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Redescriptions of the O.P.-CAMBRIDGE *Salticidae* (*Araneae*) types from Yarkand, China

Redeskrypcje typów *Salticidae* O.P.-CAMBRIDGE (*Araneae*) z Yarkand w Chinach

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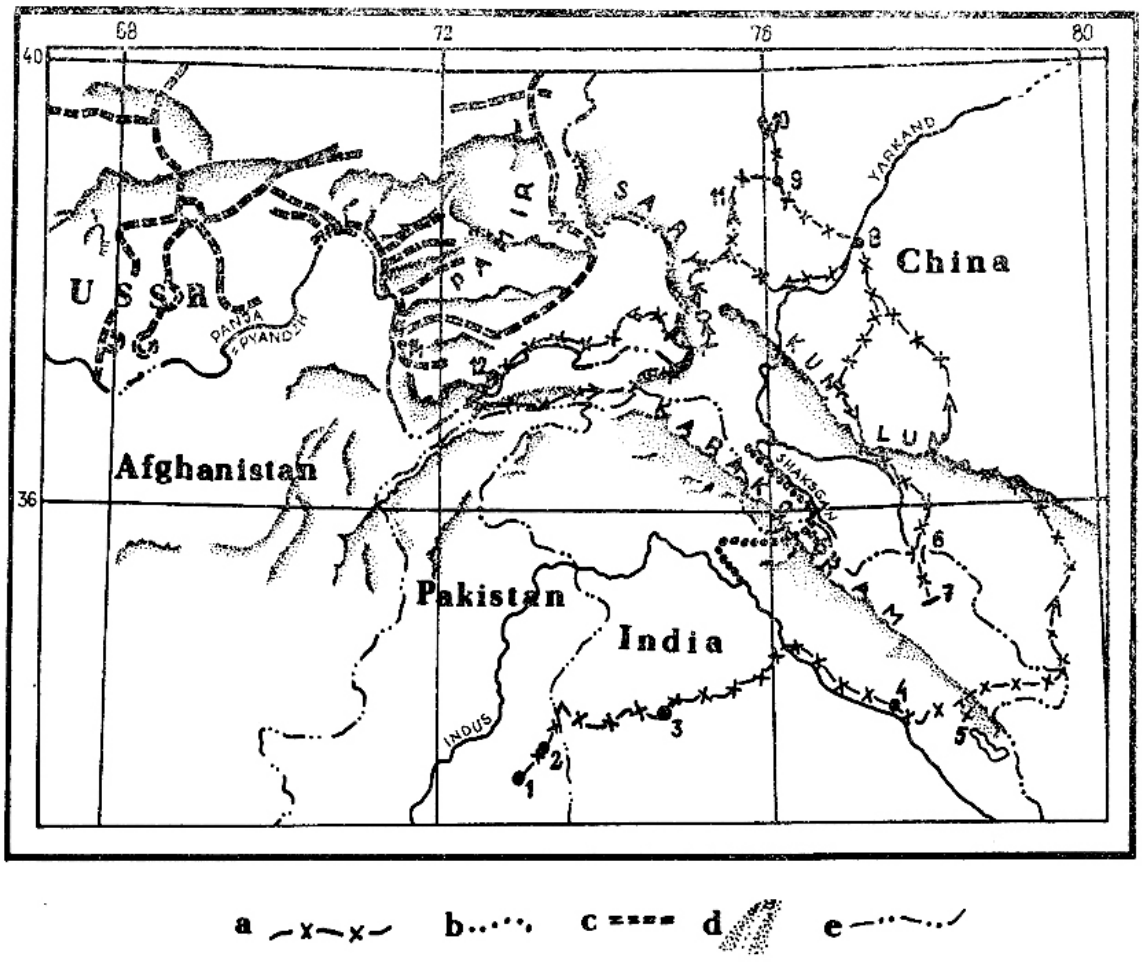
ABSTRACT. *Salticidae* (*Araneae*) described by O.P.-CAMBRIDGE, 1885, from Yarkand (Sinkiang, West China) and adjacent areas, were believed lost, but are located in Oxford, England. The following species are redescribed and lectotypes selected: *Pseudicius cinctus* (O.P.-CAMBRIDGE, 1885), *P. deletus* (O.P.-CAMBRIDGE, 1885), *P. frigidus* (O.P.-CAMBRIDGE, 1885), *Sitticus avocator* (O.P.-CAMBRIDGE, 1885) and *Yllenus auspex* (O.P.-CAMBRIDGE, 1885). *Pseudicius cambridgei* sp. n. is described and four other species are identified. The following new synonyms are established: *Pseudicius cinctus* (O.P.-CAMBRIDGE, 1885 = *rufovittatus* SPASSKY, 1952; *Sitticus avocator* (O.P.-CAMBRIDGE, 1885) = *viduus* KULCZYŃSKI, 1895; *Yllenus auspex* (O.P.-CAMBRIDGE, 1885) = *baltistanus* CAPORIACCO, 1935.

INTRODUCTION

by JERZY PRÓSZYŃSKI

Studies on Central Asian *Salticidae* are hampered by inaccurate descriptions of species by earlier authors. Recognition of species and often genera is not possible without study of the original material. While the whereabouts of most specimens are listed in PRÓSZYŃSKI (1971), the fate of the O.P.-CAMBRIDGE collection from Yarkand has remained unknown.

The O.P.-CAMBRIDGE collection from Yarkand is one of the oldest from Central Asia and the only collection from Yarkand itself. The specimens were collected by Dr. Ferdinand STOLICZKA, geologist of the British Second Mission to Yarkand during 1873–1874. The collection was made along the route of the Mission, in Kashmir, Ladakh, Karakorum Range,



1. Map of the area discussed in the text. a — approximate route of the second Yarkand mission, 1873—1874, along which Dr. F. STOLICZKA collected spiders studied subsequently by O.P.-CAMBRIDGE; b — approximate route of L. DI CAPORIACCO, 1929; c — routes of E.M. ANDREEWA, 1961—1971; d — main mountain ranges; e — present state frontiers. Localities: 1 — Rawalpindi, 2 — Murree, 3 — Shrinagar, 4 — Leh, 5 — Pankong Lake, 6 — Karakorum Pass, 7 — Bursi (nearby place of death of Dr F. Stoliczka on June 19th, 1874); 8 — Yarkand, 9 — Yangihissar, 10 — Kashgar, 11 — "Aktalla", 12 — Pyandzh (= Kala Panja, "Panjah" or "Punjah"), 13 — Mt K2 (Chogori), 14 — Khorog

Yarkand Plains and in the Pamir and Sarykol Mts (fig. 1). Subsequently the collection was identified and described by O.P.-Cambridge, 1885. He did not compare his specimens with collections made by earlier Central Asian expeditions (FEDČENKO 1868–1872, PRZEWALSKI 1871–1886, Po-

TANIN 1876–1879)* either because of language difficulties or delay in publication. His own work in turn was not fully used by subsequent arachnologists. In 1929 L. DI CAPORIACCO (1934–1935) collected in the Karakorum Range and the last part of the collecting route of STOLICZKA in the East Pamir Mts was included in the extensive collecting of ANDREEVA** (1961–1971). However, the species described by O.P.-CAMBRIDGE have priority over all species described later.

The collection of spiders of O.P.-CAMBRIDGE is kept in the Hope Department of Zoology (Entomology), Oxford University, but the Yarkand specimens were missing. There are no entries for them in the collection catalogue, nor any notes or letters in the archives. Dr. J.A.L. COOKE, who curated the collection in early 1960ies, has informed me that his search for Yarkand specimens failed then. It was finally assumed that the collection was probably returned to India and accidentally destroyed there. I carried out a similar search during preparation of my catalogue (PRÓSZYŃSKI, 1971). That yielded a single specimen of an O.P.-CAMBRIDGE species from Yarkand in the REIMOSER collection in the Naturhistorisches Museum, Vienna. It could possibly be a basis for the reclassification introduced by REIMOSER (1919). However, the specimen disagrees with the original description of the species with which it was identified and comes from a much later expedition to Karakorum (REIMOSER, 1935).

Visiting Oxford in 1977 I happened to find, among overseas O.P.-CAMBRIDGE collection, two jars (Nos 1830 and 1835) labelled (apparently recently) "*Salticidae* of Yarkand". The jars contained small glass vials with specimens, labelled with small handwritten ink numbers, old, faded and barely visible. There were no other labels in the vials or jars and no entries explaining their origin or contents in the collection catalogue. However, remaining exotic O.P.-CAMBRIDGE collections had similar handwritten numbers and the main difference was in the explanation of these numbers in the form of specific names — pasted to the wall of the jars, as well as entries in the catalogue. These were missing for the Yarkand jars. As I have seen similar jars with "*Lycosidae* from Yarkand" it seem possible that these specimens were separated by families from a large

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* The results of studies of spiders collected by these expeditions were published by KRONEBERG (1875; it is this paper O.P.-CAMBRIDGE could not read because of language difficulties!), SIMON (1895), SCHENKEL (1963).

** Provisionally summarized ANDREEVA (1975, 1976).

old jar. It is not known whether in that older jar any additional labels were present, nor who sorted the material out.

Finding these jars poses three questions: 1) did the specimens really come from the Yarkand area? 2) were they collected by Dr. F. STOLICZKA during the second Yarkand mission? 3) could they be accepted as the missing O.P.-CAMBRIDGE Yarkand types?

Examination of the specimens has shown that all of them belong to species occurring near the Yarkand Mission route (fig. 1). There are no specimens which could not be expected in that area.

The identification of the specimens with the original descriptions seemed impossible at first because of apparent discrepancies. For instance, the species of *Menemerus* (now placed in *Pseudicius*) are said to have a short cephalothorax, although to my eyes it appears remarkably long. However, if O.P.-CAMBRIDGE was accustomed to other spider families with much longer cephalothoraxes, that of *Pseudicius* could appear short to him.

Attus avocator has „palpal organ simple and of blackish-brown colour". Only one specimen in the collection fits that description, and when I started to compare it with the description, some characters concerning the cephalothorax shape and colour pattern began to fit. Of course, they would fit several hundred other species as well, but if we assume relation of the collection to the descriptions, the coincidence becomes significant.

With this experience I returned to the description of *Menemerus cinctus* which mentions: „tapering, pointed, slightly blunt apophysis" apparently single, while the specimen I tried to associate with this description has a double apophysis. However, the palpal organ was not separated from the body and the details of apophyses in that natural position are not easily visible. If we consider additionally that the optics were poor in 1885, that O.P.-CAMBRIDGE had no experience with any other *Pseudicius* and that he apparently regarded copulatory organs as unimportant (his descriptions of epigyne were "the form of the genital aperture is characteristic"), the discrepancies become less important. During comparisons more and more specimens began fitting the descriptions, once I decided to disregard those characters which could have been mentioned in the text because of poor observation, poor judgement or inexperience, so common in XIXth century taxonomy.

The general conclusion from the above is that study of the specimens alone cannot prove or disprove them to be the original type material. An additional argument could be drawn from a comparison of the contents of the collection with the list of species in the original paper.

The contents of the collection in comparison with the list of species in the paper

List of species and phena in the paper of O.P.-CAMBRIDGE (1885)	List of species and phena in the collection	Comments on identification
Heliophanus: 1 species	*Heliophanus*: 1 species	Misidentification of 2 similar species
Plexippus: 1 species	*Carrhotus*: 1 species	Mistaken 2 cosmopolitan species
Menemerus: 4 closely related phena, 2 of which were supposedly sexes of one species	*Pseudicius*: 5 closely related phena, 2 of which were sexes of one species	3 good species recognized by O.P.-CAMBRIDGE, the 4th new
Attus: 4 closely related species	*Yllenus*: 3 closely related species	Description of one species fits the ♂, other cannot be identified
Attus avocator	*Sitticus avocator*	Description fits the unique ♂

The correlation between these lists is too striking to be incidental. I assume therefore that the two jars "*Salticidae* of Yarkand" contain the original collection made by Dr. F. STOLICZKA along the route of the second Yarkand mission. It remains an open question whether these jars contain the whole *Salticidae* collection from Yarkand. Some specimens could be possibly mixed up with other families, other could be lent to other arachnologists and not returned. It seems, however, that the majority of the collection has been found.

