

New species of *Yaginumaella* Prószycki 1976 and *Helicius* Prószycki 1976 (Araneae: Salticidae) from Bhutan and Burma

Autor(en): **abka, M.**

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New species of *Yaginumaella* Prószyński 1976 and *Helicius* Prószyński 1976 (Araneae: Salticidae) from Bhutan and Burma

by **M. Żabka**

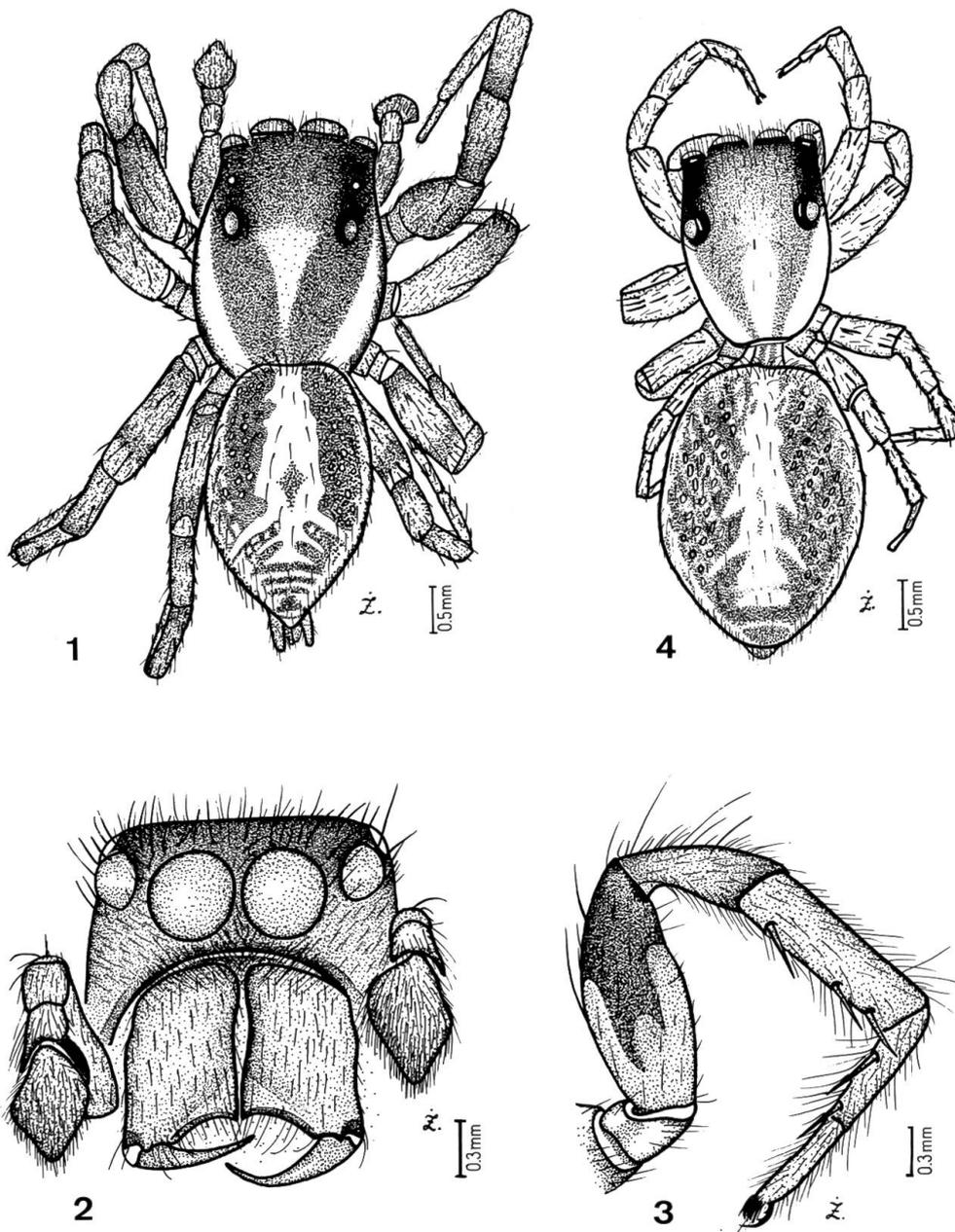
Abstract: *Helicius hillaryi* and following *Yaginumaella* species are described as new: *bhutanica*, *cambridgei*, *gogonaica*, *helvetorum*, *hybrida*, *incognita*, *intermedia*, *montana*, *nobilis*, *nova*, *orientalis*, *pilosa*, *silvatica*, *simoni*, *stemmleri*, *strandii*, *supina*, *tenella*, *thimphuica*, *urbani*, *versicolor*, *wangdica*, *wuermlii*, all from Bhutan and *Y. originalis* from Burma. They form a cluster of closely related species and provide premises for speculations on "zones of intensive speciation" (PRÓSZYŃSKI, 1981).

Thanks to the kindness of Dr. W. Wittmer (Naturhistorisches Museum, Basel), I am able to study 70 specimens of *Yaginumaella* Prószyński and *Helicius* Prószyński (Salticidae). With a single specimen of *Yaginumaella* from N.E. Burma, lent by Dr. T. Kronstedt (Naturhistoriska Riksmuseet, Stockholm), I describe here as new 24 species of *Yaginumaella* and 1 species of *Helicius*.

The number of species calls for some attention because of the unusual richness of the subtropical Himalayan fauna of *Yaginumaella* (27 species- with 3 species described previously from Nepal – Żabka 1980) in comparison with 3 species only known heterofore from Japan (YAGINUMA, 1972, 1974), Korea (Wesołowska, 1981) and Primore, USSR (PRÓSZYŃSKI, 1979). This has been already used as one of the premises for speculations on "zones of intensive speciation" (PRÓSZYŃSKI, 1980, 1981).

The unusual richness of terrestrial Artropods on the warmer slopes of the Himalaya has been also pointed out by MARTENS, 1979. Also the collectors of the material studied here have been impressed by both diversity and quantity of animals (BARONI URBANI et al., 1973). That paper contains descriptions of environments at the collection localities of the species described below.

I wish to express my thanks to Dr. W. Wittmer, Dr. C. Baroni Urbani, O. Stemmler and Dr. M. Würmli for the specimens of *Yaginumaella* and *Helicius* from Bhutan. I am grateful to Dr. T. Kronstedt for the specimen of *Yaginumaella* from Burma. I am also indebted to Doc. Dr. J. Prószyński for cooperation in preparation of this paper and translation of the text into English.



Figs 1–4: General appearance of *Yaginumaella*: 1, 4, male and female, dorsal view. 2, 3, frontal view and leg I of male.

Genus *Yaginumaella* Prószyński, 1976

The genus has been delimited by designation of a type species (*Pellenes ususudi* Yaginuma, 1972) without formal description, which due to printing delay appeared in 1979. The original description was based on a knowledge of three morphologically distant, and geographi-

cally marginal species. Now, with the number of known species increased to 30, that description may be amended by the statement that all females in *Yaginumaella* have sclerotized blind pockets on epigyne, distant from the posterior edge, differing in size and location. There are comparable pockets in some other Salticidae, but usually touching the posterior edges of the vaginal roof. Species studied by PRÓSZYŃSKI, 1979 have only sclerotized flaps which are presumably modified pockets. Copulatory openings are usually slit shaped with strongly sclerotized edges, their size and location provide useful diagnostic characters. Copulatory canals are of different length, with an internal ridge in the majority of species. The shape and size of spermathecae differ in various species as shown in the drawings. Palpal organ in males rather simple, with end of embolus lying in a special groove on the ventral surface of cymbium usually more or less expanded laterally. Seminal receptacle thick.

Cymbium densely covered with setae. Tibial apophysis robust and heavily sclerotized. Species differ in length and shape of embolus, bulb and cymbium.

Zoogeographically the genus *Yaginumaella* is subtropical Himalayan, with some species occurring in the Eastern Palearctic.

Ecological and biological information practically do not exist, except that a few species live on shrubs, bushes or trees.

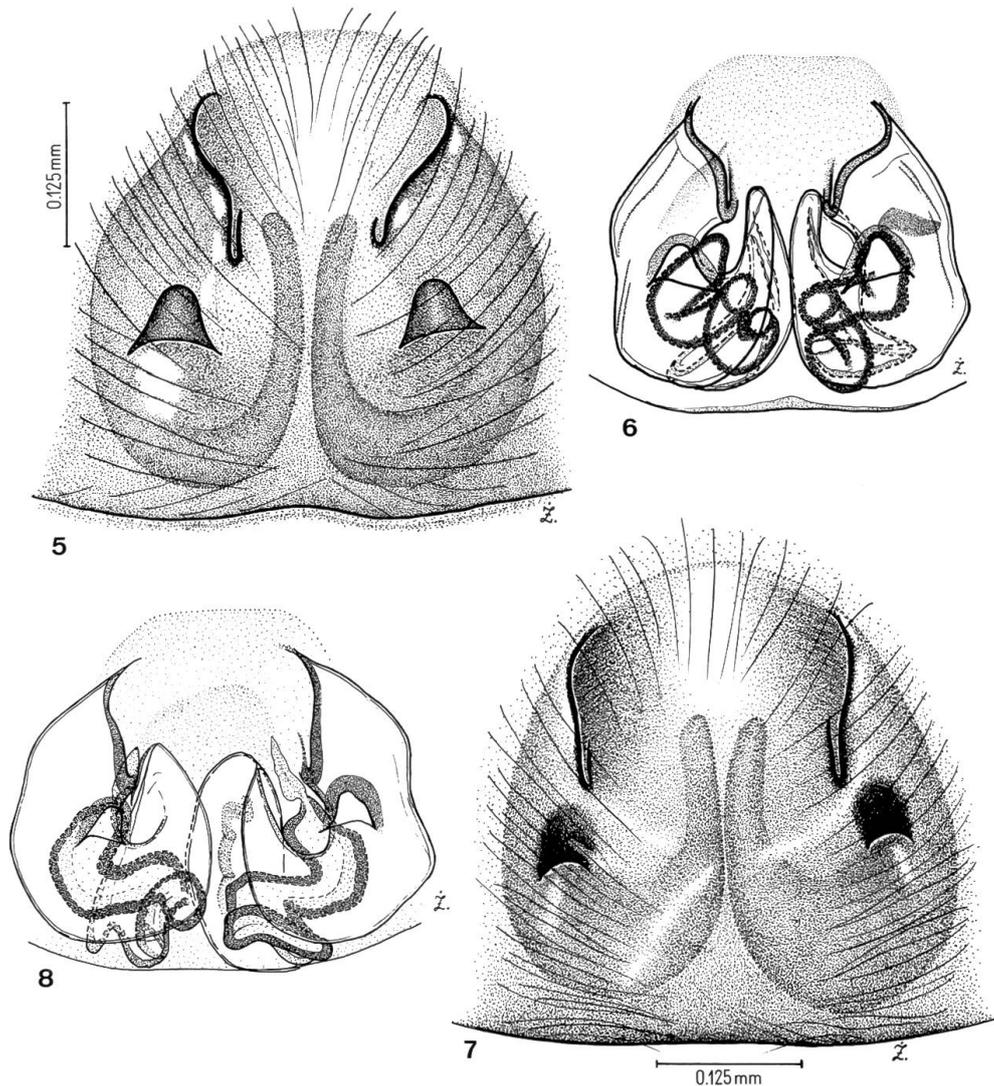
In spite of relatively numerous species discovered, the genus is apparently rather poorly known. Many species are known from one sex specimens only, the individual variation of characters for majority of species is unknown. There should be presumably much more species not yet discovered, and every new sample yields new species. It seems that preparation of an identification key for *Yaginumaella* is premature and it should be postponed until more information would be available.

***Yaginumaella tenella* n. sp.**

Figs 5–6.

♀: Dorsal aspect. Cephalothorax light brown with surroundings of eyes almost black, covered with numerous grey and greyish brown setae and sparse brown bristles. Narrow yellow median and lateral streaks along the thorax, covered with white setae. Length of cephalothorax: 2.07, length of eye field: 0.96, width of eyes I: 1.50, width of eyes III: 1.46.

Abdomen with whitish grey and light brown spots. There are clusters of greyish brown setae on the darker surface spots, these setae are getting darker posteriorly and form transverse belts in the posterior



Figs 5–8: Epigyne before and after maceration: 5, 6, *Y. tenella* n. sp. 7, 8, *Y. stemmleri* n. sp.

parts of abdomen. Sparse stronger brown and grey setae scattered over the abdomen. Lateral surfaces and spinnerets whitish grey. Length of abdomen: 2.38.

Frontal aspect: Clypeus light grey, getting greyish brown toward chelicerae, with white setae overhanging chelicerae. There are a few stronger and longer brownish grey bristles beneath eyes I, three of which located just below junction of median eyes. Chelicerae brownish grey. Pedipalps whitish grey covered with white and greyish brown bristles.

Ventral aspect: Maxillary plates and labium greyish brown, lighter apically, sternum light grey with darker margin. Ventral surface of abdomen – grey with darker spots.

Epigyne (Figs 5, 6) heavily sclerotized with characteristic shape of the copulatory openings and canals, the latter directing originally towards posterior end of epigyne and then bent anteriorly reaching copulatory openings. Spermathecae heavily sclerotized, forming double loop.

Legs I greyish yellow, joints darkened, other legs somewhat paler. All legs covered with greyish brown setae and spines.

