POLSKA AKADEMIA NAUK
INSTYTUT ZOOLOGII

ANNALES ZOOLOGICI

Tom 44 Warszawa, 31 X 1992 Nr 8

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# *Salticidae* (*Araneae*) of the Old World and Pacific Islands in several US collections

[With 135 figures in the text]

**Abstract.** Taxonomic descriptions and drawings of 33 species of *Salticidae* from the Oriental, Palaearctic and Pacific Regions kept in collections of several institutions in the USA. The following four genera are described as new: *Burmattus*, *Iranattus*, *Menemerops*, *Udvardya*; four species have been transferred to other genera; 22 species described as new.

## INTRODUCTION

I have suggested once that an author describing new genus on the basis of a single species should explain the conceptual background of that decision: whether it is the case of discovery of a relict genus with more species unlikely to come, or a description of the first species found in a hope that next related species will eventually be found (PRÓSZYŃSKI 1986b). The second leads usually to proliferation of synonymous names, especially if new taxon is described basing on an incomplete material – for instance one sex specimens, a single specimen or a specimen in poor condition of preservation. Whilst my attitude to such descriptions is obvious, I am afraid that the present paper, as well as parallely written paper on *Salticidae* of India may provide good example of the sins I declared myself against. This is caused by the dilemma what to do with the bewildering richness and diversity of almost unknown faunae of a number of areas of the world, from which only scarce and insufficient material exists. Even if insufficient, the material gives a starting point and a base for comparisons for further studies. I think therefore that the risk of possible mistakes is lesser evil than letting these materials remain unnoticed. And a part of the material studied here seems to be particularly valuable, either giving deeper insight into diversi-

fied widespread genera (e.g. *Pseudicius*), introducing to new forms of diversity (*Iranattus*) or just ordering the systematic and nomenclatorical chaos (*Burmattus*, *Menemerops*).

The material studied in this paper does not form any logical or compact group – either systematically or geographically. It is a study of most interesting specimens found in various US collections coming from various areas of the Old World and Pacific Islands. It does not exhaust resources of particular collections and some species have been purposefully left for further studies. Still, descriptions and drawings of these taxa will clarify various taxonomic problems and promote further studies on local faunae of *Salticidae*.

The paper gives taxonomic descriptions and drawings of 33 species of *Salticidae*, including 22 new ones, from the Oriental, Palaearctic and Pacific Regions kept in collections of several institutions in the USA. The following four new genera are described: *Burmattus*, *Iranattus*, *Menemerops*, *Udvardya*; four species has been transferred to other, new genera: *Burmattus albopunctatus* (THORELL, 1895), comb. n. and *Burmattus pococki* (THORELL, 1895), comb. n. (transfer from *Plexippus*), *Menemerops flavescens* (O. P.-CAMBRIDGE, 1872), comb. n. (transfer from *Menemerus*),*Udvardya elagans* (SZOMBATHY, 1915), comb. n. (transfer from *Silerella*).

A c k n o w l e d g e m e n t s. The paper is based on study of specimens of *Salticidae* from the following collections in the USA:

AMNH, New York – American Museum of Natural History, Dept. of Entomology, Central Park West at 79th St., New York, N.Y. 10024: Dr. N.I. PLATNICK, Mr. L. SORKIN;

CAS, California Academy of Sciences, Dept. of Entomology, Golden Gate Park, San Francisco, Cal., 94118: Dr. W. PUŁAWSKI , Mr. D. UBICK;

FSCA, Gainesville – Florida State Collection of Arthropods, POBox 1269, Gainesville, Florida, 32602: Dr. G.B. EDWARDS;

MCZ, Harvard University – Museum of Comparative Zoology, Harvard University, Cambridge, Mass., 02138: Dr. H.W. LEVI, Dr. W. MADDISON;

Smithsonian Institution, Dept. of Entomology, NHB 164, Washington, DC, 20560: Dr. J. A. CODDINGTON, Dr. P. SIERWALD.

I wish to express my grateful thanks to the Institutions and the Persons mentioned above for assistance given during my research and very kind and friendly attitude. I have supplemented these study with comparative specimens from other collections. My research was possible owing to the previous studies, my own and of my Colleagues from our Research Team in Siedlce, during which we used specimens from the majority of collections all around the world, specified elsewhere in our previous publications. I wish to acknowledge finally the excellent research and development conditions provided by my College - Wyższa Szkoła Rolniczo-Pedagogiczna in Siedlce. The paper was partially sponsored by the Polish Academy of Sciences Research Project CPBP 04.03., as well as Ernst Mayr Grant in Aid from the Museum of Comparative Zoology, Harvard University, Cambridge, Mass., 02138, USA.

M e t h o d s. The specimens were studied in laboratories of the above mentioned institutions and part of them also in our Department of Zoology in Siedlce with help of various stereomicroscopes available there (with effective magnification power from about 70 up to 200 times) and drawn with a help of eye piece grid. Internal structure of epigyne was studied mainly on temporary microscopic preparations (macerated in the 10–20% KOH aqueous solution in the room temperature – 24 to 72 hours, stained with Chlorazol Black E ethyl alcohol solution, 98% ethyl alcohol, toluen, xylen and closed in Clove Oil, later stored in microvials in a tube with specimen they were made from, with a help of compound microscope.



## SYSTEMATIC SURVEY

### Genus ***Burmattus*** gen. n.

The genus comprises *Plexippus pococki* THORELL, 1895, *Plexippus albopunctatus* THORELL, 1895 both described originally from Burma. The former has been found since in Vietnam. Apart from *Burmattus sinicus* sp. n. described here, there seem to be some more new species awaiting description. *Burmattus* are medium size spiders, with external appearance comparable somewhat with *Evarcha* and having very characteristic palpal organ. It contains sabre like embolus [comparable with *Arasia mollicoma* (L. KOCH, 1880) from Australia, recently illustrated by DAVIES, ŻABKA 1989], long and bent apophysis articulating with expanded rim of cymbium; there is characteristic bunch of bent setae on the side rim of cymbium, near apophysis. These characters excluded *Burmattus* from the genus *Plexippus* C. L. KOCH, 1846 where it was originally classified - although even THORELL himself entertained some doubts about that (ŻABKA 1985: 435). It is a very special merit of the latter author that he has matched ♀ to the ♂ *Plexippus pococki* THORELL, 1895 (ŻABKA 1985: 434-439, ff. 473–480, m. 35(♂♀) which permitted a better understanding of the species and also the inclusion of *Plexippus albopunctatus* THORELL, 1895 known from the ♀ only. Type species: *Plexippus pococki* THORELL, 1895.

### ***Burmattus sinicus*** sp. n.

(Figs 1–3)

Material: ♂ holotype, China: Soon Wo, 23–24 VII 1976. Leg. A. JUNG. Coll. Private collection of D. UBICK, CAS, San Francisco.

D i a g n o s i s: Differs from *Burmattus albopunctatus* (THORELL, 1895) (as shown by ŻABKA 1985: Figs 473–477 and PRÓSZYŃSKI 1984c: 153) in tibial apophysis bent dorsalwards, embolus bent slightly more pronouncedly and in colour pattern. ♀ unknown.

M e a s u r e m e n t s: Lengh of cephalothorax: 2.75 ; Length of abdomen: 3.00; Length of eye field:1.12; Height of cephalothorax (at eyes III): 1.62; Width of eye field I: 1.87; Width of eye field III: 1.94; Width of cephalothorax (at eyes III): 2.37.

**MALE. Cephalothorax** seen frontally appears high and narrow, with almost vertical sides. Dark brown with light brown flat area of thorax with a few patches

of white setae. Flat area of the cephalothorax ends at 4/5th of its length, posterior slope very steep. Eye field about 40% length of cephalothorax, widening posteriorly by some 4%, eyes III take 82% width of cephalothorax. **Abdomen** oval, tapering posteriorly. Grey mottled light greyish, with slightly browned anterior median part. There are 3 pairs of small whitish spots covered with white scales, also patches of brown scales; abdomen sparsely covered with upright bristles. **Frontal aspect**: dark with white club like stronger setae along ventral edge of clypeus (there are about 20 of them) and along anterior inner margin of chelicerae (these are longer and thinner). Diameter of ALE twice shorter than AME. Clypeus with ventral edge curved dorsally, which reduces its height to almost nil. Pedipalps brown. **Legs** of medium size, anterior longest and strongest but not excessively long; tibia I dark with ventral brush of setae. Dark brown with lighter annuli, posterior lighter. **Palpal organ** with very characteristic sabre like embolus, long and bent apophysis articulating with expanded rim of cymbium; there is characteristic bunch of bent setae on the posterior rim of cymbium, near apophysis (Figs 1–3).

## Genus ***Carrhotus*** THORELL, 1891

### ***Carrhotus harringtoni*** sp. n.

(Figs 4–6)

Material: ♀ holotype, Madagascar Ouest, 57 km NE Morondava, Amborompotsy Forest, ca. 200 m., (trop. decid.), 15–20 I 1985. Leg. M. HARRINGTON. Coll. Smithsonian Inst., Washington, DC.

R e m a r k: Species named for the collector M. HARRINGTON. Resembles *Carrhotus viduus* (cf. ANDREEVA et al. 1981: 103, ff. 41–42 as *Mogrus ornatus* – ♀ nec ♂) from which it differs in details of internal structure of epigyne: shape of spermatheca, location of its distal part and fertilization channel; on the other hand it resembles it in uncertain course of soft walled part of the copulatory channel and location of the opening. The differences in internal structure of epigyne in *Carrhotus sannio* (THORELL, 1877) (cf. PRÓSZYŃSKI 1984c: 16) are more striking. Relationship of this species to the recently described *Carrhotus bellus* WANLESS, 1983 from nearby Seychelles Islands cannot be stated because the epigyne of the latter and its internal structure are not illustrated sufficiently on otherwise excellent drawings 21e–f of WANLESS (1983: 61–63) (as a result of an unfortunate printer's error, for which Mr. F.R. WANLESS is not responsible, captions and contents of tables 20 and 21 are mixed up).

M e a s u r e m e n t s: L. cphth.: 3.75; L. abd.: 4.87; L. e–f.: 1.50; H. cphth.: 2.06; W. e–f. I: 2.25; W. e–f. III 2.50; W. cphth.: 3.00.

R e m a r k: Specimen has got a hairy appearance, which is so characteristic of *Carrhotus*; its peculiar property is whitish coloration of abdomen and light coloration of cephalothorax, it can be distinguished from other related species by internal structure of epigyne (Fig. 6)

**FEMALE. Cephalothorax** light brown with darker brown eye field, the latter covered with adpressed colorless light reflecting setae, there is a spot of white



setae posteriorly on the eye field. Thorax with narrow lighter median line from fovea posteriorwards and short lighter lines beyond posterior angles of the eye field; covered with darker brown adpressed setae, with some addition of white ones on lighter spots and irregularly throughout. Sides brown with denser whitish setae near eye field, there are "horns" of long and stouter bent blackish setae below eyes II, with three similar but softer whitish setae arising in front of eyes III. **Abdomen**: dorsal surface creamy white with two longitudinal dark brown streaks dividing it into three white bands: median one, which in posterior half is divided into chain of 5 diminishing triangles, anteriorly divided by thin indistinct darker line; and two marginal white streaks, connected anteriorly and bordering with blackish brown lower sides of abdomen. Two dark brown streaks are indistinctly light mottled and spotted with irregular dots of different shades, with a pair of small but contrasting white spots on the anterior half, posteriorly narrowed in two places (Fig. 4). Surface of abdomen with upright sparse bristles, colorless, less frequently dark. **Frontal aspect** fawn (which is presumably close to WANLESS "orange") with two horizontal brown lines below ALE which divides sides of clypeus into three fawn belts, covered with adpressed colorless setae and sparse long upright white setae along ventral edge of clypeus. Diameter of AME twice that of ALE. Chelicerae brown covered with long white setae, some of which arise from dark sclerotized bases. **Pedipalps**: tarsus and tibia blackish brown, patella brown, femur fawn with nearly apical darker annulus; there are spots of white scales along dorsal apical edges of femur and patella, all segments covered with sparse long whitish setae and a few whitish scales. **Legs** light brown to fawn, with darker spots and annuli, legs I darker than remaining. **Ventral aspect**: abdomen dark grey with four lines of yellowish dots; sternum light brown with darker margin, coxae III–IV mosaic yellow and greyish brown, coxae I dark brown, II intermediate; mouth parts dark brown. **Epigyne**: two oval depressions, separated by a thin ridge, thin posterior ridge with two indistinct posterior pockets (Fig. 6). It is only internal structure, when studied after maceration of soft tissues, that displays structures permitting to classify this species into *Carrhotus*; spermathecae are larger and more spherical than in related species, copulatory channels show general plan of the genus but are different in details; there is poorly visible, transparent membraneous (?) part running postero-medially from the sclerotized end of the channel (Fig. 3).

### ***Carrhotus malayanus*** PRÓSZYŃSKI, 1992

Material: ♂ holotype, 1 juv. Malaya: 16 mi. NE K[uala] Lumpur 1000', VI 1962. Leg.? Det. J. PRÓSZYŃSKI, 2 IV 1986. Coll. CAS, San Francisco.

The description of this species is given in PRÓSZYŃSKI 1992 together with description and comparative analysis of three other species of *Carrhotus*, which make easier comparison .

### *Cyrba algerina* (LUCAS, 1846)

(Fig. 7)

Material: 1 ♀ *Cyrba algerina* (Luc.), det. J. PRÓSZYŃSKI. Lebanon, 6 km N of Djezzine 3000', 26 IV 1970. Leg. E.S. Ross. Coll. CAS, San Francisco, USA.

The species is well known and common in the Mediterranean and adjacent areas of similar climate. However, the details of internal structure of epigyne have never been fully understood due to heavy sclerotization of spermathecae which obscured softer transparent parts. The opportunity to learn more about these structures was provided by the above mentioned specimen with epigyne still covered with unmolted tegument, removed during preparation.

The internal structure consists of well known heavily sclerotized spermathecae vesicles and anterior sclerotized semilunar channels. The new elements visible on this preparation are soft and thin walled channels: they originate as two indistinct openings located in the middle line in the posterior part of epigyne, they run along middle line anteriorly until the end of spermathecae from where they divert and join ends of sclerotized channels in their extreme lateral point (Fig. 7). I have also identified accessory gland openings at the angle between each spermatheca and the sclerotized channel near point of junction with the spermatheca. These details have never, to my knowledge, been illustrated, although Fig. 6B in WANLESS 1984a contains outline of "introductory duct" corresponding with above mentioned copulatory channels.

### *Evarcha madagascariensis* sp.n.

(Figs 13–15)

Material: ♂ holotype, Madagascar Ouest, 57 km NE Morondava, Amborompotsy Forest, ca. 200 m, (trop. decid.), 15-20 I 1985. Leg. M. HARRINGTON. Coll. Smithsonian Inst., Washington, DC.

M e a s u r e m e n t s: L. cphth.: 3.00; L. abd.: 3.78; L. e–f.: 1.50; H. cphth.: 1.94; W. e–f. I: 2.37; W. e–f. III: 2.37; W. cphth.: 2.75.

**MALE. Cephalothorax** with eye field and triangular area dorsally on thorax dark brown – that area is bald now and light reflecting, it is delimited by streaks of white setae below lateral edge of the eye field running farther convergent towards posterior slope of the thorax. Sides dark brown. **Abdomen** elongate oval pointed posteriorly, dark brown mottled yellow with median streak lighter covered with adpressed white setae; anteriorly this white streak is broadened. **Ventral aspect** light brown, with anterior coxae and mouth parts blackish brown. **Frontal aspect**: ALE located high, their dorsal rims above AME rims, diameter half of AME, lenses surrounded with greyish setae with broad white tips. Clypeus light brown with transverse band of colorless adpressed seta, some of which are whitish, the ventral edge of clypeus black with sparse longer colorless setae stretching horizontally above the chelicerae. Chelicerae flattened anteriorly, apically depressed, blackish brown but light reflecting, with sparse broad and short white setae. Pedipalps dark brown with colorless setae, denser and longer on cymbium. **Legs** blackish brown. **Palpal organ** typical for *Evarcha* and shown in figs 13–15, it differs in the details from other species known to me (PRÓSZYŃSKI 1984c).



### *Evarcha petrae* sp. n.

(Figs 8–12)

Material: ♂ holotype, Siam (Thailandia): Doi Sutep, 26 IX 1936. Leg. H.G. DEIGMAN. Coll. Smithsonian Inst., Washington, DC.

R e m a r k. Species named for Dr. Petra SIERWALD, Arachnologist, then at Smithsonian Inst., with thanks for her very effective assistance in my research at the Smithsonian Institution, Washington, DC. and for introduction into computer usage.

M e a s u r e m e n t s: L. cphth.: 2.52; L. abd.: not measured because of damage; L. e–f.: 1.19; H. cphth.: 1.26; W. e–f. I: 1.75; W. e–f. III: 1.68; W. cphth.: 1.96

**MALE. Cephalothorax** resembling in shape *Evarcha albaria*, with flat area extending to about half of thorax, slightly more rounded and slightly broader at the ventral edge beyond eyes III, more narrowing posteriorly. Darker brown than in *E. albaria*, with traces of reddish setae over eye field but without traces of white setae behind eyes I. Instead there is a marginal band of white setae along ventral margin, absent in *E. albaria*. **Abdomen** changed, it was apparently dried up, now warped, with small anterior brown scutum (there seems to be comparable tegument hardening in *E. albaria* – although indistinct). **Frontal aspect** dark brown – both clypeus and chelicerae with very sparse colorless setae; eyes I surrounded with dark brown setae with colorless tip. Anterior surface of chelicerae dark brown with transverse wrinkles and very sparse long brown setae. In *Evarcha albaria* eyes I surrounded by a lot of white setae, numerous long dense diagonally upright setae – bristles below eyes I and on light brown anterior surface of chelicerae. **Legs** dark brown, comparable in proportions and spination to *E. albaria*. **Palpal organ** resembles *E. albaria*, but with much narrower cymbium; apophysis much simpler, bifurcate (Figs 8, 11–12) (in *E. albaria* there are three complicated prongs), the flat process arises dorsally to embolus (Figs 9–10), whilst in *E. albaria* it arises from the top of bulbus, it is not certain whether these structures in both species are really homologous. Pedipalps light brown with colorless and white setae – but not as contrasting white as in *E. albaria*.

## Genus *Habrocestoides* PRÓSZYŃSKI, 1992

The genus described from India (PRÓSZYŃSKI, 1992 comprising small size jumping spiders characterized by peculiar structure of male and female genital organs and general appearance. **Cephalothorax** is of medium height with highest area between eyes III and fovea, eye field and thorax sloping. Dorsal tops of orbits of eyes I along single straight line; relation of diameters of AME to ALE 2.5: 1.5, height of clypeus slightly less than ½ diameter of AME. Anterior part

of abdomen in ♂ may be slightly hardened. **Legs** I indistinctly longer than IV in ♂, shorter than IV ♀ in. **Palpal organ**: bulbus divided diagonally onto broader anterior part with seminal receptacle channel and posterior one narrowing anteriorly and passing into short embolus, usually slightly bent and sometimes broadened apically; tibial apophysis short and usually characteristically bent articulating with protruding lateral edge of cymbium. **Epigyne** with a pair of depressions – openings located posteriorly. Narrow posterior rim of epigyne broadened medially with characteristic round internal structure. Copulatory channels membraneous leading anteriorwards to sclerotized spermathecae located more or less transversally. The structure of genital organs resembles somewhat *Habrocestum* (hence name) but not as closely as to warrant classification in that genus. It differs from *Habrocestum* also in lower and more sloping cephalothorax. Type species: *Habrocestoides bengalensis* PRÓSZYŃSKI, 1992 from India.

### ***Habrocestoides sinensis*** sp. n.

(Figs 16–21)

Material: ♂ holotype, *Habrocestum* sp., China: Suisapa, W. Hupeh, 22 VIII 1948. [Leg.] DJOU. Coll. CAS, San Francisco.

Measurements: L. cphth.: 1.81; L. abd.: 1.81; L. e–f.: 0.87; H. cphth.: 1.00; W. e–f. I: 1.31; W. e–f. III: 1.19; W. cphth.: 1.44

**MALE**. Small spider, dull colored with brown cephalothorax, greyish abdomen with indistinct whitish pattern posteriorly and weak semicrescent line in the anterior half (Fig. 21). **Frontal aspect**: light yellowish fawn chelicerae and clypeus contrast with dark eye field. **Palpal organ**: pedipalps brown with thin streak of white setae dorsally along mid-line of cymbium and tibia; tibial apophysis robust short hook shaped; embolus relatively thick, characteristically bent. The shape of bulbus and triangular white area also characteristic (comparable with *Habrocestoides szechwanensis* sp. n. from which it differs in proportions and in details).

### ***Habrocestoides szechwanensis*** sp. n.

(Figs 22–27)

Material: ♂ holotype, ♀ allotype *Habrocestoides* sp. China: Szechwan, W of Yahow, altitude 6000'–8000', June 1923. [Leg.] D.C. GRAHAM. Coll. Smithsonian Inst., Washington DC, USA.

Remark. Both specimen poorly preserved, once apparently dried up; colors changed, cephalothorax of ♂ partly smashed, that of ♀ broken, ♂ genital organ expanded.

Measurements: (first ♂, second ♀): L. cphth.: 2.12, 2.12; L. abd.: 1.62, 2.25; L. e–f.: 0.75, 0.87; H. cphth.: ?, 1.06; W. e–f. I: ?, 1.44; W. e–f. III: ?, 1.44; W. cphth.: ?, 1.69

**MALE** and **FEMALE**. **Cephalothorax** dark brown, slightly lighter brown immediately behind eye field. No distinct pattern of spots. Eye field: slightly darker than remaining cephalothorax, with remnants of minute whitish adpressed setae. There is a row of stouter but short, horizontal setae above eyes I: these are white in ♂, fawn and less visible in ♀. **Abdomen** uniformly greyish brown in ♀ (which may be also due to damage of abdomen), in ♂ brown with indistinct pattern of two rows of white spots separating median brown streak from the marginal brown areas. These white spots begin in ¼th of abdomen, in the mid-length of abdomen are more broadly spaced, the distance between the posterior ones is reduced again. The borders of these white spots are not sharp, but there are some remnants of white setae on them – their appearance now may be due to damage. There is also indistinct semilunar light line on anterior edge of abdomen in ♂, absent in ♀. **Frontal aspect**: dorsal points of eyes I in a straight line, the diameter of ALE about ¾th of that of AME; eyes I surrounded in ♂ with a row of white setae, which turn fawn between eyes, in ♀ setae surrounding eyes much less striking, light fawn. Clypeus low – about ½ diameter of ALE, brown and bald in ♀ with a sparse triangle of whitish horizontal setae above chelicerae; in ♂ damaged. Chelicerae in ♀ brown, in ♂ greyish fawn. Pedipalps in ♂ greyish fawn with spots of white setae at the apex of femur, along prolateral edge of patella and a longitudinal spot dorsally on cymbium – which is almost black, in ♀ pedipalps yellowish fawn. **Legs**: in ♂ legs I much longer, stronger and darker greyish brown than remaining, with tibial spines weakly visible on dark background; basal half of femur lighter. In ♀ these tibial spines long, robust and well visible, leg I fawn with darker annualtion, not much longer than remaining. Legs II–IV in ♀ yellow with indistinct annulation, legs IV the longest. Legs III–IV of ♂ missing.

| | | Length of segments of legs | | | | | |
|---|---|---|---|---|---|---|---|
| | Leg | Tarsus | Metatarsus | Tibia | Patella | Femur | 5 segments |
| ♂ | I | 0.54 | 0.62 | 1.25 | 0.94 | 1.25 | 4.60 |
| ♂ | II | 0.44 | 0.56 | 0.62 | 0.62 | 1.00 | 3.24 |
| ♀ | I | 0.50 | 0.50 | 0.75 | 0.75 | 1.00 | 3.50 |
| ♀ | II | 0.44 | 0.44 | 0.50 | 0.44 | 0.75 | 2.57 |
| ♀ | IV | 0.50 | 0.94 | 0.62 | 0.62 | 1.25 | 3.93 |

**Palpal organ** comparable with other species of the genus and very closely resembling *Habrocestoides sinensis* sp. n. from which it differs distinctly in shorter and thinner embolus and much shorter tibial apophysis (Figs 22–24). **Ventral aspect** greyish brown, with sternum darker brown and coxae lighter – in both sexes. **Epigyne**. Transversal sclerotized channel, with openings located laterally and terminal chamber, after small bent medially. Accessory gland channel prominent, near opening. The posterior sclerotized edge of epigyne triangular with a round lighter dot. See Figs 25–27.

## Genus *Habrocestum* SIMON, 1876

The genus distributed mainly in the Mediterranean and Africa, with single species described from Vietnam (*H. orientale* ŻABKA, 1985: 228 , f. 211–216 – which resembles more *Habrocestoides* gen. n. described above). I had no opportunity to check relationships of a few Australian species, but their classification seems to be doubtful. The two species described below show some departure from characters assigned to *Habrocestum*, hence their classification is provisional.

### *Habrocestum hongkongiensis* sp. n.

(Figs 28–32)

Material: ♂ holotype, *Habrocestum* sp. n.(?), Hong Kong, IV 1976. [Leg.] A. JUNG. Private coll. D. UBICK – CAS, San Francisco.

M e a s u r e m e n t s: L. cphth.: 1.75; L. abd.: 1.75; L. e–f.: 0.87; H. cphth.: 0.81; W. e–f. I: 1.12; W. e–f. III: 1.12; W. cphth.: 1.37.

D i a g n o s i s. Small spider with abdominal pattern containing two large white spots typical for *Habrocestum*, which in this specimen are fused, palpal organ comparable but differing in having two tibial apophyses and in smaller details.

**MALE. Cephalothorax** dark brown with indistinct median longitudinal line of white setae, on the eye field there are two lines of transversally – slightly diagonally arranged white hairs, making white spot behind junction of AME. There are also indistinct transversal lines of hairs in front of eyes III and a few hairs behind them. **Abdomen** – pattern typical for *Habrocestum*, shown in Fig. 28. **Frontal aspect**: clypeus reduced, brown, with sparse fringe of whitish setae overhanging chelicerae; eyes I surrounded with white setae with a few reddish laterally along AME's rim and a few above ALE; chelicerae slightly elongated, with expanded median rim and a bunch of long stout setae at external side near the fang basis. **Legs**: femur I dark brown, patella I dorsally yellow, tibia brown with lighter yellow spot (with a few white setae) medially on dorsal surface, with inconspicuous spines: 2 prolaterally – slightly diagonally near the apex, 3 ventro-laterally; metatarsus I and tarsus I yellow. **Palpal organ** (Figs 30–32) comparable with *Habrocestum* but not exactly similar: tibial apophysis biramous and rather *Pseudicius* like with long and thin ramus bent ventralwards; embolus originating in a different way, long and slightly waving; cymbium dark brown, tibia brown with a fan (a bunch diverting apically) of white hairs over inner edge, patella yellow with sparse white setae; tip of femur yellow with white setae.

### *Habrocestum kweilinensis* sp. n.

(Figs 33–34)

Material: ♀ holotype, *Habrocestum* sp. China: Kwei-Lin, 20 VIII 1976. [Leg.] A. JUNG. Private coll. D. UBICK – CAS, San Francisco.



M e a s u r e m e n t s: L. cphth.: 1.75; L. abd.: 2.37; L. e–f.: 0.87; H. cphth.: 0.94; W. e–f. I: 1.25; W. e–f. III:1.19; W. cphth.: 1.37.