I assume that these specimens are also in fact the types of the species described by O.P.-CAMBRIDGE. They have been found among his overseas collections, and we do not know any other collection of the same species. It seems also rather improbable that O.P.-CAMBRIDGE would easily part with his types, sending them to nonspecialists and to a colony with no prospect of development of local scientific establishments at that time. Other exotic collections of O.P.-CAMBRIDGE are also poorly labelled and it is only the absence of additional explanations of the numbers in vials, which makes this one different. But this could have (and most probably has) been lost in the meantime. The conditions in which the Yarkand collection was kept are to be found in various other XIXth century collections, so the difficulties with identification of the types cannot be considered exceptional.

The material was studied by my MSc student Miss K. ŻOCHOWSKA (under my close supervision) and by myself. The majority of the drawings are by K. ŻOCHOWSKA (except internal structures of epigyne, done by myself and drawn in china ink by Mrs. E. FLANCZEWSKA, who has also redrawn the map). The descriptions of species are by myself, as well as the English text of the whole paper. Numerous corrections and changes in the text suggested by Dr. W. PUŁAWSKI much improved the original version and I am very much obliged for them. Various arachnological aspects were also discussed with Dr. W. STARĘGA.

The present paper is to a large extent a result of my visit to Great Britain in 1977, assisted financially by the Organizing Committee of the VIIth International Congress of Arachnology. I am very much indebted to that Committee and particularly to its Chairman Dr. A.F. MILLIDGE. My one week visit in the Oxford University has left me very pleasant recollections of a kind hospitality of Professor G.C. VARLEY and the Staff Members of the Hope Department of Zoology (Entomology). The discovery of the *Salticidae* of Yarkand would not have been possible without the prior splendid curatorial work of Mr. E. TAYLOR. I am also indebted to Dr. J.A.L. COOKE for his kind cooperation, since early 1960's.

SYSTEMATIC SURVEY

Carrhotus xanthogramma Latreille, 1819

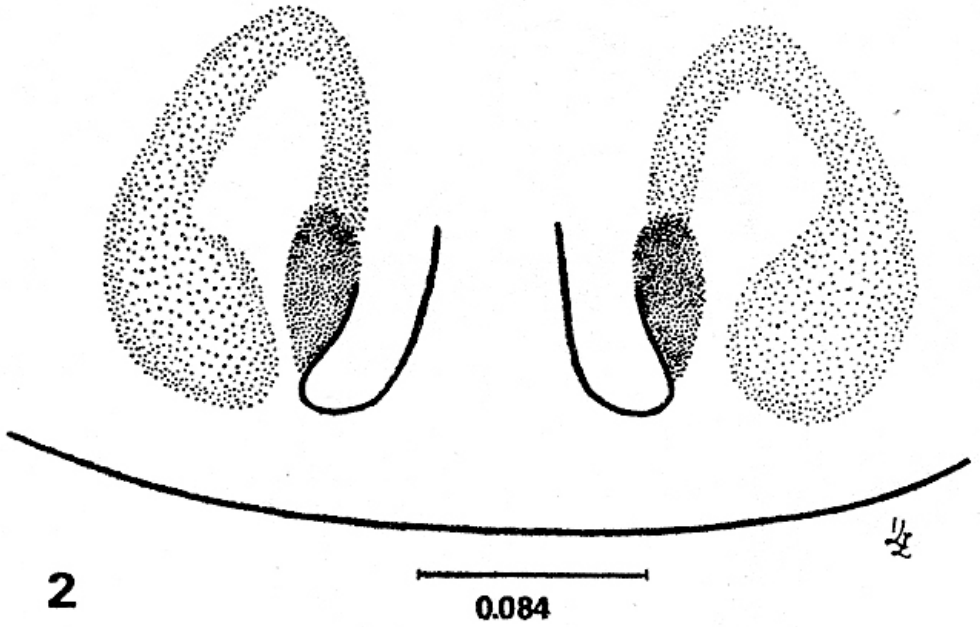
Material: Vial No. 259: 4 ♂, 4 ♀, 1 juv.

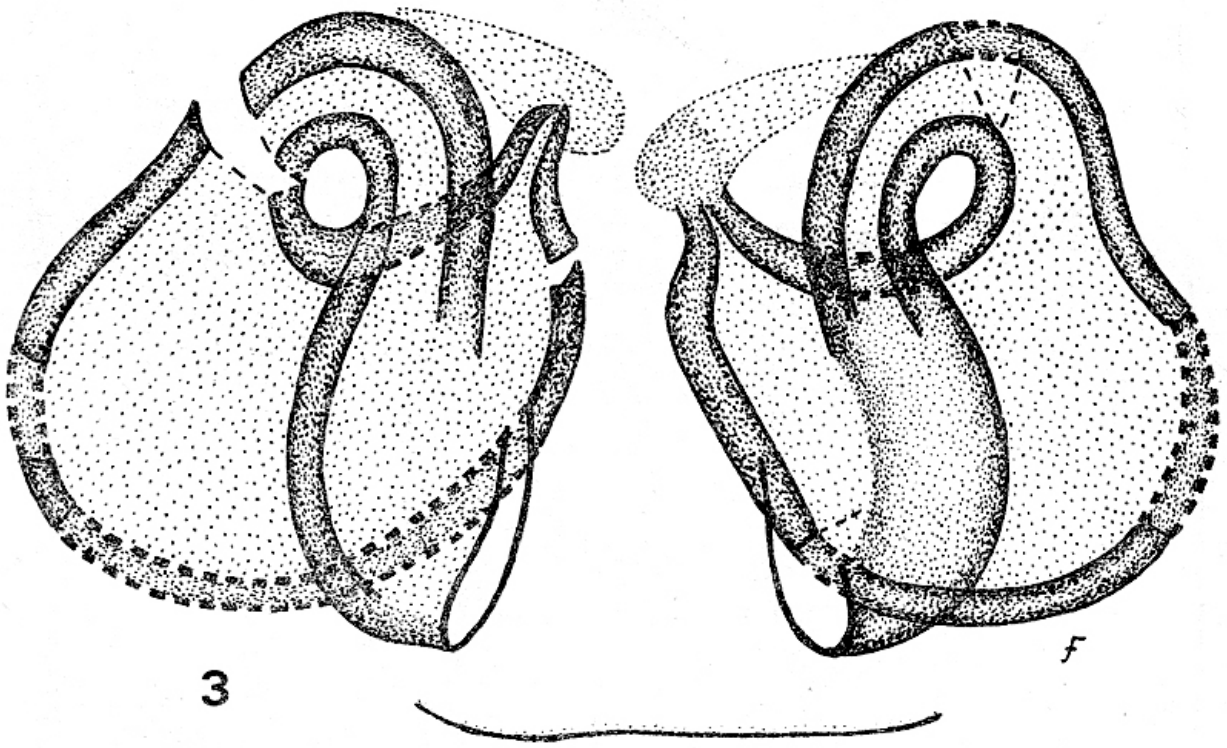
Possibly misidentified and listed by O.P.-CAMBRIDGE as "*Plexippus adansoni*", collected between Murree and Sind Valley, July, 1873. Both species are widely distributed in warm areas and were perhaps considered uninteresting and not deserving more attention (figs 2–6).

Heliophanus berlandi Schenkel, 1963

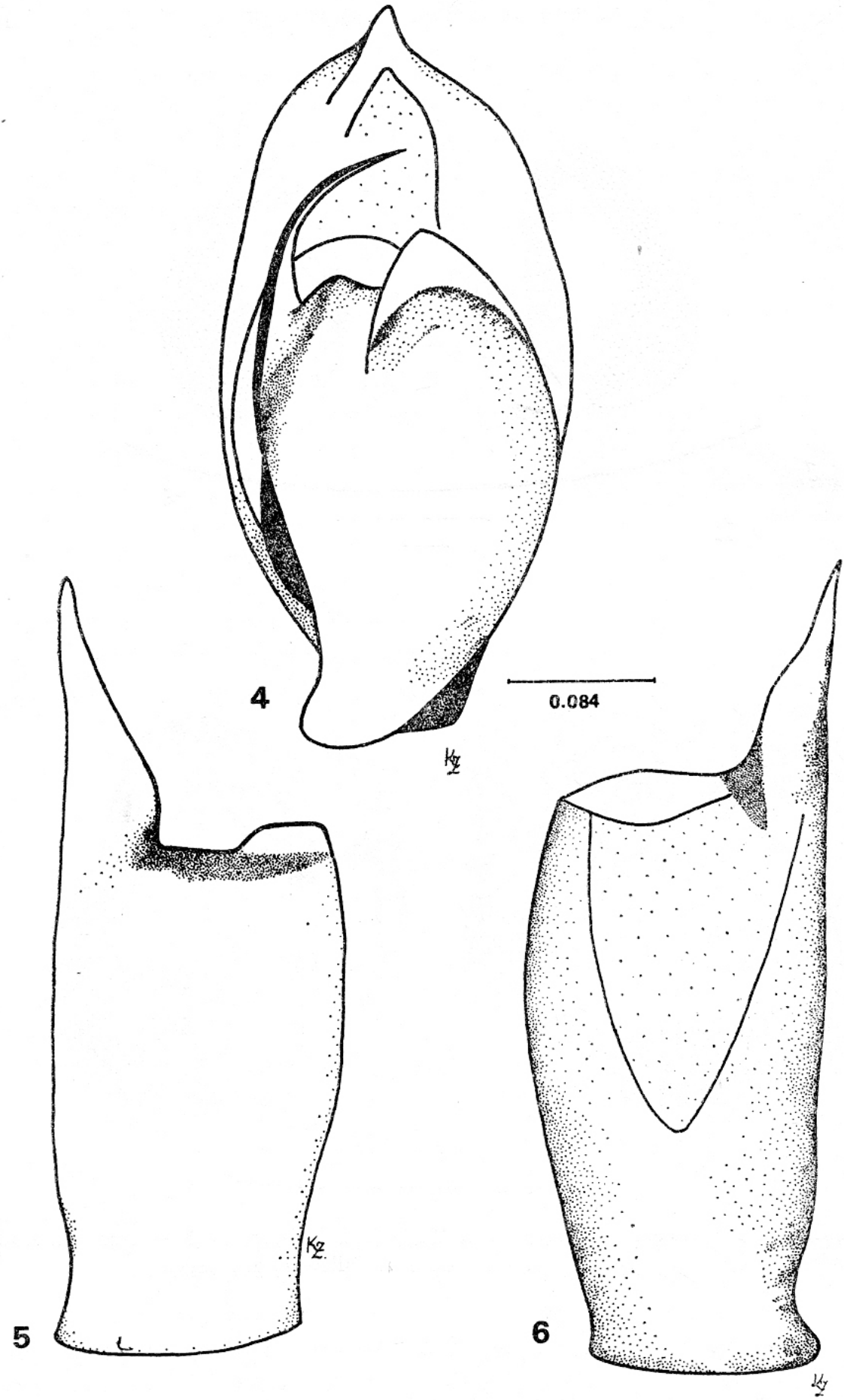
Material: Vial No. 200.3: 1 ♂; 233. 9 [a]: 4 ♀.

