

Fig. 12. Eggs of *Monoleuca semifascia* covered with scales from female abdomen (photo by V. Krantz).

*gifascia* in *Monoleuca* Grote & Robinson is based on the following putative synapomorphies with the type species by original designation, *M. semifascia* Walker: 1) reduced papillae anales surrounded by dense clump of scales presumably used to cover eggs, as in *semifascia* (Fig. 12); 2) absence of lateral lobes on female eighth segment; 3) male antenna with long pectinations to near apex, then simple; 4) narrow valvae; 5) broad gnathos rounded at apex; 6) aedeagus curved from base to apex (rather than basal and distal portions angled). Fusion of  $R_3$  and  $R_4$  may also be a synapomorphy, however, more analysis will be needed to determine whether this occurred independently or in a common ancestor with *Adoneta* Clemens and *Monoleuca occidentalis* Barnes & McDunnough.

One species of neotropical Limacodidae, *M. albicollis* Forbes (= *Heuretes picticornis* Grote & Robinson), was mistakenly placed in *Monoleuca*, based only on wing pattern and the antennae. However, features

of the forewing veins, larva, tibial spurs and genitalia clearly placed this species and its relatives in the genus *Heuretes* in the *Phobetreron* complex (Epstein and Miller 1990).

Discussion.—In response to an inquiry by Hering in 1927, Dyar wrote that he did not record the locality data of the supposed type of *elaea* that was in Druce's collection, but if it differed from the Panama locality it would be a misidentified type. He chose to leave the "matter . . . unsettled" because "To make the change would require a new name for the species I call *elaea* Druce, invalidate the genus *Epiclea*, which would supersede [sic] *Euprosterna* and require a new genus for my conception of *Epiclea*" (H. G. Dyar Collection, Smithsonian Institution Archives).

The male genitalia of *semifascia* (Fig. 8), while very similar to those of *longifascia*, show the following subtle differences: 1) curve of aedeagus less steep from base to apex; 2) gnathos slightly concave rather than convex; 3) dorsal margin of valva



more angled upwards beyond basal fourth, making it more nearly parallel to ventral margin. The differences between female genitalia of *semifascia* (Fig. 11) and *longifascia* are more obvious, including: 1) broader papillae anales that are more fused to 8th abdominal segment along the margins and more laterally convex; 2) length of bursa copulatrix much greater than length of papillae anales; 3) corpus bursae with a signum.

The continuous medial band from the inner margin to the costa in *longifascia* is unusual in genera with close phylogenetic ties to *Euclea* Huebner. *Euclea byrne* (Dyar) is the only similar example that I know of (*Talima* species and some *Parasa* species have a continuous band, but it is submarginal rather than medial). *Monoleuca occidentalis*, *Adoneta* species, and a number of *Euclea* species have a band of darker scales between the subapical and postmedial spots. The band in *M. longifascia* may have resulted from a lightening of these scales between the spots in the two regions. Alternatively, the long band in *longifascia* resulted from an extension to the costa of a postmedial fascia present only below the discal cell, as in *M. semifascia*. This, however, seems less likely because it would require that an extension of the band be produced de nova.

A third species in Druce's series is a female of a Mexican species of *Euclea*, probably undescribed.

#### ACKNOWLEDGMENTS

I acknowledge Curt Sabrosky (SEL, USDA), Phil J. Clausen (University Minnesota), and John Oswald (Texas A & M University) for helpful discussions relating to misidentified types and type species, and Douglas Ferguson (SEL, USDA) and Scott E. Miller (Bishop Museum) for helpful comments on the manuscript. I thank Vitor O. Becker (EMBRAPA) and M. Alma Solis (SEL, USDA) for providing additional specimens of *M. longifascia*, including a female, and Julian P. Donahue (LACM), and John E. Rawlins (CMNH) for loaning material. William Cox (Smithsonian Institution Archives) assisted in locating the Dyar correspondence. Vic Kranz (Smithsonian Institution) provided photographic assistance.

#### LITERATURE CITED

- Becker, V. O. and M. E. Epstein. 1995. Limacodidae. In Heppner, J. B., ed., The Atlas of Neotropical Lepidoptera. Checklist: Part 2. Association for Tropical Lepidoptera, Inc. Gainesville, Florida.
- Druce, H. 1887 [1897]. Biologia Centrali-Americana. Insecta. Lepidoptera-Heterocera. Vol. 1. pp. 201–256 [Vol. 2. pp. 433–440].
- Dyar, H. G. 1905. A list of American Cochlidian moths, with descriptions of new genera and species. Proceedings of the U.S. National Museum 29: 359–396.
- Epstein, M. E. and V. O. Becker. 1994. Combinations and synonymies in Neotropical Limacodidae, Megalopygidae, Lasiocampidae and Arctiidae (Lepidoptera). Revista Brasileira de Zoologia (1993) 10: 289–319.
- Epstein, M. E. and S. E. Miller. 1990. Systematics of the West Indian Moth genus *Heuretes* Grote and Robinson (Lepidoptera: Limacodidae). Proceedings of the Entomological Society of Washington 94: 705–715.



## A REVIEW OF THE STONEFLY GENUS *PARANEMOURA* (PLECOPTERA: NEMOURIDAE) AND A NEW SPECIES FROM THE NORTHEAST

RICHARD W. BAUMANN

Department of Zoology, Brigham Young University, Provo, UT 84602, U.S.A.

