

Heteropodinae: Transfers and Synonymies (Arachnida: Araneae: Sparassidae)

Peter Jäger

Institut für Zoologie, Johannes Gutenberg-Universität, Saarstraße 21, 55099 Mainz, Germany

E-Mail: jaegp000@mail.uni-mainz.de

Abstract — New taxonomical and systematical results concerning the subfamily Heteropodinae are presented. The following new synonymies are recognized: *Adrastis* Simon 1880, *Panaretus* Simon 1880, *Parhedrus* Simon 1887 are junior synonyms of *Heteropoda* Latreille 1804. *Adrastis atomaria* Simon 1880 = *Heteropoda boiei* (Doleschall 1859); *Parhedrus fasciatus* Reimoser 1927 = *Heteropoda ocyalina* (Simon 1887); *Heteropoda holzi* Strand 1907, *Tortula gloriosa* Simon 1880, *Tortula simoni* Karsch 1884, *Holconia beccarii* Thorell 1890, *Isopeda beccarii malangana* Strand 1907 = *Heteropoda lunula* (Doleschall 1857); *Olios freycineti* Walckenaer 1837, *Olios albifrons* Lucas 1852, *Helicopis maderiana* Thorell 1875, *Palystes ledleyi* Hogg 1922, *Heteropoda venatoria pluridentata* Hogg 1914 = *Heteropoda venatoria* (Linnaeus 1767); *Spariolenus petricola* Gravely 1931 = *Spariolenus tigris* Simon 1880. The following taxa are transferred from *Heteropoda* (*Torania*) to *Barylestis*: *B. fagei* (Lessert 1929), *B. montandoni* (Lessert 1929), *B. occidentalis* (Simon 1887), *B. scutatus* (Pocock 1903) and *B. variatus* (Pocock 1899). The following taxa are transferred from *Adrastis* to *Heteropoda*: *H. lashbrookii* (Hogg 1922), *H. murina* (Pocock 1897), *H. planiceps* (Pocock 1897) and *H. spinipes* (Pocock 1897). The following taxa are transferred from *Panaretus* to *Heteropoda*: *H. borneensis* (Thorell 1890), *H. chelata* (Strand 1911), *H. chelata vittichelis* (Strand 1911), *H. ignichelis* (Simon 1880), *H. javana* (Simon 1880) and *H. nirounensis* (Simon 1903). The following species is transferred from *Parhedrus* to *Heteropoda*: *H. ocyalina* (Simon 1887). The following taxa are transferred from *Torania* to *Heteropoda*: *H. armillata* (Thorell 1887) and *H. striatipes* (Leardi 1901). *Heteropoda lunula* (Doleschall 1857) is removed from the synonymy of *Heteropoda thoracica* (C.L. Koch 1845). *Heteropoda strandi* new name is proposed (*Heteropoda panaretiformis* preoccupied by Strand 1906). The following species formerly attributed as subspecies to *Heteropoda venatoria* are elevated to species rank: *H. bonthainensis* Merian 1911, *H. flavocephala* Merian 1911, *H. luwuensis* Merian 1911, *H. minahassae* Merian 1911, *H. montana* Merian 1911 and *H. striata* Merian 1911. The genus *Hoedillus* Simon 1898 with its type species *Hoedillus sexpunctatus* Simon 1898 is transferred to the Zoridae. The following species is transferred from *Adrastis* to *Pandercetes*: *P. nigrogularis* (Simon 1897). The following taxa are transferred from *Heteropoda* to *Pseudopoda*: *P. akashi* (Sethi & Tikader 1988) and *P. lutea* (Thorell 1895). The following species is transferred from *Heteropoda* to *Spariolenus*: *S. minusculus* (Reimoser 1934). Lectotypes and paralectotypes of the following species are designated for reasons of stability: *Heteropoda borneensis* (Thorell 1890), *Olios freycineti* Walckenaer 1837, *Palystes ledleyi* Hogg 1922 and *Spariolenus minusculus* (Reimoser 1934). The following species are recorded for the particular countries for the first time: *Barylestis occidentalis* (Simon 1887) for Sudan, *B. montandoni* (Lessert 1929) for Uganda, *B. fagei* (Lessert 1929) for Ruanda, *Heteropoda javana* (Simon 1880) for Sumatra, *H. boiei* (Doleschall 1859) for Malaysia and *H. lunula* (Doleschall 1857) for Borneo. If available, genitalia and important somatical characters of involved species are illustrated.

Key words — Sparassidae, Heteropodinae, taxonomy, transfers, synonymies, Asia, Africa

Introduction

Sparassidae are the eighth largest spider family with 922 species worldwide (Platnick 2001). In almost all other families of this or a larger scale recent taxonomical and systematical revisions were done and published (e.g. Salticidae, Linyphiidae, Gnaphosidae). Sparassidae was neglected except for the Australian territory, where Davies and Hirst revised in various papers the genera *Heteropoda*, *Yiinthei* and most genera of the subfamily Deleninae. For other taxa and other continents no recent revisions are available.

In the course of a revision of some heteropodine genera (Jäger 1999, 2000, 2001a), I have examined type material in various European museums. Some results concerning the subfamily Heteropodinae could not be included in those former publications and will be presented here.

Material and Methods

Diagnoses are given for species where type specimens were examined. Measurements are listed, if available. All measurements are given in millimeters. The following genital characters are considered in the diagnoses: males -

arising point of embolus and conductor, shape of spermduct, RTA and cymbium; females - shape of epigyneal field, absence or presence and shape of anterior bands of epigyneal field, visibility and shape of median septum, shape and course of internal duct system. Additionally to the listed characters, a median field of the epigyne is recognized in female *Pseudopoda* species (compare Jäger 2001a), which is outlined by the anterior margins of the lateral lobes.

Abbreviations used. OS - opisthosoma, PJ - consecutive number of Sparassidae examined by Peter Jäger, PS - prosoma, RTA - retrolateral apophysis, TL - total length

Collections and curators. FMKB - Forschungsinstitut Museum König, Bonn (Germany; Dr. T. Wagner), HLMD - Hessisches Landesmuseum, Darmstadt (Germany; Dr. U. Joger), MCSN - Museo Civico di Storia Naturale, Genua (Italy; Dr. G. Doria), MHNG - Musée d'Histoire Naturelle, Geneve (Switzerland; Dr. P. Schwendinger), MNCN - Museo Nacional de Ciencias Naturales, Madrid (Spain; M. Villena), MNHN - Musée National d'Histoire Naturelle, Paris (France; Dr. C. Rollard) (the double numbers, listed in the text, represent 1. the number of the jar and 2. the number of the Simon collection), NCZS - National Collection of Zoological Survey of India, Calcutta (India), NHM - The Natural History Museum, London (Great Britain; P. Hillyard), NHMB - Naturhistorisches Museum, Basel (Switzerland; Dr. A. Hänggi), NHMW - Naturhistorisches Museum Wien (Austria; Dr. J. Gruber), SMF - Senckenberg-Museum, Frankfurt (Germany; Dr. M. Grasshoff), ÜSM - Überseemuseum Bremen (Germany; Dr. H. Riemann), ZMB - Zoologisches Museum, Berlin (Germany; Dr. J. Dunlop), ZMUC - Zoological Museum of the University Copenhagen (Denmark; Dr. N. Scharff), ZMUH - Zoological Museum of the University Halle (Germany; Dr. P. Bliss), ZSIC - National Collection of the Zoological Survey Calcutta (India), ZSM - Zoologische Staatssammlung, München (Germany; Dr. M. Baehr).

Systematics

Family Sparassidae Bertkau 1872

Subfamily Heteropodinae Thorell 1873

The subfamily Heteropodinae was recognized as a subgroup of the family Sparassidae for the first time by Simon (1897b; sub Heteropodeae). He diagnosed this subfamily only by characters of the eyes (arrangement, size etc.) and included nine genera: *Panaretus*, *Heteropoda*, *Ramnes*, *Prusias*, *Parhedrus*, *Spariolenus*, *Pandercetes*, *Adrastis* and *Pediana*. *Pediana* is an Australian endemic and belongs clearly to the Deleninae (Hirst 1989b, 1995, 1997). *Prusias* and *Ramnes* are genera with four Central and South American species included. *Ramnes* was synonymized with *Prusias* by Simon (1903d). Type species of both genera in the Natural History Museum, London, were examined. From somatical and genital characters (female of *Prusias*

nugalis), it is clear that both species do not belong to the Heteropodinae. Their systematic position remains unclear. Simon (1898) added one more genus to his 'Heteropodeae': *Hoedillus*, with one species included, *H. sexpunctatus*. For its systematic position see text below.

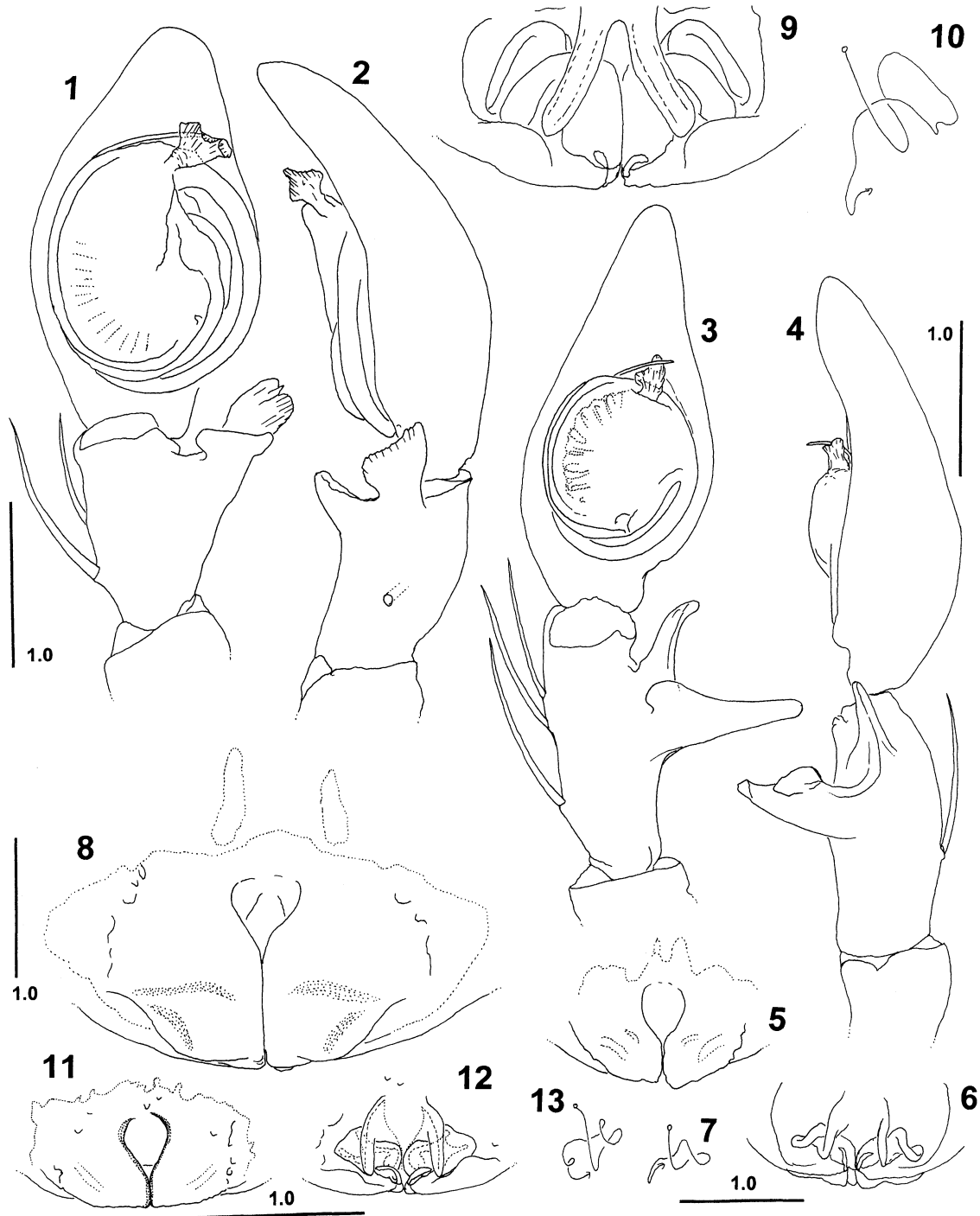
Järvi (1912) based his classifications mainly on the female genital characters and distinguished within his Heteropodeae two divisions: the 'Toraniaeformes' (*Torania*, *Damastes*) and the 'Heteropodeae verae' (*Heteropoda*, *Pandercetes*, *Pelmopoda*; probably: *Panaretus*, *Parhedrus*, *Adrastis*, *Anaptomecus*, *Spariolenus*; hardly: *Ramnes*). *Pelmopoda* spp. show convergent genital characters as *Pandercetes* and belongs to the Sparassinae. Its synonymy with *Olios* (Roewer 1954b: 1619) remains questionable. The type species *Anaptomecus longiventris* was described from one immature (Ecuador, type in MNHN Paris examined) and belongs to a group, which could be related to the Heteropodinae, but which are distinctly separated from these by several characters (different eye arrangement, no long and curved teeth at female palpal claw, different ground pattern in genitalia). The Madagascar-Seychellen endemic genus *Damastes* does not belong to the Heteropodinae (different eye arrangement, different cheliceral dentition). Its systematic position within the family remains unclear. All other genera show synapomorphic characters of the Heteropodinae (Jäger 1998a). Croeser (1996) included in his revision of *Palystes* some results on the subfamily Heteropodinae. He transferred the genus *Gnathopalystes* to the Heteropodinae mainly according to their denticles on the cheliceral furrow. From my investigations *Gnathopalystes* spp. and true heteropodine members differ in several characters: denticle field in *Gnathopalystes* extended over the whole furrow (in Heteropodinae the amount of denticles near the three anterior cheliceral teeth), *Gnathopalystes* with 2 anterior and 5 - in exceptional cases with 4 or 3 - posterior teeth (Heteropodinae with 3 anterior and 4 - in exceptional cases with 5 or 6 - posterior teeth), posterior eye row straight in *Gnathopalystes* (recurved in Heteropodinae), *Gnathopalystes* females with short teeth on the palpal claw (long and curved in Heteropodinae) and lateral margins of the head region almost parallel in *Gnathopalystes* (diverging in Heteropodinae). From these differences *Gnathopalystes* is definitely excluded from the Heteropodinae (Jäger 2001a). Probably it represents a single phylogenetic lineage together with *Prychia* and *Tychicus*, both of which share most of the characters listed above for *Gnathopalystes*. The Australian genus *Keilira* is listed by Hirst (1989a) and Croeser (1996) within the Heteropodinae. The affiliation is doubted as there are similar differences to heteropodine species as in *Gnathopalystes*. The systematic position of *Keilira* and another Australian genus described as heteropodine (*Irileka* Hirst 1998) remains unclear at present.

In recent times Davies (1994) described a new genus from Australia and New Guinea (*Yiinthi*). Three new genera were described from Asia: *Sinopoda* (Jäger 1999),

Pseudopoda and *Bhutaniella* (Jäger 2000). The genera *Pseudopoda* and *Bhutaniella* were revised and an illustrated key for heteropodine genera was proposed by Jäger (2001a). New synonymies and new transfers of Chinese Heteropodinae are listed by Jäger & Yin (2001) and are not

considered in the present paper.

At present 13 genera are listed in Platnick (2001), which are to be considered as heteropodines: *Adrastis*, *Barylestis*, *Bhutaniella*, *Heteropoda*, *Panaretidius*, *Panaretus*, *Pandercetes*, *Parhedrus*, *Pseudopoda*, *Sinopoda*,



Figs. 1-2. *Barylestis fagei* (Lessert 1929) **new comb.**: ♂ holotype from Congo. **3-7.** *Barylestis montandoni* (Lessert 1929) **new comb.**: ♂, ♀ syntypes from Congo. **8-10.** *Barylestis nigripectus* Simon 1910: ♀ syntypes from Congo. **11-13.** *Barylestis peltatus* (Strand 1916): ♀ holotype from Central Africa. — 1,3, male left palp, ventral view; 2,4, male left palp, retrolateral view; 5,8,11, epigyne, ventral view; 6,9,12, vulva, dorsal view; 7,10,13, schematic course of female internal duct system, dorsal view. (Scales in mm)

Spariolemus, *Torania*, *Yiinthe*. Two of them (*Panaretidius* and *Torania*) were recognized as junior synonyms of *Heteropoda* (Jäger 2001a). One additional genus (*Sivalicus*) is assumed from the original description (Dyal 1957) to be a heteropodine, but examination of the type material has to confirm this.

In the following, new synonymies and transfers are listed in alphabetical order of the particular genera and within *Heteropoda* in order of the genera, in which the species were described originally.

Genus *Barylestis* Simon 1910

The genus *Barylestis* was erected by Simon (1910) for three species (*B. blaisei*, *B. nigripectus*, *B. insularis*). Simon (1910) originally designated *B. blaisei* as the type species and noted that *Heteropoda occidentalis* may also belong to *Barylestis*. In his diagnosis he listed differences in comparison to the genus *Heteropoda*: different eye arrangement, different size of clypeus and shorter legs. In contrast to the original description by Simon (1910) species of the only African heteropodine genus are here diagnosed exclusively by their genitalia: the filiform embolus is coiled round the tegulum (0.75–1.75 coils). The conductor is membranous and arises from the tegulum in a 1-o'clock-position. The tip of the embolus is always situated near the conductor. In most species a compartmentalization within the tegulum and a characteristic pattern of radial lines is visible through the cuticle. The RTA is divided into a ventral and a dorsal part. The ventral part extends distinctly retrolaterally.

Females are recognized by characteristic lateral windings of the internal genital duct system and the course of this duct system respectively. The external female genitalia have a quite uniform appearance: two lateral lobes touching along the median line. The anterior part of the inner lobal margins forms a pit with a shape of a 'V', 'U' or a semicircle. In this pit the copulatory openings are situated. The epigyneal field in all species is broader than long or as long as broad. One pair of sublobal pockets are in most species present, which may be prominent (*B. occidentalis* new comb.) or almost absent (*B. montandoni* new comb.). The genus *Torania* Simon 1886 was synonymised by Jäger (2001a) with *Heteropoda* Latreille 1804. Thus all *Torania* species were formally transferred to *Heteropoda*. This is only correct for Asian species. African species, formerly listed under *Torania*, belong to the African genus *Barylestis*.

