

Wanda WESOŁOWSKA

Redescriptions of the E. SCHENKEL's East Asiatic Salticidae (Aranei)

[With 95 text-figures]

E. SCHENKEL was one of most prominent contributors to the knowledge of Central and East Asiatic *Salticidae*. Unfortunately some of his descriptions and drawings of new species are insufficient for identification and classification of particular species. The present paper contains redescriptions and revisions of 24 species described or identified by SCHENKEL. Names of 14 of these have been found to be synonyms of other valid species, earlier described. The majority of studied species have been described in the posthumous paper of SCHENKEL in 1963, one in 1936, and a few species were found identified by SCHENKEL but not published.

Apart from species studied in this paper redescriptions of some species of SCHENKEL appeared or will appear in following papers: BOHDANOWICZ, HĘCIAK (1980), PRÓSZYŃSKI (1971a and in preparation), WESOŁOWSKA [in preparation (*Heliophanus*)]. Unfortunately I have not seen 7 of species described by SCHENKEL in 1963 (*Davidia magnidens*, *Dexippus berlandi*, *D. lesserti*, *Evarcha pichoni*, *Menemerus legendrei*, *M. wuchangensis*, *Myrmarachne lesserti*).

The study of SCHENKEL's collections presents some difficulty because of inadequate labelling of specimens, and especially by differences in generic names written on the labels and used in published paper (for instance "Marma" *contortospinosa* became *Hasarina contortospinosa* in publication). However I have managed to clarify these points.

The present studies are based on collection kept in the Museum National d'Histoire Naturelle (MNHN) in Paris, which has been lent to me; single species — *Pellenes gobiensis* SCHENKEL, 1936 from the collection of the Naturhistoriska Riksmuseet in Stockholm has been studied by J. PRÓSZYŃSKI, who has given me his drawings.

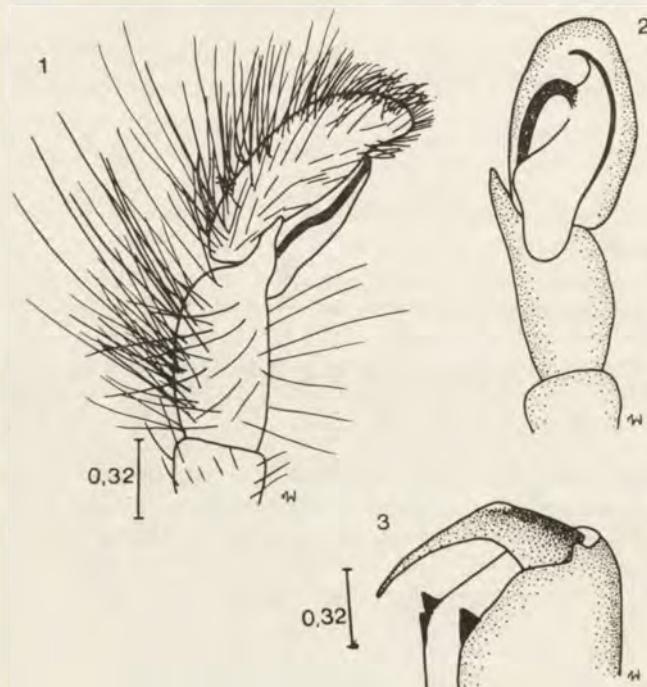
Methods used. Drawings were made a help of a stereomicroscope with magnification 7.5 to 48 times and with an eye piece square grid (ocular netmicrometer). The preparations of epigyne were macerated in 10% KOH during 24–48 hours, stained in Chlorazol Black E and mounted into Canada Balsam permanent microscopic slides. The measurements were taken and ratios counted following PRÓSZYŃSKI (1968); all measurements are given in millimetres.

I wish to express my thanks to Professor Max VACHON and Monsieur Michel HUBERT from the Museum National d'Histoire Naturelle in Paris and also to Dr. Torbjörn KRONESTEDT from Naturhistoriska Riksmuseet in Stockholm for kind assistance and lending me the specimens. I wish also to acknowledge assistance and valuable advices from J. PRÓSZYŃSKI during preparation of this publication. Due to his courtesy I can publish here two of his drawings (figs. 70 and 71).

Carrhotus xanthogramma (LATREILLE, 1819)

Synonym: *Carrhotus pichoni* SCHENKEL, 1963, syn. n.

Material: 1 ♂ (without abdomen) — holotype, 1 juv. "Carrhotus pichoni, det. SCHENKEL 1946, Hangtcheou [leg.] A. PICHON" — MNHN — Paris.



Figs. 1–3. *Carrhotus xanthogramma* (LATR.); holotype of *C. pichoni* SCHKL. — male: 1–2 — copulatory organ, lateral and ventral views, 3 — cheliceral dentition.

Remark. Additional informations in SCHENKEL's paper 1963: "Hangtscheou, Tschekiang, 1925: 2 ♂, 1 ♀".

Cephalothorax brown, eyes surrounded black. Length of cephalothorax 4.07, length of eye field 1.63, width of eye field I (on level of eyes I) 2.44, width of eye field III (on level of eyes III) 2.28. Ratios: a 0.40, b 1.07, c 0.69. Sternum brown. Pedipalps small, with single tibial apophysis. The structure of the palpal organ is shown on figs. 2–3. Legs brown, only lateral surfaces of patellas of all

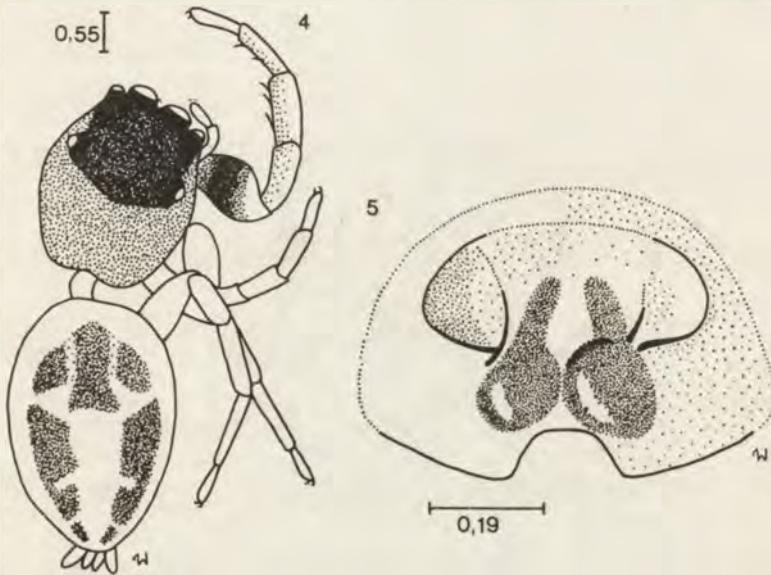
legs lighter, yellow. Legs of I pair distinctly larger than the others. Length of segments of legs: I $1.30 + 1.96 + 3.59 + 2.12 + 3.42$, II $1.14 + 1.63 + 1.79 + 1.63 + 2.93$, III $1.30 + 1.79 + 1.79 + 1.44 + 2.77$, IV $0.98 + 1.79 + 1.79 + 1.14 + 2.61$. Ratio d 1.00.

Frontal aspect. Clypeus, chelicerae, pedipalps and legs pale brown. Round the eyes some long and thin brown setae.

Dendryphantes thorelli KULCZYŃSKI, 1895

Material: 1 ♀ "Dendryphantes thorelli" KULCZYŃSKI, det. SCHENKEL 1946 — POTANIN 9" — MNHN — Paris.

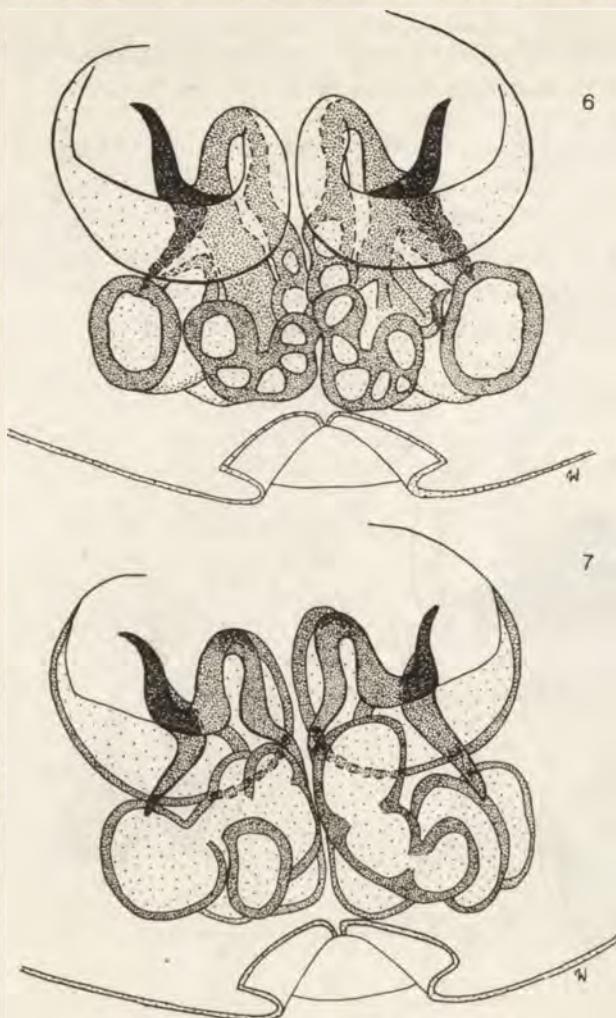
Remark. Specimen identified by SCHENKEL, not mentioned in the paper of 1963.



Figs. 4–5. *Dendryphantes thorelli* KULCZ. — female: 4 — general appearance, 5 — epigyne.

Cephalothorax rounded, dark brown, eye field large, dark. Eyes surrounded black. Length of cephalothorax 2.53, length of eye field 1.23, width of eye field I 1.56, width of eye field III 1.88. Ratios: a 0.49, b 0.83, c 0.79. Abdomen elongated, greyish-yellow with light brown pattern (fig. 4), its length 4.35. Sternum yellowish-brown. Epigyne relatively large with two oval openings, its posterior margin deeply carved (fig. 5). Inner structure of epigyne — see figs. 6 and 7. Spermathecae heavily sclerotized, with numerous chambers. Legs of I pair larger, brown, remaining legs yellow. Length of segments of

legs: I $0.65 + 0.71 + 0.97 + 0.97 + 1.56$, II $0.52 + 0.65 + 0.65 + 0.78 + 1.30$, III $0.58 + 0.78 + 0.65 + 0.45 + 1.30$, IV $0.65 + 1.04 + 1.10 + 0.78 + 1.62$. Ratio d 1.69. All body covered with dense, pale setae.



Figs. 6-7. *Dendryphantes thorelli* KULCZ. — epigyne after maceration, dorsal (6) and ventral (7) views.

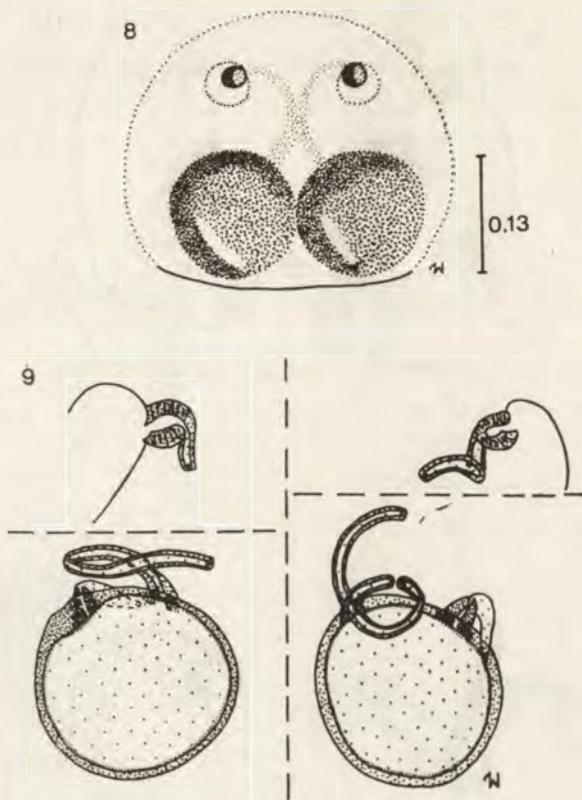
Frontal aspect. Chelicerae and legs I brown. Pedipalps pale with white setae and at intervals brown setae. Below eyes dense white setae.

Euophrys trivittata SCHENKEL, 1963

Material: 1 ♀ — holotype “*Euophrys trivittata*, det. SCHENKEL 1946 — POTANIN 113” — MNHN — Paris.

Remark. Additional informations in SCHENKEL's paper 1963: "Kloster Schine Sume, Ordos, 9. IX. 84: 1 ♀".

Cephalothorax light brown, eye field almost black. Length of cephalothorax 1.09, length of eye field 0.47, width of eye field I 0.70, width of eye field III 0.70. Ratios: a 0.43, b 1.00, c 0.67. Abdomen yellowish-white with three vertical brown stripes, its length 1.17. Sternum yellow. Epigyne of medium



Figs. 8-9. *Euophrys trivittata* SCHKL., holotype – epigyne before and after maceration.