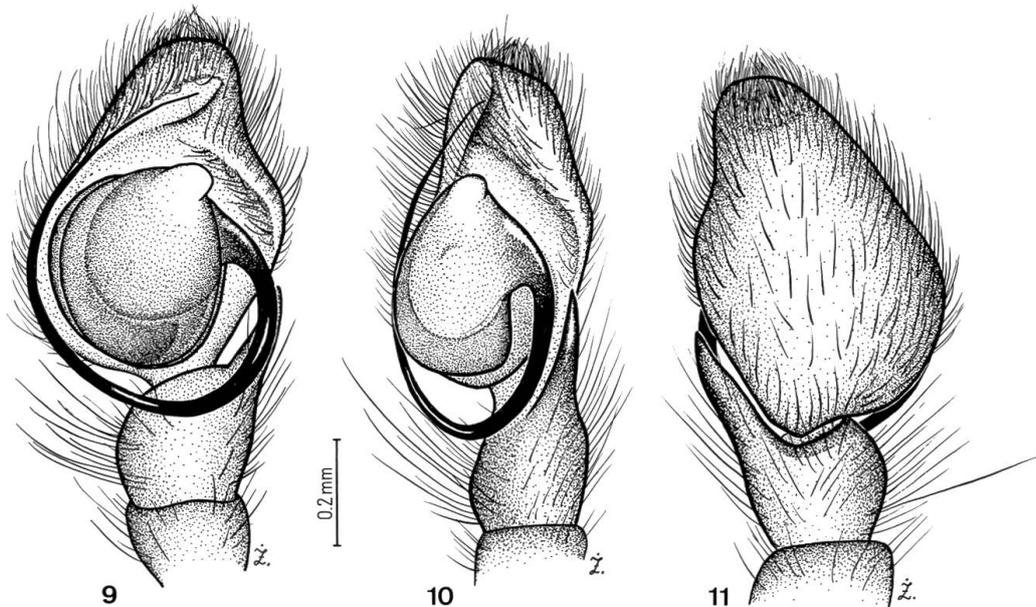
Types: 1 holotype ♀, 1 paratype ♀; Bhutan, 87 km from Phuntsholing, 22.V.1972, NHM-Basel.

Y. tenella is clearly closely related to 6 further species (*Y. stemmleri*, *Y. simoni*, *Y. intermedia*, *Y. bhutanica*, *Y. supina*, *Y. thimphuica*) in which inner copulatory canals are getting gradually shorter and the shape of spermathecae simpler.

***Yaginumaella stemmleri* n. sp.**

Figs 7–11.

♂: Dorsal aspect. Cephalothorax brown with grey setae covering its anterior part. Lateral surfaces dark orange, covered with numerous white setae, reaching the eyes lateral. Lower margins of cephalothorax



Figs 9–11: *Y. stemmleri* n. sp., ♂-palpal organ.

dark brown. Eye field covered with brown bristles, more densely anteriorly. Length of cephalothorax: 2.11, Length of eye field: 0.92, width of eyes I: 1.42, width of eyes III: 1.38.

Abdomen brownish grey with a broad, irregular greyish orange middle spot and rows of small spots directed laterally. Covered with grey setae anteriorly also with white, and sparse greyish brown bristles. Length of abdomen 2.22. Spinnerets greyish brown.

Frontal aspect: Clypeus light brown with brown bristles, three of which below junction of eyes median. Chelicerae orange brown.

Palpal organ (Figs 9–11) with very characteristic embolus – long, making a full circle around bulbus. Bulbus turned 160° in comparison with other species. Pedipalps covered with numerous brown, dorsally also white strong setae. There is a tuft of yellowish grey setae apically on cymbium.

Ventral aspect: Maxillary plates and labium dark brown, apically greyish yellow. Sternum greyish brown. Abdomen dark greyish brown with two longitudinal rows of paler spots medially. Legs I brown, II – greyish brown, III and IV greyish yellow, joints darker, covered with greyish brown setae and spines.

♀: Dorsal aspect: Eye field orange with sparse grey setae, surroundings of eyes black with white setae. Thorax brown with greyish brown bristles and the thorax dorsally and laterally covered with white setae. Length of cephalothorax: 3.03, length of eye field: 0.96, width of eyes I and III: 1.38.

Abdomen with his colouration due to groups of greyish light brown setae, darker posteriorly, covering darker surface. There are also whitish yellow and greyish yellow spots. Sparse greyish brown bristles. Spinnerets greyish yellow. Length of abdomen: 3.46.

Frontal aspect: Clypeus orange suffused with grey, covered with white setae and bristles. Below eyes I sparse greyish brown bristles, three of which below junction of eyes I median. Chelicerae light brown, pedipalps greyish yellow with light grey and white bristles.

Ventral aspect: Maxillae and labium brown greyish yellow tipped. Sternum greyish yellow. Abdomen greyish yellow with darker spots.

Epigyne (Figs 7–8) covered with sparse yellowish grey setae, has broad, parallelly arranged copulatory openings and indistinct borders of pockets. Copulatory canals run towards epigastric fold and then turn anteriorwards reaching $\frac{1}{2}$ of copulatory openings, resemble *Y. tenella*.

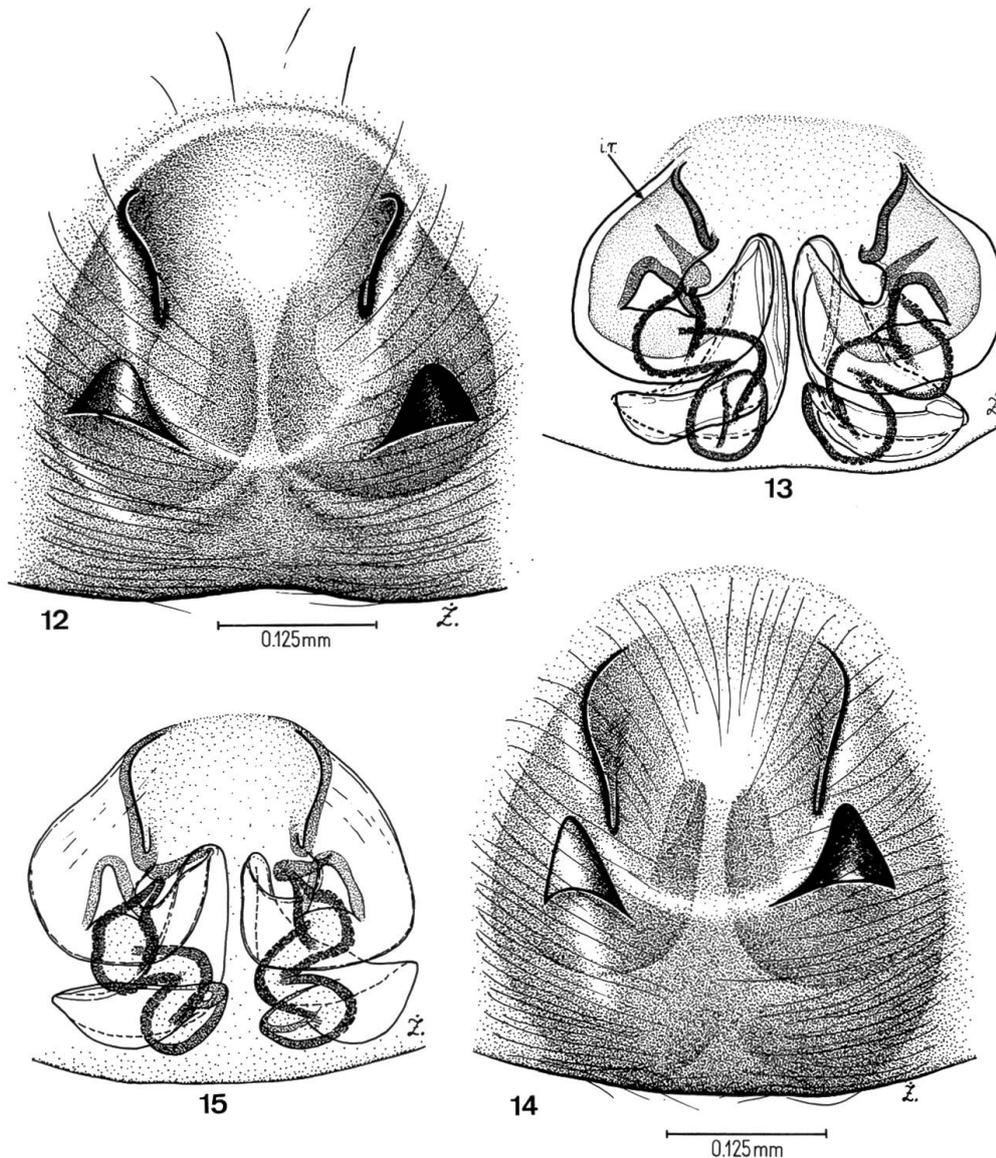
Legs whitish yellow, joints greyish brown, covered with greyish brown setae and spines.

Types: 1 holotype ♂, 1 allotype ♀, 2 paratypes (1 ♂, 1 ♀) Bhutan, 87 km from Phuntsholing, 22.V.1972., NHM-Basel.

Yaginumaella simoni n.sp.

Figs 14–15.

♀: The colouration and setae covering as in *Y.intermedia* and *Y.stemmleri*, differs in shape and size of epigynal pockets, shape and size of copulatory openings as well as absence of sclerotized ridges within the canals which separate this species from *Y.intermedia*, while distinct difference from *Y.stemmleri* is supplied by much shorter canals



Figs 12–15: Epigyne before and after maceration: 12, 13, *Y.intermedia* n.sp. 14, 15, *Y.simoni* n.sp. (ir- internal ridges)

(Figs 14–15). Length of cephalothorax: 2.11, length of eye field: 1.00, width of eyes I and III: 1.46, length of abdomen: 3.65.

Types: 1 holotype ♀, 1 paratype ♀; Bhutan, 87 km from Phuntsholing, 22.V.1972, NHM-Basel.

Yaginumaella intermedia n. sp.

Figs 12–13.

♀: Colouration and setae covering and body dimensions almost identical with *Y. stemmleri*. Epigyne (Figs 12–13) has larger pockets and shorter canals armoured with sclerotized ridges. Length of cephalothorax: 2.12, length of eye field: 1.02, width of eyes I and III: 1.46, length of abdomen: 3.66.

Type: 1 holotype ♀; Bhutan, 87 km from Phuntsholing, 22.V.1972, NHM-Basel.

Yaginumaella bhutanica n. sp.

Figs 16–18.

♀: Dorsal aspect: Cephalothorax brown with eye field orange brown, surroundings of eyes black. Yellow streak medially along the thorax. White adpressed setae on eyes surroundings, yellow streak and sides of thorax. Over eye field scattered grey setae, posteriorly brown ones. Thorax anteriorly and medially with scarce brown bristles. Length of cephalothorax: 2.22, length of eye field: 0.92, width of eyes I and III: 1.42.

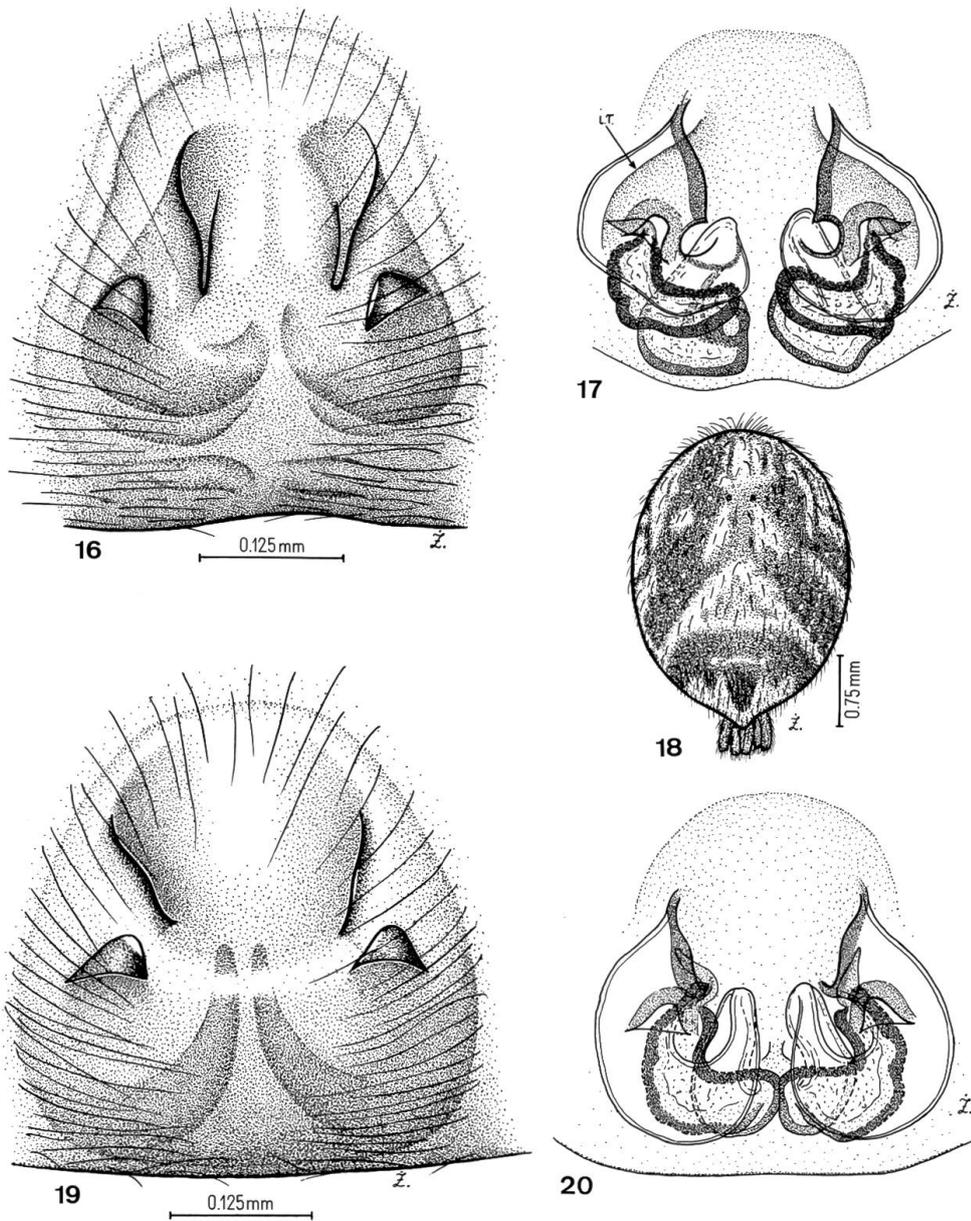
Abdomen (Fig. 18) greyish brown with mosaic of greyish yellow spots, sides with denser light spots. Covered with scarce grey and greyish brown setae and bristles- more numerous posteriorly. Spinnerets greyish brown with grey setae. Length of abdomen 3.34.