Barylestis spp. are distributed in the tropical Africa (Cameroon, Equatorial Guinea, Gabon, Congo, Central Africa, Nigeria, West Africa, Sudan, Uganda, Ruanda). They are the only African representatives of the Heteropodinae except for the cosmopolitan *Heteropoda venatoria*. The reason for this disjunct distribution pattern is unknown (vicariance by splitting {continental drift} or subsequent migration from Asia to Africa).

Barylestis blaisei (Simon 1903)

Heteropoda blaisei Simon 1903a: 721 (♀ type{s}, Estuaire du Gabon), not found in MNHN. *B. b.*, - Simon 1910: 339. ? Strand 1916b: 148.

See note under *Barylestis variatus* new comb.

Notes. Type locality of *B. blaisei* is Gabon (Estuaire du Gabon) and not Cameroon, as stated in Roewer (1954a: 712).

Barylestis fagei (Lessert 1929) new comb.

(Figs. 1–2)

Torania fagei Lessert 1929: 131, f. 15 (1♂, only one palp, part of holotype, label: A. M. Congo E., Loc: Merje, ♂, VI, p.m., det. Less.) MHNG, examined. Jäger 2001a: f. 14h (sub. *Barylestis* sp.).

Further material examined. 1♂, with label: Ruanda, 1♂, Allotypus, *Cercetius perezii* Sim., SMF 7959.

Diagnosis. ♂ embolus arising in a 3-o'clock-position, running 1.75 coils round the tegulum (Fig. 1). Dorsal RTA distally with distinct grooves (Figs. 1–2). PS 6.0–6.5, OS 5.9–7.0.

Notes. One male (SMF 7959) is labeled as allotype (=paratype) of *Cercetius perezii* Simon 1902. The latter species was described from an immature. This and the comparison with the immature holotype of *Cercetius perezii* (MNHN 1658–21936) exclude the present specimen from type status. It is the first record of *B. fagei* new comb. in Ruanda.

Barylestis insularis Simon 1910

Barylestis insularis Simon 1910: 340 (1♀, holotype, with label: *Barylestis insularis* E.S., Fernando Poo: Basilè) MNHN 1737–24336, examined.

Notes. TL 12.0 (instead of 15.0 in the original description).

Barylestis montandoni (Lessert 1929) new comb.

(Figs. 3–7)

Torania montandoni Lessert 1929: 132, f. 16–17 (1♂, only one palp, 1♀, syntypes, label: A. M. Congo E., p.m. ♂, et ♀, Loc.: Poko, VIII, det. Lessert) MHNG, examined. Schmidt 1959: 102.

Further material examined. 1♂, PJ 1623, with label: Uganda, Semliki Forest, 0°48'N, 30°8'E, 5.–12.II.1997, Th. Wagner leg., tree fogging, *Elaeis guineensis* (Arecaceae), rain forest, FMKB.

Diagnosis. ♂ embolus arising in a 3-o'clock-position, running 0.75 coils round the tegulum. Ventral RTA distinctly longer than in other *Barylestis* spp. (Figs. 3–4). PS 4.7–5.0, OS 5.0–5.9. ♀ with a U-shaped epigyneal pit (Fig.

5). Sublobal pockets absent. Lateral windings directed laterad (Figs. 6–7). PS 5.0, OS 6.0.

Notes. The specimen from Uganda represents the first record for this country.

Barylestis nigripectus Simon 1910
(Figs. 8–10)

Barylestis nigripectus Simon 1910: 339 (2♀ syntypes, PJ 1616–1617, label: *Tor. nigriventris* E.S., Congo {Mey.}), MNHN 1610–3223, examined.

Diagnosis. ♀ closely related to *Barylestis scutatus* (Pocock 1903) new comb. with similar genitalia (Figs. 8–10), but larger (TL 23.0). This species probably turns to be a synonym of *B. scutatus* new comb. (see note below).

Notes. Simon (1910) described a species *Barylestis nigripectus*. No type material of this species, labeled as such, could be found in any museum, where Simon's material was used to be deposited. As sex, type locality and a part of the specific epithet are congruent in the two females from the Simon collection in MNHN Paris, labeled as *Tor. nigriventris*, these are considered syntypes of *B. nigripectus*. Probably Simon intended to describe the species as *Torania nigriventris*, wrote this name on the label, then changed his mind and forgot to change the label. A similar case occurred in another species: Simon wrote '*Eusparassus sanguiniceps*' on a label, but published '*Eusparassus sanguinifrons*' (Jäger et al. 2002). Compare also note in *Heteropoda boiei* (*H. flavimana*) in this paper.

Schmidt (pers. comm.) compared the original material (MNHN 1610–3223) with the material of the Senckenberg Museum (SMF 37445) and published it first as *B. nigriventris* - a name, which has never been published. Later he published the same specimen as *Torania scutata* (Schmidt 1956, 1971). As only a few material of involved species is available, no final statement on taxonomical status of *B. nigripectus* can be made.

Barylestis occidentalis (Simon 1887) **new comb.**
(Figs. 14–18)

Isopeda occidentalis Simon 1887b: 264 (3♀ {+1 immature} syntypes, PJ 660–662, label: *Tor. occidentalis* E.S., Assina {All[uaud].}, Congo {Mey[er].}) MNHN 1612–9616, examined.

Torania occidentalis, - Simon 1897b: 45. 1909: 41. *T. mbogensis*, - Strand 1913a: 400 (provisional name only). *T. occidentalis*, - Järvi 1914: 72, 190, f. 50, pl. 7, f. 1–3. Lessert 1915: 41, pl. 2, f. 43–45 (5♂, with label: Busu, 36, J. Carl leg.) MHNG, examined. Jäger 2001a: f. 15 c-e.

Further material examined. 1♀, PJ 1608, with label: Uganda, Tank Hill, Kampala, 29.VI.1970, Hans Goenget leg., ZMUC. 1♀, PJ 1609, with label: Sudan, Imatong Mts., Talanga forest in wild banana, 05.xii.1980, E. Wederkinck leg., ZMUC. 1♀, PJ

1610, with the same data as PJ 1609, ZMUC.

Diagnosis. Largest *Barylestis* species. ♂ embolus arising from a 3-o'clock-position, running 0.75 coils round the tegulum (Fig. 14). Dorsal RTA distinctly pointed (lateral view; Fig. 15). PS 13.0, OS 12.0. ♀ with a V- or heart-shaped epigyneal pit (Fig. 16). Sublobal pockets prominent, pointed, reaching the anterior part of median vulva (Fig. 17). PS 9.8–15.0, OS 10.5–21.2.

Variation. Sublobal pockets may be less prominent than illustrated (e.g. in PJ 1610, compare Järvi 1912: pl. 7, f. 2).

Notes. The two females from Sudan represent the first record of *B. occidentalis* new comb. for this country.

Simon (1903b: 101) lists this species for Equatorial Guinea. The original specimens (1 subadult ♀, PJ 1725; 1 immature, PJ 1726, with label: Cabo San Juan, Rio Muni [= Guinea Ecuatorial Africa], M. Martinez de la Escalera leg. 1901, *Torania occidentalis* E. Simon, Pullus, MNCN 20.02/9239, examined) belong clearly to the genus *Remmius*. Therefore the occurrence of *B. occidentalis* in Equatorial Guinea is doubted.

Barylestis peltatus (Strand 1916)
(Figs. 11–13)

Heteropoda peltata Strand 1916a: 81 (1♀, holotype, PJ 800, with label: Awakubi [Awakaba in Central Africa?], 22.4.[19]08, Exped[ition]: Herzog Adolf Friedrich z. Mecklenburg) ZMB, examined. *B. peltatus*, - Roewer 1954a: 712.

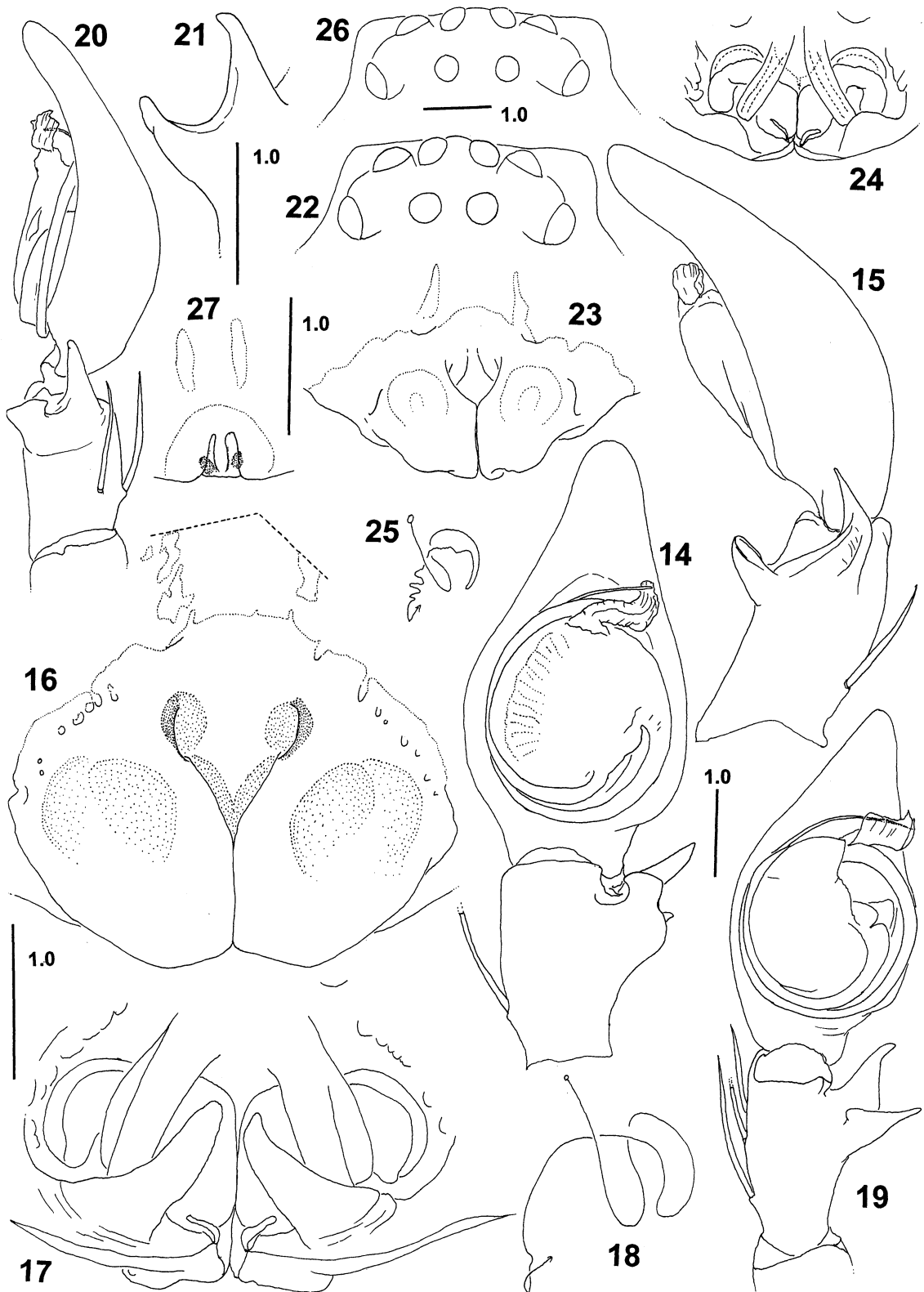
Diagnosis. Closely related to *B. montandoni* new comb., but differs in the following characters: ♀ epigyneal field distinctly broader than long (Fig. 11). Small sublobal pockets present. Lateral windings of internal duct system with slightly less coils than in *B. montandoni* new comb. (Figs. 12–13). OS 6.5.

Barylestis scutatus (Pocock 1903) **new comb.**
(Figs. 19–27)

Torania scutata Pocock 1903: 264 (1♂, 2♀, 1 subadult ♀, syntypes, label: Efulen, British Cameroons, G.L. Bates) NHM 1903.6.30.314–316, examined. Järvi 1914: 74, 193, pl. 7, f. 6. Browning 1954: 216, f. 2. Schmidt 1954: 405, 408, 412, f. 5 (sub: *Torania nigriventris*). 1956: 281. 1959: 102. 1971: 388, 429.

Further material examined. 4♀, PJ 752–755, with label: *Torania nigriventris* Simon, Kamerun, G. Schmidt det., SMF 37445.

Diagnosis. ♂ embolus arising from the tegulum in a 3-o'clock-position, running 1.75 coils round the tegulum (Fig. 19). Dorsal RTA longer than ventral part, straight conical (lateral view; Fig. 20). PS 6.6, OS 6.8. ♀ with a rounded, V-shaped epigyneal pit (Fig. 23). Sublobal pockets reaching at most the posterior part of lateral windings (Fig. 24). PS 6.4–6.6, OS 7.3–8.4.



Figs. 14–18. *Barylestis occidentalis* (Simon 1887) **new comb.**: 14–15, ♂ from Busu. 16–18, ♀ syntype from Congo. **19–27.** *Barylestis scutatus* (Pocock 1903) **new comb.**: ♂, ♀ syntypes from Cameroon. — 14, 19, male left palp, ventral view; 15, 20, male left palp, retrolateral view; 16, 23, epigyne, ventral view; 17, 24, vulva, dorsal view; 18, 25, schematic course of female internal duct system, dorsal view; 21, retrolateral apophysis, dorsal view; 22, 26, eye arrangement, dorsal view; 27, pre-epigyne, ventral view. (Scales in mm)

Variation. Sublobal pockets may not reach the lateral windings of the internal duct system (compare Järvi 1912: pl. 7, f. 6).

Barylestis variatus (Pocock 1899) **new comb.**
(Figs. 28–35)

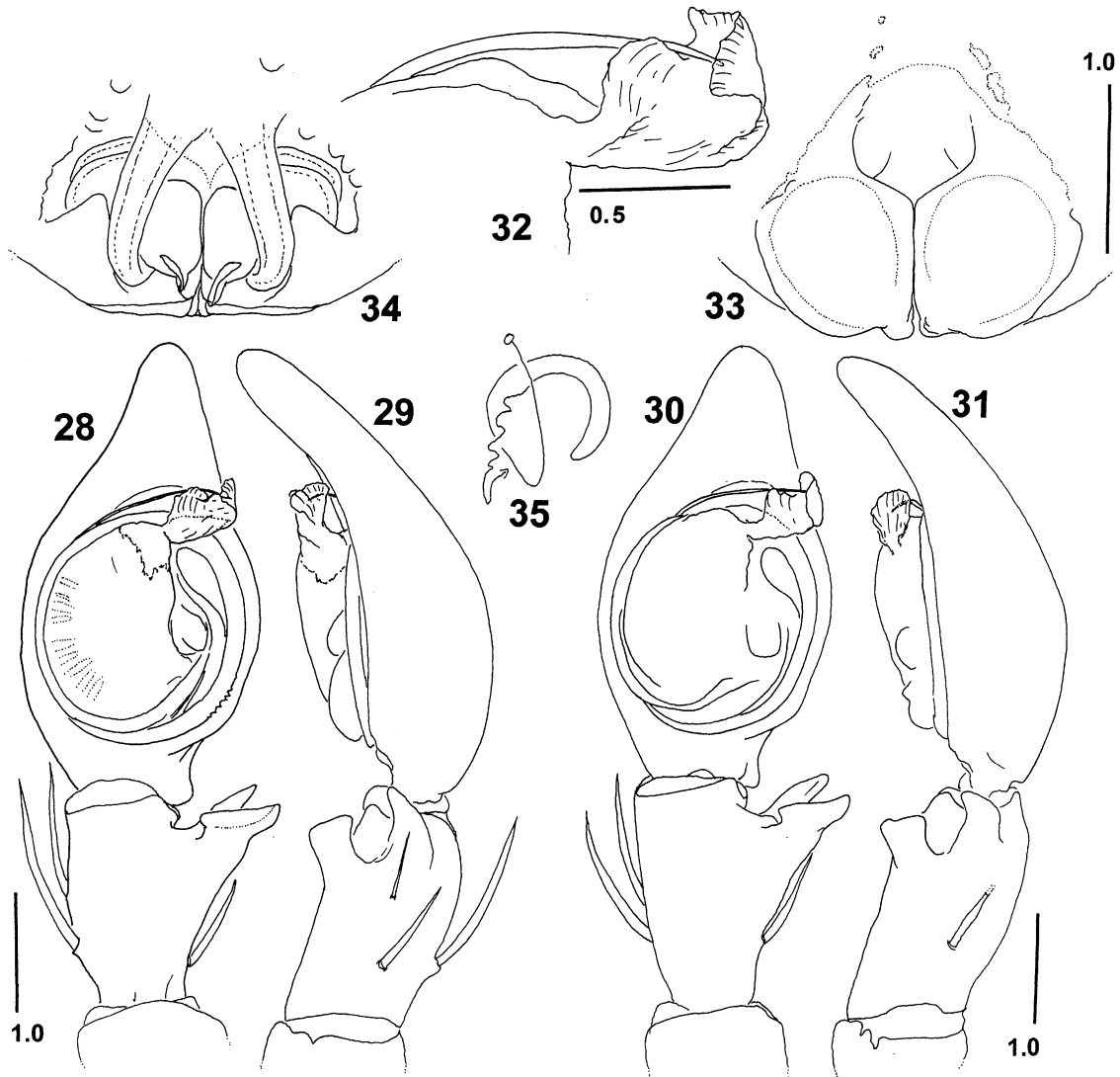
Torania variata Pocock 1899: 874, pl. 58, f. 30 (1♂, 3♀, syntypes, label: *Torania variata* Pocock, type, Benito River, British Cameroons, G.L. Bates) NHM 1898.7.6.25–26 + 1899.7.16.97–99, examined. Järvi 1914: 74, 192, pl. 7, f. 4–5. Browning 1954: 213, f. 1. Schmidt 1959: 102.

Further material examined. 1♂, PJ 1673, with label: Cameroon, J.-L. Perret, P.L.G. Benoit det. 1971, Sparassidae.

MHNG. 5♀, PJ 1611–1615, with label: *Torania variata*, cf. *Barylestis blaisei*, Prov. Sinja[?], MHNG. 1♀, PJ 875, with label: *Heteropoda blaisei*, Kamerun, Slg. Reimoser, NHMW. 1♂, PJ 1735, with label: Bata, Rio Muni [= Guinea Ecuatorial Africa], F. Martorell, 5.5.1961, MNCN 20.02/9081.

