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Remarks on the genus *Plexippus* C. L. Koch, 1846 (Araneae: Salticidae)*¹

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Abstract

The database of the genus *Plexippus* C. L. Koch, 1846 is revised following methodology of morphological comparisons, recommended by “Pragmatic classification” proposed by Prószyński (2017). Comparison of selected diagnostic characters (palps, epigynes and external appearance of body) confirms very insufficient state of knowledge of the genus, due to separate study of individual species by subsequent authors. That situation is disadvantageous for comprehension of the diversity within the genus, resulting in impossibility of identification of majority of species. There are cases of mixing up species, which cannot be resolved without revision of type specimens. Paper presents a sort of blueprint for revision of the genus.

The following new taxa are described in this paper.

Plexippus gershomi sp. n.

Plexippus strandi dushanbinus Andreeva, 1969 = *Plexippus dushanbinus* (Andreeva, 1969) - elevated to rank of full species.

The following synonymies are documented in this paper.

Euophrys vetusta C. L. Koch, 1846 = *Plexippus paykulli* (Audouin, 1826) - tentative synonym.

Habrocestum rubroclypeatum Lessert, 1927 = *Plexippus rubroclypeatus* (Lessert, 1927) (tentative transfer based on palp appearance)

Habrocestum rubroclypeatum Dyal, 1935: 229 = nomen dubium (preoccupied by Lessert, 1927).

Habrocestum dyali Roewer, 1955c: 1119 (replacement of nomen dubium)

Plexippus clemens (O. Pickard-Cambridge, 1872) (in part) = *Plexippus bhutani* Zabka, 1990 - reinstated as separate species.

Plexippus clemens (O. Pickard-Cambridge, 1872) (in part) = *Plexippus tectonicus* Prószyński, 2003 - reinstated as separate species.

Plexippus clemens (O. Pickard-Cambridge, 1872) (in part) = *Plexippus yinae* Peng & Li, 2003 = *Plexippus tectonicus* Prószyński, 2003 - reclassified as synonym of the latter name.

Plexippus coccineus: Nenilin, 1985 - identification not documented.

Plexippus coccineus: Wesolowska, 1996 = *Plexippus strandi* Spassky, 1939.

¹ Present paper constitutes partial publication of sections of the Internet "Monograph of Salticidae (Araneae) of the World 1995-2016", parts I & II by Prószyński (2016a, b), available at: <http://www.peckhamia.com/salticidae/Subfamilies/> and <http://www.peckhamia.com/salticidae/> respectively.

Plexippus coccineus: Metzner, 1999 - misidentified.

Plexippus devorans Prószyński, 2002: 142-543, f. 579-580, 584, 589-590 = *P. gershomi* sp. n.

Plexippus lutescens Wesolowska, 2011_(misplaced in *Plexippus*).

Key words: CHRYSILLINES, genus, new species, synonyms, modern standard of taxonomic documentation, *Plexippus*, taxonomy, type species, type specimens, Pragmatic Classification, Salticidae

Introduction

History of research on *Plexippus* illustrates pitfalls of taxonomic studies of poorly known genera. During XIX century large number of diverse species was described as, or transferred to *Plexippus*. The Bonnet's "Bibliographia Araneorum" (1958: 3712-3722) list 70 species of *Plexippus* accepted at that time, as well as 86 synonymic names. In the World Spider Catalogue (assessed in 2017) the number of valid species is reduced to 39, however, survey of diagnostic documentation by Prószyński (2016a, 2016b) documents only 8 recognizable species, having both sexes known, and another 12 half recognizable species (that is known from single sex specimens), 23 other names cannot be assigned to any recognizable species without additional revisions. Personal contribution of Prószyński (1971, 1973, 1976, 1984, 1987, 1992, 2009) to that reduction amounts to 43 species transferred to other genera, in a result of detailed study of their palps and internal structures of epigyne. Recently two important papers dealing with particular species from India and Thailand were added, respectively by Caleb (2016) and by Žabka & Gardzińska (2017), both with perfect and exemplary modern diagnostic documentation. The later is setting a modern standard of documentation of a species of Salticidae (Fig. 1), expected to be provided for each of **4376** recognizable species, and all other species pending revision. Unfortunately graphic documentation published in literature is often incomplete, or of quality not permitting perception of details (too small, photographs not sharp, drawings diagrammatized), which contribute to frequent misidentification in publications presented in our time.

Survey of species inside genus *Plexippus* shows inadequacies resulting from separate study of single species, or a few species only. Modern authors accept generally main characters defining the genus: unique palp and epigyne structure (although preparations of ducts and spermathecae is included only by some authors), but fragmentary knowledge of full scale of diversity limits interpretations of characters. Only knowledge of all species permits to see and understand gaps in our knowledge. For instance omission of revision of type specimens of *Plexippus devorans* makes identification of several species valueless, substitution of drawings of species from Greece by "the same" drawings from Turkmenistan make record of European fauna untrustworthy (see discussion of the case below). Onset of documentation of species by color photographs in electronic publication is exceptionally useful for documentation. Study of all species separately cannot equal understanding gained from study of all species in a single project, as a taxonomic revision.

Taxonomy

Gen. *Plexippus* C. L. Koch, 1846

Type species *Attus paykullii* Audouin, 1826 = *Plexippus paykulli* (Audouin, 1826).

Documentation studied. Summary of world's literature provided in "Monograph of Salticidae (Araneae) of the World 1995-2016", part I & II, by Prószyński (2016a) and current literature.

Diagnosis. Medium size spiders of average body proportions and robust legs, usually with white stripe on abdomen and carapace, dorsal surface of cymbium with unique, prominent spot of white setae (Figs 1C-D, 2C-D, S). Males recognizable by unique expansion of prolateral edge of embolar basis, with sclerotized serrated edge, the opposite, median edge of that basis is soft, stretching diagonally over the whole length of bulbus, which leaves visible only part of spermophor (anterior bend and part of lateral run) (Fig. 4A and a number of drawings scattered over Figs 1-4). Shape of bulbus is rounded triangular, with broad anterior

edge, gradually narrowing posteriorly and ending by prominent posterior protuberance. Epigyne heavily sclerotized, with prominent, single pocket, located medially, in anterior or median part of epigyne and followed by a furrow reaching posterior edge of epigyne. Rims of copulatory openings sclerotized, arching and long, delimiting oval, white space anterior to pocket. Copulatory ducts and spermathecae heavily sclerotized, without membranous parts, ducts runs straight or diagonally along half, or one third length of epigyne. Spermathecae posterior, globular or making single, thick walled bend. Genus and its species are defined by enclosed diagnostic, graphic documentation.

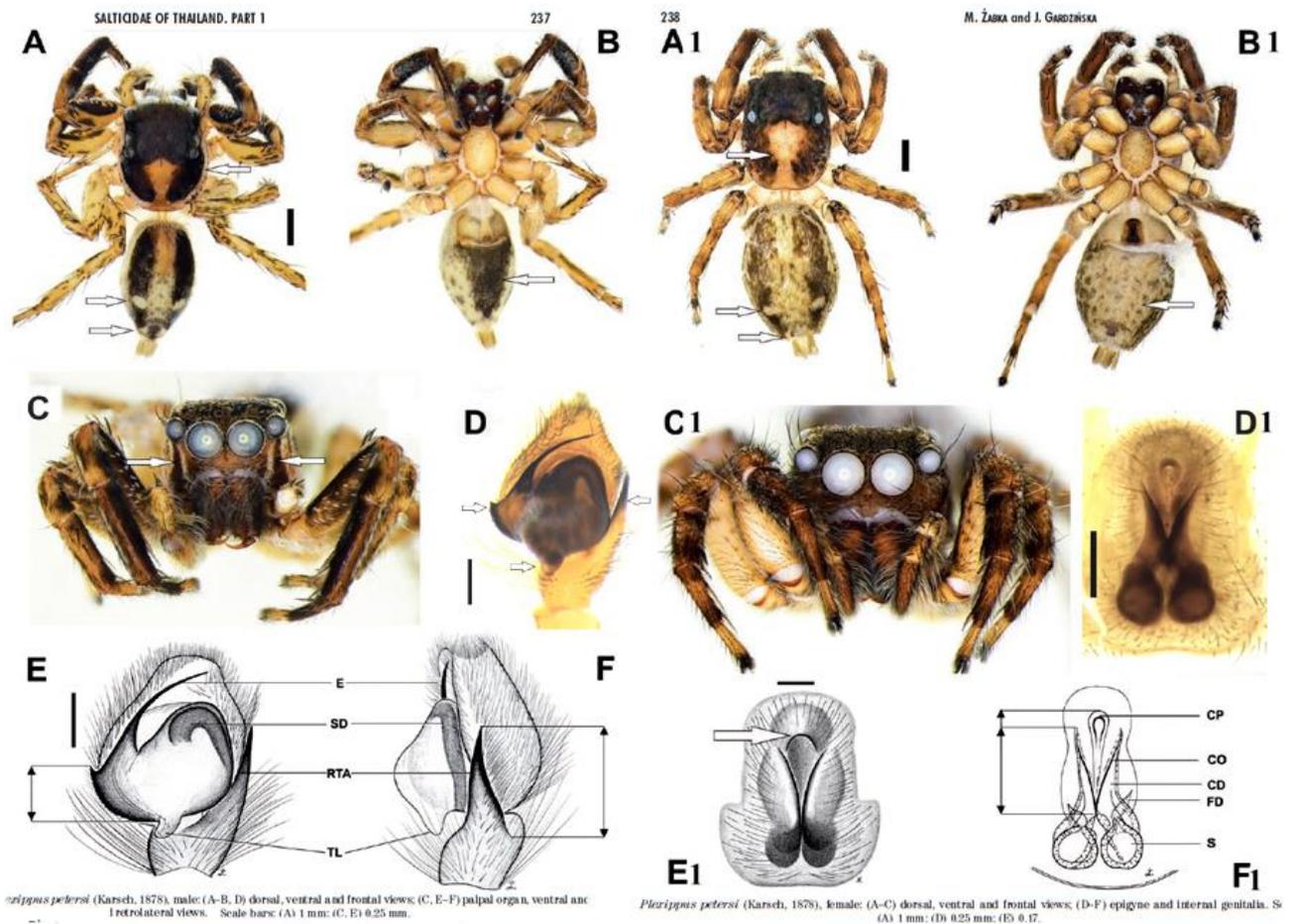


Figure 1. Modern standard of taxonomic documentation of a species of Salticidae (on example of *Plexippus petersi* (Karsch, 1878, male A-F and female A1-F1), as befitting in 2017. It consists of precise diagnostic drawings of palps - E-F, epigyne and internal structure of epigyne E1-F1, repeated also as color photograph (to reduce inadequacies resulting from subjective interpretation by an artist) - D-D1, color photographs of unchanged habitus of specimens of both sexes (dorsal, frontal and ventral views, missing lateral view) A-C1. The size of individual illustrations permits clear perception of diagnostic characters.

SOURCE: facsimile of figures 3A-F, 4A-F of Żabka & Gardzińska, (2017): *Annales Zoologici, Warszawa* 67(2): 237-238. All ©copyrights are retained by the original authors and copyright holders, used here by their courtesy.

Remarks. Genus can be divided into three groups of species by the proportions and location of epigynal pockets in relation to copulatory openings, and by shape and proportions of white, oval space enclosed between lateral rims of copulatory openings. There are following groups of species: 1 - species with pockets located near anterior end of epigyne, and epigynal furrow long; 2 - species with pocket located centrally, on the level of copulatory openings, long edges running far ahead of pocket, delimiting white and oval anterior space; 3 - species not clearly confronting to the above scheme. While palps are relatively similar, males differ by length of tibial apophysis, from short and directed transversally to parallel to cymbium and as long as bulbus. There are also differences in size of prolateral swelling of embolar basis, and its location anterior, middle or posterior. Good diagnostic characters are provided by light and/or white markings on carapace and eyefield (the later invisible on specimens submerged in alcohol)². There is also a pair of black spots in thorax, or a pair of continuous dark streaks, running parallel until end of carapace, leaving between them light medial streak (which may end anteriorly by broader spot, triangular or round (Figs 2Q-Q1).

Description. Genus and its species are defined by enclosed diagnostic graphic documentation, which effectively replace old fashioned routine detailed descriptions in words (Figs 1-7). To see diversity within genus open file <http://www.peckhamia.com/salticidae/q6-Plexippus.html>.

Discussion. Majority of species has similar appearance, increased by invisibility of white spots of semitransparent setae and scales and gradual fading of colors of specimens preserved in alcohol. Detailed measurements of parts of body, painstakingly measured by generations of arachnologists, have little diagnostic value, more practical is just overall size of body, for instance *Plexippus paykulli*, which may be twice as big as *P. clemens*, *P. devorans* and *P. tectonicus*. Comparison of body size is lost on comparative plates, where size of spiders are uniformized.

Placement of the genus *Plexippus*

Structure of palp, with embolus basis overlapping diagonally tegulum and leaving visible only anterior bent of spermophor, with part of its retrolateral course, is a morphological character delimiting genera included into informal group CHRYSILLINES. It helps in identification of these genera, but is not a proof of affinities by itself. *Plexippus* is traditionally, since Simon (1901-1903: 710-741), considered a type genus of a large group of genera Plexippeae or Plexippinae, Maddison (2015: 250) grouped 47 genera into tribe Plexippini, glamorized by assumption of phylogenetic monophyly, based on alleged molecular supporting data, but without demonstrating morphological premises.

Composition. Recognizable species - 20 [both sexes recognizable - 8, only single sex = 12] *Plexippus auberti* Lessert, 1925: Kenya, Tanzania, *Plexippus baro* Wesolowska & Tomasiewicz, 2008: Ethiopia, *Plexippus bhutani* Zabka, 1990: Bhutan, India, China: Yunnan, *Plexippus clemens* (O. Pickard-Cambridge, 1872): Turkey, Libya, Egypt, Israel, Yemen, Iran, India, *Plexippus devorans* (O. Pickard-Cambridge, 1872): Israel, Lebanon, *Plexippus fibulatus* Dawidowicz & Wesolowska, 2016: Kenya, *Plexippus fuscus* Rollard & Wesolowska, 2002: Guinea, *Plexippus iranensis* Logunov, 2009: Iran, *Plexippus kondarensis* (Charitonov, 1951): Central Asia, *Plexippus lutescens* Wesolowska, 2011: Namibia, Zimbabwe, *Plexippus minor* Wesolowska & van Harten, 2010: United Arab Emirates, *Plexippus paykulli* (Audouin, 1826): cosmopolitan, *Plexippus perfidus* Thorell, 1895: Myanmar, *Plexippus petersi* (Karsch, 1878): Africa to Japan and Australia, *Plexippus pokharae* Zabka, 1990: Nepal, *Plexippus rubroclypeatum* (Lessert, 1927) (Habrocestum?), *Plexippus setipes* Karsch, 1879: China, Vietnam, *Plexippus strandi* Spassky, 1939 Central Asia, *Plexippus tectonicus* Prószyński, 2003: Israel, *Plexippus tsholotsho* Wesolowska, 2011: Zimbabwe, South Africa.

Unrecognizable species - 20 *Plexippus andamanensis* (Tikader, 1977): Andaman Is., *Plexippus aper* Thorell, 1881: New Guinea, *Plexippus brachypus* Thorell, 1881: Yule Is., *Plexippus calcutaensis* (Tikader, 1974): India, *Plexippus coccinatus* Thorell, 1895: Myanmar, *Plexippus coccineus* Simon, 1902 "Turkomania", *Plexippus frendens* Thorell, 1881: New Guinea, *Plexippus incognitus* Bösenberg & Strand,

² Examination of specimens in alcohol causes disappearance of diagnostically important white spots of semitransparent setae and scales, perfectly visible on live specimens (compare photos of live and preserved *Plexippus paykulli*). A solution may be temporary drying up of specimens, which make these spots visible again. That method was practiced by XIX century arachnologists (like Kulczyński, 1854-1919) who used to publish two separate descriptions, of specimens "wet" and "dried up".

