

Records of the Zoological Survey of India

Studies on some spiders of the family
Clubionidae from India

**S. C. Majumder
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Zoological Survey of India

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CLUBIONIDAE FROM INDIA**

By

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and

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सत्यमेव जयते

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INTRODUCTION

The sac spiders, belonging to a moderately large family Clubionidae, are distributed in tropical and subtropical parts of the world. The name "Sac Spiders" is given to these spiders because of the construction of flattened tubular dense white retreats. The Sacs are usually made on rolled leaves or under barks. Many of the members of these group are nocturnal spending the daylight hours in sacs and at night they forage out in quest of food and hence they are also called two clawed hunting spider. Some members are active in daylight while others are active in darkness and during day time live in plant litters. They are useful predators of many harmful insects. The spiders of this family are diagonalised by having elongated cylindrical bodies with homogeneous eyes, notched trochanter, conical spinnerets converging to their apical ends and with various hues of orange, red, yellow, brown and black. Many are often with various types of ornamentation on the dorsum. Some members resemble mutilid wasp in appearance. These spiders do not spin web, hence, capturing of prey is usually effected by suddenly jumping upon the prey and seizing it with their stout toothed chelicerae.

The first record of Indian clubionid spiders was made in India by Cambridge in 1874 and thereafter through a series of publications, viz., Cambridge (1885), Simon (1889), Thorell (1890-1891), Simon (1897), Simon (1906), Strand (1907), Gravely (1931), Reimoser (1934), Caporiacco (1935), Tikader, 1962 and till 1970 as many as 61 species in 14 genera were known. Recently Singh (1970), Patel and Patel (1973), Tikader (1975-77), Tikader and Biswas (1981), Tikader (1981), and Biswas (1984) added another 11 species from India raising the total species to 72 in 14 genera.

Although a good amount of knowledge is available in Indian Clubionidae but the literature are all scattered and no consolidated account is so far available. The record of many species are doubtful as well as several are known from inadequate descriptions and illustrations. No key to Indian Clubionid fauna is available really. There are several regions in the country where from the clubionid fauna was practically unknown.

Therefore, this present work was taken up to give an up-to-date information of this family in the light of modern taxonomic concept.

Altogether, 84 species belonging to 15 genera are dealt with here, of these, 12 species in 5 genera are described here as new to science,

while 1 genus is recorded here for the first time from India. Among the remaining 72 species, descriptions and illustrations of 50 species in 12 genera are provided on the basis of the re-examination of types or other authentically identified specimens and also on the basis of examination and identification of freshly collected material. In order to make this account a complete one, descriptions, distributional data, etc., for another 17 species are also given basing on information as available in literature. Since literature pertaining to the description of remaining 5 species were not available to the author, these have just been included here citing the relevant references and giving distributional data for them. Type specimen of 14 species borrowed from M. N. H. N., Paris and Hope Entomological Collection, Oxford University Museum, London, were critically examined and redescribed in the light of modern taxonomic concept of the group. Keys to all the taxonomic categories are provided. Distributional data of all the species both in India and abroad is given. The generic concept of the family are followed. All the references are appended at the end. In the introductory chapter, a general discussion has been made on morphological characters of taxonomic importance as well as on nest building behaviour of those spiders. All the relevant literature pertaining to this family are reviewed under history. The types of the new species are deposited in the National Collection of Zoological Survey of India, Calcutta.

Being the first comprehensive account in this family, the present work prove quite useful to the future worker intending to work in this group.

HISTORICAL REVIEW

The earliest known species under this family is *Clubiona pellidula* (Clerck, 1757) which was described from Europe, while the earliest report of clubionid spiders from India dates back to 1874 when Cambridge described 6 new species, 2 under *Clubiona* Latreille and 4 under *Cheiracanthium* Koch. Later Cambridge (1885) added another 5 new species from North-Western Himalayas, 2 each under *Clubiona* Latreille and *Cheiracanthium* Koch and 1 under *Trachelas* Koch. However, the previous author put their materials under the family Drassidae Sundevall (1833). Wagner (1887) was the first to observe that some members of Drassidae have characters as : the convergence of conical spinnerets to their apical end, presence of homogeneous eyes and notched trochanter and by that they clearly differ from the other members of the family Drassidae. On the basis of this observation he established the family Clubionidae in 1887 with *Clubiona* Latreille 1804 as its type.

Simon (1888) added two new genera, *Cluilus* Simon and *Strotarchus* Simon from Mexico and reported the occurrence of *Trachelas* Koch from Madagascar.

Simon (1889) described a new species from India under the genus *Clubiona* Latreille from Jaunsar. He reported *Cheiracanthium* Koch and *Liocranum* Koch from Peru and Port Grapper, respectively.

Thorell (1890) proposed another new genus *Sphingius* from Pinang.

Thorell (1891), while working on the clubionid fauna of India, proposed two new genera *Tolophus* Thorell and *Eutitha* Thorell and he described 1 species under the genus *Corinnomma* Karsch from Nicobar Island. In addition, he also proposed another new genus *Oedignatha* Thorell from Krakatau.

Simon (1896), in his monumental work on clubionid fauna of the world recognised 6 sub-families under this family, viz., Clubioninae Banks, Liocraninae Simon, Sparassinae Simon, Cteninae Simon, Corinninae Karsch, and Anyphaeninae Bertkau. He dealt with several genera under these sub-families.

Simon (1897) described 2 new species, one each under the genus *Oedignatha* Thorell and *Apochinomma* Pavesi from Dehra Dun, U. P., India. Simon (1897a) proposed one new genus *Simalio* with a new species *S. petilus* from Philippines as its type. Simon (1897b) described 5 new species and reported 1 species under the genus *Oedignatha* Thorell from Ceylon.

Pocock (1900) made a thorough study of this family and divided it into two Sub-families, viz., Heteropodinae Keyserling and Solenopinae Simon and dealt with 7 genera under this Sub-families.

Simon (1906) work on the South Indian clubionid fauna and described 11 new species, 3 under *Clubiona* Latreille and 2 each under *Simalio* Simon, *Cheiracanthium* Koch, *Trachelas* Koch and *Sphingius* Thorell and reported 2 species, 1 under *Oedignatha* Thorell from Malabar, Kerala, another under *Castianeira* Keyserling from Pondichary. Besides these he added 3 new species, 1 under *Trachelas* Koch and two under *Sphingius* Thorell from Ceylon.

Strand (1907) described 1 new species under the genus *Oedignatha* Thorell from South India.

Simon (1910), while dealing with the South African clubionid fauna reported species under the genera *Clubiona* Latreille, *Cheiracanthium* Koch, *Castianeira* Keyserling and *Apochinomma* Pavesi, in addition, another 4 genera, viz., *Copa* Simon, *Anhita* Karsch, *Seramba* Thorell, *Solenops* Dufour, which were also put under this family were latter removed.

Lessert (1921) worked on thh East African clubionid fauna and recorded the species under the genus *Clubiona* Latreille, *Castianeira* Keyserling, and *Trachelas* Koch. Besides these, he also dealth with another 3 genera, viz., *Olios* Simon, *Ctenus* Simon, *Polystes* Simon, but these no longer exist now in this family.

Laitao (1923) worked on the Brazilian clubionid fauna and treated the genera *Castianeira* Keyserling, *Apochinomma* Pavesi, *Corinnomma* Karsch, *Syrisca* Symon, *Trachelas* Koch and *Medmassa* Simon. The other 8 genera which are also considered by him in this family are put in different families now.

Chamberline (1925) studied the clubionid fauna from U. S. A. and reported 3 genera, viz., *Clubiona* Latreille, *Cheiracanthium* Koch, *Trachelas* Koch, in addition to reporting 2 other genera, viz., *Chemis* Simon, *Mezox* Simon which are latter removed from this family.

Mello-Leitao (1927) reported the genera *Castianeira* Keyserling and *Corinna* Karsch from santosh, *Eutichurus* Simon from Brazil and *Trachelas* Koch from Caxambu.

Petrunkévitch (1928) worked on the clubionid fauna from U. S. A., reported the following genera viz., *Tolophus* Thorell, *Corinnomma* Karsch, *Aetius* Cambridge, *Syrisca* Simon, *Coenoptychus* Simon, *Apochinomma* Pavesi and *Sphingius* Thorell.

In 1931, Gravely worked out the family Clubionidae from India. He partially followed Simon (1896) regarding the classification of the

family and divided it into 5 sub-families, viz., Clubioninae Banks, Liocanninae Simon, Corinninae Karsch, Micariinae Simon, Anyphaeninae Bartkau. He worked on the materials collected from Maharashtra, Tamil Nadu and Chilka Lake areas and described 9 new species, 4 under the genus *Sphingius* Thorell, 3 under *Castianeira* Keyserling and 1 each was under *Cheiracanthium* Koch, and *Syrisca* Simon. Besides these, he reported another 16 species, of these, 5 each were under the genera *Clubiona* Latreille and *Cheiracanthium* Koch, 1 each was under *Castianeira* Keyserling, *Corinnomma* Karsch and *Apochinomma* Pavesi, 2 under *Sphingius* Thorell and 1 under *Oedignatha* Thorell.

Petrunkévitch (1931) worked on the clubionid fauna from U. S. A. and reported the following genera, viz., *Apochinomma* Pavesi, *Corinnomma* Karsch, *Syrisca* Simon, and *Trachelas* Koch.

The Indian clubionids were also studied by Reimoser (1934) who described 10 new species from South India of these, 7 were under the genera *Castianeira* Keyserling, *Matidia* Thorell, and *Corinnomma* Karsch. Beside these, he reported 1 species under the genus *Aetius* Cambridge for the first time from the Indian Sub-continent.

Caporiacco (1935) described 1 new species *Clubiona crouxi* and reported one species under the genus *Cheiracanthium* Koch from Yarkand, N. W. Himalayas, India.

Dayal (1935) reported clubionid spiders from Lahore (now in Pakistan). He described 4 new species of which 2 were under the genus *Strotarchus* Simon and 1 species each was under the genera *Liocranum* Koch and *Lausus* Simon.

Chickering (1937) and Caston (1938) worked on the clubionid fauna of Panama and U. S. A. respectively and reported several species belonging to genera *Clubiona* Latreille, *Castianeira* Keyserling, *Cheiracanthium* Koch, *Trachelas* Koch, and *Myrmecotypus* Cambridge from the respective regions and described 6 new species under the genus *Agroeca* Westring from U. S. A.

Comstock (1940) also worked on the clubionid specimens from U. S. A. following the Gravely's system of classification and discussed the characteristics of the genera *Clubiona* Latreille, *Cheiracanthium* Koch, *Castianeira* Keyserling, *Lauricius* Simon, *Syrisca* Simon, *Syspira* Simon, *Agroeca* Westring, *Liocranoids* Keyserling, *Myrmecotypus* Cambridge, *Trachelas* Koch, *Prurolithus* Koch, *Micaria* Karsch, *Lausus* Simon, *Anyphaenella* Branet *Ahsya* Keyserling. However, the last 2 genera are now not considered in this family. He pointed out that the species of the sub-family. Anyphaeninae sharply differs from those of the remaining sub-families by the position of the furrow of the posterior spiracle

which is placed far remote from the spinnerets, closer in Clubionidae. The tuft of terminal hair consist of double series (single series in Clubionidae) in view of these, place a separate family giving authorship to Bertkau in 1878.

Mello-Leitao (1941) worked on the clubionid fauna of Colombia, reported the genera *Eutichurus* Simon, *Syrisca* Simon, *Trachelas* Koch.

Mello-Leitao (1944) dealt with the clubionid fauna from Argentina and recorded the genera *Eutichurus* Simon, *Cheiracanthium* Koch, *Trachelas* Koch and *Matidia* Thorell.

Mello-Leitao (1945) recorded the genera *Metidia* Thorell and *Castianeira* Keyserling from Argentina.

Mello-Leitao (1948) worked on the clubionid fauna from British Guiana and reported the genera *Castianeira* Keyserling, *Apochinomma* Pavesi, *Syspira* Simon.

Bristoe (1958) in his book "The world spider", described the habitats and nest building mechanism in the family Clubionidae.

Tikader (1962) described a new species under *Cheiracanthium* Koch from Shillong, India.

Roddy (1966) worked on the clubionid fauna of North America. He described 3 new species under the genus *Clubionoides* Edward; described 2 new species and reported 2 other species under the genus *Clubiona* Latreille.

Dondale (1966) worked on the clubionid fauna of Australian territory, reported 2 species under the genus *Cheiracanthium* Koch and described one species under the genus *Clubiona* Latreille.

Reiskind (1969) made an excellent revisionary work of the genus *Castianeira* Keyserling from North and Central America in which he described 5 new species and reported 48 another species.

During (1970-1977) as many as 5 publications, viz., Sing (1970), Patel & Patel (1973), Tikader (1975-77), came out the Indian clubionid fauna and through these 9 new species were described under the genera *Clubiona* Latreille, *Cheiracanthium* Koch and *Castianeira* Keyserling.

Roddy (1973) worked on the North American clubionid fauna. He reported 2 species on the *Clubiona canadensis* group.

Platnick & Shadab (1974) gave an excellent revisionary work of the genus *Trachelas* Koch from North and Central America. He described 16 new species and reported 13 other species under bispinosus and bicolor group. Platnick & Shadab (1974a) described 14 new species and reported 7 species under transquillus and spiosus group.

Dondale (1976) made a revisionary work of the genus *Clubiona*

Latreille from North America in which he reported 4 species and described another 2 species.

Tikader & Biswas (1981) in their work on the West Bengal spiders reported 6 species under the genus *Clubiona* Latreille, *Cheiracanthium* Koch, and *Castianeira* Keyserling. Tikader (1981) made a revisionary work on the genus *Castianeira* Keyserling from India in which he described 1 new species and reported 4 other species.

Dondale & Redner (1982) made an excellent work in the clubionid fauna of Canada and reported 8 genera from Canada and Alaska, viz., *Clubiona* Latreille, *Cheiracanthium* Koch, *Castianeira* Keyserling, *Scotinella* Banks, *Phrurotimpus* Chamberling and Ivie, *Agroeca* Westring, *Clubionoids* Edwards and *Trachelas* Koch. They also considered the aniphaenid spiders as a separate family Aniphaenidae as was done by Bartkau (1874), Platnick (1974), and Dondale & Redner (1982). Recently Biswas (1984) described 2 new species under the genera *Clubiona* Latreille and *Cheiracanthium* Koch from West Bengal, India.

So far 1280 species in 120 genera are known from the world (Dondale & Redner 1982), of these, the Indian fauna is represented by 84 species belonging to 15 genera and 4 subfamilies.

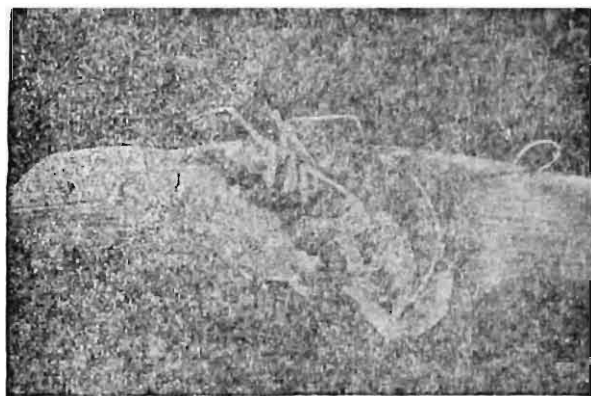
ECOLOGY AND HABITAT OF THE FAMILY CLUBIONIDAE

The clubionid spiders generally called the sac spiders because they construct silken tubular sac, whitish in colour open at both the ends or closed. They can be easily seen running over the ground, on grassy land as well as rocky ground under stone and the foliage of leaves or loose barks of trees. Like gnaphosid they do not spin web but they mostly weave silk cells of flat tubular sac, in rolled leaves, folded blades of grass, under loose bark of trees or under objects on the ground.

Some of the clubionids live on the ground amongst clumps of grass or under stone, several mounts higher than is usual for Drassidae Sundevall. April and May are the chief months for reaching their maturity. The females guard their egg sac inside the thick-walled white cells from July or onwards. When the eggs are going to be laid the female usually selects a broad leaf of plant and curls it over and encloses herself inside a strong white silk lined chambered cell, in this she retreats and deposits a compact mass of yellow eggs (Bristoe 1958).

Most of the clubionid spiders do not prefer town life. Some of

the spiders of the genus *Clubiona* Latreille which are dark brown in colour are found to live under loose barks of trees, sometimes they are



1.



2.



3.

Fig. 1. Sac cell of *Cheiracanthium himalayensis* Gravelly

Fig. 2. Sac cell of *Syrisca barkudensis* Gravelly

Fig. 3. *Simallo* species present in araneid silken cell.

found to make their way into houses and seen promenading the walls at night for searching of insects. There are some other species of this genus have been found to built tubular retreats just underside of the stones or they make flat tubular nest on the rolled leaves of plant (Bristoe 1958).

The spiders of the genus *Cheiracanthium* Koch tend to live in drier situation and guard their eggs in a cell built in under stones on the ground. Other species of this genus construct their cells in a grass head, bent in a characteristic fashion or inside curled leaves of plant (Bristoe 1958). The species *Cheiracanthium himalyaensis* Gravely were found to construct with tubular sac on broad leaves. Sac cell of *C. himalayensis* Gravely collected on 1931 by F. H. Gravely, Reg. No. 1746/18, was deposited in the National Collection of Zoological Survey of India as in fig. 1.

Some species of the genus *Syrisca* Simon are found to construct whitish tubular sac under loose bark of trees. Sac cell of *Syrisca barkudensis* Gravely, collected by Gravely in 1921, Reg. No. 1774/18, was deposited in National Collection of Zoological Survey of India as in fig. 2.

Some spiders like *Clubionoides excepta* L. Koch have been found to construct their cells among dead leaves on the ground in deciduous forest and under stones (Dondale and Redner 1982).

Some species of *Castianeira cingulata* C. L. Koch were found to construct their cells beneath the logs and stone on the ground. *Castianeira variata* Gertsch were found to construct sac cells in tall grasses under pin oaks (Dondale and Redner 1982).

The species of *Simalio* Simon were found to live in silken cells of the araneid spiders. It seems that they are the essential predator. Nest with specimens were collected by Dr. B. K. Biswas, Scientist-B, from Zoo Garden, Calcutta, in 1981, as in fig. 3.

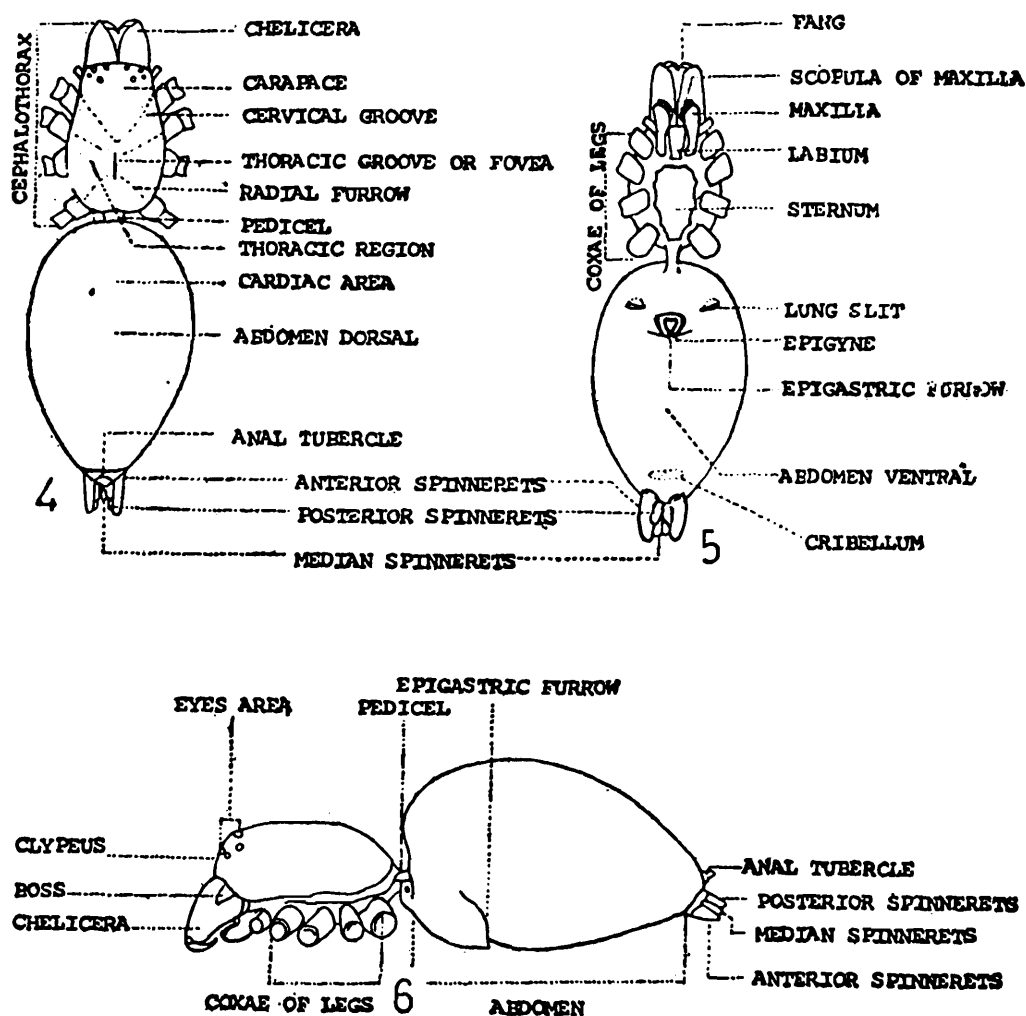
The species of the genus *Trachelas transquillus* (Hentz) were found to construct silk retreats inside rolled leaves, some were found under stone or other object on the ground (Dondale and Redner 1982).

Most of the species of the genus *Pruraticampus* Chamberlin & Ivie were found in leaf litter, few were found under stone, under piles of timber or fire wood to construct their cells. The members of the genus *Scotinella* Banks were found to construct cell under sticks on the ground and under stone and debris in the field (Dondale and Redner 1982).

It has been found that the members of the subfamily Micariinae Karsch run over the ground like mutilated wasp sometimes they found in association with ant, they rarely found on the foliage of leaves.

CHARACTERS OF SPIDERS

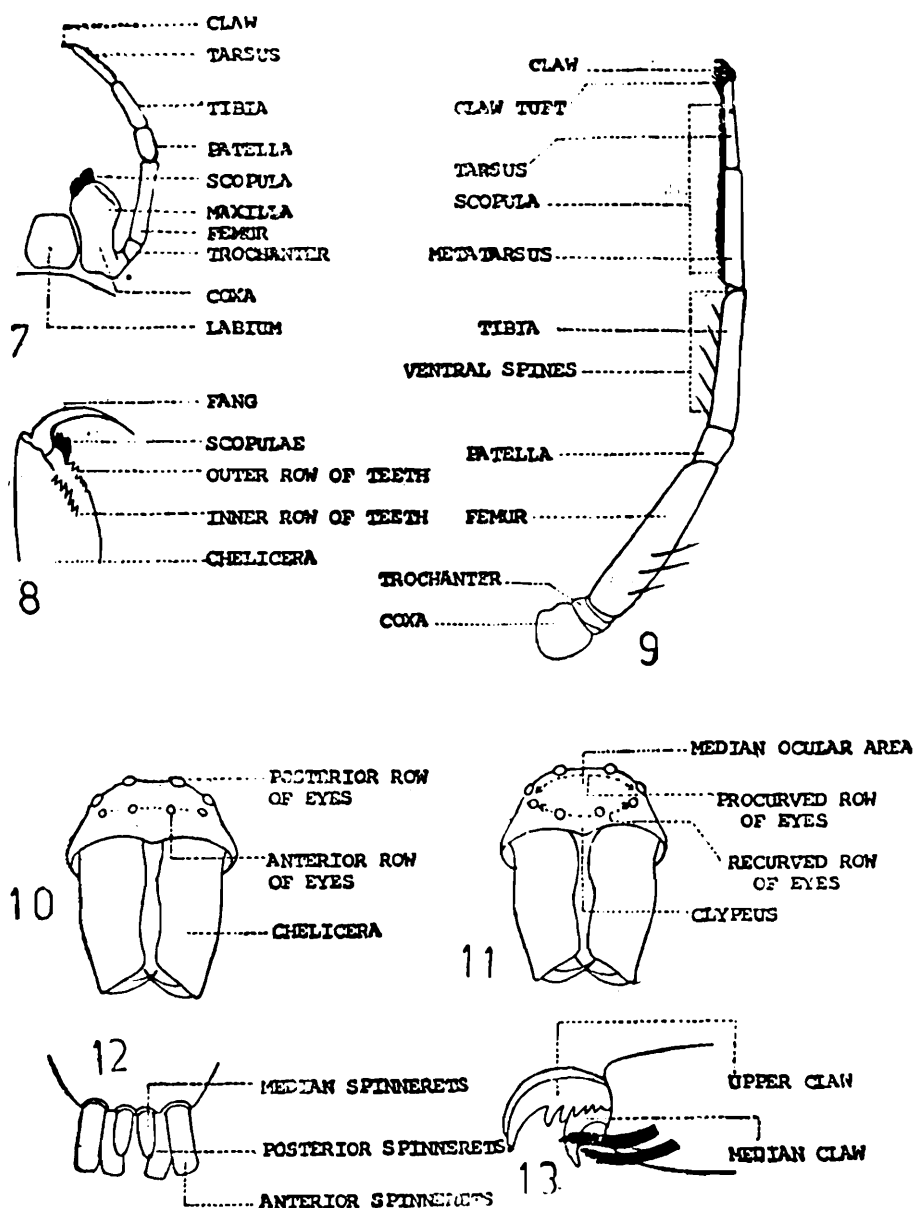
The body of the spider is divisible into a distinctive cephalothorax and abdomen, joined together by a narrow pedicel. The cephalothorax is covered dorsally by a hard sclerotic shield, the carapace, and ventrally by the sternum as in figs. 4-5. The anterior margin of sternum articulates movably with labium. With few exceptions there is a deep transverse groove, forming a kind of hinge, between the sternum and the labium. The legs are articulated in the pleural membrane between the lateral edges of the carapace and sternum. On the cephalic region are present six to eight simple eyes. The eyes are generally of two



Figs. 4-6. Characters of spiders.

kinds, viz., black or diurnal and white or nocturnal eyes. When only one type is present, the condition is described as homogeneous, in contrast to the heterogeneous, when both the types are present. The eyes are usually arranged in a double row, viz., the *anterior row* and the *posterior row*. Each row usually contains four eyes. The eye row

is described as recurved, when the concavity of the curve is directed backward, and as procurved when the concavity is turned forward as in in figs. 10-11. According to their position, the eyes are described as the anterior medians, the posterior medians, the anterior laterals and the posterior laterals. The cephalic area, occupied by the eyes, is known as ocular area. The area margined by the four median eyes is termed ocular quad. The area between the anterior row of eyes and the base of chelicerae is the clypeus, fig. 6. The space between the anterior median eyes and the margin of clypeus represents the width of clypeus. There is often a depression in the middle of the thorax, called thoracic groove or fovea as in fig. 4.