Diagnosis. ♂ embolus arising from the tegulum in a 1-o'clock-position, running 1.0 coils round the tegulum (Figs. 28,30). Both parts of the RTA of the same length (retrolateral view; Figs. 29,31). PS 6.3–8.2, OS 6.5–8.5. ♀ with a broad and U-shaped or a V-shaped epigyneal pit (Fig. 33). Sublobal pockets medium-sized, i.e. reaching the middle of the lateral windings (Fig. 34). PS 7.0–8.7, OS 8.2–12.9.

Variation. Sublobal pockets may not reach the first windings of internal duct system (PJ 875, compare Järvi 1912: pl.



Figs. 28–35. *Barylestis variatus* (Pocock 1899) **new comb.**: 28–29, 33–35, ♂,♀ syntypes from Benito River. 30–32, ♂ from Cameroon. — 28,30, male left palp, ventral view; 29,31, male left palp, retrolateral view; 32, tip of embolus with conductor, ventral view; 33, epigyne, ventral view; 34, vulva, dorsal view; 35, schematic course of female internal duct system, dorsal view. (Scales in mm)

7, f. 5).

Notes. Type locality of *B. variatus* new comb. is Benito River [= River Uoro o Mbini], which flows through Equatorial Guinea and Gabon. A definite location is not known.

From material, which was determined from former arachnologists as *B. blaisei* and the congruence of their genitalia with those of *B. variatus* new comb., it cannot be excluded that both species are synonymous. In this case *B. variatus* new comb. would be type species of the genus. Since no type material of *B. blaisei* or material from its type locality (Estuaire de Gabon) can be located, no final statements can be drawn.

Genus *Heteropoda* Latreille 1804

Adrastis Simon 1880 **new syn.**

Panaretus Simon 1880 **new syn.**

Torania Simon 1886

Parhedrus Simon 1887 **new syn.**

Urgulania Thorell 1890

Panaretidius Simon 1906

Oliophthalmus Pocock 1897. Simon 1898: 202 (syn. with *Adrastis*).

Heteropoda is the largest genus within the subfamily with about 190 nominal species. It contains small spiders from 6 mm body length to the largest sparassids with up to 50 mm body length and a leg span up to 300 mm (*Heteropoda maxima*; Jäger 2001b). The highest diversity of this huge genus is assumed to be present in the tropical South East Asia. Except for Australian species no exhaustive revision was done so far.

Several genera within the Heteropodinae were described in former times by means of somatical characters as eye arrangement or shape of the carapace (e.g. Simon 1880). These characters are variable within heteropodine genera (some of them are dependent on size, Jäger 2001a). Davies (1994) and Jäger (2001a) diagnosed this genus only by genital characters. Males can be recognized by the sheath-like conductor and the filiform embolus. In contrast to representatives of *Pseudopoda* or *Bhutaniella* the RTA arises distally at the male palpal tibia. Females possess copulatory ducts which are wound in at least one spiral. Moreover the 'spermathecae' consist of internal wound ducts in thickened parts of the internal duct system.

Genital characters of species, formerly attributed to other genera, fit with the above mentioned diagnosis for *Heteropoda*, and therefore new synonymizations and transfers on generic and species level are proposed. In general it is not yet possible to present a complete revision of the genus *Heteropoda*. To approach this target some species and their genitalia respectively are illustrated. In some cases diagnoses (combinations of character states) are given. These are based on the recent knowledge of this group.

Species formerly attributed to *Adrastis* Simon 1880

The genus *Adrastis* was described by Simon (1880) for one immature specimen from Java, which he described as *Adrastis atomaria*. He distinguished the new genus in comparison to *Pandercetes* L. Koch 1875 mainly by the shape of the prosoma. After examination of the types of all nominal *Adrastis* spp. five were recognized as *Heteropoda* spp. and one as *Pandercetes* sp. The type species is considered a junior synonym of *Heteropoda boiei* and thus *Adrastis* a junior synonym of *Heteropoda* (see note under *H. boiei*).

Heteropoda lashbrookii (Hogg 1922) **new comb.**

(Figs. 36–42)

Adrastis lashbrookii Hogg 1922: 294, f. 5 (3♂, 1♀, syntypes, label: *Adrastis lashbrookii* Hogg, 3♂, 1♀, type, Langbian Peaks, 6500', South Annam, C. Boden Kloss, Hogg. Coll., K40, April 1918) NHM 1924.III.1.448–481, examined.

Diagnosis. ♂ embolus arising from a 5-o'clock-position, conductor arising from a 9-o'clock-position from the tegulum. Conductor long and distinctly curved. Spermduct distinctly S-shaped (Fig. 36). Ventral and dorsal part of RTA without a deep indentation between them (Fig. 37). PS 3.7–3.8, OS 3.8–4.6. ♀ with additional epigyneal pockets [guide pockets for embolus?], these situated in the anterior part of the lateral lobes. Lateral lobes touching not each other. Median septum long and slender. Bands of epigyneal field arising from its lateral margins (Fig. 38). The first winding of the internal duct system in a longitudinal direction (Fig. 39). PS 4.3, OS 5.2.

Heteropoda murina (Pocock 1897) **new comb.**

(Figs. 43–46)

Oliophthalmus murinus Pocock 1897: 618, pl. 26, f. 23 (1♀, holotype, label: Baram [Borneo]) NHM 97.11.1.124, examined. *Adrastis murinus*, - Simon 1898: 202.

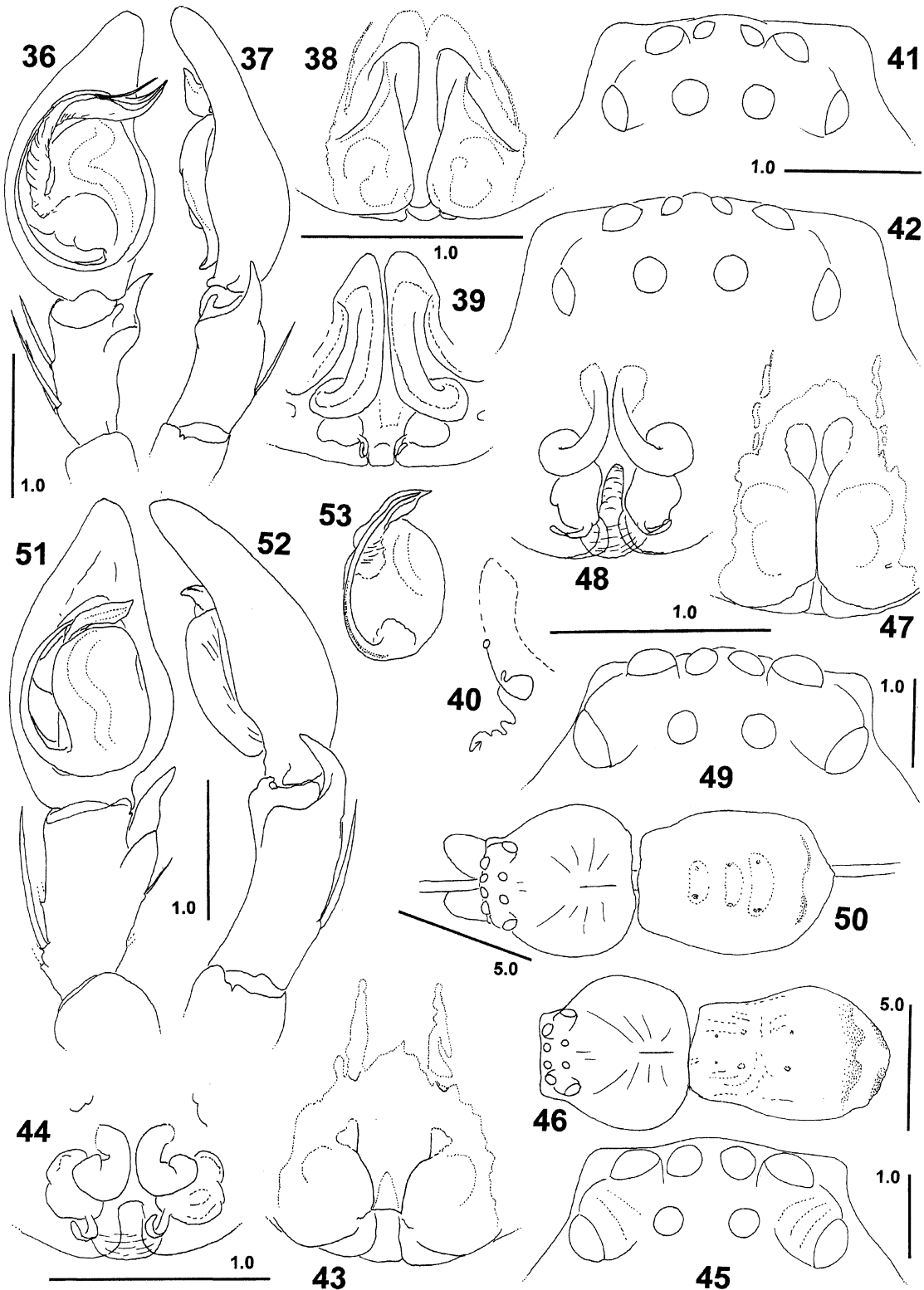
Diagnosis. ♀ median septum funnel-shaped. Lateral lobes touching not each other. Epigyneal field with distinct anterior bands (Fig. 43). First windings of internal duct system running a semicircle. Subsequent parts of duct system and spermathecae situated laterally from the first winding (Fig. 44). PS 5.7, OS 7.8.

Heteropoda planiceps (Pocock 1897) **new comb.**

(Figs. 47–50)

Oliophthalmus planiceps Pocock 1897: 619, pl. 26, f. 24 (1♀, holotype, label: Batjan [Moluccas]) NHM 97.11.1.125, examined. *Adrastis planiceps* - Simon 1898: 202.

Diagnosis. ♀ lateral lobes touching each other. Two oval



Figs. 36-42. *Heteropoda lashbrooki* (Hogg 1922) **new comb.**: ♂, ♀ syntypes from South Annam (Vietnam). **43-46.** *Heteropoda murina* (Pocock 1897) **new comb.**: ♀ holotype from Baram (Borneo). **47-50.** *Heteropoda planiceps* (Pocock 1897) **new comb.**: ♀ holotype from Batjan (Moluccas). **51-53.** *Heteropoda spinipes* (Pocock 1897) **new comb.**: ♂ holotype from Halmaheira (Moluccas). — 36-51, male left palp, ventral view; 37-52, male left palp, retrolateral view; 38, 43, epigyne, ventral view; 39-44, vulva, dorsal view; 40, schematic course of female internal duct system, dorsal view; 41-42, 45, 49, eye arrangement, dorsal view; 46, 50, prosoma and opisthosoma, dorsal view. 53, tegulum, prolateral view. (Scales in mm)

'windows' near to the anterior part of the median septum. Bands of epigyneal field situated in an intermediate position between *H. lashbrooki* and *H. murina* (Fig. 47). First winding of internal duct system running diagonally from median to lateral. Spermathecae situated posteriorly from the first winding (Fig. 48). PS 5.5, OS 6.8.

Heteropoda spinipes (Pocock 1897) **new comb.**
(Figs. 51–53)

Oliophthalmus spinipes Pocock 1897: 619, pl. 26, f. 22 (1♂, holotype, label: Oba, Halmaheira [Moluccas], Kükenthal, 1.94) NHM 97.11.1.126, examined. *Adrastis spinipes* - Simon 1898: 202.

Further material examined. *Heteropoda* sp.: 1♂, with label: Tenaru, Guadakanal, British Solomon Islands, XI. 1935, R.J.A.W. Lever, NHM 1936.11.13.24

Diagnosis. ♂ embolus arising from a 7-o'clock-position, conductor from a 10.30-o'clock-position on the tegulum. Conductor short, not curved. Spermduct slightly curved (Fig. 51). Ventral and dorsal part of RTA separated by a distinct, rounded indentation (Fig. 52). TL 11.0.

Notes. On the label of the male, additionally examined, was written: '*Oliophthalmus ornatus* Berland, Type'. No species with such a name was ever described. Apparently Berland intended to describe this specimen as a new species, but never did it. The specimen shows very similar characters as the type of *H. spinipes*. Whether they are conspecific cannot be stated at present.

Species formerly attributed to *Panaretidius* Simon 1906

Panaretidius was described by Simon (1906) by one species, *P. boutani*. Simon (1906) distinguished the new genus from *Panaretus* among other differences by the shape of the prosoma and the eye arrangement. Examination of genital characters of the type specimens showed that *P. boutani* belongs clearly to the genus *Heteropoda* (Jäger 2001a) and it is closely related to *Heteropoda venatoria*.

Heteropoda boutani (Simon 1906)
(Figs. 54–60)

Panaretidius boutani Simon 1906: 27 (1♂, 1♀ {+1 immature}, syntypes, PJ 768, 769, label: Grotte de Ban Hao, Tonkin, Boutan) MNHN 1759–13202, examined. Fage 1929: 364, f. 9–11. *Heteropoda boutani*, - Jäger 2001a: 19.

Diagnosis. ♂ embolus arising from a 6-o'clock-position, conductor from a 9-o'clock-position on the tegulum. Spermduct distinctly S-shaped. Cymbium more than twice as long as bulb (Fig. 54). RTA simple, dorsal part slightly curved and pointed (Fig. 55). ♀ median septum freely visible. Epigyneal field as long as broad, with distinct anterior bands (Fig. 56). Internal duct system similar to that of *Heteropoda*

venatoria. No distinct diagnostic differences present (Fig. 57).

The second species of this genus, *Panaretidius microphthalmus* Fage 1929, was transferred to *Sinopoda* (Jäger 1999).

Species formerly attributed to *Panaretus* Simon 1880

The genus *Panaretus* was erected by Simon (1880) for two new species (*javanus*, *ignichelis*). He compared the new genus with the genera *Torania* (sub *Tortula*) and *Palystes* and emphasized differences in the shape of the prosoma and the eye arrangement. In 1897 he designated *P. ignichelis* as type species and included additionally *P. borneensis* (Thorell 1890) in the genus. Type species and most of other included species were examined and recognized as *Heteropoda* spp.

Heteropoda borneensis (Thorell 1890) **new comb.**

Urgulania borneensis Thorell 1890b: 143 (1♂ [without palps], 1♀, 1 immature ♀, syntypes, label: Borneo [Sarawak], Doria + Beccari) MCSN, not examined. *Panaretus borneensis*, - Simon 1897b: 54.

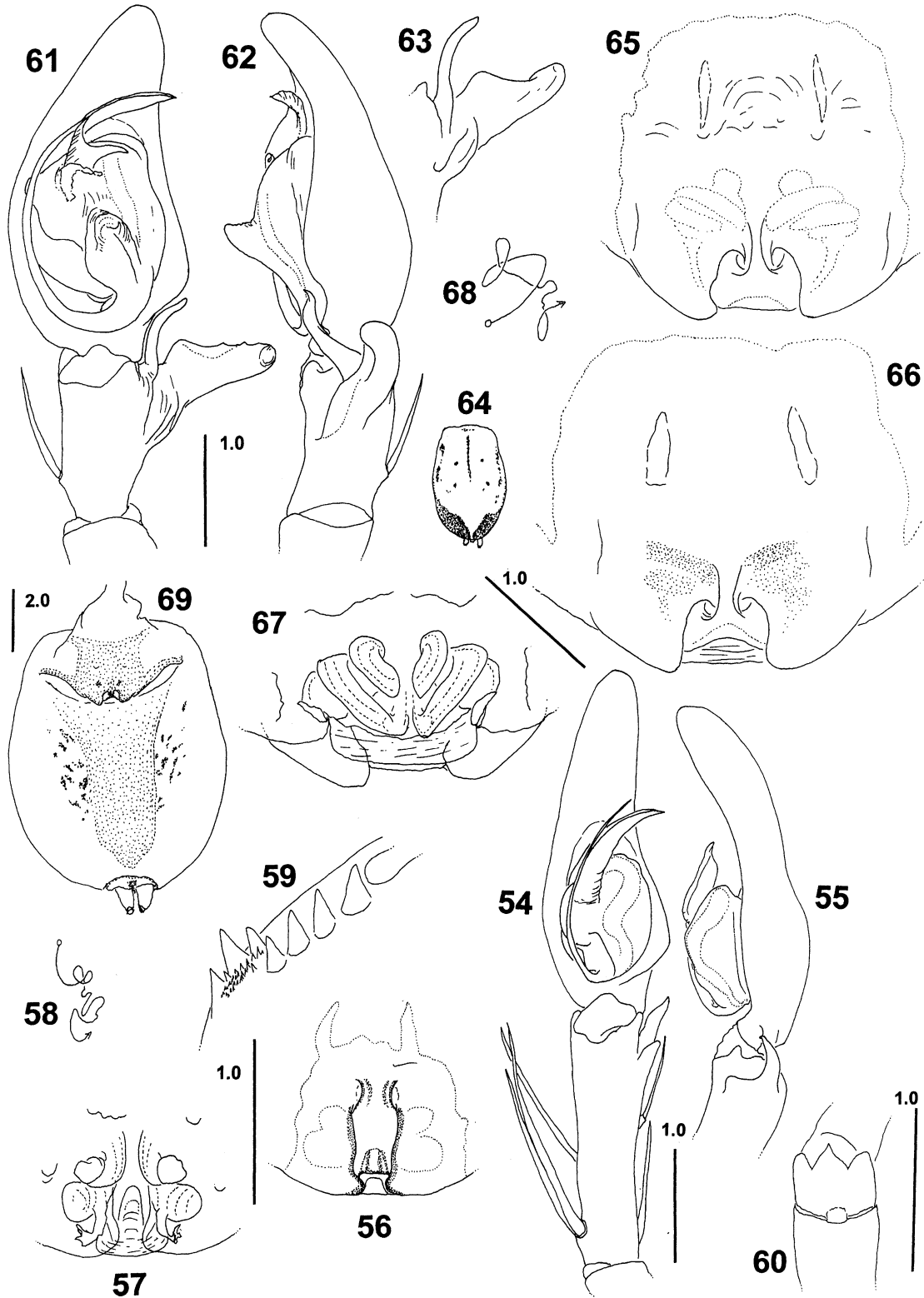
Diagnosis. ♀ median septum freely visible, not covered by lateral lobes. Epigyneal field trapezoid, with distinct anterior bands. Internal duct system simple, with only one slight winding. Posterior eye row covering a bit more than the half of the anterior width of the PS. TL 25.0.

Notes. Christa Deeleman examined and illustrated one female of the type series and provided me kindly with that information. For reasons of stability I designate this adult female as lectotype, the other specimens as paralectotypes. The female genitalia show clearly all characters of a *Heteropoda* sp. and therefore the species is transferred to *Heteropoda*.

