The identity of *Neocales* Risbec (Hymenoptera: Signiphoridae)

ANDREW POLASZEK

POLASZEK, A., 1993. THE IDENTITY OF *NEOCALES* RISBEC (HYMENOPTERA: SIGNIPHORIDAE). – *ENT. BER., AMST.* 53 (7): 99-102.

Abstract: The chalcidoid genus *Neocales* Risbec, described in Aphelinidae, is transferred to Signiphoridae and synonymised with *Chartocerus* Motschulsky. A lectotype is designated for the type species of *Neocales, N. philippiae*, which is redescribed. *Casca philippiae* Risbec, also described in Aphelinidae, is transferred to the eulophid genus *Euderomphale* Girault.

Department of Entomology, Wageningen Agricultural University, P.O. Box 8031; 6700 EH Wageningen, The Netherlands/International Institute of Entomology, c/o The Natural History Museum, London, SW7 5BD, UK.

Introduction

During the 1950's the French taxonomist Jean Risbec described numerous taxa of parasitic Hymenoptera from sub-Saharan Africa and Madagascar, mostly taxa of some economic importance. Among these were two genera described in the chalcidoid family Aphelinidae: *Neocales* (1957a) and *Paulianaphelinus* (1957b). Until recently, the identities of these genera remained unknown, and both were listed as *"genera incertae sedis"* in the most recent generic revision of the family (Hayat, 1983). In Annecke & Insley's (1971) catalogue of Ethiopian Aphelinidae *Neocales* and *Paulianaphelinus* were listed unchanged from Risbec's original descriptions, since they had not examined the type species of these genera (G. L. Prinsloo, pers. comm.). *Paulianaphelinus* has since been synonymized with *Aphelinus* Dalman (Polaszek & Hayat, 1991). The current study was initiated following the discovery of the syntypes of *Neocales* in the Muséum National d'Histoire Naturelle (MNHN), Paris. The syntype series was found to consist of three females and one male belonging to two species of *Chartocerus* Motschulsky in the family Signiphoridae, not Aphelinidae where Risbec had originally placed *Neocales* (but see discussion below).

Access to some of Risbec's types also presented an opportunity to examine the holotype of *Casca philippiae* Risbec (1957a), also described in Aphelinidae. This species was retained in Aphelinidae by Annecke & Insley (1971) as *Pteroptrix philippiae* (Risbec), *Pteropterix* being a senior synonym of *Casca*. During the present study *C. philippiae* was discovered to be an eulophid belonging to the genus *Euderomphale* Girault.

Morphological terms follow Woolley (1988).

Signiphoridae

Chartocerus Motschulsky, 1859: 171 (for full synonymy see Woolley, 1988).
Neocales Risbec, 1957a: 271; type species *Neocales philippiae* Risbec, 1957, by monotypy. **syn. n.**

Chartocerus philippiae (Risbec) comb. n.
(figs. 1-4)