**FEMALE**. A small spider resembling somewhat ♂ *Habrocestum hongkongiensis* sp. n. described above. The position of the species remains uncertain and the present classification is only provisional. **Cephalothorax** flat, slightly rounded, ends posteriorly in almost vertical slope extending over posterior ⅓th of length of cephalothorax; brown with indistinct patches of white setae near eyes lateral and at the edge of posterior slope. There are adpressed setae along mid-line of the eye field – arranged into 2 transversal – slightly inclined lines, like those in ♂ but colorless and not so conspicuous. **Abdomen** poorly preserved with remnants of 2 irregular white spots posteriorly, divided by brown chevrons followed posteriorly by 2 darker irregular lateral spots – similar as in ♂ *H. hongkongiensis* sp. n. (cf. Fig. 28). **Frontal aspect**: clypeus reduced, eyes I surrounded with white setae; chelicerae brownish yellow, pedipalps yellow with white setae. **Legs** yellow with a few thin, greyish annuli; tibia I with 2 conspicuous spines diagonally near apex and 2 very inconspicuous, short, thin and transparent ventral ones: one at the apical end (partly hidden beneath the long diagonal one) and another near basal end – hidden among the setae; retrolaterally there are 3 ventral spines – a pattern resembling ♂. **Ventral aspect**. Retromarginal tooth of chelicerae with 5 cusps on single basis (fissidentati) as in *H. orientale* ŻABKA, 1985: 228, f. 211–216. **Epigyne** with indistinct median groove with sclerotized outer rims of openings inside (Fig. 33); small pockets visible on preparation but not on specimen (Fig. 34); internal structures consist of sclerotized transversal chamber laterally from the openings, without any channels, then thick walled vertical part and complicated anterior chamber with conspicuous accessory gland openings at the external angle.

## Genus *Iranattus* gen. n.

Known from a single ♂ recognizable by enormously long leg IV (Fig. 35), curious flap of cymbium (Figs 37, 39) articulating with tibial apophysis and relatively simple bulbus and embolus (Fig. 37).

### *Iranattus rectangularis* sp. n.

(Figs 35–40)

Material: ♂ holotype, Iran: Baluchistan, 21 km Chah Bahar, 23–25 XII 1962. Leg. L.H. HERMAN. Coll. Smithsonian Inst. Washington, DC.

D i a g n o s i s. Strange looking spider with square high cephalothorax, short, thin abdomen, unusually long legs IV (almost twice longer than the IIIrd ones, the femora IV more than twice longer than the IIIrd ones) and curious flap at the basal angle of cymbium, articulating with tibial apophysis. ♀ unknown.

M e a s u r e m e n t s: L. cphth.: 1.96; L. abd.: 1.96; L. e–f.: 0.50; H. cphth.: 1.12; W. e–f. I: 1.68; W. e–f. III: 1.75; W. cphth.: 1.82

Length of segments of legs:

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | 5 segments |
|---|---|---|---|---|---|---|
| III | 0.98 | 0.49 | 0.49 | 0.42 | 0.42 | 2.80 |
| IV | 2.10 | 0.77 | 1.19 | 0.56 | 0.56 | 5.18 |

**MALE. Cephalothorax** brown with posterior slope of thorax white, eye field light yellowish (except dark margins), covered with colorless setae, particularly dense just behind eyes I. Eyes II located in the shallow depression, half way between I and III, there is a distinct large patch of white setae beneath eyes II. The appearance of cephalothorax shown on Figs 35–36. **Abdomen** narrow, greyish white, covered densely and uniformly with white adpressed setae. **Frontal aspect**: face yellowish with eyes I surrounded whitish, dense white setae over clypeus; height of clypeus, also diameter of ALE, equal to half of diameter of AME; chelicerae short, slender, yellowish, with single minute retromarginal tooth. Pedipalps yellowish, covered with long white setae. **Legs** I – basal part of femur I white, apical brown; patella and tibia with spots of white scales forming also white strips dorsally, intermingled with blackish brown areas covered with broad scales of that color covering remaining parts of the segment – particularly along prolateral edge; legs II resembling the Ist ones, legs III–IV almost white. **Palpal organ** simple, with bulbus almost oval, about the same length as pedipalpal tibia, small tibial apophysis articulating with above mentioned flap of cymbium (Figs 37–40).

### ***Leptorchestes berolinensis*** C. L. KOCH, 1846

(Figs 41–43)

Material: 1 ♂, Lebanon: Roum, 2000', 26 IV 1970. Leg. E.S. Ross. Coll. CAS, San Francisco.

M e a s u r e m e n t s: L. cphth.: 2.37; L. abd.: 3.50; L. e–f.: 1.06; H. cphth.: 0.87; W. e–f. I: 1.00; W. e–f. III: 1.25; W. cphth.: 1.37; Length of petiolus: 0.75.

**MALE**. A typical *Leptorchestes*, with typical ant like appearance and characteristic palpal organ structure. It differs from other species [*L. peresi* (SIMON, 1868) from Spain] in bifurcate tibial apophysis, relatively short (cf. PRÓSZYŃSKI 1987a: 61). As some *L. berolinensis* have also bifurcate tibial apophysis, although usually less pronounced, I decided to identify this species as such; future comparison of fresh specimens from various parts of geographic range of the species may permit checking this provisional decision. **Cephalothorax** low, flat and long, not constricted behind the eye field, posterior slope begins at 2/3rd of cephalothorax. Narrowing posteriorly and anteriorly, in the same degree, broadest at eyes III. Surface rough shining with a number of minute pits (like *Synageles*). **Petiolus** covered with two separate sclerites, raised at the point of meeting. **Abdomen** elongate, anteriorly depressed and slightly constricted. **Frontal aspect**: chelicerae thin, short, slightly elongated, directed diagonally forward. **Legs** thin and long, IV are the longest. **Palpal organ**: shown in Figs 41–43. **Ventral aspect**: retromargin of chelicerae not developed and devoid of tooth; maxillary plates long with lateral protuberance.



## Genus ***Menemerops*** gen. n.

The description of a separate genus for "*Menemerus*" *flavescens* (O. P.-CAMBRIDGE, 1872), *Evarcha afghana* ROEWER, 1961: 26, f. 109 (D ♀) (cf. PRÓSZYŃSKI 1984c: 47 – Fig. of ♀) and a number of more or less provisionally identified species is well grounded and long overdue. *Menemerops* gen. n. differs from *Menemerus* SIMON, 1868 by shape of epigyne with its anterior vertical slit like openings, posterior large and internally complicate spermathecae, small posterior pockets. Externally it resembles rather *Aelurillus* than *Menemerus*, it differs in higher cephalothorax, longer eye field in relation to the whole cephalothorax, eye field narrowing posteriorly instead of broadening like in *Menemerus*. The difficulty in delimiting this genus lies in lack of knowledge of any ♂♂, while there are several ♀♀ known, belonging apparently to several species, no ♂ has been found or at least matched with any of these ♀♀.

The type species of the genus is: *Salticus flavescens* O. P.-CAMBRIDGE, 1872a: 343, (D ♀), whose type specimen is kept at Oxford and has been examined by PRÓSZYŃSKI 1984c: 86 (♀ – *Menemerus flavescens*).

R e m a r k: This is actually the first specimen of the genus I could made epigyne preparation and detailed study of internal structure, in the case of remaining species and specimens I could only guess what the internal structure was from the parts visible through the tegument. It is therefore possible that a more extensive study of internal structure of epigyne will prompt changes in the species delimitation within the genus.

### ***Menemerops flavescens*** (O. P.-CAMBRIDGE, 1872) comb. n.

(Figs 44–45)

Material: 4 ♀♀, Iran: Khuzistan Prov. 35 km E Gach Saran, 9 Feb. 1964. Leg. J. NEAL. Coll. Smithsonian Inst., Washington, DC. Comparative material: 1 ♀ Egypt: "Sinai, St. Catharina Monastyr, 16 VIII 68. G. TSABAR". Coll. Dept. of Zoology, Hebrew University, Jerusalem (this specimen shall be described in details in the next paper of J. PRÓSZYŃSKI).

M e a s u r e m e n t s: (♀ from Iran–♀ from Sinai): L. cephth.: 4.06–3.33; L. abd.: 4.81–4.33; L. e. f.: 1.43–1.48; H. cephth.: 2.08–1.70; W. e. f. I: 2.21–2.05; W. e. f. III: 1.95–1.93; W. cephth.: 2.60–2.50.

**FEMALE**. Large spider with cursorial robust legs, coloration spotted, general appearance hairy due to long dark bristles scattered among setae. **Cephalothorax** dark, covered with white adpressed setae with spots of darker setae. **Abdomen** hairy with irregular pattern of round lighter spots leaving middle darker streak along anterior half of the abdomen and two irregular darker streaks (consisting of irregular darker spots mixed up among lighter ones) fusing posteriorly, with margins of dorsal surface lighter. **Frontal aspect**: eyes I encircled with white, clypeus with dense long white setae – arranged laterally into white lines; chelicerae brown with spots of white setae anteriorly. **Epigyne** pear shaped with distinct posterior pockets, opening in a form of parallel slits in anterior half, located at the bottom of grooves and separated by median ridge

(Figs 44–45). In contrast to *Evarcha afghana* (cf. PRÓSZYŃSKI 1984c: 47) the edges of slits are not particularly strongly sclerotized; short longitudinal canals dissected by slits run posteriorly to the haevily sclerotized large spherical spermathecae which contain a number of internal chambers. Owing to dark coloration of the sclerotized parts the internal structure is very poorly visible, the terminal parts are located dorsally to copulatory canals; I could not find accessory glands. The general layout of internal structure of epigyne in *Evarcha afghana* seems to be comparable. However, as I could not make preparation of the type specimen of that species, more precise conclusions should be delayed until further studies. **Legs** and pedipalps light, darker annulated.

## Genus ***Phintella*** STRAND in BOESENBERG, STRAND, 1906

The *Phintella* species I had an opportunity to compare with several *Pseudicius* (*samoaensis* sp. n., *reiskindi* sp. n.) whilst at the MCZ, Harvard University collection display the characters described below.

Increased length of femur I and tibia I; leg I without distinct swelling of any segment – tibia, patella and femur with darkening of ventro-prolateral surface, in a form of line or spots. Spination of tibia I consist of 2–3 pairs of ventral spines. Hairs on tibia I "normal", in some specimens with sparse ventral brush of very thin, short setae extending along patella. A characteristic row of stridulatory spines on tubercles beneath eyes lateral absent. There are, however, stridulatory microspines on minute tubercles on femur I, which apparently correspond to some stridulatory structure, resembling "rugosity" (as called by MADDISON) on sides of cephalothorax, which I have not seen clearly enough yet. Microspines on femur I are arranged differently than in *Pseudicius*.

Length of eye field is approximately about half of that of cephalothorax, whilst in *Pseudicius* only one third. Height of cephalothorax appears "average" whilst the same in *Pseudicius* is distinctly lower.

These specimens differ from heretofore known *Phintella* in bifurcate tibial apophyses in ♂, in ♀ epigyne contains median sclerotized groove with opening and channels, these pass into bent channel like spermatheca in *Phintella mussooriensis* sp. n. or its presumably transformed form – a sclerotized spherical structure with visible vestigial elements of the previous state as in ♀ *Heliophanoides bhutanicus* PRÓSZYŃSKI, 1992 and other related species.

### ***Phintella coonooriensis*** sp. n.

(Figs 46–53)

Material: ♂ holotype (epigyne isolated in a separate tube), ♂ allotype, India: Nilgiri Distr. Coonoor, Garden Mt.6000'. 1946. Leg. W. E. DAVIES. Coll. MCZ, Harvard Univ.

Measurements (first ♂, second ♀): L. cphth.: 2.25, 1.75; L. abd.: 2.25, 2.37; L. e–f.: 0.94, 0.81; H. cphth.: 1.37, 1.00; W. e–f. I: 1.25, 1.19; W. e–f. III: 1.37, 1.19; W. cphth.: 1.75, 1.31.



**Cephalothorax** longer than in *Icius* with eye field proportionally longer (42% in ♂, 46% in ♀), higher in ♂ – 60.8% than in ♀ – 46.3%. In ♂ brown with faint lighter brown median streak from fovea to hindmargin, sparse thin line of whitish marginal scales and spots of whitish scales below eyes III; no row of stridulatory tubercles and setae under eyes lateral. In ♀ and juvenile ♂ cephalothorax lower and lighter, sides yellowish fawn, two dorsal stripes greyish brown from anterior eye field to hind margin and a yellow median streak – broadest at fovea and tapering towards both hind and anterior margin, anteriorly very faint. **Abdomen**: striped pattern comparable in all specimens – median white streak with remnants of whitish scales, tapering anteriorly; lateral dark brownish grey streaks mottled sparsely white, with remnants of brown scales along median edges, marginal edges white; sides brown mottled grey (Figs 46, 51). **Frontal aspect**: ♂ face brown, almost bald, with narrow dense line of white scales overhanging chelicerae, a straight line of whitish scales below AME, eyes surrounded mainly with white setae; chelicerae overgrown, long and diverging, pedipalps with sparse whitish scales on patella, tibia and basal end of cymbium. In ♀ and juvenile ♂ face yellow, clypeus covered with thick mat of white scales, pedipalps whitish yellow, chelicerae short, small, yellowish. **Legs** I in ♂ elongated, brown, with median ring on tibia and much of basal metatarsus whitish; legs II–IV slender and lighter. In ♀ and juvenile ♂ tibia I with three pairs of ventral spines and 1 pair of lateral spines basally. In all specimens indistinct minute stridulatory tubercles irregularly on femur I. **Palpal organ**: a typical *Phintella* with biramous tibial apophysis, both prongs arise from the same initial elevation, the ventral one longer and slightly bent apically (Figs 48–50). **Ventral aspect**: maxillary plates in ♂ with enormously drawn out external angular extension (Fig. 47); sternum yellowish in ♀, brown with faint light streak in ♂ and juvenile ♂; abdomen ventrally greyish with thin whitish near-marginal lines in ♂, in ♀ more complicated pattern of two whitish reverse chevrons marks ("V" pointed posteriorly) separated by darker greyish mark of the same shape and a median anterior greyish streak from epigastric furrow to the middle of abdomen; a pair of blackish wedge shaped small marks near spinnerets; some remnants of colorless scales ventrally. **Epigyne** with two lateral grooves separated by median rise of the same dimensions, copulatory openings hidden anteriorly, spermathecae spherical (Figs 52–53) – they resemble superficially such forms as *Lechia squamata* ŻABKA 1985: f. 260 or *Phintella accentifera* (SIMON 1901) (with much shorter copulatory channels).

### ***Phintella mussooriensis*** sp. n.

(Figs 54–59)

Material: 1 ♂ holotype, 1 ♀ allotype, India: Mussoorie (30°29' N, 76°06' E), 5500–6000'. Apr.–Nov. 1934. Leg. ? Coll. MCZ, Harvard Univ.

Remark. Description of this species within *Phintella* may be considered a provocation prompting further studies. There remain several unanswered questions. Are the ♂ and the ♀ conspecific and congeneric? Palpal organ of the ♂ is

a typical *Phintella* of the group of species with bifurcated apophysis, it cannot be considered *Pseudicius* or *Marchena*. On the other hand epigyne of the ♀ bears no resemblance to any *Phintella* – it is very similar to *Madhyattus* PRÓSZYŃSKI, 1992 and some *Pseudicius*; the similarity to *Marchena* (cf. MADDISON 1987: 101–106, Figs 4–5) calls for special attention. Obvious similarities in external morphology of both sexes of this species, for instance leg I spination and presence of stridulatory microspines on femur I, does not permit separation of these forms into different taxa. Unfortunately existing descriptions are not fully comparable.

M e a s u r e m e n t s (first – ♂, second – ♀): L. cphth.: 2.25, 2.37; L. abd.: 2.62, 2.87; L. eye f.: 0.87, 1.00; H. cphth. 0.87, 1.12; W. eye f. I: 1.25, 1.50; W. eye f. III: 1.27, 1.56; W. cphth.: 1.44, 1.75.

**MALE** and **FEMALE**. Resembles *Phintella*: ♂ in elongation of leg I (Fig. 56) with darkened ventral half of prolateral surfaces, differs in having traces of tibial apophysis bifurcation (the dorsal ramus very short and far away from the more striking ventral one), less visible than in *Phintella coonooriensis* sp. n. described above; ♀ also resembles *Heliophanoides bhutanicus* PRÓSZYŃSKI, 1992 and related species, possibly more primitive. **Cephalothorax** moderately elongate, brown with light yellow streak from fovea to the hind margin, locally constricted, lower sides lighter with sparse minute whitish setae. **Abdomen** elongate oval: ♂ thin, with 2 broad marginal streaks brownish grey mottled yellow, separated anteriorly by light streak (with darker median mark) and posteriorly by several light chevron marks; ♀ broader, brownish grey mottled yellow, with 4 pairs of irregular yellowish marginal spots; posterior tip yellowish, anterior end white, possibly due to tissue damage, sides whitish yellow. **Frontal aspect**: clypeus reduced, in ♀ covered densely with whitish setae overhanging cheliceral bases, in ♂ baldish with very sparse short darker setae and sparse longer setae overhanging chelicerae; eyes I encircled with whitish setae with a few pink ones laterally (more in ♂); chelicerae yellow, in ♂ somewhat elongate (equal to twice diameter of AME) with concavity in the mid length of their inner wall. **Legs** yellow, I long, in ♂ longer with darker lateral surfaces; femoral stridulatory apparatus consists of a few very small tubercles, distinctly spaced, preceded apically with 2 apical spines in ♂ and 1 in ♀. **Palpal organ**: see Figs 54–55. **Ventral aspect**: light yellow with fawn sternum, abdomen whitish with broad grey median longitudinal area and margins; chelicerae unidentati. **Epigyne**: see Figs 59–60.

### ***Phintella nilgirica*** sp. n.

(Figs 60–63)

Material: ♀ holotype, 1 ♀ paratype (epigyne stained, in a small tube), India: Nilgiri Distr. Coonoor, Garden Mt. 6000'. 1946. Leg. W. E. DAVIES. Coll. MCZ, Harvard Univ.

R e m a r k. Closely resembling *Phintella accentifera* (SIMON, 1901) (PRÓSZYŃSKI 1984c: 156; ŻABKA 1985: 428, ff. 433–434) in epigyne and its internal structure, differs in longer copulatory channels with copulatory openings located slightly more anteriorly and also in presence of indistinct posterior pockets, visible in preparations of epigyne only (Fig. 63) and possibly overlooked during previous studies by myself and M. ŻABKA.



M e a s u r e m e n t s: L. cphth.: 1.87; L. abd.: 2.25; L. e–f.: 0.87; H. cphth.: 1.00; W. e–f. I: 1.25; W. e–f. III: 1.25; W. cphth.: 1.44.

**FEMALE**. Resembling *Phintella coonooriensis* sp. n. but lighter. **Cephalothorax** with light median streak expanding on the eye fields and covering it almost whole, except for black surrounding of eyes. **Abdomen** light with two dark submarginal streaks with brown scales along edges, light areas covered with white scales. **Frontal aspect**: clypeus covered with thick mat of white scales; chelicerae small, yellow; pedipalps thin, yellow. **Legs**: spination of tibia I resembling *Phintella coonooriensis*. **Ventral aspect**: abdomen light with a distinct pair of dark wedge shaped lines in front of spinnerets (Fig. 61). **Epigyne**: openings anterior median in separate grooves, their sclerotized rims made by the ventral edge of the opening; spermathecae spherical, with very indistinct median pockets visible on preparation only (Figs 62–63).

## Genus ***Pseudicius*** SIMON, 1885

This is a widespread diversified genus of numerous species, presenting formidable difficulty in interpretation of relationships among species, groups of species and with similarly looking genera. I met that difficulty first searching for the position of "Japanese *Icius*" (now *Phintella* BOESENBERG et STRAND, 1906): following ROEWER's 1954 mistake in synonymy of the type species of *Icius* – *Icius nobilis* C.L. KOCH, 1846 (*I. subinermis* SIMON, 1937 instead of *I. hamatus* C.L. KOCH, 1846) I misinterpreted partial resemblances of the palpal organ and assumed morphological gradation to *Pseudicius*; hence merging *Icius* and *Pseudicius* – proposed by myself in the paper of 1984 (ANDREEVA, HĘCIAK, PRÓSZYŃSKI 1984). Study of more species exposed weakness of that proposal and I have separated *Icius* and *Pseudicius* again, using among other characters difference in shape and proportions of cephalothorax and particularly presence of a row of adpressed diagonal setae on tubercles under eyes lateral.

During my visit in the MCZ at Harvard University in 1986 W. MADDISON has shared with me his finding on association of these setae with a row of microsetae on apical prolateral surface of femur I, their widespread occurrence in *Pseudicius* and related genera and stridulatory function, the findings he has published since in his paper of 1987. I am pleased to confirm morphological findings of W. MADDISON and I accept his functional explanations. I am less sure of the extent to which these charaters could be used in taxonomic interpretations – particularly their suprageneric significance. I have found a comparable, although not identical, row of lateral subocular setae in not related *Philaeus chrysops* (PODA), so it may be an independently evolved character in various groups, however very useful in *Pseudicius* itself. It remains an open question whether *Pseudicius*, as I use it today, is not too broad a genus to be subdivided into smaller, more uniform genera. For the moment I am trying to indicate closer relationships

within the genus by proposing an informal subdivision into groups of species, delaying decision until more is known.

Proposed informal division of species studied in this paper into groups of species:

I. *Pseudicius encarpatus* group:
*Pseudicius encarpatus* (WALCKENAER, 1802)
II. *Pseudicius vesporum* group:
(Known from Pacific Archipelagoes and Islands along the Asiatic Coast of Pacific; externally similar to *Pseudicius* with rather special appearance of palpal organ, possibly derived or related: with simple bulbus and embolus, tibial apophysis with well developed ventral ramus but the dorsal one reduced to a small bump, more or less pronounced; both sexes are known for *Pseudicius vesporum* only)
*Pseudicius nuclearis* sp. n.
*Pseudicius manillaensis* sp. n.
*Pseudicius solomonensis* sp. n.
*Pseudicius okinawaensis* sp. n.
*Pseudicius vesporum* sp. n.
III. *Pseudicius tamaricis* group:
*Pseudicius samoaensis* sp. n.
*Pseudicius philippinensis* sp. n.
*Pseudicius reiskindi* sp. n.
IV. *Pseudicius nepalicus* group:
*Pseudicius nepalicus* (ANDREEVA et al., 1984)
V. *Pseudicius cinctus* group of species
*Pseudicius maureri* sp.n.
*Pseudicius rudakii* sp. n.

### ***Pseudicius encarpatus*** (WALCKENAER, 1802)

(Figs 64–66)

Material: 1 ♂, *Pseudicius encarpatus* WALCK. France G.W. and E.G. PECKHAM. Coll. MCZ, Harvard Univ.

Comparative material: 1 ♂, *Icius notabilis* SIM. J.H. EMERTON. Coll. MCZ, Harvard Univ. (= *Icius hamatus* C.L. KOCH, 1846, det. J. PRÓSZYŃSKI, 21 I 1986).

An European species being type species of the genus and displaying all characters assumed now important for *Pseudicius* including: shape of cephalothorax, shape of swollen tibia I with long trichobothria, row of tubercles with stridulatory spines beneath eyes lateral and a row of microspines on femur I. Palpal organ is shown in Figs 64–66; broad tibial apophysis is actually the dorsal ramus, the ventral one is reduced and usually vestigial, here visible as a small bump in mid-length of ventral edge of apophysis, in some specimens it may have appearance of a low cone.



*Icius hamatus* C. L. KOCH, 1846 type species of genus *Icius*, differs from *Pseudicius* in higher cephalothorax and lack of subocular stridulatory spines, it has, however, femoral microspines (Fig. 67).

### ***Pseudicius manillaensis*** sp. n.

(Figs 83–84)

Material: ♂ holotype, Philippines: Manilla. (Leg.) R. BROWN. Coll. G.W. and E.G. PECKHAM, MCZ, Harvard Univ.

Measurements: L. cphth.: 2.87; L. abd.: 3.00; L. e–f.: 1.12; H. cphth.: W. e–f. I: 1.37; W. e–f. III: 1.56; W. cphth.: 2.00.

**MALE**. Externally typical *Pseudicius* with elongate flat cephalothorax, robust legs I, with a row of 12 tubercles with spines beneath eyes lateral. On prolateral surface of femur I a row of 9 minute tubercles with spines along mid-line of apical half, with additional tubercles with spines above that row: one above apical tubercle and other above basal end of the row. Abdomen white with brown median streak. **Cephalothorax** dark brown with broad streak of white adpressed setae along the eye field to the posterior slope of the thorax; sides covered with tiny adpressed brown setae, intensively white band of setae along lower sides. **Abdomen** with three equally broad longitudinal stripes: median one brown covered with dark brown setae and two lateral ones with white setae; sides grey. **Frontal aspect**: clypeus reduced to a narrow edge, with strikingly white line of dense broad, short setae, overhanging cheliceral bases. **Legs** robust and long; tibia I long, indistinctly swollen, with characteristic long trichobothrium hair and a prolateral diagonal row of very short, broad spines, the apical one shifted laterally, retrolateral surface devoid of spines. Pedipalps thin, yellow with white setae. **Palpal organ** differs from *Ps. manillaensis* sp. n. in longer and slightly waving tibial apohysis, with dorsal swelling developed into distinct angular protuberance; embolus arising more anteriorly, apical end of bulbus shaped differently (Figs 83–84).

### ***Pseudicius maureri*** sp. n.

(Figs 73–79)

Material: ♂ holotype, 1 juv. ♀ *Pseudicius maureri* sp. n., Malayasia: Selangor: Batu Caves, 23 VI 1975. Leg. J. REISKIND, J. ANDERSON. Det. J. PRÓSZYŃSKI. Coll. FSAC, Gainesville.

Remark. Species named in honour of my friend Dr. David J. MAURER, Dept. of History, Eastern Illinois University, Charleston, Illinois, USA, whose kind hospitality contributed greatly to the success of my research visit in the USA.

Diagnosis: species closely related to *Ps. cinctus* (O. P.-CAMBRIDGE, 1885) (cf. ANDREEVA et al. 1984: 351–352, ff. 20, 23, 27, 30, 33, 36, 39, 41) – with bifurcate tibial apophysis and similar shape of bulbus. It differs in shorter space between basis of embolus and tip of bulbus, different rami of tibial apophysis – particularly the horizontal course of the dorsal one. It resembles also *Ps. rudakii*

sp. n. described below, from which it differs in lack of apical broadening of embolus.

**MALE**. **Cephalothorax** flattened, long and broad; brown with indistinct yellowish streak along thorax, eye field blackish brown, sides lighter brown with two lines of white, short adpressed setae along the ventral margin, a third line of white minute setae just below the stridulatory tubercles. A row of 8 dark stridulatory tubercles with spines basally brown, apically white (Fig. 79). **Abdomen** elongate oval with darker brown median streak with indistinct chevron pattern, followed laterally by a yellow stripe with some grey, indistinct spots; sides dark. **Frontal aspect**: three white and three light brown stripes on sides below eyes lateral, clypeus beneath AME reduced to nil, its edge curved dorsally, covered with very sparse white setae; chelicerae brown. **Ventral aspect**: chelicerae and mouth parts dark brown, sternum yellow, abdomen yellowish white; dentition of the unidentati type. **Legs** I longer and stouter than remaining, tarsus–patella I brown; tibia I indistinctly swollen, long, with 3 ventro-prolateral spines (basal one is the shortest) and none retrolaterally; femur I yellow with apical retrolateral surface brown; there is characteristic row of 4 darker small stridulatory tubercles with white setae (Figs 77–78) prolaterally in the apical half; legs II–IV yellow. **Palpal organ** (Figs 73–76) resembling *Ps. cinctus* (O. P.-CAMBRIDGE, 1885) from the Middle Asia (Tadjikistan), differs in shorter space between basis of embolus and tip of bulbus, different rami of tibial apophysis – particularly the horizontal course of the dorsal one. It resembles also *Ps. rudakii* sp. n. described below, from which it differs in lack of apical broadening of embolus. Palpal femur broad, bent, with ventral basal protuberance.

### ***Pseudicius nepalicus*** (ANDREEVA et al., 1984)

(Figs 68–72)

Material: 1 ♂ *Pseudicius* sp. 3 cf. *nepalicus*, S. India, Nilgiri District: Coonoor, Garden Mt. 6000', 1946. Leg. W.E. DAVIES. Coll. MCZ, Harvard Univ.

R e m a r k. After some hesitation I decided to identify this specimen as *Ps. nepalicus* (ANDREEVA et al. 1984) rather than describe it as a different species, in spite of some minor differences in details of palpal organ. The present description increases our knowledge by a number of details not mentioned in the original description of *Ps. nepalicus*. It requires further confirmation by study on new and fresher specimens.