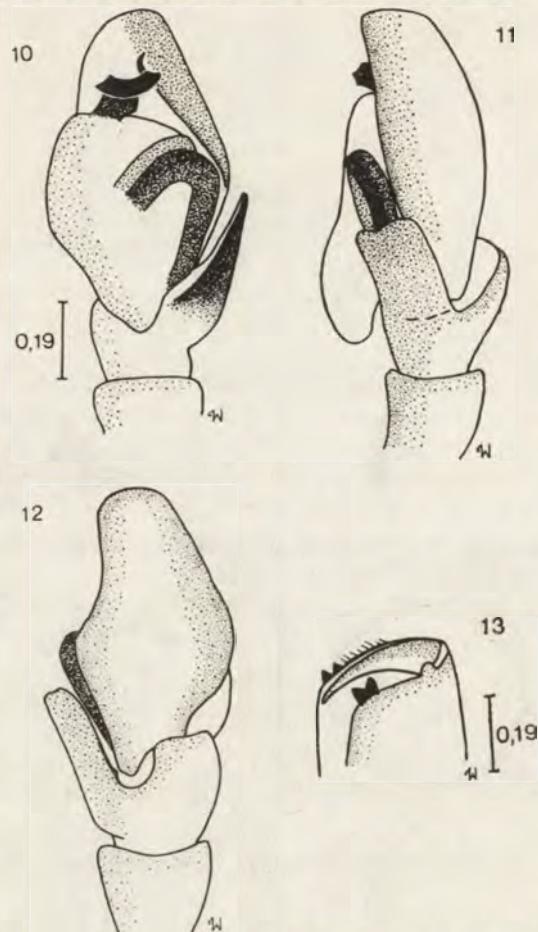
size, weakly sclerotized (fig. 8). The epigyne has been seriously damaged during preparation. Its internal structure shown of fig. 9; spermathecae spherical, copulatory canals narrow. Legs yellow, length of their segments: I $0.19 + 0.19 + 0.39 + 0.27 + 0.54$, II $0.19 + 0.19 + 0.35 + 0.27 + 0.50$, III $0.23 + 0.39 + 0.39 + 0.27 + 0.58$, IV $0.27 + 0.43 + 0.47 + 0.28 + 0.70$. Ratio d 1.20.

Frontal aspect. Chelicerae yellowish-white with a single tooth on inner posterior margin and two teeth on inner anterior margin. Eyes surrounded black. Round the eyes some long and thin brown setae.

Hasarina contortospinosa SCHENKEL, 1963

Material: 1 ♂ — holotype, 1 juv. "Marma contortospinosa, det. SCHENKEL 1946, Ganshunfou, [leg.] P. CAVALERIE" — MNHN — Paris.

Remarks. Without any doubt "*Hasarina contortospinosa*" in SCHENKEL's paper refers to specimen labelled "*Marma contortospinosa*". There is additionally information in SCHENKEL's paper: "Anschufu, Ganschuenfu, 1912: 2 ♂".



Figs. 10–13. *Hasarina contortospinosa* SCHKL., holotype — male: 10–12 — copulatory organ, ventral, lateral and dorsal views, 13 — cheliceral dentition.

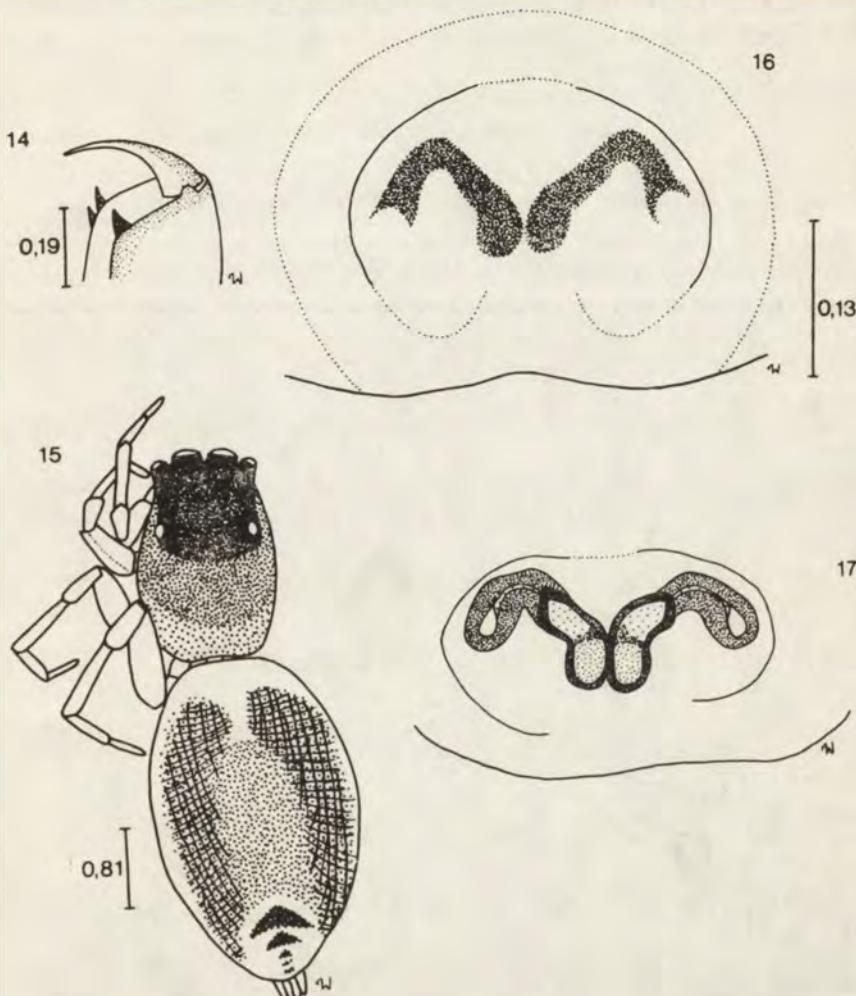
Cephalothorax dark brown, eyes surrounded black, eye field short. White setae scattered over cephalothorax. Length of cephalothorax 2.60, length of eye field 0.91, width of eye field I 1.30, width of eye field III 1.30. Ratios: a 0.35, b 1.00, c 0.70. The length of abdomen not measured because of damage of specimen. Sternum yellow. The structure of the palpal organ is shown on

figs. 10–12. Embolus twisted screwlike, tibial apophysis very broad. Legs yellow, length of their segments: I $0.52+0.52+0.71+0.65+1.10$, II $0.52+0.52+0.65+0.58+1.10$, III $0.58+0.91+0.84+0.65+1.30$, IV $0.65+0.97+0.78+0.65+1.30$. Ratio d 0.93. All body covered with dense setae.

Frontal aspect. Legs and pedipalps yellow. Chelicerae brown with white setae. White setae in vicinity of eyes especially many of them outside lateral eyes.

Heliophanus potanini SCHENKEL, 1963

Synonym: *Menemerus fagei* SCHENKEL, 1963, **syn. n.**



Figs. 14–17. *Heliophanus potanini* SCHENKEL., holotype of *Menemerus fagei* SCHENKEL. — female: 14 — cheliceral dentition, 15 — general appearance, 16–17 — epigyne before and after maceration.

Material: 1♀ — holotype "Menemerus fagei, det. SCHENKEL 1946 — POTANIN 74" — MNHN — Paris.

Cephalothorax brown, eyes surrounded black. Length of cephalothorax 2.22, length of eye field 0.88, width of eye field I 1.11, width of eye field III 1.33. Ratios: a 0.40, b 0.83, c 0.79. Abdomen light yellow with brown pattern (fig. 15), presumably decolorized in alcohol. Length of abdomen 3.55. Sternum yellow. Epigyne small, its internal structure shown on fig. 17. Legs yellow, length of their segments: I $0.55+0.55+0.66+0.55+1.11$, II $0.44+0.55+0.55+0.44+0.88$, III $0.55+0.66+0.55+0.44+1.11$, IV $0.55+0.77+0.88+0.55+1.32$. Ratio d 1.60.

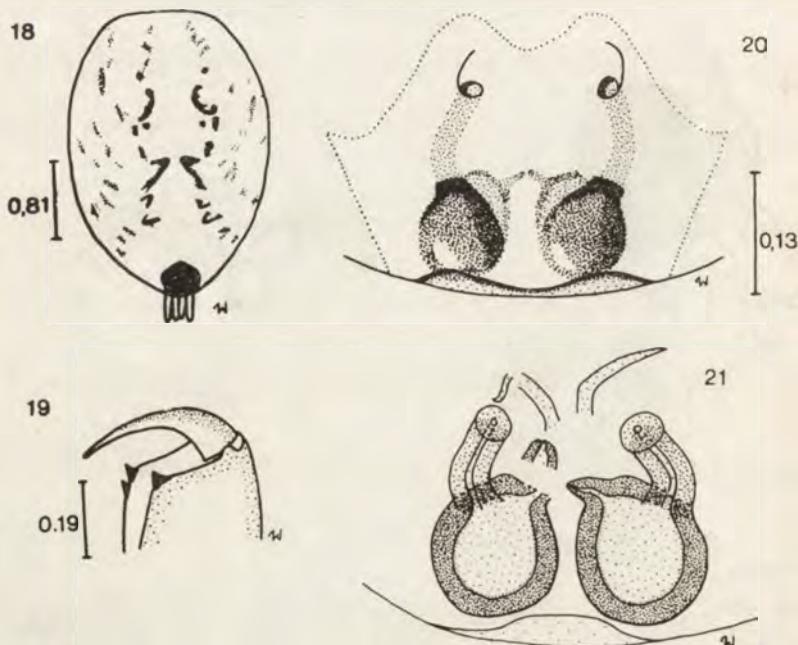
Frontal aspect. Legs, pedipalps and chelicerae yellow. Only few white setae in vicinity of eyes.

Icius cavaleriei (SCHENKEL, 1963) comb. n.

Synonym: *Dexippus cavaleriei* SCHENKEL, 1963, syn. n.

Material: 1♀ — holotype "Pancorius cavaleriei, det. SCHENKEL 1946, Anshunfou, [leg.] P. CAVALERIE" — MNHN — Paris.

Remarks. Without any doubt "*Dexippus cavaleriei*" in SCHENKEL's paper



Figs. 18–21. *Icius cavaleriei* (SCHKL.), holotype — female: 18 — abdominal pattern, 19 — cheliceral dentition, 20–21 — epigyne before and after maceration.

refers to specimen labelled "*Pancorius cavaleriei*". There is an additional information in SCHENHEL's paper: "Anschunfu, Ganschouenfu, 1912: 1 ♀".

Cephalothorax light brown, eye field yellow, eyes surrounded black. Length of cephalothorax 2.14, length of eye field 1.04, width of eye field I 1.49, width of eye field III 1.43. Ratios: *a* 0.48, *b* 1.04, *c* 0.70. Abdomen yellowish-white with imperceptible grey pattern (fig. 18), its length 2.70. Sternum pale yellow. Epigyne of medium size with small copulatory openings. Its internal structure shown on fig. 21; copulatory canals straight, spermathecae vesicular. Legs pale yellow, length of their segments: I $0.45 + 0.65 + 0.84 + 0.65 + 1.17$, II $0.45 + 0.58 + 0.71 + 0.58 + 1.10$, III $0.58 + 0.97 + 0.78 + 0.65 + 1.17$, IV $0.52 + 0.78 + 0.78 + 0.39 + 1.10$. Ratio *d* 1.00.

Frontal aspect. Legs, pedipalps and chelicerae yellow. Cheliceral inner posterior margin with a single tooth, inner anterior with two small teeth (fig. 19).

This specimen resembles very much a spider from North Korea identified as *Icius munitus* (BÖSENBERG et STRAND, 1906) (WESOŁOWSKA, 1981: figs. 34–36).

Icius davidi (SCHENKEL, 1963) comb. n.

Synonym: *Dexippus davidi* SCHENKEL, 1963, syn. n.

Material: 1 ♂ — holotype "*Carrihotus davidi*", det. SCHENKEL 1946, W. Tschekiang, [leg.] A. DAVID" — MNHN — Paris.

Remarks. Without any doubt "*Dexippus davidi*" in SCHENKEL's paper refers to specimen labelled "*Carrihotus davidi*". There is an additional information in SCHENKEL's paper: "West Tschekiang, IV 1873: 1 ♂".

Cephalothorax light brown, eye field darker, eyes surrounded black. Length of cephalothorax 2.77, length of eye field 1.33, width of eye field I 1.66, width of eye field III 1.55. Ratios: *a* 0.48, *b* 1.07, *c* 0.80. Abdomen very elongated, pale yellow with vertical light brown stripe, its length 3.22. Sternum yellow. Pedipalps small, pale yellow, with single tibial apophysis. The palpal organ is shown on figs. 24–26. I pair of legs light brown, femora darker, II pair yellow, femora brown, III and IV pairs yellow. Length of segments of legs: I $0.66 + 1.22 + 1.55 + 1.11 + 1.89$, II $0.55 + 0.99 + 1.22 + 0.88 + 1.66$, III $0.77 + 1.22 + 1.11 + 0.77 + 1.89$, IV $0.77 + 1.22 + 1.33 + 0.77 + 1.78$. Ratio *d* 1.20.

Frontal aspect. Chelicerae, legs and pedipalps light brown. Clypeus with very short white setae.

