

Taxonomic notes on the Harmochirina Simon, 1903 from South and South-East Asia (Aranei: Salticidae)

Таксономические заметки о Harmochirina Simon, 1903 из южной и юго-восточной Азии (Aranei: Salticidae)

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КЛЮЧЕВЫЕ СЛОВА. Агапеае, новый вид, описание, Ориентальный регион, пауки-скакунчики, Плехиппini, распространение, синонимия, таксономия, Harmochireae.

ABSTRACT. A new species — *Neaetha tomkovi-chi* sp.n. (♂♀) from India (Andhra Pradesh) — is diagnosed and described. Three new synonyms are proposed: *Stichius albomaculatus* Thorell, 1890 and *Bianor leucostictus* Thorell, 1890 with *Bianor angulosus* (Karsch, 1879), and *Bianor incitatus* Thorell, 1890 with *Bianor balius* Thorell, 1890. The latter species is removed from the genus *Stertinus* Simon, 1890, and its original combination is re-instated: *Bianor balius* comb.rev. The generic name *Stichius* Thorell, 1890 is synonymised with *Bianor* Peckham et Peckham, 1886. The lectotype (♀) is designated for *Modunda ghigii* Caporiacco, 1949, and a new combination is proposed: *Ureta ghigii* (Caporiacco, 1949), comb.n. (ex *Modunda*). New faunistic records for seven Harmochirina species of the genera *Bianor* Peckham et Peckham, 1886, *Harmochirus* Simon, 1885 and *Modunda* Simon, 1901 are also provided.

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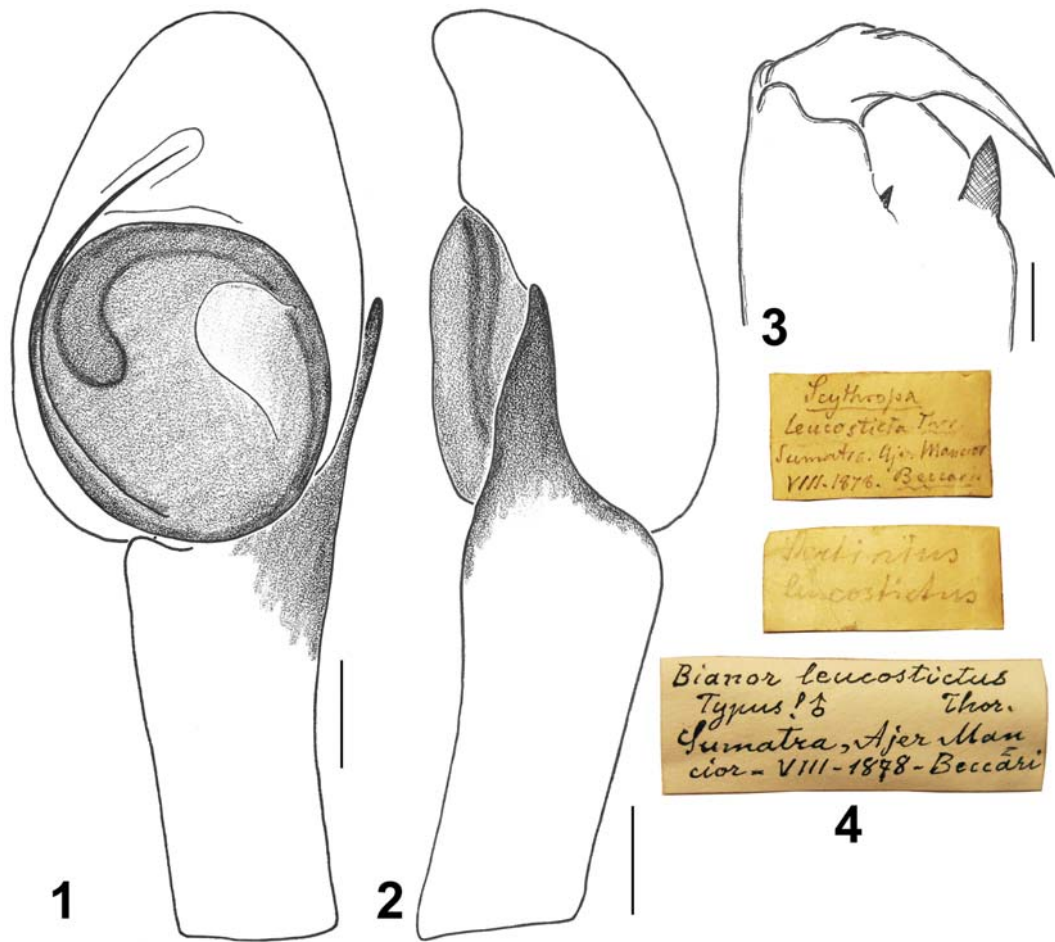
РЕЗЮМЕ. Диагностирован и описан новый вид *Neaetha tomkovi-chi* sp.n. (♂♀) из Индии (Андхра Прадеш). Предложены три новых синонима: *Stichius albomaculatus* Thorell, 1890 и *Bianor leucostictus* Thorell, 1890 с *Bianor angulosus* (Karsch, 1879), и *Bianor incitatus* Thorell, 1890 с *Bianor balius* Thorell, 1890. Последний вид перенесен из рода *Stertinus* Simon, 1890, и ему возвращена оригинальная комбинация *Bianor balius* comb.rev. Родовое название *Stichius* Thorell, 1890 синонимизировано с *Bianor* Peckham et Peckham, 1886. Обозначен лектотип (♀) для *Modunda ghigii* Caporiacco, 1949, и предложена новая комбинация: *Ureta ghigii* (Caporiacco, 1949), comb.n. (ex *Modunda*). Также приведены новые фа-

унистические находки для семи видов Harmochirina из родов *Bianor* Peckham et Peckham, 1886, *Harmochirus* Simon, 1885 и *Modunda* Simon, 1901.

Introduction

According to Maddison [2015], the salticid subtribe Harmochirina Simon 1903 of the tribe Plexippini Simon, 1901 consists of 15 valid genera. Although the majority of these genera were either recently revised in the scope of world fauna (e.g., Logunov [2001, 2009]) or described (e.g., Prószyński [1992]; Logunov [2000, 2001]), a number of Harmochirina species remain known from their original descriptions only. Some of these species (e.g., *Bianor balius* Thorell, 1890, *B. leucostictus* Thorell, 1890) were transferred to the genus *Stertinus* Simon, 1890 (see Metzner [2018]; WSC [2018]), belonging to the subtribe Simaethina in the tribe Vicirini [Maddison, 2015]. One species — *Stichius albo-maculatus* Thorell, 1890, which is the genotype of the monotypic genus *Stichius* Thorell, 1890 — was mentioned as a possible junior synonym of *Bianor balius* (see Logunov [2001: 281]) but is still considered a valid species [Metzner, 2018; Prószyński, 2017; WSC, 2018].

The following four Harmochirina species are of an obscure taxonomic status: *Bianor balius* described from the holotype ♂ from Sumatra [Thorell, 1890a] and transferred to the genus *Stertinus* by Roewer [1955]; *Bianor leucostictus* described from the holotype ♂ from Sumatra [Thorell, 1890b] and transferred to the genus *Stertinus* by Simon [1901]; *Modunda ghigii* Caporiacco, 1949 described from several syntypes (adult ♀ and three subadult ♂♂) from Kenya by Caporiacco [1949] and is now listed in the genus *Bianor* [WSC, 2018], although we failed to find out who made that transfer; and *Stichius albo-maculatus* described from the immature ♂ from Sumatra [Thorell, 1890a].



Figs 1–4. The male palp and right chelicera of *Bianor angulosus* (Karsch, 1879): 1 — the palp of the holotype male of *B. leucostictus* Thorell, 1890, ventral view; 2 — ditto, retrolateral view; 3 — ditto, ventral view; 4 — original data labels of the holotype male of *B. leucostictus*. Scale bars: (1, 2) 0.1 mm, (3) 0.25 mm.

Рис. 1–4. Пальпа самца и правая хелицера *Bianor angulosus* (Karsch, 1879): 1 — пальпа голотипа самца *B. leucostictus* Thorell, 1890, вид снизу; 2 — то же, вид сзади-сбоку; 3 — то же, вид снизу; 4 — оригинальные этикетки голотипа самца *B. leucostictus*. Масштаб: (1, 2) 0,1 мм, (3) 0,25 мм.

The aims of the present paper are: (1) to clarify the taxonomic validity and status of the aforementioned four species based on re-examination of their types; (2) to redescribe and/or map two of these species; and (3) to diagnose and describe a new species of *Neaetha* Simon, 1884 from India; and (4) to provide new faunistic records for seven Harmochirina species from South and South-East Asia.

Material and methods

This work is based on the specimens borrowed from or deposited in the following museums: ISEA — Institute for Systematics and Ecology of Animals, SB RAS, Novosibirsk, Russia (curator: Galina N. Azarkina); MCSN — Museo Civico di Storia Naturale, Genova, Italy (curator: Maria Tavano); MCVR — Museo Civico di Storia Naturale, Verona, Italy (curator: Roberta Salmaso); MMUE — Manchester Museum of the University of Manchester, Manchester, UK

(curator: Dmitri V. Logunov); MSNF — Museo di Storia Naturale, Firenze, Italy (curator: Luca Bartolozzi); NIBGE — the National Institute for Biotechnology and Genetic Engineering, Faisalabad, Pakistan; OUMNH — Oxford University Museum of Natural History, Oxford, UK (curator: Zoë Simmons); PCMF — Personal spider collection of Mario Freudenthuss (Wien, Austria); ZMMU — Zoological Museum of the Moscow State University, Moscow, Russia (curator: Kirill G. Mikhailov).

