

FRANCIS WALKER TYPES OF, AND NEW SYNONYMIES
FOR, NORTH AMERICAN *HYDROPSYCHE* SPECIES
(TRICHOPTERA, HYDROPSYCHIDAE)*

BY ANDREW P. NIMMO

Department of Entomology, University of Alberta
Edmonton, Alberta, Canada T6G 2E3

INTRODUCTION

Recently, while assembling the manuscript of a handbook to the Arctopsychoidea and Hydropsychoidea of Canada, I had occasion to examine the female holotypes of three species of *Hydropsyche* described from North America by Francis Walker (1852). Betten & Mosely (1940) record these types, but in line with the still all too prevalent practice regarding unassociated female Trichoptera, they did not illustrate the genitalia. If they had provided figures for these types the true identities of at least two North American species of *Hydropsyche* would have been long since established. The genital segments of these types are illustrated here for the first time.

Hydropsyche confusa (Walker)

Philopotamus confusus Walker, 1852: 103.

Hydropsyche confusa: Milne, 1936: 61; Betten & Mosely, 1940: 21.

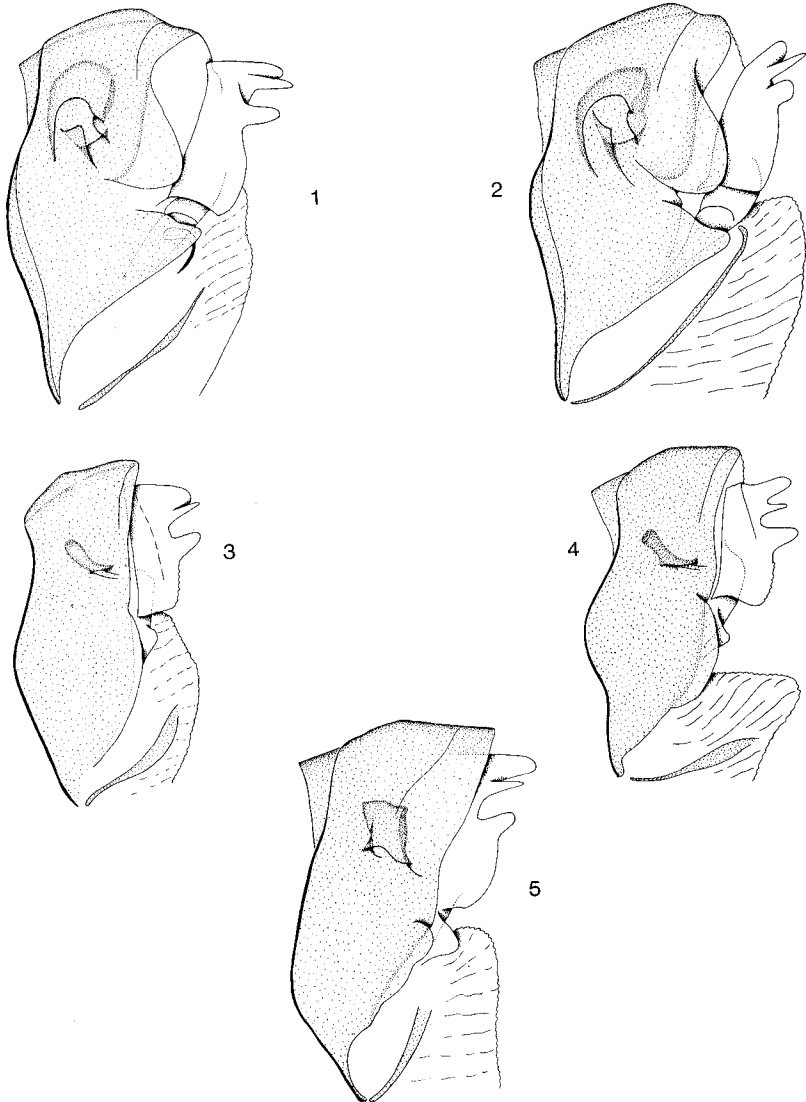
Hydropsyche separata Banks, 1936: 129; Ross & Spencer, 1952: 46
(as synonym of *H. guttata* Pictet); Smith, 1979: 10. NEW
SYNONYMY.