Figs. 7-13. Characters of spiders.

The chelicerae are the first pair of appendages of the cephalothorax. Each chelicera bears a curved fang at its apex. The inner surface of chelicera may be finely denticulate and may also have a groove, into

which the fang can be closed when not in use. This groove may also be armed with tooth on each side ; the outer row of teeth is described as promargin and the inner row as retromargin. There are sometimes long stout hairs on the promargin to constitute the so called fangscopulae, as in fig. 8.

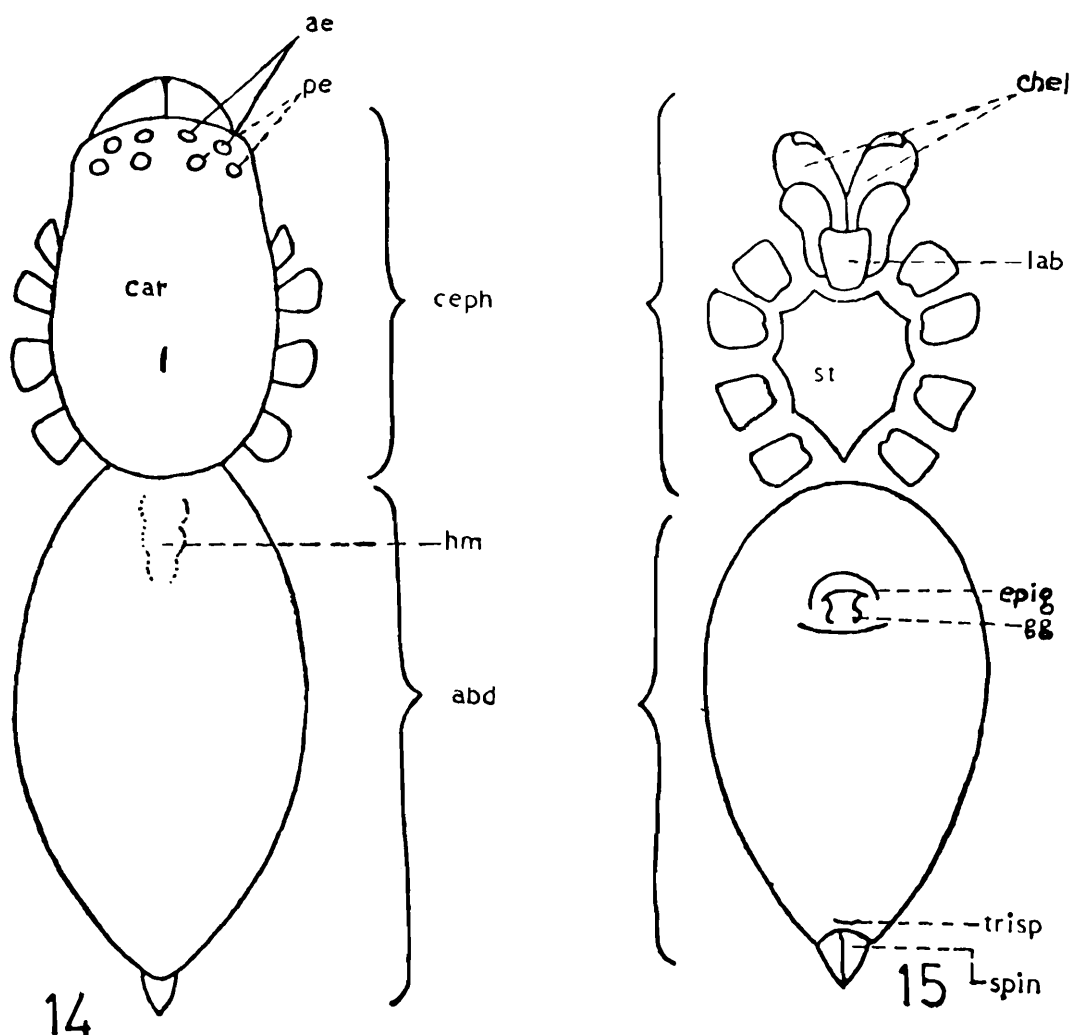
The pedipalps are the second pair of appendages. The palp proper is composed of six segments, viz., coxa, trochanter, femur, patella, tibia and tarsus as in fig. 7. In females the tarsus is simple and may or may not be with a single claw. In mature males the tarsus of palp is modified to carry a more or less complicated copulatory organ. Generally the tibia, sometimes also the patella constitute apophysis (which may be of different shapes in different species) which is of important taxonomic value. In many spiders the tarsus has a bowl-shaped cavity on its ventral surface and is called cymbium. In many groups mature males are provided with an appendage, the paracymbium. The structure of mature male palp is very important for generic or specific identification of spiders. The complicated palpal organ has many parts, but that is a matter beyond the scope of this thesis. There are four pairs of legs designated I, II, III and IV respectively. Each leg is composed of seven segments, viz., coxa, trochanter, femur, patella, tibia, metatarsus and tarsus as in fig. 9. The legs are variously clothed with spines, spinules, bristles and hairs of various types. The tarsus ends are provided with two or three claws. A characteristic tuft of hairs called claw tuft is sometimes found just above the claw. In the Gnaphosidae there are dense rows of hairs called legscopulae below the metatarsi and tarsi as in fig. 9. Spines on the dorsal sides of legs distinguished as dorsal spines and those on the ventral side as ventral spines, as in text-fig. 9.

The abdomen is produced posteriorly into a conical anal tubercle and bears three pairs of spinnerets ventrally, viz., the first or the anterior pair, the second or the median and third or the posterior pair of spinnerets as in fig. 12. In a number of families there is present in front of the anterior (ventral) spinnerets a seive like plate, called the cribellum. The special type of silk emitted from this organ is combed by the calamistrum borne on metatarsis IV. In many families of spiders which do not possess the cribellum a conical appendage called the colulus, lies between the bases of the anterior spinnerets.

The ventral surface of abdomen is provided with one or two pairs of lung-books, followed by one or two paired spiracles. The female genital opening is the vulva or epigyne, with a transverse fold, known as epigastric furrow as in fig. 6.

The tarsi of spider are often armed with hairs of the type known as tenent hairs, i.e., hairs dilated at their tips. Araneidae (=Argiopidae) and Gnaphosidae have very fine hairs called as pubescence. Sometimes the hairs are modified as spiny-hairs or mousy hairs.

Apart from the above characters the clubionid spiders have elongated cylindrical bodies and rather stout legs. The cephalothorax (Ceph) is covered dorsally by a shield like carapace (car) which bears the eyes and the dorsal groove (gr) as in fig 14 and is covered ventrally



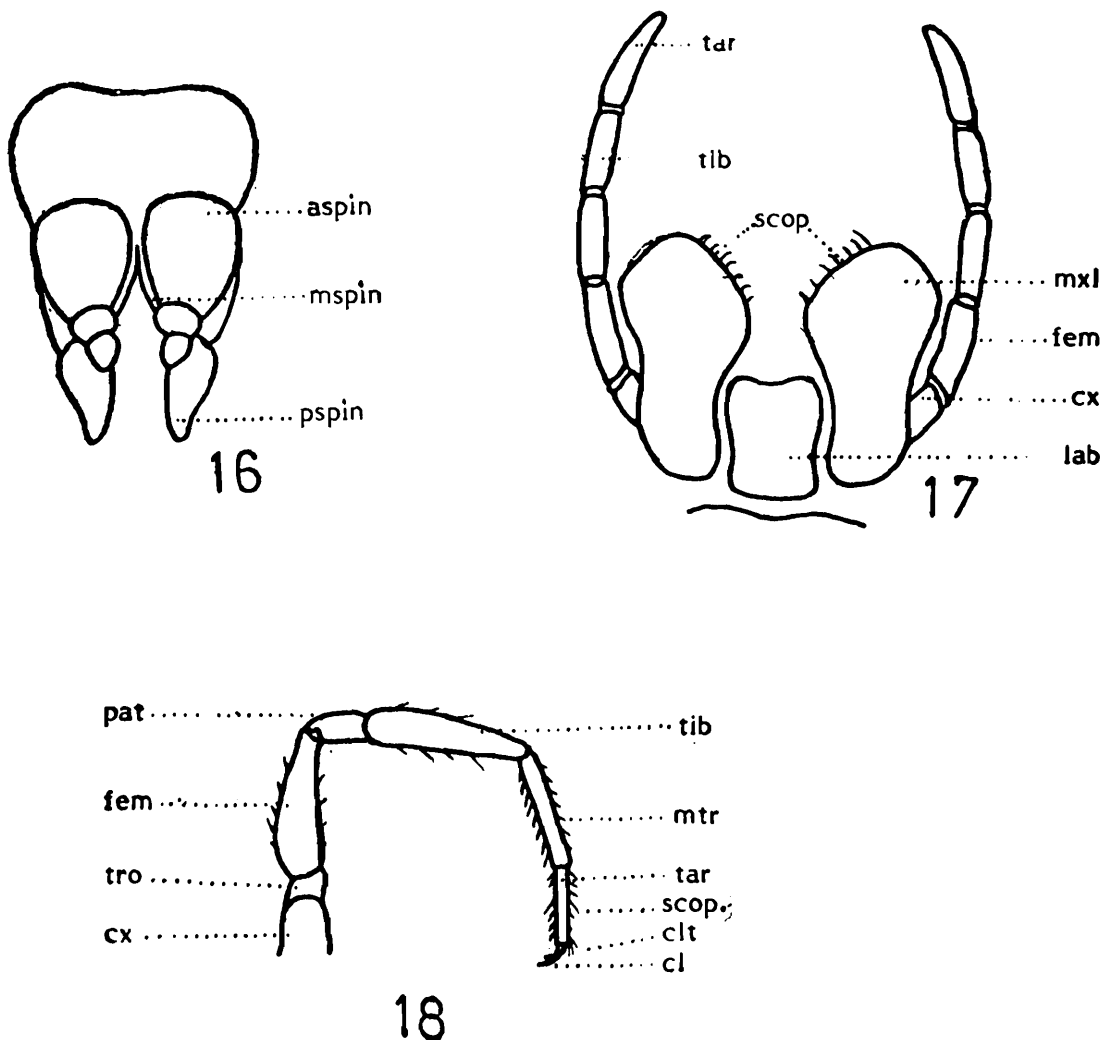
Figs. 14-15. Typical clubionid spider (Dorsal and ventral view) Cephalothorax (ceph.), carapace (car.), abdomen (abd.), labium (lab.), sternum (st.), chelicera (chel.), epigynal plate (epig.), genital groove (gg), tracheal spiracle (trisp.), heart mark (hm.), spinnerets (spin.), anterior rows of eyes (ae), and posterior rows of eyes (pe).

by a flat plate, the sternum (st), and the lower lip, or labium (lab.) as in fig. 15. The principal mouth parts and the legs project to the front or sides from the membrane joining the edges of carapace and sternum as in fig. 15.

The eyes are in the four pairs arranged in two transverse rows close to the anterior margin of carapace. They are designated as

anterior medians (pme) and posterior lateral (ple). Either row (viewed dorsally) may be straight, procurved or recurved according to species or genus. Spacing within the row may also be of taxonomic importance as in fig. 19.

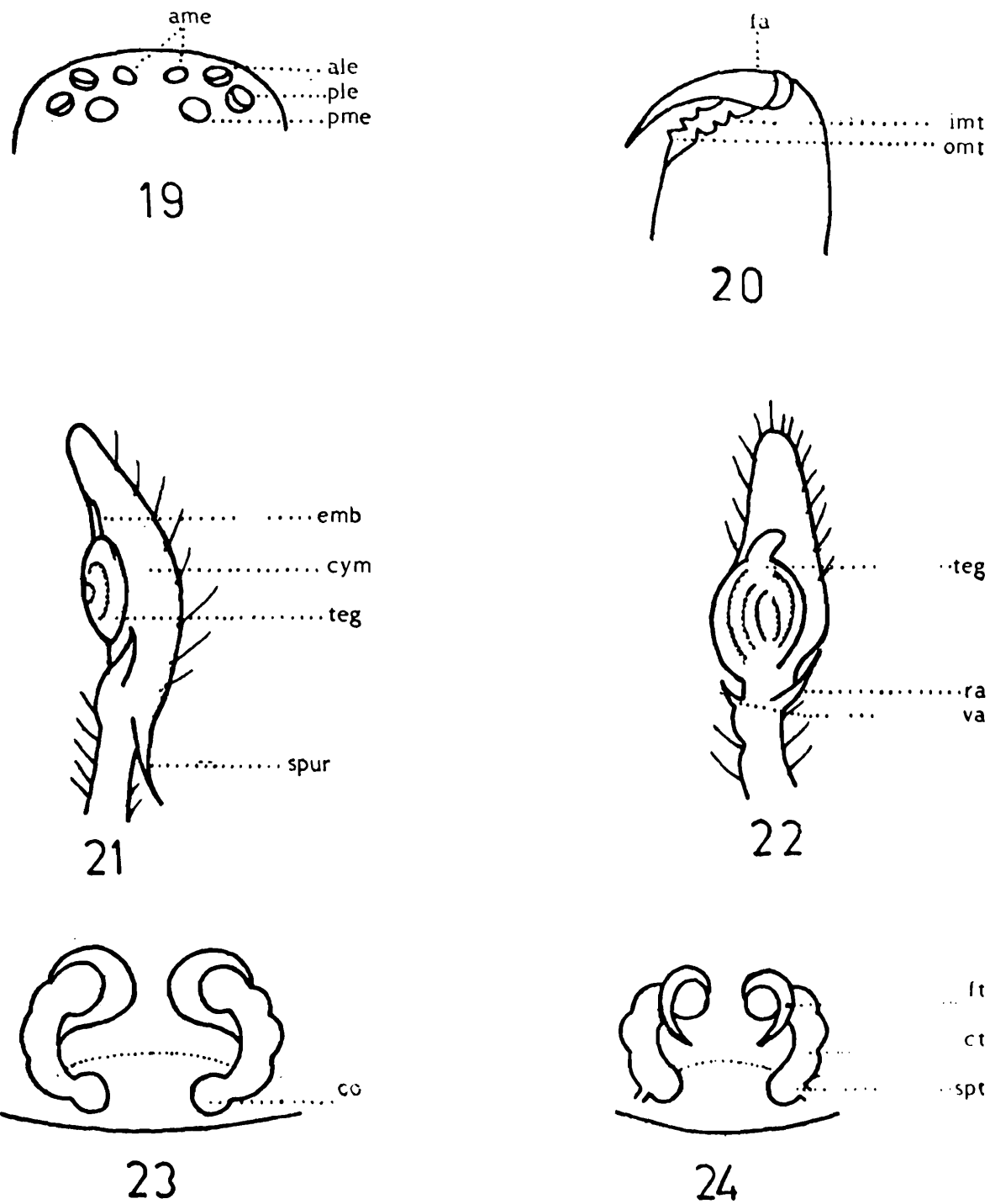
The principal mouth parts are the paired pincer-like chelicerae (chel) and palpi. Each chelicera comprises a large basal segment and a distal fang, the fang lies when at rest, in a groove, the margins of which are armed with small teeth as in fig. 20. The palpi lie



Figs. 16-18. (Spinnerets, mouth parts and leg): Anterior spinnerets (aspin.), median spinnerets (mspin.), posterior spinnerets (pspin.) tarsus (tr.) tibia (tib.), scopula (scop.), maxillae (mxl.), femur (fem.), coxa (cx.), trochanter (tro.) metatarsus (mtr.), claw (cl.), claw tuft (ct.).

immediately posterior to the chelicerae; their basal segments, the coxae (cx), have expanded lobes (pcxl), which form the sides of the preoral cavity and contain glands that pour out digestive fluids over the prey. The other segments are trochanter (tro), femur (fem), patella (pat), tibia (tib), tarsus (tar), and a small clawlike pretarsus (ptar) as in fig. 17. The tarsus, tibia, and to a lesser extent the patella of the palpus of adult males are highly modified to form the copulatory organ, the principal

parts of which are a dorsal hollowed cymbium (cym) and the genital bulb. The genital bulb consists primarily of a convex well-sclerotized



Figs. 19-24. (Eye, chelicera, male palp, epigyne and internal genitalia). Anterior median eye (ame.), anterior lateral eye (ale), posterior lateral eye (pme.), fang (fa.), anterior margin of teeth (imt.), outer margin of teeth (omt.), embolus (emb.), cymbium (cym.) tegulum (teg.), retrolateral apophysis (ra), ventral apophysis (va.), copulatory opening (co.), fertilization tube (ft.), compulatory tube (ct.) spermatheca (spt.)

tegulum (teg), within which can be discerned part of the winding seminal duct, and an intromittent organ, the embolus (e). The embolus usually

rests on a plate or membranous area called the conductor (con). The palpal tibia bears a stout retrolateral apophysis (ra), much used in classifying spiders, and more rarely a ventral (va) or dorsal apophysis (da), (Dondale & Redner 1982) as in figs. 21-22.

The legs of sac spiders are in four pairs of approximately equal length and thickness, and are numbered I-IV from the anterior end as in fig. 18. The segments from base to tip are the coxa, trochanter, femur, patella, tibia, tarsus (subdivided) into basitarsus (btar) and pretarsus as in fig. 18. The pretarsus bears two claws (cl) that are often hidden in a dense claw tuft (clt.) and scopula (scop) as in fig. 18. Some segments typically bear macrosetae (mset), the arrangement of which is often useful in classification. (Dondale & Redner 1982).

The abdomen of sac spiders is elongate and cylindrical and may be covered dorsally by an inconspicuous scutum. The position of the heart is often indicated externally by a pigmented heart mark (hm) as in fig. 14, small muscle attachment points may be visible. Ventrally the abdomen is traversed by the genital groove (gg) as in fig. 15, in which lies the opening of the internal genitalia to the outside; the female's opening is protected by a well sclerotized plate, the epigynum (epig), which also bears the paired copulatory openings (co) as in text-fig. 23. The copulatory openings lead inward through the copulatory tubes to the spermathecae (spt), where semen is stored until the eggs are laid as in the fig. 24. When the eggs are deposited semen is released to them via the fertilization tube (ft) fig. 24.

Respiration is by both book lungs and tracheae. The book lungs open through a pair of slits at the lateral ends of the genital groove, and the tracheae open through a common tracheal spiracle (trap) located immediately anterior to the spinnerets (spin).

The spinnerets are in three pairs and form a compact cluster at the posterior end of the abdomen; these are the anterior (aspin), median (mspin), and posterior (pspin) spinnerets as in fig. 16.

FAMILY CLUBIONIDAE Wagner

- 1887. Clubionidae Wagner, *Horae Soc. ent. Russ.*, 22 : 104
- 1892. Clubionidae : Banks, *Canad. Ent.* 24 : 90.
- 1899. Clubionidae : Pickard Cambridge, *Biol. Centr. Amer. Zool.* 2 : 61.
- 1900. Clubionidae : Peacock, *The fauna of British India, Arachnida*, London, : 257.
- 1922. Clubionidae : Petrunkevitch, *Trans. Connect. Acad. Arts Sci.*, 25 : 237.

Diagnosis : Cephalothorax longer than wide, ovoid or elongated in shape, coloured in various hues of yellow, orange or brown, occasionally marked with black, highest at the level of the dorsal groove. Dorsal groove usually distinct, short-shallow, sometimes located on posterior declivity. Eyes smaller in size, homogenous type, arranged in two transverse rows anterior and posterior that may be straight, recurved, or procurved, the posterior medians sometimes angular or ovoid in outline. Chelicerae rather long, slender, or stout close forward to the midline outer margin with two to seven small teeth inner margin with two to four small teeth. Maxillae usually longer than wide, without oblique depression on ventral surfaces, sometimes constricted at middle on lateral margin. Legs prograde, yellow orange, or brown, usually without dark rings or longitudinal bands, long and rather stout (sometimes relatively longer in males than in females), often with dense claw tufts composed of slender packed setae and with dense scopulae, trochanters with or without notches at distal ends on ventral side, tibia and metatarsi provided with long spines on ventral surface, tarsi with two claws. Male palpal tibia with retrolateral apophysis variable among species occasionally with ventral and dorsal apophysis; cymbium sometimes with basal spur. Tegulum smooth convex usually with apophysis at its distal end; embolus usually arising prolaterodistally on tegulum, more rarely on retrolateral margin. Abdomen elongate, yellow brown to dull red in colour, sometimes brown ornamentation may present in some species; dorsal scutum also present. Short semierrect setae and sometimes cluster of long erect curved setae present at the anterior end of the abdomen. Anterior spinneret close together not more heavily sclerotized than the other spinnerets. Female epigynal plate convex, flat or concave, round to elongate, well sclerotized, with distinct copulatory openings. Spermathecae variable among species, each often in two connected parts of different shape, with or without spermathecal organ.

In general the spiders belonging to the family Clubionidae resemble to those of Anyphaenidae Bertkau and Gnaphosidae Pocock. But differs from those on the following.

- (1) The anterior spinnets close together in Clubionidae not close together in gnaphosid spiders.
- (2) Tracheal spiracle situated just above the anterior spinnerets in Clubionidae, where as in Anyphaenidae the tracheal spiracle situated further forward from the anterior spinnerets.

The spiders belonging to the family Clubionidae generally called the two clawed hunting spiders nocturnal in habit. They live in foliage

of plant leaves, loose bark of trees and under stone. Some are found with the association of ants they live high mountain as well as low hilly regions.

Type genus : *Clubiona* Latreille 1804

Distribution : All tropical parts of the world.

The family Clubionidae represent 4 subfamilies.

Key to the subfamilies

1. Labium usually much longer than broad exceeding half the length of the endites ; the 1st tibia never provided with a series of movable spines CLUBIONINAE
 Labium not or scarcely longer than broad, more or less half as long as endites ; the 1st tibia often with a series of movable spines ... 2
2. Apical segment of the hind spinnerets is distinct and conical LIOCRANINAE
 Apical segment of the hind spinnerets always very short, flattened or rounded usually indistinct, sub-spherical. ... 3
3. The apex of the endites rounded not angulate outside and not depressed at the middle; sternum distinctly margined; the tarsi of the anterior leg are not usually long... .. CORINNINAE
 The apex of the endites sub-quadrate forming an angle outside and slightly depressed at the middle; the tarsi of the anterior legs usually long. MICARIINAE

Subfamily CLUBIONINAE

The spiders of this subfamily the labium much longer than broad and extends beyond the middle of the endites. The endites are narrower at the middle than the apex and are margined on the inside with incurved hair. The apical segment of the posterior spinnerets is distinct conical often quite long. This subfamily represent 6 genera in this thesis.

Key to the genera of the subfamily CLUBIONINAE

1. Cephalothorax with fovea. Anterior legs shorter than posterior legs; lateral eyes both anterior and posterior not close to each other *Clubiona*

- Cephalothorax without fovea if present very inconspicuous. Anterior legs longer than posterior legs. Lateral eyes both anterior and posterior very close to each other. ... 2
2. Retrolateral apophysis of the male palp with single hooked structure and the cymbium with long spur at its base. ... *Cheiracanthium*
Retrolateral apophysis of the male palp with double hooked structure and its cymbium without spur at its base. ... 3
3. Very smaller in size, the posterior median eyes widely separated and larger than all other eyes. ... *Simalia*
Very larger in size, the posterior median eyes close to each other and smaller than all other eyes. ... 4
4. The 4th pair of legs shorter than the others. ... *Eutichurus*
The 4th pair of legs more longer than others. ... 5
5. The frontal median eyes widely separated and closer to the laterals. ... *Tolophus*
The frontal median eyes not widely separated and not closer to the laterals. ... *Matidia*

Genus *Clubiona* Latreille

1804. *Clubiona* Latreille, *Nouv. Dic. hist. nat.*, 24 : 154.
1931. *Clubiona*: Gravely, *Rec. Indian Mus.*, 33 (3) : 260.
1951. *Clubiona*: Locket & Millidge, *British Spiders*, Ray Society, 1 : 238.
1976. *Clubiona*: Dondale, *Canadian Ent.*, 108 (11) : 1155.
1981. *Clubiona*: Tikader & Biswas, *Rec. zool. Surv. India*, occ. Pap. No. 30 (1) : 68.
1984. *Clubiona*: Biswas, *Bull. zool. Surv. India*, 6 (1-3) : 119.

Diagnosis : Cephalothorax rather long somewhat narrowed in front and broad posteriorly, highest at the level of the cephalic groove, covered with fine silky hair, sometimes with large hair on the anterior part; fovea usually short, radiating striae sometimes originate from it. Eyes in two rows anterior and posterior, the anterior row slightly recurved, medians closer to each other than the laterals. The posterior row markedly the longest and slightly procurved or straight, medians not so close to each other than the laterals. Chelicerae robust and convex, sometimes cylindrical in males. Maxillae longer than wide concave on lateral margin labium longer than wide. Legs usually long and slender pale yellow to reddish brown in colour with dense claw tuft and thin scopulae. Legs formula 4 1 2 2. Tibia of the male palpus without ventral apophysis but with stout retrolateral apophysis. Tegulum elongate, convex, embolus arises near the base of the tegular apophysis. Abdomen elongate and ovoid clothed with white or pale

yellow pubescence most of them are without markings. Presence of semierrect setae and cluster of long erect setae at the anterior end of abdomen. Epigyne with elongate concave or convex plate often traversed by fine grooves and ridges, compulsory opening conspicuous and cavity like, hidden in posterior margin of epigynal plate. Compulsory tube extending anterior direction forward to spermatheca, bent or coiled. Spermatheca often composed of two parts.

This genus resembles to *Cheiracanthium* Koch in general appearance but differs from the latter in the presence of fovea.

The spiders of this genus are of medium or uniform size, they are pale or tawny colours. They live in silken tubes under loose bark of trees or in rolled leaves of plant.

Type species : *Clubiona pallidula* (Clerck, 1757)

Distribution : All tropical parts of the world.