---

**Abstract.**—*Paranemoura perfecta* (Walker) is reviewed and a second species, *P. claasseni*, n. sp., is described from northeastern North America. Illustrations of the adult terminalia and wings of both *P. perfecta* and *P. claasseni* are provided. A diagnosis serves to separate the two species in the male adult stage. Distributional data are included for both species and also for females that could only be determined to genus. Results show that the genus is restricted to eastern North America and that *P. claasseni* only occurs in more northern localities.

**Key Words:** Plecoptera, stoneflies, Nemouridae, *Paranemoura*, new species, Nearctic.

---

The subgenus *Paranemoura* was erected without comment by Needham and Claassen (1925) for a single species, *Nemoura punctipennis* Claassen (1923), described from New York. Ricker (1938) studied the *Nemoura perfecta* Walker type from Nova Scotia in the British Museum and placed *N. punctipennis* as a synonym under *N. perfecta*. Ricker (1952) recognized *Paranemoura* as a monotypic subgenus and gave additional distribution data for Maine and North Carolina. *Paranemoura* was raised to generic status by Illies (1966) and it has remained monotypic and relatively poorly known even though Stark et al. (1986) indicated that *P. perfecta* was known from Connecticut (Hitchcock 1974), Maine, New York, Ontario (Harper and Hynes 1971), Pennsylvania (Surdick and Kim 1976), Quebec (Ricker et al. 1968), Virginia (Konratieff and Voshell 1979) and West Virginia.

This paper includes the description of a second species in the genus *Paranemoura* and provides distribution information for both species. *Paranemoura punctipennis* is confirmed as a junior synonym of *P. perfecta*.

### *Paranemoura perfecta* (Walker)

Figs. 1–3, 7–9, 13, 15

*Nemoura perfecta* Walker, 1852: 191.

Holotype male: Nova Scotia: Redman (TNHM), examined.

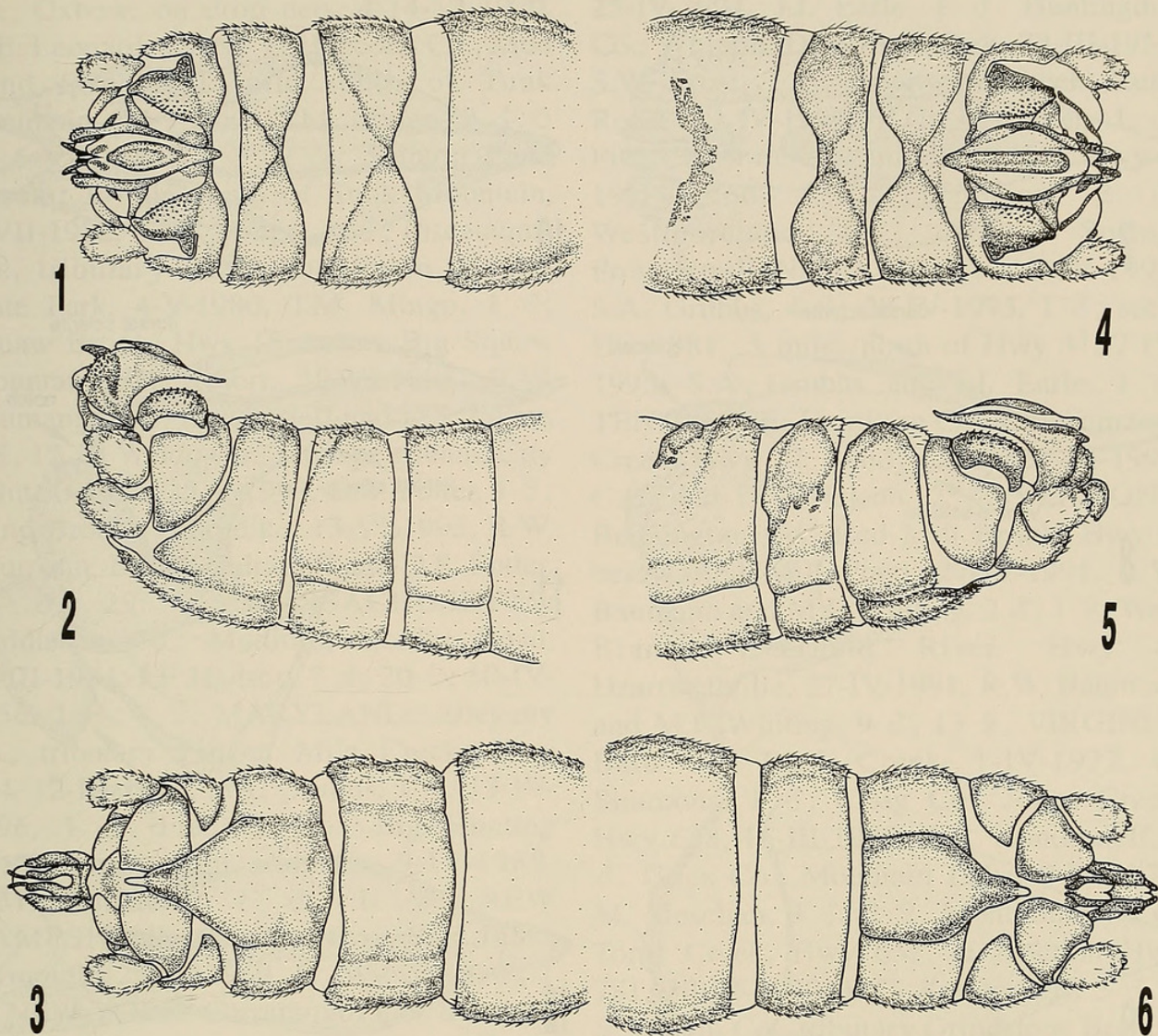
*Nemoura punctipennis* Claassen, 1923: 291.

