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A New Species of *Sialis* (Megaloptera, Sialidae) from Japan

Fumio HAYASHI

Department of Biology, Tokyo Metropolitan University, Minamiosawa 1-1,
Hachioji, Tokyo, 192-03 Japan

and

Shin-ichi SUDA

Landscape and Ecology Division, Environment Department, Public Works
Research Institute, Asahi 1, Tsukuba, Ibaraki, 305 Japan

Abstract A new species of alderflies (Megaloptera, Sialidae), *Sialis bifida*, is described from Honshu, Japan. The species is related to *S. japonica* Weele, while both the male and female differ from those of the latter species in the genital features.

Key words: *Sialis*; Sialidae; Megaloptera; new species; Japan.

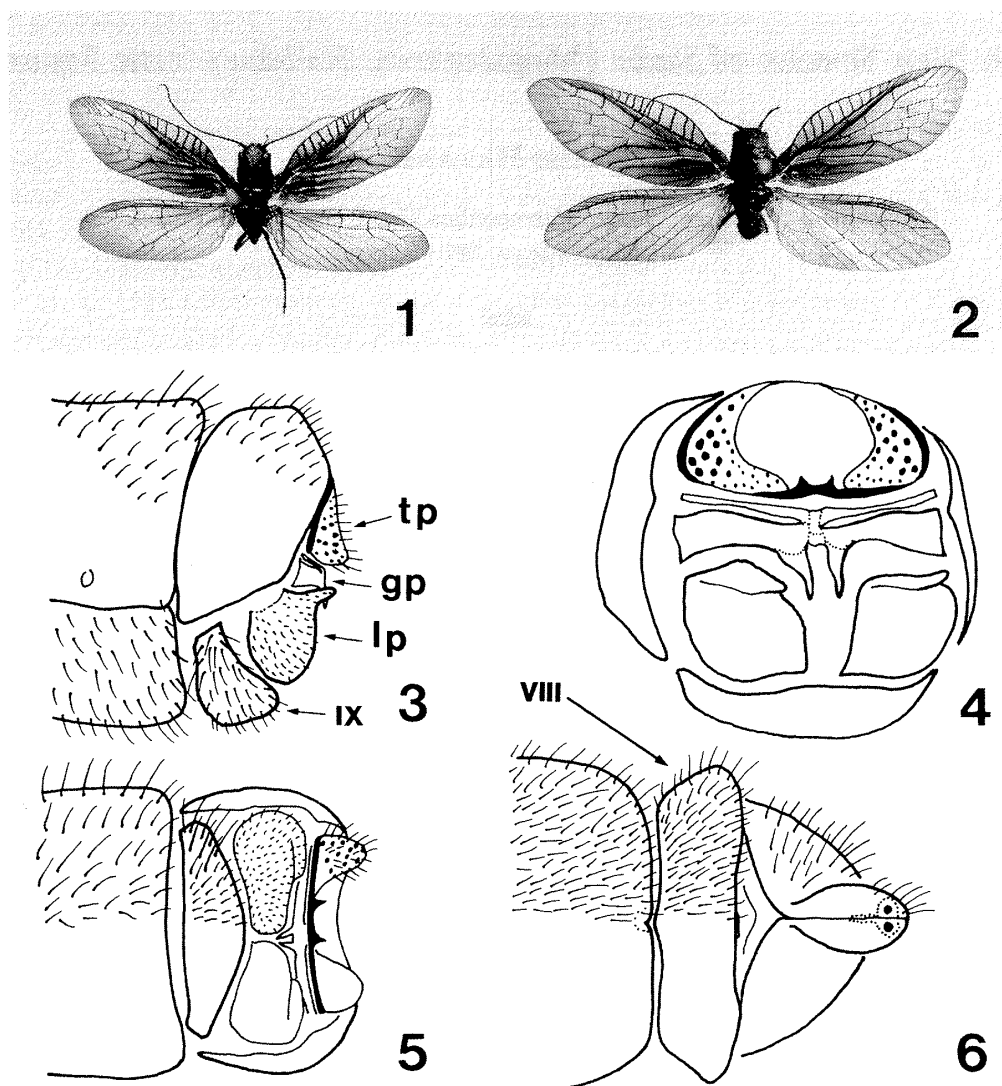
Alderflies (Megaloptera, Sialidae) are widely distributed in the world (NEW & THEISCHINGER, 1993; PENNY, 1993). Eight species assigned to two genera, *Nipponosialis jezoensis* (OKAMOTO, 1910), *N. kumejimae* (OKAMOTO, 1910), *Sialis sibirica* McLACHLAN, 1872, *S. yamatoensis* HAYASHI et SUDA, 1995, *S. longidens* KLINGSTEDT, 1932, *S. japonica* WEELE, 1909, *S. melania* NAKAHARA, 1915, and *S. sinensis* BANKS, 1940, have been recognized from Japan (HAYASHI, 1995; HAYASHI & SUDA, 1995). This paper adds a new species of *Sialis* as the ninth species from Japan. Morphological terms used in this paper are referred to HAYASHI & SUDA (1995).