Key to the species of the genus *Clubiona* Latreille from India*

1. Cleft of vulva with longitudinal marking; no 'V' shaped structure present in front. ... *analis*
 Cleft of the vulva with transverse marking; more or less 'V' shaped structure present in front. ... 2
2. Eyes of the anterior medians pearly white in colour and slightly smaller than anterior laterals. ... *filicata*
 Eyes of the anterior medians blackish in colour, slightly larger than the anterior laterals. ... 3
3. Cephalothorax yellowish brown in colour narrow anteriorly. ... *pashabaii*
 Cephalothorax brownish green in colour, broad anteriorly. ... 4
4. Ocular quadrate broader than long, the anterior median eyes close to each others. ... *andamanensis*
 Ocular quadrate longer than broad, anterior median eyes not close to each other. ... 5
5. Chelicerae reddish brown in colour with short and straight fang, fang groove scopulated, outer margin of the chelicerae with 1 big and 7 small teeth. ... *nicobarensis*
 Chelicerae dark brown in colour, with long and curved fang, fang groove not scopulated, outer margin of the chelicerae with 3 similar teeth. ...
6. Fovea present at the middle of the carapace, lateral striae present,

- encircling the median fovea. ... *ludhianaensis*
 Fovea absent at the middle of the carapace, lateral striae
 absent. ... 7
7. Femorae I, II, III, IV provided with 3 long dorsal spines ... *atwali*
 Femorae I, II, III and IV not provided with 3 long dorsal
 spines ... 8
8. Abdomen spindle shaped, the posterior half with 'V' shaped brow-
 nish ornamentation. ... *drassodes*
 Abdomen oval in shape posterior half without 'V' shaped ornamen-
 tation. ... 9
9. Sternum oval in shape not provided with 4 pairs of black dots situat-
 ed near the coxa. ... *hysgina*
 Sternum heart shaped provided with 4 pairs of black dots situated
 near the coxa. ... 10
10. Labium yellowish in colour, broader anterior end, provided with 6
 long black spines. ... *shillongensis*
 Labium reddish brown in colour, not broader anteriorly and not
 provided with 6 long black spines. ... 11
11. Maxillary lobe pale yellow in colour with constriction in the middle
 and with concavity at its outer surface. ... *chakrabartei*
 Maxillary lobe dark brown in colour, without constriction the
 middle and without concavity at its outer surface. ... 12
12. Posterior row of eyes recurved medians larger than laterals and
 close to each other. ... *tikaderi*
 Posterior row of eyes procurved, medians not close to each
 other. ... 13
13. Legs pale yellow, tarsi less scopulated, femur IV curved
 dorsally. ... *bengalensis*
 Legs reddish brown, tarsi more scopulated, femur IV curved
 ventrally. ... 14
14. Tarsi usually long with short claws. ... *pogonias*
 Tarsi usually short with long claws. ... 15
15. Tibia longer, and longer than the patella. ... *nilgherina*
 Tibia shorter, and not longer than the patella. ... 16
16. Eyes of the posterior medians closer to each other. ... *acanthocnemis*
 Eyes of the posterior medians separated from each other ... *crouxi*

* Due to non-availability of original literature and the types, the species, viz., *Clubiona leticeps* Cambridge and *Clubiona delictrix* Cambridge could not be included in the key.

1. *Clubiona analis* Thorell 1895 (Figs. 25-29)

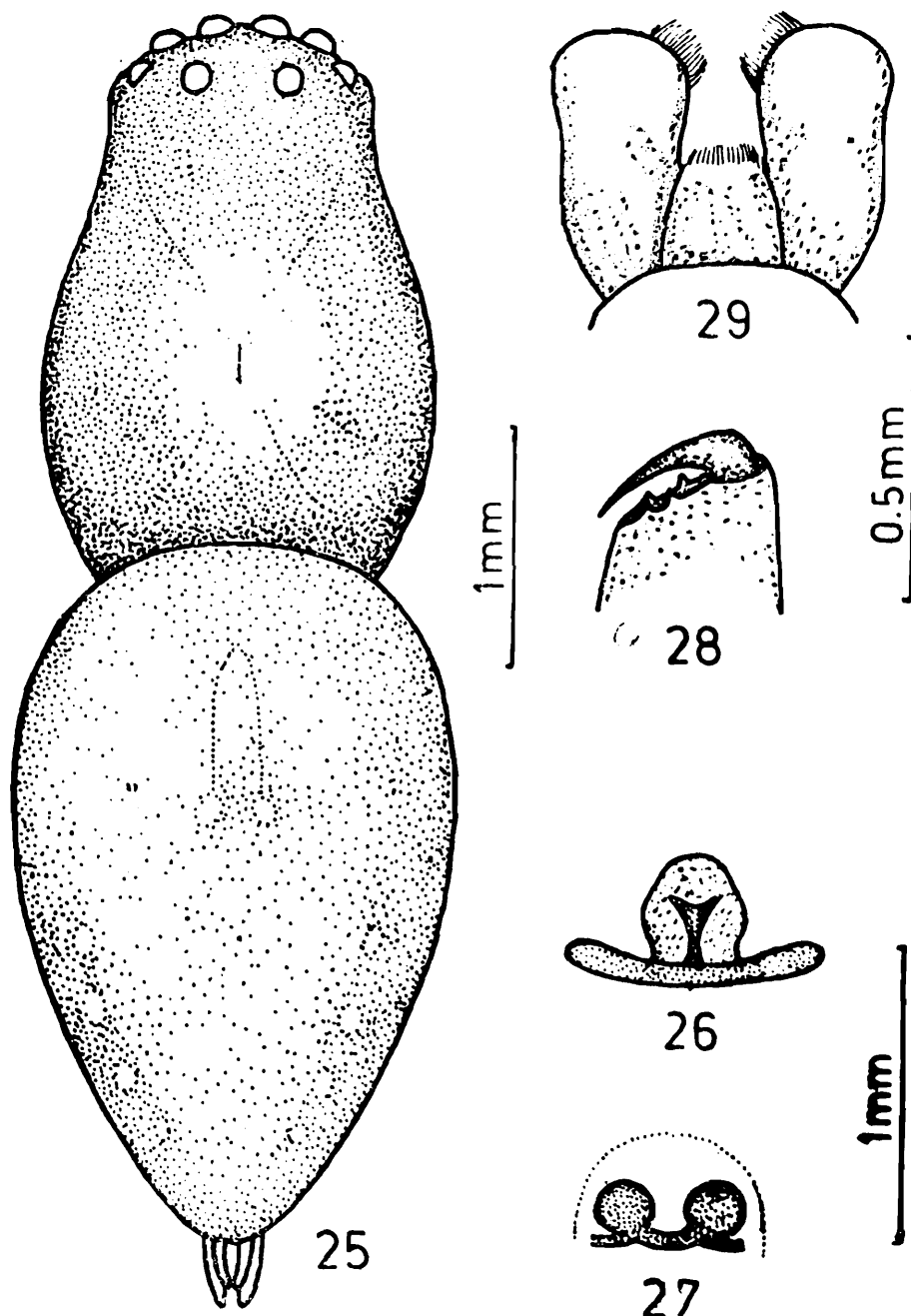
1895. *Clubiona analis* Thorell, *Spider of Burma* : 42

1931. *Clubiona analis* : Gravely, *Rec. Indian Mus.*, 33 : 261,

1981. *Clubiona analis* : Tikader & Biswas, *Rec. zool. Surv. India*, Occ. Pap. No. 30 (1) : 69.

Specimen examined : 1 ♀, Dhakuria, Calcutta, West Bengal. 26.7.1957. Coll. B.K. Tikader.

General : Cephalothorax and legs light brown, abdomen greyish in colour. Total length 5.00 mm. Carapace 2 mm long and 1.50 mm broad; abdomen 3.00 mm long, and 2.00 mm wide.



Figs. 25-29. 25. Dorsal view of female, legs omitted ; 26. Epigyne ; 27. Internal genitalia ; 28. Chelicera showing arrangements of teeth ; 29. Maxillae and labium.

Cephalothorax : Longer than wide, narrow anteriorly and broad posteriorly clothed with fine pubescence provided with short conspicuous

fovea situated just below the median half of the cephalothorax. Pattern of radiating streaks diverse from the short fovea to the sides. Eyes more or less same size, silvery white except anterior medians. Anterior row slightly recurved, medians slightly smaller than the laterals pearly white in colour and closer to each other than the laterals. The posterior row of eyes usually longer than the anterior row slightly procurved medians not so close to each other. Ocular quadrate broader than long, narrow anteriorly and broad posteriorly. Chelicerae moderately strong, pale yellow in colour, inner margin provided with 2 similar teeth, outer margin with 2 dissimilar teeth (Fig. 28). Maxillae pale yellow in colour, twice longer than wide, broad anteriorly and narrow posteriorly slightly depressed at the middle (Fig. 29). Labium longer than wide, pale yellow in colour pointed anteriorly and broad posteriorly. Sternum yellowish in colour oval in shape, pointed behind covered by fine pubescence. Legs long and slender clothed with hair and spines, leg formula 2 4 1 3. Tibia and metatarsi of I and II provided with one pair of ventral spines on each. Tarsi of all legs provided with 2 claws and claw tufts.

Abdomen : Longer than wide, broad anteriorly and tapering posteriorly. Dorsum covered by long semi erect setae anteriorly and provided with deep brown dots (Fig. 25). Ventral side more lighter than dorsum. Epigyne with more or less elongated convex plate (Fig. 26). Spermatheca rounded, composed of 2 parts with short copulatory tube (Fig. 27).

Type locality : Holotype : female, Double Island of Moulmein, Burma.

Distribution : India : West Bengal (Dhakuria, Calcutta); Burma.

Remarks : The present description and illustration are made on examining one female specimen housed in National Collection of Zoological Survey of India, Reg. No. 4408/18 (det. B. K. Tikader, 1981).

2. *Clubiona filicata* Cambridge

(Figs. 30-35)

1874. *Clubiona filicata* Cambridge, *Proc. Zool. Soc. London*, : 143.

1931. *Clubiona filicata* : Gravely, *Rec. Indian Mus.*, 33 : 261.

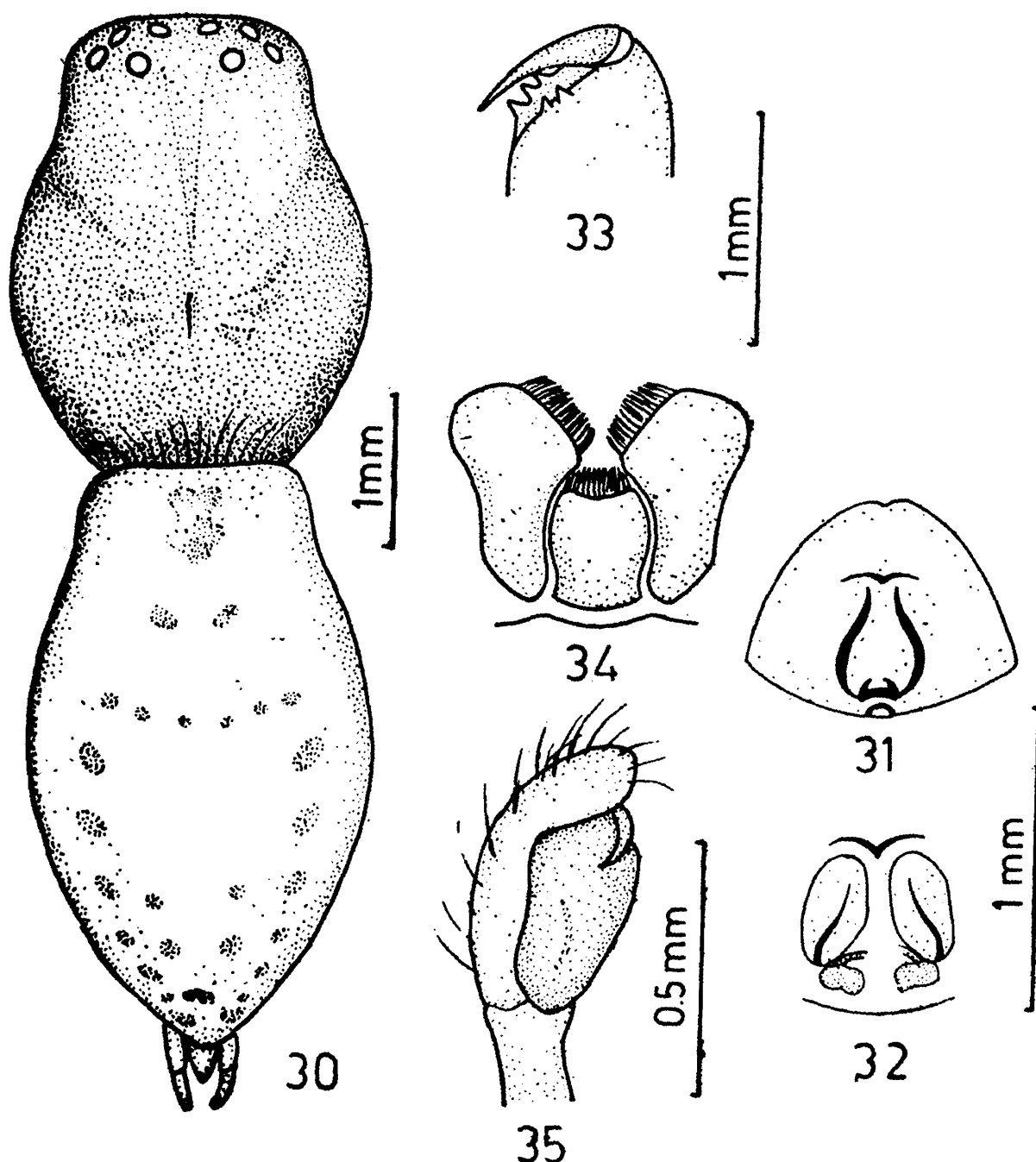
1981. *Clubiona filicata* : Tikader & Biswas, *Rec. zool. surv. India, Occ. Pap. No.* 30 (1) : 69.

Specimen examined : 1 ♀, Poona University Compound, Maharashtra, 11.9.1962. Coll. B. K. Tikader. 1 ♀, Rajbag, Poona Maharashtra, 28.10.1972. Coll. B. K. Tikader. 1 ♀, Moorduva village, Poona, Maharashtra, 20.9.1961. Coll. B. K. Tikader. 1 ♀, Rajbuglani, Poona, Maharashtra, 12.9.1975. Coll. B. K. Tikader. 1 ♀, Zoo Garden, Alipore, Calcutta, West Bengal, 28.9.1982. Coll. B. K. Biswas. 1 ♀, Palta, 24-Parganas, West Bengal, 10.7.1974. Coll. B. K. Biswas. 2 ♀ ♀, Parmadan Deer Park, 24-Parganas, West Bengal. 2.4.1984. Coll. B. K. Biswas. 1 ♀, Iron Side Road, Calcutta, 1.6.1981. Coll. B. K. Tikader. 1 ♀, Chhota Handi, South 24-Parganas, West Bengal, 18.9.1983. Coll. S. S. Saha. 1 ♀, 1 ♂, Dattabagan, Calcutta, 14.9.1962. Coll. B. D. Basu. Reg. No. 441218. 1 ♂, Pashan Village, Poona, Maharashtra, 24.11.1962. Coll. R. N. Chopra. 1 ♂, Moorduva village, Poona, Maharashtra, 20.9.1961. Coll. B. K. Tikader. 1 ♀, Barasat, 24-Parganas, West Bengal. 30.3.1984. Coll. S. C. Majumder. 1 ♂, B. Garden, Howrah, West Bengal. 3.3.1982. Coll. S. C. Majumder.

General : Cephalothorax and legs deep brown, abdomen greyish in colour. Total length 7.00 mm Carapace 3.00 mm long and 2.00 mm. broad; abdomen 4.00 mm long and 2.50 mm wide.

Cephalothorax : Longer than wide narrow anteriorly and broad posteriorly, clothed with fine spine like hair, provided with conspicuous fovea situated just below the median half of the cephalothorax. Eyes more or less same size, silvery white in colour except anterior medians. The anterior row slightly recurved, medians slightly smaller in size and pearly white in colour ; posterior row usually longer than the anterior row, slightly procurved, medians not so closer to each other. Ocular quadrate wider than long, narrow anteriorly and broad posteriorly. Chelicerae moderately strong, yellowish in colour, longer than wide, inner margin provided with 2 similar teeth and the outer margin with 3 dissimilar teeth (Fig. 33). Maxilla twice longer than broad, scopulated anteriorly, pale yellow in colour, constricted at the middle (Fig. 34). Labium longer than broad pale yellow in colour, more or less parallel scopulated. anteriorly, slightly constricted posteriorly. Sternum oval, clothed with fine hair pointed behind. Legs long and strong clothed with hair and spines. Legs formula 4 2 3 1. Tibia and metatarsi of I and II provided with 4 and 2 ventral spines, tarsi scopulated, longer and furnished with 2 claws and claw tufts. Tibia of the male palp without apophysis and without spur, longer than broad, tegulum elongated and convex (Fig. 35).

Abdomen : Longer than wide, pointed behind, clothed with fine hair, semi erect setae present at the anterior end. Dorsum provided with few deep brown dots on the posterior. Elongated convex epigynal



Figs. 30-35. 30. Dorsal view of female, legs omitted ; 31. Epigyne ; 32. Internal genitalia ; 33. Chelicera showing arrangements of teeth ; 34. Maxillae and labium ; 35. Male palp.

plate with V shaped transverse structure, conspicuous copulatory opening present (Fig. 31). Spermatheca composed of two parts (Fig. 32).

Type locality : Types : Bombay, Maharashtra, India. Deposited at O.U.M., Oxford.

Distribution : India : Maharashtra (Bombay, Poona) ; Rajasthan

(Udaipur); M. P. (Sibpuri); West Bengal (Howrah, 24-Parganas, Calcutta).

Remarks : The present description and illustration based upon the authenticated identified specimens both male and female deposited at National Collection, ZSI, Reg. No. 1773/18. In addition to this 10 female and 4 male specimens of this species were collected and identified.

3. *Clubiona pashabaii* Patel & Patel (Figs. 36-38)

1974. *Clubiona pashabaii* Patel & Patel, *Proc. Indian Acad. Sci.*, 78 (1) : 3.

General : Cephalothorax yellow to yellow brown in colour, abdomen with black patches. Total length 6.60 mm. Carapace 3.10 mm long and 2.50 mm wide ; abdomen 3.50 mm long and 1.90 mm wide.

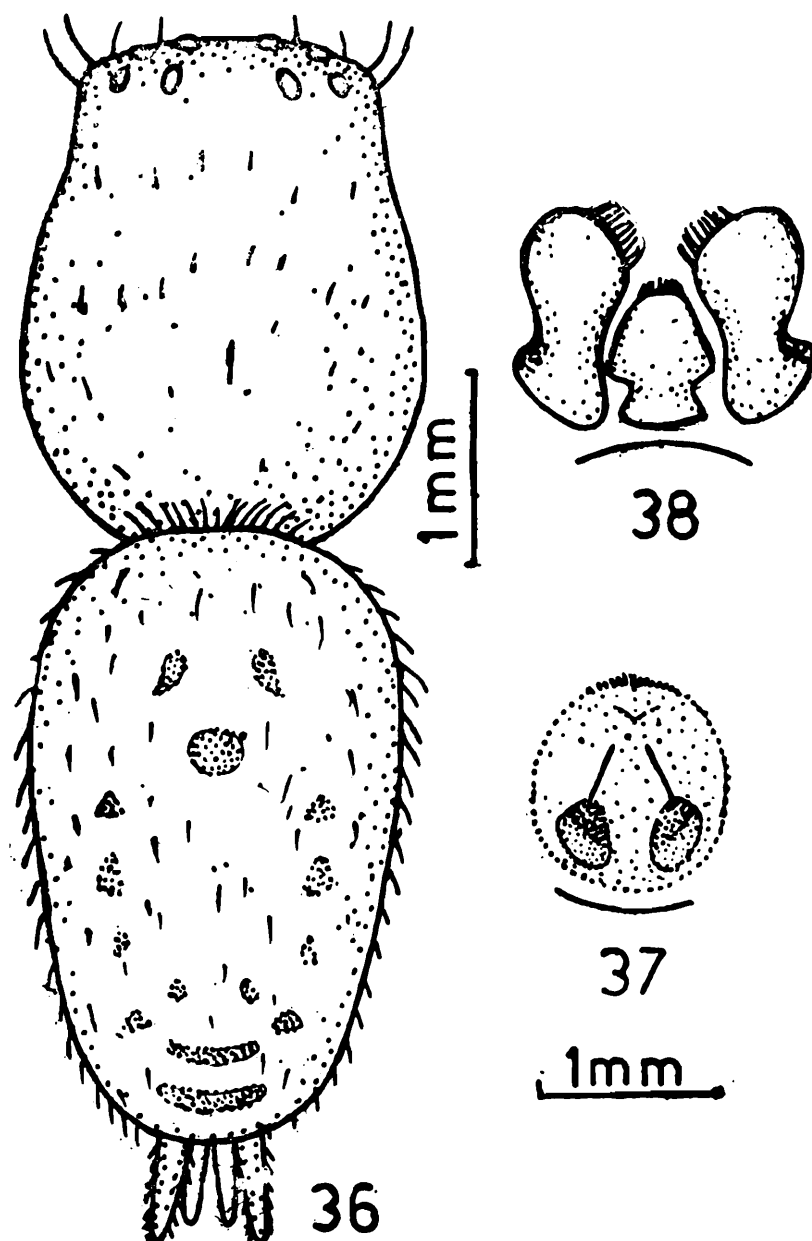
Cephalothorax : Longer than wide, slightly narrow anteriorly, clothed with fine pubescence, provided with median fovea and with large hair on the cephalic region. Eyes in two rows anterior and posterior, the anterior row straight, medians black and larger than the laterals. The posterior row longer than the anterior row, slightly procurved medians larger than the laterals, remote from each other than the laterals. Chelicerae robust, brown in colour, more or less convex, with a curved fang, inner margin provided with 2 teeth and the outer margin with 3 teeth. Maxillae elongated and scopulated (Fig. 38). Labium longer than broad extending half the length of the maxillae (Fig. 38). Sternum oval, yellowish in colour, clothed with few hair. Legs long and slender. Legs formula 4 2 1 3. Tibia and metatarsi of I and II provided with 2 and 1 pair of ventral spines, tarsi furnished with 2 claws and tenate hair, scopulae extend upto the base of metatarsi.

Abdomen : Oblong, broader anteriorly and tapering behind, clothed with fine hair and few large black dots. Dorsal side ornamented with brown patches. Ventral side uniformly light coloured. Posterior spinnerets longer and slender than the anteriors. Epigyne as in the Fig. 37.

Type locality : Kaira, villabh, Vidhyanagar, Gujarat, India.
Holotype : 1 ♀ **Paratype :** 1 ♀ with author, not deposited at National Collection of Z.S.I.

Distribution : Known only from type locality.

Remarks : The type of this species could not be procured. The



Figs. 36-38. 36. Dorsal view of female, legs omitted ; 37. Epigyne ; 38. Maxillae and labium

present description and illustration given here based on the original description and illustration of the author in his Ph. D. thesis.

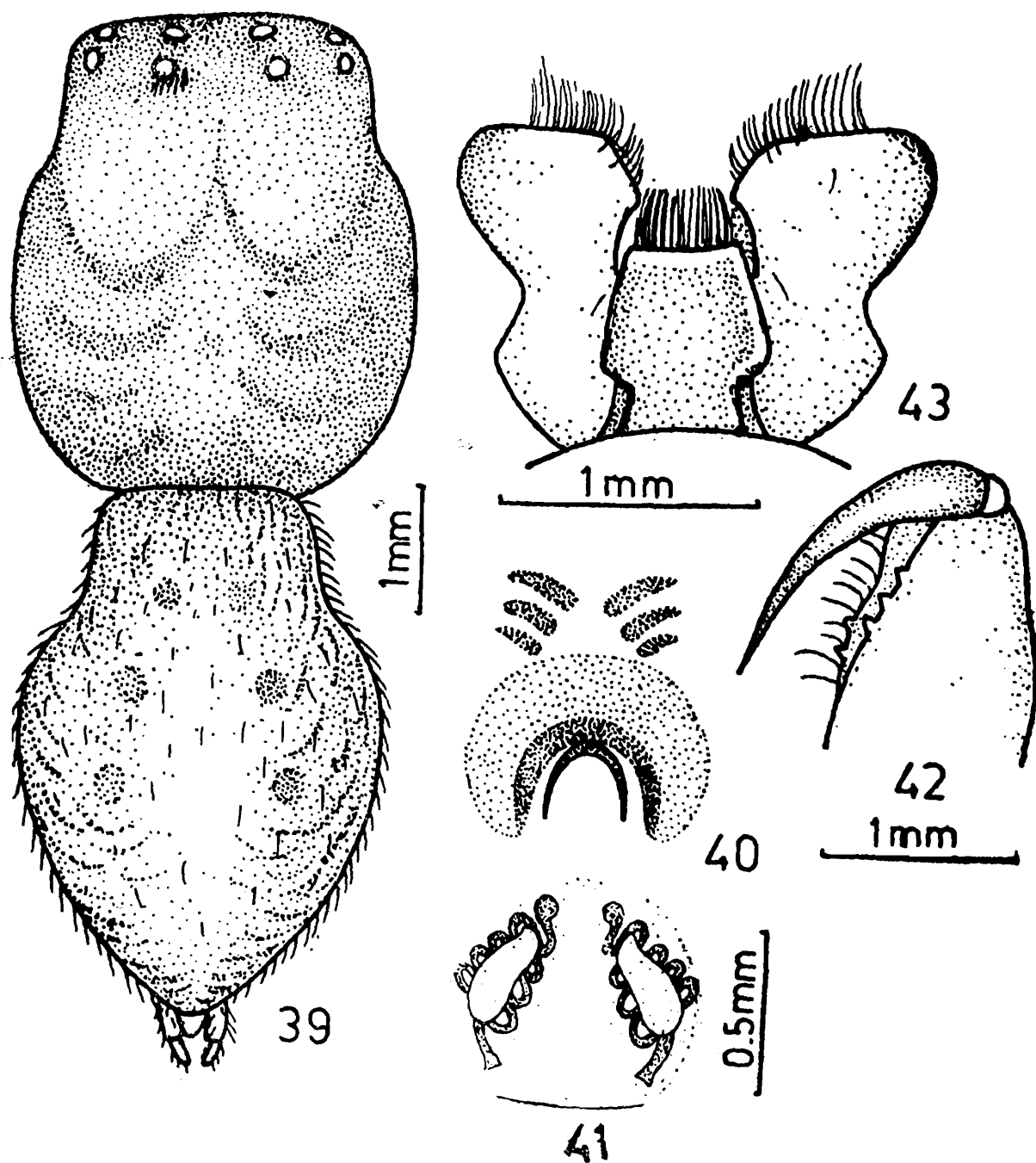
4. *Clubiona andamanensis* Tikader (Figs. 39-43)

1977. *Clubiona andamanensis* Tikader, *Rec. zool. Surv. India*, 72: 194.

