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et du
MUSÉUM D'HISTOIRE NATURELLE
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TOME 119— FASCICULE 2

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VILLE DE GENÈVE
SOCIÉTÉ SUISSE DE ZOOLOGIE

Comité de rédaction

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Directrice du Muséum d'histoire naturelle de Genève

ALICE CIBOIS, PETER SCHUCHERT

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La préférence sera donnée aux travaux concernant les domaines suivants: taxonomie, systématique, faunistique, phylogénie, évolution, morphologie et anatomie comparée.

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An annotated list of the Orthoptera (Insecta) species described by Henri de Saussure, with an account of the primary type specimens housed in the Muséum d'histoire naturelle de Genève, Part 1: The Tridactyloidea (Caelifera)

John HOLLIER¹ & Sam W. HEADS²

¹ Muséum d'histoire naturelle, C. P. 6434, CH-1211 Genève 6, Switzerland.

E-mail: john.hollier@ville-ge.ch

² Section for Biodiversity & Systematics, Illinois Natural History Survey, University of Illinois, 1816 South Oak Street, Champaign, Illinois 61820, USA.

E-mail: swheads@illinois.edu

An annotated list of the Orthoptera (Insecta) species described by Henri de Saussure, with an account of the primary type specimens housed in the Muséum d'histoire naturelle de Genève, Part 1: The Tridactyloidea (Caelifera). - Henri de Saussure described thirty species or subspecies in the superfamily Tridactyloidea (Orthoptera: Caelifera). The names are listed alphabetically, with the location of the type material (if known) and current nomenclatural combination provided. Where primary type material is housed in the Muséum d'histoire naturelle de Genève (MHNG), the sex, verbatim label data and condition of the specimens is provided along with their location within the collection.

Keywords: Cyndrarchetidae - Ripipterygidae - Tridactylidae - type catalogue.

INTRODUCTION

The Swiss entomologist Henri Louis Frédéric de Saussure (1829 - 1905) came from a well-known and well-connected Genevan family. His grandfather was Horace-Benedict de Saussure (1740 - 1799), a pioneer in many scientific disciplines; and his uncle, Théodore de Saussure (1767 - 1845) was a professor at the Geneva Academy and published important works on organic chemistry and plant physiology. His aunt Albertine Necker de Saussure (1766 - 1841), was married to botanist Jacques Necker (nephew of the Jacques Necker who acted as finance minister to the French king Louis XVI), a cousin and friend of the author Anne de Staël (1766 - 1817), and an author in her own right. Born into such a distinguished and affluent family, Henri Saussure was well placed to pursue his academic interests in natural history. As a young man he studied at the Institute of Fellenberg and then at the Geneva Academy under the tutelage of the eminent Swiss zoologist and palaeontologist François Jules Pictet de la Rive (1809 - 1872) who first introduced him to entomology. After several years spent studying in Paris, Saussure obtained his doctorate from the University of Gießen,

Germany, specializing in the study of Orthoptera and Hymenoptera. He later travelled widely in the West Indies, Mexico and North America where he met the distinguished naturalist Louis Agassiz (1807 - 1873). On his return to Switzerland, laden with important collections of New World insects and myriapods, Saussure established himself in Geneva and was to become deeply involved in the administration and development of the Natural History Museum and its collections for the rest of his life (Bedot, 1906). An internationally recognized and highly respected authority on many aspects of entomology and natural history, Saussure was one of the preeminent naturalists of his generation. He amassed large and important zoological collections and published extensively in disciplines as varied as entomology, ornithology, mammalogy, geology, geography, archaeology and anthropology. In 1872 he was elected an Honorary Fellow of the Entomological Society of London (now the Royal Entomological Society) and in 1903, two years before his death, he donated his large and important personal collection to the Muséum d'histoire naturelle de Genève (MHNG) (Ferrière, 1974).

Among entomologists, Saussure is probably best known for his work on the "orthopteroid" orders. Between 1852 and his death in 1905, he described over 1,300 orthopteran taxa, published more than 50 papers and monographs on the order and coined the term "orthopterology". His early works on Orthoptera dealt primarily with material collected during, or acquired as the result of, an expedition to the Caribbean, Mexico and the United States between 1854 and 1856 (e.g. Saussure, 1859, 1874b). Later works mainly comprised large monographic treatments of particular groups (for example, his seminal two-part monograph of the true crickets; Saussure, 1877, 1878) or regional studies such as his important contribution to the *Biologia Centrali-Americana*, edited by Frederick DuCane Godman (1834 - 1919) and Osbert Salvin (1835 - 1898). He also published several works in collaboration with other entomologists, most notably with Alphonse Pictet (1838 - 1903) and Leo Zehntner (1864 - 1961).

The type concept utilized by Saussure evolved throughout his career and although his later works included more information about type series, he never explicitly labelled specimens as types. All type specimens are therefore treated as syntypes unless it is obvious from the original description that Saussure possessed only a single specimen. The material in the MHNG collection, particularly that from Central America, was revised several times by Saussure and his successor Jean Carl (1877 - 1944), and has subsequently been studied by numerous experts. While many specimens have since been labelled as types, it is not always possible to tell by whom. Moreover, many of the locality and determination labels appear to have been added long after the descriptions were published and often bear incorrect data. Type material of species names subsequently considered synonyms usually only bear determination labels with the assumed correct name, although there is often an indication of the synonymy on the label in the specimen box. Additionally, there are a number of specimens placed in the collection under unpublished names, though in some cases these can be identified as types of species eventually published under a different name.

Type catalogues for the MHNG collections of Mantodea (Roy & Cuche, 2008) and Phasmatodea (Zompro & Brock, 2003) include many species described by Saussure. The species of Orthoptera described by Saussure in collaboration with

Alphonse Pictet are listed by Hollier (2011). Here, we present the first in a series of type catalogues listing those orthopteran species described by Saussure alone. The present contribution is concerned with those species described in the superfamily Tridactyloidea (Caelifera). Saussure considered the tridactyloids to belong within the true crickets (Ensifera: Gryllidae) and the specimens in the MHNG collections were arranged accordingly. The MHNG tridactyloid holdings were studied by Kurt K. Günther, who reorganized the specimens according to contemporary classifications of the group (i.e. within Caelifera) and published an account of the MHNG holdings (Günther, 1974). Here, we present a comprehensive list of Saussure's tridactyloid types along with detailed summaries of primary types held in the MHNG.

ARRANGEMENT AND FORMAT

Catalogue entries are listed alphabetically by specific epithet and are arranged according to the following format:

specific epithet Author, year: page [*original generic placement*].

Provenance as given in the original description. Type series.

Number of specimens. Specimen: "Label data" [format of label]. Following the recommendations of Ohl & Oswald (2004) the condition of each specimen is noted. Other comments. Location of specimens in the MHNG main Orthoptera collection.

Currently valid combination of taxon following *Orthoptera Species File* (Eades *et al.*, 2011).

Saussure's material was nearly always directly pinned through the thorax and this can be assumed to be the case for all specimens unless otherwise stated. However, many of the tridactyloids are glued to card mounts and a note is appended to the entry to indicate this.

The following abbreviations are used in the list:

BMNH The Natural History Museum, London.

MCSN Museo Civico di Storia Naturale "Giacomo Doria", Genoa.

MHNG Muséum d'histoire naturelle, Geneva.

MNHN Muséum National d'Histoire Naturelle, Paris.

NHMW Naturhistorisches Museum Wien, Vienna.

OSF Orthoptera Species Files.

CATALOGUE

biolleyi Saussure, 1896a: 215 [*Rhipipteryx*].

Costa Rica, San José (Biolley, in Mus. Genavense). Unspecified number of ♂.

The ♂ neotype (designated by Günther, 1969: 358) is in the collection of the Academy of Natural Sciences of Philadelphia (USA). The original description states that the type material is in the MHNG, but Günther (1974: 1072) concluded that the ♂ specimen in the MHNG collection with labels: "Costa Rica" [handwritten on white card]; "Rhipipteryx Biolei n. sp.?" [handwritten on white paper]; "Rhipipteryx Biollei" [handwritten on green paper]; "Rhipipteryx biolleyi Sauss. ♂, Sauss, det. K.K.

Günther 1972" [handwritten by Günther on white card with "det. K.K. Günther 197" printed] was not a type because the species name was incorrectly spelt, the data label did not have all of the available information and because the specimen was referable to *R. biolleyi intermedia*. In fact the style of the labels rather suggests the opposite, and the specimen is rather darker than the syntypes of *R. biolleyi intermedia*, which is only a colour variation of *R. biolleyi*. The status of this specimen and of the neotype is therefore unclear. Box A4d.

Rhipipteryx biolleyi Saussure, 1896.

biolleyi* var. *intermedia Saussure, 1896a: 215 [*Rhipipteryx*].

Costa Rica, Volcan de Irazu, 6000 to 7000 ft. (Rogers). Unspecified number of ♂.

Three ♂ and two ♀ syntypes. A ♂ with labels: "Irazu, 6-7000 ft., H. Rogers" [handwritten on white card]; "Rhipipteryx intermedia, ♂ Sss." [handwritten on green paper]; "Rhipipteryx biolleyi, Sauss., det. K.K. Günther 1972" [handwritten by Günther on white card with "det. K.K. Günther 197" printed]; "Cotype von: Rhipipteryx biolleyi intermedia Sauss. 1896, det. K.K. Günther 1972" [handwritten by Günther on white card with "det. K.K. Günther 197" printed]; "Syntypus" [printed on red paper]. The right middle leg is lost. A card mounted ♂ with labels: "Irazu, 6-7000 ft., H. Rogers" [printed on white card]; "Rhipipteryx intermedia, ♂ Sss." [handwritten on green paper]; "Rhipipteryx biolleyi, Sauss., det. K.K. Günther 1972" [handwritten by Günther on white card with "det. K.K. Günther 197" printed]; "Cotype von: Rhipipteryx biolleyi intermedia Sauss. 1896, det. K.K. Günther 1972" [handwritten by Günther on white card with "det. K.K. Günther 197" printed]; "Syntypus" [printed on red paper]. The specimen is mounted on its right side. A card mounted ♂ with labels: "Irazu, 6-7000 ft., H. Rogers" [handwritten on white card]; "Rhipipteryx intermedia, ♂ Sss." [handwritten on green paper]; "Rhipipteryx biolleyi, Sauss., det. K.K. Günther 1972" [handwritten by Günther on white card with "det. K.K. Günther 197" printed]; "Cotype von: Rhipipteryx biolleyi intermedia Sauss. 1896, det. K.K. Günther 1972" [handwritten by Günther on white card with "det. K.K. Günther 197" printed]; "Syntypus" [printed on red paper]. The antennae are broken, with some pieces attached to the card mount, and the left middle leg is missing. A ♀ with labels: "Irazu, 6-7000 ft., H. Rogers" [handwritten on white card]; "Rhipipteryx intermedia, Sss." [handwritten on green paper]; "Rhipipteryx biolleyi, Sauss., det. K.K. Günther 1972" [handwritten by Günther on white card with "det. K.K. Günther 197" printed]; "Cotype von: Rhipipteryx biolleyi intermedia Sauss. 1896, det. K.K. Günther 1972" [handwritten by Günther on white card with "det. K.K. Günther 197" printed]; "Syntypus" [printed on red paper]. A card mounted ♀ with labels: "Irazu, 6-7000 ft., H. Rogers" [handwritten on white card]; "Rhipipteryx intermedia, ♀ Sss." [handwritten on green paper]; "Rhipipteryx biolleyi, Sauss., det. K.K. Günther 1972" [handwritten by Günther on white card with "det. K.K. Günther 197" printed]; "Cotype von: Rhipipteryx biolleyi intermedia Sauss. 1896, det. K.K. Günther 1972" [handwritten by Günther on white card with "det. K.K. Günther 197" printed]; "Syntypus" [printed on red paper]. The specimen is mounted on its left side, the tibia and tarsi of the right hind leg are missing. Box A4d.

Junior synonym of *Ripteryx biolleyi* Saussure, 1896.

brunneri Saussure 1896b: 409, 413-414 [*Tridactylus*].

Birmania. Unspecified number of ♂ and ♀.

Lectotype ♂ (designated by Günther, 1974: 1052), mounted on card, with labels: "Teinzo. Birmanie, Fea, Maggio 1886" [printed on white card]; "Xya Brunneri Sss." [handwritten on yellow paper]; "Tridactylus brunneri Saussure, det K.K. Günther 1972, Lectotypus" [handwritten by Günther on white card with "det K.K. Günther 197" printed]; "Lecto-TYPUS" ["Lecto" handwritten and "TYPUS" printed on red card]. Specimen lacks the antennae and the last tarsal segment of the right middle leg. The right fore wing is detached and glued to the card mount. There is a micro-tube with dissected parts secured on the original pin. There are also two ♀ paralectotypes in the MHNG collection. Box A4b.

Bruntridactylus brunneri (Saussure, 1896).

capensis Saussure, 1877: 50 [*Tridactylus*].

Cap de Bonne-Espérance (Musée de Vienne). Unspecified.

Three ♂ and one ♀ syntype. Three ♂ mounted on one piece of card with labels: "Cap b. Esp, Peringuey" [handwritten by Günther on white card]; "Paralectotypen ♂ von: Tridactylus capensis Saussure, det. K.K. Günther 1972" [handwritten by Günther on white card with "det. K.K. Günther 197" printed]; "Paratypus" [printed on orange card]; "Syntypus" [printed on red paper]. The specimen on the left is tilted to its left side, and the tibia of the right middle leg is detached, though still glued to the card. This specimen also lacks the left antenna. A ♀ mounted ventral-side uppermost on a card point with labels: "Cap b. Esp, Peringuey" [handwritten by Günther on white card]; "Paralectotypen ♀ von: Tridactylus capensis Saussure, det. K.K. Günther 1972" [handwritten by Günther on white card with "det. K.K. Günther 197" printed]; "Paratypus" [printed on orange card]; "Syntypus" [printed on red paper]. Both antennae, the tarsi of the right middle leg and of both hind legs are lost. Günther (1974: 1036) considered these to be syntypes but hesitated to designate a lectotype because the specimens are all brachypterous. A ♂ and a ♀ specimen mentioned by Günther are missing from the collection. The original description states that the type material was in the NHMW, but it cannot be located there (Bruckner, pers. comm. to J.H.). Box A4b.

Xya capensis capensis (Saussure, 1877).

carbonaria Saussure, 1896a: 211 [*Rhipipteryx*].

Panama, Volcan de Chiriqui, 2000 to 3000 ft. (Champion). Unspecified number of ♀.

There is a ♀ specimen, referred to as the holotype by Günther (1969: 346), in the BMNH. The MHNG collection includes six ♀ specimens, but these were collected by Biolley, apparently after the publication of the description, and are therefore not types. Box A4.

Ripteryx carbonaria Saussure, 1896.

circumcincta Saussure, 1874b: 358 [*Rhipipteryx*].

Amérique meridionale (Musée de Paris). Unspecified number of ♂.

No specimens found in the MHNG collection. The type material was stated to be in the MNHN when the description was published. Günther (1969: 278) considered it lost.

A junior synonym of *Rhipipteryx marginata* Newman, 1834.

cyanipennis Saussure, 1874b: 358-359 [*Rhipipteryx*].

Guyane, Surinam; Venezuela. Two ♂ and more than two ♀.

Lectotype (designated by Günther, 1969: 304) with labels: "Surinam, ♂, Mr H. d. Sauss" [handwritten on ruled white card]; "Rhipipteryx cyanipennis Sauss ♂" [handwritten on green paper]; "LECTO-TYPUS" ["LECTO" handwritten and "TYPUS" printed on red card]; "Rhipipteryx cyanipennis, Saussure, det K.K. Günther 1964, Lectotypus" [handwritten by Günther on white card with "det K.K. Günther 19" printed]. Specimen lacks the right antenna. The head is detached and glued to a card triangle secured on the original pin. Box A4d.

Rhipipteryx cyanipennis Saussure, 1874.

denticulatus Saussure, 1874b: 353-354, fig. 26 [*Tridactylus*].

Para (Musée de Genève). More than one (only ♂ mentioned explicitly).

A ♂ lectotype was designated by Günther (1974: 1067) from the specimens in the MHNG, but it is missing from the MHNG collection, along with the ♀ paralectotype. A ♂ paralectotype is still present. Box A4c.

Dentridactylus denticulatus (Saussure, 1874).

fissipes Saussure, 1874b: 352-353, fig. 25 [*Tridactylus*].

États-Unis, Louisiane. Unspecified number of ♂ and ♀.

Lectotype ♂ (designated by Günther, 1974: 1066) with labels: "♂, Louisiana, Etats Unis, Mr H. d. Sauss." [handwritten on ruled white card with "Etats Unis" printed]; "♂" [printed on a small square of white card]; "A fissipes Sss ♂ ♀" [handwritten in pencil on white paper]; "Tridactylus fissipes Sauss. ♂" [handwritten on green paper]; "Tridactylus fissipes Saussure ♂, det K.K. Günther 1972, Lectotypus" [handwritten by Günther on white card with "det K.K. Günther 197" printed]; "LECTO-TYPUS" ["Lecto" handwritten and "TYPUS" printed on red card]; "Neotridactylus apicalis Say ♂, det K.K. Günther 1972, Lectotypus" [handwritten by Günther on white card with "det K.K. Günther 197" printed]. Specimen set with left fore wing spread; the right antenna, the tarsi of the right middle leg and the left hind leg are missing. There is also a ♀ paralectotype in the MHNG collection. Box A4c.

A junior synonym of *Neotridactylus apicalis* (Say, 1825).

forceps Saussure, 1896a: 210-211 [*Rhipipteryx*].

Colombia. Unspecified number of ♂ and ♀.

Lectotype ♂ (designated by Günther, 1969: 345) with labels: "Bogota, Nlle Grenade" ["Bogota" handwritten and "Nlle Grenade" printed on ruled white card]; "♂" [printed on a small square of white card]; "Rhipipter. forceps S., ♂" [handwritten on green paper]; "Rhipipteryx forceps Sauss., Lectotypus, det K.K. Günther 1963, Lectotypus" [handwritten by Günther on white card with "det K.K. Günther 19" printed].

printed]; "Lecto-TYPUS" ["LECTO" handwritten and "TYPUS" printed on red card]. Specimen mounted with wings folded. A micro-tube containing dissected parts is secured on the original pin. There is also one ♂ and one ♀ paralectotype in the MHNG collection. Box A4d.

Ripteryx forceps Saussure, 1896.

fraterna Saussure, 1896a: 214 [*Rhipipteryx*].

Mexico, Atoyac in Vera Cruz (H. H. Smith, Schumann), Orizaba (F. D. Godman); Guatemala, Purula in Vera Paz (Champion). Unspecified number of ♂ and ♀.

Two ♂ and one ♀ syntype. A card mounted ♂ with labels: "Atoyac, Vera Cruz, May H.H.S." [printed on white card]; "♂" [printed on white paper]; "Rhipipteryx fraterna Sss." [handwritten on green paper]; "Rhipipteryx mexicana, ♂, Saus., det. K.K. Günther 1972" [handwritten by Günther on white card with "det. K.K. Günther 1972" printed]; "Cotype von: Rhipipteryx fraterna Sauss. 1896, det. K.K. Günther 1972" [handwritten by Günther on white card with "det. K.K. Günther 1972" printed]; "Syntypus" [printed on red paper]. The specimen lacks the tibia and tarsi of the right middle leg. A ♂ pinned with a micro-pin to a piece of pith with labels: "Orizaba, H. S. & F. D. G., Dec. 1887" [printed on white card]; "♂" [printed on white paper]; "Rhipipteryx fraterna Sss." [handwritten on green paper]; "Rhipipteryx mexicana, ♂, Saus., det. K.K. Günther 1972" [handwritten by Günther on white card with "det. K.K. Günther 1972" printed]; "Syntypus" [printed on red paper]. A ♀ with labels: "Atoyac, Vera Cruz, Schumann" [printed on white card]; "♀" [printed on white paper]; "Rhipipteryx fraterna Sss." [handwritten on green paper]; "Rhipipteryx mexicana, ♀, Saus., det. K.K. Günther 1972" [handwritten by Günther on white card with "det. K.K. Günther 1972" printed]; "Cotype von: Rhipipteryx fraterna Sauss. 1896, det. K.K. Günther 1972" [handwritten by Günther on white card with "det. K.K. Günther 1972" printed]; "Syntypus" [printed on red paper]. Box A4b.

A junior synonym of *Ripteryx mexicana* Saussure, 1859.

fraterna var. rufescens Saussure, 1896a: 214 [*Rhipipteryx*].

Mexico, Atoyac in Vera Cruz (H. H. Smith, Schumann), Orizaba (F. D. Godman); Guatemala, Purula in Vera Paz (Champion). Unspecified number of ♀ and ♀.

A possible ♀ syntype with labels: "var, Guatemala, M H de Saussure" [handwritten on ruled white card]; "♀" [printed on a square of white paper]; "Rhipipteryx fraterna Sss." [handwritten on green paper]; "Rhipipteryx mexicana, ♀, Saus., det. K.K. Günther 1972" [handwritten by Günther on white card with "det. K.K. Günther 1972" printed]; "Entspricht: R. fraterna var. rufescens Sauss., det. K.K. Günther 1972" [handwritten by Günther on white card with "det. K.K. Günther 1972" printed]; "Syntypus" [printed on red paper]. Specimen set with wings roughly folded; the left antenna and the left front middle and hind legs are missing. Box A4b.

A junior synonym of *Ripteryx mexicana* Saussure, 1859.

galla Saussure, 1895: 92 [*Tridactylus*].

Arussi Galla, Ganale Guddá (Mars-Mai; Bottego). Unspecified.

No specimens found in the MHNG. There is a ♀ syntype in the MCSN (Poggi, pers. comm.).

Tridactylus galla Saussure, 1895.

histrion Saussure, 1896a: 207-208 [*Tridactylus*].

North America, Texas; Antilles, Cuba (Krug). Unspecified.

The ♀ lectotype (designated by Günther, 1977: 59) is in the BMNH. The MHNG collections house two ♂ and four ♀ paralectotypes. Box A4c.

A junior synonym of *Ellipes minuta* (Scudder, 1862).

histrionicus Saussure, 1896a: 207 [*Tridactylus*].

North America, Texas (Boll); Mexico, Atoyac in Vera Cruz, Frontera and Teapa in Tabasco (H. H. Smith). Unspecified number of ♂ and ♀.

The ♂ lectotype (designated by Günther, 1977: 59) is in the BMNH. The MHNG collections contain one ♂ and one ♀ paralectotype. Box A4c.

A junior synonym of *Ellipes minuta* (Scudder, 1862).

hydrodroma Saussure, 1896a: 213 [*Rhipipteryx*].

Nicaragua, Chontales (Janson), South America. Unspecified number of ♂.

No specimens found in the MHNG. There is a specimen, referred to as the holotype by Günther (1969: 307), in the BMNH.

Rhipipteryx hydrodroma Saussure, 1896.

incertus Saussure, 1896a: 206 [*Tridactylus*].

North America, Texas (Boll); Mexico (Sumichrast). More than one ♀.

There are no specimens under this name in the MHNG. There may be syntypes amongst the specimens currently placed under *Neotridactylus apicalis* (Say), which include individuals collected by Boll and Sumichrast, but these cannot be identified. Box A4c.

A junior synonym of *Neotridactylus apicalis* (Say, 1825).

kochii Saussure, 1877: 40-42, fig. 3 [*Cylindrodes*].

Nouvelle Hollande (Musée de Genève). Unspecified.

One ♂ syntype with labels: "Nord de la Nouv. Holl. M. Hy de Saussure" [handwritten on ruled white card with "Nouv. Holl." printed]; "Cylind. Kochii Sauss." [handwritten on faded lilac paper]; "Holotypus von Cylindrodes kochii Sauss. 1822 ♂, det. K. K. Günther 1974" [handwritten on white card with "det. K. K. Günther 197" printed]; "Cylindrodes kochii (Sauss.), ♂ Holotypus, det. K. K. Günther 1990" [handwritten on white card with "det. K. K. Günther 19" printed]; "Holotypus" [printed on red card]. The specimen lacks the tarsi of the right middle leg. The right front leg is detached and glued to card secured on the original pin. The terminalia, which have been detached and dissected, are in a micro-tube on a separate pin with labels "Terminalia of Holotype of Cylindrodes kochii (Saussure), det. K. K. Günther 1990" [handwritten on white card with "det. K. K. Günther 19" printed];

“Holotypus” [printed on red card]. Günther (1974: 1073) refers to this specimen as the holotype, but this is unjustified. Box A3.

Cylindraustralia kochii (Saussure, 1877).

madecassus Saussure 1896b: 409, 415-416 [*Tridactylus*].

Madagascar. Unspecified number of ♀.

The MHNG collection has one ♂ and one nymph, but these are from Ethiopia and are therefore not types. There is a ♀ specimen, referred to as the holotype by Günther (1974: 1051), in MNHN. Box A4b.

Afrotridactylus madecassus (Saussure, 1896).

mexicana Saussure, 1859: 316 [*Rhipipteryx*].

Mexico calida. Unspecified number of ♂ and ♀.

Lectotype ♂ (designated by Günther, 1969: 349), mounted on white card, with labels: “Oaxaca, Mexique, Mr H. d. Sauss” [handwritten on ruled white card with “Mexique” printed]; “Rhipipteryx mexicana Sauss., Mexique M.H.S.” [handwritten on green paper]; “♂” [printed on a small square of white card]; “LECTO-TYPUS” [“LECTO” handwritten and “TYPUS” printed on red card]; “Rhipipteryx mexicana, Sauss. ♂” [handwritten on green paper]; “Rhipipteryx mexicana Sauss., Lectotypus, det K.K. Günther 1964, Lectotypus” [handwritten by Günther on white card with “det K.K. Günther 19” printed]; “Lecto-TYPUS” [“Lecto” handwritten and “TYPUS” printed on red card]. The specimen lacks the left antenna, the tibia and tarsus of the left middle leg and the entire right middle leg. A micro-tube containing dissected parts is secured on the original pin. The specimen was originally directly pinned, but the card mount does not appear to be recent. There are also two ♀ paralectotypes in the MHNG collection. Box A4d.

Ripteryx mexicana Saussure, 1859.

pulex Saussure 1896b: 410, 419 [*Tridactylus*].

Java, Pasoeroean (Zehntner). Unspecified number of ♂.

One ♂ syntype, mounted on card, with labels: “Java or., Pasoeroean, 622, 20” [printed on yellow paper]; “pulex Sss. ♂” [handwritten on yellow paper]; “Holo-TYPUS” [“Holo” handwritten and “TYPUS” printed on red card]; “Holotypus von Tridactylus pulex Saussure 1897 [sic], det K.K. Günther 1972” [handwritten by Günther on white card with “det K.K. Günther 197” printed]. This specimen lacks the left fore wing and left hind leg. The right fore wing and right hind leg are detached and glued to the card mount. There is a micro-tube with dissected parts secured to the original pin. There are eleven other specimens with the same data placed under this name, and it is not clear why Günther did not consider them to be syntypes. Box A4b.

Xya pulex (Saussure, 1896).

pulicaria Saussure, 1896a: 215-216 [*Rhipipteryx*].

Mexico, Dos Caminos in Guerrero, Atoyac in Vera Cruz, Teapa in Tabasco (H. H: Smith). Unspecified number of ♂ and ♀.

The lectotype ♂ (designated by Günther, 1969: 366) is in the BMNH. The MHNG collections include six ♂ and three ♀ paralectotypes. Box A4e.

Mirhipipteryx pulicaria pulicaria (Saussure, 1896).

pulicaria* var. *peruviana Saussure, 1896a: 216 [*Rhipipteryx*].

Peru, Tarma (Mus. Genavense). Two ♀.

Lectotype ♀ (designated by Günther, 1969: 383), glued on a card point, with labels: "Peru" [handwritten on green paper]; "Rhipipteryx peruviana Sauss." [handwritten on green paper]; "Rhipipteryx peruviana Sauss., det K.K. Günther 1964" [handwritten by Günther on white card with "det K.K. Günther 19" printed]; "LECTOTYPUS" ["Lecto" handwritten and "TYPUS" printed on red card]. The head and prothorax are missing, as is the left middle leg and the tarsi of the right middle leg. Box A4e.

Mirhipipteryx peruviana (Saussure, 1896).

riparius Saussure, 1877: 48-49, figs 4 & 11 [*Tridactylus*].

Iles de la Sonde, Banka (Musée de Leyde et de Genève). Six specimens, sex not specified.

Lectotype ♀ (designated by Günther, 1974: 1028), card mounted, with labels: "Banka, Iles de la Sonde, M H de Saussure" [handwritten on ruled white card]; "Tridactylus riparius Sss." [handwritten on yellow paper]; "Lectotypus ♀, von Tridactylus riparius Sauss. 1877, det K.K. Günther 1973" [handwritten by Günther on white card with "det K.K. Günther 197" printed]; "LECTOTYPUS" ["Lecto" handwritten and "TYPUS" printed on red card]. Specimen lacks most of both antennae and both middle legs. The left front leg and right hind leg are detached and glued to the card mount. A micro-tube with dissected parts is secured on the original pin. Box A4b.

Xya riparia (Saussure, 1877).

rivularia Saussure, 1896a: 212 [*Rhipipteryx*].

Colombia (Mus. Genavense). Unspecified (only ♂ mentioned explicitly).

One ♂ syntype with labels: "Colombie, M H de Saussure" [handwritten on ruled white card]; "Rhipipteryx rivularia Sss., ♂" [handwritten on green paper]; "Holotypus von Rhipipteryx rivularia, Saussure 1896, det K.K. Günther 1972" [handwritten by Günther on white card with "det K.K. Günther 197" printed]; "HOLOTYPUS" ["Holo" handwritten and "TYPUS" printed on red card]. Specimen set with wings partially spread; most of both antennae and the right front leg are missing. Günther (1974: 1071) refers to this specimen as the holotype, but this is unjustified. Box A4d.

Rhipipteryx rivularia Saussure, 1896.

scrofulosa Saussure, 1896a: 215 [*Rhipipteryx*].

Mexico, Rincon in Guerrero (H. H. Smith). One ♂.

No specimens found in the MHNG. The ♂ holotype is in the BMNH (Günther, 1969: 361).

Rhipipteryx scrofulosa Saussure, 1896.

tartarus Saussure, 1874a: 26 [*Tridactylus*].

Tashkent et Samarkand. Unspecified number of ♂ and ♀.

Lectotype ♂ (designated by Günther, 1974: 1060), mounted on white card, with labels: "2 17, Turkestan, Mr H. d. Sauss." [handwritten on ruled white card]; "Tashkent" [printed in Cyrillic characters on a strip of white card]; "♂" [handwritten on a small square of white paper]; "Tridactylus tartarus Sss" [handwritten on yellow paper]; "LECTO-TYPUS" ["LECTO" handwritten and "TYPUS" printed on red card]; "Tridactylus tartarus, Saussure 1874 ♂, det K.K. Günther 1972, Lectotypus" [handwritten by Günther on white card with "det K.K. Günther 197" printed]. The specimen lacks most of the left antenna. A micro-tube containing the dissected abdomen is secured on the original pin. There are also three ♂ and two ♀ paralectotypes in the MHNG collection. Box A4b.

Bruntridactylus tartarus (Saussure, 1874).

tricolor Saussure, 1896a: 214 [*Rhipipteryx*].

Mexico. Unspecified (only ♂ mentioned explicitly).

The lectotype ♂ (designated by Günther, 1969: 354) is in the BMNH. The MHNG collection houses two ♂ and two ♀ paralectotypes. Box A4d.

Rhipipteryx tricolor Saussure, 1896.

tricolor var. saltator Saussure, 1896a: 214-215 [*Rhipipteryx*].

Costa Rica. Unspecified.

One ♂ syntype, mounted on white card, with labels: "Cache, Costa Rica, H. Rogers" [printed on white card]; "Rhipipteryx saltator Sss." [handwritten on green paper]; "Rhipipteryx saltator, Saussure, det. K.K. Günther 1972, Paratypus" [handwritten by Günther on white card with "det. K.K. Günther 197" printed]; "Paratypus" [printed on orange card]; "Syntypus" [printed on red paper]. Günther (1969: 358) stated that the ♀ specimen in the BMNH is the holotype, but no such detail, even of the sex of the material, was given in the description and so the holotype designation is unjustified. Box A4d.

Rhipipteryx saltator Saussure, 1896.

trilobata Saussure, 1874b: 357-358 [*Rhipipteryx*].

Guyane. Unspecified number of ♀.

No specimens found in the MHNG collection. The whereabouts of the type material is unknown.

Rhipipteryx trilobata Saussure, 1874.

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ERRATUM

Carlos Carbonell (pers. comm.) kindly pointed out that Hollier (2011) mistakenly gave the current combination of *Zoniopoda iheringi* Pictet & Saussure, 1887 as “*Chromacris iheringi* (Pictet & Saussure, 1887).” This was an error in compiling the list, and the species retains its original generic placement (Carbonell, 2007).

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**A new species of *Austropsocus*
(Psocodea: 'Psocoptera': Pseudocaeciliidae)
with a peculiar forewing venation from New Caledonia**

Charles LIENHARD

Muséum d'histoire naturelle, c. p. 6434, CH-1211 Genève 6, Switzerland.

E-mail: charleslienhard@bluewin.ch

A new species of *Austropsocus* (Psocodea: 'Psocoptera': Pseudocaeciliidae) with a peculiar forewing venation from New Caledonia. - *Austropsocus millei* sp. n. is described and illustrated on the basis of a single male from New Caledonia. Based on general morphology the new species is assigned to the genus *Austropsocus*, in spite of its very peculiar, autapomorphic forewing venation. Contrary to the relatively simple *Caecilius*-type venation present in all previously known pseudocaeciliids, this species has multi-branched Rs and M veins (5-6 branches each) in the apical third of the forewing, and a multitude of transversal veinlets or short spur-veins in its basal two thirds, forming a reticulate pattern in the area between the veins R/R1 and M+Cu/CuA. This forewing venation shows striking similarities to that known from certain representatives of the closely related family Calopsocidae. This situation is interpreted as a case of parallel evolution.

Keywords: Zelandopsocinae - Calopsocidae - wing morphology - parallelism.

INTRODUCTION

The discovery of an unusual new species with striking autapomorphic structures may often lead to the erection of a new monotypic genus, which involves the risk that an existing and closely related genus becomes paraphyletic. An example in the Psocoptera is the troglomorphic genus *Troglotroctes* Lienhard (Liposcelididae) which is probably phylogenetically embedded within the large genus *Liposcelis* Motschulsky (see Grimaldi & Engel, 2006; Yoshizawa & Lienhard, 2010). If no sufficient phylogenetic data on the group concerned are available, it is often preferable to assign the unusual new species to a closely related existing genus, even if this may create problems for identification keys in the case that key characters are strongly modified in the new species. Examples are the three extraordinary species of *Odontopsocus* Badonnel (Epipsocidae), *Lachesilla* Westwood (Lachesillidae) and *Ectopsocus* McLachlan (Ectopsocidae) described by Lienhard (2002), or the sexually dimorphic pseudocaeciliid *Ophiodopelma glyptocephalum* Lienhard (Lienhard, 1985).

In here I describe an extraordinary New Caledonian pseudocaeciliid belonging to the subfamily Zelandopsocinae. This subfamily consists of 4 genera: *Zelandopsocus* Tillyard (31 species), *Austropsocus* Smithers (31 species), *Novopsocus* Thornton (3 species) and *Howeanum* Smithers (2 species) (see Lienhard & Smithers, 2002;

Schmidt & Smithers, 2004; Cuénoud, 2008). Besides the New Guinean endemic *Novopsocus*, most zelandopsocines are exclusively known from Australia, New Zealand and New Caledonia (see Lienhard & Smithers, 2002). 74% of the Psocoptera species known from New Caledonia (including Loyalty Islands) belong to this subfamily (see Lienhard, 2004), i. e. 27 species of *Zelandopsocus* and 7 species of *Austropsocus*, all of them described by Thornton & Smithers (1974). Both genera were at that time assigned to the family Philotarsidae, essentially because they have 3-segmented tarsi. Their transfer to the family Pseudocaeciliidae, which generally has 2-segmented tarsi, was proposed by Mockford (1984).

Among the numerous specimens of Zelandopsocinae collected by Christian Mille in New Caledonia and deposited in the Psocoptera collection of the Geneva Natural History Museum, there is one male showing an unusual forewing venation, which is completely different from the venation of the *Caecilius*-type (*sensu* Badonnel, 1951) present in all previously known pseudocaeciliids. At first glance this extraordinary specimen was supposed to represent a new genus. However, in view of the difficulties in defining certain zelandopsocine genera as monophyletic groups (see Thornton & Smithers, 1974; Thornton, 1984; Cuénoud, 2008), this very particular male is described here as a new species of the possibly paraphyletic genus *Austropsocus*.

MATERIAL AND METHODS

Dissection and slide-mounting followed the methods described by Lienhard (1998). The material examined (holotype) is deposited in the Psocoptera collection of the Muséum d'histoire naturelle, Geneva, Switzerland (MHNG).

Abbreviations of wing veins are used according to Yoshizawa (2005). The following other abbreviations are used in the description: BL = body length (in alcohol); F = hindfemur (length); FW = forewing (length); HW = hindwing (length); IO/D = shortest distance between compound eyes divided by anteroposterior diameter of compound eye in dorsal view of head; T = hindtibia (length); t1, t2, t3 = tarsomeres of hindtarsus (length, measured from condyle to condyle).

DESCRIPTION

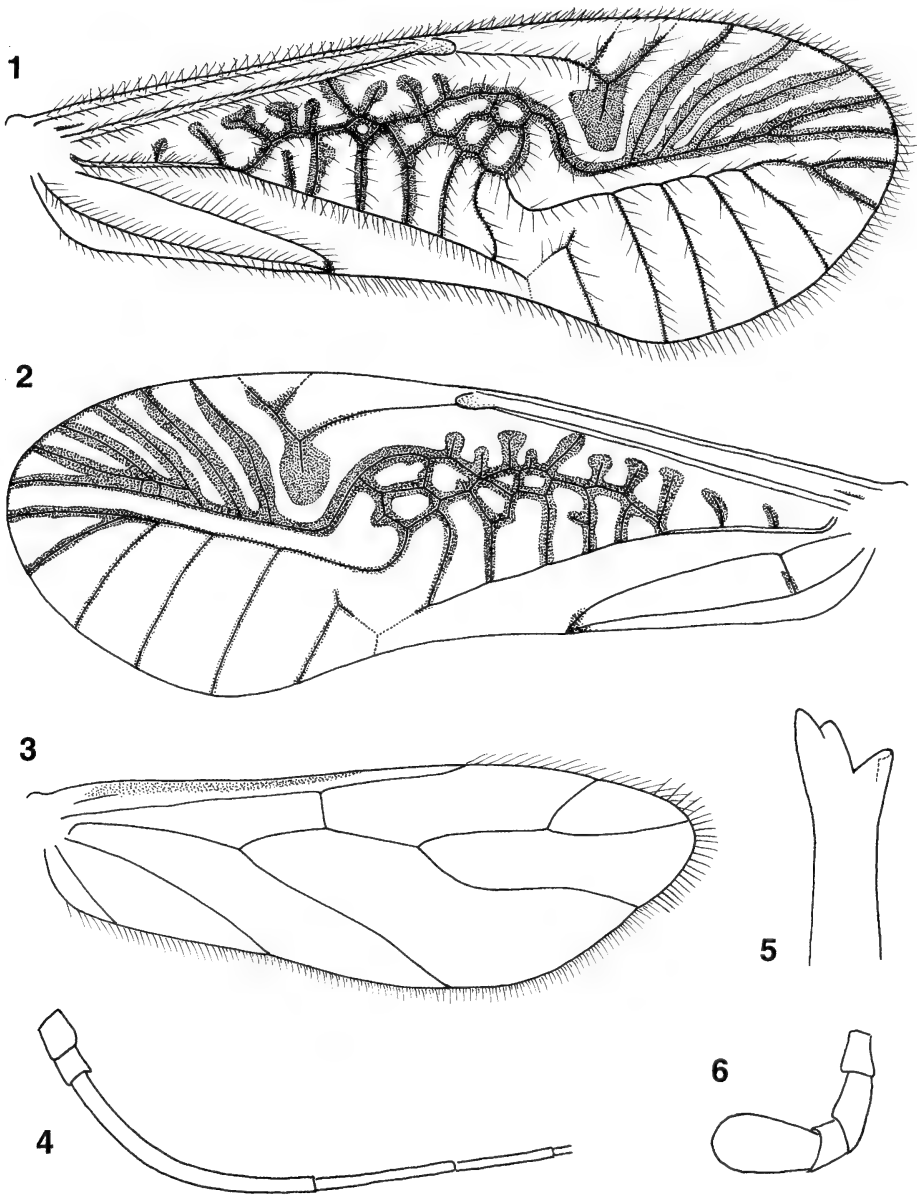
Austropsocus millei sp. n.