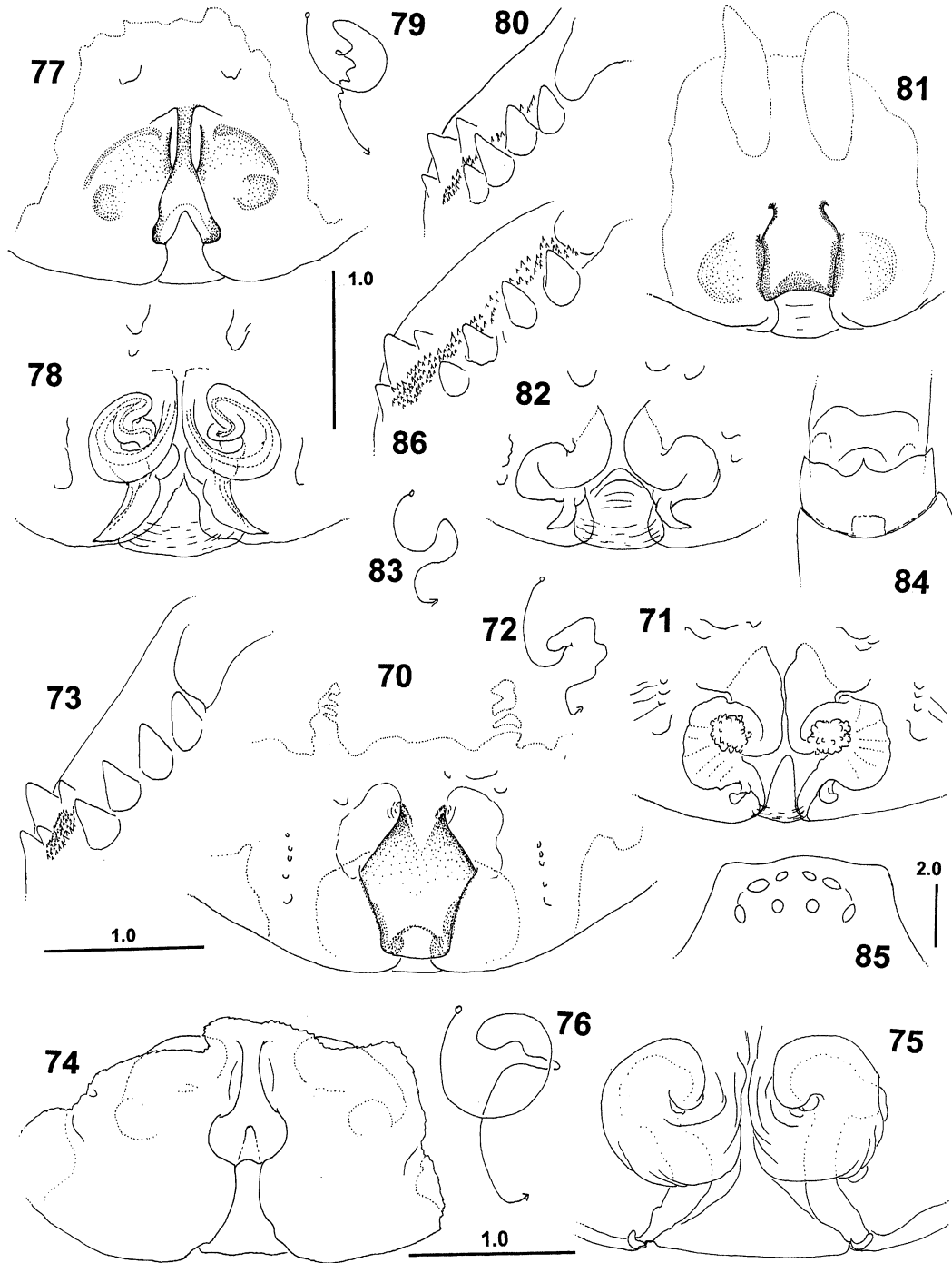
Heteropoda chelata (Strand 1911) **new comb.**
(Figs. 70–73)

Panaretus chelatus Strand 1911: 9 (1♀, holotype, PJ 705, label: *Panaretus chelatus* Strand, Type!, New Guinée, Torricelligeb., 780m.) MNHN 1672 Bis-1918 c[oll]. St[rand]., examined.

Diagnosis. ♀ median septum almost pentagonal. Epigyneal field distinctly broader than long, without distinct lateral margins. Bands of epigyneal field short and partly fragmented into single patches (Fig. 70). Internal ducts running almost in one plane. After the first winding glandular structures with many small tubercles (Figs. 71–72). PS 11.6, OS 15.9.



Figs. 54–60. *Heteropoda boutani* (Simon 1906): 54–55, ♂ syntype, 56–60, ♀ syntype from Tonkin (Vietnam). **61–69.** *Heteropoda javana* (Simon 1880) **new comb.**: 61–64, ♂ from Java (PJ 1674); 65–69, ♀ syntype (PJ 1675) from Java. — 54,61, male left palp, ventral view; 55,62, male left palp, retrolateral view; 56,65–66, epigyne, ventral view; 57,67, vulva, dorsal view; 58,68, schematic course of female internal duct system, dorsal view; 59, cheliceral dentition, ventral view; 60, metatarsal trilobate membrane, dorsal view; 63, retrolateral apophysis, ventral view; 64, opisthosoma, dorsal view, 69, opisthosoma, ventral view. (Scales in mm)



Figs. 70–73. *Heteropoda chelata* (Strand 1911) **new comb.**: ♀ holotype from New Guinea. **74–76.** *Heteropoda ignichelis* (Simon 1880) **new comb.**: ♀ holotype from Saigon (Vietnam). **77–80.** *Heteropoda* sp. from Tonkin (Vietnam). **81–86.** *Heteropoda nirounensis* (Simon 1903) **new comb.**: ♀ syntypes from Sumatra. — 70, 74, 77, 81, epigyne, ventral view; 71, 75, 78, 82, vulva, dorsal view; 72, 76, 79, 83, schematic course of female internal duct system, dorsal view; 73, 80, 86, cheliceral dentition, ventral view; 84, metatarsal trilobate membrane, dorsal view; 85, eye arrangement, dorsal view. (Scales in mm)

Heteropoda chelata vittichelis (Strand 1911) **new comb.**

type(s)?, whereabouts unknown).

Panaretus chelatus vittichelis Strand 1911: 10 (♀, New Guinea,

Although the type specimens could not be found, the

subspecies is formally transferred as subspecies to *Heteropoda chelata* new comb. Synonymization of Bonnet (1958) of the present subspecies with *H. chelata* new comb. is not followed here, as he mentioned no reasons for a synonymization of both forms.

Heteropoda ignichelis (Simon 1880) **new comb.**
(Figs. 74–76)

Panaretus ignichelis Simon 1880: 261 (1♀, holotype, PJ 1648, from Saigon, Vietnam, original label missing, re-written label with species name only) MNHN 1661–1568, examined. Simon 1904: 285. Tikader & Sethi 1990: 174, f. 28–32.
Olios ignichelis, - Hasselt 1893: 143.

Diagnosis. ♀ median septum slightly anchor-shaped (Fig. 74). Internal ducts with one first large winding, with a subsequent lateral loop to the spermathecae, then followed by a long fertilization duct (Fig. 75–76). PS 10.2, OS 13.0 (dried?; original description: 15mm).

Notes. The holotype and its genitalia were slightly damaged. The original label is missing. According to illustrations and notes in Tikader & Sethi (1990) they examined the same specimen, which is in deed the holotype according to measurements and a comparison with the original description.

Heteropoda sp.
(Figs. 77–80)

Material examined. 1C (PJ 758), label: *Pan. ignichelis* E.S., Tonkin (Blaise), MNHN 1662–22380

Notes. This specimen was labeled by Simon as *Panaretus ignichelis*. In fact it represents a different species, which is closely related to *H. ignichelis* new comb., but differ from the holotype female in the following characters: median septum Y-shaped (upside down), this septum close to posterior margin of epigyne (Fig. 77). Internal ducts with one first large winding, with a subsequent coil to the spermathecae (without lateral loop as in *H. ignichelis*; Figs. 78–79). PS 8.1, OS 11.3.

Heteropoda javana (Simon 1880) **new comb.**
(Figs. 61–69)

Panaretus javanus Simon 1880: 260 (1♂, 1♀ {both separated in an extra vial, PJ 1674, 1675}, 3♂ (PJ 1676–1678), 24♀ (PJ 1679–1702), 2 subadult ♀ (PJ 1703–1704), [all adult ♀♀ are considered syntypes]. label: Club. Heteropodeae, *Panaretus javanus* E.S., Java, Zueda, M. Palabuan etc. {Fr.}) MNHN 1677–290, examined. Simon 1897b: 50, f. 43.

Further material examined. 1♀, PJ 141, label: Sumatra, Fort de Kock, XII. 1912, leg. E. Jacobson, SMF 4586. 1♀, PJ 648, label: Sumatra, Balighe, 003., Sparassidae, NHMW.

Diagnosis. ♂ conductor basally with a retrolateral, pointed apophysis. RTA separated into two parts: one

slender part, running close to the cymbium, and one massive retrolateral part. Embolus arising from a 5-o'clock-position, conductor from an almost 12-o'clock-position on the tegulum (Figs. 61–62). Dorsal opisthosoma with a characteristic black posterior margin (Fig. 64). PS 6.4, OS 6.3. ♀ median septum anchor-shaped. Anterior bands integrated into the epigyneal field (Figs. 65–66). First and second winding of internal ducts twisted round the spermathecae diagonally (Fig. 67–68). Ventral opisthosoma with a broad dark median band and irregular lateral spots (Fig. 69). PS 8.2–8.7. OS 10.6–11.5.

Notes. Simon described in 1880 only the female. In 1897 he added the description of the male. It is assumed that he added specimens subsequently to the original type series. Therefore only females are considered syntypes. Males do not have type status.

Heteropoda nirounensis (Simon 1903) **new comb.**
(Figs. 81–86)

Panaretus nirounensis Simon 1903c: 304 (1♀, PJ 762, 1 subadult ♀, syntypes, label: *Panar. Nirouensis* E.S., Sumatra, I. du Nirou (Rouchard 1902) MNHN 1662–22179, examined. Tikader & Sethi 1990: 172, f. 23–27.

Diagnosis. ♀ median septum almost rectangular, anterior part with convergent margins. Anterior bands partly integrated in epigyneal field (Fig. 81). Internal duct system similar to that of *H. chelata* new comb., but without distinct glandular tubercles and spermathecae less prominent (Fig. 82–83). PS 8.9, OS 8.3.

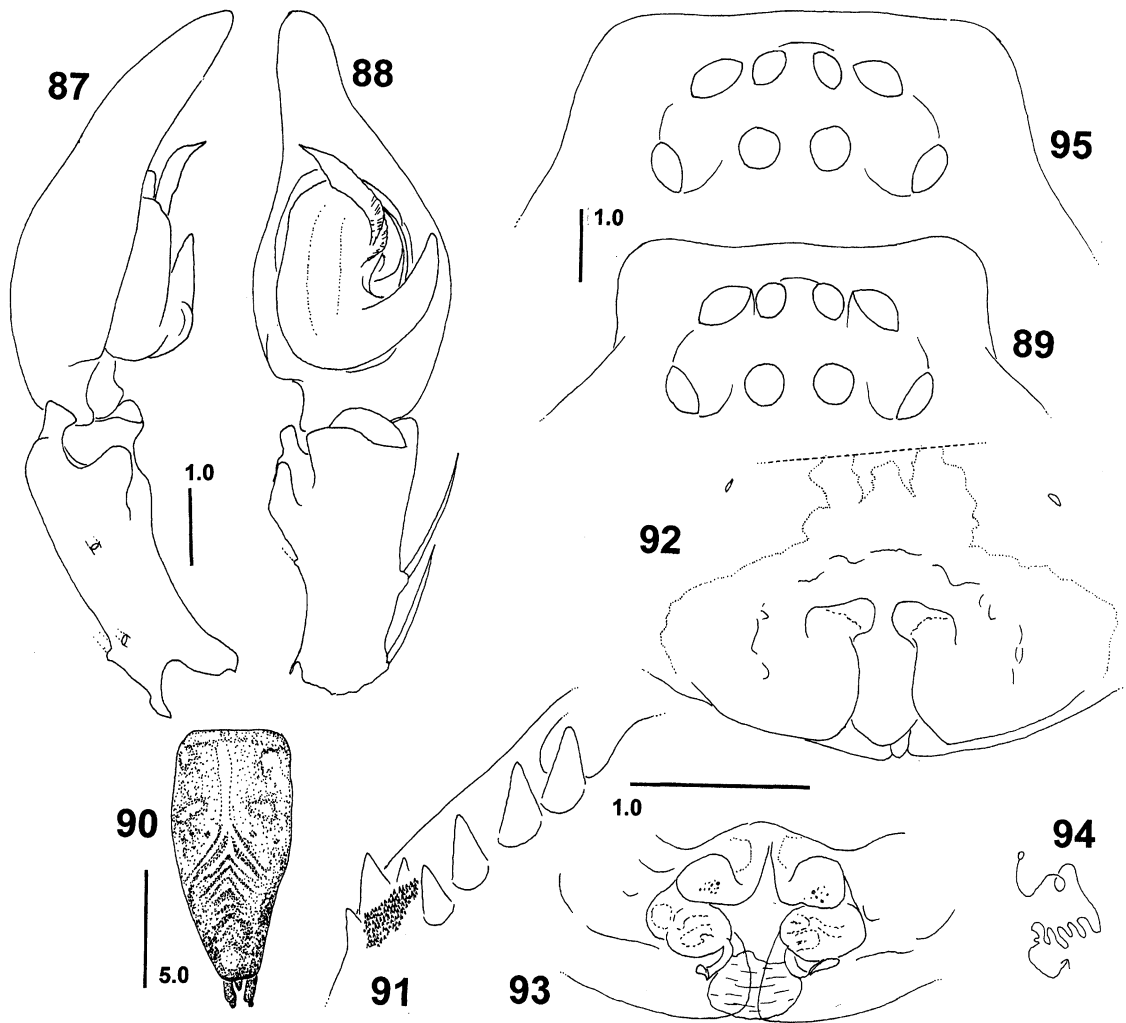
Notes. Although Simon wrote on the original label '*nirouensis*' and this would be the correctly formed epithet, the published epithet '*nirounensis*' is considered the valid name.

Species formerly attributed to the genus
Parhedrus Simon 1887

The genus *Parhedrus* was erected by Simon (1887a) originally for one species, *Parhedrus ocyalinus*, which he described together with the genus. Differences in the shape of the prosoma, the eye arrangement and the clypeus were listed in a diagnostic comparison to the genus *Adrastis*. Examination of the type material of *P. ocyalinus* in the MNHN Paris showed without doubt that the type species belongs according to the course of its female internal duct system to the genus *Heteropoda*.

Heteropoda boiei (Doleschall 1859)
(Figs. 87–95)

Sparassus boiei Doleschall 1859: 52, pl. 15, f. 1 (♂, type{s}, Java, Buitenzorg, Natuurkundige Commissie) whereabouts unknown, not examined. *Heteropoda boiei*, - Simon 1880: 271.



Figs. 87–95. *Heteropoda boiei* (Doleschall 1859): 87–89, 91, ♂ (PJ 1668); 92–95, ♀ (PJ 1670) from Penang (Malaysia), 90, ♂ (PJ 344) from Indragiri (Sumatra). — 87, male right palp, retrolateral view; 88, male right palp, ventral view; 89, 95, eye arrangement, dorsal view; 90, opisthosoma, dorsal view; 91, cheliceral dentition, ventral view; 92, epigyne, ventral view; 93, vulva, dorsal view; 94, schematic course of female internal duct system, dorsal view. (Scales in mm)

Heteropoda flavimana Simon 1880: 274 (3♀, 1 subadult ♀, syntypes, PJ 1649–1652, label: Benkolen, baie de Palabouan, Club. *Parhedrus diardi* Dol.) MNHN 1749–3404, examined. *Parhedrus boiei*, - Gravely 1931: 257, f. 13A–B. *Adrastis atomaria* Simon 1880: 283 (1 immature, holotype, PJ 1658, label: Club. *Adrastis* E.S. *Atomaria*, Java) MNHN 1747–2600, examined. **new syn.**

Further material examined. 2♂, 1♀, PJ 1668–1670, label: *Parhedrus boiei* (Dol.), West Malaysia: Penang, ♀♂, Dr. Carter. NHM 1860.15 (part). 1♂, PJ 344, label: Sumatra, Indragiri, A. v. Mechel, 1899, NHMB 552a. 1♂, PJ 579, label: *Heteropoda venatoria*, Java, NHMW. 1♂, PJ 56, label: [Java] Bolang, Buitenzorg, 600 M., VI. 1924, Dct. v. Luv., Kleur grysgroen als lichen op boomstam, SMF 4590.

Diagnosis. ♂ with prominent prolateral tegular apophysis, covering arising point of embolus. Conductor

arising from a 2-o'clock-position on the tegulum (Fig. 88). Dorsal RTA apically slightly broadened, truncated (Fig. 87). PS 8.8–11.3, OS 10.7–15.7. ♀ with median septum partly covered by lateral lobes, its anterior part narrow with rims bent to lateral sides. Epigyneal field distinctly broader than long, with long anterior bands (cutted in illustrated specimen; Fig. 92). Internal ducts with first winding almost globular (Fig. 93–94). PS 11.5–14.1, OS 14.1–23.2. OS with characteristic conical shape and dorsal pattern (Fig. 90). Muscle sigillae on dorsal OS in both sexes distinctly fragmented into single, partly elongated patches.

Notes. From the original description by Doleschall (1859) and from the comparison with material from the type locality (PJ 56) the taxonomical identity of the species is clear. As no closely related species is known, with which the species could be confused, it seems not to be necessary to designate a neotype at present.