Frontal aspect: Clypeus brown with white adpressed setae and scarce long white bristles overhanging brown chelicerae. Pedipalps yellowish grey, covered with grey and greyish brown setae.

Ventral aspect: Maxillary plates and labium grey, pale tipped. Sternum greyish brown. Abdomen yellowish grey with broad grey spot from epigyne to spinnerets, also small grey spots.

Epigyne (Figs 16–17) distinctly different from other species, with copulatory openings and pockets heavily sclerotized. Copulatory canals moderately long with distinct internal ridges, spermathecae heavily sclerotized.

Legs I: coxa, trochanter, femur- greyish yellow, femur with darker distal end, patella and tibia brown, metatarsus and tarsus yellow, remaining legs similarly coloured but getting gradually paler, legs covered with light and greyish setae and spines.



Figs 16–20: Two species of *Yaginumaella*: 16–18, *Y. bhutanica* n. sp., epigyne, its internal structures with internal ridges and abdominal pattern 19, 20, *Y. supina* n. sp., epigyne and its internal structures.

Type: 1 holotype ♀; Bhutan, Phuntsholing, 125 km from Thimphu, 2100 m, 25. V. 1972, NHM-Basel.

***Yaginumaella supina* n. sp.**

Figs 19–20.

♀: Dorsal aspect: Cephalothorax brown, eyes surrounded with black, over thorax yellow streak covered with white setae, lateral surfaces orange, also with white setae. Remaining cephalothorax covered

with greyish brown setae anteriorly and dark brown posteriorly. Length of cephalothorax: 2.15, length of eye field: 0.96, width of eyes I and II: 1.50.

Abdomen greyish yellow covered with yellowish setae, spotted greyish brown with blackish brown setae, clusters of black setae form spots posteriorly. Sparse greyish brown bristles. Spinnerets yellowish grey with grey setae. Length of abdomen: 3.38.

Frontal aspect: Clypeus greyish orange with numerous white setae and bristles overhanging chelicerae. A few greyish brown bristles beneath eyes I, 3 of which below of eyes I median. Chelicerae and pedipalps greyish orange, the latter with whitish yellow and brown bristles.

Ventral aspect: Maxillary plates and labium brownish orange, paler tipped. Sternum yellow, abdomen yellowish grey with small grey spots.

Epigyne (Figs 19–20) externally similar to *Y. tenella* and *Y. stemm-leri*, rather strongly sclerotized with distinct pockets and copulatory openings. Differs from two latter species by distinctly shorter and simplified copulatory canals. Seen through the epigyne's wall these canals reach the posterior margin of the plate.

Legs I greyish orange, the subsequent ones getting gradually paler—the fourth whitish yellow, joints grey; legs covered with greyish brown setae and spines.

Type: 1 holotype ♀; Bhutan, 20 km S Thimphu, 18.V.1972, NHM-Basel.

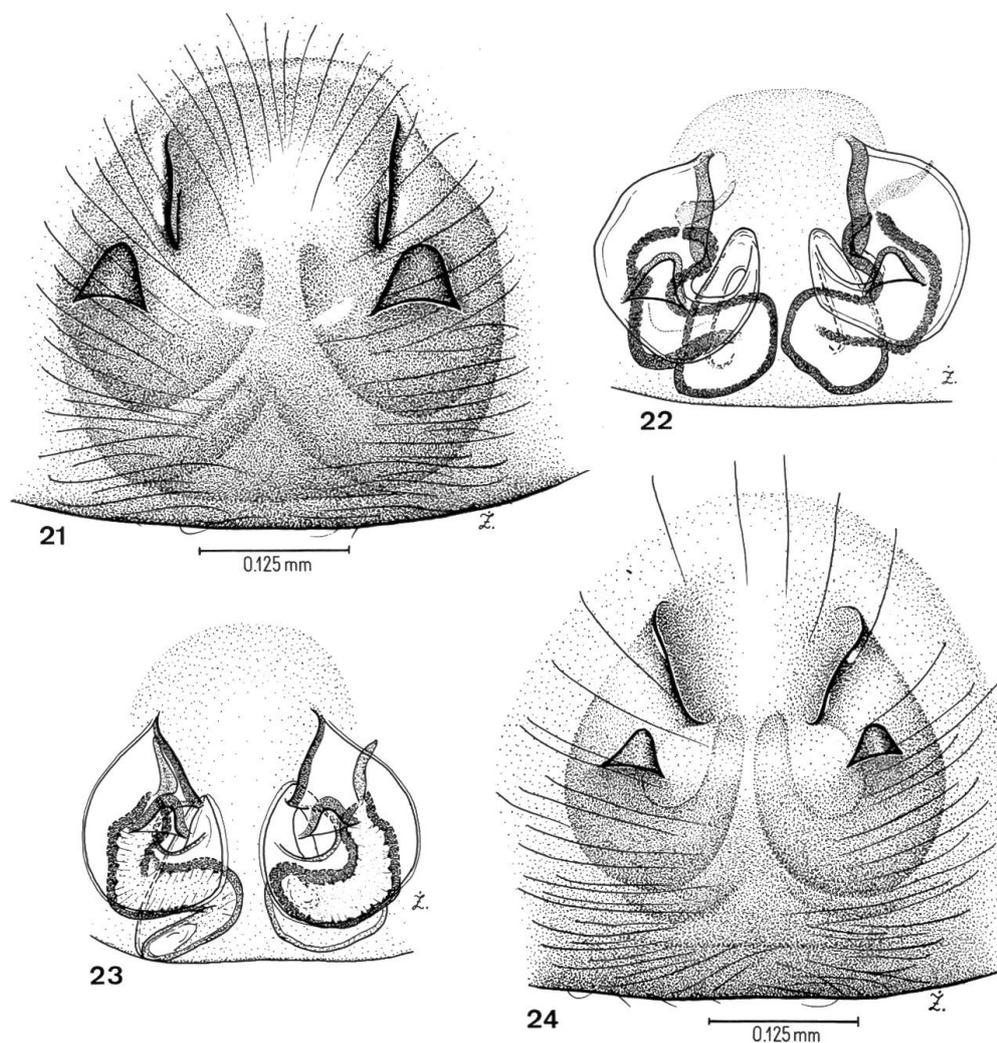
***Yaginumaella thimphuica* n. sp.**

Figs 21–22.

♀: Dorsal aspect: Cephalothorax brown covered with grey setae, darker and sparser posteriorly. Eyes surroundings black. Yellow spot covered with white adpressed setae medially on the thorax. Lateral surfaces posteriorly yellow, anteriorly brown, covered with white adpressed setae. Length of cephalothorax: 2.07, length of eye field: 0.96, width of eyes I and III: 1.42.

Abdomen greyish brown with pale grey diagonal stripes from medial light spot lateralwards. Dark brown adpressed setae on darker areas, yellowish grey on paler. Greyish brown bristles scattered over the dorsal surface. Length of abdomen: 3.06.

Frontal aspect: Clypeus greyish yellow with white setae and bristles overhanging chelicerae. Chelicerae greyish yellow. Pedipalps greyish yellow with pale and greyish brown setae.



Figs 21–24: Epigyne before and after maceration: 21, 22, *Y. thimphuica* n.sp. 23, 24, *Y. helvetorum* n.sp.

Ventral aspect: Maxillary plates, labium and sternum greyish dark yellow. Abdomen light grey with darker grey spot medially and similar spots laterally.

Epigyne (Figs 21–22) with slit like copulatory openings and large pockets. Copulatory canals rather short, without internal ridges, spermathecae large, heavily sclerotized.

Legs greyish yellow, joints darker; legs covered with darker setae and spines.

Type: 1 holotype ♀; Bhutan, 20 km S Thimphu 18.V.1972, NHM-Basel.

Externally similar to *Y. bhutanica*, but general colouration of the abdomen results from setae concentrations and not from pigmentation.

Differs also by paler sides of cephalothorax, different structure of the epigyne and lack of internal ridges in the copulatory canals.

Yaginumaella helvetorum n. sp.

Figs 23–24.

♀: Dorsal aspect: Cephalothorax dark brown, becoming light brown laterally. Yellow streak along the thorax, covered densely with white and light yellow setae, similarly coloured lateral surfaces. Surroundings of eyes black, eye field with white, pale yellow and pale grey setae, posteriorly brown setae. Numerous grey brown bristles. Length of cephalothorax: 2.03, length of eye field: 1.00, width of eyes I and III: 1.46.

Abdomen light brownish grey, posteriorly darker, with diagonal longitudinal spots, covered densely with pale grey setae, posteriorly setae are darker. Numerous greyish brown bristles. Spinnerets yellowish grey. Length of abdomen 2.68.

Frontal aspect: Clypeus greyish light brown with numerous setae, some of which overhanging chelicerae. A few greyish brown bristles, beneath eyes I, 3 of them between eyes I median. Chelicerae and pedipalps greyish light brown covered with light greyish brown setae.

Ventral aspect: Maxillary plates, labium and sternum greyish dark yellow. Abdomen yellowish grey darker suffused.

Epigyne (Figs 23–24) with distinct copulatory openings, canals well visible through the epigyne make a turn posteriorwards and run anteriorwards between both openings. There are no internal ridges within canals, spermathecae short, heavily sclerotized. The pockets lie superficially over the canals. Epigyne covered with long, delicate, pale yellow setae.

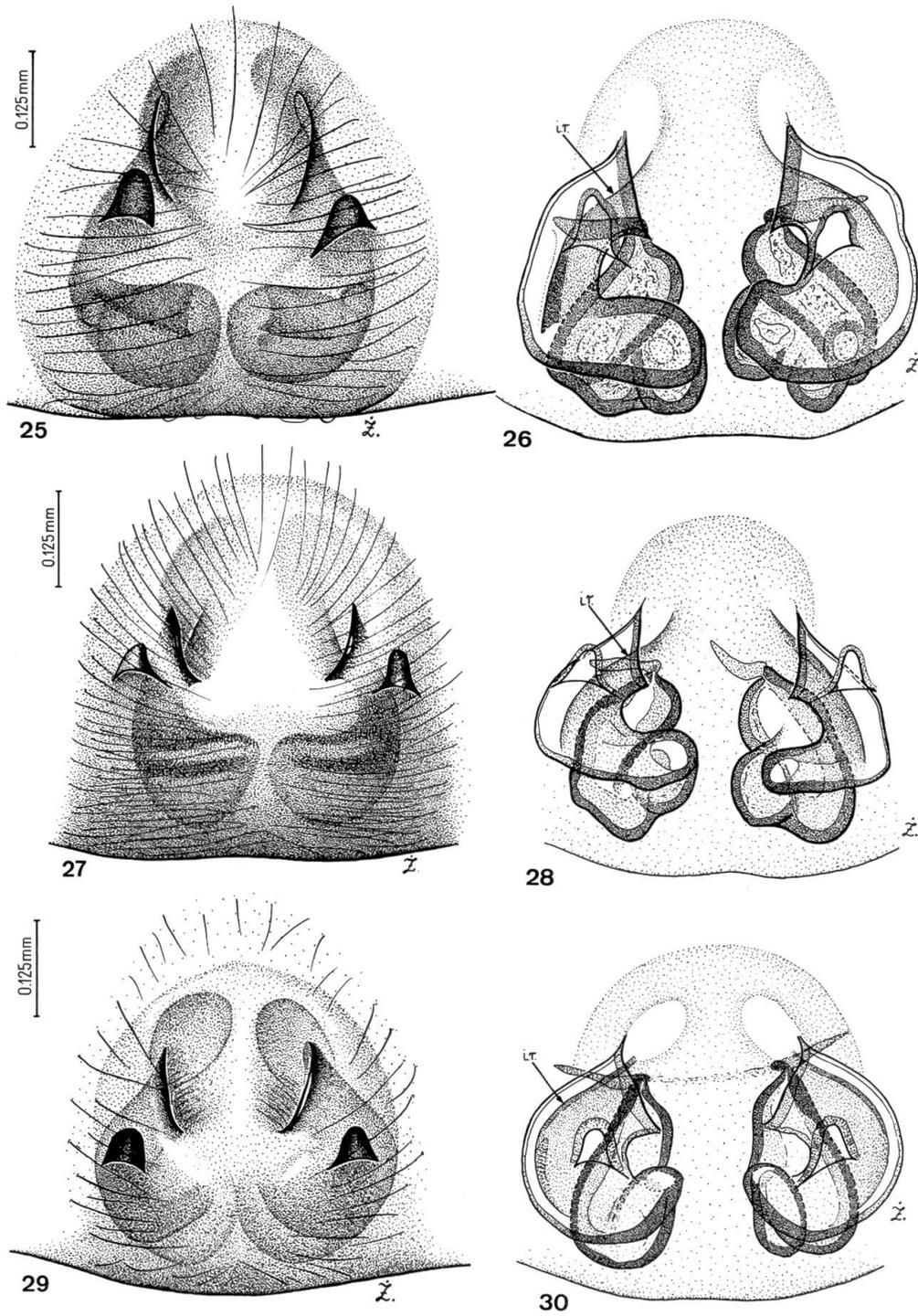
Legs greyish brown, covered with numerous grey setae and brown spines.

Type: 1 holotype ♀; Bhutan, Gidaphu, 2300 m, 2.VI.1972, NHM-Basel.

Yaginumaella urbanii n. sp.

Figs 25–26, 31–34, 41.

♂: Dorsal aspect: Cephalothorax brown suffused with blackish grey, eyes surrounding black, sides orange. Thorax covered with dark brown setae, more densely posteriorly. White setae very dense on sides, less nearby eyes II and III. Blackish brown bristles scattered over the eye field, more densely posteriorly. Length of cephalothorax: 2.50, length of eye field: 1.38, width of eyes I and III: 1.38.



Figs 25–30: Epigyne before and after maceration: 25, 26, *Y. urbanii* n. sp. 27, 28, *Y. cambridgei* n. sp. 29, 30, *Y. strandi* n. sp. (ir- internal ridges).