The characters: figs 7–11. These are presumably the specimens mentioned by O.P-CAMBRIDGE as *Heliophanus dubius* SIMON, 1876, "between Sirikol and Aktalla" (fig. 1). Both species are similar but differ in details of their genital organs. *H. berlandi* has a Central Asiatic distribution while *H. dubius* an Euro-Siberian.

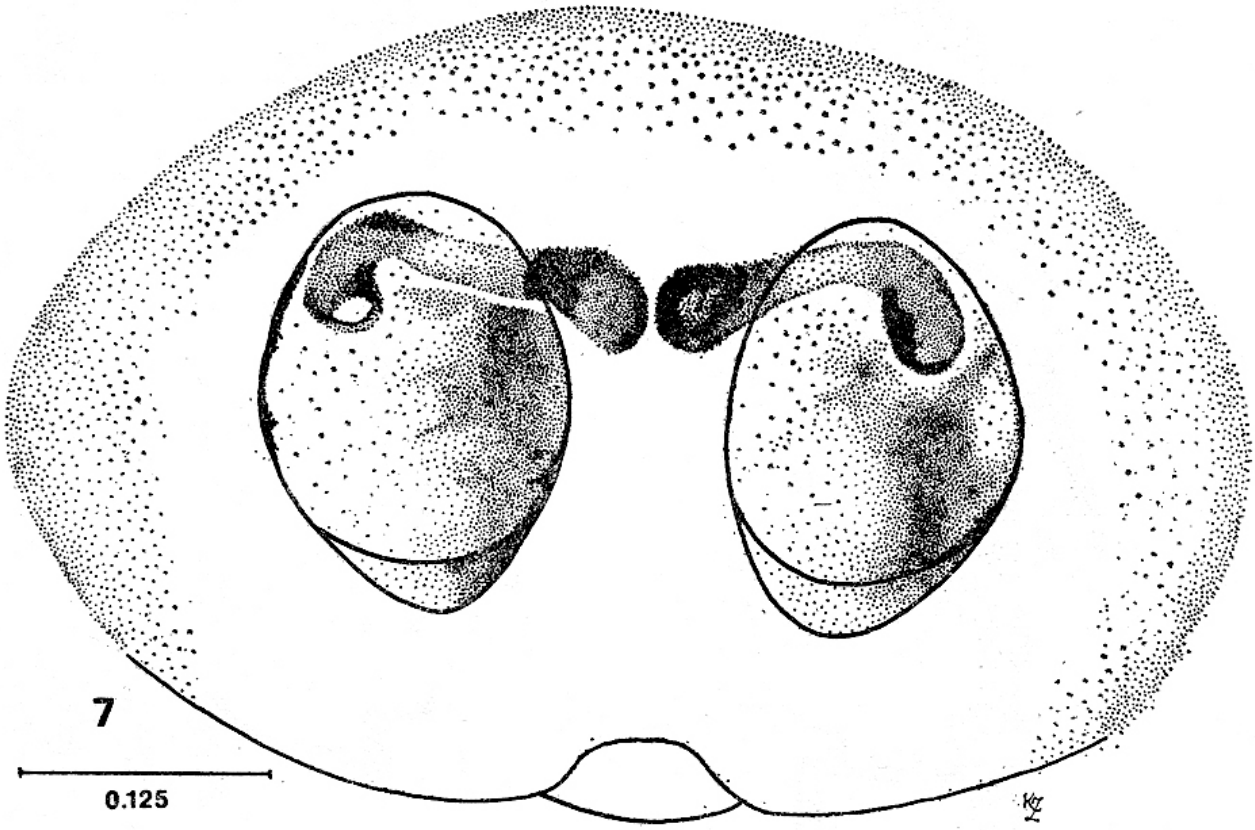


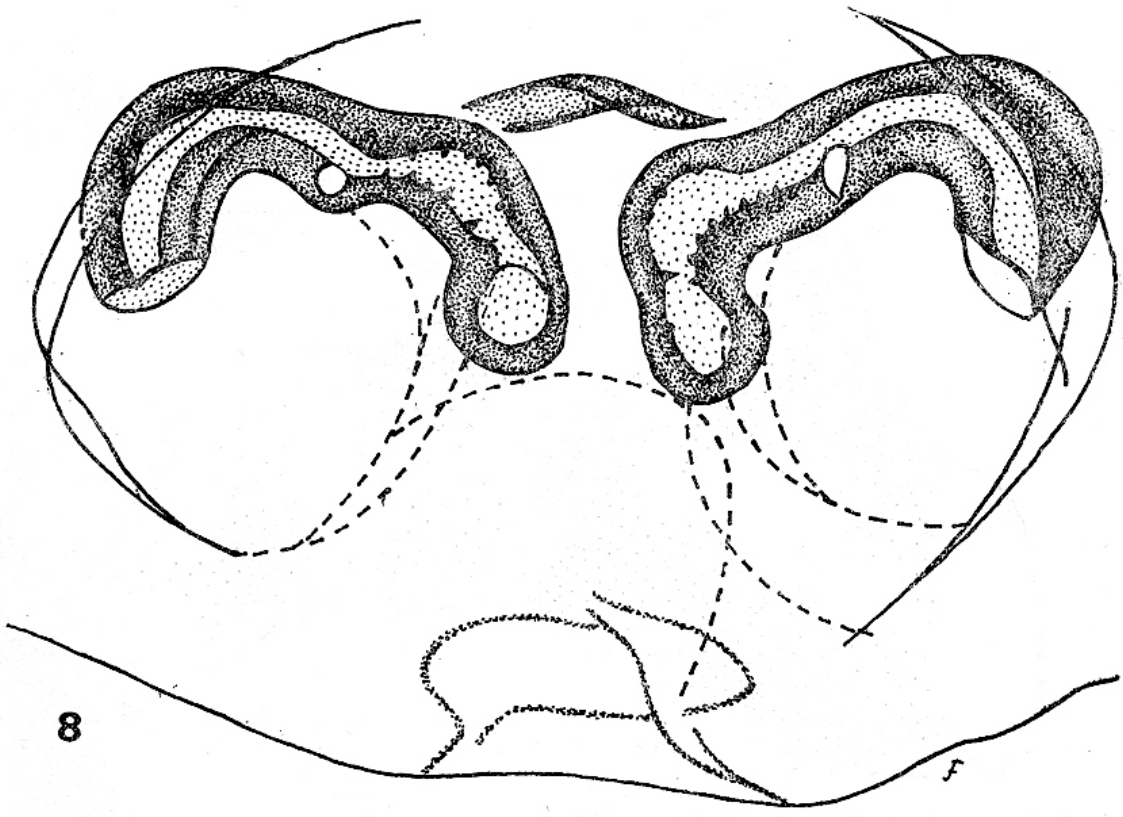


2, 3. *Carrhotus xanthogramma* LATREILLE, 1819, ♀. 2 — epigyne, 3 — same, internal structure (scale in mm, also in all following drawings)

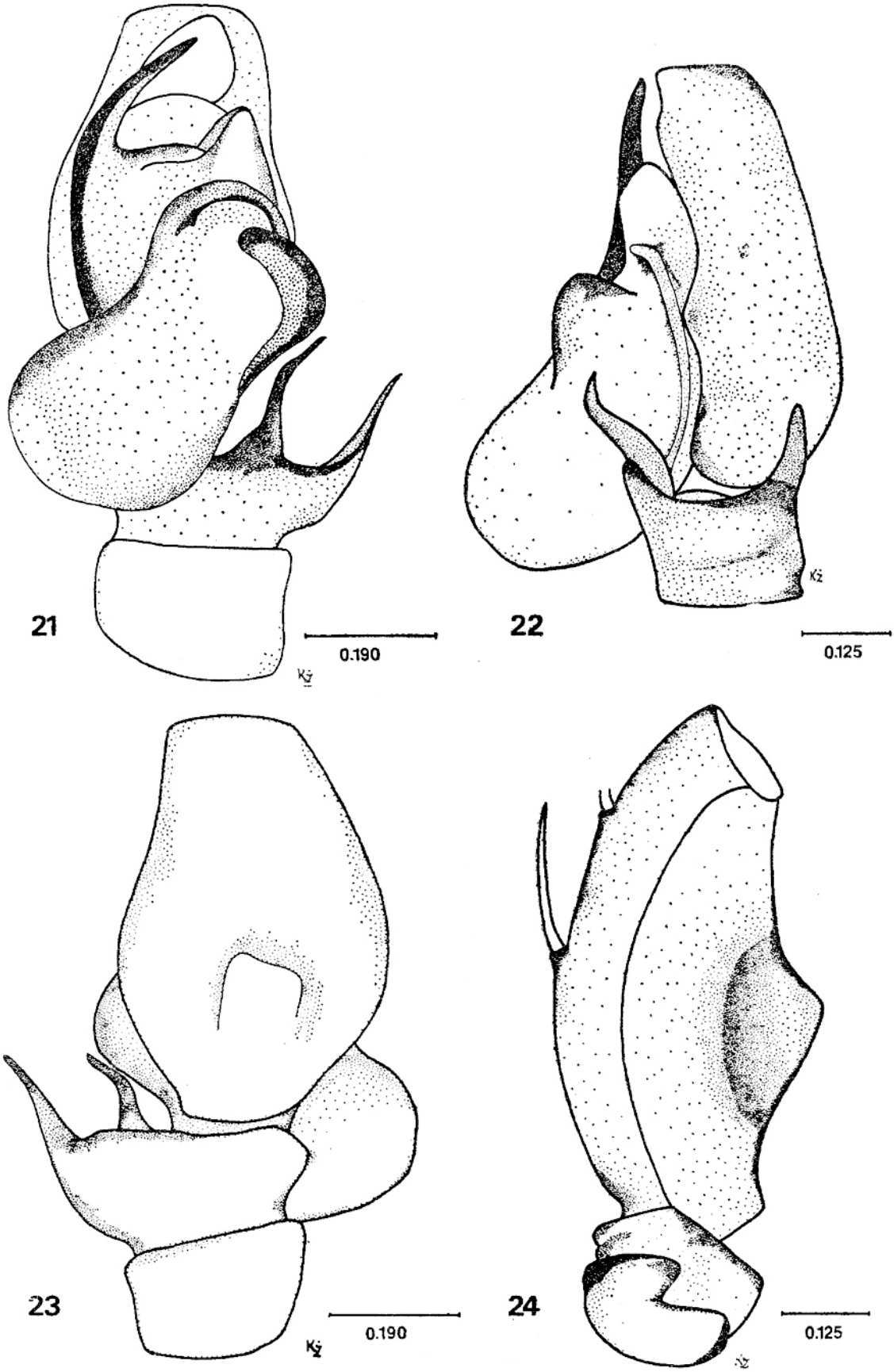


4–6 *Carrhotus xanthogramma* LATREILLE, 1819, ♂. 4 — palpal organ, 5 — palpal tibia dorsally, 6 — same, ventrally





7, 8. *Heliophanus berlandi* SCHENKEL, 1963, ♀. 7 — epigyne, 8 — same, internal structure

