

Salticidae from the Himalayas.¹ Subfamily *Spartaeinae* WANLESS, 1984
(*Araneae: Salticidae*)

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ABSTRACT. Five salticid *Spartaeinae* species: *Brettus anchorum* WANLESS, *Cyrba ocellata* (KRONEBERG), *Phaeacius fimbriatus* SIMON, *P. wanlessi* WIJESINGHE, and *Portia fimbriata* (DOLESCHALL), all from Nepal are diagnosed, described and illustrated.

Key words: Arachnology, zoogeography, *Araneae*, *Salticidae*, *Spartaeinae*, Himalaya.

INTRODUCTION

During the last 25 years the salticid fauna of the Himalayas has been a subject for intense taxonomic and biogeographic investigation. The Himalayas, being under Oriental and Palaearctic influence, offer a huge variety of habitats and climatic conditions and various zoogeographical elements can be found there.

The subfamily *Spartaeinae* consists of 13 genera; some of them distributed only in tropical Asia (*Brettus*, *Gelotia*, *Mintonia*, *Neobrettus*, *Phaeacius*, *Spartaeus*, *Taraxella*), others of wider distribution. The subfamily itself is one of the best studied thanks to the revisionary works by WANLESS (summarised in 1984a) and it can be distinguished by eye size and position, genitalic structure and unique mating and hunting behaviour. According to JACKSON & HALLAS (1986) *Spartaeine* are a primitive salticid subfamily, which originated from web-building ancestors. They are intermediate group between primitive web-building spiders and typical salticids (jumping on their prey, not web-building) - especially *Portia*. *Brettus* and *Cyrba* are more derived and can be placed closer to "typical" *Salticidae*. On the other hand

¹⁾ The paper partly includes the results of the Himalaya Expeditions of J. MARTENS sponsored by Deutscher Akademischer Austauschdienst and Deutsche Forschungsgemeinschaft.

FORSTER (1982) considers *Spartaeinae* to be extremely specialised, not primitive. The predatory behaviour of *Spartaeinae* is atypical for salticids. All spartaeines rely on lunging, instead of leaping, to attack their prey. *Brettus*, *Cyrba* and *Portia* are specialised web-invaders that prey on other spiders. *Phaeacius* is a specialised ambush predator that sits on the trunks and waits for its prey to come (JACKSON 1990b).

Abbreviations used: AEW = anterior eye width, AL = abdomen length, CL = cephalothorax length, CW = cephalothorax width, EFL = eye field length, PEW = posterior eye width.

The study is based on material from the following collections:

SMF = Naturmuseum und Forschungsinstitut Senckenberg, Frankfurt a. M. (collected by Drs. J. MARTENS, W. SCHAWALLER, A. AUSOBSKY, B. DAAMS)

JS = collection by Dr. J. SVATON deposited in Andrei Kmet Museum, Martin.

Brettus THORELL, 1895

Brettus WANLESS 1979: 183; 1980: 220; 1984a: 181.

This genus consist of six species and occurs in Sri Lanka, India, Burma, Sulawesi (WANLESS 1984a) and Nepal (this paper). Taxonomical status of *B. madagascarensis* (PECKHAM et PECKHAM) found in Madagascar (WANLESS 1980) must be verified, because its figures are not sufficient.

Behaviour of *Brettus* is little known. It is primarily a rain forest species, found on the green leaves of trees. The spiders do not build their own webs (JACKSON & HALLAS 1986a) but invade alien webs, wher they prey on spider eggs and steal insects.

Brettus anchorum WANLESS, 1979

Brettus anchorum WANLESS, 1979: 188; 1984a: 181.

MATERIAL EXAMINED

Nepal. 1M, 1F, Gorkha Distr., Arughat - Suteo, 600-700 m, Waldreste Kulturland, 27.VII.1983, leg. MARTENS & SCHAWALLER, SMF.