Figs 1-9

HOLOTYPE: MHNG (2 slides, remaining parts in alcohol); male; New Caledonia, Boulouparis, Réserve du Mont Do, 795m, Malaise trap; 7.xii.2006-4.i.2007; leg. C. Mille.

DESCRIPTION OF MALE (female unknown): *Colouration*. Body light grey-brown to medium brown. Head without striking colour pattern, compound eyes black. Antenna light to medium brown, maxillary palp dark brown. Legs light brown, tarsi and basal area of coxae darker brown. Forewing with dark brown pigmentation along most of the veins forming a striking pattern (Figs 1, 2), hindwing hyaline except for a slightly brown zone in basal half along anterior margin (Fig. 3).

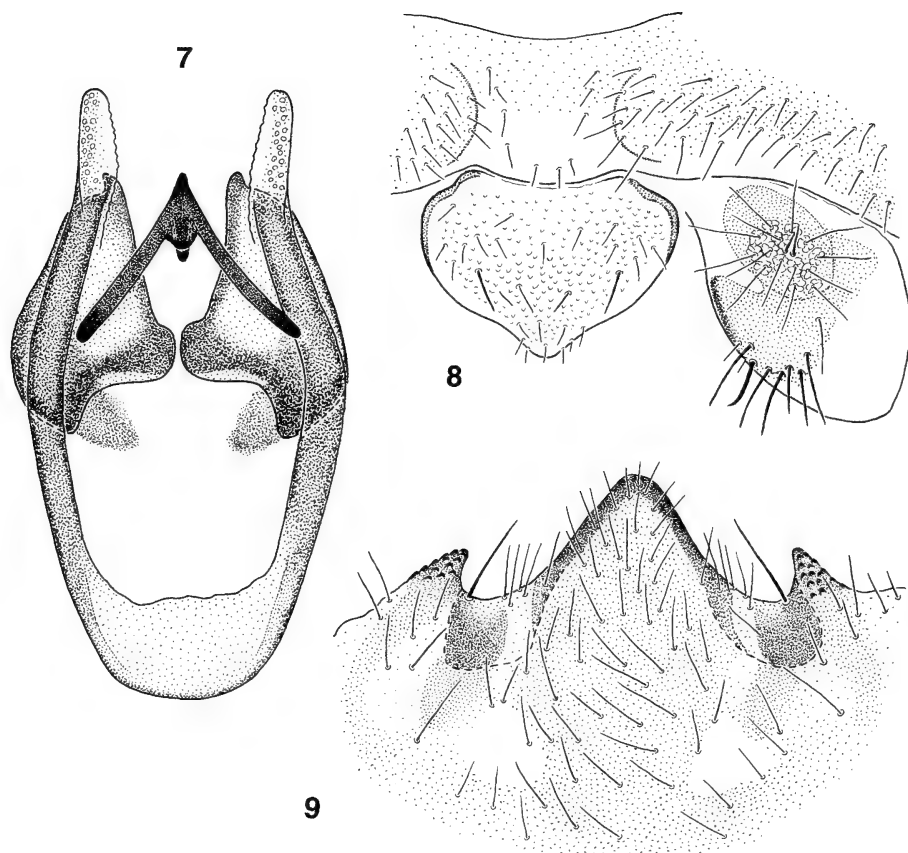
Morphology. Head shape normal, vertex regularly rounded, without median emargination, ocelli well-developed, compound eyes relatively small (IO/D 2.4). Antenna 13-segmented, flagellum bearing long hairs and some shorter setae; long hairs



FIGS 1-6

Austropsocus millei sp. n., male holotype. (1) Right forewing. (2) Left forewing (pilosity not shown). (3) Right hindwing. (4) Basalmost five articles of antenna (pilosity not shown). (5) Lacinial tip. (6) Maxillary palp (pilosity not shown).

particularly dense on first flagellar segment, this flagellomere slightly curved and somewhat thicker than second flagellomere (Fig. 4). Maxillary palp with terminal segment relatively short and thick, not longer than twice its width (Fig. 6). Lacinial tip



FIGS 7-9

Austropsocus millei sp. n., male holotype. (7) Phallosome. (8) Clunium, epiproct and right paraproct. (9) Hypandrium.

with a short inner tine and a longer, broader and apically bifid outer tine (Fig. 5). Marginal labral sensilla of type 2 (Mockford, 1984: fig. 2). Legs with 3-segmented tarsi, pretarsal claws lacking preapical tooth, with broad, membranous pulvillus. Pearman's organ on hindcoxa well-developed.

Wings of normal shape (i. e. greatest breadth at about 2/3 of their length), flat and membranous (not coriaceous and folded or vaulted), lacking distinct bulges or lobes. Forewing with a very distinctive venation (Figs 1, 2): Rs and M each with 5-6 branches, R1 bifurcate distally in pterostigma, the latter posteriorly with a long spur-vein; areola postica angled, with a short spur-vein at its apex, directed towards M; left forewing with a crossvein between CuP and A1 and two short crossveins between posterior branches of R; both forewings with an irregular and slightly variable reticulation in the area between veins R/R1 and M+Cu/CuA, this reticulation formed by Rs and M (not recognizable as principal veins) and a series of accessory transversal

veinlets and spur-veins. Margin and all veins of forewing setose, mostly with more than one row of setae. Only one row of setae in CuP, CuA1, M branches, most of Rs branches, most accessory veins and posterior margin between wing base and nodulus. Hindwing (Fig. 3) with normal venation (left hindwing with a short vertical spur-vein at about 1/3 of CuA directed towards Rs+M), veins bare, margin setose between R1 and M, with microtrichia from M to posterior wing base.

Terminalia as in Figs 7-9. Clunium simple, laterally completely fused with hypandrium; epiproct simple; paraproct sensorium with 14 trichobothria in basal rosettes surrounding two shorter setae without rosettes, posterior margin of paraproct with a small hair and a particularly stout seta close to each other. Hypandrium trilobate, median lobe tapering to narrowly rounded tip, lateral lobes much shorter, more pointed and slightly rugose; a pair of broadly rounded sclerotized areas present on dorsal side of hypandrium, between lateral and median lobes (see interrupted lines in Fig. 9). Phallosome with a pair of subtriangular plate-like lateral sclerites and an apically pointed aedeagal sclerite; the latter medially bearing a subapical thickening extended into a short anteriorly-directed rod; endophallus with a suboval, irregularly delimited sclerotized area on each side but lacking denticulate structures. Eversible vesicles on ventral side of abdomen not observed.

Measurements. BL = 1.7 mm; FW = 2.9 mm; HW = 2.2 mm; F = 635 μ m; T = 1058 μ m; t1 = 293 μ m; t2 = 53 μ m; t3 = 75 μ m.

ETYMOLOGY: The species is dedicated to its collector, Dr Christian Mille (IAC, Institut Agronomique néo-Calédonien, La Foa, New Caledonia).

DISCUSSION

Using general keys to Psocoptera families (Smithers, 1990; Lienhard, 1998; New & Lienhard, 2007), the male described above is identified as belonging to the family Pseudocaeciliidae. In the keys to genera published by Thornton (1981) and New & Lienhard (2007) it keys out as a member of the genus *Austropsocus*, and in the key to New Caledonian species by Thornton & Smithers (1974) it is assigned to a small group of *Austropsocus* species, comprising *A. productus* Thornton & Smithers and *A. thapsinus* Thornton & Smithers. These species are characterized by bare hindwing veins, 3-lobed hypandrium and phallosome with a pair of subtriangular plate-like sclerites. Comparing the morphology of the terminalia of the present specimen with the figures published by Thornton & Smithers (1974), it seems to be more closely related to *A. productus* than to *A. thapsinus*. However, it clearly differs from *A. productus* by the very particular forewing venation, the setose CuP in the forewing, the absence of a sclerotized peg on the posterior margin of the clunium, some details of the hypandrium and the phallosome, and by the colouration. Probably it also differs from *A. productus* and the other New Caledonian species of *Austropsocus* by the relatively short and thick terminal article of the maxillary palp and by the curved and slightly thickened first antennal flagellomere. Both characters are not explicitly mentioned by Thornton & Smithers (1974). In general, Pseudocaeciliidae have a slender and straight first flagellomere (width and shape similar to that of the second flagellomere) and a slender terminal article of the maxillary palp (about 3 times longer than wide).

The similarity to other New Caledonian representatives of the genus *Austropsocus* and the problems about generic definitions within the Zelandopsocinae (see Introduction) led me to place this surprising specimen in the genus *Austropsocus* rather than establishing a new genus merely based on the autapomorphic forewing venation. A somewhat similar case of a spectacular autapomorphy in a single species of Pseudocaeciliidae, clearly assignable to a known genus, is the pseudocaeciliine *Ophiopelma glyptocephalum* Lienhard, where head morphology is strongly modified (Lienhard, 1985). Nothing similar to the specialized head structures of *O. glyptocephalum* is known in Psocoptera, contrary to the case of *A. millei*. The forewing venation of the latter shows striking similarities to that known from certain representatives of the family Calopsocidae, i. e. multi-branched R and M veins and an extensive reticulate network of secondary veinlets (see Thornton & Smithers, 1984). However, calopsocids have 2-segmented tarsi and setose hindwing veins and are characterized by the following synapomorphies: setose wing membranes in forewing and hindwing, and sharp-edged vertex with a strong median emargination. According to Yoshizawa (2002) the family Pseudocaeciliidae has to be regarded as a paraphyletic group, and the family Calopsocidae as a highly specialized clade within it. The presence of a calopsocid-like forewing venation in *Austropsocus millei*, in combination with some plesiomorphic characters states (3-segmented tarsi, normal head shape and bare wing membranes), suggests that the similarity between *A. millei* and the Calopsocidae is based on synapomorphy, and that this species should be regarded as a basal member of the Calopsocidae clade. However, the particular combination of accessory veins and striking colour pattern in the forewing of *A. millei* (Figs 1, 2), never seen in Calopsocidae which have uniformly brown wings (see figures in Thornton & Smithers, 1984), rather supports the interpretation that this wing structure is homoplasious to similar structures in the Calopsocidae. More general molecular phylogenetic analyses of Psocodea by Johnson *et al.* (2004) and Yoshizawa & Johnson (2010) also included a species of *Calopsocus* Hagen and representatives of several genera of Pseudocaeciliinae. Both papers suggested that the Calopsocidae are embedded in the latter. Johnson *et al.* (2004) also analysed a species of *Austropsocus* and *Zelandopsocus* and clearly showed that Zelandopsocinae are rather distantly related to the Pseudocaeciliinae + Calopsocidae clade. These data support my assumption that the apomorphic forewing modifications evolved independently in *A. millei* and in the Calopsocidae. Therefore the hypothesis that *A. millei* has to be regarded as a basal member of the Calopsocidae clade is here rejected. Nothing is known about the biology of Calopsocidae (New & Lienhard, 2007) and of the new species. Thus no adaptation to similar conditions by parallel evolution can be postulated.

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On linyphiid spiders from Sulawesi, Indonesia (Arachnida, Araneae)

Andrei V. TANASEVITCH¹ & Kathrin STENCHLY²

¹ Centre for Forest Ecology and Production, Russian Academy of Sciences, Profsoyuznaya Str. 84/32, Moscow 117997, Russia. E-mail: and-tan@mail.ru

² Tropenzentrum - Centre for International Rural Development, Kassel University, Steinstrasse 19, D-37213 Witzenhausen, Germany. E-mail: stenchly@uni-kassel.de

On linyphiid spiders from Sulawesi, Indonesia (Arachnida, Araneae). -

A small collection of linyphiid spiders from agroecosystems on the Indonesian island of Sulawesi contains four species, two of which are new: *Maorineta sulawesi* sp. n. and *Microbathypantes celebes* sp. n. A new genus *Australo-phantes* gen. n. is established for *Agyneta laetesiformis* Wunderlich, 1976 (the type species) which was previously known from Queensland, Australia only. Based on the new data, the linyphiid fauna of Sulawesi is currently known to contain seven species, and it shows relations to the Australian and Oriental faunas.

Keywords: New genus - new species - new combination - new records - agroecosystems - Oriental & Australian regions.

INTRODUCTION

Sulawesi, lying between Wallace's and Weber's biogeographic lines, is of prime importance for biogeographers, since this island occurs in the area where Oriental and Australian biota overlap, and its long-term isolation has allowed the development of a characteristic flora (Moss & Wilson, 1998). The climate of Central Sulawesi is characterized by relatively constant temperatures at an average of 23°C while precipitation levels vary considerably with elevation and topography. In the study area at the eastern margin of the Lore Lindu National Park mean annual precipitation can be estimated to be around 2300 mm per year (rainy season from April to October). The vegetation is influenced by periodic drought events due to the El Niño-Southern Oscillation. Primary forests are dominated by Meliaceae, Lauraceae and Euphorbiaceae in the understory (Kessler *et al.*, 2005). The increasing importance of agricultural export products, particularly cacao seeds (*Theobroma cacao*), led to strong immigration of local people into the Lore Lindu region which changed the landscape structure (Weber, 2006). Cacao agroforestry systems have replaced primary forest, and the ongoing trend towards simplifying the shade canopies of cacao plantations and the conversion to other agricultural land uses such as rice cultivation lead to the loss of structural complexity.

Only four linyphiid species have hitherto been listed from Sulawesi and all of them were described from the island: *Dumoga arboricola* Millidge & Russell-Smith,

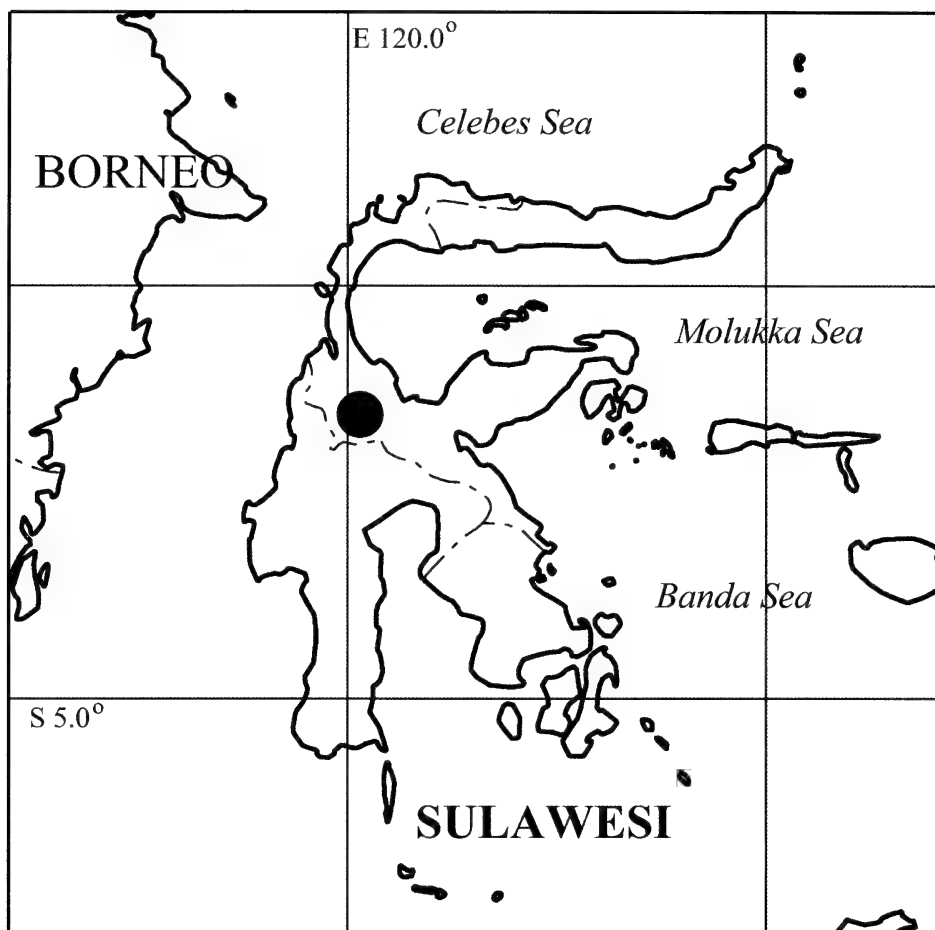


FIG. 1

Map of the study area in Sulawesi, Indonesia. Filled circle indicating Kulawi valley.

1992, *D. complexipalpis* Millidge & Russell-Smith, 1992, *Nesioneta sola* (Millidge & Russell-Smith, 1992) and *Plicatiductus storki* Millidge & Russell-Smith, 1992. New material from Sulawesi allows to add three species to that list, two of them are new to science, and one (*Agyneta laetesiformis* Wunderlich, 1976) is here recorded for the first time from outside the Australian continent.

MATERIAL AND METHODS

This paper is based on spider material collected by Kathrin Stenchly during her fieldwork on Sulawesi (formerly known as Celebes), Indonesia from 2007 to 2008. The spider material was caught at 22 differently managed cocoa agroforestry sites in the Kulawi Valley, along the eastern margin of Lore Lindu National Park in Central Sulawesi (see Fig. 1). At each site a 40m×40m plot was established. The plots are characterized by different levels of habitat complexity due to various management

practises of smallholders, such as leaf litter removal, weeding and shade tree cultivation.

Litter-dwelling spider communities were sampled using four roofed pitfall traps (diameter = 20 cm) per plot. Canopy-dwelling spiders were caught on five cacao trees per plot, each tree being fitted with one branch eclector (after Simon, 1993). Traps were emptied each month between May 2007 and March (litter samples) or April 2008 (canopy samples), resulting in 10 and 11 distinct samples per plot for the litter spiders and canopy spiders, respectively. A 1:1 mixture of ethylene glycol and water was used as preservation liquid in both types of traps.

In the descriptions chaetotaxy is given in a formula, e.g., Ti I: 2-1-1-2(1), which means that tibia I has two dorsal spines, one pro-, one retrolateral spine, and two or one ventral spine (the apical spines are disregarded). The sequence of leg segment measurements is as follows: femur + patella + tibia + metatarsus + tarsus. All measurements are given in mm. All scale lines in the figures correspond to 0.1 mm unless indicated otherwise.

The terminology of genitalic structures follows that of Saaristo (1995) and Saaristo & Tanasevitch (1996).

By default, the material is deposited in the Muséum d'histoire naturelle, Geneva, Switzerland and it is not given registration numbers. Some paratypes and non-type specimens are in the collection of the Zoological Museum of the Moscow State University, Moscow, Russia (ZMMU).

ABBREVIATIONS

B	Bursa copulatrix
DSA	Distal suprategular apophysis
E	Embolus
EmP	Embolic plate
EP	Embolus proper
L	Lamella characteristica
LL	Lateral lobes
MM	Median membrane
MPS	Middle part of scape
PS	Proscape
SMF	Senckenberg Museum, Frankfurt a. M., Germany
St	Stretcher
TA	Terminal apophysis
Th	Thumb
ZMMU	Zoological Museum of the Moscow State University, Moscow, Russia

RESULTS

Australophantes Tanasevitch gen. n.

TYPE SPECIES: *Agyneta laetesiformis* Wunderlich, 1976.

ETYMOLOGY: The genus name *Australophantes* is a combination of “Australia” and “*phantes*” (from the Greek υφάινω = hyphaino, which means “to weave”); the gender is masculine.

DIAGNOSIS: The new genus is characterized by the peculiar structure of its epigyne, notably by the modified distal part of the scape (see Saaristo & Tanasevitch, 1996): lateral lobes transformed into elongated pipes, terminating in a funnel-shaped bursa copulatrix; by the presence of a pair of flat lobes instead of a stretcher; as well as by the absence of a posterior median plate. The male is characterized by the hummingbird-beak-shaped distal suprategular apophysis, by the peculiar and complex shape of the embolus, as well as by the absence of the Fickert's gland in the embolic division.

DESCRIPTION: Small-sized micronetine, total length 1.70-1.95. Carapace unmodified, eyes normal, not enlarged. Chelicerae unmodified, stridulatory fields large, furrows fine. Chaetotaxy: FeI-IV: 0-0-0-0; TiI-IV: 2-0-0-0; Mtl-II: 1-0-0-0, III-IV: 0-0-0-0. Metatarsus IV without trichobothrium. TmI 0.27-0.30. Palp (Figs 2-5): patella without special setae. Cymbium with a small and narrow posterodorsal process and a short posteroventral outgrowth. Paracymbium toothless, its anterior and apical pockets merged into a single deep pocket. Distal suprategular apophysis long, thin and slightly curved, resembling the beak of a hummingbird. Embolic division: embolus relatively large, elongated and complex in shape (Fig. 5); terminal apophysis consisting of two flat parts; lamella characteristic developed as a short and narrow band, broom-shaped distally. Fickert's gland absent. Epigyne (Figs 6): proscape long and narrow; lateral lobes extended into narrow pipes, terminating in a funnel-shaped bursa copulatrix; entrance grooves/tubes (?) in distal part of scape considerably wider than in middle part of scape and in proscape; a pair of flat lobes present instead of a stretcher; posterior median plate absent.

TAXONOMICAL REMARKS: The specific structure of the distal part of the scape (see above) in *Australophantes* gen. n. has no analogues in known Micronetinae. The relatives of this genus should be expected to occur in the Australian and Pacific regions.

SPECIES INCLUDED: Only the type species, *A. laetesiformis*.

DISTRIBUTION: Australian Region and Wallacea: Australia (Queensland) and Sulawesi (Kulawi Valley).

Australophantes laetesiformis (Wunderlich, 1976) comb. n. Figs 2-6
Agyneta (?) *laetesiformis* Wunderlich, 1976: 127, figs 8-17 (description of male and female).

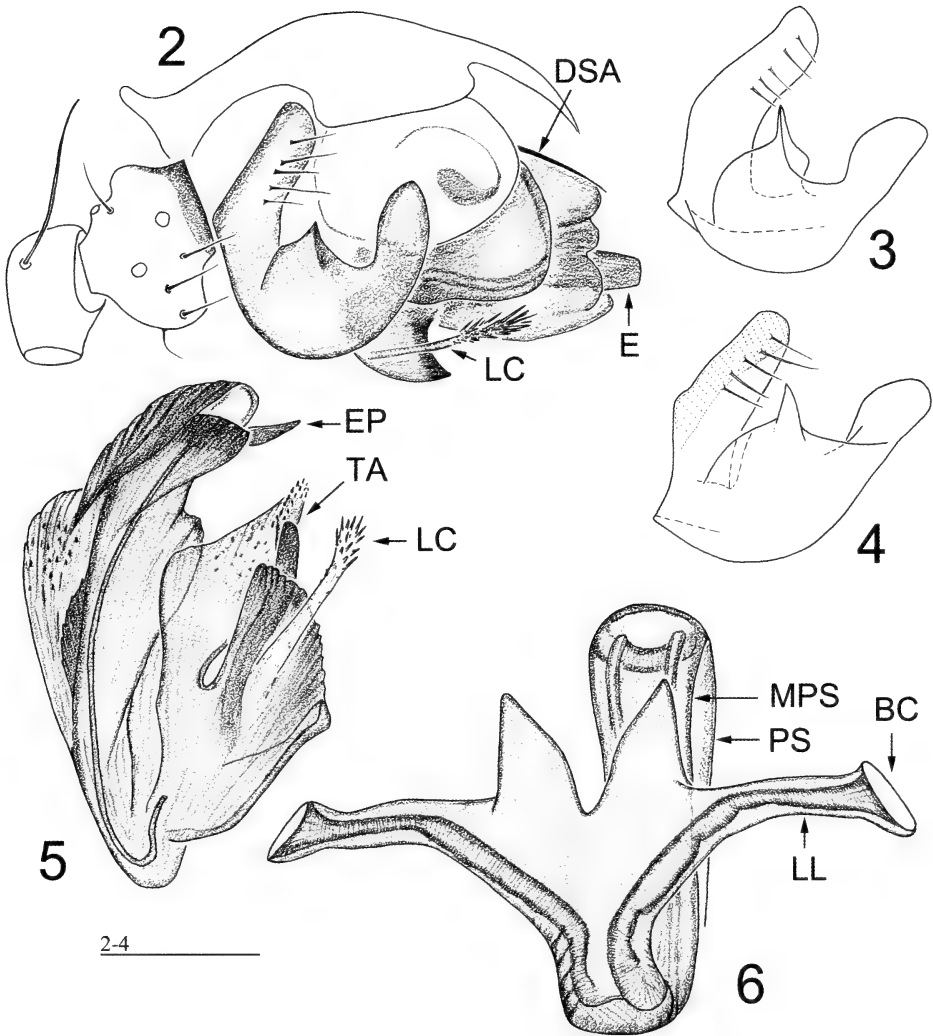
TYPE MATERIAL EXAMINED: SMF 29067; ♂ holotype of *Agyneta laetesiformis*; AUSTRALIA, Cairns; leg. Wunderlich, det. Wunderlich; 1975. – SMF 29068; 2 ♀ paratypes with same label data.

NEW MATERIAL: 1 ♂, 1 ♀; INDONESIA, Sulawesi, Kulawi Valley, Wangka (1°36.458'S, 120°1.304'E), 500 m a.s.l., cacao plantation, pitfall trap; III.2008. – 1 ♀; Kulawi Valley, Tompibugis (1°37.524'S, 120°2.039'E), 400 m a.s.l., cacao plantation, pitfall trap; VII.2007.

VARIABILITY: The specimens from Sulawesi are smaller than the types but not significantly; the genitalia of all specimens of the same sex are essentially identical.

REMARKS: The species was described well on the basis of specimens of both sexes from Cairns, northern Queensland, Australia (Wunderlich, 1976), and after that it has never been recorded again.

DISTRIBUTION: See above.



FIGS 2-6

Australophantes laetesiformis (Wunderlich, 1976), ♂. (2) Right palp, retrolateral view. (3, 4) Paracymbium, different aspects. (5) Embolic division, not to scale. (6) Scape, posterodorsal view, not to scale.

***Dumoga complexipalpis* Millidge & Russell-Smith, 1992**

MATERIAL: 2 ♂ (one of them in ZMMU); INDONESIA, Sulawesi, Kulawi Valley, Bolapapu (1°26.105'S, 119°59.552'E), 650 m a.s.l., cacao plantation, branch eclector; VI-VII.2007.

REMARKS: This species was described and is still only known from males collected in the Dumoga-Bone National Park, Sulawesi (Millidge & Russell-Smith, 1992).

Maorineta sulawesi Tanasevitch sp. n.

Figs 7-16

ETYMOLOGY: The specific name, a noun in apposition, is taken from the name of the Indonesian Island where the new species was found.

HOLOTYPE: 1 ♂; INDONESIA, Sulawesi, Kulawi Valley, Watukilo (1°36.029'S, 120°2.062'E), 475 m a.s.l., cacao plantation, pitfall trap; VII.2007.

PARATYPES: 1 ♂; INDONESIA, Sulawesi, Kulawi Valley, Oo-Marena (1°32.49'S, 120°1.045'E), 575 m a.s.l., cacao plantation, pitfall trap; VI.2007. – 7 ♂, 3 ♀; Kulawi Valley, Marena (1°33.132'S, 120°1.212'E), 585 m a.s.l., cacao plantation, pitfall trap; VIII-X.2007 & III.2008. – 4 ♂, 1 ♀ (ZMMU); Kulawi Valley, Wangka (1°36.458'S, 120°1.304'E), 500 m a.s.l., cacao plantation, pitfall trap; III.2008. – 2 ♂; Kulawi Valley, Toro (1°30.049'S, 120°1.723'E), 925 m a.s.l., cacao plantation, pitfall trap; VII.2007. – 1 ♂; Kulawi Valley, Sungku (1°31.167'S, 120°0.654'E), 650 m a.s.l., cacao plantation, litter, pitfall trap; VII.2007. – 1 ♂; Kulawi Valley, Bolapapu (1°26.105'S, 119°59.552'E), 650 m a.s.l., cacao plantation, pitfall trap; VI.2007. – 1 ♀; Kulawi Valley, Pilimakujawa (1°38.998'S, 120°2.842'E), 400 m a.s.l., cacao plantation, pitfall trap; VI.2007.

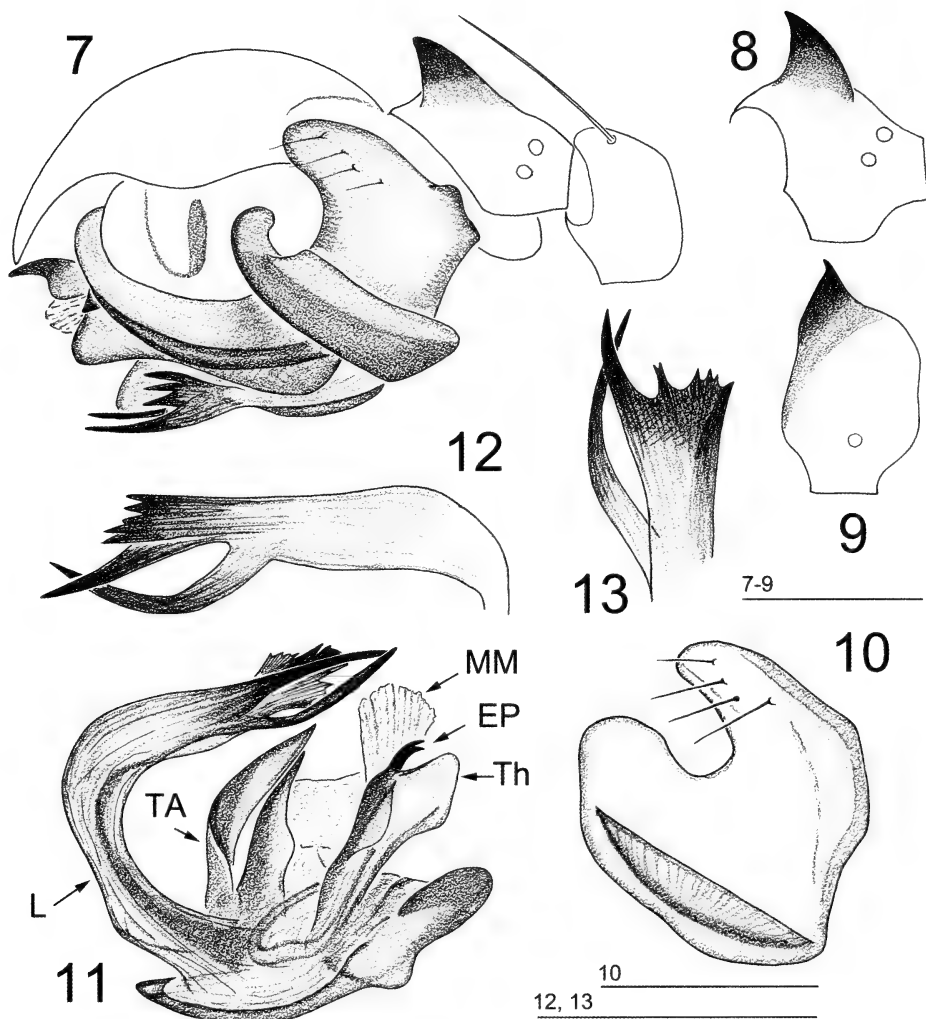
DIAGNOSIS: The new species is characterized by the peculiar shape of the palpal tibia which carries a conical, darkened outgrowth dorsally, by the complicated structure of the distal part of the lamella characteristica in males, as well as by the shape of the proscape in females.

DESCRIPTION: Male (paratype from Marena). Total length 1.40 (1.35-1.55). Carapace 0.58 long, 0.48 wide, pale yellow, unmodified. Eyes normal, not enlarged. Sternum grey. Chelicerae 0.28 long, stridulatory area small, furrows fine. Legs pale yellow. Leg I 2.35 long (0.63+0.18+0.58+0.53+0.43), IV 2.19 long (0.58+0.18+0.58+0.50+0.35). Chaetotaxy: Femora and metatarsi spineless, tibiae with only two weak dorsal spines each; length of spines about 1.5-2 diameter of segment. TmI 0.20 (0.20-0.26). Metatarsus IV without trichobothrium. Palp (Figs 7-13): patella without special setae. Tibia with a large, conical, pointed, slightly curved, darkened outgrowth dorsally. Paracymbium toothless, its anterior and apical pockets merged into a single shallow pocket. Lamella characteristica long and narrow, with a pointed, curved, ventral branch distally; apically with a long straight tooth and several black teeth of different sizes. Embolus relatively large, thumb and carina present, both well developed. Abdomen 0.75 long, 0.50 wide, ventrally grey, dorsally pale, almost white, with a grey tip.

Female (paratype from Marena). Total length 1.45 (1.34-1.48). Carapace 0.63 long, 0.43 wide. Chelicerae 0.25 long. Leg I 1.93 long (0.50+0.15+0.48+0.45+0.35), IV 1.85 long (0.50+0.15+0.50+0.40+0.30). TmI 0.26 (0.22-0.26). Abdomen 0.75 long, 0.58 wide. Epigyne dark brown (Figs 14-16): proscape rounded, with a short narrow base; distal part of scape, lateral lobes and stretcher strongly reduced; posterior median plate absent. Body and leg coloration, and chaetotaxy as in male.

TAXONOMIC REMARKS: At present, the genus *Maorineta* Millidge, 1988 comprises seven New Zealand species (Millidge, 1988) and one Pacific species which occurs in the Caroline, Marshall and Cook Islands (Beatty *et al.*, 1991). The new species is clearly distinguished from all known congeners by the complicated shape of the distal part of the lamella characteristica, which in the other species is of one piece. The female is clearly distinguished by the shield-shaped proscape with a short narrow base.

DISTRIBUTION: Currently known from Kulawi Valley, Sulawesi only.



FIGS 7-13

Maorineta sulawesi sp. n., ♂ paratype from Wangka. (7) Left palp, retrolateral view. (8, 9) Palpal tibia, lateral and dorsal view, respectively. (10) Paracymbium. (11) Embolic division, not to scale. (12) Lamella characteristica. (13) Distal part of lamella characteristica.

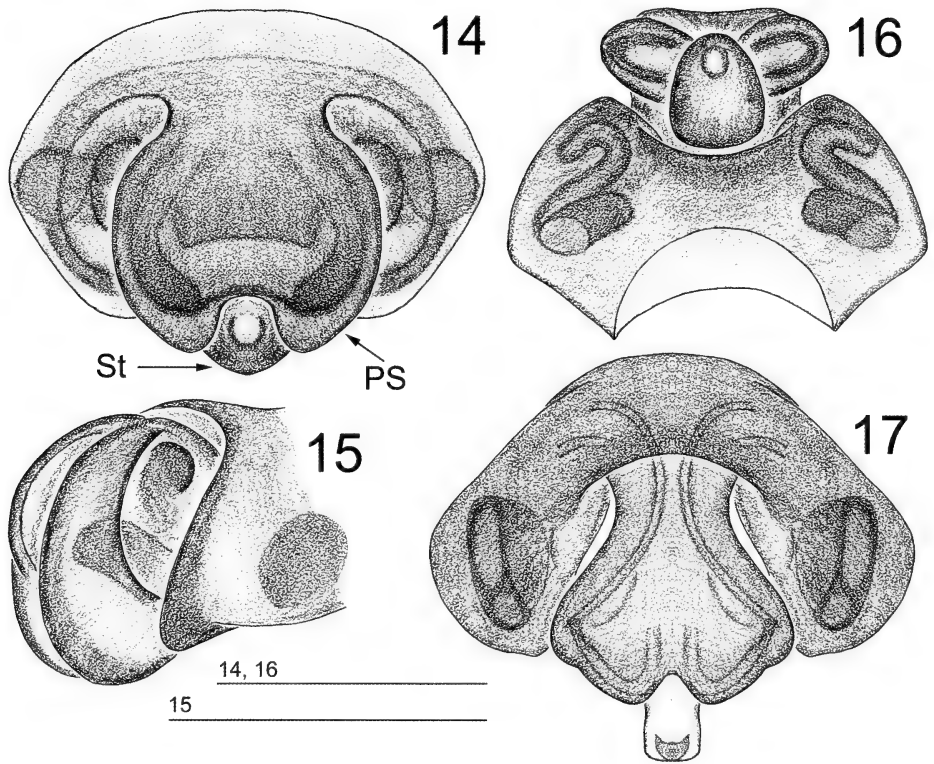
***Microbathyphantes celebes* Tanasevitch sp. n.**

Figs 18-27

ETYMOLOGY: The specific name, a noun in apposition, is taken from the historical name of the island where the new species was found.

HOLOTYPE: ♂; INDONESIA, Sulawesi, Kulawi Valley, Oo (1°33.54'S, 120°1.343'E), 550 m a.s.l., cacao tree, branch trap; VIII.2007.