1906: China , Korea , Taiwan, Japan, *Plexippus insulanus* Thorell, 1881:| Moluccas, *Plexippus luteus* Badcock, 1932: Paraguay, *Plexippus niccensis* Strand, 1906: Japan, *Plexippus ochropsis* Thorell, 1881: New Guinea, *Plexippus paykulli nigrescens* (Berland, 1933): Marquesas, *Plexippus phyllus* Karsch, 1878: New South Wales, *Plexippus robustus* (Bösenberg & Lenz, 1895): from Usambaa, German XIX century Ost Afrika, *Plexippus rubrogularis* Simon, 1902: South Africa, *Plexippus seladonicus* C. L. Koch, 1846: Mexico, *Plexippus stridulator* Pocock, 1899: New Britain, *Plexippus taeniatus* C. L. Koch, 1846: Mexico, *Plexippus tortilis* Simon, 1902: W Africa, *Plexippus redimitus* Simon, 1902: India, Sri Lanka, *Plexippus wesolowskae* Biswas & Raychaudhuri, 1998: Bangladesh, *Plexippus zabkai* Biswas, 1999: Bangladesh, *Plexippus pseudopaykulli* Sen, Dhali, Saha & Raychaudhuri, 2015: India (Figs 1H, 4T).

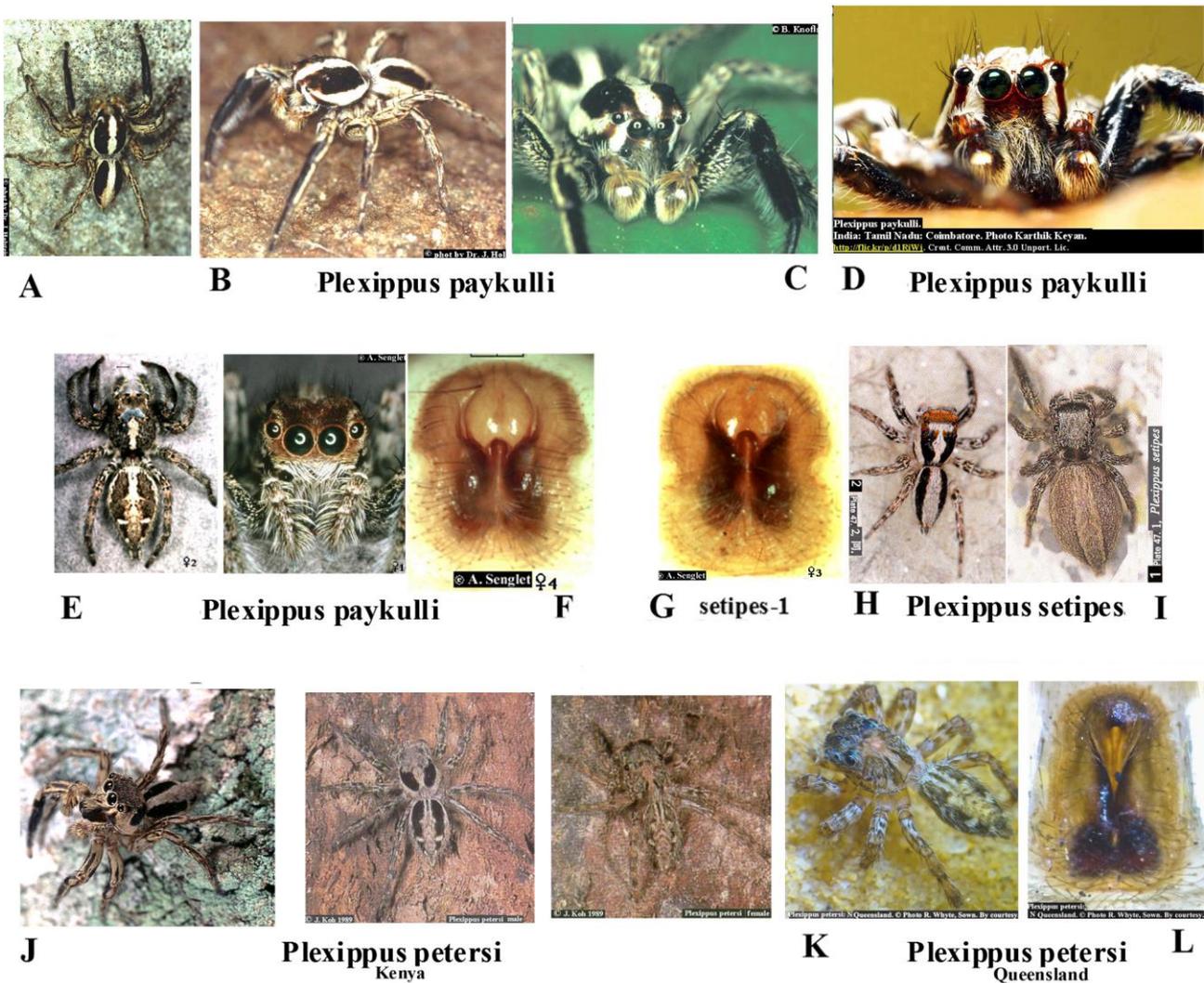


Figure 2a. Color pattern and body shape of species of *Plexippus*. **A-D** - *Plexippus paykulli* (Audouin, 1826) males, **E-F** - *P. paykulli* female - dorsal & frontal view, epigyne, **G** - *P. setipes-1*, **H-I** - *P. setipes* Karsch, 1879, Japan, epigyne (no data), **J** - *P. petersi* (Karsch, 1878) Kenya , **K-L** - *P. petersi* Queensland female and epigyne.

SOURCES: **A, J** - Photo J. Holstein, **B, C** - Photo B. Knoflach, **D** - Photo Karthik Keyan, **E-F, G, M** - Photo A. Senglet, 2002, **H, I** - Photo Ono, Ikeda & Kono, 2009 The Spiders of Japan, **K-L** - Photo R. Whyte. All copyrights are retained by the original authors and copyright holders, used here by their courtesy.

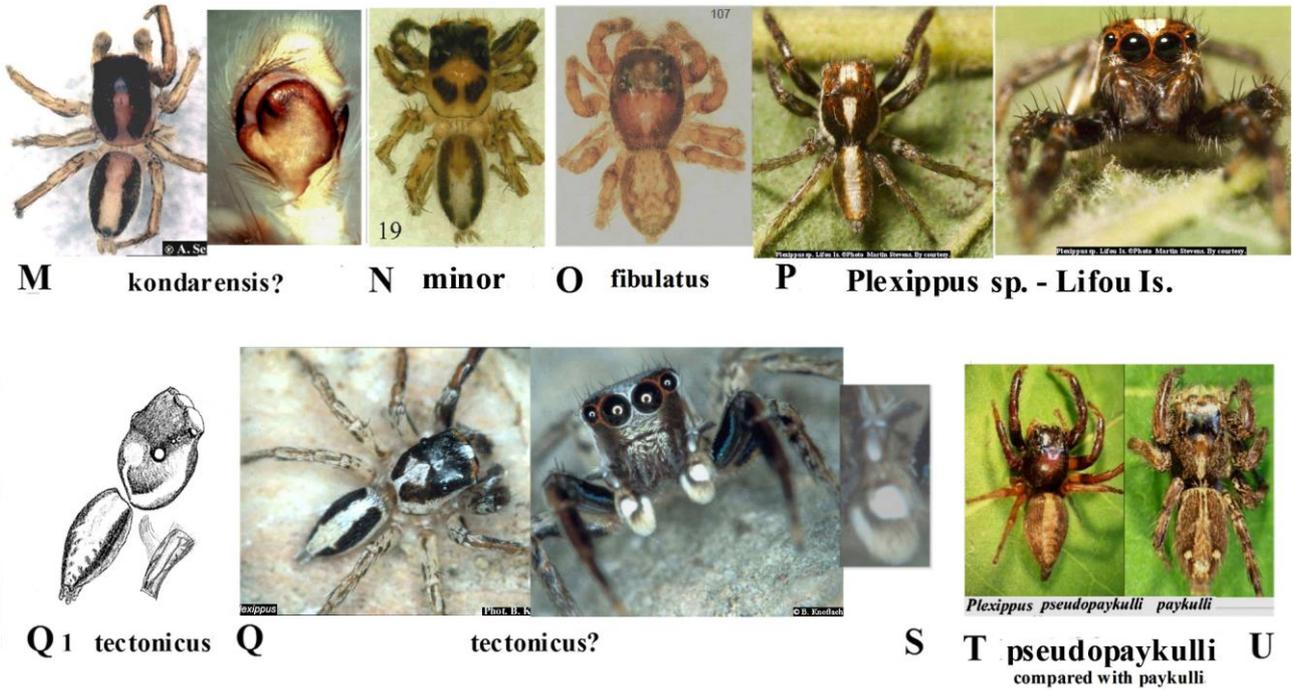


Figure 2b. Color pattern and body shape of species of *Plexippus*. **M** - *P. cf. kondarensis* (Charitonov, 1951) male and palp, **N** - *P. minor* Wesolowska & van Harten, 2010, **O** - *P. [?] fibulatus* Dawidowicz & Wesolowska, 2016, **P** - *P. sp.* from Lifou Is., **Q1** - *P. tectonicus* Prószyński, 2003, **Q-S** - *P. cf. tectonicus* Prószyński, 2003, male (note white spot on cymbium, black and white "flag" of setae on palpal femur), **T** - *P. pseudopaykulli* Sen, Dhali, Saha & Raychaudhuri, 2015 compared with **U** - *P. paykulli*.

SOURCES: **M** - Photo A. Senglet, 2002, **N** - Wesolowska, van Harten, 2010: United Arab Emirates, 2010: 3: 49, pl 19, **O** - Dawidowicz & Wesolowska, 2016: *Annales Zoologici* **66**(3): 454, f. 69-70, 107, **P** - Photo M. Anderson, by courtesy of R. Whyte, **Q** - Prószyński, 2003 *Annales Zoologici*, 53: 145, f. 581-582, 586, 591, 736-737, **Q-S** - Photo B. Knoflach, **T-U** - Photo Dhali, Saha & Raychaudhuri, 2017: *World Scientific News* 20: 28, pl. 18. All copyrights are retained by the original authors and copyright holders, used here by their courtesy.

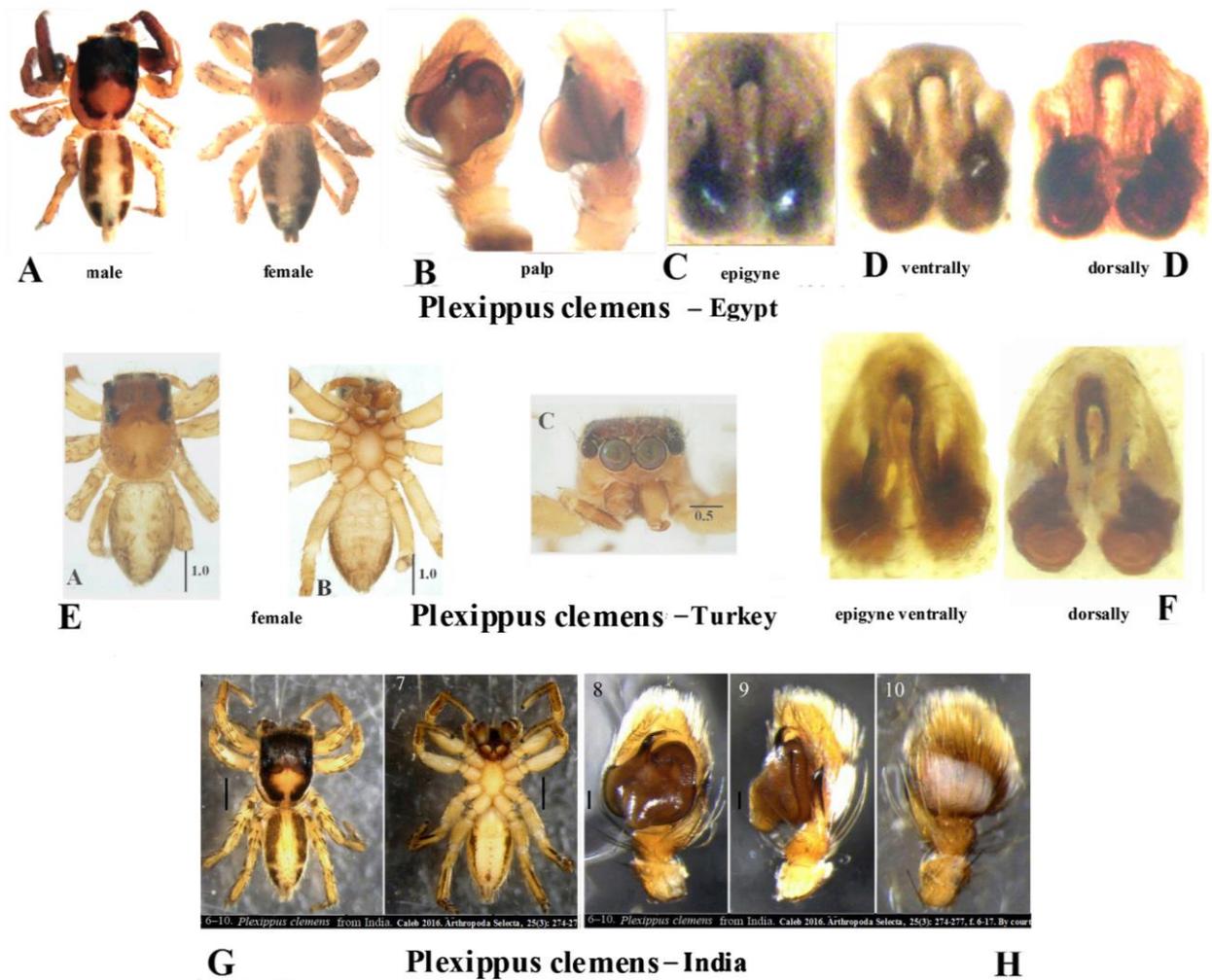


Figure 3. Color pattern and body shape of species of *Plexippus*. **A-D** - *Plexippus clemens* (O. Pickard-Cambridge, 1872) - Egypt, **E-F** - *Plexippus clemens* -Turkey, ventral view of epigyne (uncleared soft tissues embedding spermathecae and ducts hamper perception of details of structures!), **G-H** - *Plexippus clemens* - India.

SOURCES: **A-D** - El-Hennawy, Mohafez & El-Gendy, 2015: Serket **14**(3):131, f. 1-7, 2015: 131, f. 1-7t, **E-F** -Coşar, Danişman & Yıldırım, 2014: Serket **14**(2): 92, f. 8A-C, 9A-B, **G-H**- Photo J.T.D. Caleb, 2016b: Arthropoda Selecta **25**(3): 274, f . 6-17. All copyrights are retained by the original authors and copyright holders, used here by their courtesy.