Hydropsyche guttata Pictet: Schuster & Etnier, 1978: 126.

Hydropsyche corbeti Nimmo, 1966: 688; Schuster & Etnier, 1978:
126 (as synonym of *H. guttata* Pictet). NEW SYNONYMY.

Fig. 2 depicts the genitalia of the female holotype of *H. confusa* (Walker). Fig. 1 is of the genitalia of a female which has been recognised as belonging to *H. separata* Banks. The rather obscure locality information recorded by Betten & Mosely (1940) indicates that the type of *confusa* was collected in the western Northwest Territories, adjacent to the northern boundary of Alberta. The female of *separata* was collected at Empress in southeastern Alberta.

*Manuscript received by the editor October 14, 1981.



Figures 1-5. Fig. 1. *Hydropsyche separata* Banks [= *confusa* (Walker)]—genital segments of female, lateral aspect. Fig. 2. *H. confusa* (Walker)—genital segments of female holotype, lateral aspect. Fig. 3. *H. recurvata* Banks [= *alternans* (Walker)]—genital segments of female, lateral aspect. Fig. 4. *H. alternans* (Walker)—genital segments of female holotype, lateral aspect. Fig. 5. *H. reciproca* (Walker)—genital segments of female holotype, lateral aspect.

While not absolutely identical (the differences may be attributed to geographic variation, laboratory treatment, and observer variables), these two specimens are much more similar to each other than either is to the females of the most nearly related species (*H. betteni* Ross), and I judge them to be conspecific. *H. separata* is therefore synonymised with *H. confusa* which has clear priority.

Smith (1979) quotes me as considering the possibility that *H. corbeti* Nimmo may be a synonym of *separata*. Prior to my examination of the type of *confusa* I had decided that it was. However, it must now be entered as a synonym of *confusa*.

In view of the taxonomic history of this species Walker must be attributed with remarkable insight in naming it *confusa*.

Hydropsyche alternans (Walker)

Philopotamus alternans Walker, 1852: 104.

Hydropsyche alternans: Vorhies, 1909: 707 (sp.indet.); Betten, 1934: 185 (prob. *H. bifida*).

Philopotamus indecisus Walker, 1852: 104.

Hydropsyche indecisa: Betten & Mosely, 1940: 20 (as synonym of *H. alternans*).

Hydropsyche slossonae var. *recurvata* Banks, 1914: 253.

Hydropsyche recurvata: Betten, 1934: 190; Milne, 1936: 73 (as synonym of *H. slossonae*); Ross, 1944: 99. NEW SYNONYMY.

Symphitopsyche recurvata: Schuster & Etnier, 1978: 34.

Hydropsyche codona Betten, 1934: 187; Milne, 1936: 73 (as synonym of *H. slossonae*); Ross, 1938: 18 (as synonym of *H. recurvata*).

Fig. 4 depicts the genitalia of the holotype female of *H. alternans* (Walker) (from the Albany R., far northern Ontario). Fig. 3 depicts the genitalia of a female (from Wandering River, northeastern Alberta) which has been recognised as belonging to *H. recurvata* Banks. Again, these two females are not precisely identical, for possible reasons similar to those given under *H. confusa* above. I judge these two specimens to be conspecific. *H. recurvata* is therefore synonymised with *H. alternans* which has priority.

Hydropsyche reciproca (Walker)

Philopotamus reciprocus Walker, 1852: 104.

Hydropsyche reciproca: Betten & Mosely, 1940: 22.

The genitalia of the female holotype do not correspond to those of any other species known to me. They are illustrated here, for the first time, for the future reference of students of North American *Hydropsyche* species. The type locality is given simply as 'North America'.

