

CONCERNING THE TYPE SPECIMENS OF *GOMPHUS ADELPHUS*
SELYS, 1857, AND *G. CONSANGUIS* SELYS, 1879
(ANISOPTERA: GOMPHIDAE)

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Gomphus brevis Hagen is synonymized with *Gomphus adelphus* Selys based on examination of the type. The holotype of *Gomphus consanguis* Selys has been found and the neotype established by M.J. WESTFALL (1962, *Fla Ent.* 45: 30) is suppressed.

INTRODUCTION

Since the original description of *Gomphus adelphus* Selys, 1857, based on a single male from New York, at least 20 additional references to the species have appeared as listed below. Most of them only cite the original description. A description of a female from New York (SELYS, 1878, communicated by Hagen) differed substantially from the description of the male. HAGEN (1885) described a larva from Massachusetts which he supposed to be this species. FLETCHER (1906) reported a female identified by E.M. Walker as *G. adelphus* from Quebec, which WALKER (1908) later said was *G. vastus* (Walsh). The species has been thought to be very rare and possibly extinct, as recent searches by several odonatologists have not turned up anything that could be assigned to *adelphus*.

One reason that the true identity of *adelphus* went undetected for so long is that the species was placed with the *Gomphurus* group by NEEDHAM & HEYWOOD (1929). Needham visited the M.C.Z. and might have seen the

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females there which were labeled *adelphus*. These females are *G. vastus*, a valid species of the *Gomphurus* group.

DISCUSSION AND NEW SYNONYMY

In August 1981, we studied seven specimens placed under the label *Gomphus adelphus* in the Selys Collection at the Royal Institute of Natural Sciences of Belgium, in Brussels. The first specimen was a male bearing the label "Gomphus adelphus ♂ S." in Selys handwriting. This specimen, which agrees in every detail with Selys' original description, must be the holotype, and has been so labeled by us. The specimen is identical with what North American workers have been identifying as *G. (Hylogomphus) brevis* Hagen in Selys, 1878. It fits the description of *G. brevis* given by WALKER (1958), and the photographs of this species in NEEDHAM & WESTFALL (1955).

MUTTKOWSKI (1910) indicated that the type male and female of *brevis* were in the Museum of Comparative Zoology, Harvard University. However, the species does not appear on the list of types at M.C.Z. copied from the card file by B. Elwood Montgomery in 1942, and recently several colleagues have been unable to find Hagen's ♂ type of *brevis*. The allotype ♀ of *adelphus* was examined by Rosser Garrison and Frank Carle, who concluded it was a small *G. vastus*.

Since the holotype ♂ of *G. brevis* could not be found at the M.C.Z. by Paul Miliotis, Garrison or Carle, and because the name *G. adelphus* has priority over *G. brevis*, we propose the following synonymy.

GOMPHUS (HYLOGOMPHUS) ADELPHUS SELYS

- SELYS LONGCHAMPS, E. de, 1857. [Monographie des Gomphines] *Mém. Soc. r. Sci. Liège* 11: 413, ♂ type, Coll. Selys.
- HAGEN, H., 1861. *Synopsis of the Neuroptera of North America*. Smithsonian Institution, Washington, p. 104.
- SELYS LONGCHAMPS, E. de, 1878. *Bull. Acad. Belg.* (II) 46: 457, description of ♀, M.C.Z. [= *vastus* Walsh, 1862].
- HAGEN, H., 1885. *Trans. Am. ent. Soc.* 12: 262, description of larva (supposition). [= *fraternus* (Say) according to NEEDHAM & BETTEN, 1901].
- CALVERT, P.P., 1895. *Jl N.Y. ent. Soc.* 3: 45.
- NEEDHAM, J.G. & C.A. HART, 1901. *Bull. Ill. St. Lab. nat. Hist.* 6(1): 74, 76.
- NEEDHAM, J.G., 1897. *Can. Ent.* 27: 165.
- NEEDHAM, J.G. & C. BETTEN, 1901. *Bull. N.Y. St. Mus.* 47: 445, 446, 451-452.
- CALVERT, P.P., 1905. *Occ. Pap. Boston Soc. nat. Hist.* 7: 19.
- FLETCHER, J., 1906. *Ann. Rep. ent. Soc. Ont.*, p. 104 [= *vastus* according to WALKER, 1908].
- MUTTKOWSKI, R., 1908. *Bull. Wis. nat. Hist. Soc.* 6(1/2): 83 (key).
- WALKER, E.M., 1908. *Ottawa Nat.* 22: 52.
- MUTTKOWSKI, R., 1910. [Catalogue of the Odonata of North America] *Bull. publ. Mus., Milwaukee* 1(1): 89.