A part of the digital photographs (Figs 8–10, 14–16, 32–36) were made at the Oxford University Museum of Natural History (UK) with a Leica M165C stereo microscope (trinocular) with automated z-stepper, Camera Leica DFC495, Leica Application Suite (software to run above), and Helicon Focus 5.3 x64 as a processing software. Other digital photographs (Figs 5–7, 24–31, 42–49) were made at the World Museum of Liverpool (UK) by means of a Canon 6d Mark ii Camera with a Canon MP-E 65mm Lens with Helicon Remote ver. 3.9.7W to control the StackShot 3X Macro Rail and camera settings, and Helicon Focus 6.8.0 as a processing software.



Figs 5–7. General appearance of *Bianor angulosus* (Karsch, 1879): 5 — the holotype male of *B. leucostictus* Thorell, 1890, lateral view; 6 — ditto, ventral view; 7 — ditto, dorsal view. Scale bars: 1 mm.

Рис. 5–7. Общий вид *Bianor angulosus* (Karsch, 1879): 5 — голотип самец *B. leucostictus* Thorell, 1890, вид сбоку; 6 — то же, вид снизу; 7 — то же, вид сверху. Масштаб: 1 мм.

Abbreviations used in the text: *Eyes*: AME — anterior median eye, PLE — posterior lateral eye(s). *Leg segments*: Fm — femur, Mt — metatarsus, Pt — patella, Tr — tarsus, Tb — tibia. *Position of spines on legs*: ap — apical, d — dorsal, pr — prolateral, rt — retrolateral, v — ventral. *Others*: a.s.l. — above sea level, D — described, S — synonymized, T — transferred. For the leg spination the system adopted is that used by Ono [1988]. The sequence of leg segments in measurement data is as follows: femur + patella + tibia + metatarsus + tarsus. All measurements are in mm.

Taxonomy

Bianor angulosus (Karsch, 1879) Figs 1–11, Map 1.

Bianor angulosus Karsch, 1879: 553 (D♀; holotype ♀ in the Natural History Museum of the Humboldt University; examined, see Logunov [2001]).

Stichius albo-maculatus Thorell, 1890a: 70 (holotype: immature ♂ in the MCSN, examined). **Syn.n.**

Bianor leucostictus Thorell, 1890b: 158 (D♂; holotype ♂ in the MCSN, examined). **Syn.n.**

Bianor trepidans Thorell, 1895: 334 (D♀; lectotype ♀ in the Swedish Museum of Natural History in Stockholm; examined, see Logunov [2001]). Synonymized with *B. angulosus* by Logunov [2001].

Stertinius leucostictus: Simon, 1901: 839.

Bianor hotingchiehi Schenkel, 1963: 434, figs 249a–f (D♂; holotype ♂ in the Natural History Museum in Paris; examined, see Logunov [2001]). Synonymized with *B. angulosus* by Logunov [2001].

Bianor simoni Żabka, 1985: 204, figs 30–34 (D♂; holotype ♂ in the Institute of Zoology in Warszawa; examined, see Logunov [2001]). Synonymized with *B. angulosus* by Logunov [2001].

Stichius albomaculatus: Roewer, 1955: 1662; Prószyński, 1984: 57 (♂).

Bianor incitatus (*nec* Thorell, 1890b; misidentified): Prószyński, 2017: 49, figs 22T1 (♂).

For a complete reference list of this species see WSC [2018].

TYPES. HOLOTYPE ♂ of *Bianor leucostictus* Thorell, 1890 (MCSN; Figs 1–7) from “Sumatra, Ajer Mancior, VIII-1878-Beccari” [apparently, nr. Bukittinggi in Padang Province, West Sumatra (c. 0°19′55.4″S, 100°23′06.7″E); collected by Odoardo Beccari, an Italian naturalist who travelled for many years in Malaysia and Indonesia]. — HOLOTYPE immature ♂ of *Stichius albo-maculatus* Thorell, 1890 (MCSN; Figs 8–11) from “Siboga, Sumatra, 1886, E. Modigliani” [apparently, Sibolga City (c. 1°44′N, 98°46′E) in North Sumatra, Indonesia].

OTHER MATERIAL. THAILAND: 1♂ (ISEA; det. G.N. Azarkina, 2018), Province Ta Phraya, NP La Lu (c. 14°02′N, 102°34′E), 122 m a.s.l., 1–4.08.2012, A.A. Gurina.

COMMENTS. Despite in the original description of *S. albo-maculatus* T. Thorell [1890a: 70] it is stated that he examined a single female (“*Singulum exemplum femineum nondum adultum pulchrae hujus araneolae in Sumatra (Sibolga) cepit Modigliani*”), the holotype of *S. albo-macula-*



Figs 8–11. General appearance of *Bianor angulosus* (Karsch, 1879): 8 — carapace of the holotype male of *Stichius albo-maculatus* Thorell, 1890, dorsal view; 9 — abdomen of *S. albo-maculatus*, dorsal view; 10 — carapace of *S. albo-maculatus*, ventral view; 11 — original data labels of the holotype male of *S. albo-maculatus*. Scale bars: 0.5 mm.

Рис. 8–11. Общий вид *Bianor angulosus* (Karsch, 1879): 8 — головогрудь голотипа самца *Stichius albo-maculatus* Thorell, 1890, вид сверху; 9 — брюшко *S. albo-maculatus*, вид сверху; 10 — головогрудь *S. albo-maculatus*, вид снизу; 11 — оригинальные этикетки голотипа самца *S. albo-maculatus*. Масштаб: 0,5 мм.

tus is actually an immature (subadult) male (Figs 8–10). This male has the dorsum with a colour pattern that is typical of *B. angulosus*: viz. yellow-brown, with two pairs of elongated white spots and a transverse white stripe at its front edge (Fig. 9; cf. Fig. 7 and figs 60, 66 in Logunov [2001]). The type locality of *S. albomaculatus* lies in Sumatra, from where *B. angulosus* has also been recorded [Logunov, 2001]. Moreover, the mature male from Sumatra (Kampong) hitherto identified by T. Thorell as *S. albomaculatus* (deposited in Stockholm) turned out to be *B. angulosus* (see Logunov [2001: 231]). Thus, although, the name *S. albo-maculatus* could be treated as a *nomen dubium* (because the holotype is an immature specimen), it is safe and better to consider it a junior synonym of *B. angulosus*.

The taxonomic status of the genus *Stichius* itself no longer remains unclear [Roewer, 1955: “nicht zu deuten”; Prószyński, 2017]; this generic name is indeed a junior synonym of *Bianor*.

The examined holotype male of *Bianor leucostictus* (Figs 1–7) possess all the diagnostic characters of and is identical to *B. angulosus* (cf. figs 57, 58 in Logunov [2001]): viz., the papal tibia as long as the cymbium (Figs 1, 2), the round tegulum with a well-developed large membranous area, and the same embolic length and its position (Fig. 1). Therefore, it is safe to conclude that the name *B. leucostictus* is to be synonymised with *B. angulosus*.

Logunov [2001: 231] re-examined the male from Sumatra (Kampong), which was originally identified by T. Thorell as *Stichius albomaculatus*, and listed it under the ‘Material’ examined for *Bianor angulosus*; this specimen is deposited in the Swedish Museum of Natural History in Stockholm (no. 1819). Earlier, the same male was also re-examined and illustrated by Prószyński [1984: 57]. By unknown editorial

mistake, the latter Prószyński’s work was included in the reference list of *Bianor incitatus* (see Logunov [2001: 236]) rather than be that of *B. angulosus*. Hence, the non-type male examined and named by Thorell as *S. albomaculatus* actually belongs to *B. angulosus*, and both illustrated records of this male by Prószyński [1984: 57, 2017: 49, fig. 22T1] should be included in the reference list of *B. angulosus* and removed from that of *B. incitatus*, where they are currently listed [WSC, 2018].

DISTRIBUTION. It is a rather widespread Oriental species (Map 1) recorded/described to date under several names: from Bhutan and southern India (Orissa) in the west [Logunov, 2001], southward to Sri Lanka [Karsch, 1879: sub *Ballus a.*; Logunov, 2001]; eastward to throughout Bangladesh and Myanmar to southern China [Schenkel, 1963; Peng *et al.*, 1993; Song *et al.*, 2012, etc.: all sub. *B. hotingchiehi*] and northern Vietnam [Žabka, 1985: sub. *B. hotingchiehi* and *B. simony*] in the east, and south-eastward throughout Thailand and southern Vietnam, to Indonesia (Sumatra, Java) and Malaysia [Thorell, 1890a: sub. *Stichius albo-maculatus*; Thorell, 1890b: sub. *B. leucostictus*; Logunov, 2001; Prószyński, 2017: sub. *B. incitatus*].