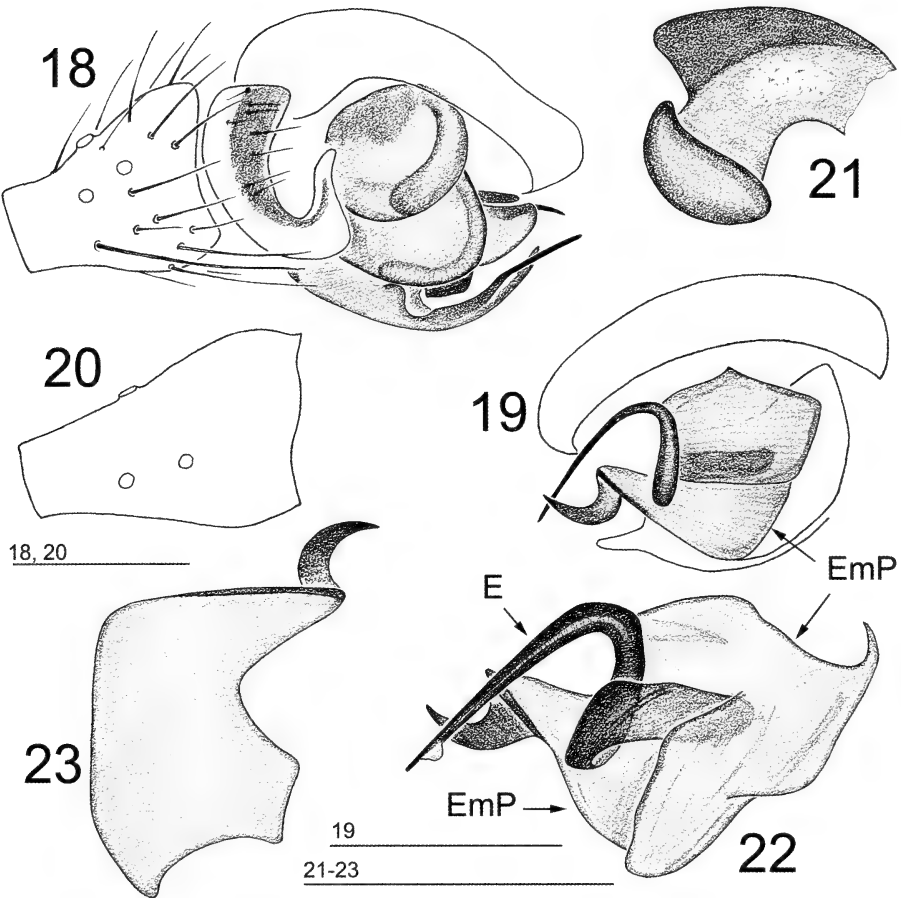
PARATYPES: 2 ♀; INDONESIA, Sulawesi, Kulawi Valley, Oo (1°33.54'S, 120°1.343'E), 550 m a.s.l., cacao tree, branch trap; VIII.2007. – 1 ♂; same locality, cacao plantation, pitfall trap; III.2008. – 2 ♂; Kulawi Valley, Oo-Marena (1°32.49'S, 120°1.045'E), 575 m a.s.l., cacao plantation, pitfall trap; VI.2007, IX.2007. – 5 ♂; Kulawi Valley, Marena (1°33.132'S,



FIGS 14-17

Epigynes of *Maorineta sulawesi* sp. n., ♀ paratype from Wangka (14-16) and of *Nesioneta sola* (Millidge & Russell-Smith, 1992) (17, not to scale). (14, 17) Ventral view. (15) Lateral view. (16) Dorsal view.

120°1.212'E), 585 m a.s.l., cacao plantation, pitfall trap & branch eclector; VI.-IX.2007. - 1 ♂; same locality; I.2008. - 1 ♂; same locality, cacao plantation, pitfall trap; VI.2007. - 1 ♂; Kulawi Valley, Toro (1°30.586'S, 120°1.157'E), 700 m a.s.l., cacao plantation, pitfall trap; VII.2007. - 1 ♂; same locality; I.2008. - 2 ♂; Toro (1°30.049'S, 120°1.723'E), 925 m a.s.l., cacao plantation, pitfall trap; VII.2007. - 2 ♂ (ZMMU); Kulawi Valley, Sungku (1°27.845'S, 119°59.564'E), 725 m a.s.l., cacao plantation, pitfall trap; VIII.-IX.2007. - 1 ♂; Sungku (1°31.167'S, 120°0.654'E), 650 m a.s.l., cacao plantation, pitfall trap; 2008. - 1 ♀; same locality; IX.2007. - 1 ♂; Sungku (1°30.161'S, 120°0.454'E), 675 m a.s.l., cacao plantation, pitfall trap; IV.2007. - 1 ♂; Sungku (1°29.439'S, 120°0.385'E), 750 m a.s.l., cacao plantation, pitfall trap; IX.2007. - 1 ♂; Sungku (1°32.109'S, 120°0.799'E), 625 m a.s.l., cacao plantation, pitfall trap; VII.2007. - 1 ♂; Kulawi Valley, Bolapapu (1°26.105'S, 119°59.552'E), 650 m a.s.l., cacao plantation, pitfall trap; VI.2007. - 1 ♂; Kulawi Valley, Watukilo (1°36.029'S, 120°2.062'E), 475 m a.s.l., cacao tree, branch eclector; VIII.2007. - 1 ♂; Kulawi Valley, Lawua (1°36.651'S, 120°2.035'E), 425 m a.s.l., cacao plantation, pitfall trap; VII.2007. - 1 ♂; Kulawi Valley, Tompibugis (1°37.524'S, 120°2.039'E), 400 m a.s.l., cacao plantation, pitfall trap; IX.2007. - 1 ♂; Kulawi Valley, Pilimakujawa (1°38.998'S, 120°2.842'E), 400 m a.s.l., cacao plantation, pitfall trap; VII.2007. - 1 ♂; Kulawi Valley, Wangka (1°36.458'S, 120°1.304'E), 500 m a.s.l., cacao plantation, pitfall trap; III.2008. - 1 ♂; Kulawi Valley, Bolapapu (1°26.105'S, 119°59.552'E), 650 m a.s.l., cacao plantation, pitfall trap; VIII.2007.

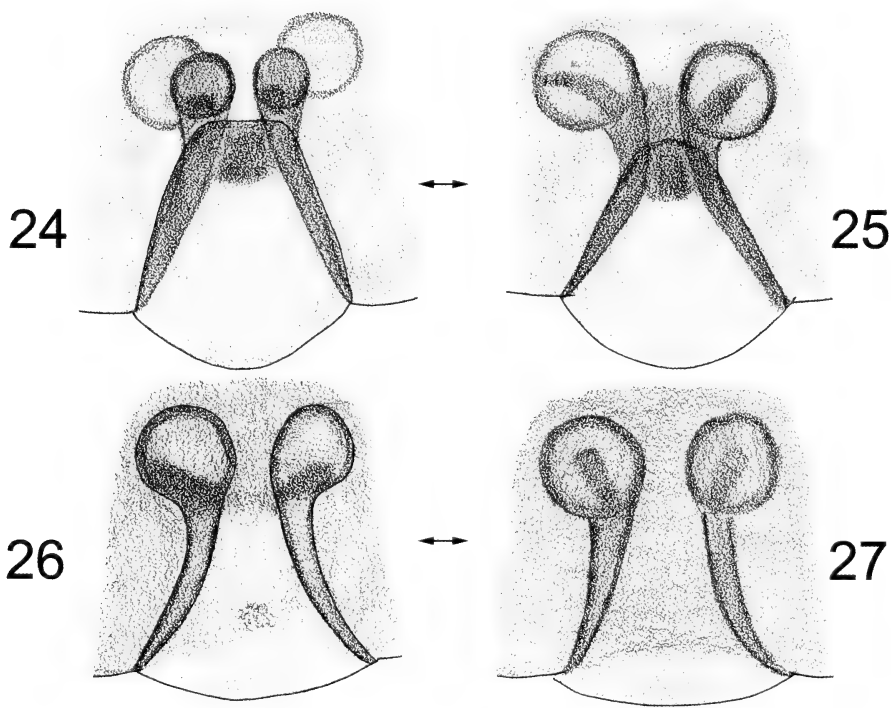


FIGS 18-23

Microbathyphantes celebes sp. n., ♂ paratype from Sungku (18, 19, 21-23) and ♂ paratype from Mareva (20). (18, 19) Right palp, retrolateral and proventral view, respectively. (20) Palpal tibia, retrolateral view. (21) Distal supratregular apophysis. (22) Embolic division. (23) Embolic plate.

DIAGNOSIS: The new species is characterized by the peculiar shape of its embolic plate (sensu Beatty *et al.*, 1991; Saaristo, 1995) (= lamella or lamella *characteristica* auct.) and by the hook-like outgrowth resembling a pit-hook structure on the supratregular apophysis in males, as well as by the trapeziform shape of the shallow epigynal cavity in females.

DESCRIPTION: Male (paratype from Sungku). Total length 1.63 (1.60-1.68). Carapace unmodified, 0.75 long, 0.60 wide, greyish yellow to pale brown, with a narrow grey margin; in some specimens carapace with a grey polygonal spot in post-ocular area and with indistinct radial stripes. Eyes normal, not enlarged. Sternum grey. Chelicerae 0.45 long. Stridulatory fields absent. Legs pale yellow, leg I 3.83 long (1.00+0.23+1.00+0.95+0.65), IV 3.64 long (0.98+0.20+1.00+0.88+0.58). Chaetotaxy:



FIGS 24-27

Epigynes and vulvae of *Microbathyphantes celebes* sp. n., ♀ paratype from Sungku (24, 25) and ♀ paratype from Oo (26, 27). (24, 26) Ventral view. (25, 27) Dorsal view. Arrows indicate which details belong to the same specimen.

FeI: 1-1-0-0, II: 1-0-0-0, III-IV: 0-0-0-0; TiI 2-1-1-0, II: 2-0-1-0, III-IV: 2-0-0-0. All metatarsi spineless. TmI 0.20 (0.18-0.22). Metatarsus IV without trichobothrium. Palp (Figs 18-23): Tibia slightly elongated, unmodified. Paracymbium simple, U-shaped, pockets absent. Suprategular apophysis short and wide. Embolic division complex, consisting of two parts: embolic plate and coiled embolus with a narrow radix. Embolic plate with a long anterior projection ending in a hook-like outgrowth. Abdomen 0.78 long, 0.50 wide, grey, dorsal pattern absent.

Female (paratype from Sungku). Total length 1.75 (1.68-1.75). Carapace 0.75 long, 0.55 wide. Chelicerae 0.35 long. Leg I 3.31 long (0.85+0.23+0.85+0.80+0.58), IV 3.19 long (0.88+0.18+0.85+0.78+0.50). TmI 0.23. Abdomen 1.10 long, 0.70 wide. Epigyne (Figs 24-27) small, epigynal cavity shallow, trapeziform, receptacles spherical. Body and leg coloration, and chaetotaxy as in male.

VARIABILITY. The males show variability in the length of the palpal tibia (Fig. 18 cf. Fig. 20).

TAXONOMIC REMARKS: The new species is most similar to the Oriental-Pacific *M. palmarius* (Marples, 1955), but differs well by the shape of the anterior projection of the embolic plate in males, as well as by the trapeziform epigynal cavity in females.

DISTRIBUTION: Currently known from Kulawi Valley, Sulawesi only.

Nesioneta sola (Millidge & Russell-Smith, 1992)

Fig. 17

MATERIAL: 1 ♀; INDONESIA, Sulawesi, Kulawi Valley, Toro (1°30.443'S, 120° 2.474'E), 800 m a.s.l., cacao tree, branch trap; IX.2007.

REMARKS: This species was described and was previously known from a female from the Dumoga-Bone National Park, Sulawesi only (Millidge & Russell-Smith, 1992).

CONCLUSION

Lying at, and partly forming, the border between two major realms, the Oriental and the Australian, Sulawesi can soundly be expected to support faunistic elements from both these zoogeographical regions also among spiders. The Sulawesi spider fauna currently contains seven linyphiid species. Six of them have been described from the island and remain unknown beyond it. Only one, *Australophantes laetesiformis*, has also been reported from Australia. *Nesioneta sola* and *Microbathyphantes celebes* sp. n. are clearly evidence of Oriental relationships in belonging to genera of Oriental origins. Judging from secondary genitalic characters, *Dumoga arboricola*, *D. complexipalpis* and *Plicatiductus storki* most probably also have Oriental relations. The remaining species, *Maorineta sulawesi* sp. n. and *Australophantes laetesiformis*, both demonstrate Australian ties. *M. sulawesi* sp. n. belongs to a genus currently encompassing eight species, seven of which are known only from New Zealand, while one more occurs on some of the other Pacific islands (Beatty *et al.*, 1991). *Australophantes laetesiformis*, a unique micronetine earlier recorded only in Queensland, Australia, is here reported from outside the Australian continent for the first time. Further studies on Sulawesi spiders will probably provide a better idea about the different origins of the island's fauna.

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A new, sibling species of cave flatworm from Switzerland (Platyhelminthes, Tricladida, Dendrocoelidae)

Ronald SLUYS

Netherlands Centre for Biodiversity Naturalis (section ZMA) &
Institute for Biodiversity and Ecosystem Dynamics, University of Amsterdam,
P.O. Box 9514, 2300 RA Leiden, The Netherlands.
E-mail: Ronald.Sluys@ncbnaturalis.nl

A new, sibling species of cave flatworm from Switzerland (Platyhelminthes, Tricladida, Dendrocoelidae). - The paper describes a new species of *Dendrocoelum*, collected from a Swiss cave, representing the second species of this genus to be reported from subterranean localities in Switzerland. The new species closely resembles two other species, *D. clujanum* and *D. stenophallus*, both from Roumania.

Keywords: Platyhelminthes - Tricladida - Dendrocoelidae - *Dendrocoelum nekoum* sp. nov. - new species - sibling species - Switzerland.

INTRODUCTION

The most recent and comprehensive review of European subterranean planarians (Platyhelminthes, Tricladida) is that of Goubault (1972). A more recent summary of the geographic distribution of the various species was published by the same worker (Goubault, 1994). The only subterranean planarian mentioned for Switzerland is *Dendrocoelum infernale* (Steinmann, 1907), which was reported from caves, springs, and the profundal habitat of lakes in three cantons, viz. Berne, Saint-Gall, and Schwyz (Goubault, 1972). The present paper describes the finding of another, new member of the genus *Dendrocoelum* from a fourth canton, Obwalden.

The genus *Dendrocoelum* Örsted, 1844 s.l. comprises about 80 nominal species and has a principally European distribution, which extends to the region of the Caspian Sea and also includes northern Africa (cf. Harrath *et al.*, 2012).

MATERIAL AND METHODS

The animals were fixed in Bouin's fluid and, subsequently, transferred to 70% ethanol. Specimens were embedded in paraffin (histowax); histological sections were made at intervals of 8 µm and were stained in Mallory-Cason. Reconstructions of the copulatory apparatus were obtained using a camera lucida attached to a compound microscope. The material is deposited in the collections of the Netherlands Centre for Biodiversity Naturalis (section ZMA).

Abbreviations used in the figures: ad, adenodactyl; ab, adenodactyl bulb; ap, adenodactyl papilla; bc, bursal canal; ca, common atrium; cb, copulatory bursa; cod,

common oviduct; fl, flagellum; go, gonopore; ma, male atrium; od, oviduct; ph, pharynx; pb, penis bulb; pp, penis papilla; sg, shell glands; vd, vas deferens

SYSTEMATIC ACCOUNT

Order Tricladida Lang, 1884

Family Dendrocoelidae Hallez, 1892

Genus *Dendrocoelum* Örsted, 1844

Dendrocoelum nekoum sp. nov.

MATERIAL EXAMINED: Holotype: ZMA V.Pl. 6903.1, Riedschwandhöhle, 6078 Lungern, Klein Melchtal, 46°47' N 8°13'E, Switzerland, alt. 1550 m, a small lake about 100 m into the cave, 22 March 2009, sagittal sections on 17 slides. Paratype: V.Pl. 6903.2, *ibid.*, sagittal sections on 12 slides.

ETYMOLOGY: The specific epithet is derived from the acronym NeKO for the foundation "Naturerbe Karst und Höhlen Obwalden", the organization that has as one of its members the collector of the material, viz. Martin Trüssel.

DIAGNOSIS: *Dendrocoelum nekoum* can be distinguished from its congeners by the following combination of features: absence of eyes; long penial papilla, provided with a spacious lumen, with at its tip an inflexible flagellum; ovaries positioned at about 1/4th of the distance between the brain and the root of the pharynx; testes extending from about 1/2 of the distance between the brain and the root of the pharynx to the level of the gonopore; adenodactyl with the so-called Balkan type of musculature.

DESCRIPTION: Preserved specimens 12x4 mm; live animals were estimated to measure about 15 mm in length. Anterior end truncated and provided with a small, cup-shaped sucker. Animals devoid of any pigmentation and eyes (Fig. 1).

Pharynx small, located in the posterior half of the animal, measuring about 1/9th of the body length; musculature of the dendrocoelid type, i.e. with the inner zone consisting of a layer of intermingled circular and longitudinal muscles. Mouth opening situated at the posterior end of the pharyngeal cavity.

The testes are situated at the dorsal side of the body, as well as in the middle part and at the ventral side; the follicles extend from about one-half of the distance between the brain and the root of the pharynx (i.e. from a considerable distance posterior to the ovaries) to the level of the gonopore. The ovaries are located at about 1/4th of the distance between the brain and the root of the pharynx.

The sperm ducts are swollen to spermiducal vesicles but upon penetrating the anterior wall of the penis bulb they decrease considerably in diameter. Whilst traversing the bulb, the vasa deferentia expand again somewhat in diameter and open into the proximal section of the penis lumen. The latter is wide, occupying most of the space of the elongated penis papilla, and at the distal end of the papilla even expands to such an extent that hardly any penial mesenchyme is present (Fig. 2).

The penis papilla occupies most of the male atrium. The tip of the penis papilla is provided with a highly characteristic flagellum. The shape of this flagellum seems to be independent of the degree of extension or contraction of the penis papilla. In contrast to the holotype, the penis papilla of the paratype projects for a considerable

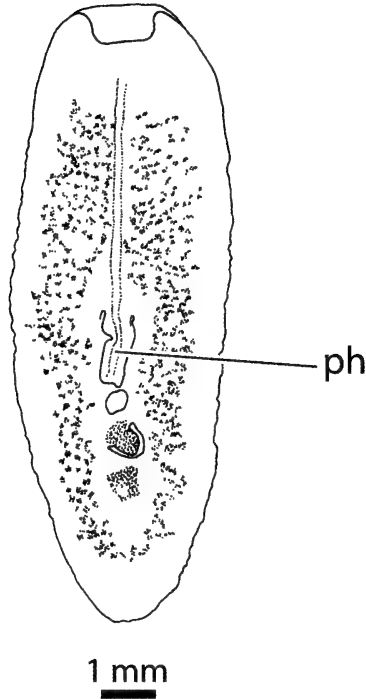


FIG. 1

Cleared specimen of *Dendrocoelum nekoum*, viewed from the ventral side.

distance through the gonopore. However, the shape of the flagellum of the paratype is precisely the same as in the holotype. The lining epithelium of the very tip of the penis, and thus of the flagellum, is pierced by openings of erythrophil penis glands. The penis bulb consists of criss-cross arranged, strong muscle fibres. This mess of circular and longitudinal fibres extends throughout the mesenchyme of the penis papilla, albeit much more faintly developed. The epithelium of the penis papilla is underlain by a well-developed layer of circular muscle.

The two oviducts join to form a common oviduct immediately dorsally to the most posterior section of the male atrium, which receives the opening of the common oviduct at its most postero-dorsal section. The common oviduct and the posteriormost sections of the oviducts receive the secretion of erythrophil shell glands. Oviducts and common oviduct are lined with cuboidal cells; those of the common oviduct are nucleated, while the cells of the oviducts are infranucleated.

A large copulatory bursa is situated directly posterior to the pharyngeal pocket. A long and somewhat undulating bursal canal connects it with the common atrium. The bursal canal is lined with a nucleated epithelium and is surrounded by a well-developed subepithelial layer of circular muscles, followed by a thin layer of longitudinal muscles (Fig. 2).

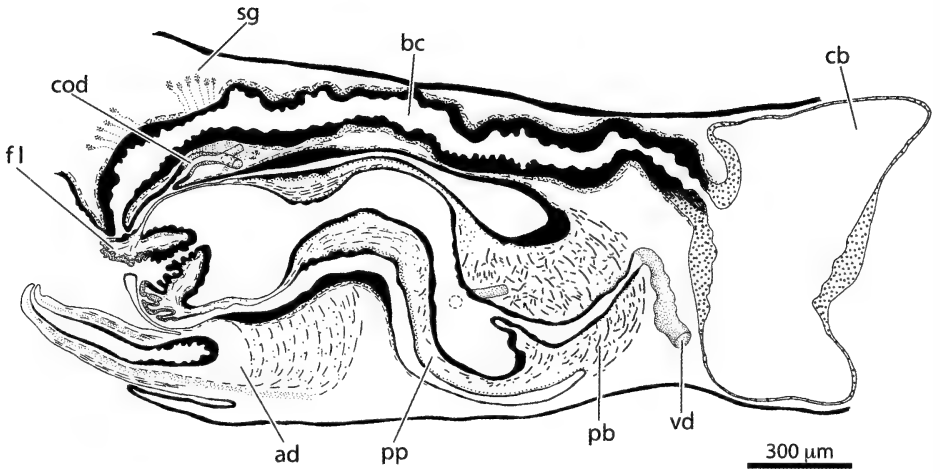


FIG. 2

Dendrocoelum nekoum. Holotype. Sagittal reconstruction of the copulatory apparatus.

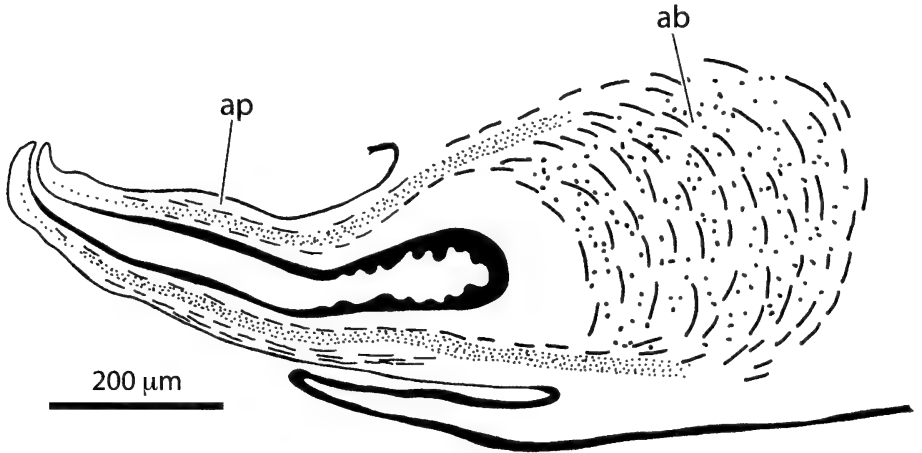


FIG. 3

Dendrocoelum nekoum. Holotype. Sagittal reconstruction of the adenodactyl.

A well-developed musculo-glandular organ or adenodactyl is located underneath the posterior half of the male atrium. This adenodactyl consists of a highly muscular bulb, consisting of strong, intermingled layers of muscle fibres, and a conical papilla (Figs 2, 3). The papilla is provided with a distinct lumen and its mesenchyme is traversed by a relatively thick, pale blue staining layer of circular muscle fibres that is both dorsally and ventrally bounded by a single layer of longitudinal muscle fibres. This condition is similar to the Balkan type of adenodactyl recently described by Harrath *et al.* (2012).

DISCUSSION: The gross morphology of *D. nekoum*, and in particular its characteristic penial flagellum, resembles only three other species of *Dendrocoelum*: *D. her-*

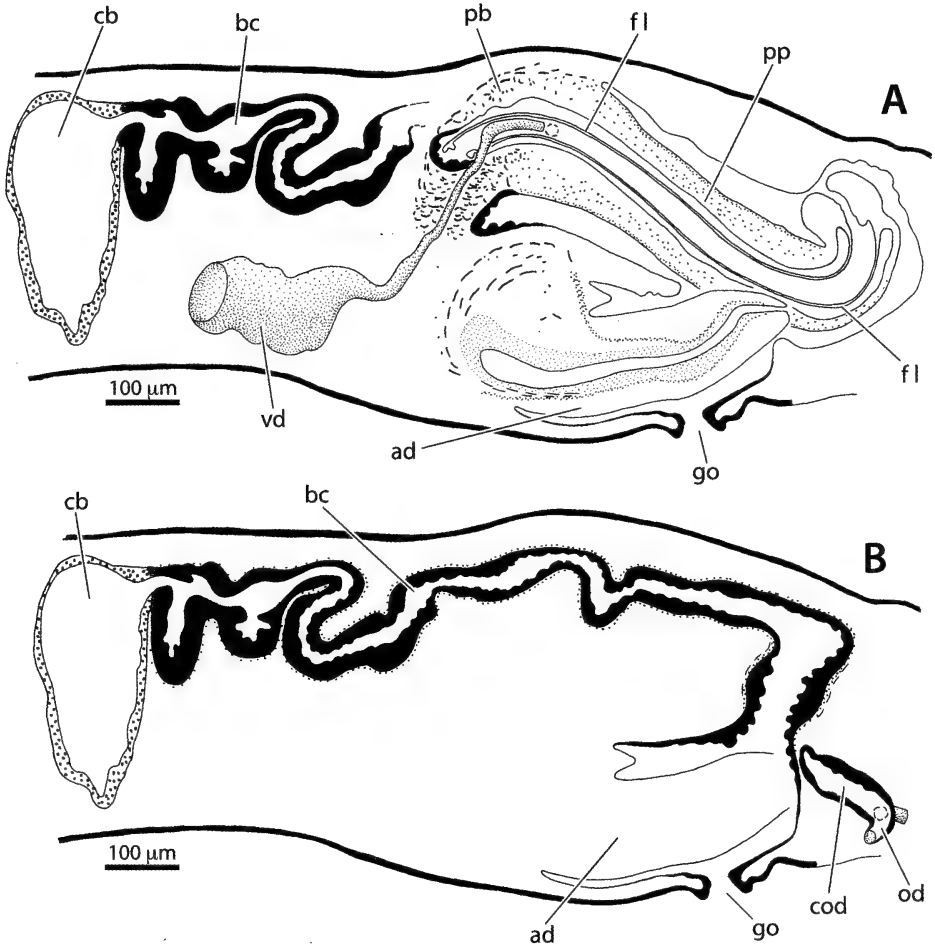


FIG. 4

Dendrocoelum hercynicum. Syntype (Museum für Naturkunde 10436b). (A) Sagittal reconstruction of the copulatory apparatus. (B) Sagittal reconstruction of the copulatory bursa and bursal canal; exact opening of common oviduct into the atrium could not be observed.

cynicum Flössner, 1959; *D. clujanum* Codreanu, 1943; *D. stenophallus* Codreanu & Balcesco, 1967.

Dendrocoelum hercynicum from Sachsen (Germany) has been described with a very long, inverted penial flagellum, the tip of the latter being swollen and thus suggesting a structure similar to the flagellum of *D. nekoum* (cf. Flössner, 1959, fig. 4). For comparative studies I have sectioned a syntype specimen of *D. hercynicum*, since no histological material of this species was available. Examination of this specimen confirmed the presence of an extremely long and inverted flagellum, albeit that the tip did not show the swelling as depicted by Flössner (Fig. 4A). Evidently, this flagellum

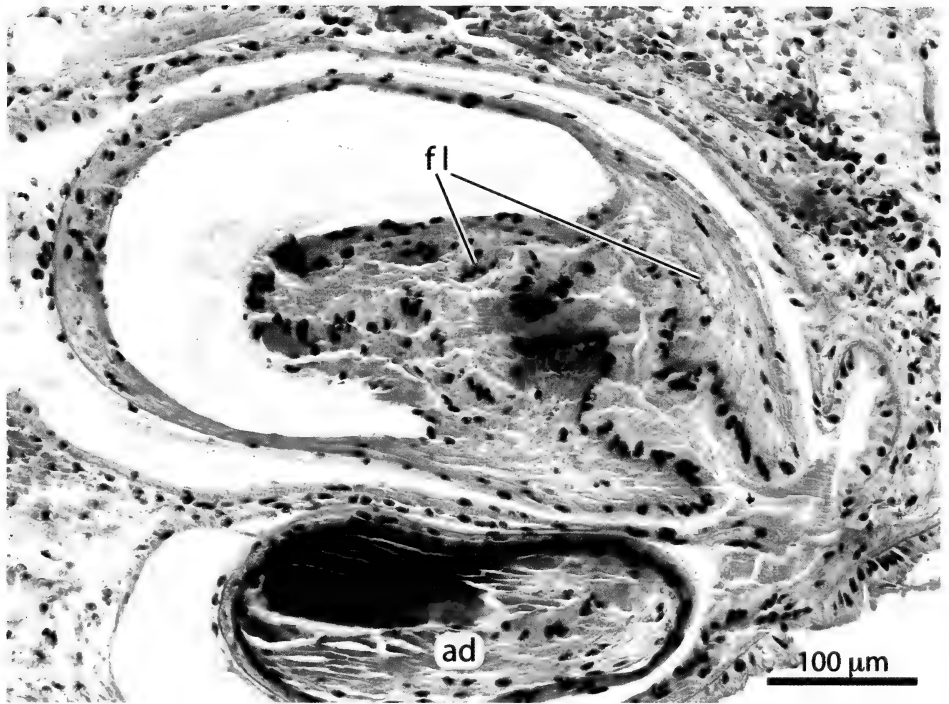


FIG. 5

Dendrocoelum stenophallus (MNHN AJ 275-276). Microphotograph of flagellum on the penis papilla.

is highly different from the short one in *D. nekoum*. Furthermore, the bursal canal of *D. hercynicum* shows many lateral undulations, as noticed also by Flössner (1959, fig. 4), which are absent in *D. nekoum* (Fig. 4B).

After examination of the descriptions of *D. clujanum* and *D. stenophallus*, both from Roumania, one can only conclude that these nominal species are very similar, if not the same. The only structural difference concerns the solely dorsal testes in *D. clujanum* (Codreanu, 1943) and the situation in *D. stenophallus* in which the testes occur throughout the dorso-ventral space. Both species have an elongated penis papilla provided with a distally distinctly widened penial lumen. In addition, the tip of the penis is provided with a swelling resembling the flagellum of *D. nekoum*. Unfortunately, the type material of both *D. clujanum* and *D. stenophallus* was not available for study. However, I have been able to re-examine paratypes of *Dendrocoelum dimitrescuae* Gourbault, 1968, a junior synonym of *D. stenophallus*, the material of which was collected from the same cave as *D. stenophallus*.

The microphotographs in Gourbault (1967, plate II, E) already suggested a penis structure, notably a flagellum, very similar to that of *D. nekoum* (Fig. 5). Gourbault (1967, p. 812) doubted whether this flagellum could be inverted, due to a lack of sufficient musculature. My observation on *D. nekoum* (see above) suggests indeed a non-inversible or non-eversible flagellum.

Codreanu & Balcesco (1967) described for *D. stenophallus* the presence of a muscular sphincter between male and common atrium. However, specimen AJ 275-276 shows no sphincter in this region. It is only the case that the circular musculature around the vaginal region of the bursal canal is somewhat more developed than on other parts of the canal, a condition that was also described by Gourbault (1967, p. 810).

A difference between *D. nekoum* and *D. stenophallus* resides in the distribution of the testes along the axis of the body. In *D. stenophallus* the anteriormost testes are also far removed from the brain and the ovaries, i.e. located at one-half of the distance between the brain and the root of the pharynx, similar to the condition in *D. nekoum*. However, in *D. stenophallus* the follicles extend to the posterior end of the body, whereas in *D. nekoum* they reach to the level of the gonopore.

Another difference concerns the position of the ovaries. In *D. stenophallus* the ovaries are located at about 1/8th of the distance between the brain and the root of the pharynx, whereas in *D. nekoum* the gonads are situated at 1/4th of this distance. For *D. clujanum* it is also described that the testes extend into the posterior end of the body (Codreanu, 1943).

In view of these small differences and the fact that the subterranean Roumanian localities of both *D. clujanum* and *D. stenophallus* are far removed and, presumably, completely isolated from Swiss caves, it is here proposed that *D. nekoum* represents a new species. The geographic argument lends some strength from the observation that subterranean forms, in general, have a restricted distribution (Gourbault, 1994). Thus, the new species forms the third member of a group of sibling species of which the two other members are *D. stenophallus* and *D. clujanum*.

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A new eyeless species of *Howdeniola* Osella, 1980 from Ecuador (Coleoptera, Curculionidae)

Christoph GERMANN

Natur-Museum Luzern, Kasernenplatz 6, CH-6003 Luzern and Naturhistorisches Museum der Burgergemeinde Bern, Bernastrasse 15, CH-3005 Bern.

E-mail: germann.christoph@gmail.com

A new eyeless species of *Howdeniola* Osella, 1980 from Ecuador (Coleoptera, Curculionidae). - *Howdeniola polleti* sp. nov. is described from southern Ecuador. The fifth species of the Neotropic *Howdeniola* Osella, 1980 represents the southernmost record of the genus, and the first with no visible eye remnants. The single male specimen was caught in a pan trap in the Podocarpus National Park at 2000 m a. s. l. in a lower montane rainforest.

Keywords: Cossoninae - eyeless species - taxonomy - South America - Podocarpus National Park - Ecuador.

INTRODUCTION

The genus *Howdeniola* Osella, 1980 was originally placed into Molytinae, later Howden (1992) moved it to Cossoninae. Alonso-Zarazaga & Lyal (1999) listed *Howdeniola* in the tribe Dryotribini Le Conte, 1876 together with the supposed closely related *Micromimus* Wollaston, 1873.

Howdeniola comprises four hitherto described species, all with vestigial eyes: *H. nitidipennis* Osella, 1980 and *H. sulcipennis* Osella, 1980 – both from Colombia – and *H. margheritae* Belló & Osella, 2008 and *H. onorei* Belló & Osella, 2008 – both from northern Ecuador – (Osella 1980, Belló & Osella 2008).

Within a biodiversity sampling project in Podocarpus National Park in Ecuador a single male specimen of an eyeless weevil was caught. This specimen shows the typical characters of *Howdeniola* which are modified and summarized after Osella (1980) and Howden (1992) as follows: (I) fore margin of epistoma overhanging mouthparts, (II) impunctate head abruptly different from rostrum, (III) eyes reduced or lacking, (IV) scrobe latero-ventral, reaching to or near base of rostrum, (V) seven articulated funiculus of the antenna, (VI), conspicuously elongated tibial uncus at outer angle, (VII) scutellum dorsally not visible, (VIII) basal margin of elytra elevated, (IX) shiny integument of the body.

In the following *Howdeniola polleti* sp. nov. from southern Ecuador is described.

MATERIAL AND METHODS

The male genital structures were extracted and dry glued on the mounting card. The genital structures were photographed beneath glycerol with a 5-megapixel digital

camera (Leica DFC425) under a stereomicroscope (Leica MZ16). The same camera was used for the habitus pictures. The pictures are composites processed using the software Imagic Image Access (Version 10) and then retouched using Adobe Photoshop version 10.0.1 (Adobe Systems Incorporated). The body size was measured dorsally from the apex of the elytra to the base of the rostrum.

Label data is reported literally, labels are separated by double slash (/), and own remarks are added in rectangular brackets.

TAXONOMIC PART

Howdeniola polleti sp. nov.

Figs 1-6

HOLOTYPE: ♂; (EC) Zamora Chinchipe: San Francisco, Reserva Biológica // San Francisco, all trails, 2000m [m a.s.l.], 03°58'30"S 79°04'25"W, // 25/02/2009-3/03/2009 (PT) [pan trap], leg. Marc Pollet & Anja De // Braekeleer, sorted by Marc Pollet - sample code: EC/2009-36/MP&ADB-018 // [red label] Holotype *Howdeniola polleti* sp. nov. des. C. Germann 2012.

REMARKS: The specimen was caught in a 5% formalin (= 2% formaldehyde) fixative solution with detergent in the traps, and then stored in 70% alcohol. The specimen was treated with Pepsin solution for preparation of the genital organs. The holotype specimen is deposited in the RBINS (Royal Belgian Institute of Natural Sciences).

DESCRIPTION: *Habitus:* Figs 1-2.

Size: 1.96 mm

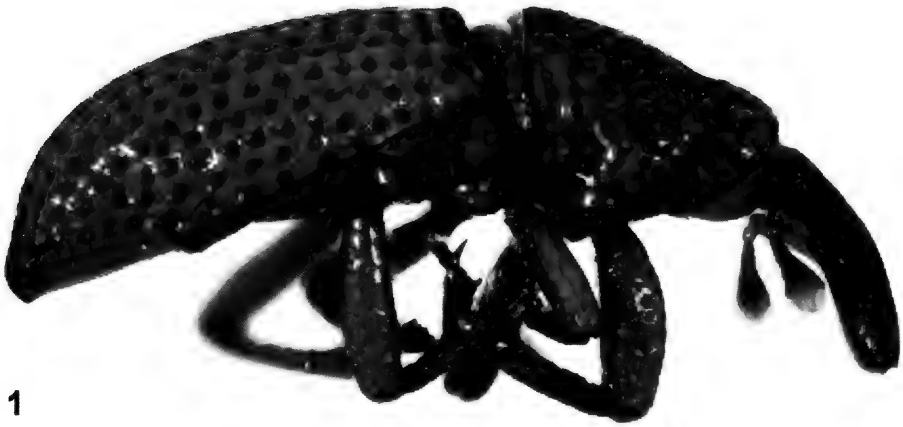
Body colour: auburn, glossy.

Head, rostrum and antennae: Head (Fig. 3) globose, impunctate and glabrous, abruptly different from rostrum. Eyes lacking. Rostrum about four times longer than wide, elliptical in cross-section, dorsally sparsely punctate, epistoma glabrous and impunctate, fore margin hanging over mouthparts. Scrobes latero-ventral, reaching to the base. Antennal insertion bulged in dorsal view, antennae inserted at beginning of apical third of rostrum. Antennal scape gradually enlarged, as long as funiculus. Funiculus (Fig. 4) consisting of seven segments of following ratios (L/B): 1st: 1.25; 2nd: 0.9; 3rd: 0.6; 4th to 6th: 0.5; 7th: 2.0. Club oval, circular in cross-section, densely clothed with long white setae, and sitting in the bowl-like 7th segment.

Pronotum: Index (L/B): 1.53. Longer than wide, strongly constricted after the first third, widest after the middle. Surface deeply punctate with interspaces of about the size of punctation. Short bright hairs arise from punctation.

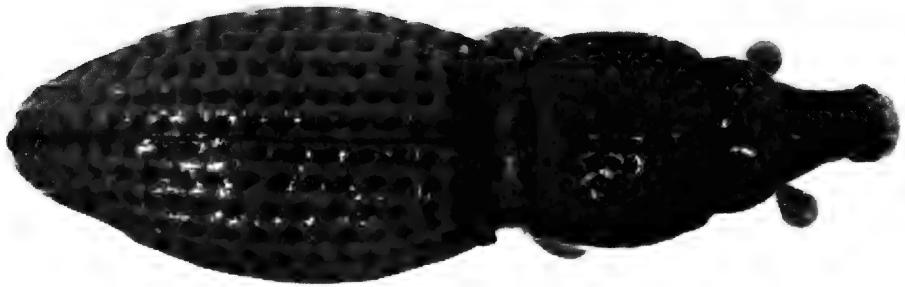
Elytra: Index (L/B): 1.76. Base narrower than pronotum, oval, lacking humeral callus (apterous), widest before the middle, tapered towards base and conical towards apex. Eight deeply punctate striae, intervals including suture narrow, elevated and costate with minute adherent hairs. Intervals (excluding suture) 3, 5, 6 and 7 are incomplete, not reaching the elytral apex. Five sternites, of which 3 and 4 are equal, sternite 5 rounded towards apex, deeply punctate with bowed hairs and slightly bulged in the middle.