Abdomen with central spot orange suffused with grey, margins dark orange covered with numerous dark grey setae. Posteriorly 2 light yellow diagonal spots with similarly coloured setae. Anteriorly and in front of spinnerets white setae. Spinnerets brown grey with light brown setae. Sparse greyish brown bristles all over abdomen. Length of abdomen: 2.50.

Frontal aspect: Clypeus brown covered with white setae overhanging cheliceral bases. 4 greyish brown bristles beneath eyes I, two of these between eyes median. Chelicerae yellowish brown.

Palpal organ (Figs 31–34) brown, covered with numerous white setae, and a few longer brown ones. Embolus arises from mid length of bulbus. Apophysis reaches mid length of the bulbus.

Ventral aspect: Labium dark brown, maxillary plates and sternum orange brown. Abdomen yellowish grey with dark grey median longitudinal spot and similar transverse spots.

Leg I: femur greyish dark brown, remaining segments orange brown; other legs getting gradually paler – up to greyish yellow, joints darker; legs covered with sparse white and greyish brown setae and spines.

♀: Dorsal aspect: Cephalothorax dark brown, suffused with dark grey, sides paler. Thorax with yellow longitudinal median streak covered with white setae, ending before hindmargin, similarly coloured areas on lateral surfaces. Remaining parts of thorax covered with white setae laterally, dark brown posteriorly, eye field with pale grey setae and blackish brown bristles, denser near eyes. Length of cephalothorax: 2.88, length of eye field: 0.84, width of eyes I: 1.34, width of eyes III: 1.38.

Abdomen (Fig. 41) grey, medially paler, covered anteriorly with pale grey setae and reddish grey setae posteriorly where they form distinct concentrations. Blackish grey bristles all over abdomen. Spinnerets yellowish grey with grey setae. Length of abdomen: 3.15.

Frontal aspect: Clypeus light brown, suffused with grey, with white setae partly overhanging cheliceral bases. A few greyish brown bristles beneath eyes I, 3 of which between eyes median. Chelicerae light brown, suffused with grey. Pedipalps yellow with greyish brown and white setae.

Ventral aspect: Maxillary plates, labium and sternum light brown, suffused with grey. Abdomen light grey with darker spots.

Epigyne (Figs 25, 26) covered with long brown setae, with copulatory openings located rather closely together. Pockets weakly

sclerotized. Copulatory canals broad gradually becoming more sclerotized, with internal ridges. Spermathecae thick walled and heavily sclerotized.

Legs pale greyish yellow darker suffused covered with brownish grey setae and spines. Darker joint areas.

Types: 1 holotype ♂, 1 allotype ♀, 1 paratype ♀; Bhutan, Sha Gogona, 3100 m, 10.–12. VI. 1972, NHM-Basel.

Yaginumaella cambridgei n. sp.

Figs 27–28.

♀: Dorsal aspect: Cephalothorax brown, eyes I–II area dark brown, eyes II area black. Median stripe yellow covered with white setae along the thorax, similar areas laterally. Remaining parts of thorax covered with dark brown and greyish yellow adpressed setae, dark brown bristles scattered all over. Length of cephalothorax: 2.26, length of eye field: 0.84, width of eyes I: 1.38, width of eyes III: 1.42.

Abdomen brownish grey, posteriorly becoming gradually darker with indistinct spots and transverse yellow belts. Covered with greyish yellow setae, posteriorly gradually darker up to concentrations of greyish black. Sides and spinnerets yellow covered with brownish grey setae. Length of abdomen: 2.73.

Frontal aspect: Clypeus yellowish brown covered with white setae—numerous and dense under eyes I median and above cheliceral bases. Between eyes I median 2 long brown bristles. Chelicerae yellowish brown, pedipalps dark yellow with pale yellow and greyish brown setae.

Ventral aspect: Maxillary plates and labium yellowish brown, paler tipped, sternum yellow. Abdomen yellowish grey with grey spots.

Epigyne (Figs 27–28). Copulatory openings and pockets rather weakly sclerotized, distinct depressions near openings. Differs from *Y. urbanii* by broader separation of pockets and more delicate canals.

Legs yellow covered with greyish brown setae and spines.

Type: 1 holotype ♀; Bhutan, Kothoka, 1600–2600 m, 9. VI. 1972, NHM-Basel.

Yaginumaella strandi n. sp.

Figs 29–30.

Description of female: Dorsal aspect: Cephalothorax orange brown, posteriorly suffused with grey, covered with grey and greyish brown setae. Ocular area black with white setae. Dark yellow stripes with white setae medially along the thorax and on sides. Brown bristles

anteriorly. Length of cephalothorax: 2.26, length of eye field: 0.88, width of eyes I and III: 1.38.

Abdomen with mosaic of larger whitish yellow spots with yellow setae and smaller yellowish brown spots with greyish brown setae which are becoming almost black posteriorly. Sides and spinnerets whitish yellow, covered with white and grey setae. Length of abdomen: 3.30.

Frontal aspect: Clypeus dark yellow with darker margin, covered with white setae and bristles overhanging cheliceral bases. 5 light brown bristles beneath eyes I, 3 of which between eyes median. Chelicerae and pedipalps greyish orange, the latter with greyish yellow and brown setae and bristles.

Ventral aspect: Maxillary plates and labium brown, whitish yellow tipped. Sternum yellow with darker margin. Abdomen yellowish white with small grey spots.

Epigyne (Figs 29–30) covered with greyish yellow setae with distinct depressions near copulatory openings separated by a ridge. Pockets broadly separated, small, heavily sclerotized. Some differences in canals shape shown on figure 30.

Legs yellow, joints greyish brown.

Material: 1 holotype ♀; Bhutan, Tongsa, 2150 m, 24.VI.1972, NHM-Basel.

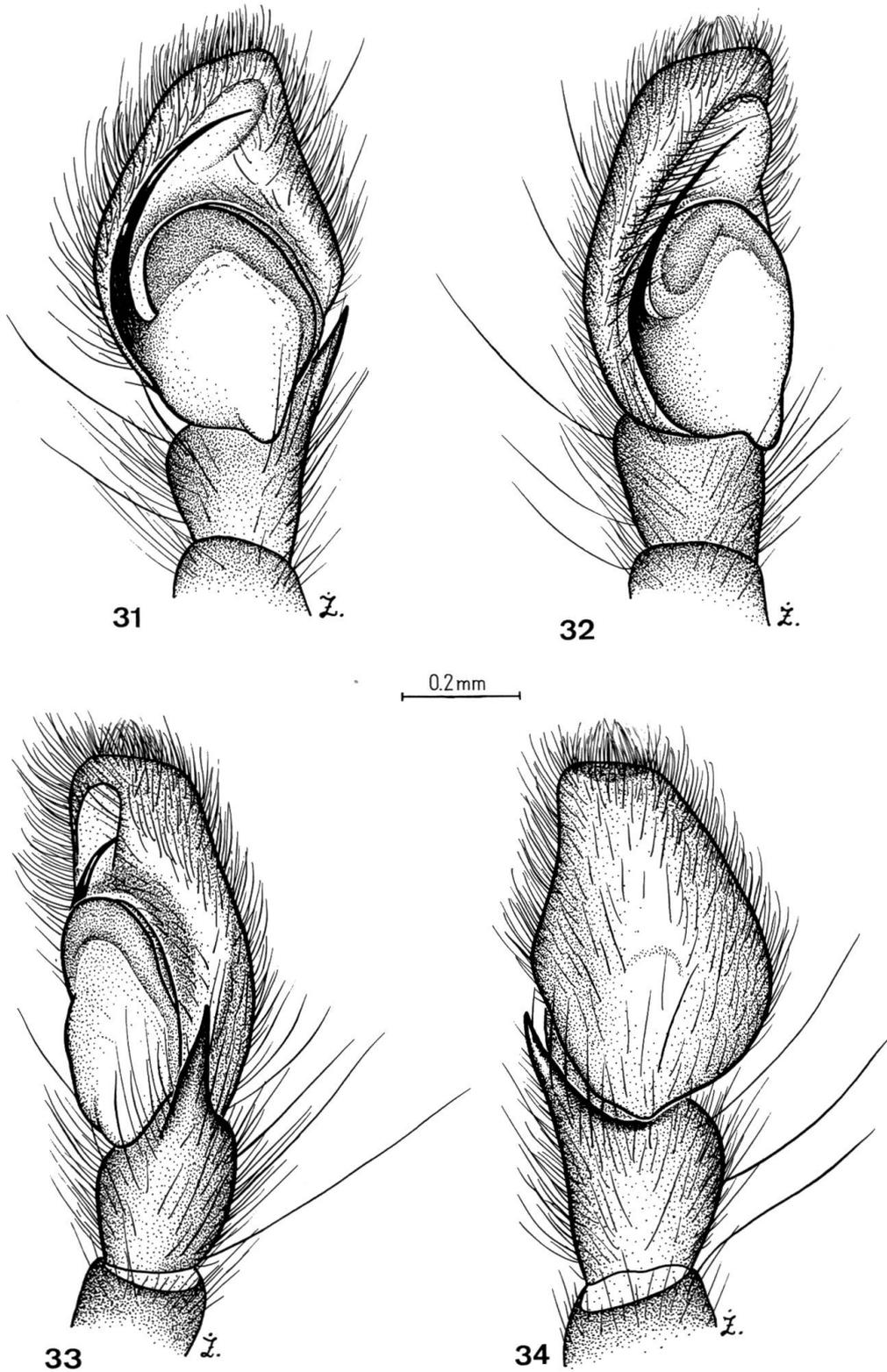
***Yaginumaella silvatica* n. sp.**

Figs 35–36.

♀: Dorsal aspect: Cephalothorax brown, with yellow stripes covered with white setae medially along the thorax and on sides. Remaining parts of the thorax with brown setae and a few bristles, eye field with grey setae and dark brown bristles, more numerous anteriorly. Length of cephalothorax: 2.84, length of eye field: 1.11, width of eyes: I 1.84, width of eyes III: 1.80.

Abdomen pale greyish yellow with grey spots covered with darker grey setae; darker and more numerous posteriorly. Diagonal light greyish yellow stripes in $\frac{2}{3}$ length of abdomen, merging with similarly coloured sides. Spinnerets pale grey covered with grey setae. Length of abdomen: 4.42.

Frontal aspect: Clypeus yellowish brown suffused with grey, narrow yellow stripe beneath the eyes; covered with white setae and numerous white and whitish yellow bristles overhanging cheliceral bases. Beneath distance between eyes I median 3 greyish brown bristles. Chelicerae yellowish brown, suffused with grey.



Figs 31–34: *Y. urbanii* n. sp., ♂- palpal organ.

Ventral aspect: Maxillary plates and labium yellowish brown paler tipped. Sternum yellow. Abdomen pale grey with darker spots.

Epigyne (Figs 35–36) covered with greyish brown bristles, with broadly margined copulatory openings and large pockets. Canals broad with strongly sclerotized ridge.

Legs I greyish dark yellow, remaining pale greyish yellow, joints greyish.

Type: 1 holotype ♀; Bhutan, 87 km from Phuntsholing, 22.V.1972, NHM-Basel.

Yaginumaella gogonaica n. sp.

Figs 37–38, 40.

♀: Dorsal aspect: Cephalothorax dark brown suffused with grey, light spot on eye field and over thorax. Setae greyish yellow on eye field, greyish brown with sparse white on remaining thorax, whitish grey near eyes. Bristles brown on eye field, denser anteriorly, greyish brown on thorax. Length of cephalothorax: 2.22, length of eye field: 0.88, width of eyes I: 1.34, width of eyes III: 1.38.

Abdomen (Fig. 40) brownish black with large greyish yellow spot covered with greyish yellow and anteriorly white setae; abdomen with sparse brownish black bristles. Spinnerets greyish yellow with grey setae. Length of abdomen 2.88.

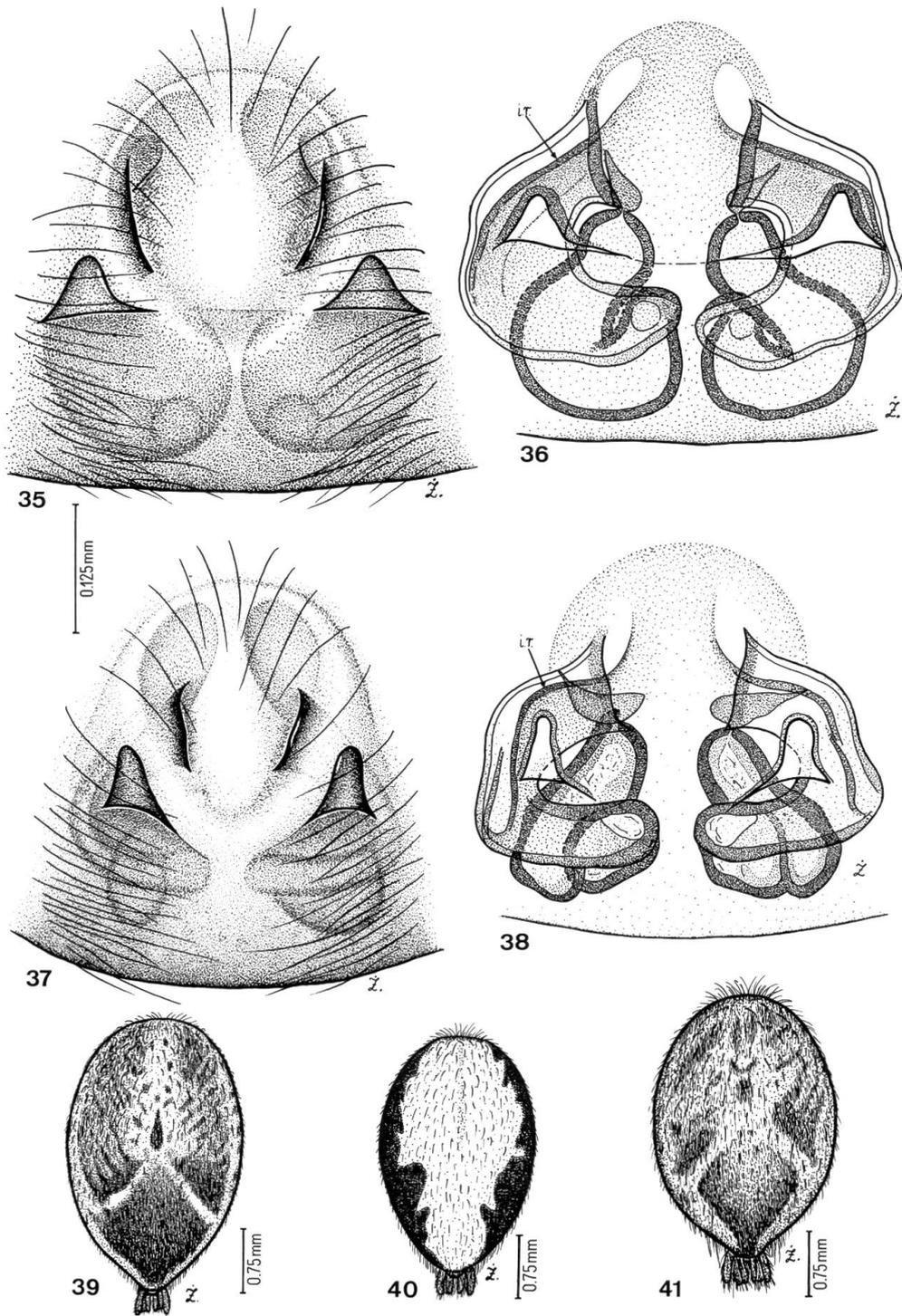
Frontal aspect: Clypeus yellow with brown margin, covered with white setae and bristles overhanging chelicerae. A few greyish brown bristles, three of which below junction of eyes I median? Chelicerae brown. Pedipalps yellowish grey covered with whitish grey and brown bristles.