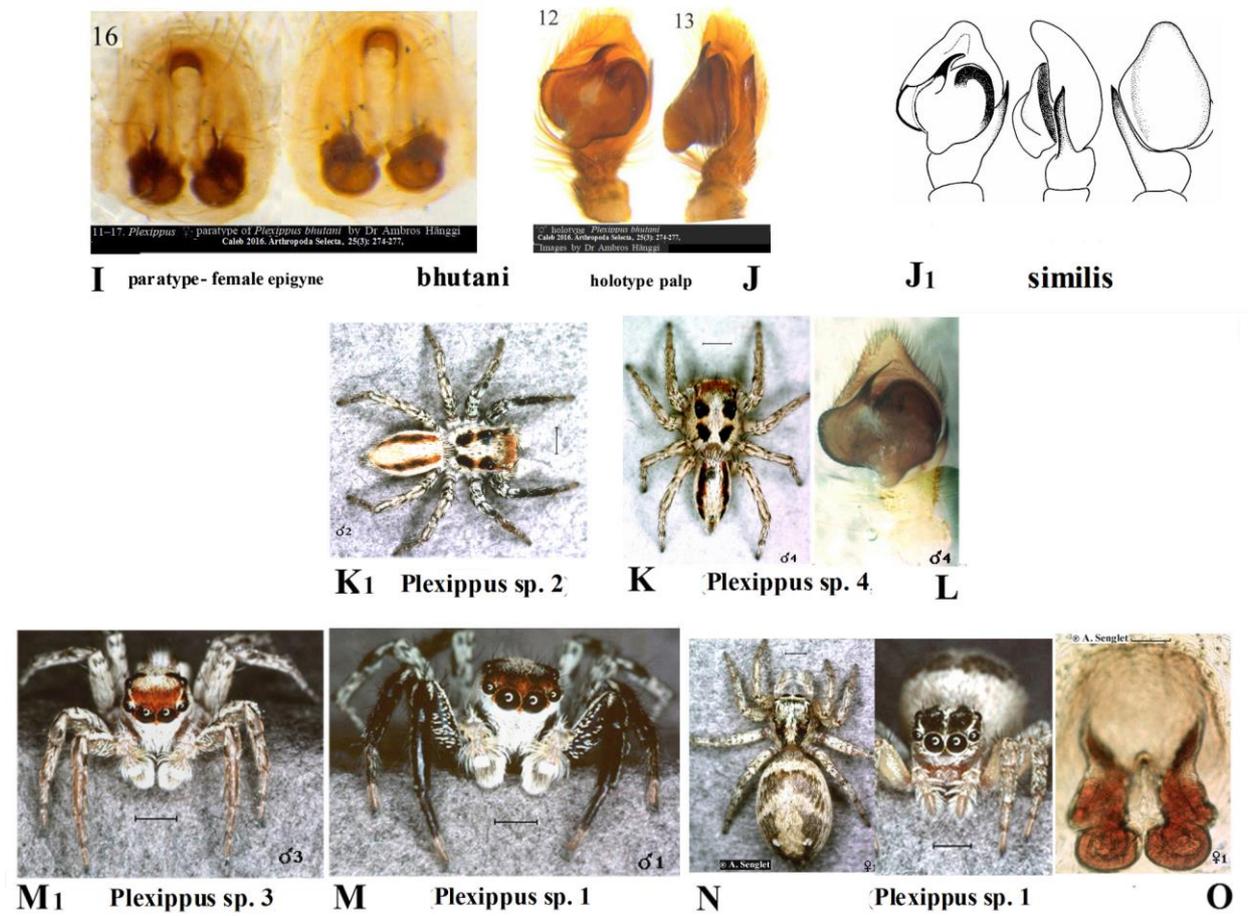


Figure 3b. Color pattern and body shape of species of *Plexippus*. **I-J** - *Plexippus bhutani* Zabka, 1990 - paratype female, holotype male, **J1** - *Plexippus similis* Wesolowska & van Harten, 2007, **K1** - *Plexippus* sp. 2, **K-L** - *Plexippus* sp. 4 - male and its palp, **M1** - *Plexippus* sp. 3, **M** - *Plexippus* sp. 1 male (note black legs I), **N-O** - *Plexippus* sp. 1 female and internal structures of epigyne.

SOURCES: **I-J** - photo A. Haenggi, from Caleb (2016b) Arthropoda Selecta 25(3): 271-277, **J1** - Wesolowska & van Harten, 2007 Fauna of Arabia 23: 246, f. 165-168, **K, K1, M1, M, N-O** -Photo A. Senglet. All copyrights are retained by the original authors and copyright holders, used here by their courtesy

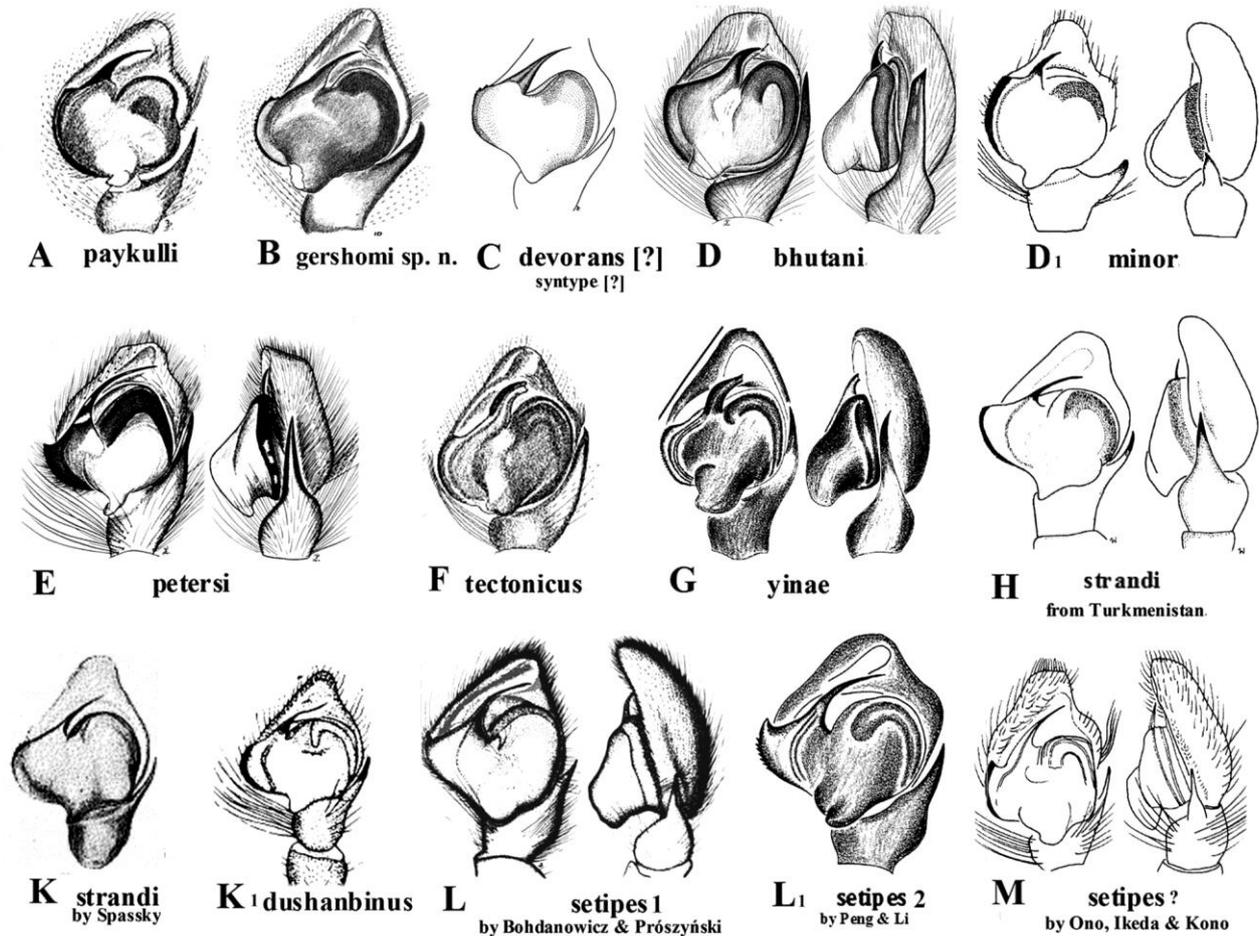


Figure 4a. Diagnostic characters of species of *Plexippus*. **A** - *Plexippus paykulli* (Audouin, 1826) (palp 1/3 larger than remaining species), **B** - *P. gershomi* sp. n., **C** - *P.* sp. [*devorans*?? - unlabeled specimen in O. Pickard-Cambridge collection, from a jar with specimens from Palestine], **D** - *P. bhutani* Zabka, 1990, **D1** - *P. minor* Wesolowska & van Harten, 2010, **E** - *P. petersi* (Karsch, 1878), **F** - *P. tectonicus* Prószyński, 2003, **G** - *Plexippus yinae* Peng X., Li S., 2003 = *P. tectonicus* [?], **H** - *Plexippus strandi* Spassky, 1939 - from Turkmenistan, **K** - *P. strandi* Spassky, 1939, **K1** - *P. dushanbinus* (Andreeva, 1969), **L** - *P. setipes*-1 Karsch, 1879, **L1** - "*P. setipes*-2" Peng & Li, 2003, [another palp, hypothetically matching holotype of *P. setipes* - see Figs 9R-S], **M** - *P. setipes*.

SOURCES: **A, B-C, F** - Prószyński 2003a. *Annales Zoologici* 2003: 143- 145, f 577-578, 583, 587-588, **D, E**, - Zabka M. 1990c. *Senckenbergiana biologica* 70 (1/3): 173, f 28-33, 26- 27, 34-37, **D1**, - Wesolowska, van Harten, 2010: *United Arab Emirates*, 2010: 3: 49, pl 19, f 57-58, **G** - Peng X., Li S., 2003. *Revue Suisse de Zoologie* 110: 755, f 5A-E, **H** - Wesolowska, 1996: *Arthropoda Selecta* 5(1/2): 36, f. 25A-C, 26A-C, **K** - Spassky, 1939b: *Folia Zoologica et Hydrobiologica*, 9: 299, f. 1-2, **K1** - Andreeva, 1969: *Dyushanbe*, 90, f. 2, **L** - Bohdanowicz & Prószyński, 1987, *Annales Zoologici* 41, 2: 117-119; f 229-232, **L1** - Peng & Li, 2003b: 755, f. 4A-F, **M** - Ono, Ikeda & Kono, 2009: *The Spiders of Japan* 576, f. 172-174 .

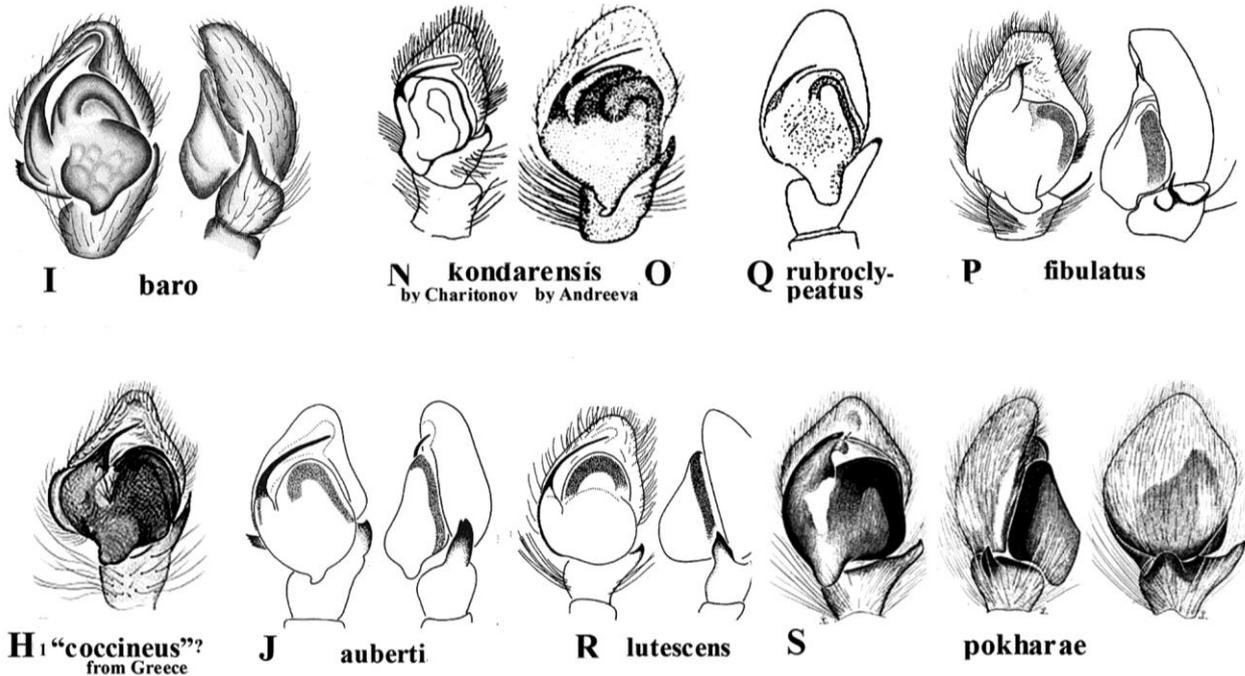


Figure 4b. H1 - *P. "coccineus"* [identification questionable - see text] from Greece, I - *P. baro* Wesolowska & Tomaszewicz, 2008, J - *P. auberti* Lessert, 1925, N- *P. kondarensis* (Charitonov, 1951) - by Charitonov, O - *P. kondarensis* - by Andreeva, P - *P. fibulatus* Dawidowicz & Wesolowska, 2016, Q - *P. [?] rubroclypeatus* (Lessert, 1927) (comb. n.), R- *P. [?] lutescens* Wesolowska, 2011 (misplaced in this genus), S - *P. [?] pokharae* Zabka, 1990.

SOURCES: H1 - Metzner, 1999:Andrias 14: 136, f. 100a-j, I - Wesolowska, Tomaszewicz, 2008. Journal of Afrotropical Zoology 4: 44-45, 167-170 , J - Wesolowska 2012b. Genus. 23(2): 213-215, f 41-46 , N - Charitonov, 1951: 215, f. 7 , O - Andreeva, 1969: Dyushanbe, 90, f. 2, P - Dawidowicz & Wesolowska, 2016: Annales Zoologici, 454, f. 69-70, 107, R - Wesolowska, W. (2011b). Genus 22: 336, f. 69-70, , S - Zabka M. 1990c. Senckenbergiana biologica 70 (1/3): 173, f 28-33, 26- 27, 34-37. All copyrights are retained by the original authors and copyright holders, used here by their courtesy.

Note on not identified species

There is a group of relatively similar species of *Plexippus*, containing not less than four species, photographed by A. Senglet, either in Iran or Afghanistan, marked by him on photos with small numbers 1-4, shown on Figs 3K1 (*Plexippus* sp. 2), K-L (*Plexippus* sp. 4 - male and its palp), M1 (*Plexippus* sp. 3), M (*Plexippus* sp. 1 male - note black legs I), N-O (*Plexippus* sp. 1 female and its internal structure of epigyne). Documentation of that group has unique value because of visible color pattern, unfortunately not comparable with other species of *Plexippus*, exact places of occurrence are not known. Epigyne of two(?) similar species from Lenkoran and Krasnovodsk were drawn by Prószyński (1973: 120, f. 61) from permanent Dahl's preparations kept in Museum in Berlin (Figs 5K-K1), named here provisionally *Plexippus* cf. *strandii*. That group may include temporarily (until revised) misidentified *P. "coccineus"* from Greece, shown on Figs 4H1, 5J-J1, 7C.