M e a s u r e m e n t s: L. cphth.: 2.00; L. abd.: 2.19; L. e–f.: 0.75; H. cphth.: 0.75; W. e–f. I: 1.00; W. e–f. III: 1.06; W. cphth.: 1.31.

**MALE**. Typical *Pseudicius* with elongated flat cephalothorax, robust anterior legs, elongate oval abdomen; there are minute 7 stridulatory tubercles with stridulatory microspines on femur I and a row of 14–15 tubercles with spines stridulatory beneath eyes lateral. **Cephalothorax** fawn, eye field darker, sides lighter; dense white adpressed setae make broad marginal band, and a spot around fovea, thinner over eye field, slightly waving on thorax. **Abdomen** with narrow median stripe of thin dark brown setae, with a few light reflecting scales posteriorly, followed laterally by lighter brownish yellow stripes covered with thin sparse, colorless setae; there are two pairs of white transversely elongated spots across the lighter stripes and a pair of much smaller median spots, margins with more intensively white setae, denser and more white opposite dorsal spots; in lateral view that pattern looks like four diagonal white lines ending at above described spots (Fig. 70); sides dark brown mottled light yellow. **Frontal aspect**: clypeus reduced to a narrow edge with a row of intensively white dense setae overhanging cheliceral bases – their length comparable to diameter of ALE; sides below ALE appear yellow; chelicerae slightly lenghtened, anteriorly flattened, brownish with external sclerotized rim; pedipalps pale yellowish. **Legs** I robust, long, brown; tibia I swollen and somewhat ovoid, tapering apically, with single prolateral spine – short but robust, and several long bent trichobothria like hairs – characteristic of *Pseudicius* (Fig. 71). Legs II–IV short, slender, light yellow, in some areas brownish. **Palpal organ** resembles *P. nepalicus* in shape and proportions; differs in dorsal ramus of tibial apophysis somewhat stronger developed, broad and round (Figs 68, 71–72; cf. also ANDREEVA et al. 1984: 366 Figs 49-51 and BOHDANOWICZ, PRÓSZYŃSKI 1987: Figs 74–76); embolus arises slightly more anteriorly – rather in 1 o'clock position. Significance of these differences is uncertain.



### ***Pseudicius nuclearis*** sp. n.

(Figs 85–87)

Material: ♂ holotype, Marshall Isl. Enivetok Atoll, on E side of the Enivetok Marine Biological Laboratory building, exposed to wind and sun (11:15 AM), III 1960. Coll. MCZ, Harvard Univ.

M e a s u r e m e n t s: L. cphth.: 2.25; L. abd.: 2.62; L. e–f.: 0.94; H. cphth.: 0.87; W. e–f. I: 1.25; W. e–f. III: 1.31; W. cphth.: 1.62.

**MALE**. Externally resembles *Pseudicius* with long, low and flat cephalothorax, brown with darker eye field and light brown dorsum of thorax, both covered densely with whitish adpressed setae; there is a broad marginal belt of white adpressed setae, a characteristic row of tubercles with spines beneath eyes lateral (Fig. 87). **Abdomen**: covered with white adpressed setae, brown setae over median dark brown lancet shaped streak; sides dark grey; spinnerets yellowish grey. **Frontal aspect**: clypeus reduced, brown with a dense fringe of short, intensely white setae overhanging cheliceral bases; eyes I encircled dorsally and laterally with reddish setae; chelicerae fawn, somewhat elongated. Pedipalps very thin, yellow, covered with long white setae. **Legs** I robust, brown, tibia actually not swollen but thicker than tarsus–metatarsus I, with sparse long trichobothria like hairs, typical for *Pseudicius*; three short ventral prolateral spines evenly spaced; there is also single retrolateral spine – very short and inconspicuous, located basally. On femur I a row of 6 minute black tubercles (stridulatory?) along mid-line of apical half. **Palpal organ** related to *Pseudicius* but not apparently similar (Figs 85–86).

### *Pseudicius okinawaensis* sp. n.

(Figs 98–100)

Material: ♀ holotype, Okinawa: Shimabuku, May 20 – July 1945. [Leg.] PARSONS and WERNER. Coll. MCZ, Harvard Univ.

R e m a r k. A *Pseudicius* with typical row of 10 stridulatory spines on tubercles under eyes lateral, as well as a row of six minute stridulatory microspines on tubercles + one additional above – apically on prolateral surface of femur I. Legs longer and stronger than II–IV but less strikingly than in males of other *Pseudicius*.

M e a s u r e m e n t s: L. cphth.: 2.12; L. abd.: 3.50; L. e–f.: 0.87; H. cphth.: 0.75; W. e–f. I: 1.12; W. e–f. III: 1.19; W. cphth.: 1.37.

**FEMALE. Cephalothorax** long and flat, brown with lighter streak from fovea posteriorly (not sharply delimited); broad white band of setae along ventral margin; a row of 10 stridulatory spines on tubercles below eyes lateral. **Abdomen** long, not narrowing and equally rounded on both ends, white with 3 pairs of dark narrow spots – the first taking almost half of the length of abdomen, and a single median posterior spot, there is also a weak median line od darker triangles (Fig. 100). Dark spots are covered with brown setae, there are remnants of shining colorless minute setae posteriorly. **Frontal aspect**: clypeus covered with long white setae overhanging cheliceral bases; eyes I encircled with colorless setae with addition of some reddish and a few darker; chelicerae fawn, pedipalps light yellow with long sparse white setae. **Legs** I light fawn, femur yellow, tibia I cylindrical with single apical prolateral spine and some sparse longer hairs; legs II–III somewhat shorter. **Epigyne** resembles that of *Ps. tokaraensis* (BOHDANOWICZ et PRÓSZYŃSKI 1987): 71–72, Figs 77–80 (from which it differs in longer pockets) and such species as *Ps. daitaricus* PRÓSZYŃSKI, 1992: soft spiral copulatory channel passing into sclerotized one, spermathecae median, more or less elongated; pockets narrow, located in the mid-length of epigyne or even anteriorly. Differs from *Ps. solomonensis* sp. n. in much longer pockets located more medially; much broader coils of copulatory channels which are membraneous, longer sclerotized part of the copulatory channel beyond the dorsal bent – making also broad coil and proportionally much smaller spermathecae – whose length is about ½nd of the channel coil (Figs 98–99).

### *Pseudicius philippinensis* sp. n.

(Figs 104–111)

Material: ♂ holotype, ♂ paratype, Philippines: Los Banos. [Leg.] P. J. BAKER. Coll. MCZ, Harvard Univ.

D i a g n o s i s. A small, narrow, *Pseudicius* looking spider, closely related to *Ps. samoaensis* sp. n. from which differs mainly in strongly bent tibial apophysis and thicker embolus, also slightly different shape of bulbus. Also similar to *Ps. reiskindi* sp. n.



M e a s u r e m e n t s: L. cphth.: 1.75, 1.87; L. abd.: 2.12, 2.50; L. e–f.: 0.62, 0.75; H. cphth.: 0.62, 0.69; W. e–f. I: 0.94, 0.94; W. e–f. III: 1.00, 1.06; W. cphth.: 1.12, 1.19.

**MALE. Cephalothorax** narrow and long, dark brown with indistinct median longitudinal streak of white adpressed setae – preserved now in parts only, and a white marginal band (Fig. 111); a row of 8–9 stridulatory spines on tubercles below eyes lateral, inconspicuous on the dark background and hidden among whitish setae. **Abdomen** elongated, tapering and pointed, with two marginal bands of whitish setae covering darker areas; sides greyish, median streak lighter with anterior darker line twice indistinctly crossed. **Frontal aspect**: clypeus reduced to an edge, with thick line of short white scale-like setae overhanging cheliceral bases. Ventral aspect: chelicerae unidentati. **Legs**: a curious asymmetry in development of legs I in both specimens: one tibia is longer and more robust, another is shorter, smaller and devoid of spines – in one specimen the undeveloped leg is the left one, in the other the right one (see Figs 106–109). There is a characteristic row of some 6 minute stridulatory spines on tubercles on femur I – very inconspicuous in both specimens. Legs II–IV yellowish fawn, shorter and much slender than the Ist one. **Palpal organ** similar to *Ps. samoaensis* sp. n. from which differs mainly in strongly bent tibial apophysis, which is single, thicker embolus, also slightly different shape of bulbus (Figs 107–110).

### *Pseudicius reiskindi* sp. n.

(Figs 112–116)

Material: ♂ holotype, 1 juv. ♀, *Pseudicius reiskindi* sp. n., Borneo: Brunei: edge of Brunei river, mangrove, 29 VII 1975. Leg. J. REISKIND, det. J. PRÓSZYŃSKI. Coll. FSAC, Gainesville.

R e m a r k. Species named in honour of the collector – Dr. J. REISKIND of the Florida State University at Gainesville.

D i a g n o s i s. Typical *Pseudicius* appearance, closely related to *Ps. samoaensis* sp. n. and *Ps. philippinensis* sp. n., differs from the former in more bent tibial apophysis, thicker than in the latter, on the other hand embolus is thinner and much more similar to *Ps. samoaensis* sp. n., also shape of bulbus is closer to that species. It is presumably related to *Ps. tamaricis* SIMON from Libian desert, but that species has straight and much longer apophysis and slightly different bulbus, embolus comparable.

M e a s u r e m e n t s: L. cphth.: 1.77; L. abd.: 2.21; L. e-f.: 0.71; H. cphth.: 0.65; W. e–f. I: 0.91; W. e–f. III: 0.97; W. cphth.: 1.10.

**MALE. Cephalothorax** long, flat and broad; light brown with darker eye field; lighter thoracal mid-line, broad belt of adpressed white setae above ventral margin of carapace. There is a well visible row of stridulatory tubercles with short bent brown spines. **Abdomen** elongate with yellowish brown median stripe and sides, the median stripe followed laterally by two stripes of white setae; there are also 3 pairs of indistinct darker pigmented spots on white streaks beneath the setae – which complicates the pattern (Figs 115–116)]. **Frontal aspect**: a

fringe of white scale like setae, short and broad, hanging down from the ventral edge of clypeus; chelicerae greyish brown. **Legs** I (Fig. 114) robust, intensely reddish brown with numerous long and thin bristles scattered sparsely over otherwise bald surface of segments, tibia I much swollen, tapering at both ends, with two single ventro-prolateral spines, one of which minute, arranged transversally; there is a row of 5 minute stridulatory tubercles with delicate spines along apical part of prolateral surface of femur I. Legs II–III slender, yellow. **Palpal organ** resembles that in *Ps. tamaricis* from Africa, and several related species with a single apophysis, differs in the tibial apophysis bent "S" like (Figs 112–113).

The immature specimen differs in having lighter coloration – particularly in yellowish cephalothorax, yellowish legs I and whitish abdomen with 3 pairs of reddish brown large spots, arranged in two rows, and a terminal diamond shaped spot (Fig. 116). The number of stridulatory tubercles under eyes lateral and on femur I – as in ♂.

### ***Pseudicius rudakii*** sp. n.

(Figs 80–82)

Material: ♂ holotype, Iran: Fars Province: Shiraz, Peak Hotel, 1 V 1965. Leg. J. NEAL. Coll. Smithsonian Institution, Washington, DC.

R e m a r k: species named in honour of great Persian-Tadjik poet RUDAKI who once wrote a poem on a girl from Shiraz.

M e a s u r e m e n t s: L. cphth.: 2.10; L. abd.: 2.66; L. e–f.: 0.84; H. cphth.: 0.77; W. e–f. I: 1.19; W. e–f. III: 1.26; W. cphth.: 1.61.

**MALE. Cephalothorax** brown with lighter streak along posterior half of the thorax, eye field darker; a row of 8 stridulatory bristles on darker tubercles below eyes lateral. **Abdomen** light with whitish margins and brownish median streak. **Frontal aspect** light brown with clypeus reduced to nil, eyes I surrounded with inconspicuous colorless setae, 2 lines of white scales above the ventral edges of cephalothorax laterally; chelicerae and palps yellowish fawn. **Legs** yellow except patella–tarsus I brown; tibia very indistinctly swollen, with 3 ventral spines in apical half prolaterally and none retrolaterally; femur I with 5 (4) minute stridulatory spines on tubercles. **Palpal organ** resembles that in *Ps. cinctus* (O. P.-CAMBRIDGE, 1885) (cf. ANDREEVA et al., 1984: 351–352, ff. 20, 23, 27, 30, 33, 36, 39, 41) – with bifurcate tibial apophysis and similar shape of bulbus; embolus curiously broadened apically (Fig. 81) – presumably allowing breaking at that spot during copulation, which may stop genital opening of female. Pedipalpal femur ventrally with sclerotized ridge like protuberance.

### ***Pseudicius samoaensis*** sp. n.

(Figs 116–119)

Material: ♂ holotype, Samoa: Mo'ata near Apia, from mangroves, 18 III 1962. [Leg.] R.W. TAYLOR. Coll. MCZ, Harvard Univ.



D i a g n o s i s. Typical *Pseudicius* with elongated flat and low cephalothorax, long and robust leg I with typical tibia (Fig. 119) and typical femoral stridulatory microspines on tubercles, greyish brown abdomen indistinctly light dotted (Fig. 118). Tibial apophysis slightly bent apically (Fig. 117).

M e a s u r e m e n t s: L. cphth.: 2.00; L. abd.: 2.75; L. e–f.: 0.81; H. cphth.: 0.69; W. e–f. I: 1.00 ; W. e–f. III: 1.06; W. cphth.: 1.31.

**MALE. Cephalothorax** fawn with darker eye field, indistinct thin median streak of white adpressed setae along the thorax, indistinct band of white setae along ventral margins of carapace. A row of 11 stridulatory spines on tubercles under eyes lateral. **Abdomen** elongate oval (Fig. 118), greyish brown with indistinct pattern of spots – slightly lighter, there is a broken marginal line of white setae. **Frontal aspect**: clypeus reduced to an edge, bald, brown; chelicerae somewhat elongate. **Legs** I robust and long, brown; femur I with a row of 5 stridulatory tubercles with microspines – 5, in a compact row, one more apart – apically, and another one above; tibia I shown on Fig. 119, remaining legs greyish yellow, short and slender. **Palpal organ** (see Figs 117–118) differs from *Ps. tamaricis* in longer bulbus and embolus, the latter more bent, also tibial apophysis is more bent (cf. PRÓSZYŃSKI 1987: 52). Differs from *Ps. reiskindi* sp. n. in broader bulbus, long tibial apophysis more straight, apically hook-like bent.

### ***Pseudicius solomonensis*** sp. n.

(Figs 101–103)

Material: 1 ♀ holotype, Solomons Islands: Three Sisters, 1916. Leg. W.M. MANN. Coll. MCZ, Harvard Univ.

R e m a r k. *Pseudicius* like with long, low and flattened cephalothorax, robust and long legs I (however the difference with remaining legs less striking), abdomen oval with white spots.

M e a s u r e m e n t s: L. cphth.: 2.25; L. abd.: 3.25; L. e–f.: 0.87; H. cphth.: 0.87; W. e–f. I: 1.50; W. e–f. III: 1.50; W. cphth.: 1.87.

**FEMALE. Cephalothorax** brown with darker eye field, slightly depressed transversally in the fovea area, with sparse adpressed whitish setae over lower sides; a row of 12 stridulatory tubercles with spines below eyes lateral. **Abdomen** oval, anteriorly truncated narrow, tapering posteriorly; brownish grey sparsely mottled whitish, with two pairs of small white spots anteriorly, four pairs of marginal diagonal white linear spots and white posterior tip (Fig. 103). **Frontal aspect**: clypeus covered with dense mat of white setae, chelicerae brown, pedipalps light yellow. **Legs** I brown, robust, less strikingly longer than the remaining legs in other related species; tibia I thick but with parallel lateral surfaces, without any special swelling, with two medium size spines on prolateral half and one very short mid-ventral (or retro-lateral) basally; with sparse white hairs – denser than in other *Pseudicius*, not resembling trichobothria. A row of 6 minute black stridulatory tubercles along mid-line of prolateral surface of femur I. Legs II–III lighter and shorter than the Ist one, leg IV, however, actually longer than leg I. **Epigyne** (Figs 101–102) copulatory openings medially at the

bottom of a shallow groove, pockets medium size at the posterior rim of epigyne; copulatory channels well sclerotized, form 2 tight coils, then bent dorsally and after another bent branch off a long (about ½ diameter of the coil) and broad accessory gland channel directed anteriorly. That pattern of channels is comparable with *Ps. vesporum* sp. n. from which it differs in proportions (channels thicker) and much thinner accessory gland channel (cf. Fig. 93). From that place the channel runs posteriorly and bending joins slightly swollen, medially located oval spermatheca, whose length equals diameter of the coils. In *Ps. vesporum* sp. n. the shape of spermathecae is different – they form a transversally elongated chamber from the accessory gland channels and are apically swollen .

### ***Pseudicius vesporum*** sp. n.

(Figs 88–97)

Material: ♂ holotype, ♀ allotype (with epigyne preparated), 1 ♀ paratype, Philippines: Mindanao: Davao Province, Lawa, mud wasp nest, 16 IV 1930. [Leg.] C.F. Clagg. Coll. MCZ, Harvard Univ.

Diagnosis. ♂ palpal organ simple, closely resembling *Ps. nuclearis* sp. n. and *P. manillaensis* sp. n. in short bulbus (in relation to cymbium), embolus arising at the 9 hour position and running parallel to bulbus but at some distance; tibia with only ventral prong developed – the dorsal one reduced to small swelling – almost imperceptible in *P. nuclearis*, more distinct in *manillaensis* and still more pronounced in *vesporum*.

Remark. Named after wasps' nests where specimens were found.

Measurements (first – ♂, second – ♀): L. cphth.: 2.50, 2.75; L. abd.: 2.25, 2.50; L. e–f.: 1.06, 1.12; H. cphth.: 1.00, 1.12; W. e–f. I: 1.37, 1.50; W. e–f. III: 1.37, 1.50; W. cphth.: 1.81, 2.06.

**MALE** and **FEMALE**. **Cephalothorax** brown covered densely with fine adpressed whitish setae, ♂ with intensely white band along the ventral margin, lacking in ♀; a row of 10 to 12 stridulatory tubercles with spines under eyes lateral. **Abdomen** greyish brown with indistinct pattern (see Figs 96–97). **Frontal aspect**: eyes anterior encircled with white setae laterally and darker ones dorsally; in ♂ there are reddish setae between eyes I and above AME, white above ALE, there are no setae beneath AME; clypeus reduced to an edge – in ♂ covered with dense row of white scales overhanging cheliceral bases, in ♀ median triangle of whitish setae overhangs mid line of chelicerae and is followed laterally by a few darker setae. **Legs** development different in both sexes: in ♂ much longer and more robust, in ♀ darker and robust but appearing shorter than legs IV. There is a considerable variation in spination of tibia I in ♀ – both specimens have 3 prolateral spines ventrally, in one ♀ retrolateral margin is devoid of spines whilst in the other there are 2 spines (as in Fig. 91). In ♂ tibia I with a few trichobothria like long hairs, which are not visible in ♀♀ – in which tibia I is covered with denser short white hairs – spination as in Fig. 90; comparison of tibia I in ♂ and ♀ in Figs 90–91. A row of 5 to 7 minute stridulatory tubercles on femur I with an additional single tubercle above the row. **Ventral aspect**: cheliceral retrolateral tooth in ♂ distinctly bicuspid (fissidentati), in ♀ the anterior



cusp is not developed, instead a sloping edge, which gives appearance of an "unidentati" state (Figs 94–95). **Epigyne** shown in (Figs 92–93) is very similar to that in *Ps. solomonensis* sp. n. from which it differs internally in slightly more distant spacing of copulatory openings; the internal structure differences are much more striking – median vertical location of spermathecae, much broader and higher accessory gland channels, narrower coils of copulatory channels. This structure could be considered transistory and much simpler in relation to that in such species as *Ps. tokaraensis* (Bohdanowicz et Prószyński 1987): 71–72, Figs 77–80 and *Ps. daitaricus* Prószyński, 1992 where copulatory channel is divided into soft spiral passing into sclerotized one, spermathecae medially located and more or less elongated, pocket narrow and located medially or even anteriorly. **Palpal organ** ventrally and laterally is shown in Figs 88–89.

### ***Thianitara*** sp.

(Figs 121–124)

Material: 1 ♀ *Thianitara* sp. det. J. Prószyński; Thailand: E slope of Doi Sutep, 875–950 m, 15 VII 1962. Leg. Ross and Kavanaugh. Coll. CAS, San Francisco.

Measurements: L. cphth.: 2.37; L. abd.: 2.87; L. e–f.: 1.00; H. cphth.: 0.62; W. e–f. I: 1.56; W. e–f. III: 1.56; W. cphth.: 1.75.

The available information is not sufficient to classify this species in a sure way, but it may provide a good test for the proposed Key for the genera of *Euophryinae* of the World (Prószyński in prep). According to literature data (Simon 1897-1903) the genus is characterized by low cephalothorax, elongate and robust leg I with tibia I swollen and armoured into 5 pairs of ventral spines and metatarsus I about as long as tibia. These characters are well visible in Fig. 121. However, the only species of the genus has been described from Sumatra and is known from ♂ specimens only (cf. Prószyński 1984c: 147). The confirmation of proper classification of this species and its occurrence in Thailand depends therefore on finding the ♂ specimen matching the present ♀.

I assume that in those circumstances it may be better to abstain from describing and naming the species formally. The general appearance with its characteristic abdominal pattern and low cephalothorax is shown in Figs 121–122, the epigyne and its simple spherical spermathecae are shown in Figs 123–124. The structure and position of accessory glands is still uncertain: they are presumably located on the copulatory channel near spermatheca, there is however some protuberance near the entrance to copulatory channel dorsally to sclerotized rim of the copulatory openings. On the other hand distal end of spermathecae and the soft fertilization channels are not marked.

### Genus ***Udvardya*** gen. n.

The description of this genus was necessitated by discovery that *Silerella elagans* Szombathy, 1915 is not congeneric with *Silerella barbata* Boes. et Str., 1906 (cf. Prószyński 1985: 70–73, ff. 7–8), type species of the genus *Silerella*

BOES. et STR., 1906 (the latter actually a synonym of *Siler* SIMON, 1889). Finding of the proper systematic position for *Silerella elagans* became possible with discovery and provisional identification of an unknown ♂ of that species by C.E. GRISWOLD in the collection of the CAS, San Francisco. Continuing his line of research I have confirmed his tentative identification (a job easier for me because of previous study of the type specimen in the Budapest Museum) and give below description of both sexes, including heretofore undescribed ♂. I have consulted that conclusion with Mr. F.R. WANLESS who has not only seconded it but also sent me for examination all specimens of the genus he has prepared simultaneously for his own research project. Actually I have proposed the generic name *Udvardya* gen. n. for *Silerella elagans* SZOMBATHY, 1915 already (PRÓSZYŃSKI 1987: 116–117) in a form which, from my point of view, contains all necessary elements for genus definition, except description in words. As N.I. PLATNICK has convinced me in recent discussion that such a form leaves room for nomenclatorical confusion, I give the description below.

The genus can be characterized by having legs I long and robust with long trochanter, patella, tibia and metatarsus; flattened cephalothorax with eye field taking about half of its length. ♂ with peculiar "horns" on chelicerae – resembling some other apparently unrelated genera. The retrolateral tooth is large and bicuspid (Fissidentati), there is a curious dense bunch of stout pale setae dorsally to that tooth. The detailed description of the type species and drawings are given below.

Type species: *Silerella elagans* SZOMBATHY, 1915 whose type specimen is kept in the Hungarian NH Museum in Budapest

I propose for this genus, which seems to be different from all known to me, the name *Udvardya* gen. n. The name is in honour of Dr. M.D.F. UDVARDY, whose works on zoogeography were very stimulating for me and whose excellent textbook "Dynamic Zoogeography of Land Animals" I had honour to translate into Polish.

### ***Udvardya elegans*** (SZOMBATHY, 1915), comb. n.

(Figs 124–135)

*Silerella elegans* SZOMBATHY, 1915 (D♀ );
*Silerella elegans*: PRÓSZYŃSKI 1983b: 287–291, ff. 19–20 (♀);
*Udvardya elegans*: PRÓSZYŃSKI 1987: 116–117 (F ♂♀) (transfer from *Silerella*, no description of *Udvardya* in words).

Material. A) In the coll. CAS, San Francisco, det. C.E. GRISWOLD as *Silerella* sp.: 1 ♂, 1 ♀ "Finsch hafen, N. Guinea, IV. 44, E. S. Ross"; 1♂, 5 ♀♀, "Maffin Bay, Dutch N. Guinea [=Irian], X. 44. S. Ross". B) In the coll. AMNH, New York, det. J. PRÓSZYŃSKI: 4 ♂♂, 1♀ "New Guinea A.P.O. 503. Lt. B. STRUCK" (samples "Oro Bay": 2, 4. 6, 6, 7); 3 ♀♀, 4 juv., "Hollandia, Dutch New Guinea, [now Irian]: April–May 1945. Leg. Borys MALKIN "(3 samples); 1 ♀, "250 ft. Rain forst Dec. 1944. Leg. H. HOOGSTRAAL"; 1 ♂, "Hollandia and E. Sentani, Aug.–Sept. Markos; Hart"; 1 ♀, "Aitape, Finsch Coast, British New Guinea [now New Guinea–Papua] Fall 1944. Leg. W.R. ENNS(705)".

Measurements (♂, ♂, ♀, ♀): L. cphth.: 2.69, –, 2.75, –; L. abd.: 3.75, –, 3.75, –; L. e–f.: 1.50, 1.75, 1.20, 1.62; H. cphth.: 1.37, 1.69, 1.37, 3.12; W. e–f. I: 1.81, 2.12, 1.87, 2.12; W. e–f. III: 1.87, 2.37, 1.87, 2.00; W. cphth.: 2.12, 2.75, 2.25, 2.50.

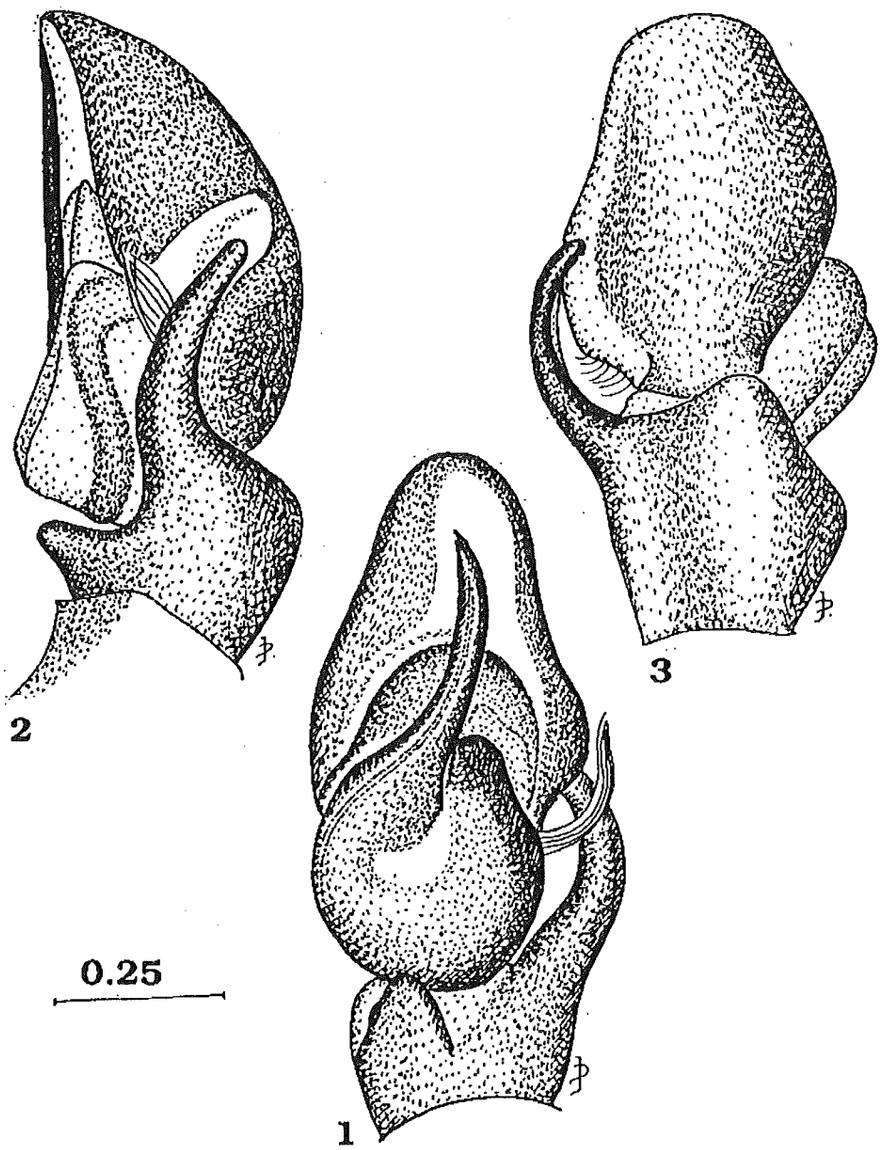


**MALE** and **FEMALE**. Remarkably similar in general appearance, with main difference in ♂ having "horns" on chelicerae, absent in ♀; there are also minor differences in abdominal pattern. The species provides curious mixture of characters appearing in other – apparently unrelated genera – with anterior legs (and to lesser extent cephalothorax shape) resembling *Sobasina* (see WANLESS 1987) and *Chalcolecta* (see PRÓSZYŃSKI 1984c: 33). **Cephalothorax** flattened (Fig. 129), brown with vertical spots of white setae on sides of cephalothorax beneath eyes lateral and near end of the thorax; white setae form six horizontal lines beneath eyes anterior lateral. **Abdomen** elongate oval, flattened dorsally, with characteristic white pattern on black background (Figs 125–126). **Frontal aspect** – triangle median bunch of white setae overhanging chelicerae, white lines under ALE as in Fig. 128; clypeus reduced to nil. **Legs** I long and robust with long trochanter, patella, tibia and metatarsus (some resemblance to *Thianitara*), brown with black sockets of spines and a patch of white setae along mid-length on prolateral surface of patella I on all studied specimens (Fig. 127). Remaining legs much shorter and slender with brown sides. **Palpal organ** elongate with long tibia and long cymbium; bulbus elongate with meandering seminal receptacle channel; embolus makes half of a coil (Figs 130–132). **Epigyne** as shown in Figs 133–134, there is some variation in epigyne among several specimens studied, in comparison with PRÓSZYŃSKI 1983: f. 20 anterior groove appear more narrow, median sclerotized channel-like parts of internal structure look differently.