Legs: Coxae separated from each other as follows: procoxae by less than ½ of their diameter, mesocoxae by ½ and metacoxae by two times of their diameter. Femora unarmed, punctate, short adherent bright hairs arise. Tibiae punctate with short adher-



1

0.5 mm



2

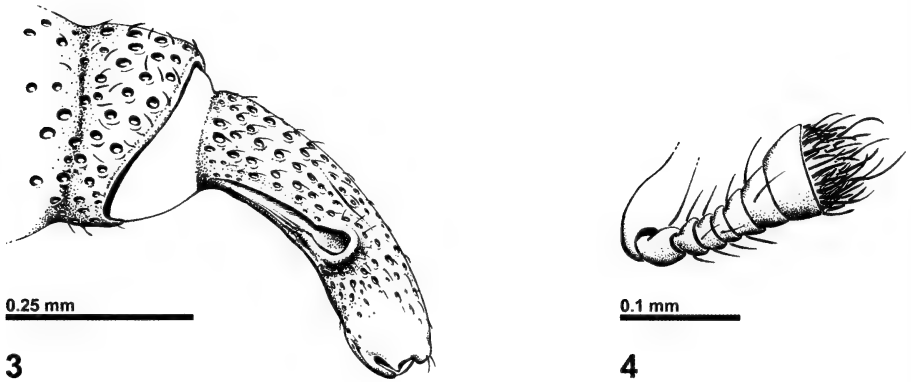
FIGS 1-2

Howdeniola polleti sp. nov. (holotype). Habitus in lateral view (1) and dorsal view (2).

ent bright hairs. Inner side of tibiae set with raised bright hairs, fore tibiae with densely standing raised bristles from the middle on. Apex of tibiae with long curved uncus at outer apical angle, and short tooth at inner angle. Tarsi with three well visible tarsal segments, fourth very short. Claw segment as long as first tarsal segment, claws minute and simple.

Aedeagus (Figs 5-6): Apex of aedeagus asymmetrically pointed, ventrally hook-like bowed. Median lobe containing a tubular sclerite diverging towards apophyses.

DIFFERENTIAL DIAGNOSIS: *Howdeniola polleti* sp. nov. differs from all other four above-mentioned members of the genus by the slender elytra with narrow and costate intervals, the strongly constricted pronotum before its fore margin, and the conspicuously pointed apex of the aedeagus.



FIGS 3-4

Howdeniola polleti sp. nov. (holotype). (3) Head and anterior portion of pronotum in lateral view. (4) Antenna. (Illustrations by C. Hochholdinger).

KEY OF THE SPECIES OF HOWDENIOLA

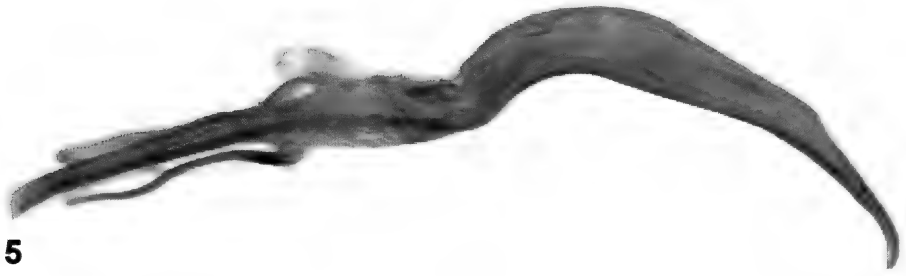
Modified after Belló & Osella (2008: 473)

- 1 Elytra smooth, shiny. Pronotum with small and widely space punctation. Colombia (Quindio) ***nitidipennis* Osella, 1980**
- Elytra with punctate striae not or faintly shiny. Pronotum with dense punctation **2**
- 2 Elytra globose, strongly striate. Pronotum rounded laterally. Colombia (Saladido) ***sulcipennis* Osella (1980)**
- Elytra less globose. Pronotum cylindrical **3**
- 3 Intervals on Elytra flat, smooth. Aedeagus widened with a cordiform apex. Ecuador (Pichincha, Cerro Blanco) ***onorei* Belló & Osella 2008**
- Intervals slightly cariniform. Aedeagus elongate pointed **4**
- 4 Antennae inserted at apical fifth of rostrum. Vestigial eyes. Pronotum constricted before fore margin. Elytra more oval, with long raised setae. Ecuador (Pichincha, Otonga) ***margheritae* Belló & Osella 2008**
- Antennae inserted at beginning of apical third of rostrum. Eyes lacking. Pronotum strongly constricted before fore margin. Elytra more elongate, with minute adherent hairs. Ecuador (Zamora Chinchipe, San Francisco) ***polleti* sp. nov.**

DERIVATIO NOMINIS: The new species *Howdeniola polleti* sp. nov. is named after its collector, dear colleague and renowned dipterist Dr. Marc Pollet (Brussels, Belgium).

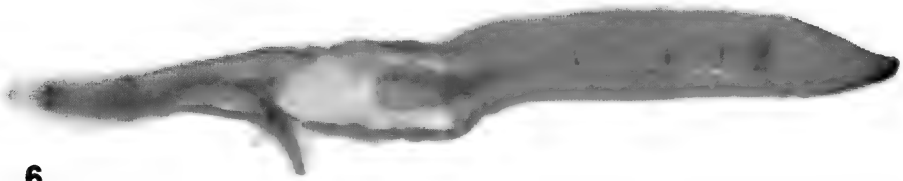
BIONOMY: *Howdeniola polleti* sp. nov. was collected in pan traps, these were dug into the soil until their upper rim. The biome at the altitude of 2000 m a. s. l. can be considered as lower montane rainforest (written communication M. Pollet).

DISTRIBUTION: *Howdeniola polleti* sp. nov. represents the southernmost find of the genus. Furthermore an undescribed *Howdeniola* was recorded from Costa Rica



5

0.25 mm



6

FIGS 5-6

Howdeniola polleti sp. nov. (holotype). Aedeagus in lateral view (5) and ventral view (6).

(Rancho Quemado, Osa, Puntarenas, leg. F.A. Quesada, det. R. Anderson; record from IABIN (Red Interamericana de Información sobre Biodiversidad)). These further records obviously indicate that many more species of this genus will be discovered in this large area.

ACKNOWLEDGEMENTS

Thanks go to Marc Pollet for the invitation to study the collected samples of Curculionoidea from Podocarpus National Park, Ecuador. Further thanks go to the host agencies of the biodiversity inventory project RBINS (Royal Belgian Institute of Natural Sciences), EDIT (European Distributed Institute of Taxonomy) and DFG RU-816 (Deutsche Forschungsgemeinschaft Research Unit 816). The sampling was supported by the Leopold III Fund and by the Fund for Scientific Research – Flanders.

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New species of *Tychus* from Greece and Turkey (Coleoptera, Staphylinidae, Pselaphinae)

Giorgio SABELLA¹, Volker BRACHAT² & Serguei A. KURBATOV³

¹ Dipartimento di Biologia Animale dell'Università, via Androne 81, I-95124 Catania.
E-mail: sabellag@unict.it

² Beethovenweg 19a D-82538 Geretsried. E-mail: vc.brachat@t-online.de

³ Davydkovskaya 4-2-104, Moscow 121352 Russia. E-mail: pselaphidae@yandex.ru

New species of *Tychus* from Greece and Turkey (Coleoptera: Staphylinidae: Pselaphinae) - Six new species of *Tychus* Leach, 1817 are described: *T. triumphator* Sabella sp. n. from Lesbos Island (Greece) and *T. meybohmi* Brachat sp. n. from central Turkey (*dalmatinus* group), *T. nothus* Sabella sp. n. from central Turkey (*lederi* group), *T. assingi* Brachat sp. n. from Turkey (*rhodopeus* group), *T. moecha* Kurbatov sp. n. from Lesbos Island (Greece) (*florentinus* group), and *T. sellarius* Kurbatov sp. n. from Turkey (*incertae sedis*). The females of *Tychus sodalicius* Kurbatov, 2011, *T. spurius* Sabella, 2011 and *T. grassator* Sabella, 2011 are described for the first time and their antennae and genital plates are illustrated. The genital plates of *T. latebrosus* Besuchet, 2011 and *T. altivagus* Besuchet, 2011 are also illustrated for the first time. New localities are reported for *T. latebrosus* Besuchet, 2011, *T. olor* Sabella & Kurbatov, 2002 and *T. balcanicus* Reitter, 1902.

Keywords: Taxonomy - Greece - Turkey - *Tychus* - new species.

INTRODUCTION

This study is a further contribution to the revision of the Palaearctic species of *Tychus*. Six new species are described. The previously unknown females of *Tychus sodalicius* Kurbatov, 2011, *T. spurius* Sabella, 2011 and *T. grassator* Sabella, 2011 are described based on the material collected in the same locality and at the same date of the respective holotypes (Sabella *et al.*, 2011). The genital plates of *T. latebrosus* Besuchet, 2011 and *T. altivagus* Besuchet, 2011 are illustrated for the first time. New localities are given for several species.

The study was partly supported by a M.U.R.S.T. 60% grant (programme: Morphology, systematic and animal phylogeny).

MATERIAL AND METHODS

The depositories of the material examined in this study and their acronyms used in the text are as follows:

MHNG Muséum d'Histoire Naturelle, Genève, Switzerland

PCVB Private collection of V. Brachat, Geretsried, Germany

The body length is measured from the anterior clypeal margin to the posterior margin of the last visible abdominal tergite. The head length is measured from the anterior clypeal margin to the posterior margin of the neck; the head width includes eyes; the elytral length is measured along the suture and the elytral width is the combined maximal width. The abdominal segments are numbered from the first visible segment onwards, i.e. from the first tergite (fourth segment) and first sternite (third segment). The nomenclature follows that proposed by Chandler (2001) for the external morphology and Kurbatov & Sabella (2008) for characters of the aedeagus.

TAXONOMY

Following characters shared by all *Tychus* species examined in this study are listed below:

Pubescence consisting of long and flattened golden setae on head and pronotum; other setae shorter, yellowish and suberect, very sparse on sides of pronotum and dense on elytra, especially on its sides and apex, and on abdominal tergites. Tuft of dense setae on neck.

Body smooth and shiny; only elytra with some large punctures.

Head widest at eyes, narrowest posterior to antennal tubercles, tubercles separated by medial longitudinal sulcus, more or less long and impressed. Vertex separated from frontal rostrum by shallow transverse depression with very fine punctures. Pair of vertexal foveae between and close to eyes. Front with small tooth on each side. Tempora rounded. Antennomere III narrowed at the base, antennomere VIII shorter than previous antennomeres, club consisting of three antennomeres broaden progressively from IX to XI. Antennomere IX transverse, distinctly wider than funicular antennomeres; X transverse, wider than IX; terminal antennomere longer than wide and longer than antennomeres IX and X combined.

Pronotum wider than head, widest near middle, more clearly narrowed and rounded anteriorly than posteriorly, with seven small basal pits, median pit larger than lateral ones. Pair of antebasal foveae present.

Elytra wider than long and longer than pronotum. Two basal foveae on each elytron; sutural fovea joined to shallow sutural stria, latter reaching elytral apex.

Abdomen with first tergite longer than following combined, discal carinae of first tergite very short and very weakly defined; surface between discal carinae with pubescent basal impression variable in width. First abdominal tergite with pair of basolateral foveae, first abdominal paratergite with pair of antebasal impressions, second abdominal sternite with pair of antebasal foveae.

Male: Metaventricle with median impression. Abdominal sternites not modified.

NEW SPECIES OF *TYCHUS* LEACH, 1817

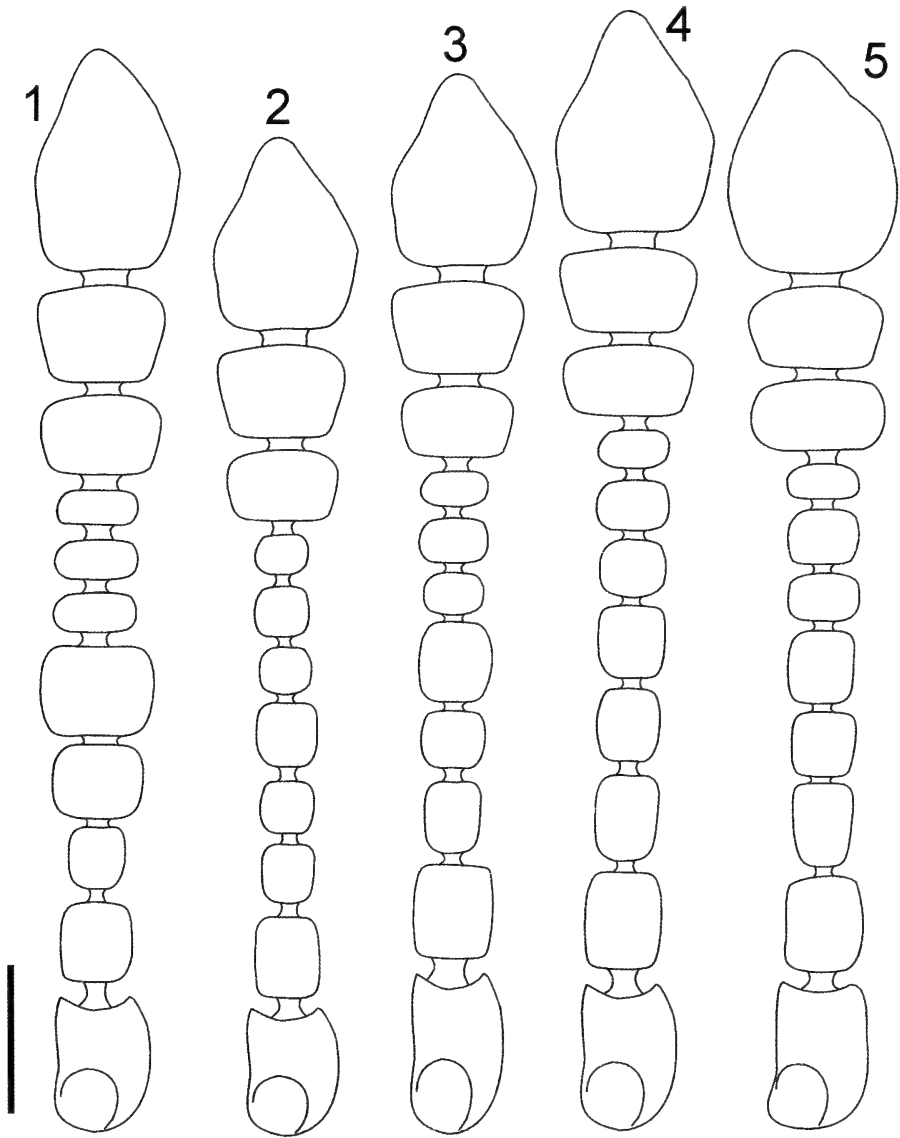
***Tychus dalmatinus* species group** (Besuchet & Sabella, 1996)

Tychus triumphator Sabella sp. n.

Figs 1-2, 11-12, 23

HOLOTYPE: MHNG, ♂; Greece, Lesbos Island, Labou Mili, 110 m, 39°08'06"N 26°23'18"E; 19.03.2005; A. Lompe & H. Meybohm.

PARATYPES: MHNG, 1♂ and 1♀; Greece, Lesbos Island, same data as holotype; A. Lompe & H. Meybohm.- PCVB, 1♂; same data as holotype; A. Lompe & H. Meybohm.- PCVB, 1♂; Greece, Lesbos Island, Pigi, 90 m, 39°10'58"N 26°26'05"E; 21.03.2005; A. Lompe & H. Meybohm.



FIGS 1-5

Antennae of *Tychus*. (1) *T. triumphator*, holotype. (2) *T. triumphator*, female paratype from Labou Mili (Lesbos Island). (3) *T. meybohmi*, holotype. (4) *T. nothus*, holotype. (5) *T. nothus*, female paratype from Kadirli (Kahramanmaraş). Scale bar 0.1 mm.

DESCRIPTION: Length 1.45-1.50 mm. Winged. Body dark brown in male, lighter brown in female, with reddish elytra and antennae, abdomen black, legs yellowish and palpi yellow.

Head slightly wider (0.275-0.285 mm) than long (0.250-0.260 mm), frontal rostrum 0.135-0.140 mm wide and 0.080 mm long. Eyes well developed (24-28 facets). Apical segment of maxillary palpi 0.150 mm long and 0.075 mm wide.

Pronotum wider (0.330-0.350 mm) than long (0.300 mm) with lateral antebasal foveae in well marked impressions.

Elytra wider (0.600-0.610 mm) than long (0.500-0.525 mm) with humeri slightly protruding. Discal fovea joined to discal stria, latter reaching elytral mid-length.

Abdomen with first tergite 0.175-0.180 mm long, basal impression extending on about over half of tergal width.

Male: Antennae (Fig. 1) 0.725-0.740 mm long, club 0.290 mm long; scape distinctly longer than wide; antennomeres II and III slightly longer than wide; IV wider than III and distinctly wider than long; V wider than IV and strongly wider than long; antennomeres VI, VII and VIII strongly wider than long, VI and VII subequal. All femora and tibiae slightly thickened, posterior margin of mesotrochanters prolonged into long and sharp median spines, mesotibiae each with small subapical tooth, metatibiae each with evident apical spur. Aedeagus (Figs 11-12) 0.315-0.325 mm long.

Female: Antennae (Fig. 2) 0.665 mm long, club 0.275 mm long; scape and antennomere II distinctly longer than wide; III slightly longer than wide; IV as long as wide; V wider than IV and VI and slightly wider than long; antennomeres VI, VII and VIII wider than long, VI shorter than VII. Genital plate as in Fig. 23.

COMMENTS: *Tychus triumphator* sp. n. is similar to *T. rhodensis* Sabella, Bueckle, Brachat, 1998. Males of both species are easily distinguished by the shape of the antennae with antennomeres IV-VIII, especially IV and V, which are strongly thickened in *T. triumphator* (not thickened in *T. rhodensis*), by all abdominal sternites not modified in *T. triumphator* (first and second sternites modified in *T. rhodensis*), and by the different shape of the apex of the ventral portion of the aedeagal median lobe. Females of both species are distinguished only by the shape of the genital plate, which has more rounded sides in *T. triumphator* sp. n.

***Tychus meybohmi* Brachat sp. n.**

Figs 3, 13-14

HOLOTYPE: MHNG, ♂; Turkey, Kahramanmaraş Prov., NO Kadirli, 12,5 km NO Andirin-Geben, 1.500 m, 37°39'14.2"N 36°26'27"E; 03.05.2005; H. Meybohm & V. Brachat.

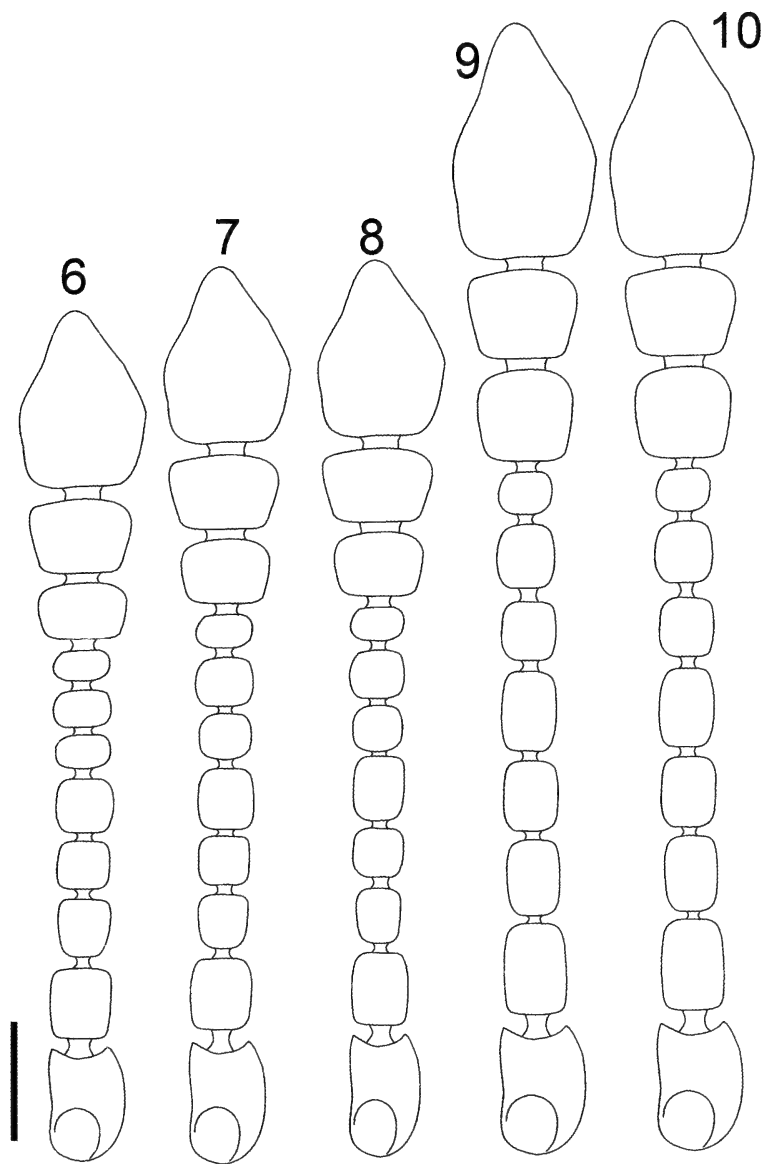
DESCRIPTION: Length 1.35 mm. Winged. Body brownish with abdomen black, antennae reddish, legs yellowish and palpi yellow.

Head as long as wide (0.275 mm), frontal rostrum 0.125 mm wide and 0.070 mm long. Eyes well developed with 24 facets. Apical segment of maxillary palpi 0.175 mm long and 0.075 mm wide.

Pronotum wider (0.325 mm) than long (0.275 mm) with lateral antebasal foveae in shallow impressions.

Elytra wider (0.600 mm) than long (0.500 mm) with humeri slightly protruding. Discal fovea joined to discal stria, latter reaching more than elytral mid-length.

Abdomen with first tergite 0.190 mm long, basal impression extending on more than third of tergal width.



FIGS 6-10

Antennae of *Tychus*. (6) *T. assingi*, holotype. (7) *T. moecha*, holotype. (8) *T. moecha*, female paratype, from Lepetimnos (Lesbos Island). (9) *T. sellarius*, holotype. (10) *T. sellarius*, female paratype from Pasayaylasi (Aydin). Scale bar 0.1 mm.

Male: Antennae (Fig. 3) 0.740 mm long, club 0.275 mm long; scape and antennomere II distinctly longer than wide; III longer than wide; IV wider than long; V wider than IV and VI and longer than wide; VI and VII wider than long, VII wider and slightly longer than VI; VIII much wider than long. Posterior margin of

mesotrochanters acute in middle, mesotibiae unarmed, metatibiae each with very small apical spurs. Aedeagus (Figs 13-14) 0.350 mm long.

Female: Unknown.

COMMENTS: *Tychus meybohmi* sp. n. is very similar to *Tychus viti* Besuchet, 2011 from which it can be distinguished by its smaller size (1.35 mm *T. meybohmi*, 1.60-1.65 mm *T. viti*), by the antennal shape with segments V longer than wide (slightly wider than long in *T. viti*), and by the different shape of the ventral portion and dorsal apophysis of the aedeagal median lobe.

***Tychus lederi* species group** (Sabella & Kurbatov, 2002)

Tychus nothus Sabella sp. n.

Figs 4-5, 15-16, 24

HOLOTYPE: MHNG, ♂; Turkey, Kahramanmaraş Prov., NO Kadirli, 10 km N Andirin-Cokak, 1.148 m, 37°39'18.9"N 36°20'51"E; 03.05.2005; H. Meybohm & V. Brachat.

PARATYPES: MHNG, 1♀; Turkey, Kahramanmaraş Prov., same data as holotype; H. Meybohm & V. Brachat.- PCVB, 1♀; same data as holotype; H. Meybohm & V. Brachat.- PCVB, 1♂; Turkey, Mersin Prov., N Anamur, road Ermenek-Anamur, about 2 km S Kazanci, 1.421 m, 36°28'59.9"N 32°50'45.2"E; 22.04.2005; H. Meybohm & V. Brachat.

DESCRIPTION: Length 1.60-1.65 mm. Winged. Body dark brown with elytra red, antennae reddish, legs yellowish and palpi yellow.

Head slightly longer (0.300 mm) than wide (0.285-0.290 mm), frontal rostrum 0.135-0.14 mm wide and 0.080 mm long. Eyes well developed (24-26 facets). Apical segment of maxillary palpi 0.185 mm long and 0.085 mm wide.

Pronotum wider (0.345-0.350 mm) than long (0.300-0.310 mm) with lateral antebasal foveae in shallow impressions.

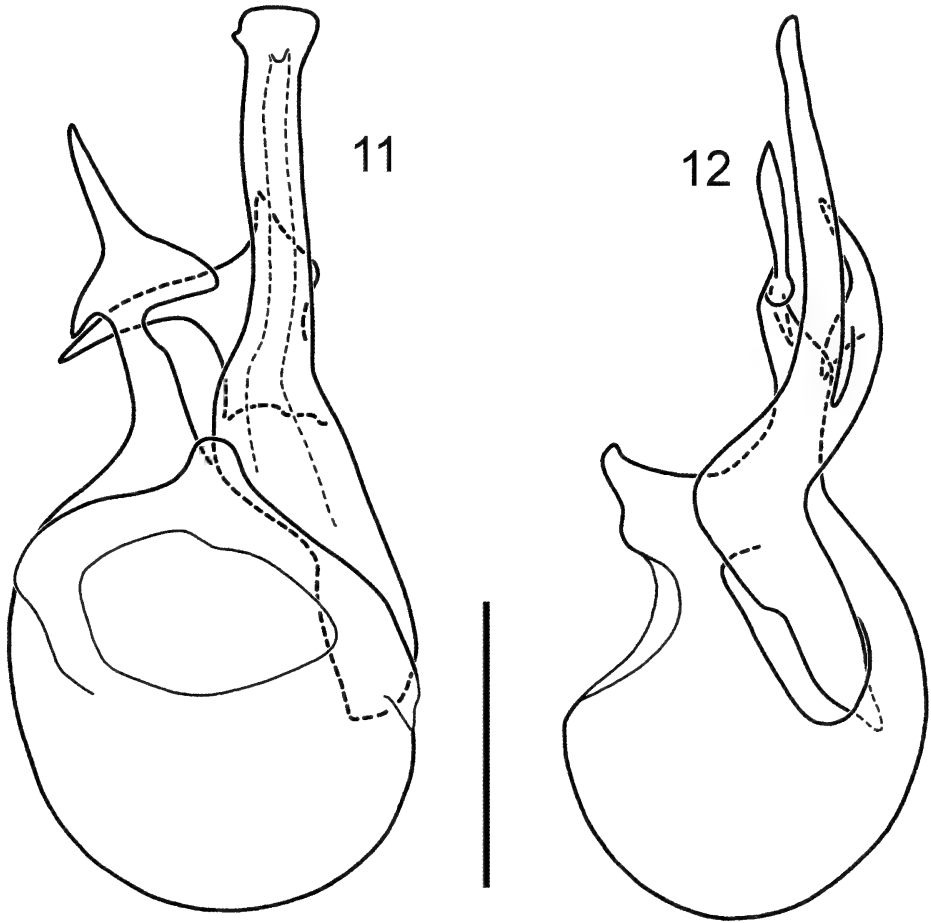
Elytra wider (0.595-0.600 mm) than long (0.500-0.525 mm) with humeri slightly protruding. Discal fovea joined to discal stria, latter reaching about elytral mid-length.

Abdomen with first tergite 0.185-0.190 mm long, basal impression extending on more than third of tergal width.

Male: Antennae (Fig. 4) 0.760-0.775 mm long, club 0.290 mm long; scape and antennomeres II-III distinctly longer than wide; IV and V slightly longer than wide; VI, VII and VIII wider than long. All femora and tibiae slightly thickened, posterior margin of mesotrochanters extended into long and sharp median spines. Mesotibiae unarmed, metatibiae each with small apical spurs. Aedeagus (Figs 15-16) 0.360-0.365 mm long.

Female: Antennae (Fig. 5) 0.725-0.740 mm long, club 0.285-0.290 mm long, similar to that of male, but only slightly shorter and thinner. Genital plate as in Fig. 24.

COMMENTS: *Tychus nothus* sp. n. is very similar to *T. olor* Sabella & Kurbatov, 2002, from which it is distinguished by its bigger size (1.55-1.65 mm *T. nothus*, 1.45-1.55 mm *T. olor*), by the shape of the antennomeres IV and V slightly longer than wide (wider than long in *T. olor*), and by the shorter aedeagus (0.360-0.365 mm in *T. nothus*, 0.385-0.390 mm in *T. olor*) with shorter dorsal apophysis bearing a thinner and longer dorsal process in *T. nothus* sp. n.



FIGS 11-12

Tychus triumphator, holotype, aedeagus in ventral (11) and lateral (12) views. Scale bar 0.1 mm.

***Tychus rhodopeus* species group** (Besuchet & Sabella, 1999)

Tychus assingi Brachat sp. n.

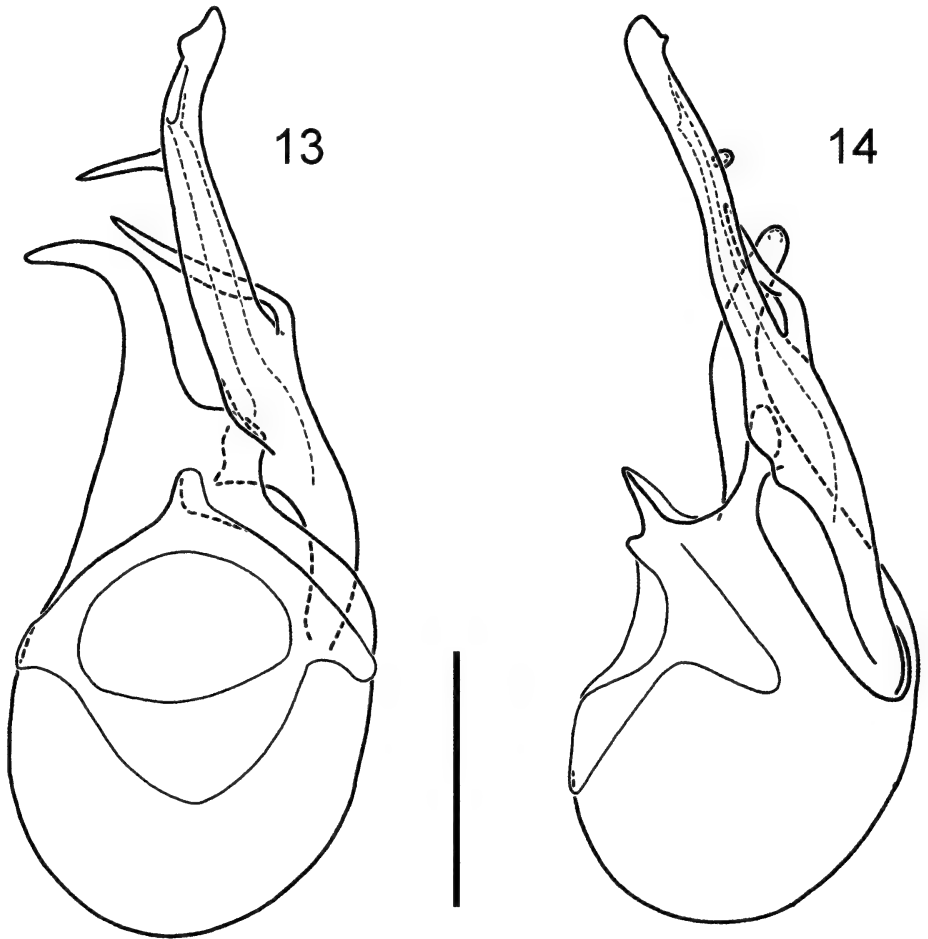
Figs 6, 17-18

HOLOTYPE: MHNG, ♂; Turkey, Mersin Prov., N Anamur, road Ermenek-Anamur, about 2 km S Kazanci, 1.421 m, 36°28'59.9"N 32°50'45.2"E; 22.04.2005; H. Meybohm & V. Brachat.

DESCRIPTION: Length 1.40 mm. Winged. Body dark brown with elytra reddish, antennae and legs yellowish and palpi yellow.

Head wider (0.285 mm) than long (0.265 mm), frontal rostrum 0.135 mm wide and 0.055 mm long. Eyes consisting in 16 facets. Apical segment of maxillary palpi 0.165 mm long and 0.075 mm wide.

Pronotum wider (0.325 mm) than long (0.300 mm) with lateral antebasal foveae in shallow impression.



FIGS 13-14

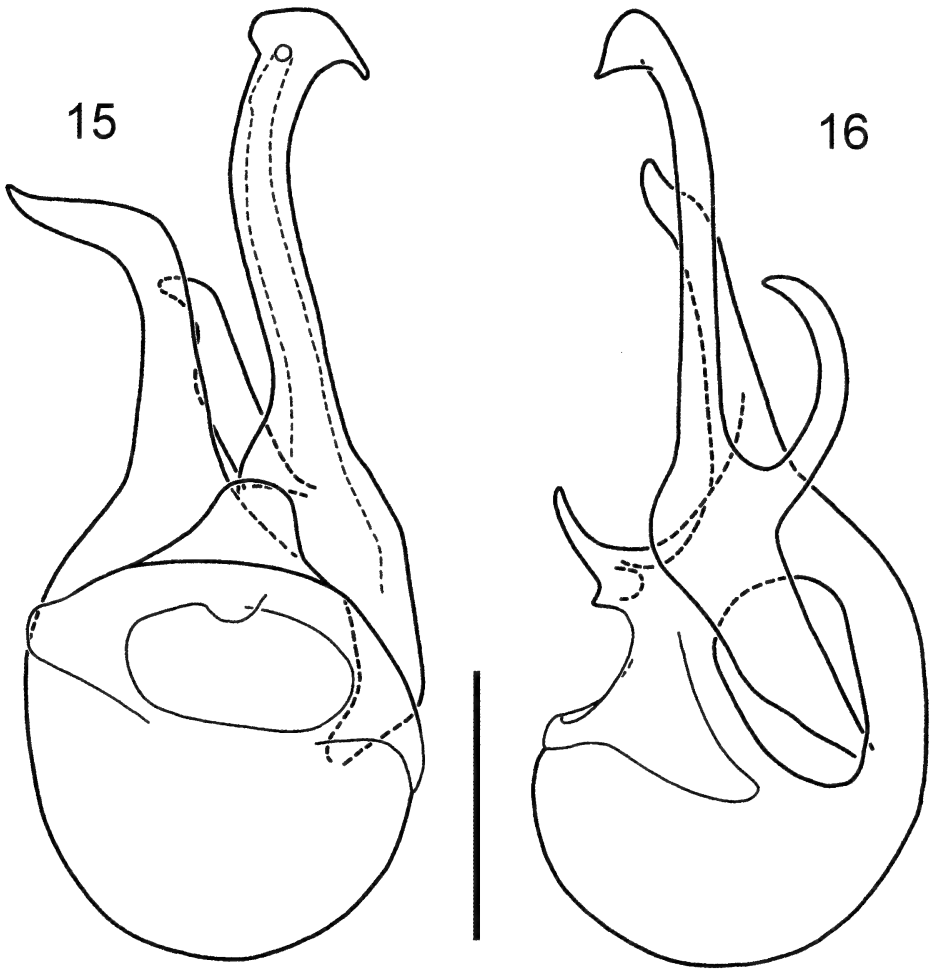
Tychus meybohmi, holotype, aedeagus in ventral (13) and lateral (14) views. Scale bar 0.1 mm.

Elytra wider (0.610 mm) than long (0.500 mm) with slightly protruding humeri. Discal fovea joined to discal stria, latter reaching more than elytral mid-length.

Abdomen with first tergite 0.190 mm long, basal impression extending on more than 1/3 of tergal width.

Male: Antennae (Fig. 6) 0.760 mm long, club 0.285 mm long; scapus distinctly longer than wide; antennomeres II and III longer than wide; IV slightly wider than long, V as long as wide and slightly wider than IV; VI and VII distinctly wider than long, VII slightly longer than VI, VIII strongly wider than long. Posterior margin of mesotrochanters acute in middle. Mesotibiae and metatibiae unarmed. Aedeagus (Figs 17-18) 0.300 mm long.

Female: Unknown.



FIGS 15-16

Tychus nothus, holotype, aedeagus in ventral (15) and lateral (16) views. Scale bar 0.1 mm.

COMMENTS: *Tychus assingi* sp. n. is similar to *T. rhodopeus* Besuchet & Sabella, 1999, from which it is distinguished by the shape of the antennomere IV slightly wider than long and V as wide as long (IV and V distinctly longer than wide in *T. rhodopeus*) and by the different shape of the ventral portion of the aedeagal median lobe.

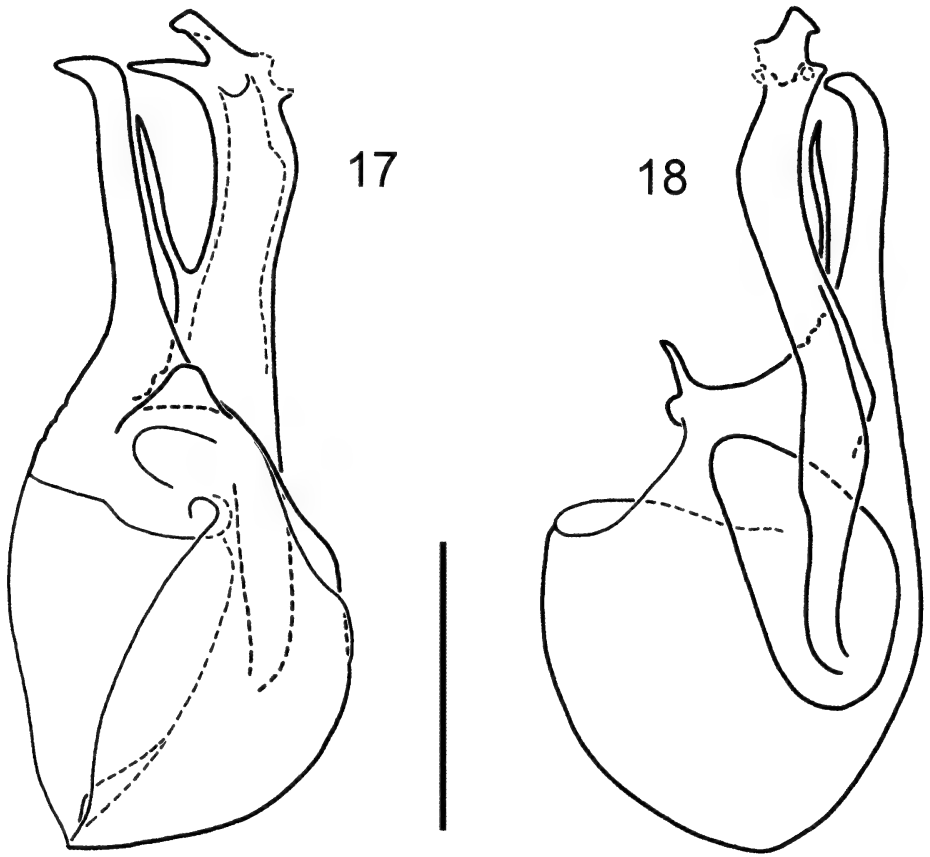
***Tychus florentinus* species group** (Sabella & Poggi, 1997)

Tychus moecha Kurbatov sp. n.

Figs 7-8, 19-20, 25

HOLOTYPE: MHNG, ♂; Greece, Lesbos Island, Skotino, 200 m, 39°15'52"N 26°12'25"E; 17.03.2005; A. Lompe & H. Meybohm.

PARATYPE: MHNG, 1♀; Greece, Lesbos Island, Lepetimnos, 570 m, 39°21'11"N 26°17'37"E; 18.03.2005; A. Lompe & H. Meybohm.