The types of *Heteropoda flavimana* were not labeled as such, but were determined by Simon as *Parhedrus diardi*. It is assumed that Simon described *H. flavimana* according to these specimens, as they fit with the original description perfectly (size, coloration, shape of OS, number of specimens, locality), and forgot to change the label (see also notes in *Barylestis nigripectus* in this paper). One immature specimen from Java was described by Simon (1880) as *Adrastis atomaria*, the type species of the genus *Adrastis* Simon 1880 by monotypy. Simon distinguished this genus from *Pandercetes* by the shape of the prosoma. Examination of the type specimen showed clearly that it belongs to the species *Heteropoda boiei*. Elongated opisthosoma with dorsal pattern, marble-like pattern on prosoma, elongated spinnerets are congruent in direct comparison with specimens of *H. boiei*. Differences in eye arrangement (especially relation from eye row width to width of head region) is considered being due to ontogenetical transformations, as known from other heteropodine species. Thus *Adrastis atomaria* Simon 1880 is recognized as a junior synonym of *Heteropoda boiei* (Doleschall 1859) and *Adrastis* Simon 1880 as a junior synonym of *Heteropoda* Latreille 1804.

Heteropoda ocyalina (Simon 1887) **new comb.**
(Figs. 96–105)

Parhedrus ocyalinus Simon 1887a: 469. (2♀, syntypes, PJ 691, 692, label: Clubionidae, Java, S. baie de Palabouan) MNHN 1702, examined. Simon 1897b: 55, f. 42.
Parhedrus fasciatus Reimoser 1927b: 1 (1 immature, holotype,

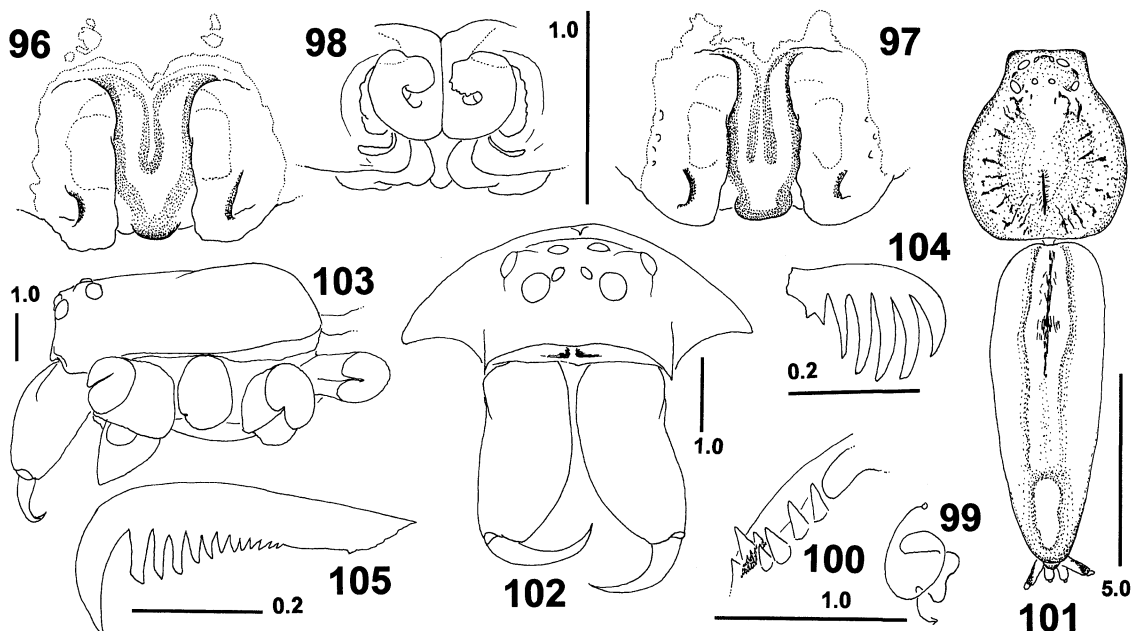
PJ 1624, with label: Pulu Berhala b. Sumatra, Van der Meer Mohr leg., Typus!) NHMW, examined. **new syn.**

Diagnosis. ♀ median septum almost freely visible, with parallel margins, anterior part diverging, posterior margin with an additional lobe. Width of median septum variable. Posterior part of epigyne with two small indentations. Epiygneal field slightly broader than long, its anterior bands may be attached to it or separated and fragmented into single patches (Figs. 96–97). First windings of internal duct system touching each other along the median line. Spermathecae partly covered by first winding (Figs. 98–99). OS elongated (Fig. 101). PS 5.3, OS 8.8.

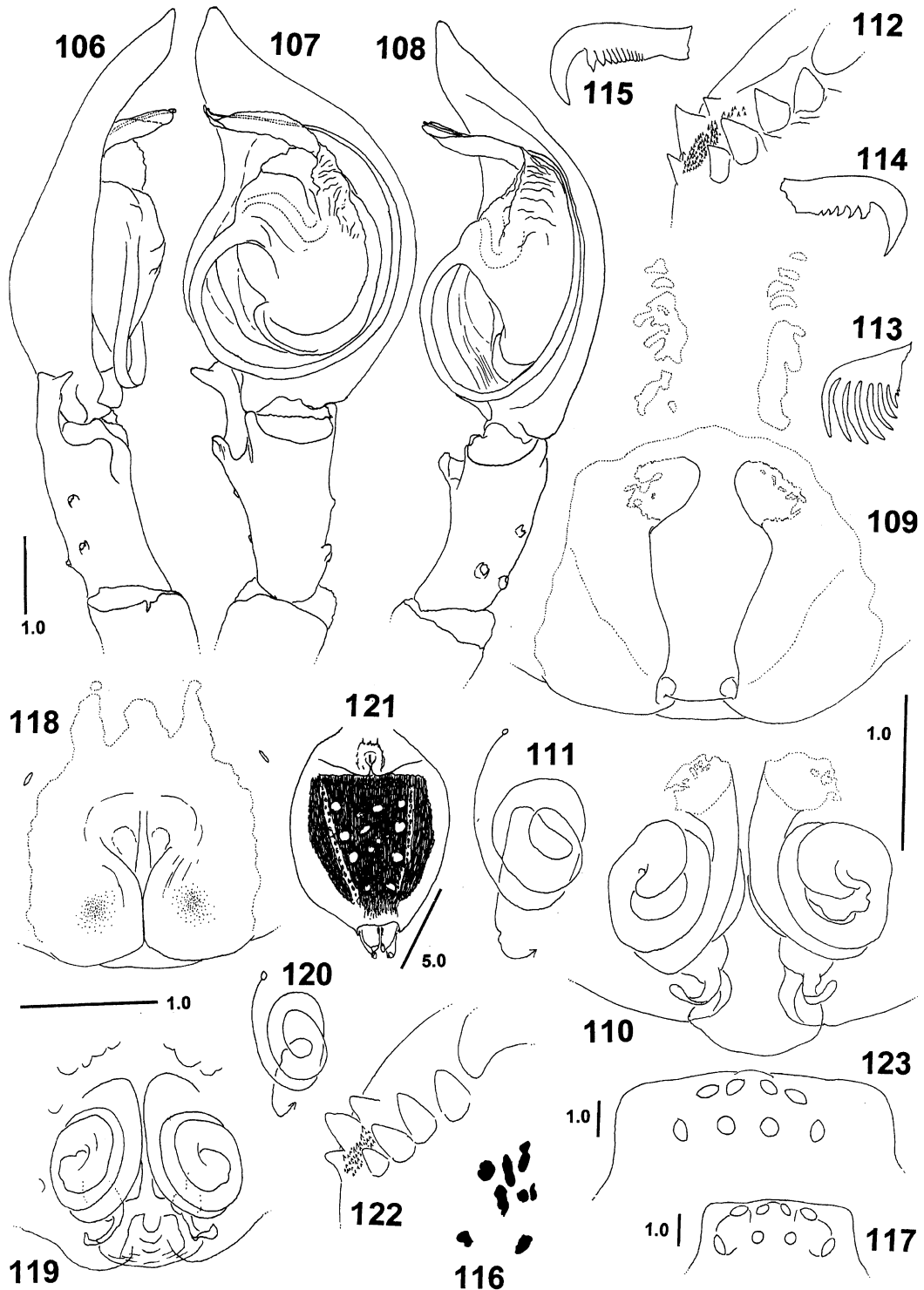
Notes. The immature holotype of *Parhedrus fasciatus* Reimoser 1927 shows all the somatical characters (elongated opisthosoma with bright median band, femora distinctly spotted, same eye arrangement, same leg spination) of the two female syntypes of *Heteropoda ocyalina* (Simon 1887) new comb. Thus, the former species is a junior synonym of the latter.

Asian species, formerly attributed to the genus
Torania Simon 1886

The genus *Torania* was erected by Simon (1880: sub *Tortula*, 1886) for one species, *T. gloriosa*. He compared it in his description with the genus *Isopeda* and emphasized differences in the eye region. As genitalia of *T. gloriosa* are congruent with those of *Heteropoda* species, *Torania* Simon 1886 is considered a junior synonym of *Heteropoda*



Figs. 96–105. *Heteropoda ocyalina* (Simon 1887) **new comb.**: ♀ syntypes from Java. — 96–97, epigyne, ventral view; 98, vulva, dorsal view; 99, schematic course of female internal duct system, dorsal view; 100, cheliceral dentition, ventral view; 101, prosoma and opisthosoma, dorsal view; 102, eye arrangement and chelicerae, frontal view; 103, prosoma, lateral view; 104, palpal claw, retrolateral view; 105, prolatateral claw of leg I, prolatateral view. (Scales in mm)



Figs. 106–117. *Heteropoda lunula* (Doleschall 1857) **new comb.**: 106–108, ♂ holotype of *Tortula simoni* Karsch from Cochinchina (Vietnam). 109–112, 116–117, ♀ holotype of *Torania gloriosa* Simon 1880 from Cochinchina (Vietnam). 113–115, ♀ from Java (PJ 485). **118–123.** *Heteropoda dasyurina* (Hogg 1914): ♀ holotype from New Guinea. — 106, male right palp, retrolateral view; 107, male right palp, ventral view; 108, male right palp, prolateral view; 109, 118, epigyne, ventral view; 110, 119, vulva, dorsal view; 111, 120, schematic course of female internal duct system, dorsal view; 112, 122, cheliceral dentition, ventral view; 113, palpal claw, retrolateral view; 114, retrolateral claw of leg I, retrolateral view; 115, prolateral claw of leg I, prolateral view; 116, muscle sigilla of dorsal opisthosoma, dorsal view; 117, 123, eye arrangement, dorsal view; 121, opisthosoma, ventral view. (Scales in mm)

Latreille 1804 (Jäger 2001a).

Heteropoda armillata (Thorell 1887) **new comb.**

Holconia armillata Thorell 1887: 233 (immature type material from Shwegoo-myo (Myanmar) probably in MCSN, not examined). *Torania armillata*, - Simon 1897b: 45. *Isopeda armillata*, - Gravely 1931: 238, f. 4A.

Heteropoda lunula (Doleschall 1857) **new comb.**
(Figs. 106–117)

Olios lunula Doleschall 1857: 428 (1♀, holotype, PJ 881, from Java) NHMW 1858.I.30, examined. Doleschall 1859: 54, pl. 6, f. 5 (♀ probably conspecific; not ♂: pl. 7, f. 5, pl. 9, f. 12), not examined.

Tortula gloriosa Simon 1880: 257 (1♀, holotype, label: *Tor. gloriosa* E.S., Cochinchine) MNHN 1610 Bis-9223, examined, **new syn.**

Tortula simoni Karsch 1884: 71 (1♂, holotype, PJ 1187, with label: Cochinchina [left legs and palp removed]) ÜMB 10271, examined, **new syn.** *Torania simoni*, - Simon 1897b: 40.

Torania gloriosa, - Simon 1886: 143. 1897b: 45, f. 23. 1904: 285, pl. 16, f. 2. Gravely 1931: 246, f. 8C. Tikader & Sethi 1990: 169, f. 17–22.

Holconia beccarii Thorell 1890b: 147 (♀ type, Sumatra, Beccari) whereabouts unknown, not examined, but see notes below. **new syn.** *Torania beccarii* Roewer 1954a: 724.

Isopeda beccarii malangana Strand 1907: 189 (1♀, holotype, PJ 810, label: Ost-Java, Malang, C. Graafland daselbst, Holotypus ♀, Nr. 406) formerly in Coll. Museum Wiesbaden, now deposited in HLMD, examined, **new syn.**

Heteropoda holzi Strand 1907: 193 (1♂, holotype, lost, from Java, Graafland coll. 1906–1907), not examined, **new syn.**

Heteropoda gloriosa, - Jäger 2001a: 19.

Further material examined. 2♂, PJ 238, 239, label: Sumatra: Bandar Kwala, v. Auer leg., IX. 1900, Strand det., SMF 5013/2. 1♂, 1♀, PJ 879, 880, label: Borneo, Slg. Reimoser, NHMW. 1♀, PJ 95, label: Malakka, SMF 8571. 1♀, PJ 49, label: W.Sumatra: Lahat, SMF 5561. 1♀, PJ 874, label: *Torania armillata*, Sumatra, Medan, Fulmek, Slg. Reimoser, NHMW (Reimoser 1927a). 1♀, PJ 485, label: Java, NHMW 1882, III.45. 1♀, PJ 486, label: Amboina, Doleschall, NHMW 1858.I.29. 1♀, PJ 889, label: Tandjong, Morana, Sultanat Deli, Sumatra, Dr. H. Heinemann, 1928, ZSM. 1♀, PJ 131, label: Buitenzorg, Java, SMF 4593. 2♀, label: *Tor. gloriosa* E.S., Java, Palovanan (Fr.)/13376, 13361, 1161, MNHN 1611–13361.

Diagnosis. Large spider, legs covered by dense and long hairs. Muscle sigillae on dorsal OS fragmented into small single patches (Fig. 116). ♂ embolus arising from a 2.30-o'clock-position, conductor from a 9-o'clock-position on the tegulum. Spermduct only visible in the distal half of the tegulum, running transversally. Cymbium with a distinct retrolateral indentation (Fig. 107–108). Dorsal RTA long, with one pointed ventrad part (Fig. 106). PS 9.1–10.5, OS 9.5–10.7. ♀ median septum freely visible, variable in shape, mostly converging in posterior part, diverging in its anterior

part, but may have almost parallel margins. Distinct bright roundish 'windows' near the anterior end of the septum. Epigyneal field slightly broader than long, with distinct anterior bands, separated from the field and distinctly fragmented into single patches. Epigyneal field with characteristic diagonal lines in its posterior half, which divide a dark anterior part from a brighter posterior part (Fig. 109). First part of internal duct system with 2.5 windings, these membranous (Fig. 110–111). PS 12.6–15.0, OS 13.7–19.0.

Notes. The holotype of *Heteropoda lunula* (Doleschall 1857) new comb. was deposited together with two other type specimens from different species in one vial. In former times curators assembled type specimens from different species in one vial (Gruber, pers. comm.). The description by Doleschall (1857) match fully with the specimen, which is considered the holotype, according to coloration and measurements. It is herewith removed from the synonymy of *Heteropoda thoracica* (C.L. Koch 1845). According to its original description the latter species seems to be a synonym of *Heteropoda venatoria*. Examination of the yet unlocated type material has to confirm this. The described male of *H. lunula* (Doleschall 1859) new comb. belongs clearly to *Heteropoda venatoria*.

The type material of *Holconia beccarii* Thorell 1890 could not be found neither in the MCSN Genua nor in any other museum, in which Thorell's material was used to be deposited. From the original description (coloration, size and location) and from the fact that Strand (1907) attributed his subspecies *malangana* to this species and that the former taxon is definitely conspecific with the holotype of *H. lunula* new comb., it is most likely that *Holconia beccarii* Thorell 1890 is a synonym of *Heteropoda lunula* (Doleschall 1857) new comb.

The type of *Heteropoda holzi* Strand 1907 is lost (Jäger 1998b). The original description and two males, determined by Strand (PJ 238, 239) points clearly to conspecificity and thus synonymy with *Heteropoda lunula* (Doleschall 1857) new comb.

Two species with similar characters, which are likely closely related to *H. lunula* new comb., were found in the NHM London. In all three species the first wound part of the internal duct system is membranous. Diagnoses, mainly based on genital characters, and illustrations are presented here, as this species group seems to have a wide distribution range (India, Indonesia, New Guinea). More coils of the internal duct system are considered the apomorphic state. Only a comprehensive revision on involved species may enlighten phylogenetic relationships between these species.

Heteropoda dasyurina (Hogg 1914)
(Figs. 118–123)

Palystes dasyurinus Hogg 1914: 57 (1♀, holotype, label: Wollaston Exp.: Dutch New Guinea 1912) NHM

1921.3.24.119/ 1921.65, examined. Hogg 1915: 471, f. 33.
Heteropoda dasyurinus Croeser 1996: 114.

Diagnosis. ♀ lateral lobes touching each other. Median septum only visible in the anterior half, narrow and slightly converging. Epigyneal field with parallel margins, anterior bands and a median lobe (Fig. 118). Internal duct system similar to that of *H. lunula* new comb., but with the very first part of the first winding bent to the lateral sides (in *H. lunula* new comb. directed to anterior). First part of internal duct system with 2.5 windings, these membranous (Fig. 119–120). Ventral OS dark with distinct white patches, these consisting of short hairs (Fig. 121). PS and legs with small dark spots. PS 11.6, OS 12.5.