Holotype male: New York: Axton, Adirondack Park, 12–22 June 1901 (CUIC), examined.

**Recognition.**—*Paranemoura perfecta* is very distinctive in the structure of the male epiproct. The sclerotized portion of the dorsal sclerite (epihook) is sharply pointed at the tip, where it rotates between the base of the ventral sclerite (Figs. 7, 8). In addition, the lateral basal profiles of the ventral sclerite are smoothly rounded from the base to the dorsal surface (Fig. 8). The female is difficult to separate without associated males (Fig. 13).

**Distribution.**—The following specimens were confirmed as part of this study based on the examination of male specimens: CANADA: NEW BRUNSWICK: Charlotte Co., tributary of Digdequash River, Hwy 127, south of Dumbarton, 15-VI-1993, R.W. Baumann and B.C. Kondratieff, 2 ♂.



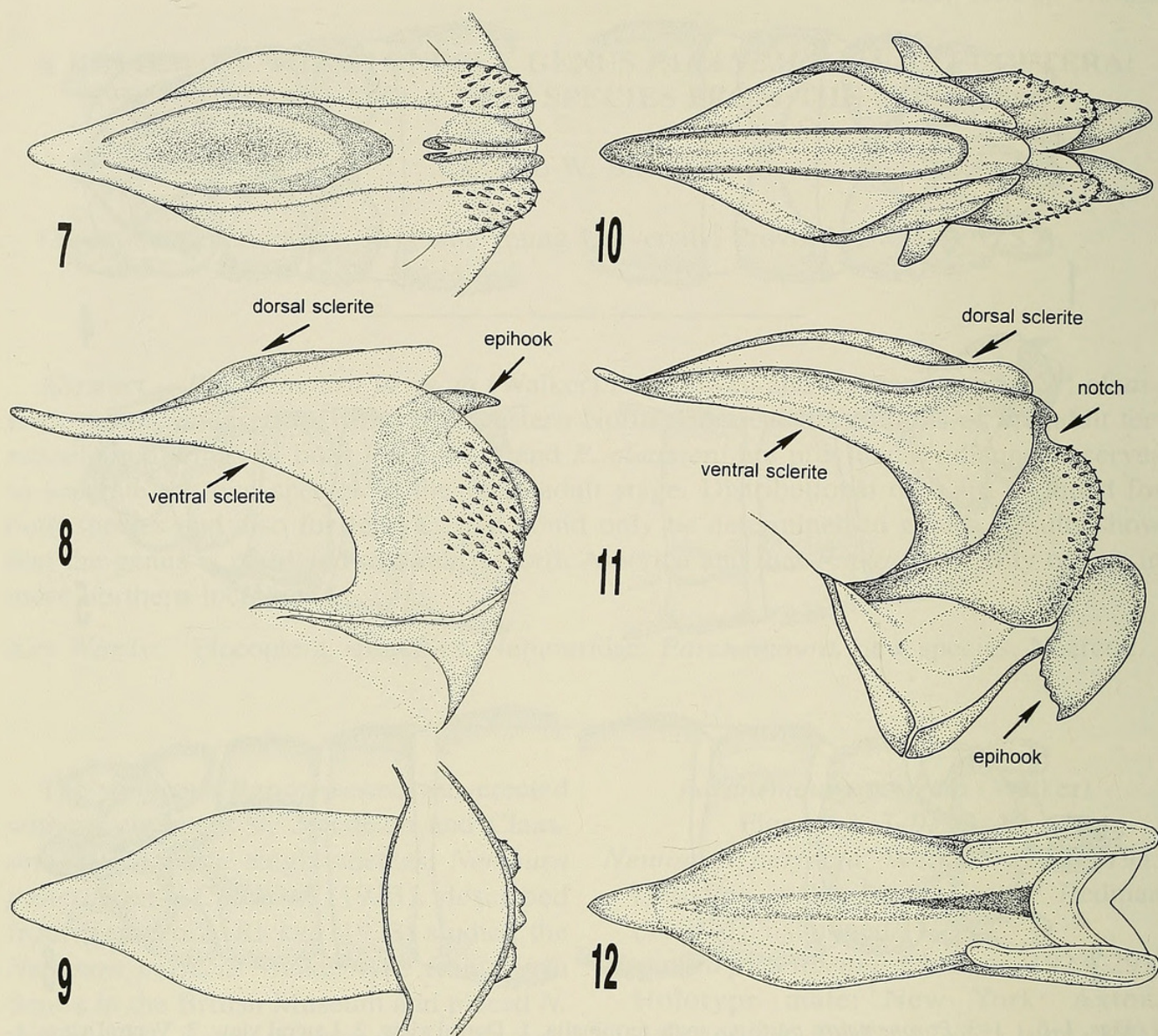


Figs. 1–6. 1–3, *Paranemoura perfecta*, male terminalia. 1, Dorsal view. 2, Lateral view. 3, Ventral view. 4–6, *P. claasseni*, male terminalia. 4, Dorsal view. 5, Lateral view. 6, Ventral view.