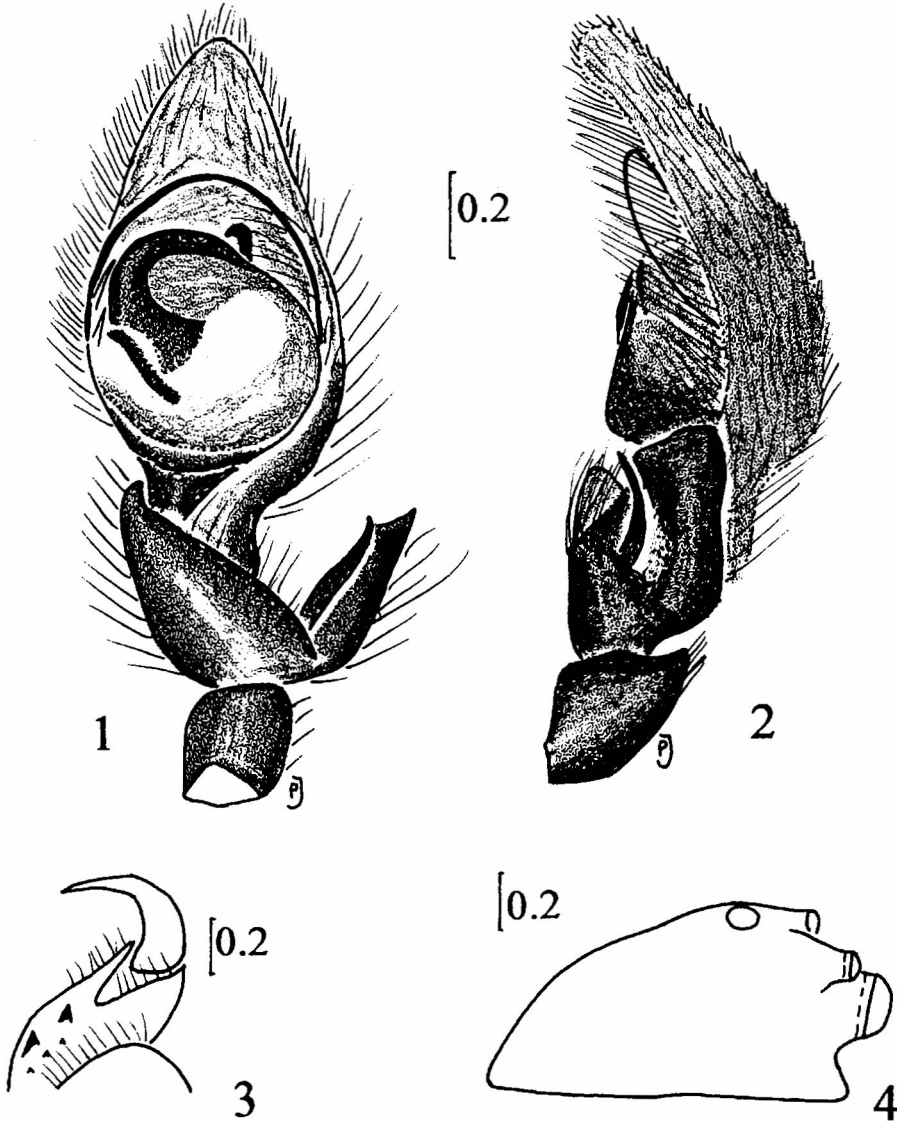
DIAGNOSIS

This species is characteristic in that: males have hook-shaped process on the upper part of tegulum and peculiar details of tibial apophysis and apophysae M_1 and M_2 ; while females have small spermathecae placed laterally.