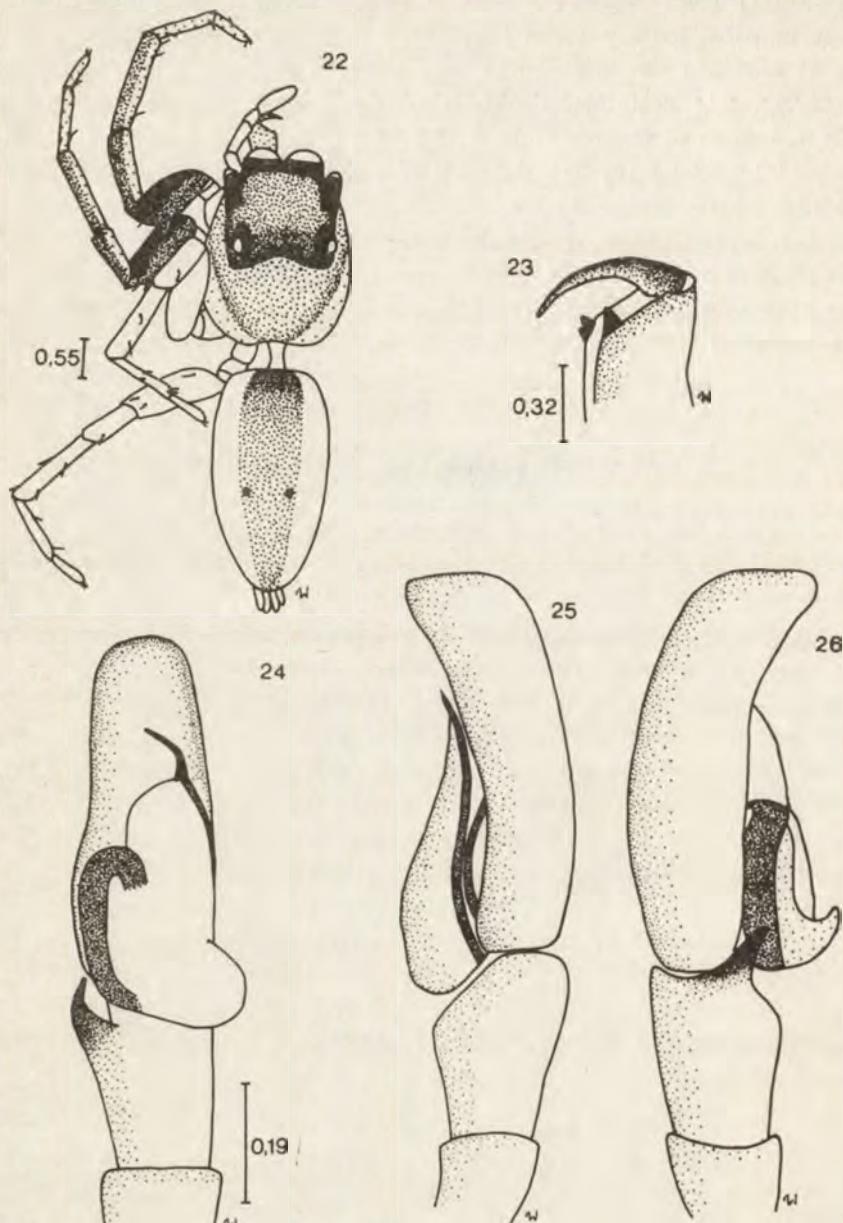
Icius tschekiangensis (SCHENKEL, 1963) comb. n.

Synonym: *Dexippus tschekiangensis* SCHENKEL, 1963, syn. n.

Material: 2 ♀♀ — syntypes "*Carrihotus tschekiangensis*", det. SCHENKEL 1946, W. Tschekiang, [leg.] A. David" — MNHN — Paris.

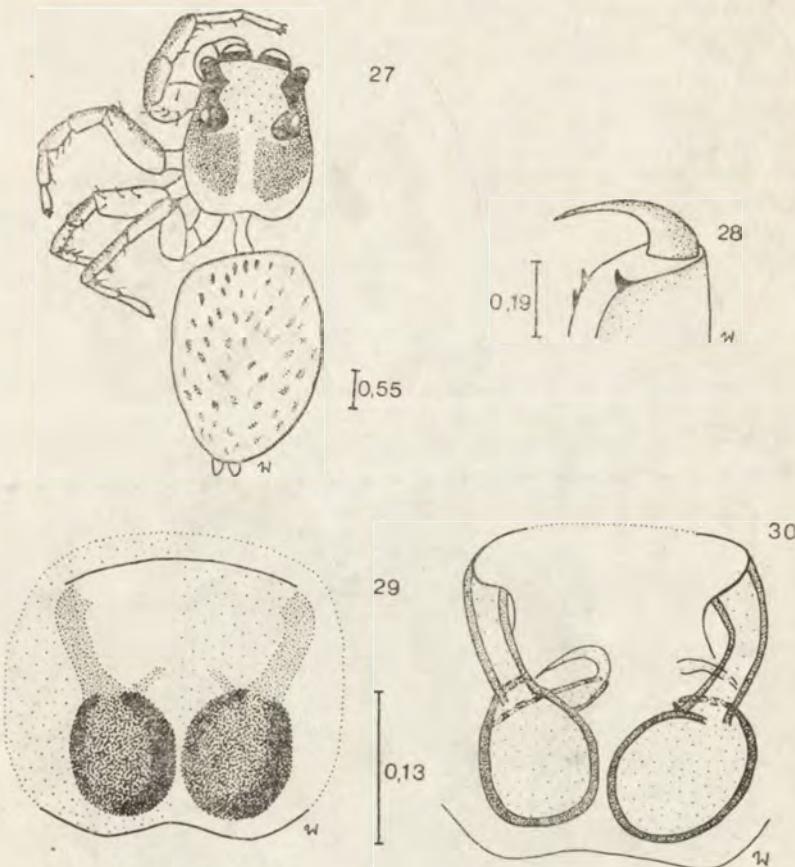
Remarks. Without any doubt "*Dexippus tschekiangensis*" in SCHENKEL's paper refers to specimen labelled "*Carrhotus tschekiangensis*". There is an additional information in SCHENKEL's paper: "West Tschekiang, IV 1873: 2 ♀".

Cephalothorax light brown, eyes surrounded black. White setae scattered



Figs. 22–26. *Icius davidi* (SCHKL.), holotype — male: 22 — general appearance, 23 — cheliceral dentition, 24–26 — copulatory organ, ventral and two lateral views.

over cephalothorax. Length of cephalothorax 2.34, length of eye field 1.10, width of eye field I 1.49, width of eye field III 1.43. Ratios: a 0.47, b 1.04, c 0.74. Abdomen yellow, all its surface covered by small, light brown spots. Length of abdomen 3.18. Sternum yellow. Epigyne very small, with depression in



Figs. 27-30. *Icius tschekiangensis* (SCHK.), holotype — female: 27 — general appearance, 28 — cheliceral dentition, 29-30 — epigyne before and after maceration.

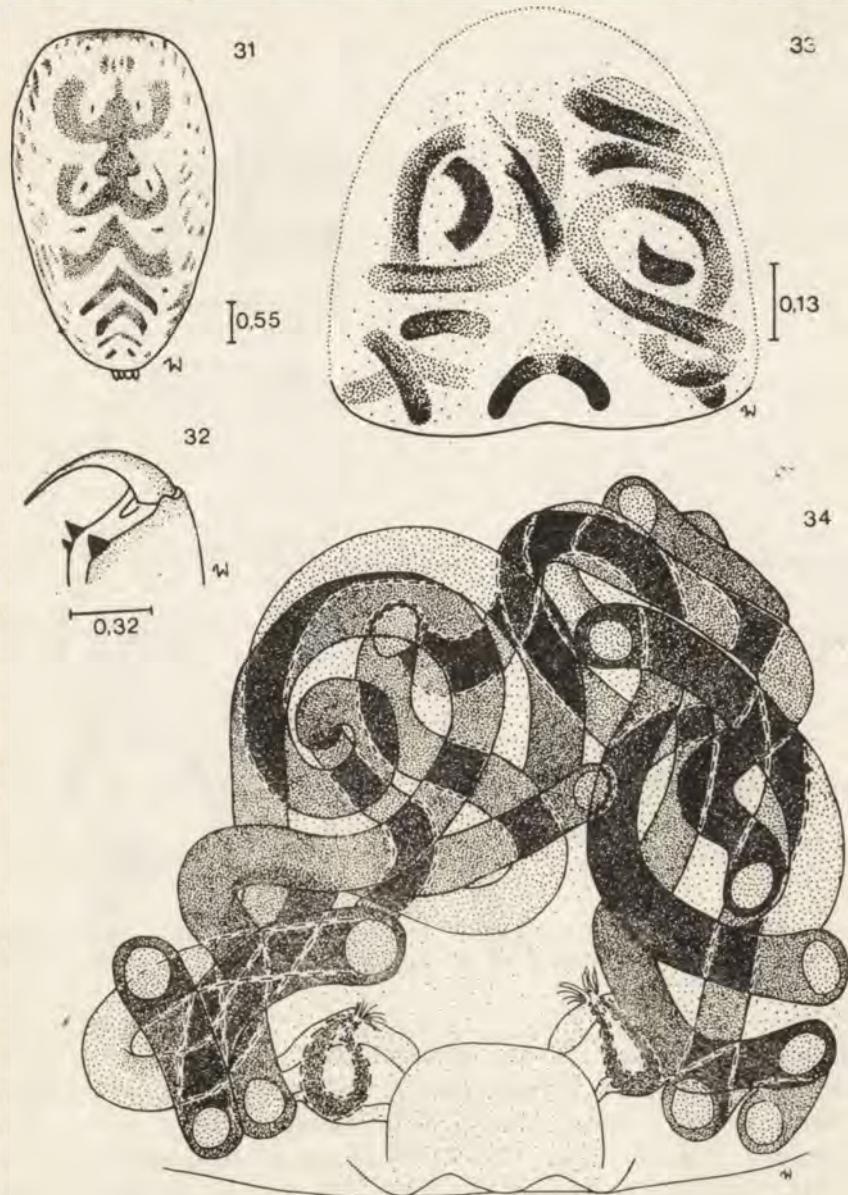
anterior part (fig. 29). The internal structure (fig. 30) resembles "*Jotus munitus*, Japan, Hyogo Pref., 14 VII 57, coll. det. T. YAGINUMA "21" [see BOHDANOWICZ, PRÓSZYŃSKI, in preparation (*Salticidae of Japan*)]. Legs yellow, length of their segments: I $0.52+0.65+0.78+0.65+1.23$, II $0.45+0.65+0.78+0.65+1.04$, III $0.65+0.97+0.84+0.58+1.36$, IV $0.52+1.30+0.65+1.04+1.23$. Ratio d 0.77.

Frontal aspect. Chelicerae, legs and pedipalps pale yellow. Some longer dark setae above median eyes.

Marpissa dybowskii (KULCZYŃSKI, 1895)

Synonym: *Marpissa koreanica* SCHENKEL, 1963, syn. n.

Material: 1 ♀ — holotype "Marpissa koreanensis, det. SCHENKEL 1946, Korea, Suigen" — MNHN — Paris.



Figs. 31-34. *Marpissa dybowskii* (KULCZ.). — holotype of *M. koreanica* SCHKL. — female: 31 — abdominal pattern, 32 — cheliceral dentition, 33-34 — epigyne before and after maceration.

Remarks. Without any doubt "*Marpissa koreanica*" in SCHENKEL's paper refers to specimen labelled "*Marpissa koreanensis*". SCHENKEL in his paper gives information: "Suigen, Korea, 1 X 1925: 1 ♀".

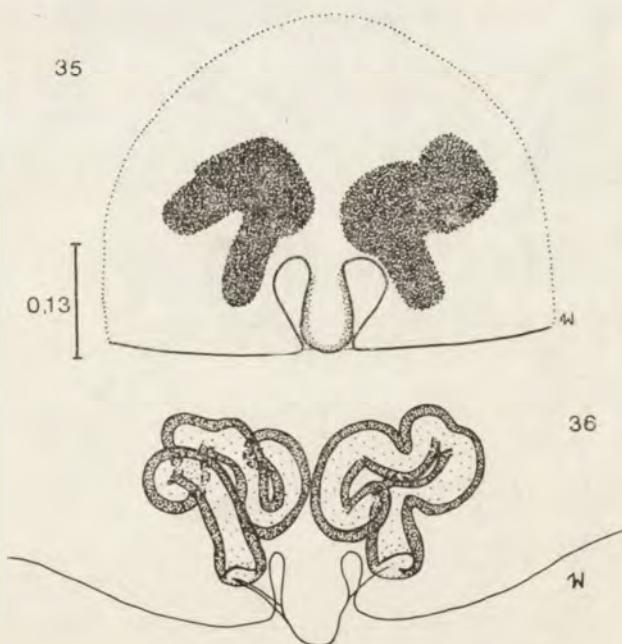
Cephalothorax light brown, eye field dark brown, eyes surrounded black. Length of cephalothorax 3.22, length of eye field 1.44, width of eye field I 1.78, width of eye field III 1.89. Ratios: *a* 0.45, *b* 0.94, *c* 0.81. Abdomen elongated whitish-yellow with light grey pattern (fig. 31). length of abdomen 4.77. Sternum light brown. Epigyne of medium size (fig. 33). Copulatory canals very coiled and difficult to trace (fig. 34), with characteristic accessory glands (see also PRÓSZYŃSKI, 1979; figs. 166–170). Legs of I pair larger, stronger, light brown, the others yellow. Length of segments of legs: I 0.66 + 0.99 + 1.33 + 1.22 + + 2.11, II 0.55 + 0.88 + 1.11 + 0.99 + 1.66, III 0.55 + 0.99 + 0.99 + 0.88 + 1.78, IV 0.88 + 1.11 + 1.33 + 1.11 + 2.11. Ratio *d* 1.34.

Frontal aspect. Chelicerae, legs, pedipalps and clypeus light brown. Marginally to lateral eyes 1–2 strong brown setae.

Marpissa nobilis (GRUBE, 1861).

Synonym: *Mithion hotingchiehi* SCHENKEL, 1963, syn. n.