FIGS 17-18

Tychus assingi, holotype, aedeagus in ventral (17) and lateral (18) views. Scale bar 0.1 mm.

DESCRIPTION: Length 1.45 mm. Apterous with fused elytra. Body dark brown with abdomen darker, antennae reddish, legs yellowish and palpi yellow in male; uniformly yellowish brown with palpi yellow in female.

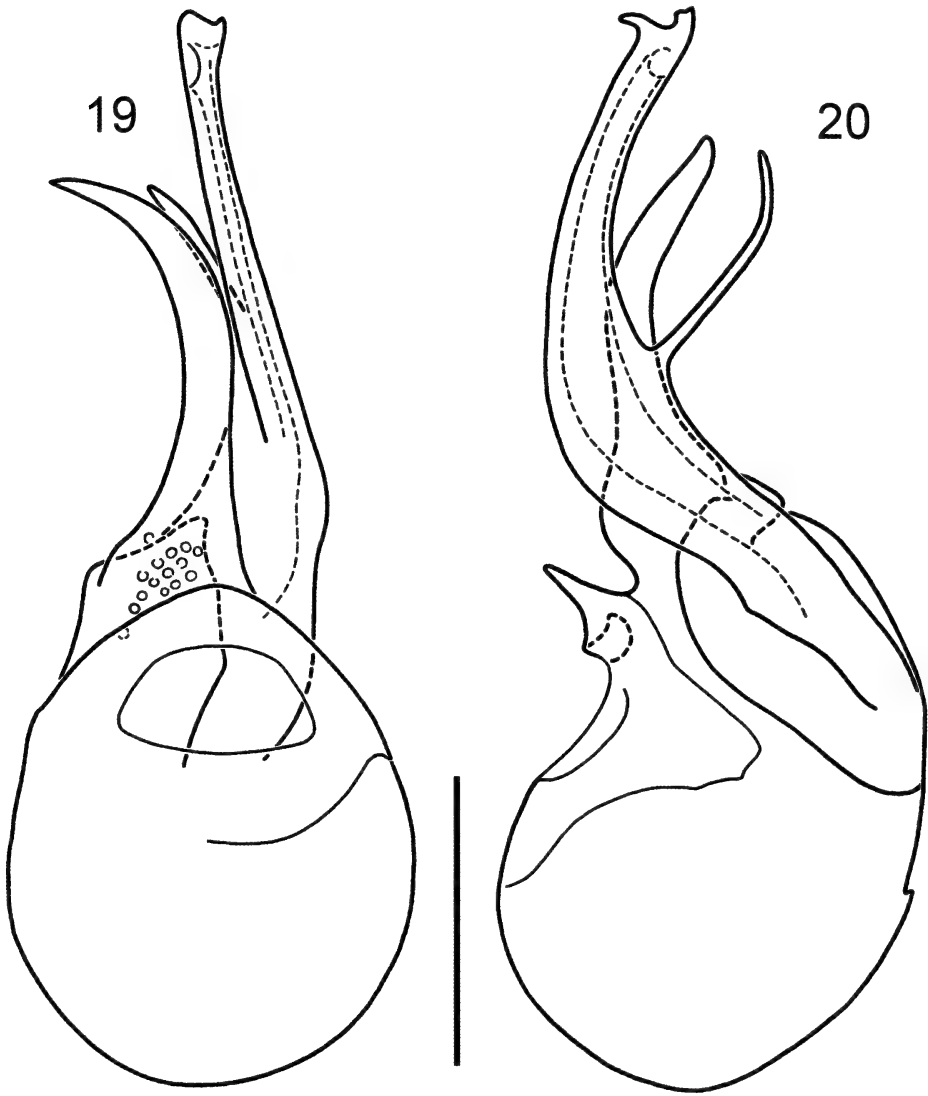
Head slightly wider (0.265-0.290 mm) than long (0.255-0.275 mm), frontal rostrum 0.165-0.175 mm wide and 0.070 long. Apical segment of maxillary palpi 0.190 mm long and 0.070 mm wide.

Pronotum wider (0.310 mm) than long (0.290-0.300 mm) with lateral antebasal foveae in shallow impressions.

Elytra wider (0.575-0.590 mm) than long (0.475-0.490 mm) with humeri not very protruding. Discal fovea joined to discal stria, latter reaching elytral mid-length.

Abdomen with first tergite 0.200 mm long, basal impression extending on more than 1/3 of tergal width.

Male: Antennae (Fig. 7) 0.800 mm long, club 0.300 mm long; scape distinctly longer than wide; antennomere II longer than wide, III slightly longer than wide; IV

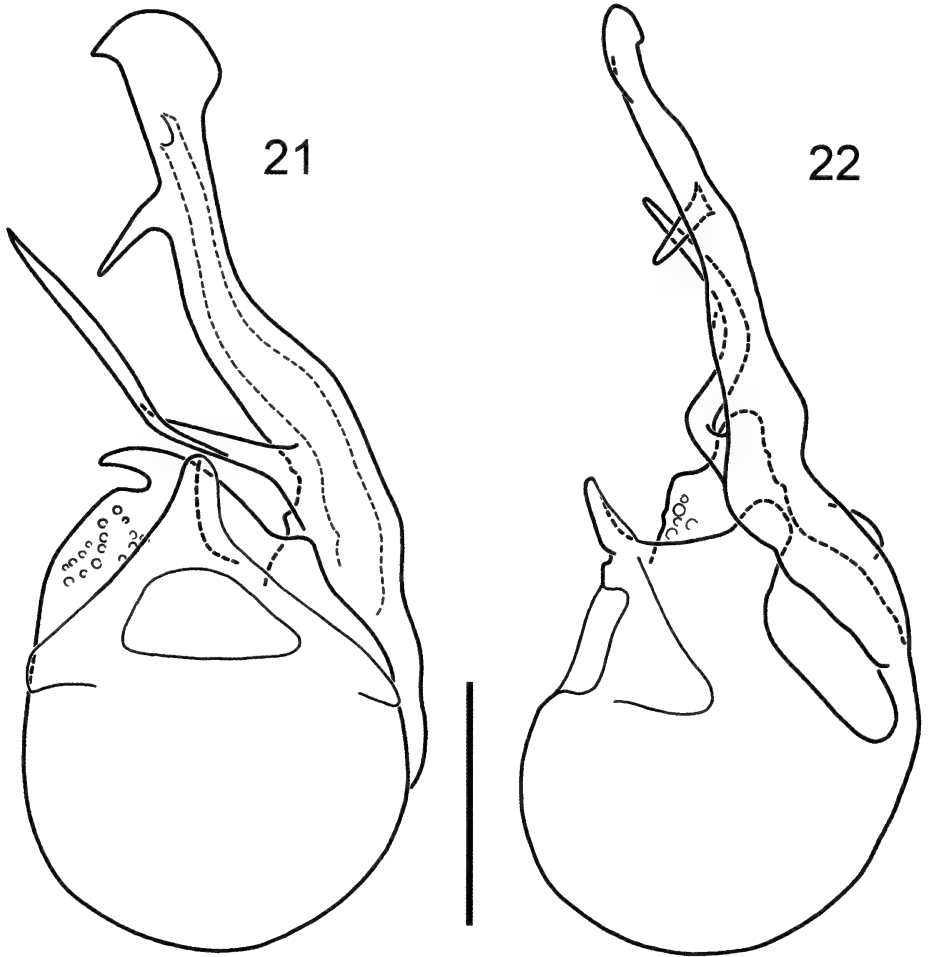


FIGS 19-20

Tychus moecha, holotype, aedeagus in ventral (19) and lateral (20) views. Scale bar 0.1 mm.

wider than long, V longer than wide and slightly wider than IV, VI distinctly wider than long, VII and VIII slightly wider than previous, and markedly wider than long, VII longer than VI. Eyes large (18 facets). Posterior margin of mesotrochanters extended into small median spines, mesotibiae each with small subapical spurs, metatibiae unarmed. Aedeagus (Figs 19-20) 0.370 mm long.

Female: Antennae (Fig. 8) 0.775 mm long, club 0.300 mm long, similar to that of male but slightly shorter and thinner. Eyes small (12 facets). Genital plate as in Fig. 25.



FIGS 21-22

Tychus sellarius, holotype, aedeagus in ventral (21) and lateral (22) views. Scale bar 0.1 mm.

COMMENTS: *Tychus moecha* sp. n. is similar to *T. grassator* Sabella, 2011, from which it distinguished by the shape of the antennomeres IV and VII wider than long (distinctly longer than wide in *T. grassator*), by the shape of ventral portion of the aedeagal median lobe and by the different shape of the genital plate (Figs 25, 31).

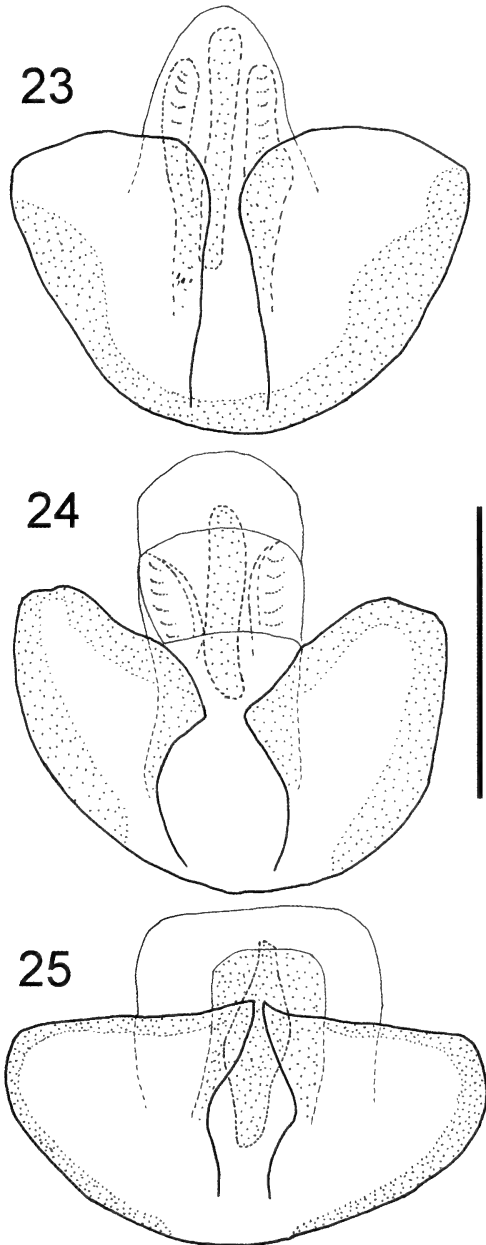
Incertae sedis

Tychus sellarius Kurbatov sp. n.

Figs 9-10, 21-22

HOLOTYPE: MHNG, ♂; Turkey, Aydin Prov., N Aydin, Pasayaylasi, 1.460 m, 37°56' 47''N 27°53'53''E; 20.04.2006; H. Meybohm & V. Brachat.

PARATYPE: MHNG, 1 ♀; Turkey, Aydin Prov., same data as holotype; H. Meybohm & V. Brachat.



FIGS 23-25

Genital plates of *Tychus*. (23) *T. triumphator*, paratype from Labou Mili (Lesbos Island). (24) *T. nothus*, paratype from Kadirli (Kahramanmaraş). (25) *T. moecha*, paratype from Lepetimnos (Lesbos Island). Scale bar 0.1 mm.

DESCRIPTION: Length 1.60 mm. Apterous. Body reddish brown with abdomen darker, legs yellowish and palpi yellow in male, uniformly yellowish brown with palpi yellow in female.

Head slightly longer (0.285-0.300 mm) than wide (0.275 mm), frontal rostrum 0.175 mm wide and 0.075 mm long. Apical segment of maxillary palpi 0.200-0.210 mm long and 0.075 mm wide.

Pronotum slightly longer (0.340 mm) than wide (0.325 mm) in male, as wide as long (0.340 mm) in female, with lateral antebasal foveae in shallow impressions.

Elytra wider (0.575-0.600 mm) than long (0.450-0.460 mm) with humeri not protruding. Discal fovea joined to discal stria, latter reaching more than elytral mid-length.

Abdomen with first tergite 0.200 mm long, basal impression extending on more than 1/3 of tergal width.

Male: Occipital region of head more convex than in female, eyes large (18 facets), antennae (Fig. 9) 1 mm long, club 0.390 mm long; scape and antennomeres II-V distinctly longer than wide; VI slightly longer than wide, VII longer and wider than VI and distinctly longer than wide, VIII strongly transverse. Posterior margin of mesotrochanters extended into small median spines, mesotibiae and metatibiae each with small apical spurs. Aedeagus as in Figs 21-22, 0.240 mm long.

Female: Eyes poorly developed (8 facets); antennae (Fig. 10) 1 mm long with club 0.390 mm long, similar to that of male.

COMMENTS: Based on external features (especially the antennal shape and the male secondary sexual characters) *Tychus sellarius* sp. n. resembles species of the *Tychus lederi* group (Sabella & Kurbatov, 2002). It is however unique by the peculiar shape of the dorsal apophysis of the aedeagal median lobe, with mesal margin prolonged to form two long spine-like processes extended medially. As we hold the assignment of *T. sellarius* sp. n. to this group as questionable, we prefer to leave it incerta sedis.

DESCRIPTION OF FEMALES

The females of some species were still unknown and are thus described below based on material collected in the same locality and at the same date of the respective holotypes (except for *T. spurius*).

Tychus cilicicus species group (Sabella & Kurbatov, 2002)

Tychus sodalicus Kurbatov, 2011

Figs 26, 29

MATERIAL EXAMINED: PCVB, 1 ♀; Turkey, Hatay Prov., Antakya, Ziyaret Dagi, Leylekli (Bachaue), 510 m, 35°57'47"N 36°02'57"E; 22.04.2004; H. Meybohm & V. Brachat.

DESCRIPTION: Length 1.45 mm. Body dark brown with elytra and antennae reddish and legs and palpi yellowish.

Head wider (0.270 mm) than long (0.250 mm), frontal rostrum 0.135 mm wide and 0.055 mm long. Eyes well developed (24 facets). Antennae (Fig. 26) 0.700 mm long, club 0.275 mm long; scape longer than wide; antennomere II slightly longer than wide, III distinctly longer than wide; IV slightly longer than wide; V longer than wide;

VI, VII and VIII distinctly wider than long, VII slightly wider than VI and VIII. Apical segment of maxillary palpi 0.175 mm long and 0.085 mm wide.

Pronotum wider (0.340 mm) than long (0.290 mm) with lateral antebasal foveae in well marked impressions.

Elytra wider (0.580 mm) than long (0.490 mm) with humeri not very protruding. Discal fovea joined to discal stria, latter reaching less than elytral mid-length.

Abdomen with first tergite 0.175 mm long, basal impression extending on half of tergal width.

Genital plate as in Fig. 29.

***Tychus mutabilis* species group** (Sabella & Kurbatov, 2002)

Tychus spurius Sabella, 2011

Figs 27, 30

MATERIAL EXAMINED: PCVB, 1 ♀; Turkey, Sinop Prov., 15 km SW Sinop, S Kilih, 80 m, grassy road margin, 41°57'02"N 35°02'06"E; 03.04.2009; V. Assing.

DESCRIPTION: Length 1.70 mm. Winged. Body uniformly dark brown with legs and palpi yellowish.

Head as wide as long (0.300 mm), frontal rostrum 0.165 mm wide and 0.060 mm long. Eyes with 18 facets. Occipital region slightly convex. Antennae (Fig. 27) 0.770 mm long, club 0.310 mm long; scape and antennomeres II and III distinctly longer than wide; IV as long as wide; V wider than IV and wider than long; VI, VII and VIII wider than long, VII wider than VI and VIII. Apical segment of maxillary palpi 0.190 mm long and 0.085 mm wide.

Pronotum wider (0.365 mm) than long (0.330 mm) with small antebasal foveae in shallow impressions.

Elytra wider (0.650 mm) than long (0.510 mm) with humeri not very protruding. Discal fovea joined to discal stria, latter reaching more than elytral mid-length.

Abdomen with first tergite 0.220 mm long, basal impression extending more than 1/3 of tergal width.

Genital plate as in Fig. 30.

***Tychus florentinus* species group** (Sabella & Poggi, 1997)

Tychus grassator Sabella, 2011

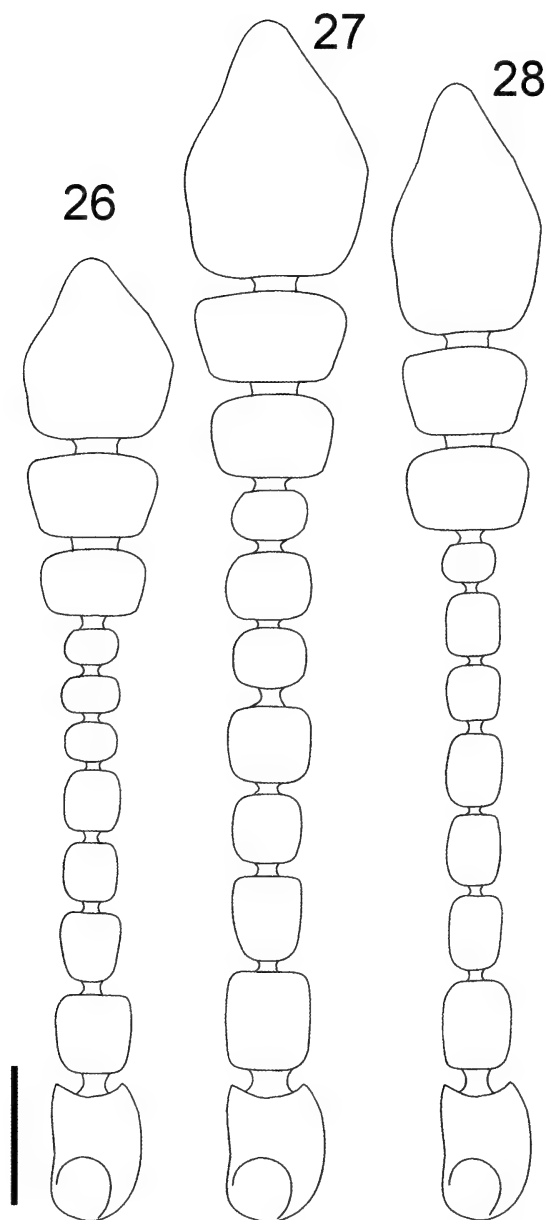
Figs 28, 31

MATERIAL EXAMINED: PCVB, 2 ♀ ♀; Turkey, Izmir Prov., environs of Kemalpaşa, Nif Dağı, 972 m, 38°24'19"N 27°23'32"E; 24.04.2006; H. Meybohm & V. Brachat.

DESCRIPTION: Length 1.45 mm. Winged. Body uniformly reddish brown with antennae and legs yellowish and palpi yellow.

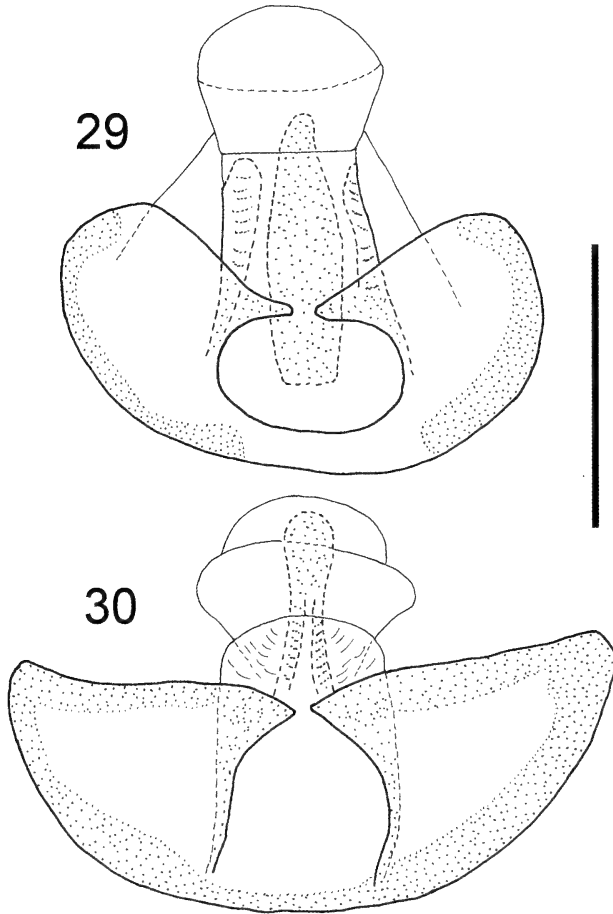
Head slightly longer (0.270 mm) than wide (0.260 mm), frontal rostrum 0.150 mm wide and 0.060 mm long. Eyes with 8 facets. Antennae (Fig. 28) 0.800-0.820 mm long, club 0.325 mm long; scape distinctly longer than wide; antennomeres II-V distinctly longer than wide; V slightly longer than IV; VI as long as wide, VII longer than wide, VIII distinctly wider than long. Apical segment of maxillary palpi 0.145 mm long and 0.060 mm wide.

Pronotum as long as large (0.325 mm) with small lateral antebasal foveae in shallow impressions.



FIGS 26-28

Antennae of *Tychus* female. (26) *T. sodalicus* from Antakya (Hatay). (27) *T. spurius* from Sinop. (28) *T. grassator* from Kemalpaşa (Izmir). Scale bar 0.1 mm.



FIGS 29-30

Genital plates of *Tychus*. (29) *T. sodalicius* from Antakya (Hatay). (30) *T. spurius* from Sinop. Scale bar 0.1 mm.

Elytra wider (0.560 mm) than long (0.410 mm) with humeri not very protruding. Discal fovea joined to discal stria, latter reaching elytral mid-length.

Abdomen with first tergite 0.175 mm long, basal impression extending on more than 1/3 of tergal width.

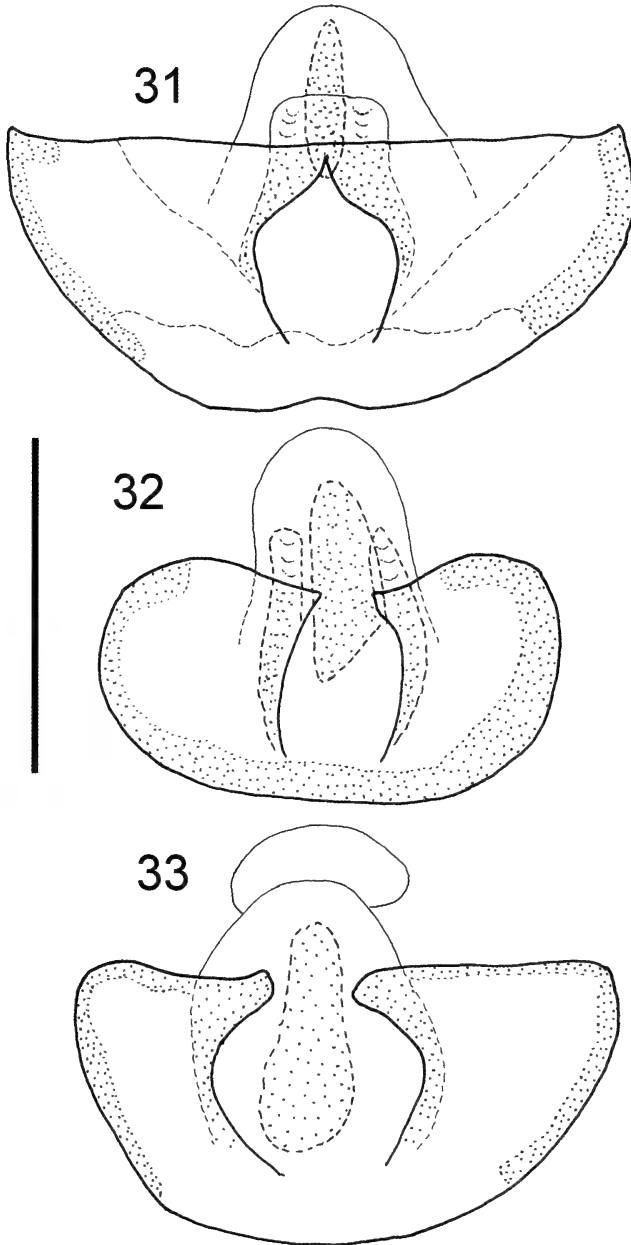
Genital plate as in Fig. 31.

Incertae sedis

Tychus altivagus Besuchet, 2011

Fig. 32

The genital plate of the female paratype (Fig. 32) is illustrated for the first time.



FIGS 31-33

Genital plates of *Tychus*. (31) *T. grassator* from Kemalpaşa (Izmir). (32) *T. altivagus* paratype from Saklıkent (Antalya). (33) *T. latebrosus* paratype from Do Luca (Kahramanmaraş). Scale bar 0.1 mm.

NEW LOCALITY RECORDS

New locality records are listed below for some *Tychus* species. These records significantly expand the known distribution of these species.

***Tychus latebrosus* Besuchet, 2011**

Fig. 33

MATERIAL EXAMINED: PCVB, 1 ♂; Turkey, Kahramanmaraş Prov., 30 km SSW K. Maraş, Uzunsöğüt, 660 m, 37°22'43"N 36°40'51"E; 20.03.2005; V. Assing.- PCVB, 1 ♀; Turkey, Kahramanmaraş Prov., W Doluca, 40 km SSW K. Maraş, 1.140 m, 37°23'10"N 36°40'24"E; 30.04./02.05.2007; H. Meybhom & V. Brachat.- PCVB, 1 ♀; Turkey, Kahramanmaraş Prov., 14 km S Türkoglu, 851 m, 37°21'06.3"N 36°44'21.9"E; 06.05.2002; H. Meybhom & V. Brachat.

COMMENTS: The species was known so far only from some localities in south-eastern Turkey (Adiyaman and Kahramanmaraş provinces). The genital plate of the paratype (Fig. 33) is illustrated here for the first time.

***Tychus olor* Sabella & Kurbatov, 2002**

MATERIAL EXAMINED: PCVB, 2 ♂♂; Turkey, Niğde Prov., environs of Çiftehane, E of Maden, 1.330 m, 37°28'22"N 34°40'05"E; 17.04.2011; H. Meybhom & V. Brachat.

COMMENTS: The species was known so far only from Zorhum-Yayalasi (Hatay province, southeasteastern Turkey).

***Tychus balcanicus* Reitter, 1902**

Tychus longicornis Besuchet 1958: 914 (synonymized by Besuchet 1999: 55).

MATERIAL EXAMINED: PCVB, 1 ♂; Turkey, Kastamonu Prov., about 50 km W Kastamonu, road Daday-Eflani, 1.000 m, 41°27'01"N 33°20'25"E; 25.03.2010; V. Assing.- MHNG, 1 ♂; Turkey, Burdur Prov., 20 km S Burdur, 1.200 m; 01.05.1969; W. Wittmer.- MHNG, 1 ♂; Turkey, Antalya Prov., Bakaran-Cevizli, 1.400 m; 08.05.1978; C. Besuchet & I. Löbl.

COMMENTS: The species was known so far from southwestern Bulgaria, Karabalkan locality that Reitter (1902: 187) had mistakenly referred to Turkey, from western Turkey, Port Baklar and Belgeyix near Isparta (Besuchet 1958: 915), and from Georgia without additional geographical indications (Löbl & Besuchet 2004: 318).

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An annotated list of the Orthoptera (Insecta) species described by Henri de Saussure, with an account of the primary type material housed in the Muséum d'histoire naturelle de Genève, Part 2: The Acrididae: Oedipodinae

John HOLLIER

Muséum d'histoire naturelle, C.P. 6434, CH-1211 Genève 6, Switzerland.

E-mail: John.Hollier@ville-ge.ch

An annotated list of the Orthoptera (Insecta) species described by Henri de Saussure, with an account of the primary type material housed in the Muséum d'histoire naturelle de Genève, Part 2: The Acrididae: Oedipodinae. - Henri de Saussure described 145 species or subspecies in the subfamily Oedipodinae. The names are listed alphabetically, and the location of the type material (if known) and the current nomenclatural combination are given. When there is primary type material in the Muséum d'histoire naturelle de Genève (MHNG) the sex, verbatim label data and condition of the specimens is given, along with their location within the collection.

Keywords: Caelifera - Acridoidea - type-catalogue - grasshoppers.

INTRODUCTION

Henri de Saussure (1829-1905) was a prolific taxonomist probably best known for his work on orthopteroid insects. Details of his career can be found in the introduction to the first part of the catalogue (Hollier & Heads, 2012). Saussure dedicated two monographs (Saussure, 1884, 1888) to the “Oedipodidae”, a group which more or less corresponds with the currently recognised subfamily Oedipodinae of the Acrididae, and described others in publications on regional faunas or expedition findings. The monographs made great use of the collection of Brunner von Wattenwyl (1823-1914), most of which is now housed in the Naturhistorisches Museum (NHMW) in Vienna.

Saussure described 145 species or subspecies in the Oedipodinae. Type specimens of 102 taxa have been identified in the collection of the Muséum d'histoire naturelle de Genève (MHNG). Specimens which were in other collections at the time of publication has been located where possible but there are some 20 taxa unaccounted for. It is possible that some type specimens are to be found amongst the series placed under the name of their senior synonyms, or amongst the duplicate and depot material, having lost any labels that identify them as such (Carbonell, in lit.). Saussure's type concept evolved through his career, and his later works include more information about the type series, but he did not label specimens as types. The specimens in the MHNG

were revised several times by Saussure and his successor Jean Carl, and have subsequently been studied by many experts. While many specimens are labelled as types, it is not always possible to tell by whom. There are also many specimens labelled as lectotypes, but in many cases designations have not been formally published. Many of the locality and identification labels appear to have been added long after the descriptions, not always correctly. Type specimens of species synonymised (whether correctly or not) usually only bear an identification label showing the name assumed to be correct, although there is often an indication of the original name on the species name label in the insect box.

ARRANGEMENT AND FORMAT

The species are listed alphabetically. The format for each is:

specific epithet Author, year: page [*Original generic placement*].

Provenance as given in the original description. Type series.

Number of specimens. Specimen: "Label data" [format of label]. Following the recommendations of Ohl & Oswald (2004) the condition of each specimen is noted. Other comments. Location of specimens in the MHNG main Orthoptera collection.

Currently valid combination following Orthoptera Species File (Eades *et al.*, 2011).

The following abbreviations are used in the list:

ANSP The Academy of Natural Sciences, Philadelphia

BMNH The Natural History Museum, London

MHNG Muséum d'histoire naturelle, Geneva

MNHN Muséum National d'Histoire Naturelle, Paris

MZPW Museum of the Institute of Zoology of the Polish Academy of Sciences, Warsaw

NHMW Naturhistorisches Museum Wien, Vienna

NHRS Naturhistoriska riksmuseet, Stockholm

OSF Orthoptera Species File

SMFD Forschungsinstitut und Naturmuseum Senckenberg, Frankfurt am Main

ZMAS Zoological Institute of the Russian Academy of Sciences, St Petersburg

CATALOGUE

aldabrae Saussure, 1899: 632-633 [*Conipoda*].

Insula Aldabra. Unspecified number of ♂ and ♀.

One ♂ and one ♀ syntype. A ♂ with labels: "Aldabra" [handwritten on a strip of pink paper]; "Conipoda ♂, aldabrae Sss." [handwritten on pink paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread. A ♀ with labels: "Aldabra" [handwritten on a strip of pink paper]; "♀" [printed on white paper]; "Conipoda ♀, aldabrae Sss." [handwritten on pink paper]; "Syntypus" [printed on red paper]. Specimen set with left wings spread and right wings folded; both antennae, both front legs, the tarsi of the left middle leg and the right middle leg are lost. There is consi-

derable insect feeding-damage to the thorax. There are further syntypes in the SMFD. Box V29.

Conipoda aldabrae Saussure, 1899.

amaranthinus Saussure, 1884: 206 [*Sphingonotus*].

Aden (coll. Brunn. no 8276). Unspecified.

No specimens found in the MHNG. The type material was in the collection of Brunner von Wattenwyl when the description was published, but could not be identified amongst the specimens in the NHMW (Bruckner, pers. comm.).

A junior synonym of *Sphingonotus balteatus balteatus* (Serville, 1838).

angustipennis Saussure, 1884: 201 [*Sphingonotus*].

Persia, Shahrud (coll. Brunn. no 14671). Unspecified number of ♀.

No specimens found in the MHNG. The type material was in the collection of Brunner von Wattenwyl when the description was published, but could not be located in the NHMW (Bruckner, pers. comm.).

A junior synonym of *Leptopternis gracilis* (Eversmann, 1848).

annulata ceylonica Saussure, 1884: 158 [*Trilophidia*].

Ceylon (Humbert). Unspecified number of ♂ and ♀.

One ♂ and one ♀ syntype. A ♂ with labels: "285" [handwritten on white paper]; "Humbert, Ceylon" [handwritten on bluish paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded, the right fore wing being directed slightly downwards. A ♀ with labels: "290" handwritten on white paper; "Syntypus" [printed on red paper]. The species name label in the insect box has the locality Ceylon handwritten in the lower left corner. Specimen set with wings folded; the right hind leg is detached and secured through the femur on the original pin. Box V22.

A junior synonym of *Trilophidia annulata* (Thunberg, 1815).

annulata japonica Saussure, 1888: 54 [*Trilophidia*].

Japonia. Unspecified number of ♂ and ♀.

One ♀ syntype with labels: "Japon" [handwritten on white paper]; "Musée de Genève, No." [printed on white card]; "*Trilophidia annulata* Thg, var. *japonica* Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with left wings spread and right wings folded; the left antenna, the tibia and tarsi of the left middle leg, the tarsi of the right middle leg and the right hind leg are lost. The left hind leg, which lacks the tarsi, is detached and secured through the femur on the original pin. No ♂ syntype(s) could be found in the MHNG. Box V22.

Trilophidia japonica Saussure, 1888.

apicalis Saussure, 1884: 206 [*Sphingonotus*].

Persia, Shahrud (Brunn. 14669). Unspecified number of ♂ and ♀.

No specimens found in the MHNG. The type specimens were in the collection of Brunner von Wattenwyl when the description was published, and are now in the NHMW (Bruckner, pers. comm.).

Sphingonotus obscuratus apicalis Saussure, 1884.

azteca Saussure, 1861: 397-398 [*Oedipoda*].

Mexico. Unspecified.

One ♂ syntype with labels: "Meztill, t.t." [printed on white card]; "Oedipoda azteca Ss., type ♂" [handwritten on green paper]; "Tomonotus aztecus Sauss." [handwritten on green paper]; "Oedipoda azteca Sauss., Holotypus, C S C 1966" [handwritten by Carbonell on red card]; "Type series unspecified: treat as syntype. Hollier 2011" [handwritten on red paper]. Specimen set with wings spread; the right antenna, the tibia and tarsi of the left front leg, the last tarsal segment of the right middle leg and both of the hind legs are missing. The holotype label is unjustified. Box V6.

Lactista azteca (Saussure, 1861).

aztecus Saussure, 1884: 214 [*Heliastus*].

Ager mexicanus septentrionalior. Unspecified number of ♂ and ♀.

No specimens found in the MHNG. The whereabouts of the type material is unknown.

Heliastus aztecus Saussure, 1884.

behrensi Saussure, 1884: 71-72 [*Arphia*].

California (Behrens); Ager mexicanus. Unspecified number of ♂ and ♀.

Lectotype ♂ (designated by Otte, 1984: 312) with labels: "Napa Soda Sp., May 30/70" [handwritten on pinkish paper]; "Californie, 602 35" [handwritten on white paper]; "Arphia behrensi Sauss." [handwritten on green paper]; "Lectotype, det. D. Otte 1982" [handwritten on red card]. Specimen set with wings spread; most of the right antenna is missing. A further three ♂ and one ♀ specimens from California present are probably part of the type series. Carbonell (pers. comm.) questioned the designation (not having recorded the first of these labels in his notes) because Otte (1984: 312) gives the date as 1970. However, the label does not specify the century and the label style and handwriting suggest a collection date in 1870 rather than 1970. Images on OSF. Box V2.

Arphia behrensi Saussure, 1884.

behrensi Saussure, 1884: 75 [*Chimarocephala*].

California (Behrens). Unspecified number of ♂ and ♀.

Lectotype ♂ (designated by Otte, 1984: 314) with labels: "Californie, Mr. H de S." [handwritten on white paper]; "Corthoph. [sic] behrensi Sauss." [handwritten on green paper]; "S Behrens" [handwritten on green paper]; "TYPE Otte 1982" [handwritten in pencil on white card]; "Lectotypus" [printed on red card]. Specimen set with wings spread. Two ♂ paralectotypes are also present. Box V3.

A junior synonym of *Chimarocephala pacifica* (Thomas, 1873).

behrensi Saussure, 1884: 165 [*Conozoa*].

California (Behrens). Unspecified number of ♂ and ♀.

Six ♂ and four ♀ syntypes. A ♂ with labels: "Calif." [printed on white card]; "Conozoa Behrensi Sauss." [handwritten on green paper]; "Conozoa Behrensi Sauss." [handwritten on brown paper]; "Syntypus" [printed on red paper]. Specimen set with

wings spread; the right hind leg is missing. A ♂ with labels: "Californie, M H. de Saussure" [handwritten on white paper]; "Conozoa Behrensi Sauss." [handwritten on green paper]; "Conozoa Behrensi Sauss." [handwritten on brown paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded; both antennae, the last tarsal segment of the right middle leg and the left hind leg are lost. A ♂ with labels: "Calif." [printed on white card]; "Conozoa Behrensi Sauss." [handwritten on green paper]; "Conozoa Behrensi Sauss." [handwritten on brown paper]; "Syntypus" [printed on red paper]. Specimen set with left wings spread and right wings folded. A ♂ with labels: "Californie" [handwritten on white paper]; "Conozoa Behrensi Sauss." [handwritten on green paper]; "Conozoa Behrensi Sauss." [handwritten on brown paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded; the left antenna is missing. A ♂ with labels: "Californie, M H. de Saussure" [handwritten on white paper]; "Conozoa Behrensi Sauss." [handwritten on green paper]; "Conozoa Behrensi Sauss." [handwritten on brown paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded; the tibia and tarsi of the left middle leg are missing. A ♂ with labels: "Californie" [handwritten on white paper]; "Conozoa Behrensi Sauss." [handwritten on green paper]; "Conozoa Behrensi Sauss." [handwritten on brown paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded; the right antenna and the ends of the tibiae (plus tarsi) of both hind legs are lost. A ♀ with labels: "Calif." [printed on white card]; "Conozoa Behrensi Sauss." [handwritten on green paper]; "Conozoa Behrensi Sauss." [handwritten on brown paper]; "Syntypus" [printed on red paper]. Specimen set with right wings spread and left wings folded; the tarsi of the right middle leg are missing. A ♀ with labels: "Californie" [handwritten on white paper]; "Conozoa Behrensi Sauss." [handwritten on green paper]; "Conozoa Behrensi Sauss." [handwritten on brown paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded. A ♀ with labels: "Calif." [printed on white card]; "Conozoa Behrensi Sauss." [handwritten on green paper]; "Conozoa Behrensi Sauss." [handwritten on brown paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded; the tarsi of the right middle leg are lost. A ♀ with labels: "Californie" [handwritten on white paper]; "Conozoa Behrensi Sauss." [handwritten on green paper]; "Conozoa Behrensi Sauss." [handwritten on brown paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded; the last tarsal segment of the left middle leg and the entire right hind leg are lost. Box V23.