Examined specimens are preserved in Natural History Museum and Institute, Chiba (CBM); F. HAYASHI Collection (HC); Laboratory of Insect Systematics, Division of Entomology, National Institute of Agro-Environmental Sciences, Tsukuba (NAE); and S. SUDA Collection (SC).

Sialis bifida sp. nov.

[Japanese name: Futao-senburi]

Male. Forewing length 12–13 mm (mean 12.75 mm, SD=0.38, N=8). Head, body, antennae and legs black, but raised lines and dots on head dark brown. Wings slightly dark, forewings with basal area strongly fuscous (Fig. 1). Terminal plate narrow, with short setae, surrounding a relatively large anal opening (Fig. 4); genital plate consisting of two pairs of pterygoid laminae and



Figs. 1–6. *Sialis bifida* sp. nov. — 1, Male (holotype), dorsal view; 2, female (paratype), dorsal view; 3, male terminalia, lateral view; 4, *ditto*, posterior view; 5, *ditto*, ventral view; 6, female terminalia, ventral view. Abbreviations: tp, terminal plate; gp, genital plate; lp, lateral plate; VIII and IX, sternum VIII and IX.

the tip separated, dorsal laminae little sclerotized and very narrow (Fig. 4); lateral plates with many short setae, bent backward at dorsal margin as shown in Fig. 3; sternum IX subtriangular, narrowing laterally, with many short setae.

Female. Forewing length 14–16 mm (mean 14.92 mm, SD=0.80, N=6). Body colour as in male. Wing colour as in male except the slightly lighter basal area (Fig. 2). Sternum VIII nearly rectangular with slightly curved lateral margin, with many short setae (Fig. 6).

Material examined. Holotype: ♂, Karasu-gawa, Horigane-mura, Minamiazumi-gun, Nagano Prefecture, Japan, 1–VI–1997, F. HAYASHI leg.

(NAE). Paratypes: 3♂2♀, same data as holotype (1♀ in NAE, 1♂ in CBM, 2♂1♀ in SC). Other specimens: 1♂ (in ethanol), same data as holotype (HC). 1♂1♀ (in ethanol), same locality as holotype, 30-V-1996, H. ONODERA & H. TSUKUDA leg. (HC). 1♂2♀, Kagamiganaru, Mt. Daisen, Tottori Pref., Japan, 29-V-1990, R. B. KURANISHI leg. (CBM). 1♂, Tsubura-ike, Kamiichi-machi, Toyama Pref., 10-VI-1972, T. KAJI leg. (CBM). 1♀, Asou, Kamiichi-machi, Toyama Pref., 29-V-1980, H. NEGORO leg. (CBM).

Distribution. Japan (Honshu).

Remarks. The new species is closely related to *S. japonica* known from Japan (Honshu, Shikoku and Kyushu), in the respects of wing colouration and general genital structure. Among *Sialis*, only these two species have forewings with heavily dark basal half. But male *S. bifida* differs from *S. japonica* in having the genital plate with two pairs of long pterygoid laminae and with the separated tip (in the latter species, the dorsal one of the two pairs of pterygoid laminae is short, and the tip is not separated). Female *S. bifida* differs from *S. japonica* in having many brown setae on the eighth sternum (mostly hyaline in the latter species).

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