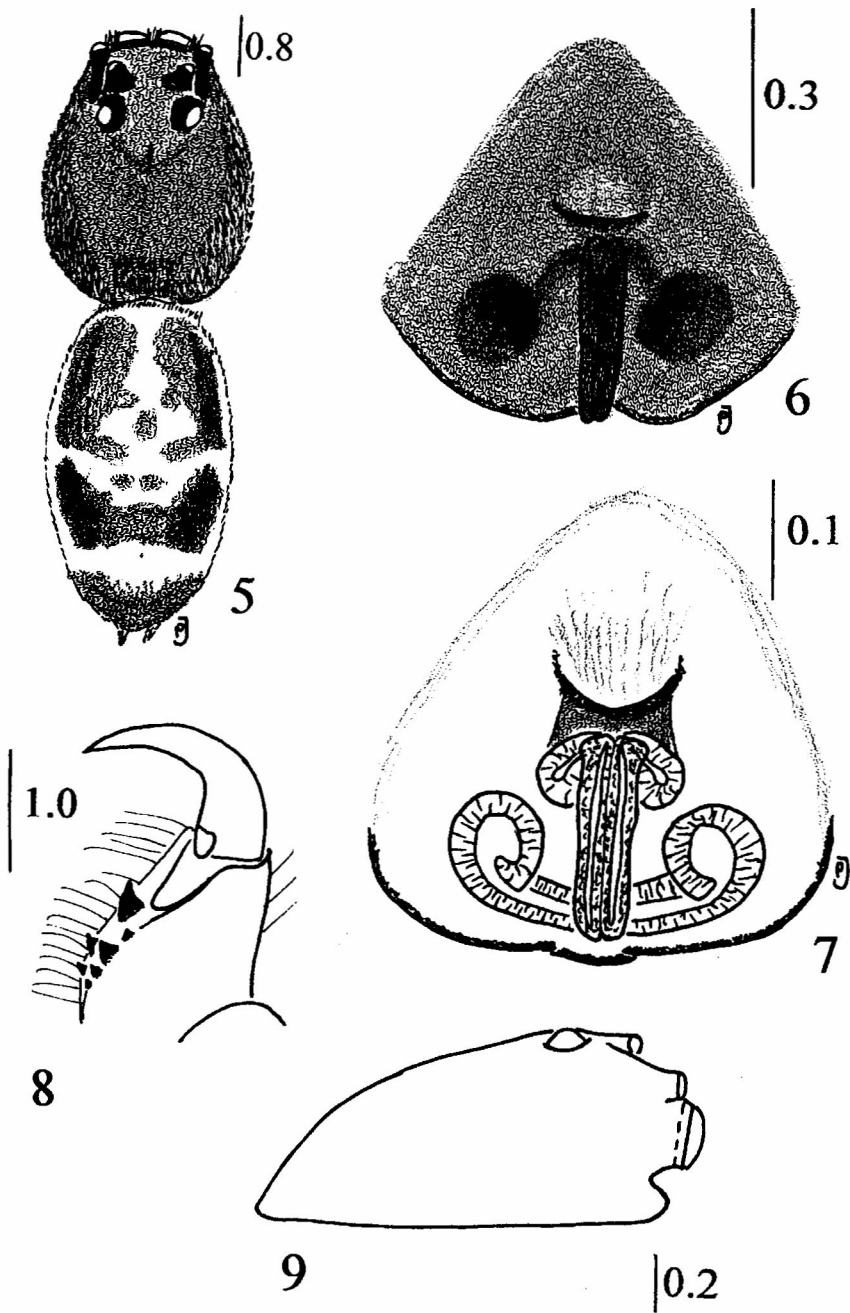
DESCRIPTION

Male (Figs 1-4). Measurements (in mm): CL 2.40; CW 1.98; EFL 1.02; AEW 1.26; PEW 1.02; AL 3.00. Spines formula: tl p 1-1, r 1-1; ml p 1-1, r 1-1. Legs

formula: 1-4-2-3. Cephalothorax dark brown, only surroundings of eyes darker. The lower margins with belt of white hairs. PME rather large. Abdomen elongated,



1-4. Male of *Brettus anchorum*: 1 - ventral view of palpal organ, 2 - lateral view of palpal organ, 3 - cheliceral dentition, 4 - lateral view of cephalothorax



5-9. Female of *B. anchorum*: 5 - dorsal aspect, 6 - epigyne, 7 - internal structures of genitalia, 8 - cheliceral dentition, 9 - lateral view of cephalothorax

ellipsoid, pale brown; anteriorly and posteriorly greyish. Spinnerets grey. Clypeus brown, covered with dense white hairs. Chelicerae (Fig. 3) dark brown; basally fringed with white hairs. Maxillae and labium brown, only the inner margin of maxillae and tip of labium pale orange. Sternum shiny orange. Venter grey. Palpal organ brown; tegulum oval, tegular furrow narrow; apophysae M_1 and M_2 (in Wanless 1984a) as shown in fig. 1. The upper part of tegulum with hook-shaped process (in Wanless 1984a - apophysa "a"). Embolus elongated, whip-like, coiled around the tegulum. Tibial apophysis illustrated in figs 1-2. Legs very long, delicate, brown. The first darkest, with scopula of long dark hairs, the third lightest, all covered with dark bristles.

Female (Figs 5-9). Measurements (in mm): CL 3.36; CW 2.56; EFL 1.12; AEW 1.60; PEW 1.36; AL 4.24. Spines formula: tI p 1-1, r 1-1; mI p 1-1, r 1-1. Legs formula: 4-1-3-2. Surroundings of eyes black, eye field light brown, the rest of cephalothorax brown. The lower margin fringed with short, delicate, white hairs. Abdomen beige with dark and brown markings; covered with brown and whitish hairs. Spinnerets beige. Clypeus and chelicerae (Fig. 8) brown. Maxillae and labium brown, their tips lighter. Sternum light yellow, shiny. Venter beige. Palps light yellow with flag of white hairs. Epigyne (Figs 6-7) light brown, triangular in shape. All internal structures strongly sclerotised. Copulatory openings narrow, slit-shaped, placed centrally. Insemination ducts short, L-shaped. Accessory glands absent. Spermathecae small, oval, one chambered. Legs very long, delicate, brown, the first darkest, the third lightest, all covered with dark bristles. Legs I with scopula of long, brownish hairs.

