



## Neotropical *Nilothauma* Kieffer, 1921, with the description of thirteen new species (Diptera: Chironomidae)

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## Abstract

Thirteen new species to *Nilothauma* Kieffer are described and figured: *N. amazonense*, *N. calori*, *N. complicatum*, *N. fazzariense*, *N. involucrum*, *N. jaraguaense*, *N. longissimum*, *N. roquei*, *N. sooretamense*, and *N. zitoi* from Brazil and *N. spiesi* from Chile as males, and *N. aripuanense* and *N. matogrossense* from Brazil as males and pupae. Type material and other materials of *Paranilothauma reissi* Sponis, *P. strebulosum* Adam et Sæther, *Neelamia fittkai* Sponis, and *N. bergeri* Sponis are examined and the males figured. A phylogenetic analysis of all *Nilothauma*, *Paranilothauma* Sponis, and *Neelamia* Sponis species is performed, showing that the genera *Paranilothauma* and *Neelamia* should be regarded as junior synonyms of *Nilothauma* and the included species are placed in *Nilothauma* as new combinations accordingly. New material further revealed that *N. bergeri* is a synonym of *N. fittkai*. *Nilothauma* is found in all biogeographical regions except Antarctica, and shows an Inabrezian (Northern Gondwana) distribution pattern. The phylogeny combined with the corresponding area cladogram and BPA analysis suggests the Neotropical Region as the area of origin.

**Key words:** Chironomidae, Chironominae, *Nilothauma*, *Paranilothauma*, *Neelamia*, new species, new synonyms, Brazil, Chile, Neotropics

## Introduction

The genus *Nilothauma* was erected by Kieffer (1921a) based on *Nilothauma pictipenne* Kieffer, 1921. The immatures of *Nilothauma* are found in the littoral and sublittoral sediment of standing and flowing waters (Pinder & Reiss 1983, 1986; Cranston *et al.* 1989). Adam and Sæther (1999) revised the genus and recognized 25 species. Recently Yan *et al.* (2005) described an additional species from Oriental China. Up to now 26 species of the genus have thus been described worldwide. Of these 6 species occur in the Palaearctic Region, 4 in the Nearctic Region, 11 in the Afrotropical Region, 5 in the Oriental Region, and 2 in the Australian Region. In addition, two species from Peru, *N. aleta* Roback and *N. duena* Roback, were described in *Nilothauma* by Roback (1960). Watson and Heyn (1992) examined the types of both species and stated that they belong in two new genera which they were going to describe. According to Adam and Sæther (1999) they appear to belong in *Paratendipes* Kieffer, and they did not include them in their revision of *Nilothauma*. In this review of the Neotropical species we agree with this assessment, but both species should be re-examined to ascertain their position.

Adam and Sæther (1999) proposed four species groups in *Nilothauma*, the *duminola*-, *babiyi*-, *brayi*- and *pictipenne* groups, separated mainly on hypopygial features like the number of dorsal, setose projections on tergite IX. The *duminola*- and the *babiyi* groups have one dorsal projection only, while two projections are found in the *brayi*- and *pictipenne* groups. Further, in the *pictipenne* group the wing has dark areas, while in the other groups the wings lack dark spots or markings.

The genus *Nilothauma* together with *Paranilothauma* Sponis, 1987 and *Neelamia* Sponis, 1987 form a closely related group of genera (Adam & Sæther 2000). The genus *Paranilothauma* was erected by Sponis (1987) based on the male and pupa of *P. reissi* Sponis from the Amazonas in Brazil. Later, Adam and Sæther (2000) described a second species, *P. strebulosum*, from Costa Rica. The genus *Neelamia* was erected by Sponis (1987) based on the males of *N. fittkai* Sponis and *N. bergeri* Sponis, both from Brazil.

In this article we describe 13 new species of *Nilothauma* from Brazil and Chile and re-examine *Paranilothauma reissi*, *P. strebulosum* Adam et Sæther, *Neelamia fittkai* and *N. bergeri*. New material revealed that *N. bergeri* is a synonym of *N. fittkai*. Further, the systematic relationships of the *Nilothauma*, *Paranilothauma* and *Neelamia* species are evaluated, resulting in *Paranilothauma* and *Neelamia* being placed as synonyms of *Nilothauma*. The biogeography of the genus is outlined and emended diagnoses to imagines, pupa, and larva as well as keys to the males and pupae of the Neotropical species are provided.