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Herausgeber: Professor Dr. HANS STRÜMPEL, Dr. GISELA RACK,
Professor Dr. RUDOLF ABRAHAM, Professor Dr. WALTER RÜHM
Schriftleitung: Dr. GISELA RACK

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A redescription of *Symphitoneuria dammermanni* ULMER, 1951 (Trichoptera: Leptoceridae)[1]

JOHN C. MORSE
(With 2 figures)

Abstract

The male holotype of *Symphitoneuria dammermanni* Ulmer, 1951, from Kambera, northeast Sumba Island, Indonesia, the only known specimen for the species, is redescribed. Characters are provided by which it may be distinguished from other species of the genus and with which its phylogenetic relationships may be inferred.

Introduction

The species *Symphitoneuria dammermanni* was described by Ulmer (1951) in his major work on the Trichoptera fauna of the Sunda Islands. Since that publication, all other species of the genus have been described or redescribed. A review of the characters of this species is now essential in order to facilitate its comparison with the other species for phylogenetic and diagnostic purposes. Through the kindness of Prof. Dr. H. Strümpel of the Zoologisches Museum, Universität Hamburg, I have been able to examine Ulmer's holotype specimen, the only specimen known for this species.

This appears to be the only species of *Symphitoneuria* known with confidence outside the Australian biogeographic region, west of Weber's Line. A male of this genus was reported by Martynov (1931; as *Notanatolica opposita* [Walker, 1852], whose male was unknown at the time) from Sulawesi (= Celebes), but was not described, so that the species could well have

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been a misidentification of *S. dammermanni* or some yet-undescribed species. Females presumed to have been those of *S. opposita* were reported by Ulmer (1906) also from Sulawesi, but with some doubt about their identity (Ulmer, 1951). Bank's (1913, as *Notanatolica opposita*) specimens of *S. opposita* (sex not indicated) from the Philippines, also may have been misidentified specimens of *S. dammermanni* or an undescribed species.

The genus *Symphitoneuria* was first described by Ulmer (1906) for *Notanatolica exigua* MacLachlan, 1862, because of the very peculiar venation of the male forewing. Subsequently, Mosely (1936) described the genus *Loticana* to accomodate *Notanatolica opposita*, identified by the unremarkable wing venation of its female. Banks (1939) suggested that *Loticana* is a synonym of *Symphitoneuria*; Mosely and Kimmins (1953), formally confirmed his opinion.

Morse (1981) included *Symphitoneuria* in his newly restricted tribe Triplectidini, whose monophyly was evidenced by the unique extra appendage which articulates at the ventral base of each inferior appendage of the male genitalia. Morse and Holzenthal (1987) suggested that *Symphitoneuria*, *Lectrides* Mosely (1953, in Mosely and Kimmins, 1953), *Symphitoneurina* Schmid (1950), and *Triplectidina* Mosely (1936), presently granted the status of genera, apparently evolved from within *Triplectides*, thereby rendering the latter paraphyletic. I do not propose to resolve that difficulty within the limited scope of this paper.

There are now six species known for *Symphitoneuria* as follows:

S. ampla Korboot, 1964, from New Guinea (male redescribed by Illies, 1969, and Neboiss, 1987; female described by Illies, 1969).

S. dammermanni Ulmer, 1951, from Sumba, Indonesia (male redescribed here).

S. exigua (MacLachlan, 1862, as *Notanatolica*), from northeastern Australia (male redescribed, female described by Mosely and Kimmins, 1953).

S. licmetica Neboiss, 1986b, from New Caledonia, both male and female described.

S. opposita (Walker, 1852, as *Leptocerus*), from Tasmania and Victoria, Australia, with confidence (see above) (male described by Mosely 1936, as *S. exigua* [q.v., Mosely and Kimmins, 1953]; female redescribed by Mosely, 1936).

S. wheeleri Banks, 1939, from Western Australia (male redescribed, female described by Mosely and Kimmins, 1953).

Illustrations of genitalia of males and females of all these species except *S. dammermanni* were reproduced by Neboiss (1986a); he also reproduced drawings of the wing venation of males of all these (except *S. dammermanni* and *S. ampla* [the latter provided however by Illies, 1969]) and of the female of *S. opposita*.

Symphitoneuria dammermanni Ulmer, 1951

Symphitoneuria dammermanni Ulmer, 1951, male described.
Symphitoneuria dammermanni Ulmer, 1957, listed.

Holotype: Male. "Dammerman, N. O. Soemba, Kambera, III.1925 [printed on unbordered label]; Type [handwritten on double-black-bordered label]; Type [handwritten on unbordered label]; Lieftinck, M. A. ded. [handwritten on double-black-bordered label = Dr. M. A. Lieftinck, formely Director of the Zoological Museum in Buitenzorg, has donated this specimen (Prof. Dr. H. Strümpel, pers. com.)]; Coll. Ulmer, Eing. No. 6-63 [printed on unbordered label]; *Symphitoneuria dammermani* [handwritten on unbordered label]; Z. I. M., Hamburg [printed on unbordered label]." Note that the labels suggest that the patronymic species name may be misspelled in Ulmer's (1951, 1957) publications. Since he spelled it *"S. dammermanni"* everywhere that it appears in the original work, that spelling must be considered the "correct orginal spelling" (International Commission on Zoological Nomenclature, 1985).