### ***Yllenus arenarius*** MENGE in SIMON, 1868

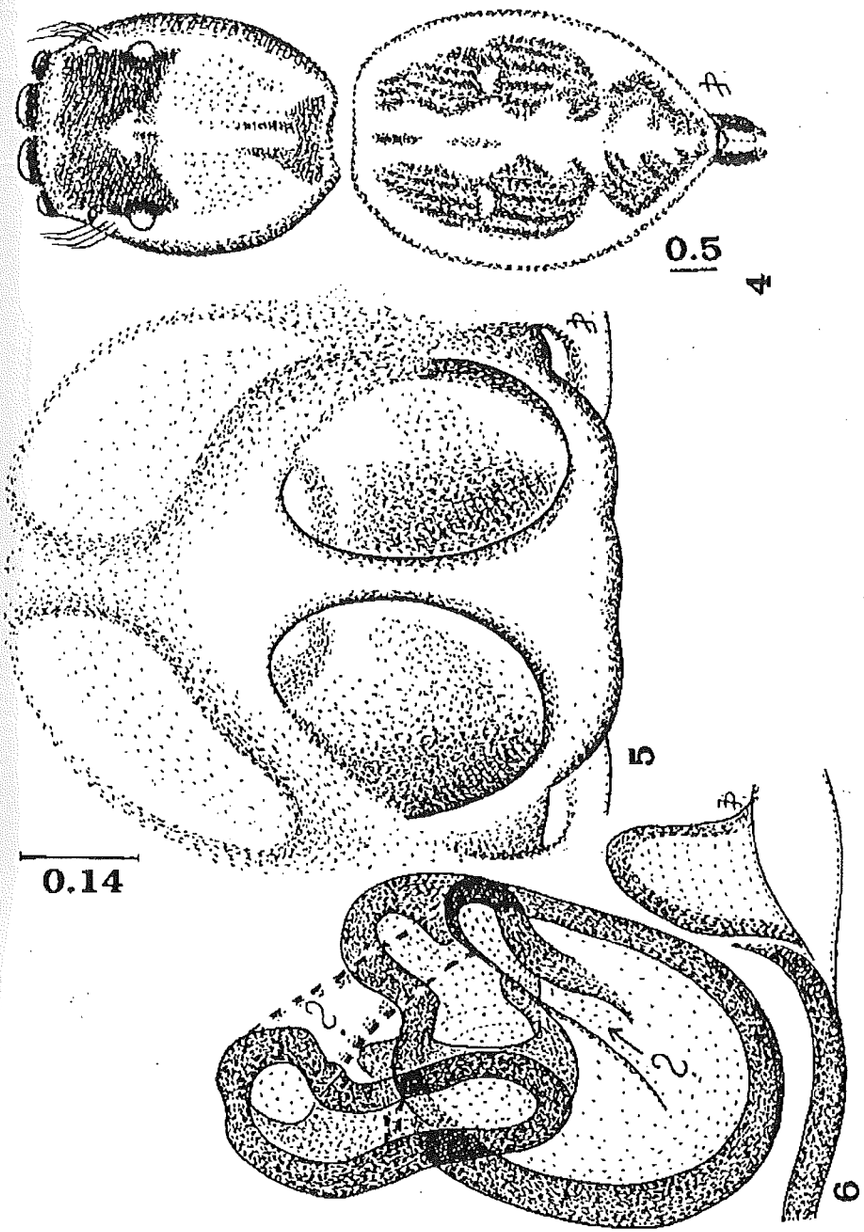
Material: 1 ♂, 1 ♀, "(341) *Yllenus arenarius* E. SIMON, France, coll. Peckham" [on reverse side of label written "Europe"; 1 ♂, 1♀, "*Yllenus arenarius* SIMON, Coasts of France, coll. J. H. Emerson"; both samples in the coll. MCZ, Harvard Univ.

These two samples, correctly identified, but without exact collecting locality given causes some doubs. As SIMON 1937 states "it is foreign to France" and the the occurence of this species was not confirmed west from Poland (described from Gdansk, Poland, subsequently found on various sand dunes in various part of Poland, PRÓSZYŃSKI 1968), the above mentioned samples create a puzzle. Does *Yllenus arenarius* live in France overlooked by collectors? If so, it should be searched for on sandy ground, possibly sea beaches. Or are both samples mislabelled, with "France" substituted for the country the specimens came from?




Figs 1–3. *Burmattus sinicus* sp. n. Palpal organ.






Figs 4–6. *Carrhotus harringtoni* sp. n. General appearance (4), epigyne (5) and spermatheca (6).

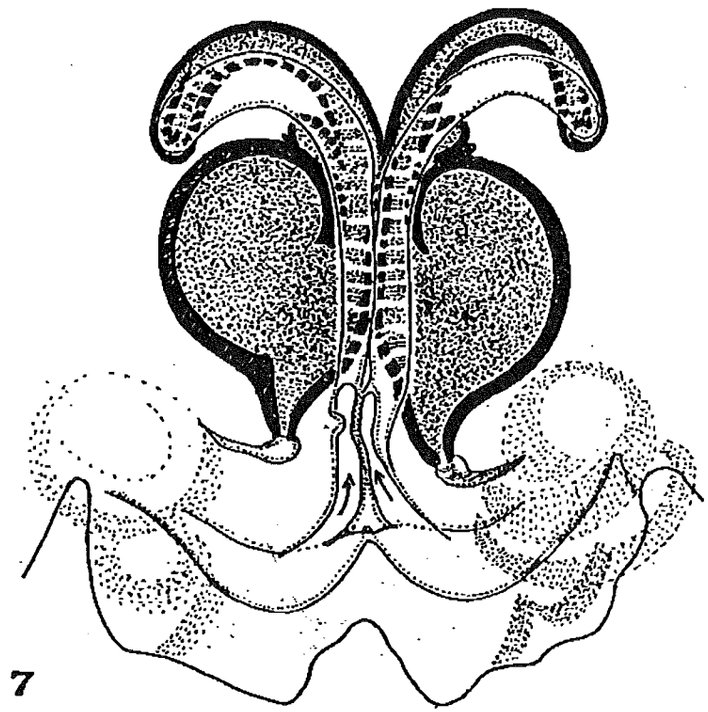
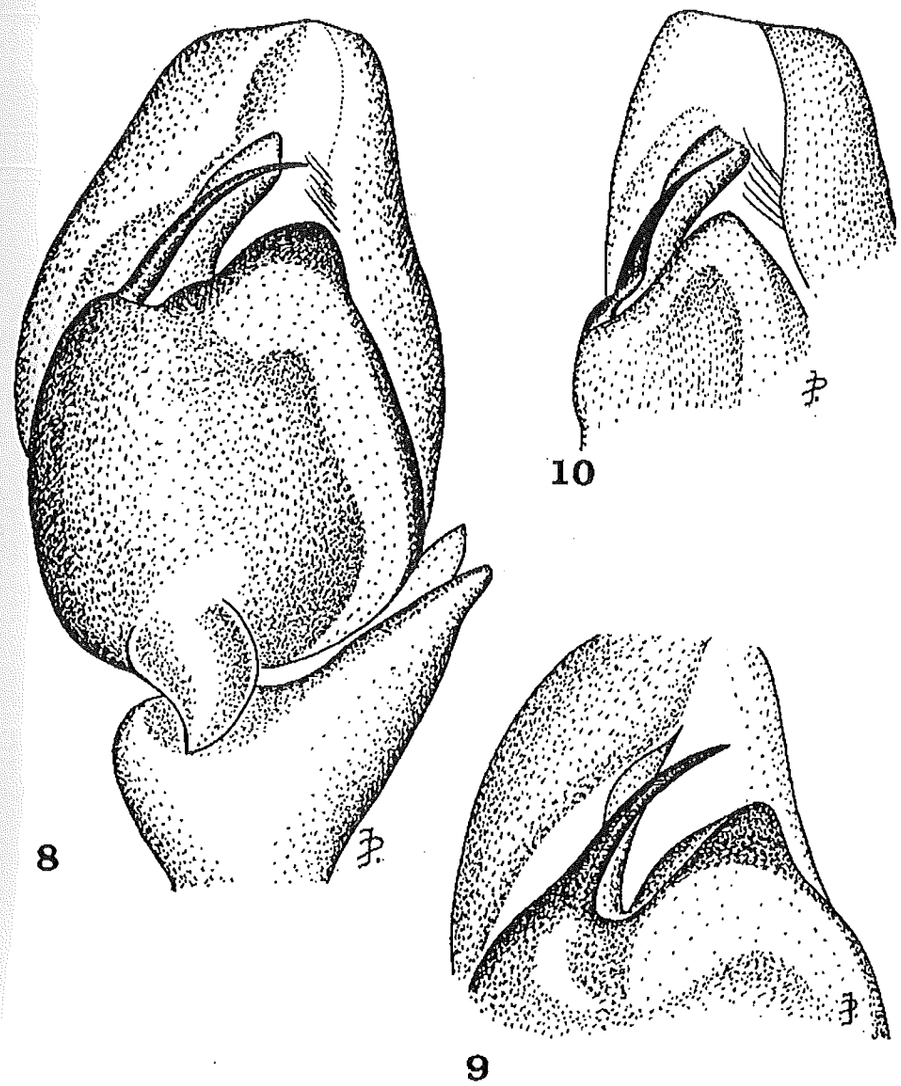
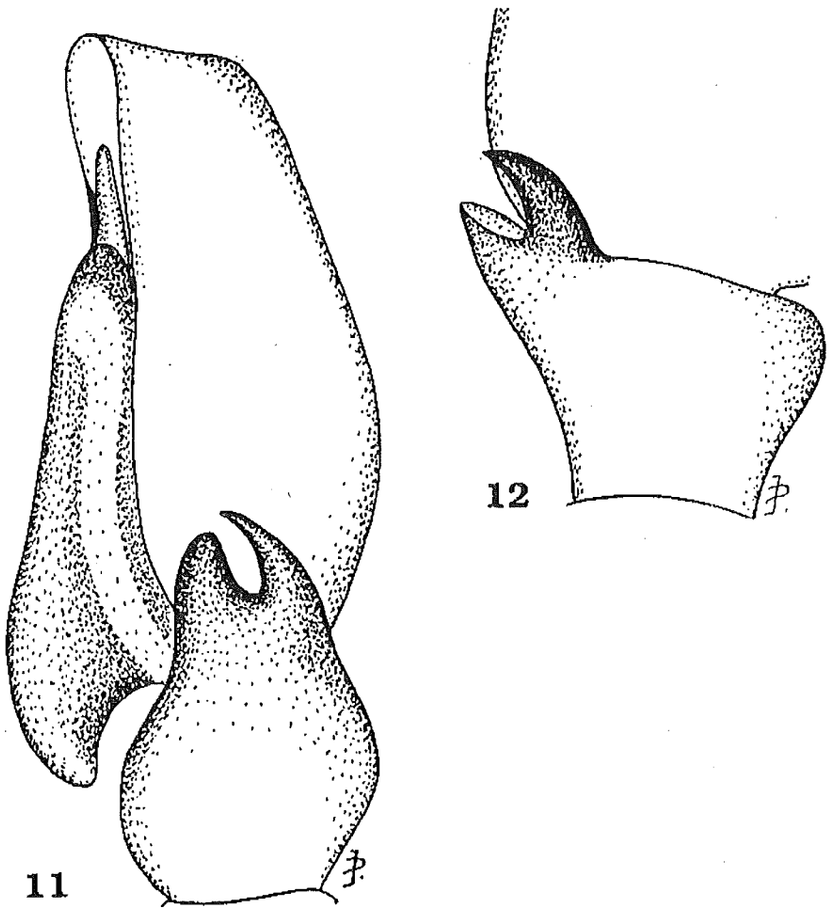



Fig. 7. *Cyrba algerina* (Luc.). Internal structure of epigyne – note copulatory openings, soft, thinn walled channels and accessory gland openings.



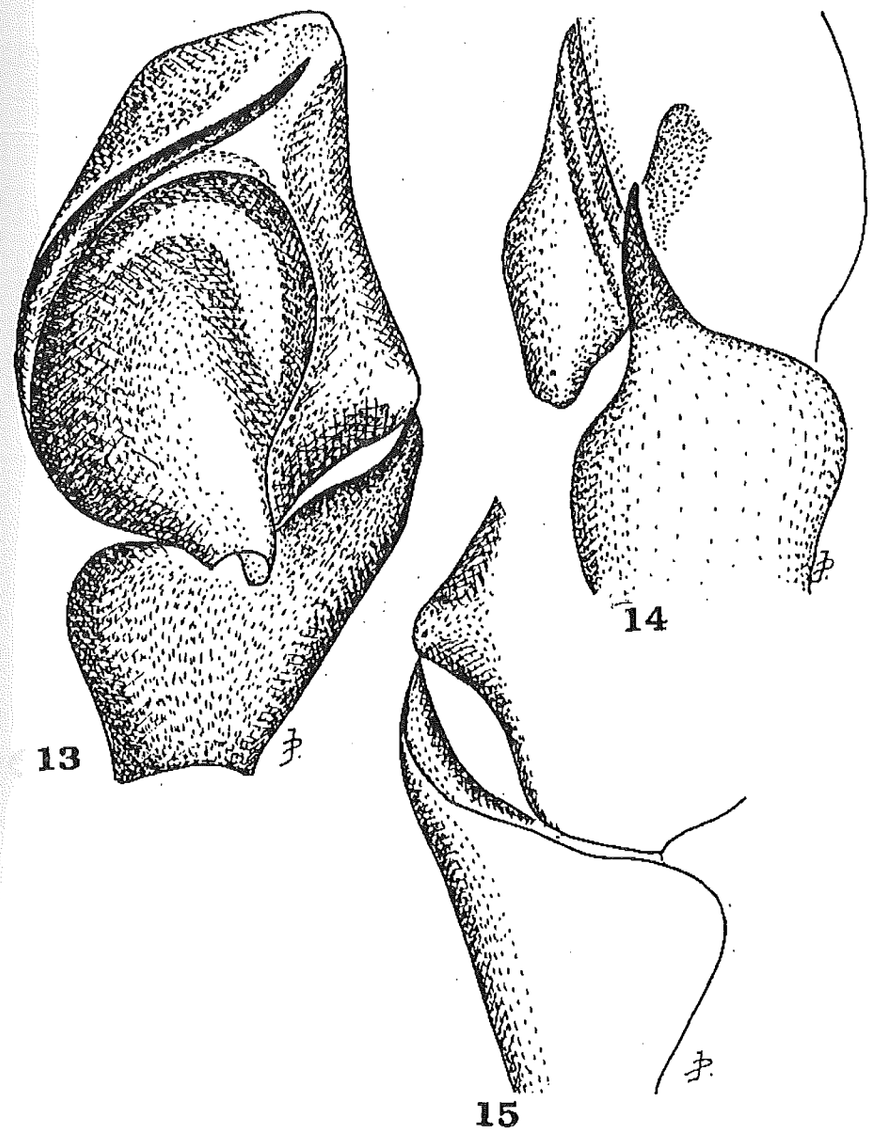



Figs 8–10. *Evarcha petrae* sp. n. Palpal organ ventrally (8) and details of embolus in two lateral positions (9, 10).

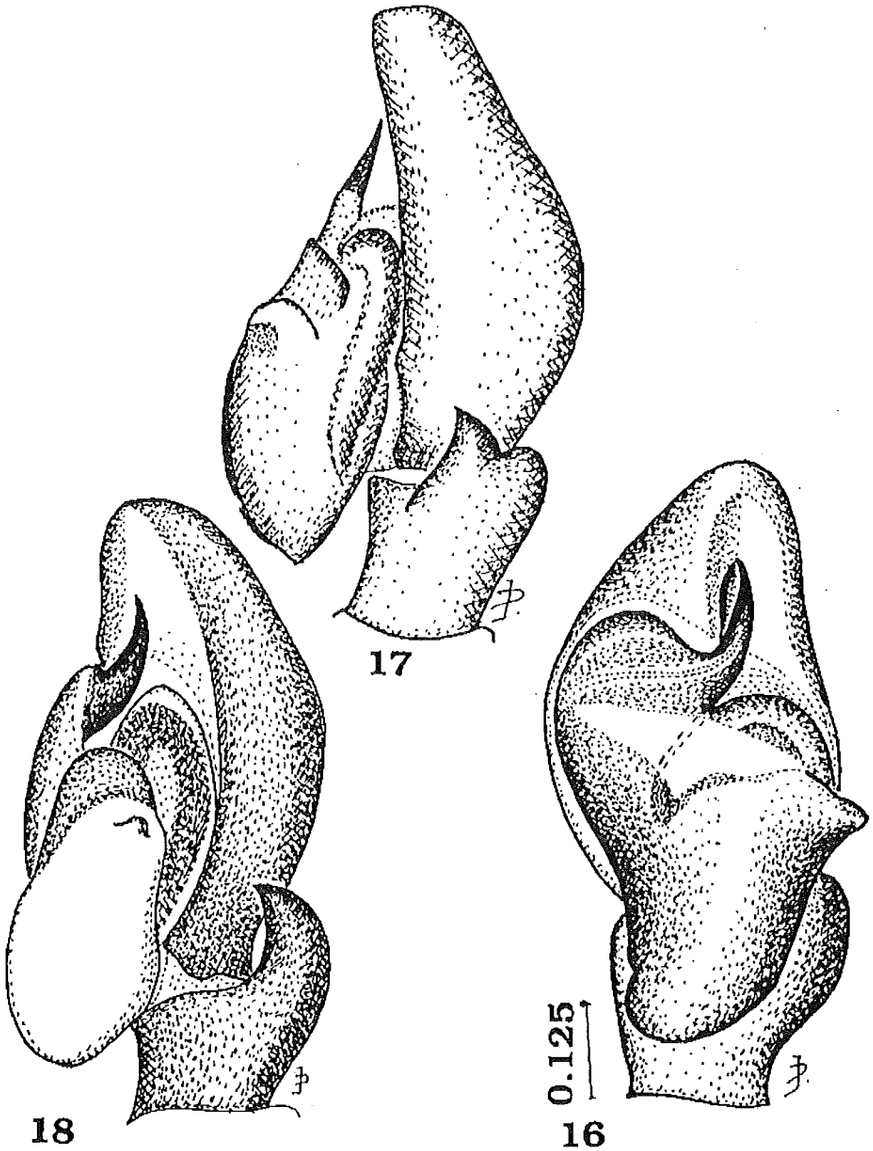



Figs 11–12. *Evarcha petrae* sp. n. Palpal organ laterally (11) and tibial apophysis dorso-laterally (12).



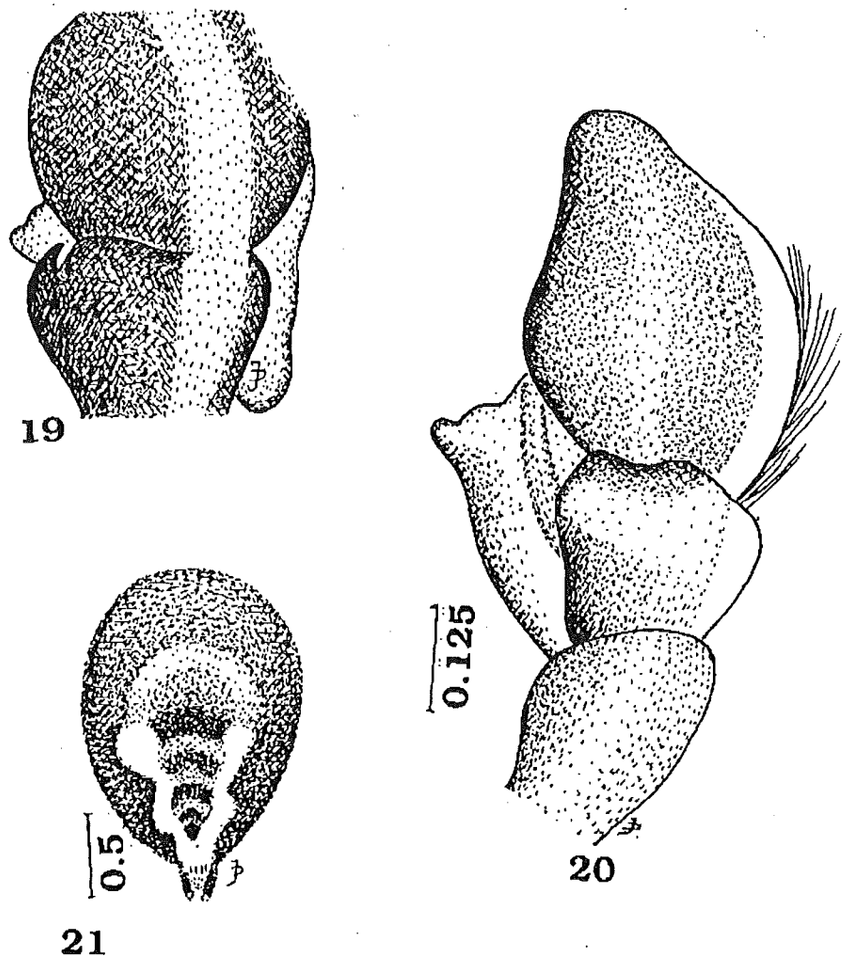



Figs 13–15. *Evarcha madagascariensis* sp.n. Palpal organ.

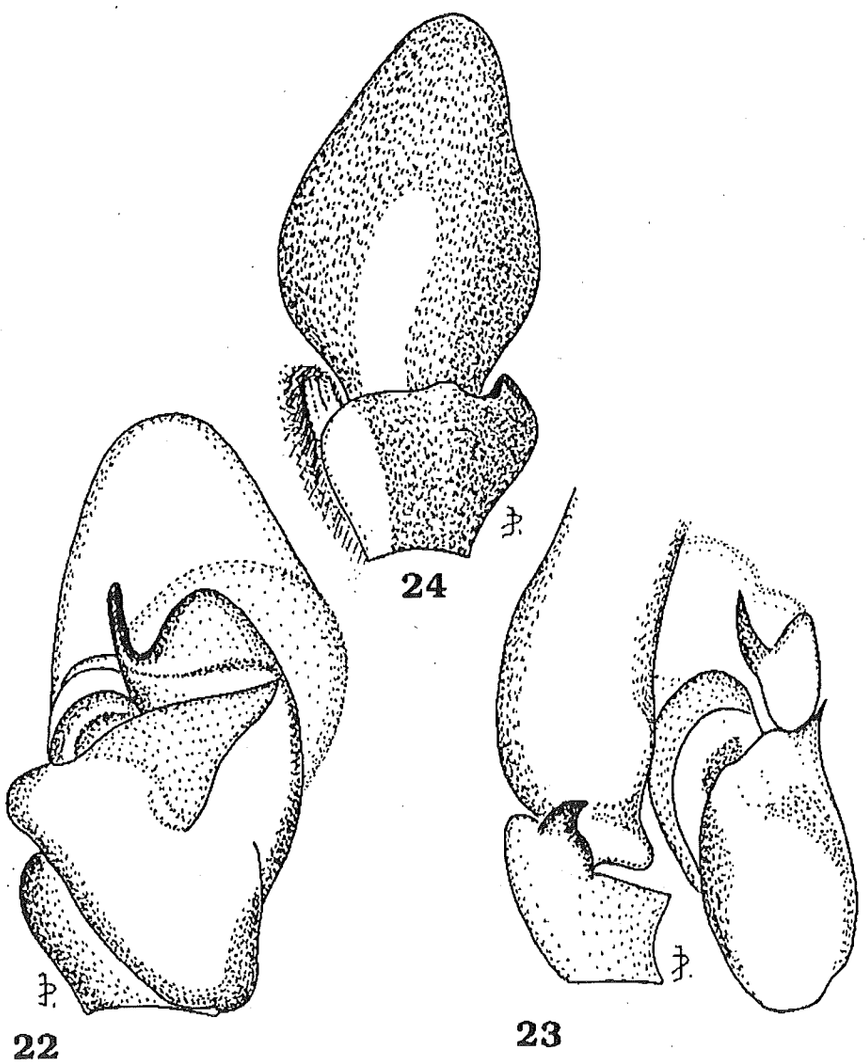



Figs 16–18. *Habrocestoides sinensis* sp. n. Palpal organ: ventral (16), lateral (17), ventro-lateral views (18).



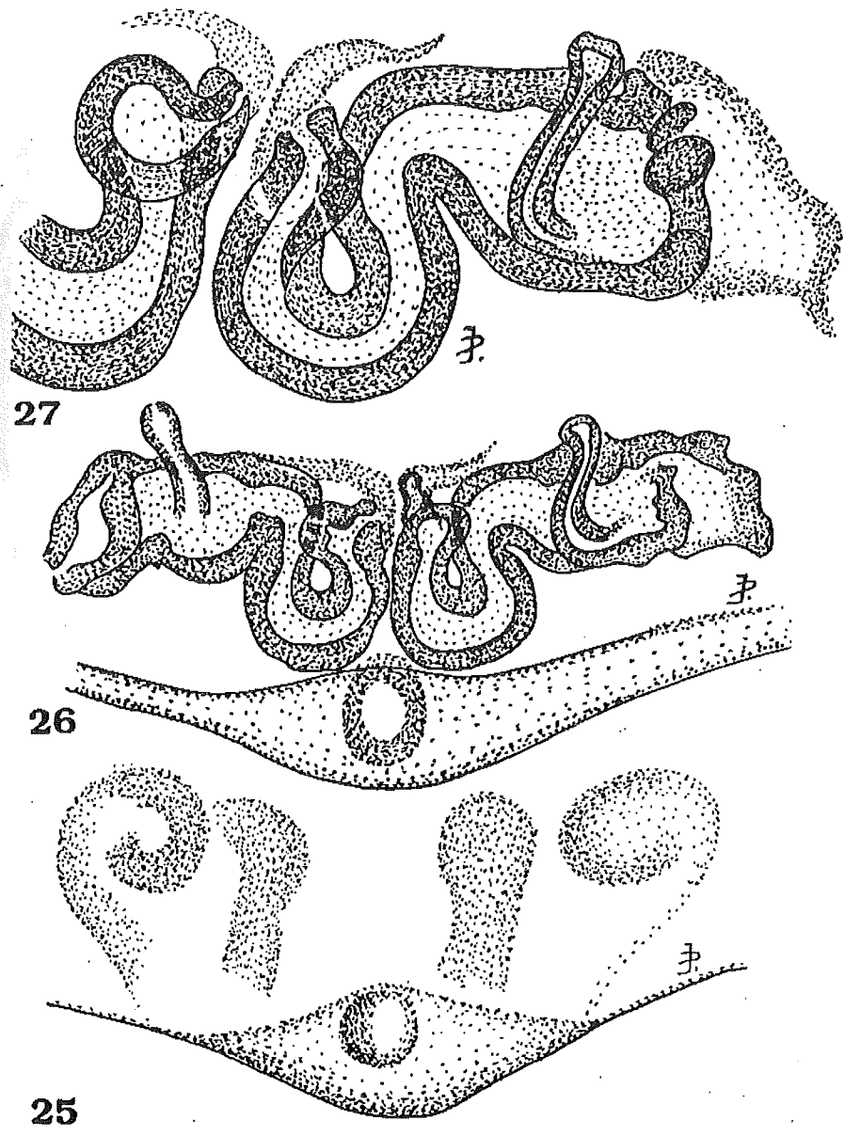



Figs 19–21. *Habrocestoides sinensis* sp. n. Palpal organ: position of dorsal streak of white setae (19), dorso-lateral view (20); also abdominal pattern (21).