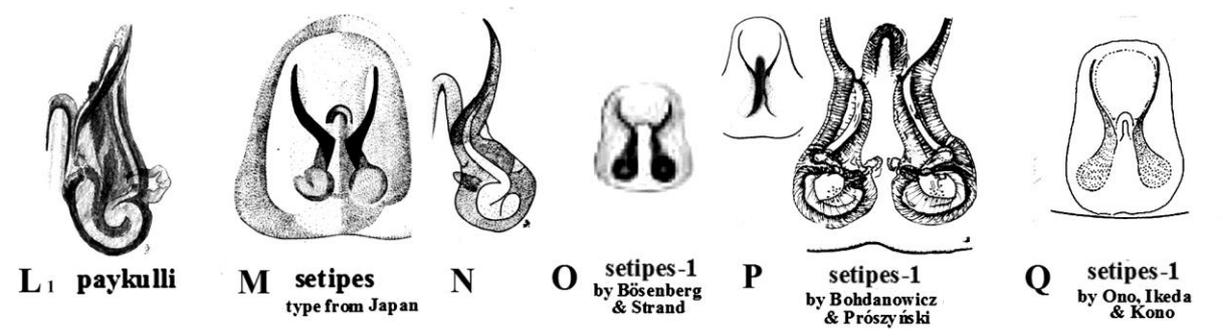
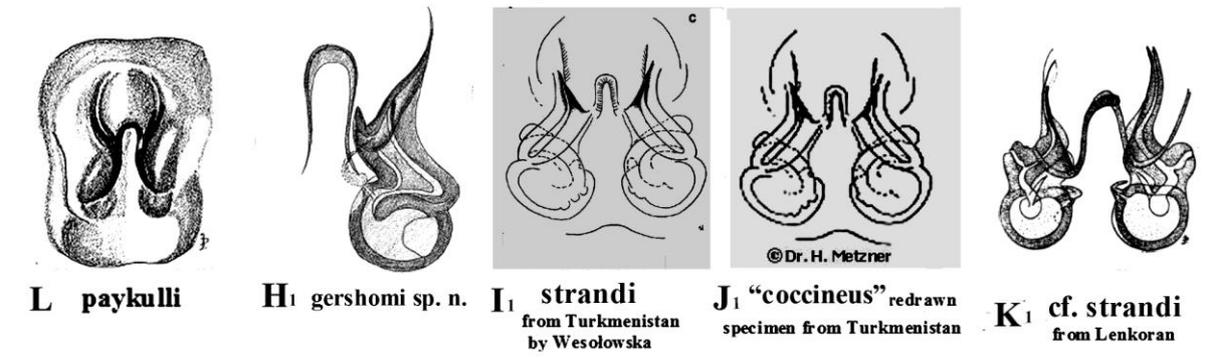
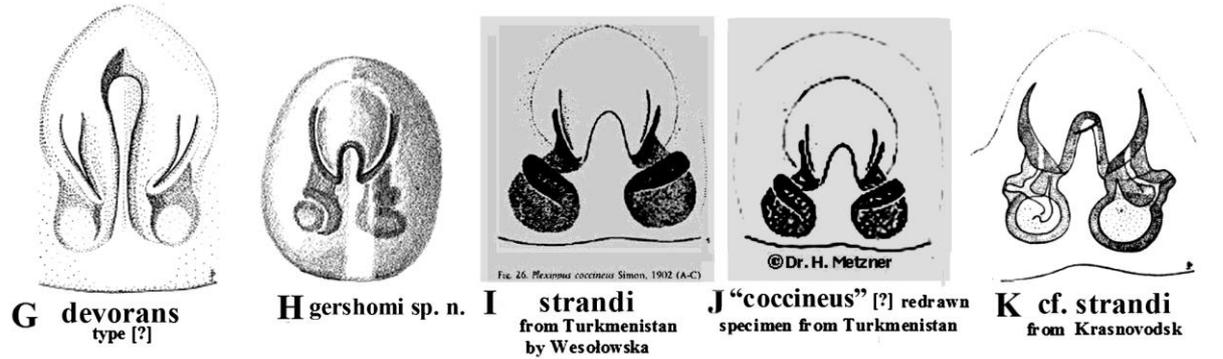
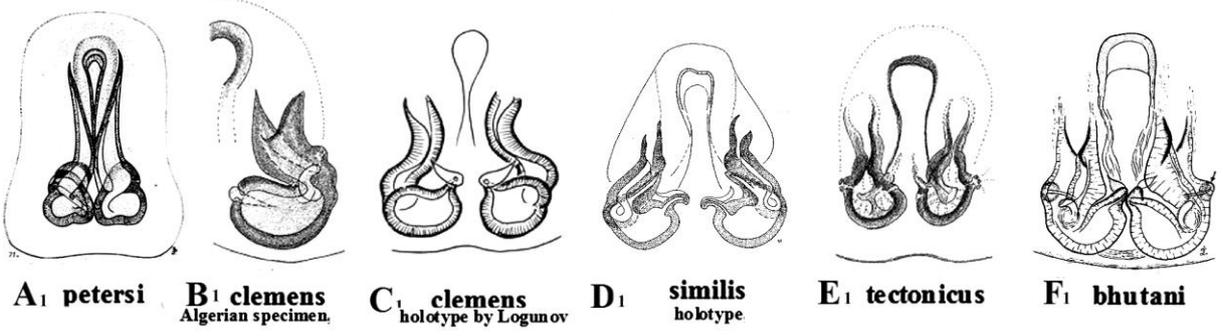
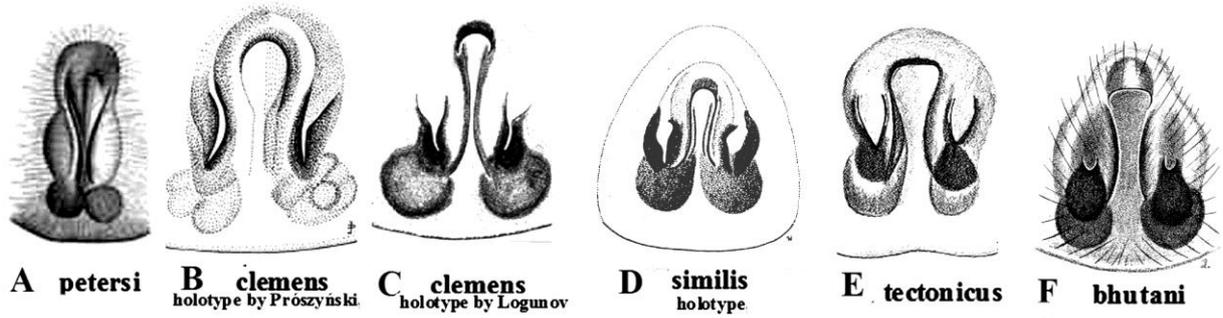


Figure 5. Diversity of epigyne, ducts and spermathecae in *Plexippus*. **A-A1** - *Plexippus petersi* (Karsch, 1878), **B** - *P. clemens* (O. Pickard-Cambridge, 1872) - holotype by Prószyński, **B1** - *P. clemens* - Algerian specimen by Prószyński, **C-C1** - *P. clemens* - holotype by Logunov, 2010b, **D-D1** - *P. similis* Wesolowska & van Harten, 1994 - holotype, **E-E1** - *P. tectonicus* Prószyński, 2003, **F-F1** -- *P. bhutani* Zabka M. 1990c, **G** - *P. devorans* (O. Pickard-Cambridge, 1872), **H-H1** - *P. gershomii* sp. n. Prószyński 2003a, **I-I1** - *P. strandi* Spassky, 1939 - by Wesolowska, **J-J1** - *P. "coccineus" [?]* - by Metzner, 1999: 136, f. 100a-j (redrawn Figs I-I1 showing *P. strandi* specimen from Turkmenistan - hence untrustworthy), **K-K1** - misidentified L. Koch specimens of *A. "setipes"* from Lenkoran and Krasnovodsk = *P.* cf. *strandii* - sensu Wesolowska, **L-L1** - *P. paykulli* (Audouin, 1826), **M-N** - *P. setipes* Karsch, 1879 - type from Japan, **O** - *P. setipes*-1 - by Bösenberg & Strand, **P** - *P. setipes*-1 by Bohdanowicz & Prószyński, **Q** - *P. setipes*-2 - by Ono, Ikeda & Kono.

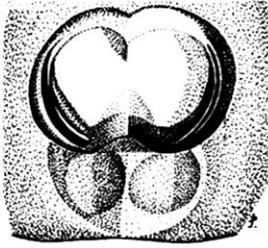
SOURCES: **A-A1** - Zabka 1985. *Annales Zoologici*: 433-434, f 464-470, **A1** - Prószyński 1987: 80. **B-B1** - Prószyński 1984c[a]: 85, also - Prószyński. *Annales Zoologici* 2003: 142, f 592-593; 143-145, f 589, **C-C1** - Logunov, 2010b: *Bulletin of the British Arachnological Society* **15**: 87, f. 7, **D-D1** - Wesolowska & van Harten, 1994: *Yemeni-German Plant Protection Project* 72, f 147-149, **E-E1, G, H-H1** - Prószyński 2003a. *Annales Zoologici* 53, 1: 143, 145-146, f 581-582, 586, 589, 591, 736-737, **F-F1** - Zabka 1990c: 173, f. 28-33, **I-I1** - Wesolowska 36, f. 25A-C, 26A-C, **J-J1** - Metzner, 1999: 136, f. 100a-j, **K-K1** - Prószyński, 1973b: *Annales zoologici*. 120, f. 61-66, **L-L1** - Prószyński, *Annales zoologici* 2003: 142, f 592-593, **M-N** - Prószyński 1973b, *Annales Zoologici*, 30: 120-124, f 61-66, **O** - Bösenberg & Strand, *Abhandlungen der Senckenbergischen Naturforschenden Gesellschaft* 30: 364, pl. 13, f. 363, **P** - Bohdanowicz, Prószyński. 1987. *Annales Zoologici* 41, 2: 117-119; f 229-232, **Q** - Ono, Ikeda, Kono 2009: *Spiders of Japan* 576, f. 172-174. All ©copyrights are retained by the original authors and copyright holders, used here by their courtesy.

...figure on page 49

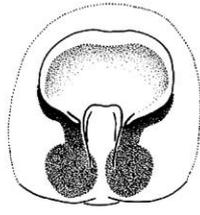
Figure 6. Diversity of epigyne and ducts in *Plexippus* (continuation). **A -A1** - *Plexippus perfidus* Thorell, 1895, **B-B1** - *P. auberti* Lessert, 1925, **C** - *P. kondarensis* (Charitonov, 1951) by Charitonov, **C1** - *P. kondarensis* by Logunov, **D-D1** - *P. iranensis* Logunov, 2009, **E** - *P. strandi* Spassky, 1939, **F** - *P. strandi* - by Andreeva, **G** - *P. dushanbinus* Andreeva, 1969, **H** - *P. robustus*[?] (Bösenberg & Lenz, 1895), **I** - *P. [?] vetustus* (C. L. Koch, 1846) (*Euophrys vetusta*) (epigyne plugged by waxy stopper?), **J-J1** - *P. fuscus* Rollard & Wesolowska, 2002, **K -K1** - *P. tsholotsho* Wesolowska, 2011, **L** - *P. pseudopaykulli* Sen, Dhali, Saha & Raychaudhuri, 2015, **M** - *P. setipes*-2 Peng & Li, 2003b: 755, f. 4A-F.

SOURCES: **A -A1** - Prószyński 1984c[a]. *Atlas ...*: 112, **B-B1** - Prószyński 1984c[a]: 152., **C** - Charitonov, 1951: 215, f. 7, **C1** - Logunov D.V., Rakov. S.Y. 1998. *Arthr.Sel.* 7(2): 129, f 45, **D-D1** - Logunov, 2009, *Contributions to Natural History* 12: 908-909, 18-19, **E** - Spassky, 1939: *Folia Zoologica et Hydrobiologica*, 299, f. 1-2, **F-G** - Andreeva, 1969: *Izvestiya Otdelenie Biologicheskikh Nauk Akademii Tadzhikskoi SSR* 4: 90, f. 2, **H** - Bösenberg & Lenz, 1895: *Jahrbuch der Hamburgischen Wissenschaftlichen Anstalten* 12(2) 32, pl. 1, f. 8, **I** - Prószyński, 1987: *Atlas ...*: 25, **J-J1** - Rollard & Wesolowska, 2002: *Zoosystema* 303, f. 15A-B, **K -K1** - Wesolowska, 2011 *Genus*, 22(2): 337-338, f 71-72, **L** - Dhali, Saha & Raychaudhuri, 2017: *World Scientific News* 28, f. 28-32, pl. 18, **M** - Peng & Li, 2003b: 755, f. 4A-F. All ©copyrights are retained by the original authors and copyright holders, used here by their courtesy.

...figure on page 51



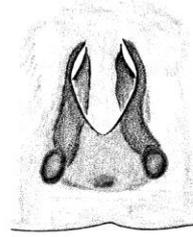
A *perfidus*



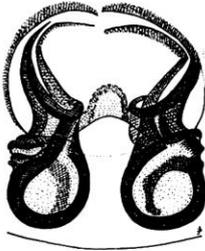
B *auberti*



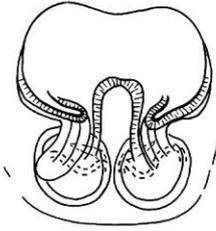
C *kondarensis*
by Charitonov



D *iranensis*



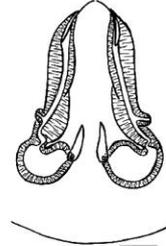
A₁ *perfidus*



B₁ *auberti*



C₁ *kondarensis*
by Logunov



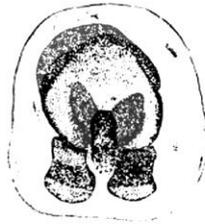
D₁ *iranensis*



E *strandii*
by Spassky



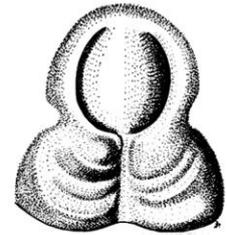
F *strandii*
by Andreeva



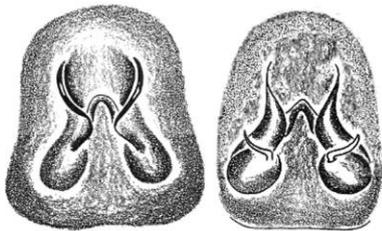
G *dushanbinus*



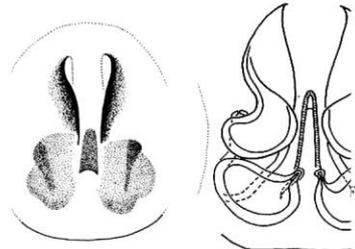
H *robustus*



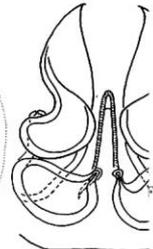
I *vetustus*
(plugged by waxy stopper?)