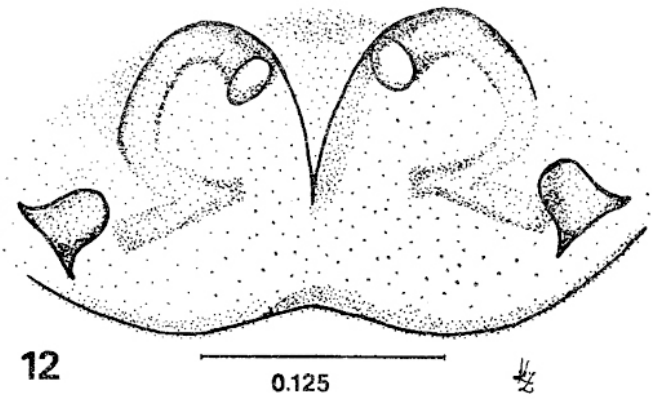


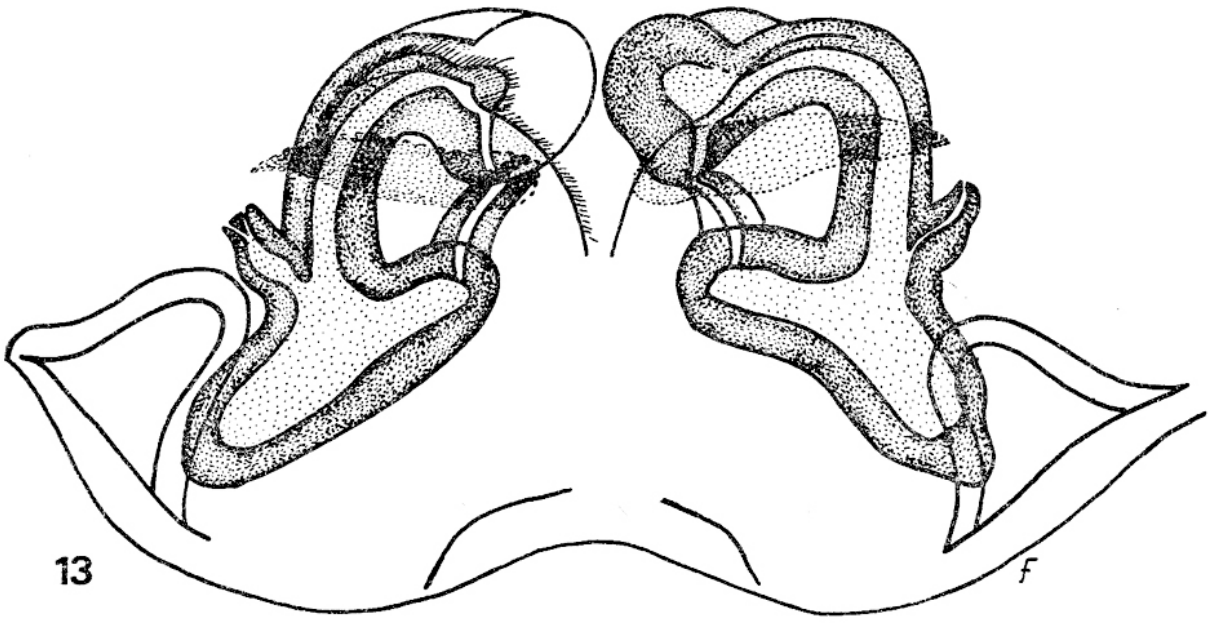
1–24. *Pseudicius cinctus* (O.P.-Cambridge, 1885), ♂. 21 — palpal organ ventrally, 22 — same, laterally, 23 — same, dorsally, 24 — palpal femur

Pseudicius cambridgei* sp. n.

Material: Vial No. 67: 1 ♀ — holotype. Locus typicus: unknown, presumably along the route of the second Yarkand mission (fig. 1). Named for O.P.-CAMBRIDGE.

The species resembles closely *Pseudicius deletus* (O.P.-CAMBRIDGE, 1885) and *P. frigidus* (O.P.-CAMBRIDGE, 1885) described below. It differs from them in the shape of the epigyne and its internal structures (figs 12, 13).





12, 13. *Pseudicius cambridgei* sp. n., ♀. 12 — epigyne, 13 — same, internal structure

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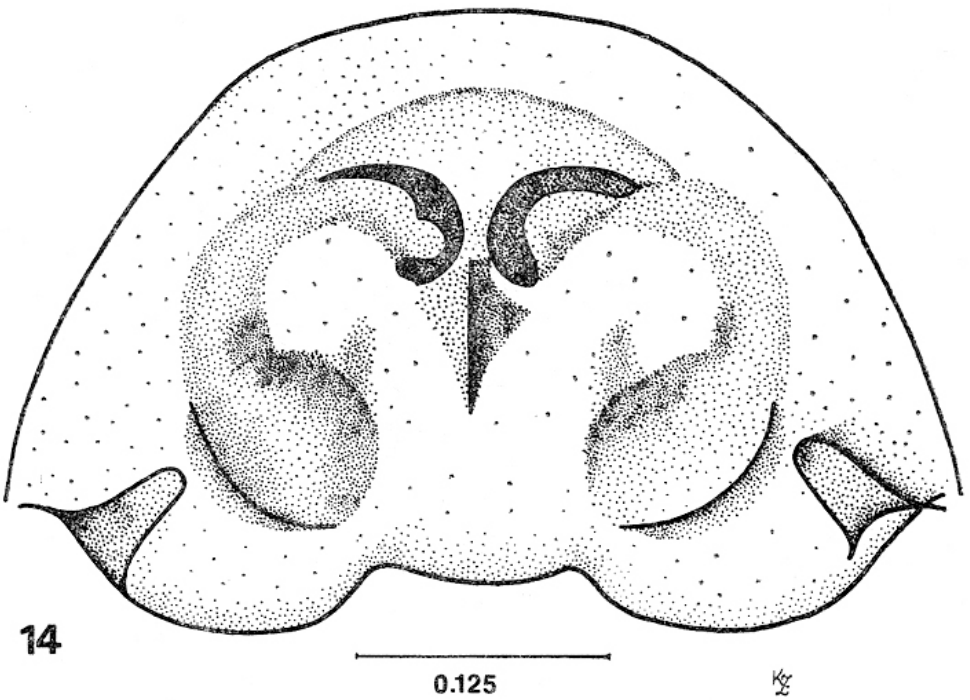
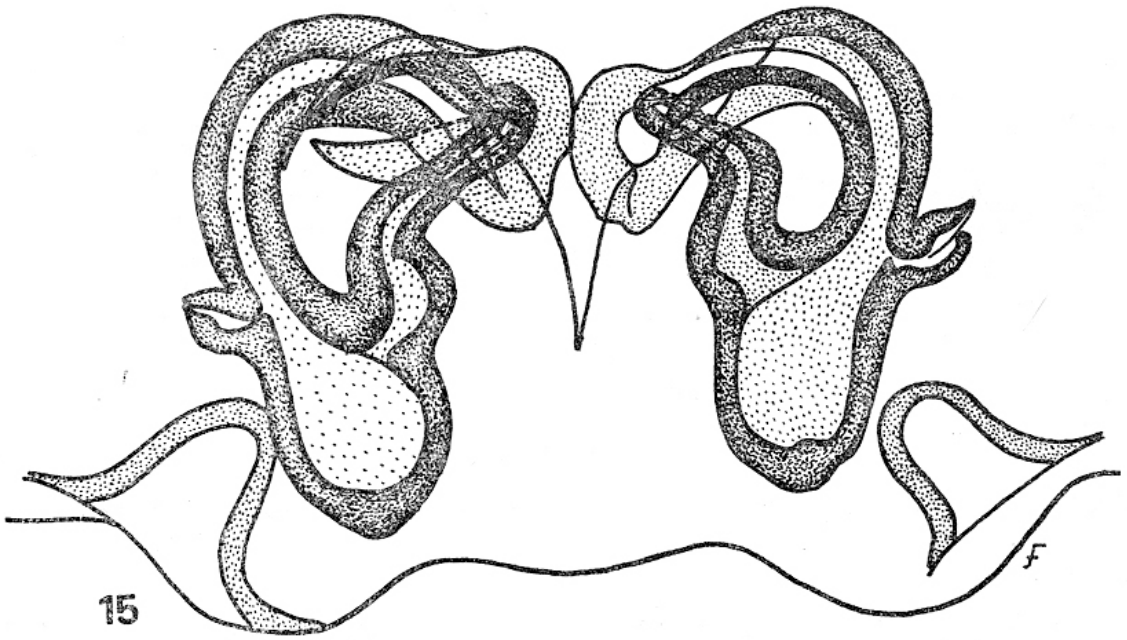
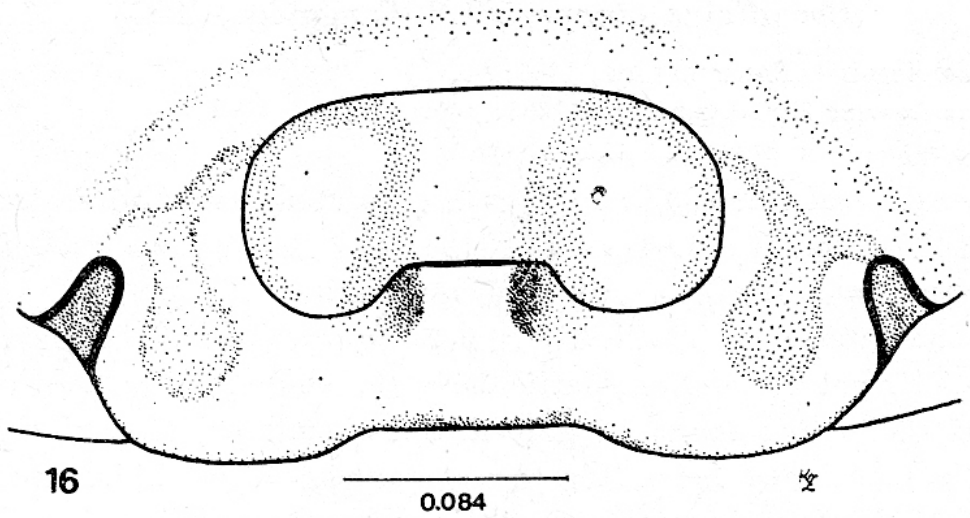
* Comparison of the genera *Icius* SIMON, 1876, and *Pseudicius* SIMON, 1885, from the whole Palaearctic and especially from Central Asia leads to some doubt about how they should be separated. The problem becomes even more complicated if one compares Oriental and Ethiopian species of these genera. It cannot be solved without revisions of both genera; hence identification of species as *Pseudicius* is provisional.

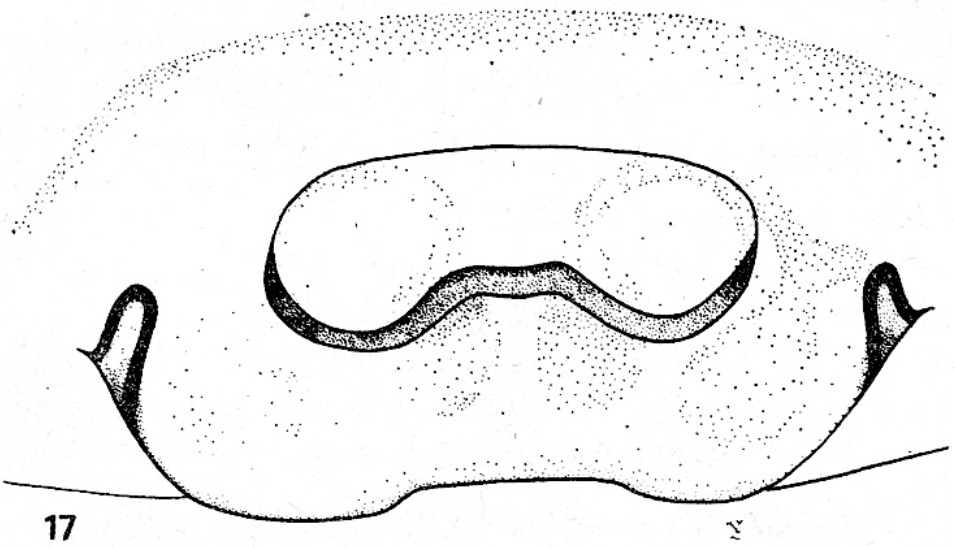
Colouration of the specimen partly faded. Dorsal surface of cephalothorax brown, with yellow median stripe along the thorax ending before the hindmargin. Cephalothorax sides light yellow, dorsum at present grey but originally darker. Traces of median white pattern: anterior median stripe 1/5th of abdomen length, slightly swollen at ends, followed by three pointed reversed "v" marks and a few indistinct transverse short white lines in front of spinnerets.