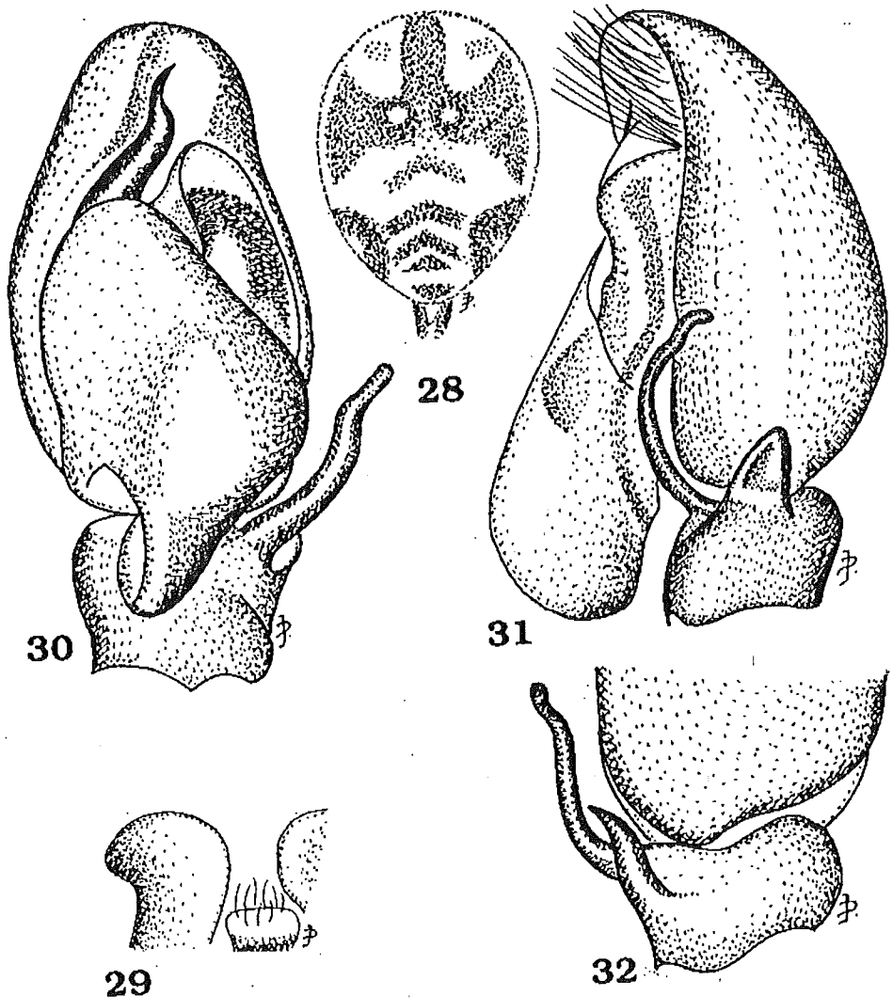



Figs 22–24. *Habrocestoides szechwanensis* sp. n. Palpal organ: ventral (22), lateral (23) and dorsal views (24).



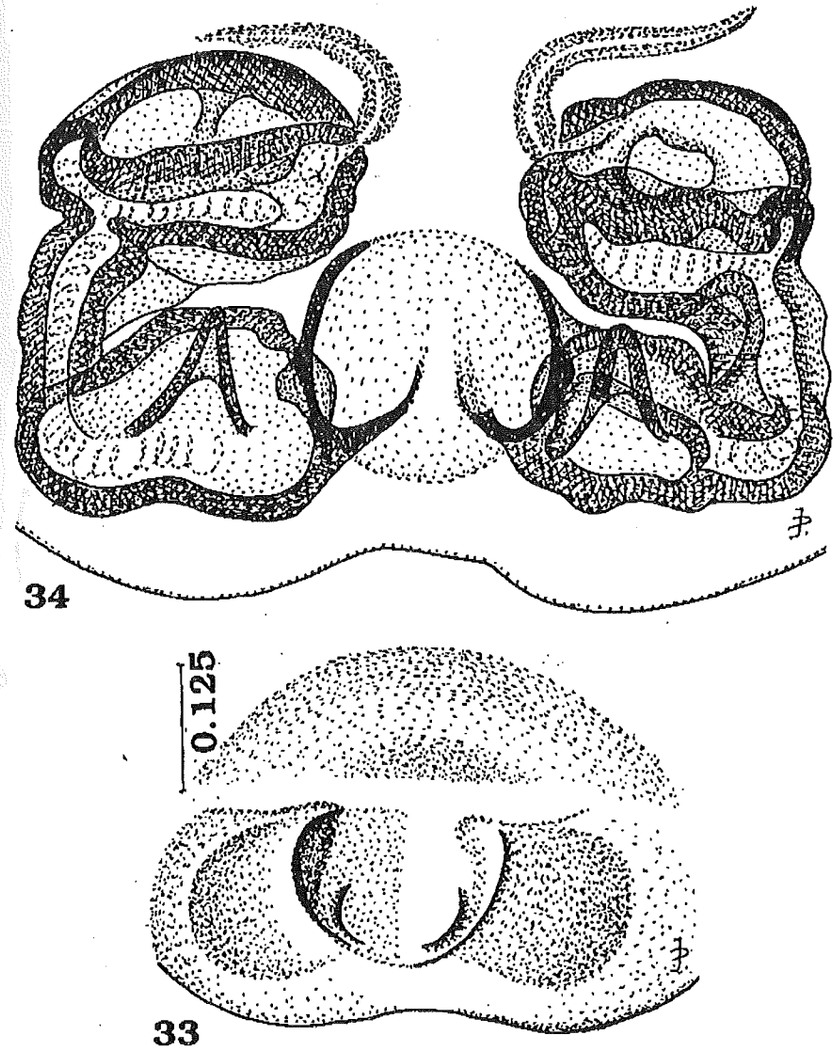



Figs 25–27. *Habrocestoides szechwanensis* sp. n. Epigyne (25), its internal structure (26) and spermatheca dorsally (27).

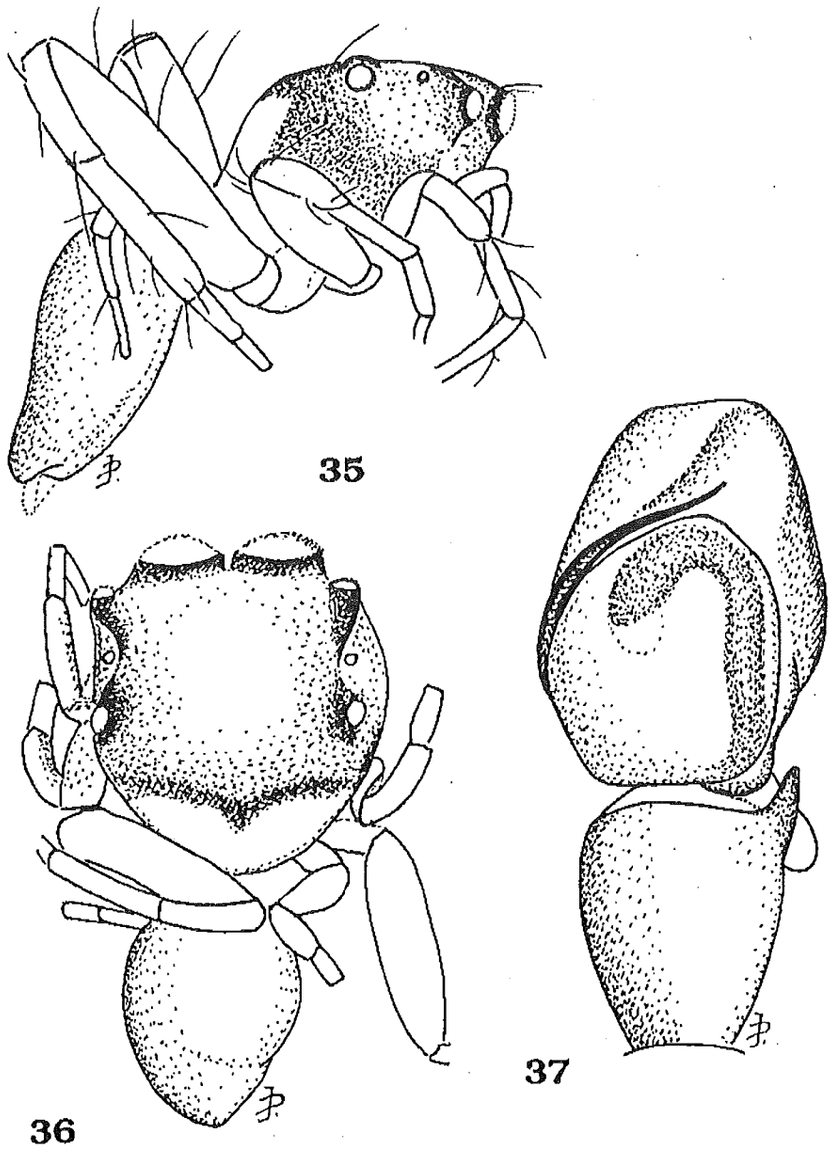



Figs 28–32. *Habrocestum hongkongiensis* sp. n. Abdominal pattern (28), maxillary plate (29), palpal organ (30–31), biramous tibial apophysis dorsally (32).



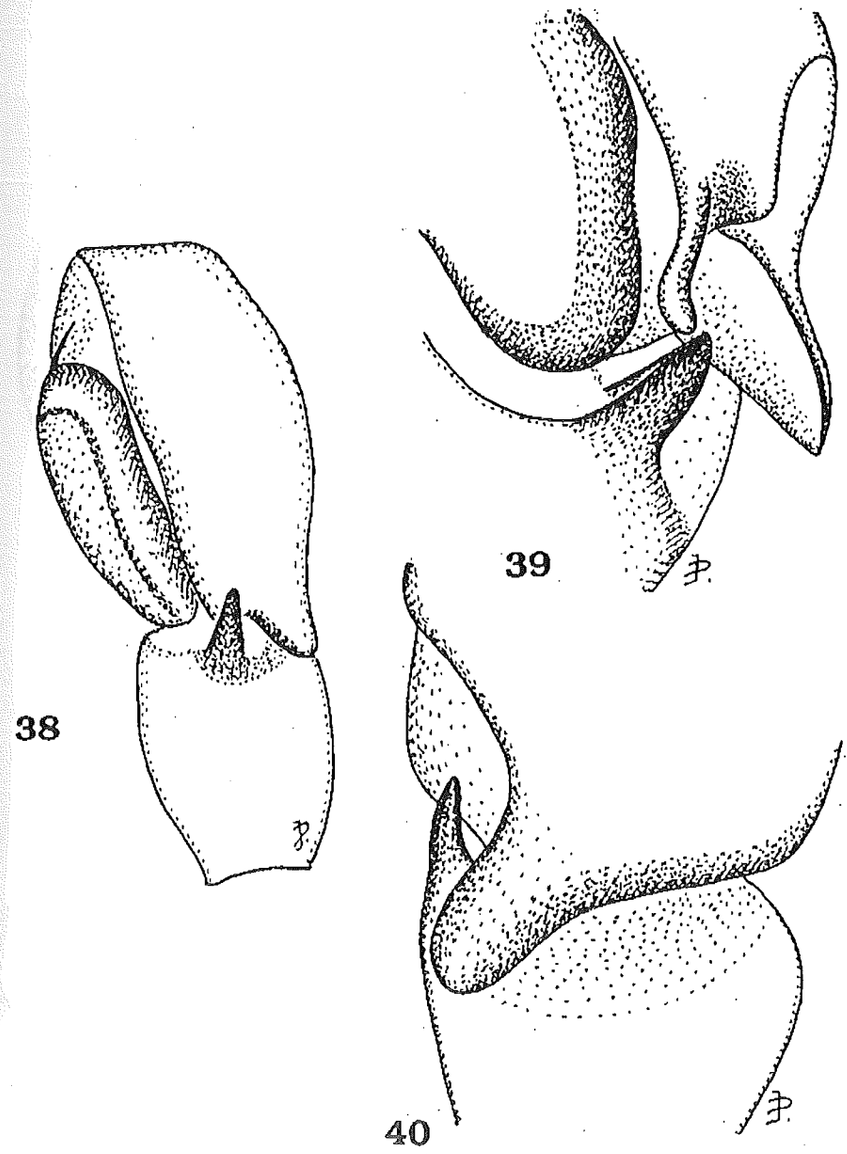



Figs 33–34. *Habrocestum kweilinensis* sp. n. Epigyne (33) and its internal structure dorsally (34).

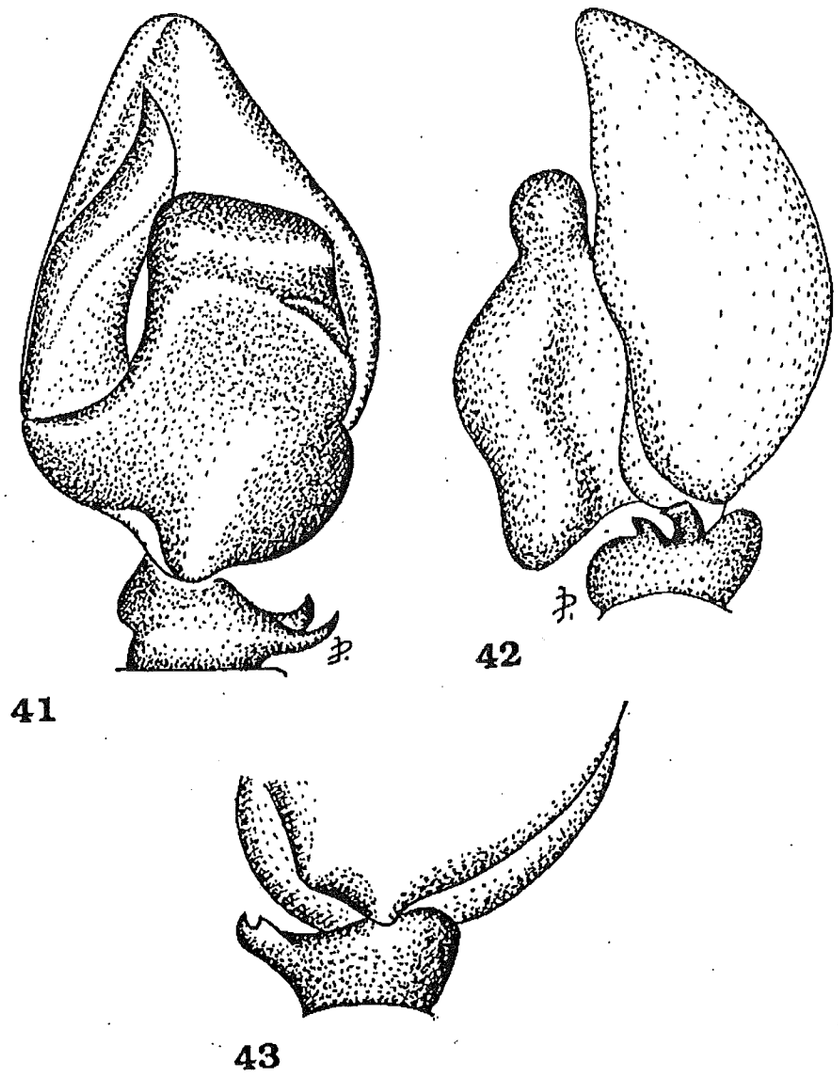



Figs 35–37. *Iranattus rectangularis* sp. n. General appearance laterally (35) and dorsally (36); palpal organ ventrally (37).



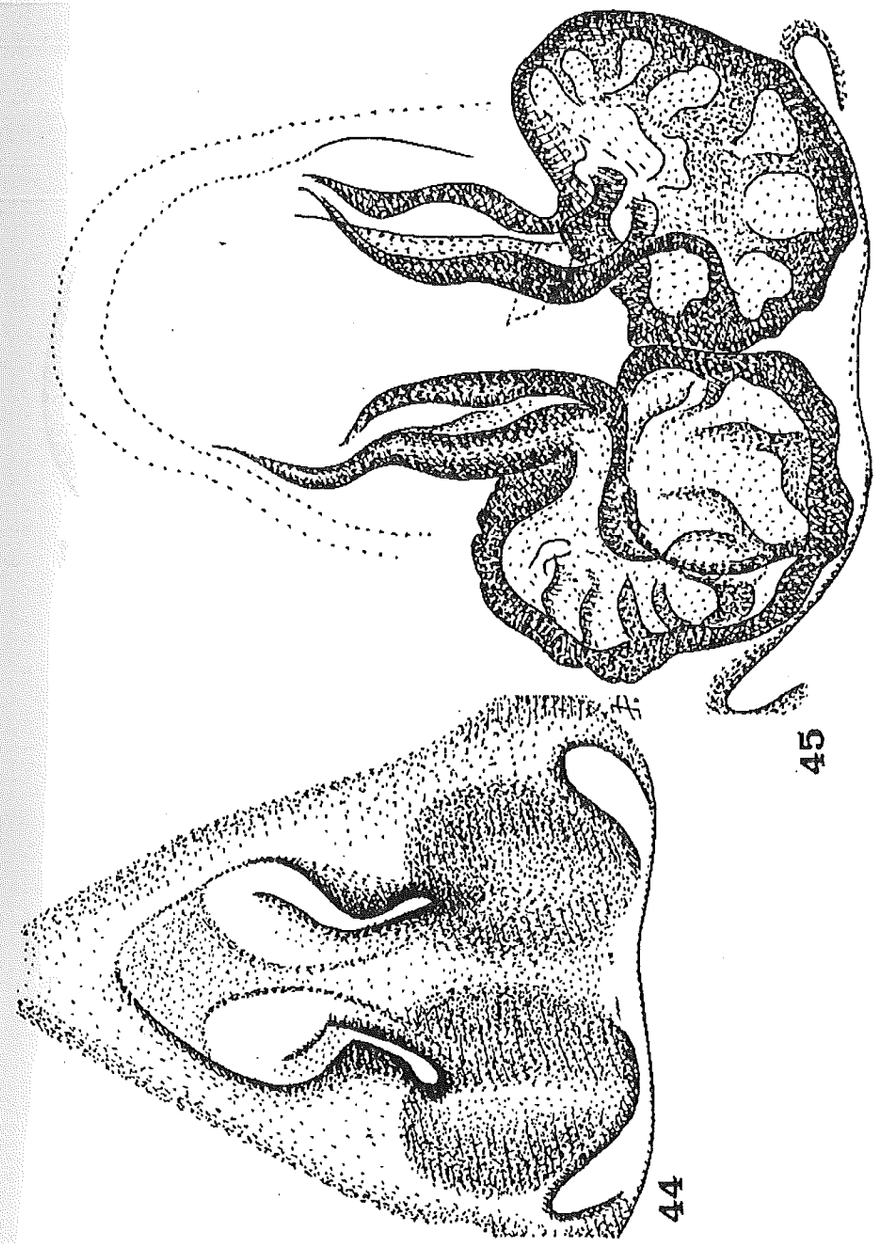



Figs 38–40. *Iranattus rectangularis* sp. n. Palpal organ laterally (38) and its locking apparatus ventro-laterally (39) and dorsally (40).

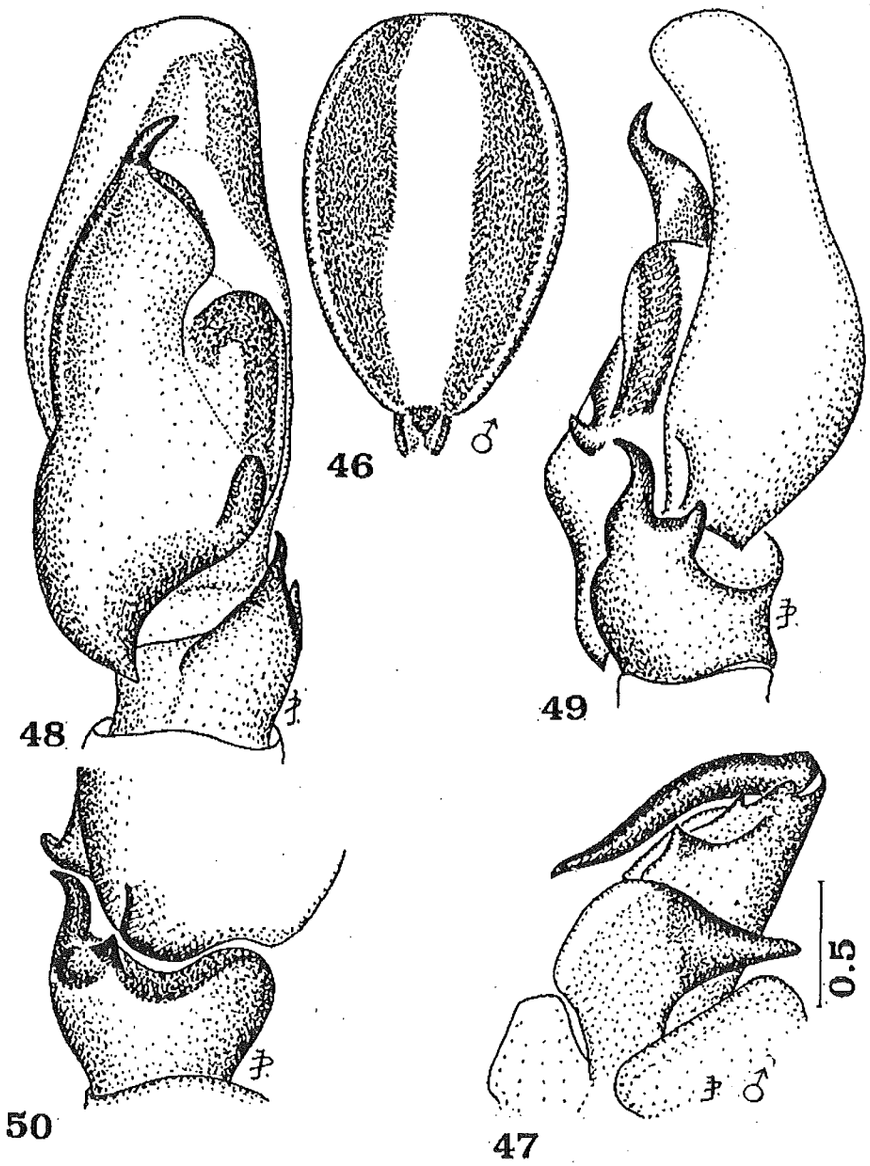



Figs 41–43. *Leptorchestes berolinensis* C. L. Koch, 1846. Palpal organ.



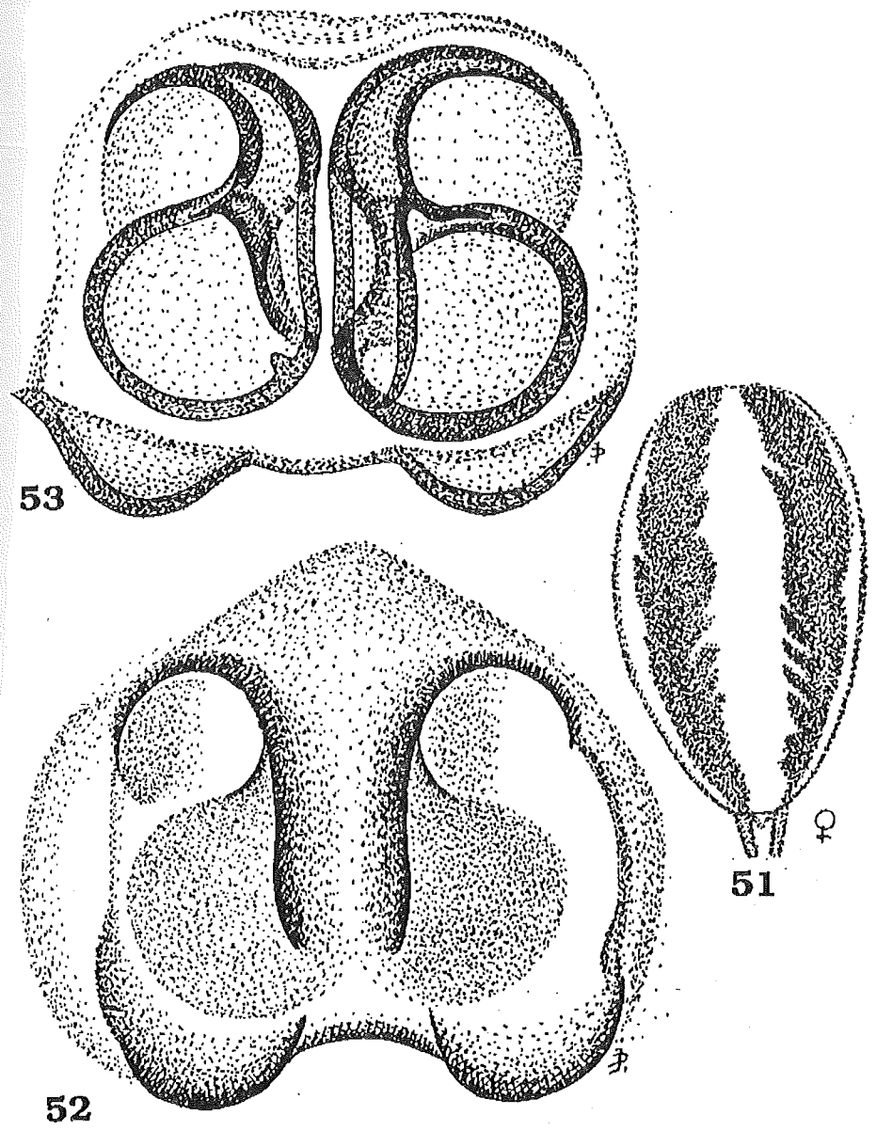



Figs 44–45. *Menemerops flavescens* (O. P.-Cambridge, 1872). Epigyne (44) and its internal structure (45).