DISTRIBUTION

India (WANLESS 1979), Nepal.

Cyrbia SIMON, 1876

Cyrbia WANLESS 1984a: 185; 1984b: 445; WESOŁOWSKA 1996: 27.

This genus includes seven species (WANLESS 1984b) and is widely distributed, e.g. in Nepal, SE Asia, Africa (WANLESS 1984a), Turkmenistan (WESOŁOWSKA 1996). *Cyrbia* is not a typical web-builder but builds web-like arrays of silk (JACKSON 1990a) and invades alien webs to feed on spiders, their eggs and insects (JACKSON 1990a, JACKSON & HALLAS 1986a). *Cyrbia* may be found under rocks and walking about on the ground or on tops of rocks (JACKSON 1990a).

Cyrbia ocellata (KRONEBERG, 1875)

Euophrys ocellata KRONEBERG, 1875: 48.

Cyrbia micans SIMON, 1885: 22.

Stasippus inornatus THORELL, 1887: 375.

Vindima maculata THORELL, 1895: 348.

Cyrba flavimana SIMON, 1899: 103.

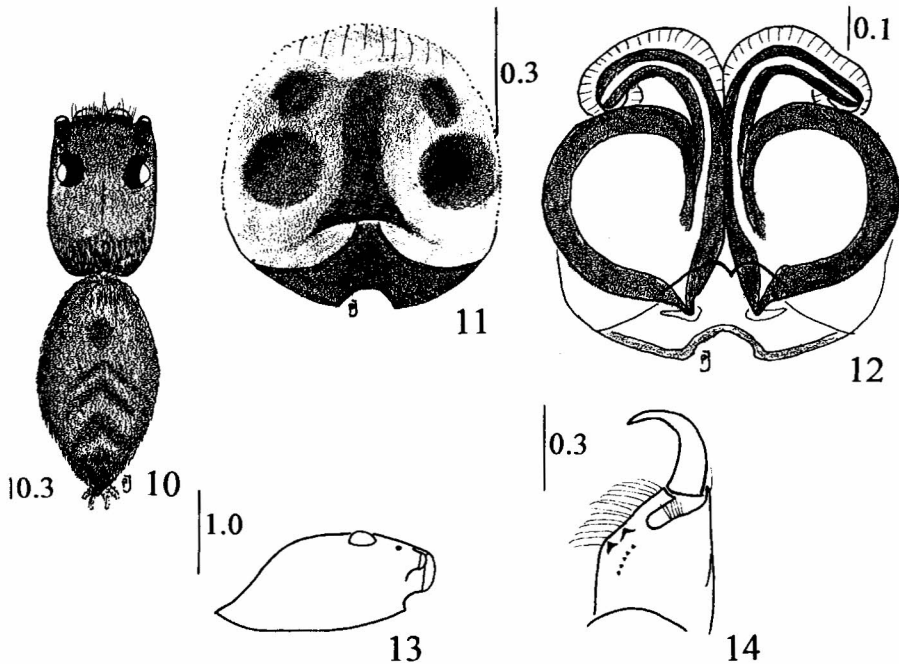
Astia maculata: SIMON 1901: 436.

Cyrba tadjhika, PRÓSZYŃSKI 1971: 396.

C. ocellata: WANLESS 1984b: 455.

MATERIAL EXAMINED

Nepal. 1F, Suli Gad river, 2800-3300 m, 7.-18.VI.1973, leg. MARTENS, SMF.
1F, Dhading Distr., Absteig von Kordunje ins Ankhu Khola Tal, 650-900 m,
24.VII.1983, leg. MARTENS, SCHAWALLER, SMF.



10-14. Female of *Cyrba ocellata*: 10 - dorsal aspect, 11 - epigyne, 12 - internal structures of genitalia,
13 - lateral view of cephalothorax, 14 - cheliceral dentition

DIAGNOSIS

C. ocellata differs from other species in epigynal caudal ledge and anterior margin of embolic guides which extend laterally.