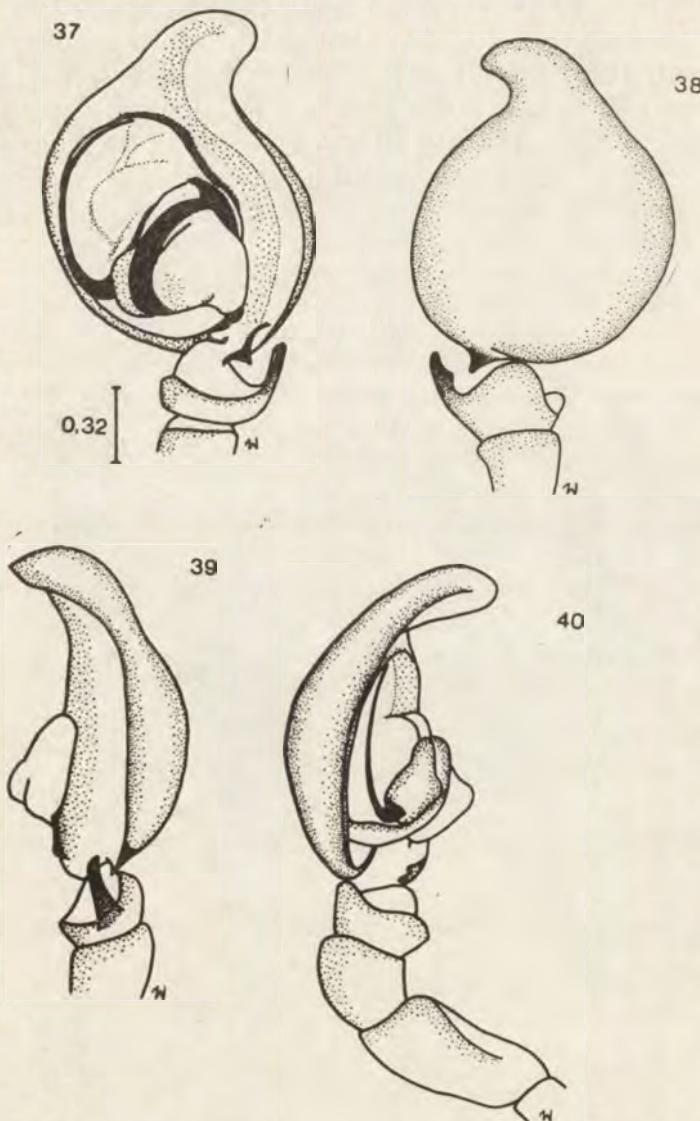
Material: 1 ♀ — holotype "*Mithion hotingchiehi*, det. SCHENKEL 1946" — MNHN — Paris.



Figs. 35–36. *Marpissa nobilis* (GRUBE); holotype of *Mithion hotingchiehi* SCHKL. — epigyne before and after maceration.

Remark. SCHENKEL in his paper gives information: "Wuchang, 1937: 1 ♀".

Cephalothorax dark brown, eyes surrounded black. Length of cephalothorax 2.30, length of eye field 1.22, width of eye field I 1.44, width of eye field III 1.66. Ratios: a 0.53, b 0.87, c 0.85. Abdomen elongated, brown, with vertical broad whitish-yellow stripe, ventrally with three black longitudinal streaks. Length of abdomen 4.99. Sternum yellow with small brown spots at the bases of coxae.



Figs. 37-40. *Marpissa pulla* (KARSCH) — male copulatory organ, ventral, dorsal and two lateral views.

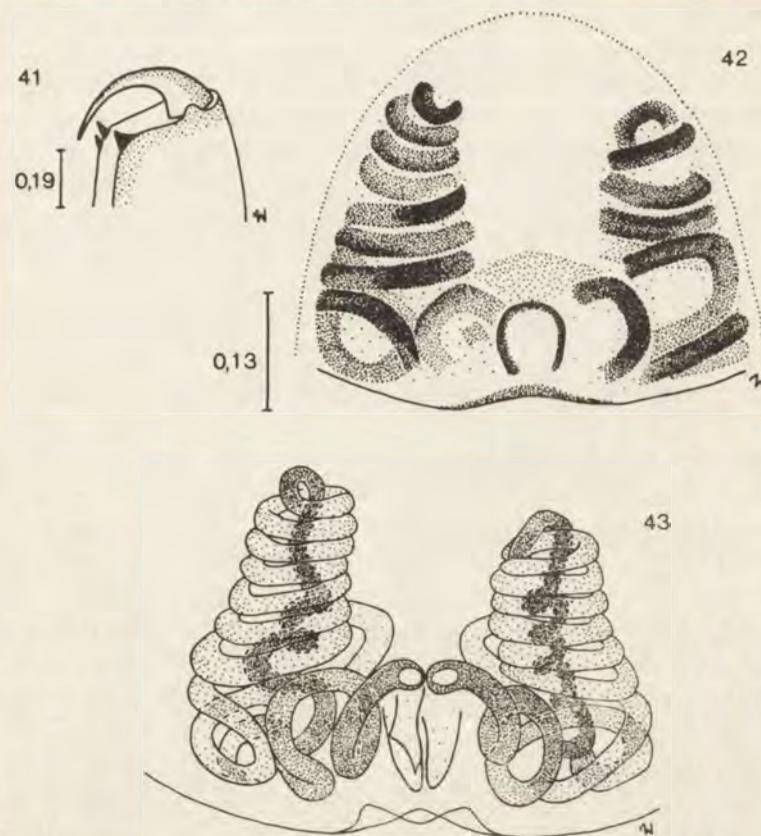
Epigyne small, with depression divided posteriorly by a median ridge (fig. 35). Copulatory canals and spermathecae are shown on fig. 36. Legs of I pair larger, stronger. Length of segments of legs: I $0.66 + 0.88 + 1.44 + 0.88 + 1.78$, II $0.55 + 0.55 + 0.66 + 0.77 + 1.33$, III $0.66 + 0.77 + 0.77 + 0.77 + 1.22$, IV $0.66 + 0.88 + 1.11 + 0.77 + 1.55$. Ratio d 1.44.

Frontal aspect. Legs, pedipalps, chelicerae light brown. Cheliceral inner posterior margin with a single tooth, inner anterior with two small teeth. Clypeus with a few long setae. Marginally to each lateral eye two strong, short setae.

Marpissa pulla (KARSCH, 1879)

Material: 1 ♂, 3 ♀♀ "Menemerus pulla" (KARSCH), Nagasaki, 169 c. St." — MNHN — Paris.

Remark. These specimens do not belong to the collection studied by SCHEN-



Figs. 41–43. *Marpissa pulla* (KARSCH) — female: 41 — cheliceral dentition, 42–43 — epigyne before and after maceration.

KEL, but to STRAND's collection kept also in MNHN Paris. I describe it here because of its close similarity to *Marpissa dybowskii*.

Female. Cephalothorax brown with two semicrescent pale spots behind the eye field. Eyes surrounded black. Length of cephalothorax 2.66, length of eye field 1.22, width of eye field I 1.78, width of eye field III 1.76. Ratios: a 0.46, b 1.00, c 0.68. Abdomen elongated, light grey with darker pattern, ventrally with two dark longitudinal streaks. Length of abdomen 4.22. Sternum light brown with yellow central spot. Epigyne small, weakly sclerotized, with central copulatory openings (fig. 42). Copulatory canals form two entangled knots drawn anterioly (fig. 43). Legs yellow, I larger, stronger, with pale brown femora. Length of segments of legs: I $0.66 + 0.77 + 1.11 + 0.99 + 1.89$, II $0.55 + 0.66 + 0.77 + 0.66 + 1.33$, III $0.55 + 0.88 + 0.77 + 0.66 + 1.33$, IV $0.55 + 0.99 + 1.11 + 0.66 + 1.55$. Ratio d 1.44.

Male. Coloration resembling that of female. Length of cephalothorax 3.00, length of eye field 1.11, width of eye field I 1.66, width of eye field III 1.66. Ratios: a 0.37, b 1.00, c 0.67. Length of abdomen 2.89. The palpal organ is shown on figs. 37–40. Cymbium broad, single tibial apophysis. Male copulatory organ closely resembles that of *Marpissa pomatia* (WALCKENAER, 1802) (PRÓSZYŃSKI, 1979; figs. 184–191). Legs I yellow, with brown femora, on patella and tibia brown long wedges. Remaining legs yellow. Length of segments of legs: I $1.11 + 0.99 + 0.99 + 0.88 + 1.66$, II $0.66 + 0.66 + 0.88 + 0.77 + 1.33$, III $0.66 + 0.77 + 0.77 + 0.66 + 1.22$, IV $0.66 + 1.11 + 1.11 + 0.66 + 1.44$. Ratio d 1.44.

Frontal aspect. Chelicerae, clypeus and legs brown. A few short white setae above median eyes. Pedipalps with very broad cymbium, brown, their paracentral surfaces darker.

Marpissa tschekiangensis (SCHENKEL, 1963) **comb. n.**

Synonyms: *Mithion tschekiangensis* SCHENKEL, 1963, **syn. n.**

Mithion pichoni SCHENKEL, 1963, **syn. n.**

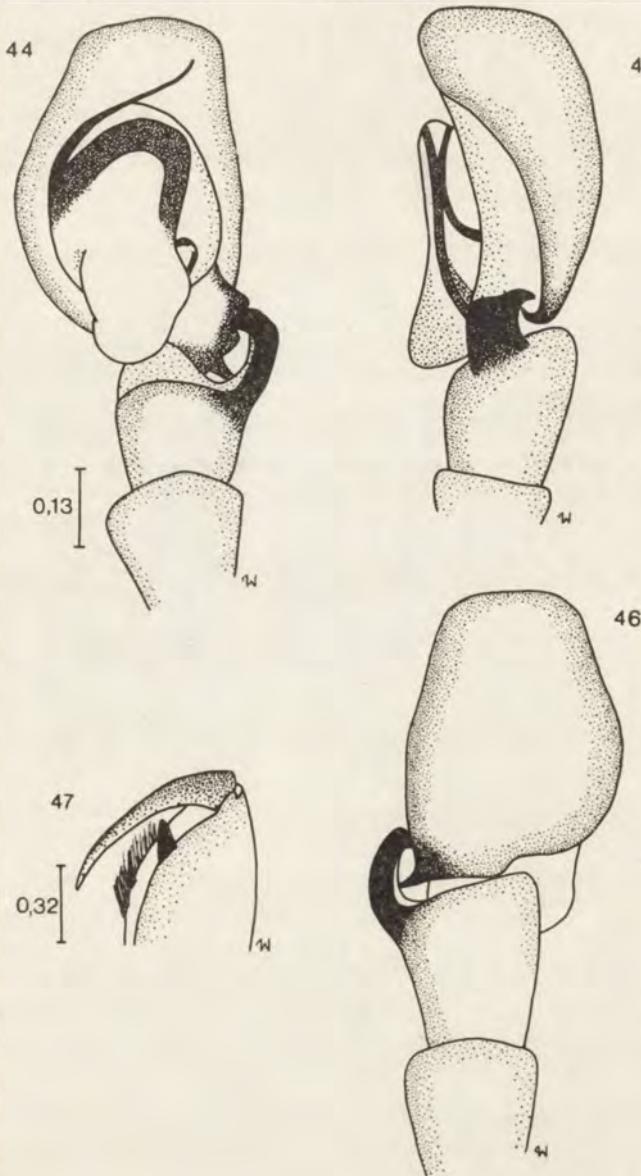
Marpissa salsophila TYSTSCHENKO, 1965, **syn. n.**

Material: 1 ♀ — holotype "*Mition tschekiangensis*, det. SCHENKEL 1946, W. Tschekiang, [leg.] A. DAVID"; 3 ♂♂ — syntypes "*Mithion pichoni*, det. SCHENKEL 1946, Hangtcheou, [leg.] A. PICHON" — both MNHN — Paris.

Remark. SCHENKEL 1963 gives informations: *M. tschekiangensis* — "West Tschekiang, IV 1873: 1 ♀"; *M. pichoni* — "Hangtscheou, Tschekiang, 1925: 4 ♂".

Female. Cephalothorax dark brown, eyes surrounded black. Length of cephalothorax 3.22, length of eye field 1.33, width of eye field I 1.55, width of eye field III 1.66. Ratios: a 0.41, b 0.93, c 0.86. Abdomen elongated, dark brown with pale longitudinal streak (fig. 48). Length of abdomen 4.66. Sternum yellow. Epigyne small with a posterior depression, partially divided by a median

ridge (fig. 50). Spermathecae heavily sclerotized, with numerous chambers (fig. 51), a bit more elongated than those of *Marpissa canestrinii* (NINNI, 1868) (PRÓSZYŃSKI, 1976; fig. 251). Legs I robust, light brown, remaining legs yellow. Length of segments of legs: I $0.77 + 1.11 + 1.78 + 1.11 + 1.78$, II $0.66 + 0.77 +$

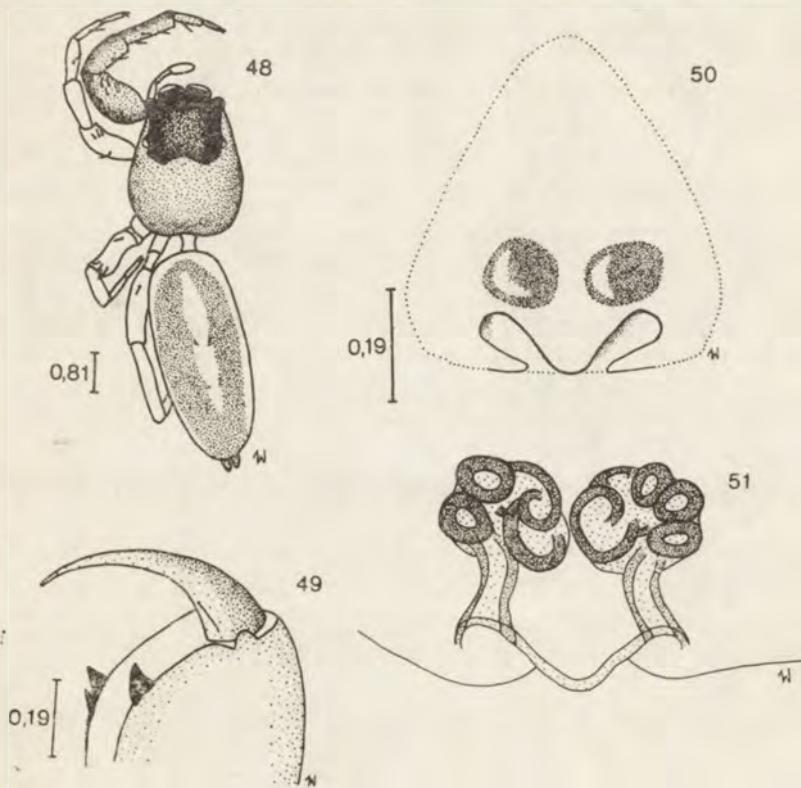


Figs. 44-47. *Marpissa tschekiangensis* (SCHKL.) ; holotype of *Mithion pichoni* SCHKL. — male: 44-46 — copulatory organ, ventral, lateral and dorsal views, 47 — cheliceral dentition.