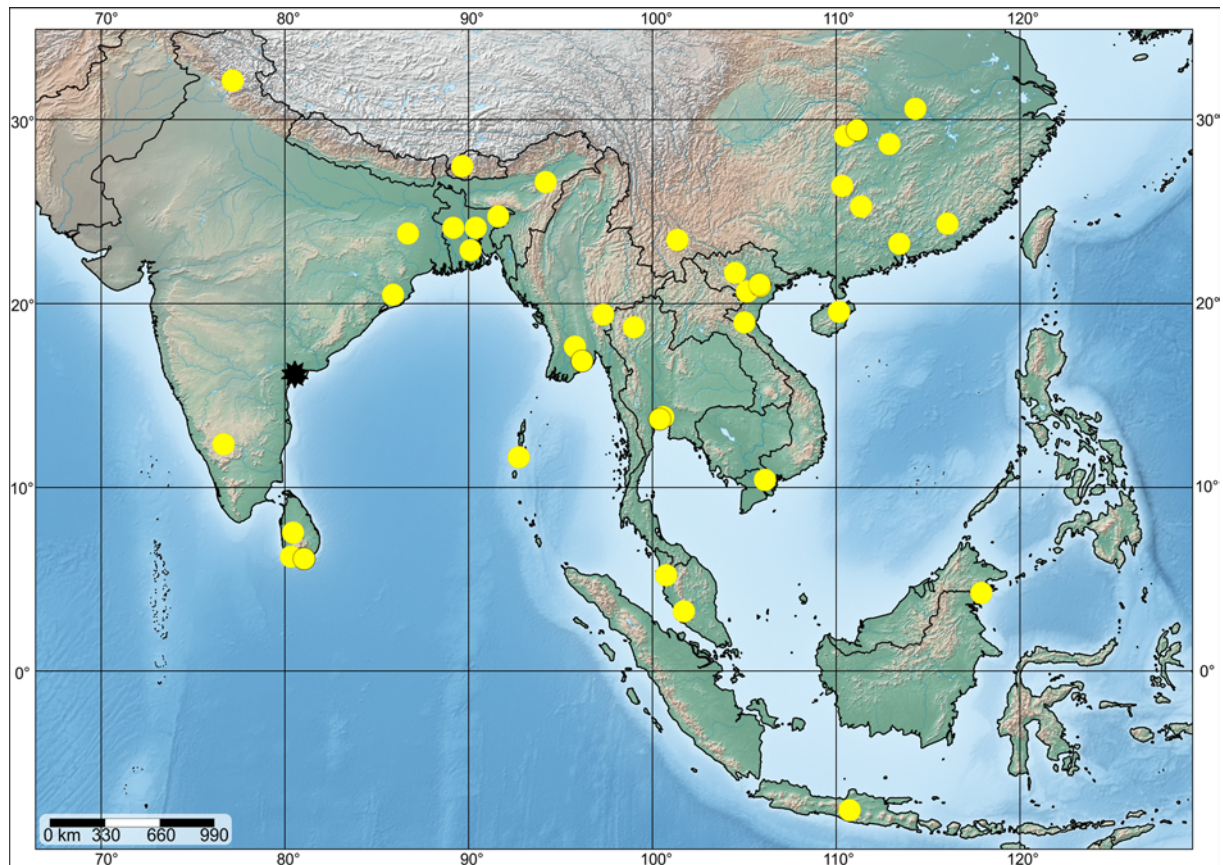
DESCRIPTION. See Logunov [2001].

Bianor balius Thorell, 1890, **comb.rev.**
Figs 12–17, Map 2.

Bianor balius Thorell, 1890a: 73 (D♂; holotype ♂ in the MCSN; examined).

Bianor balius: Thorell, 1892: 256; Simon, 1901: 638.

Bianor incitatus Thorell, 1890b: 159 (D♀; lectotype ♀ in the Swedish Museum of Natural History in Stockholm; examined, see Logunov [2001]). **Syn.n.**



Map 1. Collecting localities of *Bianor angulosus* (Karsch, 1879) (circles) and *Neaetha tomkovichii* sp.n. (asterisk).
 Карта 1. Точки находок *Bianor angulosus* (Karsch, 1879) (кружки) и *Neaetha tomkovichii* sp.n. (звездочка).

Bianor incitatus: Thorell, 1892: 259 (♀); Simon, 1901: 638 (♀); Logunov, 2001: 236–240, figs 87–104 (T ♀ from *Stertinus*, S♂); Yin *et al.*, 2012: 1332, figs 720a–d (♂); Prószyński, Deeleman-Reinhold, 2013: 117, figs 21–24 (♂); Suguro, 2013: 5, figs 1–7 (♂♀).

Stertinus balius: Roewer, 1955: 1011, 1435.

Stertinus incitatus: Roewer, 1955: 1011, 1435.

Bianor carli Reimoser, 1934: 506, fig. 27 (D♀; holotype ♀ in the Natural History Museum in Geneva; examined, see Logunov [2001]). Synonymized with *B. incitatus* by Logunov [2001].

Bianor obak Berry, Beatty et Prószyński, 1996: 220–222, figs 18–24, map 2 (D♂♀; holotype ♀ in the Bishop Museum, Honolulu, Hawaii; examined, see Logunov [2001]). Synonymized with *B. incitatus* by Logunov [2001].

Bianor maculatus (nec Keyserling, 1883; misidentified): Peng, 1989: 158, figs 1A–C (♂); Peng *et al.*, 1993: 29–30, figs 46–49 (♂); Song, Zhu, Chen, 1999: 506, figs 289K, 324N (♂).

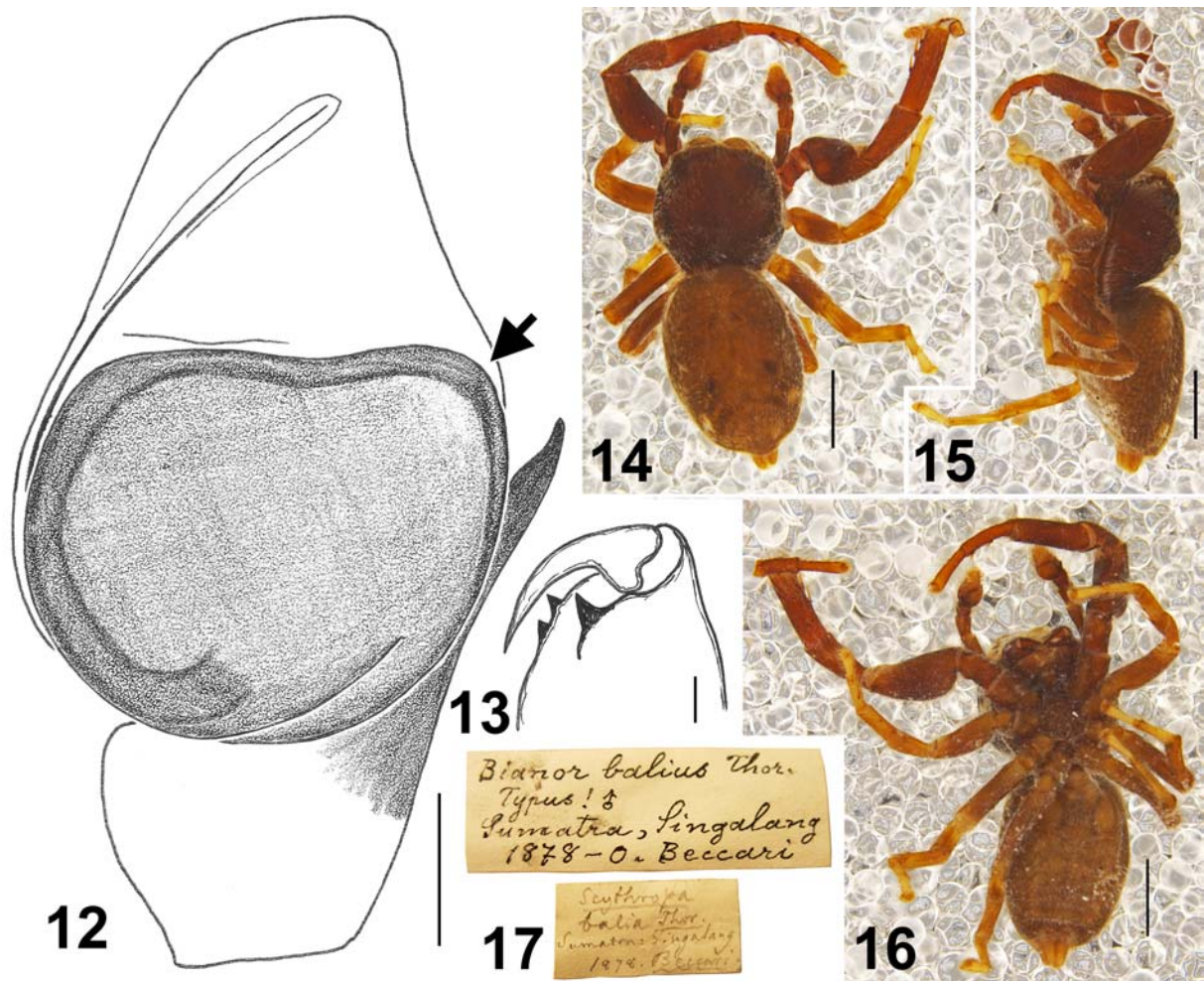
TYPE. HOLOTYPE ♂ (MCSN; Figs 12–17) from Singalang [apparently, Singgalang Mt. (c. 0°23′24″S, 100°19′51″E)], [West] Sumatra, [Indonesia], 1878, coll. O[dorado] Beccari.

OTHER MATERIAL. INDONESIA: 1♂ (MCSN), “Gunung Sitoli Is. Nias” [apparently, Gunungsitoli, the capital city of Nias Regency of North Sumatra (c. 1°17′N, 97°37′E)], 1886, E. Modigliani [this ♂ was also mentioned by Thorell [1890a] in the original description of *B. balius*]. — CAMBODIA: 1♀ (PCMF), Siem Reap, Angkor Wat (13°26.370′N, 103°51.602′E), c. 6 m a.s.l., hand collecting from a house wall, 1.12.2014, M. Freudenschuss.

DIAGNOSIS. Of the *Bianor* species known from both sexes, *B. balius* is most similar to *B. albobimaculatus* (Lucas, 1846) (cf. figs 4–8, 13–18, 19–27, 36–46 in Logunov [2001]) and *B. wunderlichi* Logunov, 2001 (cf. figs 9–12,

28–35 in Logunov [2001]). The males of *B. balius* can be distinguished from these species by the following characters: the absence of the membranous area of the tegulum (present in both related species), the markedly more extended antero-prolateral edge of the tegulum (arrowed in Fig. 12) and the colour pattern of dorsum (Fig. 14; a pair of white spots in *B. balius* which are absent from *B. albobimaculatus* and two pairs of white spots and a number of irregular white spots in *B. wunderlichi*). The females of *B. balius* were diagnosed by Logunov [2001: sub *B. incitatus*], and can reliably be distinguished from those of all other *Bianor* species by the widest first loop of the insemination ducts [Logunov, 2001: figs 94, 101, 102].