DESCRIPTION

Female. Measurements (in mm): CL 2.43; CW 1.65; EFL 1.04; AEW 1.56;
PEW 1.47; AL 3.18. Spines formula: tl p 1-1, r 1-1; ml p 0-1, r 0-1. Legs formula:

4-1-3-2. Thorax (Fig 10) brown, eye field darker, surroundings of eyes black. Marginally and posteriorly cephalothorax covered with white hairs. Abdomen beige, posteriorly increasingly darker; with white dots, central ash-greyspot and posteriorly with transversal ash-grey belts. Spinnerets grey, their tips increasingly lighter. Clypeus brown with a row of dark hairs. Chelicerae (Fig. 14) brown. Maxillae and labium brown with lighter tips. Sternum brown. Venter grey. Palps brown with flag of white hairs. Epigyne (Fig. 11-12) oval. Copulatory openings strongly sclerotised, semicircular in posterior part of epigyne. Insemination duct delicate. Accessory glands absent. Spermathecae oval, one-chambered, very strongly sclerotised. Legs long, rather delicate, brown with dark hairs.

DISTRIBUTION

Australia, SE Asia, Kenya, Tadjikistan (WANLESS 1984b), Bhutan (PRÓSZYŃSKI 1978), Turkmenistan (WESOŁOWSKA 1996), Nepal.

Phaeacius SIMON, 1900

Phaeacius WANLESS 1981: 199; WIJESINGHE 1991: 249.

The genus comprises of nine species (WANLESS 1981, WIJESINGHE 1991) recorded from Sri Lanka, Java, Singapore, Sumatra, Philippines, Burma, India and Nepal.

Predatory behaviour of *Phaeacius* is atypical for salticid strategy of actively stalking and then leaping on active insects. The spiders are highly specialised ambush predators, especially effective in catching moths and salticids (JACKSON 1990b).

Phaeacius fimbriatus SIMON, 1900

Phaeacius fimbriatus SIMON, 1900: 32; WANLESS 1981: 202.

MATERIAL EXAMINED

Nepal. 1F, Sankhua Sabha Distr., Arun Valley, Tunlingtar, 500 m, tree-rich cultural land near airport, 21.-22.VI.1988, leg. MARTENS, SCHAWALLER, SMF.