General : Cephalothorax and legs brownish green, abdomen light

brown in colour. Total length 8.50 mm. Carapace 4.00 mm long and 3.00 mm wide ; abdomen 4.20 mm long and 3.20 mm wide.

Cephalothorax : Longer than wide, broad in front, cephalic region slightly high, clothed with fine hair, fovea usually present at the middle of the carapace. Eyes pearly white in colour ; the anterior row slightly



Figs. 39-43. 39. Dorsal view of female, legs omitted ; 40. Epigyne ; 41. Internal genitalia ; 42. Chelicera showing arrangements of teeth ; 43. Maxillae and labium.

recurved, equal in size, medians close to each other than the laterals. The posterior row of eyes usually longer than the anterior row, slightly procurved or straight, more or less equal in size, the medians close to

each other than the laterals. The lateral eyes of both anterior and posterior close to each other. Ocular quadrate longer than wide, narrow anteriorly and wider posteriorly. Chelicerae strong and stout, twice longer than wide, reddish brown in colour, inner margin provided with 3 teeth, outer margin with 2 teeth (Fig. 42). Maxillae longer than wide, reddish brown in colour, broad and scopulated anteriorly and constricted at the middle (Fig. 43). Labium longer than wide, reddish brown in colour, broader and scopulated anteriorly, a shallow depression present posteriorly. Sternum oval in shape, pale yellow in colour, covered with fine pubescence. Legs long and strong. Legs formula 2 1 4 3. The legs I and II longer than III and IV. The tibia and metatarsi of I and II provided with 2 ventral spines on each. Tarsi furnished with 2 claws and claw tufts.

Abdomen : Longer than wide, broad anteriorly and tapering posteriorly. A tuft of long spine like hair present at the anterior end of the dorsum. Two pairs of sigilla present along with the multiple brownish parallel lines on either lateral side of the mid dorsum (Fig. 39). Epigyne with rounded sclerotized plate in front of which there present 6 black lines (Fig. 40). Spermatheca longer than wide, composed of two parts with coiled copulatory tube (Fig. 41).

Type locality : Holotype : female, long island, Middle Andaman, India. 17.5.1971. Coll. B.K. Tikader, deposited at National Collection of ZSI, Reg. No. Nil.

Distribution : Known only from type locality.

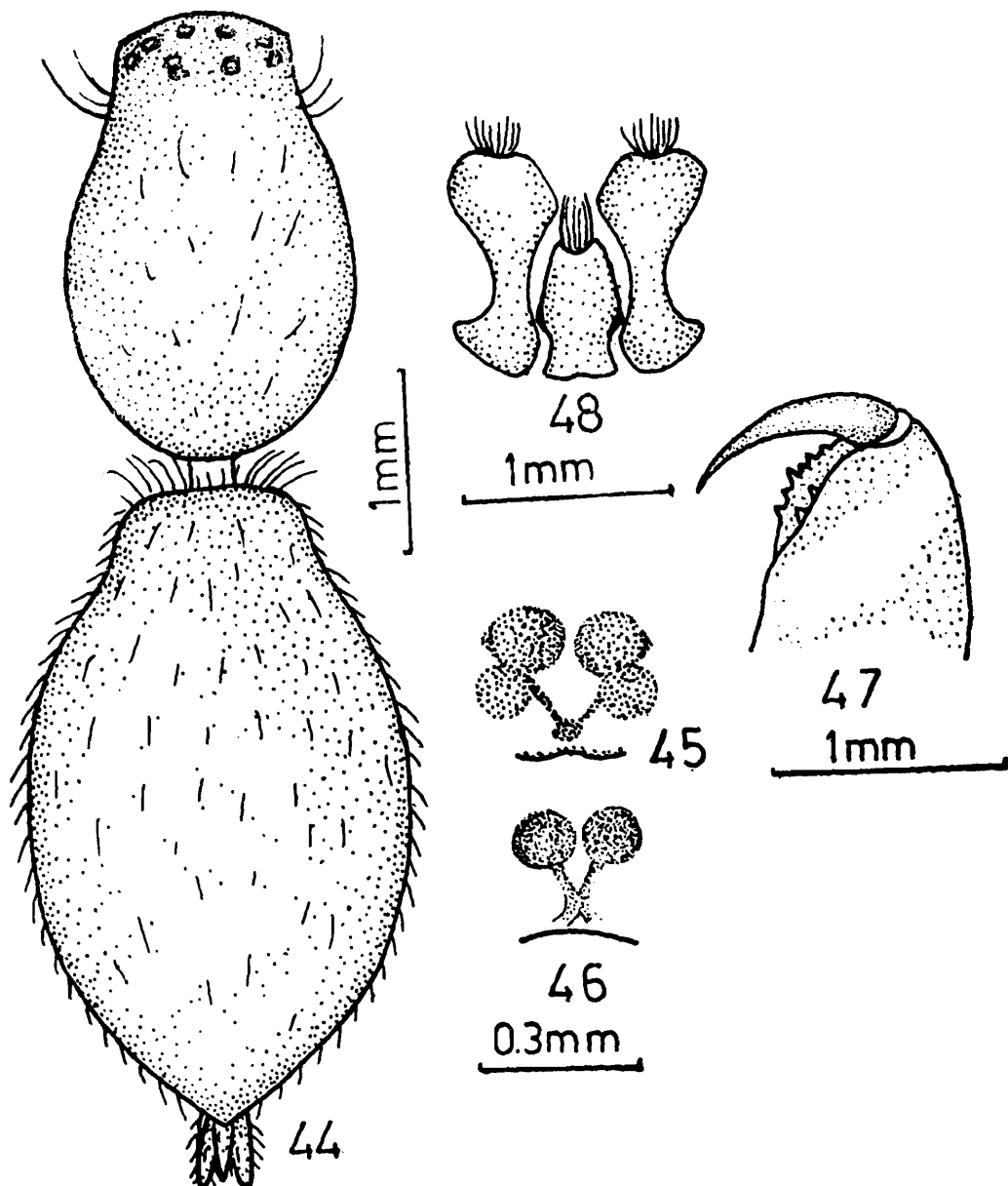
Remarks : The present description and illustration are based on examining holotype female. Besides original description, the genitalia, internal genitalia which are elaborately discussed by dissecting out the genitalia from the holotype material.

5. *Clubiona nicobarensis* Tikader (Figs. 44-48)

1977. *Clubiona nicobarensis* Tikader, *Rec. zool. Surv. India*, 72 : 196.

General : Cephalothorax, chelicerae reddish brown, legs greenish brown and the abdomen whitish in colour. Total length 7.40 mm. Carspace 3.00 mm long and 2.00 mm wide ; abdomen 4.20 mm long and 2.50 mm. wide.

Cephalothorax : Longer than wide, narrow anteriorly and broad posteriorly, prominent fovea present at the middle of the cephalothorax. Eyes in two rows anterior and posterior ; anterior row slightly recurved, silvery white in colour, medians slightly smaller than the laterals and close to each other than the laterals. The posterior row longer than the anterior row, nearly straight, pearly white, medians larger than the laterals and close to each other than the laterals. Ocular quadrate



Figs. 44-48. 44. Dorsal view of female, legs omitted ; 45. Epigyne ; 46. Internal genitalia ; 47. Chelicera showing arrangements of teeth ; 48. Maxillae and labium.

slightly longer than wide, narrow in front, wider behind. Chelicerae twice longer than wide, inner margin provided with 2 small teeth and the outer margin with one big tooth along with 6 small teeth (Fig. 47). Maxillae longer than wide, constricted at the middle (Fig. 48). Labium

longer than wide, anteriorly narrow and scopulated. Sternum oval, clothed with fine hair ; pointed behind. Legs long and strong clothed with hair and spines. Legs formula 2 4 1 3. Tibia and metatarsi of I and II provided with 2 pairs of ventral spines on each. Tarsi long and scopulated.

Abdomen : Longer than wide, tapering both anterior and posterior, clothed with fine pubescence. Ventral side more lighter than the dorsum. Epigyne with conspicuous small rounded copulatory opening (Fig. 45). Spermathecae small and rounded, with short copulatory tube (Fig. 46).

Type locality : Holotype : female, Kamorta Island, Nicobar Island, India. 18.5.1971. Coll. B. K. Tikader. Paratype : one female, Port Blair, South Andaman, India. 19.5.1971. Coll. B. K. Tikader. Type specimen deposited at National Collection of Zoological Survey of India. Reg. No. Nil.

Distribution : Known only from type locality.

Remarks : The description and illustration are given here mainly based on the holotype female deposited at the National Collection of ZSI, Reg. No. Nil. The genitalia and internal genitalia which are elaborately discussed by dissecting out the genitalia from the holotype material.

6. *Clubiona ludhianaensis* Tikader (Figs. 49-53)

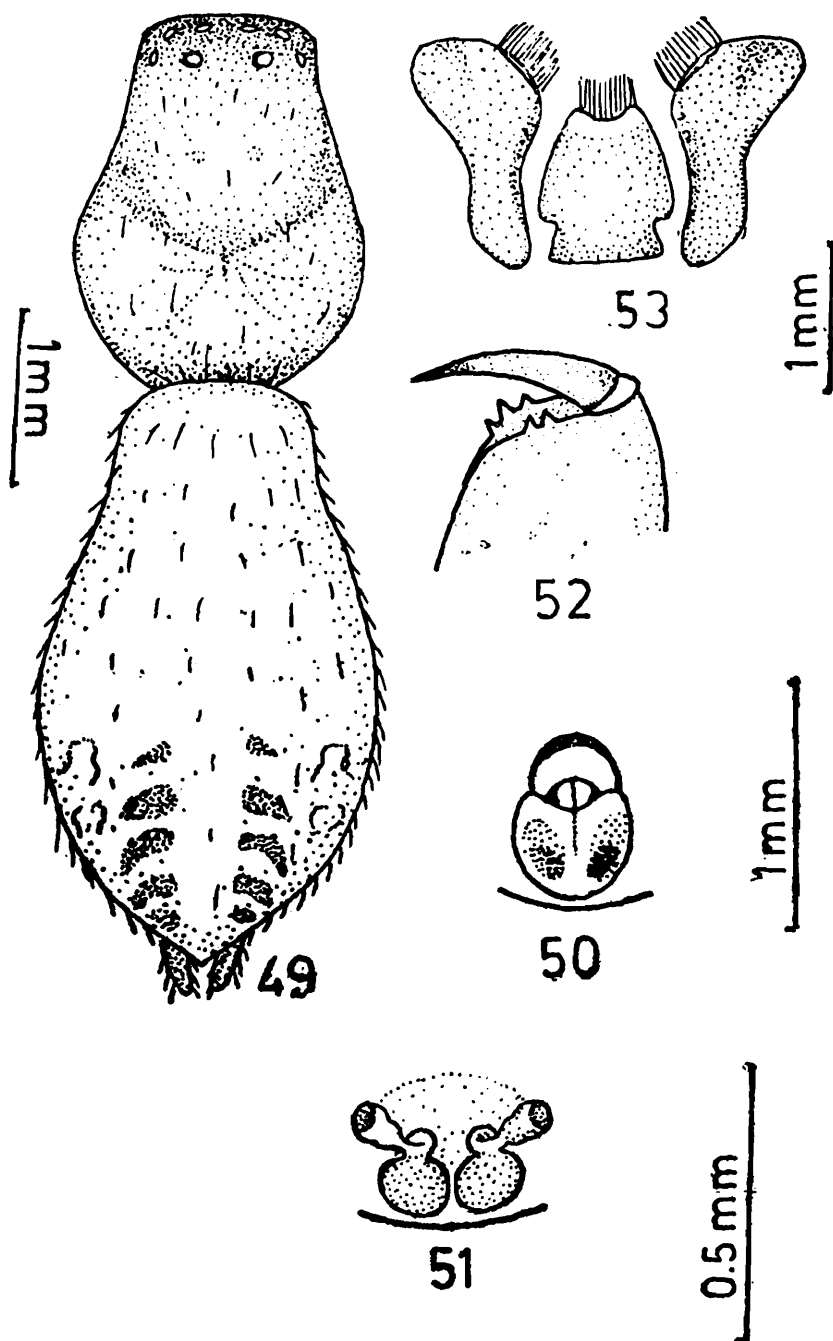
1976. *Clubiona ludhianaensis* Tikader, *J. Bombay nat. Hist. Soc.*, 73 (1) : 175.

Specimen examined : 1 ♀, Umran, Khasi and Jaintia Hills, Meghalaya, India. 27.6.1965. Coll. B. K. Tikader. 1 ♀, Himainagar, Gujarat. 16.11.1964. Coll. R. N. Vargava. 1 ♀, Jamduar, Dist. Goalpara, Assam. 7.3.1957. Coll. B.K. Tikader. 1 ♀, Burdwan Agricultural Farm, Burdwan, West Bengal. 12.1.1982. Coll. S. C. Majumder.

General : Cephalothorax and legs brownish green, abdomen pale green. Total length 11.00 mm. Carapace 4.20 mm long and 3.00 mm wide ; abdomen 6.80 mm long and 3.60 mm wide.

Cephalothorax : Longer than wide, wider in front clothed with

hair and few spine like hair, cephalic region slightly convex and higher than the thoracic region. Prominent fovea present just below the median half of the cephalothorax, lateral striae present on either side of the fovea. Eyes more or less equal size, pearly white in colour. The anterior row nearly straight and distributed in equal distance from each



Figs. 49-53. 49. Dorsal view of female, legs omitted; 50. Epigyne; 51. Internal genitalia; 52. Chelicera showing arrangements of teeth; 53. Maxillae and labium.

other; posterior row slightly procurved, distributed in equal distance. Ocular quadrate wider than long and wider behind. Chelicerae vertical longer than wide, dark brown in colour; inner margin provided with 2 equal size of teeth, outer margin with 3 dissimilar teeth (Fig. 52).

Maxillae and labium longer than wide, scopulated anteriorly ; maxillae deep brown in colour constricted at the middle (Fig. 53). Sternum heart shaped provided with four deep brown dots present opposite the coxa. Legs long and stout, clothed with hair and spines. The posterior legs longer than the anterior leg. Legs formula 4 3 2 1. Tibia and metatarsi of I and II provided with 2 pairs of ventral spines on each. Tarsi scopulated and furnished with 2 claws.

Abdomen : Longer than wide, narrower posteriorly, clothed with fine pubescence, deep brown marking present at the posterior half of the dorsum (Fig. 49). Epigyne more or less elongated with conspicuous copulatory opening ; (Fig. 50). Internal genitalia with spermatheca which is rounded in shape divided into two parts, copulatory tubes short and coiled (Fig. 51).

Type locality : Holotype : female, Ludhiana, Punjab Agricultural University Compound, Punjab, India, 10.11.1975. Coll. Dr. G. L. Sadana. Reg. No. Nil. Paratype : one female locality, date and collector same as the holotype.

Distribution : India : Punjab (Ludhiana) ; Meghalaya (Umran) new report ; Gujarat (Himainagar) new report ; Assam (Goalpara) new report ; West Bengal (Burdwan) new report.

Remarks : The holotype and paratype were critically examined, deposited at National Collection of Zoological Survey of India, Reg. No. Nil. The present description and illustration based mainly on holotype material. Besides original description, the genitalia and internal genitalia which were elaborately discussed here. In addition to this 4 female specimens were collected and identified.

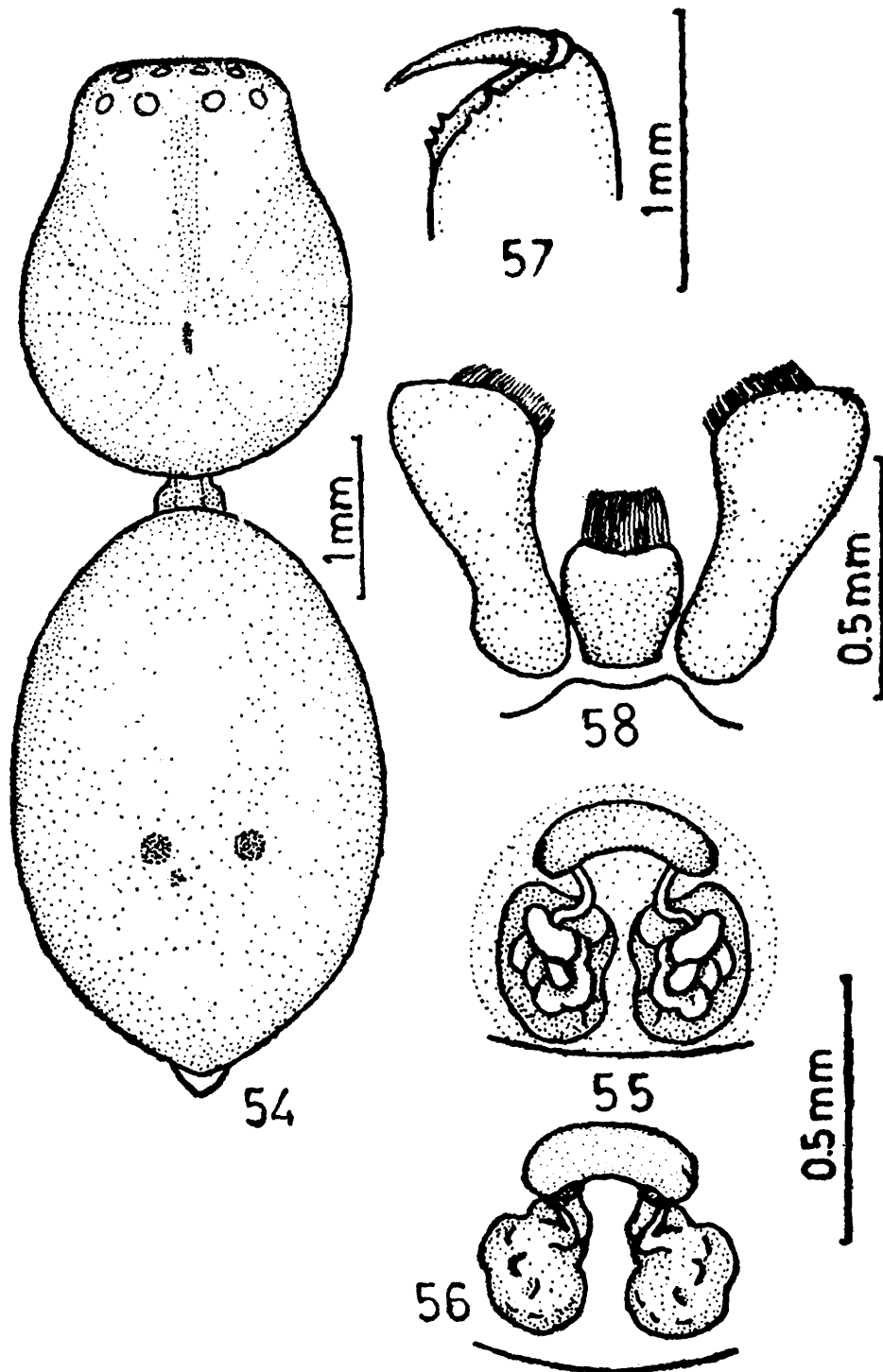
7. *Clubiona atwali* Singh (Figs. 54-58)

1970. *Clubiona atwali* Singh, *Science & Culture*, 36 : 410.

Specimen examined : 2 ♀ ♀, Elephant falls, Nepha, 27.6.1966. Coll. B. Biswas. 1 ♀, Khati, U.P. 12.6.1984. Coll. S. Chakraborty.

General : Cephalothorax pale yellow in colour, dark brown on anterior side, slightly blackish posteriorly, legs redish brown and abdomen pale yellow in colour. Total length 6.00 mm long. Carapace 2.6 mm long and 2.00 mm. wide ; abdomen 3.6 mm long and 2.9 mm wide.

Cephalothorax : Longer than wide, slightly narrowed anteriorly, somewhat convex in shape, covered with fine black hair, inconspicuous fovea present at the middle of the cephalothorax. Eyes in two rows



Figs. 54-58. 54. Dorsal view of female, legs omitted; 55. Epigyne; 56. Internal genitalia; 57. Chelicera showing arrangements of teeth; 58. Maxillae and labium.

anterior and posterior, distributed more or less in equal distance from each other. The anterior row recurved slightly, blackish in colour; posterior row longer than the anterior row, slightly procurved. Ocular quadrate, wider than long, narrowed anteriorly and wider posteriorly.

Chelicerae dark brown in colour projecting forward, inner margin provided with 2 teeth and the outer margin with 3 teeth (Fig. 57). **Maxillae** longer than wide, slightly depressed at the middle (Fig. 58). **Labium** longer than wide emerginate at the apex. **Sternum** oval, yellowish in colour, pointed behind. **Legs** relatively long and strong. **Legs formula** 4 1 2 3. **Femora** with 3 long dorsal spines. **Tibia** and **metatarsi** of I and II provided with 1 pair of ventral spine on each. **Tarsi** long and scopulated, provided with 2 claws.

Abdomen : Elongated in shape, longer than wide, covered with fine pubescence. **Dorsum** provided with V shaped brown dots but in other specimen V shaped dots absent. (Fig. 54). **Epigyne** with flat and convex plate, copulatory opening more conspicuous (Fig. 55). **Internal genitalia** with elongated spermathecae, copulatory tube long and coiled (Fig. 56).

Type locality : Holotype : female, Punjab Agricultural University, Ludhiana, Punjab, India. 22.4.1960. Coll. J. Singh (Type specimen with author not deposited at National Collection of ZSI).

Distribution : India : Punjab (Ludhiana) ; Nepal (Elephant fall) new report ; U. P. (Khati) new report.

Remarks : The type was not procured however the present description and illustration based on freshly collected identified specimen. The identified specimens were compared with the original description and illustration made by Singh (1970) and in full agreement with the original description and illustration.

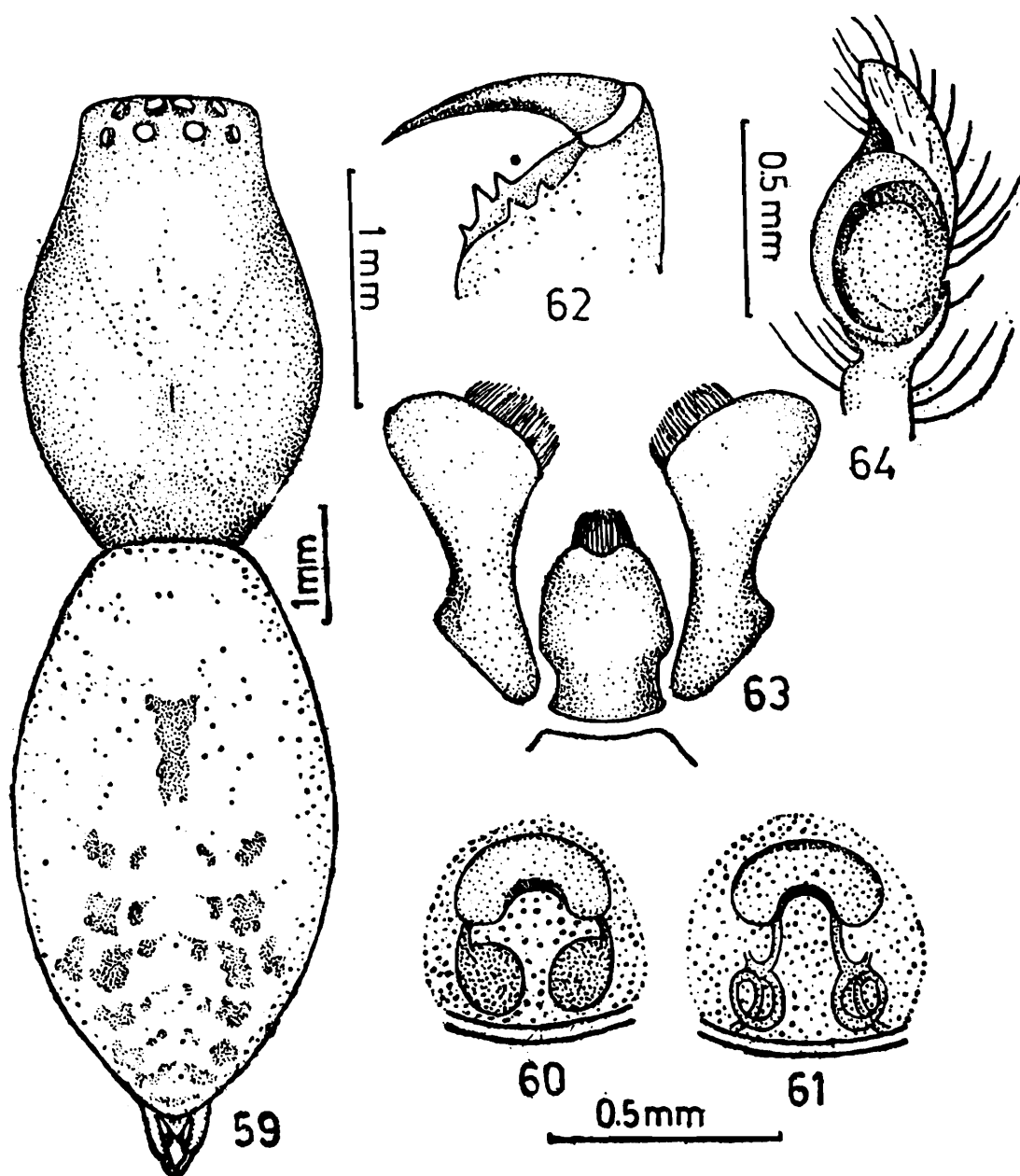
8. *Clubiona drassodes* Cambridge (Figs. 59-64)

1974. *Clubiona drassodes* Cambridge, *Proc. zool. Soc. London*, : 414

1931. *Clubiona drassodes* : Gravely, *Rec. Indian. Mus.*, 33 : 262.

Specimen examined : 1 ♀, Burdwan Agricultural farm, Burdwan, West Bengal. 12.1.1982. Coll. S. C. Majumder. 1 ♂, B. Garden, Howrah, West Bengal. 3.3.1982. Coll. S. C. Majumder. 1 ♂, Dehra Dun, U. P. 14.4.1976. Coll. B. S. Lamba. 1 ♂, Sirpur, Saran, Bihar. 20.4.1913. Coll. Machenzie. 1 ♀, Crowlia Ghat, Andaman. 16.4.1964. Coll. B. S. Lamba. 1 ♀, Corbet National Park, Dehra Dun, U. P. 2.4.1974. Coll. A. Singh. 2 ♀ ♀, Gandhinagar Park, Belgaon, Karnataka. 22.1.1982. Coll. S. K. Ghosh. 1 ♀, Poona

University Compound, Poona, Maharashtra. 3.7.1975. Coll. B. K. Tikader. 1 ♀, Salem, Madras, Tamil Nadu. 8.3.1962. Coll. J. K. Sen. 1 ♀, 1 ♂, Sirpur, Saran, Bihar. 1913. Coll. Machenzie, Reg. No. 1774/18. 1 ♂, 1 ♀, Birbhum, West Bengal. 1930. Coll. F. H. Gravely, Reg. No. 1776/18.



