

A conspicuous new caddisfly species (Trichoptera: Philopotamidae) from Papua (Indonesian New Guinea)

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Abstract

Description of the male of a new species of *Chimarra* from Papua. The affinities of this beautiful species with conspicuous fore- and hindwings and with peculiar maxillary palpi are, for the time being, obscure.

Key words: Trichoptera, *Chimarra*, Papua (Indonesia, New Guinea).

Introduction

During an entomological expedition to Papua in February 2005 (a cooperation between the Zoological Museum of Amsterdam and the University of Cenderawasih, Waena, Papua) several caddisfly specimens have been sampled, this being only quite a marginal object of sampling activity. Most of them have been preserved in alcohol, the exception being a fine insect, kept in the Zoological Museum of Amsterdam, which has been pinned and will be here described.

Chimarra (C.) formosa sp.nov. (Figs. 1-4)

TYPE MATERIAL. Holotype, Male: "Indonesia Papua, Kecamatan Abenaho, Pass Valley, 1950 m, 3°51'S-139°05'E, 11-17.ii.2005, at light". "UNCEN-ZMA Expedition Papua Indonesia 2005", [ZMAN].

DESCRIPTION. Male Holotype.

Forewing length: 7 mm. Head (with the exception of the reddish postero-lateral warts), antennae, legs with spurs, metathorax and abdomen, are black, only mesothorax and especially prothorax being lighter.

Median ocellus placed at end of small protuberance with black setae; dorsally on head, bilaterally, two groups of black setae, one latero-distal, one more central behind the paired ocelli; anterior warts feebly protruding; postero-lateral long, oblique warts on which numerous long, strong, conspicuously red setae are inserted; no posterior warts. Maxillary palp with peculiar structure: 1st article

very short; 2nd very long, as long as 3+4+5 together, with stiff setae inserted in its distal half; 3rd second in length (as long as 4+5); 4th very short, slightly angular; 5th slightly shorter than 3rd, possibly flexible but certainly not annulated.

Pronotum with 2 pairs of round warts with red setae. Mesonotum devoid of warts, on both sides of scutellum with small bush of (about 5) setae, on the tegulae abundant long red setae being inserted. Spurs 1, 4, 4 (that of the foreleg extremely short, remaining ones very long).

The conspicuous wings are mainly characterized by very large, completely hyaline "windows", roughly similar in the fore- and hindwings; these "windows" are in strong contrast with the remaining parts of the wing which are covered by dense, short, fine, either brown or blackish hairs, forewings of general brownish tinge somehow darker, basal half of space between Cu and A1 veins in hindwing paler than the rest; the dense setation renders difficult observation of some transverse veins. Limits of the hyaline windows sometimes strikingly corresponding with some venation details (for instance: in the forewing the window distal limit overlaps the anastomosis, its inferior limit overlapping the proximal part of the strongly curved M3+4 vein). No detailed description of the venation (Fig. 3) being necessary, attention will be pointed only to a few apparently more significant or seldomly observed details of the forewing: discoidal cell and stem of RS vein without "thickened nodes" (thus: no "bulla" in the "nude cell"); anterior limit of discoidal cell straight, not "asymmetric"; for the hindwing we mention that the root of the Cu vein is abruptly curved to join A1 and that Sc and R1 are not only not fused, but running independently along their whole length.

Abdominal segment V with large gland orifices; no trace of processes from venters VIII or IX. Segment VIII dorsally longer than ventrally and with feebly sclerotized median longitudinal strip. Segment IX ventrally with deep median sinus of proximal limit, its distal limit straight; in dorsal view with a vast median zone entirely membranous, laterally limited by the oddly asymmetrical median limits of the sclerotized parts of the dorsum. Superior appendages knob-like, connected by a "bridge" to the widely distant halves of the Xth segment, which



Fig. 1 – *Chimarra (C.) formosa* sp.nov., male holotype.

send medially a sharp point, their dark apex being turned beak-like laterad and downwards. Inferior appendages stout, hollow dorsally and medially, proximally connected on the median line, their proximo-lateral angle protruding mediad and apicad (Fig. 4A), their apex a rather long point turned upwards in lateral view. Phallus – in lateral view – serpentine, capitate and finishing in a sharp point turned downwards; a rather important dorsal membranous zone in its distal third; two short, similarly strong internal spines.

HABITAT: Fig. 5 will give an idea about the locality in disturbed montane forest where the specimen has been sampled. The nearby village Pass Valley is expanding and the forest is being logged bit by bit, first to be used for agriculture. The locality shown on Fig. 5 is at the edge of this disturbed forest and will probably not exist anymore in a few years. The river Bion with its brownish water, was, however, still unpolluted.

