The Japanese species of the genus *Plectrocnemia* Stephens (Trichoptera; Polycentropodidae) are revised based on examination of male material. Five new species are described: *P. divisa*, *P. suzukii*, *P. corna*, *P. scoparia*, and *P. odaniyamensis*. *P. levaniyamensis* Vishkova et al. is recorded from Japan for the first time and redescribed. *P. wui* (Ulmer), *P. tochimotii* Schmid, *P. tsukuiensis* (Kobayashi), and *P. okiensis* Kobayashi are redescribed. *Arctopsyche hirayamai* Matsumura is transferred to *Plectrocnemia* and redescribed. *P. asuana* Kobayashi, *P. kadowakii* Kobayashi, and *P. makiensis* Kobayashi are transferred to the genus *Nyctiophylax* Brauer.

Key words *Plectrocnemia* · Japan · New species · New combination · New record

Introduction

*Plectrocnemia* Stephens, 1836 (Trichoptera; Polycentropodidae) is a genus composed of 79 extant and 24 fossil species (Trichoptera World Checklist, http://entweb.clemson.edu/database/trichoptera/; access date Oct. 9, 2006). Most species of this genus have been recorded from the Palaeartic and the Oriental regions, and a few from the Nearctic and the Australian regions (Fischer 1962; Morse, personal communication). In Japan, 11 species have been recorded (Navás 1933; Tsuda 1942; Schmid 1964; Kobayashi 1984, 1985, 1987; Tanida and Takemon 1993; Li et al. 1998). However, five taxonomic problems remain. At first, several unidentified males were found in many localities (Nozaki 1988; Nozaki and Nakamura 2005; Morita 1996; Ito et al. 1997, 1998, 1999, 2000a,b, 2004; Kuhara et al. 2000; Nagayasu et al. 2003). Second, additional descriptions of genitalia including the fine structure of phallus are necessary for some Japanese species because the related species have been discovered from neighboring countries in recent times (Yang et al. 1997; Li et al. 1998; Arefina et al. 2003). Third, judging from the original description, generic assignments of *P. asuana* Kobayashi, 1985, *P. kadowakii* Kobayashi, 1987, and *P. makiensis* Kobayashi, 1987 are doubtful. And, fourth, R.B. Kuranishi (personal communication) suggested that a Japanese hydropsychid species, *Arctopsyche hirayamai* Matsumura, 1931, probably belongs to *Plectrocnemia*. Finally, the taxonomic status of *P. galloisi* Navás, 1933 also should be confirmed, because this species was described only from the general female morphology, which is insufficient for specific identification. To solve these taxonomic problems, we examined extensive material including some type specimens and unidentified male specimens used by Nozaki (1988), Nozaki and Nakamura (2005), Morita (1996), Ito et al. (1997, 1998, 1999, 2000a,b, 2004), Kuhara et al. (2000), and Nagayasu et al. (2003), and describe or redescribe males of Japanese species and propose some new combinations.

Materials and methods

We used only males in this study because the associations between the males and females or immature stages are still uncertain in most Japanese species of this genus. Genitalic segments are figured after treatment in hot 10% KOH. Terminology used in this article follows Hamilton (1986). Specimens are preserved in 70% alcohol, unless pinned or mounted specimens are indicated in parentheses. Type specimens of newly described species are deposited in the collections of Natural History Museum and Institute, Chiba (CBM-ZI). Other specimens are deposited in the collections of the senior author unless otherwise indicated in parentheses. Collecting methods, collectors, and depositaries are abbreviated as follows: L, light trap; M, malaise trap; S, sweeping; AO, A. Ohkawa; EY, E. Yamamoto; HM, H. Moriya; KU, K. Uesugi; MD, M. Doi; MN, M. Nakajima; NK,
N. Kuhara; RBK, R.B. Kuranishi; TH, T. Hattori; TI, T. Ito; TN, T. Nozaki; SCM, Sagamihara City Museum; SEHU, Systematic Entomology, Faculty of Agriculture, Hokkaido University.

**Descriptions**

Genus *Plectrocnemia* Stephens, 1836

*Plectrocnemia* Stephens, 1836, 168; McLachlan, 1878, 393–394; Ulmer, 1907, 182–183; Martynov, 1934, 212–213; Mosely, 1939, 198; Tsuda, 1942, 259; Mosely and Kimmins, 1953, 353; Roy et al., 1980, 19–22.

**Male.** Body brown to dark brown, 3.5–7.5 mm long. Head (Fig. 1) without ocelli. Maxillary palpi long, five-segmented, terminal segment longest and flexible. Antennae slightly longer than body. Frontal wart subtriangular and connected with slender antennal warts, preocellar and ocellar warts ellipsoidal and connected each other, preocellar warts without distinct edge in some species, occipital warts large kidney-shaped. Pronotum (Fig. 1) with large median and small lateral warts. Scutal warts small, round and close to scutal midline. Scutellar warts kidney-like, without distinct mesal line in some species. Tibial spurs 3-4-4.

Forewing (Fig. 1) uniformly brown or light brown with dark veins, light spots at r-m, m2-m3, and m-cu in most species, conspicuous markings in a few species; ellipsoidal, densely pubescent with fringe of short setae; apical forks I, II, III, IV, and V present, I short; discoidal, median and thyridial cells present; subcosta connected with radius near base, radius connected with discoidal cell by transverse nervules; postcostal area broad. Hindwing (Fig. 1) uniformly brown or light brown with dark veins, obtuse apically; apical fringes mostly short but long at anal margin; costal margin straight; apical forks I, II, and V present, I short; discoidal cell small and triangular; subcosta and radius very close to each other; radius connected with discoidal cell at basal 4/5 by transverse nervure; no cross vein Cu-A; anal lobe well developed. Some veins of both wings sometimes indistinct.

Abdominal sternite V with pair of scent gland processes.

Genitalia (Figs. 2–15). Very complicated, inner parts often invisible without KOH treatment. Sternite IX large, heavily sclerotized with posterolateral process in some species. Tergites IX and X fused in most species, sclerotiza-