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Lonchoptera vaillanti sp. nov., a new fly from Switzerland (Diptera: Lonchopteridae)

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Lonchoptera vaillanti sp. nov. from Ticino is described and distinguished from its close relatives, *L. strobli* (De Meijere, 1906) and *L. nerana* Vaillant, 1989. The number of Swiss species of the family rises to eight.

Keywords: taxonomy, new species, Swiss fauna.

INTRODUCTION

The family Lonchopteridae includes only a small number of species. The European adults are well described (for example, Bährmann & Bellstedt 1988; Czerny 1930; Vaillant 1989, 1992, 2002); several species are common. Adults of some are regularly and sometimes in large numbers found in emergence traps on streams or picked along their banks, or in similar wet habitats. An unknown species was taken while collecting along a mountain stream in Ticino, Switzerland, and is here described. This description raises the number of Swiss Lonchopteridae to eight (Haenni 1998).

DESCRIPTION

Lonchoptera vaillanti sp. nov.

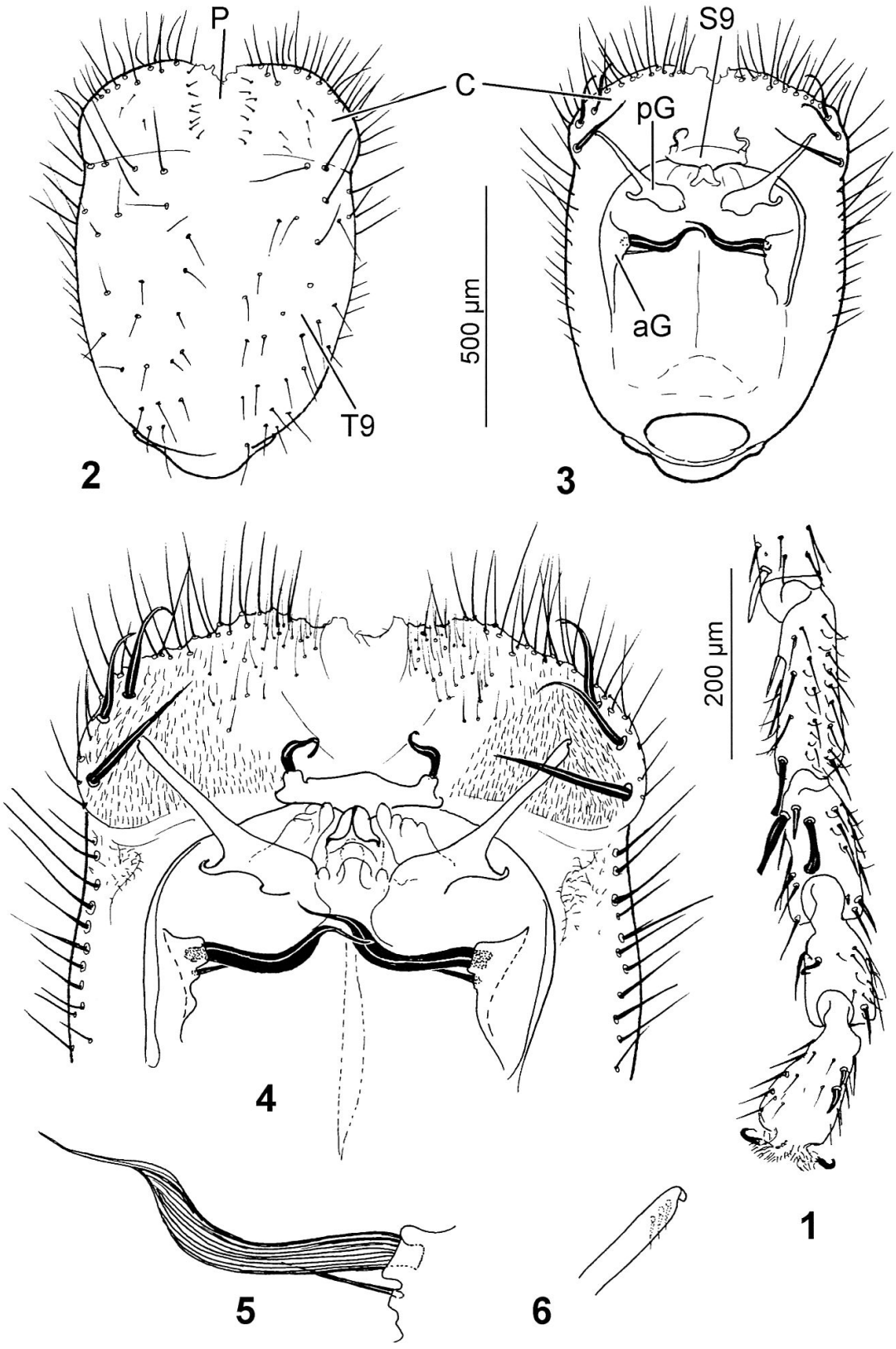
(Figs 1–6)

Material: Holotype ♂, paratype ♂, Switzerland, Ticino, Valle Mesolcina, Fiume Moesa at Buffalora Falls, 12 Aug. 2001, P. Zwick. Specimens in 75% ethanol, some parts in Euparal on glass slides. Holotype in Musée de Zoologie, Lausanne; paratype in my collection.

A typical *Lonchoptera*, wing length 3.5–3.8 mm. Vein A ends in wing margin. No long seta at the end of R. Wing index 2.9, wing angles: 1, 155°; 2, 224°; 3, 135° (see Vaillant 1989). Most veins with tiny black setae.