COMMENTS. To date, *B. incitatus* has been well-described, illustrated and known from both sexes and many localities, with a number of the studied samples containing both sexes collected together (see Logunov [2001: 236–237]). As is evident from the present study, the holotype male of *B. balius* possesses all the diagnostic characters of *B. incitatus* (viz., the flat, transverse-ovoid tegulum with the visibly extended antero-prolateral edge and no membranous area of the tegulum) and is identical to the latter species (cf. Fig. 12 and figs 89, 90 in Logunov [2001]; figs 23, 24 in Prószyński & Deeleman-Reinhold [2013]; or figs 23, 24 in Berry *et al.* [1996: sub *B. obak*]). Thus, it is safe to conclude that (1) *B. balius* comb.rev. is indeed a member of the genus *Bianor* rather than of *Stertinus* (contra Roewer [1955]) and its original combination is to be re-instated; and (2) *B. balius* is to be considered a senior synonym of *B. incitatus*.



Figs 12–17. Copulatory organ and general appearance of the holotype male of *Bianor balius* Thorell, 1890: 12 — palp, ventral view; 13 — left chelicera, ventral view; 14 — body, dorsal view; 15 — ditto, lateral view; 16 — ditto, ventral view; 17 — original data labels. Scale bars: (12, 13) 0.1 mm, (14–16) 1 mm.

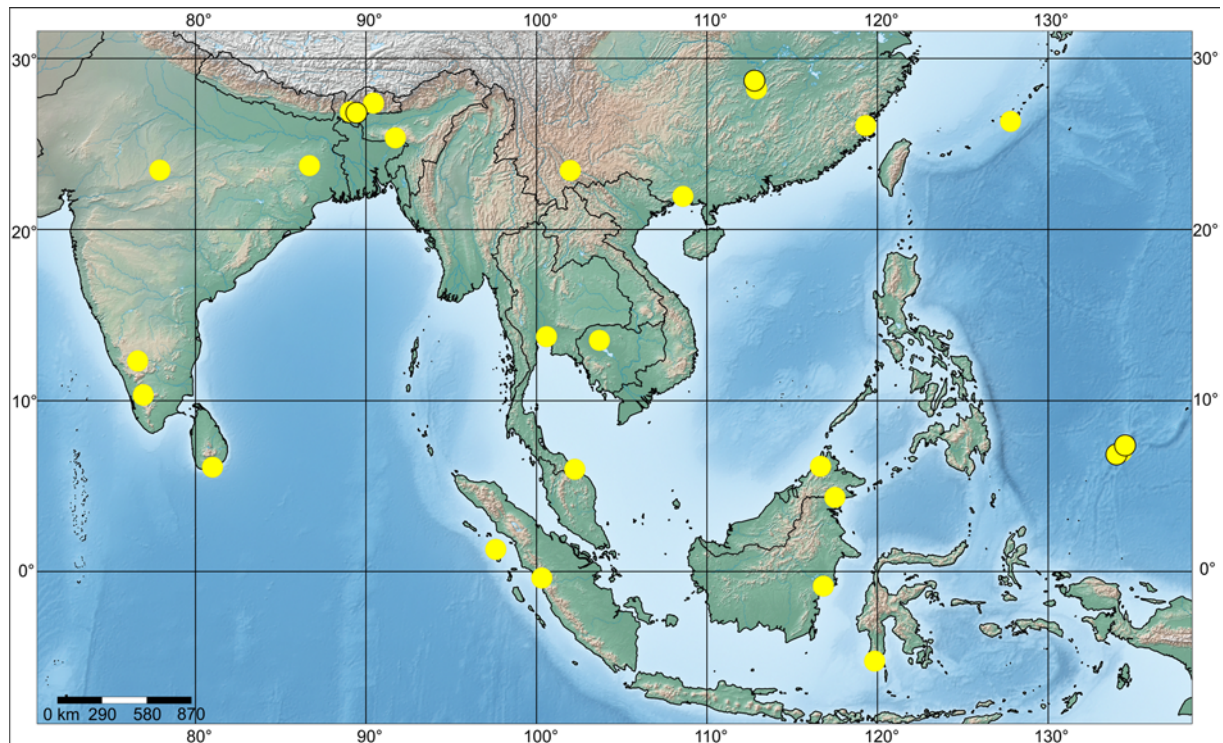
Рис. 12–17. Копулятивные орган и общий вид голотипа самца *Bianor balius* Thorell, 1890: 12 — пальпа, вид снизу; 13 — левая хелицера, вид снизу; 14 — тело, вид сверху; 15 — то же, вид сбоку; 16 — то же, вид снизу; 17 — оригинальные этикетки. Масштаб: (12, 13) 0,1 мм, (14–16) 1 мм.

Although both species names were published in the same year and month, September 1890, the exact publication date of *B. balius* is September 4th, 1890 (see Thorell [1890a: 4]), whereas the name *B. incitatus* was published on “*pridie Kal. Sept. 1890*” [Thorell, 1890b: 132], which means “on the last day, September 1890”; hence the name *B. balius* was published slightly earlier and has a priority over the name *B. incitatus*.

DISTRIBUTION. It is a rather widespread Oriental species (Map 2) recorded/described to date under many different names: from India (Mysore, Madya Pradesh and Meghalaya) and Bhutan [Reimoser, 1934: sub. *B. carli*; Logunov, 2001: sub. *B. incitatus*], southward to Sri Lanka [Logunov, 2001: sub. *B. incitatus*]; eastward to southern China (Yunnan, Guanxi and Hunan) [Peng *et al.*, 1993: sub. *B. maculatus*; Yin *et al.*, 2012 and Logunov, 2001: both sub. *B. incitatus*] and Japan (Okinawa) [Logunov, 2001 and Suguro, 2013: both sub. *B. incitatus*], and south-eastward to Indonesia, Malaysia [Thorell, 1890a,b, 1892; Logunov, 2001

and Prószyński, Deeleman-Reinhold, 2013: both sub. *B. incitatus*] and the Caroline Islands [Berry *et al.*, 1996: sub. *B. obak*].

DESCRIPTION. MALE (the holotype; Figs 12–16). Measurements: Carapace: 2.00 long, 1.73 wide, 1.10 high. Abdomen: 2.30 long, 1.75 wide. Ocular area: 1.25 long, 1.26 wide anteriorly, 1.68 wide posteriorly. Cheliceral length 0.80. Clypeal height 0.15. Diameter of AME 0.40. Length of leg segments: I 1.55 + 1.08 + 1.15 + 0.90 + 0.65 (5.33); II 1.03 + 0.63 + 0.55 + 0.58 + 0.40 (3.19); III 1.03 + 0.63 + 0.68 + 0.70 + 0.40 (3.44); IV 1.23 + 0.59 + 0.70 + 0.80 + 0.48 (3.80). Leg formula I,IV,III,II. Leg spination: I: Fm d 0-0-1-2; Pt pr 0-1-0; Tb v 0-0-1-2-2ap; Mt v 2-2ap. II: Fm d 0-0-1-2; Tb pr 0-1, v 1-1; Mt v 2-2ap. III: Fm d 3ap; Tb pr and rt 0-1, v 1ap; Mt pr and rt 2ap. IV: Fm d 1/2ap; Tb pr and rt 0-0-1; Mt pr and rt 1ap. Coloration (in alcohol, the specimen is visibly faded; Figs 14–16). Carapace russet and shagreen, sparsely covered with white recumbent scales; dark brown around eyes. Sternum yellowish russet, covered



Map 2. Collecting localities of *Bianor balius* Thorell, 1890.

Карта 2. Точки находок *Bianor balius* Thorell, 1890.

with white hairs. Labium and endites yellowish russet, with yellowish tips. Chelicerae yellowish russet. Abdomen: dorsum light brown, covered with a shining scutum, and with a pair of small white spots in its rear third; sides yellowish brown; venter brownish yellow. Book-lung covers and spinnerets yellow. Leg I stronger and longer than other legs, russet, with yellowish tarsi. Legs II–IV: femora brownish, patellae and tibiae yellowish brown, metatarsi and tarsi light yellow. Palps yellowish brownish. Palpal structure is typical of *Bianor* species (cf. Logunov, 2001), as shown in Fig. 12: RTA singular, well-developed; tegulum flat, transverse-ovoid, with its antero-prolateral edge visibly extended; embolus thread-like, poorly visible, originating at about seven o'clock.

FEMALE. See Logunov [2001: sub. *B. incitatus*].

Neaetha tomkovichii sp.n.

Figs 18–31, Map 1.

TYPES: HOLOTYPE ♂ and paratype ♀ (ZMMU) from India, Andhra Pradesh, nr. Bapatla (15.86°N, 80.49°E), 20–28.02.2014, K.P. Tomkovich.