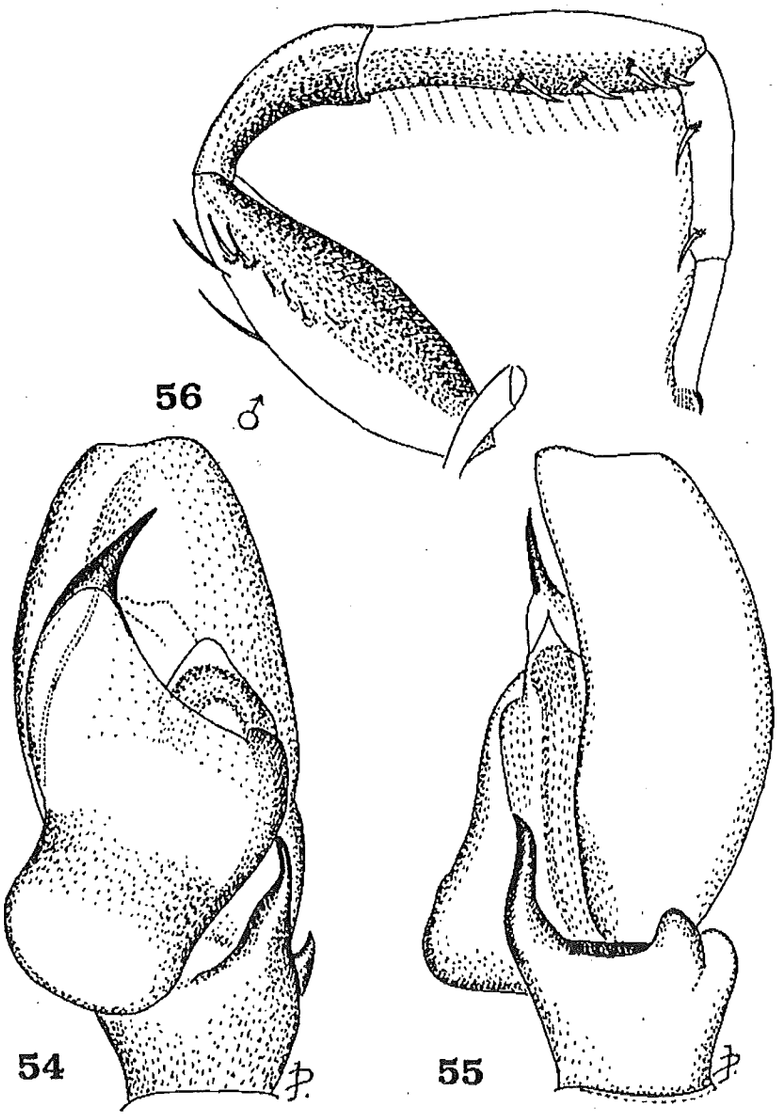



Figs 46–50. *Phintella coonooriensis* sp. n. Abdominal pattern (46), maxillary plate and chelicera (47), palpal organ (48–50).



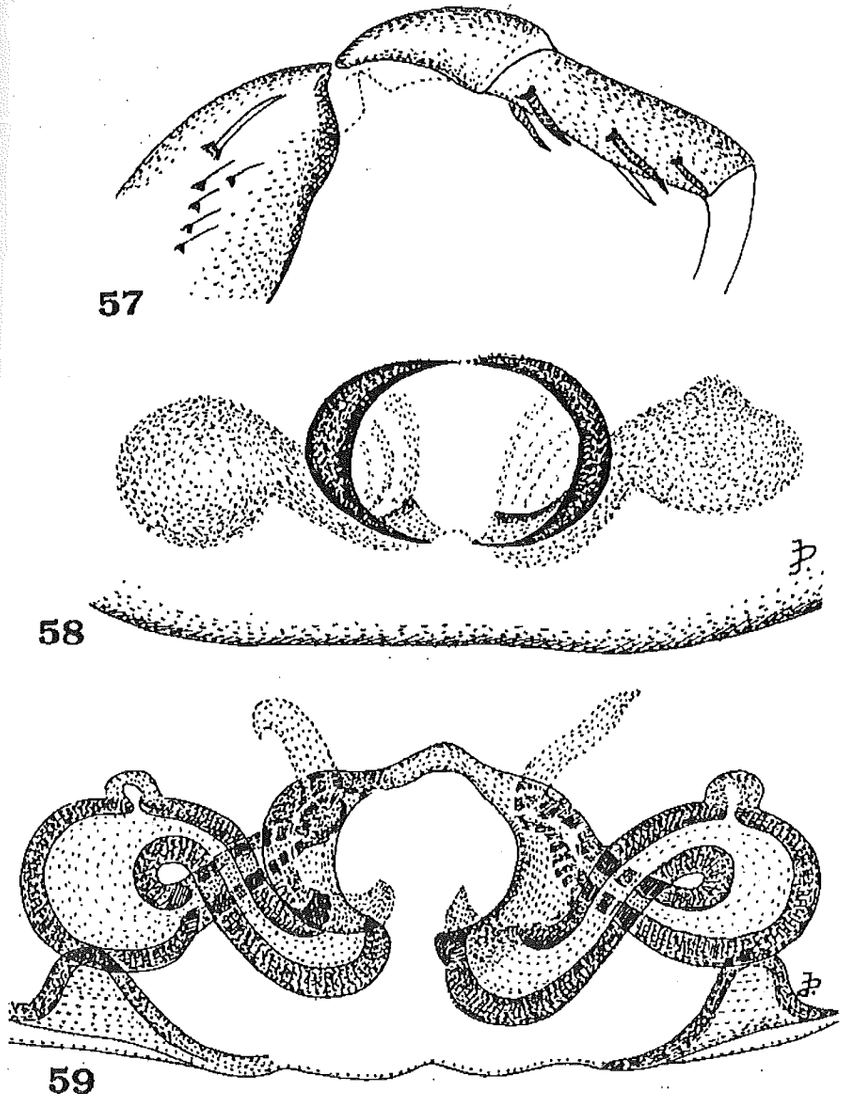



Figs 51–53. *Phintella coonooriensis* sp. n. Abdominal pattern (51); epigyne and its internal structure (52, 53).

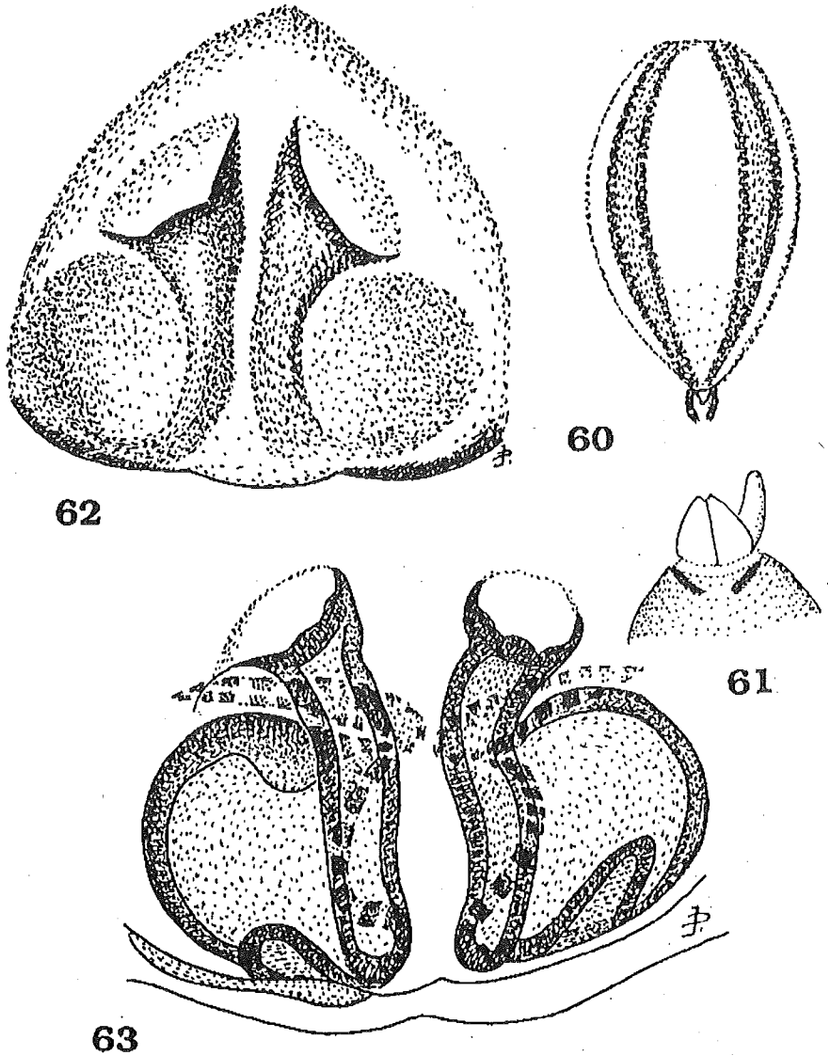



Figs 54–56. *Phintella mussooriensis* sp. n. Palpal organ (54–56); ♂ leg I - note elongate tibia and spination (56).



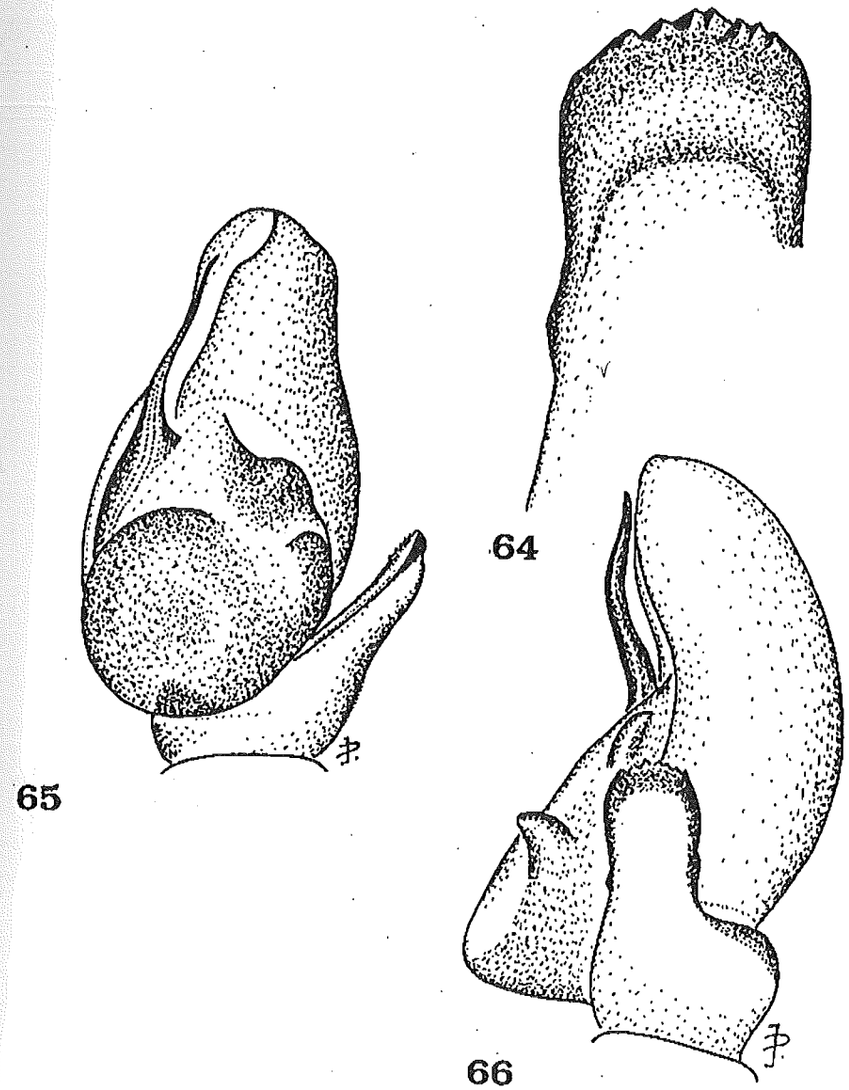



Figs 57–59. *Phintella mussooriensis* sp. n. ♀ leg 1 (57) (note differences with ♂: shorter tibia, spination); epigyne and its internal structure (58, 59).

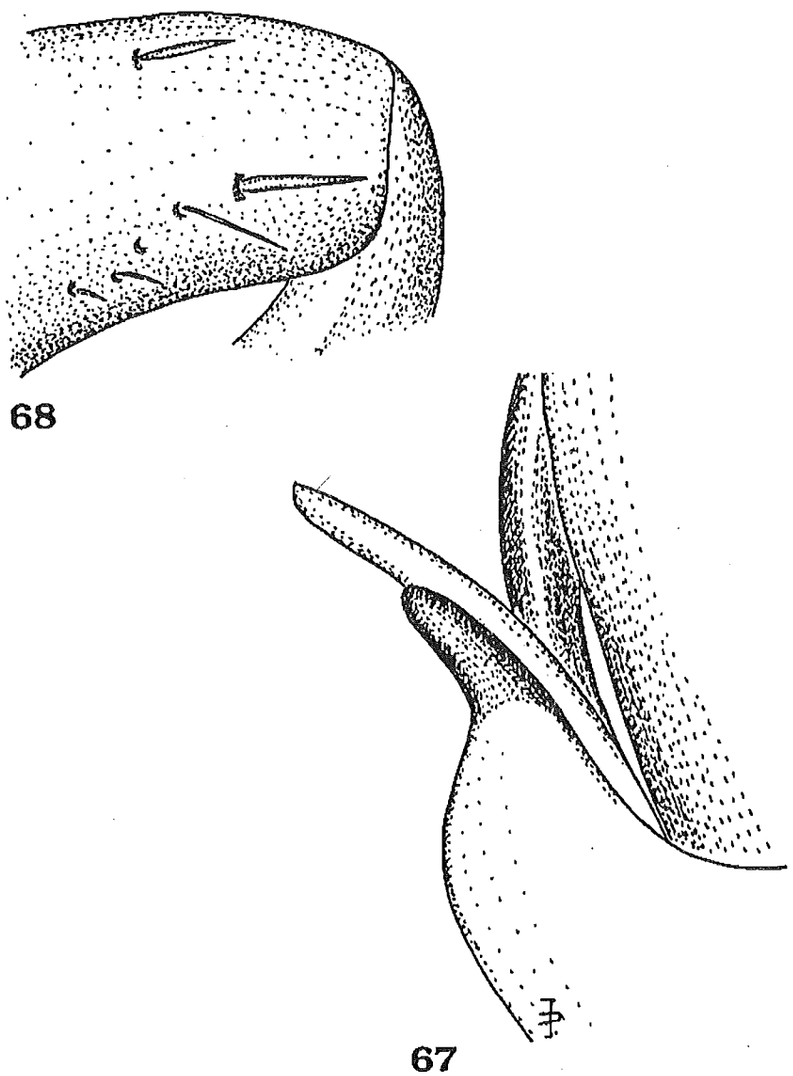



Figs 60–63. *Phintella nilgirica* sp. n. Abdominal pattern (60), spinnerets ventrally (61), epigyne and its internal structure (62, 63).



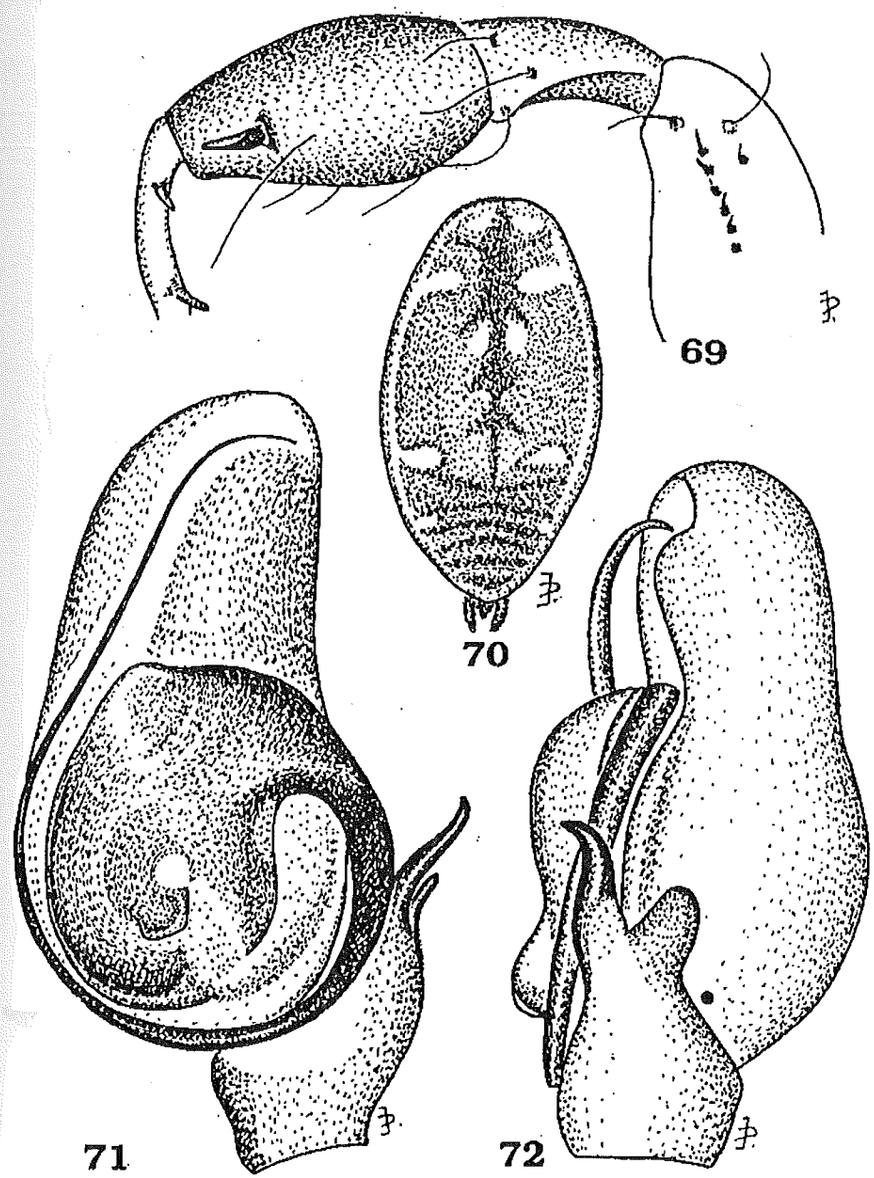



Figs 64–66. *Pseudicius encarpatus* (WALCKENAER, 1802). Palpal organ.

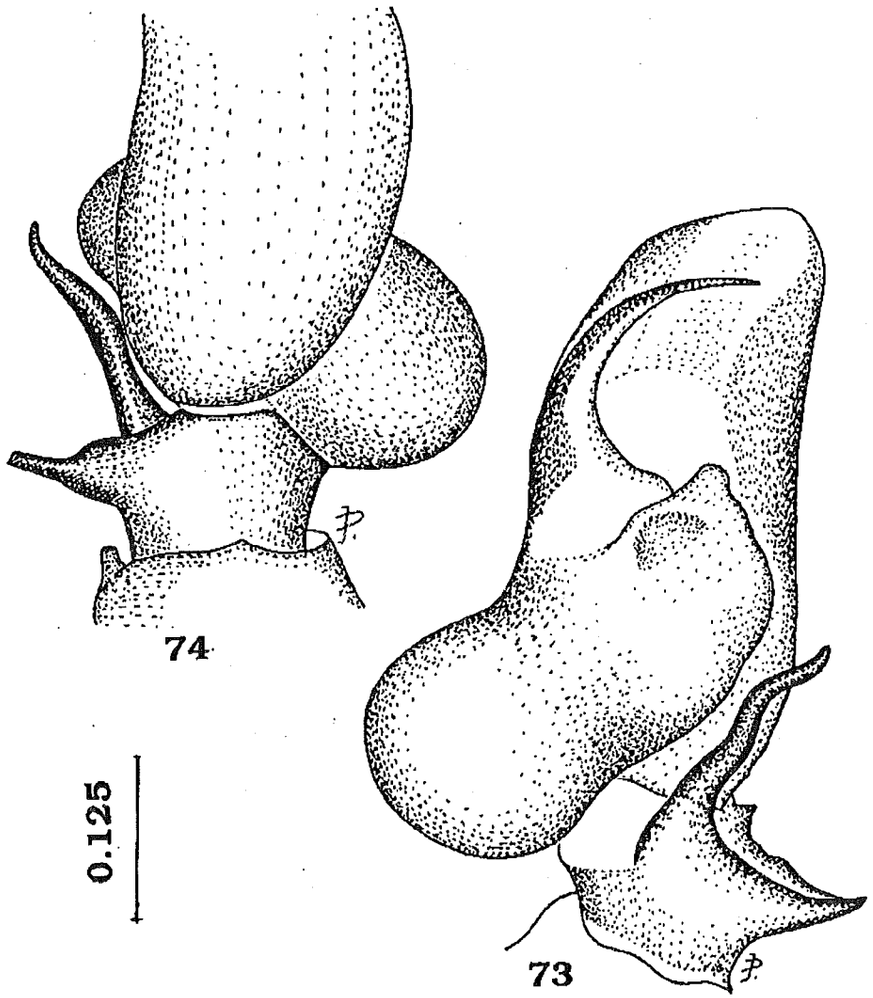



Figs 67–68. *Icius hamatus* (C. L. Koch, 1846): stridulatory microspines on tip of femur I prolaterally (68); *Pseudicius nepalicus* (ANDREEVA et al., 1984): tibial apophyses, dorsal view (67).



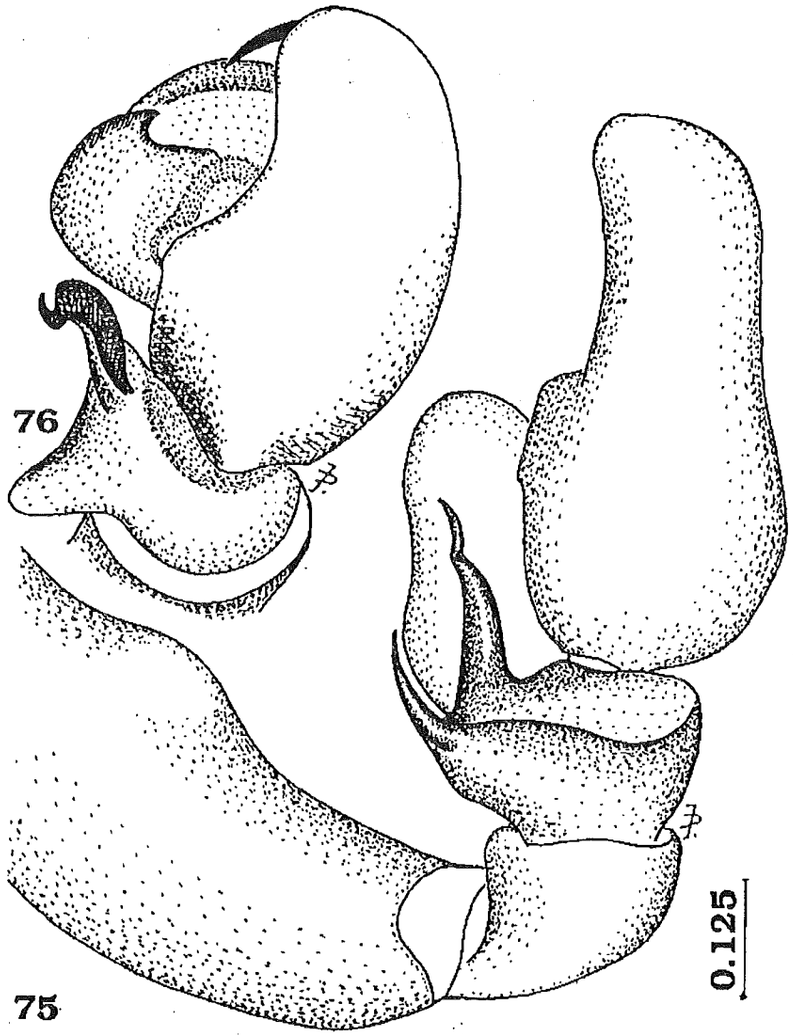



Figs 69–72. *Pseudicius nepalicus* (ANDREEVA et al., 1984). Leg I (69), abdominal pattern (70), palpal organ (71, 72).

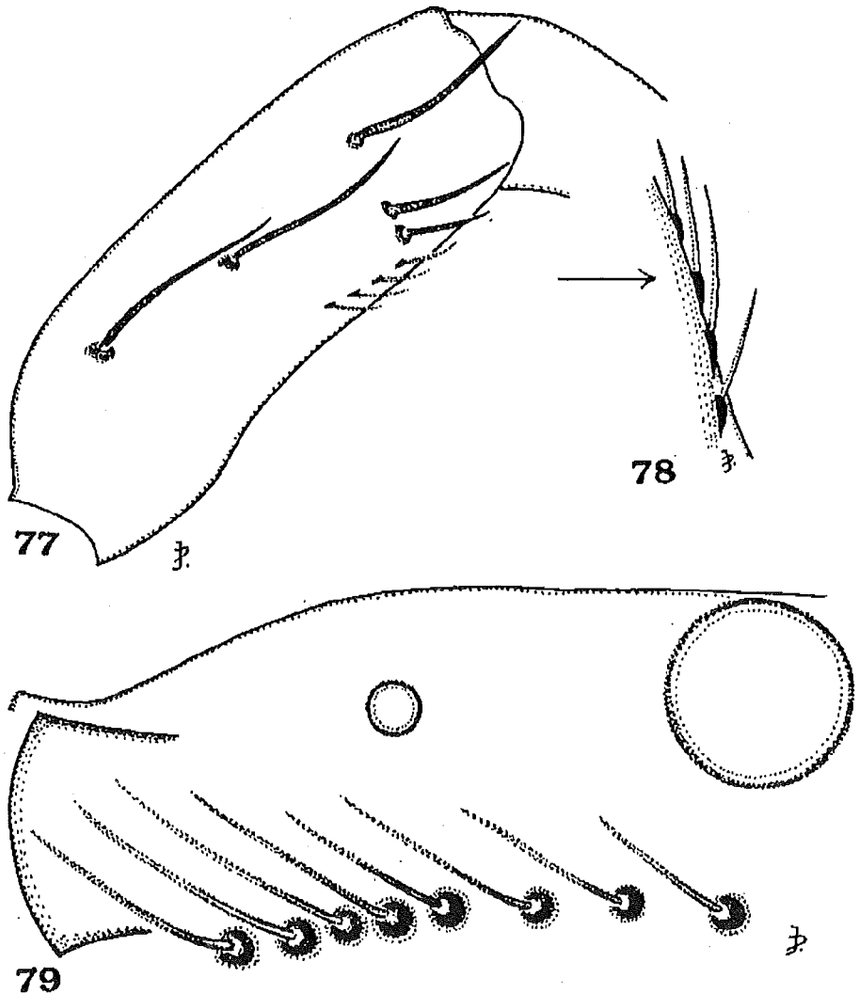



Figs 73–74. *Pseudicius maureri* sp. n. Palpal organ ventrally (73) and dorsally (74).



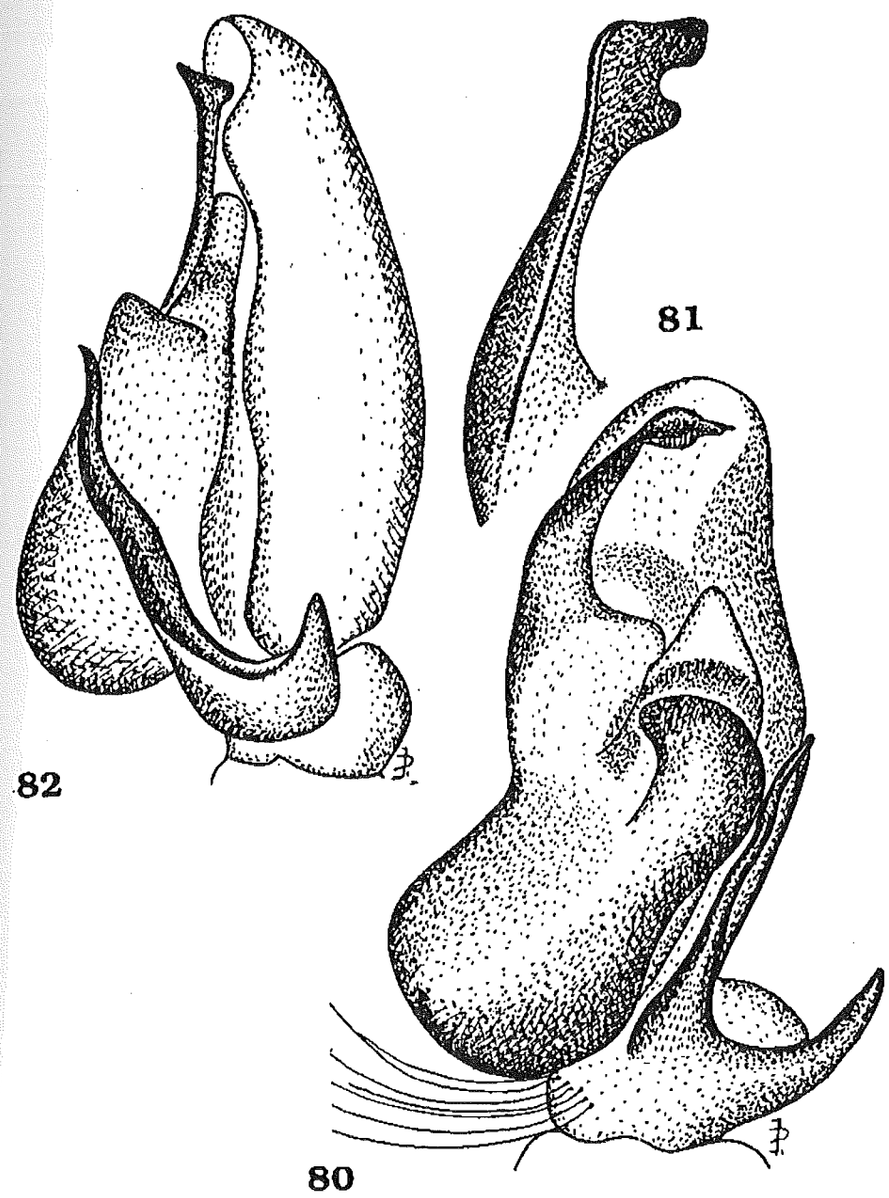



Figs 75–76. *Pseudicius maureri* sp. n. ♂ pedipalp laterally (75); tibial apophysis antero-laterally (76).