Figs. 59-64. 59. Dorsal view of female, legs omitted ; 60. Epigyne ; 61. Internal genitalia ; 62. Chelicera showing arrangements of teeth ; 63. Maxillae and labium ; 64. Male palp.

General : Cephalothorax and legs yellowish brown, abdomen light brown with deep brown ornamentation. Total length 9.4 mm. Carapace 4.00 mm long and 2.8 mm wide ; abdomen 5.4 mm long and 2.4 mm wide.

Cephalothorax : Longer than wide, narrowed anteriorly and broad posteriorly, clothed with spine like hair, prominent fovea present just

behind the middle of the cephalothorax. Eyes more or less same size, arranged in two transverse series. The anterior row slightly recurved; posterior row longer than the anterior row, slightly procurved and equally distributed from each other. Chelicerae moderately strong, darker in colour, inner margin provided with 2 similar teeth, outer margin with 3 dissimilar teeth (Fig. 62). Maxillae and labium longer than wide, darker in colour, maxillae constricted at the middle, broader and scopulated anteriorly (Fig. 63). Sternum elongated in shape, narrower both anterior and posterior end, clothed with fine pubescence. Legs long and moderately strong. Legs formula 4 1 2 3. Tibia and metatarsi of I and II provided with 2 and 1 pair of ventral spines. Tarsi long and scopulated. Tibia of the male palp longer than wide without apophysis, tegulum flat, cymbium without spur (Fig. 64).

Abdomen : Elongated in shape, covered with fine pubescence, dorsum provided with pattern of deep brownish dot on the posterior half (Fig. 59). Epigyne with elongated sclerotized plate, conspicuous copulatory opening present on lateral side of the Epigynal plate (Fig. 60). Internal genitalia with small spermathecae, copulatory tube long and coiled. (Fig. 61).

Type locality : Types : Bombay, Maharashtra, India, deposited at O.U.M. Oxford, London.

Distribution : India : Maharashtra (Bombay); West Bengal (Birbhum, Burdwan, Howrah, Calcutta); U. P. (Dehra Dun); Bihar (Saran); Karnataka (Belgaon) new report; Andaman (Crowlia ghat) new report.

Remarks : The description and illustration based on the authenticated identified male and female specimens deposited at the National Collection of ZSI, Reg. No. 1772/18. The description of genitalia and internal genitalia given here more elaborately beside the original description. In addition to this, 7 females and 2 males were collected and identified.

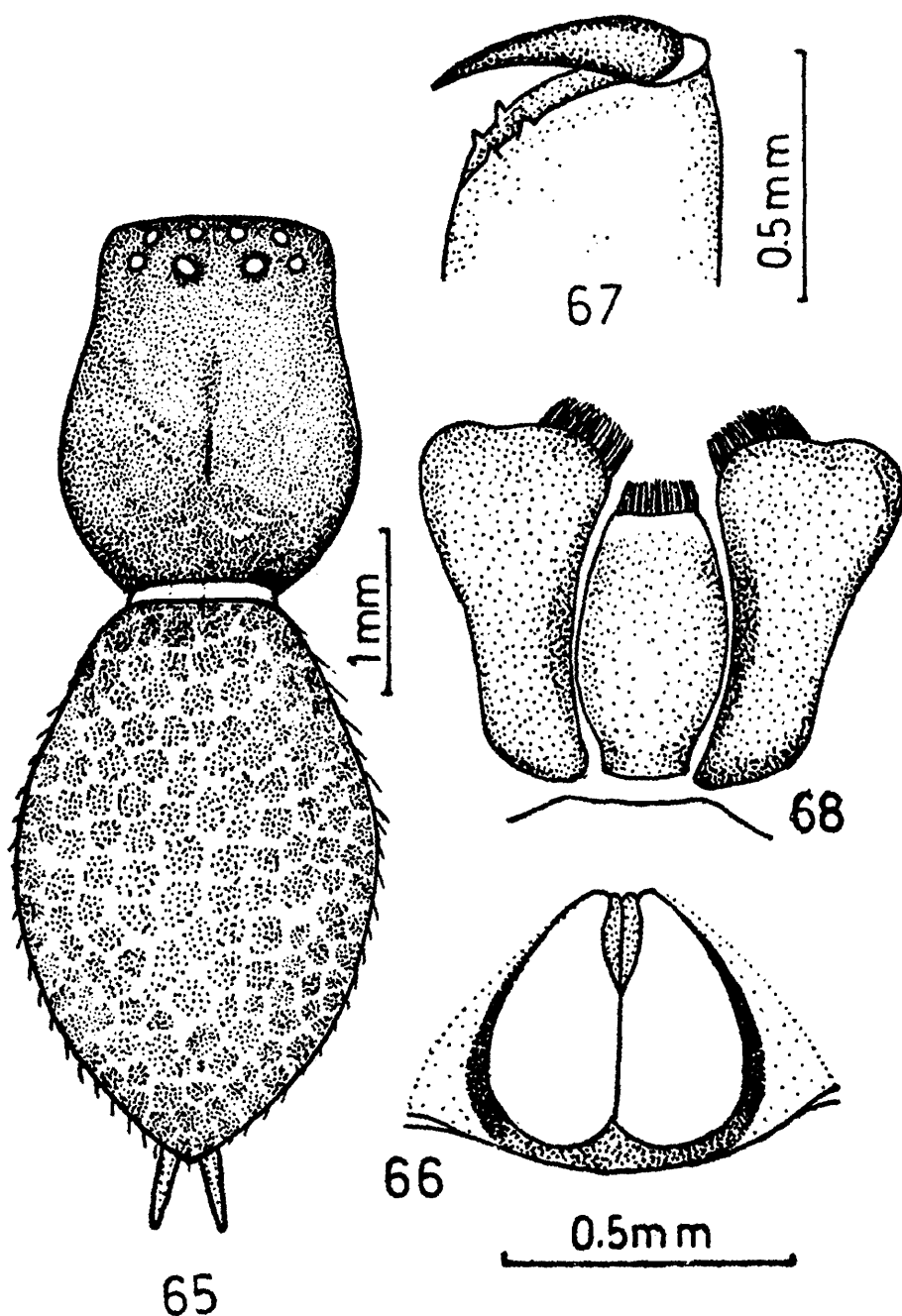
9. *Clubiona hysgina* Simon (Figs. 65-68)

1889. *Clubiona hysgina* Simon, *Journal of the Asiatic Society*, 58 (2) : 343. (2)

General : Cephalothorax and legs yellowish brown, abdomen brownish with numerous multiple dark brownish dots, Total length

6.00 mm Carapace 2.5 mm long and 1.8 mm wide ; abdomen 3.5 mm long and 2.4 mm wide.

Cephalothorax : Parallel, longer than wide, slightly convex and narrower anteriorly, covered with fine pubescence and large hair, fovea usually present at the middle of the cephalorax. Eyes in two rows anterior and posterior, pearly white in colour. The anterior row slightly recurved, medians almost rounded and slightly larger than the laterals,



Figs. 65-68. 65. Dorsal view of female, legs omitted ; 66. Epigyne ; 67. Chelicera showing arrangements of teeth ; 68. Maxillae and labium.

and close to each other than the laterals. Posterior row longer than the anterior row, slightly procurved and separated from each other approximately in equal distance. Chelicerae long and slender, more or

less stout redish brown in colour, inner and outer margin provided with 2 similar teeth on each (Fig. 67). Maxillae long and narrow, constricted at the middle, broader distally and slightly concave, yellowish brown in colour (Fig. 68). Labium twice longer than wide more or less parallel. Sternum oval in shape, covered with fine pubescence. Legs long and slender, covered with hair and spines. Legs formula 4 2 3 1. The tibia and metatarsi of I and II provided with 2 pairs of ventral spines on each.

Abdomen : Elongated in form, covered with fine pubescence. Multiple dark brownish dots present on the dorsum (Fig. 65). Ventral side more uniformly coloured than the dorsum. Vulva big, yellow, convex or broad angle anteriorly. Epigyne with conspicuous copulatory opening (Fig. 66).

Type locality : Holotype ; female, Deota, Jaunsar, N. W. Himalayas, India. Coll. Oldham, housed in the National Collection of Zoological Survey of India, Calcutta, Reg. No. 3601/10.

Distribution : As known from the type locality only.

Remarks : The present description and illustration given here based upon examining one female holotype specimen deposited in National Collection of ZSI. The description of the internal genitalia could not be possible to include here, therefore, the condition of the types is out of dissection.

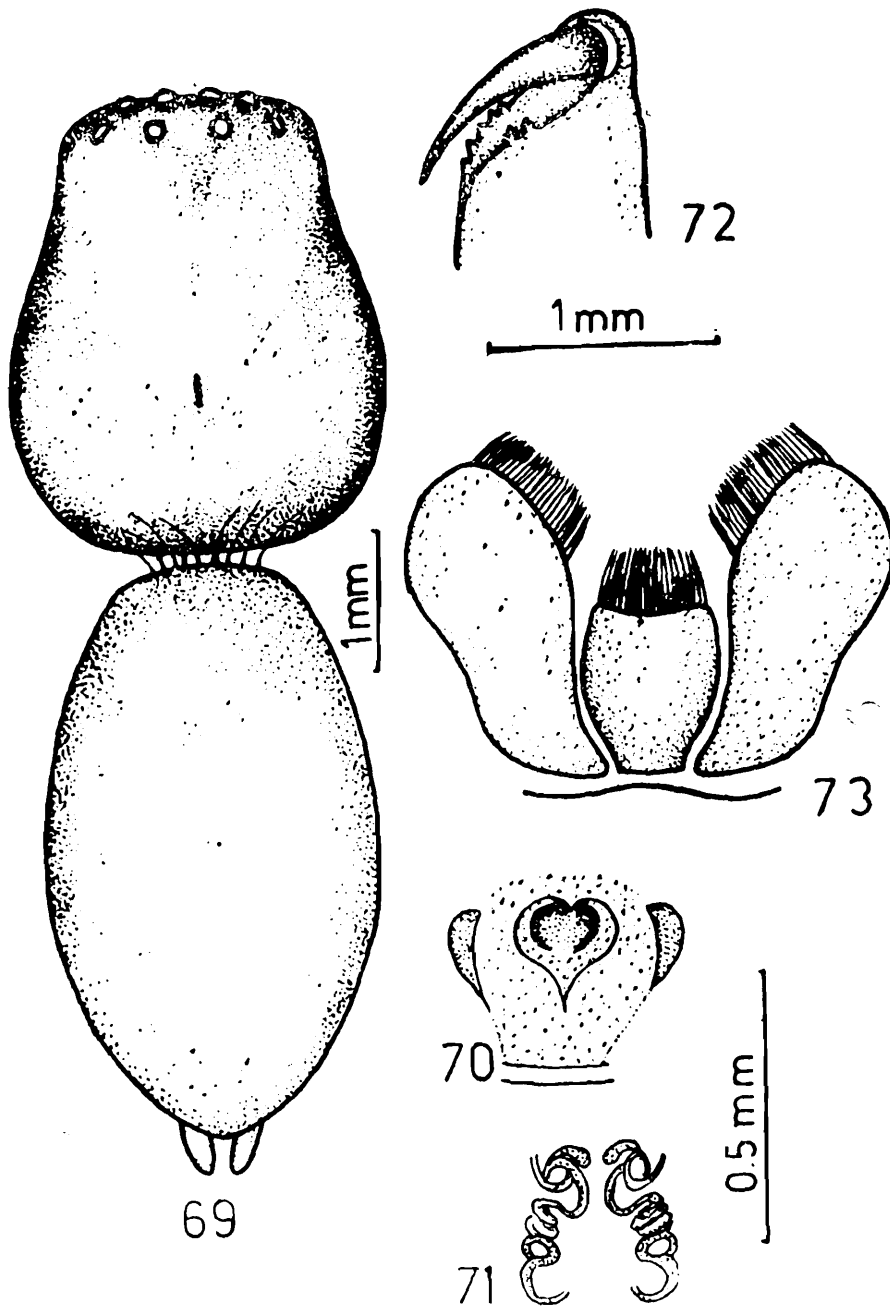
10. *Clubiona shillongensis* sp. nov.

(Figs. 69-73)

General ; Cephalothorax and legs redish brown, abdomen somewhat greyish brown in colour. Total length 7.5 mm. Carapace 3.2 mm long and 2.8 mm wide ; abdomen 4.3 mm long and 2.4 mm wide.

Cephalothorax : Longer than broad, narrow anteriorly and broad posteriorly clothed with fine hair and some spine like hair, cephalic region slightly high anteriorly, provided with prominent fovea at the middle of the cephalothorax, radiating striae originate from the fovea. Eyes in two rows anterior and posterior, pearly white in colour. Anterior row slightly recurved, more or less equal size, distributed in equal distance from each other ; posterior row longer than the anterior row, slightly procurved, medians slightly smaller than the laterals. Ocular quadrate wider than long narrower anteriorly. Chelicerae longer than

wide, redish brown in colour, inner margin provided with 2 teeth and the outer margin with 4 teeth (Fig. 72). Maxillae longer than wide, redish brown in colour, broader and scopulated anteriorly, constricted at the middle (Fig. 73). Labium redish brown, narrower posteriorly and broad anteriorly with 6 long spines. Sternum heart shaped, pointed



Figs. 69-73. 69. Dorsal view of female, legs omitted ; 70. Epigyne; 71. Internal genitalia ; 72. Chelicera showing arrangements of teeth ; 73. Maxillae and labium.

behind and provided with 4 pairs of deep brownish dots, situated just opposite the coxa. Legs long, strong and stout, covered with hair and spines. Legs formula 4 2 1 3. Tibia and metatarsi of I and II provided with 2 pairs of ventral spines on each. Tarsi scopulated and pro-

vided with 2 claws.

Abdomen : Elongated and spindle shaped, clothed with fine hair and number of long spine like hair. Ventral side more lighter than the dorsum. Epigyne elongated and convex plate with longitudinal structure, copulatory opening present anterolaterally of the vulva (Fig. 70). Spermathecae small, with long and coiled copulatory tube (Fig. 71).

Type locality : Holotype ; 1 ♀, 5148/18 Bishnupur, Shillong, India. 20. 7. 1959. Coll. B. K. Tikader. Paratypes ; 1 ♀, 2149/18 Darjeeling, West Bengal, India. 1. 4. 1974. Coll. P. K. Maity. 2 ♀♀, 5150/18. Coonoor Rly. Station, Madras, Tamil Nadu, India. 28. 2. 1965. Coll. J. K. Sen. 2 ♀♀, 5151/18 Bishnupur, Shillong, India. 29. 7. 1959. Coll. B. K. Tikader.

Distribution : India : Shillong (Bishnupur) ; Tamil Nadu (Madras) ; W. Bengal (Darjeeling).

Remarks : This species resemble to *Clubiona hysgina* Simon in general appearance but differs from that due to the following particulars :

- (i) The anterior median eyes of *C. shillongensis* larger than the laterals and close to each other where as in *C. hysgina* not larger than laterals, not close to each other.
- (ii) The outer margin of the chelicerae provided with 4 teeth, whereas 2 teeth in *C. hysgina*.
- (iii) Epigyne structurally different.

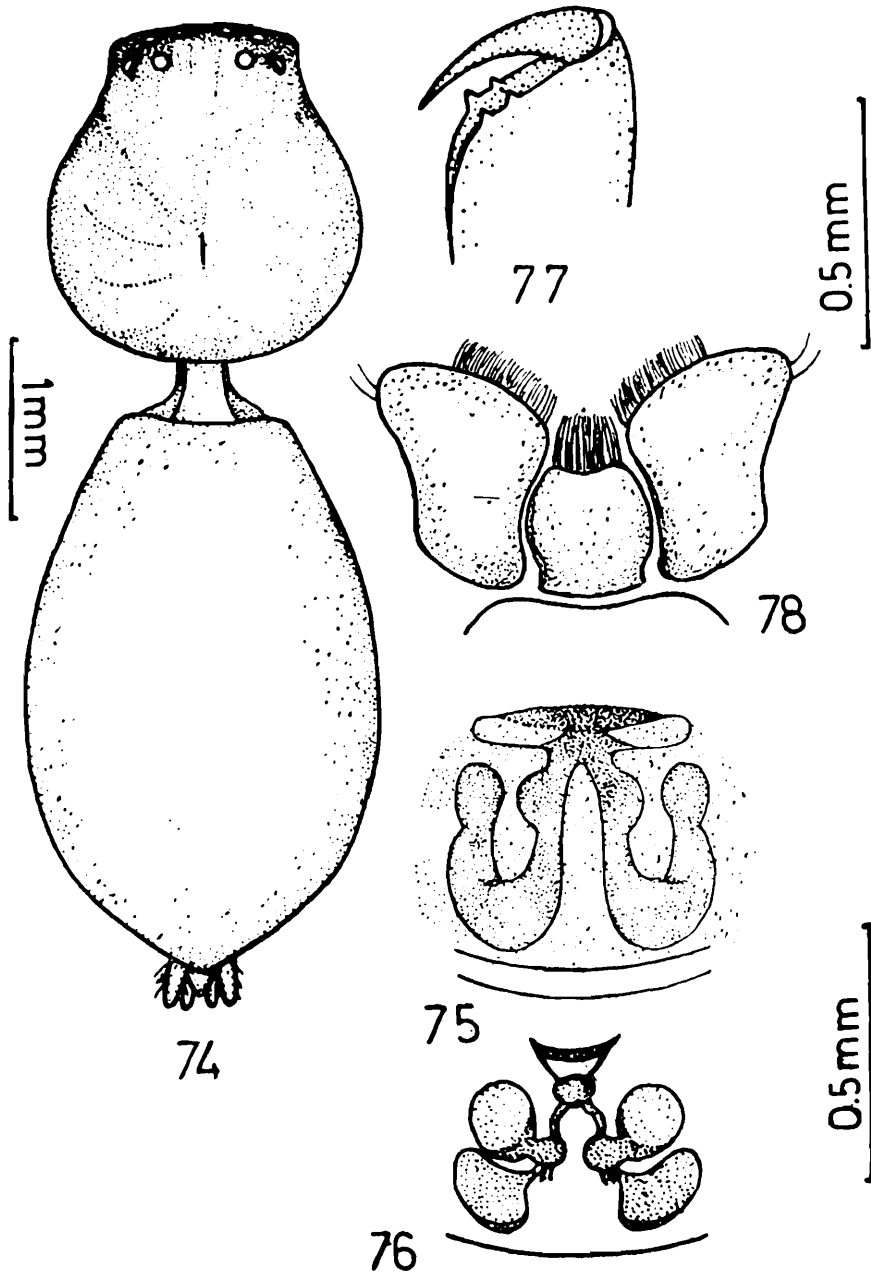
11. *Clubiona chakrabartei* sp. nov.

(Figs. 74-78)

General : Cephalothorax and legs yellowish brown, abdomen pale yellow in colour. Total length 5.5 mm. Carapace 2.0. mm. long and 1.8 mm. wide ; abdomen 3.50 mm. long and 2.00 mm. wide.

Cephalothorax : Longer than wide with narrower anterior end and broad posteriorly, covered with fine pubescence, fovea usually present at the middle of the cephalothorax. Clypeus narrow. Eyes in two rows anterior and posterior, more or less equal size. The anterior row slightly recurved silvery white in colour, distributed in equal distance from each other ; posterior row slightly procurved longer than the anterior row, medians rounded, slightly larger than the laterals and not in close to each other. Ocular quadrate wider than long, more wider

posteriorly. Chelicerae moderately strong, pale yellow, inner and outer margin provided with 2 teeth on each (Fig. 77). Maxillae longer than wide, redish brown in colour, with slight constriction at the middle (Fig. 78). Labium longer than wide, more or less parallel, scopulated anteriorly. Sternum heart shaped, pointed behind, clothed with fine hair. Legs relatively long and strong. Legs formula 4 2 3 1.



Figs. 74-78. 74. Dorsal view of female, legs omitted; 75. Epigyne; 76. Internal genitalia; 77. Chelicera showing arrangements of teeth; 78. Maxillae and labium.

Tibia and metatarsi of I and II provided with 2 and 1 pair of ventral spines. Tarsi I and II less scopulated than the tarsi III and IV.

Abdomen: Spindle shaped, longer than wide, covered with fine pubescence with no ornamentation on the dorsum. (Fig. 74). Epigyne

elongated and convex plate with oval copulatory opening (Fig. 75). Internal genitalia with long and convoluted spermatheca with short copulatory tube (Fig. 76).

Type locality : Holotype : 1 ♀ Reg. No. 5151/18 Dwali, U. P., India. 8. 6. 1984. Coll. S. Chakrabarty.

Distribution : Known from the type locality.

Remarks ; This species resemble with *C. atwali* Singh in general appearance but differs from that due to the following particulars.

1. Cephalothorax with prominent fovea and the anterior row of eyes silvery white in colour whereas in *C. atwali* cephalothorax with inconspicuous fovea and the anterior row of eyes blackish in colour.
2. Outer margin of the chelicerae with 2 teeth whereas in *C. atwali* with 3 teeth.
3. Epigyne structurally different,

* The species is named after Dr. S. Chakrabarty, Reader, Kalyani University, who collect it for my study.

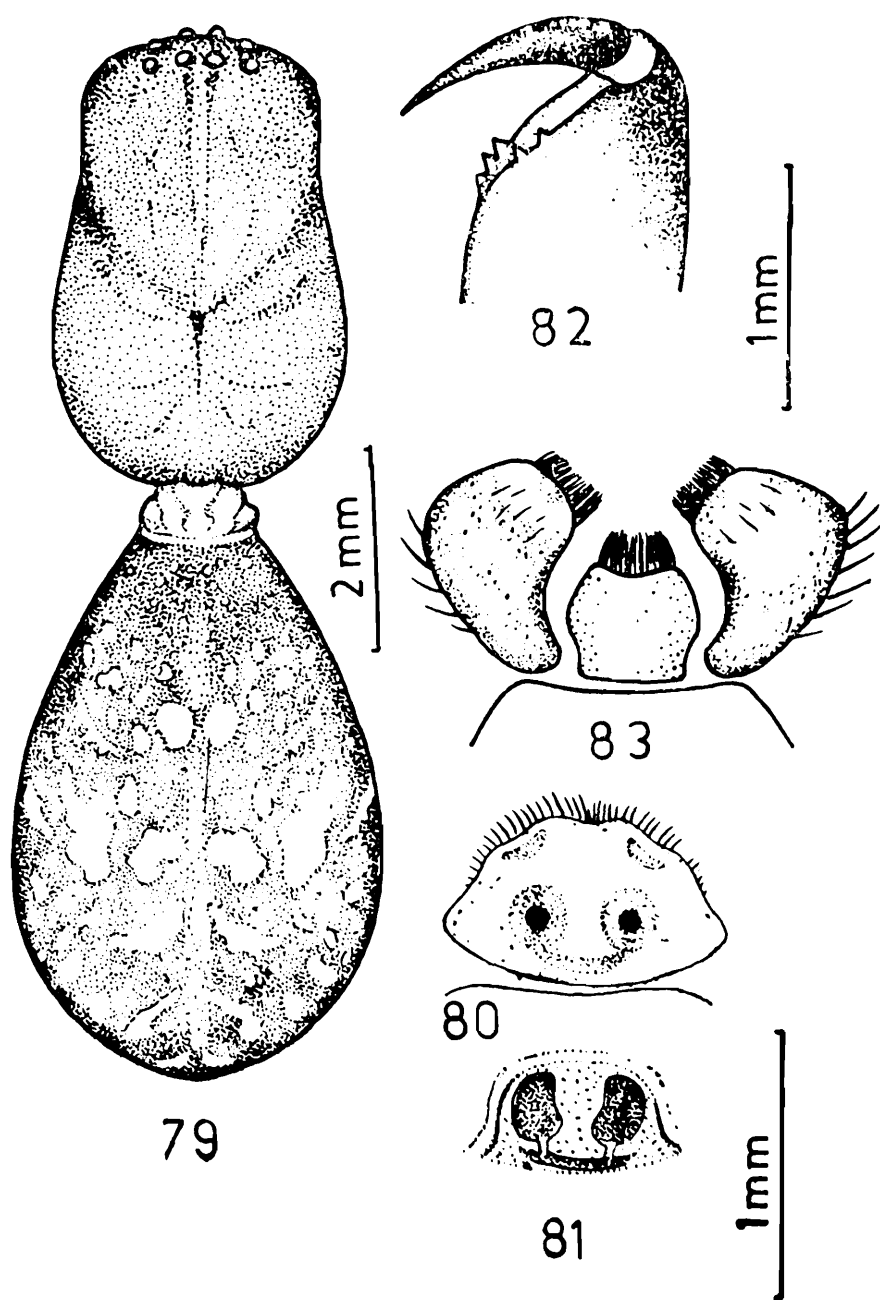
12. *Clubiona tikaderi* sp. nov.

(Figs. 79-83)

General : Cephalothorax reddish brown, legs partly blackish and partly yellowish ; abdomen decorated by multiple patches of yellowish and blackish colouration. Total length 10.50 mm. Cephalothorax 4.50 mm. long and 3.00 mm. wide ; abdomen 6.00 mm. long and 4.00 mm. wide.

Cephalothorax : Longer than wide, not narrow in front, covered with fine pubescence, provided with central fovea situated just below the median half of the cephalothorax, radiating striae may originate from the central fovea, cephalic region slightly high anteriorly. Eyes in two rows anterior and posterior. The anterior row of eyes slightly recurved, medians slightly smaller than the laterals and close to each other than the laterals. The posterior row of eyes longer than the anterior row, more or less straight, medians larger than the laterals and close to each other. Ocular quadrate wider than long. Clypeus narrow and slanting. Chelicerae strong and stout, wider than long, darker in colour, dorsally scopulated by number of black spine-like hair, inner margin provided with 2 teeth and the outer margin with 3 teeth (Fig.

82). Maxillae longer than wide, without constriction at the middle, concavity present at its inner surface, distal end broader, yellowish and scopulated, the posterior end narrower, darker in colour (Fig. 83). Labium longer than wide, anterior end paler and scopulated, posterior end darker in colour. Sternum oval, deep brown in colour, covered with fine pubescence. Legs long and slender, strong and stout, partly blackish and partly yellowish. Legs formula 4 1 2 3. Femora provided



Figs. 79-83. 79. Dorsal view of female, legs omitted; 80. Epigyne; 81. Internal genitalia; 82. Chelicera showing arrangements of teeth; 83. Maxillae and labium.

with a number of long black spines. The femore I and II slightly curved than the femora III and IV. Tibia and metatarsi of I and II provided with 3 ventral spines on each. Tarsi scopulated and provided with 2

claws and claw tuft.