$+0.88+0.77+1.44$, III $0.77+0.66+0.77+0.66+1.55$, IV $0.66+1.22+1.33+$
 $+0.99+1.78$. Ratio d 1.73.

Frontal aspect. Chelicerae and legs brown. Long white setae on clypeus overhanging chelicerae. Close to lateral eyes a few strong brown setae. Pedipalps yellow covered by setae.

Male. Coloration resembling that in female. Length of cephalothorax 3.33, length of eye field 1.44, width of eye field I 1.66, width of eye field III 1.78. Ratios: a 0.43, b 0.93, c 0.87. Abdomen elongated, dark brown with four



Figs. 48–51. *Marpissa tschekiangensis* (SCHKL.), holotype — female: 48 — general appearance,
 49 — cheliceral dentition, 50–51 — epigyne before and after maceration.

pairs of white spots laterally, ventrally with three dark longitudinal streaks. Length of abdomen 4.55. Sternum brown. Male copulatory organ is shown on figs. 44–46. Tibial apophysis is very broad. Legs brown, I robust. Length of segments of legs: I $0.88+1.11+2.11+1.44+2.33$, II $0.55+0.77+0.99+$
 $+0.77+1.33$, III $0.66+0.99+0.99+0.66+1.66$, IV $0.77+1.33+1.44+0.88+$
 $+1.89$. Ratio d 1.45.

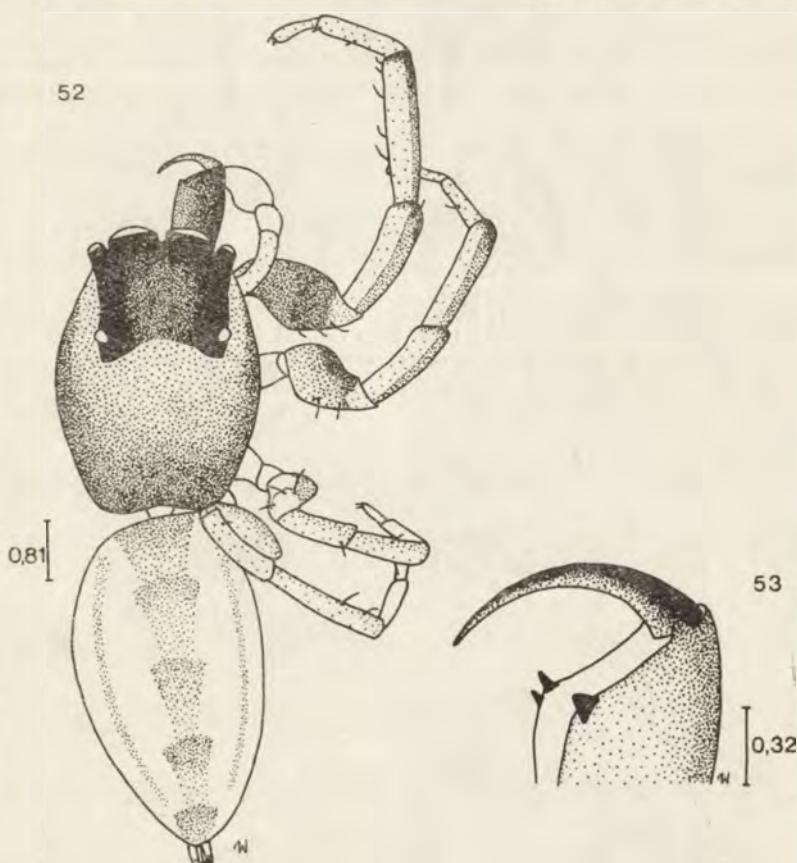
Frontal aspect. Chelicerae, clypeus and legs brown, pedipalps lighter. Marginally to lateral eyes 1–2 strong brown setae.

Menemerus bonneti SCHENKEL, 1963

Material: 1 ♂ — holotype "Menemerus bonneti", det. SCHENKEL 1946, Vinhi" — MNHN — Paris.

Remark. SCHENKEL in his paper gives information: "Vinh, 7 III 1925: 1 ♂".

Cephalothorax dark brown, eye field black. Length of cephalothorax 3.77, length of eye field 1.55, width of eye field I 2.00, width of eye field III 2.00.



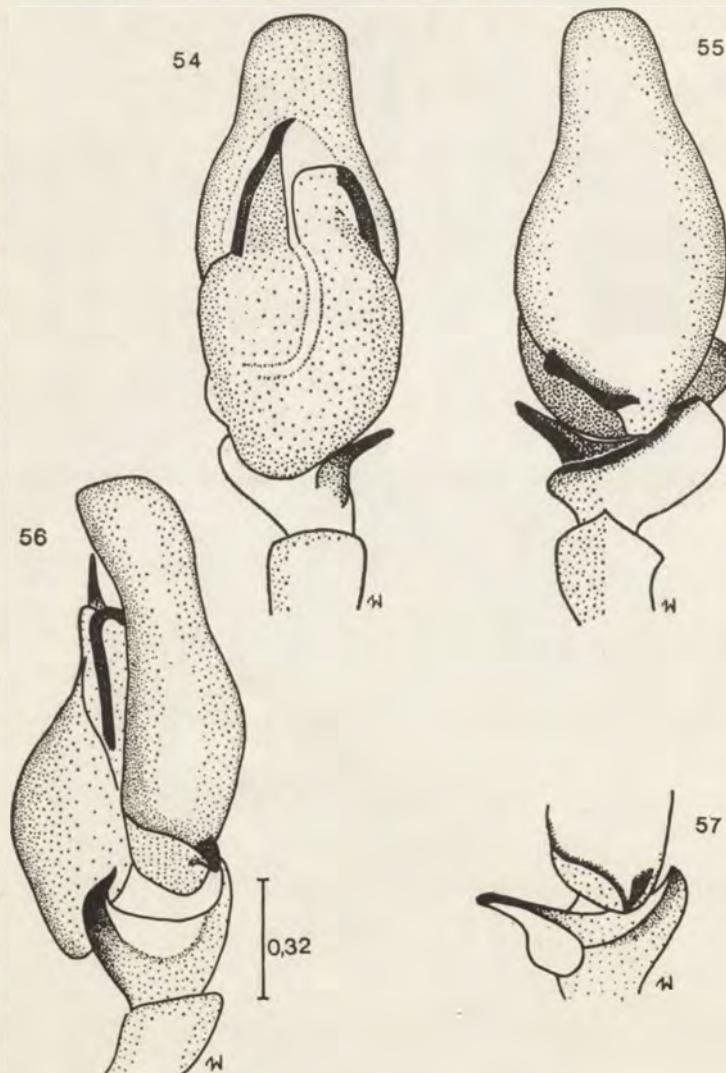
Figs. 52–53. *Menemerus bonneti* SCHKL., holotype — male: 52 — general appearance, 53 — cheliceral dentition.

Ratios: *a* 0.41, *b* 1.00, *c* 0.77. Abdomen elongated, yellow with three parallel rufous stripes going longitudinally, the median one broader (fig. 52). Length of abdomen 4.44. Sternum light brown. Pedipalps dark brown. The palpal organ is shown on figs. 54–56. Legs dark brown, I with black femora. Length of segments of legs: I $0.77 + 1.55 + 2.11 + 1.66 + 2.33$, II $0.66 + 1.33 + 1.66 +$

$+1.22+2.00$, III $0.66+1.22+1.33+1.11+1.89$, IV $0.88+1.44+2.00+1.22+2.33$. Ratio d 1.50. All body covered with dense setae.

Frontal aspect. Legs and chelicerae dark brown. External parts of tibia and patella of pedipalps covered by white setae. Very dense white setae form white contrasting band under eyes and on clypeus. A few white setae above the eyes.

This species is closely related to *Menemerus semilimbatus* (Hahn, 1827), *M. bivittatus* (DUFOUR, 1831) and *M. congoensis* BERLAND et MILLOT, 1941.

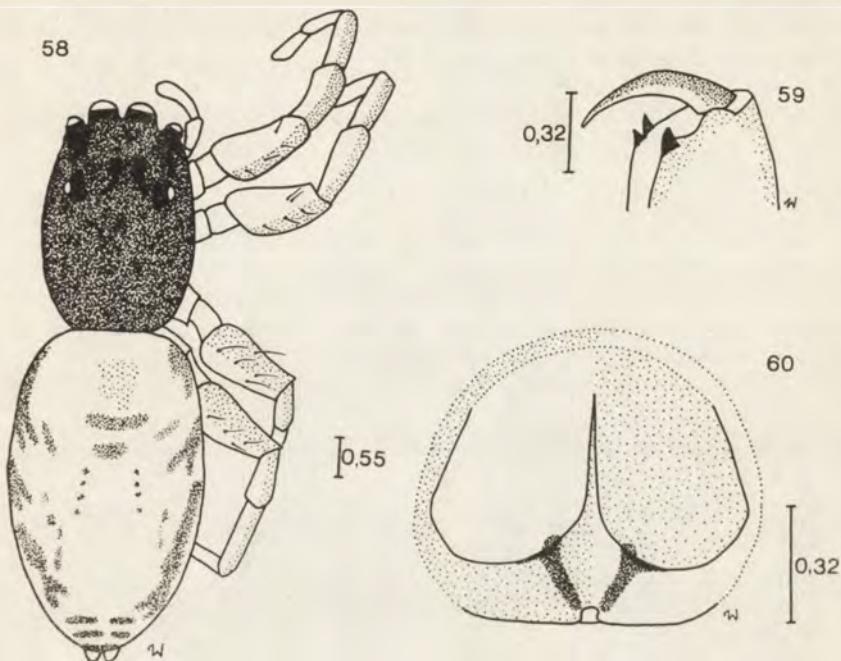


Figs. 54–57. *Menemerus bonneti* SCHKL., holotype: 54–56 — male copulatory organ, ventral, dorsal and lateral views, 57 — tibial apophysis dorso-lateral view.

Menemerus confusus BÖSENBERG et STRAND, 1906

Synonyms: *Menemerus schensiensis* SCHENKEL, 1963, syn. n.
Menemerus sinensis SCHENKEL, 1963, syn. n.

Material: 1 ♀ — holotype "Menemerus schensiensis, det. SCHENKEL 1946, Hantchongfu, [leg.] A. DAVID"; 1 ♀ — syntype "Menemerus sinensis, det. SCHENKEL 1946, W. Tschekiang, [leg.] A. DAVID"; 2 ♀♀ — syntypes "Menemerus sinensis, det. SCHENKEL 1946, Chine, Nan King, [leg.] J. DE JOANNIS" — all MNHN — Paris.



Figs. 58–60. *Menemerus confusus* Bös. et Str.; syntype of *M. sinensis* Schkl. — female: 58 — general appearance, 59 — cheliceral dentition, 60 — epigyne.

Remark. SCHENKEL in his paper gives informations: *M. schensiensis* — "Han-tschong-fu. Süd Schensi, 1873: 1 ♀."; *M. sinensis* — "West Tschekiang, IV 1872: 1 ♀.", "Nankin, 1908: 3 ♀."