Northumberland Co., Big Eskedelloch River, Hwy 8, 17-VI-1993, R.W. Baumann and B.C. Kondratieff, 1 ♂. York Co., tributary of Magaguadavic River, Hwy 3, southeast of Thomston Corner, 14-VI-1993, R.W. Baumann and B.C. Kondratieff, 3 ♂. NOVA SCOTIA: Annapolis Co., Roop Brook, off Hwy 10, above Springfield Lake, 23-VI-1993, R.W. Baumann and B.C. Kondratieff, 3 ♂, 4 ♀. Cape Breton Co., Baddeck, Cape Breton Island, 22-VI-1936, J. McDunnough, 1 ♂, 4 ♀. Guysborough Co., Silvey Brook, Hwy 16, north of Lincolnville, 22-VI-1993, R.W. Baumann and B.C. Kondratieff, 24 ♂, 27 ♀. Kings Co., Butler Brook, below Burke Lake, Dalhousie Road, 23-VI-1993, R.W.

Baumann and B.C. Kondratieff, 1 ♂. Yarmouth Co., Bear Lake Brook, Hwy 203, above Second Bear Lake, 24-VI-1993, R.W. Baumann and B.C. Kondratieff, 1 ♂, 5 ♀; Clyde River, Hwy 203, Flintstone Rock, 24-VI-1993, R.W. Baumann and B.C. Kondratieff, 1 ♂. ONTARIO: Hastings Co., 2 miles east of New Carlow, 21-IV-1968, W.E. Ricker, 1 ♂, 2 ♀. Lennox and Addington Co., 4 miles east of Vennachar, 21-IV-1968, W.E. Ricker, 1 ♂. Nipissing Co., Costello Lake, Algonquin Park, 15-V-1940, W.M. Spurles, 1 ♂. PRINCE EDWARD ISLAND: Prince Co., headwaters Grand River, Hwy 177, south of Wellington, 18-VI-1993, R.W. Baumann and B.C. Kondratieff, 2 ♂. QUEBEC:





Figs. 7-12. 7-9, *Paranemoura perfecta*, male epiproct. 7, Dorsal view. 8, Lateral view. 9, Ventral view. 10-12, *P. claasseni*, male epiproct. 10, Dorsal view. 11, Lateral view. 12, Ventral view.

Joliette Co., Mont Tremblant Park: 19-V-1954, A. Robert, 1 ♂, 5 ♀; Baie des Aulnes, 21-V-1954, 1 ♂. Témiscamingue Co., Laniel, 27-VI-1939, F.P. Ide, 1 ♂, 1 ♀. Terbonne Co., University of Montreal Biological Station: St. Hippolyte de Kilkenny, 22-V-1964, L. Venne, 1 ♂, 1 ♀; 2-V-1966, P.P. Harper, 2 ♂, 1 ♀; Lac Long, St. Hippolyte, 3-V-1966, P.P. Harper, 3 ♂, 1 ♀; 26-V-1966, 5 ♂; tributary du Lac Cromwell, St. Hippolyte, 14-V-1966, P.P. Harper, 2 ♂, 2 ♀; 10-V-1967, 24 ♂, 22 ♀. UNITED STATES: CONNECTICUT: Fairfield Co., Wolcott, 3-V-1959, S.W. Hitchcock, 1 ♂; Redding Ridge, 13-VI-