Heteropoda hampsoni Pocock 1901
 (Figs. 124–128)

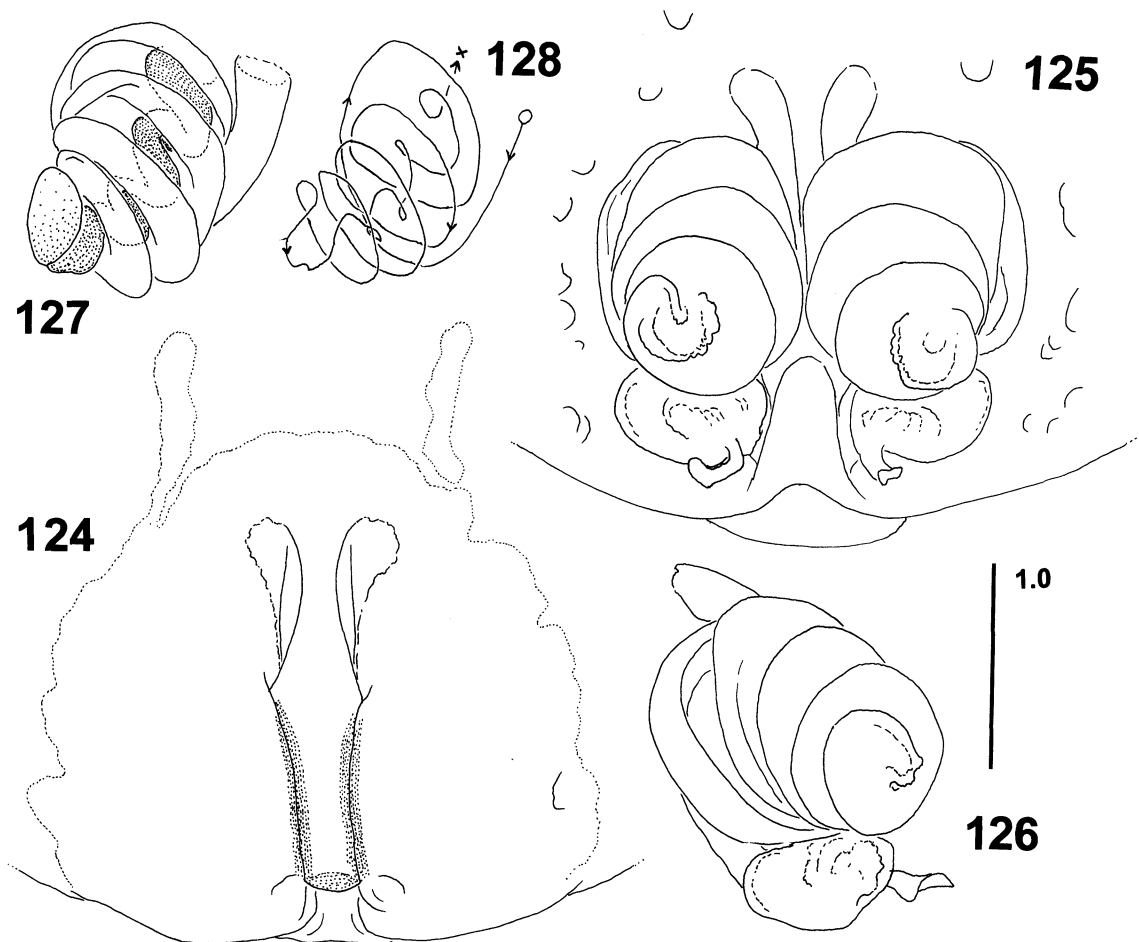
Heteropoda hampsoni Pocock 1901: 495 (1♀, holotype, label: Ootacamund, Nilghiri Hills, G.F. Hampton) NHM 88–57, ex-

amined. Sethi & Tikader 1988: 21, f. 82–86.

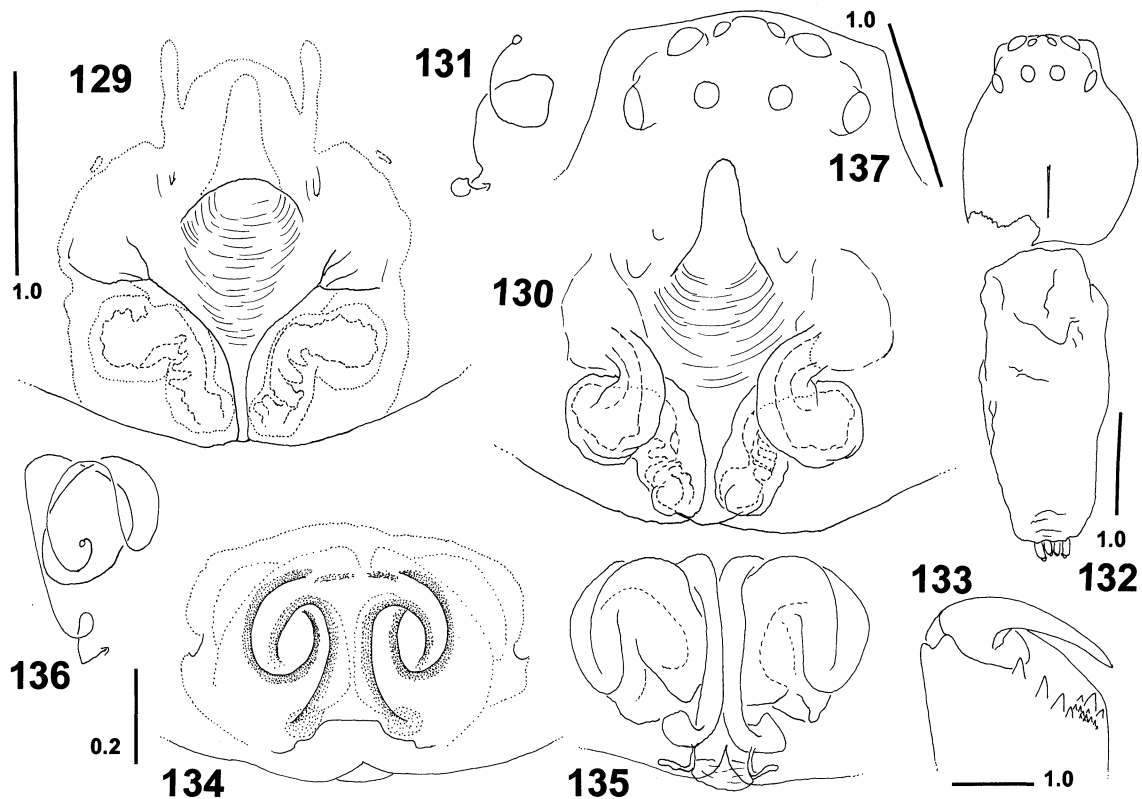
Diagnosis. ♀ lateral lobes touching not each other. Median septum long and slender. Epigyneal field slightly broader than long, with distinct anterior bands, these partly separated from the field (Fig. 124). First part of the internal duct system with 4.75 coils, membranous. Spermathecae only partly covered by the anterior windings (Figs. 125–128). Legs annulated, PS with a distinct marble-like pattern, OS with a distinct pattern. PS 13.3.

Heteropoda strandi new name
 (*Heteropoda panaretiformis* preoccupied by Strand 1906)
 (Figs. 129–131)

Torania panaretiformis Strand 1913b: 119 (1♀, holotype, PJ 246, label: W-Sumatra: Bungar-Bondar, Schütz S., *Torania panaretiformis* Strand) SMF 4749, examined.



Figs. 124–128. *Heteropoda hampsoni* Pocock 1901: ♀ holotype from Ootacamund (India). — 124, epigyne, ventral view; 125, vulva, dorsal view; 126, left half of internal duct system, lateral view; 127, anterior part of left half of internal duct system, anterior view; 128, schematic course of female internal duct system, anterior view. (Scales in mm)



Figs. 129–131. *Heteropoda strandi* new name: ♀ holotype of *Torania panaretiformis* Strand 1913 from Sumatra. **132–133.** *Spariolemus megalopsis* Thorell, 1891: immature holotype from Nicobar Islands (India). **134–137.** *Spariolemus minusculus* (Reimoser 1934) **new comb.**: ♀ from Palni Hills (India). — 129,134, epigyne, ventral view; 130,135, vulva, dorsal view; 131,136, schematic course of female internal duct system, dorsal view; 132, prosoma and opisthosoma, dorsal view; 133, cheliceral dentition, ventral view; 137, eye arrangement, dorsal view. (Scales in mm)

Further material examined. 1♀, PJ 62, label: W. Sumatra, Bungar-Bondar, 14.IV.1914, Schütz S.V., SMF. 3♀, PJ 78–80, label: Eusparassidae, Bungar-Bondar, W-Sumatra, Schütz S.V., SMF.

Diagnosis. ♀ anterior epigyne with characteristic conical invagination (Fig. 129). Internal duct system simple, with only one coil (Figs. 1301–131).

Notes. The internal genitalia of *H. strandi* new name shows characters, which show general differences in comparison to other *Heteropoda* spp. Until conspecific males are available and male genital characters are known, it is placed in the genus *Heteropoda*.

Heteropoda striatipes (Leardi 1901) **new comb.**

Isopoda striatipes Leardi 1901b: 366 (1♀, holotype, Mahè) ?Zoological Institute of the University Pavia, not examined.
Torania striatipes.— Roewer 1954a: 725.

Notes. From the original description it is not clear, whether this species belongs in fact to the genus *Heteropoda*. As the posterior eye row of *H. striatipes* new comb. is recurved according to its description and Leardi (1901b) compared his new species with *Beregama herculea*

Thorell 1881, it seems also to be possible that the species belongs to the subfamily Sparassinae. It is here transferred purely formally to *Heteropoda*, until the type material can be examined.

The original description was published in 1901 as indicated in Roewer (1942), and not in 1902 as cited in Platnick (2001).

Heteropoda venatoria (Linnaeus 1767)

Olios freycineti Walckenaer 1837: 569 (1♀ syntype, PJ 1653, label: Mariannes, Ile Guam, Freycinet, *Heteropoda freycineti* Walck, Type), MNHN (in Zootheque coll.), examined (herewith the present syntype {PJ 1653} designated as **lectotype**, other syntypes as **paralectotypes**; see also note below). **new syn.** Roewer 1954b: 1608 (nomen dubium).

Olios albifrons Lucas 1852: 76 (♀ type{s}, Réunion) whereabouts unknown, but see not below. **new syn.**

Ocypete bruneiceps Giebel 1863: 320 (1 subadult ♂, 1 subadult ♀, syntypes?, PJ 1659, 1660, label is missing) ZMUH, examined.

Helicopsis maderiana Thorell 1875: 123 (1♀, holotype, PJ 1625, with label: *Helicopsis Madeiriana* Thor., Madeira, Galathea, S.No. 253, Thorell det.) ZMUC Sparassid coll. 39, examined.

new syn.

Palystes maderianus.- Simon 1880: 263.

Olios maderianus.- Simon 1883: 281, 309. Reimoser 1919: 204.

Palystes ledleyi Hogg 1922: 296, f. 6 (1♂, 3♀, 1 immature, syntypes, PJ 1626–1630, with label: 1924.III.1.485–490, K52, Cotypes, Dran, Langbian Prov., 3000', S.Annam, C. Boden Kloss, March-May 1918. 3♀, 1 subadult ♂, syntypes, PJ 1631–1634, with label: 1924.III.1.791–794, K52, Cotypes, Dran, Langbian Prov., 3000', S.Annam, C. Boden Kloss, March-May 1918, 342.1924, 1924.iii.791–94. 1 subadult ♂, syntype, PJ 1635, with label: 1924.III.1.495, K 53, Cotype, Kuala Lumpur, F.M.S., C. Boden Kloss, Hogg. Coll. 1♀, syntype, PJ 1636, with label: 1924.III.1.496, K 62, Cotype, Kuala Lumpur, F.M.S., C. Boden Kloss, Hogg. Coll.) all NHM, examined. **new syn.** [1 ♂ (PJ 1626) is designated here-with as **lectotype**, all other syntypes as **paralectotypes**].

Heteropoda ledleyi.- Croeser 1996: 114.

Heteropoda venatoria pluridentata Hogg 1914: 57 (2♀, syntypes, PJ 1656–1657, label: Wollaston, N.Guinea, *Heteropoda regia* Fabr. var. nov. *pluridentata*) NHM 1921.3.24.111–112, examined. **new syn.**

Further material examined. 1♂, PJ 1654, label: Nouv. Zelande, Quay et Gaymard, *Heteropoda peroniana* Walckenaer, E.S. det., MNHN (Zootheque coll.). 1♀, PJ 1655, label: Ile Guam, Freycinet., *Heteropoda freycineti* Walck., E.S. det., MNHN (Zootheque coll.).

For further synonymies and references see Platnick 2001.

Notes. *Heteropoda venatoria* is widely distributed in tropical regions and therefore described several times independently by various authors under different names.

The species *Olios freycineti* was described by Walckenaer (1837) apparently from more than one specimen, as he mentioned in his original description two different localities (Iles Sandwich, Ile Guam). The present female fits with the original description given by Walckenaer (1837), i.e. measurements and description of the specimen match, and therefore it is considered a syntype, which is here designated as lectotype. The present female (PJ 1653) belongs clearly to *Heteropoda venatoria*. Thus the type locality of *Olios freycineti* Walckenaer 1837 is the Island Guam in Micronesia and *Olios freycineti* Walckenaer 1837 is a junior synonym of *Heteropoda venatoria* (Linnaeus 1767).

The type material of *Olios albifrons* Lucas 1852 could not be traced successfully in the MNHN Paris or any other collection. In the Zootheque of the MNHN Paris one immature specimen was found, which was determined by Lucas as *Olios albifrons* (1 immature, PJ 1723, label: *Olios albifrons*, Lucas det., Congo, Dyborski, 92–94). This specimen belongs clearly to *Heteropoda venatoria*. In the original description Lucas (1852) placed the new species in close relationship to *Olios leucosius* Walckenaer 1805 (= *Heteropoda venatoria*). The original description of *O. albifrons* fits with *Heteropoda venatoria* (body length, coloration). From Réunion no other Sparassidae are described so far. From all these reasons *Olios albifrons* Lucas 1852 is

considered a junior synonym of *Heteropoda venatoria* (Linnaeus 1767).

The two specimens of *Ocypete bruneiceps* Giebel 1863 are fixed on a glass plate. In the original description Giebel (1863) mentioned six females. It is supposed that the subadult male were probably recognized as immature female. Whereabouts of the other four syntypes are not known. As the examined specimens are apparently belonging to *Heteropoda venatoria* (Linnaeus 1767), the synonymy is confirmed.

The holotype female of *Helicopsis madeirana* Thorell 1875 was collected in Madeira during the 'Galathea' expedition. No further records of *H. venatoria* from this island are known to the author. Probably it represents a unique sample on this island, which is supposed to be introduced by human activities as mentioned already in Bonnet (1957: 2203, list of references).

The syntype series of *Palystes ledleyi* Hogg 1922 contained at least three different species (*Heteropoda venatoria*, *Heteropoda* sp., *Gnathopalystes* sp.). From the original description and the fact that most of the syntypes are clearly conspecific with *Heteropoda venatoria*, one male (PJ 1626) is chosen as lectotype for reasons of stability. Thus *Palystes ledleyi* is a junior synonym of *Heteropoda venatoria* (Linnaeus 1767).

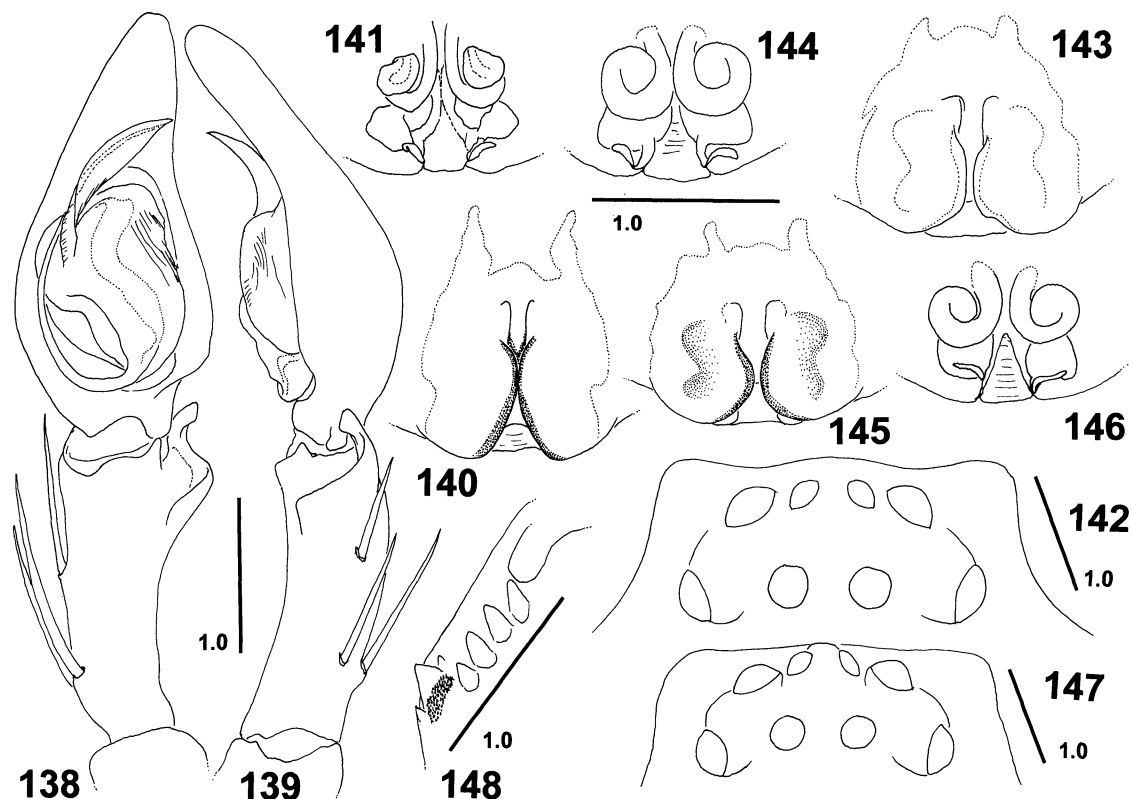
Species formerly attributed as subspecies to
Heteropoda venatoria

Merian (1911) described six subspecies of *Heteropoda venatoria*. These forms do certainly not belong to *Heteropoda venatoria* and are herewith elevated to species rank. In some cases it remains unclear, whether two forms are synonymous with each other or are - in other cases - geographically separated forms of one species. Further investigations are necessary on these closely related taxa. The designations of lectotypes and paralectotypes (subparatypoids) by Forcart (1961) are valid after ICZN (1999).

Heteropoda bonthainensis Merian 1911 **new stat.**
(Figs. 138–142)

Heteropoda venatoria bonthainensis Merian 1911: 257 (1♂, lectotype, PJ 351, label: Celebes, about 1500 m on the Peak of Bonthain, X. [18]95) NHMB 550-I a, examined, (1♀, paralectotype, PJ 328, label: Süd-Celebes, Pic von Bantaeng, 1350 m, Drs. P. + F. Sarasin leg. + don.) NHMB 550-I b, examined. Forcart 1961: 81 (designated lectotype and paralectotype).

Diagnosis. ♂ embolus arising from a 5.30-o'clock-position, conductor from a 10-o'clock-position on the tegulum. Sperm duct slightly S-shaped (Fig. 138). Dorsal RTA distinctly set off against ventral RTA (lateral view; Fig. 139). PS 5.9, OS 7.0. ♀ lateral lobes touching each other at a point. Median septum narrow and visible only in the



Figs. 138–142. *Heteropoda bonthainensis* Merian 1911 **new stat.**: 138–139, 142, ♂ lectotype; 140–141, ♀ paralectotype (PJ 328) from Celebes. **143–148.** *Heteropoda minahassae* Merian 1911 **new stat.**: 143–144, ♀ lectotype; 145–148, ♀ paralectotype (PJ 329) from Celebes. — 138, male left palp, ventral view; 139, male left palp, retrolateral view; 140, 143, 145, epigyne, ventral view; 141, 144, 146, vulva, dorsal view; 142, 147, eye arrangement, dorsal view; 148, cheliceral dentition, ventral view. (Scales in mm)

anterior part. Epigyneal field slightly longer than broad, with distinct anterior bands (Fig. 140). Spermathecae extending laterally beyond the first (anterior) part of the internal duct system (Fig. 141). PS 7.3, OS 11.1.