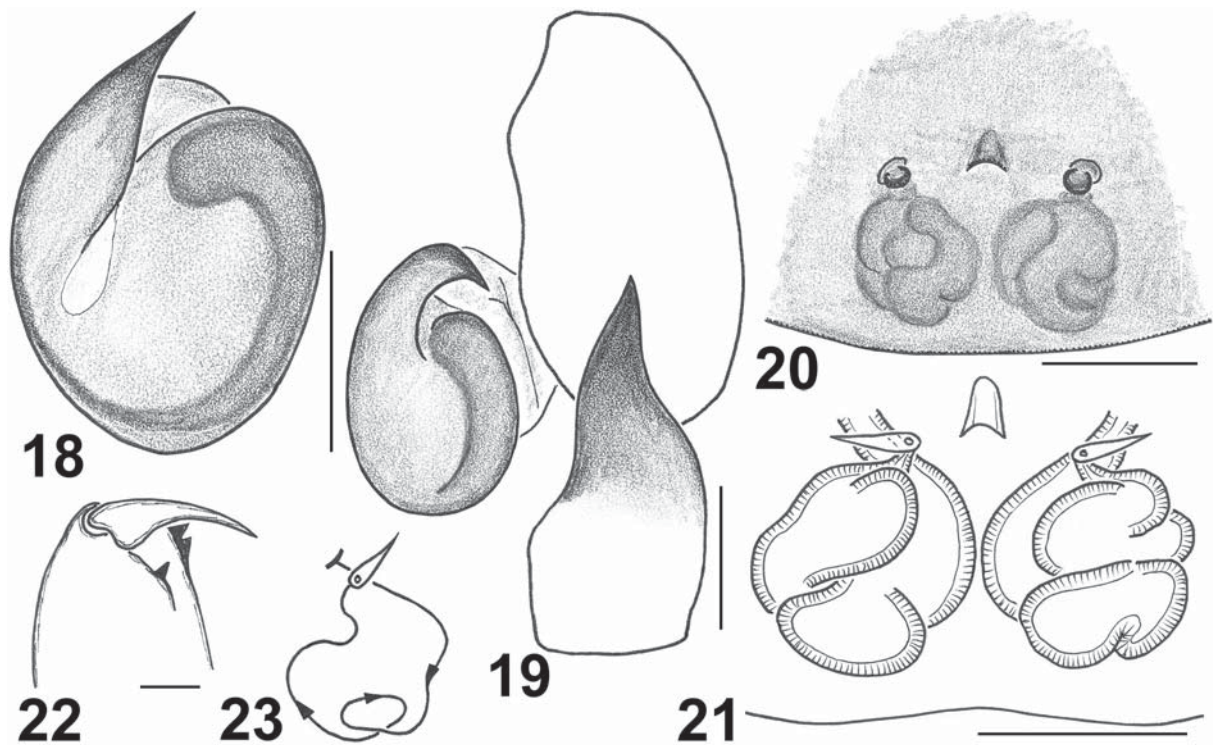
ETYMOLOGY. The species is named after the collector, Mr Konstantin P. Tomkovich (Moscow, Russia).

DIAGNOSIS. The new species is most similar to two Mediterranean congeners: *Neaetha membrosa* (Simon, 1868) and *N. absheronica* Logunov et Guseinov, 2002. From the former species (cf. figs 1–15 in Logunov [1996]), *N. tomkovichii* sp.n. differs in having the straight tibial apophysis (Fig. 19; bent apically in *N. membrosa*), the much smaller epigynal pocket and the central position of the copulatory organs (Fig. 20; shifted to the epigastric furrow in *N. membrosa*). From *N. absheronica* (cf. figs 4A–S in Lecigne [2016]), the new species differs in having the slightly shorter, straight

embolus (Fig. 18; visibly bent mediad at its tip in *N. absheronica*), the round bulbous (visibly elongated-ovoid in *N. absheronica*), the smaller, singular epigynal pocket (Fig. 20; notched at its distal end in *N. absheronica*) and the less-chambered spermathecae (Fig. 21).

DISTRIBUTION. The type locality only (Map 1: asterisk). To date, the genus *Neaetha* has been known from the Afrotropical Region and the Mediterranean area (including the Near East and the Caucasus) of the Palaearctic Region [Logunov, 2009; WSC, 2018]. It is the first record of the genus from South Asia and the Oriental Region.

DESCRIPTION. MALE (holotype; Figs 18, 19, 24–27). Measurements: Carapace: 1.43 long, 1.25 wide, 0.80 high. Abdomen: 1.28 long, 0.98 wide. Ocular area: 0.90 long, 1.03 wide anteriorly, 1.18 wide posteriorly. Cheliceral length 0.48; promargin with two teeth, retromargin with one tooth. Clypeal height 0.19. Diameter of AME 0.35. Length of leg segments: I 1.00 + 0.60 + 0.68 + 0.68 + 0.35 (3.31); II 0.58 + 0.33 + 0.33 + 0.25 + 0.25 (1.74); III 1.23 + 0.53 + 0.60 + 0.45 + 0.33 (3.14); IV 0.70 + 0.35 + 0.31 + 0.35 + 0.30 (2.01). Leg formula I,III,IV,II. Leg spination: I: Fm d 0-0-1-2; Tb v 2-2-2ap; Mt v 2-2ap. II: Fm d 0-1-3; Pt pr 0-1-0; Tb pr 1-1, v 1-1ap; Mt v 2-2ap. III: Fm d 0-0-1-3; Pt pr and rt 0-1-0; Tb d 1-0-0, pr and rt 1-1, v 2ap; Mt pr 1-1ap, rt 2-1ap, v 2ap. IV: Pt rt 0-1-0; Tb pr and rt 0-1, v 2ap; Mt pr 2ap, rt 1-2ap. Coloration (in alcohol; Figs 24–27). Carapace yellowish brownish, covered with white recumbent scales; sides are darker (brown) with a wide yellow longitudinal marginal band on each side (Fig. 27); thorax with a median longitudinal brown stripe; there are two longitudinal thin white lines of scales running along the ALE-PLE line on each side of the carapace (Fig. 24). Black around eyes. Clypeus densely covered with white hairs (Fig. 25). Sternum yellow, with a



Figs 18–23. Copulatory organs of *Neaetha tomkovichi* sp.n., the holotype male (18, 19) and the paratype female (20–23): 18 — bulbus, ventral view; 19 — male palp, retrolateral view; 20 — epigyne, ventral view; 21 — spermathecae, dorsal view; 22 — female right chelicerae, ventral view; 23 — diagrammatic course of the insemination ducts. Scale bars: 0.1 mm.

Рис. 18–23. Копулятивные органы *Neaetha tomkovichi* sp.n., голотип самец (18, 19) и паратип самка (20–23): 18 — бульбус, вид снизу; 19 — пальпа самца, вид сбоку-сзади; 20 — эпигина, вид снизу; 21 — сперматека, вид сверху; 22 — правая хелицера самки, вид снизу; 23 — схематический ход осеменительных канальцев. Масштаб: 0,1 мм.

brown band along its margins, covered with white hairs. Labium brown. Endites yellowish brownish, with white apexes. Chelicerae brownish yellow, anteriorly covered with sparse white scales. Abdomen yellow, with a brown reticulated pattern (Figs 24, 27). Book-lung covers brown. Spinnerets contrastingly grey-brown. Leg I larger than others and visibly swollen; its Fm brownish yellowish, the remaining segments darker, orange-brown and covered with black and white hairs. Legs II–IV yellow, with brownish rings and patches. Male palp: Fm and Pt yellow, Tb, cymbium and bulbus brownish; palpal structure as in Figs 18, 19: both palps of the holotype are visibly expanded; Tb relatively short, with a wide and straight tibial apophysis directed anteriorly; bulbus round; embolus straight.

FEMALE (paratype; Figs 20–23, 28–31). Measurements: Carapace: 1.93 long, 1.53 wide, 0.94 high. Abdomen: 2.00 long, 1.78 wide. Ocular area: 1.05 long, 1.23 wide anteriorly, 1.38 wide posteriorly. Cheliceral length 0.60; promargin with two teeth, retromargin with one tooth (Fig. 22). Clypeal height 0.20. Diameter of AME 0.43. Length of leg segments: I 0.93 + 0.58 + 0.63 + 0.45 + 0.33 (2.92); II 0.70 + 0.45 + 0.38 + 0.30 + 0.26 (2.09); III 1.48 + 0.73 + 0.73 + 0.55 + 0.40 (3.89); IV 0.83 + 0.40 + 0.43 + 0.43 + 0.35 (2.44). Leg formula III,I,IV,II. Leg spination: I: Fm d 1ap; Tb v 2-2-2ap; Mt v 2-2ap. II: Fm d 1ap; Pt pr 0-1; Tb v 1-1; Mt v 2-2ap. III: Fm d 0-0-0-1-1-3; Pt pr and rt 0-1-0; Tb pr 1-1, rt 1-1-1, v 1ap; Mt pr 1-2ap, rt 2-2ap. IV: Pt rt 0-1-0; Tb rt 1-1; Mt pr 2ap, rt 1-2ap. Coloration (in alcohol; Figs 28–

