

**A new species of *Nimboa* Navás, 1925 from Madagascar  
(Neuroptera: Coniopterygidae)**

György SZIRÁKI

*Hungarian Natural History Museum, Department of Zoology, Collection of Smaller Insect Orders,  
H-1088 Budapest, Baross utca 13, Hungary. E-mail: sziraki.gyorgy@nhmus.hu*

**Abstract** – *Nimboa benyovszkyi* sp. nov. (Neuroptera: Coniopterygidae) is described on the basis of 30 male specimens collected in the frame of the Madagascan Project of the Californian Academy of Sciences (CAS). The newly described species is the second representative of the genus from Madagascar.

**Key words** – taxonomy, species description, male terminalia, Madagascan Project, CAS

INTRODUCTION

*Nimboa* Navás, 1925 (Neuroptera: Coniopterygidae: Coniopteryginae) is a moderately large genus of dusty lacewings, including hitherto about 20 valid species from the Afrotropical and Oriental regions, and from the southern part of Palearctic region (SZIRÁKI 2011).

The knowledge on Coniopterygidae of Madagascar has been significantly expanded in the last decade. MEINANDER (1972) mentioned a single species (*Semidalis mascarenica* Fraser, 1952) of the family from Madagascar. A few years later MEINANDER (1974) described the second species (*Coniopteryx madagascariensis* Meinander, 1974) from the island. In a subsequent paper the same author (MEINANDER 1983) also listed a third species (*Nimboa pauliani* Kimmins, 1960) from Madagascar, however without any collecting data. The ongoing identification of the extraordinarily large coniopterygid material collected in frames of the Madagascan Project of the Californian Academy of Sciences (CAS) elevated the number of the known Madagascan species of the family to 26 (SZIRÁKI 2015, 2020, 2021). Description of a new species of *Nimboa* – the second Madagascan representative of the genus – is given in the present paper. The names of collectors of paratypes are abbreviated as: ES = Evert I. Schlinger; BF = Brian Fischer; FP = Frank Parker; CG = Charles E. Griswold; HH = Rasolandalao Harin'Hala; MI = Michael Irwin.

## TAXONOMY

*Nimboa benyovszkyi* sp. nov.  
(Figs 1–6)

*Type material* – Holotype: male, labelled as “Madagascar, Fianarantsoa Province, near to Isalo National Park, at a stream E of Interpretive Center, 22°37’36” S, 45°21’29” E, 750 m a.s.l., 30.III.–7.IV.2002, open area, Malaise trap, leg.: R. Harin’Hala”. Paratypes: 1 male, same data as holotype but 27.V.–4.VI.2002; 2 males, same data but 12–22.VI.2002; 1 male, same data but 28.III.–9.IV.2003; 1 male, Madagascar, Fianarantsoa Province, near to Isalo National Park, E of Interpretive Center, 22°37’36” S, 45°21’29” E, 885 m a.s.l., 15.X.–9.XI.2001, dry stream bed, Malaise trap, leg.: HH; 1 male, same data but 17–25.XI.2001; 2 males, same data but 16–21.XII.2001; 1 male, same data but 3–10.II.2002; 1 male, same data but 10–17.II.2002; 1 male, same data but 24.II.–3.III.2002; 1 male, same data but 4–12.VI.2002; 2 males, same data but 10–25.VII.2002; 3 males, same data but 23.VIII.–7.IX.2002; 1 male, same data but 17–25.X.2002; 1 male, Madagascar, Mahajanga Province, Ampijoroa National Park, 160 km N of Maevatana on RN 04, 16°19’10” S, 46°48’48” E, 43 m a.s.l., 22–28.IX.2003, deciduous forest, Malaise trap, leg.: HH; 1 male, Madagascar, Toliara Province, Andohahela National Park, Ihazofotsy, Parcelle III, 24°50’05” S, 46°29’21” E, 80 m a.s.l., 26.I.–3.II.2003, dry spiny forest, Malaise trap, leg.: MI, FP & HH; 1 male, same data but 8–16.III.2003; 1 male, same data but 28.IV.–6.V.2003; 1 male, same data but 20.V.–3.VI.2003; 1 male, same data but 24.VII.–3.VIII.2003; 1 male, Madagascar, Toliara Province, Andohahela National Park, Tsimelahy, Parcelle II, 24°56’13” S, 46°37’36” E, 180 m a.s.l., 10–21.IX.2003, transitional forest, Malaise trap, leg.: MI, FP & HH; 1 male, Madagascar, Toliara Province, Ifaty, near Hotel Paradisia in costal dunes, 23°10’47” S, 43°37’01” E, 9 m a.s.l., 26.V.–5.VI.2002, vegetation in sandy area, leg.: HH; 1 male, Madagascar, Toliara Province, Ifaty, 22 km N of Toliara, 23°11’ S, 43°37’ E, 30 m a.s.l., 18.IV.1998, swept from beach dunes, leg.: MI & ES; 1 male, same site and collectors but captured by Malaise trap at 19.IV.1998; 1 male, Madagascar, Toliara Province, Tsimanampetsosa National Park, Forêt de Bemanamteza, 20.7 km E of Efoetse, 23 km SE of Beheloka, 23°59’32” S, 43°52’50” E, 90 m a.s.l., 22–26.III.2002, Malaise trap in spiny thicket, leg.: BF, CG et al. Holotype and paratypes are deposited in the collection of CAS, except 3 paratypes are housed in Hungarian Natural History Museum (HNHM), Budapest.