Cephalothorax dark brown, with surroundings of eyes black. Length of cephalothorax 3.11–3.44, length of eye field 1.22–1.33, width of eye field I 1.66–1.78, width of eye field III 1.66–1.78. Ratios: a 0.39, b 1.00, c 0.73–0.75. Abdomen dorso-ventrally flattened, yellow with a few brown spots (fig. 58), its length 3.66–4.44. Sternum yellow. Epigyne large, its posterior part elevated in a form of triangular, very narrow process, separating two large depressions with copulatory openings (figs. 60 and 62). The depression was plugged with

waxy secretion in all studied specimen (see SCHENKEL, 1963; fig. 246b). Inner structure of epigyne is shown on figs. 61 and 63 (the left half of epigyne of *M. schensiensis* partially damaged during preparation). The inner structure is the same as in "*Menemerus confusus*, Japan, Osaka Pref., 10 VIII 59, coll. det. T. YAGINUMA "34" [BOHDANOWICZ, PRÓSZYŃSKI, in preparation (*Salticidae*)

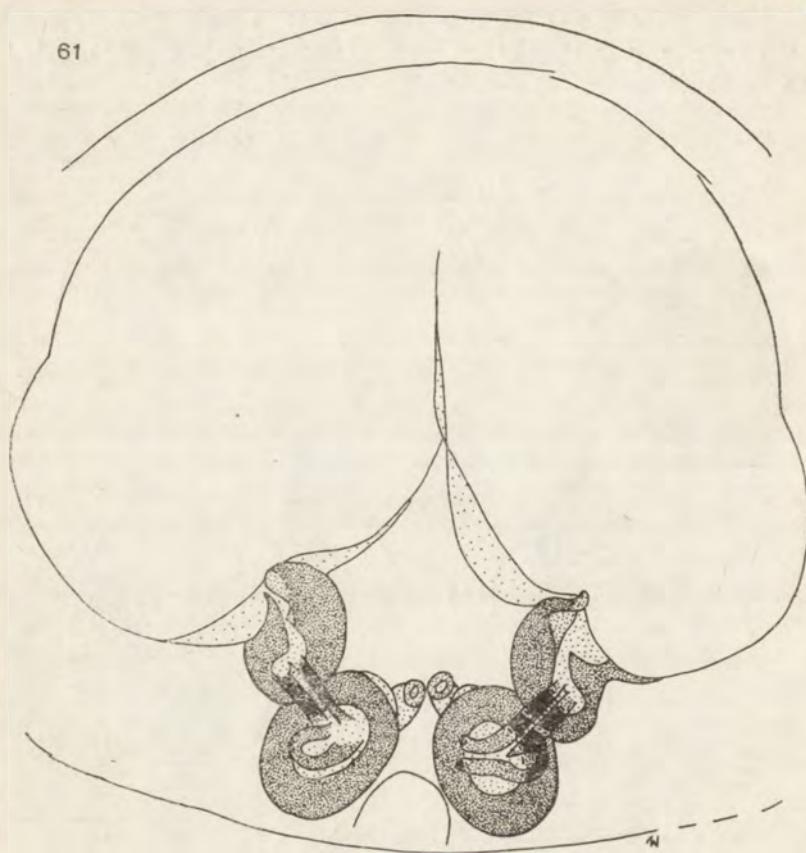
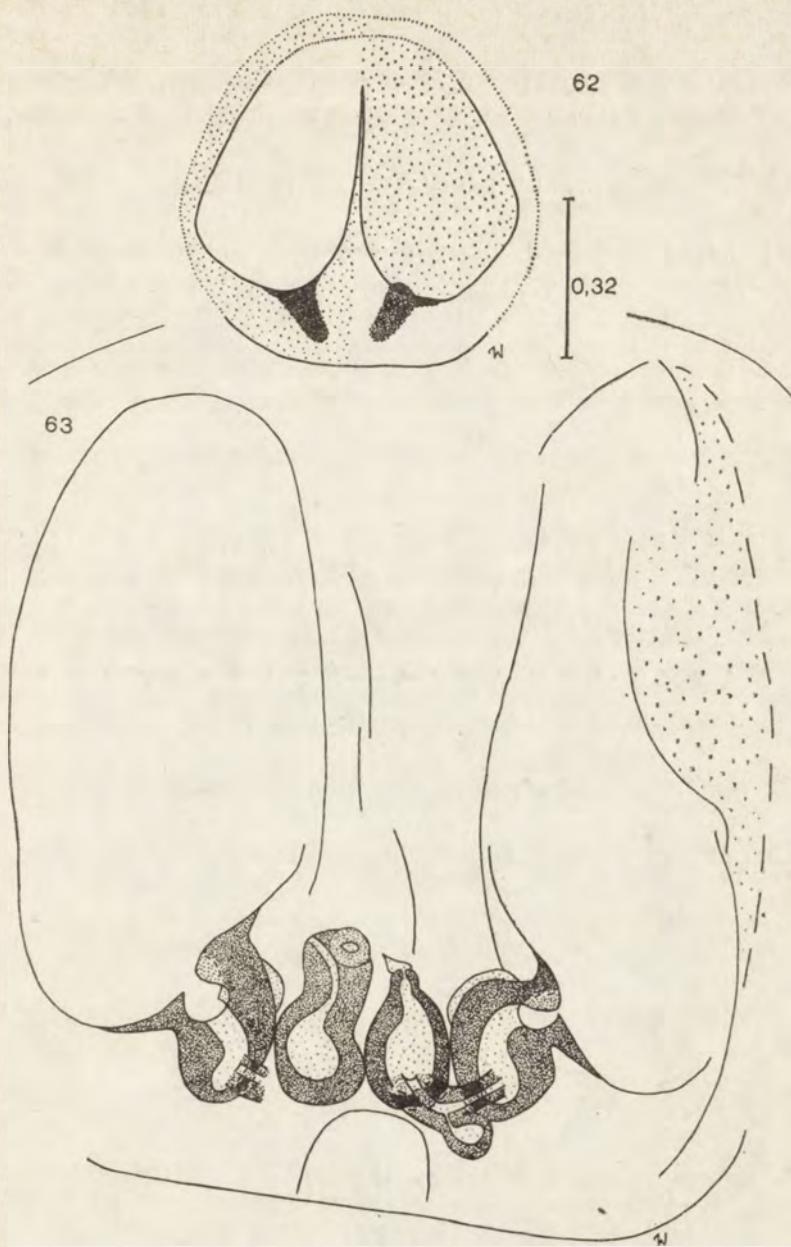


Fig. 61. *Menemerus confusus* Bös. et STR., syntype of *M. sinensis* SCHKL. — epigyne after maceration.

of Japan)]. Legs yellow, length of their segments: I 0.55–0.66 + 0.66–0.88 + 0.99–1.22 + 0.99–1.11 + 1.55–1.66, II 0.55–0.66 + 0.77 + 0.99–1.11 + 0.99–1.11 + 1.55–1.78, III 0.77–0.88 + 0.99–1.11 + 0.99–1.22 + 0.88–0.99 + 1.66–1.89, IV 0.88–0.99 + 1.22–1.55 + 1.55–1.78 + 1.11 + 2.11–2.44. Ratio d 1.46–1.56.

Frontal aspect. Clypeus, pedipalps and legs yellow. Chelicerae light brown covered with dense white setae.



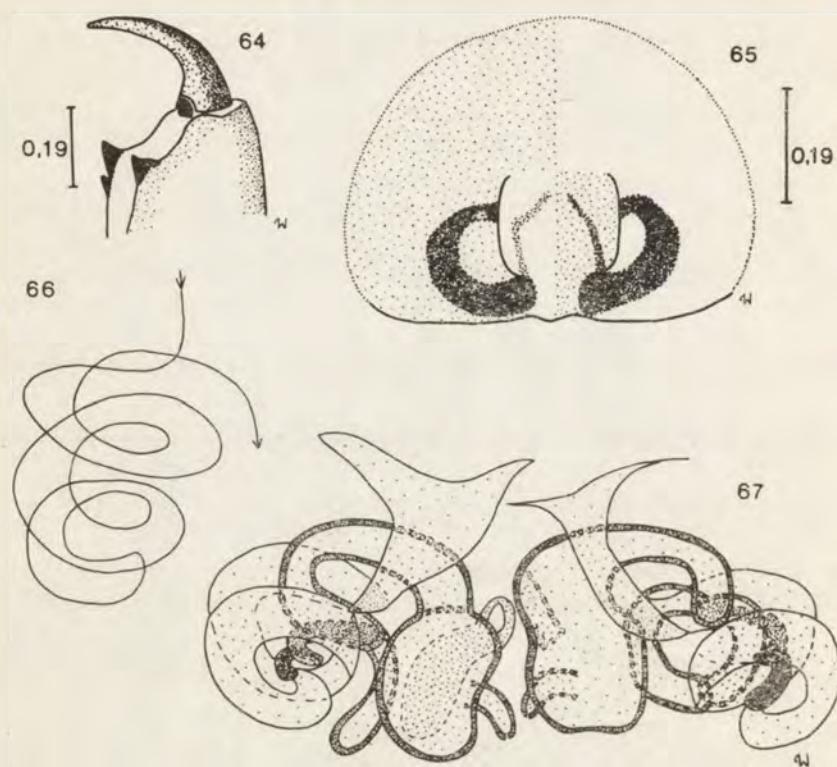
Figs. 62–63. *Menemerus confusus* Bös. et STR.; holotype of *M. schensiensis* SCHKL. — epigyne before and after maceration.

"Menemerus" yunnanensis SCHENKEL, 1963

Material: 1 ♀ — holotype "*Menemerus yunnanensis*, det. SCHENKEL 1946, Chine, H. Plateau, Yunnan-Fou, 1850–2000 m, [leg.] D. LEGENDRE, 1915" — MNHN — Paris.

Remark. SCHENKEL in his paper gives information: „District von Yunnan-fu, Hochplateau”.

Cephalothorax elongated, dark brown, with surroundings of eyes black. Length of cephalothorax 2.27, length of eye field 0.91, width of eye field I 1.23,



Figs. 64–67. "*Menemerus* yunnanensis" SCHKL., holotype — female: 64 — cheliceral dentition, 65 — epigyne, 66 — the schematic diagram showing the author's interpretation of the copulatory canals course, 67 — epigyne after maceration.

width of eye field III 1.30. Ratios: *a* 0.40, *b* 0.95, *c* 0.74. Abdomen light. The length of abdomen not measured because of damage of specimen. Sternum yellow. Epigyne weakly sclerotized, with a median depression (fig. 65). Copulatory canals spirally coiled (fig. 67). Legs yellow, I larger, robust. Length of segments of legs: I $0.39 + 0.52 + 0.84 + 0.65 + 1.04$, II $0.45 + 0.52 + 0.58 + 0.58 +$

$+0.97$, III $0.58+0.71+0.65+0.39+0.97$, IV $0.52+0.78+0.91+0.65+1.25$. Ratio d 1.40.

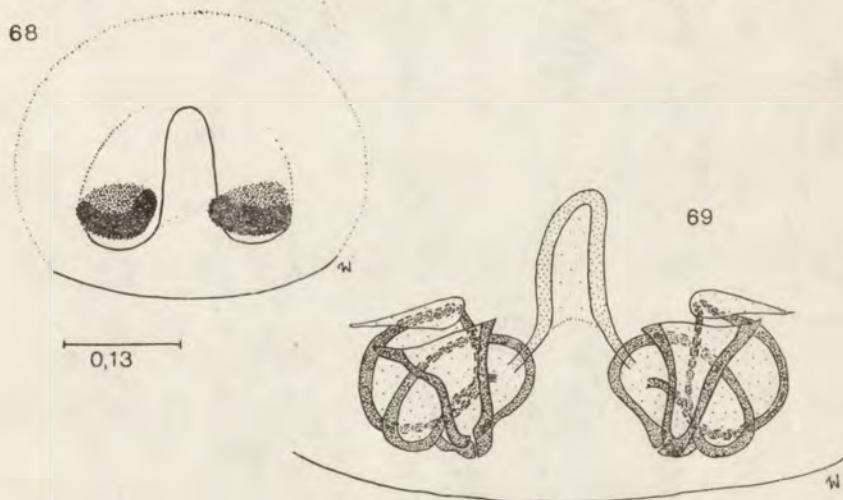
Frontal aspect. Chelicerae brown. Pedipalps yellow covered by setae. Below eyes a few white setae.

Pellenes denisi SCHENKEL, 1963

Material: 1 ♀ — holotype “*Pellenes denisi*, det. SCHENKEL 1946 — POTANIN 27” — MNHN — Paris.

Remark. SCHENKEL in his paper gives information: “Etsingol oberhalb Kau-täh, innere Mongolei, 20 VI 86: 1 ♀.”

Cephalothorax almost rhomboidal, dark brown, with surroundings of eyes black. Length of cephalothorax 1.82, length of eye field 0.71, width of eye field I 1.10, width of eye field III 1.30. Ratios: a 0.39, b 0.85, c 0.64. The length of abdomen not measured because of damage of specimen. Sternum brown. Epigyne weakly sclerotized, with a median depression, partially divided by a median ridge (fig. 68). Inner structure of epigyne is shown on fig. 69. Legs I robust, brown, remaining legs yellow. Length of segments of legs: I $0.39+0.45+0.71+0.58+0.97$, II $0.32+0.52+0.65+0.52+0.84$, III $0.53+0.65+0.52+0.52+1.10$, IV $0.58+0.65+0.71+0.65+1.10$. Ratio d 1.36.