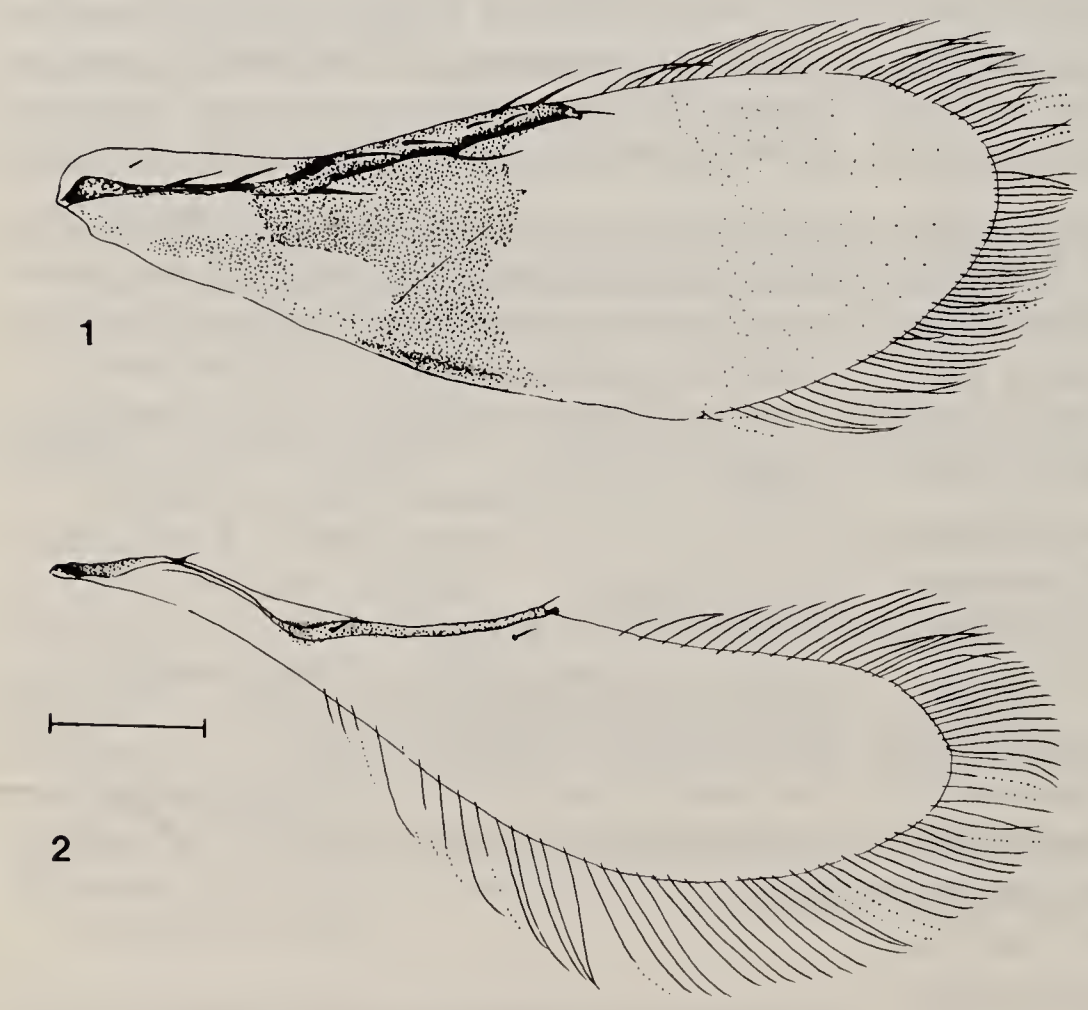
Neocales philippiae Risbec, 1957a: 271. Lectotype ♀ (here designated), [Madagascar] "1014 (3) Aphelinidae ex coch[enille]. s[ur]/ *Philippia*" "*Neocales philippiae* Risbec". Paralectotypes, 2 ♀, 1 ♂ same data as lectotype (MNHN) [examined].

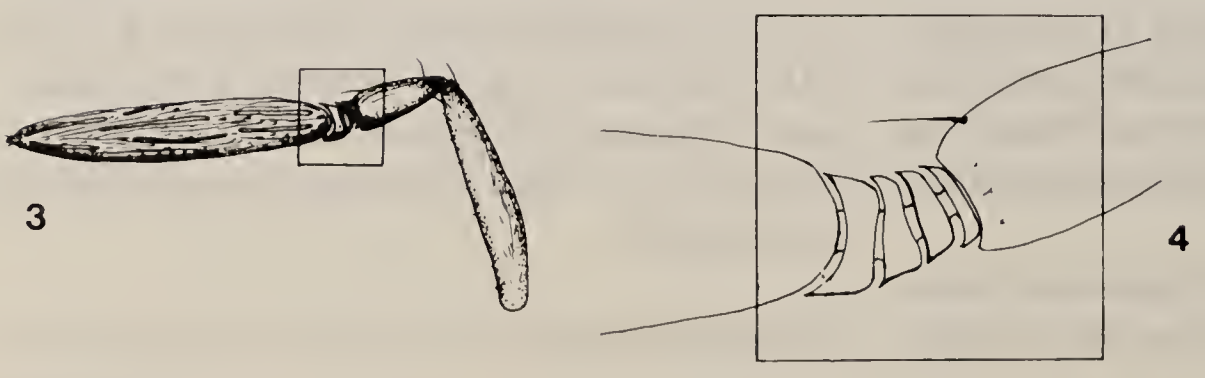
Female (lectotype). Coloration: As in the ma-