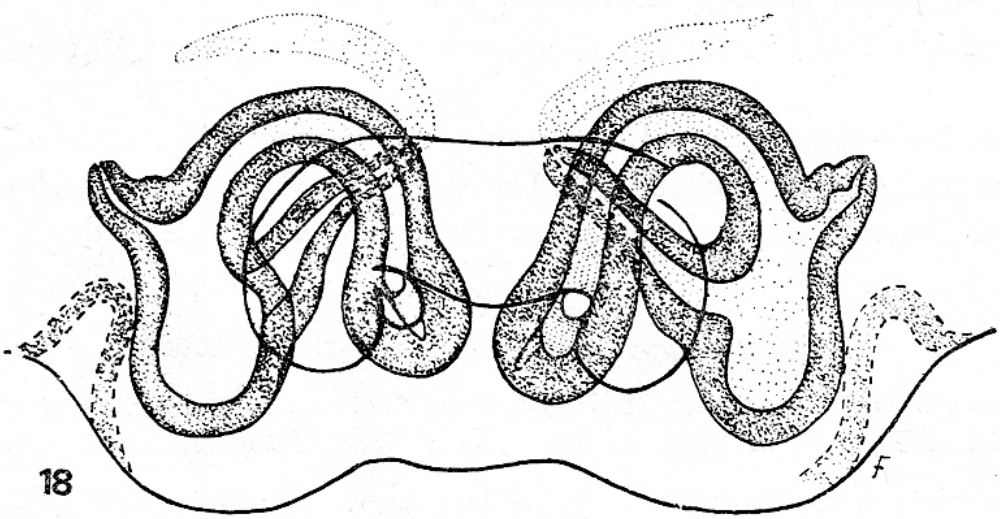




14, 15. *Pseudicius deletus* (O.P.-Cambridge, 1885), ♀. 14 — epigyne, 15 — same, internal structure







16–18. *Pseudicius frigidus* (O.P.-CAMBRIDGE, 1885), ♀. 16 — epigyne, 17 — same, slightly inclined anteroventrally, 18 — same, internal structure

Pseudicius cinctus (O.P.-Cambridge, 1885)

Menemerus cinctus O.P.-Cambridge, 1885: 99.
Menemerus incertus O.P.-Cambridge, 1885: 100.
Pseudicius rufovittatus Spassky, 1952, **n. syn.**

Material: Vial No. 233.6: 1 ♂ (with separated pedipalp) — lectotype (new), 1 ♂ — paralectotype; 233.9 [b]: 1 ♀ (lectotype of *M. incertus* O.P.-Cambridge, 1885). Locus typicus: Yarkand.

The characters: figs 19–24. The general appearance of the male agrees with the original description, particularly the abdominal pattern and the shape of the palpal organ in anterolateroventral position, the pointed apophysis mentioned being the dorsal ramus of the tibial apophysis. The female displays some traces of the abdominal pattern described by O.P.-Cambridge, as well as a characteristic row of spines arising from darker protuberances below the lateral eyes.

The specimens, and especially their genital organs, are the same as specimens of *P. rufovittatus* from Tadzhik and Turkmen SSR.

Pseudicius deletus (O.P.-Cambridge, 1885)

Menemerus deletus O.P.-Cambridge, 1885: 101.

Material: Vial No. 40: 1 ♀ — lectotype; 44: 1 ♀ — paralectotype. Locus typicus: route from Yarkand to Bursi (fig. 1).

The characters: figs 14, 15. Abdomen macerated white with traces of two parallel stripes and three pairs of small white spots, located approximately at 1/4th, 3/4th and 4/5th of abdominal length.

Pseudicius frigidus (O.P.-Cambridge, 1885)

Menemerus frigidus O.P.-Cambridge, 1885: 102.

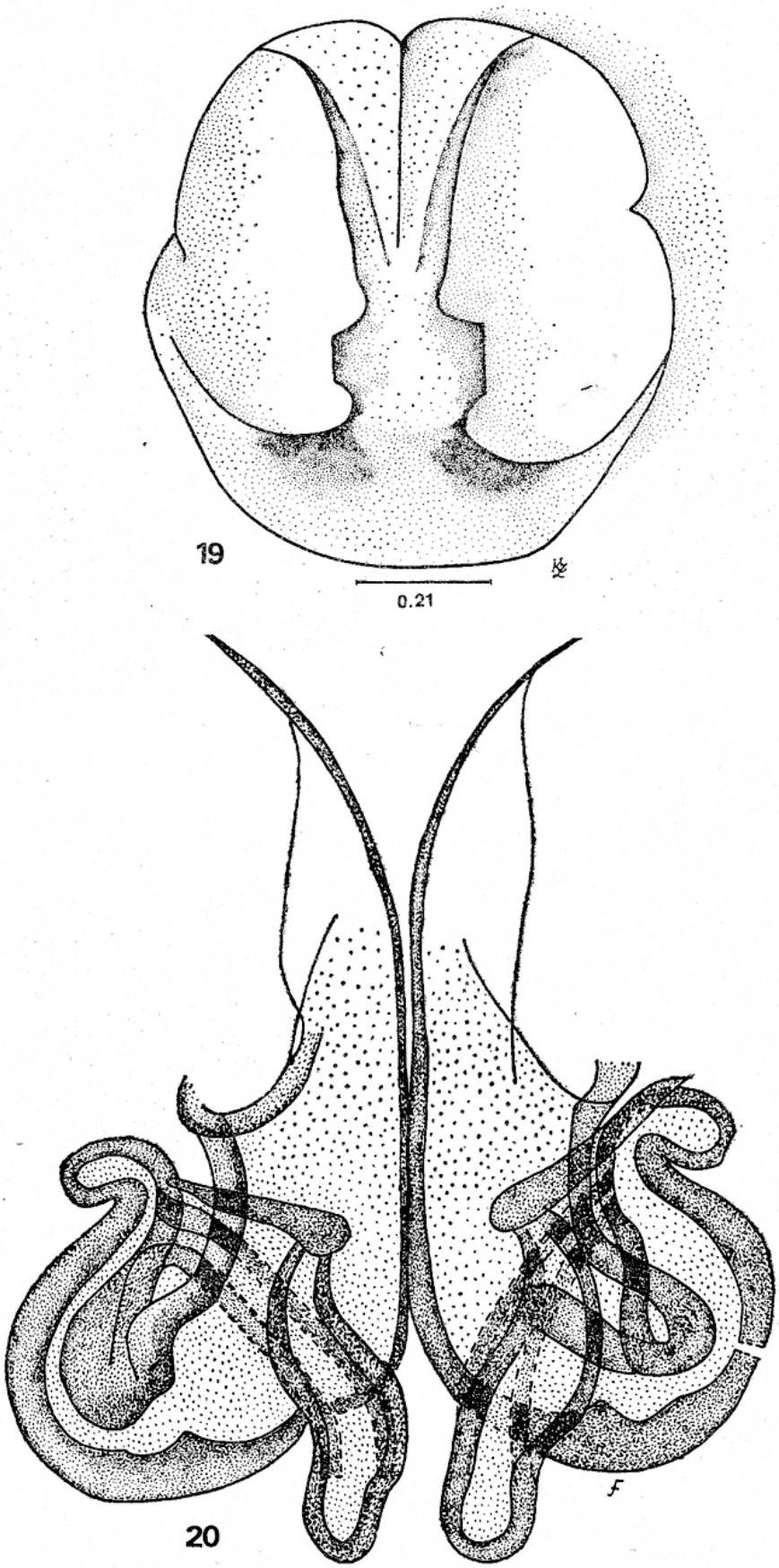
Material: Vial No. 57: 1 ♀ — lectotype. Locus typicus: Murree, Pakistan.

The characters: figs 16–18. Abdomen faded with faint traces of darker median streak in anterior half, bifurcating posteriorly. There follow three pairs of diagonal darker lines connecting medially and a dark triangular spot.

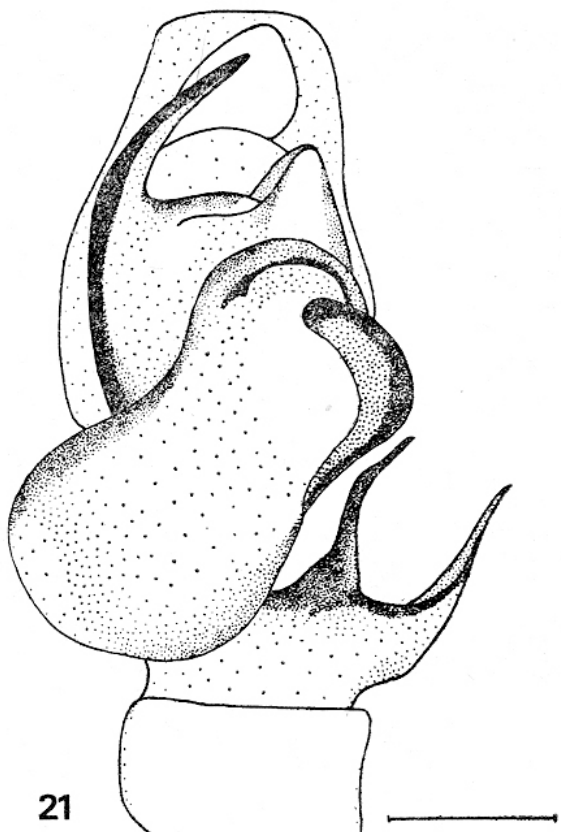
Sitticus avocator (O.P.-Cambridge, 1885)

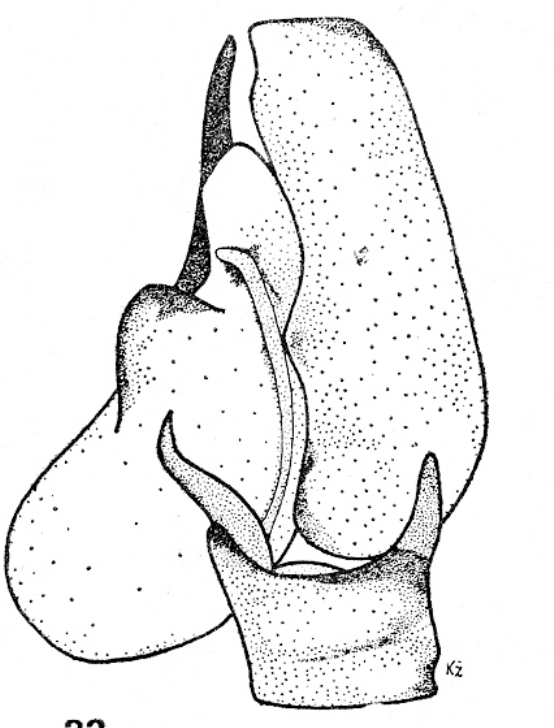
Attus avocator O.P.-Cambridge, 1885: 106 — in *Attulus*: Reimoser 1919 et auct. seq.
Attus viduus Kulczyński, 1895, **n. syn.** — in *Sitticus*: Reimoser 1919 et auct. seq.