The original description was written from observations of the single unprepared specimen. I have cleared the genitalia in KOH and preserved them in glycerin and mounted the left wings dry, with hairs removed, on a microscope slide. The antennae have both been partly broken over the years and one of each of the legs is missing (right foreleg, left mid- and hindlegs), the remaining leg of each pair lacking the distal tarsal segments. There is some glue on the thorax where the left wings had been removed earlier and attempts apparently had been made to re-attach them.

Description: Based on the prepared wings and genitalia, the following remarks may be added to Ulmer's (1951) description, using the terminology employed by Morse and Neboiss (1982). Colors of the holotype now faded somewhat. Forewings each with apical Forks I, II, and V present (Fig. 1, forks of S_{1+2}, S_{3+4}, and Cu_{1+2}); discoidal cell short and broad, slightly longer than its stem and nearly as broad as the larger apical cells; thyridial cell vestigial, veins M and Cu seemingly forming single thick composite longitudinal vein with S_{3+4} for apical four-fifths of discoidal cell (to s crossvein), with five veins arising from it (S_3, S_4 + MA, MP, Cu_1, and Cu_2); Cu_2 recurved about 110° basally and arising from this composite vein about midway between origin of discoidal cell (fork of S) and Cu_1; nigma present in Fork II. Hindwings each with Forks II and V present; "false vein" present; Fork V long, originating about one-third of distance between origin of discoidal cell (fork of S) and fork of M.

Male genitalia generally resembling those of other species in the genus (Fig. 2). Segment IX narrow, tergum and sternum slightly produced posteriorly, triangular. Superior appendages about half as long as tergum X, clavate in lateral (Fig. 2A) and dorsal (Fig. 2B) views. Tergum X about as long as inferior appendages, subtruncate and deeply cleft apically, broadly rounded projections laterally, with transverse reinforcing band ventrally at base of cleft and diagonal reinforcing ridge internally on each side near base of tergum. Inferior appendages each rectangular in lateral view (Fig. 2A); apico-dorsal lobe short, with setose accessory projection mesally; mesal ridge broadly rounded basally (Fig. 2C); baso-ventral lobe about half as long as appendage; harpago apex hooked mesally. Phallus tubular, with membranous strip dorsally from apex nearly to base; sclerotized phalicata

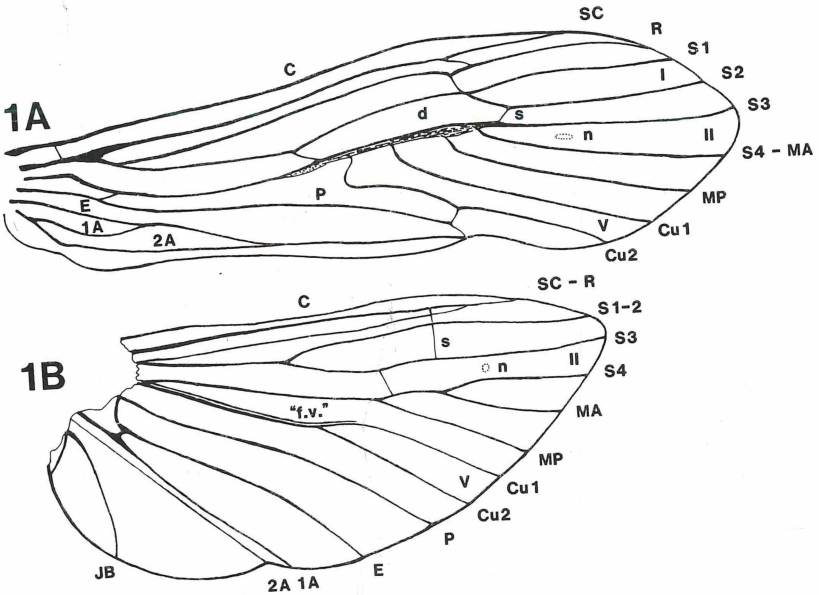
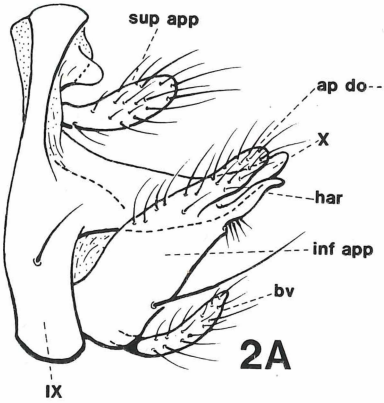
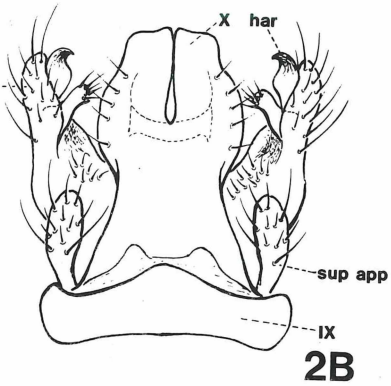