jority of *Chartocerus* spp. head, antennae, body and legs entirely brown/black except the tarsi somewhat paler, the mid tarsi palest. Fore wings proximally strongly infuscate below the marginal vein, followed by a hyaline strip, the distal third uniformly, weakly infuscate (fig. 1). Hind wings uniformly hyaline (fig. 2). Morphology: Mandibles bidentate. Posterior margin of vertex narrowly rounded, head orthognathous. Antennae (figs. 3 and 4) with scape a little more than 2× pedicel length. The club a little more than 3× pedicel length. The scape narrow, elongate; length slightly more than 5× maximum width. Funicle four-segmented, the first funicle segment the smallest, the fourth the largest, the second and third segments approximately equal. Club with many longitudinal sensilla. Mesoscutum with about 24 minute setae, mostly in the posterior half. Scutellum with a row of about 12 fine setae along its posterior edge. Ovipositor about 1.5× the length of the hind femur. Fore wing setation as in fig. 1, typical for the genus. Maximum length of wing fringe a little less than half the maximum width of the fore wing disc. Hind wing with small discal seta present, the maximum length of the wing fringe about half the maximum width of the hind wing disc (fig. 2).

Male (paralectotype). Coloration and morphology as for female, except for genitalic characters. Genitalia closely resembling those of *C. fimbriae* Hayat (1976). Head missing.

Remarks. Risbec's (unique) original slide contained four specimens mounted under two





Figs. 1-4. *Chartocerus philippiae* (Risbec), female lectotype. 1, fore wing; 2, hind wing; 3, antenna; 4, detail of antenna showing funicle (Figs. 1-3 drawn to the same scale, scale line 0.1 mm).

coverslips. I have cleared and remounted each specimen on a separate slide in Canada balsam. These four specimens represent two different species of *Chartocerus*. In his original description Risbec believed he was describing four conspecific females. From the description it is clear which of the two species in the syntype series he was describing. I have therefore designated as lectotype a female approximating most closely to his description. Fortunately, the only male in the syntype series is conspecific with the lectotype female, the other two females representing a second species. The two species are very easily separable by fore wing characters; both the patterning and wing fringe length differ fundamentally in the two species. *C. philippiae* is close to *C. fimbriae* Hayat, which has the fourth funicle segment larger, and the marginal fringe of the fore wing longer. Specimens of (West African) *Chartocerus* in The Natural History Museum, London (NHM), tentatively determined by Dr J. S. Noyes as *C. subaeneus* (Foerster)/*nowitzkyi* (Domenichini) are closer to *C. philippiae*, but differ slightly in fore wing and hind wing characters.

The second species, represented by two females, is close to *C. hyalipennis* Hayat, described from India, and may be conspecific with specimens from Togo which I have examined in the Natural History Museum, London, identified as *C. hyalipennis* by Dr J. S. Noyes.

Revisionary work on Africotropical *Chartocerus* will be needed before the two species treated here can be correctly placed at the species-level.

Eulophidae

Euderomphale philippiae (Risbec) comb. n.

Casca philippiae Risbec, 1957a: 269. Holotype ♂, [Madagascar] "1008 (2) ex cochenille s[ur]/ *Philippia* sp. *Neocasca philippiae* Risbec" (MNHN) [examined].
Pteroptrix philippiae (Risbec): Annecke & Insley 1971: 36.