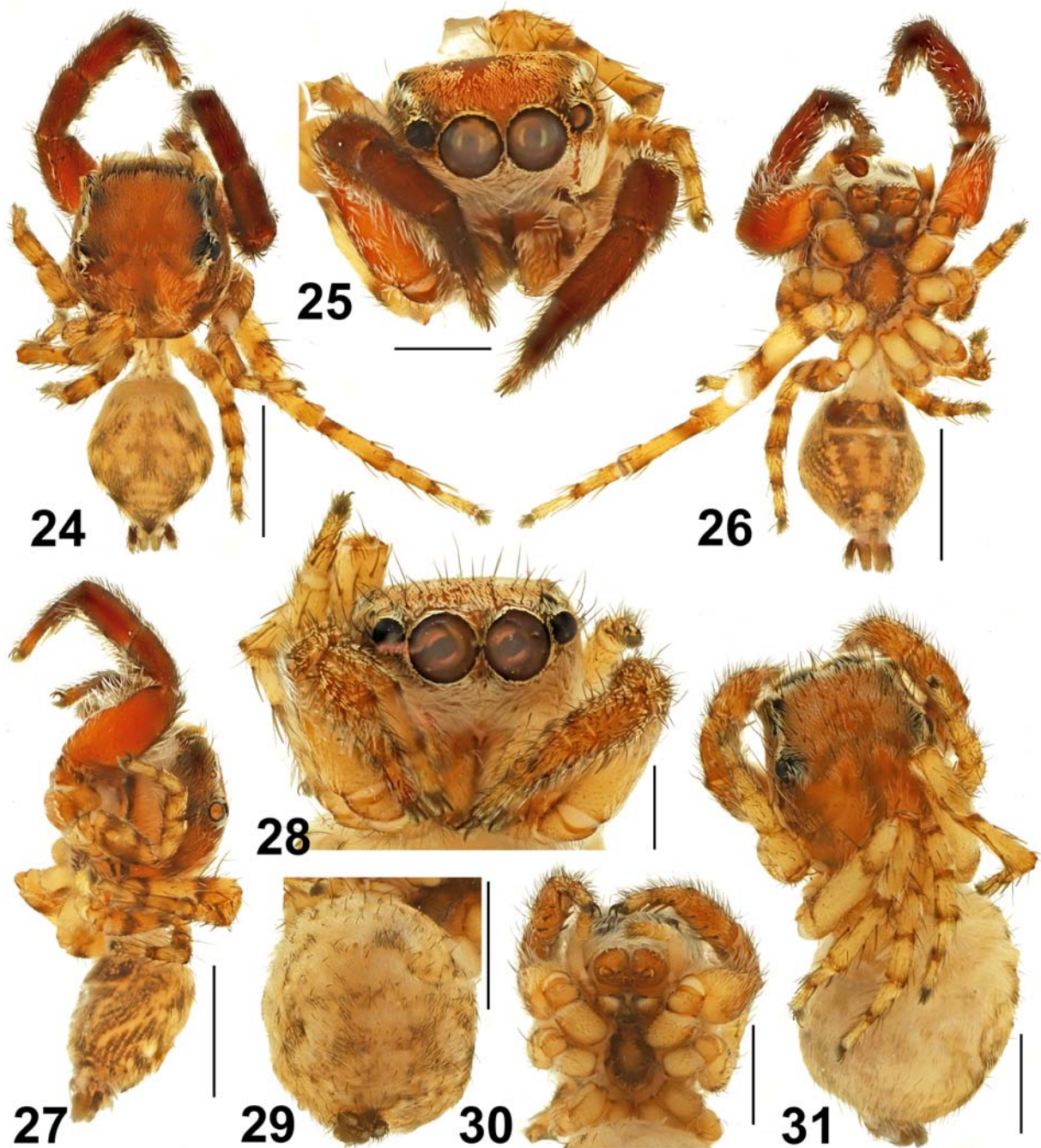
31), as in the male, but differs as follows: body colour lighter, predominately yellow, abdomen ventrally and its sides yellow, book-lung covers and palps yellow. Epigyne and spermathecae as in Figs 20–22: epigynal plate flat, with a small blind-ending epigynal pocket in its centre; copulatory openings small, covered with round flaps; insemination ducts and receptacles thick-walled and merged in a kind of a multi-chambered mass, which is typical of all *Neaetha* species.

Ureta ghigii (Caporiacco, 1949), **comb.n.**
Figs 32–41.

Modunda ghigii Caporiacco, 1949: 484, fig. 96 (D♀; lectotype ♀ in the MCVR; examined).

TYPES: LECTOTYPE ♀ (MCVR, 647; Figs 32–34, 37–41; designated here) from [Kenya], Elmenteita [Lake], 100 km N [apparently, Baringo County (c. 0°30'16.1"N, 36°10'55.5"E)], m 1550 [a.s.l.], XII.1945, Toschi Menegnetti. PARALECTOTYPE subadult ♂ (MSNF, 647; Figs 35, 36; designated here) from Kenya, Elmenteita, XII.1945, [Toschi] Menegnetti.

DIAGNOSIS. The female of *U. ghigii* (Figs 37–39) differs from that of *U. quadrispinosa* (Lawrence, 1928) (cf. figs 173–175 in [Wesołowska, Haddad, 2013] and figs 37, 38 in Azarkina & Foord [2013: sub *Euophrys* q.]) in having the epigynal notch in which the singular epigynal pocket is situated (the notch is absent and the double epigynal pocket in *U. quadrispinosa*), the larger copulatory openings form-



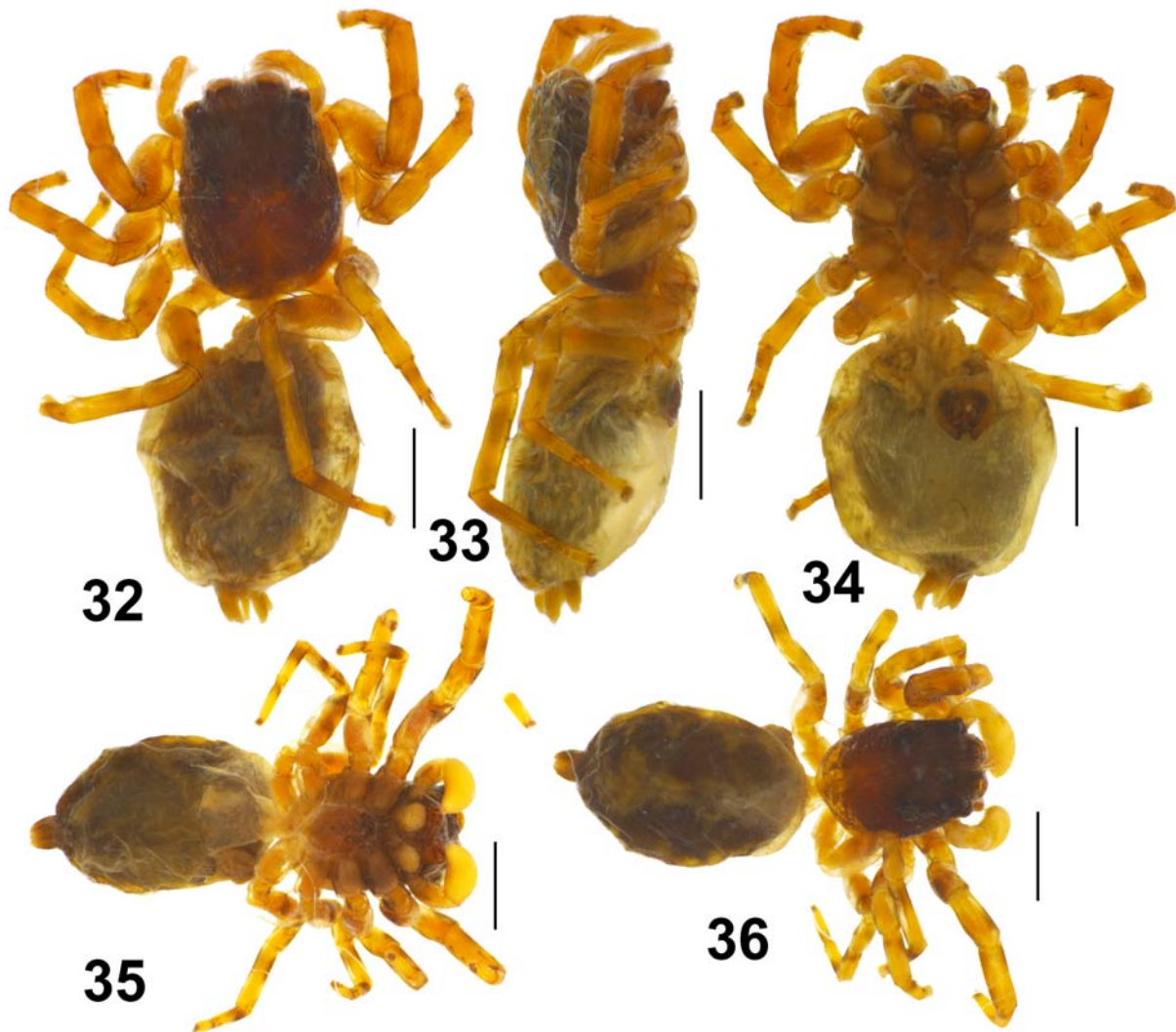
Figs 24–31. General appearance of *Neaetha tomkovichi* sp.n., the holotype male (24–27) and the paratype female (28–31): 24, 31 — body, dorsal view; 25, 28 — clypeus, frontal view; 26 — body, ventral view; 27 — ditto, lateral view; 29 — abdomen, dorsal view; 30 — carapace, ventral view. Scale bars: (24, 26, 27, 29–31) 1 mm, (25, 28) 0.5 mm.

Рис. 24–31. Общий вид *Neaetha tomkovichi* sp.n., голотип самец (24–27) и паратип самка (28–31): 24, 31 — тело, вид сверху; 25, 28 — клипеус, вид спереди; 26 — тело, вид снизу; 27 — то же, вид сбоку; 29 — брюшко, вид сверху; 30 — головогрудь, вид снизу. Масштаб: (24, 26, 27, 29–31) 1 мм, (25, 28) 0,5 мм.

ing almost a round central depression and the straight insemination ducts directed laterad (convoluted and directed anteriorad in *U. quadrispinosa*).

COMMENTS. With the absence of the male, it is not easy to assign *M. ghigii* to a correct genus. Yet, it is obvious that the species belongs neither to *Modunda* Simon, 1901,

as none of the four diagnostic characters of the latter genus (see Logunov [2001: 270]) can be found in *M. ghigii*, nor to the Harmochireae (*sensu* Logunov [2001, 2009]). The species seems to belong to the subtribe Thiratoscirtina of the tribe Aelurillini (*sensu* Maddison [2015]) containing 14 Afrotropical genera, and, in my opinion, could be provisionally



Figs 32–36. General appearance of *Ureta ghigii* (Caporiacco, 1949), the lectotype female (32–34) and the paralectotype immature male (35, 36): 32, 36 — body, dorsal view; 33 — ditto, lateral view; 34, 35 — ditto, ventral view. Scale bars: 1 mm.

Рис. 32–36. Общий вид *Ureta ghigii* (Сарториакко, 1949), лектотип-самка (32–34) паралектотип, ювенильный самец (35, 36): 32, 36 — тело, вид сверху; 33 — тоже, вид сбоку; 34, 35 — тоже, вид снизу. Масштаб: 1 мм.

