 8.0 km east of the village of Kirtland (Fig. 1). Physiographically, the Arboretum is included within the Southern New York Section of the Appalachian Plateau Province (Feldman et al., 1977). This Section was overridden by several advances of Pleistocene glaciation, the latest of which receded some 13,000 years ago. It is characterized by poorly drained surfaces containing many bogs, ponds, and lakes, except near the Portage Escarpment where small rivers have excavated relatively deep valleys.

The unnamed tributary of the East Branch of the Chagrin River that flows through the rocky gorge forming Stebbins Gulch (Prosser, 1912) is a second order stream (Horton, 1945). It has a total length of approximately 6.5 km, with some 3.3 km in permanent flow. The headwaters arise at approximately 400 m above mean sea level on the north slopes of the Defiance Moraine. The stream first flows northward on glacial drift materials, then angles northwestward and cuts into bedrock of Upper Devonian and Mississippian Age. Berea Sandstone and various shale and lesser sandstone formations form the walls of the gorge and rise to heights approaching 75 m. In places the walls are vertical or overhang the bedrock substratum of the stream (Figs. 2, 3).

After leaving the gorge area the stream crosses unconsolidated drift materials of the preglacial Mentor River valley (Baker, 1957) into which it frequently disappears during late summer. It reappears again on bedrock formed by the Chagrin Shale Formation some 400 m before entering the East Branch of the Chagrin River (Fig. 1). The confluence with the East Branch is at 240 m above mean sea level, giving a total relief along the stream of 160 m and an average gradient of some 25 m/km. A gradient of approximately 60 m/km exists within the gorge itself.

The relatively level uplands near the stream support a climax forest of the Beech-Maple Association (Gordon, 1966). Most of the valley slopes are covered with a Mixed Mesophytic Forest Association, although the deeper rocky portions within the gorge itself support a Hemlock Forest Association.

Weekly collections of adult Plecoptera were made throughout 1972, and more irregularly between 1973 and 1977. Specimens were obtained by sweeping, hand picking from the substrate, and by use of a black light.

The following list of 30 species, 15 genera, and 7 families follows the arrangement given by Zwick (1973). Information is given on flight period and relative abundance for each included species. The five species newly recorded for Ohio are indicated by asterisks.

Family Perlodidae

Isoperla clio (Newman). April-June; uncommon.

**I. namata* Frison. May, June; common.

Family Perlidae

Phasganophora capitata (Pictet). June, July; uncommon.

**Acroneuria carolinensis* (Banks). May-July; common.

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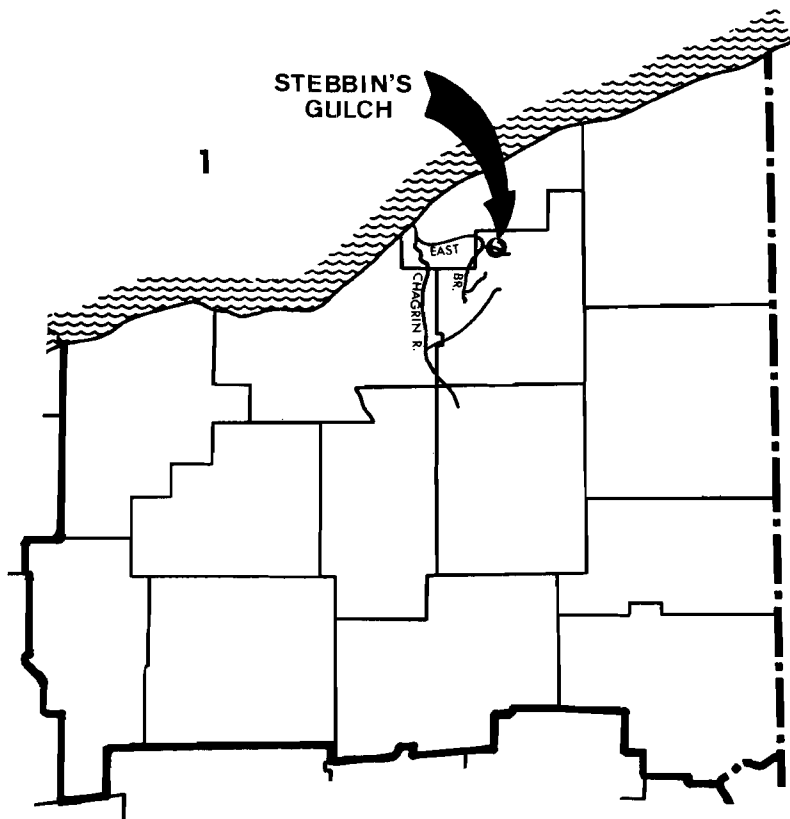


Fig. 1. Location of Stebbins Gulch in northeastern Ohio.