Abdomen : Longer than wide with tapering anteriorly and broader posteriorly, clothed with long spine like hair, dorsum decorated by multiple patches of dark and yellowish colouration (Fig. 79). Ventral side more lighter than the dorsum. Epigyne with rounded plate, hairy at its anterior end with conspicuous rounded copulatory opening on either lateral side of epigynal plate (Fig. 80), internal genitalia with small and club shaped spermatheca connected with each other by short copulatory tube (Fig. 81).

Type locality : Holotype : 1 ♀, Reg. No. 5153/18. Mukundnagar, Poona, Maharashtra, India. 13. 9. 1977. Coll. B. K. Tikader.

Distribution : Known from the type locality.

Remarks : This species resembles to *C. pogonias* Simon in general appearance but differs from that due to the following particulars.

1. Legs partly black and partly yellow where as in *C. pogonias* leg uniform in colour.
2. The dorsum of *C. tikaderi* decorated by multiple patches of dark and yellowish colouration whereas in *C. pogonias* such decoration absent.
3. Epigyne structurally different.

* It is with much pleasure that the species is named after Dr. B. K. Tikader, renowned Arachnologist and the Director, Zoological Survey of India.

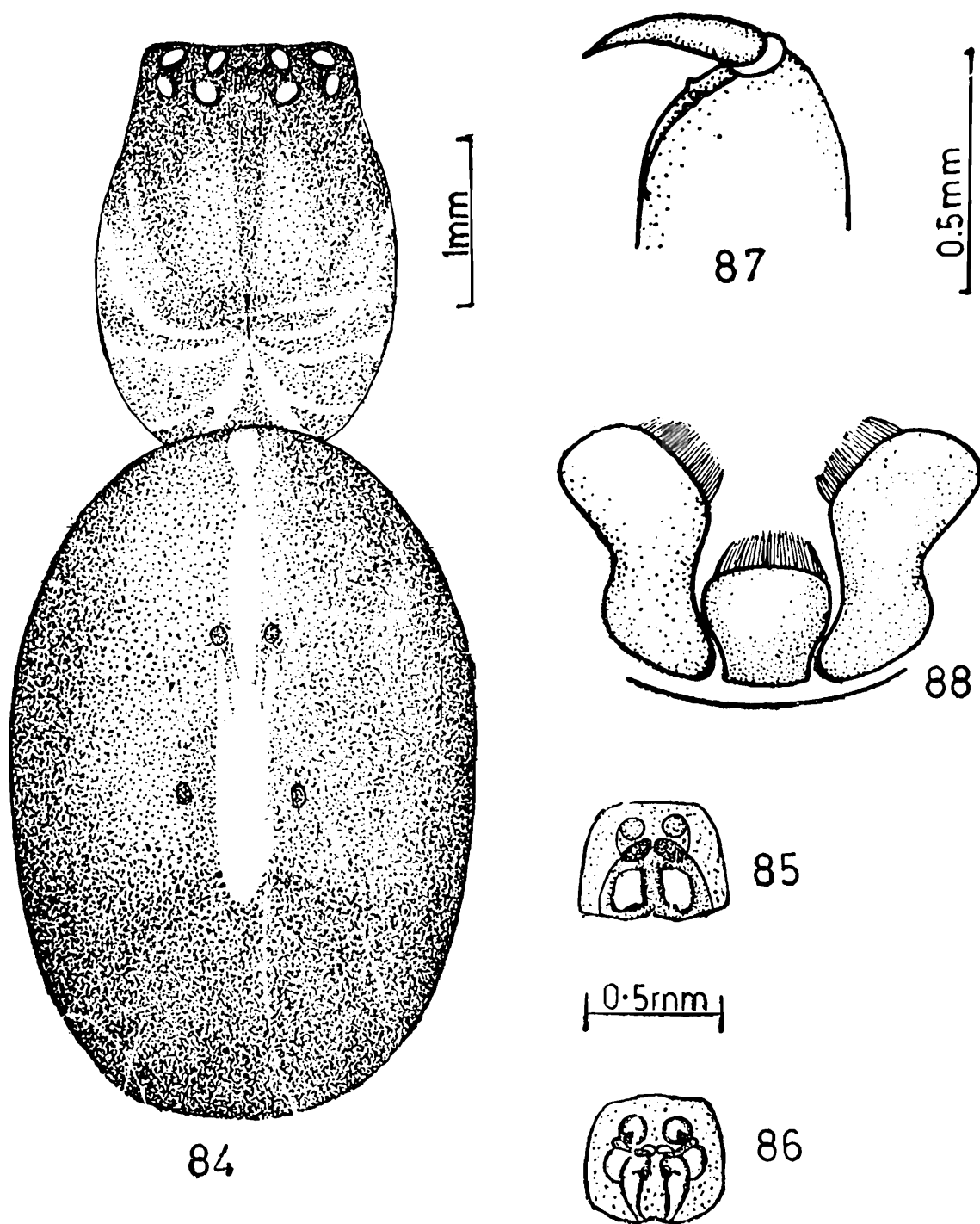
13. *Clubiona bengalensis* Biswas (Figs. 84-88)

1984. *Clubiona bengalensis* Biswas, *Bull. zool. Surv. India*. 6 (1-3) : 119.

General : Cephalothorax and abdomen greyish to cream colour, legs light brown. Total length 6.70 mm. Carapace 2.50 mm. long and 1.80 mm. wide ; abdomen 4.20 mm. long and 2.80 mm. wide.

Cephalothorax : Longer than wide, wider in front, clothed with fine hair and spine-like hair, convex cephalic region slightly higher than posterior region, prominent fovea present at the middle of the cephalothorax. Eyes pearly white, nearly of uniform size. Anterior row nearly straight and the posterior row slightly longer than the anterior row, slightly procurved. Ocular quadrate wider than long and wider in behind. Chelicerae strong, vertical and dark brown in colour, inner margin provided with 2 teeth and the outer margin with one tooth (Fig.

87). Maxillae and labium deep brown in colour longer than wide, anterior margin scopulated (Fig. 88). Sternum nearly heart-shaped, longer than wide, clothed with fine hair. Legs strong, stout clothed with hair and spines. Posterior legs longer than the anterior legs. Legs formula 4321. Tibia I and II provided with 2 pairs of ventral spines on each and metatarsi and tarsi provided with ventral scopulae.



Figs. 84-88 84. Dorsal view of female, legs omitted ; 85. Epigyne ; 86. Internal genitalia ; 87. Chelicera showing arrangements of teeth ; 88. Maxillae and labium.

Abdomen : Longer than wide, oval in shape, clothed with fine

pubescence. Two pairs of Sigilla present on the dorsum. Ventral side uniformly pale colour. Epigyne with rectangular plate, conspicuous rounded copulatory opening present on either lateral side of the epigynal plate (Fig. 85), internal genitalia with long and convulated spermatheca, copulatory tube short (Fig. 86).

Type locality : Holotype : female, Agri-Horticultural Society of India Garden, 1, Alipore Road, Calcutta, India, 15. 9. 1981. Coll. Bijan Biswas. Reg. No. 5113/18, ZSI.

Paratypes : Five females, from paddy field, Assam, India. August 1983. Coll. N. Krishnaswamy.

Distribution : India : West Bengal (Calcutta Zoo Garden) ; Assam.

Remarks : The holotype and 5 paratype females were critically examined and the present description and illustration mainly based on the holotype material deposited at Z. S. I., Calcutta.

14. *Clubiona pogonias* Simon (Figs. 89-92)

1906. *Clubiona pogonias* Simon, *Ann. Soc. Ent. Fr.*, 975 : 312.

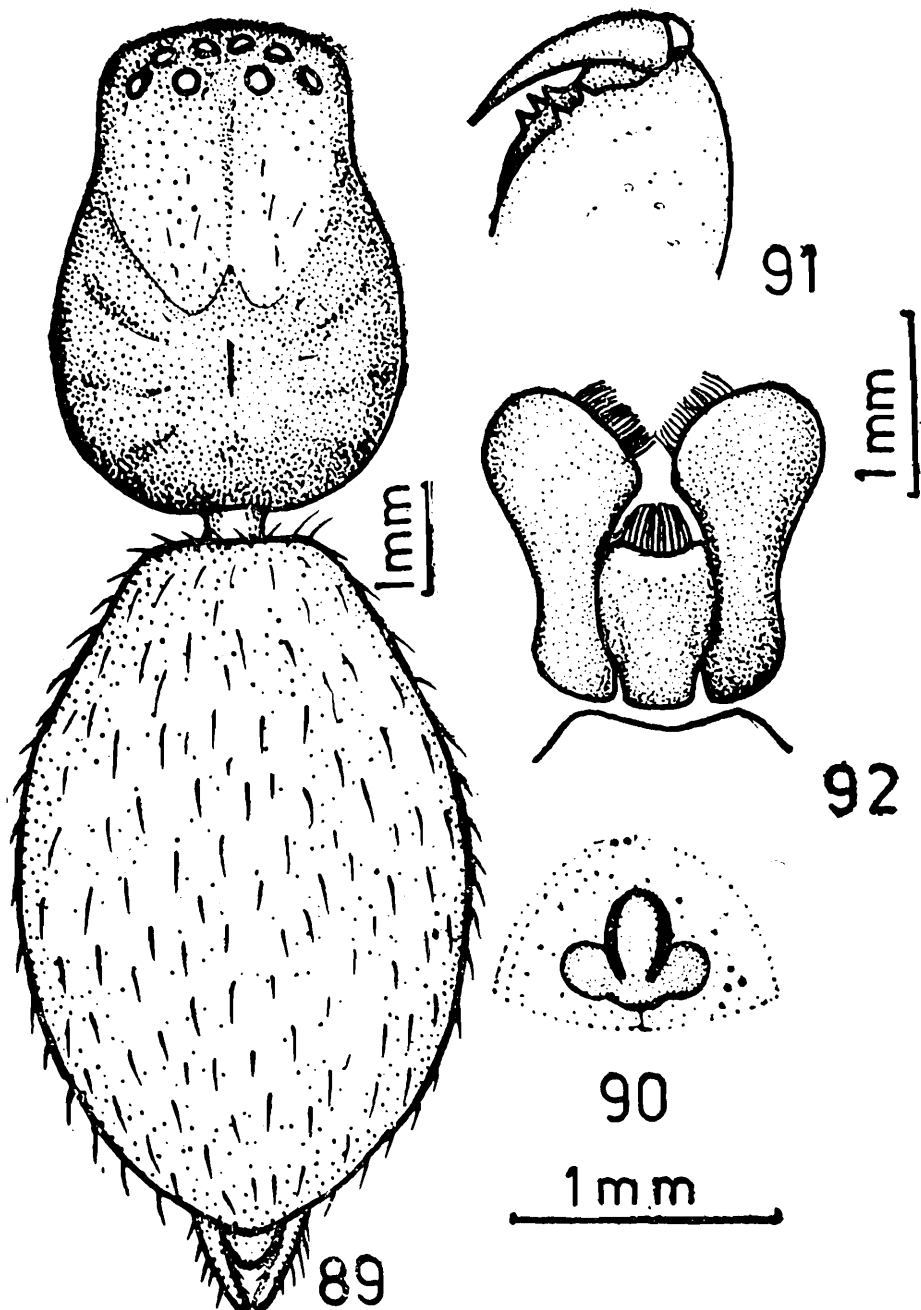
Specimen examined : 3 ♀ ♀, Darjeeling, E. Himalaya, West Bengal, India. Reg. No. 23617 Paris.

General : Cephalothorax and legs deep brownish red, abdomen redish brown in colour. Total length 11.00 mm. Carapace 4.50 mm. long and 3.4 mm. wide ; abdomen 6.50 mm. long and 4.00 mm. wide.

Cephalothorax : Longer than wide, narrow anteriorly and broad at the middle, covered with long semi erect curved setae distributed equally over the carapace, cephalic region slightly high anteriorly, fovea present below the median half of the carapace. Eyes pearly white in colour more or less same size, distributed in equal distance from each other. The anterior row slightly recurved, posterior row longer than the anterior row, more or less straight or slightly procurved. Ocular quadrate wider than long, narrow anteriorly and wider posteriorly. Chelicerae strong and stout, longer than wide, deep brownish in colour, inner margin provided with 2 teeth and the outer margin with 3 teeth (Fig. 91). Maxillae redish brown in colour, twice longer than wide, constricted at the middle, broader and scopulated distally (Fig. 92). Labium longer than wide, covered with fine pubescence, anteriorly narrower and scopulated by tuft of long hair. Sternum longer than wide,

with pointed posterior end, covered with hair and spines. Legs formula 4 2 3 1. Femora provided with 6 dorsal spines. Femora I, II and III curved ventrally and IV slightly curved dorsally. Tibia and metatarsi of I and II provided with 3 and 1 pair of ventral spine. Tarsi long and scopulated, provided with 2 claws.

Abdomen : Spindle shaped, longer than wide, tapering both anterior and posterior, covered with semi erect curved setae more anteriorly than posterior. Ventral side uniformly light coloured. Epi-



Figs. 89-92. 89. Dorsal view of female, legs omitted ; 90. Epigyne ; 91, Chelicera showing arrangements of teeth ; 92. Maxillae and labium.

gyne as elongated plate with conspicuous copulatory opening on either lateral side of the plate (Fig. 90).

Type locality : Types : Darjeeling, E. Himalaya, West Bengal, India. Deposited at M. N. H. N., Paris, Reg. No. 23617 Paris.

Distribution : Known from the type locality.

Remarks : 3 female type of the series were critically examined, the present description and illustration were based upon that. However, permission to dissect out the genitalia could not be procured and in view of this, the detailed description of the internal genitalia not possible to include here.

15. *Clubiona nilgherina* Simon (Figs. 93-97)

1906. *Clubiona nilgherina* Simon, *Ann. Soc. ent. France*, 75 : 298.

Specimen examined : 4 ♀ ♀, 5 ♂ ♂, Coonoor, Nilgiri, S. India. Reg. No. 11837. M.N.H.N., Paris.

General : Cephalothorax legs and abdomen pale yellow in colour. Total length 5.80 mm. Carapace 2.50 mm. long and 2.00 mm. wide, abdomen 3.30 mm. long and 1.90 mm. wide.

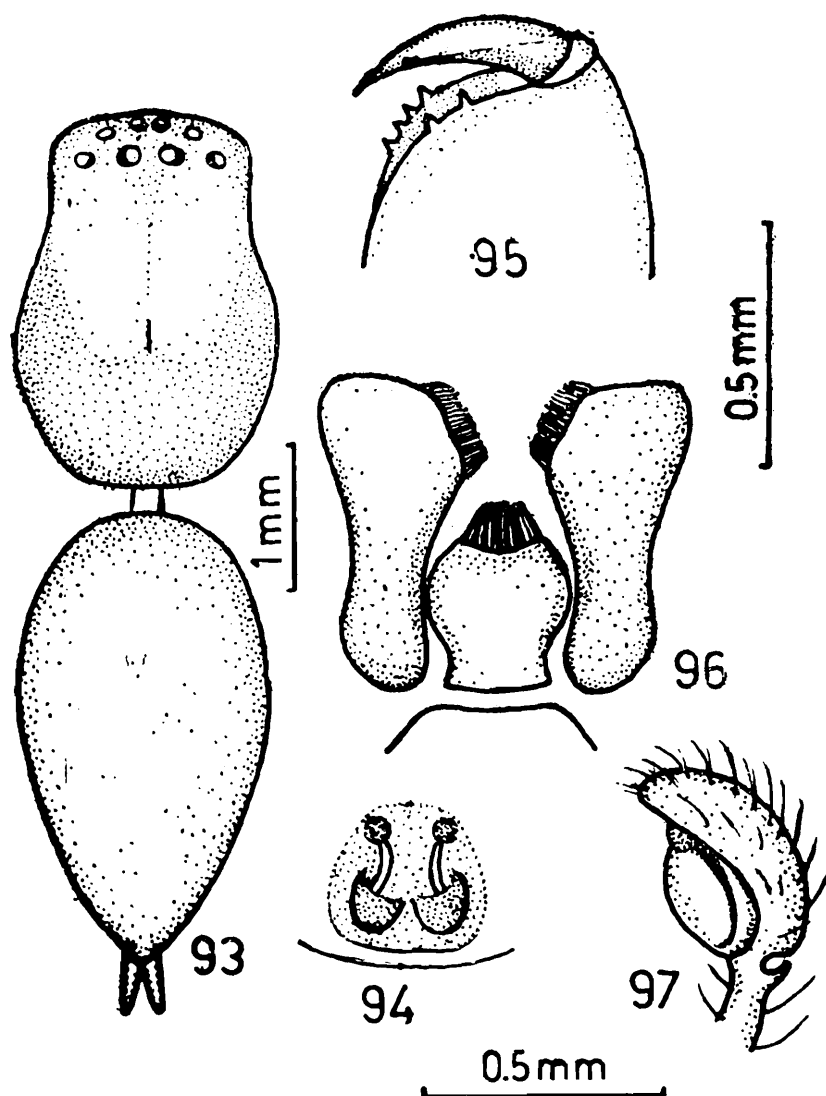
Cephalothorax : Longer than wide, covered by short pubescence, fovea present at the middle. Eyes almost equal size, arranged in two rows anterior and posterior. The anterior row slightly recurved, medians blackish, obviously smaller than laterals and close to each other; posterior row longer than the anterior row, medians larger than laterals and not in close to each other. Ocular quadrate wider than long. Chelicerae longer than wide, inner and outer margin provided with 2 and 3 teeth (Fig. 95). Maxillae and labium longer than wide (Fig. 96). Maxillae constricted slightly at the middle, labium narrower and scopulated anteriorly. Sternum pale yellow in colour, oval in shape, Legs strong and stout, legs formula 4 2 3 1. Tibia slightly longer, tibia and metatarsi of I and II provided with 2 and 1 pair of ventral spine. Tibia of the male palp provided with short broad retrolateral apophysis. Genital bulb small and black provided with short embolus and convex tegulum (Fig. 97).

Abdomen : Oval in shape, longer than wide, covered by fine pubescence. Epigyne as oval plate, with conspicuous copulatory opening situated laterally (Fig. 94).

Type locality : Types : Coonoor, Nilgiri, Tamil Nadu, India, deposited at Paris Museum. Reg. No. 11837.

Distribution : Known only from type locality.

Remarks ; Four female and five male type specimens were critically examined. The present description and illustration based upon that.



Figs. 93-97 93. Dorsal view of female, legs omitted ; 94. Epigyne ; 95. Chelicera showing arrangements of teeth ; 96. Maxillae and labium ; 97. Male palp.

The description of internal genitalia not included here, since the permission to dissect out of genitalia could not be procured.

16. *Clubiona acanthocnemis* Simon (Figs. 98-102)

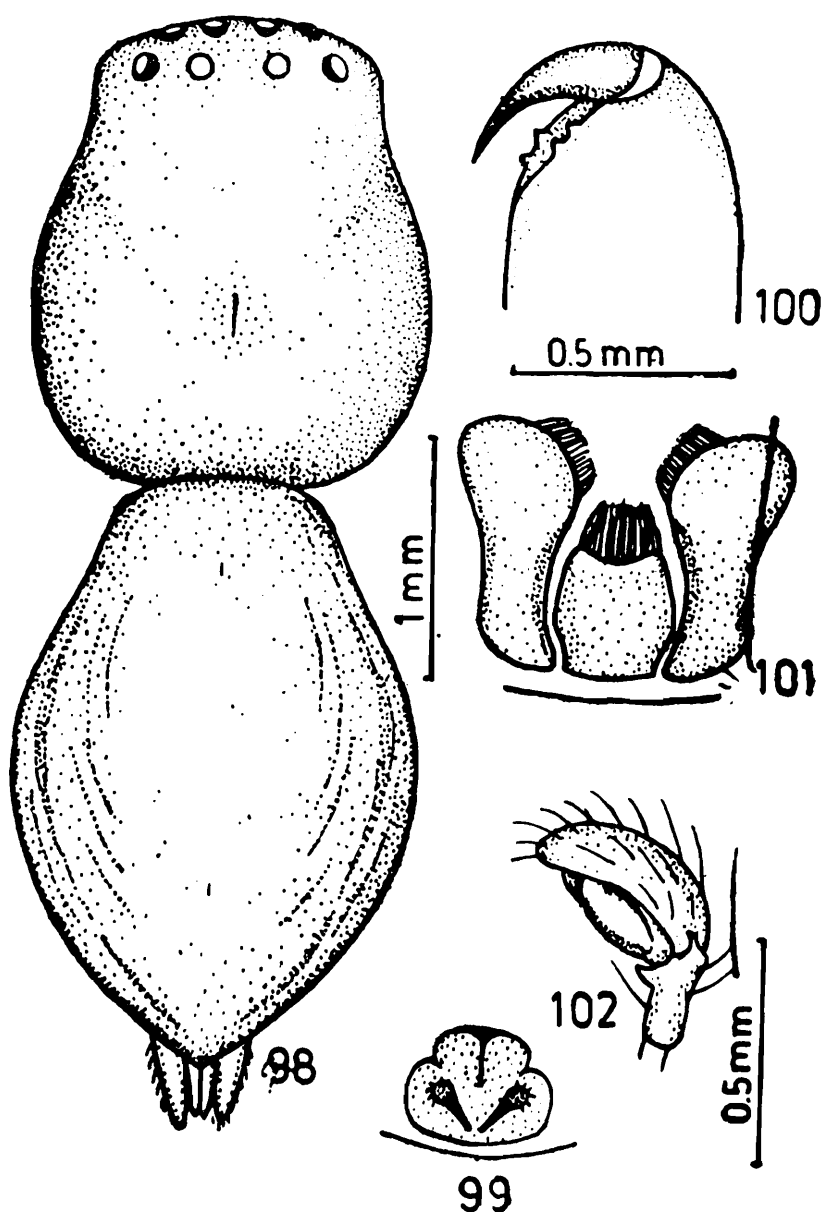
1906. *Clubiona acanthocnemis* Simon, *Ann. Soc. ent. France*, 75 : 298.

Specimen examined : 3 ♀♀, 1 ♂, Coonoor, Nilgiri, South India, Reg. No. 17350, Paris.

General : Cephalothorax and legs redish brown, abdomen yello-

wish in colour. Total length 3.4 mm. Carapace 2.1 mm. long and 1.8 mm. wide ; abdomen 2.3 mm. long and 1.8 mm. wide.

Cephalothorax : Longer than wide, slightly broader anteriorly with fovea at the middle of the carapace, covered with fine pubescence. Eyes in two rows, anterior and posterior. The anterior row slightly procurved, almost in equal distance, medians slightly smaller than laterals and close to each other ; posterior row usually longer than the anterior row, more or less straight, medians slightly closer to each other than the laterals. Ocular quadrate wider than long, wider posteriorly. Chelicerae robust and convex, inner and outer margin provided with 2



Figs. 98-102 88. Dorsal view of female, legs omitted ; 99. Epigyne ; 100. Chelicera showing arrangements of teeth ; 101. Maxillae and labium ; 102. Male palp.

teeth on each (Fig. 100). Maxillae and labium longer than wide, reddish brown in colour (Fig. 101). Sternum pale yellow, oval in shape. Legs not longer enough, Tibia and patella usually short almost in equal

length. Legs formula 4 3 2 1. Tibia and metatarsi of I and II provided with 1 and 2 pair of ventral spines. Tibia of the male palps provided with short broad and blackish apophysis, tegulum broad and convex, embolus short (Fig. 102r).

Abdomen: Oval in shape, longer than wide, covered by long spine like hair. Epigyne with rounded plate, conspicuous copulatory opening present (Fig. 99).

Type locality: Types: Coonoor, Nilgiri, Tamil Nadu, India, Deposited at Paris Museum. Reg. No. 17350.

Distribution: Known only from type locality.

Remarks: The present description and illustration are based on examining the type material deposited at Paris Museum. The permission to dissect out the genitalia could not be procured, hence the description of internal genitalia not possible to included here.

17 *Clubiona crouxi* Caporiacco

1935. *Clubiona crouxi* Caporiacco, *Mem. Soc. ent. ital.*, 13 : 218.

General: Cephalothorax dark not black, abdomen yellowish in colour. Female specimen: Total length 4.55 mm. Cephalothorax 1.75 mm. long; abdomen 3.00 mm. long. Male specimen: Total length 4.00 mm. Cephalothorax 1.75 mm. long; abdomen 2.75 mm. long.

Cephalothorax: Longer than wide, clothed with pubescence. Eyes in two rows, the anterior row slightly recurved more or less equal size, the medians separated from each other as twice in diameter. The posterior row slightly recurved, medians slightly closer to the laterals. Legs long, femora provided with 2-3 long spines, patella with single spine. The tibia I and II provided with 2 ventral spines on each. The tibia of the male palp provided with short curved apophysis.

Abdomen: Longer than wide, epigyne oblonged, provided with a depression at the middle of the epigynal margin which is quite black. Male smaller than the female.

Type locality: Tpdcs: Yarkand, N. W. Himalayas, India.

Distribution: Known from the type locality.

Remarks: As the type was not procured, therefore, the description given here based upon the original Latin literature of Caporiacco (1935) after translating it into English.

The following two species which are also known from India under this genus are mentioned here giving the original reference and distribu-

tional data, since neither the relevant literature nor the types could be procured.

18. *Clubiona laticeps* Cambridge

1885. *Clubiona laticeps* Cambridge, *Res. Soc. Yarkand Miss. Aran.*, : 22

Type locality : Yarkand, N. W. Himalayas, India.

Distribution : Known from the type locality.

19. *Clubiona delictrix* Cambridge

1885. *Clubiona delictrix* Cambridge, *Res. Soc. Yarkand. Miss. Aran.*, : 21

Type locality : Yarkand, N. W. Himalayas, India.

Distribution : Known from the type locality.

Cheiracanthium Koch, C. L.

1839. *Cheiracanthium* Koch, C. L., *Die. Arach. Sechster Band*, : 9.

1864. *Cheiracanthium* ; Koch, L., *Abb. nat. Ges. Nurnberg*, ; 144.

1892. *Cheiracanthium* : Causard, C. R. *Acad. Sci.*, 144 : 1035.

1910. *Cheiracanthium* : Lessert, *Mus. d'hist. nat. d'Genova*, ; 413.

1931. *Cheirncanthium* : Gravely, *Rec. Indian Mus.*, 33 (3) : 263.

1937. *Cheirceanthium* : Chickering, *Trans. Amer. micr. Soc.*, 56: 2.

1951. *Cheiracanthium* : Locket & Millidge, *British Spider*, : 143.

