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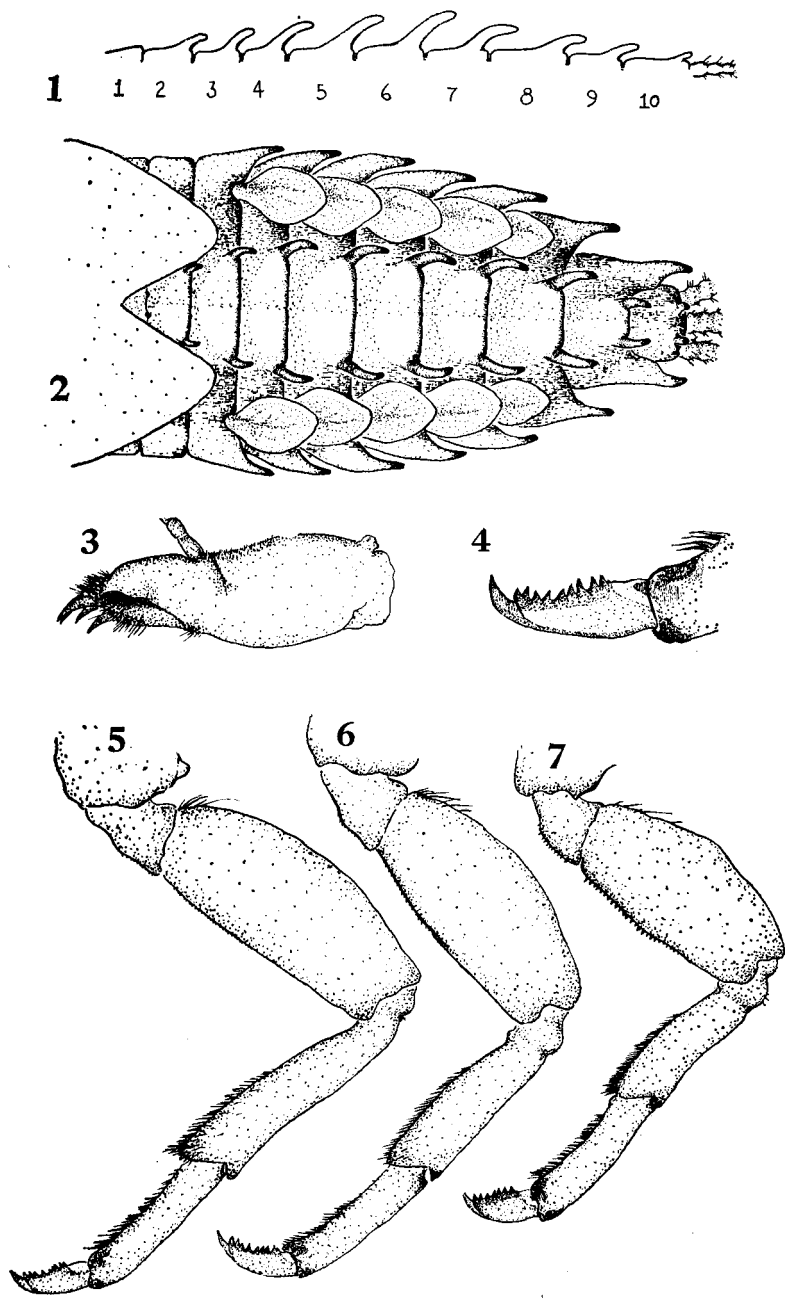
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Through the kindness of Dr. Herbert H. Ross and Mrs. Leonora K. Gloyd of the Illinois State Natural History Survey, the authors received for study a collection of the mayfly genus *Ephemerella*. Included in this material was an undescribed species of the subgenus *Chitonophora* (= the *needhami* group of Traver, 1935, The Biology of Mayflies) represented by nymphs only. Dr. Lewis Berner of the University of Florida has loaned us additional nymphs of this species from Virginia. We take great pleasure in naming this species for Dr. Berner in recognition of his contributions to our knowledge of the mayflies of the Southeast. We would like to thank Mr. David I. Rasmussen for aid in inking the illustrations.

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EXPLANATION OF FIGURES

Ephemerella berneri, mature female nymph, paratopotype. Fig. 1, profile of paired, dorsal, submedian abdominal spines. Fig. 2, dorsal view of abdomen. Fig. 3, left maxilla. Fig. 4, claw of foreleg. Fig. 5, left metathoracic leg. Fig. 6, left mesothoracic leg. Fig. 7, left prothoracic leg.

Ephemerella (Chitonophora) bernerii, n. sp.

MATURE NYMPH (in alcohol). Length: body 11-13; tails 8-9 mm. Head light brown, posterior margin of head capsule narrowly dark brown; ventral margin of frons dark brown; labrum brown, lateral margins black; antennae brown at base, becoming paler apically. Pronotum light brown, lateral and posterior margins narrowly dark brown, anterior margin raised forming a deep furrow posterior to it. Mesothorax light brown; a low, angular, obtuse median tubercle situated between wing pads; two very low paramedian ridges anterior to this tubercle. Legs short and thick (figs. 5, 6, 7), light brown with a conspicuous ventral dark brown dot at each trochantero-femoral joint, larger brown spot at distal end of tarsi; claws light brown at base, dark brown at apex, with 8-10 denticles (fig. 3). Abdomen light brown with conspicuous, paired, dorsal, submedian spines on segments 2-10 (figs. 1 and 2); lateral margins of abdominal segments produced into long acuminate projections on segments 3-9 (fig. 2) which are darker brown apically; tergite 1 with only minute, paired, dorsal, submedian bumps; tergite 2 with long, well-defined, paired, dorsal, submedian spines; length of spines increases from tergites 2-6 and then decreases from 7-10 (fig. 1); bases of paired, dorsal, submedian spines widen from tergites 2-7 and then decrease in width on tergites 8-10; all paired, dorsal, submedian spines light brown at base and dark brown at apex (on some specimens the spines are longer than shown in figures 1 and 2, with the apices more recurved as seen in lateral view). Sternum light brown without conspicuous markings. Caudal filaments light brown and equal in length; sparsely setaceous at base, with longer setae distally on both sides of the filaments, but better developed on the mesal sides. (The tails of the developing adult show them to be narrowly banded with fuscous at each joining.)

Holotype: Male nymph, Flat Shoals, Flint River, 5.6 miles west Concord, Pike County, Georgia, 21-IV-39, P. W. Fattig, in collection of Illinois State Natural History Survey, Urbana. Paratopotypes: 1 female nymph in Illinois Natural History Survey, and 1 female nymph and 1 cast skin of female nymph in collection at University of Utah, Salt Lake City.

Paratypes: 1 male and 8 female nymphs, Piney River, Amherst Co., Virginia, 24-IV-53, Jean Pugh, 1 female nymph in collection University of Utah and all others in collection of University of Florida, Gainesville, Florida.

Remarks: *Ephemerella bernerii* is a member of the subgenus *Chitonophora* and may be distinguished from all known species of this subgenus by the great development of the paired, dorsal, submedian abdominal spines on tergites 2-10.

Ephemerella bernerii keys to *Ephemerella hystrix* Traver in Traver's keys (op. cit.). *Ephemerella hystrix*, however, does not belong in the subgenus *Chitonophora*. With *E. heterocaudata* McDunnough, *E. jacobi* McDunnough, and *E. columbiella* McDunnough, it forms a separate group which is distinguished in both the nymphal and adult stages by the fact that the median terminal filament is definitely longer and better developed than the lateral cerci.