Ventral aspect: Maxillary plates and labium brown with pale grey margin. Sternum greyish brown. Abdomen pale grey with dark grey spots.

Epigyne (Figs 37–38) covered with pale greyish yellow setae, with closely spaced copulatory openings, pockets large, rather strongly sclerotized. Shape of canals similar to *Y. urbanii* n. sp. *Y. cambridgei* n. sp. *Y. strandi* n. sp. and *Y. silvatica* n. sp.

Legs I and II greyish yellow with brownish grey distal ends of femora, patellae and tibiae; remaining legs greyish yellow, joints dark grey.

Type: 1 holotype ♀; Bhutan, Gogona, 3100 m, 10.–12.VI.1972, NHM-Basel.



Figs 35–41: Epigyne, its internal structures and abdominal pattern: 35, 36, *Y. silvatica* n.sp. 37, 38, 40, *Y. gogonaica* n.sp. 39, *Y. nova* n.sp. 41, *Y. urbanii* n.sp. (lr- internal ridges).

Yaginumaella versicolor n. sp.

Figs 42–43.

♀: Dorsal aspect: Eye field and thorax brown, orange streak covered with white setae medially and laterally on thorax. Setae grey on eye field, greyish brown on thorax. Dark brown bristles on eye field. Length of cephalothorax: 2.34, length of eye field: 0.88, width of eyes I and III: 1.42.

Abdomen brownish grey with setae greyish brown, posteriorly almost black. Broad longitudinal median greyish yellow spot covered with yellow setae. Greyish brown and greyish yellow bristles scattered over the abdomen. Spinnerets greyish yellow. Length of abdomen: 2.58.

Frontal aspect: Clypeus orange with greyish brown margin, covered with numerous white setae and white and greyish brown bristles overhanging cheliceral bases. Three bristles beneath eyes I median junction. Chelicerae orange brown, pedipalps yellow with greyish brown and white bristles.

Ventral aspect: Labium brown, maxillary plates light brown with orange margin. Sternum yellow with greyish brown margin. Abdomen greyish yellow with dark yellow spots.

Epigyne (Figs 42–43) oval, the distance between pockets larger than between copulatory openings, edges of the latter almost parallel. Copulatory canals without internal ridges.

Legs greyish yellow, joints greyish brown; legs covered with greyish brown setae and spines.

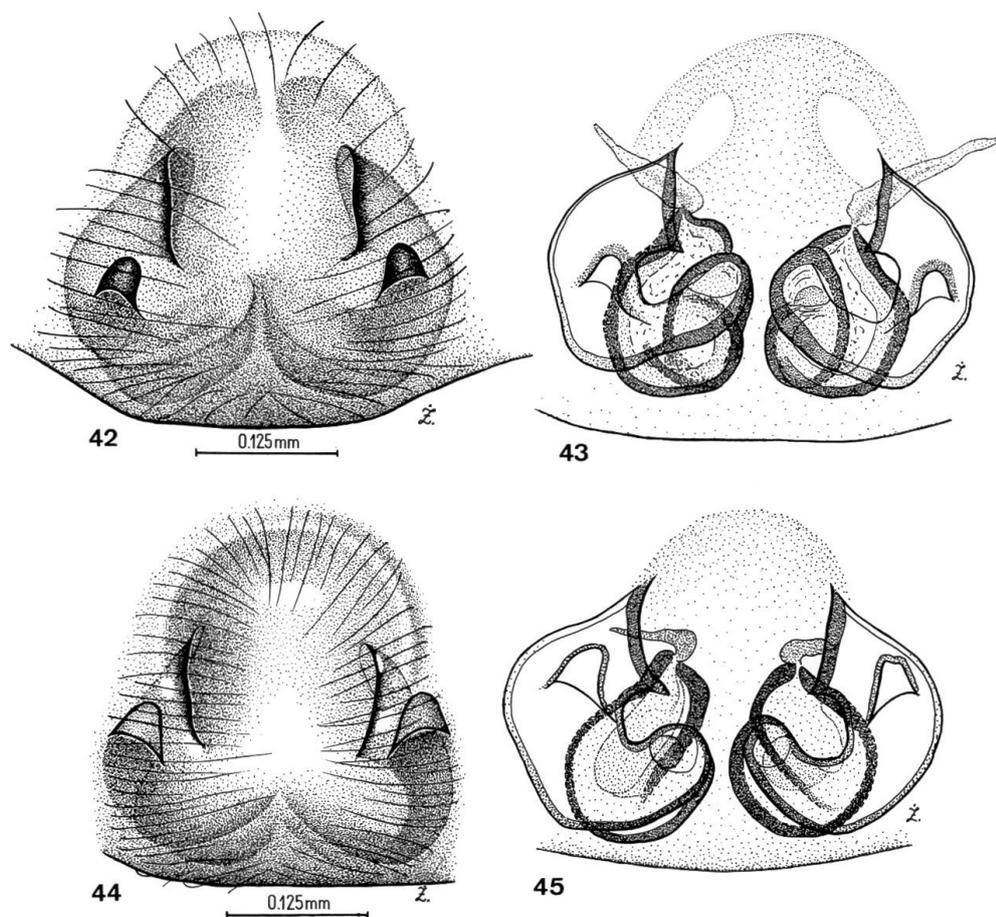
Type: 1 holotype ♀; Bhutan, Gogona, 3100 m, 10.–12.VI.1972, NHM-Basel.

Yaginumaella nova n. sp.

Figs 39, 44–45.

♀: Dorsal aspect: Cephalothorax brown with yellow stripe covered with white adpressed setae medially along the thorax and along the sides. Eye field with silver and yellowish adpressed setae, thorax posteriorly and along the margins with dense dark brown adpressed setae. Sparse black bristles over the thorax. Length of cephalothorax: 2.50, length of eye field: 1.00, width of eyes I: 1.57, width of eyes III: 1.53.

Abdomen (Fig. 39) posteriorly dark greyish brown with greyish spots, darker areas also covered with greyish black adpressed setae. Anteriorly darker pigmented areas become paler with corresponding setae yellowish grey, gleaming and adpressed. Sparse greyish brown bristles all over. Sides pale grey darker spotted. Spinnerets yellowish grey with greyish brown setae. Length of abdomen: 3.34.



Figs 42–45: Epigyne before and after maceration: 42, 43, *Y. versicolor* n.sp. 44, 45, *Y. nova* n.sp.

Frontal aspect: Clypeus yellowish orange covered with white adpressed setae and upright white bristles, some of which overhanging cheliceral bases. Chelicerae orange yellow. Pedipalps greyish yellow covered with yellowish setae and bristles.

Ventral aspect: Maxillary plates and labium yellowish orange. Sternum dark yellow. Abdomen grey with darker spots laterally, covered with brownish grey setae. Greyish brown bristles near spinnerets.

Epigyne (Figs 44–45) covered with grey setae with distinct pockets and strongly sclerotized copulatory openings. Internal structures like those in *Y. versicolor* but copulatory canals shorter and spermathecae less complicated.

Legs pale grey with greyish brown setae and spines.

Types: 1 holotype ♀, 1 paratype ♀; Bhutan, Tongsa, 2150 m, 24.VI.1972, NHM-Basel., 2 paratypes ♀; Gogona, 3100 m, 10.–12.VI.1972, NHM-Basel.

Yaginumaella nobilis n. sp.

Figs 46–47.

♀: Dorsal aspect: Cephalothorax brown suffused with grey, covered with sparse dark brown and white setae, denser, pale grey and white on eye field. Light orange stripe with white setae medially and laterally on the thorax. Sparse dark brown bristles. Length of cephalothorax: 2.84, length of eye field: 1.00, width of eyes I and III: 1.50.

Abdomen dark brownish grey with yellowish grey irregular median longitudinal spot, branching posteriorly, covered with white and yellow setae. Posteriorly abdomen with blackish brown setae. Sparse bristles greyish yellow and greyish brown. Sides greyish yellow with yellow and white setae. Spinnerets yellowish brown. Length of abdomen: 3.73.

Frontal aspect: Clypeus yellowish brown suffused with dark grey near cheliceral bases, with yellow spots beneath eyes I lateral. Covered with sparse white setae and white and greyish brown bristles overhanging clypeal margin. Beneath eyes I median junction 3 distinct bristles. Chelicerae greyish brown, pedipalps dark yellow covered with pale grey and brown bristles.

Ventral aspect: Maxillary plates and labium yellowish brown paler tipped. Sternum yellow with greyish brown margin. Abdomen greyish yellow darker spotted.

Epigyne (Figs 46–47) heavily sclerotized. Pockets closely spaced in the central part of epigyne. Copulatory openings large, canals broad. Spermathecae heavily sclerotized and simple. These characters fit generally also *Y. montana* n. sp., *Y. orientalis* n. sp., *Y. wuermli* n. sp. and *Y. hybrida* n. sp. These species can be identified by the details shown on figures.

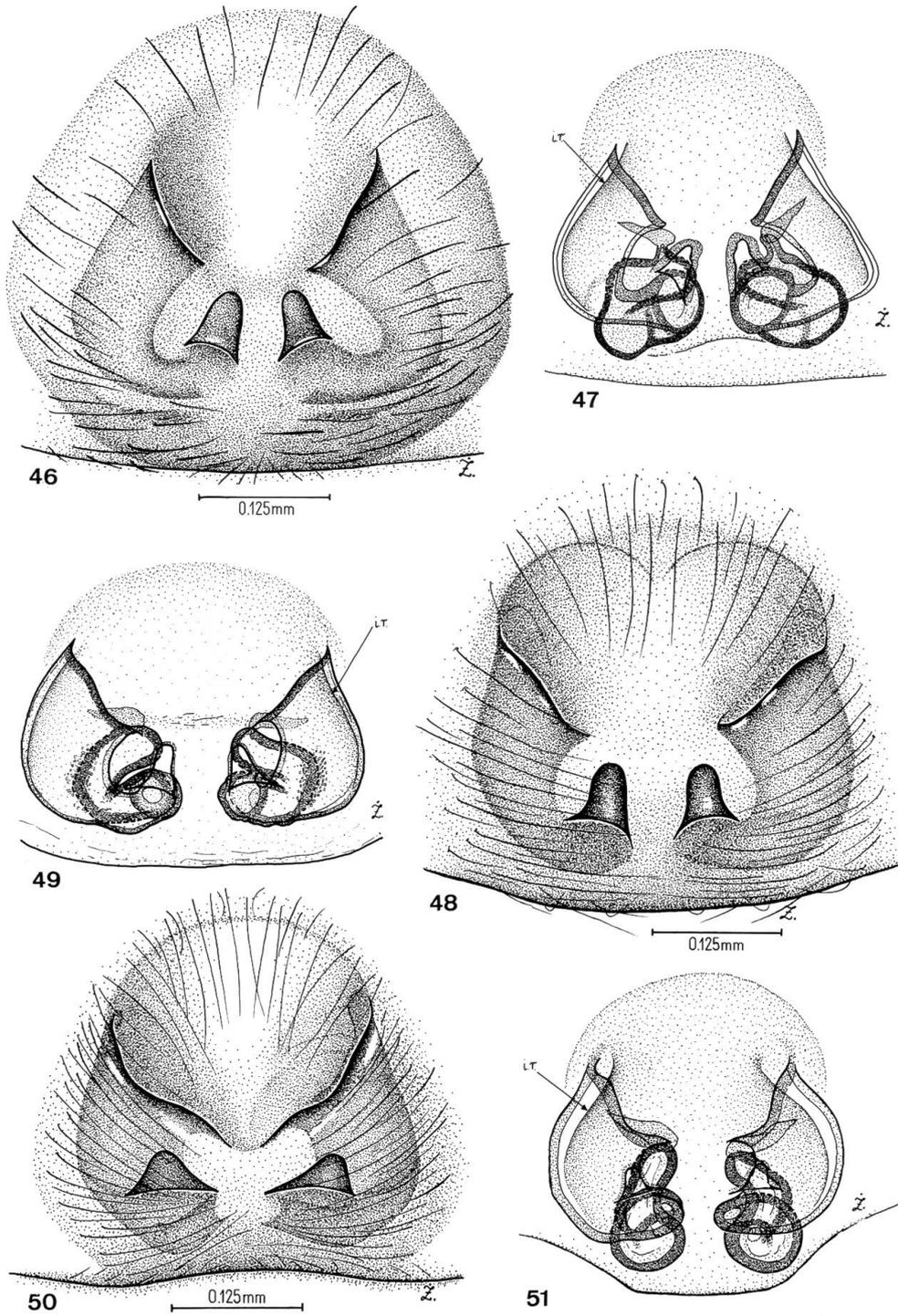
Type: 1 holotype ♀; Bhutan, Dorjula, 3100 m, 6. VI. 1972, NHM-Basel.