Body brown, thorax more vividly ochre with 3 dark dorsal stripes; part of thoracic pleura also infuscate, ventral side of thorax and legs yellow. Setae dark except the moderately sized ones around the inner rear margin of the compound eyes and small setae on the rear face of the head. Wings ochre, veins brown.

Fore tarsus segments 3–5 modified, able to roll up tightly, ventrally with enlarged dark setae near medial edge as follows: segment 3 with a distal spatulate seta; segment 4 with 3 basal setae, the large outer ones spatulate, the smaller one between them pointed; segment 4 with a curved small dark seta at base (Fig 1). Middle femur with a row of 6 ventral spines, the 3 posterior ones thick and curved. Middle tibia simple, unmodified, without anterodorsal seta. Hind leg unmodified.



Figs 1–6. *Lonchoptera vaillanti* sp. nov., male. 2. male genitalia, dorsal view – 3. same, ventral view – 4. same, detail, scale is same as for fig 1. – 5. left anterior gonapophysis – 6. apex of left posterior gonapophysis – 1. ventral view of segments 2–5 of right fore tarsus. Figs 5 and 6 are not to scale. aG, anterior gonapophysis; C, cercus; P, proctiger; pG, posterior gonapophysis; S9, sternite IX; T9, tergite IX.

Secondary male characters: Abdominal sternites 3 and 4 each with a pair of straight setae on either side, those on segment 4 very large, reaching over the anterior edge of the large genitalia which are folded forward against the abdominal venter. Tergite IX large, dish-shaped, dorsal face with sparse dark setae. Short flange-like cerci enclosing the indistict proctiger between them not well separated from tergite IX. Cerci strongly setose, ventrally with 3 enlarged sinuous setae on either side near edge (Figs 2, 3). Sternite IX in the shape of a narrow transverse bar with indistinct anterior tip and a strongly socketed and strongly sinuous seta on either side, middle bare (Figs 2, 3). Posterior gonapophyses short, with a pair of very unequal setae. The huge anterior one with double sinuosity, conspicuously narrowed to long pointed tip. The small posterior seta straight (note that the normally erect posterior gonapophyses and their setae are downfolded and therefore pointing mediad in the slide preparation shown in Figs 3, 4!). All major setae distinctly fluted (Fig 5). Anterior gonapophyses in the shape of two divergent transparent fingers, each with three tiny sensilla in a subterminal fold (Fig 6). The base of the gonapophysis carries a large external hook (Fig 4). Penial sclerites not studied in detail; the long phallapodeme visible by transparency (Fig 4).

Female, pupa and larva: Unknown.

Affinities and distinction: *L. vaillanti* sp. nov. belongs to a group identified by the same general shape of tergite IX, short, flange-like cerci, and short posterior gonapophyses with a pair of unequal setae. Among these species, *L. vaillanti* sp. nov. shares a row of spines on the middle femur with *L. strobli* (De Meijere) and *L. nerana* Vaillant. *L. vaillanti* sp. nov. shares with *L. nerana* the finger-shaped distal part of the posterior gonapophysis, with *L. strobli* the basolateral hooked portion. In the key to German species (Bährmann & Bellstedt 1988) *L. vaillanti* sp. nov. keys to *L. strobli* but the setal pair on the anterior gonapophyses easily separates the related taxa. In *L. strobli* and *L. nerana* both setae are only slightly curved; they are of very unequal size in *L. nerana*, less so in *L. strobli*. The thickness and double sinuosity of the larger seta in *L. vaillanti* sp. nov. reminds a little bit of *L. tristis* Meigen, 1824 where, however, the sinuous part is contracted, knob like, and the thin tip reduced to a tiny spine so that the entire apex resembles a bird's head (see figures in Vaillant 1992). However, *L. tristis* has simple middle femora and a curved and slightly swollen hind tibia (Bährmann & Bellstedt 1988, their fig. 17). *L. tristis* and also *L. pictipennis* (Bezzi, 1899) have 4 setae on sternite IX. However, the development of the paramedian setae differs much between these two species.

Distribution and habitat: Geographically, *L. vaillanti* sp. nov. occurs in the Ticino, between its two closest relatives. *L. strobli* is found in the Alps but Vaillant (1989) emphasizes its absence from France, which is not far from where *L. vaillanti* sp. nov. was taken. The single known specimen of *L. nerana* comes from the spring shore of the Nera river in the Apenninian Mti Sibillini. *L. vaillanti* sp. nov. was picked at the waterline on a large rock in the torrential Fiume Moesa and was, at the time of collection, mistaken for some aquatic Empididae. The numerous specimens of *L. strobli* that served for comparison all came from an emergence trap on the stream Jägergraben at Lunz, Lower Austria. Adults of several additional *Lonchoptera* are regularly and in large numbers taken in emergence traps on streams, or swept from stream banks or hygropetric sites on rock faces, like *L. tristis* and *L. fallax* (De Meijere, 1906) (my own data). However, aquatic larval habitats are documented only for *L. lutea* Panzer, 1809 and *L. nigrociliata* (Duda, 1927) (Vaillant 2002).

Dedication: It is my pleasure to respectfully name this species for Prof. François Vaillant, Grenoble, in recognition of his important contributions to the study of Lonchopteridae, and many other groups of mainly aquatic insects.

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