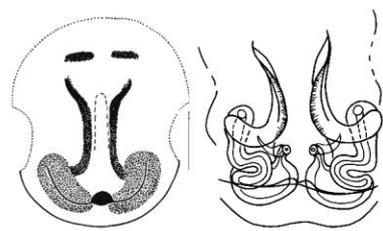
M *setipes 2*
by Peng & Li



J *fuscus*



J₁



K *tsholotsho*

K₁



L *pseudopaykulli*

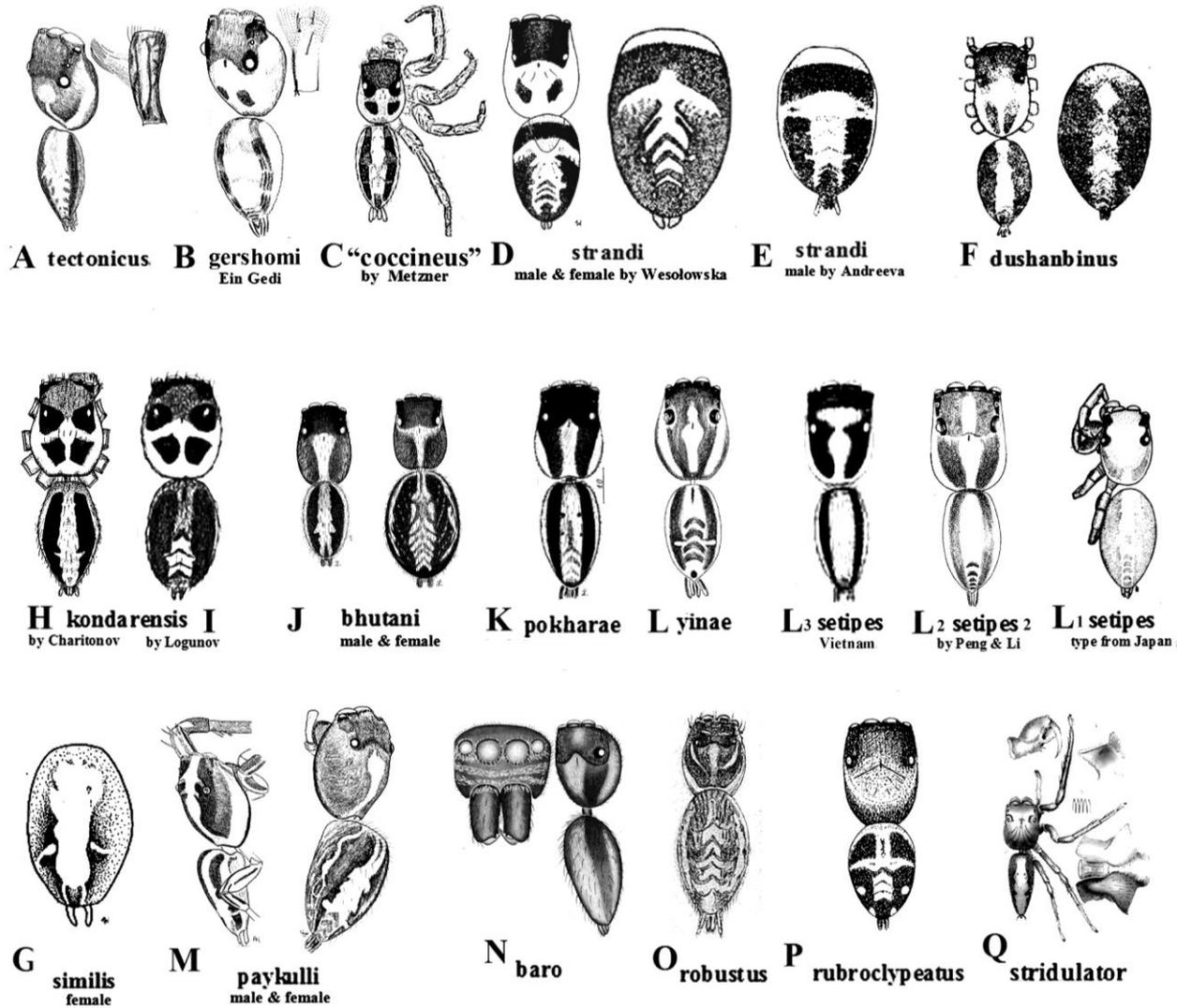


Figure 7. Body pattern diversity in *Plexippus*. A - *Plexippus tectonicus* Prószyński, 2003, - body and palpal "flag", B - *P. gershomi* sp. n. - body and palpal "flag", C - *P. "coccineus"*[?] by Metzner, D - *P. strandi* Sspassky, 1939 male and female abdomen by Wesolowska, E - *P. strandi* Spassky, 1939 - male abdomen by Andreeva, F - *P. dushanbinus* - male body and female abdomen by Andreeva, G - *P. similis* - female abdomen by Wesolowska, H-I - *P. kondarensis* (Charitonov, 1951) - body of male by Charitonov and by Logunov & Rakov, J - *P. bhutani* Zabka, 1990 - male and female, K - *P. pokharae* Zabka, 19, L - *P. yinae* Peng & Li, 2003 = [?] *P. tectonicus* Prószyński, 2003, L1 - *P. setipes* Karsch 1879 - type from Japan, Prószyński, 1973: 120, f. 61, L2 - *P. setipes-2* Peng & Li, 2003, L3 - *P. setipes* from Vietnam, M - *P. paykulli* (Audouin, 1826), N - *P. baro* Wesolowska & Tomasiewicz, 2008, O - *P. robustus* (Bösenberg & Lenz, 1895), P - *P. [?] rubroclypeatus* (Lessert, 1927), Q - *P. [?] stridulator* Pocock, 1899.

SOURCES: A, B, M - Prószyński 2003a. *Annales Zoologici* 53, 1: 145- 146, f 581-582, 586, 591, 736-737, C - Metzner, 1999: 136, f. 100a-j, D - Wesolowska, 1996: 36, f. 25A-C, 26A-C, E-F - Andreeva, 1976: 88, f. 118-120, 121-124, G - Wesolowska & van Harten, 1994: *Yemeni-German Plant Protection Project*, 72, f. 147-149, H - Charitonov, 1951: *Uscel'e Kondara* 215, f. 7, I - Logunov & Rakov, 1998. *Arthropoda Selecta* 7(2): 129, f 43-46, J, K - Zabka, 1990b: *Senckenbergiana Biologica* 70: 173, 175, f. 28-33, f. 34-37, L, L2 - Peng & Li, 2003b: *Revue Suisse de Zoologie* 110: 755, f. 4A-F, 5A-E, L1 - Prószyński 1971: 120, f. 61- L3 - Zabka 1985: 436, ff. 481-486, N - Wesolowska, Tomasiewicz, 2008. *Journal of Afrotropical Zoology*, 4: 44-45, 167-170, O - Bösenberg & Lenz, 1895, *Jahrbuch der Hamburgischen Wissenschaftlichen Anstalten* 12(2): 32, pl. 1, f. 8), P - Lessert, 1927: *Revue Suisse de Zoologie* 34: 435, f. 19 (Dmf), Q - Pocock, 1899f: 119, pl. 11, pl. 16. All copyrights are retained by the original authors and copyright holders, used here by their courtesy.

***Plexippus auberti* Lessert, 1925**

Figures 4J, 6B-B1

Plexippus auberti Lessert, 1925a: 503, f. 85-86 (Df).

Plexippus auberti Prószyński, 1984a: 152 (f).

Plexippus auberti Wesolowska, 2012a: 213, f. 41-46 (f, Dm).

Documentation studied. Summary of world's literature provided by "Monograph of Salticidae (Araneae) of the World 1995-2016. Part I & 2" by Prószyński (2016a, b) and current literature.

Diagnosis. Palp differs from remaining species by anterior bulbus relatively narrow and triangular, prolateral expansion of embolar base not developed, with a group of small sclerotized teeth emerging from lower prolateral edge of bulbus (Fig. 4J), comparable with palp of *P. baro* which, however, differs by lower origin of embolus, longer lateral teeth and stronger develop of bulbus protuberance (Fig. 4I). Tibial apophysis relatively robust, ending with minute fork. Epigyne (Figs 6B-B1) with wider anterior depression and short, central position of pocket, comparable with *P. perfidus* (Figs 6A-A1) which, however, has shorter pocket and longer ducts. Body length 7.5, 8.5 mm.

Distribution. Kenya, Tanzania.

***Plexippus baro* Wesolowska & Tomaszewicz, 2008**

Figures 4I, 7N

Plexippus baro Wesolowska & Tomaszewicz, 2008: 44, f. 167-170 (Dm).

Documentation studied. Summary of world's literature provided by "Monograph of Salticidae (Araneae) of the World 1995-2016. Part I & 2" by Prószyński (2016a, b) and current literature.

Diagnosis. Palp resembles closely *P. auberti*, with bulbus broad, longer embolus and narrow, sharp pointed tibia apophysis (Fig. 4I). Body appearance with relatively broad median abdominal streak, broad, narrowing posteriorly light thoracal streak and light spot on anterior eyefield. Lower lateral light streak along dark carapace's edge. Clypeus dark with two thin bands of whitish scales (Figs 7N). Body length 5.9 mm.

Distribution. Ethiopia.

***Plexippus bhutani* Zabka, 1990**

Figures 3I-J, 4D, 5F-F1, 7J

Plexippus bhutani Zabka, 1990b: 173, f. 28-33 (Dmf).

Plexippus bhutani Xie & Peng, 1993: 21, f. 9-11 (f).

Plexippus bhutani Peng et al., 1993: 180, f. 629-631 (f).

Plexippus bhutani Peng & Li, 2003b: 750, f. 1A-C (f).

Plexippus clemens Caleb, 2016b: 274, f. 6-17 (mf), (in part: synonymy with *P. bhutani* **rejected**)

Documentation studied. Summary of world's literature provided by "Monograph of Salticidae (Araneae) of the World 1995-2016. Part I & 2" by Prószyński (2016a, b) and current literature.

Diagnosis. Differs from all remaining species by longer tibial apophysis, reaching level of anterior edge of bulbus (Figs 3J, 4D), with broad tip, while in comparable species *P. clemens* apophysis reach mid-length of bulbus (Figs 3B, H), length of apophysis in *P. tectonicus* (= *yinae*) is intermediate between these two, but is narrow and ends with sharp tip. Embolus relatively broad, it is strongly bent atop basis, appearing as arising from the mid point of anterior edge of bulbus, a position typical for several species of *Plexippus*. Embolus is also relatively thick, on original drawing followed by whitish structure of similar shape, however, not commented in original description. Epigyne with pocket moved to near anterior end of epigyne, far ahead of

copulatory openings (Figs 5F-F1) - a pattern characteristic to part of species (see also *P. clemens*, *P. petersi*, *P. similis*, *P. tectonicus*, species otherwise differing between themselves by proportions of epigyne internal structures, especially shape of ducts, spermathecae and development of armature of scent exuding openings). Abdominal dark stripes are broad (Fig. 7J) in both sexes, also dark stripes on carapace are continuous, not interrupted, light median thoracal stripe ends before eyefield, which is dark. Total body length of male 4.85 mm, of female 5.65 mm (in exemplary specimens of Żabka 1990: 172).

Distribution. Bhutan, India, China: Yunnan

Remarks. *Plexippus bhutani* is listed in the WSC as a synonym of *Plexippus clemens* (O. Pickard-Cambridge, 1872), from which females differ by anterior position of pocket (compare Figs, 3I, 5F-F1 with 5B-B1, 5C-C1) which allows to consider them as separate species. Therefore:

Plexippus clemens (O. Pickard-Cambridge, 1872)(in part) = *Plexippus bhutani* Żabka, 1990 - reinstated as separate species.

***Plexippus clemens* (O. Pickard-Cambridge, 1872)**

Figures 3A-D, E-F, G-H, 5B-C1

Salticus clemens O. Pickard-Cambridge, 1872a: 335.

Menemerus clemens Prószyński, 1984a: 85 (drawing of holotype).

Plexippus clemens Logunov, 2010b: 87, f. 11-12.

Euophrys clemens Prószyński, 1971: 405 (name in Catalog, following Simon 1876: 196).

Plexippus similis Wesolowska & van Harten, 1994: 72, f. 147-149 (Df).

Plexippus clemens Prószyński, 2003: 142, f. 592-593

Plexippus clemens Wesolowska & van Harten, 2007: 246, f. 165-168 (misclassified = *P. similis*).

Plexippus clemens Logunov, 2010b: 87, f. 7-12 (drawings of holotype).

Plexippus clemens Coşar, Danişman & Yıldırım, 2014: 92, f. 8A-C, 9A-B (f).

Plexippus clemens El-Hennawy, Mohafez & El-Gendy, 2015: 131, f. 1-7 (mf).

Plexippus clemens Caleb, 2016b: 274, f. 6-17 (mf, proposed synonymy of *P. bhutani* and *P. yinae* not accepted).

Material and documentation studied: Holotype female - "21" "*Attus clemens* Cambr." "B. 1821". O. Pickard-Cambridge coll. - Mus. Oxford.

Documentation studied. Summary of world's literature provided by "Monograph of Salticidae (Araneae) of the World 1995-2016. Part I & 2" by Prószyński (2016a, b) and current literature.

Diagnosis. Species recognizable by anterior pocket in epigyne, which is broad, and equally broad median furrow, following it (as in epigyne on holotype specimen - Fig. 5B). Internal structures of epigyne (Fig. 5B1) were studied on specimen from Algeria (coll. Bosmans), identified as conspecific with holotype by similarity of epigyne (epigyne of holotype was not prepared to save it from damage). Copulatory opening located in mid-length of epigyne, copulatory duct very broad, with thick, sclerotized walls, runs diagonally towards outer edge of transversally oval spermatheca. Bulging armature of pheromone exuding opening is located on outer surface of copulatory duct, before its junction with spermatheca (Fig. 5B1). Photographs of epigyne of females from Egypt (Figs 3C-D) and from Turkey (Figs 3F) confirms their conspecificity, which permits also to identify matching male (Fig 3B), appearance of photographed female and male of these specimens permits in turn to identify *P. clemens* from India (Figs 3G-H).

Discussion. The first drawing of epigyne of the holotype specimen was done by Prószyński (1984b: 85) [Fig. 5B] who abstained, however, from making preparation of epigyne to save precious, unique specimen from damage. Drawings of epigyne of the same holotype specimen, this time with its internal structures, was subsequently published by Logunov (2010: 87, f 7-12) [Fig. 5C-C1], looking very different with strikingly narrower pocket and furrow, also ducts are narrower and longer. Unfortunately Logunov failed to notice existence of previously published drawings and did not comment on their differences, although he was in perfect situation to resolve apparent conflict of documentation. Since his representation of these structures

has somewhat diagrammatized appearance, I delay comments on the described above discrepancy, until new, revisionary data become available. I must add, however, that narrowness of the epigyne's pocket and furrow shown by Logunov, resembles features of epigyne of syntype of "Attus" *devorans* O. Pickard-Cambridge, 1872a: 327 "Attus devorans Cambr." "41", "jar 1739" [original label of the species described as *Salticus devorans*] kept in the same collection - I abstain temporarily from commenting on that coincidence, the remaining syntypes of that species are kept in the NH Museum in London, not yet revised. More information on that species - see *Plexippus devorans*, below.

Similarity of palps of *P. clemens* from Egypt and India with palps of *P. similis* from Yemen (Figs 3J1) poses question of correctness of identification, and previously suggested synonymy with female (Fig. 5C-C1), originally described as *P. similis* Wesolowska & van Harten, 1994. These questions cannot be answered without further research.

Environmental information. Species described on "...single female found on low plants on the plains of Jordan", an area collected by the Reverend Octavius Pickard-Cambridge "...between 16th of March and 18 of May, 1865", "...for the most part, within a circuit of about a mile from Elisha's Well (Ain es Sultan) [water supply of Jericho]".

Distribution. Algeria, Egypt, Israel, India, Iran[?], Turkey, Yemen.

Correcting synonymy:

Plexippus clemens (O. Pickard-Cambridge, 1872) (in part) = *Plexippus bhutani* Zabka, 1990 - reinstated as separate species.

Plexippus clemens (O. Pickard-Cambridge, 1872) (in part) = *Plexippus tectonicus* Prószyński, 2003 - reinstated as separate species.

Plexippus clemens (O. Pickard-Cambridge, 1872) (in part) = *Plexippus yinae* Peng & Li, 2003 = *Plexippus tectonicus* Prószyński, 2003 - reclassified as synonym of the latter name.