Heteropoda flavocephala Merian 1911 **new stat.**
(Figs. 149–155)

Heteropoda venatoria flavocephala Merian 1911: 255 (1♀, lectotype, PJ 327, label: [Celebes], Lake Posso, Gesch. Dr. Sarasin, [1895]) NHMB 550-IV a, examined, (1♀, paralectotype, PJ 349, label: Celebes, Buol, Gesch. Der. P. + F. Sarasin, [15./24.VIII.1894]) NHMB 550-IV b, examined, (1♀, paralectotype, label: N-Celebes, Paguat, Uangkahulu-Tal, IX. 1894), NHMB 550-IB c, not examined, (1♀, paralectotype, PJ 340, label: [Celebes] Umgebung von Mapane, P. + F. Sarasin leg. + don., [II.1895]) NHMB 550-IV d, examined. Forcart 1961: 81 (designated lectotype and paralectotypes).

Diagnosis. ♀ with median septum almost freely visible, its anterior margins bent laterad at a right angle. Inner margins of lateral lobes diverging in posterior half. Epigyneal field as long as broad, with distinct anterior bands (Figs.

149, 154). Internal duct system with large first winding in a regular spiral. Spermathecae extending beyond the first (anterior) part of the internal duct system (Figs. 150–155).

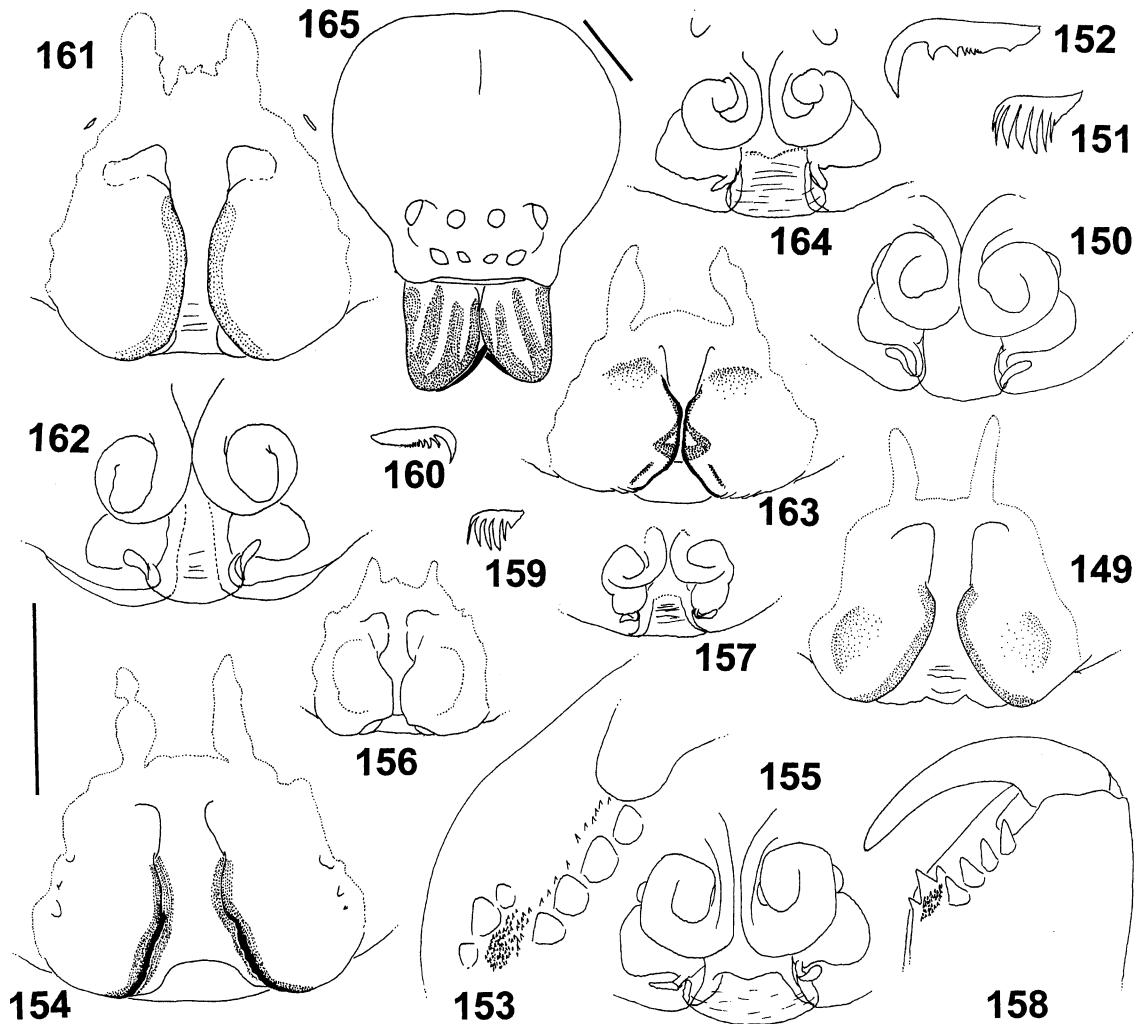
Notes. Two types are probably conspecific (PJ 327, 349), one type (PJ 340) is definitely not conspecific with the lectotype (PJ 327; see below).

Heteropoda sp.
(Figs. 156–160)

Heteropoda venatoria flavocephala Merian 1911: 255 (1♀, paralectotype, PJ 340, label: [Celebes] Umgebung von Mapane, P. + F. Sarasin leg. + don., [II.1895]) NHMB 550-IV d, examined. Forcart 1961: 81 (designated lectotype and paralectotypes).

Diagnosis. ♀ with median septum partly covered by lateral lobes. Epigyneal field with small anterior bands (Fig. 156). Internal duct system with semicircular first winding, its anterior parts extending beyond the spermathecae (Fig. 157).

Notes. From differences in female genitalia and somatical characters (cheliceral dentition, teeth of palpal claw and leg



Figs. 149–155. *Heteropoda flavocephala* Merian 1911 **new stat.**: 149–153. ♀ lectotype from Celebes; 154–155, ♀ paralectotype (PJ 349) from Celebes. **156–160.** *Heteropoda* sp., ♀ paralectotype of *Heteropoda flavocephala* Merian 1911 **new stat.** (PJ 340) from Celebes. **161–162.** *Heteropoda montana* Merian 1911 **new stat.**: ♀ paralectotype from Celebes. **163–165.** *Heteropoda striata* Merian 1911 **new stat.**: ♀ lectotype from Celebes. — 149,154,156,161,163, epigyne, ventral view; 150,155,157,162,164, vulva, dorsal view; 151,159, palpal claw, retrolateral view; 152, retrolateral claw of leg I, retrolateral view; 160, prolateral claw of leg I, prolateral view; 153,158, cheliceral dentition, ventral view; 165, prosoma and chelicerae, dorsal view. (Scales in mm)

claws) the present specimen is considered not conspecific with the lectotype of *Heteropoda flavocephala* Merian 1911 **new stat.**

Heteropoda luwuensis Merian 1911 **new stat.**

Heteropoda venatoria luwuensis Merian 1911: 256 (♀ immature holotype, label: Central-Celebes, N. des Golfes von Boni, leg. Drs. P. + F. Sarasin, I. 1895), NHMB 550-II a, examined. Forcart 1961: 81.

Notes. As the holotype is immature, no diagnosis is proposed here.

Heteropoda minahassae Merian 1911 **new stat.**
(Figs. 143–148)

Heteropoda venatoria minahassae Merian 1911: 253 (1♀, lectotype, PJ 339, label: Celebes, Sudara, P. + F. Sarasin, 1893) NHMB 550-V b, examined, (1♀, paralectotype, PJ 329, label: [Celebes] am Klabat, 1500 m hoch, 23. Sept[ember], P. + F. Sarasin) NHMB 550-V b, examined, (1♂, 1♀, 4 immatures, paralectotypes, same data as PJ 329), NHMB 550-V a, not examined. Forcart 1961: 82 (designated lectotype and paralectotypes).

Diagnosis. ♀ lateral lobes covering partly the median septum, almost touching each other. Epigyneal field slightly broader than long, anterior bands short (Figs. 143,145). First

winding in an almost regular spiral. Inner part of the first winding not reaching its posterior margin. Spermathecae extending not beyond the first (anterior) part of the internal duct system (Figs. 144,146). PS 5.9–6.3, OS 7.0–7.6.

Heteropoda montana Merian 1911 **new stat.**
(Figs. 161–162)

Heteropoda venatoria montana Merian 1911: 254 (1 immature, lectotype, label: N-Celebes, Matinang-Gebirge, 250m, VIII. 1894) NHMB 550–VI e, examined, (1 immature, paralectotype, label: N-Celebes, Gipfel des Lokon, 1894) NHMB 550–IV a, examined, (2 immatures, paralectotypes, label: N-Celebes, Soputan, 1200m, 19./21.IV.1895) NHMB 550–IV b, examined, (1♀, paralectotype, PJ 348, label: Celebes, Rurukan, IX.[18]94, P. + F. Sarasin leg. + don.) NHMB 550–VI c, examined, (1 immature, paralectotype, label: N-Celebes, Tomohon, 780m, 1894, Leg. Drs. P. + F. Sarasin) NHMB 550–IV d, examined. Forcart 1961: 82 (designated lectotype and paralectotypes).

Diagnosis (according to adult paralectotype!, PJ 348). ♀ median septum broad, slightly covered by lateral lobes. Epigyneal field slightly broader than long, with short anterior bands (Fig. 161). Inner part of the first winding almost reaching its posterior margin. Spermathecae extending beyond the first (anterior) part of the internal duct system (Fig. 162). PS 10.3, OS 10.8.

Heteropoda striata Merian 1911 **new stat.**
(Figs. 163–165)

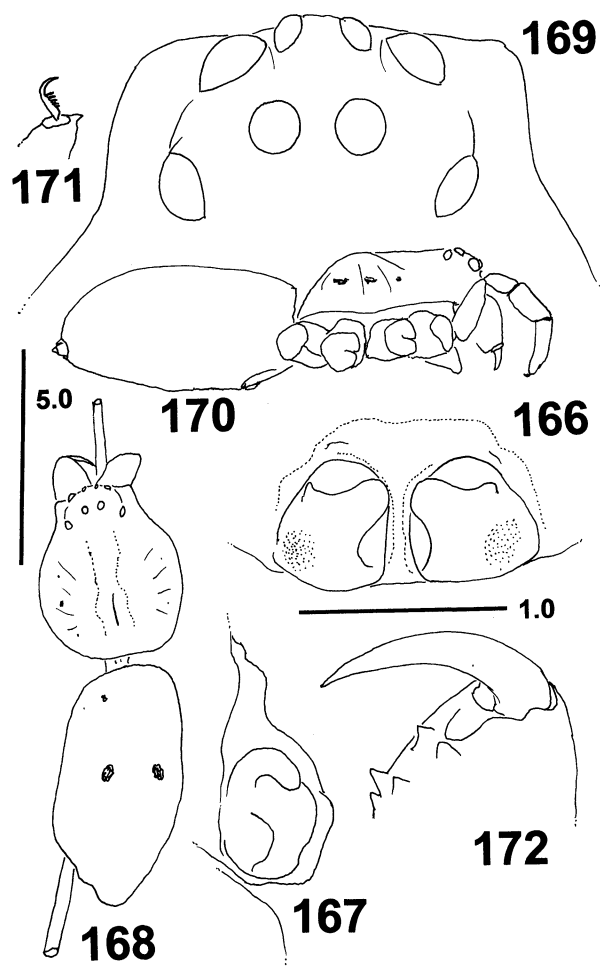
Heteropoda venatoria striata Merian 1911: 257 (1♀, lectotype, PJ 357, label: Celebes, Tomohon, Gesch. Dres P. + F. Sarasin) NHMB 550–III a, examined, (1 ♀, paralectotype, Kema?, whereabouts unknown), NHMB?, not examined. Forcart 1961: 82 (designated lectotype).

Diagnosis. ♀ median septum partly covered by lateral lobes, these touching each other along the median line. Epigyneal field trapezoid, broader than long, with distinct anterior bands, these slightly converging orad. Anterior part of median septum converging (Fig. 163). Inner part of the first winding situated on its anterior margin. Spermathecae extending beyond the first (anterior) part of internal duct system (Fig. 164). PS 8.4, OS 10.9.

Genus *Hoedillus* Simon 1898
(Figs. 166–172)

Type species. *Hoedillus sexpunctatus* Simon 1898: 200 (1♀, holotype, label: Guatemala, F.D. Godman [Sarg], Coll. God. + S., 1901.67) NHM 1901.3.3.132, examined. Pickard-Cambridge 1900: 122, pl. 9, f. 1.

Notes. Simon described this monotypic genus from one female and placed it in his 'Heteropodeae' (1898). The

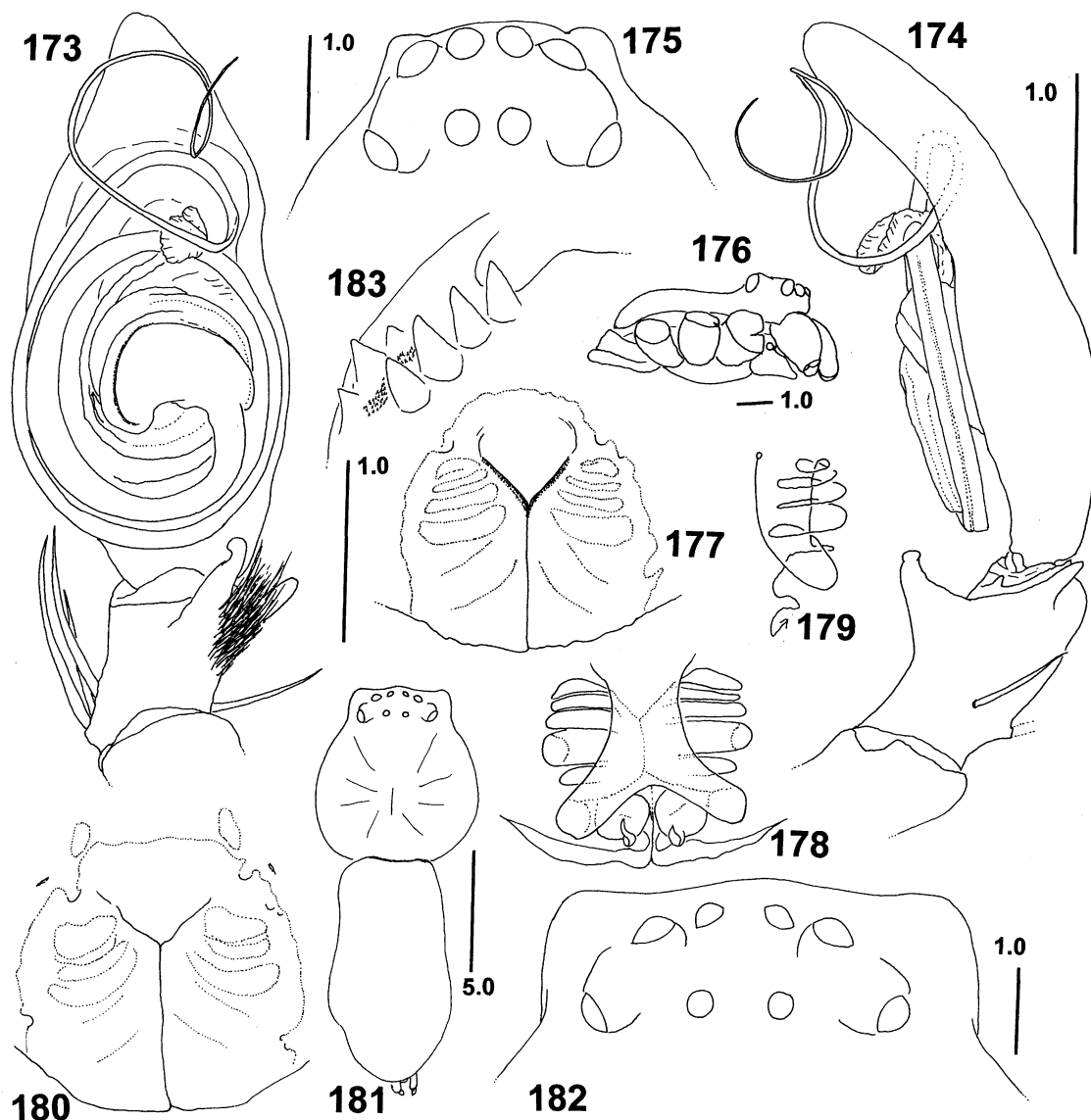


Figs. 166–172. *Hoedillus sexpunctatus* Simon 1898 (Zoridae): ♀ holotype from Guatemala. — 166, epigyne, ventral view; 167, epigyne, lateral view; 168, prosoma and opisthosoma, dorsal view; 169, eye arrangement, dorsal view; 170, prosoma and opisthosoma, lateral view; 171, palpal claw, retrolateral view; 172, cheliceral dentition, ventral view. (Scales in mm)

genus is here definitely excluded from the Sparassidae, as it has no metatarsal trilobate membrane, the autapomorphy for all sparassids. According to somatical characters (Figs. 166–172) it is transferred to the Zoridae.

Genus *Pandercetes*

The genus *Pandercetes* contains heteropodine species, which live on tree bark, where individuals are well camouflaged (Hillyard 1997) and resemble *Hersilia* spp. (Hersiliidae) from their habit and behavior. Type species of this genus is *P. gracilis* L. Koch 1875. Males are characterized by irregular distal coils of the embolus and a membranous conductor, females by screw-like copulatory ducts. In both sexes the head region with eyes is elevated.