*Diagnosis* – *Nimboa benyovszkyi* sp. nov. belongs to the *Nimboa basipunctata* species group as defined by SZIRÁKI (2005). Its unspotted wing membrane, the presence of caudal projection(s) on the paramere and a pair of long ventral setae on hypandrium are similar to the condition found in *Nimboa bifurcata* Meinander, 1998, known from Tanzania, and suggest a close

phylogenetic relationship between the two species. *Nimboa pauliani*, the only *Nimboa* species recorded from Madagascar, is apparently not closely related to the new species because of the unique characteristics of its male genitalia (MEINANDER 1972, 1976). The main diagnostic characters of the new species are the following: presence of distinct shoulder spots; a bifid caudal projection of the paramere; very short and stout basal branches of the stylus; the caudal part of stylus being curved upwards; the normally sclerotized part of the penis being pickaxe-like and its ventral hook being relatively wide in lateral view.

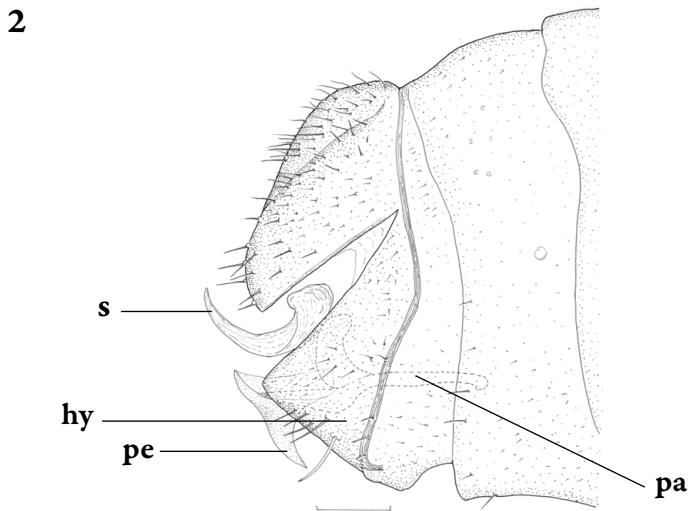
*Description* – Male (Figs 1–6): length of the body 0.9–1.4 mm. Head capsule pale ochreous or light brown, palpi light brown. Eyes moderately large, rounded. Antennae 0.9–1.3 mm, 27–32 segmented. Scape and pedicel pale ochreous, flagellum light brown. Scape and most of flagellar segments about as long as broad; pedicel 1.5 times longer than broad; a few distal antennal segments (in some individuals also the first segment of flagellum) somewhat longer than broad. Ordinary hairs are arranged in two regular rings on flagellar segments and situated irregularly on scape and pedicel; scale-like hairs absent.

Thorax pale ochreous or light brown; shoulder spots light or medium brown, distinct but not striking; thoracal sutures and apodemes medium or dark brown. Legs light brown. Length of fore wing 1.5–2.3 mm, that of hind wing 1.3–1.8 mm. Wing membrane unspotted, with very slight or somewhat stronger brownish tint; in latter case with light strips along yellowish brown longitudinal veins. Majority of marginal fringes minute, some of them moderately long, also with several definitively long fringes at the base of hind wing. Pregenital part of abdomen pale ochreous.