1964. *Cheiracanthium* : Locket, *Ann. Mag. nat. Hist.*, (13) 7 : 259.

1966. *Cheiracanthium* : Dondale, *Aust. J. Zool.*, 14 : 1176.

1967. *Cheiracanthium* : Chrysanthus, *Nova Guinea Zool.*, 37 : 403.

1981. *Cheiracanthium* : Tikader & Biswas, *Rec. zool. Surv. India*, occ, pap. No. 30 (1) : 69.

Diagnosis : Cephalothorax ovoid in shape, longer than wide, convex anteriorly, with no median fovea if present very inconspicuous. Eyes nearly uniform size, arranged in two transverse series—anterior and posterior. The anterior row slightly recurved, posterior row scarcely longer than the anterior row, straight and uniformly spaced, the laterals further remote from the medians, both the laterals anterior and posterior

close to each other. Ocular quadrate relatively narrower anteriorly. Chelicerae longer than wide, moderately strong and stout, dark brown in colour, outer margin provided with 2 teeth and the inner with 2 or 3 teeth. Maxillae longer than wide, constricted at the middle. Labium longer than wide. Legs long and slender, moderately stout, the 1st leg longer than the 4th leg. Trachanter IV with distinct ventral notch. Tibia of the male palpus with retrolateral apophysis, sometimes with dorsal and ventral apophysis; cymbium with strong spur at its base, tegulum with strong apophysis, embolus long arising on retrolateral side of the tegulum. Abdomen elongated, oval and pointed posteriorly, dull yellow or pale green without pattern of scutum without cluster of long erect setae at the anterior end. Epigyne with flat or concave plate, with copulatory opening situated at the lateral margin of the plate. Spermatheca small, nearly rounded, well separated.

This genus resembles with *Clubiona* Latreille in general appearance but differs from the later due to closer of the lateral eyes both anterior and posterior, cymbium with long spur whereas in *Clubiona* Lat. lateral eyes not closer and the cymbium without spur.

The spiders of this genus are swift nocturnal hunters. They are found on plant foliage or on buildings.

Type species : *Cheiracanthium punctorium* Villers, 1757.

Distribution : All tropical parts of the world.

Key to the species of the genus *Cheiracanthium* Koch, C. L. from India*

- | | | |
|---|-----|--------------------|
| 1. Genital bulb or male palpus broad anteriorly, membrane of the palpal organ well developed. | ... | <i>trivialis</i> |
| Genital bulb or male palpus usually narrower anteriorly, membrane of the palpal organ well developed. | ... | 2 |
| 2. Cymbium with long stout spur at its base, extending almost at the middle of the tibia. | ... | <i>indicum</i> |
| Cymbium with rudimentary spur, not extending to the middle of the tibia. | ... | 3 |
| 3. Tegular apophysis of the palpal organ enormously developed. | ... | <i>insigne</i> |
| Tegular apophysis of the palpal organ not enormously developed. | ... | 4 |
| 4. Tibia of the male palpus with short retrolateral apophysis, slightly sinuous at its tip. | ... | <i>melanostoma</i> |
| Tibia of the male palpus with long and slender retrolateral apophysis, more sinuous at its tip. | ... | 5 |

5. Vulva with a large cavity without dark spot, copulatory opening situated on either side of the cavity. ... *himalayensis*
 Vulva without a large cavity with dark spot, copulatory opening situated between the dark spot. ... 6
6. Cephalothorax broader posteriorly, narrower anteriorly. ... *kashmirensis*
 Cephalothorax narrower posteriorly and broader anteriorly ... 7
7. Sternum oval in shape, light brown in colour. ... *denieli*
 Sternum heart shaped, deep brown in colour. ... 8
8. Prominent fovea present at the middle of the cephalothorax. ... *saraswati*
 No fovea present at the middle of the cephalothorax. ... 9
9. Lateral eyes both anterior and posterior slightly separated from each other. ... *murina*
 Lateral eyes both anterior and posterior very close to each other. ... 10
10. Posterior row of eyes slightly procurved, medians slightly larger than the laterals. ... *trivittatum*
 Posterior row of eyes slightly recurved, medians slightly smaller than laterals. ... 11
11. Chelicerae more or less parallel, inner and outer margin provided with 4 and 3 teeth. ... *pauriensis*
 Chelicerae narrower anteriorly, inner and outer margin provided with two teeth on each. ... 12
12. Tarsi comparatively longer and less scopulated. ... *sikkimensis*
 Tarsi comparatively shorter and more scopulated, ... 13
13. Maxillary lobe angulated distally at its inward side, scopulated by tuft of long hair. ... *mysorensis*
 Maxillary lobe not angulated distally at its inward side and not scopulated. ... 14
14. Dorsum provided with 2 pairs of sigilla, clothed with long black spine like hair, ... *confexum*
 Dorsum not provided with Sigilla, clothed with short whitish pubescence. ... 15
15. Labium usually short, broader anteriorly, not extends beyond the middle of the maxillae. ... *inornatum*
 Labium usually long, narrower anteriorly, extends beyond the middle of the maxillae. ... 16
16. Legs usually short, coxa rovided with 2-3 longitudinal indistinct blackish lines. ... *poonaensis*
 Legs enormously longer, coxa not provided with 2-3 longitudinal indistinct blackish lines. ... 17
17. Eyes more or less in equal size, ocular quadrate almost squire. ... *jabalpurensis*
 Eyes not in equal size, ocular quadrate not almost squire. ... 18
18. Maxillae redish in colour, broader and concave distally. ... *vorax*
 Maxillae deep brownish in colour, rounded and convex distally. ... 19
19. Eyes of the anterior row shorter than the posterior row, slightly recurved, medians smaller than laterals. ... *sadanai*
 Eyes of the anterior row not shorter than the posterior row, slightly procurved, medians larger than the laterals. ... 20

20. Eyes of the posterior medians close to each other than the laterals. ... *nalsaroverensis*
 Eyes of the posterior medians not close to each other than the laterals. ... 2I
21. Abdomen elongated, olivaceous green in colour. ... *conspersum*
 Abdomen oval, pale yellow in colour. ... *incompta*
- * Due to nonavailability of original literature and the types, the species, viz.; *Cheiracanthium approximatum* Cambridge and *Cheiracanthium adjacens* Cambridge could not be included in the key.

20. *Cheiracanthium trivialis* (Thorell) (Figs. 103-108)

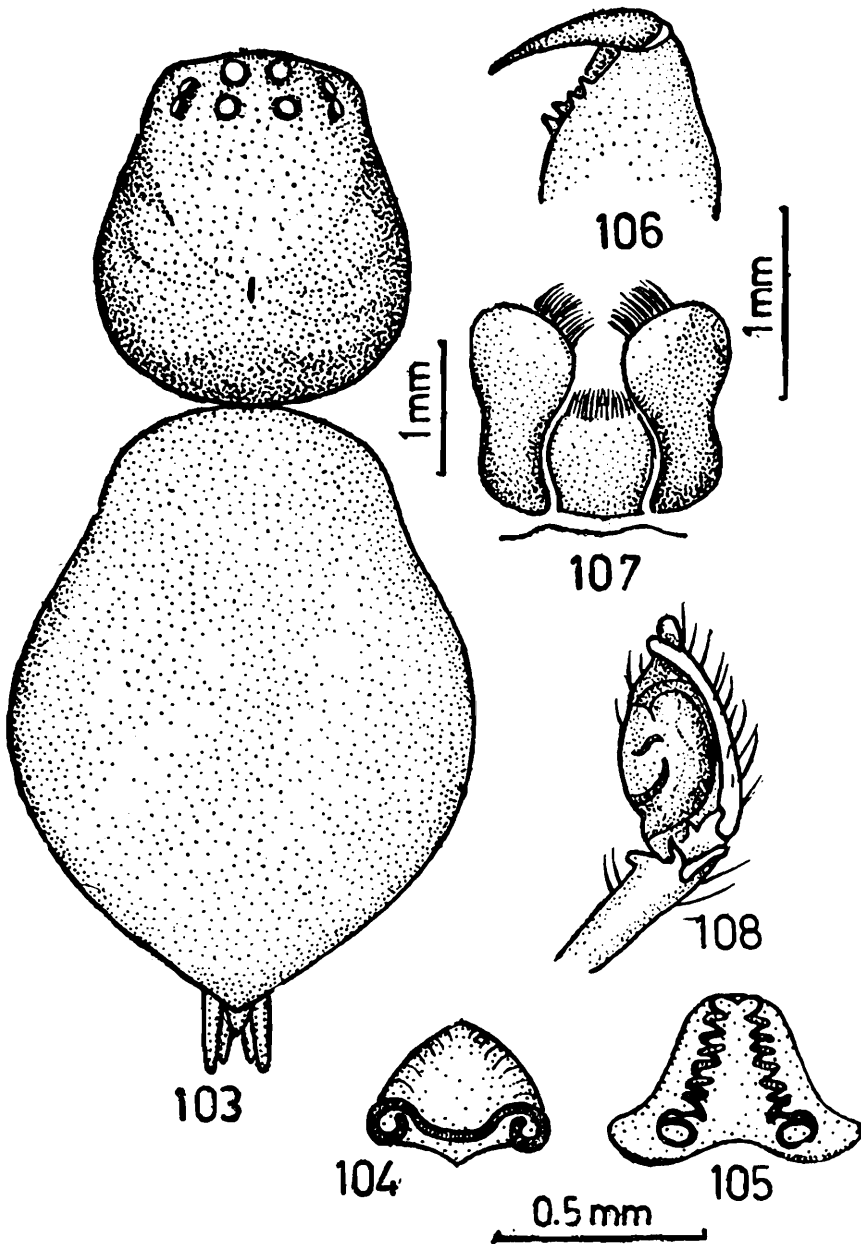
1895. *Eutitha trivialis* Thorell, *Spider of Burma*, : 40.
 1931. *Chirncanthium trivialis* : Gravely, *Rec, Indian Mus.*, 33 (3) : 265.
 1981. *Cheiracanthium trivialis* : Tikader & Biswas, *Rec. zool. Surv. India*, occ. pap. No. 30 (I) : 71.

Specimen examined : 1 ♀, B. Garden, Howrah, West Bengal.
 2.4.1982. Coll. S. C. Majumder. 2 ♀ ♀, B. Garden, West Bengal. 1.2.1982. Coll. S. C. Majumder. 1 ♀, Zoo Garden, Alipore, Calcutta. 7.5.1982. Coll. B. K. Biswas. 1 ♀, Dum Dum, Calcutta, West Bengal. 31.8.1969. Coll. D. Sinha. 1 ♀, Miki, Banjan Valley, Dist. Balaghat (M.P.). 26.8.1969. Coll. B. Biswas. 1 ♀, Kalyani, Dist. Nadia, W. Bengal, 17.9.1969. Coll. D. Sinha. 1 ♀, Kalimpong, Darjeeling, West Bengal. 31.11.1973. Coll. P. K. Maity. 1 ♀, Barkot, Dist. Uthar (U.P.). 12.11.1973. Coll. A. Singh. 1 ♀, Moorduva Village, Poona, Maharashtra. 4.1.1963. Coll. B. K. Halder. 1 ♀, Kolva Beach, Goa. 12.11.1967. Coll. K. S. Pradhan. 1 ♀, Sangvem Forest, Goa. 17.11.1967. Coll. K. S. Pradhan. 1 ♀, Smalia, Birbhum, Dist. West Bengal. 1914. Coll. Southerland. 1 ♀, Thilla, 24 Parganas, West Bengal. 6.9.1983. Coll. A. K. Hazra. 2 ♀ ♀, Kalimpong, Darjeeling, West Bengal. 1931. Coll. Southerland. 1 ♂, Kalimpong, Darjeeling, West Bengal. 1931. Coll. Southerland. Reg. No. 1738/18. 1 ♀, Habra, 24-Parganas, W. Bengal. 9.5.1959. Coll. B. K. Tikader. Reg. No. 4418/18.

General : Cephalothorax, legs and abdomen light brown in colour. Total length 7.10 mm. Carapace 2.60 mm. long and 2.00 mm. wide ; abdomen 4.50 mm. long and 3.50 mm. wide.

Cephalothorax : Longer than wide. Clothed with fine hair, cephalic region slightly high, fovea usually present posterior of the carapace. Eyes silvery white except anterior medians which are pearly white. The anterior row of eyes slightly recurved, medians slightly larger than

laterals and close to each other. Posterior row longer than anterior row, nearly straight, medians larger than the laterals and not in wider distance from each other, laterals very close to each other. Ocular quadrate longer than wide, slightly narrower anteriorly. Chelicerae



Figs. 103-108. 103. Dorsal view of female, legs omitted ; 104. Epigyne ; 105. Internal genitalia ; 106. Chelicera showing arrangements of teeth ; 107. Maxillae and labium ; 108. Male palp.

longer than wide, strong and stout, inner and outer margin provided with 2 teeth on each (Fig. 106). Maxillae and labium longer than wide with light yellow in colour narrower posteriorly, wider and scopulated anteriorly (Fig 107). Sternum light yellow in colour, heart shaped, clothed with fine hair. Legs long and slender covered with hair and spine. Legs formula 1 4 2 3. Tibia and metatarsi of I and II provided with 1 and 2 pairs. Tarsi relatively long. Tibia of the male palp with

blunt apophysis, tegular apophysis well developed, cymbium without spur (Fig. 108).

Abdomen : Oval longer than wide tapering in both ends, dorsum provided with large number of chalk white dots, ventral side lighter than dorsum. Epigyne as flat and convex plate with prominent rounded copulatory opening on either posterolateral side of the plate (Fig. 104). Internal genitalia with small and rounded spermatheca, copulatory tube long and coiled (Fig. 105).

Type locality : Types : Tharrwaddy, Burma.

Distribution : India : Tamil Nadu (Madras) ; M. P. (Balaghat) ; Maharashtra (Poona) ; West Bengal (Howrah, Nadia, 24-Parganas) ; Goa ; Burma.

Remarks : The present description and illustration are based upon authenticated identified male and female specimens present in the National Collection of Z.S.I. Reg. No. 1738/18. In addition to this 14 female specimens of this species were collected and identified.

21. *Cheiracanthium indicum* Cambridge (Figs. 109-112)

1874. *Ghiracanthium indlcum* Cambridge, *Proc. zool. Soc., London*, : 411.

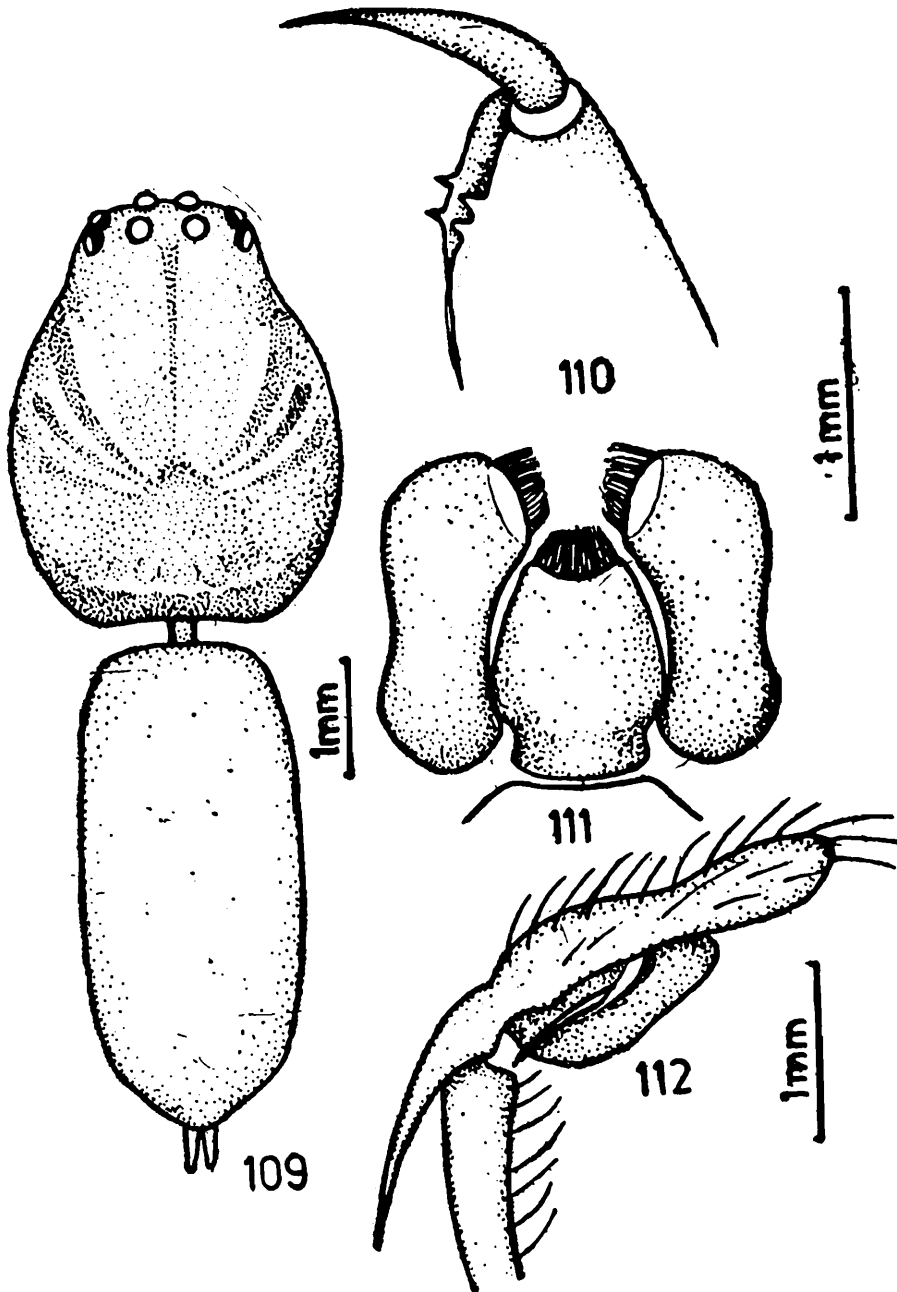
1931. *Chiracanthium indicum* : Gravely, *Rec. Indian Mus.*, 33 : 265.

Specimen examined : 1 ♂, Baripani, Shillong. 19.1.1961. Coll. M. L. Roonwal. 1 ♂, Kalimpong, Darjeeling, W. Bengal. 31.1.1982. Coll. P. K. Maity. 1 ♂, Barigar, Jodhpur, Rajasthan. 3.8.1965. Coll. V. C. Agarwal. 1 ♂, Poona City, Maharashtra. 18.12.1973. Coll. B. K. Tikader. 1 ♂, Tenmaila Camp, Sikkim. 21.8.1959. Coll. B. K. Tikader. 1 ♂, Khadakvasla lake, Poona, Maharashtra. 7.11.1966. Coll. B. K. Tikader. 1 ♂, Panchpedi, Jabalpur, M. P. 9.8.1963. Coll. Raja Ram. 1 ♂, Ranidoti, M. P. 21.1.1973. Coll. N. K. Sinha. 1 ♂, Malur, Dist. Kolar, Maharashtra. 5.3.1978. Coll. M. B. Rao. 1 ♂, Kalimpong, Darjeeling, West Bengal. 1931. Southerland. Reg. No. 1751/18.

General : Cephalothorax and legs light brown ; abdomen pale yellow in colour. Total length 7.5 mm. Carapace with pedicel 3.5 mm. long and 2.5 mm. wide ; abdomen 4.00 mm. long and 1.8 mm. wide.

Cephalothorax : Longer than wide, ovoid in shape, covered with hair and few spine like hair, provided with central fovea, few indistinct brownish lines radiating from the dorsal groove area. The cephalic region slightly high in front. Eyes silvery white except anterior medians

which are pearly white, arranged in two transverse series. The anterior row of eyes slightly recurved, medians larger than the laterals and close to each other ; posterior row longer than the anterior row, recurved,



Figs. 109-112. 109. Dorsal view of female, legs omitted ; 110. Chelicera showing arrangements of teeth ; 111. Maxillae and labium ; 112. Male palp.

medians smaller than the laterals and slightly remote from the laterals, both the lateral eyes close to each other. Ocular quadrate slightly longer than laterals. Chelicerae longer than wide, strong and stout, inner and outer margin provided with 2 teeth on each (Fig. 110). Maxillae and labium elongated, light brown in colour covered with fine hair scopulated anteriorly ; maxillae depressed at the middle (Fig. 111). Sternum oval in shape clothed with fine pubescence. Legs long and elongated not

very strong. Legs formula 1 3 2 4. Tibia and metatarsi of I and II provided with 2 pairs of ventral spines on each, tarsi long furnished with 2 claws. Tibia of the male palpus usually long, provided with long and sharp retrolateral apophysis, cymbium with elongated spur at its base reaching almost at the middle of the tibia, tegulum convex with tegular apophysis, embolus long and slender (Fig. 112).

Abdomen : Longer than wide more or less elongated in form, narrower posteriorly, broad anteriorly, covered with fine pubescence.

Type locality : Holotype : male, Bombay, Maharashtra, India.

Distribution : India : Maharashtra (Bombay, Kolar, Poona) ; Gujarat (Jodhpur) ; Sikkim ; Shillong ; West Bengal (Kalimpong, Darjeeling).

Remarks : The present description and illustration are given here based on examining authenticated identified male specimen deposited at National Collection of Z.S.I. Reg. No. 1751/18. Besides this 9 male specimens were collected and well tallied with the authenticated male specimen.

22. *Cheiracanthium insigne* Cambridge (Figs. 113-116)

1874. *Cheiracanthium insigne* Cambridge, *Proc. Zool. Soc. London*, 408.

1895. *Eutitha gracilipes* : Thorell, *Spider of Burma*, : 47,

1931. *Cheiracanthium insigne* ; Gravely, *Rec. Indian Mus.*, 33 (3) : 266.

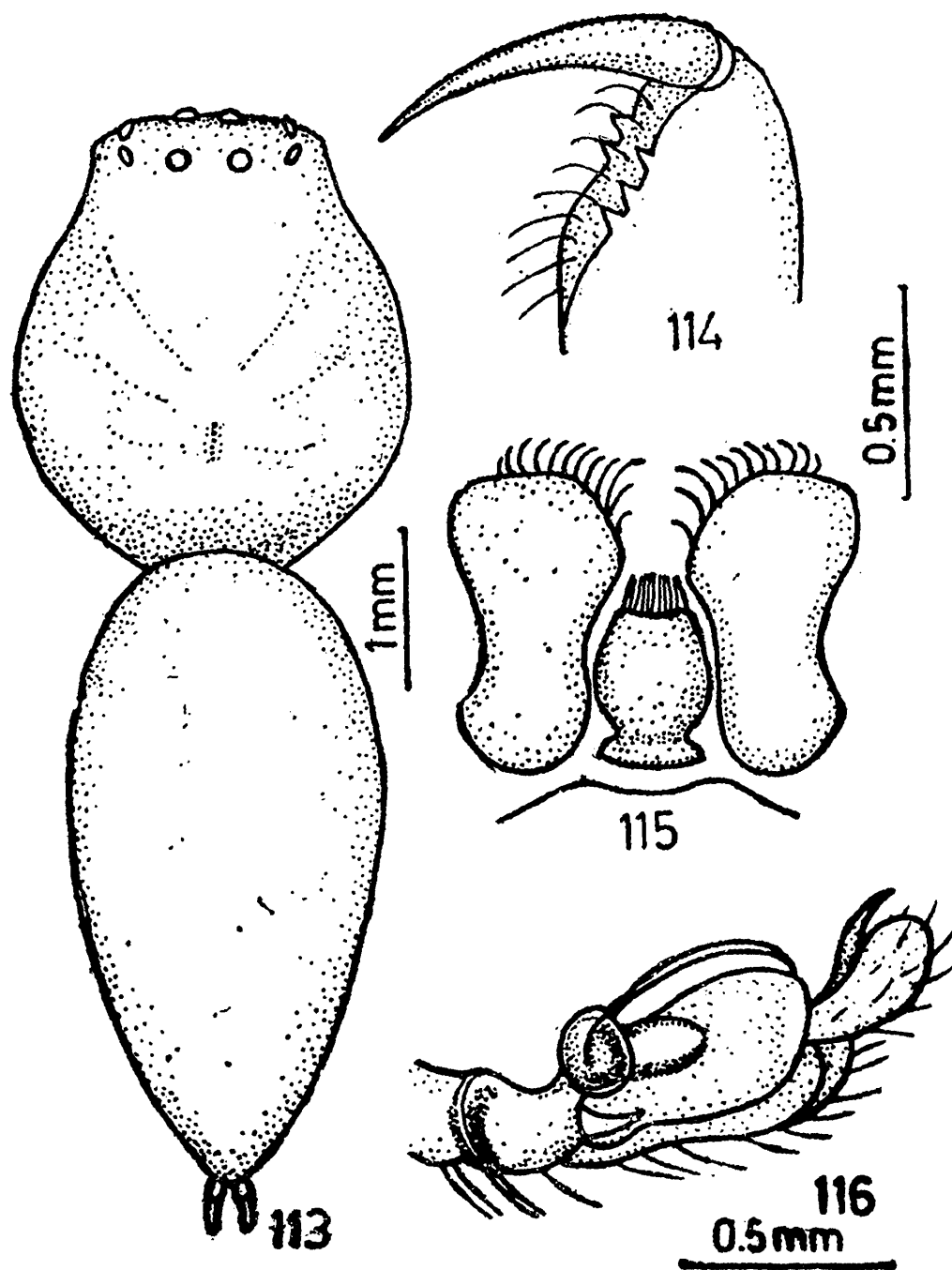
1981. *Cheiracanthium insigne* : Tikader & Biswas, *Rec. zool. Surv. India*, occ. pap. No. 30 (I) : 70.

Specimen examined : 1 ♂, B. Garden, Sibpur, Howrah, West Bengal. 2.3.1981. Coll. S. C. Majumder. 1 ♂, Zoo Garden, Alipore, Calcutta. 24.2.1982. Coll. B. K. Biswas. 1 ♂, Iron side Road, Calcutta. 1.6.1981. Coll. B. K. Tikader. 1 ♂, Palta, 24-Parganas, West Bengal. 2.8.1978. Coll. B. K. Biswas. 1 ♂, Poona City, Maharashtra. 21.6.1961 Coll. B. K. Halder. 1 ♂, Sivajinagar, Poona, Maharashtra. 24.2.1975. Coll. M. S. Malhotra. 1 ♂, Kierpur, Dist. Purnea, Bihar. 8.9.1915. Coll. C. Paiva. Reg. No. 1750/18,

General : Cephalothorax legs and abdomen light brown in colour. Total length 6.50 mm. Carapace 3.00 mm. long and 2.50 mm. wide ; abdomen 4.00 mm. long and 2.00 mm. wide.