Remarks. As in the case of the two *Chartocerus* spp., Annecke & Insley (1971) had not examined the type material of this species. The unique specimen in the MNHN labelled as above is, in my opinion, undoubtedly the specimen on which Risbec based his description of *Casca philippiae*. A lectotype designation is therefore not necessary here since Risbec stated that the species was described from a unique specimen. The name "*Neocasca*" on the label is certainly a lapsus, understandable, to an extent, when one considers that in the same paper Risbec's next description was of *Neocales*, and he had applied the prefix "*Neo-*" to both *Cales* and *Casca*, both of which were, at the time, valid aphelinid genera. Examination of this specimen shows that it clearly belongs in the eulophid genus *Euderomphale*, which, like many of the aphelinid genera, is a specialist parasite of whiteflies.

Discussion

The Eulophidae and Signiphoridae of Africa, Madagascar and the associated islands have been very little studied, either in terms of their biology or their taxonomy (Prinsloo, 1980). The purpose of this note is to properly place generically some species whose true identity was previously unknown. I have stopped short at resolving problems at the species-level.

Although Risbec was clearly mistaken in his family placement of the species included here, a recent phylogenetic study (Woolley, 1988) suggests that Signiphoridae may actually form a monophyletic sister-group to part of Aphelinidae (the *Ablerus*/*Azotus* lineage), and may therefore eventually be regarded as a taxon within Aphelinidae. Thus Risbec's family placement of *Neocales* may be correct, however fortuitously.

Clearly further taxonomic studies are necessary on African aphelinids, and especially signiphorids. These groups are of particular interest because their hosts, mostly whiteflies (Aleyrodidae) and scale insects (Coccoidea) are often of great economic importance.

Acknowledgments

I am grateful to the Directorate General for International Cooperation (DGIS) of the Netherlands Government and to Dr J. Casewitz-Weulersse (MNHN) for the opportunity to study Risbec's types; also to Dr J. S. Noyes and the Trustees of The Natural History Museum, London for access to comparative *Chartocerus* specimens. Dr J. La-Salle (International Institute of Entomology, London) kindly confirmed the identity of *Casca philippiae* as an *Euderomphale*, and both Dr LaSalle and Dr G. L. Prinsloo (Plant Protection Research Institute, Pretoria, South Africa) made useful comments on the first draft.

References

ANNECKE, D. P. & H. P. INSLEY, 1971. Catalogue of Ethiopian Encyrtidae & Aphelinidae (Hymenoptera: Chalcidoidea). – *Dep. Agric. Tech. Serv., Rep. S. Afr., Entomology Mem.* 23: 1-53.

HAYAT, M., 1976. Some Indian species of Chartocerus (Hym.: Chalcidoidea: Signiphoridae). – *Orient. Ins.* 10: 161-164.

HAYAT, M., 1983. The genera of Aphelinidae (Hymenoptera) of the World. – *Syst. Ent.* 8: 63-102.

MOTSCHULSKY, N. DER, 1859. IV. Entomology appliquée. Insectes utiles et nuisibles. – *Etudes ent.* 8: 169-174.

POLASZEK, A. & M. HAYAT, 1991. The Identity of Pauli-anaphelinus mariscusae Risbec (Hymenoptera: Aphelinidae). – *Boll. Lab. Ent. agr. Filippo Silvestri* 46 (1989): 21-24.

PRINSLOO, G. L., 1980. An illustrated guide to the families of African Chalcidoidea (Insecta: Hymenoptera). – *Sci. Bull. Dep. Agric. Fish. Rep. S. Afr.* 395: 1-66.

RISBEC, J., 1957a. Aphelinidae de Madagascar (Hym. Chalcidoidea). – *Naturaliste malgache* 9 (2): 263-272.

RISBEC, J., 1957b. Hymenoptères Proctotrupidae et Chalcidoides. – *Mém. Inst. scient. Madagascar (E)* 7: 321-366.

WOOLLEY, J. B., 1988. Phylogeny and classification of the Signiphoridae (Hymenoptera: Chalcidoidea). – *Syst. Ent.* 13: 465-501.

Accepted 31.iii.1993.