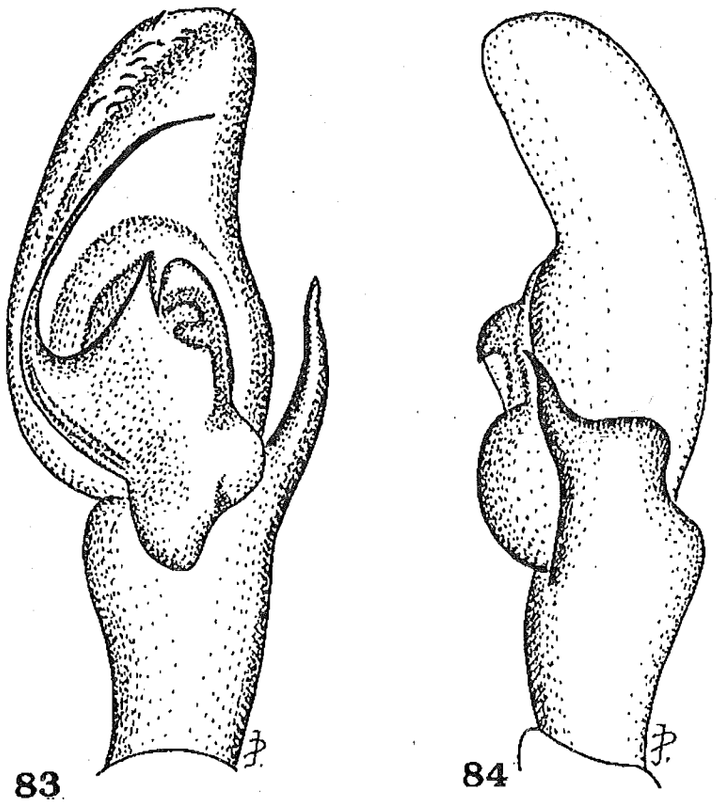



Figs 77–79. *Pseudicius maureri* sp. n. ♂ femur I prolaterally – note difference between microspines and other spines (77); femoral microspines under higher magnifiction (78); stridulatory spines on tubercles under eyes III (79).



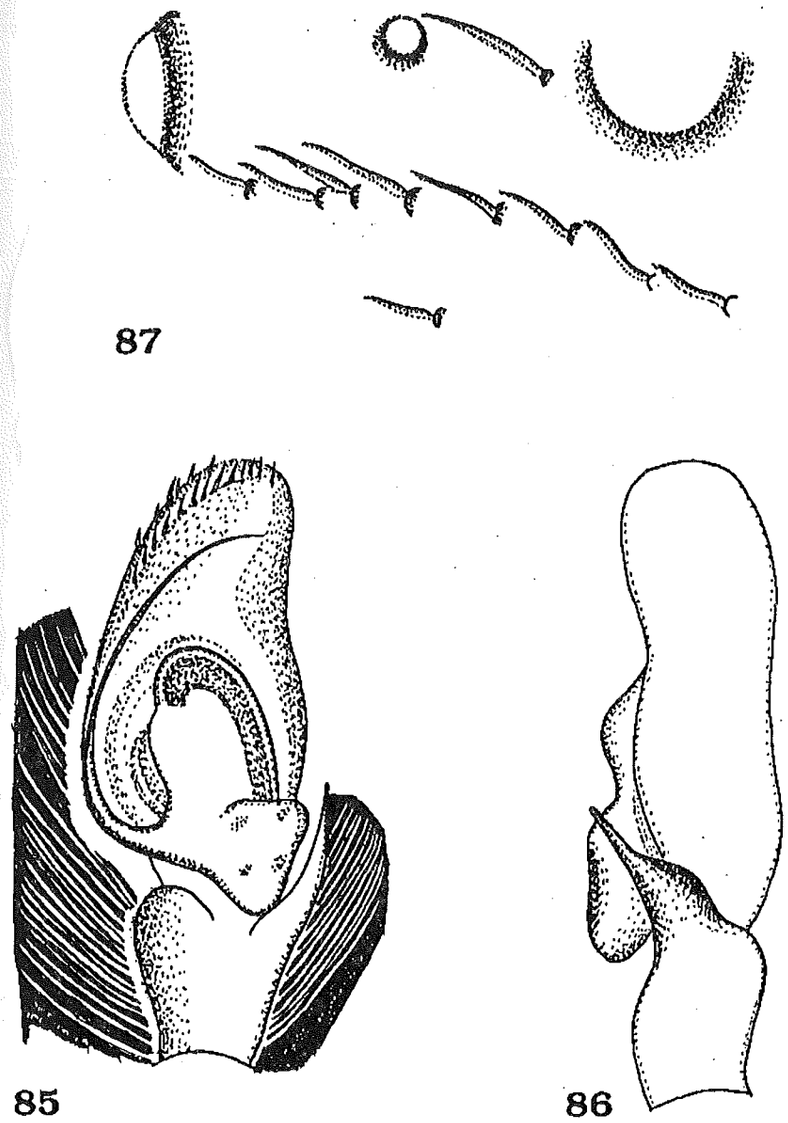



Figs 80–82. *Pseudicius rudakii* sp. n. Palpal organ: ventrally (80) and laterally (82), tip of embolus (81).

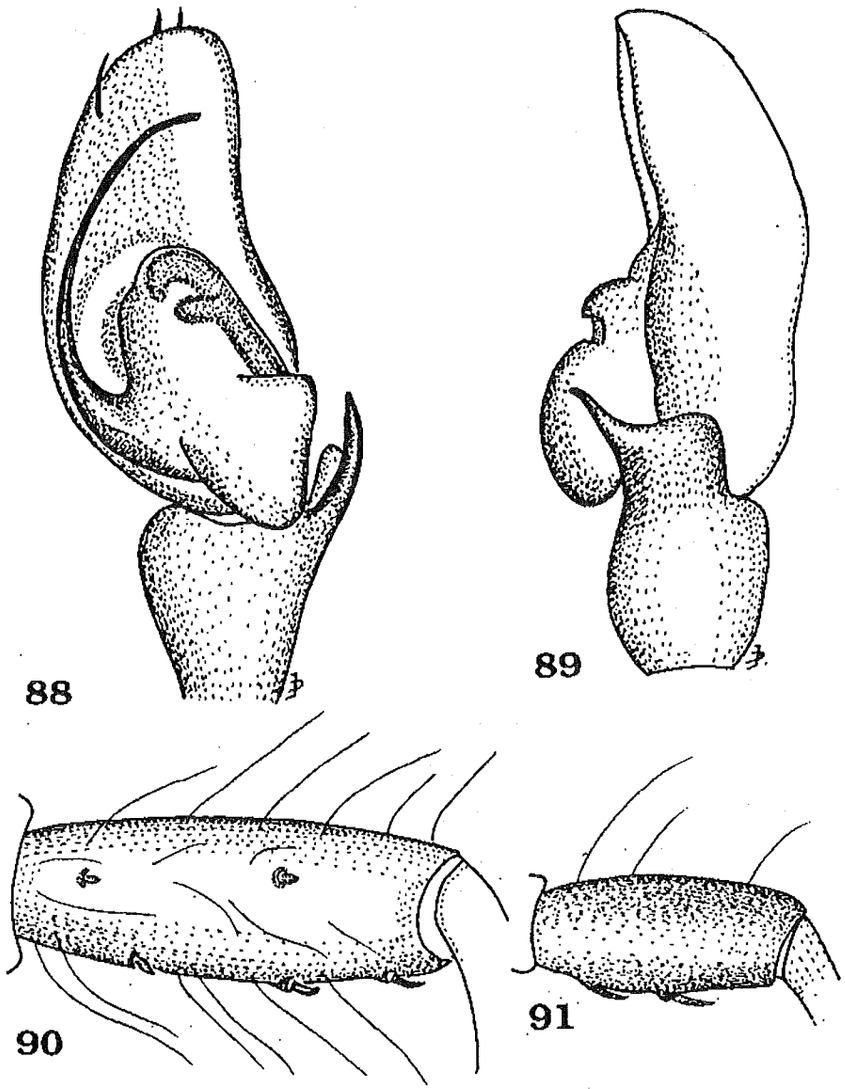



Figs 83–84. *Pseudicius manillaensis* sp. n. Palpal organ.



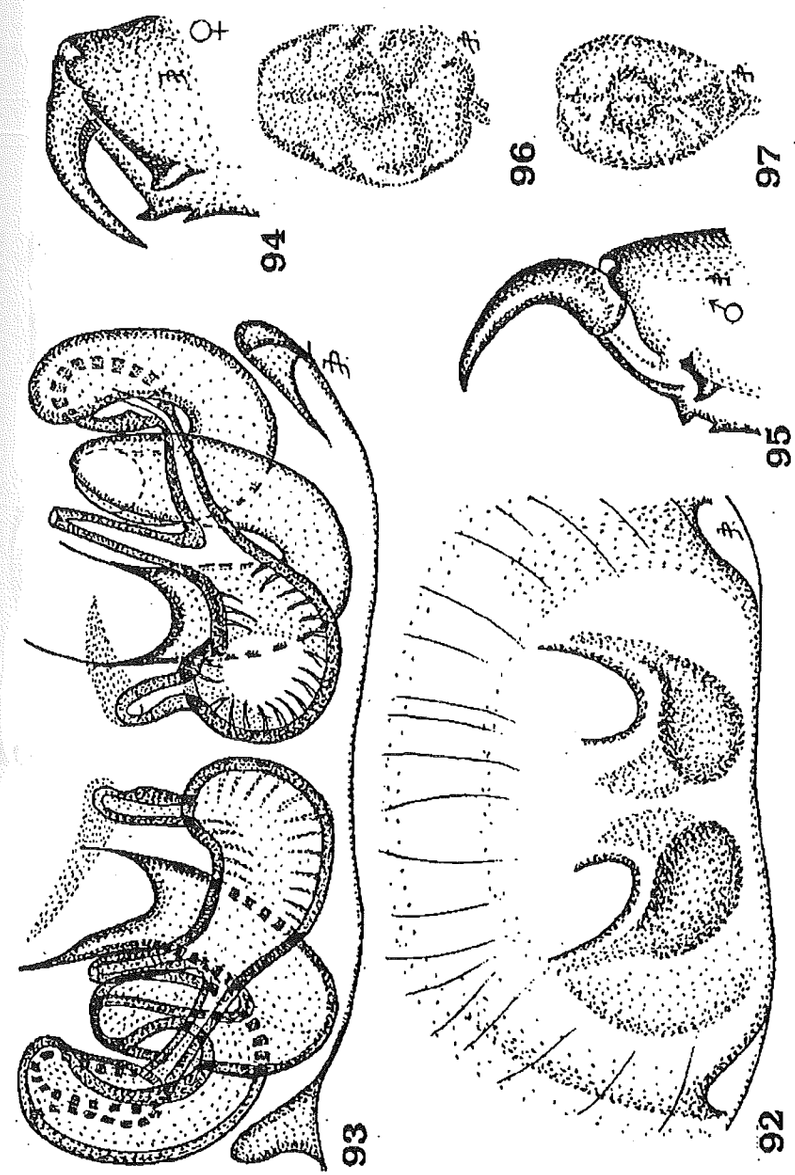



Figs 85–87. *Pseudicius nuclearis* sp. n. Palpal organ (85, 86) and characteristic row of tubercles and spines below eyes lateral (87).

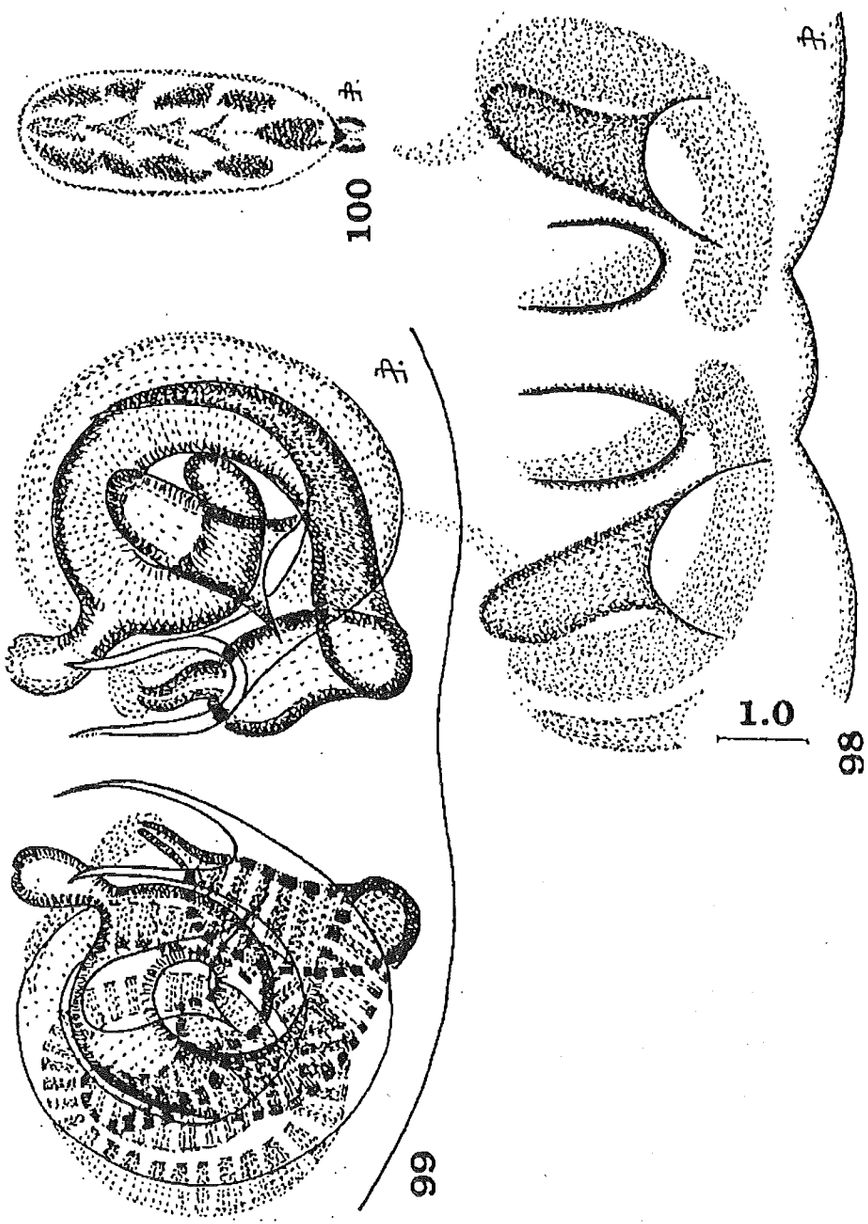



Figs 88–91. *Pseudicius vesporum* sp. Palpal organ ventrally (88) and laterally (89), comparison of tibia I in ♂ (90) and in ♀ (91).



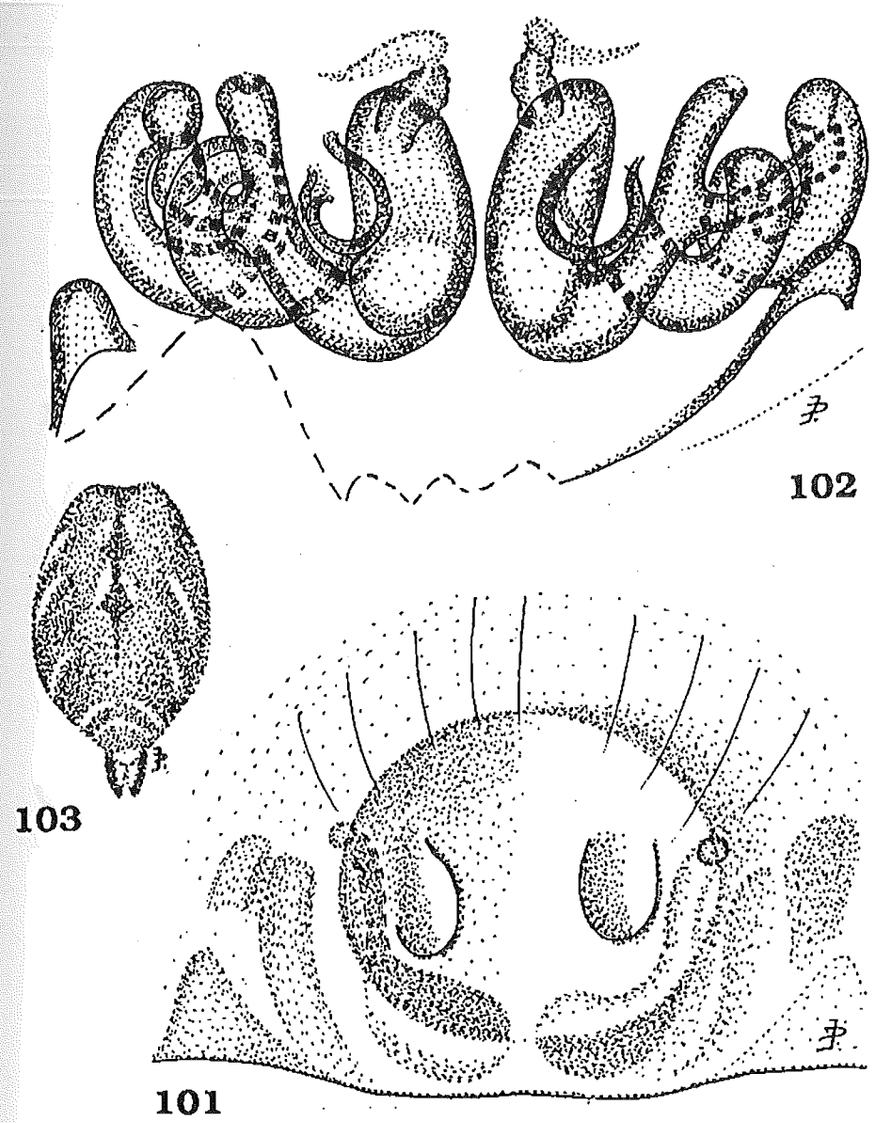



Figs 92–97. *Pseudicius vesporum* sp. Epigyne (92) and its internal structure (93); cheliceral dentition in ♀ (94) and ♂ (95); abdominal pattern in ♀ (96) and ♂ (97).

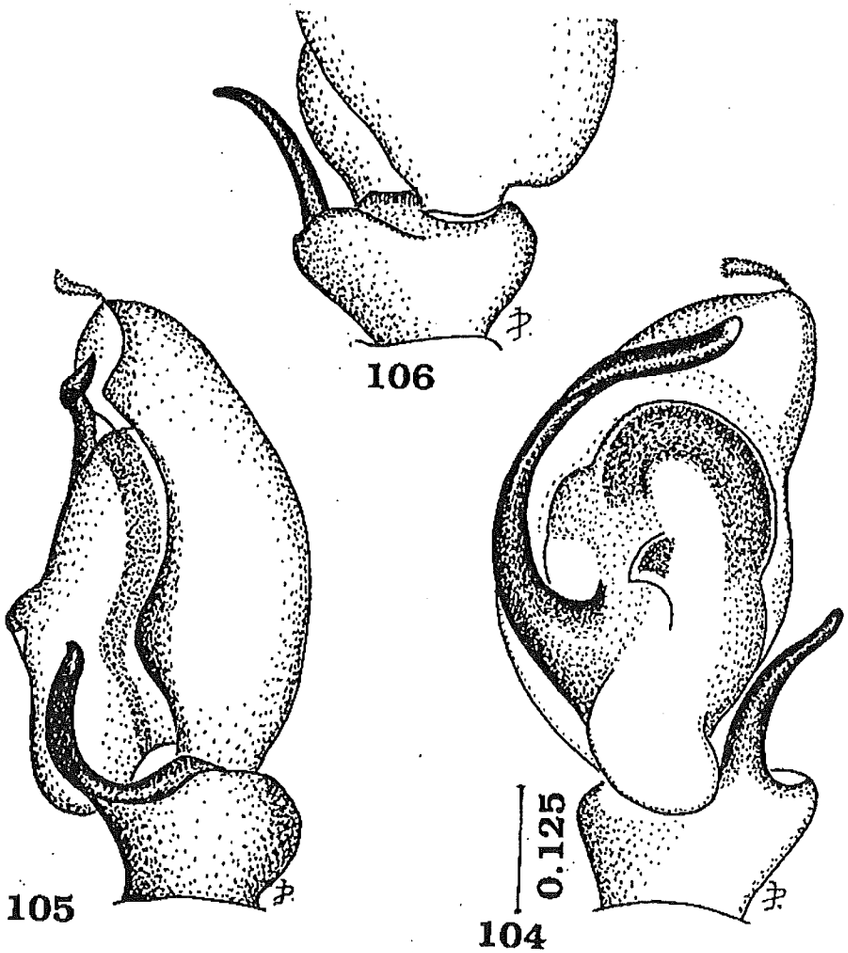



Figs 98–100. *Pseudicius okinawensis* sp. n. Epigyne (98), its internal structure (99) and abdominal pattern (100).



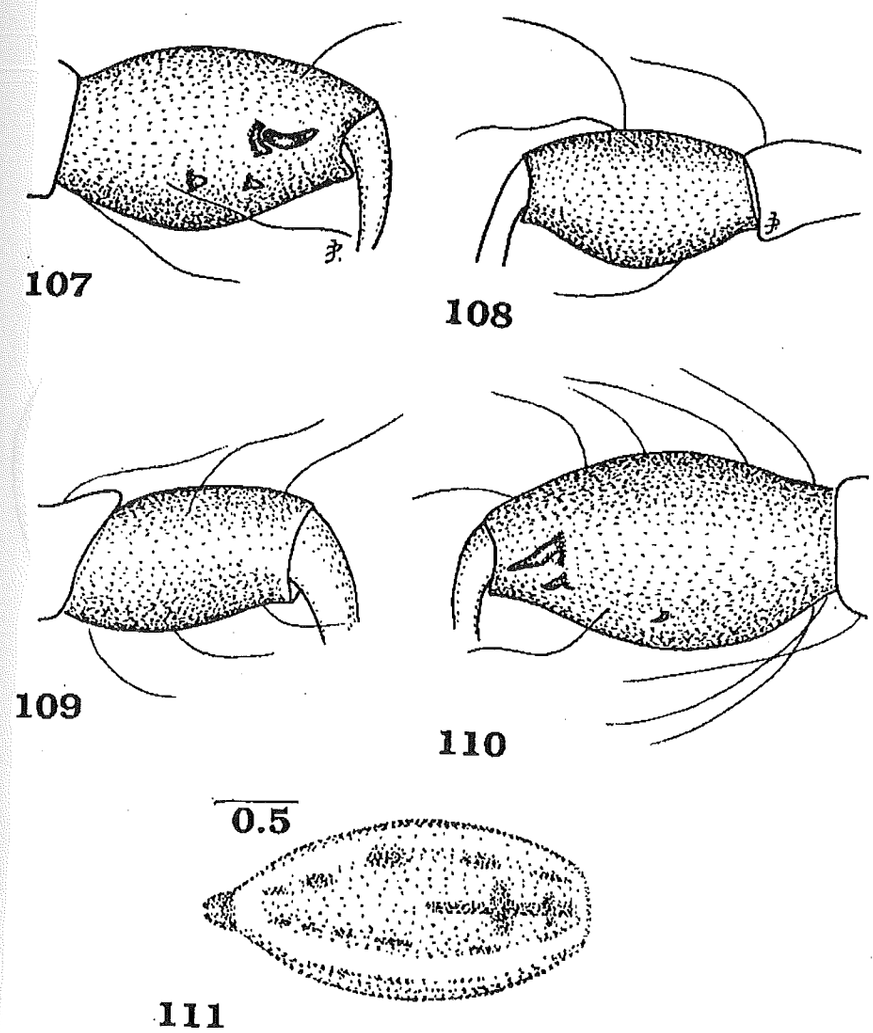



Figs 101–103. *Pseudicius solomonensis* sp. n. Epigyne (101) and its internal structure (102); abdominal pattern (103).

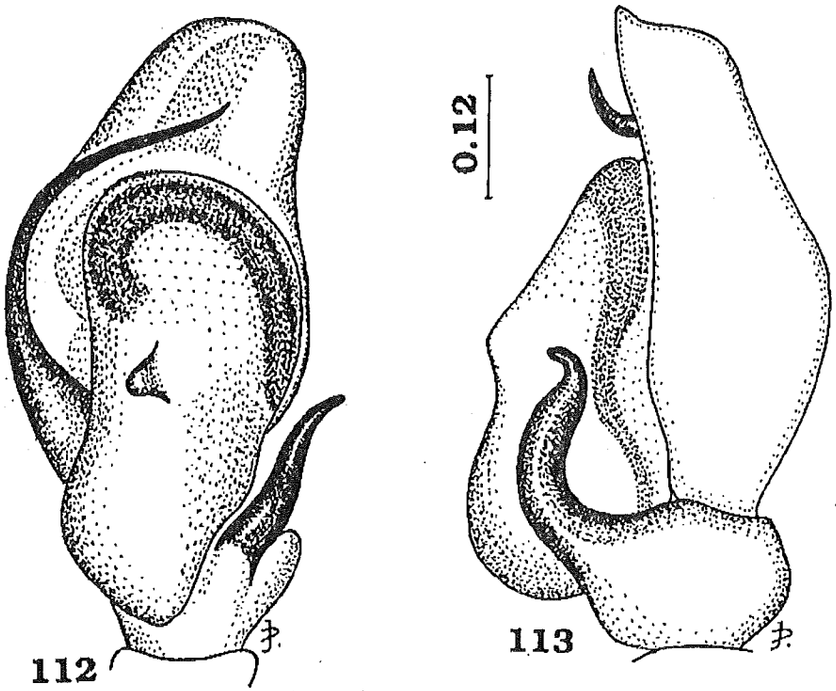



Figs 104–106. *Pseudicius philippinensis* sp. n. Palpal organ – note single, bent tibial apophysis.