***Plexippus coccineus* Simon, 1902**

Figures of type specimen not available, misidentified *P. "coccineus"* is shown on Figs 4H, 7C

Plexippus coccineus Simon, 1902a: 403

Plexippus coccineus Nenilin, 1985a: 132 (synonymy devoid of any documentation – see Fig. 8).

Documentation studied. Summary of world's literature provided by "Monograph of Salticidae (Araneae) of the World 1995-2016. Part I & 2" by Prószyński (2016a, b) and current literature.

Remarks. *Plexippus coccineus* Simon, 1902a: 403 is unrecognizable from the original description of a single male, collected in Turkomania (historical name of the area between Persia and Georgia, exact meaning in this description is uncertain), original specimen kept in the Simon collection in MNHN-Paris (Prószyński 1971: 459) was not revised. Synonymy with *Plexippus strandi* Spassky, 1939, proposed by Nenilin³, 1985a: 132 (Fig. 8) is not supported by examination of specimen and diagnostic graphic documentation, therefore is not acceptable. Therefore:

Plexippus coccineus: Nenilin, 1985 - identification not documented, synonymy not accepted.

Plexippus coccineus: Wesolowska, 1996 = *Plexippus strandi* Spassky, 1939.

Plexippus coccineus: Metzner, 1999 - misidentified.

³ Knowing personally A.B. Nenilin, young enthusiast who died trying to save his spider collection from fire, I know that at that time he had no slightest chance to study type specimens kept in Paris Museum, he has apparently assumed synonymy of these species because of occurrence in the same geographical area but, with more experience gained in the meantime, we understand that each geographical area may harbor more than one related species of local genera of Salticidae.

Номенклатурные изменения

Валидные названия справа: а) новая синонимия: *Aelurillus ater*(part) = *Ae. nigrum*, *Ae. iranum* (Roew.) = *Ae. concolor*, *Cyrba micans* Sim. = *C. ocellata*, *Marpissa tschekiangensis* (Schenkel) = *M. obscura*, *Menemerus cronebergi* Charit. = *M. marginatus*, ***Plexippus strandi* Spassky = *P. coccineus***, *Pseudicius vittatus* Sim. = *P. cinctus*, *Salticus tenuimanus* (Sim.) = *S. tricinctus*, *S. semillimus* Denis = *S. tricinctus*, *Sitticus gertschi* Prosz. = *S. cutleri*; б) новая комбинация: *Cyrba ocellata* (Kroneberg), comb. n. = *Euophrys ocellata* = *Cyrba algerina* (см. Харитонов, 1932).

А. Б. НенилинМАТЕРИАЛЫ К ФАУНЕ ПАУКОВ СЕМЕЙСТВА SALTICIDAE
PROCEEDINGS OF THE ZOOLOGICAL INSTITUTE, Leningrad, 1985, VOL. 139

Figure 8. Facsimile of diagnostic documentation of nomenclatorial changes postulated by Nenilin (1985: 132), reduced to equation sign (=) only, including *Plexippus strandi* = *P. coccineus*.

***Plexippus devorans* (O. Pickard-Cambridge, 1872)
Figures 4C[?], 5G**

Salticus devorans O. Pickard-Cambridge, 1872a: 327.

Menemerus devorans Prószyński, 1984: 85.

Hasarius devorans Prószyński (1971: 412) (name in catalogue of collections).

Plexippus devorans Prószyński, 2002: 142, f. 585, 591.

Plexippus devorans Prószyński, 2002: 142-543, f. 579-580, 584, 589-590 = *Plexippus gershomi* sp. n.

Material and documentation studied: Syntype female - "Attus devorans Cambr." "41", "jar 1739"⁴ [original label of the species described as *Salticus devorans* = *Plexippus devorans*]. O. Pickard-Cambridge coll. - Mus. Oxford. [Syntypes listed from NH Museum London as *Hasarius devorans* by Prószyński (1971: 412) were not be examined]. Unlabeled male found in O. Pickard-Cambridge collection, Oxford Museum, in a jar with Palestine specimens – could possibly belong to series of *P. devorans*.

Documentation studied. Summary of world's literature provided by "Monograph of Salticidae (Araneae) of the World 1995-2016. Part I & 2" by Prószyński (2016a, b) and current literature.

Remarks. Species described on several specimens - "Adults and immature examples of both sexes [of *Salticus devorans*] were found on walls, rocky banks and among stones on the plains of the Jordan. An adult male was also met with at Rasheiya [XIXth century station between Baniyas and Damascus, on the spur of Mt. Hermon, in present day in Lebanon]" - which suggests that the species may be more common in typical environments in Israel and widely distributed in the Levant. Palp shown in Fig. 4C belongs to a specimen found unlabeled[?] in a jar with Palestine collection may, by elimination of other possibilities, MIGHT BE a stray male of "Attus devorans" because unique, more anterior position of prolateral swelling of embolar basis and its shorter distance from embolus itself, which is broader than in other species. Pickard-Cambridge lists from Palestine males of only that species of *Plexippus*. While this hypothesis cannot be taken as proof of placement of the specimen, the puzzle it presents may be solved only by comparison with syntypes kept in NH Museum in London. Perhaps mentioning it in this description may stimulate identification of remaining syntypes.

Conclusions. Lack of knowledge of internal structure of epigyne in syntype specimen drawn by Prószyński (1984: 85), together with lack of taxonomic revision of syntype specimens of this species kept in NH

⁴ "Jar 1739" contains also another female of obviously *Plexippus* sp. with label No. "36", mislabeled "Menemerus indistinctus" (that name is used for a male specimen in the original paper by O. Pickard-Cambridge 1872: 342), epigyne of this specimen is shown (with obvious misinterpretation in its median central part) in Prószyński 1984: 85.

Museum of London, makes uncertain all subsequent identification of that species. Anterior position of the epigynal pocket (Fig. 5G) excludes all species with central pocket, narrowness of epigynal furrow excludes broad furrowed forms (like *P. similis*). It resembles drawings f. 11- 12 in Logunov (2010) claimed to represent holotype of *P. clemens* (by the way O. Pickard -Cambridge 1872 uses both names "*devorans*" and "*clemens*" in combinations with "*Salticus*", changed later by Simon 1876 for "*Hasarius*" and "*Euophrys*" respectively, however, on original labels both names are used in combination with "*Attus*" - changes of mind in such matters are frequently encountered in old collections) kept in the same jar. Problem could be disentangled by redescription and good diagnostic drawings of syntypes of *Plexippus devorans* (= "*Hasarius*" *devorans*) kept in Natural History Museum in London (Prószyński 1971: 412), which may possibly cause necessity of renaming other species reported from the Near East.

Specimens of *Plexippus devorans* from Ein Gedi, described by Prószyński (2003: 142-143, f. 579-580, 584, 589-590) are described now as *Plexippus gershomi* sp. n. (Figs 4B, 5H-H1, 7B) below.

***Plexippus dushanbinus* Andreeva, 1969** upgraded from subspecies
Figures 4K1, 6G, 7F

Plexippus strandi dushanbinus Andreeva, 1969: 90, f. 2 (Dmf)

Documentation studied. Summary of world's literature provided by "Monograph of Salticidae (Araneae) of the World 1995-2016. Part I & 2" by Prószyński (2016a, b) and current literature.

Diagnosis. Differs distinctly from *Plexippus strandi* by color pattern of body, with notable absence of transverse black belt in the anterior abdomen, a character noticed by Andreeva (1976: 88, f. 121-124). Palp resembles *P. strandi*, but prolateral part of embolar basis seems to be less swollen and located more symmetrically along the length of bulbus. Epigyne with pocket located centrally, seems to be larger than in *P. strandi*.

Description (condensed translation of original Russian description by Andreeva). Male carapace yellow covered by indistinct whitish setae, except eyefield covered with brownish red setae, with indistinct spot of white setae, and thin black line along ventral edge. Eyes III located on pair of black spot, there is an indistinct, elongated spot of dark setae along posterior one third of posterior slope of thorax. Legs and palps brownish yellow, with longitudinal spots of dark setae, clypeus with dense and long white "beard". Abdomen dorsally yellow, with two lateral reddish brown streaks. Length of body 5.5 mm. Female. Carapace (damaged) dark brown with eyefield still darker. Eyes Median Anterior surrounded ventrally by whitish setae, dorsally brownish red. Clypeus, chelicerae and palps brown with whitish setae, legs brown without white setae. Abdomen dark with light median streak, beginning from diamond shaped spot. Length of body 6.2 mm .

Remarks. The description require completing by more precise drawing documentation, especially providing drawing of internal structure of epigyne. Placement of *dushanbinus* as a subspecies of *P. strandi* disagree with principles of taxonomy limiting description of subspecies only to interpopulational studies. Without populational research on *P. strandi* there are no reason to suggest populational relationships of these forms. Differences in color pattern are sufficiently distinct to elevated this subspecies to the rank of full species.

Therefore:

Plexippus strandi dushanbinus Andreeva, 1969 = *Plexippus dushanbinus* (Andreeva, 1969) - elevated to rank of full species.

***Plexippus fibulatus* Dawidowicz & Wesolowska, 2016**
Figures 2O, 4P

Plexippus fibulatus Dawidowicz & Wesolowska, 2016: 454, f. 69-70, 107 (Dm).

Material. Holotype male and 2 paratypes males from Kenya: Mt Elgon, Suam River, 2100 m. Coll. A. Holm (studied by Dawidowicz & Wesolowska).

Documentation studied. Summary of world's literature provided by "Monograph of Salticidae (Araneae) of the World 1995-2016. Part I & 2" by Prószyński (2016a, b) and current literature.

Diagnosis. Body appearance, proportions and color pattern, does not resemble *Plexippus* (Fig. 2O), general appearance of palp resembles *Plexippus* but differs significantly in details [Fig. 4P] - embolus is fleshy with only tip sclerotized, embolar basis only indistinctly swollen prolaterally, devoid of sclerotized, serrated rim. Tibial apophysis is also different - needle like, sclerotized and bent, set perpendicularly to tibia.

Conclusion. The position of the species seems to be uncertain. Unless confirmed by discovery of a chain of gradual changes to typical features of *Plexippus*, in numerous new species, the species deserves to be placed in a genus of its own.

***Plexippus fuscus* Rollard & Wesolowska, 2002**

Figures 6J-J1

Plexippus fuscus Rollard & Wesolowska, 2002: 303, f. 15A-B (Df).

Material. Holotype female from Guinea: Mt Leclerc, 1250 m. Leg. C. Rollard. Studied by Rollard & Wesolowska.

Documentation studied. Summary of world's literature provided by "Monograph of Salticidae (Araneae) of the World 1995-2016. Part I & 2" by Prószyński (2016a, b) and current literature.

Diagnosis. General plan of epigyne resembles *Plexippus*, is characterized by very thin and relatively long pocket, located in the middle of epigyne, sclerotized rims of copulatory openings parallel and long, space between them narrow (Figs 6J-J1).

***Plexippus gershomi* sp. n.**

Figures 4B, 5H-H1, 7B, 9Q-Q1

Plexippus devorans Prószyński, 2003: 142, f. 579-580, 58, 589-590 (mf only from Ein Gedi Sulphur Springs).

Material. Holotype male, allotype female from Ein Gedi Sulphur Springs, Israel, labeled "*Plexippus devorans*", kept in the Israel National Arachnid Collection, Department of Evolution, Systematics and Ecology, Hebrew University at Givat Ram, Berman Building, 91904 Jerusalem, Israel.

Etymology. named for the late Dr. Gershom Levy, creator of the Israel National Arachnid Collection, containing (in 2003) 99 species of Salticidae.

Remarks. Description of this species as separate, in difference to Prószyński (2003: 142-143) where was identified as *P. devorans* is a provisional solution to the epigyne differences with syntype specimen of the "*Attus devorans*" kept in Oxford Museum, significance of which become apparent with comparison of more species of *Plexippus*. The existing doubts may be dispelled after revision of remaining male and female syntypes of "*Salticus*" *devorans* O. Pickard-Cambridge, 1872 in the Natural History Museum of London (where are labeled as "*Hasarius*" *devorans*), revision beyond the present possibilities of the author of this paper.

Diagnosis. Color pattern of male resembling several other species: carapace light with a pair of dark spots on the slope of thorax, eye field dark with some indistinct white setae. Abdomen light, its unique feature are two slightly darker marginal streaks along edges of dorsal surface, consisting of several thin gray lines, broken

into five short blocks of (Fig. 7B). In other species marginal streaks are continuous, much darker and broader. Palps typical for *Plexippus*, differing in strong expansion of prolateral margin of embolar basis and middle position of its serrated, sclerotized edge (Fig. 4B). Bunch of setae on apical half of palpal femur is white. Epigynal pocket (Figs 5H-H1) is located centrally (in difference to anterior position of pocket in syntype specimen of *P. devorans* - Fig. 5G), white space between extended rims of copulatory opening is oval. Ducts broad and running diagonally, resemble those in *P. clements*, but spermatheca looks more globular.

Description (based on Prószyński 2003: 142-143, f. 579-580, 584, 589-590, Ein Gedi Sulphur Springs specimen only). Male. Cephalothorax yellow with a pair of contrasting brown, large spots on posterior slope of thorax (Fig. 7B), eye field fawn, with no white streak. Abdomen with median area whitish yellow, with a pair of marginal darker streaks interrupted into 5 blocks, consisting of 3-4 thin dark lines, there is one more such block in front of whitish spinnerets. Face yellow with dense, long, white setae on clypeus, some of which stretch diagonally forward, partially overhanging cheliceral bases. Eyes I I surrounded ventrally by white, dorsally by yellowish setae, eyefield in frontal view appears brown. Chelicerae basally yellow, apically light brown. Palps light yellow, with yellow cymbium having dorsally, large spot of white setae, characteristic for the genus *Plexippus*. Palpal femur, tibia and cymbium with long, white setae. Embolus thin and short, located at about mid-length of anterior edge of bulb, prolateral part of embolar basis strongly expanded (Fig. 4B). Ventral aspect of body whitish. Legs I: femur with light brown line along prolateral surface, tibia and patella light brown, metatarsus and tarsus yellow. Legs II-IV yellow. Female. Carapace yellow, with lighter streak, expanded broader in the foveal area, posterior slope of thorax steeper than in *P. paykulli*, sides of carapace whitish yellow with traces of indistinct, radial bars. Eyefield darker yellow, with an indistinct, thin diagonal line of white setae along lateral edges of eyefield, medially from eyes II to junction between eyes anterior median and anterior lateral, eyes III surrounded black. Abdomen diverse in specimens described in the 2003, it is not precise which of these characterizes allotype of the species described here. Eyefield in the frontal view appears dark, remaining parts are whitish yellow, eyes I are surrounded by white setae. Legs generally yellow, with femora whitish yellow. Epigyne and its internal structures are shown on Figs 5H-H1.

Body size range of this species, is around 5 mm. Seasonal occurrence of male - March and October, of females March, May and August.

Remarks. Similar species were photographed by the late Mr. A. Senglet, presumably from Iran, or Afghanistan (Fig. 3K-K1) present dorsal view of a similarly colored *Plexippus* sp. differing by two pairs of black spots on carapace entirely white. That specimen differs also by marginal abdominal lines intensely black, surrounded with thin, red contour, palp of that specimen does not differ significantly from *P. gershomi*. Two males, photographed in facial view (Fig. 3M-N), differ by legs color: intensely black legs I in one, light brown with white seta in another. Both have clypeus covered by dense beard of white setae, overhanging cheliceral bases, upper orbits of eyes I are red, there are also red spots immediately above eyes I. The female shown on Figs 3N-O, has color pattern relatively more contrasting, internal structure of epigyne resembling *Plexippus gershomi*. While formal descriptions of these species is not possible because of insufficient data, they indicate that fauna of Western Asia is much more rich, than heretofore assumed.