ETYMOLOGY: Formosus – a – um (Latin) = beautiful.

Discussion

The most considerable effort towards obtaining reasonably reliable diagnoses for *Chimarra* STEPHENS, 1829, and for its subgenera, is that made by BLAHNIK (1998): a difficult task, as stressed by the author, because of the very large number of species and of their diversity. Relying on that publication we consider – with hesitation concerning some details – the new species as belonging to sg. *Chimarra*. According to Dr. R.J. BLAHNIK (in litt.) the species "... does possess an interesting assortment of primitive characters".

From New Guinea including adjacent islands and archipelagoes, some 24 species of the genus are known at present (NEBOISS 1986; MALICKY 1994; CARTWRIGHT 2001). Sound considerations about the affinities of *C. (C.) formosa* sp.nov. are for the time being impossible.

Interestingly, between the numerous Australian species described by CARTWRIGHT (2002) two (*C. luminaris* and *C. locolo*, both from northern Australia) are characterized by a small "pale semi-transparent window" near the discoidal cell, in both wings of *C. locolo*, and only in the forewing of *C. luminaris*. Both species are considered by the author as representing a "*Chimarra luminaris*-group". But if other characters of these species are taken into consideration, it becomes clear that the Papuan species does not belong to this species-group, not only because of the strongly different ♂ genitalia, but especially because in the hindwing of the Australian species R5 is tribranched (f1 absent). Moreover, *C. tamsi* MOSELY, 1936, described from São Tomé Island (West Africa) has a "large rounded white patch" in both wings; nevertheless, nothing indicates kinship with the new species here described. The remarkable structure of the maxillary palpi of the new species, not resembling anything described or illustrated in publications on the

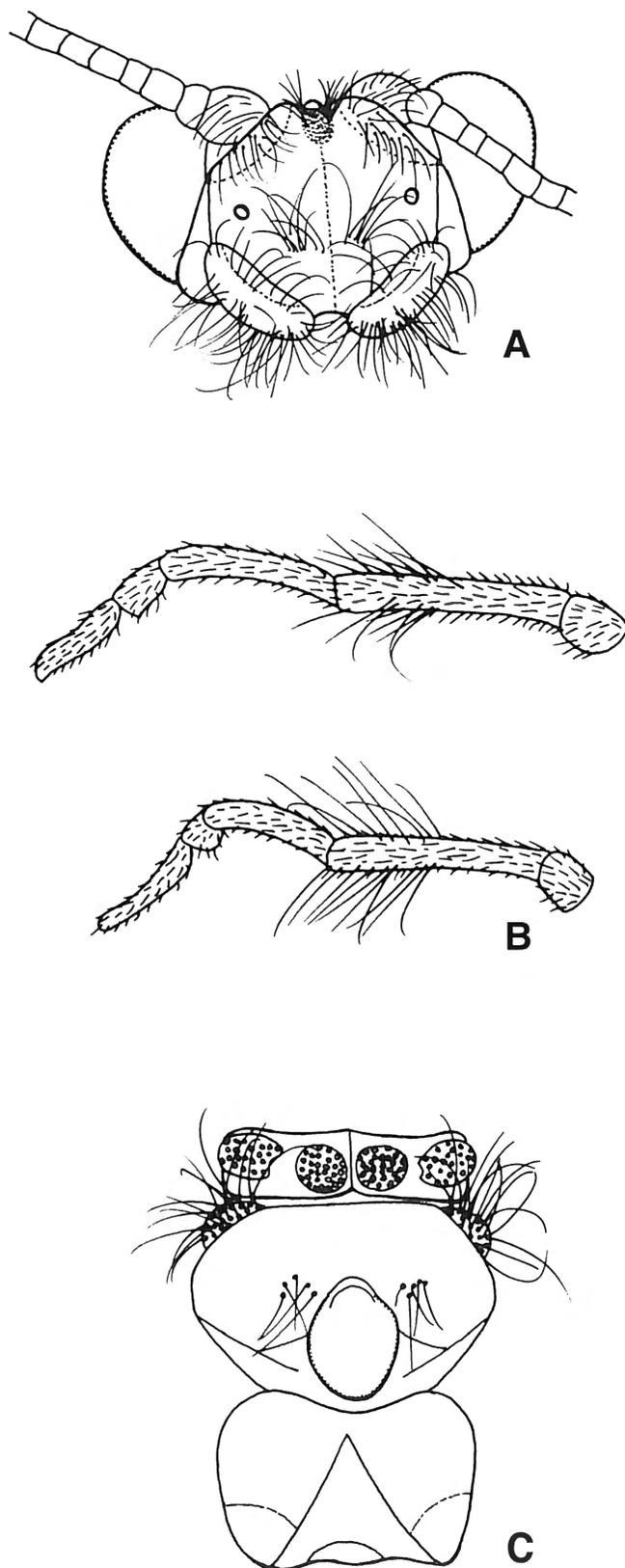


Fig. 2 – *Chimarra (C.) formosa* sp.nov. A. Head. B. Maxillary palp, under two slightly different observation angles; C. Thorax.