Figs. 173–176. *Pandercetes longipes* Thorell 1881: ♂ holotype from New Guinea. **177–183.** *Pandercetes nigrogularis* (Simon 1897) **new comb.**: ♀ syntypes from Java. — 173, male left palp, ventral view; 174, male left palp, retrolateral view; 175, 182, eye arrangement, dorsal view; 176, prosoma, lateral view; 177, 180, epigyne, ventral view; 178, vulva, dorsal view; 179, schematic course of female internal duct system, dorsal view; 181, prosoma and opisthosoma, dorsal view. (Scales in mm)

Species formerly attributed to *Adrastis* Simon 1880

Pandercetes nigrogularis (Simon 1897) **new comb.**
(Figs. 177–183)

Adrastis nigrogularis Simon 1897a: 489 (2♀, syntypes, PJ 689–690, label: Clubionidae - *Adrastis nigrigularis* E.S., Java, S. baie de Palabouan {Fr.}) MNHN 1571, examined. Jäger 2001a: f. 2c.

Diagnosis. ♀ epigyne with long median suture between

lateral lobes, anterior margins of lateral lobes forming a ‘V’ (Figs. 177, 180). Internal duct system with beginning part broad ‘Y’-shaped (upside down). Subsequent copulatory ducts with 4.5 coils, with their axis parallel to the body axis (Figs. 178–179). Eyes small in comparison to other *Pandercetes* spp. (Fig. 181–182). PS 8.1–8.6, OS 9.2–11.0.

Notes. Simon (1897) noted ‘*nigrigularis*’ on the original label, but published ‘*nigrogularis*’. The latter name is valid.

The following species is listed for reasons of comparison and illustration of male genital characters of the genus *Pandercetes*.

Pandercetes longipes Thorell 1881
(Figs. 173–176)

Pandercetes longipes Thorell 1881: 312 (1♂, holotype, PJ 1665, label: [New Guinea] Ansum, Ins. Yobi, 1875, leg. O. Beccari) MCSN, examined.

Diagnosis. ♂ with embolus arising from a 6-o'clock-position, conductor from a 7.30-o'clock-position on the tegulum. Embolus running 1.75 windings round the tegulum, with 2 further apical irregular coils (Fig. 173). Ventral RTA with blunt apex, dorsal RTA pointed (Fig. 174). PS 4.4, OS 4.8.

Genus *Pseudopoda* Jäger 2000

The genus *Pseudopoda* was described and revised by Jäger (2000, 2001a). Diagnostic characters in males are a flattened or broadenend embolus in combination with a membranous conductor and in females slit-like first parts of the copulatory ducts, with first windings directed from lateral to median (with only few exceptions; see note under *P. lutea* new comb.).

Pseudopoda akashi (Sethi & Tikader 1988) **new comb.**

Heteropoda akashi Sethi & Tikader 1988: 22, f. 92-96 (1♀, holotype, 2♀, paratypes, Barapani, Khasi and Jaintia Hills, Meghalaya, India, Coll. Dr. A.K. Mondal, 18.4.1964), NCZS, not examined.

Notes. From the original description (illustration of female genitalia, comparison with *Pseudopoda prompta*) this species belongs clearly to *Pseudopoda*. No diagnosis or

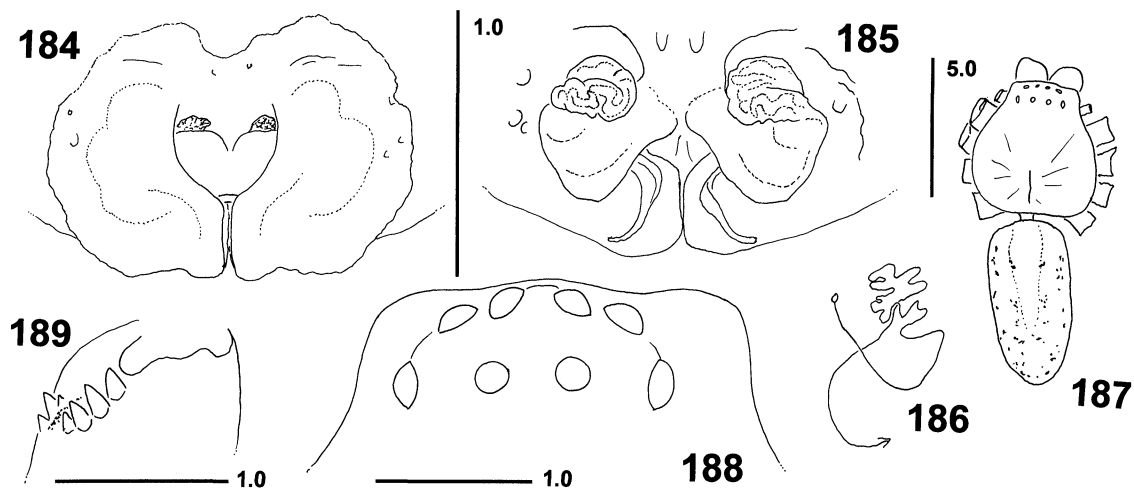
statements to its systematic position can be made without examination of the original material.

Pseudopoda lutea (Thorell 1895) **new comb.**
(Figs. 184–189)

Heteropoda lutea Thorell 1895: 265 (1♀, holotype, label: Burma, Tharrawaddy, Envalu, Oates) NHM 95.9.21.849, examined. Leardi 1901a: 89 (description of male from Myanmar, material not examined). Sethi & Tikader 1988: 24, f. 103–107.

Diagnosis. Closely related to *Pseudopoda diversipunctata* Jäger 2001 from Nepal (S-Annapurna), but ♀ with median field of epigyne U-shaped and distinctly shorter (in *P. diversipunctata* median field V-shaped and longer). Lateral lobes touching each other along the median line (in *P. diversipunctata* lateral lobes touching each other only at the posterior epigyneal margin) (Fig. 184). First part of the first winding running diagonally from the median line laterally (in *P. diversipunctata* running straight and parallel to the length axis of the body) (Fig. 185–186). OS slightly elongated (Fig. 187). PS. 4.8, OS 5.8.

Notes. Basal species within *Pseudopoda* (*P. diversipunctata*-group, *P. serrata*, *P. hingstoni*) show plesiomorphic characters in female genitalia, i.e. first winding of the internal duct system running from median to lateral (Jäger 2001a, Jäger & Ono 2001). They are identified as representatives of the genus *Pseudopoda* 1) by the median epigyneal septum which is reduced in *Pseudopoda* spp., i.e. the septum does not reach the posterior margin of the epigyne, but is separated by the lateral lobes, and 2) by corresponding characters of the males (embolus flattened, conductor membranous, RTA arising medially to basally). In *Pseudopoda minor* and *P. cuneata* a transition from this plesiomorphic state to an apomorphic state is recognizable:



Figs. 184–189. *Pseudopoda lutea* (Thorell 1895) **new comb.**: ♀ holotype from Myanmar. — 184, epigyne, ventral view; 185, vulva, dorsal view; 186, schematic course of female internal duct system, dorsal view; 187, prosoma and opisthosoma, dorsal view; 188, eye arrangement, dorsal view; 189, cheliceral dentition, ventral view. (Scales in mm)

the first winding is turning (in an evolutionary sense) and in other *Pseudopoda* species it starts at the lateral side running to the median line (Jäger 2001a).

Genus *Spariolenus* Simon 1880

The genus *Spariolenus* was erected by Simon (1880) for two species, *S. tigris* Simon 1880 and *S. taprobanicus* (Walckenaer 1837). The latter species was provided by Simon with a question mark and later (1897b) he designated *S. tigris* as type species. Males are characterized by a strong and simply bent embolus and a strongly reduced conductor. Females may be recognized by their two epigyneal pits and an uncoiled internal duct system, which consists only of windings.

Spariolenus megalopis Thorell, 1891
(Figs. 132–133)

Spariolenus megalopis Thorell 1891: 77 (1 immature, holotype, PJ 1188, with label: Gille Nicobar Galathea pütt..ies[?]) ZMUC, examined.

Notes. As the holotype is immature, no diagnosis is proposed here. It remains unclear, whether the species belongs to *Spariolenus* or not.

Spariolenus minusculus (Reimoser 1934) **new comb.**
(Figs. 134–137)

Heteropoda minuscula Reimoser 1934: 485, f. 9 (1♀, syntype, PJ 1705, label: Voy. Carl et Escher, Inde meridionale, Mariyan-Shola, 11.–17.IV) MHNG, examined. (1♀, syntype, PJ 1706, with label: Voy. C. e. Escher, Ind. Merid., Kukkalshola, 1.IV.) MHNG, examined. As both syntypes are not clearly conspecific with each other, one (PJ 1705 from Mariyan-Shola) is designated as **lectotype**, the other syntype (PJ 1706) as **paralectotype** for reasons of stability.

Further material examined. 1♀, PJ 462, with label: Süd-Indien, Palni-Hills, J. Carl, K. Escher leg. 1926/27, E. Reimoser det.) NHMW 17864.

Diagnosis. Species distinctly smaller than *S. tigris*. ♀ genitalia similar to those of *S. tigris*, but proportions within epigyne different (Fig. 134). Vulva with longer internal ducts (Figs. 135–136).

Notes. From the external and internal genital characters (two epigyneal pits, these spirally coiled; lateral lobes indistinct; internal duct system consisting of large windings), which are generally congruent to those found in *S. tigris*, the present species belongs clearly to the genus *Spariolenus*. The female which was additionally examined was labeled as 'cotype'. According to the original description only the two female syntypes were examined by Reimoser. Thus the additional female from NHMW has no type status.

Spariolenus taeniatus Thorell 1890

Spariolenus taeniatus Thorell 1890a: 44 (2 subadult ♀, syntypes, from Nias, Hili Zabobo, Bawo Lowalani, Modigliani leg.) MCSN, not examined. Reimoser 1929: 129.

Notes. As the syntypes are immature, no diagnosis is proposed here. It remains unclear, whether the species belongs to *Spariolenus* or not.

Spariolenus taprobanicus (Walckenaer 1837)

Olios taprobanicus Walckenaer 1837: 570 (type{s} from Sri Lanka) whereabouts unknown.
Spariolenus taprobanicus Simon 1880: 281.

Notes. Only one specimen from Sri Lanka could be found in the MNHN Paris (Simon coll. no. 20561), which was determined as *S. taprobanicus*. The specimen belongs clearly to the genus *Heteropoda*. Simon (1880) provided *S. taprobanicus* in his genus description of *Spariolenus* with a question mark. He did not state, whether he has seen the type or not. Until the type material is found or a neotype is described, no statements on the systematic position of this species are possible.

Spariolenus tigris Simon 1880

Spariolenus tigris Simon 1880: 281 (1♀, holotype {+ 1 immature ♀}, PJ 687{688}, with label: Calcutta, Thev[enet]. Clubionidae) MNHN 1750–1576, examined. Simon 1897b: 56, f. 45. 1897c: 253. Gravely 1931: 257, f. 13C–D. Sethi & Tikader 1988: 7, f. 19–24. Jäger 2001a: 9, f. 2e, m-p, 14d, 15a-b.

Spariolenus petricola Gravely 1931: 258, f. 13E (♀ syntypes, Khandagiri & Pachmarhi, type locality not specified in original description) ZSIC 1509/18, not examined. **new syn.** Sethi & Tikader 1988: 7, f. 14–18.

Further material examined. 2♂, PJ 867–868, with label: Calcutta, Gravely, Sammlung Reimoser, NHMW.

Diagnosis. ♂ with strong and simply bent embolus. Conductor strongly reduced. RTA with two rounded tips. PS 6.0–8.9, OS 6.3–8.6. ♀ with two epigyneal pits, these spirally coiled. Lateral lobes indistinct. Internal duct system consisting of several large windings. Epigyneal field roundish, with anterior patches separated from the field. PS 8.8, OS 10.9

Notes. *Spariolenus petricola* was obviously described from immature females, which possess a pre-epigyne and a pre-vulva, respectively (Gravely 1931, Sethi & Tikader 1988). Such pre-genitalia occur in almost all subgroups of Sparassidae and consist of two parallel furrows, which are invaginated as vulval tubes (compare *Barylestis scutatus* new comb., Fig. 27 in this paper, and *Olios japonicus* in

Jäger & Ono 2000: 45, f. 7–9). As the general appearance and other somatical characters of *S. petricola* are congruent with those of *S. tigris* (as stated in the original description by Gravely in 1931), *Spariolenus petricola* Gravely 1931 is considered a junior synonym of *Spariolenus tigris* Simon 1880.

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アシダカグモ科：転属とシノニム (pp. 33-61)

Peter Jäger (Institute für Zoologie, Johannes Gutenberg-Universität, Germany)

アシダカグモ亜科 Heteropodinae に関する分類学的検討の新規の結果をまとめた。 *Adrastis* Simon, *Panaretus* Simon, *Parhedrus* Simon はいずれも *Heteropoda* 属のシノニムであることがわかった。種レベルでのシノニム関係は次のとおり：*Adrastis atomaria* Simon 1880 = *Heteropoda boiei* (Doleschall 1859); *Parhedrus fasciatus* Reimoser 1927 = *Heteropoda ocyalina* (Simon 1887); *Heteropoda holzi* Strand 1907, *Tortula gloriosa* Simon 1880, *Tortula simoni* Karsch 1884, *Holconia beccarii* Thorell 1890, *Isopoda beccarii malangana* Strand 1907 = *Heteropoda lumula* (Doleschall 1857); *Olios freycineti* Walckenaer 1837, *Olios albifrons* Lucas 1852, *Helicopsis maderiana* Thorell 1875, *Palystes ledleyi* Hogg 1922, *Heteropoda venatoria pluridentata* Hogg 1914 = *Heteropoda venatoria* (Linnaeus 1767); *Spariolemus petricola* Gravely 1931 = *Spariolemus tigris* Simon 1880. 次の分類群は *Heteropoda* (*Torania*) から *Barylestis* へ移した：*B. fagei* (Lessert 1929), *B. montandoni* (Lessert 1929), *B. occidentalis* (Simon 1887), *B. scutatus* (Pocock 1903), *B. variatus* (Pocock 1899). 次の分類群は *Adrastis* から *Heteropoda* へ移した：*H. lashbrookii* (Hogg 1922), *H. murina* (Pocock 1897), *H. planiceps* (Pocock 1897), *H. spinipes* (Pocock 1897). 次の分類群は *Panaretus* から *Heteropoda* へ移した：*H. borneensis* (Thorell 1890), *H. chelata* (Strand 1911), *H. chelata vittichelis* (Strand 1911), *H. ignichelis* (Simon 1880), *H. javana* (Simon 1880), *H. nirounensis* (Simon 1903). 次の種は *Parhedrus* から *Heteropoda* へ移した：*H. ocyalina* (Simon 1887). 次の分類群は *Torania* から *Heteropoda* へ移した：*H. armillata* (Thorell 1887) と *H. striatipes* (Leardi 1901). *Heteropoda lumula* (Doleschall 1857) を *Heteropoda thoracica* (C. L. Koch 1845) のシノニムから復帰させた。新名 *Heteropoda strandi* を提唱した (*Heteropoda panaretiformis* は Strand 1906 により先取されていたため)。 *Heteropoda venatoria* の亜種とされていた次の種を独立種に昇格させた：*H. bonthainensis* Merian 1911, *H. flavocephala* Merian 1911, *H. luwuensis* Merian

1911, *H. minahassae* Merian 1911, *H. montana* Merian 1911 と *H. striata* Merian 1911. *Hoedillus* Simon 1898 とそのタイプ種 *Hoedillus sexpunctatus* Simon 1898 はミヤマシボグモ科 (*Zoridae*) へ移した。次の種は *Adrastis* から *Pandercetes* へ移した：*P. nigrogularis* (Simon 1897). 次の分類群は *Heteropoda* から *Pseudopoda* へ移した：*P. akashi* (Sethi & Tikader 1988) と *P. lutea* (Thorell 1895). 次の種は *Heteropoda* から *Spariolemus* へ移した：*S. minusculus* (Reimoser 1934). 種名安定のため、次の種のレクトタイプとパラレクトタイプを指定した：*Heteropoda borneensis* (Thorell 1890), *Olios freycineti* Walckenaer 1837, *Palystes ledleyi* Hogg 1922, *Spariolemus minusculus* (Reimoser 1934). 次の種をそれぞれの地域から初めて記録した：*Barylestis occidentalis* (Simon 1887) をスーダンから, *B. montandoni* (Lessert 1929) をウガンダから, *B. fagei* (Lessert 1929) をルアンダから, *Heteropoda javana* (Simon 1880) をスマトラから *H. boiei* (Doleschall 1859) をマレーシアから, そして *H. lumula* (Doleschall 1857) をボルネオから。得られるかぎり、生殖器と他の重要な外部形態形質を図示した。(和訳：編集委員会)

コモリグモ科の地理的に隔たった近縁種のペア：*Acantholycosa solituda* (Levi & Levi) と *A. sternerii* (Marusik) (pp. 63-71)

Torbjörn Kronestedt¹, Yuri M. Marusik² (¹Swedish Museum of Natural History, Sweden; ²Institute for Biological Problems of the Norththe North, Far East Branch of the Russian Academy of Sciences, Russia)

コモリグモ科の *Pardosa solituda* Levi & Levi (新北区：ロッキーマン山脈) と *Pardosa sternerii* Marusik (旧北区：モンゴル、南シベリア) を再記載した。後者の雌を初めて記載・図示した。この2種は交接器官の配置により最近縁と考えられる。両種の雄は第1脚、第2脚の脛節と蹠節上に羊毛状の柔毛を共有する。これらの歩脚の節の外皮には何らかの化学物質を分泌すると思われる孔が多数ある。両種を *Acantholycosa* に転属した。(和訳：編集委員会)

書 評 Book Reviews

The Spiders of Korea

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待ちに待った南宮峻氏の『韓国クモ図鑑』が出版された。B6版 648 頁の大著である。南宮氏は 1920 年生まれで、第二次世界大戦にも従軍した経験を持つ韓国のクモ学者。35 年間、中学校の教員をされ、洞窟性の生物や蜘蛛の分類研究に努力された。日本蜘蛛学会会員としても長く、すでに 1964 年の *Atypus*

に「韓国忠州の蜘蛛」を投稿している。日本語に堪能、温厚篤実、謙虚な人柄で、韓国のクモに関心をもつ私たち日本の研究者のほとんどが南宮氏のお世話になっている。私は 1990 年に新海栄一・小野展嗣両氏とともに韓国クモ研究所所長・金胃弼氏に招かれて訪韓したおりに、実質的な案内役として南宮氏に連日お世話になった。その当時から、南宮氏は一眼レフカメラを抱えて、クモの接写を盛んに撮影していた。新海栄一氏のフィールド図鑑『クモ』が出版された直後でもあり、南宮氏は新海氏の図鑑に負けない、写真と生殖器の図を並置した真に役立つ韓国クモ図鑑を作る夢を語っていた。すでに 70 歳という高齢で