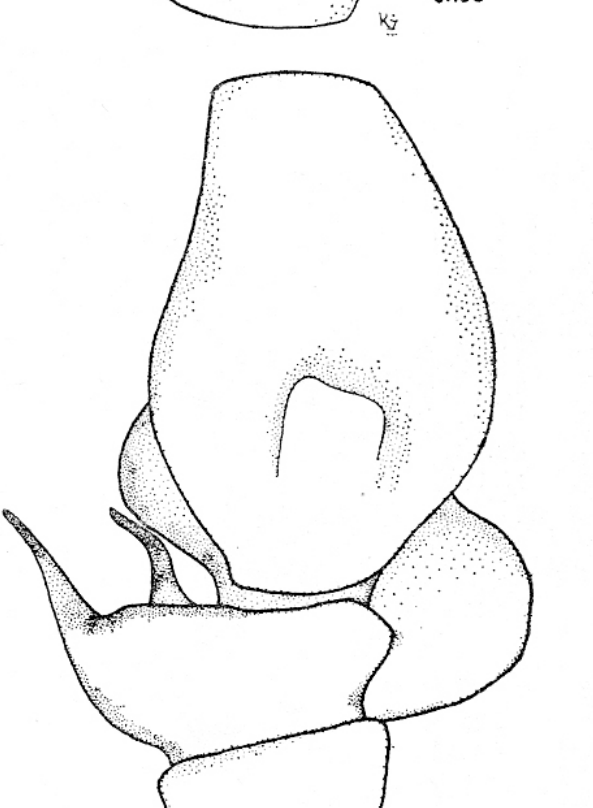
Material: Vial No. 143: 1 ♂ — lectotype. Locus typicus: Sinkiang, given as Yangihissar which, however, disagrees with the date given as "April 1874". According to Mission itinerary (Ball, 1886)

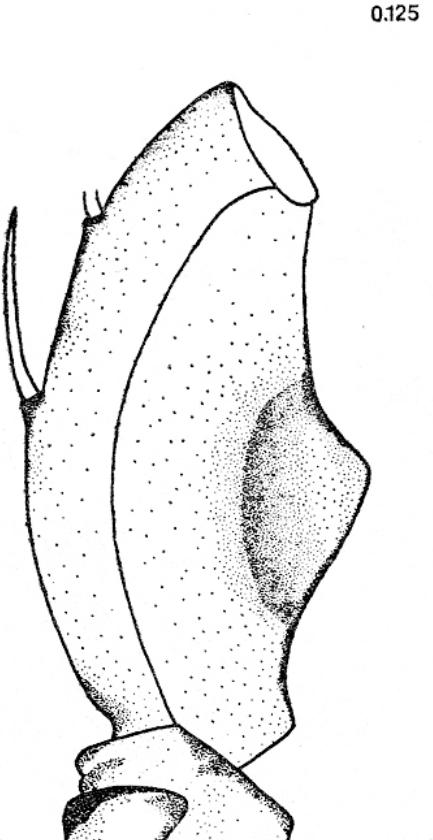


19, 20. ***Pseudicius cinctus*** (O.P.-CAMBRIDGE, 1885), ♀. 19 — epigyne, 20 — same, internal structure





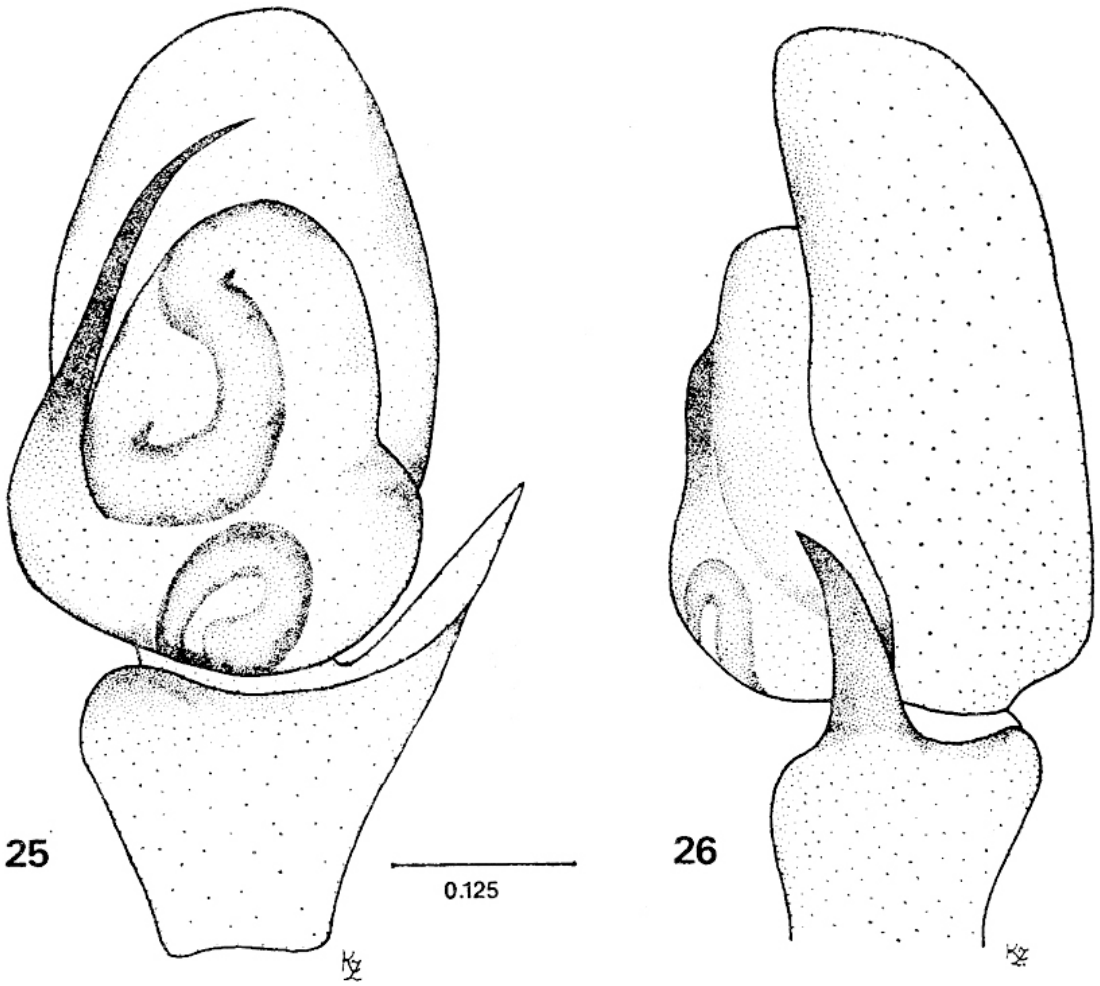




1–24. *Pseudicius cinctus* (O.P.-Cambridge, 1885), ♂. 21 — palpal organ ventrally, 22 — same, laterally, 23 — same, dorsally, 24 — palpal femur

Dr Stoliczka was during whole April 1874 far away from Yangihissar, somewhere between "Panjah" and Sarykol. As the species is rather high mountain dweller it is more probable that it was collected rather in the above mentioned mountains than in Yangihissar.

The characters: figs 25, 26. They agree with specimens of *S. viduus* (including the type). The species is distributed between the Baikal Lake area and Korea and also in Tibet. It has recently been discovered in Ladakh at an altitude of 3400 m (ŻABKA, in press).



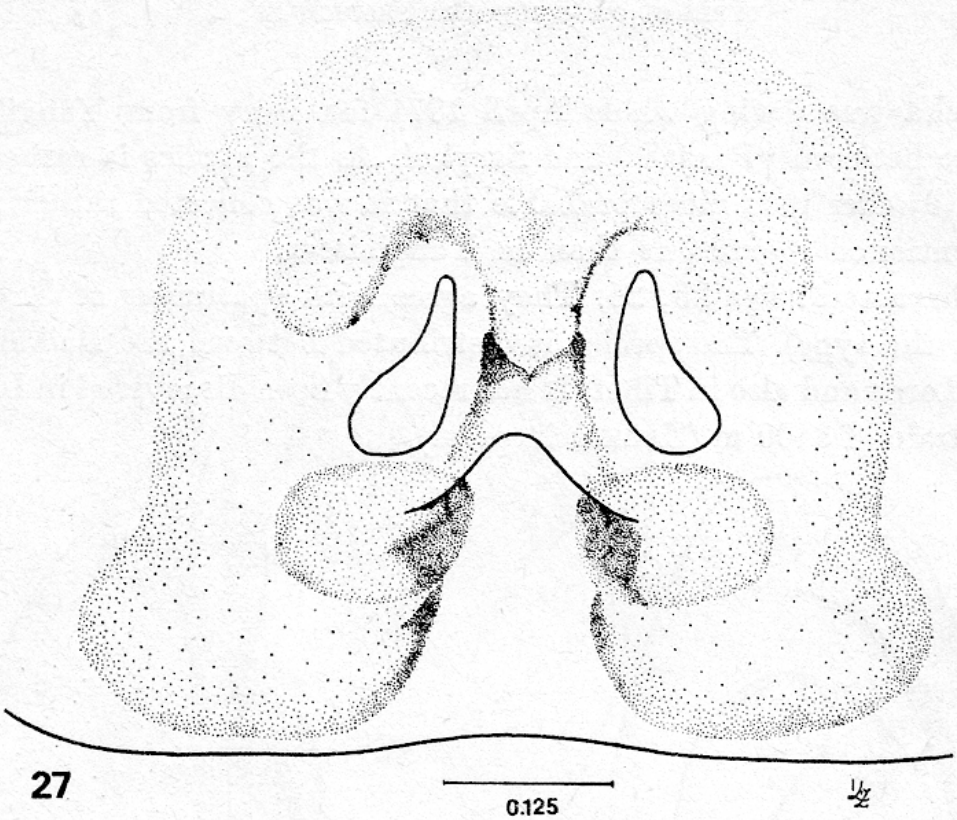
25, 26. *Sitticus avocator* (O.P.-CAMBRIDGE, 1885), ♂. 25 — palpal organ ventrally, 26 — same, laterally