Yaginumaella montana n. sp.

Figs 48–49.

♀: Dorsal aspect: Cephalothorax brown with dark yellow median stripe covered with white setae along the thorax. Covered with pale greyish yellow and brown setae and brown bristles. Length of cephalothorax: 2.11, length of eye field: 0.96, width of eyes I and III: 1.46.

Abdomen greyish brown with pale yellow median longitudinal streak, belts of similarly coloured dots laterally. Covered with dark greyish brown setae, denser posteriorly. Median streak with yellow



Figs 46–51: Epigyne before and after maceration: 46, 47, *Y. nobilis* n. sp. 48, 49, *Y. montana* n. sp. 50, 51, *Y. orientalis* n. sp. (ir- internal ridges).

setae, there is a cluster of dark greyish brown setae in the middle. Sides and spinnerets greyish yellow with greyish brown setae. Length of abdomen: 3.06.

Frontal aspect: Clypeus greyish orange covered with white setae, some of which overhanging cheliceral bases. A few greyish brown bristles beneath eyes I, 3 of which beneath eyes I median junction. Chelicerae and pedipalps dark yellow covered with greyish yellow and greyish brown setae.

Ventral aspect: Labium orange brown, maxillary plates and sternum dark yellow. Abdomen pale grey spotted grey.

Epigyne (Figs 48–49) with broadly spaced copulatory openings and pockets between them. Canals characteristic broadly separated, broad with distinct internal ridge.

Legs dark yellow finely suffused with grey, with greyish brown setae and spines.

Types: 1 holotype ♀, 5 paratypes ♀; Bhutan, Dorjula, 3100 m, 6. VI. 1972, NHM-Basel.

***Yaginumaella orientalis* n. sp.**

Figs 50–51.

♀: Dorsal aspect: Eye field greyish brown with sparse pale grey setae. Thorax light brown with grey brown setae, yellow median spots covered with sparse white setae along the thorax and sides. Sparse greyish brown bristles. Length of cephalothorax: 2.19, length of eye field: 1.00, width of eyes I and III: 1.42.

Abdomen grey, posteriorly darker with sparse grey and brown setae and bristles. Medially longitudinal greyish white streak not reaching the end of abdomen. Rows of whitish dots diagonally towards pale yellow sides. Spinnerets yellowish brown. Length of abdomen: 3.69.

Frontal aspect: Clypeus medially dark orange, sideways yellow. Pale grey setae and bristles beneath eyes I, with some overhanging cheliceral bases and 3 grouped beneath eyes I median junction. Chelicerae dark yellow, pedipalps whitish yellow with grey and greyish brown setae and bristles.

Ventral aspect: Maxillary plates dark yellow, labium light brown. Sternum dark yellow with yellowish brown dots marginally. Abdomen yellowish grey with grey longitudinal stripe and dots.

Epigyne (Figs 50–51) heavily sclerotized with broad copulatory openings, broadly separated. Pockets distinct of medium size. Canals weakly sclerotized with distinct internal ridge.

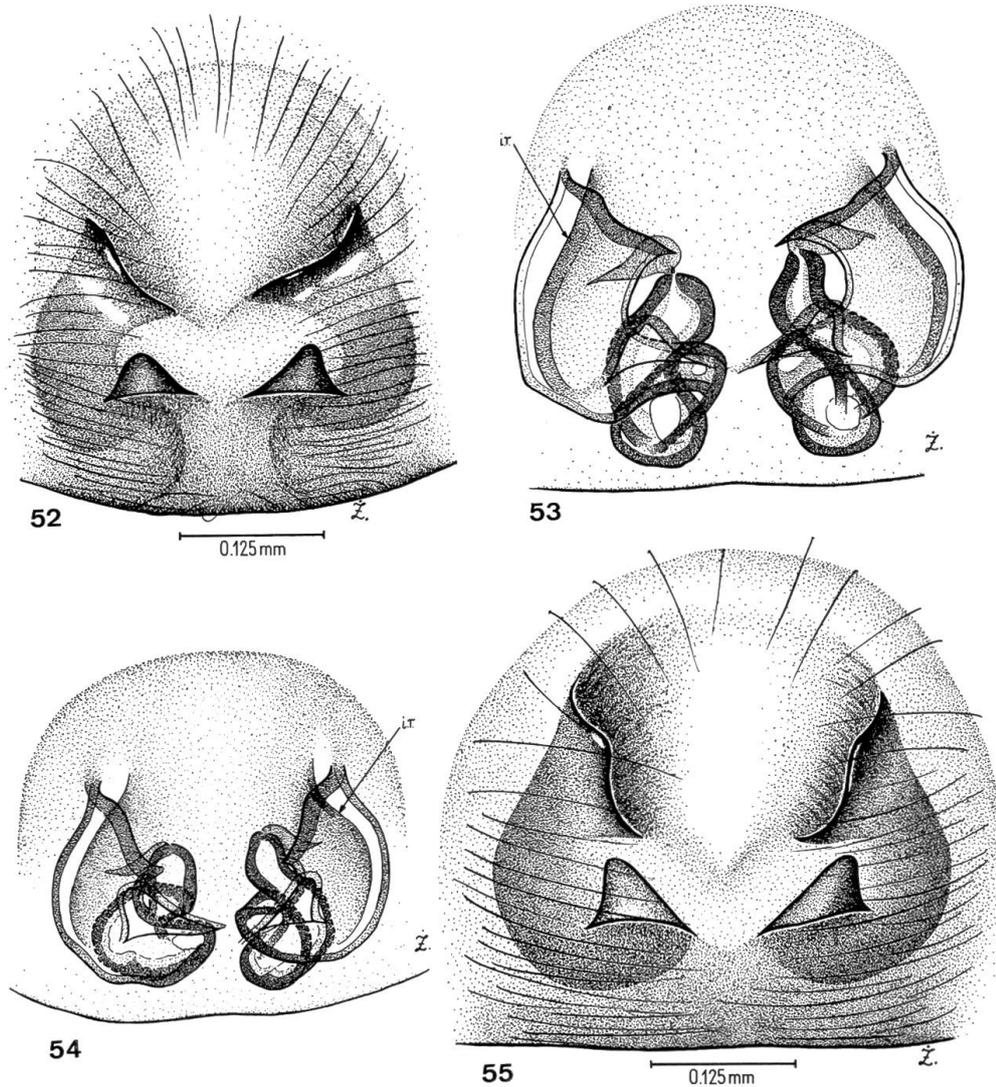
Legs uniformly yellow, anterior darker, remaining gradually paler, with pale brown setae and spines.

Types: 1 holotype ♀, 2 paratypes ♀; Bhutan, Chimakothi, 1900–2300 m, 22.V.1972, NHM-Basel.

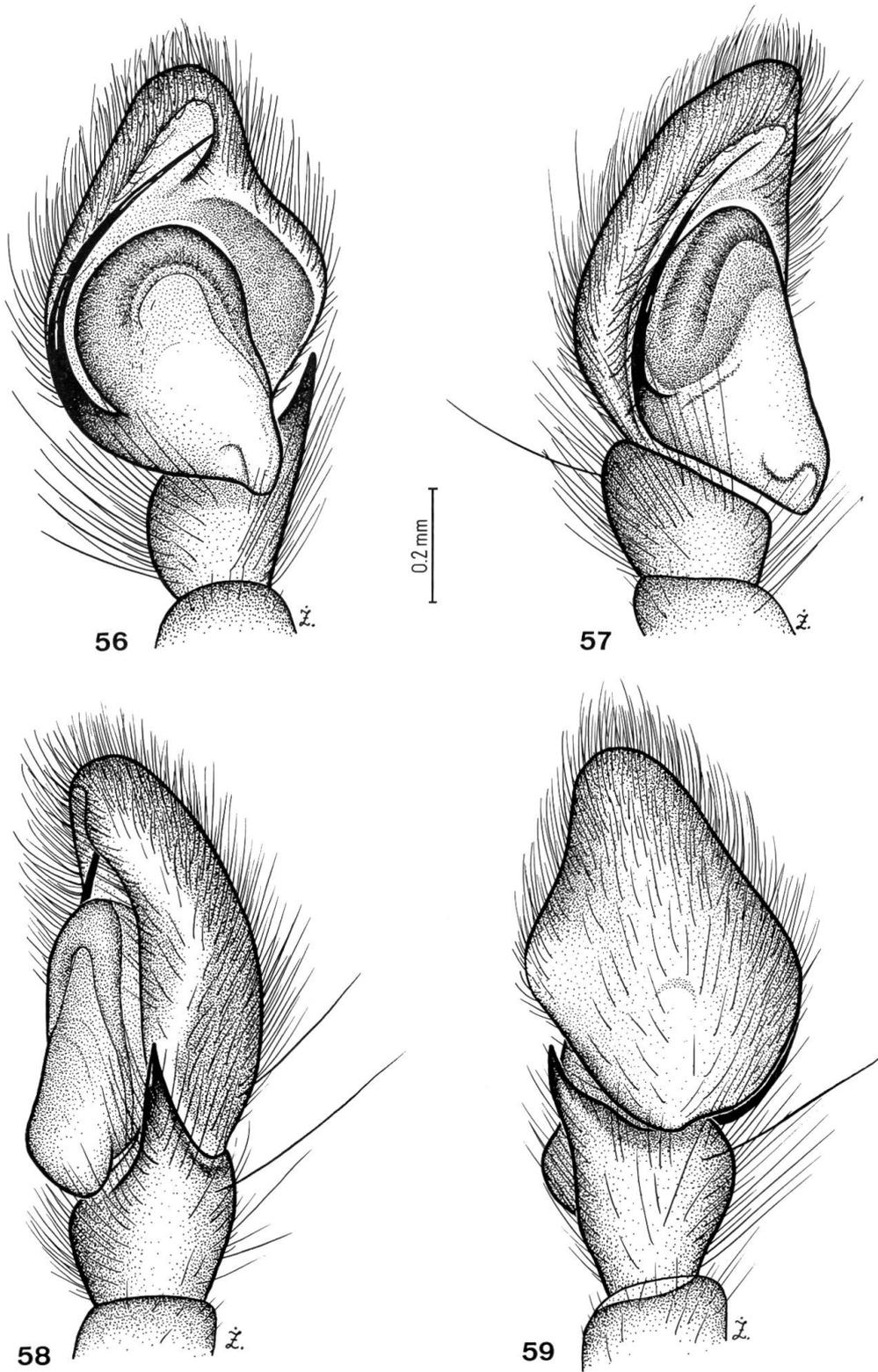
Yaginumaella wuermli n. sp.

Figs 52–53, 56–59.

Material: 1 holotype ♂, 1 allotype ♀, 1 paratype ♂; Bhutan, Tongsa, 30.VI.1972. 1 paratype ♂; Dorjula, 3100 m, 6.VI.1972. 1 paratype ♂; Thimphu, 14.V.1972. 2 paratypes ♂; Chimakothi, 1900–2300 m, NHM-Basel.



Figs 52–55: Epigyne before and after maceration: 52, 53, *Y. wuermli* n. sp.; 54, 55, *Y. hybrida* n. sp. (ir- internal ridges)



Figs 56–59: *Y. wuermli* n. sp., ♂- palpal organ.

♂: Dorsal aspect: Cephalothorax brown, with yellow longitudinal thoracic stripe extending from eye field to hindmargin of thorax, stripe narrowing posteriorly. Sides yellow covered with white setae. Length of cephalothorax: 1.76, length of eye field: 0.84, width of eyes I: 1.34, width of eyes III: 1.30.

Abdomen dark brown with broad light yellow stripe, posteriorly passing into several reversed "V" marks. Narrow median longitudinal dark grey line through the stripe. Diagonal irregular pale yellow belts. There are yellow setae on paler areas and dark grey brown on darker. Greyish brown bristles scattered. Spinnerets pale grey with greyish brown setae. Length of abdomen 2.18.

Frontal aspect: Clypeus light brown suffused with greyish brown. Sparse white setae, a few longer greyish brown overhanging cheliceral bases. A few greyish brown bristles beneath eyes I, 3 of which beneath eyes I median junction. Chelicerae light brown.

Copulatory organ (Figs 56–57). Embolus arises posteriorly, its distal part runs in a groove on cymbium. Cymbium yellowish brown with numerous greyish brown setae and bristles, bristles white near tibial apophysis.

Ventral aspect: Maxillary plates and labium brown, with tipped yellow. Sternum yellow with grey margin. Abdomen pale grey with darker grey streak and smaller oval spots.

Legs: femur I greyish brown, remaining segments greyish yellow, joints greyish brown. Legs II–IV paler with darker grey spots near joints. All segments covered with greyish brown setae and spines.

♀: Dorsal aspect: Cephalothorax brown with yellow median longitudinal streak and yellow sides. Eyes area with white setae, posteriorly on thorax brown, yellow spots with sparse white setae. Sparse brown bristles. Length of cephalothorax: 2.11, length of eye field: 0.96, width of eyes I and III: 1.46

Abdomen with mosaic of yellow and greyish yellow spots, darker posteriorly. Broad median yellow streak posteriorly broken into several reversed "V" marks. There is a cluster of brownish grey setae in the middle of yellow streak, similar clusters more laterally over the abdomen, especially posteriorly. Greyish brown bristles over the surface. Sides pale yellow with white setae. Spinnerets pale grey with grey setae. Length of abdomen: 3.00.

Frontal aspect: Clypeus yellow indistinctly grey spotted, with white setae some of which overhang cheliceral bases. Greyish brown bristles beneath eyes I, 3 of which beneath eyes I median junction.

Chelicerae and pedipalps yellow, the latter with yellow and greyish yellow setae.