Plexippus iranus Logunov, 2009

Figures 6D-D1

Plexippus iranus Logunov, 2009c: 908, f. 18-19 (Df).

Material. Holotype female from Iran: Bandar-e Abbas. Leg. Bilek & Ressler. Coll. NH Museum, Wien.

Documentation studied. Summary of world's literature provided by "Monograph of Salticidae (Araneae) of the World 1995-2016. Part I & 2" by Prószyński (2016a, b) and current literature.

Comment. According to Logunov the holotype is lacking external epigynal pocket and furrow (Figs 6D-D1), which is main diagnostic character of the genus, similarity of spermathecae and ducts alone are less important because these structures can develop independently in non related genera. If that epigynal pocket

is not overlooked during study and its absence is real, the species cannot be placed in the genus *Plexippus* and should be reclassified elsewhere.

***Plexippus kondarensis* (Charitonov, 1951)**

Figures 2M, 4N-O, 6C-C1, 7H-I

- Hissarinus kondarensis* Charitonov, 1951: 215, f. 7 (Dmf).
Hissarinus kondarensis Andreeva, 1969: 90, f. 2 (mf).
Plexippus kondarensis Andreeva, 1975: 339.
Plexippus kondarensis Andreeva, 1976: 88, f. 116-117 (mf).
Plexippus kondarensis Prószyński, 1976: 156, f. 280 (m).
Plexippus kondarensis Logunov & Rakov, 1998: 129, f. 43-46 (mf).

Documentation studied. Summary of world's literature provided by "Monograph of Salticidae (Araneae) of the World 1995-2016. Part I & 2" by Prószyński (2016a, b) and current literature.

Diagnosis. Belongs to group of species characterized by palp resembling *Plexippus* but devoid of expanded prolateral edge of embolar basis and of sclerotized, serrated edge, containing also *P. rubroclypeatus*. *P. kondarensis* is characterized by presence of two pairs of large black spots on dorsum of carapace, with eye field semi dark (Figs 7H-I).

Description (condensed original description by Charitonov 1951: 2015-216). Male carapace yellow with 3 pairs of irregular dark spots of short, adpressed black setae: the first very small, and arranged transversally, just beyond eyes I, the second and third larger, in mid length and in posterior half of carapace. Light spaces laterally and between dark spots covered with short, adpressed white setae. Clypeus covered with long "beard" of yellowish white setae, overhanging also cheliceral bases. Orbital setae below anterior eyes, both median and lateral are white, above light orange. Sternum light yellow with white setae. Legs yellow, patellae and tibiae I-II yellowish grey except tibia I, which is dark brown, densely covered with long, black setae. Femora I-IV with longitudinal dark spots on anterior and posterior surface, white scales on distal parts of anterior surfaces of femora I-II, patellae I-IV with triangular lateral spots. Female. Appearance of carapace less differentiated than in males, anterior half grayish brown, passing onto lighter posterior half, orange spots on lateral surfaces. Legs pale. Longitudinal streaks on abdomen less sharp than in male. Total body length is given as 7.6 mm for male and 8.1 mm for female.

Distribution. Tadjikistan: Varzob Valley, including Kondara, also Kvak, Ramit.

***Plexippus lutescens* Wesolowska, 2011**

Figures 4R

- Plexippus lutescens* Wesolowska, 2011b: 336, f. 69-70, 94 (Dm).

Documentation studied. Summary of world's literature provided by "Monograph of Salticidae (Araneae) of the World 1995-2016. Part I & 2" by Prószyński (2016a, b) and current literature.

Distribution. Namibia, Zimbabwe.

Comment. Palp does not resemble genus *Plexippus* (Fig. 4R) and the author did not present any argument for placement of this species. Therefore species should be reclassified elsewhere.

***Plexippus minor* Wesolowska & van Harten, 2010**
 Figures 2N, 4D

Plexippus minor Wesolowska & van Harten, 2010: 49, pl. 19, f. 57-58 (Dm).

Material. Holotype male and 4 male paratypes from United Arab Emirates: Wadi Shawkah.

Documentation studied. Summary of world's literature provided by "Monograph of Salticidae (Araneae) of the World 1995-2016. Part I & 2" by Prószyński (2016a, b) and current literature.

Diagnosis. General body appearance and color pattern typical for *Plexippus*, with a pair of large dark spots on thoracal slope (Fig. 2N). Palp typical, differs from other species by relatively narrow prolateral swelling of embolar base (Fig. 4D).

Distribution. United Arab Emirates.

***Plexippus paykulli* (Audouin, 1826)**
 Figures 2A-F, U, 4A, 5L-L1, 7M

Only selected quotation of one of most frequently cited species:

Attus paykullii Audouin, 1826: 409, pl. 7, f. 22 (Dm).

Euophrys vetusta C. L. Koch, 1846: 219, f. 1264 (Df) **syn. n.**

Plexippus paykulli Peckham & Peckham, 1886: 296.

Plexippus paykulli Zabka, 1985: 432, f. 458-463 (mf).

Plexippus paykulli Prószyński, 1987: 80 (mf).

Plexippus paykulli Bohdanowicz & Prószyński, 1987: 116, f. 222-227 (mf).

Euophrys vetusta Prószyński, 1987: 25 (f; "=*Plexippus* sp.").

Plexippus paykulli Prószyński, 2003: 144, f. 577-578, 583, 587-588 (mf).

Plexippus paykulli Żabka & Gardzińska, 2017: 232, f. 1A-F, 2A-F (mf).

Documentation studied. Summary of world's literature provided by "Monograph of Salticidae (Araneae) of the World 1995-2016. Part I & 2" by Prószyński (2016a, b) and current literature.

Remarks. Perfectly known species, not requiring additional description. Some confusion in photographs and description of males is caused by disappearance of whitish streaks on male eyefield and face, becoming transparent without isolating layer of air when examined in alcohol, that can be reversed by taking specimens out from alcohol and drying them temporarily up. Total body length of male is 8.40 mm, of female 10.00 mm (exemplary specimen Żabka 1990: 172).

Distribution cosmopolitan in warmer areas of the world, in cooler climatic zones can be found in hothouses.

***Euophrys vetusta* C. L. Koch, 1846** (compare Figs 6I with 5L)

Material. Holotype female "*Euophrys vetusta* C. L. Koch ZMB 1802" "St. Thomas". Institut für Systematische Zoologie, Museum für Naturkunde der Humboldt Universität, Berlin. Drawn by J. Prószyński 21. XII. 1985.

Remarks. Epigyne belongs apparently to *Plexippus paykulli*, the one drawn by Prószyński (1987: 25) is disfigured by convex median waxy plug sealing copulatory openings (compare Figs 6I with 5L). There is no any other *Plexippus* occurring on Western Hemisphere. Therefore:

Euophrys vetusta C. L. Koch, 1846 = *Plexippus paykulli* (Audouin, 1826) - tentative synonym, pending further confirmation.

***Plexippus perfidus* Thorell, 1895**

Figures 6A-A1

Plexippus perfidus Thorell, 1895: 366 (Df).

Plexippus perfidus Prószyński, 1984a: 112 (f).

Documentation studied. Summary of world's literature provided by "Monograph of Salticidae (Araneae) of the World 1995-2016. Part I & 2" by Prószyński (2016a, b) and current literature.

Diagnosis. Epigyne with pocket located centrally (Fig. 6A-A1), resembling closely *P. auberti*, from which differs by very short pocket. Color pattern not documented.

Distribution. Myanmar.

***Plexippus petersi* (Karsch, 1878)**

Figures 1, 2J-L, 4E, 5A-A1

Only selected quotations:

Euophrys petersii Karsch, 1878a: 332, pl. 2, f. 7 (Dm).

Plexippus petersi Simon, 1903a: 728.

Plexippus petersi Zabka, 1985: 433, f. 464-470 (mf).

Plexippus petersi Prószyński, 1987: 80 (mf).

Plexippus petersi Zabka, 1990b: 172, f. 26-27 (m).

Plexippus petersi Peng & Li, 2003b 752, f. 3A-F (mf).

Plexippus petersi Yin et al., 2012: 1443, f. 787a-f (mf).

Plexippus petersi Żabka & Gardzińska, 2017: 232, f. 3A-F, 4A-F (mf).

Documentation studied. Summary of world's literature provided by "Monograph of Salticidae (Araneae) of the World 1995-2016. Part I & 2" by Prószyński (2016a, b) and current literature.

Remarks. Well known species, widely distributed in warm areas of Eastern Hemisphere. Females easily recognizable by narrow epigyne with anterior pocket. Defined sufficiently by Figs 1, 2J-L, 4E, 5A-A1.

***Plexippus pokharae* Zabka, 1990**

Figures 4S, 7K

Plexippus pokharae Zabka, 1990b: 175, f. 34-37 (Dm).

Documentation studied. Summary of world's literature provided by "Monograph of Salticidae (Araneae) of the World 1995-2016. Part I & 2" by Prószyński (2016a, b) and current literature.

Comment. While body proportions and color pattern (Fig. 7K) resemble *Plexippus*, palp structure exclude that affinity - embolus is robust, arises from robust basis gradually tapering, there is no serrated, sclerotized edge. In addition, structure of tip of embolus is rather special, consisting of two layers [?], the soft one, with bent tip, superimposed [?] on sclerotized one (Fig. 4S). The tibial apophysis and dorsal protuberance do not resemble *Plexippus*.

Distribution. Nepal: Kaski Distrikt, near Pokhara, 1000-1200 m.

Conclusion. The species should be excluded from *Plexippus* and classified elsewhere, presumably in its own genus.

***Plexippus pseudopaykulli* Sen, Dhali, Saha & Raychaudhuri, 2015**
 Figures 2T, 6L

Plexippus pseudopaykulli Sen, Dhali, Saha & Raychaudhuri, 2015 : 32, f. 77-81, pl. 13 (Df).
Plexippus pseudopaykulli Dhali, Saha & Raychaudhuri, 2017: 28, f. 28-32, pl. 18 (f).

Documentation studied. Summary of world's literature provided by "Monograph of Salticidae (Araneae) of the World 1995-2016. Part I & 2" by Prószyński (2016a, b) and current literature.

Remarks. Species unrecognizable from original description and drawings (Fig. 6L), also photograph is insufficient (Fig. 2T). No information on whereabouts of type species. Considered nomen dubium.

***Plexippus rubroclypeatus* (Lessert, 1927) comb. n.**
 Figures 4Q, 7P

Habrocestum rubroclypeatum Lessert, 1927: 435, f. 19 (Dmf).
Habrocestum rubroclypeatum Prószyński, 1976: 155, f. 279 (m) (copy of Lessert's drawing for comparison).

Documentation studied. Summary of world's literature provided by "Monograph of Salticidae (Araneae) of the World 1995-2016. Part I & 2" by Prószyński (2016a, b) and current literature.

Comments. Enigmatic species of unclear position. Palp disagrees with genus *Habrocestum* Simon, 1876, its shape of bulbus and embolus resemble atypical *Plexippus*, like *P. kondarensis*, without swelling of embolar basis and lateral, sclerotized, serrated edge. Of the other hand, external appearance of body, especially abdominal pattern and carapace not narrowing anteriorly, differ from *Plexippus*.

***Habrocestum rubroclypeatum* Dyal, 1935: 229** (junior synonym, preoccupied by Lessert, 1927) is nomen dubium because cannot be recognized from its original description and type specimen is lost. Its renaming by Roewer as *Habrocestum dyali* Roewer, 1955c: 1119 is not mandated. Therefore:

Habrocestum rubroclypeatum Lessert, 1927 = *Plexippus rubroclypeatus* (Lessert, 1927) (tentative transfer based on palp appearance)
Habrocestum rubroclypeatum Dyal, 1935: 229 (not Lessert, 1927) = nomen dubium.
Habrocestum dyali Roewer, 1955c: 1119 (not mandated replacement of a nomen dubium).

***Plexippus setipes* Karsch, 1879**

Figures 2G1-I, 4L-M, 5M-Q, 6M, 7L1-L3, 9A-E, I-M, R-U

Morph "setipes-1" Figs 2G, 4L, 5O-Q, 9L-M, U; Morph "setipes-2" Figs 4L1, 6M, 7L2, 9E, 9K-K1,T

Plexippus setipes Karsch, 1879g: 89 [Holotype from Japan, collector Hilgendorf].
Plexippus setipes Bösenberg & Strand, 1906 <http://www.wsc.nmbe.ch/reference/1387>: 364, pl. 9, f. 131, pl. 13, f. 363 (f).
Plexippus setipes Prószyński 1973: 120-122, f. 61-63 (but not f. 64-66 = *P. cf. strandi*).
Plexippus setipes Zabka, 1985: 436, f. 481-486 (m).
Plexippus setipes Bohdanowicz & Prószyński, 1987: 117, f. 228-232 (mf) = "*P. setipes-1*".
Plexippus setipes Peng & Li, 2003b: 755, f. 4A-F (mf) = "*P. setipes-2*".
Plexippus setipes Żabka & Gardzińska, 2017: 233, f. 5A-F, 6A-B (mf).

Material. "*Plexippus setipes* Karsch⁵ 2768 Japan " Zool Mus. Berlin, Alcohol Collection 4 females - syntypes.

⁵ Authenticity of the holotype specimen is confirmed by the name of collector - Franz Martin Hilgendorf who was lecturer at the Imperial Medical Academy Tokyo (1873-1876), later worked in the Museum für Naturkunde in Berlin. Of the other hand, similarly named specimen from "Chinchoxo" (= Faktory and Stationion of Deutschen Afrikanischen Gesellschaft (1873-1876), in N of Cabinda, Angola), cannot be collected by Hilgendorf and cannot be conspecific with holotype. Specimens labelled *Menemeroides illigeri* [unpublished collection name on preparations by Dahl] - (drawn by Prószyński 1973: 120-122, f. 64-66, not *Menemerus illigeri* Audouin, 1826) is *Plexippus* sp.

Documentation studied. Summary of world's literature provided by "Monograph of Salticidae (Araneae) of the World 1995-2016. Part I & 2" by Prószyński (2016a, b) and current literature.

Remarks. Existing descriptions of *P. setipes* are incomplete and diagnostic drawings are confusing, depicting apparently three different morphs. I assume that female type specimen of this species (Figs 7L1, 9A, I-J) collected by Hilgendorf in Japan is the only unquestionable female of this species. I hypothesize that female illustrated on Figs 2H, and 9C from Japan may be conspecific because of indistinct median streak on abdomen, therefore matching male may also be *P. setipes* (Figs 2H, repeated on 9B). It is characterized by unusual transverse white belt, following red one, in anterior eyefield, occurring also in Vietnamese specimen (Figs 7L3, 9D). Male palps of these specimens are shown on Figs 9R-S – (the latter looking somewhat differently). Differences of palps of all three morphs lies in slightly different shapes and proportions, which are not clear cut and may be interpreted in various way, therefore identification of males should be based on color pattern characters, which are, however, imprecisely documented for some specimens.

Distribution. Japan, Vietnam.

Morph *P. "setipes-1"* from Japan (by Bösenberg & Strand, 1906, Bohdanowicz & Prószyński, 1987, Ono, Ikeda & Kono, 2009: epigyne) differs from *P. setipes* by distinctly longer ducts (Figs 9L-M), and exaggerated swelling of prolateral edge of embolar basis is moved somewhat more anteriorly (Figs 4L, 9U).

Morph *P. "setipes-2"* from China differs strikingly from *P. setipes* by longitudinal median white streak on eyefield in male, not transverse (Fig. 7L2), length of ducts is intermediate between two remaining morphs (Figs 9K-K1), difference of palp shown on figs 4L1 and 9T are rather vague.