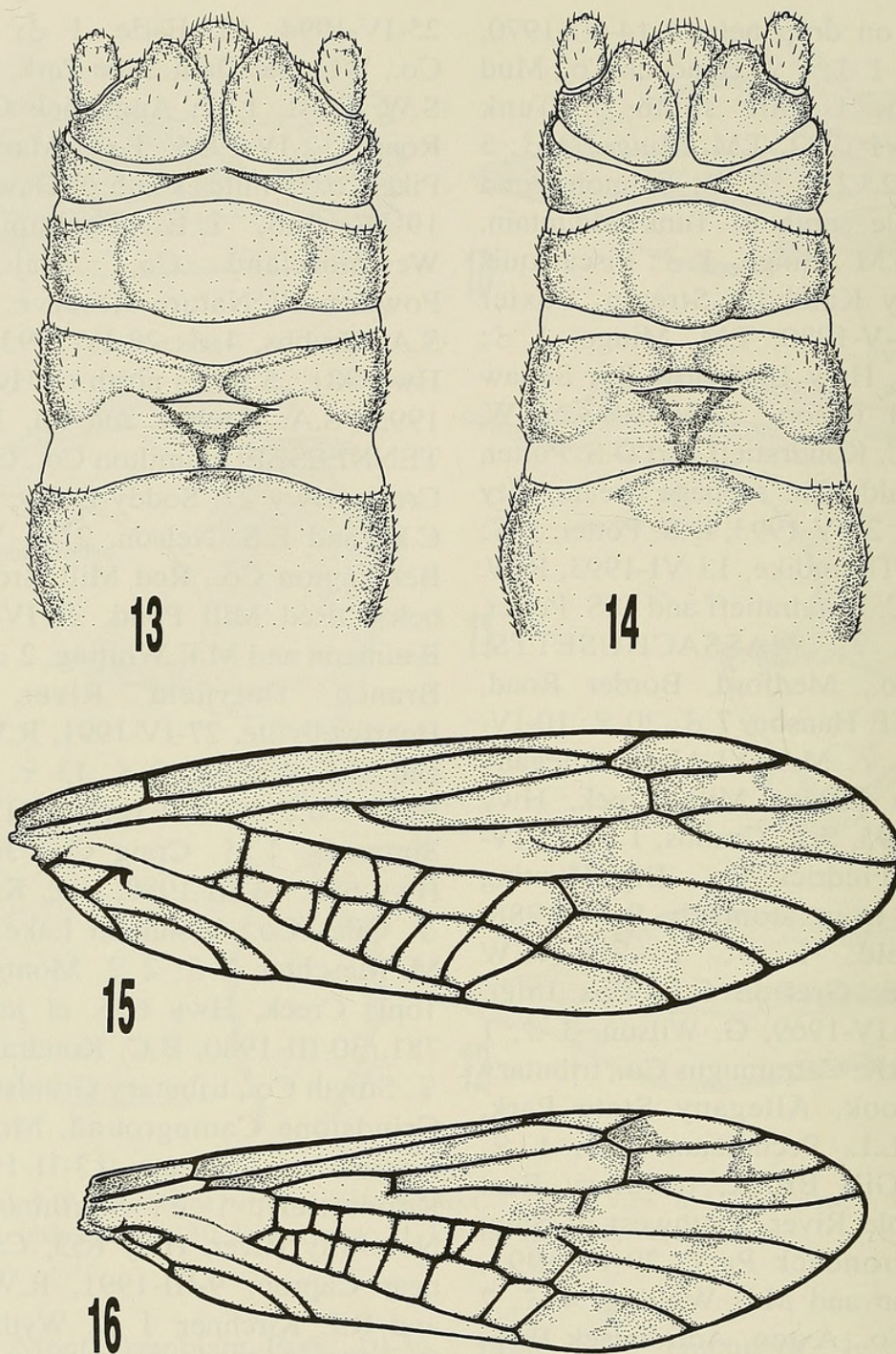
1960, S.W. Hitchcock, 1 ♂; Saugatuck River, Hwy 53, Redding, 8-IV-1963, S.W. Hitchcock, 1 ♂; Aspetnek River, Easton, 5-IV-1966, S.W. Hitchcock, 1 ♂; drought stream, upper Easton, 5-IV-1966, S.W. Hitchcock, 1 ♂. Hartford Co., Staffordville, 23-IV-1964, S.W. Hitchcock, 1 ♂; Fenton River, East Willington, 5-IV-1968, S.W. Hitchcock, 2 ♂. Middlesex Co., Menunketesuck River, Killingworth, 1-IV-1965, S.W. Hitchcock, 17 ♂, 8 ♀; 5-IV-1965, 6 ♂, 17 ♀; 8-IV-1965, 1 ♂, 3 ♀; 7-IV-1969, 1 ♂. New London Co., Pachang State Forest, near Voluntown, 23-V-1966, S.W. Hitchcock, 1 ♂. MAINE: Aroostook



Co., Oxbow, on drop nets, 4-14-VI-1970, D.E. Leonard, 1 ♂, 1 ♀. Hancock Co., Mud Pond Stream, 1 mile south of Tunk Mountain, 9-VI-1982, T.M. Mingo, 2 ♂, 5 ♀; 6-VII-1982, 2 ♂, 2 ♀; Salmon Pond Stream, 1 mile south of Tunk Mountain, 7-VII-1982, T.M. Mingo, 1 ♂; Piscataquis Co., tributary Katahdin Stream, Baxter State Park, 4-V-1980, T.M. Mingo, 1 ♂; Squaw Brook, Hwy 15, below Big Squaw Mountain Ski Resort, 12-VI-1993, R.W. Baumann, B.C. Kondratieff and D.S. Potter, 1 ♂, 12 ♀. Waldo Co., seepage stream, City Point, Belfast, 25-V-1993, D.S. Potter, 1 ♂; Wing Brook, Thorndike, 13-VI-1993, R.W. Baumann, B.C. Kondratieff and D.S. Potter, 52 ♂, 29 ♀. MASSACHUSETTS: Middlesex Co., Medford, Border Road, 27-III-1954, J.F. Hanson, 7 ♂, 20 ♀; 10-IV-1956, 1 ♂, 1 ♀. MARYLAND: Allegany Co., tributary Fifteen Mile Creek, Hwy 144, 12-III-1995, S.A. Grubbs, 1 ♂; 13-IV-1996, 1 ♂. Fredrick Co., Big Hunting Creek, from trout stomach, 9-IV-1988, R.M. Duffield, 1 ♂, 1 ♀. NEW HAMPSHIRE: Grafton Co., Fox Inlet, Plymouth, 25-IV-1969, G. Wilson, 3 ♂, 1 ♀. NEW YORK: Carraraugus Co., tributary Stoddard Brook, Allegany State Park, 24-IV-1963, L.L. Pechuman, 1 ♂, 1 ♀. Essex Co., Gill Brook, tributary East Branch Ausable River, southwest of Saint Huberts, Adirondack Park, 29-IV-1991, R.W. Baumann and M.F. Whiting, 4 ♂, 7 ♀. Franklin Co., Axton, Adirondack Park, 12-22-VI-1901, A.D. McG. and C.O.H., 1 ♂, 3 ♀ (*N. punctipennis* types). Hamilton Co., Salmon River, Hwy 30, below Salmon Pond, Adirondack Park, 29-IV-1991, R.W. Baumann and M.F. Whiting, 2 ♂, 2 ♀; Hatchery Brook, Hwy 30, northwest of Speculator, Adirondack Park, 30-IV-1991, R.W. Baumann and M.F. Whiting, 1 ♂, 2 ♀. NORTH CAROLINA: Watanga Co., Blowing Rock, 23-III-1940, T.H. Frison, C.O. Mohr and A.W. Hawkins, 2 ♂. PENNSYLVANIA: Forest Co., Clarion River, Greenwood Road, 11-IV-1996, E.C. Masteller, 1 ♂. Franklin Co., Dothan Run,