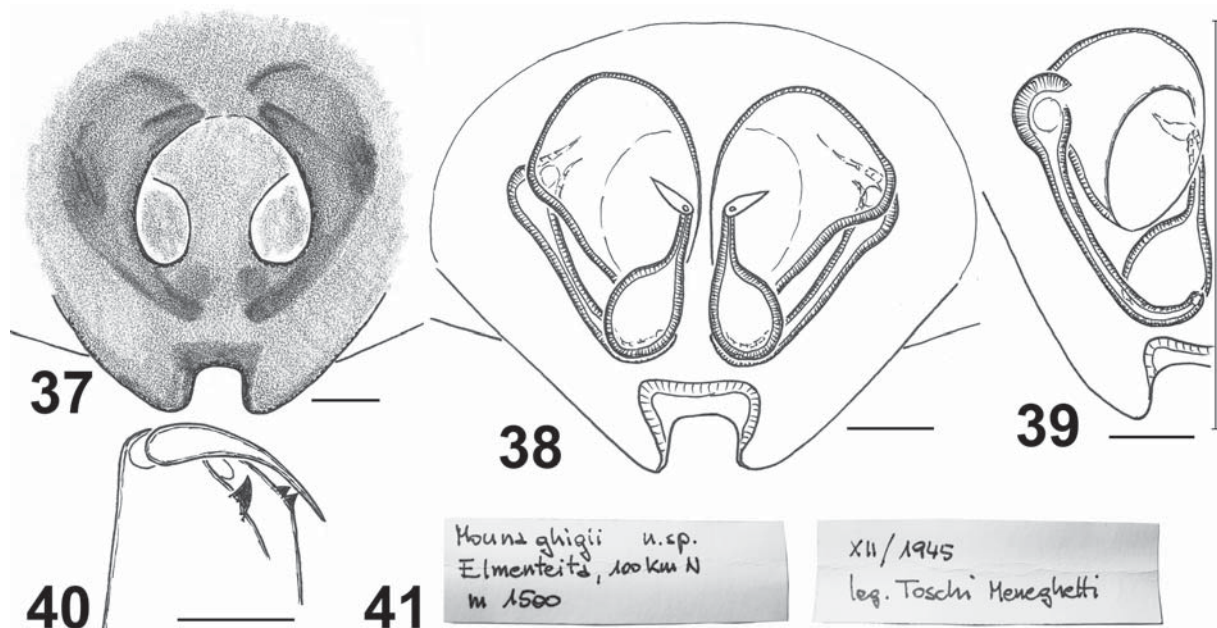
assigned to the genus *Ureta* Wesolowska et Haddad, 2013. *M. ghigii* is a medium-sized salticid (body length 4.88 mm), with unidentate chelicerae (Fig. 40) and the conformation of the copulatory organs being similar to that of the *Ureta* generotype – *U. quadrispinosa* from South Africa — namely, in having the well-developed epigynal pocket, the widened entrances of the copulatory openings and the rather long insemination ducts ended up by the retort-shaped receptacles (Figs 37–39; cf. figs 173–175 in Wesolowska & Haddad [2013] and figs 37–39 in Azarkina & Foord [2013: sub *Euophrys* q.]). Therefore, it seems reasonable to propose a new combination: *Ureta ghigii* (Caporiacco, 1949), **comb.n.**

DISTRIBUTION. The type locality only.

DESCRIPTION. MALE unknown.

FEMALE (lectotype; Figs 32–34, 37–41). Measurements: Carapace: 2.25 long, 1.58 wide, 0.95 high. Abdomen: 2.63 long, 2.38 wide. Ocular area: 1.03 long, 1.28 wide anteriorly, 1.29 wide posteriorly. Cheliceral length 0.58; promargin

with two teeth, retromargin with one tooth (Fig. 40). Clypeus not marked. Diameter of AME 0.40. Length of leg segments: I 1.15 + 0.68 + 0.70 + 0.60 + 0.38 (3.51); II 1.00 + 0.63 + 0.58 + 0.55 + 0.35 (3.11); III 1.08 + 0.55 + 0.60 + 0.70 + 0.45 (3.38); IV 1.38 + 0.68 + 0.90 + 0.88 + 0.48 (4.32). Leg formula IV,I,III,II. Leg spination: I: Fm d 0-1-1-1; Tb pr 0-0-1, v 2-2ap; Mt v 2-2ap. II: Fm d 0-1-1-2; Tb v 1-0; Mt v 2-2ap. III: Fm d 0-1-1-3; Tb pr and rt 0-1, v 1ap; Mt pr and rt 2ap, v 1-0-0. IV: Fm d 0-1-1-1; Tb v 1-0-2ap; Mt pr and rt 1ap, v 2ap. Coloration (in alcohol, the specimen is visibly faded; Figs 32–34). Carapace yellowish brown, shagreen, with a pale yellow line in the middle of the thorax; eye field darker (brown); carapace sparsely covered with white recumbent scales. Sternum and chelicerae yellowish brown. Endites and labium yellowish brown, with white apices. Abdomen slightly flattened and faded, greyish; dorsal colour pattern of reddish scales is poorly visible due to the poor condition of the specimen. Book-lung covers and spinnerets yellowish. All legs and palps yellowish, with no co-



Figs 37–41. Copulatory organ of the lectotype female of *Ureta ghigii* (Caporiacco, 1949): 37 — epigyne, ventral view; 38 — spermathecae, dorsal view; 39 — ditto, ventral view; 40 — right chelicerae, ventral view; 41 — original data label from two sides. Scale bars: 0.1 mm.

Рис. 37–41. Копулятивные орган лектотипа-самки *Ureta ghigii* (Сарориакко, 1949): 37 — эпигина, вид снизу; 38 — сперматека, вид сверху; 39 — тоже, вид снизу; 40 — правая хелицера, вид снизу; 41 — оригинальная этикетка с двух сторон. Масштаб: 0,1 мм.

lour pattern. Epigyne and spermathecae as shown in Figs 37–39: epigynal plate with two large and deep copulatory openings; proximal edge of the epigynal plate overhangs the epigastric furrow and bears a deep notch having the well-developed, singular pocket in the middle; the insemination ducts with wide, well-developed entrances followed by narrow tubes ended up with retort-shaped receptacles bearing the fertilization ducts.

New faunistic records

The following sections present new faunistic records for seven Harmochirina species, of which the majority, except for *Bianor albobimaculatus* and *Harmochirus brachiatus*, remain known to date from few localities only.

Bianor albobimaculatus (Lucas, 1846)

MATERIAL. PAKISTAN: 1 ♂, 1 ♀ (MMUE), Lahore [c. 31°32'42.9"N, 74°19'54.9"E], rice field, 9.08.2005, A. Butt; 1 ♂, 2 ♀♀ (ZMMU), NWF, Peshawar, Forestry Campus of Agricultural University [c. 34°01'00.0"N, 71°28'44.6"E], 14–26.08.2004, S.V. Ovtchinnikov; 1 ♂ (MMUE), Pakistan, Khushab Distr. [c. 32°19'40.1"N, 72°18'30.5"E], in grass, 2014, G. Rasool; 2 ♂♂, 1 ♀ (ISEA, 001.8258), Gahkuch Paeen (36.176°N, 73.762°E), 1861 m a.s.l., rural environments, 10.09.2018, D. Jablonski; 1 ♂, 2 ♀♀ (MMUE), Karachi (?) [c. 25°13'34.8"N, 67°06'11.9"E], 2014, M. Kazim; 1 ♂, 1 ♀, 2 imm. (NIBGE; det. G.A. Blagoev, 2018), Punjab, Sahiwal (30.65°N, 73.1°E), 173 m a.s.l., 12.08.2010, Q. Abbas; 5 ♂♂, 9 ♀♀, 3 imm (NIBGE; det. G.A. Blagoev, 2018), Punjab, Faisalabad, NIBGE (31.3833°N, 73.0167°E), 182 m a.s.l., 12.11.2010, S. Akhtar; 1 ♂ (NIBGE; det. G.A. Blagoev, 2018), Punjab, Sargodha (32.0667°N, 72.6667°E), 192 m a.s.l., 14.06.2010, S. Akhtar; 1 ♂ (NIBGE; det. G.A. Blagoev, 2018), Punjab, Lahore,

Changamanga (31.0833°N, 73.95°E), 197 m a.s.l., 17.07.2010, S. Akhtar; 2 imm. (NIBGE; det. G.A. Blagoev, 2018), Punjab, Nankana Sahib (31.45°N, 73.7°E), 193 m a.s.l., 28.05.2010, S. Akhtar; 1 imm. (NIBGE; det. G.A. Blagoev, 2018), Punjab, Sheikhpura, Pekhi (31.6167°N, 73.8667°E), 208 m a.s.l., 29.04.2010, S. Akhtar; 1 imm. (NIBGE; det. G.A. Blagoev, 2018), Punjab, Faisalabad, PARS (31.033°N, 73°E), 180 m a.s.l., 29.04.2012, S. Akhtar. — INDIA: 2 ♂♂ (ZMMU), Uttarakhand, nr. Rishikesh (29.976°N, 78.209°E), c. 300 m a.s.l., 14–16.04.2012, K.P. Tomkovich.

DISTRIBUTION. This is one of the best-known and widespread *Bianor* species, recorded from South Africa, the Mediterranean, throughout the Arabian Peninsula and Near East to Central Asia and NW India (Punjab and Uttarakhand) [Logunov, 2001; present data]. Although hitherto the species was formally reported from Pakistan [Logunov, 2001: 227], the present records provide exact locality data for the first time.