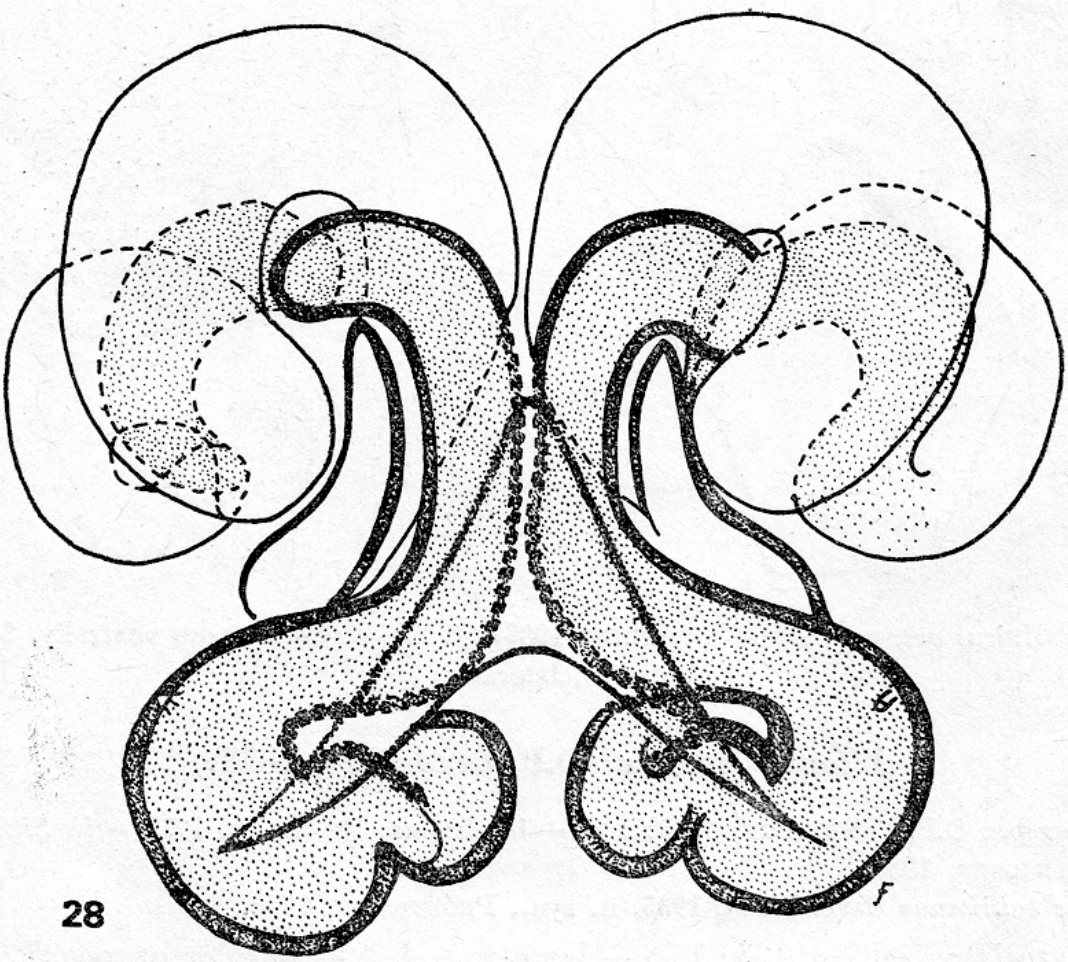
Yllenus auspex (O.P.-Cambridge, 1885)

Attus auspex O.P.-CAMBRIDGE, 1885: 104 — in *Attulus*: REIMOSER, 1919 — in *Sitticus*: REIMOSER, 1935.

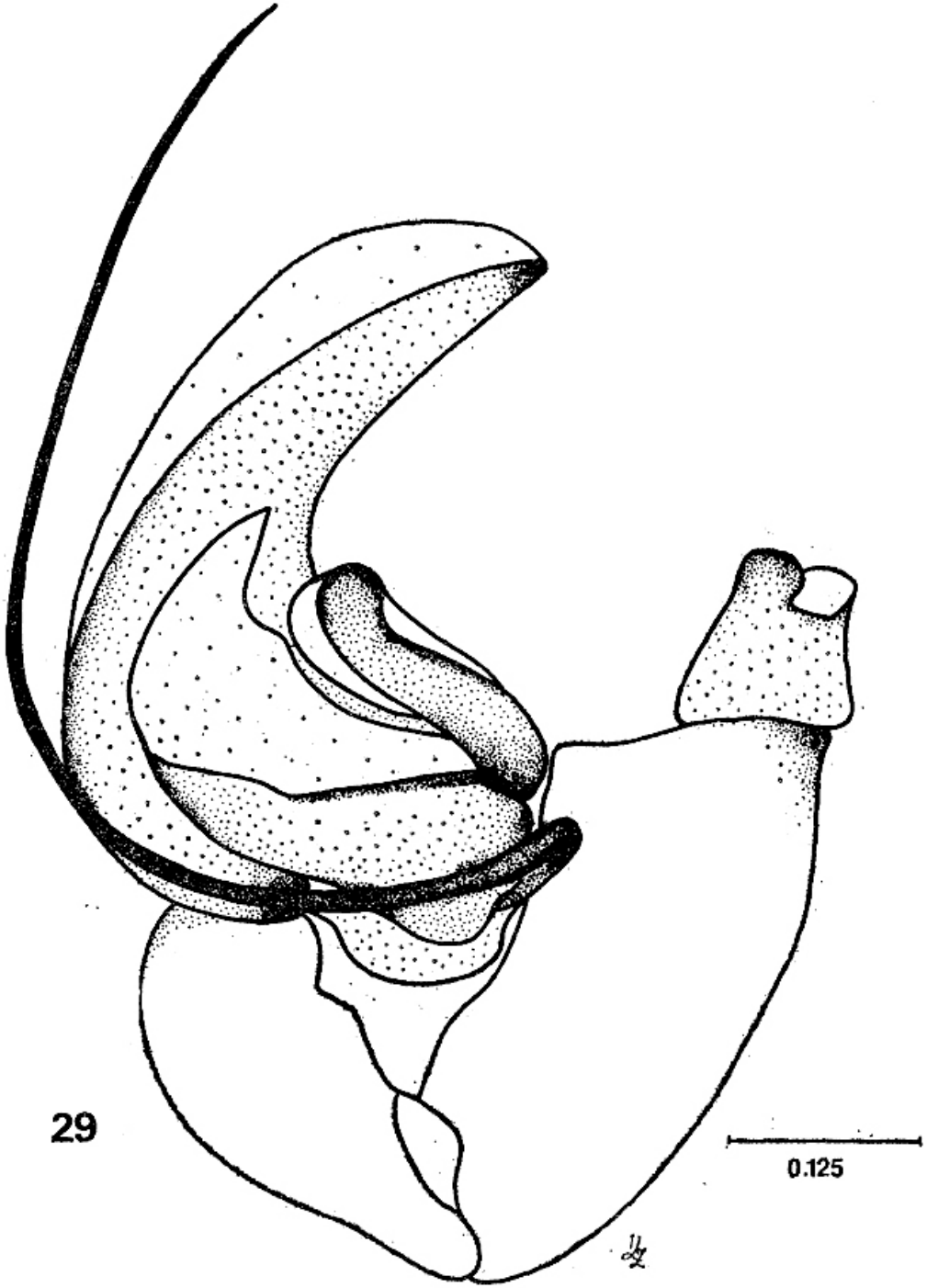
Yllenus baltistanus CAPORIACCO, 1935, **n. syn.**, PRÓSZYŃSKI, 1968.

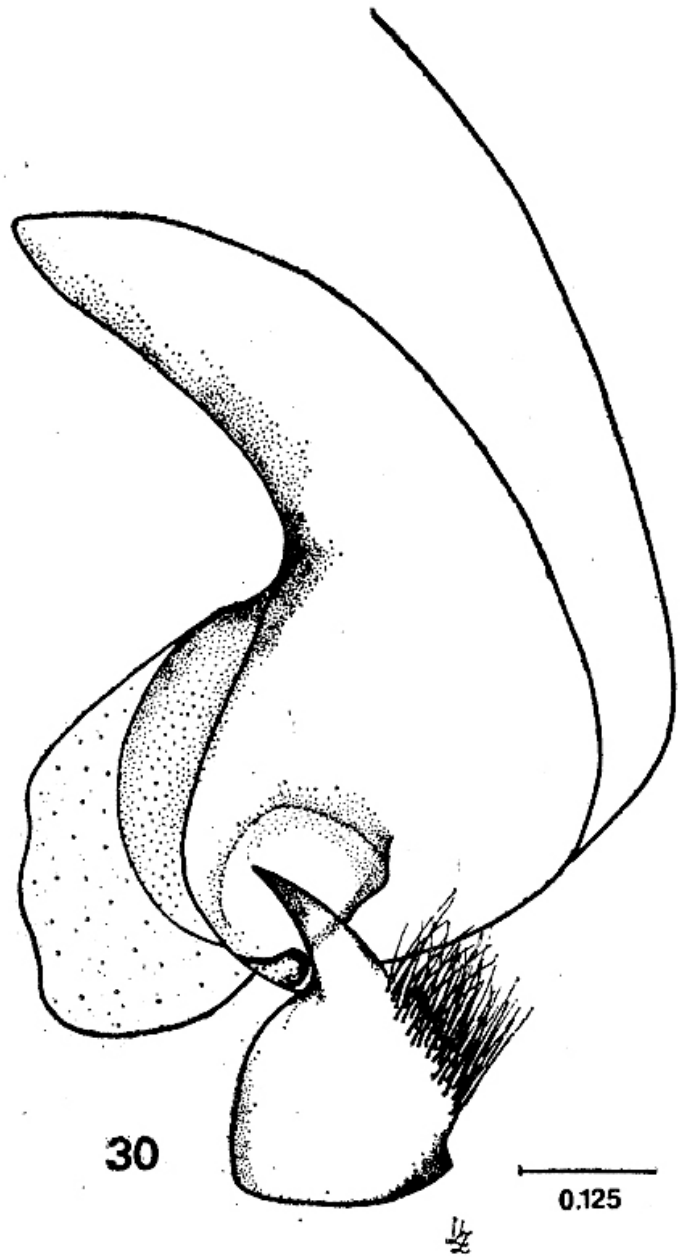
Material: Vial No. 135: 1 ♂ — lectotype, 4 ♂ — paralectotypes, 1 ♀ — paralectotype; 210 [a]: 2 ♀ — paralectotypes; 218: 1 ♀ — paralectotype; No. illegible: 1 ♂ — paralectotype, 1 ♀ — paralectotype. Terra typica: hills between Sirikol and Aktalla; China, West Sinkiang, Yarkand.





27, 28. *Yllenus auspex* (O.P.-Cambridge, 1885), ♀. 27 — epigyne, 28 — same, internal structure





29, 30. *Yllenus auspex* (O.P.-CAMBRIDGE, 1885), ♂. 29 — palpal organ laterally, outer side, 30 — same, inner side

Other material: 1 ♂, 1 ♀ "*Attulus auspex* CBR. Yarkand. Sammlung REIMOSER" — coll. Naturhistorisches Museum, Wien [misidentified, in reality *Sitticus niveosignatus* (SIMON, 1880)].

The characters: figs 27–30. The species has been attributed to *Attus auspex* because of the following remark of O.P.-CAMBRIDGE: "the digital joint [= the pedipalpal tarsus] is of great length, the base is of a somewhat angular shape, and the fore part of it is produced into long cylindrical curved form; the palpal organs are bulbous, tumid, placed chiefly beneath the hinder part of the digital joint, and encircled at their base and round the inner side by a long, strongish, tapering spine [= embolus], which runs more or less closely alongside the inner margin of the digital joint and forms a very conspicuous and characteristic feature of the species" (p. 105). The description fits some 7 *Yllenus* species, but the single male present in the collection is *Y. baltistanus*. The genital organs of the lectotype and paralectotypes are the same as in specimens of *Y. baltistanus* (including the type).

Y. baltistanus is known from Mongolia, Pamir Mts, Karakorum Range and Ladakh (PRÓSZYŃSKI, 1968; ŻABKA, in press).

Yllenus hamifer Simon, 1893

Material: Vial No. 723.9 [?]: 1 ♀. Collecting locality: unknown.

I cannot attribute this species to any description of O.P.-CAMBRIDGE. The characters: figs 31, 32.