A junior synonym of *Conozoa sulcifrons* (Scudder, 1876).

bengalensis Saussure, 1888: 80 [*Sphingonotus*].

India or., Bengalia. Unspecified number of ♀.

No specimens found in the MHNG. The type material is in the BMNH according to their online database.

Chondronotulus bengalensis (Saussure, 1888).

blondeli Saussure, 1884: 191 [*Acrotylus*].

Senegalis (Blondel). Unspecified number of ♂ and ♀.

One ♂ and two ♀ syntypes. A ♂ with labels: "Sénégal Sss." [printed on white paper]; "Blondeli Sauss, Afr. occid." [handwritten on pink paper]; "Syntypus" [printed

on red paper]. Specimen set with wings spread. A ♀ with labels: "SENEGAL S." [printed on white paper]; "Acrotylus Blondeli Sauss." [handwritten on pink paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread. A ♀ with labels: "Sénégal Sss." [printed on white paper]; "Acrotylus Blondeli Sauss." [handwritten on pink paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the tarsi of the right hind leg are missing. Box V29.

Acrotylus blondeli Saussure, 1884.

bolli crepitans Saussure, 1884: 140 [*Dissosteira*].

Georgia. Unspecified number of ♀.

Two ♀ syntypes. A ♀ with labels: "Georgie, 599 65" [printed on white paper]; "Dissosteira crepitans Sauss." [handwritten on green paper]; "Dissosteira crepitans Sauss." [handwritten on brown paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread, the right fore wing is lost. The left middle leg and both hind legs are missing. A ♀ with labels: "Georgie, 599 65" [printed on white paper]; "var. crepitans Sss., Amer bor." [handwritten on green paper]; "Dissosteira crepitans Sauss." [handwritten on green paper]; "Dissosteira crepitans Sauss." [handwritten on brown paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the head and prothorax are lost, as is the right hind leg. Box V18.

Spharagemon crepitans (Saussure, 1884).

borealis Saussure, 1884: 164 [*Psinidia*].

Amer. boreal., Colorado (coll. Brunn.). Unspecified number of ♂ and ♀.

No specimens found in the MHNG. The type series was in the collection of Brunner von Wattenwyl when the description was published, and is now in the NHMW. There is a specimen labelled as lectotype by Otte in the NHMW (Bruckner, pers. comm.), but this does not seem to have been formally designated.

A junior synonym of *Trachyrhachys coronata* Scudder, 1876.

bramina Saussure, 1884: 132-133 [*Chloebora*].

India (coll. Brunn.). Unspecified number of ♂.

No specimens found in the MHNG. The ♂ type material was in the collection of Brunner von Wattenwyl when the description was published, but could not be located in the NHMW (Bruckner, pers. comm.) and does not appear on the BMNH online database.

Chloebora bramina Saussure, 1884.

brasilianus Saussure, 1888: 81-82 [*Sphingonotus*].

Brasilia (Brunn. 8984). One ♀.

No specimens found in the MHNG. The holotype ♀ was in the collection of Brunner von Wattenwyl when the description was published, and is now in the NHMW (Bruckner, pers. comm.).

Sphingonotus brasilianus Saussure, 1888.

brullei Saussure, 1884: 153 [*Oedipoda*].

A replacement name for *Acridium miniatum* Brullé, 1840, the latter being a junior homonym of *Gryllus miniatum* Pallas, 1771. The MHNG collection includes a

series from the Canary Islands labelled as “*Quirognesia brullei* Saussure” but these are not types. Box V16.

A junior synonym of *Scintharista notabilis notabilis* (Walker, 1870).

brullei blanchardiana Saussure, 1888: 35-36 [*Quirognesia*].

India orientalis, Bombay (Paris); Arabia, Aden (BMNH). Unspecified number of ♀.

No specimens found in the MHNG. Type material is indicated on the BMNH online database.

Scintharista notabilis blanchardiana (Saussure, 1888).

brunneri Saussure, 1884: 121-122 [*Scintharista*].

Persia, Shahrud; Armenia, Ordubat (coll. Brunn. & Mus. Genavense) Unspecified number of ♂ and ♀.

Three ♂ syntypes. A ♂ with labels: “Scharud (Perse), Br.” [handwritten on white card]; “L. Brunneri Saus, Perse” [handwritten on yellow paper]; “*Scintharista Brunneri* Saus.” [handwritten on yellow paper]; “*Syntypus*” [printed on red paper]. Specimen set with wings spread; part of the left antenna and the last tarsal segment of the left front leg are lost. A ♂ with labels: “Scharud (Perse)” [handwritten on blue card with printed line and margins (apparently a species name label of the sort placed in insect boxes)]; “*Scintharista Brunneri* Saus.” [handwritten on yellow paper]; “*Syntypus*” [printed on red paper]. Specimen set with wings spread; the last tarsal segment of the left hind leg is lost. A ♂ with labels “Ordubat (Arménie)” [handwritten on ruled blue card (part of a species name label of the sort placed in insect boxes)]; “*Scintharista Brunneri* Saus.” [handwritten on yellow paper]; “*Syntypus*” [printed on red paper]. Specimen set with wings roughly spread; part of the left antenna is missing. Box V14.

Scintharista notabilis brunneri Saussure, 1884.

brunneri Saussure, 1884: 206 [*Sphingonotus*].

Asia minor? (coll. Brunn. no 8273). Unspecified number of ♀.

No specimens found in the MHNG. There is a ♀ syntype in the NHMW (Bruckner, pers. comm.).

Sphingonotus obscuratus brunneri Saussure, 1884.

brunneriana Saussure, 1884: 180-181 [*Bryodema*].

Sina, Hong-Kong (coll. Brunn. 6605). Unspecified number of ♀.

No specimens found in the MHNG. There is a ♀ syntype in the NHMW (Bruckner, pers. comm.).

Bryodema brunnerianum Saussure, 1884.

brunnerianum Saussure, 1884: 155-156 [*Derotmema*].

America borealis, Colorado (coll. Brunn. & Mus. Genav.). Unspecified number of ♂ and ♀.

One ♀ syntype with labels: “*Derotmema Brunnerianum* Sss., Colorado” [handwritten on green paper]; “*Derotmema brunnerianum* Saus.” [handwritten on brown

paper]; “Syntypus” [printed on red paper]. Specimen set with right wings spread and left wings folded; the right antenna is lost. Otte (1984: 318) refers to this specimen as the holotype, but the original description treats both ♂ and ♀ characters without designating a holotype. Box V22.

A junior synonym of *Derotmema haydeni* (Thomas, 1872).

caerulescens sulfurescens Saussure, 1884: 152 [*Oedipoda*].

Algiria; Senegalis. Unspecified.

There are no specimens placed under this name in the MHNG collections. The syntypes are almost certainly amongst a series with yellow hind wings placed under the name “coerulescens [sic] Afriq. sept.” but it is not possible to identify them positively. Boxes V20 and V21.

Oedipoda caerulescens sulfurescens Saussure, 1884.

calcarata Saussure, 1884: 193-194 [*Conipoda*].

Madagascar; Senegalis. Unspecified number of ♂ and ♀.

One ♀ syntype with labels: “Sénégal Sss.” [printed on white paper]; “Syntypus” [printed on red paper]. Specimen set with wings spread; the tibia and tarsi of the left middle leg are lost. The original description does not state where the types are deposited, but it is probable that the specimens from Madagascar are in the MNHN. Box V29.

Conipoda calcarata Saussure, 1884.

calthulus Saussure, 1884: 93 [*Xanthippus*].

Nevada (coll. Brunner no 12771 & Mus. Genavense). Unspecified number of ♂ and ♀.

Lectotype ♂ (designated by Otte, 1984: 317) with labels: “Xanthippus calthulus Sss., Nevada” [handwritten on white paper]; “calthulus Sss., Amer. sept.” [handwritten on green paper]; “TYPE Otte 1982” [handwritten in pencil on white card]; “Lectotypus” [printed on red card]. Specimen set with wings spread. A ♀ paralectotype with the same data is also present. Box V6.

A junior synonym of *Cratypedes lateritius* (Saussure, 1884).

canescens Saussure, 1888: 89 [*Leptopternis*].

Aegyptus. One ♂.

Holotype ♂ with labels: “Hyalorhipis canescens Sss., Egypte, M. H. de Sauss.” [handwritten on lilac paper]; “Hyalorhipis canescens Sauss.” [handwritten on blue paper]; “Holotypus” [printed on red card]. Specimen set with wings spread; the last tarsal segment of the right front leg and both hind legs are missing. This is the specimen from which the measurements in the description were taken (the hind legs being already lost). The description also makes reference to an illustration in Savigny (1817: Orthoptera, plate 7, figure 12), and the specimen used for that figure (and presumably in the MNHN) might be considered a syntype, which would make the specimen in the MHNG also a syntype. Box V32.

Hyalorhipis canescens (Saussure, 1888).

capensis Saussure, 1884: 119-120 [*Pachytylus*].

Africa merid., Promont. B. Sp. Unspecified number of ♂ and ♀.

One ♀ syntype with labels: "Cap. B. Esp." [handwritten in pencil on whitish - paper]; "Oedaleus capensis Sauss." [handwritten on pink paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the right antenna, the tibia and tarsi of the left front leg, and the tarsi of the right front leg are missing. Both sexes were treated in the description, but a second ♀ and a ♂ in the MHNG were collected by Peringuey after the publication of the description and are therefore not types. Box V10.

A junior synonym of *Locustana pardalina* (Walker, 1870).

capensis Saussure, 1884: 201 [*Sphingonotus*].

Africa meridionalis (coll. Brunn. no 5296). Unspecified.

No specimens found in the MHNG. The type material was in the collection of Brunner von Wattenwyl when the description was published, but could not be located in the NHMW (Bruckner, pers. comm.). It is said to be in the BMNH on OSF, but does not appear in the BMNH online database.

Sphingonotus capensis Saussure, 1884.

capito Saussure, 1884: 120 [*Pachytylus*].

Madagascar. Unspecified number of ♀.

There are no specimens placed under this name in the MHNG collection, but two specimens placed in the collection as "*P. migratoroides* Reich" were identified as *L. migratoria capito* by B. Zolotarevsky. The measurements of the ♀ thus identified match those in the rather cursory description of *P. capito*, and the specimen is possibly a syntype. One ♀, possibly a syntype, with labels: "Madagascar, GRANDID" [printed on pink paper]; "Oedalus migrator. Reich" [handwritten on pink paper]; "Locusta migratoria capito Sauss., ph. gregaria, B. Zolotarevsky det." [handwritten on white card with "B. Zolotarevsky" printed]. "Syntype of *L. m. capito* Sauss., 1884? Hollier 2010" [handwritten on red paper]. Specimen set with wings spread; the claw of the left hind leg and the last tarsal segment of the right hind leg are lost. The other specimen identified by Zolotarevsky is a male, and so not a syntype. Box V11.

Locusta migratoria capito Saussure, 1884.

ceylonica Saussure, 1884: 126 [*Ditopternis*].

Ceylon (Humbert). Unspecified number of ♂ and ♀ (variation of femur colouration mentioned).

Three ♂ and three ♀ syntypes. A ♂ with labels: "Ceylan, Humbert" [handwritten on bluish paper]; "127" [handwritten on white paper]; "ceylonica Sss" [handwritten on yellow paper]; "Ditopt. ceylonica Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the last tarsal segment of the left middle leg, the tarsi of the right middle leg and the tarsi of the right hind leg are lost. A ♂ with labels: "Ceyl." [printed on a square of white card]; "Oedipoda" [handwritten on white paper]; "Ditopt. ceylonica Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded; most of the right antenna, the tarsi of the right front leg, the last tarsal segment of the

left middle leg and the last tarsal segment of the right hind leg are missing. A ♂ with labels: "83" [handwritten on white paper]; "Dittopter. ceylonica Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded; both antennae, the left front leg and the right hind leg are lost. A ♀ with labels: "244" [handwritten on white paper]; "Humbert, Ceylon" [handwritten on white paper]; "Dittopter. ceylonica Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; both antennae and both hind legs are lost. A ♀ with labels: "88" [handwritten on white paper]; "Dittopter. ceylonica Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with left wings spread and right wings folded; the left antenna and the last tarsal segment of the right front leg are missing. A ♀ with labels: "Humbert, Ceylan" [handwritten on white paper]; "Dittopter. ceylonica Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with right wings spread and left wings folded; both antennae, the last tarsal segment of the left front leg, the left middle leg and the left hind leg are lost. Box V15.

Dittopternis ceylonica Saussure, 1884.

citripennis Saussure, 1888: 167-168 [*Pycnodictya*].

Africa meridionalis, Transvaalia (Mus. Dohrn). Unspecified number of ♀.

The type material, comprising only ♀, which was in the collection of Dohrn when the description was published, is in the MZPW. The ♀ specimen placed under this name in the MHNG collection was collected by Jean Carl long after the description was published and is therefore not a type. Box V19.

Pycnodictya citripennis Saussure, 1888.

coerulans aegyptica Saussure, 1884: 200-201 [*Sphingonotus*].

Aegyptus. Unspecified number of ♀.

The MHNG collection contains no specimens under this name. There are four specimens from Egypt placed as "coerulans var. Afrique sept." but these do not match the measurements given in the description. The whereabouts of the type material is unknown. Box V30.

A junior synonym of *Sphingonotus rubescens rubescens* (Walker, 1870).

coerulans carinata Saussure, 1888: 79 [*Sphingonotus*].

Locality unspecified (Syria or Egypt). Unspecified.

According to Johnston (1956: 489) the ♀ holotype is in the ZMAS. The specimens in the MHNG collection are from the Canary Islands, and are therefore not types. Box V31

Sphingoderus carinatus (Saussure, 1888).

coerulans cubensis Saussure, 1884: 201 [*Sphingonotus*].

Cuba. Unspecified.

Three ♂ and nine ♀ syntypes. A ♂ with labels: "pt. bt. par M. Chevrolat, Poey" [handwritten on white paper]; "Sphingonotus cubensis Sauss." [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded; the left

antenna and the claw of the left hind leg are lost. A ♂ with labels: “petite bto. vitrée 56, Bayamo” [handwritten on white paper]; “*Sphingonotus cubensis* Sauss.” [handwritten on green paper]; “*Syntypus*” [printed on red paper]. Specimen set with wings folded; the right antenna and part of the tibia and the tarsi of the left hind leg are missing. A ♂ with labels: “CUBA” [printed on white paper]; “79/56 Oedipoda” [handwritten on white paper]; “*Sphingonotus cubensis* Sauss.” [handwritten on green paper]; “*Syntypus*” [printed on red paper]. Specimen set with wings folded. A ♀ with labels: “56” [handwritten on white paper]; “pt. bl. vitr., Cuba 56” [handwritten on white paper]; “*Sphingonotus cubensis* Sauss.” [handwritten on green paper]; “*Syntypus*” [printed on red paper]. Specimen set with wings folded; the left antenna is lost. A ♀ with labels: “pt. bt. par M. Chevrolat, Poey” [handwritten on white paper]; “*Sphingonotus cubensis* Sauss.” [handwritten on green paper]; “*Syntypus*” [printed on red paper]. Specimen set with wings folded; the left antenna is missing. A ♀ with labels: “CUBA” [printed on white paper]; “79/56” [handwritten on white paper]; “*Sphingonotus cubensis* Sauss.” [handwritten on green paper]; “*Syntypus*” [printed on red paper]. Specimen set with wings spread; the tarsi of the left middle and hind legs are missing. A ♀ with labels: “Cuba, Sumichrast” [handwritten on white paper]; “79/56” [handwritten on white paper]; “*Sphingonotus cubensis* Sauss.” [handwritten on green paper]; “*Syntypus*” [printed on red paper]. Specimen set with wings spread; the left front leg and the tarsi of the left hind leg are lost. A ♀ with labels: “pt. bl. vitr., Cuba 56” [handwritten on white paper]; “*Sphingonotus cubensis* Sauss.” [handwritten on green paper]; “*Syntypus*” [printed on red paper]. Specimen set with wings roughly spread; the right antenna is missing. A ♀ with labels: “pt. bt. par M. Chevrolat, Poey” [handwritten on white paper]; “*Sphingonotus cubensis* Sauss.” [handwritten on green paper]; “*Syntypus*” [printed on red paper]. Specimen set with wings folded; the left antenna is lost. A ♀ with labels: “56” [handwritten on white paper]; “pt. bt. par M. Chevrolat, Poey” [handwritten on white paper]; “*Sphingonotus cubensis* Sauss.” [handwritten on green paper]; “*Syntypus*” [printed on red paper]. Specimen set with wings folded; the right antenna is lost. A ♀ with labels: “pt. bl. vitr., Cuba 56” [handwritten on white paper]; “*Sphingonotus cubensis* Sauss.” [handwritten on green paper]; “*Syntypus*” [printed on red paper]. Specimen set with wings folded; the last tarsal segment of the right hind leg is missing. A ♀ with labels: “pt. bl. vitr., Cuba 56” [handwritten on white paper]; “var. *Cubensis* Sauss., Cuba” [handwritten on green paper]; “*Sphingonotus cubensis* Sauss.” [handwritten on green paper]; “*Syntypus*” [printed on red paper]. Specimen set with wings folded; the left antenna and right hind leg are missing. The left hind leg, which lacks the last tarsal segment, is detached and secured through the femur on the original pin. Box V31.

Sphingonotus haitensis cubensis Saussure, 1884.

coerulans vitrea Saussure, 1888: 79 [*Sphingonotus*].

Aegyptus (coll. Brunn. no 8279). Unspecified number of ♀.

There are no specimens placed under this name in the MHNG collection. The name, originally used for a variety, was synonymised with *S. caerulans caerulans* by Kirby (1910: 274), and the name *vitrea* is not referred to on OSF. The whereabouts of the type material is unknown.

A junior synonym of *Sphingonotus caerulans caerulans* (Linnaeus, 1767).

corpulentus Saussure, 1884: 96 [*Leprus*].

Mexico altior. Unspecified number of ♀.

One ♀ syntype with labels: “Mexique, Ayuanjuato” [handwritten on whitish paper]; “corpulentus Sss., Mexique” [handwritten on green paper]; “Xanthippus corpulentus Sauss.” [handwritten on green paper]; “Leprus corpulentus Sauss., Holotypus, C S C 1966” [handwritten by Carbonell on red card]; “Type series unspecified: treat as syntype. Hollier 2011” [handwritten on red paper]. Specimen set with wings spread; both antennae, the tibia and tarsi of the left front leg, the entire left middle leg and the tarsi of both hind legs are missing. Otte (1984: 323) erroneously calls the specimen ♂. Images on OSF. Box V6.

A junior synonym of *Leprus elephas* (Saussure, 1861).

costata Saussure, 1888: 37 [*Cosmorhyssa*].

Africa meridionalis, Promot. B. Spie. Unspecified number of ♀.

One ♀ syntype with labels: “CAP” [printed on pink paper]; “Cosmorhyssa costata Sss., type ♀” [handwritten on red paper]; “Holotypus” [printed on red card]; “Type series unspecified: treat as syntype. Hollier 2011” [handwritten on red paper]. Specimen set with wings spread; both antennae, the left front leg, the last tarsal segment of the right middle leg and both of the hind legs are missing. Box V15.

A junior synonym of *Morphacris fasciata* (Thunberg, 1815).

couloniana Saussure, 1884: 125-126 [*Dittopternis*].

Africa occidentalis, Guinea, Alatifé (Coulon). Unspecified number of ♀.

One ♀ syntype with labels: “Côte d’or, d’Alatifé” [handwritten on white paper]; “Couloniana Sss, M. Coulon” [handwritten on red paper]; “Heterop. couloniana Sauss.” [handwritten on pink paper]; “Holotypus” [printed on red card]; “Type series unspecified: treat as syntype. Hollier 2011” [handwritten on red paper]. Specimen set with wings spread. Box V16.

Heteropternis couloniana (Saussure, 1884).

crassicollis Saussure, 1888: 38 [*Oedaleus*].

Africa merid., Promot. B. Sp. Unspecified number of ♀.

One ♀ syntype with labels: “crassicollis Blanch., Cap B. Sp. M.H.S.” [handwritten on pink paper]; “Gastrim. crassicollis Blanch.” [handwritten on pink paper]; “Holotypus” [printed on a white card disk with red margin]; “Gastrimargus crassicollis, Saussure, 1888, J. M. Ritchie det. 1976, HOLOTYPE ♀” [typewritten on white card with “J. M. Ritchie det. 19” printed, and with “HOLOTYPE ♀” in red]; “Type series unspecified: treat as syntype. Hollier 2011” [handwritten on red paper]. Specimen set with wings spread, the right hind wing is lost; both antennae, the right front and middle legs, the tarsi of the left middle leg and the last tarsal segment of the right hind leg are missing. In the description Saussure attributes this species to Blanchard, but without indicating that it is a new species; Ritchie (1982: 285) regards this as an error and treats the species as Saussure’s. Box V7.

Gastrimargus crassicollis (Saussure, 1888).

crassus Saussure, 1884: 187-188 [*Acrotylus*].

Africa? Unspecified number of ♂ and ♀.

One ♀ syntype with labels: "Acr. crassus Sss., Afrique?" [handwritten on pink paper], "Acrotylus crassus Sauss." [handwritten on pink paper]; "Acrotylus crassus Sauss." [handwritten on pink paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread, those on the right being smaller than those on the left; the left antenna, the last tarsal segment of the left front leg, the claw of the left middle leg, the last tarsal segment of the right middle leg, the last tarsal segment of the left hind leg and the last tarsal segment of the right hind leg are missing. The right hind leg is detached and secured through the femur on the original pin. There are two other ♀ and a ♂ which may be syntypes, although their locality labels refer to the Cape which is much more specific than the "Africa?" given in the original description. Box V27.

Acrotylus crassus Saussure, 1884.

crepusculum Saussure, 1884: 67 [*Arphia*].

Texas. Unspecified number of ♂.

Lectotype ♂ (designated by Otte, 1984: 314) with labels: "Dallas Co. Iowa, Allen" [printed on white paper]; "Scudder, Type" [printed on white paper]; "crepusculum ♀ [sic] Sss." [handwritten on green paper]; "crepusculum Sss., Texas, Calif." [handwritten on green paper]; "245" [printed on white paper]; *Arphia crepusculum* Sauss." [handwritten on green paper]; "TYPE Otte, 1882" [handwritten in pencil on white card]; "Lectotypus" [printed on red card]. Specimen set with wings spread. One ♂ paralectotype is present. The original description gave Texas as the locality, possibly a lapse due to the name Dallas on the locality label. Box V1.

A junior synonym of *Arphia xanthoptera* (Burmeister, 1838).

cristulata Saussure, 1884: 133 [*Ptetica*].

Turquestania. Unspecified number of ♂ and ♀.

One ♂ and one ♀ syntype. A ♂ with labels: "Ptetica cristulata Sss., Turkestan, M. H. de Sauss." [handwritten on yellow paper]; "Ptetica cristulata Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the tarsi of both middle legs are missing. A ♀ with labels: "5" [printed on a square of white card with a red line]; "КАРАКШ СТЕНЬ" [printed on a strip of white card]; "Ptetica cristulata Sss., ♀, Turkest., M. H. de Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; both antennae are lost. The abdomen has some insect feeding damage near the tip. Box V16.

Ptetica cristulata Saussure, 1884.

cruciata Saussure, 1888: 45 [*Dittopternis*].

Australia meridionalis, Gawlertown. Unspecified number of ♀.

One ♀ syntype with labels: "26" [handwritten on blue paper]; "Gawler. Austr. merid" [handwritten on lilac paper]; "Grammatotropis [sic] cruciata Sss. ♀" [handwritten on lilac paper]; "Holotype of *Dittopternis cruciata* Sauss. 1888" [handwritten on white card]; "Austroicetes ♀ cruciata (Sauss.), det. K. H. L. Key, 1958" [determination handwritten on white card with "det. K. H. L. Key, 1958" printed]; "Type series

unspecified: treat as syntype. Hollier 2011" [handwritten on red paper]. Specimen set with right wings spread and left wings folded; the right antenna, the right front leg, the tarsi of the left middle leg, the right hind leg and the last tarsal segment of the left hind leg are lost. Box V14.

Austroicetes cruciata (Saussure, 1888).

cruciata Saussure, 1888: 26, fig. 2 [*Tetramerotropis*].

Australia, Fretum de Torres, insulae Darnley. One ♂.

Possible holotype ♂ with labels: "603 24, Darnley Islands, Torres Strait" [handwritten on white paper]; "T. cruciatus Sss. type ♂" [handwritten on lilac paper]; "Possible holotype of *Tetramerotropis cruciata* Sauss., 1888, Hollier 2010" [handwritten on red paper]. Specimen set with wings spread; most of both antennae and the tarsi of the left middle leg are missing. The original description states that the specimen was discoloured due to preservation in spirits. Box V4.

Tetramerotropis cruciata Saussure, 1888.

dauidiana Saussure, 1888: 67-68 [*Callirrhypis*].

Mongolia, in Septentrione urbis Pekin. (David) (Mus. Parisiense). Unspecified number of ♂ and ♀.

One ♂ syntype with labels: "Mongolie, M. A. David" [handwritten on white card]; "Callirrhypis Sss., Davidiana Sss., Mongolie" [handwritten on yellow paper]; "Compsorhipis dauidiana Sauss." [handwritten on blue paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the right antenna is missing. In the original description the syntypes were said to be in the MNHN. Box V29.

Compsorhipis dauidiana (Saussure, 1888).

dohrnianus Saussure, 1888: 166-167 [*Oedaleus*].

Africa meridionalis, Transvaalia (Mus. Dohrn). Unspecified number of ♀.

No specimens found in the MHNG. There is a syntype, referred to as the holotype on OSF, in the MZPW, having been in the collection of Dohrn when the description was published.

A junior synonym of *Gastrimargus acutangulus acutangulus* (Stål, 1873).

elephas Saussure, 1861: 398 [*Oedipoda*].

Mexico. Unspecified.

One ♀ syntype with labels: "Leprus elephas Sss. type ♀, Mexiq." [handwritten on green paper]; "Xanthippus elephas Sauss." [handwritten on green paper]; *Oedipoda* (*Leprus*) *elephas* Sauss., Holotypus C S Carbonell 1970" [handwritten by Carbonell on red card]; "Type series unspecified: treat as syntype. Hollier 2011" [handwritten on red paper]. Specimen set with wings roughly folded; both antennae, both front legs, the tarsi of the right middle leg and the last tarsal segment of the left hind leg are missing. There is serious insect feeding damage, and the abdomen is detached and glued to card on a separate pin with the label "*Oedipoda* (*Leprus*) *elephas* Saussure, ♀ Holotypus" [handwritten by Carbonell on red card]. Images on OSF. Box V6.

Leprus elephas (Saussure, 1861).

fallax Saussure, 1884: 69 [*Arphia*].

Guatemala. One ♀.

No specimens found in the MHNG. The whereabouts of the holotype is unknown.

Arphia fallax Saussure, 1884.

fallax Saussure, 1884: 170 [*Trimerotropis*].

Amer. boreal., California. Unspecified number of ♂ and ♀.

Lectotype ♀ (designated by Rentz & Weissman, 1980: 233) with labels: "Californie, 602 35" [handwritten on white paper]; "122" [handwritten on green paper]; "fallax Sauss, Amer. sept." [handwritten on green paper]; "Trimer. fallax Sauss." [handwritten on green paper]; "Trimerotropis fallax Sauss" [handwritten on brown paper]; "LECTOTYPE ♀, TRIMEROTROPIS FALLAX Saussure, Det. D. C. Rentz '76" [handwritten on red card with "TYPE" printed]. Specimen set with wings spread; the left antenna and right middle leg are missing. A ♂ and a ♀ paralectotype are also present. Box V24.

A junior synonym of *Trimerotropis fontana* Thomas, 1876.

fedtschenki Saussure, 1884: 150-151 [*Oedipoda*].

Turquestania. One ♀.

No specimens found in the MHNG. The whereabouts of the holotype is unknown.

Oedipoda fedtschenki fedtschenki Saussure, 1884.

finotianus Saussure, 1886: 28 [*Helioscirtus*].

Algeria, Oran. Unspecified number of ♂.

One ♂ syntype with labels: "ORAN, 2.9.80 Finot" [locality and date printed, "Finot" handwritten on pale blue paper]; "Helioscirtus Finotianus, Oran ♂ Sss. H. d. Saussure" [handwritten on lilac paper]; "Helioscirtus finotianus Sauss." [handwritten on blue paper]; "Holotypus" [printed on red card]; "Type series unspecified: treat as syntype. Hollier 2011" [handwritten on red paper]. Specimen set with wings spread; the tarsi of the left front leg and the claw of the left middle leg are lost. Box V29.

Sphingonotus finotianus (Saussure, 1886).

furcifer Saussure, 1888: 69 [*Acrotylus*].

Africa meridionalis, Promont. B. Sp. Unspecified number of ♂ and ♀.

One ♂ and one ♀ syntype. A ♂ with labels: "CAP" [printed on pink paper]; "Acrotylus furcifer Sss, type ♂" [handwritten on red paper]; "Acrotylus furcifer Sauss." [handwritten on pink paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; both antennae, both front legs, both middle legs, the right hind leg and part of the tibia and the tarsi of the left hind leg are missing. A ♀ with labels: "CAP" [printed on pink paper]; "Acrotylus furcifer Sss, type ♀" [handwritten on red paper]; "Acrotylus furcifer Sauss." [handwritten on pink paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; both antennae, the tarsi of the left front leg, the right front leg, both middle legs and the tarsi of both hind legs are missing. A

further five ♂ and two ♀ specimens with similar data labels may be syntypes, although not explicitly labelled as such. Box V28.

Acrotylus furcifer Saussure, 1888.

fuscifrons texana Saussure, 1884: 163 [*Psinidia*].

Texas. Unspecified number of ♀.

One ♀ syntype with labels: "Dallas, Texas, J. Boll" [handwritten on green paper]; "var." [handwritten on green paper]; "T. fuscifrons var." [handwritten on green paper]; "Probable syntype of T. fuscifrons texana Sauss., 1884, Hollier 2010" [handwritten on red paper]. Specimen set with wings spread: the left antenna and the tarsi of the right front leg are missing. This specimen was in the collection as an unnamed variety of *P. fuscifrons*, but the measurements match those given in the original description, which gave no indication of the depository. Box V23.

A junior synonym of *Trachyrhachys kiowa* (Thomas, 1872).

gibbosus Saussure, 1884: 143 [*Lactista*].

California (coll. Brunn.). Unspecified number of ♂ and ♀.

One ♂ syntype with labels: "Lactista gibbosus S., Calif." [handwritten in pencil on white paper]; "Lactista gibbosus Sauss." [handwritten on green paper]; "Lactista gibbosa Sauss." [handwritten on brown paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the right antenna, right front leg, right middle leg and left hind leg are lost. Otte (1984: 323) refers to this specimen as the type, but the original description treats ♂ and ♀ characters without nominating a holotype. Box V19.

Lactista gibbosus Saussure, 1884.

grandidieri Saussure, 1888: 34 [*Chloebora*].

Madagascar. Unspecified number of ♀.

No specimens found in the MHNG. The whereabouts of the type material is unknown, but it is probably in the MNHN.

Pyncocrania grandidieri (Saussure, 1888).

granulata Saussure, 1884: 67 [*Arphia*].

Amer. boreal., Florida. Unspecified number of ♀.

Lectotype ♂ (designated by Otte, 1984: 312) with labels: "Georgie, 599 65" [printed on white paper]; "granulata Sss., Amer. sept." [handwritten on green paper]; "Arphia granulata Sauss." [handwritten on green paper]; "TYPE D. Otte, 1982" [handwritten in pencil on white card]; "Lectotype designated by Otte 1984" [handwritten on red paper]. Specimen set with wings spread; the right middle leg lacks the tarsi. There is another ♂ specimen with the same data label. The original description gives the locality as Florida and only mentions ♀ explicitly, and so the status of these specimens as syntypes is questionable although the measurements are consistent with those given in the description. There is a ♀ with labels: "granulata Sss., Florida" [handwritten on white card with printed margin]; "Arphia granulata Sauss." [handwritten on green paper]; "Syntype of A. granulata Sauss. 1884 (based on sex and locality). Hollier 2011" [handwritten on red paper]. Specimen set with wings spread; both antennae, the last

tarsal segment of the right front leg and the tarsi of the left middle leg are lost. This ♀ is definitely a syntype, but it is probable that the specimen designated as lectotype by Otte was not part of the type series (having a different locality and sex) making the designation invalid. Box V1.

Arphia granulata Saussure, 1884.

grossa Saussure, 1884: 132 [*Chloeбора*].

India Orientalis, Himalya (Palezieux). Unspecified number of ♀.

Three ♀ syntypes. A ♀ with labels: "HIMALAJA, Mr Hy de Sauss." [printed on white card]; "Chloeborus Sss., grossus Sss., ♀" [handwritten on white paper]; "Chloeбора grossa Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the right antenna, the left front leg and the tarsi of the right middle leg are lost. A ♀ with labels: "HIMALAJA, Mr Hy de Sauss." [printed on white card]; "Chloeбора grossa Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded; the left antenna, part of the tibia and the tarsi of the left middle leg and the last tarsal segment of the left hind leg are missing. A ♀ with labels: "HIMALAJA, Mr Hy de Sauss." [printed on white card]; "Chloeбора grossa Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded; the right front leg is lost. Box V16.

Chloeбора grossa Saussure, 1884.

guatemalae Saussure, 1888: 91 [*Heliastus*].

Guatemala. Unspecified number of ♂.

No specimens found in the MNHG. There are three specimens from Guatemala in the collection as *H. sumichrasti* var., but these are ♀ and the measurements do not correspond with those in the description and so they cannot be considered syntypes. The whereabouts of the type material is unknown. Box V32.

A junior synonym of *Heliastus sumichrasti* (Saussure, 1861).

haitensis Saussure, 1861: 323-324 [*Oedipoda*].

Haiti. Unspecified.

Two ♀ syntypes. A ♀ with labels: "Haiti" [printed on white card]; "Haitensis Sss. type" [handwritten on green paper]; "Sphingonot. haitensis Sauss." [handwritten on green paper]; "Oedipoda haitensis Sauss, Holotypus CSC 1966" [handwritten by Carbonell on red card]; "Type series unspecified: treat as syntype. Hollier 2011" [handwritten on red paper]. Specimen set with right wings spread and left wings folded; the tibia and tarsus of the right front leg, the left middle leg and the tibia and tarsus of the right hind leg are missing. A ♀ with labels: "Haiti" [printed on white card]; "Sphingonot. haitensis Sauss." [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with right wings spread and left wings folded; both antennae, the tarsi of the left hind leg, and the right hind leg are lost. The left hind leg appears to have been reattached with glue. The second ♀ has the same data label as that marked as a type, and is almost certainly a syntype. Box V31.

Sphingonotus haitensis haitensis (Saussure, 1861).

hottentotus Saussure, 1884: 188 [*Acrotylus*].

Africa merid., Promontor. bonae Spei (coll. Brunn. no 2243). Unspecified number of ♂.

No specimens found in the MHNG. According to OSF there is a ♂ syntype, referred to as the holotype, in the BMNH, but this is not indicated in the BMNH online database. There are two specimens from Brunner von Wattenwyl's collection under this name in the NHMW, but neither has the collection number indicated by Saussure (Bruckner, pers. comm.).

Acrotylus hottentotus Saussure, 1884.

humbertiana Saussure, 1884: 127-128 [*Pternoscirta*].

Ceylon (Humbert). Unspecified number of ♂ and ♀.

One ♀ syntype with labels: "Ceylon, Humbert" [handwritten on white paper]; "343" [handwritten on white paper]; "Humbertiana Sss., Ceylon" [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with left wings spread and right wings folded; both antennae are missing. The original description treated both sexes, but no ♂ specimens could be found in the MHNG. Box V15.

A junior synonym of *Pternoscirta cinctifemur* (Walker, 1859).

humbertianus Saussure, 1884: 189-190 [*Acrotylus*].

Ceylon (Humbert); Africa merid. (Stål). Unspecified number of ♂ and ♀.

One ♂ and two ♀ syntypes. A ♂ with labels: "CEYLON HUMB" [printed on a strip of white paper]; "238" [handwritten on white card]; "Acrotylus Humbertianus Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the left middle and left hind legs are missing. A ♀ with labels: "CEYLON HUMB" [printed on a strip of white paper]; "120" [handwritten on white card]; "Acrotylus Humbertianus Sss., Indes orient" [handwritten on yellow paper]; "Acrotylus Humbertianus Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded; the last tarsal segment of the right front leg is missing. A ♀ with labels: "CEYLON HUMB" [printed on a strip of white paper]; "132" [handwritten on white card]; "Acrotylus Humbertianus Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with left wings spread and right wings folded; the right antenna, two tarsal segments of the left front leg, the tarsi of the right middle leg, the tarsi of the left hind leg and the entire right hind leg are lost. Box V28.

Acrotylus humbertianus Saussure, 1884.

hyalina Saussure, 1888: 47-48 [*Heteropternis*].

Senegalis ad flumen Casamanzam; Africa calida, Senegalis (coll. Brun. no 2022); Africa meridionalis, Natal, Transvaal; Zanzibar (coll. Brun. no 10270). More than one ♂ and ♀.

One ♂ and one ♀ syntype. A ♂ with labels: "Cazamana, Mr Ed Sarazin" [handwritten on white card]; "Heterop. hyalina Sauss." handwritten on pink paper]; "Heteropternis thoracica (Walker), ♂, R. Roy det. 1988" [handwritten on white card with "R. Roy det. 19" printed]; "Syntypus" [printed on red paper]. Specimen set with

right wings spread and left wings folded; both antennae and the right front leg are missing. The specimen has been repaired with glue where the thorax and abdomen join. A ♀ with labels: "Cazamana, Mr Ed Sarazin" [handwritten on white card]; "Heteropternis hyalina Sss" [handwritten on red paper]; "Heterop. hyalina Sauss." [handwritten on pink paper]; "Heteropternis thoracica (Walker), ♀, R. Roy det. 1988" [handwritten on white card with "R. Roy det. 19" printed]; "Syntypus" [printed on red paper]. Specimen set with left wings spread and right wings folded; both antennae and the last tarsal segment of the left middle leg are lost. Other syntypes, from several localities, were in the collection of Brunner von Wattenwyl when the description was published. Box V16.

A junior synonym of *Heteropternis thoracica* (Walker, 1870).

inda Saussure, 1884: 181-182 [*Bryodema*].

India (Mus. Vindobense). Unspecified number of ♂ and ♀.

No specimens found in the MHNG. The type series was stated to be in the NHMW when the description was published, but could not be located in 2010 (Bruckner, pers. comm.).

Bryodema luctuosum indum Saussure, 1884.

indus Saussure, 1884: 204 [*Sphingonotus*].

India, Himalaya. Unspecified number of ♂ and ♀.

One ♂ and one ♀ syntype. A ♂ with labels: "HIMALAJA, Mr Hy de Sauss." [printed on white paper]; "Indus Sauss., Ind. Orient." [handwritten on yellow paper]; "Sphingon. Indus Sauss" [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the last tarsal segment of the left front leg and the tarsi of the right front leg are missing. A ♀ with labels: "HIMALAJA, Mr Hy de Sauss." [printed on white paper]; "Sphingon. Indus Sauss" [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the last tarsal segment of the right front leg is lost. A further ♂ and three ♀ placed under this name without explicit locality labels could be part of the type series. Box V31.