Family *Nemouridae*

Amphinemura delosa (Ricker). May-July; abundant.

A. nigriflora (Provancher). May-July; common.

Ostrocerca truncata (Claassen). April; uncommon.

Prostoia similis (Hagen). April; rare.

Soyedina vallicularia (Wu). March, April; common.

Family *Capniidae*

Allocapnia frisoni Ross and Ricker. December, January; rare.

A. granulata (Claassen). February-April; uncommon.

A. illinoensis Frison. February; uncommon.

A. nivicola Fitch. January-March; abundant.

A. recta (Claassen). January, February; common.

A. rickeri Frison. February; uncommon.



Fig. 3. Bedrock substratum of stream in gorge area.

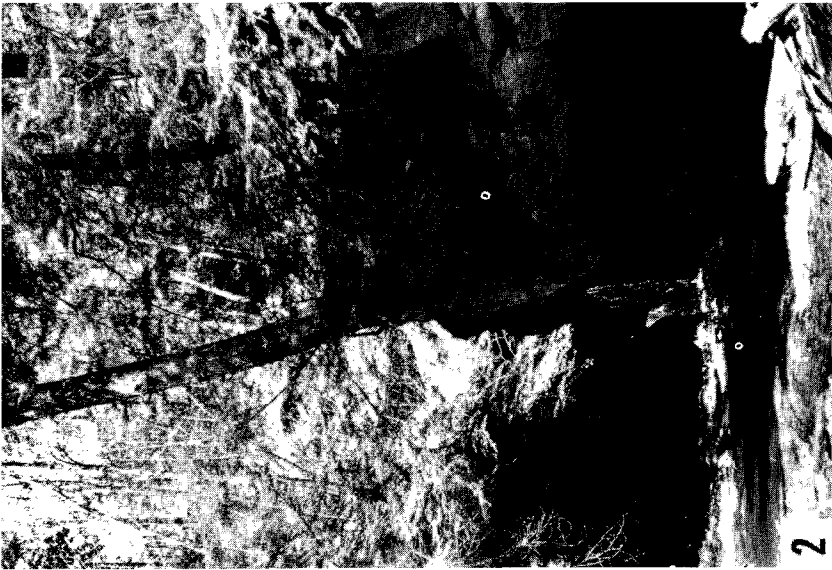


Fig. 1. Appearance of stream as it flows through the gorge area.

A. lycorias (Newman). June; uncommon.
Perlesta placida (Hagen). June, July; common.

Family *Chloroperlidae*

Alloperla caudata Frison. May, June; uncommon.
 **A. chloris* Frison. June-August; abundant.
A. imbecilla (Say). May, June; uncommon.
Hastaperla brevis (Banks). May-July; abundant.
Sweltsa mediana (Banks). May-July; common.

Family *Taeniopterygidae*

Taeniopteryx maura (Pictet). February, March; common.
 **T. meteui* Ricker and Ross. February; common.

A. vivipara (Claassen). February; uncommon.
Paracapnia angulata Hanson. February-April; abundant.

Family *Leuctridae*

Leuctra ferruginea (Walker). May-July; common.
 **L. sibleyi* Claassen. April-June; common.
L. tenuis (Pictet). June-September; abundant.
Paraleuctra sara (Claassen). March-May; common.

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LITERATURE CITED

- Baker, J. 1957. Glacial geology of Geauga County, Ohio. Ph.D. thesis, Univ. Ill.
 Feldman, R. M., A. H. Coogan, and R. A. Heimlich. 1977. Southern Great Lakes. Geol. Field Guide Series. Kendall Hunt Publ. Co., Dubuque, IA.
 Gordon, R. B. 1969. The Natural Vegetation of Ohio in Pioneer Days. Bull. Ohio Biol. Surv., n. ser. III.
 Horton, R. E. 1945. Erosional development of streams and their drainage basins; hydrophysical approach to quantitative morphology. Bull. Geol. Soc. Amer. 56:275-370.
 Prosser, C. S. 1917. The Devonian and Mississippian formations of northeastern Ohio. Bull. Geol. Surv. Ohio, 4 ser. 15:218-228.
 Zwick, P. 1973. Insecta: Plecoptera, Phylogenetisches System und Katalog. Das Tierreich 94.