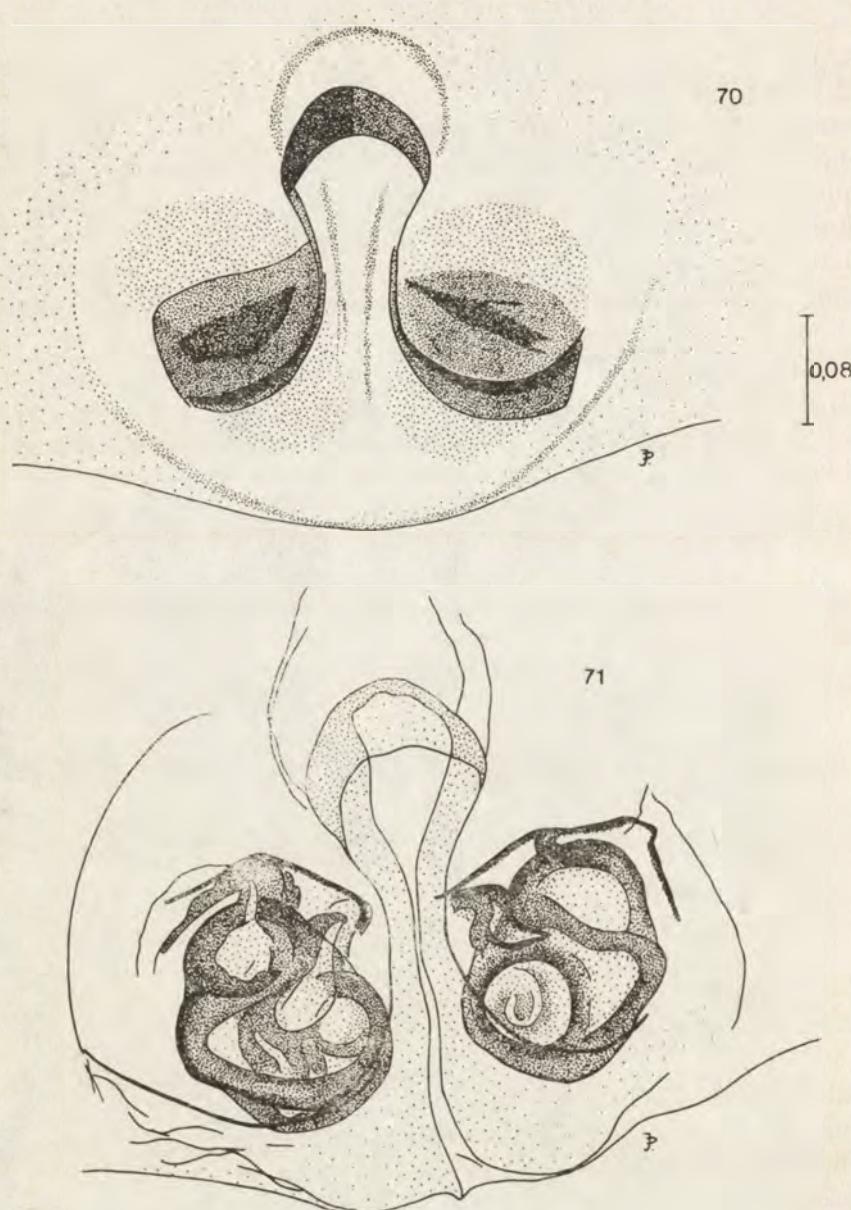
Figs. 68–69. *Pellenes denisi* SCHKL., holotype — epigyne before and after maceration.

Frontal aspect. Chelicerae brown, with a single tooth on inner posterior margin and two teeth on inner anterior margin. Clypeus and legs brown, pedipalps yellow. Only few white setae in vicinity of eyes.

This species is related to *Pellenes* sp. 1 (PRÓSZYŃSKI, 1979; figs. 237–238), *P. nigrociliatus* (SIMON in L. KOCH, 1875) (PRÓSZYŃSKI, 1979; 229–230) and *P. gobiensis* SCHENKEL, 1936.

Pellenes gobiensis SCHENKEL, 1936

Material: 1 ♀ — holotype “*Pellenes gobiensis*, S. Mongolei, 30 VII 1927, Sven Hedins Exp. Ctr. Asien Dr HUMMEL”. Prep. nr 6536 — Naturhistoriska Riksmuseet — Stockholm.



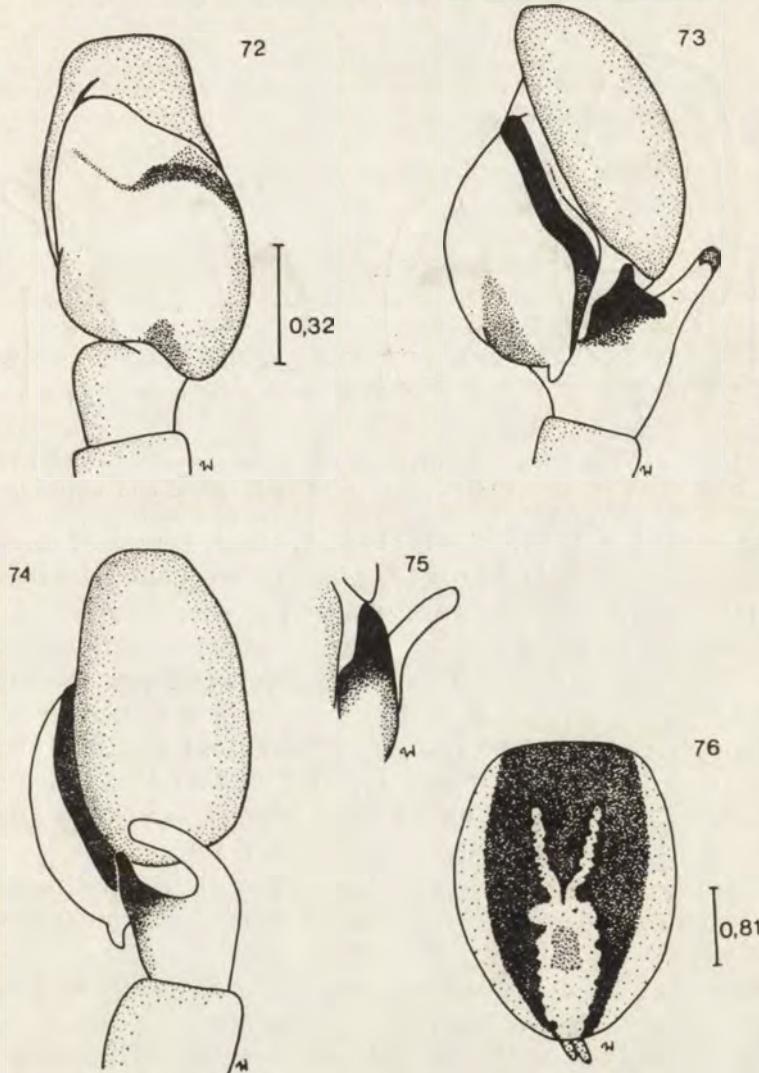
Figs. 70–71. *Pellenes gobiensis* SCHKL., holotype — epigyne before and after maceration (drawing by J. PRÓSZYŃSKI).

Epigyne and its internal structure are shown on figs. 70–71. Epigyne with a median depression, partially divided by a median ridge. Spermathecae heavily sclerotized, with numerous chambers.

Phlegra potanini SCHENKEL, 1963

Synonym: *Phlegra pichoni* SCHENKEL, 1963

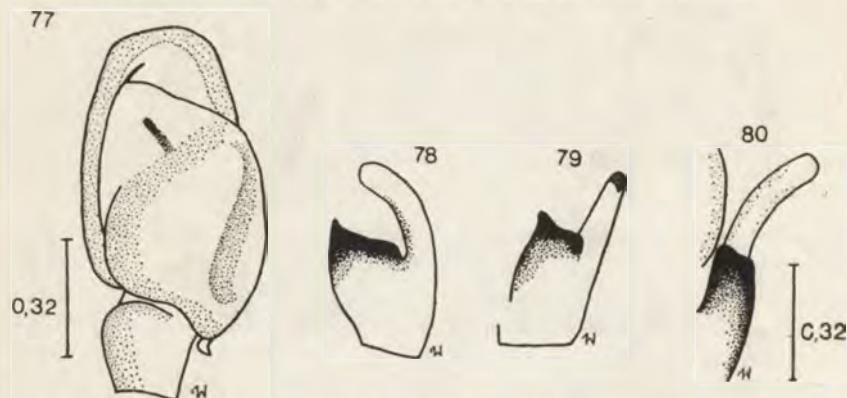
Material: 1 ♂ — holotype "Phlegra potanini", det. SCHENKEL 1946 —



Figs. 72–76. *Phlegra potanini* SCHKL., holotype — male: 72–74 — copulatory organ, ventral, lateral and dorsal views, 75 — tibial apophysis dorso-lateral view, 76 — abdominal pattern.

POTANIN 140"; 1 ♂ — holotype "*Phlegra pichoni*, det. SCHENKEL 1946, Hangtcheou, [leg.] A. PICHON" — both MNHN — Paris.

Remarks. SCHENKEL in his paper gives information: *Ph. potanini* — "Wahrscheinlich Kloster Dschoni, Kansu, 24 V: 1 ♂"; *Ph. pichoni* — "Hangtscheou, Tschekiang, 1925: 1 ♂." There is information in SCHENKEL's paper that type of *Ph. pichoni* has been lost, however, it has been rediscovered in collection of the MNHN in Paris, so I could compare it directly to *Ph. potanini*, I was unable to find any specific differences between these specimens, neither in structure of male copulatory organ nor in coloration.



Figs. 77–80. *Phlegra potanini* SCHENKL., holotype of *Ph. pichoni* SCHENKL. — male: 77 — copulatory organ ventral view, 78–80 — tibial apophysis, dorsal, lateral and ventro-lateral views.

Cephalothorax dark brown, eye field black, short. Length of cephalothorax 2.79–3.12, length of eye field 0.91–1.17, width of eye field I 1.43–1.62, width of eye field III 1.43–1.62. Ratios: *a* 0.32–0.37, *b* 1.00–1.04, *c* 0.64–0.72. Abdomen rounded, brown, its length 2.21–3.05. Sternum light brown. Male copulatory organ is shown on figs. 72–75 and 77–80. Two tibial apophysis, heavily sclerotized. Legs light brown, only tarsus and metatarsus darker. Length of segments of legs: I 0.65–0.84 + 0.52–0.58 + 0.71–0.84 + 0.78–0.97 + 1.17–1.69, II 0.65–0.97 + 0.65–1.30 + 0.78 + 0.84–0.91 + 1.30–1.43, III 0.78–1.17 + 1.17–1.23 + 0.97–1.10 + 0.97–1.10 + 1.88–1.95, IV 0.65–1.17 + 1.30–1.49 + 0.97–1.30 + 0.78–0.97 + 1.43–2.08. Ratio *d* 1.00. All body covered with dense setae.

Frontal aspect. Chelicerae, clypeus, legs yellow. On the pedipalps paracentral surfaces of tibia and patella and external surface of cymbium covered by dense white setae.

This species is related to *Phlegra festiva* (C. L. KOCH, 1834) (PRÓSZYŃSKI, 1971b), differs from it only in colour pattern, being generally darker. On cephalothorax of *Ph. festiva*, behind the eye field two rows of silvery setae form two lighter longitudinal stripes whereas cephalothorax of *Ph. potanini* is uniformly brown. The legs of *Ph. festiva* are yellow covered by dark brown setae and those of *Ph. potanini* are light brown covered by light brown setae.

Pseudoheliophanus similis SCHENKEL, 1963

Material: 2 juv. "Pseudoheliophanus similis, det. SCHENKEL 1946" — MNHN — Paris.

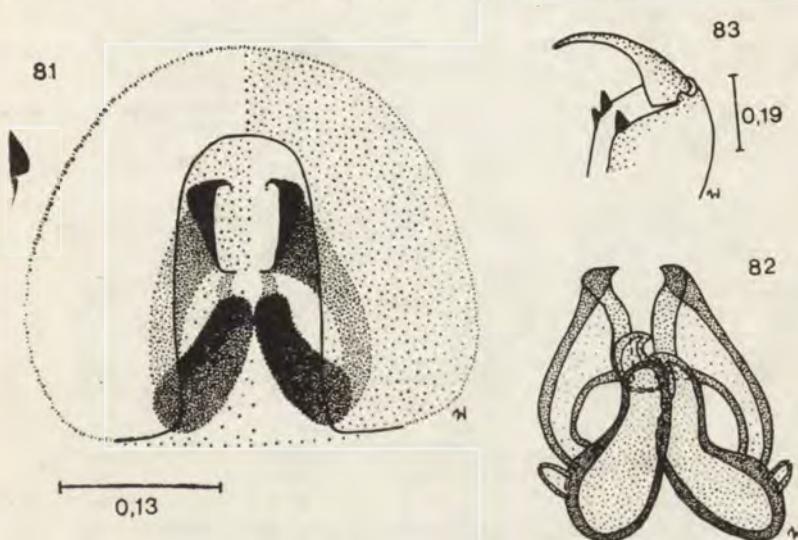
Remark. SCHENKEL, 1963 gives information: "Fluss Barchany im N. von Borobalgassun, Ordos, 12 IX 84: 2 juv. ♀."

There are only 2 juvenile specimens, one of them is a immature female with very weakly sclerotized epigyne. It appears that describing of new genus and new species on a basis of such material is completely unjustified.

Salticus potanini SCHENKEL, 1963

Material: 1 juv., 1 ♀ — holotype "Salticus potanini, det. SCHENKEL 1946 — POTANIN 15" — MNHN — Paris.

Remark. SCHENKEL in his paper gives information: "Grenze Chara su-Cha, linkes Ufer des Etsingol, 23–29 VII 86: 1 ♀."



Figs. 81–83. *Salticus potanini* SCHENKL., holotype — female: 81–82 — epigyne before and after maceration, 83 — cheliceral dentition.