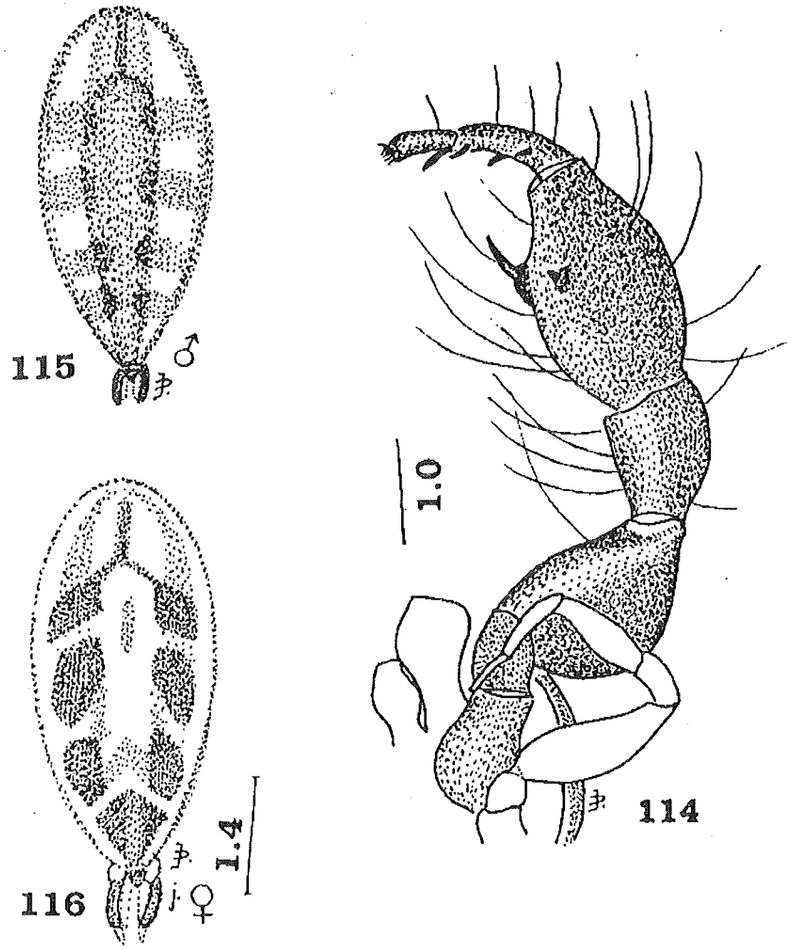



Figs 107–111. *Pseudicius philippinensis* sp. n. Tibia I variation in two specimen: left (107, 109) and right (108, 110) legs; abdominal pattern (111).

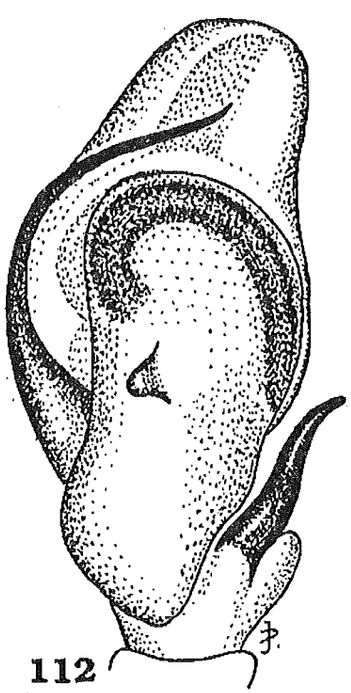


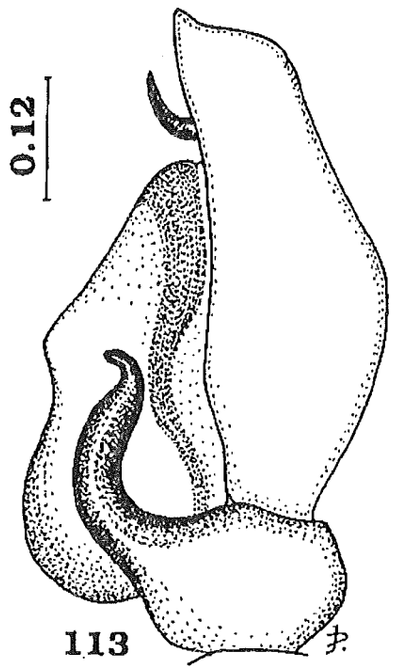

Figs 112–113. *Pseudicius reiskindi* sp. n. Palpal organ.





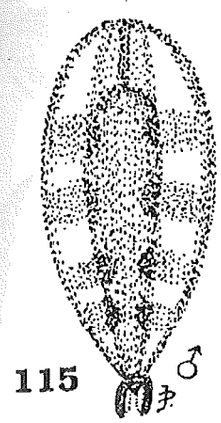

Figs 114–116. *Pseudicius reiskindi* sp. n. Leg I in ♂ (114); abdominal pattern in ♂ (115) and in juvenile ♀ specimen (116).

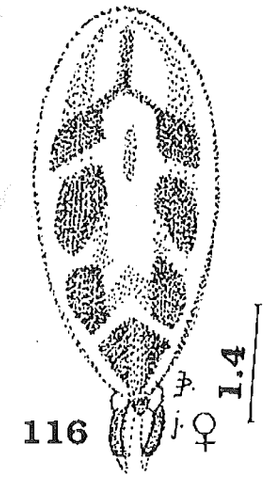


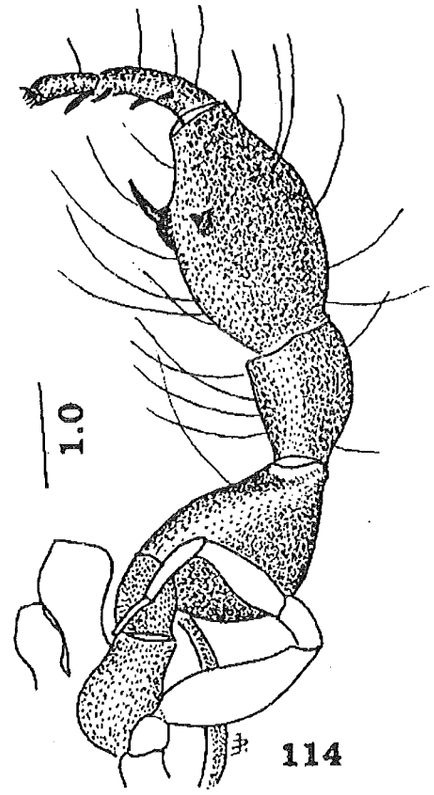




Figs 112–113. *Pseudicius reiskindi* sp. n. Palpal organ.

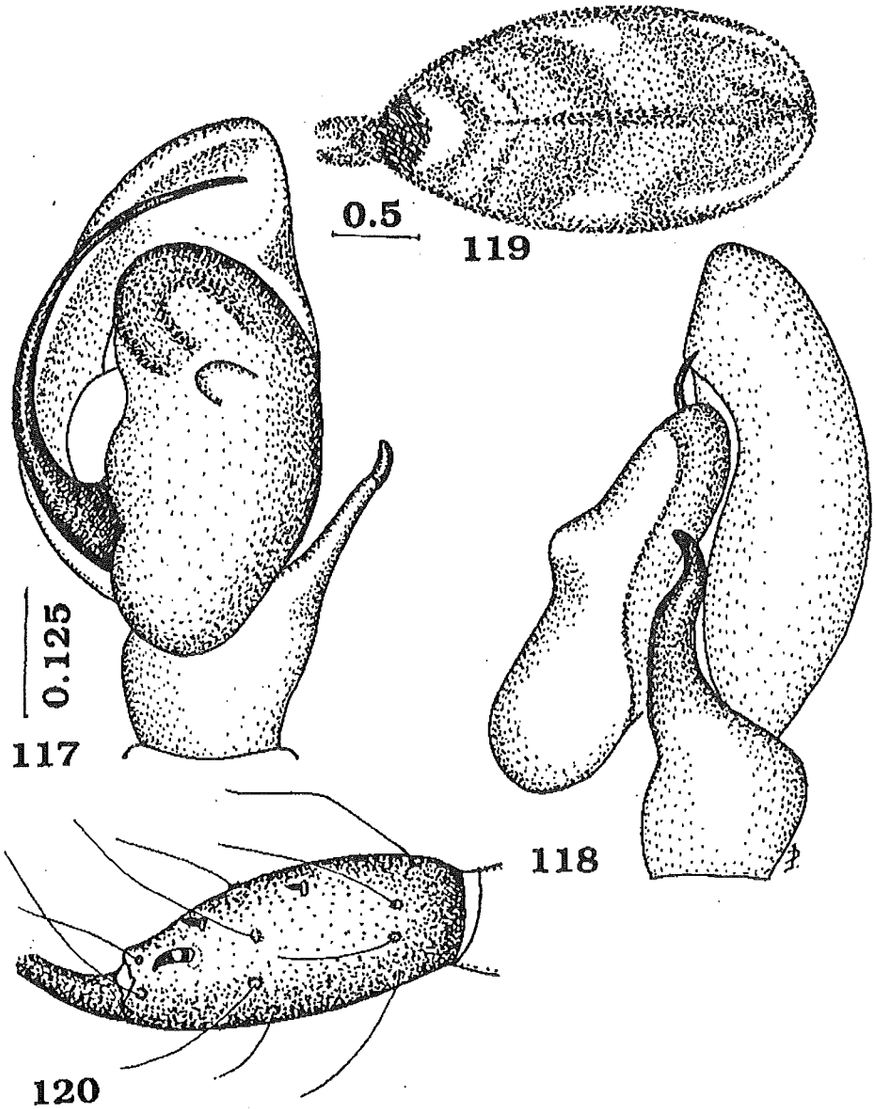




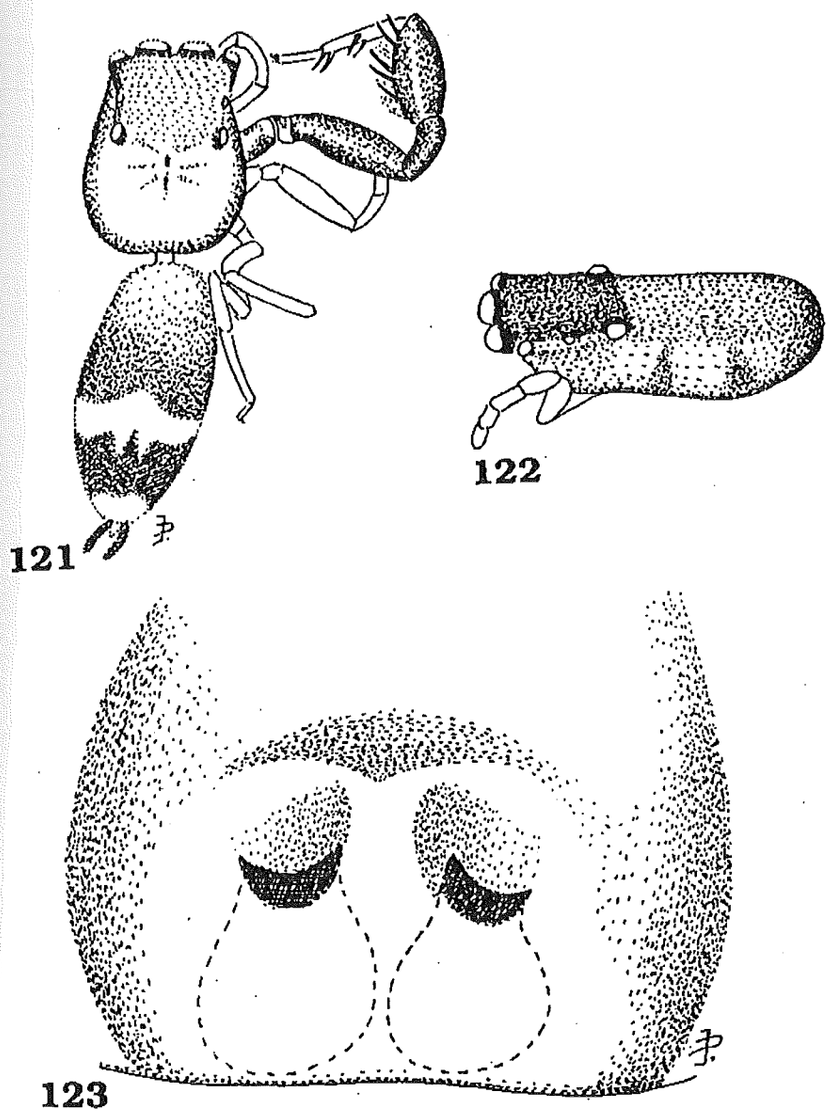




Figs 114–116. *Pseudicius reiskindi* sp. n. Leg I in ♂ (114); abdominal pattern in ♂ (115) and in juvenile ♀ specimen (116).




Figs 117–120. *Pseudicius samoaensis* sp. n. Palpal organ (117, 118); abdominal pattern (119) and tibia I (120).






Figs 121–123. *Thianitara* sp. General appearance (121); lateral view on cephalothorax (122); epigyne (123).

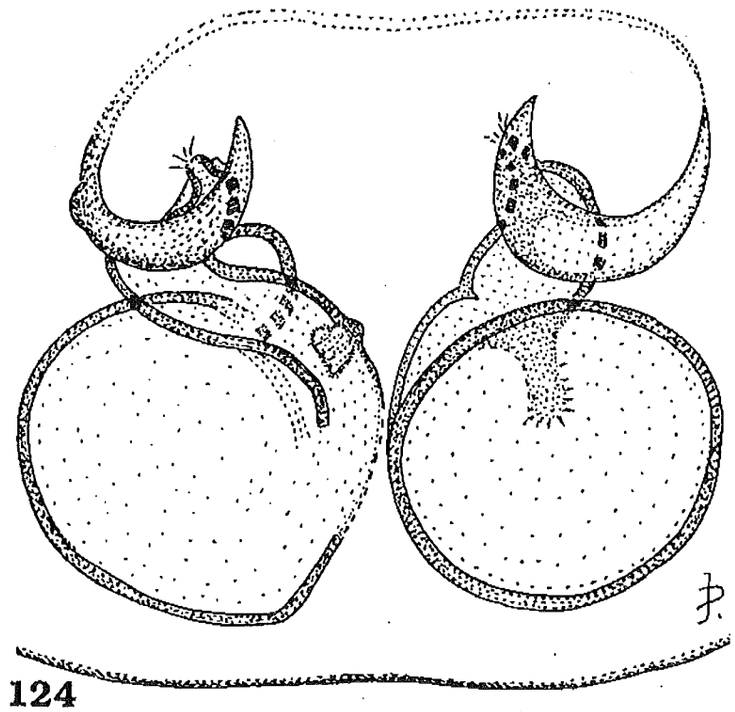
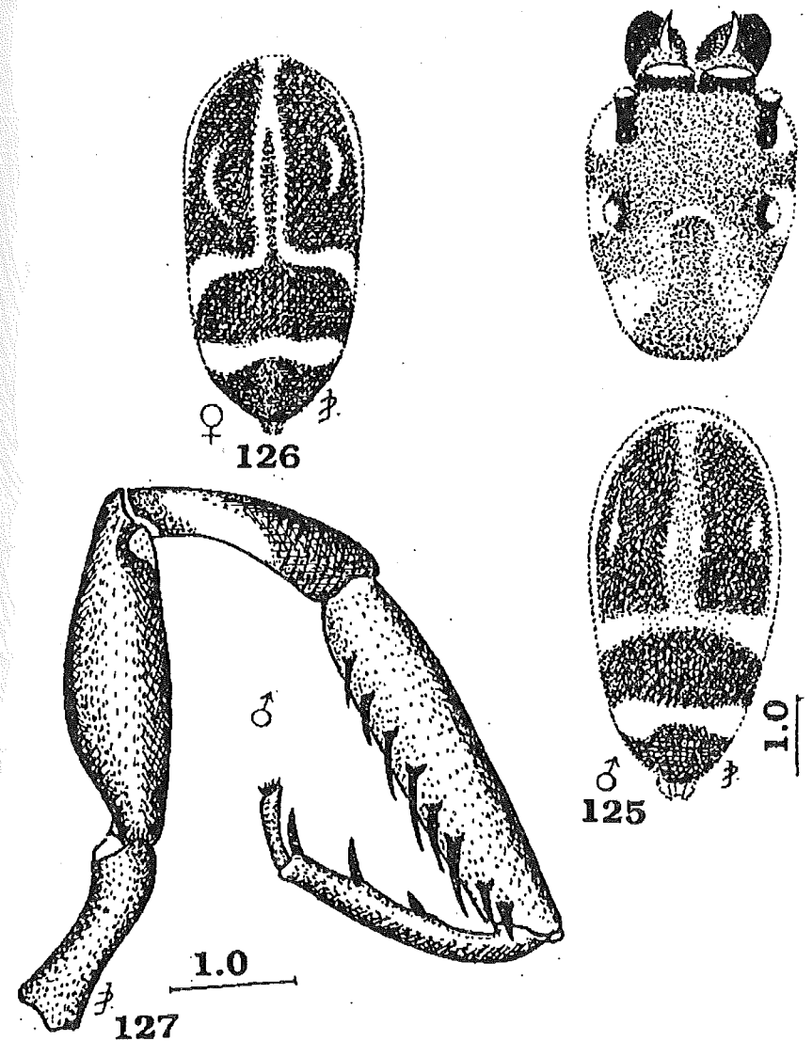
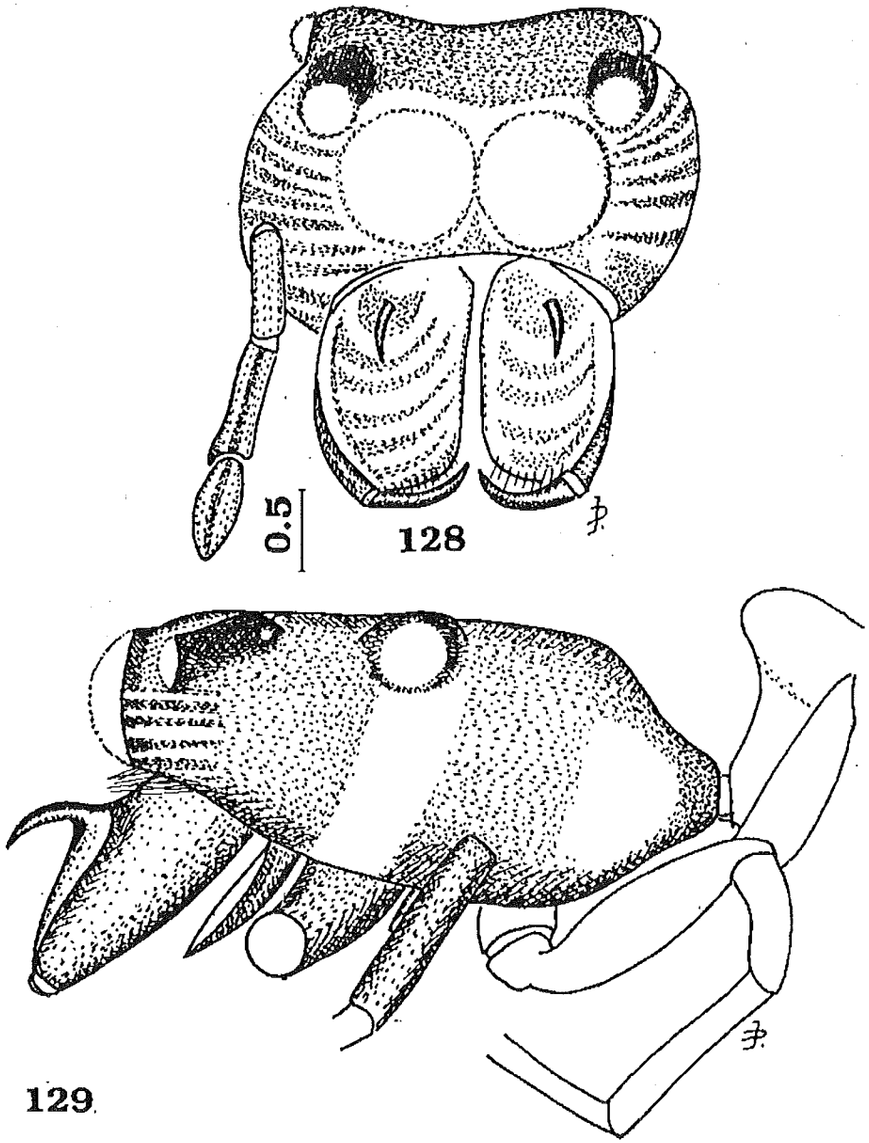



Fig. 124. *Thianitara* sp. Internal structure of epigyne.



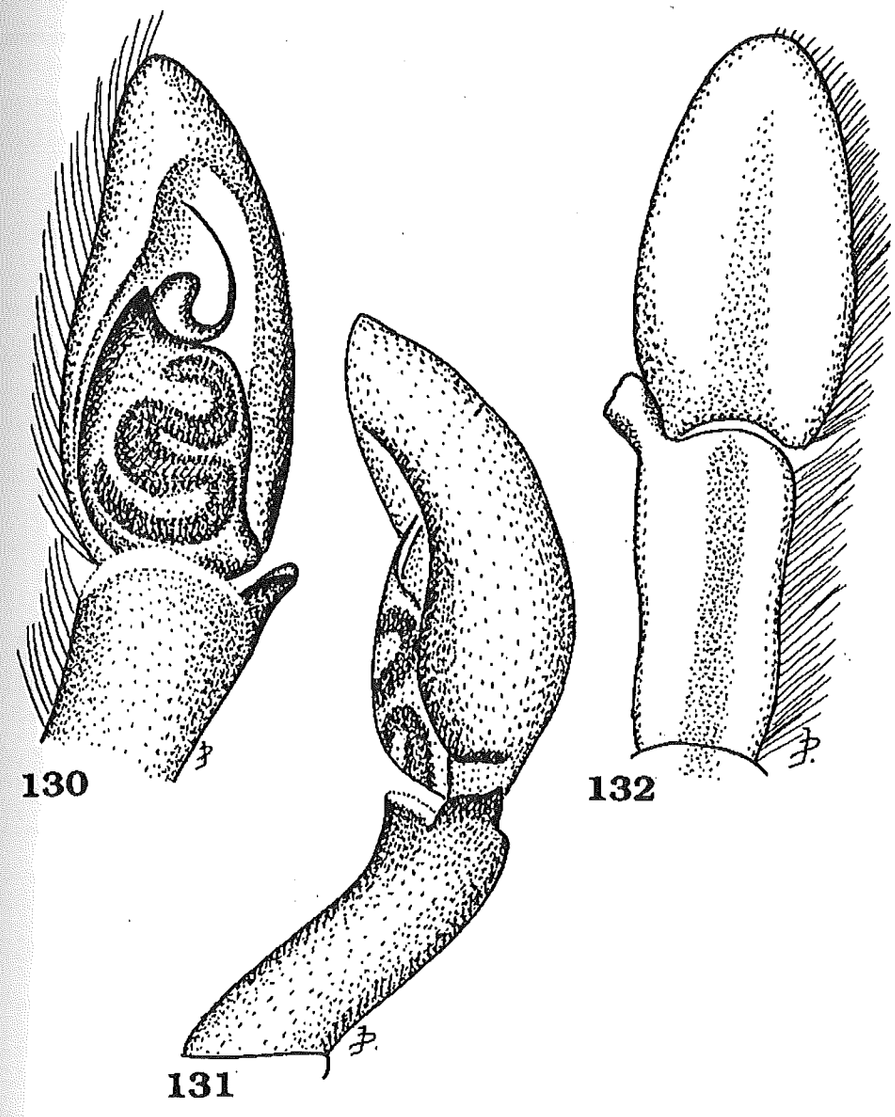



Figs 125–127. *Udvardya elegans* (Szombathy, 1915). Dorsal pattern: ♂ cephalothorax and abdomen (125), ♀ abdomen (126); leg I in ♂ (127).

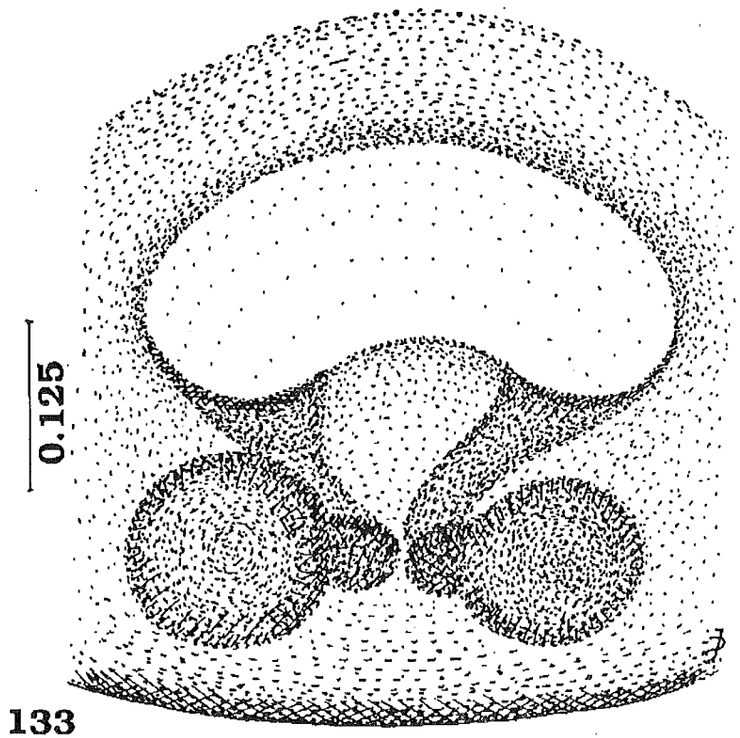


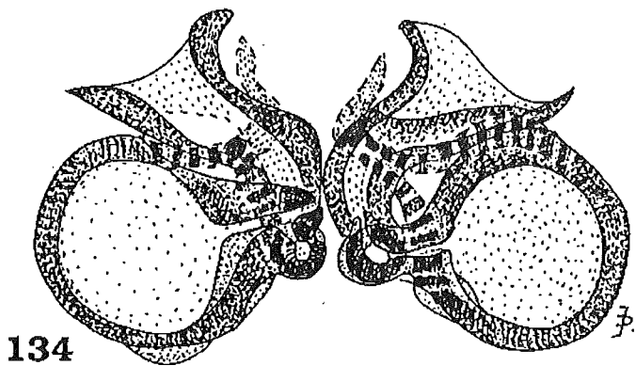

Figs 128–129. *Udvardya elegans* (SZOMBATHY, 1915), ♂ stripped frontal pattern (128) and cephalothorax laterally (129).






Figs 130–132. *Udvardya elegans* (SZOMBATHY, 1915). Palpal organ ventral (130); lateral (131) and dorsal (132) views; note long tibia.




Figs 133–134. *Udvardya elegans* (SZOMBATHY, 1915). Epigyne (133) and its internal



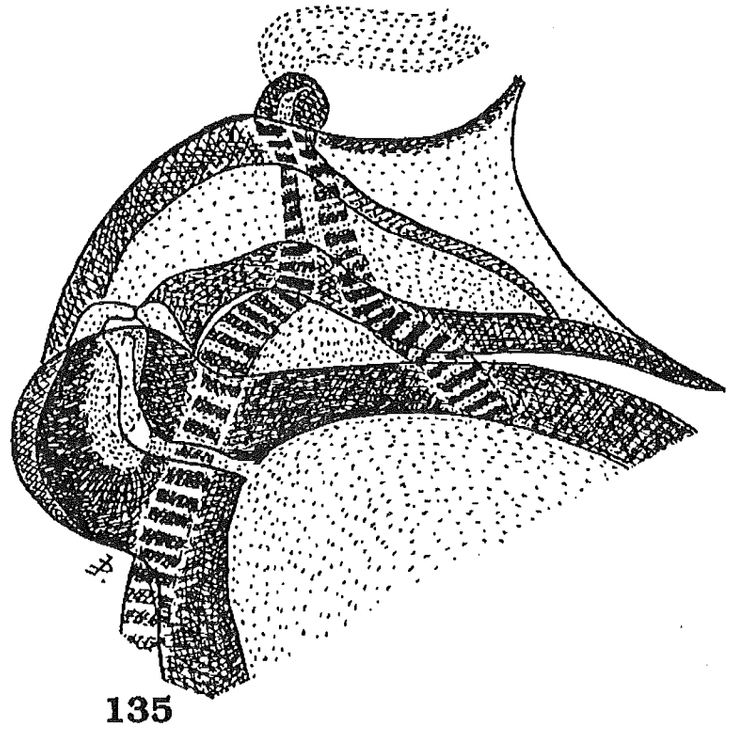



Fig. 135. *Udvardya elegans* (SZOMBATHY, 1915). Internal structure of epigyne: details of accessory gland, copulatory channel and distal part of spermatheca.

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STRESZCZENIE


[Tytuł: *Salticidae* (*Araneae*) Starego świata i wysp Oceanu Spokojnego w kilku zbiorach w USA]

Praca zawiera taksonomiczną charakterystykę 33 gatunków *Salticidae* ze zbiorów kilku większych muzeów zoologicznych w Stanach Zjednoczonych, w tym opisy 22 nowych gatunków i czterech nowych rodzajów (*Burmattus, Iranattus, Menemeroides, Udvardya*); cztery gatunki przeniesiono do nowych rodzajów.


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Redaktor pracy - dr W. Czechowski