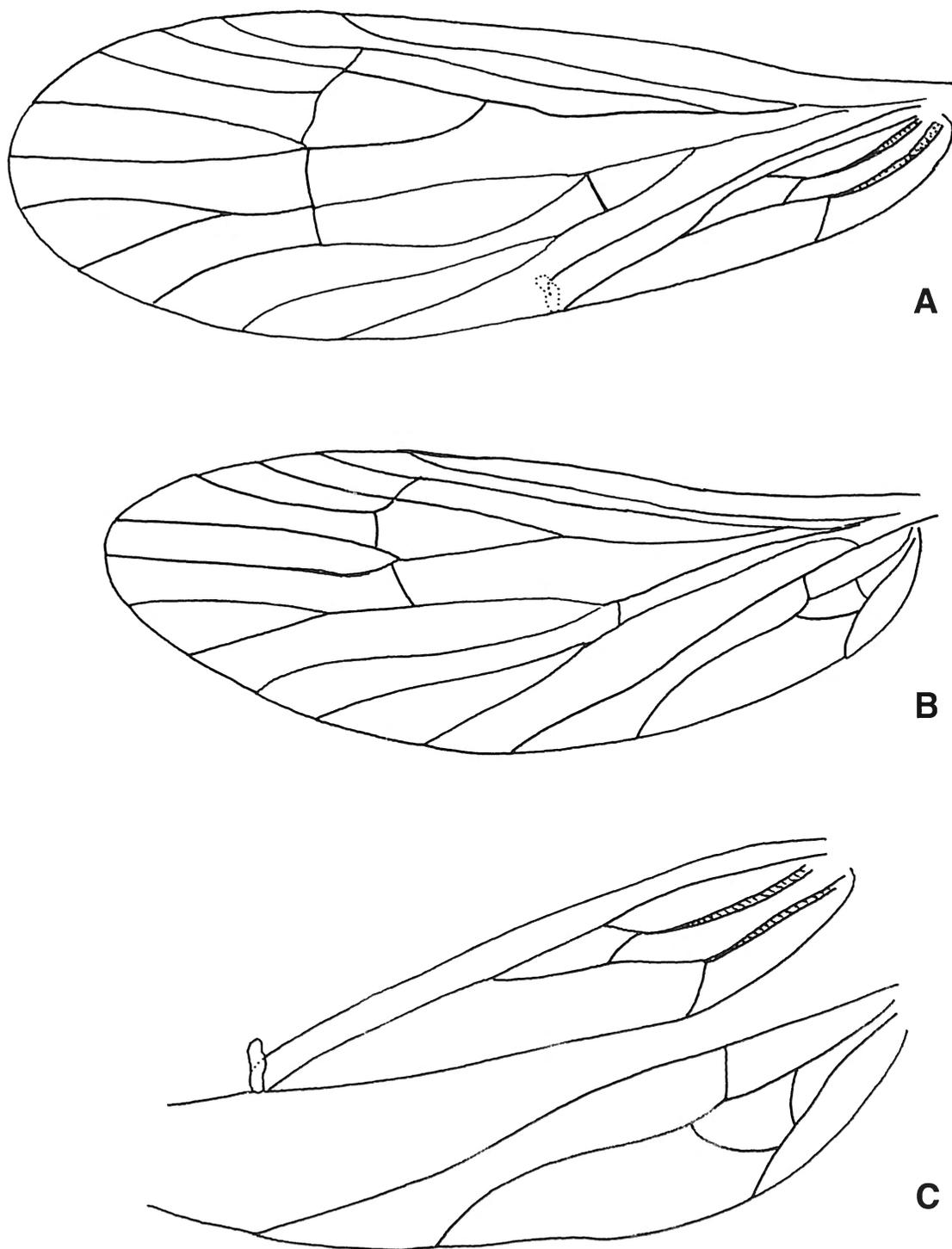


Fig. 3 – *Chimarra (C.) formosa* sp.nov. A. Forewing. B. Hindwing. C. Anal zone of fore- and hindwing, under observation angles slightly different from figs. 3A & 3B.