Cephalothorax brown, with sparse white setae, eye field darker, eyes surrounded black. Length of cephalothorax 1.69, length of eye field 0.71, width of eye field I 0.84, width of eye field III 0.91. Ratios: a 0.42, b 0.92, c 0.84. Abdomen grey, its length 2.60. Sternum brown. Epigyne small, with heavily sclerotized edges of the copulatory openings (fig. 81). The inner structure is the same as in specimen from Mongolia (WESOŁOWSKA, in press: fig. 107). Legs yellow with darker stripe on each segment. Length of segments of legs: I 0.39 +

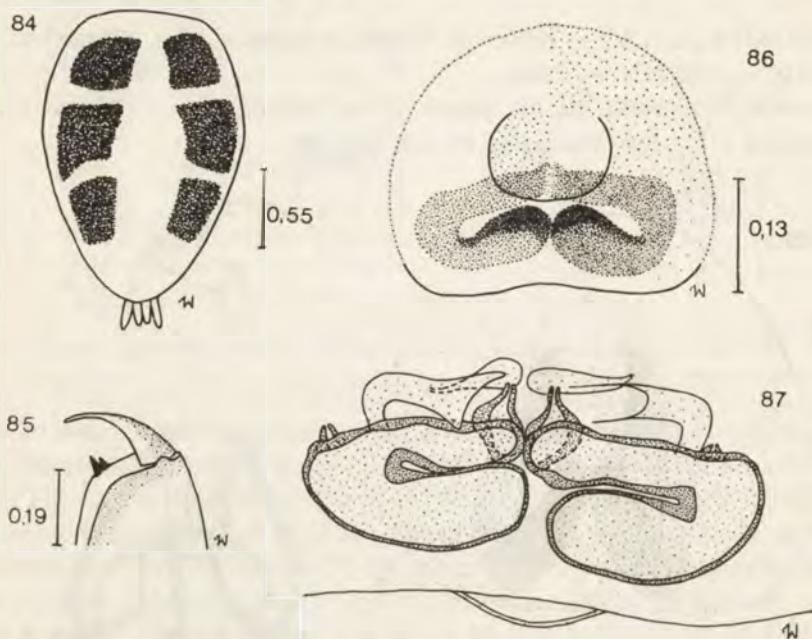
$+0.39+0.45+0.39+0.65$, II $0.32+0.32+0.32+0.32+0.52$, III $0.39+0.39+$
 $+0.39+0.32+0.71$, IV $0.45+0.52+0.58+0.36+0.91$. Ratio d 1.49.

Frontal aspect. Legs, clypeus light brown, chelicerae darker, pedipalps yellow. Only a few short white setae in vicinity of eyes.

Sitticus viduus (KULCZYŃSKI, 1895)

Material: 2 juv., 1 ♀ "Pellenes sp.", det. SCHENKEL 1946 — POTANIN 15" — MNHN — Paris.

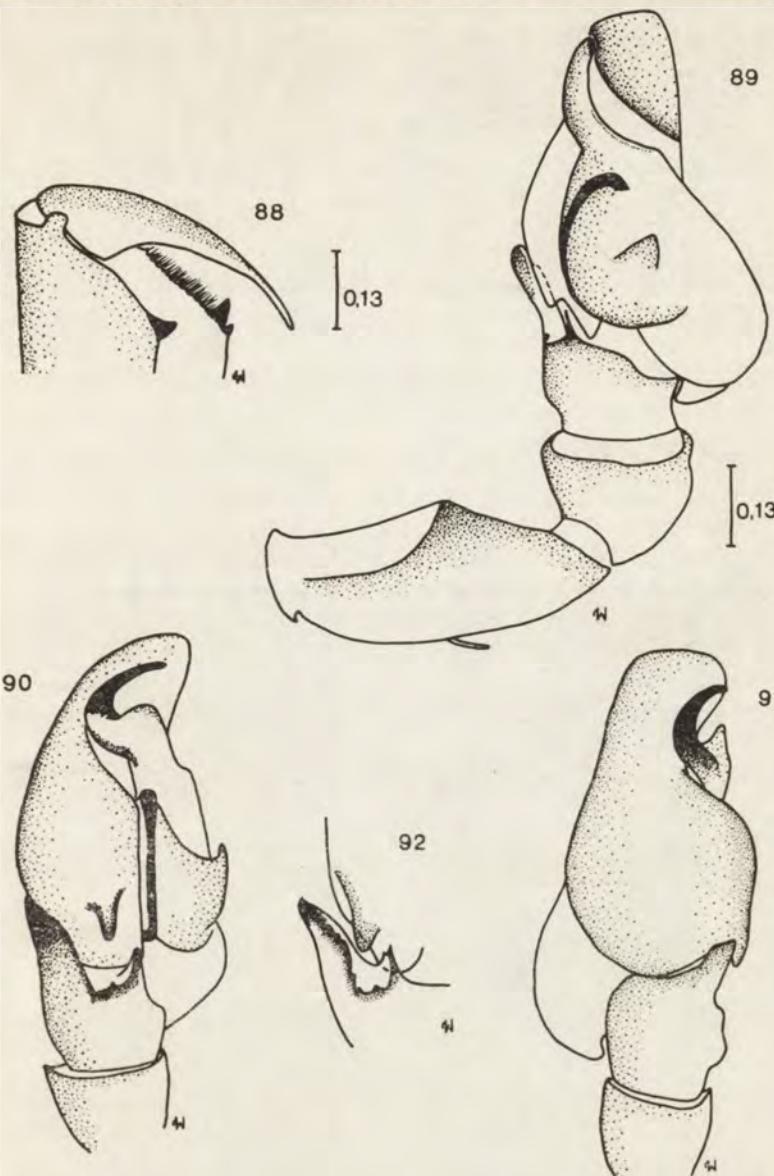
Remark. This specimen has been only mentioned but not described in the SCHENKEL's paper of 1963.



Figs. 84–87. *Sitticus viduus* (KULCZ.) — female: 84 — abdominal pattern, 85 — cheliceral dentition, 86–87 — epigyne before and after maceration.

Cephalothorax light brown, with surroundings of eyes II and III dark brown. Length of cephalothorax 1.82, length of eye field 0.78, width of eye field I 1.23, width of eye field III 1.23. Ratios: a 0.43, b 1.00, c 0.63. Abdomen yellow with three pairs of large brown spots laterally (fig. 84), its length 1.95. Sternum yellow. Epigyne small, very weakly sclerotized (fig. 86), its inner structure is shown on fig. 87. Legs yellow, length of their segments: I $0.52+0.58+0.65+0.32+0.97$, II $0.45+0.52+0.32+0.52+0.91$, III $0.58+0.52+0.45+0.45+0.97$, IV $0.52+0.71+0.97+0.65+1.56$. Ratio d 2.15. All body covered by setae.

Frontal aspect. Chelicerae, clypeus, pedipalps and legs yellow.

Tasa¹ davidi (SCHENKEL, 1963), comb. n.Synonym: *Thianella davidi* SCHENKEL, 1963, syn. n.

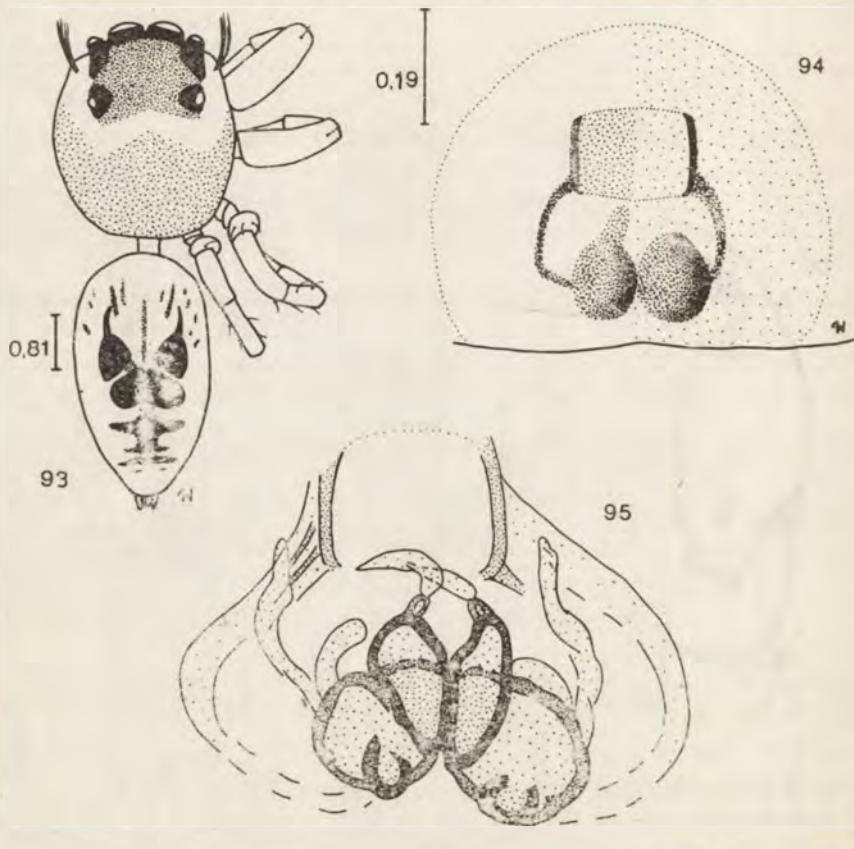
Figs. 88–92. *Tasa davidi* (SCHKL.), holotype of *Thianella davidi* SCHKL. — male: 88 — cheliceral dentition, 89–91 — copulatory organ, ventral, lateral and dorsal views, 92 — tibial apophysis.

¹ A new generic name *Tasa* nom. nov. (type-species: *Thianella davidi* SCHENKEL, 1963) is here introduced for the preoccupied *Thianella* SCHENKEL, 1963, nec *Thianella* STRAND, 1907.

Material: 1 ♂ — holotype “*Breda davidi*, det. SCHENKEL 1946, Hant-choungfu, [leg.] A. DAVID” — MNHN — Paris.

Remarks. Without any doubt “*Thianella davidi*” in SCHENKEL’s paper refers to specimen labelled “*Breda davidi*”. There is an additional information in SCHENKEL’s paper: “Han-tschang-fu, Süd Schensi, 1873: 1 ♂.” The specimen is much damaged, without abdomen.

Cephalothorax brown, with surroundings of eyes II and III black. Length of cephalothorax 1.95, length of eye field 0.78, width of eye field I? (the specimen damaged), width of eye field III 1.10. Ratio a 0.40. Sternum brown. The palpal organ is shown in figs. 89–91. Tibial apophysis characteristic, with saw-toothed edge (fig. 92). Embolus turn down as far as dorsal surface of cymbium. Legs yellow, the basal parts of each segment darker. Length of segments of legs: I $0.45 + 0.65 + 0.97 + 0.78 + 1.10$, II $0.45 + 0.52 + 0.65 + 0.58 + 0.91$, III $0.52 + 0.58 + 0.65 + 0.52 + 0.91$, IV $0.58 + 0.65 + 0.78 + 0.52 + 1.10$. Ratio d 1.20.



Figs. 93–95. *Thyene imperialis* (Rossi), holotype of *T. sinensis* SCHKL. — female: 93 — general appearance, 94–95 — epigyne before and after maceration.

Frontal aspect. Pedipalps and legs yellow. Chelicerae light brown.

The very closely related species has been found in Japan — YAGINUMA's collection "28 VI 1964, Kochi Pref. "17" [BOHDANOWICZ, PRÓSZYŃSKI, in preparation (*Salticidae of Japan*)].

Thyene imperialis (ROSSI, 1846)

Synonym: *Thyene sinensis* SCHENKEL, 1963, **syn. n.**

Material: 2 juv., 1 ♀ — holotype "*Thyene sinensis*, det. SCHENKEL 1946, Wuchang, Ho Ting Chich" — MNHN — Paris.

Remark. There is an additional information in SCHENKEL's paper: "Wuchang, 1937: 1 ♀, 2 juv."

Cephalothorax rounded, yellow, eyes surrounded black. There are characteristic "horns"-tufts of long black setae; one on each lateral side of the eye field. Length of cephalothorax 3.00, length of eye field 1.33, width of eye field I 1.66, width of eye field III 1.78. Ratios: *a* 0.44, *b* 0.93, *c* 0.80. Abdomen yellow, with black pattern (fig. 93). Length of abdomen 3.55. Sternum yellow. Epigyne small, weakly sclerotized, with an anterior depression (fig. 94). Spermathecae heavily sclerotized, with numerous chambers, into which enter spirally coiled structures unknown function (fig. 95). Legs yellow, length of their segments: I $0.66 + 0.77 + 1.22 + 1.10 + 1.66$, II $0.55 + 0.77 + 0.99 + 0.99 + 1.33$, III $0.66 + 1.22 + 1.22 + 1.22 + 1.89$, IV $0.77 + 1.22 + 1.11 + 0.99 + 2.00$. Ratio *d* 0.91.

Frontal aspect. Chelicerae, clypeus, pedipalps and legs yellow. Near lateral eyes two "horns". Median eyes surrounded by single row of white scales.

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Present address:
Wrocław University
Museum of Natural History
Sienkiewicza 21, 50-335 Wrocław

STRESZCZENIE

[**Tytuł:** Redeskrypcja wschodnioazjatyckich *Salticidae (Aranei)* opisanych przez E. SCHENKELA

Praca zawiera rewizję i redeskrypcje 23 gatunków *Salticidae* opisanych z Azji Wschodniej przez E. SCHENKELA w r. 1936 i 1963. Prace te są podstawowym wprowadzeniem do fauny pająków Chin, Mongolii oraz Korei i mają zasadnicze znaczenie dla analizy zoogeograficznej Azji Wschodniej. Wskutek niedostatecznej precyzji rysunków oraz wad klasyfikacji, interpretacja gatunków SCHENKELA była utrudniona. Praca niniejsza uzupełnia te braki i koryguje klasifikację *Salticidae* przez wyjaśnienie stanowiska systematycznego 6 gatunków oraz synonimizację 7 nazw. Wprowadzono nową nazwę *Tasa nom. nov.*

РЕЗЮМЕ

[**Заглавие:** Редескрипция восточноазиатских *Salticidae (Aranei)* описанных Е. Шенкелем]

Статья содержит ревизию и переописание 23 видов *Salticidae*, описанных Е. Шенкелем (E. SCHENKEL) в 1936 и 1963 г.г. из восточной Азии. Обе эти работы являются главными вводными работами к фауне пауков Китая, Монголии и Кореи, имеют также фундаментальное значение для зоогеографического анализа восточной Азии. Вследствие недостаточной точности рисунков и недостатков классификации интерпретация видов Шенкеля была утруднена. Настоящая работа пополняет эти недостатки и поправляет классификацию *Salticidae*, выясняя систематическое положение 6 видов и синонимизируя 7 названий. Введено новое название *Tasa nom. nov.*

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