A junior synonym of *Sphingonotus longipennis* Saussure, 1884.

infernalis Saussure, 1884: 70 [*Arphia*].

Texas. Unspecified number of ♂.

Lectotype ♂ (designated by Otte, 1984: 312) with labels: "Arphia frigida?, Ft. McKin., Wyo. 7-83, No." [determination and date handwritten, the rest printed on white card]; "Arphia infernalis Sauss." [handwritten on green paper]; "TYPE Otte 1982" [handwritten in pencil on white card]. Specimen set with wings spread; the right antenna is missing. Two other ♂ specimens are present, one with the same data label as the specimen designated as the lectotype. There is also a ♂ with labels: "Dallas, Texas" [printed on white paper]; "Arphia infernalis Sauss." [handwritten on green paper]; "Syntype of A. infernalis Sauss. 1884 (based on locality data). Hollier 2011" [handwritten on red paper]. Specimen set with wings spread. This specimen is almost certainly a syntype, but the specimen designated as lectotype by Otte is probably not

part of the type series (having a different locality) making the designation invalid. Box V1.

A junior synonym of *Arphia conspersa* Scudder, 1875.

infernalis Saussure, 1884: 116-117 [*Oedaleus*].

Japonis (coll. Brunn.) (Siberia Orientalior; Amur (coll. Brunn.) for var.). Unspecified number of ♂ and ♀.

The lectotype (designated by Ritchie, 1981: 128) is in the NHMW. The MHNG collection includes one ♂ and two ♀ from Mongolia; these are not part of the type series. Box V10.

Oedaleus infernalis Saussure, 1884.

intermedius Saussure, 1884: 96 [*Leprus*].

California (coll. Brunner no 9733). Unspecified number of ♀.

No specimens found in the MHNG. The type material was in Brunner von Wattenwyl's collection when the description was published. It is not clear where it is now; the specimen in the NHMW has a different collection number from the one cited by Saussure (Bruckner, pers. comm.) and the BMNH online database does not list type material for this species.

Leprus intermedius Saussure, 1884.

intutus Saussure, 1888: 87 [*Sphingonotus*].

Persia, Shahrud. Unspecified.

One ♂ and two ♀ syntypes. A ♂ with labels: "Schahrud (Perse)" [handwritten on blue card with a printed border]; "Sphingonotus intutus Sauss." [handwritten on blue paper]; "Sphing. intitus Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with right wings spread and left wings folded. A ♀ with labels: "Scharud (Perse) Br." [handwritten on white paper]; "Sphingonotus intutus Sauss." [handwritten on blue paper]; "Syntypus" [printed on red paper]. Specimen set with right wings spread and left wings folded; the claw of the left middle leg is missing. A ♀ with labels: "Schd" [handwritten on white paper]; "Scharud (Perse) Br." [handwritten on white paper]; "intutus Sauss., nebulosus Fisch., Arménie" [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the left hind leg is lost. Box V31.

Sphingonotus intutus Saussure, 1888.

jamaicensis Saussure, 1884: 202 [*Sphingonotus*].

Jamaica. Unspecified number of ♂.

One ♂ syntype with labels: "Cumming, Jam., 547" [handwritten on white card]; "Sphingonotus jamaicensis Sauss." [handwritten on green paper]; "Sphingonotus jamaicensis Sauss., Holotypus C. S. C. 1966" [handwritten by Carbonell on red card]; "Type series unspecified: treat as syntype. Hollier 2011" [handwritten on red paper]. Specimen set with wings spread; the right antenna is missing. Otte (1984: 329) follows Carbonell in assuming that this specimen is the holotype without comment. Box V31.

A junior synonym of *Sphingonotus haitensis haitensis* (Saussure, 1861).

japonicus Saussure, 1888: 84-85 [*Sphingonotus*].

Japonia. Unspecified number of ♂ and ♀.

Three ♀ syntypes. A ♀ with labels: "Japon" [handwritten on a strip of yellow paper]; "5" [handwritten in pencil on white paper]; "Musée de Genève, No 48" [printed on white card with "48" added by hand]; "Sph. japonicus Sss." [handwritten on a strip of yellow paper]; "Sphingonotus japonicus Sauss." [handwritten on blue paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread. A ♀ with labels: "Japon" [handwritten on a strip of yellow paper]; "5" [handwritten in pencil on white paper]; "Musée de Genève, No 86" [printed on white card with "86" added by hand]; "Sph. japonicus Sss." [handwritten on a strip of yellow paper]; "Sphingonotus japonicus Sauss." [handwritten on blue paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the last tarsal segment of the right front leg and the right hind leg are missing. A ♀ with labels: "Japon" [handwritten on a strip of white paper]; "Sphingonotus japonicus Sauss." [handwritten on yellow paper]; "Sphingonotus japonicus Sauss." [handwritten on blue paper]; "Syntypus" [printed on red paper]. Specimen set with right wings spread and left wings folded; the left antenna, the last tarsal segment of the right front leg, two tarsal segments of both middle legs and the tibia and tarsi of the right hind leg are lost. The right hind femur and the abdomen have some insect feeding damage. Although the original description treats both sexes, the form of the labels of the only ♂ in the MHNG collections suggest that it is a more recent specimen and not a syntype. Box V31.

Eusphingonotus japonicus (Saussure, 1888).

kittaryi Saussure, 1884: 207 [*Sphingonotus*].

Turquestania; Indersk. – Littus orientale maris Caspis (coll. Brunn. no 14636). Unspecified number of ♂ and ♀.

One ♂ and two ♀ syntypes. A ♂ with labels: "Sphingonot. Kittarii, ♂ Sss., Steppes des Kirghiz, M. H. Saussure" [handwritten on yellow paper]; "Sphing octofasc. Serv." [handwritten on yellow paper]; "Sphingonotus octofasciata Serv." [handwritten on blue paper]; "Syntypus" [printed on red paper]. Specimen set with right wings spread and left wings folded. A ♀ with labels: "ЯГНОБЪ [?]" [printed on a strip of white card]; "21" [printed on a square of blue card]; "Sphingon. Kittarii Sss., Turkestan, M. H. Saussure" [handwritten on yellow paper]; "octofasciata, Serv., Kittaryii Sauss, Turkestan, Casp[?]" [handwritten on white paper]; "Sphing octofasc. Serv." [handwritten on yellow paper]; "Sphingonotus octofasciata Serv." [handwritten on blue paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the last tarsal segment of the right middle leg is lost. A ♀ with labels: "Kzarnowodsh (rive E. de la Mer. Casp.)" [handwritten on blue card with a printed border]; "Sphing octofasc. Serv." [handwritten on yellow paper]; "Sphingonotus octofasciata Serv." [handwritten on blue paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded. A further ♀ placed under this name without a locality label may also be a syntype. Box V30.

A junior synonym of *Sphingonotus octofasciatus* (Serville, 1838).

lateritius Saussure, 1884: 92-3 [*Xanthippus*].

Amer. bor.; Nevada (coll. Brunner no 12575, Mus. Genavense). Unspecified number of ♂ and ♀.

One ♀ syntype with labels: "Xanthippus lateritius Sss., Nevada" [handwritten on white paper]; "lateritius Sauss., Amer. sept." [handwritten on green paper]; "TYPE Otte '82" [handwritten in pencil on white card]; "Holotypus" [printed on red card]; "Syntype, not holotype! Hollier 2011" [handwritten on red paper]. Specimen set with wings spread; the tarsi of the left front leg are lost. This specimen is not, despite the reference in Otte (1984: 317), the holotype because both sexes are treated in the description and no holotype was designated by Saussure. Box V6.

Cratypedes lateritius (Saussure, 1884).

laticincta Saussure, 1884: 169-170 [*Trimerotropis*].

Texas (Boll). Unspecified number of ♀.

Lectotype ♀ (designated by Rentz & Weissmann, 1980: 236) with labels: "Texas, Boll, 601 95" [printed on white paper]; "laticincta Sss., Texas" [handwritten on green paper]; "Trimer. laticincta Sauss." [handwritten on green paper]; "sulfurea Sss, type" [handwritten on green paper]; "Lectotype ♀, Trimerotropis laticincta Saussure, Det. D. C. Rentz 1977" [determination and last two numerals of date handwritten, "Det. D. C. Rentz 19" printed on pink coloured card]. Specimen set with left wings spread and right wings folded. Box V24.

A junior synonym of *Trimerotropis latifasciata* Scudder, 1880.

ledereri Saussure, 1888: 51-52 [*Oedipoda*].

Syria (Dom. Lederer lecta). Unspecified number of ♂ and ♀.

One ♂ and one ♀ syntype. A ♂ with labels: "Oedipoda Charpentieri Fib., Syrie, Coll. Lederer" [handwritten on white paper]; "122" [handwritten on white card with printed margin]; "Oedipoda ledereri Sauss." [handwritten on yellow paper]; "Oedipoda ledereri Sauss." [handwritten in blue paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread. The abdomen shows some insect feeding damage near the end. A ♀ with labels: "Tête fausse?" [handwritten on white paper]; "Oedipoda ledereri Sauss." [handwritten on yellow paper]; "Oedipoda ledereri Sauss." [handwritten in blue paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; both front legs, the tarsi of the right middle leg and two tarsal segments of the right hind leg are missing. There is considerable insect feeding damage to the lower part of the prothorax and the head appears to have been glued on. Box V20.

Oedipoda ledereri Saussure, 1888.

leprosus Saussure, 1884: 92 [*Xanthippus*].

Amer. bor.; Nova-Mexico. More than one ♂ (variation to scutellum noted) and an unspecified number of ♀.

Lectotype ♀ (designated by Hebard, 1929: 340) with labels: "Taos Valley, N. Mexico, 5-31-1883" [handwritten on white card]; "Hippiscus (?) Haldemani Scudd., No." [handwritten with "No." printed on white card with a printed border]; "Lectotype

of *Xanthippus leprosus* Saussure, 1884, designated Hebard 1929: 340" [handwritten on red paper]. A ♂ paralectotype with the same data is also present. Box V6.

A junior synonym of *Xanthippus corallipes* (Haldeman, 1852).

lobatus Saussure, 1888: 65-66, fig. 5 [*Circotettix*].

America borealis; Colorado. Unspecified number of ♀.

One ♀ syntype with labels: "Salmon C'y, Idaho 8-85" [locality printed and date handwritten on white card]; "Circotettix lobatus Sss., Type ♀, Colorado, H de Saussure" [handwritten on green card]; "Circotettix lobatus Sauss." [handwritten on brown paper]; "Circotettix undulatus Thos. No." [handwritten on white card with No." printed]; "Holotypus" [printed on red card]; "Type series unspecified: treat as syntype. Hollier 2011" [handwritten on red paper]. Specimen set with left wings spread and right wings folded; most of the right antenna and the tarsi of the right middle leg are lost. Hebard, who examined the specimen, noted (1928: 263) the difference between the printed locality label and the handwritten label, concluding that the former was correct even though the original description cites the latter. Box V26.

A junior synonym of *Circotettix undulatus* (Thomas, 1872).

longipennis Saussure, 1884: 203-204 [*Sphingonotus*].

[No locality] (coll. Brunn. no 6363). Unspecified number of ♂ and ♀.

No specimens found in the MHNG. The type series is in the NHMW (Bruckner, pers. comm.).

Sphingonotus longipennis Saussure, 1884.

maculosa Saussure, 1884: 162-163 [*Psinidia*].

Amer. bor.; Fort Mc. Leod. Unspecified number of ♂ and ♀.

One ♂ and one ♀ syntype. A ♂ with labels: "Ft. McLeod, B.A. Aug 82" [locality printed and date handwritten on white card]; "Tr. maculosa Sss, Amer. bor." [handwritten on green paper]; "Trachyrach. [sic] maculosa Sauss." [handwritten on green paper]; "Trachyrachis [sic] maculosa Sauss." [handwritten on brown paper]; "Syntypus" [printed on red paper]. Specimen set with right wings spread and left wings folded; the right antenna is lost. A ♀ with labels: "Ft. McLeod, B.A. Aug 82" [locality printed and date handwritten on white card]; "Trachyrach. [sic] maculosa Sauss." [handwritten on green paper]; "Hippiscus(?) neglectus?, Thos., No." [handwritten on white card with "No." printed]; "Syntypus" [printed on red paper]. Specimen set with right wings spread and left wings folded; most of the left antenna is lost. Otte (1984: 325) refers to the ♂ as the holotype, but the original description treats both sexes and no holotype was designated and so both specimens are syntypes. Box V23.

A junior synonym of *Metator pardalinus* (Saussure, 1884).

madecassus Saussure, 1884: 115 [*Oedaleus*].

Madagascar (Mus. Genav. & coll. Brunn.). More than one ♀ (measurements given as range).

Lectotype ♀ (designated by Ritchie, 1981: 107) with labels: "Madagascar, M H de S" [handwritten on whitish paper]; "Gen. Oedalus" [handwritten in pencil on white

paper]; “*Oedaleus madecassus* Sss., Madg.” [handwritten on pink paper]; “Lectotypus” [printed on white card disk with purple margin]; “*Oedaleus (Gastrimargus) madecassus* Saussure, 1884., J. M. Ritchie det 1976, LECTOTYPE ♀” [typewritten on white card with “J. M. Ritchie det. 19” printed]; “= *Oedalus virgula* (Snellen van Vollenhoven, 1869), J. M. Ritchie det. 1976” [printed on white card with “=” added by hand]. Specimen set with wings spread; the right antenna, the last tarsal segment of the left front leg, two tarsal segments of the right middle leg and the last tarsal segment of the left middle leg are lost. Box V9.

A junior synonym of *Oedaleus virgula* (Snellen van Vollenhoven, 1869).

marmoratus africana Saussure, 1888: 39 [*Oedaleus*].

Africa merid. Unspecified number of ♂ and ♀.

Lectotype ♂ (designated by Ritchie, 1982: 248) with labels: “Cap b sp” [printed on ruled white card]; “Lectotypus” [printed on a white card disk with purple margin]; “*Oedaleus (Gastrimargus) marmoratus* var *africana*, Saussure, 1888, J. M. Ritchie det. 1976, LECTOTYPE ♂” [typewritten on white card with “J. M. Ritchie det. 19” printed]. Specimen set with wings folded; the left antenna and the last tarsal segment of the left middle leg are lost. Box V7b.

Gastrimargus africanus africanus (Saussure, 1888).

marmoratus grandis Saussure, 1888: 39 [*Oedaleus*].

Sina, Kiang-si. Unspecified.

No specimens found in the MHNG. A ♀ syntype, referred to as the holotype, is in the NHRS (Ritchie, 1982: 262). This taxon is not mentioned on OSF.

A junior synonym of *Gastrimargus marmoratus* (Thunberg, 1815).

marmoratus minor Saussure, 1888: 39 [*Oedaleus*].

Mongolia. Unspecified number of ♀.

No specimens found in the MHNG collection. The variety was considered nomen incertae sedis by Ritchie (1982: 247) because the genus does not occur in Mongolia and the types are apparently lost. This taxon is not mentioned on OSF.

Probably a junior synonym of *Gastrimargus marmoratus* (Thunberg, 1815)

marmoratus sundaicus Saussure, 1884: 113 [*Oedaleus*].

Congo [sic]. Unspecified.

Lectotype ♀ (designated by Ritchie, 1982: 262) with labels: “Sumatra” [handwritten on white paper]; “*marmoratus* Thbg., var. *Sundaicus* Sss., Iles des Indes” [handwritten on yellow paper]; “*Oedaleus marmoratus* Thbg.” [handwritten on yellow paper]; “Lectotypus” [printed on white card disk with purple margin]; “*Oedaleus (Gastrimargus) marmoratus* stirps *sundaicus* Saussure, 1884, J. M. Ritchie det 1976, LECTOTYPE ♀” [typewritten on white card with “J. M. Ritchie det. 19” printed]. Specimen set with wings spread; both antennae and the last tarsal segment of the right front leg are missing. This species does not occur in central Africa and the locality given in the description is clearly a lapse. Box V9.

A junior synonym of *Gastrimargus marmoratus* (Thunberg, 1815).

mexicana Saussure, 1859: 391 [*Machaerocera*].

Mexico calida. Unspecified number of ♂ and ♀.

Six ♂ and five ♀ syntypes. A ♂ with labels: "Mexiq." [printed on white card]; "Machaerocera mexicana Sss., Mexique" [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the right antenna is lost. A ♂ with labels: "Tampico, t.c." [printed on white card]; "Machaerocera mexicana Sss., Mexique" [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with left wings spread and right wings folded; two tarsal segments of the right front leg, the last tarsal segment of both middle legs and both hind legs are missing. A ♂ with labels: "Tampico, t.c." [printed on white card]; "Machaerocera mexicana Sss., Mexique" [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with left wings spread and right wings folded; the left antenna, the last tarsal segment of the right front leg, the claw of the left middle leg, the tibia and tarsi of the right middle leg and both hind legs are lost. A ♂ with labels: "Cordova, t.c." [printed on white card]; "Machaerocera mexicana Sss., Mexique" [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded; the right front leg and two tarsi of the right middle leg are missing. A ♂ with labels: "Tampico, t.c." [printed on white card]; "Machaerocera mexicana Sauss., (inedit.)" [handwritten on white paper]; "Syntypus" [printed on red paper]. Specimen set with left wings spread and right wings folded; the right antenna, left front leg, left middle leg, the tarsi of the right middle leg and the right hind leg are missing. The left hind leg appears to have been reattached with glue. A ♂ with labels: "Machaerocera mexicana Sss., Mexique" [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with left wings spread and right wings folded; the left antenna and right middle leg are lost. A ♀ with labels: "Cordova, t.c." [printed on white card]; "mexicana Sauss., M. H. S." [handwritten on white paper]; "Machaerocera mexicana Sss., Mexique" [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the right front leg is missing. A ♀ with labels: "Cordova, t.c." [printed on white card]; "Machaerocera mexicana Sss., Mexique" [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with right wings spread and left wings folded; the left front leg, the last tarsal segment of the right front leg, the last tarsal segment of the left middle leg, the tibia and tarsi of the right middle leg and the last tarsal segment of the right hind leg are missing. The left hind leg, which lacks the tarsi, is detached and secured through the femur on the original pin. A ♀ with labels: "Mirador" [handwritten on white card]; "Machaerocera mexicana Sss., Mexique" [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with left wings spread and right wings folded; the ends of both antennae, the right front leg, the tibia and tarsi of the right middle leg and the left hind leg are lost. There is considerable insect feeding damage to the thorax and abdomen. A ♀ with labels: "Tc 26, Mexique 54, M. Giessbrecht C." [handwritten on white paper]; "Machaerocera mexicana Sss., Mexique" [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with left wings spread and right wings folded; both front legs are lost. A ♀ with labels: "Mexique" [handwritten on white card]; "Machaerocera mexicana Sss., Mexique" [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen

set with wings folded; the left antenna, the tarsi of the left front leg, the right front leg, and the tarsi of both middle legs are lost. Box U13.

Machaerocera mexicana Saussure, 1859.

mexicana Saussure, 1861: 397 [*Oedipoda*].

Mexico. Unspecified.

One ♂ and 3 ♀ syntypes. A ♂ with labels: "Tescuitlan" [handwritten on a strip of white card]; "Oedipoda mexicana Sss. ♂ type" [handwritten on green paper]; "Oedipoda mexicana Sauss., Typus. C S Carbonell, 1970" [handwritten by Carbonell on red card]; "Leurinotina orizabae (Sauss.), C. S. Carbonell det. 1970" [determination and last two numerals of date handwritten on printed white card]. Specimen set with right wings spread and left wings folded; the antennae, left front leg, left middle leg and the tarsi of the right hind leg are missing. A ♀ with labels: "Orizaba, Sumichrast" [handwritten on white paper]; "Oedipoda mexicana Sss. ♀ type" [handwritten on green paper]; "Leuronotina orizabae (Sauss.) C. S. Carbonell det. 1970" [determination and last two numerals of date handwritten on printed white card]; "Oedipoda mexicana Sauss., Typus. C S Carbonell 1970" [handwritten by Carbonell on red card]. Specimen set with right wings spread and left wings folded; the tarsi of the left front leg and the last tarsal segment of the right hind leg are missing. A ♀ with labels: "Cuautl. t.c." [printed on white card]; "Oedipoda mexicana Sss. type" [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with left wings spread and right wings folded; the antenae, right middle leg and right hind leg are missing, the left hind leg is detached and secured through the femur on the original pin. The head and thorax show signs of insect feeding damage and the abdomen is almost totally lost. A ♀ with labels: "Texas, Mexique, 601 40" [handwritten on white paper]; "Oedipoda mexicana Sss. ♀ type" [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread. A fourth ♀ is also labelled as a type, but the locality is given as Guatemala while that in the original description is Mexico. This species was given the replacement name *Tomonotus orizabae* Saussure, 1884: 98 because it had become a junior homonym of *Tomonotus mexicanus* Saussure, 1861: 321. Images on OSF. Box V6.

Replaced by *Leuronotina orizabae* (Saussure, 1884).

mexicana Saussure, 1884: 164 [*Psinidia*].

Ager mexicanus (coll. Brunn.). Unspecified number of ♂.

No specimens found in the MHNG. There is a ♂ syntype in the NHMW (Bruckner, pers. comm.).

A junior synonym of *Trachyrhachys kiowa* (Thomas, 1872).

mexicanus Saussure, 1861: 321 [*Tomonotus*].

Mexico temperata. Unspecified number of ♂ and ♀.

Lectotype ♂ (designated by Otte, 1984: 321) with labels: "Cuautla, t.c." [printed on white card]; "Tomonotus mexicanus Sss., ♂ type" [handwritten on green paper]; "Tomonotus mexicanus Sauss. ♂, Typus C. S. C. 1970" [handwritten by Carbonell on red card]; "Lectotypus" [printed on red card]. Specimen set with right

wings roughly spread and left wings folded; most of both antennae, both front legs, the last tarsal segment of the left middle leg, the left hind leg and the tibia and tarsi of the right hind leg are missing. There is also a ♀ paralectotype present. Images on OSF. Box V6.

Tomonotus mexicanus Saussure, 1861.

miniata coerulea Saussure, 1884: 150 [*Oedipoda*].

Patria? One specimen of unspecified sex.

There are no specimens placed under this name in the MHNG collection. It is possible that the type is amongst the numerous specimens of *O. miniata* (Pallas, 1771) or *O. fuscocincta* Lucas, 1849 in boxes V19 and V20.

Oedipoda coerulea Saussure, 1884.

minor Saussure, 1899: 631-632 [*Pachytylus*].

Sansibar. Unspecified.

One ♀ syntype with labels: "Zanzibar" [handwritten on pink paper]; "Voeltzkow" [handwritten on a strip of white card]; "minor Sss. ♀, Zanzibar" [handwritten on pink paper]; "Typus" [printed on white card disk with red margin]; "Pachytylus minor Sauss. Type!, = Heteropternis minor Sauss, V. M. Dirsh det. 1958" [handwritten on white card with "V. M. Dirsh det. 195" printed]. Specimen set with right wings spread and left wings folded; the right antenna and the tibia and tarsi of the right middle leg are missing. A ♀ syntype in the SMFD is incorrectly referred to as the holotype on OSF. Box V10.

Heteropternis minor (Saussure, 1899).

mirabilis Saussure, 1888: 31-32, fig. 1 [*Brunnerella*].

Armenia; Ordubat (coll. Brunn. no 15014). Unspecified number of ♂.

No specimens found in the MHNG. The type material could not be located in the NHMW (Bruckner, pers. comm.), and its whereabouts is unknown.

Brunnerella mirabilis mirabilis Saussure, 1888.

mongolicus Saussure, 1888: 82 [*Sphingonotus*].

Mongolia (Pater David). Unspecified number of ♂ and ♀.

One ♀ syntype with labels: "Mongolie, M. A. David" [handwritten on white paper]; "Sph. mongolicus Sss., Mongolie" [handwritten on yellow paper]; "Sphingonot mongolicus Sauss." [handwritten on yellow paper]; "Sphingonotus mongolicus Sauss." [handwritten on blue paper]; "Syntypus" [printed on red paper]. Specimen set with left wings spread and right wings folded; the right antenna, both front legs, the right middle leg and the right hind leg are missing. The MHNG collection also contains one ♂ and three ♀ specimens from Yarkand, but these are probably not types because the latter is not in Mongolia. The original description treats both sexes and there are presumably other syntypes in the MNHN. Box V31.

Sphingonotus mongolicus Saussure, 1888.

monticola Saussure, 1884: 170 [*Trimerotropis*].

Mexico altior, in planitibus incultis apud urbem Perote prope Tesuitlan in altitude. 2600 mertr. cepi. Unspecified number of ♀.

The MHNG collection contains a ♂ specimen with the labels: “Tesusitlan” [handwritten on white card]; “monticola Sss, type” [handwritten on green paper]; “Not the type!, Type is ♀ Saussure 1884: 170” [handwritten on white card]. Since the measurements of this specimen coincide with those given in the original description, and the locality label also corresponds to that given in the description it seems likely that this is a syntype, and that the sex given in the description was a lapse by Saussure. Specimen set with right wings spread and left wings folded; both antennae, both front legs, both middle legs and the left hind leg are lost. This species was considered a junior synonym of *T. tolteca* (Saussure, 1861) by Rentz & Weissman (1980: 244) but this is not followed on OSF. Box V24.

Trimerotropis monticola Saussure, 1884 (considered *nomen dubium* on OSF).

monticola huasteca Saussure, 1888: 63 [*Trimerotropis*].

Tellus mexicana, lacus Meztitlani. Unspecified number of ♂.

There are no specimens placed under this name in the MHNG collection, but a specimen placed under “monticola var.” is probably a syntype. A ♂ with labels: “Metzill. t. t.” [printed on white card]; “Trimerotr. monticola ♂ var., Mexiq.” [handwritten on green paper]; “Probable syntype of *T. monticola huasteca* Sauss., 1888, Hollier 2010” [handwritten on red paper]. Specimen set with right wings spread and left wings folded; the left antenna, the last tarsal segment of the right front leg, the last tarsal segment of the left hind leg and the tarsi of the right hind leg are missing. *T. huasteca* was considered a valid species by Hebard, who had examined the specimen (1932: 260) and by Rentz & Weissman (1980: 234), but it does not appear on OSF. Box V24.

Trimerotropis huasteca Saussure, 1888.

moseri Saussure, 1884: 195 [*Helioscirtus*].

Turquestania (Moser). Unspecified number of ♂.

Two ♂ syntypes. A ♂ with labels: “Turkestan russe, M. Moser” [handwritten on white paper]; “Moseri Sss., Turkestan.” [handwritten on yellow paper]; “alaris Sss, type” [handwritten on white paper]; “Helioscirtus Moseri Sauss.” [handwritten on yellow paper]; “Helioscirtus moseri Sauss.” [handwritten on blue paper]; “Syntypus” [printed on red paper]. Specimen set with wings spread; the left antenna, the left front leg, the right middle leg and the right hind leg are lost. A ♂ with labels: “Turkestan russe, M. Moser” [handwritten on white paper]; “alaris Sss, type” [handwritten on white paper]; “Helioscirtus Moseri Sauss.” [handwritten on yellow paper]; “Helioscirtus moseri Sauss.” [handwritten on blue paper]; “Syntypus” [printed on red paper]. Specimen set with wings spread; both front legs and the tarsi of both hind legs are missing. There is insect feeding damage to the head and abdomen. Box V29.

Helioscirtus moseri moseri Saussure, 1884.

nanus Saussure, 1884: 86-87 [*Hippiscus*].

Amer. boreal., Colorado (coll. Brunner). Unspecified number of ♂ and ♀.

Possible ♂ syntype with labels: “Etats Unis, Mr H de Saussure” [handwritten on white card]; “III” [printed on white card]; “nana? Sss., Amer. bor.” [handwritten on

green paper]; “*Pardaloph. nana* Sss, ♂” [handwritten on green paper]; “Syntypus of *P. nanus* Sauss. 1884? Hollier 2010” [handwritten on red paper]. Specimen set with wings spread; most of the left antenna, the last tarsal segment of the right middle leg, the tarsi of the left hind leg and the last tarsal segment of the right hind leg are lost. Otte (1984: 326) states that this is the [holo]type, but the original description includes both ♂ and ♀ characters and no holotype was designated. If Otte’s interpretation of the small printed label as meaning Illinois is correct, it is even less likely that this specimen is part of the type series, which the original description states was from Colorado. There are syntypes in the NHMW (Bruckner, pers. comm.). Box V5.

A junior synonym of *Pardalophora haldemanii* (Scudder, 1872).

nietana Saussure, 1861: 321-322 [*Tomonotus*].

Mexico. Unspecified.

One ♂ syntype with labels: “Cordova, t.c.” [printed on white card]; “*Tomonotus nietana* Sss., type” [handwritten on white card]; “*Arphia nietana* Sauss.” [handwritten on green paper]; “Holotypus” [printed on red card]; “Type series unspecified: treat as syntype. Hollier 2011” [handwritten on red paper]. Specimen set with wings spread; both antennae and both hind legs are lost. The abdomen shows some insect feeding damage. A ♀ specimen with the same locality data is present and is almost certainly a syntype, although the measurements given in the original description correspond to the ♂ specimen. Images on OSF. Box V1.

Arphia nietana (Saussure, 1861).

nigrofasciatus australis Saussure, 1888: 41-42 [*Oedaleus*].

Nov. Holland. Unspecified number of ♂ and ♀.

Lectotype ♀ (designated by Ritchie, 1981: 101) with labels: “390” [handwritten on a square of white card with black borders]; “*Oedaleus senegalensis* Krauss, Australie” [handwritten on lilac paper]; “Victoria” [handwritten on lilac paper]; “Lectotypus” [printed on a white card disk with purple margin]; “*Oedaleus nigrofasciatus* var. *australis* Sauss., 1888. J. M. Ritchie det 1976, LECTOTYPE ♀” [typewritten on white card with “J. M. Ritchie det. 19” printed]; “*Oedaleus australis*, Saussure, 1888, J. M. Ritchie det. 1976” [printed on white card]. Specimen set with wings spread; the antennae, left front leg, right middle leg, the tibia and tarsi of the left middle leg and the tarsi of the left hind leg are missing. There is insect feeding damage to the head, thorax and legs. A ♀ paralectotype is present. Box V10.

Oedaleus australis Saussure, 1888.

nigrofasciatus caffer Saussure, 1888: 41 [*Oedaleus*].

Africa meridionalis; Pron. B. Sp. Unspecified number of ♀ and ♀.

Lectotype ♀ (designated by Ritchie, 1981: 119) with labels: “Delalande, Afrique” [handwritten on white card]; “var. Afr. merid.” [handwritten on pink paper]; “*Oedaleus nigrofasciatus* Chp. “ [handwritten on pink paper]; “Lectotypus” [printed on a white card disk with purple margin]; “*Oedaleus (Oedaleus) nigrofasciatus* var. *caffer* Saussure, 1888. J. M. Ritchie det 1976, LECTOTYPE ♀” [typewritten on white card with “J. M. Ritchie det. 19” printed]; “= *Oedaleus plenus*, (Walker, 1870), J. M. Ritchie

det. 1976" [printed on white card with "=" added by hand]. Specimen set with wings spread, the left hind wing is missing; the antennae, both front legs and both hind legs are lost. Box V10.

A junior synonym of *Oedaleus plenus plenus* (Walker, 1870).

nigrofasciatus citrinus Saussure, 1888: 41 [*Oedaleus*].

Promontorium Bonae Spei. Unspecified number of ♂ and ♀.

Lectotype ♂ (designated by Ritchie, 1981: 151) with labels: "citrinus Sss. ♀ [sic], Cap. Type" [handwritten on pink paper]; "Holotypus" [printed on red card]; "Oedaleus citrinus Saussure, V. M. Dirsh det., 1961, ♂ Type!" [handwritten on white card with "V. M. Dirsh det., 19" printed]; "Lectotypus" [printed on red card]. Specimen set with wings spread; the right antenna, both front legs, the right middle leg and the right hind leg are missing. Box V9.

A junior synonym of *Oedaleus flavus flavus* (Linnaeus, 1758).

nigrofasciatus gracilis Saussure, 1884: 116 [*Oedaleus*].

Africa merid.; Rossia merid. Unspecified.

Lectotype ♀ (designated by Ritchie, 1981: 100) with labels: "Cap. B. Esp." [handwritten on whitish paper]; "nigro-fasciatus Th., var. gracilis Sss., Afr." [handwritten on lilac paper]; "Oedaleus gracilis Sauss." [handwritten on pink paper]; "Lectotypus" [printed on white card disk with purple margin]; "Oedaleus (Oedaleus) nigrofasciatus var. gracilis Saussure, 1884, J. M. Ritchie det 1976, LECTOTYPE ♀" [typewritten on white card with "J. M. Ritchie det. 19" printed]; "Oedaleus nigrofasciatus (Degeer, 1773), J. M. Ritchie det. 1976" [printed on white card]. Specimen set with wings spread; both antennae, the tarsi of the left front leg, the right front leg, the right middle leg, the left hind leg and the last tarsal segment of the right hind leg are missing. Box V10.

A junior synonym of *Oedaleus nigrofasciatus* (De Geer, 1773).

niloticus Saussure, 1888: 80-81 [*Sphingonotus*].

Aegyptus. Unspecified number of ♂.

No syntypes found in the MHNG. Three specimens (one ♂ and two ♀) which had been placed under this name in the MHNG collection are from Ain Sefra (Algeria) and were determined as *Sphingonotus rubescens* (Walker, 1870) by Dirsh. The original description does not state where the type material was deposited, and its current whereabouts is unknown. Box V29.

Sphingonotus niloticus Saussure, 1888.

obesus Saussure, 1884: 214-215 [*Heliastus*].

Patris? (Brasilia?). Probably one ♀ (provenance unknown).

One ♀ syntype with labels: "obesus Sauss., Patria?" [handwritten on green paper]; "obesus Sss. type" [handwritten on green paper]; "Heliastus obesus Sauss." [handwritten on green paper]; "Heliastus obesus Sauss, Holotypus, C S C 1966" [handwritten by Carbonell on red card]. Although the provenance was not known, the green paper labels indicate that Saussure thought (correctly) that the species was Neotropical.

Specimen set with wings spread; the tarsi of the left front and right middle legs are lost. Images on OSF. Box V32.

Heliastus obesus Saussure, 1884.

ocelote Saussure, 1861: 398-399 [*Oedipoda*].

Mexico. Unspecified.

One ♀ syntype with labels: "Cordova, t.c." [printed on white card]; "Hippiscus ocelote Sss., type ♀" [handwritten on white paper]; "Hippiscus ocelote Sss., type, Mexiq." [handwritten on green paper]; "Oedipoda (Hippiscus) ocelote Sauss., Holotypus, C S C 1966" [handwritten by Carbonell on red card]; "Type series unspecified: treat as syntype. Hollier 2011" [handwritten on red paper]. Specimen set with wings spread; most of the right antenna is lost, as are all of the legs except the femur of the right hind leg. Images on OSF. Box V4.

Hippiscus ocelote (Saussure, 1861).

orizabae Saussure, 1884: 98 [*Tomonotus*].

Replacement name for *Oedipoda mexicana* Saussure, 1861: 397 which was transferred to *Tomonotus* and so became a secondary junior homonym of *Tomonotus mexicanus* Saussure, 1861: 321. The type material is discussed under the name *O. mexicana* in this catalogue. Box V6.

Leuronotina orizabae (Saussure, 1884).

otomitus Saussure, 1861: 322 [*Tomonotus*].

Mexico orientalis. Unspecified number of ♂.

One ♂ syntype with labels: "Cordova, t.c." [printed on white card]; "Chimaroceph. otomita Sss. ♂ type" [handwritten on white paper]; "Cortoph. [sic] otomita Sauss." [handwritten on green paper]; "Tomonotus otomitus Sauss, Holotypus, C S C 1966" [handwritten by Carbonell on red card]; "GM" [handwritten in pencil on white card]; "Type series unspecified: treat as syntype. Hollier 2011" [handwritten on red paper]. Specimen set with right wings spread and left wings folded; both antennae and all of the legs are lost. Images on OSF. Box V3.

Encoptolophus otomitus (Saussure, 1861).

ovaticeps Saussure, 1888: 165-166 [*Arphia*].

Colorado (Mus. de Genève). Unspecified.

One ♀ syntype with labels: "602 33" [printed on white paper]; "Arphia ovaticeps Sauss." [handwritten on green paper]; "TYPE Otte 1982" [handwritten in pencil on white card]; "Holotypus" [printed on red card]; "Type series unspecified: treat as syntype. Hollier 2011" [handwritten on red paper]. The species name label in the insect box has the locality "Etats-Unis" handwritten in the lower left corner. Specimen set with wings spread; the right antenna and the tarsi of the right hind leg are lost. The type material of *Arphia ovaticeps* was initially identified by Saussure (1884: 68) as *A. tenebrosa* (Scudder, 1872), but later recognised to represent a different species. Box V1.

A junior synonym of *Arphia pseudonietana* (Thomas, 1870).

pardalina Saussure, 1861: 324 [*Oedipoda*].

Mexico. More than one specimen.

Three ♂ and two ♀ syntypes. A ♂ with labels: "Puebla, t.f." [printed on white card]; "Xanthippus pardalinus Sauss." [handwritten on green paper]; "TYPE Otte 1982" [handwritten in pencil on white card]; "Syntypus" [printed on red paper]. Specimen set with wings folded; the left antenna, right middle leg and two tarsal segments of both hind legs are missing. A ♂ with labels: "Mexic." [printed on white card]; "Xanthippus pardalinus Sauss." [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; both antennae, both front legs, both middle legs and the tarsi of the left hind leg are missing. The specimen has been reinforced with a pin through both hind femura and the abdomen. A ♂ with labels: "Orizaba, t.t." [printed on white card]; "Xanthippus pardalinus Sauss." [handwritten on green paper]; "27" handwritten on white paper; "Syntypus" [printed on red paper]. Specimen set with wings spread, most of the left hind wing is lost; both antennae, the tarsi of the left front leg, the right front leg, the left middle leg, two tarsal segments of the left hind leg and the tarsi of the right hind leg are all lost. The specimen has been reinforced with a pin through both hind femura and the abdomen. A ♀ with labels: "Orizaba, t.t." [printed on white card]; "Xanthippus pardalinus Sauss." [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; both antennae, the tibia and tarsi of the right front leg and the tibia and tarsi of the right hind leg are missing. The specimen has been reinforced with a pin through both hind femura and the abdomen. A ♀ with labels: "Xanthippus pardalinus Sauss." [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; both antennae, the right front leg, the left middle leg, the tibia and tarsi of the right middle leg, the tarsi of the left hind leg, the entire right hind leg and the end of the abdomen are lost. The remaining part of the abdomen shows insect feeding damage. The first ♂ specimen, marked as the type by Otte, is the one which corresponds to the measurements in the original description. Otte (1984: 337) stated that the type was not found in the MHNG or the NHMW, but this is clearly a lapse. Images on OSF. Box V5.

A junior synonym of *Xanthippus corallipes* (Haldeman, 1852).

pardalina Saussure, 1884: 162 [*Psinidia*].

Colorado (coll. Brunn. no 12238, 12239). Unspecified number of ♂ and ♀.

The lectotype (designated by Otte, 1984: 325) is in the NHMW. The MHNG collection has one ♀ paralectotype. Box V23.

Metator pardalinus (Saussure, 1884).

pellepidus Saussure, 1884: 144 [*Lactista*].