25-IV-1994, J.I. Earle, 1 ♂. Huntingdon Co., Whipple Dam State Park, 22-III-1953, S.W. Frost, 1 ♂; Aughwick Creek, Runk Road, 12-IV-1996, E.C. Masteller, 1 ♂. Pike Co., 4 miles south of Hawley, Hwy 6, 19-IV-1966, L.L. Pechuman, 2 ♂. Westmoreland Co., Major Spring, Powdermill Nature Reserve, 7-IV-1993, S.A. Grubbs, 4 ♂; 28-IV-1993, 1 ♂; seep, Hwy 381, .5 miles north of Hwy 31, 7-IV-1995, S.A. Grubbs and J.I. Earle, 1 ♂. TENNESSEE: Hamilton Co., Chickamanga Creek, Hwy 27, Soddy-Daisy, 29-III-1996, C.H. and E.S. Nelson, 2 ♂. VERMONT: Bennington Co., Red Mill Brook, Hwy 9, below Red Mill Pond, 27-IV-1991, R.W. Baumann and M.F. Whiting, 2 ♂, 1 ♀; West Branch Deerfield River, Hwy 8, Heartwellville, 27-IV-1991, R.W. Baumann and M.F. Whiting, 9 ♂, 13 ♀. VIRGINIA: Bath Co., Back Creek, 1-IV-1972, G. Simmons, 1 ♂. Craig Co., Johns Creek, Hwy 658, 16-III-1980, B.C. Kondratieff, 5 ♂. Giles Co., Mountain Lake, 9-IV-1977, M. Meschter, 3 ♂, 2 ♀. Montgomery Co., Toms Creek, Hwy 655, at junction Hwy 781, 30-III-1980, B.C. Kondratieff, 5 ♂, 2 ♀. Smyth Co., tributary Grindstone Branch, Grindstone Campground, Mount Rogers Recreation Area, 13-II-1980, B.C. Kondratieff, 1 ♂. Southhampton Co., Nottoway River, Hwy 653, Carys Bridge, near Capron, 9-III-1991, R.W. Baumann and R.F. Kirchner, 1 ♂. Wythe Co., East Fork Stony Fork, Reed Creek, Hwy 717, Jefferson National Forest, 11-III-1991, R.W. Baumann and R.F. Kirchner, 1 ♂, 3 ♀. WEST VIRGINIA: Pocahontas Co., Sugar Creek, tributary Williams River, Monongahela National Forest, 3-V-1981, R.F. Kirchner, 3 ♂, 3 ♀; headwaters Sugar Creek, Hwy 76, off Hwy 151, 14-V-1990, R.W. Baumann, R.F. Kirchner and B.C. Kondratieff, 1 ♂, 7 ♀; 24-V-1994, R.F. Kirchner and B.C. Kondratieff, 27 ♂, 48 ♀; spring tributary Charles Creek, Cranberry Glades, 24-IV-1994, R.F. Kirchner and B.C. Kondratieff, 31 ♂, 5 ♀. Randolph Co.,





Figs. 13–16. 13, 14, *Paranemoura*, female terminalia. 13, *P. perfecta*, ventral view. 14, *P. claasseni*, ventral view. 15, 16, *Paranemoura* wings. 15, *P. perfecta*, right forewing. 16, *P. claasseni*, right forewing.

Marsh Fork Buckhannon River, Hwy 47, near Pickens, 24-III-1992, S.M. Clark, 1 ♂.

***Paranemoura claasseni* Baumann,  
New Species**

Figs. 4–6, 10–12, 14, 16

Male: Macropterous or slightly brachypterous, wings reaching just beyond tip of abdomen; length of forewings 4.5–5.5 mm; length of body 6.0–7.0 mm. Body and legs

light brown, coloration darker on head, thorax and tip of abdomen; wings brown, with darkly mottled patches along costa, and just before and just after cord, apical costal crossvein absent so typical nemourid “X” is missing, many small cubital cells present beyond arc (Fig. 16). Head broad in occipital area, eyes large, anterior margin of pronotum, where it joins head, very narrow. Anterior median margins of abdominal ter-



ga 6 and 7 as darkly sclerotized patches, terga 8 and 9 darkly sclerotized and forming narrow median bands. Hypoproct broad at base, parallel sided over ninth sternum, apex constricted abruptly to narrow nipple-like tip, which extends to base of epiproct, vesicle absent (Fig. 6). Paraprocts generally broad, inner margin with pointed projection on lateral-apical corner, outer margin formed into narrow band, which encircles base of cercus (Fig. 6). Epiproct composed mostly of large ventral sclerite, darkly sclerotized and forming boat-like keel that is broad at base and narrows down to pointed apex, dorsal aspect with sclerotized area in anterior  $\frac{1}{3}$ , ventral portion rounded, naked of spines and darkly sclerotized, base with irregularly rounded margin that is notched near dorsal lateral surface, patch of small spines present below notch; dorsal sclerite small but darkly sclerotized, with sharp anterior projection and more blunt posterior projection that has jagged, teeth-like structures at apex, forming rounded process (epihook), that rotates in and out of ventral sclerite; basal sclerites large, darkly sclerotized and triangle shaped (Figs. 4, 5).