SUMMARY

The female holotypes of *Hydropsyche confusa* (Walker), *H. alternans* (Walker), and *H. reciproca* (Walker), all from North America, were examined, and illustrations of the genitalia are provided for the first time. It is concluded that *H. separata* Banks is conspecific with *H. confusa* (Walker), and that *H. recurvata* Banks is conspecific with *H. alternans* (Walker). The Walker names have priority. *H. reciproca* (Walker) cannot yet be equated with any other known species.

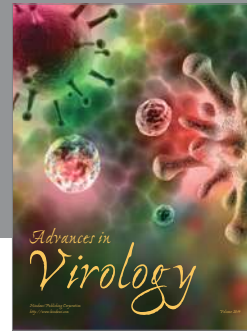
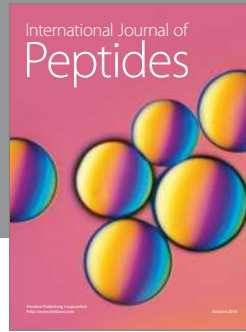
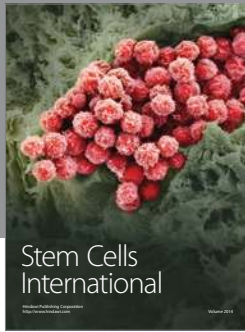
ACKNOWLEDGMENTS

Loan of the three types examined here was very kindly arranged by Peter Barnard of the Entomology Dept, British Museum (Natural History). This paper is an offshoot of work on preparation of a Handbook to the Arctopsychidae and Hydropsychidae of Canada, which was supported by a contract from the Canada Dept of Agriculture. The work was carried out in the Dept. of Entomology, University of Alberta. Steve Ashe of that Department read, and commented on the manuscript. Publication costs were met by George E. Ball of the same Department, from grant NRC A-1399 held by him.

To all, my sincere thanks.

REFERENCES

- BANKS, N.**
 1914. American Trichoptera—notes and descriptions. *Can. Ent.* **46**: 252–258.
 1936. Notes on some Hydropsychidae. *Psyche*, Camb. **43**: 126–130.
- BETTEN, C.**
 1934. The Caddis Flies or Trichoptera of New York State. *Bull. N.Y. St. Mus., Albany* **292**:1–576.
- BETTEN, C. AND M. E. MOSELY**
 1940. The Francis Walker Types of Trichoptera in the British Museum. *British Museum (Natural History)*, London. vi+248 pp.
- MILNE, L. J.**
 1936. Studies in North American Trichoptera. 3:56–128, Cambridge, Mass.
- NIMMO, A. P.**
 1966. A list of Trichoptera taken at Montreal and Chambly, Quebec, with descriptions of three new species. *Can. Ent.* **98**:688–693.
- ROSS, H. H.**
 1938. Lectotypes of North American Caddis Flies in the Museum of Comparative Zoology. *Psyche*, Camb. **45**:1–61.
 1944. The Caddis Flies, or Trichoptera, of Illinois. *Bull. Ill. St. Nat. Hist. Surv., Urbana*, **23**, 326 pp.
- ROSS, H. H. AND G. J. SPENCER**
 1952. A preliminary list of the Trichoptera of British Columbia. *Proc. Ent. Soc. Br. Columb.* **48**:43–51.
- SCHUSTER, G. A. AND D. A. ETNIER**
 1978. A manual for the identification of the larvae of the Caddisfly genera *Hydropsyche* Pictet and *Symphitopsyche* Ulmer in eastern and central North America (Trichoptera: Hydropsychidae). Environmental Monitoring and Support Laboratory, Cincinnati EPA-600/4-78-060: xii+129 pp.
- SMITH, D.**
 1979. The larval stage of *Hydropsyche separata* Banks (Trichoptera: Hydropsychidae). *Pan-Pacif. Ent.* **55**:10–20.
- VORHIES, C. T.**
 1909. Studies on the Trichoptera of Wisconsin. *Trans. Wis. Acad. Sci. Arts Lett.* **16**:647–738.
- WALKER, F.**
 1852. Catalogue of the specimens of neuropterous insects in the collections of the British Museum. Part 1. 192 pp. London.



Hindawi

Submit your manuscripts at
<http://www.hindawi.com>