Ventral aspect: Maxillary plates and labium greyish yellow, paler tipped. Sternum yellow with greyish yellow margin. Abdomen pale grey yellow with grey streak and diagonal belts of small grey spots laterally.

Epigyne (Figs 52–53) with heavily sclerotized openings and pockets, covered with long yellow setae. General pattern of internal structures similar to *Y. nobilis* n. sp., *Y. montana* n. sp. and *Y. orientalis* n. sp. from which it differs in details shown on figure 53.

Legs yellow, covered with greyish brown setae.

Types: 1 holotype ♂, 1 allotype ♀, 1 paratype ♂; Bhutan, Tongsa, 30. VI. 1972. 1 paratype ♂; Dorjula, 3100 m, 6. VI. 1972. 1 paratype ♂; Thimphu, 14. V. 1972. 2 paratypes ♂; Chimakothi, 1900–2300 m. All NHM-Basel.

***Yaginumaella hybrida* n. sp.**

Figs 54–55.

♀: Dorsal aspect: Cephalothorax light brown with yellow median thoracic streak and yellow sides. Setae white near eyes and on yellow spots, brown on remaining areas. Bristles brown, denser near eyes. Length of cephalothorax: 2.92, length of eye field: 1.07, width of eyes I and III: 1.73.

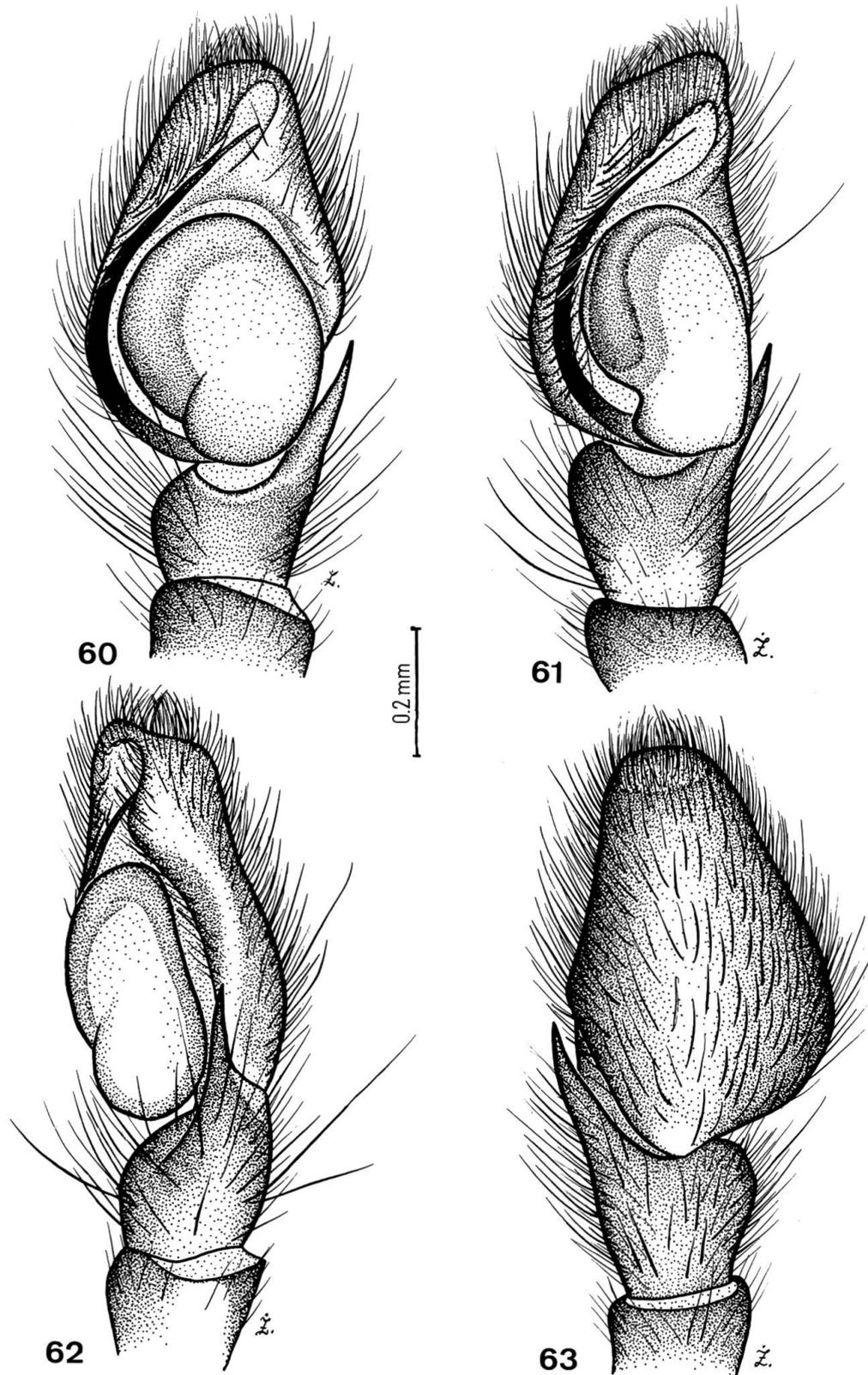
Abdomen light brown, posteriorly darker with pale yellow median streak and diagonal rows of indistinct small spots. Setae light brown darker anteriorly and near spinnerets, with a cluster in the middle of the yellow streak. Dark greyish brown bristles all over. Spinnerets greyish yellow with greyish brown setae. Length of abdomen 4.15.

Frontal aspect: Clypeus yellow, beneath eyes I median suffused grey, with white setae and greyish yellow bristles overhanging cheliceral bases. Beneath eyes I median junction 3 pale brown bristles. Chelicerae and pedipalps yellow, the latter with greyish brown setae.

Ventral aspect: Maxillary plates and sternum yellow. Labium yellowish orange. Abdomen yellowish grey.

Epigyne (Figs 54–55) with broad copulatory openings whose edges undulate. Pockets large, weakly sclerotized, between broadly spaced and deeper lying canals. Internal structures similar to *Y. nobilis* n. sp., *Y. montana* n. sp., *Y. orientalis* n. sp. and *Y. wuermli* n. sp. but differ in details.

Legs yellow with greyish brown setae and spines.



Figs 60–63: *Y. pilosa* n.sp., ♂- palpal organ.

Types: 1 holotype ♀, 3 paratypes ♀; Bhutan, Thimphu, 21.V.1972, 2 paratypes ♀; Thimphu, 14.V.1972, NHM-Basel.

Yaginumaella pilosa n. sp.

Figs 60–63.

♂: Dorsal aspect: Cephalothorax brown with paler eye field and dark orange sides. Setae greyish brown and grey, white on sides. Bristles greyish brown, more numerous anteriorly. Length of cephalothorax: 2.34, length of eye field: 0.96, width of eyes I: 1.53, width of eyes III: 1.50.

Abdomen greyish brown, darker posteriorly with transverse rows of indistinct yellow spots posteriorly. Sides yellow, spinnerets greyish yellow. Setae grey and greyish brown, yellow grey and white anteriorly, near spinnerets and on sides. Length of abdomen: 2.50.

Frontal aspect: Clypeus brown with white hanging setae. A few white and greyish brown bristles beneath eyes I. Chelicerae brown.

Palpal organ (Figs 60–63): bulbus almost oval, seminal receptacle canal weakly sclerotized. Embolus arises posteriorly, its distal part in a cymbium groove. Apophysis reaches $\frac{1}{2}$ of the bulbus length.

Ventral aspect: Maxillary plates and labium brown paler tipped. Sternum brown, somewhat lighter. Abdomen brownish grey.

Legs: Femora I laterally blackish brown, paler dorsally, remaining segments light brown. Other legs gradually paler, to pale yellow with joints grey.

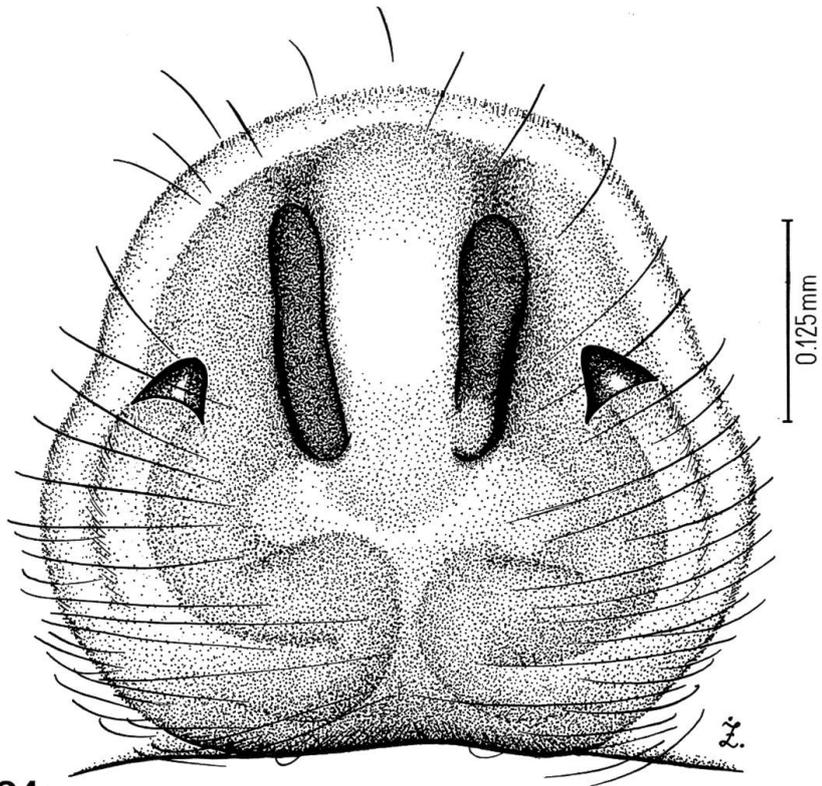
Types: 1 holotype ♂, 1 paratype ♂; Bhutan, 21 km E Wangdi Phodrang, 1700–2000 m, 15.–16.VI.1972, NHM-Basel.

Yaginumaella originalis n. sp.

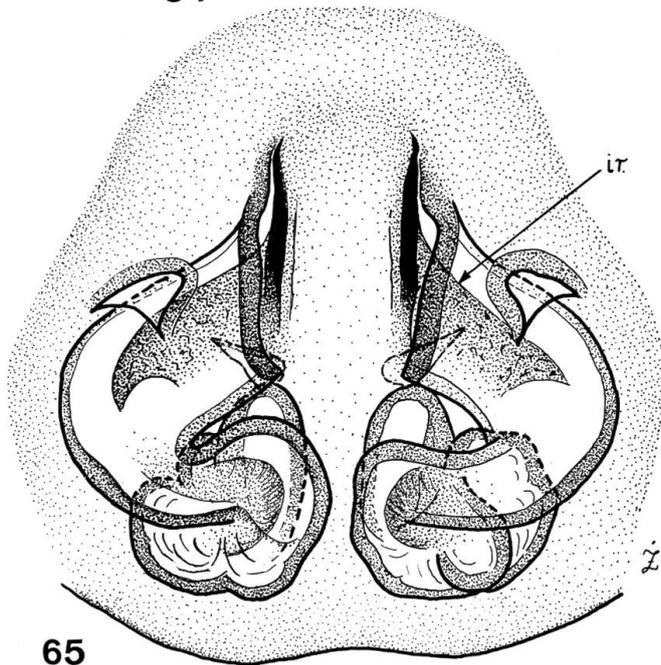
Figs 64–66.

♀: Dorsal aspect: Median light orange streak runs from near eyes I to thoracic hindmargin, becoming gradually narrower and lighter posteriorly- up to light yellow. It is followed on thorax by two parallel greyish orange areas. Sides posteriorly light yellow, anteriorly becoming orange. White setae near eyes. Brown bristles on eye field and on greyish orange areas. Length of cephalothorax: 2.30, length of eye field: 0.92, width of eyes I: 1.46, width of eyes III: 1.42.

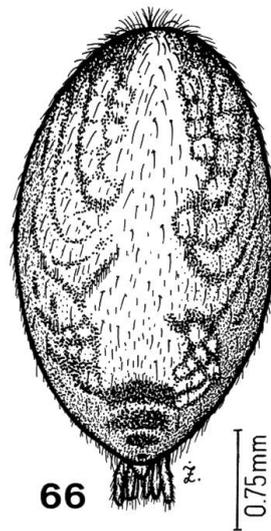
Abdomen (Fig. 66) pale yellow with mosaic of brownish grey spots arranged into diagonal belts. Broad pale yellow margin around the abdomen. Dorsal surface covered with greyish brown setae and brown bristles, setae and bristles denser anteriorly. Spinnerets yellow with brownish grey setae. Length of abdomen: 3.46.



64



65



66

Figs 64–66: *Y. originalis* n.sp.: epigyne, its internal structures with internal ridges and abdominal pattern.

Frontal aspect: Clypeus light orange with white setae and yellowish brown bristles. Chelicerae and pedipalps light orange.

Ventral aspect: Sternum yellow. Abdomen yellow greyish brown irregularly spotted with 3 longitudinal spots medially.

Epigyne (Figs 64–65) oval with strongly sclerotized openings and small, broadly spaced pockets. Long and thin greyish yellow setae. Internal canals heavily sclerotized with distinct internal ridge.

Legs: Anterior legs dark yellow with greyish brown setae, fine bristles and strong spines. Remaining legs paler.

Type: 1 holotype ♀; NE Burma, Kambaiti, 6800–7000 ft, 13.–15.IV.1934. R. Mallaïse, NRM-Stockholm.

Yaginumaella incognita n. sp.

Figs 67–69.

♀: Dorsal aspect: Eye field orange with sparse brown bristles, eyes surroundings black with grey setae. Broad median yellow streak with white setae along the thorax, sides similarly coloured. Remaining thorax light brown with darker setae. Length of cephalothorax: 2.65, length of eye field: 1.08, width of eyes I: 1.69, width of eyes III: 1.73.