Female: Macropterous to slightly brachypterous. Length of forewings 5.5–6.5 mm; length of body 6.0–7.0 mm. Body, appendages and wings similar to male. Subgenital plate mostly lightly sclerotized medially, with darkly colored, Y-shaped pattern over vaginal opening, posterior-lateral margins more darkly sclerotized. Pre-genital plate large and broadly rounded posteriorly, only lightly sclerotized except for darker round patch medially near base of "Y" on segment eight (Fig. 14).

Diagnosis: *Paranemoura claasseni* is most distinctive in the shape of the male epiproct. In dorsal view, the epiproct is more expanded medially in *P. claasseni* (Figs. 4, 10) than in *P. perfecta* (Figs. 1, 7). The lateral margin of the ventral sclerite is notched in *P. claasseni* (Fig. 11), where it is smoothly rounded in *P. perfecta* (Fig. 8). Additionally, the epihook of the dorsal sclerite is bluntly pointed with jagged teeth

where it extends outward in *P. claasseni* (Fig. 11), while in *P. perfecta* it is smooth and sharply pointed (Fig. 8). The females are difficult to separate without associated males.

Type material: Holotype ♂, allotype ♀ and 119 ♂ and 6 ♀ paratypes from Maine, Kennebec County, Crystal Spring, Rome, 31-V-1987, R.W. Baumann and G.Z. Jacobi. Holotype deposited in the National Museum of Natural History, Smithsonian Institution, Washington, DC. Additional paratypes were examined from the following localities: CANADA: NEW BRUNSWICK: Carleton Co., Gibson Creek, Hwy 105, Northhampton, 15-VI-1993, R.W. Baumann and B.C. Kondratieff, 2 ♂, 5 ♀. Charlotte Co., tributary Digdequash River, Hwy 127, south of Dumbarton, 15-VI-1993, R.W. Baumann and B.C. Kondratieff, 42 ♂, 24 ♀. Gloucester Co., Nepisiguit River, Hwy 360, north of Bathurst Mines, 17-VI-1993, R.W. Baumann and B.C. Kondratieff, 2 ♂. Northumberland Co., Barnaby River, Hwy 126, southeast of Barnaby River, 17-VI-1993, R.W. Baumann and B.C. Kondratieff, 12 ♂, 1 ♀. Restigouche Co., Williams Brook, off Hwy 180, north of Mount Carleton Provincial Park, 16-VI-1993, R.W. Baumann and B.C. Kondratieff, 28 ♂, 8 ♀. York Co., tributary of Magaguadavic River, Hwy 3, southeast of Thomston Corner, 14-VI-1993, R.W. Baumann and B.C. Kondratieff, 16 ♂, 33 ♀; Pokiok Stream, Hwy 635, below Lake George, 15-VI-1993, R.W. Baumann and B.C. Kondratieff, 24 ♂, 78 ♀. NOVA SCOTIA: Colchester Co., boggy stream, Hwy 104, 3 km east of Masstown, 22-VI-1993, R.W. Baumann and B.C. Kondratieff, 1 ♂. Halifax Co., Cooks Brook, Hwy 224, Cooks Brook, 23-VI-1993, R.W. Baumann and B.C. Kondratieff, 46 ♂, 29 ♀; Gays River, junction Hwys 277 and 224, Carrolls Corner, 23-VI-1993, R.W. Baumann and B.C. Kondratieff, 1 ♂, 4 ♀. PRINCE EDWARD ISLAND: Prince Co., headwaters Grand River, Hwy 177, south of Wellington, 18-VI-1993, R.W. Baumann and B.C. Kondratieff, 6 ♂, 4 ♀. QUEBEC: Saguenay



Co., Matamek River, 30 km east of Sept-Iles, VI-1975, N.E. Williams, 1 ♂, 2 ♀. UNITED STATES: MAINE: Waldo Co., Halfmoon Stream, Hwy 220, Thorndike, 13-IV-1993, R.W. Baumann, B.C. Kondratieff and D.S. Potter, 3 ♂, 1 ♀. Washington Co., Narraguagus River, Hwy 9, 5-V-1973, T.M. Mingo, 1 ♂, 2 ♀; Tomah Stream, Hwy 6, southwest of Vanceboro, 4-V-1982, T.M. Mingo, 1 ♂, 1 ♀; 30-V-1982, 3 ♂; south-east of Topsfield, 14-VI-1993, R.W. Baumann and B.C. Kondratieff, 76 ♂, 80 ♀. NEW HAMPSHIRE: Coos Co., Pittsburg, 22-VI-1954, R.L. Blickle, 4 ♂, 6 ♀.