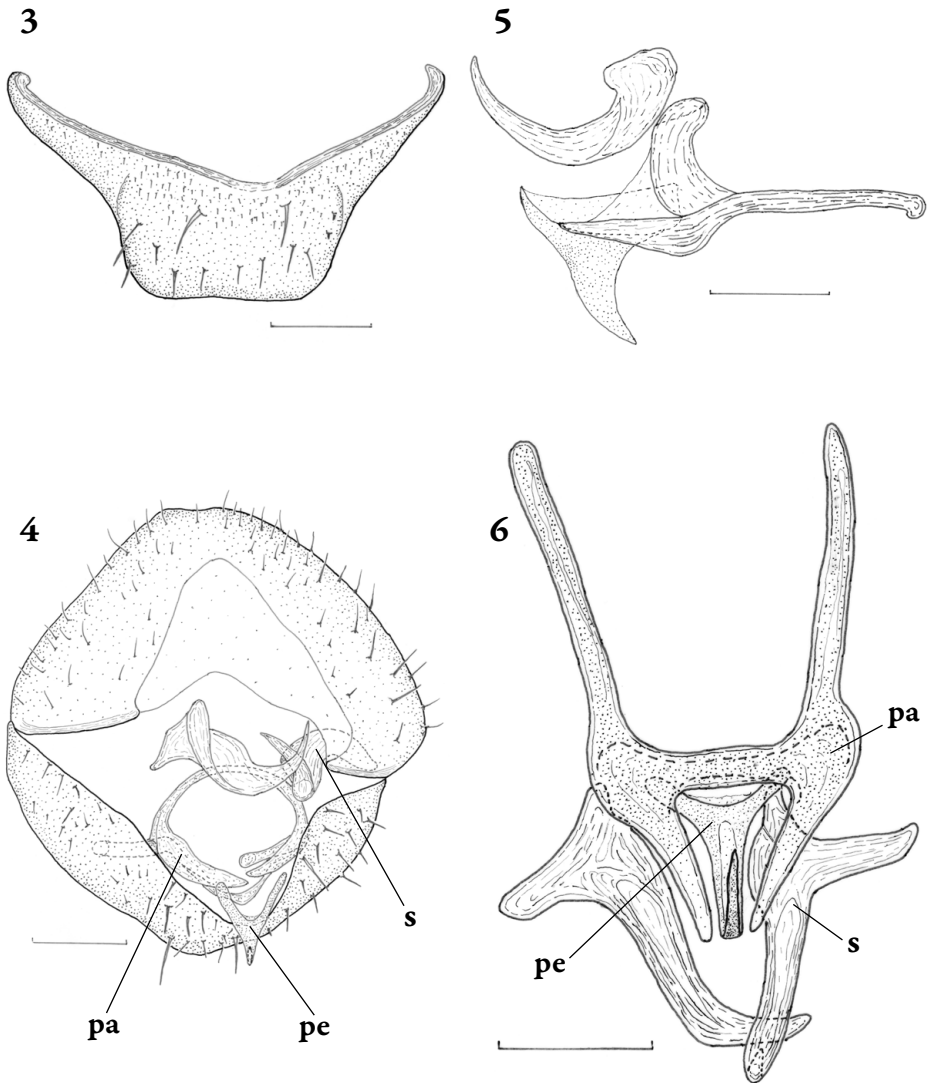
Male terminalia (Figs 2–6) well sclerotized, medium brown. Apodeme of ninth segment narrow, bent caudally; its median part usually weakened, or in a few cases interrupted. Hypandrium short, caudally truncate, with a pair of ventral setae. Ectoproct and proximal part of hypandrium synscleritous only in a small area, while there is a somewhat larger membranous structure between them. Ventral apodeme of ectoproct distinct but narrow. Paramere with proximal rods narrow, ring-like middle part moderately broad in lateral view, narrow in ventral and dorsal views; caudal part terminated in a pair of acute, ventrally situated projections, sclerotization of which somewhat weakened caudally; with a membranous connection between its middle and caudal parts. Stylus bifurcate basally (recognizable in ventral view), both basal branches very short and stout. Caudal part of stylus hooked, curved upwards and turned somewhat inwards. Normally sclerotized part of penis pickaxe-like in lateral view, its ventral hook rather wide, upper one slender and continued proximally in a membranous sheet; penis sclerite Y-shaped in ventral view.

Female: unknown.

*Etymology* – The new species is dedicated to Móric Benyovszky (1746–1786), Hungarian and Polish noble, military officer, explorer, memorialist and prince of Madagascar in the 18th century.



**Figs 1–2.** *Nimboa benyovszkyi* sp. nov., 1 = habitus (paratype, collected near to Isalo National Park (12–22.VI.2002)), 2 = male terminalia, lateral view. Abbreviations: hy = hypandrium, pa = paramere, pe = penis, s = stylus. Scale bar = 0.04 mm (photo by Anna Ágnes Somogyi, drawing by György Sziráki)



**Figs 3–6.** *Nimboa benyovszkyi* sp. nov., 3 = hypandrium, ventral view, 4 = male terminalia, caudal view, 5 = male internal genitalia, lateral view, 6 = male internal genitalia, ventral view. Abbreviations: pa = paramere, pe = penis, s = stylus. Scale bars = 0.04 mm (drawings by György Sziráki)

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