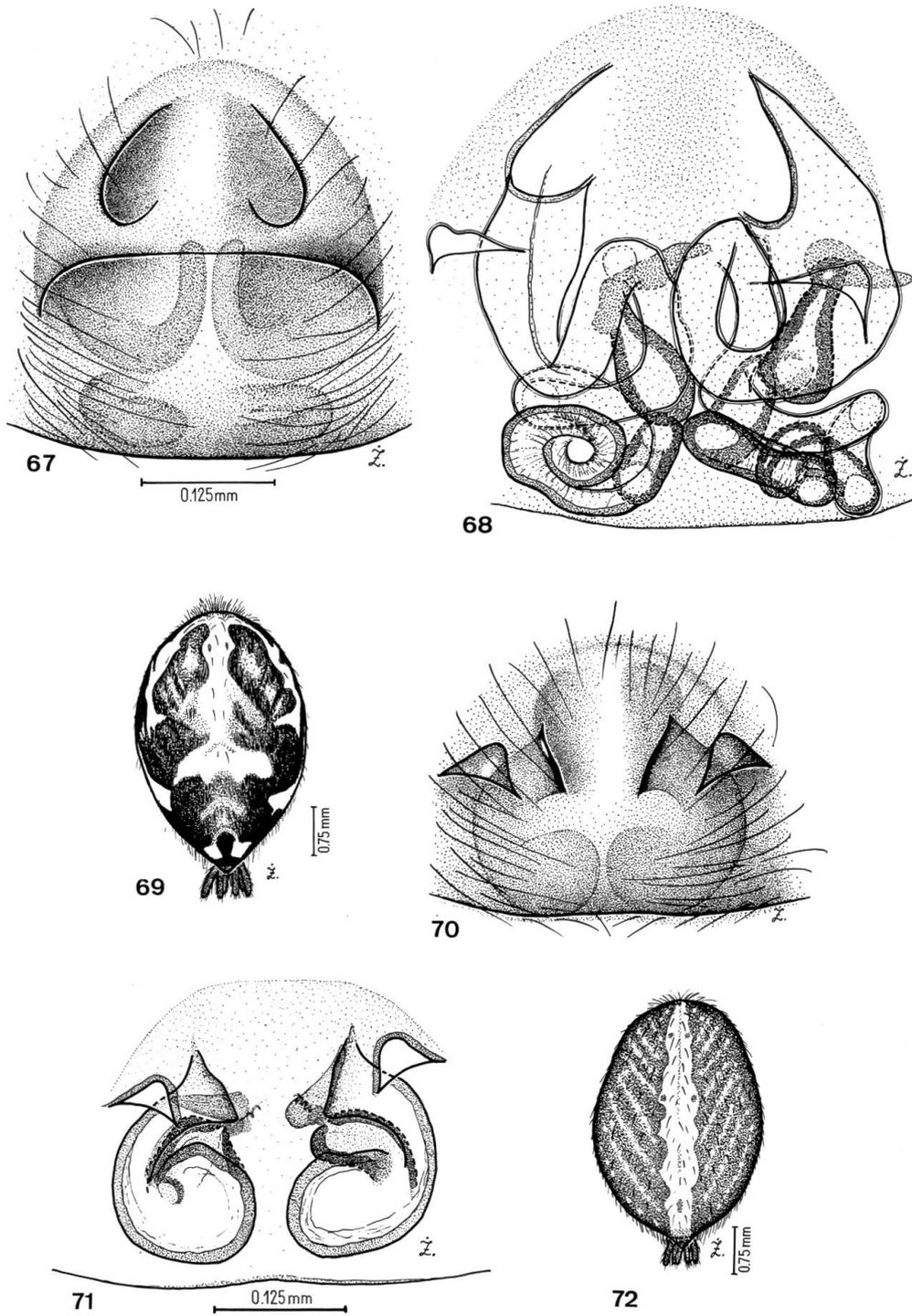
Abdomen (Fig. 69) greyish brown with mosaic of whitish yellow spots. Clusters of brown setae on darker spots, replaced posteriorly by black ones. Cluster of grey and white setae anteriorly, sparse greyish brown bristles scattered over the abdomen, denser near spinnerets, which are greyish brown. Length of abdomen: 4.07.

Frontal aspect: Clypeus yellow, its lower margin brown, covered with white setae. White and greyish brown bristles overhanging cheliceral bases, 3 standing beneath eyes I median junction. Chelicerae orange, pedipalps whitish yellow with white and grey setae.

Ventral aspect: Maxillary plates and labium orange, paler tipped. Sternum yellow with yellowish grey margin. Abdomen with pale grey median spot and belts of brown lines and pale grey dots running laterally.

Epigyne (Figs 67–68) differs from orange representatives of the genus. Anteriorly strongly sclerotized depressions with copulatory openings resembling *Y. ususudi* (Yaginuma, 1972), type species of the genus. Internal structures more complicated than in *Y. ususudi*. Canals long and coiled, in some places heavily sclerotized. Pockets different than in other species studied.

Legs pale yellowish grey with clusters of grey setae near joints. Spines greyish brown.



Figs 67–72: Epigyne, its internal structures and abdominal pattern: 67–69, *Y. incognita* n.sp.; 70–72, *Y. wangdica* n.sp.

Types: 1 holotype ♀, 5 paratypes ♀ and 7 juv. paratypes; Bhutan, 13 km E Wangdiphodrang, 1300 m, 7. VI. 1972, NHM-Basel.

Yaginumaella wangdica n. sp.

Figs 70–72.

♀: Dorsal aspect: Eye field with orange spot narrowing posteriorly and extending medially along the thorax, sides orange, remaining thorax brown with dark grey lines radiating from the central fovea, eyes surroundings black. Setae sparse greyish brown, greyish white near eyes; setae yellow on orange spots. Bristles dark brown. Length of cephalothorax: 2.30, length of eye field: 0.92, width of eyes I: 1.50, width of eyes III: 1.46.

Abdomen (Fig. 72) brownish grey with greyish white median streak and two diagonal rows of pale grey dots laterally. Spinnerets brownish grey. Abdomen with a few grey setae, more dense anteriorly and near spinnerets. Sparse greyish brown bristles. Length of abdomen: 4.03.

Frontal aspect: Clypeus greyish brown, with a mosaic of lighter brown and darker greyish brown spots laterally. Thin yellow line immediately beneath eyes I stretching beneath eyes II. Small number of pale grey setae and pale grey or greyish brown bristles, 3 of which standing beneath eyes I median junction. Chelicerae brown darker suffused, with transverse orange spot in $\frac{1}{3}$ length near fang. Pedipalps yellow covered with yellow and greyish brown setae and bristles.

Ventral aspect: Maxillary plates and labium orange brown, pale tipped. Sternum yellow with grey margin. Median area of abdomen greyish brown with two rows of pale grey spots, with pale grey elongate spots laterally.

Epigyne (Figs 70–71) small, weakly sclerotized, with broadly spaced large pockets. Copulatory canals bent and broadening posteriorly.

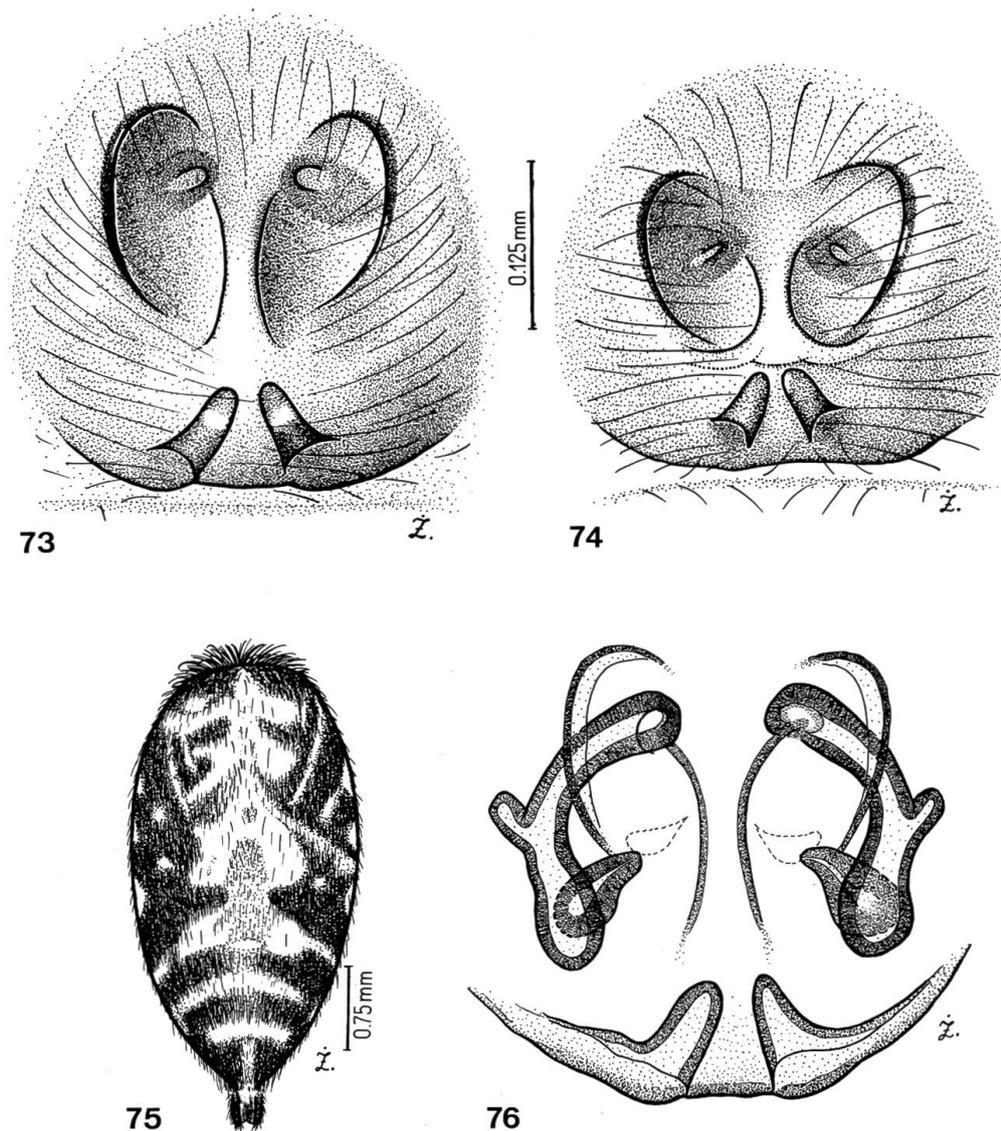
Legs: I grey orange brown with paler dorsal surfaces, also tarsus and metatarsus pale. Remaining legs gradually paler posterior yellow with grey spots at both ends of tibia. Covered with greyish brown setae.

Types: 1 holotype ♀, 1 paratype ♀; Bhutan, Kotoka-Gogona, 2600–3400 m, 10. VI. 1972. 2 paratypes ♀; Wangdiphodrang, 1300 m, 7. VI. 1972. All specimens NHM-Basel.

Genus **Helicius** Prószyński 1976

The genus contains the type species, *Maevia cylindrata* Karsch, 1879 from Japan, redescribed as "*Telamonina*" *cylindrata* by PRÓSZYŃSKI (1973: 126), and another Japanese species *Helicius yaginumai* Pró-

szyński, 1976; ff. 373–382 and Bhodanowicz, Prószyński (in prep.). The females are characterized by general similarities in internal structure of their epigyne- canals, spermathecae short branching of canal to the accessory gland. *H. hillaryi* n. sp., differs from both Japanese species mainly in external appearance of epigyne, especially in shape and location of pockets. The male is known only in *H. yaginumai* which has bulbus and embolus resembling *Heliophanus*, robust semilunar and bifid tibial apophysis, curious patellar protuberance and ridge shaped elevation on pedipalpal femur.



Figs 73–76: *Helicius hillaryi* n. sp.: 73, 74, epigyne, ventral and ventro-posterior view, 75, epigyne after maceration, 76, abdominal pattern.

Helicius hillaryi n. sp.

Figs 73–76.

♀: Dorsal aspect: Cephalothorax brown, eye field dark brown, eyes surroundings black. Thorax with a yellow median streak, sides light yellow, a reddish-orange stripe beneath eyes II and III. White adpressed setae on cephalothorax, posteriorly also erect scattered blackish brown and brown bristles. Length of cephalothorax: 2.19, length of eye field: 0.84, width of eyes I: 1.30, width of eyes III: 1.38.

Abdomen (Fig. 75) brownish grey with mosaic of pale yellow and orange yellow spots, with dense greyish brown setae on darker areas and only single setae on paler areas. Dense dark brown and white bristles anteriorly, white setae concentrated near spinnerets. Spinnerets long, dark grey with fine grey setae. Length of abdomen: 3.46.

Frontal aspect: Clypeus yellow with dense white setae, some of which overhang cheliceral bases. Chelicerae yellowish orange, pedipalps yellow, densely setose with long white hairs.

Ventral aspect: Maxillary plates and labium yellowish grey. Sternum greyish yellow. Abdomen pale yellowish darker irregularly spotted. Three dark grey streaks running medially and touching near spinnerets.

Epigyne (Figs 73, 74, 76), covered with fine yellowish white setae, consists of 2 grooves with strongly sclerotized external edges, separated by median ridge, with openings at the bottom of grooves 2 closely spaced pockets near epigastral fold, the posterior part of epigyne separated from the anterior one by distinct edge. Straight canals pass into spermathecae, protuberances of accessory gland clearly visible.

Legs uniformly yellow with greyish brown setae, some distinctly longer. Tarsi end with tufts of dark setae.

Types: 1 holotype ♀, 3 paratypes ♀; Bhutan, Changra, 18 km S Tongsa, 1900 m, 22.VI.1972, NHM-Basel.

Comparative material: *Helicius yaginumai* Prósz.: holotype ♂, allotype, 1 ♂, 1 juv. paratypes; Nagano Pref., Japan, T. Yaginuma.

The species resembles *H. yaginumai* Prósz. from which it differs in outward bending of the epigynal canals and closer spacing of the epigynal pockets.

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Author's address:
Marek Żabka,
Zakład Zoologii IBS,
WSR-P, Prusa 12
08-110 Siedlce, Poland.