Additional *Paranemoura* records.— Since it is not possible to make specific determinations without male adults, a number of localities were not included under either of the named species. This problem is especially apparent in the more northern areas of Canada and the United States, where it is possible to find both *Paranemoura* species at the same site. The southern records probably all refer to *P. perfecta* but where the dividing line occurs in New England is not known. Thus the following distribution records are included, where only female specimens have been collected. CANADA: NEW BRUNSWICK: Queens Co., Gagetown, 6-VI-1933, C.E. Atwood, 2 ♀; Number Ten Brook, Hwy 101, Clarendon, 25-VI-1993, R.W. Baumann and B.C. Kondratieff, 1 ♀. Northumberland Co., Halcomb, 8-VII-1951, E.E. Gilbert, 4 ♀. Sunbury Co., Oromocto River, Hwy 101, Tracy, 25-VI-1993, R.W. Baumann and B.C. Kondratieff, 3 ♀. NOVA SCOTIA: Hants Co., Herbert River, Hwy 14, 23-VI-1993, R.W. Baumann and B.C. Kondratieff, 2 ♀. Queens Co., boggy stream, Hwy 210, above Beavertail Basin, 24-VI-1993, R.W. Baumann and B.C. Kondratieff, 8 ♀. ONTARIO: Frontenac Co., 2 miles from Snow Road, 21-IV-1968, W.E. Ricker, 2 ♀. Nipissing Co., Cache Lake, Algonquin Park, 4-VI-1936, W.M. Sprules, 1 ♀; Head Lake, Algonquin Park, 9-VI-1936, W.M. Sprules, 1 ♀. Renfrew Co., Meridian Road, Forest Station, Petawawa, 28-V-1959, J.R. Vockeroth, 1 ♀. PRINCE EDWARD

ISLAND: Kings Co., Morell River, Hwy 320, Riverton, 20-VI-1993, R.W. Baumann and B.C. Kondratieff, 1 ♀. QUEBEC: Chicoutimi Co., Pikauba River, Laurentides Park, 21-VII-1938, V.D. Vladykov, 1 ♀. Gatineau Co., Fortune Creek, ridge road, Gatineau Park, 31-V-1964, W.E. Ricker, 1 ♀. Joliette Co., Mont Tremblant Park: Ruisseau Beattie, 11-VI-1957, A. Robert, 2 ♀; Ruisseau des Erables, 19-VI-1959, A. Robert, 1 ♀; 30-VI-1961, 1 ♀. Témiscamingue Co., Temiskaming, 22-VII-1939, F.P. Ide, 1 ♀. UNITED STATES: CONNECTICUT: Tolland Co., Storrs, 4-V-1959, Camp, 1 ♀; 12-V-1959, Rizzo, 1 ♀. MAINE: Aroostock Co., Madawaska Lake, Stockholm, 17-VI-1953, J.F. Hanson, 2 ♀; 8-VII-1953, 1 ♀; Masardis, 13-VII-1960, A.E. Brower, 1 ♀. Franklin Co., Rangeley, 19-VI-1960, 1 ♀. Hancock Co., Lake Wood, Mount Desert Island, 13-VI-1953, M.E. Smith, 1 ♀. Oxford Co., Newton Brook, Hwy 2, Newton Brook Rest Area, 31-V-1987, R.W. Baumann and J.Z. Jacobi, 2 ♀. Penobscot Co., Pushaw Stream, Hwy 43, Hirundo Wildlife Sanctuary, 9-VI-1982, T.M. Mingo, 4 ♀. Piscataquis Co., Bennett Brook, Hwy CC, 5 miles west of Hwy 15, 11-VI-1993, R.W. Baumann, B.C. Kondratieff and D.S. Potter, 2 ♀. Somerset Co., East Branch Sandy Stream, Hwy 101, north of Denniston, R.W. Baumann, B.C. Kondratieff and D.S. Potter, 7 ♀; headwaters South Fork Penobscot River, Hwy 210, 12-VI-1993, R.W. Baumann, B.C. Kondratieff and D.S. Potter, 5 ♀; Trout Brook, Hwy 15, above Long Lake, 12-VI-1993, R.W. Baumann, B.C. Kondratieff and D.S. Potter, 11 ♀. Waldo Co., Webb Brook, Webb Road, Thorndike, 5-VI-1993, D.S. Potter, 2 ♀. MASSACHUSETTS: Berkshire Co., brooklet 1 mile north of Hwy 20, October Mountain State Forest, 27-IV-1991, R.W. Baumann and M.F. Whiting, 2 ♀. NEW HAMPSHIRE: Grafton Co., Dorchester, 13-VI-1964, S.W. Hitchcock, 1 ♀. NEW JERSEY: Gloucester Co., Iona, 21-IV-1907, ?, 1 ♀. Sussex Co., Little Flat Brook, Hwy 650, southeast of Milford, 5-V-1991, R.W. Baumann and





Baumann, Richard W. 1996. "A review of the stonefly genus paranemoura (plecoptera: nemouridae) and a new species from the northeast." *Proceedings of the Entomological Society of Washington* 98, 818–826.

**View This Item Online:** <https://www.biodiversitylibrary.org/item/89742>

**Permalink:** <https://www.biodiversitylibrary.org/partpdf/66689>

**Holding Institution**

Harvard University, Museum of Comparative Zoology, Ernst Mayr Library

**Sponsored by**

Harvard University, Museum of Comparative Zoology, Ernst Mayr Library

**Copyright & Reuse**

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: Entomological Society of Washington

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.