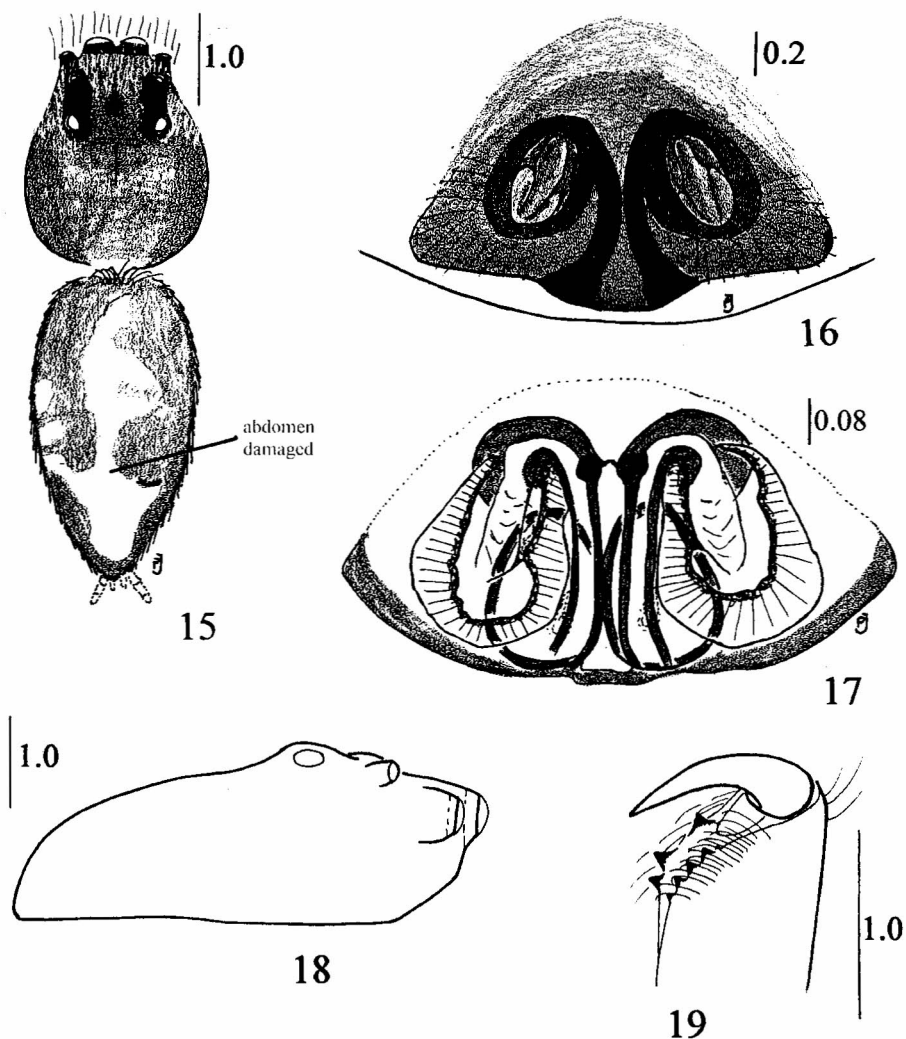
DIAGNOSIS

Accessory glands large and oval, spermathecae small.

DESCRIPTION

Female. Measurements (in mm): CL 4.16; CW 3.76; EFL 1.92; AEW 2.32; PEW 2.16; AL 6.56. Spines formula: tI p 1-1-1-1, r 0-1-1-1; mI p 0-1-1, r 1-1-1; tII p 1-1-1, r 1-1-1; mII p 0-0-1, r 1-1-1. Legs formula: 4-3-1-2. Cephalothorax (Figs 15, 18) flat and oval in shape, PME rather large; whole surface light brown, only surroundings of eyes black. Eye field covered with white hairs. Abdomen ellipsoid, brown with longitudinal, irregular, lustre, white pattern. Spinnerets pale yellow.

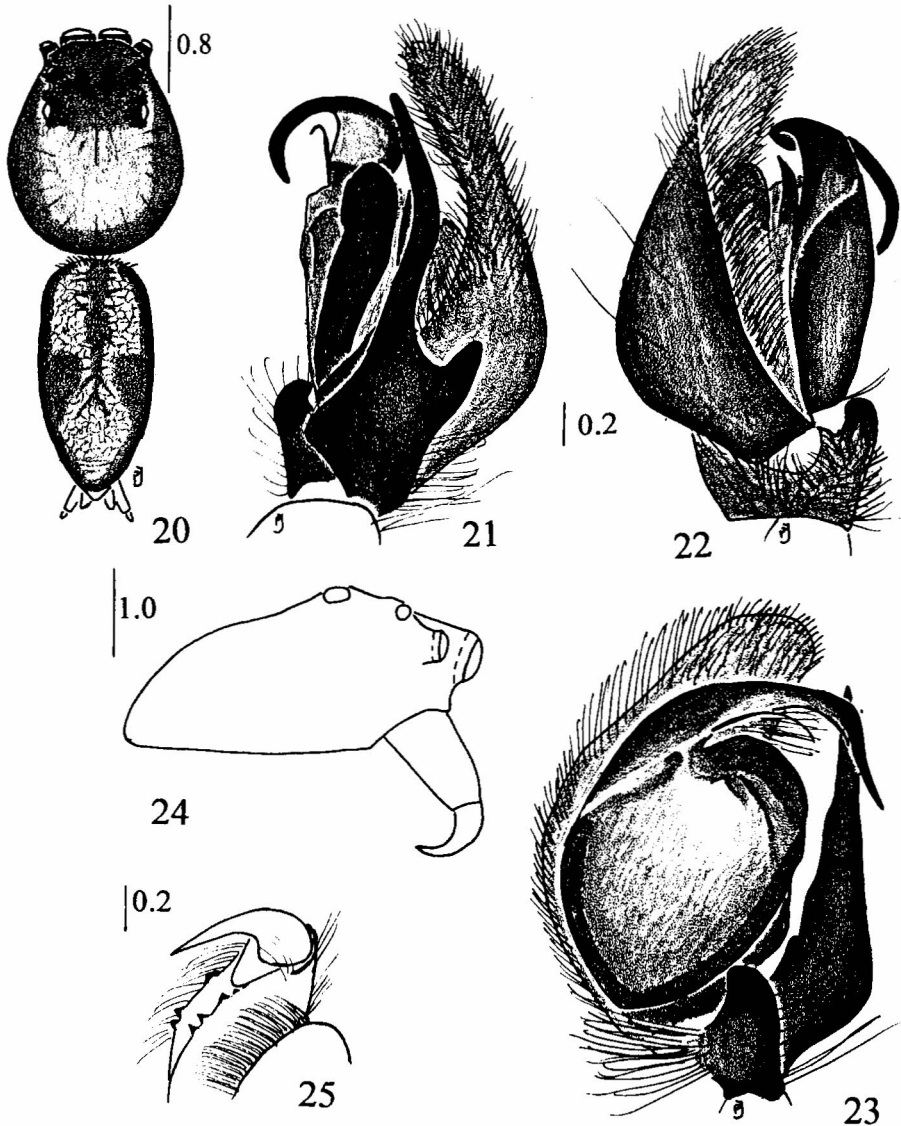
Clypeus light brown with a fringe of a few white hairs. Chelicerae (Fig. 19) brown. Maxillae and labium brown, their tips lighter. Sternum buff. Venter white. Palps brown with flag of long, white hairs. Epigyne (Figs 16-17)) triangular in shape. Copulatory openings in central part of epigyne, on the bottom of oval-like cavity. All internal structures strongly sclerotised. Insemination ducts short. Accessory glands distinctive. Spermathecae small, one chambered. Legs long, rather delicate, pale yellow.