Yucatan. Unspecified number of ♂ and ♀.

Lectotype ♂ (designated by Otte, 1984: 323) with labels: "Valladolid, Yucatan, Gaumer" [printed on white card]; "Lactista pellepidus Sss, Yucatan ♂, M. H de Sauss." [handwritten on green paper]; "Typus C S C 1966" [handwritten by Carbonell on red card]; "Lectotypus" [printed on red card]. Specimen set with wings spread. Two ♀ paralectotypes with the same data label are also present. Although Carbonell and Otte both considered these specimens to be the types, the style of the data labels suggest that

they were part of the material collected for the preparation of the Godman & Salvin's *Biologia Centrali-Americana* series in the 1890s (Saussure, 1896; Saussure & Pictet, 1897, 1898), while Gaumer only appears to have lived in Yucatan after 1885. It is probable that these specimens are not actually part of the type series and that the lectotype designation is therefore invalid. The MHNG has a ♂ and two ♀ specimens under this name labelled "Guatemala", which may be the real syntypes, Guatemala being rather loosely defined at that time. Images on OSF. Box V19.

Lactista pellepidus Saussure, 1884.

persa Saussure, 1884: 205 [*Sphingonotus*].

Persia, Shahrud, Ordubat (coll. Brunn. no 12660, 14660). Unspecified number of ♂ and more than one ♀ (size variation noted).

No specimens found in the MHNG. The type material was in the collection of Brunner von Wattenwyl when the description was published, but could not be identified amongst the specimens in the NHMW (Bruckner, pers. comm.).

Sphingonotus nebulosus persa Saussure, 1884.

persa Saussure, 1884: 185 [*Thalpomena*].

Persia, Shahrud (coll. Brunn.). Unspecified number of ♂.

One ♂ syntype with labels: "Schahkuh, (Albrus. Perse)" [handwritten on blue card with printed border]; "C. persa Sauss., Perse, Perse" [handwritten on whitish paper]; "Thalpom. persa Sauss." [handwritten on yellow paper]; "Thalpomena persa Sauss" [handwritten on blue paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the right antenna is lost. Box V27.

Pseudocoles persa (Saussure, 1884).

pilosus Saussure, 1884: 201 [*Sphingonotus*].

Persia, Shahrud (coll. Brunn. no 14671). Unspecified number of ♀.

No specimens found in the MHNG. The ♀ type material was in the collection of Brunner von Wattenwyl when the collection was published, but could not be located in the NHMW (Bruckner, pers. comm.).

Sphingonotus pilosus Saussure, 1884.

pistrinaria Saussure, 1884: 173 [*Trimerotropis*].

Texas (Boll). Unspecified number of ♂ and ♀.

Lectotype ♂ (designated by Otte, 1984: 335) with labels: "Texas, Boll., 601 95" [printed on white paper]; "pistrinaria Sss., Texas" [handwritten on green paper]; "Trimer. pistrinaria Sauss." [handwritten on green paper]; "Lectotype sel. by Otte 1982" [handwritten in pencil on whitepaper]; "Lectotypus" [printed on red card]. Specimen set with wings spread. Two ♂ and two ♀ paralectotypes with similar data are also present. Box V25.

Trimerotropis pistrinaria Saussure, 1884.

pulchripennis Saussure, 1884: 143-144 [*Lactista*].

Colombia. Unspecified number of ♂.

Three ♂ syntypes. A ♂ with labels: “COLOMBIE, 603 28” [numerals handwritten and name printed on white paper]; “*L. pulchripennis* Sss., Colombie” [handwritten on green paper]; “*Lactista pulchripennis* Sauss.” [handwritten on green paper]; “Syntypus” [printed on red paper]. Specimen set with wings spread. A ♂ with labels: “COLOMBIE, 603 28” [numerals handwritten and name printed on white paper]; “*Lactista pulchripennis* Sauss.” [handwritten on green paper]; “Syntypus” [printed on red paper]. Specimen set with wings spread. A ♂ with labels: “COLOMBIE, 603 28” [numerals handwritten and name printed on white paper]; “*Lactista pulchripennis* Sauss.” [handwritten on green paper]; “Syntypus” [printed on red paper]. Specimen set with wings spread. Images on OSF. Box V19.

A junior synonym of *Lactista stramineus* (Erichson, 1848).

rebellis Saussure, 1888: 61 [*Conozoa*].

California (coll. Brunn. no 9727). Unspecified number of ♂ and ♀.

No specimens found in the MHNG. There is at least one syntype in the NHMW (Bruckner, pers. comm.).

Conozoa rebellis Saussure, 1888.

rhamses Saussure, 1889: 94-95 [*Leptopternis*].

Egypt. Unspecified.

No specimens found in the MHNG. This species was described from an illustration in Savigny (1817: Orthoptera plate 7, figure 15 (in the description given as plate 6)) and the type material is presumably in the MNHN.

Hyalorrhapis rhamses (Saussure, 1889).

rileyanum Saussure, 1884: 156 [*Derotmema*].

Amer. borealis, Salm County, Idaho (Riley). Unspecified.

One ♂ syntype with labels: “Salmn C’y, Idaho 8-83” [locality printed and numerals handwritten on white card]; “D. Rileyana Sss., Amer. sept.” [handwritten on green paper]; “*Derotmema Rileyana* Sauss.” [handwritten on brown paper]; “*Derotmena cupidinium* Scudd. No. ??” [handwritten on white card with “No.” printed]; “Holotypus” [printed on red card]; “Type series unspecified: treat as syntype. Hollier 2011) [handwritten on red paper]. Specimen set with left wings spread and right wings folded; part of the last tarsal segment of the right middle leg and the entire left hind leg are missing. Box V22.

A junior synonym of *Derotmema haydeni* (Thomas, 1872).

rogenhoferi Saussure, 1888: 62, fig. 4 [*Conozoa*].

Bagdad (Mus. Vindobonense). Unspecified number of ♀.

One ♀ syntype with labels: “*Conozoa Rogenhoferi* Sss., Bagdad” [handwritten on white paper]; “*Conozoa Rogenhoferi* Sauss” [handwritten on blue paper]; “*Cosmozoo Rogenhoferi* Sauss.” [handwritten on pink paper]; “Probable syntype of *C. rogenhoferi* Sauss., 1888, Hollier 2010” [handwritten on red paper]. Specimen set with left wings spread and right wings folded; the left antenna, the tibia and tarsi of the right front leg, the tarsi of the left middle leg, the tibia and tarsi of the right middle leg, the

last tarsal segment of the left hind leg and two tarsal segments of the right hind leg are lost. Box V23.

Mioscirtus wagneri rogenhoferi (Saussure, 1888).

saltator Saussure, 1861: 323 [*Hippopedon*].

Mexico. Unspecified.

One ♀ syntype with labels: "Hippopedon saltator Sss., type ♀, Mexiq." [handwritten on green paper]; "Hippopedon saltator Sauss., Holotypus, C S C 1966" [handwritten by Carbonell on red card]; "Type series unspecified: treat as syntype. Hollier 2011" [handwritten on red paper]. Specimen set with right wings spread and left wings folded; the tarsi of the right front leg, the entire left middle leg and both hind legs are missing. The abdomen shows some insect feeding damage. Images on OSF. Box V4.

Hippopedon saltator Saussure, 1861.

sarasini Saussure, 1884: 114 [*Oedaleus*].

Oceania, Nova Caledonia (Mus. Genavense don. Sarasin) (coll. Brunner). Unspecified number of ♂ and ♀.

The lectotype (designated by Ritchie, 1982: 305) is in the NHRS. The MHNG collection includes one ♂ paralectotype, and a ♀ that is probably a paralectotype although not labelled as such. Box V9.

Oedaleus sarasini (Saussure, 1884).

satrapes Saussure, 1884: 199 [*Sphingonotus*].

Turquestania (Moser); Persia (coll. Brunn. no 14628. 14672). Unspecified number of ♂ and ♀.

One ♀ syntype with labels: "Turkestan, Russe, M. Moser" [handwritten on white paper]; "Sphingonotus satrapes Sauss." [handwritten on yellow paper]; "Sphingonotus satrapes Sauss." [handwritten on blue paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; both antennae, the tarsi of the left front leg, the right front leg and the left hind leg are lost. There is insect feeding-damage to the head and thorax. Box V29.

Sphingonotus satrapes satrapes Saussure, 1884.

savignyi Saussure, 1884: 208 [*Sphingonotus*].

Aegyptus; Nubia, Chartum. Unspecified number of ♂ and ♀.

Two possible ♂ syntypes. A ♂ with labels: "Egypte, 13" [handwritten on white paper]; "Savignyi Sauss., Egypte" [handwritten on pink paper]; "Sphingonotus savignyi Sauss." [handwritten on blue paper]; "Possible syntype of *S. savignyi* Sauss., 1884, Hollier 2010" [handwritten on red paper]. Specimen set with wings spread. A ♂ with labels "Egypte, Naville" [handwritten on white card]; "Sphing savignyi Sauss." [handwritten on pink paper]; "Sphingonotus savignyi Sauss." [handwritten on blue paper]; "Possible syntype of *S. savignyi* Sauss., 1884, Hollier 2010" [handwritten on red paper]. Specimen set with left wings spread and right wings folded; the right antenna is missing. Saussure refers to Savigny (1817: plate 7, figure 13) as the source

of his description but he includes measurements for both sexes, implying that he also had specimens upon which to base it. Box V30.

Sphingonotus savignyi savignyi Saussure, 1884.

savignyi apicalis Saussure, 1884: 208 [*Sphingonotus*].

Turquestania, Persia; Cashmir, Ladak (Schlagintweit). Unspecified.

Two ♂ syntypes. A ♂ with labels: “Coll. Schlagintweit, Ladák. Nro 87” [printed on yellow card with numerals handwritten]; “Savignyi Sss, var. apicalis Sss., Himalaya” [handwritten on yellow paper]; “Sphing. savignyi Sauss.” [handwritten on yellow paper]; “Sphingonotus savignyi Sauss” [handwritten on blue paper]; “Syntypus” [printed on red paper]. Specimen set with wings spread; both antennae, both front legs, both middle legs, the left hind leg and the tarsi of the right hind leg are lost. A ♂ with labels: “Coll. Schlagintweit, Ladák. Nro 27” [printed on yellow card with numerals handwritten]; “Savignyi Sss, var. apicalis Sss., Himalaya” [handwritten on white paper]; “Sphing. savignyi Sauss.” [handwritten on yellow paper]; “Syntypus” [printed on red paper]. Specimen set with wings spread; the left antenna, the tibia and tarsi of the left front leg, the left middle leg and the tibia and tarsi of the right hind leg are lost. This taxon was synonymised with *S. savignyi* by Kirby (1910: 277), and does not appear on OSF. Box V30.

Probably a junior synonym of *Sphingonotus savignyi savignyi* Saussure, 1884

savignyi canariensis Saussure, 1884: 208 [*Sphingonotus*].

Insulae fortunatae. Unspecified number of ♂.

Two ♂ syntypes. A ♂ with labels: “Cap Vert., M. Ed Sarazin” [handwritten on white paper]; “Sphingonotus savignyi Sauss.” [handwritten on blue paper]; “Sayignyi Sauss., var. hesperidium Sss, Cap. Vert.” [handwritten on white paper]; “Sphing. savignyi Sauss.” [handwritten on pink paper]; “PROPERTY MUS. HIST. NAT. GENF” [printed on white card]; “Syntype of *S. canariensis* Sauss., 1884? Hollier, 2010” [handwritten on red paper]. Specimen set with wings spread; the last tarsal segment of the left front leg is missing. A ♂ with labels: “Cap Vert., M. Ed Sarazin” [handwritten on white paper]; “Sphingonotus savignyi Sauss.” [handwritten on blue paper]; “Sphing. savignyi Sauss.” [handwritten on pink paper]; “Syntype of *S. canariensis* Sauss., 1884? Hollier, 2010” [handwritten on red paper]. Specimen was set with wings spread, but the left wings are missing; both antennae, two tarsal segments of the left front leg, two tarsal segments of the left middle leg, the right middle leg, the tarsi of the left hind leg and most of the tibia and the tarsi of the right hind leg are lost. This species was described from ♂ specimens said to be from the Canary Islands in the description. However, Saussure (1888: 84) later wrote that they were actually from the Cap Verde Islands, and that the locality given in the description was doubtful. His words could be taken to mean that he had received more specimens, from Cap Verde, after the description was published which made him doubt the original locality data, in which case these specimens may not be syntypes, and the whereabouts of the type material would be unknown. Box V30.

Sphingonotus canariensis canariensis (Saussure, 1884).

scabra Saussure, 1888: 57 [*Tmetonota*].

Africa meridionalis, Pron. Bon Spei. Unspecified number of ♀.

One ♀ syntype with labels: "Cap b Esp." [printed on pink paper]; "Tmetonota scabra Sss., Cap." [handwritten on red paper]; "Tmetonota scabra Sauss." [handwritten on pink paper]; "Holotypus" [printed on red card]; "Type series unspecified: treat as syntype. Hollier 2011" [handwritten on red paper]. Specimen set with wings spread; most of the left antenna and the right front leg are missing. Box V24.

Tmetonota scabra Saussure, 1888.

scabriusculus lucasii Saussure, 1888: 83-84 [*Sphingonotus*].

Africa sept., Algeria; Tunisia. Unspecified number of ♂ and ♀.

One ♂ and one ♀ syntype. A ♂ with labels: "LALLA- MARGHRNIA, 17.7.80, Finot" [locality and date printed, "Finot" handwritten on pale blue paper]; "Sphingonotus lucasii Sauss." [handwritten on pink paper]; "Sphingonotus lucasii Sauss." [handwritten on blue paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the tarsi of the left middle leg are missing. A ♀ with labels: "Oran" [handwritten on white paper]; "Sphingonotus lucasii Sauss." [handwritten on pink paper]; "Sphingonotus lucasii Sauss." [handwritten on blue paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the left antenna, the last tarsal segment of the left front leg, the tibia and tarsi of the right front leg, the tarsi of the right middle leg and the right hind leg are lost. Box V31.

Sphingonotus lucasii Saussure, 1888.

seriatus Saussure, 1884: 215-216 [*Pycnostictus*].

Nova Hollandia septentr., Cap Greenville (Godeffroy no 8007); Queensland. More than one ♀ (more than one locality).

One ♀ syntype with labels: "8007" [handwritten on white paper]; "8007. Urnissa n. sp. Bowen, M.G." [handwritten on white paper]; "Th. seriatus Sauss., Austral merid." [handwritten on lilac paper]; "Prenoth. seriatus Sauss." [handwritten on lilac paper]; "Pycnostictus seriatus Sauss." [handwritten on lilac paper]; "Holotypus" [printed on red card]; "Syntype, not holotype! Hollier 2011" [handwritten on red paper]. Specimen set with wings spread; the left antenna, the last tarsal segment of the left middle leg, the right middle leg and both hind legs are lost. The abdomen has been repaired with glue. Box V33.

Pycnostictus seriatus Saussure, 1884.

spurcata Saussure, 1884: 137 [*Dissosteira*].

Amer. boreal., California. Unspecified number of ♀.

One ♀ syntype with labels: "Calif a." [handwritten on white card]; "spurcata Sauss, Californie" [handwritten on green paper]; "Dissosteira spurcata Sauss." [handwritten on brown paper]; "Holotypus" [printed on red paper]; "Type series unspecified: treat as syntype. Hollier 2011" [handwritten on red paper]. Specimen set with wings spread; the tibia and tarsi of the left middle leg and the tibia and tarsi of the left hind leg are missing. The front and top of the head have been lost due to insect feeding damage. Box V17.

Dissosteira spurcata Saussure, 1884.

sumichrasti Saussure, 1861: 324 [*Oedipoda*].

Mexico calida. Unspecified.

Three ♂ and five ♀ syntypes. A ♂ with labels: "Mirador" [printed on white card]; "Sumichrasti, type ♂ Sss" [handwritten on green paper]; "Heliastus sumichrasti Sauss." [handwritten on green paper]; "Heliastus sumichrasti Sauss." [handwritten on green paper]; "Oedipoda sumichrasti Sauss., Typus C S Carbonell 1970" [handwritten by Carbonell on red card]. Specimen set with right wings spread and left wings folded; the left antenna, the last tarsal segment of both middle legs and both hind legs are lost. There is insect feeding damage at the base of the abdomen. A ♂ with labels: "Mirador" [printed on white card]; "Heliastus sumichrasti Sauss." [handwritten on green paper]; "Heliastus sumichrasti Sauss." [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with right wings spread and left wings folded; the right antenna and left hind leg are lost. A ♂ with labels: "Mexique, Sumichrast" [handwritten on white paper]; "Heliastus sumichrasti Sauss." [handwritten on green paper]; "Heliastus sumichrasti Sauss." [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded; the last tarsal segment of the right front leg, part of the tibia and the tarsi of the right middle leg and the right hind leg are missing. A ♀ with labels: "Tampico, t.c." [printed on white card]; "Oedip. sumichrasti, ♀ Sss., r28" [handwritten on white paper]; "Sumichrasti, type ♀ Sss" [handwritten on green paper]; "Heliastus sumichrasti Sauss." [handwritten on green paper]; "Oedipoda sumichrasti Sauss., Typus C S Carbonell 1970" [handwritten by Carbonell on red card]. Specimen set with right wings spread and left wings folded. A ♀ with labels: "Orizaba, Sumichrast" [handwritten on white paper]; "Heliastus sumichrasti Sauss." [handwritten on green paper]; "Heliastus sumichrasti Sauss." [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the tarsi of the right middle leg are lost. A ♀ with labels: "Orizaba, Sumichrast" [handwritten on white paper]; "25" [handwritten on white paper]; "Heliastus sumichrasti Sauss." [handwritten on green paper]; "Heliastus sumichrasti Sauss." [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with wings roughly folded; the left antenna and right hind leg are lost. A ♀ with labels: "Cordova, M. H de S." [handwritten on white paper]; "Heliastus sumichrasti Sauss." [handwritten on green paper]; "Heliastus sumichrasti Sauss." [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded; both antennae are missing. The left hind leg is detached and secured through the femur on the original pin. A ♀ with labels: "Potrero, Sumichrast" [handwritten on white paper]; "Heliastus sumichrasti Sauss." [handwritten on green paper]; "Heliastus sumichrasti Sauss." [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen mounted ventral side up, with wings folded; the tarsi of the right front leg are missing. There are a number of other specimens which may also be syntypes. The neotype in the ANSP (designated by Otte 1984: 321) is invalid because the type material is extant. Images on OSF. Box V32.

Heliastus sumichrasti (Saussure, 1861).

terrosa Saussure, 1888: 57-58 [*Tmetonota*].

Africa meridionalis, Pron. B. Sp. Unspecified number of ♀.

One ♀ syntype with labels: "Cap b Esp., Peringuey" [printed on pink paper]; "Tmetonota terrosa Sss, Cap" [handwritten on red paper]; "Tmetonota terrosa Sauss." [handwritten on pink paper]; "Holotypus" [printed on red card]; "Type series unspecified: treat as syntype.Hollier 2011" [handwritten on red paper]. Specimen set with wings spread; the tarsi of the right front leg are missing. Box V24.

Tmetonota terrosa Saussure, 1888.

texensis Saussure, 1884: 140 [*Dissosteira*].

Texas. Unspecified number of ♂ and ♀.

Five ♂ and two ♀ syntypes. A ♂ with labels: "Texas Boll., 601 95" [printed on white paper]; "Dissosteira texensis Sauss." [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread. A ♂ with labels: "Texas Boll., 601 95" [printed on white paper]; "Dissosteira texensis Sauss." [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the left antenna and the last tarsal segment of the right hind leg are missing. A ♂ with labels: "Texas Boll., 601 95" [printed on white paper]; "Texensis Sauss., Texas" [handwritten on green paper]; "Dissosteira texensis Sauss." [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded; the tarsi of the right middle leg are missing. A ♂ with labels: "Texas Boll., 601 95" [printed on white paper]; "Dissosteira texensis Sauss." [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded. A ♂ with labels: "Texas Boll., 601 95" [printed on white paper]; "Dissosteira texensis Sauss." [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded; the right antenna and left hind leg are lost. A ♀ with labels: "Texas Boll., 601 95" [printed on white paper]; "Dissosteira texensis Sauss." [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded; most of the left antenna is lost. A ♀ with labels: "Texas Boll., 601 95" [printed on white paper]; "Dissosteira texensis Sauss." [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded. Box V18.

A junior synonym of *Spharagemon equale* (Say, 1825).

thalassinus Saussure, 1884: 177-178 [*Circotettix*].

Nevada (coll. Brunn.). Unspecified number of ♂.

No specimens found in the MHNG. There is a ♂ syntype in the NHMW (Rentz & Weissman, 1980: 228), having been in the collection of Brunner von Wattenwyl when the description was published. The reference on OSF to a holotype in the BMNH appears to be an error because the species is not mentioned on the BMNH online database.

A junior synonym of *Circotettix undulatus* (Thomas, 1872).

tolteca Saussure, 1861: 397 [*Oedipoda*].

Mexico. Unspecified.

Lectotype ♀ (designated by Hebard, 1932: 260) with labels: "Oaxaca" [handwritten on white card]; "tolteca Sss, type" [handwritten on green paper]; "Trimerot. toltecus Sauss." [handwritten on green paper]; "Oedipoda tolteca Sauss., Holotypus, C

S C. 1966" [handwritten by Carbonell on red card]; "Lectotypus" [printed on red card]. Specimen set with left wings roughly spread and right wings folded; the last tarsal segment of the left front leg and the tarsi of the right middle leg are missing. The hind femora and abdomen have a hole left by a pin placed transversally, perhaps to aid setting. Images on OSF. Box V24.

Trimerotropis tolteca (Saussure, 1861).

toltecus Saussure, 1884: 91-2 [*Xanthippus*].

Mexico alta. Unspecified number of ♂ and ♀.

Two ♀ syntypes. A ♀ with labels: "toltecus Sss." [handwritten on green paper]; "Xanthippus toltecus Sauss." [handwritten on green paper]; "Syntypus" [printed on red paper]. The species name label in the insect box has the locality "Mexique" handwritten in the lower left corner. Specimen set with left wings spread and right wings folded; the right antenna, the tibia and tarsi of the right front leg, both middle legs, two tarsal segments of the left hind leg and the tibia and tarsi of the right hind leg are lost. There is considerable insect feeding damage to the abdomen. A ♀ with labels: "Mexico City, Schumann" (top) and "21.6.88" (bottom) [locality printed, collector and date hand written on white card]; "Xanthippus toltecus Sauss" [handwritten on green paper]; "Syntype of X. toltecus?" [handwritten on red paper]. Specimen set with wings folded; both antennae are lost. The second specimen was regarded as a syntype by Otte (1984: 338) but the date suggests that it was captured after the description was published, in which case it is not part of the type series. Box V5.

A junior synonym of *Xanthippus corallipes* (Haldeman, 1852).

tuberculosa Saussure, 1888: 56 [*Tmetonota*].

Africa meridionalis. Unspecified number of ♀.

One ♀ syntype with labels: "PERINGUEY, CAP B E" [printed on pink paper]; "Tmetonota tuberculosa Sauss." [handwritten on pink paper]; "Tmetonota tuberculosa Sauss." [handwritten on pink paper]; "Holotypus" [printed on red card]; "Type series unspecified: treat as syntype. Hollier 2011" [handwritten on red paper]. Specimen set with right wings spread and left wings folded; the left antenna and both front legs are lost. Box V24.

A junior synonym of *Tmetonota abrupta* (Walker, 1870).

venezuelae Saussure, 1884: 213-214 [*Heliastus*].

America meridionalis; Venezuela, Colombia, Panama. Unspecified number of ♂ and ♀.

Three ♂ and five ♀ syntypes. A ♂ with labels: "COLOMBIE, 603 28" [locality printed and numerals handwritten on white paper]; "Heliastus venezuelae Sauss." [handwritten on green paper]; "Heliastus venezuelae Sauss." [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread. A ♂ with labels: "COLOMBIE, 603 28" [locality printed and numerals handwritten on white paper]; "Heliastus venezuelae Sauss." [handwritten on green paper]; "Heliastus venezuelae Sauss." [handwritten on green paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the left hind leg is missing. A ♂ with labels:

“COLOMBIE, 603 28” [locality printed and numerals handwritten on white paper]; “*Heliastus venezuelae* Sauss.” [handwritten on green paper]; “*Heliastus venezuelae* Sauss.” [handwritten on green paper]; “*Syntypus*” [printed on red paper]. Specimen set with wings folded. A ♀ with labels: “COLOMBIE, 603 28” [locality printed and numerals handwritten on white paper]; “*Heliastus venezuelae* Sauss.” [handwritten on green paper]; “*Heliastus venezuelae* Sauss.” [handwritten on green paper]; “*Syntypus*” [printed on red paper]. Specimen set with wings spread; the tarsi of the left middle leg, and the left hind leg are missing. A ♀ with labels: “Colombie? Rùhe” [handwritten on white paper]; “*Heliastus venezuelae* Sauss.” [handwritten on green paper]; “*Heliastus venezuelae* Sauss.” [handwritten on green paper]; “*Syntypus*” [printed on red paper]. Specimen set with wings spread; the right antenna, the tarsi of the right front leg and the last tarsal segment of the left middle leg are lost. A ♀ with labels: “COLOMBIE, 603 28” [locality printed and numerals handwritten on white paper]; “*Heliastus venezuelae* Sauss.” [handwritten on green paper]; “*Heliastus venezuelae* Sauss.” [handwritten on green paper]; “*Syntypus*” [printed on red paper]. Specimen set with wings spread; both antennae are missing. The right hind leg is detached and secured on the original pin. A ♀ with labels: “COLOMBIE, 603 28” [locality printed and numerals handwritten on white paper]; “*Heliastus venezuelae* Sauss.” [handwritten on green paper]; “*Heliastus venezuelae* Sauss.” [handwritten on green paper]; “*Syntypus*” [printed on red paper]. Specimen set with wings folded; both antennae, the left front leg, the tarsi of the right middle leg and two tarsal segments of the right hind leg are lost. A ♀ with labels: “COLOMBIE, 603 28” [locality printed and numerals handwritten on white paper]; “Venezuelae Sauss., Colombie” [handwritten on green paper]; “*Heliastus venezuelae* Sauss.” [handwritten on green paper]; “*Heliastus venezuelae* Sauss.” [handwritten on green paper]; “*Syntypus*” [printed on red paper]. Specimen set with wings folded; the tarsi of the right middle leg are lost. Carbonell did not label these specimens as types, but he considers them to belong to the type series (Carbonell pers. comm.). The whereabouts of the specimens from Venezuela and Panama are unknown. Images on OSF. Box V32.

A junior synonym of *Heliastus sumichrasti* (Saussure, 1861).

verrucosa Saussure, 1888: 56-57 [*Tmetonota*].

Africa meridionalis, Promont. B. Sp. Unspecified number of ♂ and two ♀.

One ♂ and two ♀ syntypes. A ♂ with labels: “PERINGUEY, CAP B E” [printed on pink paper]; “*Tmetonota verrucosa* Sss.” [handwritten on pink paper]; “*Tmetonota verrucosa* Sauss.” [handwritten on pink paper]; “*Syntypus*” [printed on red paper]. Specimen set with right wings spread and left wings folded; the tarsi of both front legs are lost. A ♀ with labels: “CAP” [printed on pink paper]; “*Tmetonota verrucosa* Sss., Cap. ♀” [handwritten on red paper]; “*Tmetonota verrucosa* Sauss.” [handwritten on pink paper]; “*Syntypus*” [printed on red paper]. Specimen set with left wings spread and right wings folded; the right antenna is lost. A ♀ with labels: “Cap b Esp., Brady” [printed on pink paper]; “*Tmetonota verrucosa* Sss.” [handwritten on pink paper]; “*Tmetonota verrucosa* Sauss.” [handwritten on pink paper]; “*Syntypus*” [printed on red paper]. Specimen set with left wings spread and right wings folded; most of both antennae, the left front leg, the tarsi of the right front leg and the right

middle leg are lost. The right hind leg is detached and secured through the femur on the original pin. The thorax and abdomen are severely damaged by insect feeding. Box V24.

Tmetonota verrucosa Saussure, 1888.

verticalis Saussure, 1884: 111-112 [*Oedaleus*].

Africa meridionalis, Natal. Unspecified number of ♂ and ♀.

Lectotype ♀ (designated by Ritchie 1982: 275) with labels: "Natal" [handwritten on white paper]; "verticalis Sss., Natal" [handwritten on white paper]; "Gastrim. verticalis Sauss." [handwritten on pink paper]; "Lectotypus" [printed on white card disk with purple margin]; "Gastrimargus verticalis, Saussure, 1884, J. M. Ritchie det 1976, LECTOTYPE ♀" [typewritten on white card with "J. M. Ritchie det. 19" printed, and with "LECTOTYPE ♀" in red]. Specimen set with wings spread; both antennae, the tarsi of the left front leg, the tarsi of the left hind leg and the last tarsal segment of the right hind leg are lost. The abdomen has been eviscerated and stuffed. A second ♀, labelled as a paralectotype, is present. Box V7.

Gastrimargus verticalis verticalis (Saussure, 1884).

vitellinus Saussure, 1884: 94 [*Xanthippus*].

Amer. bor., Nevada (coll. Brunner no 12569). Unspecified number of ♂.

No specimens found in the MHNG. The type material is in the NHMW (Bruckner, pers. comm.).

A junior synonym of *Agymnastus ingens* (Scudder, 1877).

vitripennis Saussure, 1888: 38-39 [*Oedaleus*].

Africa meridionalis, Promont. B. Sp. Unspecified number of ♀.

One ♀ syntype with labels: "Delalande, Afrique" [handwritten on a disk of whitish paper]; "Pachytilus crassicolis Bl., Cap de b. Esp." [handwritten on white paper]; "vitripennis Sss., Cap B. Sp. MHS" [handwritten on pink paper]; "Gastrim. vitripennis Sauss." [handwritten on pink paper]; "Holotypus" [printed on a white card disk with red margin]; "*Gastrimargus vitripennis*, Saussure, 1888, J. M. Ritchie det. 1976, HOLOTYPE ♀" [typewritten on white card with "J. M. Ritchie det. 19" printed and with "HOLOTYPE ♀" in red]; "Type series unspecified: treat as syntype. Hollier 2011" [handwritten on red paper]. Specimen set with wings spread; both antennae, the left middle leg, the tibia and tarsi of the right middle leg and the last tarsal segment of the right hind leg are lost, as is most of the abdomen, which had been eviscerated and stuffed. Ritchie (1982: 283) refers to this specimen as the holotype without discussion. Box V7.

Gastrimargus determinatus vitripennis (Saussure, 1888).

zapotecus Saussure, 1884: 91 [*Xanthippus*].

Ager mexicanus. Unspecified number of ♀.

One ♀ syntype with labels: "Puebla, t. f." [printed on white card]; "zapotecus Ss., M.H.S., Mexiq." [handwritten on green paper]; "Xanthippus zapotecus Sauss." [handwritten on green paper]; "Holotypus" [printed on red card]; "Type series un-

specified: treat as syntype. Hollier 2011" [handwritten on red paper]. Specimen set with wings folded; the left antenna, right front leg, left middle leg and the last tarsal segment of the right middle leg are lost. The specimen has been reinforced by placing a pin laterally through both hind femora and the abdomen. Box V5.

A junior synonym of *Xanthippus corallipes* (Haldeman, 1852).

zebrata Saussure, 1884: 126 [*Dittopternis*].

India orientali. Unspecified number of ♂ and ♀.

Twelve ♂ and six ♀ syntypes. A ♂ with labels: "INDES OR." [printed on a strip of white paper]; "Ditopter. [sic] zebrata Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the right antenna and the last tarsal segment of the left hind leg are lost. A ♂ with labels: "INDES OR." [printed on a strip of white paper]; "Ditopt. zebrata Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the last tarsal segment of the left hind leg is lost. A ♂ with labels: "Ceyl" [printed on white card]; "Ditopter. [sic] zebrata Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the left antenna and left front leg are missing. A ♂ with labels: "INDES OR." [printed on a strip of white paper]; "Ditopt. [sic] zebrata Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the last tarsal segment of the right middle leg and two tarsal segments of the left hind leg are lost. A ♂ with labels: "INDES OR." [printed on a strip of white paper]; "Ditopt. [sic] zebrata Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the last tarsal segment of the right middle leg is missing. A ♂ with labels: "INDES OR." [printed on a strip of white paper]; "Ditopt. [sic] zebrata Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; the last tarsal segment of the left middle leg is missing. A ♂ with labels: "INDES OR." [printed on a strip of white paper]; "Ditopter. [sic] zebrata Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded; the tarsi of the left hind leg are lost. A ♂ with labels: "INDES OR." [printed on a strip of white paper]; "Ditopt. [sic] zebrata Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded; the last tarsal segment of the right hind leg is missing. A ♂ with labels: "INDES OR." [printed on a strip of white paper]; "Ditopt. [sic] zebrata Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded. A ♂ with labels: "INDES OR." [printed on a strip of white paper]; "Ditopt. [sic] zebrata Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded; the left antenna is lost. A ♂ with labels: "INDES OR." [printed on a strip of white paper]; "Ditopt. [sic] zebrata Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded; two tarsal segments of the left hind leg are missing. A ♂ with labels: "INDES OR." [printed on a strip of white paper]; "Trilophidia St. n. sp., 16 Oedip." [handwritten on a strip of whitish paper]; "Syntypus" [printed on red paper]. Specimen set with wings folded. A ♀ with labels: "INDES OR." [printed on a strip of white paper]; "Ditopter. [sic] zebrata Sauss." [handwritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with wings spread; two

tarsal segments of the left middle leg and two tarsal segments of the right hind leg are missing. A ♀ with labels: “Ditopt. [sic] zebrata Sauss.” [handwritten on yellow paper]; “Syntypus” [printed on red paper]. Specimen set with wings spread. A ♀ with labels: “Ceyl” [printed on white card]; “Ditopter. [sic] zebrata Sauss.” [handwritten on yellow paper]; “Syntypus” [printed on red paper]. Specimen set with wings folded; both antennae and the tarsi of both hind legs are missing. A ♀ with labels: “INDES OR.” [printed on a strip of white paper]; “Ditopt. [sic] zebrata Sauss.” [handwritten on yellow paper]; “Syntypus” [printed on red paper]. Specimen set with wings folded; the left antenna is missing. A ♀ with labels: “INDES OR.” [printed on a strip of white paper]; “Ditopt. [sic] zebrata Sauss.” [handwritten on yellow paper]; “Syntypus” [printed on red paper]. Specimen set with wings folded. A ♀ with labels: “INDES OR.” [printed on a strip of white paper]; “Ditopt. [sic] zebrata Sauss.” [handwritten on yellow paper]; “Syntypus” [printed on red paper]. Specimen set with wings folded. Two juveniles present may also be considered syntypes. Box V15.

Ditopternis zebrata Saussure, 1884.

zimmermanni Saussure, 1861: 320-321 [*Tomonotus*].

Carolina. Unspecified.

One ♂ and one ♀ syntype. A ♂ with labels: “Carol. S.” [printed on white card]; “zimmermanni Sss. type ♂” [handwritten on green paper]; “Chartoph. zimmermanni Sauss.” [handwritten on green paper]; “Syntypus” [printed on red paper]. Specimen set with left wings spread and right wings folded; the left antenna and the tarsi of the right hind leg are missing. A ♀ with labels: “Carol. S.” [printed on white card]; “zimmermanni Sss. type ♀” [handwritten on green paper]; “Chartoph. zimmermanni Sauss.” [handwritten on green paper]; “Syntypus” [printed on red paper]. Specimen set with left wings spread and right wings folded; both antennae, the right hind leg and the last tarsal segment of the left hind leg are lost. Box V3.

A junior synonym of *Chortophaga viridifasciata* (De Geer, 1773).

Unavailable names.

Some other names have been ascribed to Saussure in the literature.

Oedalus nigrocincta Saussure, 1884: 148 is regarded as a junior synonym of *Oedipoda fuscocincta fuscocincta* Lucas, 1849, but it is actually a lapse; species 2 in the key is referred to as “*nigrocincta* L.”, but in the text species 2 is correctly called “*fuscocincta* Lucas”.

The name *Sphingonotus hesperidium* Saussure 1888: 78 is considered a junior synonym of *Neosphingonotus canariensis* (Saussure, 1884) but it is actually a lapse, the former having been used erroneously Saussure’s key to species though not in the subsequent text. This lapse is corrected in the errata (Saussure, 1888: 175).

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REVUE SUISSE DE ZOOLOGIE

Tome 119 — Fascicule 2

	Pages
HOLLIER, J. & HEADS, S. W. An annotated list of the Orthoptera (Insecta) species described by Henri de Saussure, with an account of the primary type specimens housed in the Muséum d'histoire naturelle de Genève, Part 1: The Tridactyloidea (Caelifera)	149-160
LIENHARD, C. A new species of <i>Austropsocus</i> (Psocodea: 'Psocoptera': Pseudocaeciliidae) with a peculiar forewing venation from New Caledonia	161-167
TANASEVITCH, A. V. & STENCHLY, K. On linyphiid spiders from Sulawesi, Indonesia (Arachnida, Araneae)	169-180
SLUYS, R. A new, sibling species of cave flatworm from Switzerland (Platyhelminthes, Tricladida, Dendrocoelidae)	181-188
GERMANN, C. A new eyeless species of <i>Howdeniola</i> Osella, 1980 from Ecuador (Coleoptera, Curculionidae)	189-193
SABELLA, G., BRACHAT, V. & KURBATOV, S. A. New species of <i>Tychus</i> from Greece and Turkey (Coleoptera, Staphylinidae, Pselaphinae) . .	195-214
HOLLIER, J. An annotated list of the Orthoptera (Insecta) species described by Henri de Saussure, with an account of the primary type material housed in the Muséum d'histoire naturelle de Genève, Part 2: The Acrididae: Oedipodinae	215-260

REVUE SUISSE DE ZOOLOGIE

Volume 119 — Number 2

Pages

HOLLIER, J. & HEADS, S. W. An annotated list of the Orthoptera (Insecta) species described by Henri de Saussure, with an account of the primary type specimens housed in the Muséum d'histoire naturelle de Genève, Part 1: The Tridactyloidea (Caelifera)	149-160
LIENHARD, C. A new species of <i>Austropsocus</i> (Psocodea: 'Psocoptera': Pseudocaeciliidae) with a peculiar forewing venation from New Caledonia	161-167
TANASEVITCH, A. V. & STENCHLY, K. On linyphiid spiders from Sulawesi, Indonesia (Arachnida, Araneae)	169-180
SLUYS, R. A new, sibling species of cave flatworm from Switzerland (Platyhelminthes, Tricladida, Dendrocoelidae)	181-188
GERMANN, C. A new eyeless species of <i>Howdeniola</i> Osella, 1980 from Ecuador (Coleoptera, Curculionidae)	189-193
SABELLA, G., BRACHAT, V. & KURBATOV, S. A. New species of <i>Tychus</i> from Greece and Turkey (Coleoptera, Staphylinidae, Pselaphinae) . .	195-214
HOLLIER, J. An annotated list of the Orthoptera (Insecta) species described by Henri de Saussure, with an account of the primary type material housed in the Muséum d'histoire naturelle de Genève, Part 2: The Acrididae: Oedipodinae	215-260

Indexed in CURRENT CONTENTS, SCIENCE CITATION INDEX

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