Fig. 1: Wings of male holotype of *Symphitoneuria dammermanni* Ulmer: 1A, forewing; 1B, hindwing. A = anal vein, C = costa, Cu = cubitus, d = discoidal cell, E = empusal vein, "f.v." = "false vein", JB = jugal bar, MA = anterior media, MP = posterior media, n = nigma, P = plical vein, R = radius, S = sector, s = sectoral crossvein, SC = subcosta; I, II, V = primary apical cells, or "Forks", I, II, and V.

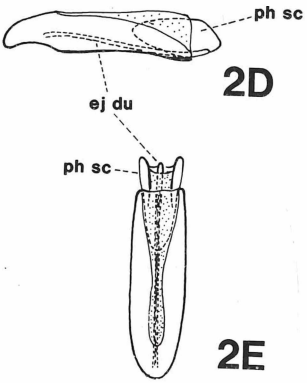
Fig. 2: Genitalia of male holotype of *Symphitoneuria dammermanni* Ulmer: 2A, left lateral view (phallus omitted); 2B, dorsal view; 2C, ventral view; 2D, phallus, left lateral view; 2E, phallus, dorsal view. ap do = apico-dorsal lobe of inferior appendage, bv = baso-ventral lobe of inferior appandage, ej du = ejaculatory duct, har = harpago, inf app = inferior appendage, IX = segment IX, me lo = mesal lobe of inferior appendage, ph sc = phallotremal sclerite, sup app = superior appendage, X = tergum X.



2A

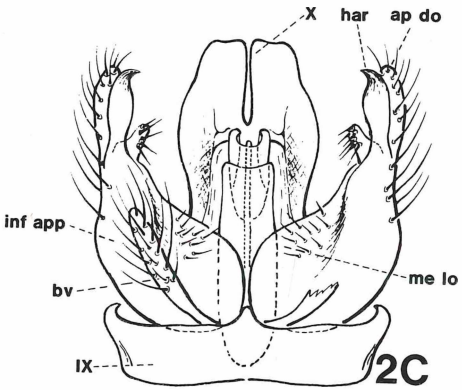


2B



2D

2E



2C

and parameres absent; phallotremal sclerite membranous dorsally, two-fifths as long as tubular portion of phallus, ovoid in lateral view (Fig. 2D) and subconical in dorsal view (Fig. 2E); ejaculatory duct conspicuous, extreme tip free from phallotremal sclerite (Figs 2C, 2E).

The female and immature stages of *S. dammermanni* remain unknown.

Diagnosis: The wing venation of *S. dammermanni* most closely resembles that of *S. ampla*, especially in the short and broad forewing discal cell and the long hindwing Fork V. However, it differs from that and all other *Symphitoneuria* species by the more nearly apical position of forewing vein Cu_2, apparently arising about midway between the fork of S and the apparent origin of Cu_1. The male genitalia of *S. dammermanni* resemble those of *S. ampla*, *exigua*, and *opposita* in the presence of a setose mesal accessory projection on the apico-dorsal lobe above the base of the harpago of each inferior appendage. This species resembles *S. ampla*, *opposita*, and *wheeleri* in that tergum X is about as long as the inferior appendages. It resembles *S. opposita* in the parallel-sided apex of the phallus. However, it differs from all known species of *Symphitoneuria* in the subtruncate apex and broadly rounded and projecting sides of tergum X.

Phylogeny: The currently recognized genera *Triplectidina*, *Symphitoneurina*, *Lectrides*, and *Symphitoneuria* form a monophyletic group (Morse and Holzenthal, 1987) as evidenced by the vestigial thyridial cell and the congruent R-M-Cu veins on the posterior side of the discal cell in the male forewings of their included species. Among these, *Lectrides* and *Symphitoneurina* resemble each other most closely in that the harpago is absent from each male inferior appendage and the baso-ventral lobe is about the same size as the main portion of the appendage. These two constitute a monophyletic group with *Symphitoneuria* as evidenced by the lack of Fork I in the hind wing of both sexes.

Symphitoneuria probably is a monophyletic group, as inferred by the fact that the apico-dorsal lobe of each male inferior appendage is unusually short in these species. The unique setose accessory process on the mesal surface of the apico-dorsal lobe of each male inferior appendage is strong evidence that *S. ampla*, *dammermanni*, *exigua*, and *opposita* constitue a monophyletic group.

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Address of the author:

Prof. Dr. John C. Morse, Department of Entomology, Clemson University, Clemson, South Carolina 29634, U. S. A.