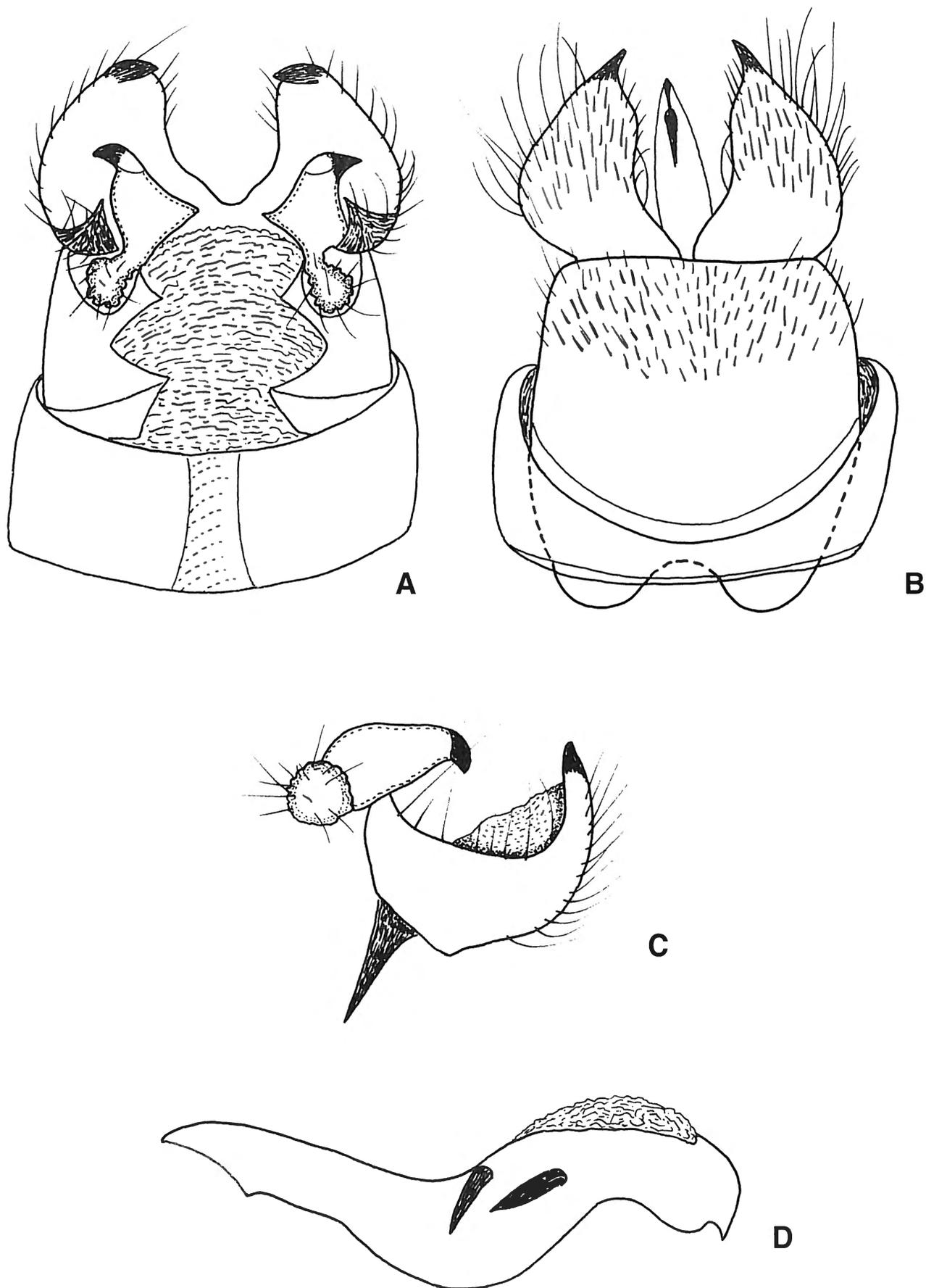


Fig. 4 – *Chimarra (C.) formosa* sp.nov. Male genitalia. A. Dorsal. B. Ventral. C. Left superior appendage, segm. X, and inferior appendage, lateral. D. Phallus, lateral.



Fig. 5 – The type locality of *Chimarra (C.) formosa* sp.nov. River Bion, Pass Valley, Kecamatan Abenaho, Jayawijaya Mountains, Papua Indonesia.

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genus (or the family) is certainly an element to be taken into consideration; nevertheless BLAHNIK (1998: 15) mentions diversity in the morphology of the maxillary palp – which urges on caution.

Some emendation of the widely used diagnoses of *Chimarra* and Philopotamidae will be necessary if several characters of the new species (for example those of the maxillary palp) will be taken into consideration.

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