Bianor pseudomaculatus Logunov, 2001

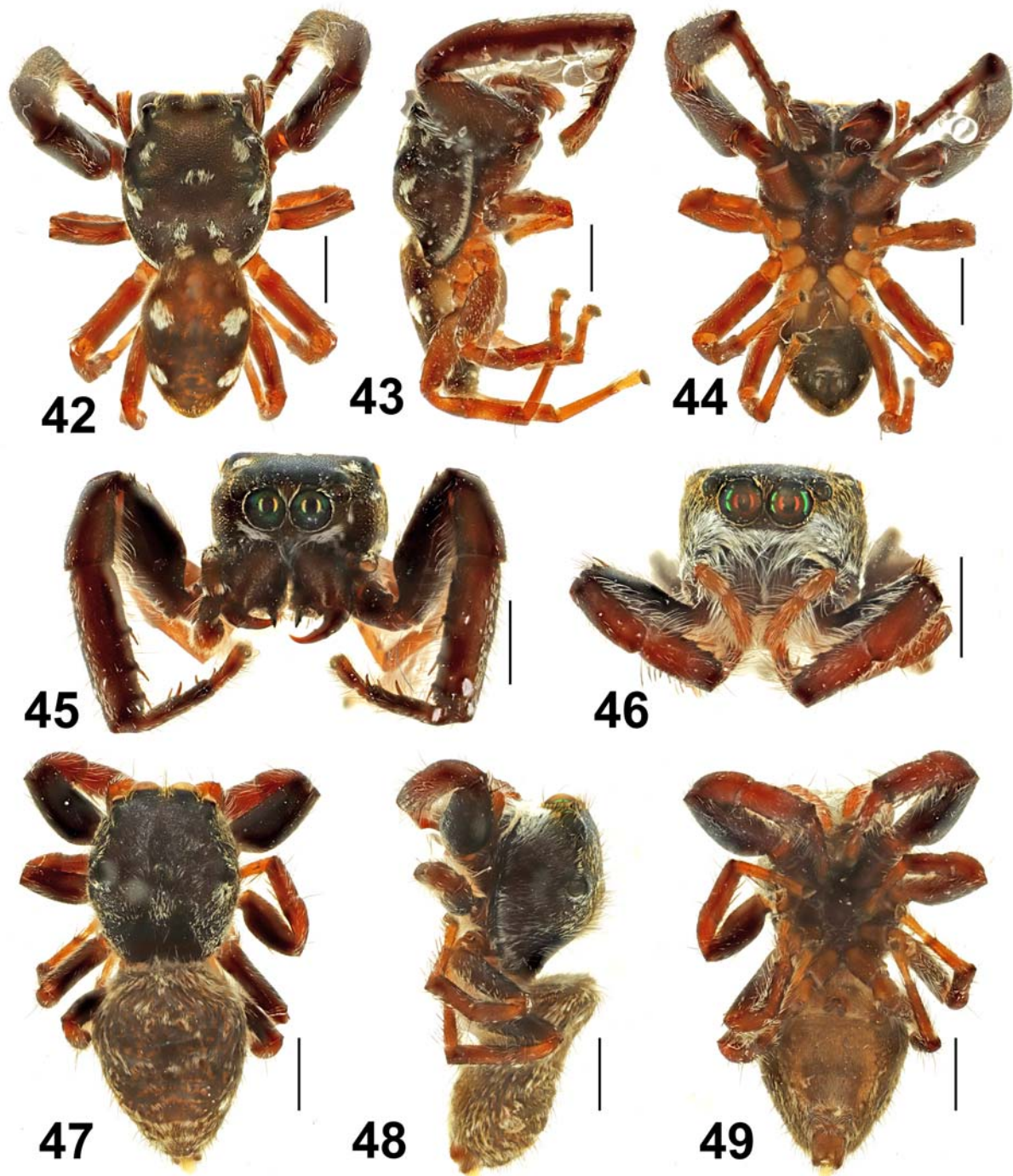
MATERIAL. INDIA: 1 ♂, 1 ♀ (ZMMU), Assam, Chapar, Champamati River (26.323°N, 90.461°E), c. 400 m a.s.l., 1–3.01.2014, K.P. Tomkovich; 1 ♂ (ZMMU), Meghalaya, Sohra area, nr. Tyrne (25.246°N, 91.672°E), lowland jungle, 300–400 m a.s.l., 18–21.12.2013, K.P. Tomkovich. — CAMBODIA: 2 ♂♂ (PCMF), Koh Kong/Tatai (11°34.624'N, 103°07.684'E), c. 10 m a.s.l., 02.12–05.12.2014, J. Nigl.

DISTRIBUTION. Bhutan, NE India (Assam, Meghalaya), southern Vietnam (Ho Chi Minh) [Logunov, 2001; present data]. New species record to Cambodia.

Bianor punjabicus Logunov, 2001

Figs 42–49.

MATERIAL. PAKISTAN: 2 ♂♂, 1 ♀ (MMUE), Punjab Prov., Khushab Distr., Jahlar Lake [c. 32°30'04.1"N, 72°05'11.0"E], on



Figs 42–49. General appearance of *Bianor punjabis* Logunov, 2001 from Pakistan (Jahlar Lake), male (42–45) and female (46–49): 42, 47 — body, dorsal view; 43, 48 — ditto, lateral view; 44, 49 — ditto, ventral view; 45, 46 — clypeus, frontal view. Scale bars: 1 mm.

Рис. 42–49. Общий вид *Bianor punjabis* Logunov, 2001 из Пакистана (оз. Яхлар), самец (42–45) и самка (46–49): 42, 47 — тело, вид сверху; 43, 48 — то же, вид сбоку; 44, 49 — то же, вид снизу; 45, 46 — клипеус, вид спереди. Масштаб: 1 мм.

Typha, 28.10.2012, G. Rasool; 1 ♀ (MMUE), Pakistan, Lahore [c. 31°32'42.9"N, 74°19'54.9"E], in grass, 16.05.2013, G. Rasool.

DISTRIBUTION. NE Afghanistan, NW India (Punjab) [Logunov, 2001] and NE Pakistan [present data]. New species record to Pakistan, and the second one after the original description.

COMMENTS. Although *B. punjabis* can easily be distinguished from its closest congener *B. angulosus* by the conformation of the male palp (see Logunov [2001] for further details), the males of both species can also be separated by their body colour pattern: viz. by the presence of two round white spots on the eye field in *B. punjabis*

(absent in *B. angulosus*) and three pairs of large white round spots on the dorsum in *B. punjabicus* (two pairs of elongated spots/bands in *B. angulosus*) (cf. Figs 7, 9 and 42). The clypeus of *B. punjabicus* also contains two transverse white streaks of scales (Fig. 45), not known in other *Bianor* species for which the males have been described (see Logunov [2001, 2009]).

Harmochirus brachiatus (Thorell, 1877)

MATERIAL. THAILAND: 1 ♂ (ISEA; det. G.N. Azarkina, 2018), Province Nakhon Ratchasima (Korat), Nong Bun Nak Vil. (14°42'N, 102°27'E), 170 m a.s.l., 20–23.07.2012, A.V. Korshunov.

DISTRIBUTION. From Bhutan in the north-west, eastward to southern Vietnam (Dak Lak Province) and Taiwan, and south-eastward to Indonesia and Malaysia (Borneo) [Logunov, 2001]. The new record lies within the outlined range of the species.

Harmochirus insulanus (Kishida, 1914)

MATERIAL. VIETNAM: 1 ♂ (MMUE), Tuyen Quang Province, c. 5 km E of Na Hang (22°20'59"N, 105°25'36"E), c. 290 m a.s.l., beaten from understorey vegetation, 4–13.11. 2015, D.V. Logunov.

DISTRIBUTION. Japan (Honshu, Shikoku, Kyushu), China (Gansu, Hainan, Guandong) [Logunov *et al.*, 1997; Logunov, 2001] and northern Vietnam (present data). New species record to Vietnam.

Harmochirus zabkai Logunov, 2001

MATERIAL. PAKISTAN: 1 ♂ (ZMMU), N vicinity of Islamabad [c. 33°47'24.4"N, 73°06'21.8"E], national park, 800 m a.s.l., 24.08.2005, S.V. Ovtchinnikov; 2 ♀♀ (ZMMU), same locality, 5.09.2004, S.V. Ovtchinnikov; 2 ♀♀ (MMUE), North-West Frontier Prov., c. 1.5 km N of Islamabad (33°44'30"N, 73°03'E), c. 800 m a.s.l., forest (under stones), 10.07.2003, S.V. Ovtchinnikov; 1 ♂ (ISEA, 001.8259), Choa Saidan Shah, Chakwal (32.761°N, 73.145°E), 741 m a.s.l., rocky habitat, 15.09.2018, D. Jablonski. — SRI LANKA: 3 ♀♀ (OUMNH), “Ceylon, jar 1867” (no exact locality and date).

DISTRIBUTION. Pakistan (present data), India (Punjab, Maharashtra, Tamil Nadu, Karnataka), Sri Lanka (present data), southern Vietnam (Dong Nai Province), and Malaysia (Malaya) [Logunov, 2001]. New species record to Sri Lanka (although without an exact locality).

Modunda staintoni (O. Pickard-Cambridge, 1872)

MATERIAL. PAKISTAN: 1 ♂ (MMUE), Punjab Prov., Uchali Lake [c. 32°33'49.2"N, 72°01'02.5"E], on *Typha* vegetation, 29.10.2012, G. Rasool; 1 imm (CBGO; det. G.A. Blagoev, 2018), Punjab, D.G. Khan, Fort Minro (29.9167°N, 69.9667°E), 1850 m a.s.l., 18.05.2010, S. Akhtar; 1 ♀ (NIBGE; det. G.A. Blagoev, 2018), Punjab, Nankana Sahib (31.45°N, 73.7°E), 193 m a.s.l., 28.05.2010, S. Akhtar; 1 ♂ (NIBGE; det. G.A. Blagoev, 2018), Islamabad, Rawal Dam, Lake View Park (33.716°N, 73.129°E), 534 m a.s.l., 22.07.2013, S. Swar.

DISTRIBUTION. From Egypt, throughout the Near East, eastward to NW India (Punjab) [Logunov, 2001] and NE Pakistan [present data]. New species record to Pakistan.

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