15-19. Female of *Phaeacius fimbriatus*: 15 - dorsal aspect, 16 - epigyne, 17 - internal structures of genitalia, 18 - lateral view of cephalothorax, 19 - cheliceral dentition

DISTRIBUTION

Java (WANLESS 1981), Nepal (here).



20-25. Male of *Phaeacius wanlessi*: 20 - dorsal aspect, 21 - retrolateral view of palpal organ, 22 - retrodorsal view of palpal organ, 23 - ventral view of palpal organ, 24 - lateral view of cephalothorax, 25 - cheliceral dentition

***Phaeacius wanlessi* WIJESINGHE, 1991**

Phaeacius wanlessi WIJESINGHE, 1991: 249.

MATERIAL EXAMINED

Nepal. 1M, Sankhua Sabha Distr., below Karmarang to Hedangna, tree-rich cultural land, 950-1350 m, 5. VI. 1988, leg. MARTENS, SMF.

DIAGNOSIS

In comparison with closely related *P. fimbriatus*, *P. lancearius* and *P. canalis* embolus robust, flattened and longer, retrolateral tibial apophysis the longest.

DESCRIPTION

Male. Measurements (in mm): CL 3.60; CW 3.00; EFL 1.20; AEW 1.92; PEW 1.80; AL 4.20. Spines formula: tI p 1-1-1, r 1-1-1; mI p 0-0-1, r 1-1-1. Legs formula: 2-1-3-4. Cephalothorax (Figs 20, 24) moderately flattened, oval. PME rather large. Surroundings of eyes black, the rest of cephalothorax brown. Abdomen ellipsoid, elongate; marginally blackish, the rest with dorsal grey belt, white, shiny with dots and spots; whole covered with sparse blackish and whitish hairs. Spinnerets grey. Clypeus brown with a few short black hairs. Chelicerae (Fig. 25) brown. Maxillae and labium brown, their tips white. Sternum yellow. Venter grey. Palpal organ (Figs 21-23) massive, dark brown. Cymbium densely hairy. Tegulum ovoid, tegular furrow elongate, narrow. Embolus robust, flattened, long, curved. Conductor elongate, slender and curved. Retrolateral tibial apophysis very massive, large, elongate, tapered; ventral and intermediate apophysae short, blunt. Legs elongate, rather delicate, yellow; covered with black bristles and black and white hairs. Scopula absent.

DISTRIBUTION

Sri Lanka (WIJESINGHE 1991), Nepal.