Y. hamifer is previously known from Mongolia.

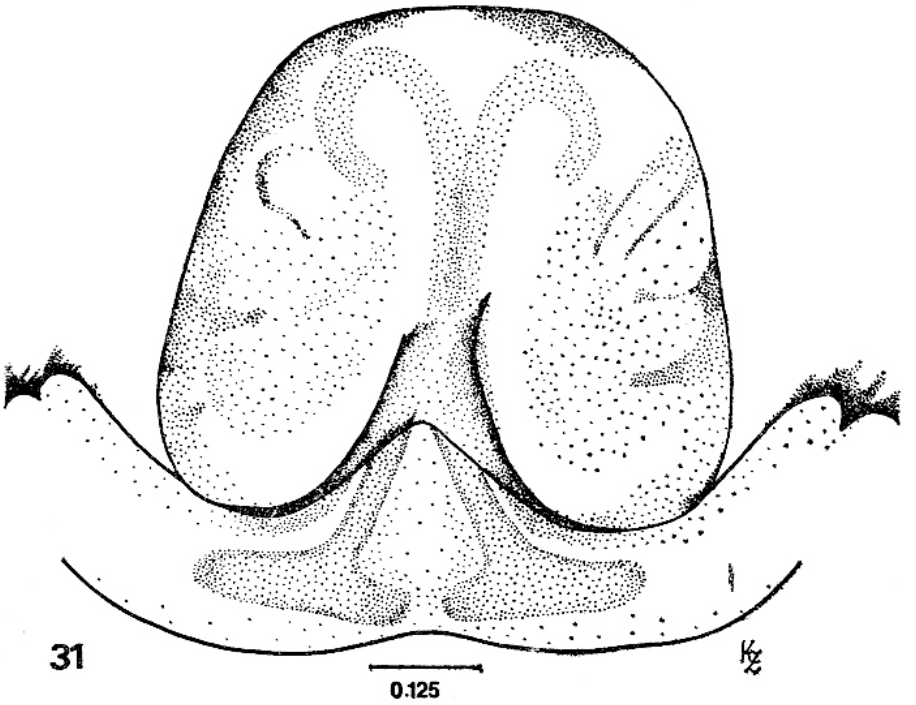
Yllenus robustior Prószyński, 1968

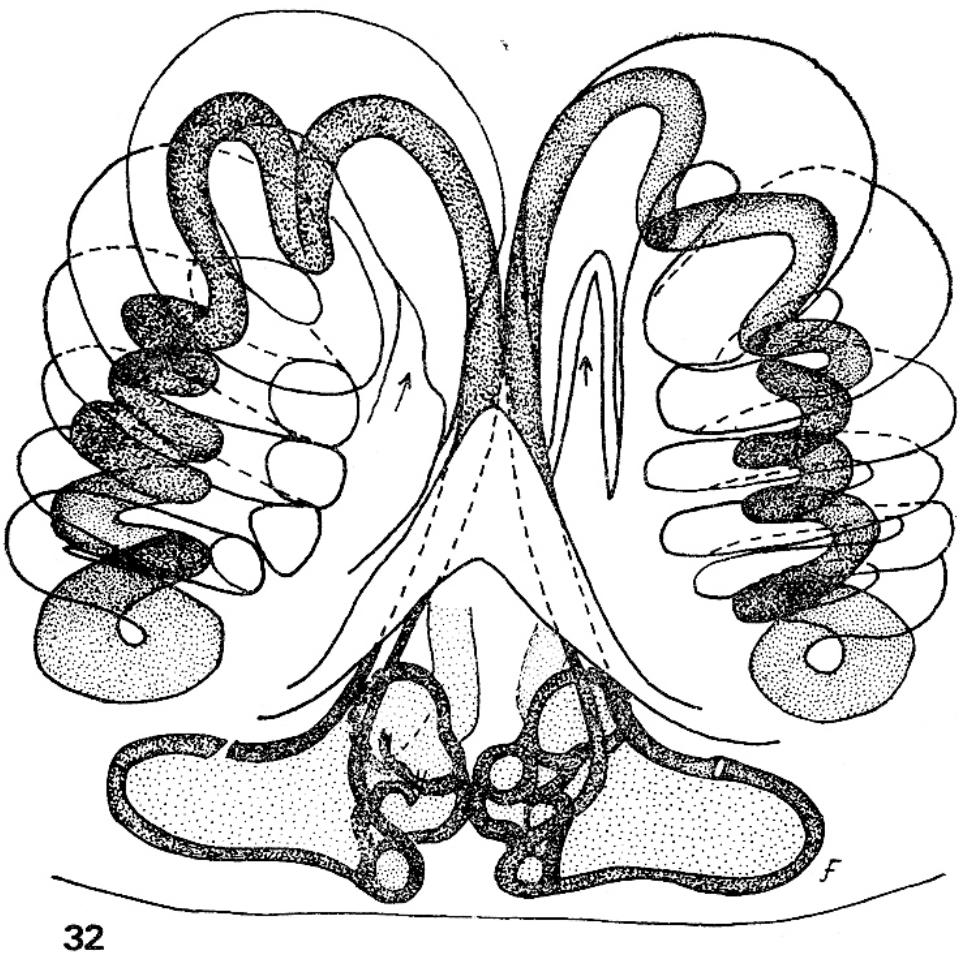
Material: Vial No. 210 [b]: 1 ♀. Collecting locality: unknown.

I cannot attribute this species to any description of O.P.-CAMBRIDGE. The characters: figs 33, 34. The spiral copulatory canals on fig. 34 are changed during mounting of the microscopic slide by the pressure of the cover slip. They do return to their normal position after dissolution of the mounting medium (Canada Balsam) in xylol and removal of the cover slip. In their normal position they are very similar to canals shown in fig. 88 of PRÓSZYŃSKI (1968).

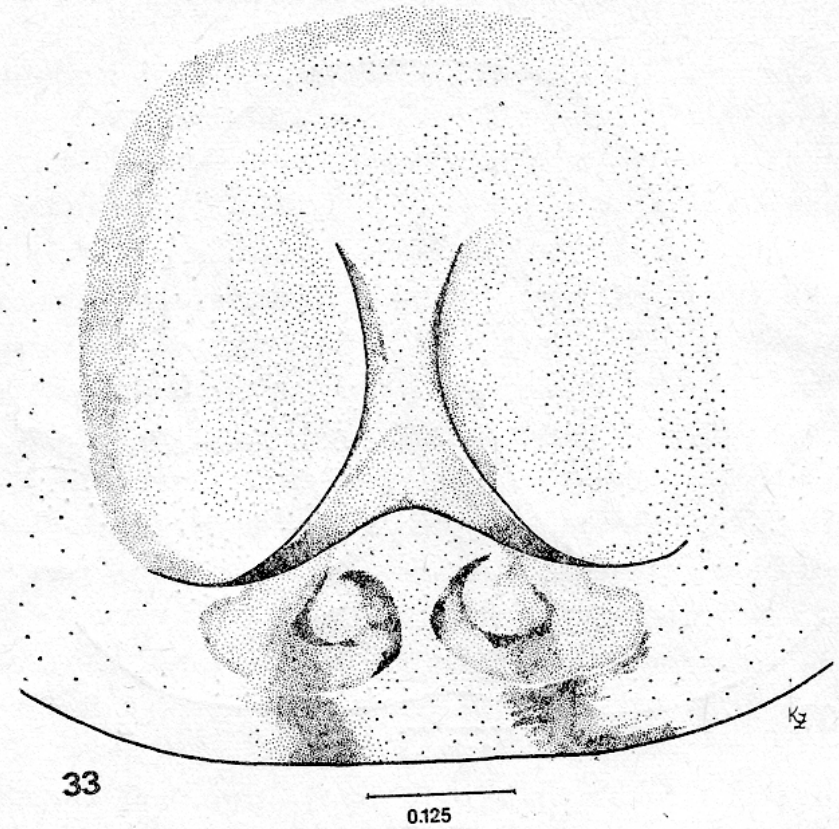
Y. robustior is previously known from Mongolia.

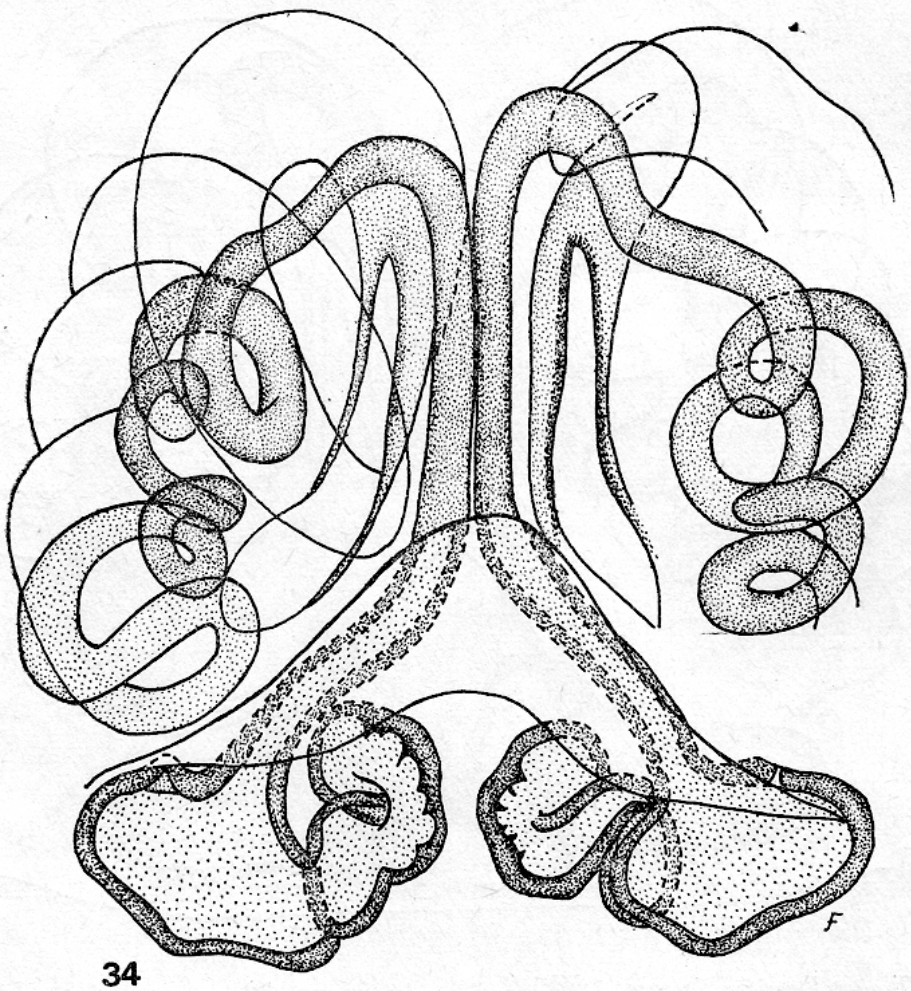
There are three more nominal species of *Attus* described in the paper of O.P.-CAMBRIDGE. Unfortunately there are no useful diagnostic characters in these descriptions and I am unable to attribute any species to these descriptions. However, these species were collected not in Yarkand but





31, 32. ***Yllenus hamifer*** SIMON, 1893, ♀. 31 — epigyne, 32 — same, internal structure





33, 34. *Yllenus robustior* Prószyński, 1968, ♀. 33 — epigyne, 34 — same, internal structure

South of Himalaya, in Sind Valley and in Murree. These are as follows: *Attus beneficus* O.P.-CAMBRIDGE, 1885: 103, *Attus devotus* O.P.-CAMBRIDGE, 1885: 102, *Attus diductus* O.P.-CAMBRIDGE, 1885: 104.

STRESZCZENIE

Uważane za zaginione typy *Salticidae* (*Araneae*) opisane przez O.P.-CAMBRIDGE, 1885, z Yarkandu (Sinkiang, Zachodnie Chiny) i okolic zostały odnalezione w Oksfordzie i zrewidowane w niniejszej pracy. Praca podaje redeskrypcje i wyznacza lektotypy gatunków *Pseudicius cinctus*, *P. deletus*, *P. frigidus*, *Sitticus avocator* oraz *Yllenus auspex*. Ponadto praca zawiera opis *Pseudicius cambridgei* sp. n. oraz oznaczenia czterech gatunków. Zsynonimizowano następujące nazwy wymienionych wyżej gatunków: *Pseudicius rufovittatus* SPASSKY, 1952, *Sitticus viduus* (KULCZYŃSKI, 1895), *Yllenus baltistanus* CAPORIACCO, 1935.

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