- WILLIAMSON, E.B., 1914. *Ent. News* 25: 448.
HOWE, R.H., 1918. *Mem. Thoreau Mus. nat. Hist.* 2(3): 30, 33.
HOWE, R.H., 1921. *Mem. Thoreau Mus. nat. Hist.* 2 (suppl.): 6.
GARMAN, P., 1927. *Bull. Conn. St. Geol. nat. Hist. Surv.* 39: 142.
BYERS, C.F., 1928. *Can. Ent.* 60: 5.
NEEDHAM, J.G., 1928. *Mem. Cornell Univ. agric. Stn* 101: 50.
NEEDHAM, J.G. & H.B. HEYWOOD, 1929. *Handbook of the dragonflies of North America*. Thomas, Springfield-Baltimore, pp. 82, 86, 87, 94 (placed with the *Gomphurus* group).
NEEDHAM, J.G. & M.J. WESTFALL, 1955. *A manual of the dragonflies of North America*. Univ. Calif. Press, Berkeley-Los Angeles, p. 186.

Syn. brevis HAGEN in SELYS, 1878

Bull. Acad. Belg. (11)46: 460 (reprint p. 57), ♂ ♀ types M.C.Z.

Some of the more important references which usually have descriptions:

- NEEDHAM, J.G. & C. BETTEN, 1901. *Bull. N. Y. St. Mus.* 47: 449, description ♂ ♀, larva (supposition).
WILLIAMSON, E.B., 1901. *Proc. Indiana Acad. Sci.*, pp. 122-123.
MUTTKOWSKI, R., 1908. *Bull. Wis. nat. Hist. Soc.* 6(1/2): 83, 84-85.
MUTTKOWSKI, R., 1910. [Catalogue of the Odonata of North America]. *Bull. publ. Mus., Milwaukee* 1(1): 90.
GARMAN, P., 1927. *Bull. Conn. St. Geol. nat. Hist. Surv.* 39: 141, 143, 144, 146, 149, 151.
NEEDHAM, J.G. & H.B. HEYWOOD, 1929. *Handbook of the dragonflies of North America*. Thomas, Springfield-Baltimore, pp. 82, 88.
NEEDHAM, J.G. & M.J. WESTFALL, 1955. *A manual of the dragonflies of North America*. Univ. Calif. Press, Berkeley-Los Angeles, pp. 227, 228.
WALKER, E.M., 1958. *The Odonata of Canada and Alaska*, vol. 2. Univ. Toronto Press, pp. 195, 198, 203, 206, 257, 258.

In addition to the holotype ♂ of *G. adelphus*, under the same label at Brussels we found in 1981 five (3 ♂ & 2 ♀) complete specimens of more recent collections that were conspecific with the holotype and probably were placed there in later years by a curator. Another ♂ lacked abdominal segments 4-10. It bore a green printed label "N. Carolina Morrison", and was not identified positively by us.

GOMPHUS (GOMPHURUS) CONSANGUIS SELYS

SELYS LONGCHAMPS, E. de, 1879. *C. r. Soc. Ent. Belg.* 22: 660.

Gomphus rogersi Gloyd (1936, *Occ. Pap. Mus. Zool. Univ. Mich.* 326: 1-5) was considered a synonym of this species by NEEDHAM & WESTFALL (1955), but was resurrected by M.J. WESTFALL (1962, *Fla Ent.* 45: 29-41). The final specimen in the Selys Collection under the drawer label *G. adelphus* was placed just below the specimen now designated as the holotype of that species. It was obviously different from *adelphus* and bore only a small green pin label "N.

Carol. Morr.”. It was complete and also different from the incomplete specimen referred to above which also bore a similar label. We borrowed the specimen and confirmed our suspicion that it fit perfectly the original description of *G. consanguis* Selys, 1879. It must be the specimen Selys had in hand when he wrote the description. Therefore it is considered the holotype and has been so labeled by us. The neotype established by WESTFALL (1962, *Fla Ent.* 45: 30) because the type was thought to be lost or destroyed, is hereby suppressed. The specimen Erich Schmidt studied for Mrs Gloyd in 1937 and which he erroneously thought was the type of *consanguis*, was labeled *melanogaster*, but it is *G. rogersi*. The name *melanogaster* never appeared in print before WESTFALL (1962), and is a nomen nudum. Figure 104 of the 1955 Manual by NEEDHAM & WESTFALL is of *rogersi*.

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