***Portia* KARSCH, 1878**

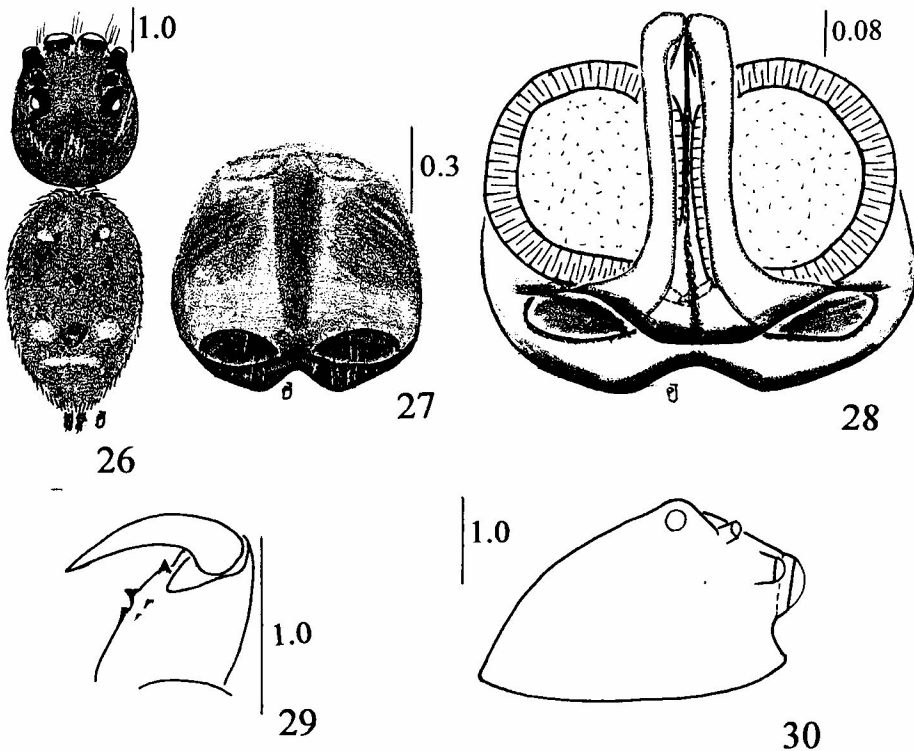
Portia WANLESS 1978: 83; 1984a: 191; ŽABKA 1985: 195; JACKSON & HALLAS 1986b: 423.

Portia is one of the best studied salticid genera. It was revised by WANLESS (1978, 1984a) and its biology was investigated by JACKSON and his research team (e. g. HALLAS 1986b, JACKSON 1995). The genus includes of eight species distributed in the Oriental, Ethiopian and Himalayan regions. According to JACKSON et HALLAS (1986b) *Portia* is morphologically primitive and is a web-builder (two types of webs), a cursorial spider, araneophagous (systematic invader of alien webs), an aggressive mimic, a kleptoparasite, and a predator specialised in opening egg sacs and eating spider eggs (JACKSON & HALLAS 1986b).

Portia fimbriata (DOLESCHALL, 1859)*Salticus fimbriatus* DOLESCHALL, 1859: 22.*Sinis fimbriatus*: THORELL 1878: 270.*Boethoportia ocellata* HOGG, 1915: 502.*Portia fimbriata*: WANLESS 1978: 99; DAVIES & ŽABKA 1989: 195.

MATERIAL EXAMINED

Nepal. 1F, Kathmandu-Tal, Park von Balaju, 1400 m, IX.1969, leg. MARTENS,
SMF. 1F, JS.



26-30. Female of *Portia fimbriata*: 26 - dorsal aspect, 27 - epigyne, 28 - internal structures of genitalia,
29 - cheliceral dentition, 30 - lateral view of cephalothorax

DIAGNOSIS

This species may be distinguished by strongly sclerotised, posterior copulatory openings.

DESCRIPTION

Female. Measurements (in mm): CL 3.60; CW 2.68; EFL 0.96; AEW 2.24; PEW 1.84; AL 4.80. Spines formula: tI p 1-1, r 1-1, mI p1-0, r 0-0. Legs formula: 4-1-2-3. Cephalothorax (Fig. 26) brown, only eye field lighter and surroundings of eyes black; covered with a few white hairs. Abdomen grey with beige dots and markings; covered with sparse white hairs. Spinnerets light brown. Clypeus brown with a fringe of dense white hairs. Chelicerae (Fig. 29) brown; their inner margins with tuft of white basal hairs. Maxillae and labium brown, lighter towards apices. Sternum dirty brown. Venter grey. Palps yellow with white hairs. Epigyne (Figs 27-28) oval. Copulatory openings strongly sclerotised, ellipsoid, placed posteriorly. Insemination ducts delicate, membranous. Accessory glands absent. Spermatheca oval-like, one-chambered, very strongly sclerotised. Legs long, rather delicate, brown with transversal lighter belts. Tarsi and metatarsi orange. On the legs I scopula of pale yellow hairs.

DISTRIBUTION

Amboina, New Georgia, New Guinea, Solomon Island, Sri Lanka (WANLESS 1978), Nepal .

ACKNOWLEDGEMENTS

I am most grateful to Prof. J. MARTENS (Mainz) and Dr. J. SVATON (Martin) for providing specimens and to Dr. M. ŽABKA (Siedlce) and two anonymous referees for critical remarks on the manuscript.

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