Uncertain species from Krasnovodsk and Lenkoran. – see *P. strandi* (below). Prószyński 1973: 120-122, f. 61-63 illustrated epigyne of two species mounted in permanent slides by F. Dahl and labeled *Plexippus setipes*, from Lenkoran (Azerbaijan) and Krasnovodsk (Turkmenistan), while resembling superficially epigyne of *P. setipes*, they are much closer to *P. strandi* by shorter ducts and prominent bulge of armature of pheromone exuding opening. It is not possible to identify them without knowledge of general body appearance and color pattern.

***Plexippus similis* Wesolowska & van Harten, 1994**

Figures 3J1, 5D-D1, 7G

Plexippus similis Wesolowska & van Harten, 1994: 72, f. 147-149 (Df).

Plexippus clemens Prószyński, 2003: 142 (considers *Plexippus similis* a synonym)

Plexippus clemens Wesolowska & van Harten, 2007: 246, f. 165-168 (Sm).

Documentation studied. Summary of world's literature provided by "Monograph of Salticidae (Araneae) of the World 1995-2016. Part I & 2" by Prószyński (2016a, b) and current literature.

Remarks. It seemed, at certain time, that similarity of epigyne of this species and *P. clemens* (compare Figs 5D-D1 with B-B1) is sufficient to consider them synonyms. However, learning of epigyne of several other species permitted to notice differences: proportions of length of epigynal furrow, breadth of ducts and shape of spermatheca, also palps, seem intermediate between *P. clemens* and *P. bhutani* (compare Figs 3J1 with J, and also B) in length of tibial apophysis, thickness of embolus and space separating it from serrated edge of swelling of embolar base. Since these difference concern mainly proportions of parts, some residual of incertitude remains, pending of more complete comparative research of fresh, or live specimens.

Distribution. Yemen.

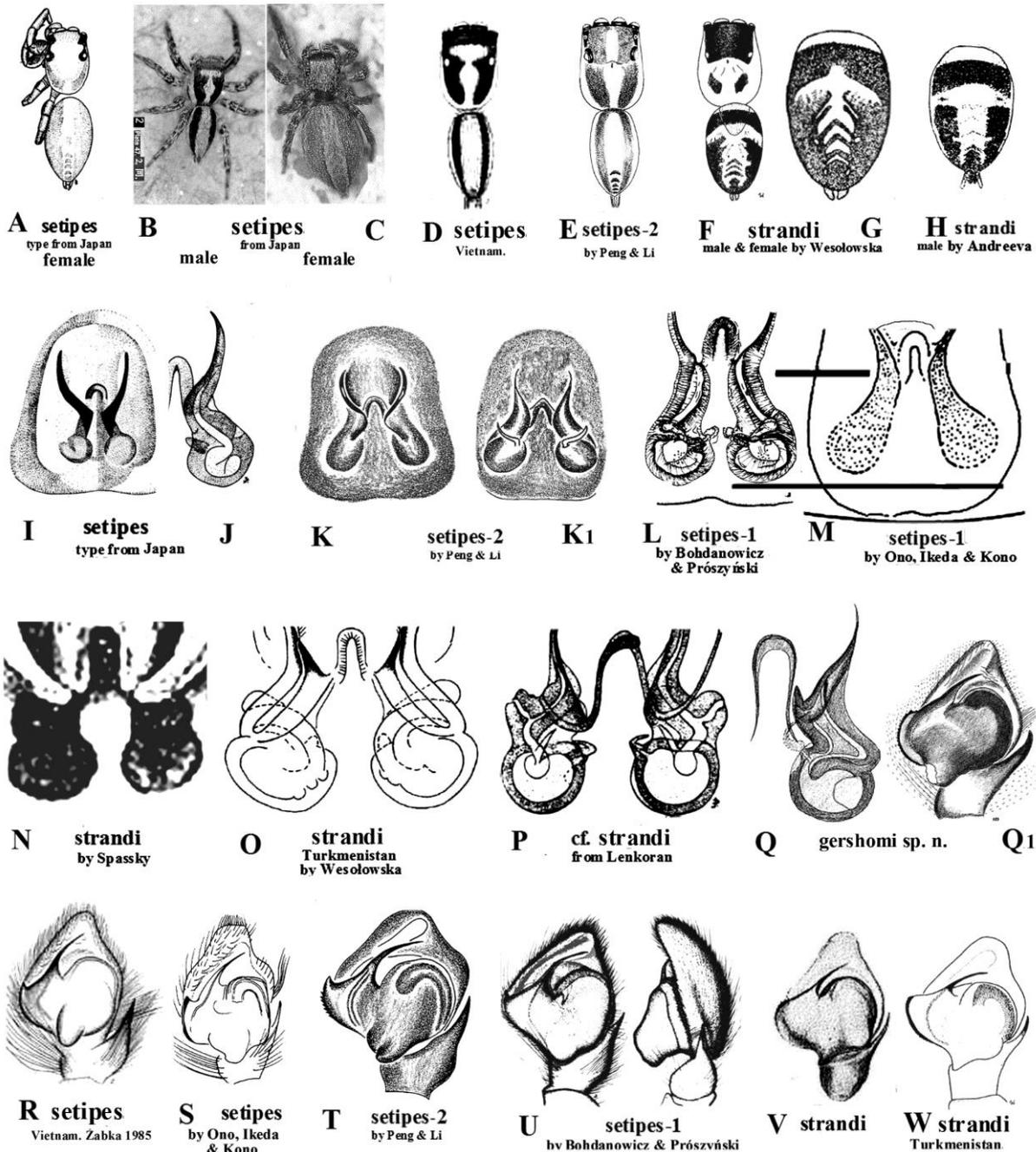


Figure 9. Graphic definition of three morphs of *Plexippus setipes* (A-E, I-M, R-U50-P), as well as *P. strandi* (F-H, N-P, V-W) and *P.gershomi* sp. n. (Q-Q1). A - *P. setipes* - holotype, from Japan, B, C - *P. setipes*, from Japan, D - *P. setipes*, from Vietnam, E - *P. setipes-2*, from China, F-G - *P. strandi*, male and female, H - *P. strandi* - male, I-J - *P. setipes* - holotype, from Japan, K-K1 - *P. setipes-2* - from China, L-M - *P. setipes-1* - from Japan, N - *P. strandi* - syntype, O - *P. strandi* - from Turkmenistan, P - *P. cf. setipes* from Lenkoran, Q-Q1 - *P. gershomi* sp. n., R - *P. setipes* from Vietnam, S - *P. setipes* from Japan, T - *P. setipes-2* - from China, U - *P. setipes-1* from Japan, V - *P. strandi* - syntype, W - *P. strandi* - from Turkmenistan.

SOURCES: A, I-J, P - Prószyński 1973: 120, f. 61, B, C, M, S - Photo Ono, Ikeda & Kono, 2009 The Spiders of Japan, D - Zabka 1985: 436, ff. 481-486, E, K-K1, T - Peng & Li, 2003b: 755, f. 4A-F, F-G, O, W - Wesolowska, 1996: 36, f. 25A-C, 26A-C, H-Andreeva, 1976: 88, f. 118-120, 121-124, L, U - Bohdanowicz & Prószyński. 1987. Annales Zoologici 41, 2: 117-119; f 229-232, N, V - Spassky, 1939: Folia Zoologica et Hydrobiologica, 299, f. 1-2, Q-Q1 - Prószyński 2003a. Annales Zoologici 2003: 143-145, f 589, R - Zabka 1985: 436, ff. 481-486. All copyrights are retained by the original authors and copyright holders, used here by their courtesy.

***Plexippus strandi* Spassky, 1939**

Figures 4H, K, 5I-I1, K-K1, 6E-F, 7D, E, 9F-H, N-P, V-W

Plexippus strandi Spassky, 1939b: 299, f. 1-2 (Dmf).

Plexippus strandi Andreeva, 1969: 90, f. 2 (mf).

Plexippus strandi Prószyński, 1976: 156, f. 281 (m).

Plexippus coccineus Nenilin, 1985a: 132 (not documented synonymy!).

Plexippus coccineus Wesolowska, 1996: 36, f. 25A-C, 26A-C (mf) = *P. strandi* Spassky, 1939 syn. n.

Plexippus coccineus Metzner, 1999: 136, f. 100a-j (mf) (female epigyne copied from Wesolowska (1996: 36, f. 26A-C) = *P. strandi* from Turkmenistan, male palp and body belong to different species).

Plexippus setipes Prószyński 1973: 120-122, f. 64-66 only (= *P. cf. strandi*).

Documentation studied. Summary of world's literature provided by "Monograph of Salticidae (Araneae) of the World 1995-2016. Part I & 2" by Prószyński (2016a, b) and current literature.

Diagnosis. Unique character separating male *P. strandi* from all remaining species is dark (black?) and thick transverse belt in anterior abdomen, immediately behind anterior white area, separated posteriorly by light transverse belt at beginning of light median streak (Fig 9F-H). Female has similar abdominal pattern. Male has also a pair of dark spots on thoracal slope. Other characters are less clear cut - excessive prolateral swelling of embolar basis seems to be bigger and somewhat more anterior, embolus is shorter and thinner (Figs 9V-W) but that is comparable with several other *Plexippus*, a result of slight change of proportions. Epigyne (Fig. 9O, 6E-F) has centrally located pocket and relatively short ducts, with bulging armature of pheromone exuding opening, but it resembles variety of similarly developed structures in related species, the constancy of that character has not been checked.

Uncertain species from Krasnovodsk and Lenkoran. Prószyński 1971: 120-122, f. 61-63 illustrated epigyne of two specimens of *Plexippus "setipes"*, found in Museum für Naturkunde, Berlin, mounted in permanent slides by F. Dahl, 1 from Lenkoran (Azerbaijan) and Krasnovodsk (Turkmenistan). These are resembling superficially epigyne of *P. setipes*, but are much closer to *P. strandi* by shorter ducts and prominent bulge of armature of pheromone exuding opening (Figs. 5K-K1 and 9P). These are classified provisionally as *P. cf. strandi* because final identification without knowing habitus appearance of specimens is not possible.

Distribution. Described from Tadjikistan, Uzbekistan and Turkmenistan, its occurrence in Greece is mistake due to substitution of redrawn Turkmenistan specimen epigyne into plate illustrating Greek species (Metzner (1999: 136, f. 100a-j, see Figs 5I-I1) however matching male has entirely different abdominal color pattern (Fig. 7D).

***Plexippus tectonicus* Prószyński, 2003**

Figures 2Q1, 4F-G, 5E-E1, 7A

Plexippus tectonicus Prószyński, 2003: 145, f. 581-582, 586, 591, 736-737 (Dmf).

Plexippus yinae Peng & Li, 2003b: 755, f. 5A-E (Dm). **syn. new.**

Material. Holotype male, allotype female: Israel: Geshur, pitfall trap, paratype males Kallia. Kept in Hebrew University, Jerusalem and Ben Gurion University Sede Boqer.

Remarks. *Plexippus yinae* is hereby removed from synonymy of *P. clemens* and considered synonym of *Plexippus tectonicus* because of similarity of their palps (compare Figs 4F and G). Both descriptions were published in 2003, however that of Prószyński's was published with date "1 March 2003", that of Peng & Li with date "December 2003".

Diagnosis. About half the size of *P. paykulli*, resembling *P. "devorans"* from which differs by black "flag" of setae on palpal femur, broader embolus and white line along palpal tibia.

Description. Male. Carapace dark brown with traces of white, adpressed setae, with white, thin thoracic streak expanded into large, regular round spot in the foveal area (Fig. 2Q1), delimited from eyefield by fawn transverse line. Sides light fawn with whitish adpressed setae, with dark brown margin along ventral edge of carapace. Abdomen with median light streak, followed laterally by a pair of dark brown streaks, expanded further on sides and ventral surface. There are four white chevrons on posterior half of light streak, interconnected medially. Posterior angle of abdomen dark, dorsal spinnerets dark brown with lighter tips. Face uniformly dark brown, eyes I surrounded by yellow setae. Clypeus dark brown, almost bald, with a few longer gray setae under AME, stretching diagonally and overhanging chelicerae, there are also sparse peculiar setae swollen apically on clypeus and entering chelicerae. Chelicerae dark brown. Palps light brown to yellow, cymbium dorsally with contrasting round, white spot of adpressed setae. Line of adpressed white setae terminally on femur and along patella. There is characteristic retrolateral "flag" - bunch of dark, brown or black setae on palpal femur. Palpal organ - see Figs 4F-G. Legs brown with mosaic of black spots: leg I dark brown with apical end of tarsus yellow, leg II brown with darker metatarsus, III-IV yellow with brownish shade. Length of body 3.4 mm.

Paratype male is much lighter, possibly due to fading, with darker areas brown, whitish setae on yellow background are less striking. Dark areas on thorax consist of adpressed brown, elongated scales, also on abdomen dark spots consist of brown, adpressed scales. Palpal organ and "grey flag" on palpal femur as in holotype specimen. Legs yellow.

Female (allotype). Eyefield light brown, covered by unnoticeable, colorless adpressed scales. Thorax yellow with sparse darker, brownish olive adpressed setae, concentration of which makes four elongate darker spots on posterior slope of thorax. Face light yellow with sparse, white setae on clypeus, white setae encircling eyes. Chelicerae creamy yellow, arising horizontally and almost immediately bending perpendicularly down. Pedipalps yellow with sparse, long, stiff setae dark and whitish. Abdomen pinkish yellow, with lighter median, light delimited streak, lateral part of dorsum darker brown, due to adpressed brown scales, anteriorly group of longer, dark bristles, There is a pair of white spots in four fifth of length of abdomen, encircled by dark brown scales. Spinnerets dark yellow. Abdomen ventrally lighter pinkish yellow. Sternum and coxae yellow with pinkish hue. Epigyne covered by waxy secretion blurring its shape, its correct appearance become visible after bath in KOH solution (Figs 5E-E1). Legs yellow with short and sparse dark setae. Length of body 5.5 mm.

Nomenclatural correction:

Plexippus yinae Peng & Li, 2003 = *Plexippus tectonicus* Prószyński, 2003 **syn. new.**

Plexippus cf. tectonicus- photographs of a live male specimen from Yemen - (Photo B. Knoflach, published in Wesolowska W., van Harten A. 2007. Fauna of Arabia, 23: 246-248, f. 33-36) show a species resembling closely *Plexippus tectonicus* but differing by intensely black coloration of carapace, abdomen and legs I, with contrasting white pattern, but the white foveal spot, anteriorly to thin petiole, is not round but diamond shaped. Setae around lateral external half of eyes I median are reddish (those on median half of these orbits are white) and correspond with red orbital setae around eyes I lateral, while median parts of orbits I are white (Figs 2Q-S). White spot on cymbium is striking, "flag" on palpal femur consist of both black and white setae. Lack of specimens do not permit to study palps. I assume that the species should be closely related to *P. tectonicus*, but separate.

***Plexippus tsholotsho* Wesolowska, 2011**

Figure 6K-K1

Plexippus tsholotsho Wesolowska, 2011b: 337, f. 71-72 (Df).

Documentation studied. Summary of world's literature provided by "Monograph of Salticidae (Araneae) of the World 1995-2016. Part I & 2" by Prószyński (2016a, b) and current literature.

Diagnosis. Epigynal pocket located centrally, very narrow. Epigyne and its internal structures somewhat different from usual in *Plexippus* so the placement of species is uncertain.

Distribution. Zimbabwe, South Africa

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References

Attention: only selected references are listed here, other references can be found either in the Internet Database of Salticidae at <http://www.peckhamia.com/salticidae/>, or in the WSC at <http://www.wsc.nmbe.ch/>.

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