Cephalothorax : Longer than wide, clothed with fine hair and few spine like hair, fovea usually present at the middle of the carapace, cephalic region slightly high and narrow anteriorly, Eyes silvery white

in colour except anterior medians which are pearly white in colour. The anterior row slightly recurved, medians slightly longer than the laterals and close to each other, the posterior row more or less straight, slightly longer than the anterior row, medians larger than the laterals and close to each other than the laterals, Both the lateral eyes of anterior and posterior very close to each other, Ocular quadrate slightly longer



Figs. 113-116. 113. Dorsal view of male, legs omitted ; 114. Chelicera showing arrangements of teeth ; 115. Maxillae and labium ; 116. Male palp.

than wide, narrower anteriorly. Chelicerae strong and stout, inner and outer margin provided with 2 and 3 teeth (Fig. 114). Maxillae and labium longer than wide scopulated anteriorly, maxillae strongly depressed at the middle (Fig. 115). Sternum heart shaped, clothed with fine

pubescence and pointed behind. Legs long and slender, clothed with hair and spines, Legs formula 1 4 2 3. Tibia and metatarsi of I and II provided with 4 and 2 apirs of ventral spines, tarsi long and scopulated. Tibia of the male palp provided with short retrolateral spine, tegular apophysis enormously developed, embolus long and cylindrical (Fig. 116).

Abdomen : Longer than wide, tapering behind, clothed with fine hair with no ornamentation, ventral side lighter than dorsum.

Type locality : Types : Bombay, Maharashtra, India,

Distribution : India : Maharashtra (Poona, Bombay) ; Madras ; Assam ; Bihar ; West Bengal (24-Parganas, Howrah) ; Sri Lanka ; Burma.

Remarks : The present description and illustration are based on examining authenticated identified male specimen deposited at National Collection of Z.S.I. Reg. No. 4414/18. In addition to this 5 male specimen of this species were collected and identified.

23. *Cheiracanthium melanostoma* Thorell

(Figs. 117-122)

1895. *Eutitha melanostoma* Thorell, *Spider Fauna of Burma*, : 44.

1931. *Cheiracanthium melanostoma* : Gravely, *Rec. Indian Mus.*, 33 (3) : 264.

1981. *Cheiracanthium melanostoma* : Tikader & Biswas, *Rec. zool. Surv. India*, occ. pap. No. 30 (1) : 69.

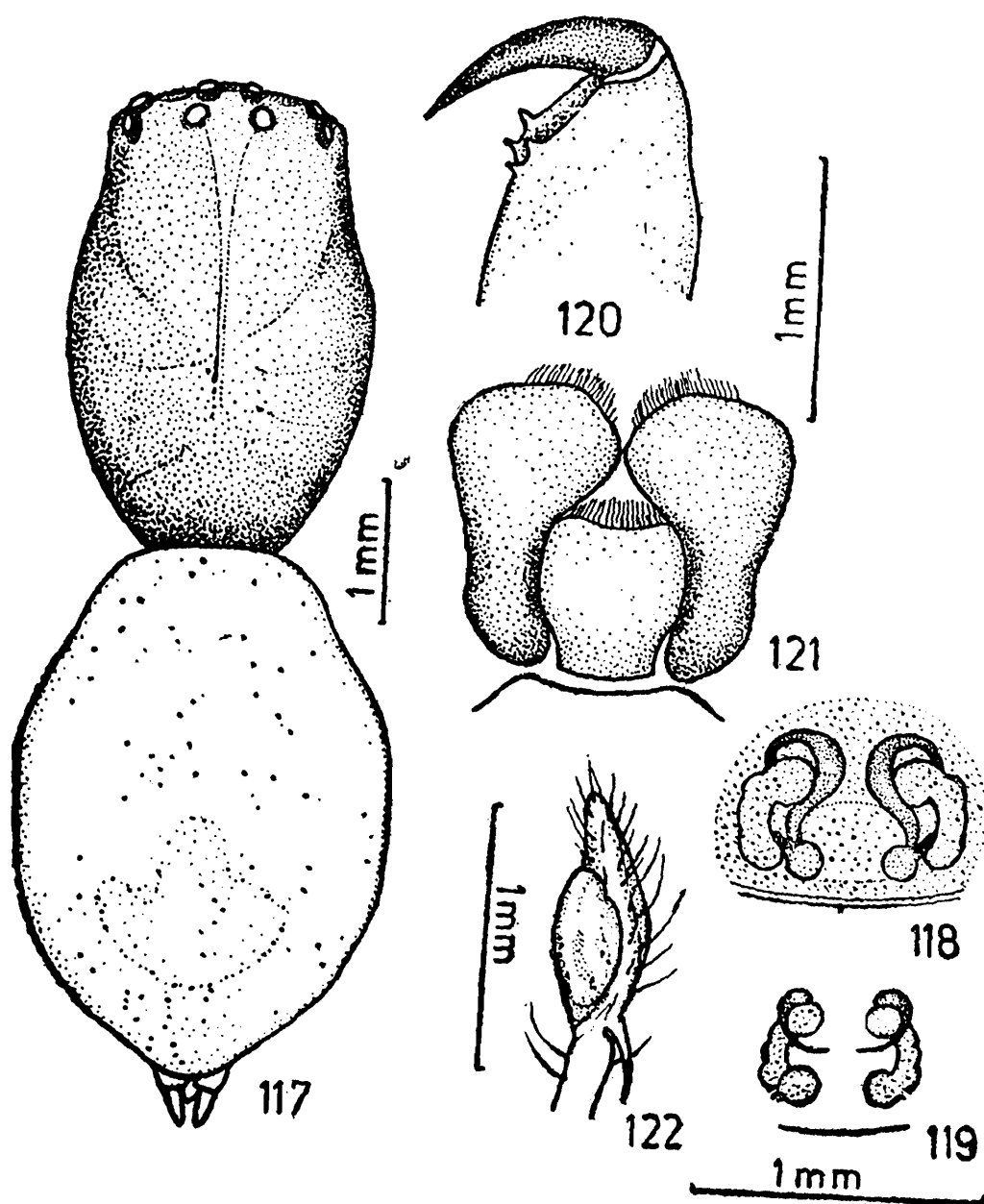
Specimen examined : 1 ♀, 1 ♂, Raghunathgange, Dist. Murshidabad, West Bengal. 11.3.1983. Coll. S. C. Majumder. 1 ♀, Petrapole, 24-Parganas, West Bengal. 1.4.1984. Coll. B. K. Biswas. 1 ♀, Raghunathgange, Murshidabad, West Bengal. 12.3.1983. Coll. S. C. Majumder. 1 ♀, Poona, Maharashtra. 6.2.1962. Coll. K. L. V. Narayan. 1 ♀, Mutha river, Poona, Maharashtra. 17.2.1962. Coll. R. N. Chopra. 3 ♀ ♀, Munduva village, Poona. Maharashtra. 15. 11.1961. Coll. B. K. Tikader. 1 ♀, Agriculture College Compound, Poona, Maharashtra. 8.12.1962. Coll. B. K. Halder. 2 ♀ ♀, C. I. V Compound, Dist. Amednagar, Poona, Maharashtra, 19.5.1974, Coll. M. S. Malhotra, 1 ♀, Palta 24 Parganas, West Bengal. 10.7.1974, Coll. B. K. Biswas. 1 ♂, Colani Rly. Stn., Goa. 3.4.1966. Coll. K. S. Pradhan. 1 ♂, Sinhgart Forest, Poona, Maharashtra. 15.11.1960. Coll. B. K. Tikader, 1 ♀, Kalapatha,

Dist. Betul, M. P. 30.11.1971. Coll. V. D. Srivastava. 1 ♀, Salem, Madras, Tamil Nadu. 8.3.1965. Coll. J. K. Sen. 1 ♀, Baligai, Dist. Midnapore, West Bengal. 5.2.1969. Coll. B. D. Basu. 1 ♀, Madan Mahal, Dist. Jabalpur, M. P. 17.2.1967. Coll. H. Khajuria, 1 ♀, Dalhouse, Dist. Jabalpur, M. P. 8.6.1967. Coll. H. L. Hora. 1 ♀, Richhai, Dist. Jabalpur, M. P. 25.2.1967. Coll. H. Khajuria. 1 ♀, B.S.I. Compound, Poona. 10.11.1961. Coll. B. K. Tikader. 1 ♀, 1 ♂, Malar Dist. Kolar, Maharashtra. 5.3.1978, Coll. M. B. Rao. 1 ♀, Peswa Park, Poona, Maharashtra. 28.4.1961. Coll. B. K. Halder. 2 ♂ ♂, 1 ♀, Gandhinagar Park, Dist. Belgaon, Karnataka. 22.1.1982. Coll. S. K. Ghosh. 1 ♂, Gandhinagar Park, Dist. Belgaon, Karnataka, 24.1.1982. Coll. S. K. Ghosh. 2 ♀ ♀, N. C. L. Compound, Poona, Maharashtra. 10.9.1982. Coll. B. K. Tikader. 1 ♀, Khanapur village, Dist. Kolaba, Maharashtra. 7.11.1963. Coll. B. K. Tikader. 1 ♀, Dhasar, Viramgaon, Gujarat. 30.1.1974. Coll. B. Dutta. 1 ♀, Sivajinagar, Poona, Maharashtra, 9.10.1963. Coll. S. D. Kanber. 1 ♂, Canning Town, 24-Parganas, West Bengal. 2.1.1966. Coll. K. C. Basu. 1 ♂, Pali, Jodhpur, Rajasthan. 4.2.1962. Coll. A. K. Dutta. 2 ♂ ♂, Sarasabar, Dist. Churu, Rajasthan. 29.1.1957. Coll. B. Biswas. 1 ♂, Mandore, Rajasthan. 7.2.1962. Coll. A. K. Dutta. 1 ♀, Surusuna, Bhutan. 11.2.1962. Coll. S. K. Mitra. 16 ♀ ♀, 3 ♂ ♂, Sirpur, Saran, Bihar, 13.8.1930. Coll. Wachenzie. 2 ♀ ♀, Katihar, Dist. Purnia, Bihar. 30.1.1910. Coll. C. Paiva. Reg. No. 1728/18. 1 ♂, Kalimpong, Darjeeling, West Bengal. 1918. Coll. Mrs. Dake. Reg. No. 1737/18.

General : Cephalothorax, legs and abdomen light brown in colour. Total length 7.00 mm. Carapace 3.00 mm. long and 2.50 mm. wide ; abdomen 4.20 mm. long and 3.00 mm. wide.

Cephalothorax : Longer than wide, clothed with fine pubescence, fovea present below the median half of the carapace, cephalic region slightly high. Eyes arranged in two transverse series, silvery white in colour except anterior medians which are pearly white. The anterior row slightly recurved, medians slightly larger than laterals and close to each other, the posterior row longer than the anterior row, more or less straight or slightly procurved medians not in close to each other. Both the lateral eyes anterior and posterior close to each other. Ocular quadrate wider than long, narrow anteriorly and wider posteriorly. Chelicerae strong and stout, brownish in colour, longer than wide, inner and outer margin provided with 2 teeth on each (Fig. 120). Maxillae and labium longer than wide, anteriorly wider and scopulated, posteriorly narrower ; maxillae slightly constricted at the middle (Fig. 121). Sternum heart shaped, pointed behind clothed with hair. Legs

long and slender clothed with hair and spine. Legs formula 1 4 3 2. Tibia and metatarsi of I and II provided with one pair of ventral spine on each, tarsi provided with 2 claws. Tibia of the male palpus provided with short retrolateral apophysis, slightly sinuous at its tip, tegulum convex and rounded with short embolus, cymbium with spur at its base (Fig. 122).



Figs. 117-122. 117. Dorsal view of female, legs omitted ; 118. Epigyne ; 119. Internal genitalia ; 120. Chelicera showing arrangements of teeth ; 121. Maxillae and labium ; 122. Male palp.

Abdomen : Oval, longer than wide, dorsum provided with few black dots. Ventral side lighter than dorsum, epigyne with flat concave plate, conspicuous rounded copulatory opening present on either lateral side of the epigynal plate (Fig. 118). Internal genitalia with

small and rounded spermatheca, copulatory tube short (Fig. 119).

Type locality : Types : Tharrwaddy, Burma.

Distribution : India : Andaman (Crowlia Ghat) ; Bhutan (Sursuna) ; Bihar (Saran, Dinapur) ; Goa ; Gujarat (Viramgaon) ; Karnataka (Belgaon) ; Maharashtra (Amednagar, Kolar) ; Mysore (Bandipar) ; Orissa (Chilka lake) ; Rajasthan (Jodhpur, Sarsabar, Churu, Mandore) ; West Bengal (Darjeeling, Kalimpong, Midnapore, 24-Parganas, Murshidabad) ; Burma.

Remarks : The present description and illustration are based on examining authenticated identified male and female specimens deposited at National Collection of Z. S. I. Besides this 25 female and 12 male specimens were collected and identified.

24. *Cheiracanthium himalayensis* Gravely

(Figs. 123-128)

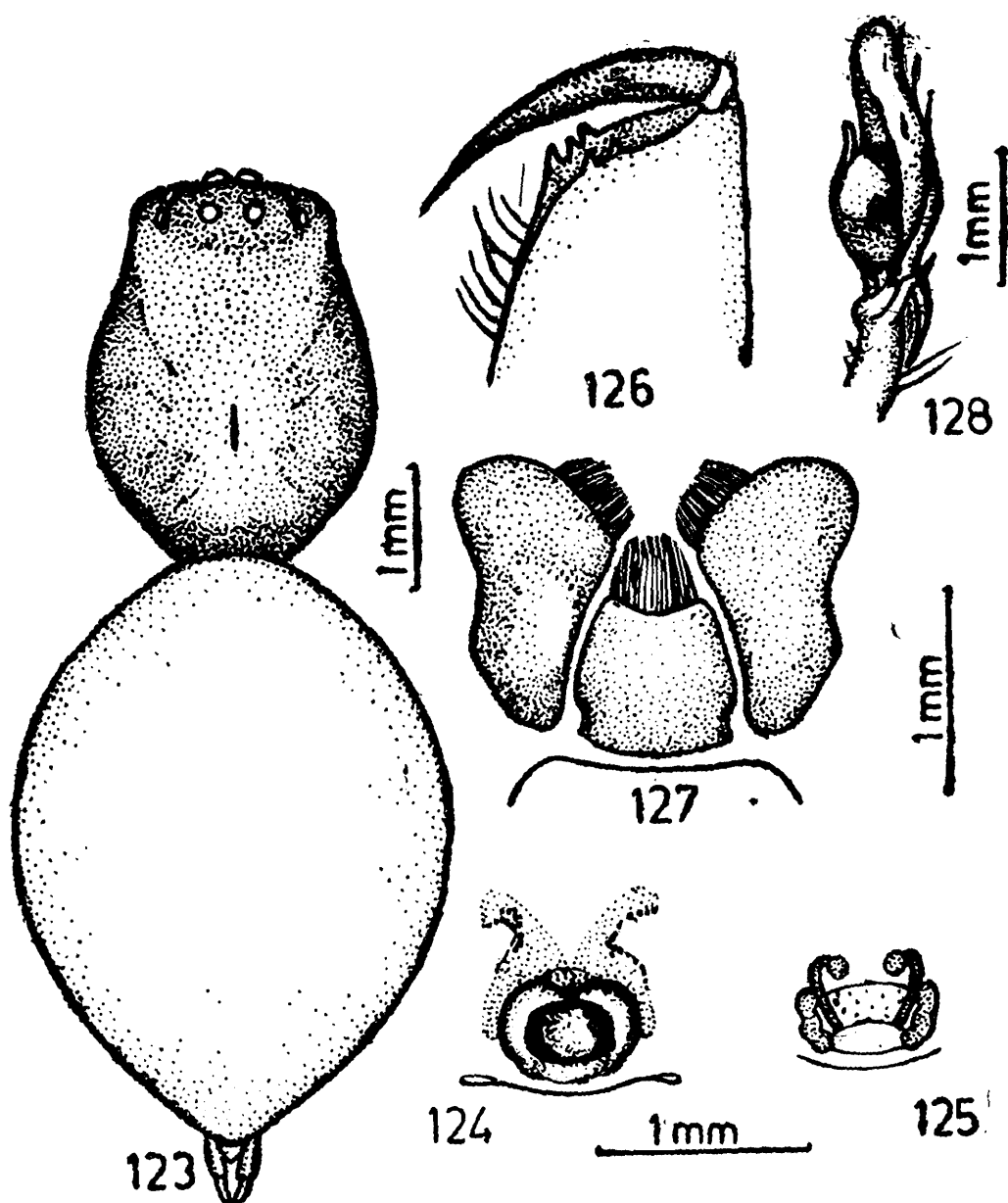
1931. *Cheiracanthium himalayensis* Gravely, *Rec. Indian Mus.*, 33 (3) : 264.

Speciman examined : 1 ♀, Sericulture garden, Shillong. 19.11.1965. Coll. S. N. Prasad. 1 ♀, Satluj river, Dist. Kinnour, Poona, Maharashtra. 11.8.1973. Coll. R. Tilak. 1 ♀, Dhosa, Dist. Bhabnagar, Gujarat, 28.12.1973. Coll. S. K. Gupta. 1 ♀, Kalimpong, Darjeeling, West Bengal. 30.10.1917. Coll. Southerland. 1 ♀, Dehra Dun, U. P. 16.9.1914. Coll. N. C. Chatterjee. Reg. No. 1748/18. 1 ♂, Kalimpong, Darjeeling, West Bengal. 1914. Coll. Southerland. Reg. No. 1747/18. 1 ♀, Tindharia, Darjeeling, West Bengal. 1915. Coll. R. Drake. Reg. No. 1773/18.

General : Cephalothorax and legs brownish ; abdomen light brown in colour. Total length 8.4 mm. Carapace 3.2 mm. long and 2.5 mm. wide ; abdomen 5.2 mm. long and 3.9 mm. wide.

Cephalothorax : Longer than wide, ovel in shape, provided with fine fovea at the middle of the carapace, covered with fine hair, cephalic region slightly high with narrower anterior end. Eyes pearly white in colour arranged in two transverse series. The anterior row slightly recurved, medians slightly larger than the laterals and close to each other than the laterals. Posterior row slightly longer than the anterior row, more or less straight, medians remote from the laterals, both the laterals close to each other. Ocular quadrate slightly longer than wide. Chelicerae strong and stout, deep brown in colour, inner margin provided with 2 and the outer margin with 3 teeth (Fig. 126). Maxillae

and labium longer than wide, brownish red in colour ; maxillae broader anteriorly constricted at the middle, labium narrower anteriorly (Fig. 127). Sternum heart shaped, pointed behind clothed with fine spine like hair. Legs long and slender clothed with hair and spines. Legs formula 1 3 2 4. The tibia and metatarsi of I and II provided with 1 pair of ventral spine on each. Tibia and the male palp provided with elongated retrolateral apophysis sinuous at its tip, tegulum convex with tegular apophysis, embolus long and slender, cymbium with long spur (Fig. 128).



Figs. 123-128. 123. Dorsal view of female, legs omitted ; 124. Epigyne ; 125. Internal genitalia ; 126. Chelicera showing arrangements of teeth ; 127. Maxillae and labium. 128. Male palp.

Abdomen : Longer than wide, tapering both anterior and posterior, wider at the middle. Dorsum provided with few black dots, ventral side lighter than dorsum. Epigyne as rounded black cavity

with copulatory opening at its lateral side (Fig. 124). Internal genitalia with small and rounded spermatheca, copulatory tube short (Fig. 125).

Type locality : Types : Tindharia, Darjeeling, West Bengal, India. October 1915. Coll. R. Drake. Reg. No. 1773/18. deposited at Z. S. I. National Collection.

Distribution : India : Maharashtra (Poona) new report ; Gujarat, new report ; Shillong ; U. P. (Dehra Dun) ; West Bengal (Kalimpong, Darjeeling).

Remarks : In spite of the presence of type specimen, the present description and illustration are made on the basis of examining authenticated identified male and female specimen deposited at Z. S. I. National Collection. Reg. No. 1747/18. Beside this, 4 female specimens of this species were collected and identified.

25. *Cheiracanthium kashmirensis* sp. nov.

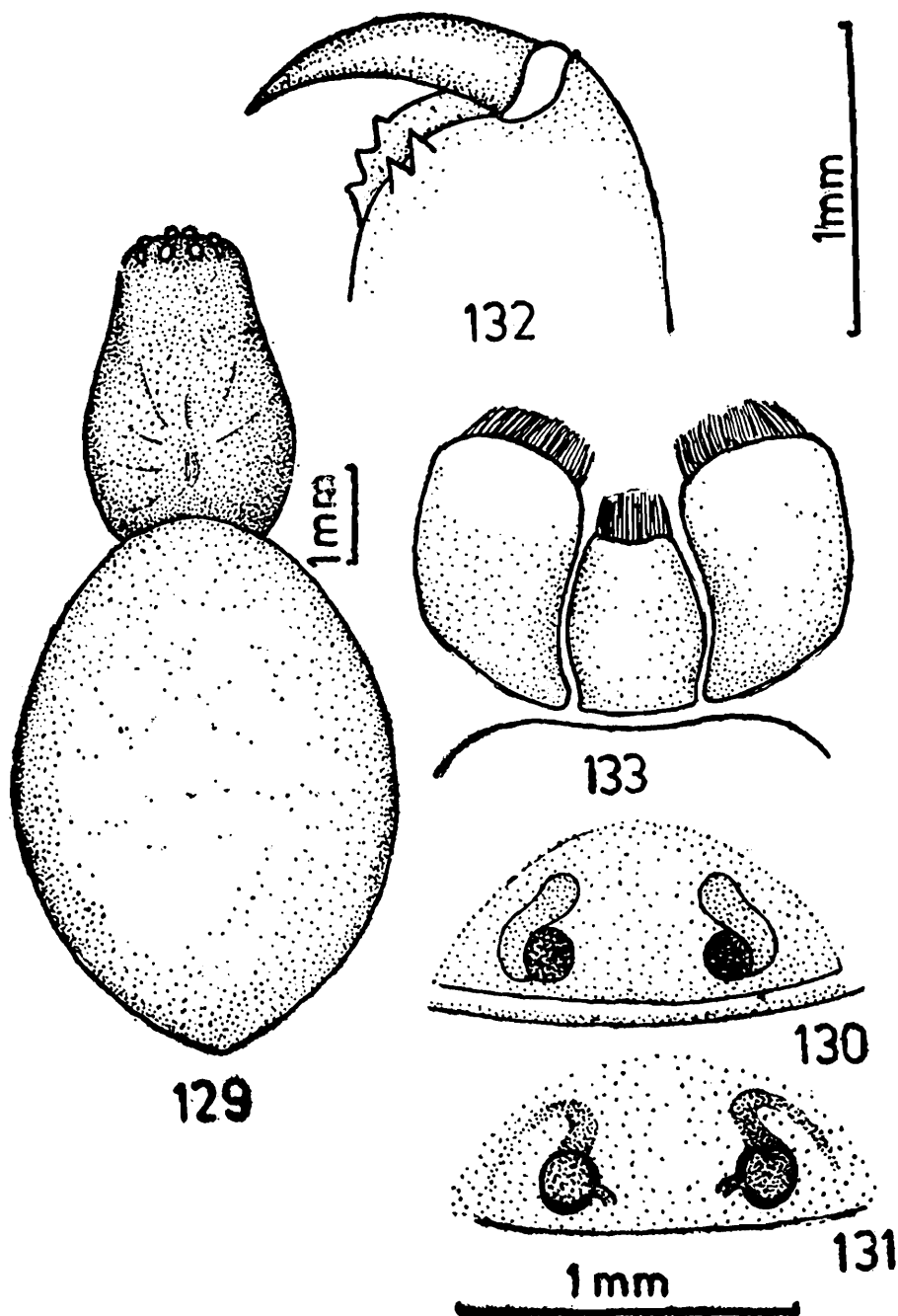
(Figs. 129-133)

General : Cephalothorax and legs yellowish brown ; abdomen pale yellow in colour. Total length 9.20 mm. Carapace 3.10 mm. long and 2.00 mm. wide ; abdomen 6.10 mm. long and 4.00 mm. wide.

Cephalothorax : Longer than wide, with narrower anterior end, broader and rounded posteriorly, covered by fine pubescence, thoracic region overlapped by the anterior end of the dorsum, cephalic region slightly high. Eyes pearly white in colour, arranged in two transverse series, the anterior row slightly recurved, medians smaller than the laterals and close to each other than the laterals. Posterior row of eyes longer than the anterior row, recurved, medians slightly larger than the laterals and not close to each other. Ocular quadrate wider than long, wider posteriorly. Clypeus more or less vertical. Chelicerae deep brownish in colour, longer than wide, inner margin provided with 2 teeth and the outer margin with 3 teeth (Fig. 132). Maxillae and labium wider than long with no depression at the middle ; maxillae wider anteriorly, yellowish in colour but narrower posteriorly deep brownish in colour (Fig. 133). Sternum heart shaped, covered with fine pubescence. Legs strong and stout, covered by hair and spines. Legs formula 1 4 3 2. Patella more or less curved. The patella III and IV more curved than the patella I and II. Tibia and metatarsi of I and II provided with 2 and 1 pair of ventral spines, tarsi long, wider anterior end provided with 2 claws and claw tufts.

Abdomen : Oval in shape, longer than wide, covered with fine

pubescence, ventral side lighter than dorsum. Epigyne as flat concave plate with rounded copulatory opening on either lateral side of the plate (Fig. 130). Internal genitalia with small and rounded spermatheca (Fig. 131).



Figs. 129-133. 129. Dorsal view of female, legs omitted; 130. Epigyne; 131. Internal genitalia; 132. Chelicera showing arrangements of teeth; 133. Maxillae and labium.

Type locality : Holotype : 1 ♀, Reg. No. 5154/18. Dhal Lake, Kashmir, India. 2.10.1958. Coll. B. Biswas.

Distribution : Known from the type locality.

Remarks : This species resembles to *Cheiracanthium vorax* Cambridge in general appearance but differs from that on the followings :

1. Cephalothorax with fovea where as in *C. vorax* fovea absent.
2. The posterior row of eyes recurved, medians larger than laterals. Whereas in *C. vorax* posterior row procurved, medians smaller than laterals.
3. Epigyne structurally different.

26. *Cheiracanthium denieli* Tikader

(Figs. 134-139)

1975. *Cheiracanthium denieli* Tikader, *J. Bombay nat. Hist. Soc.*, 72(1) : 43.

General : Cephalothorax and abdomen light brownish green. Total length 6.30 mm. Carapace 3.00 mm. long and 2.20 mm. wide ; abdomen 3.40 mm. long and 1.80 mm. wide.

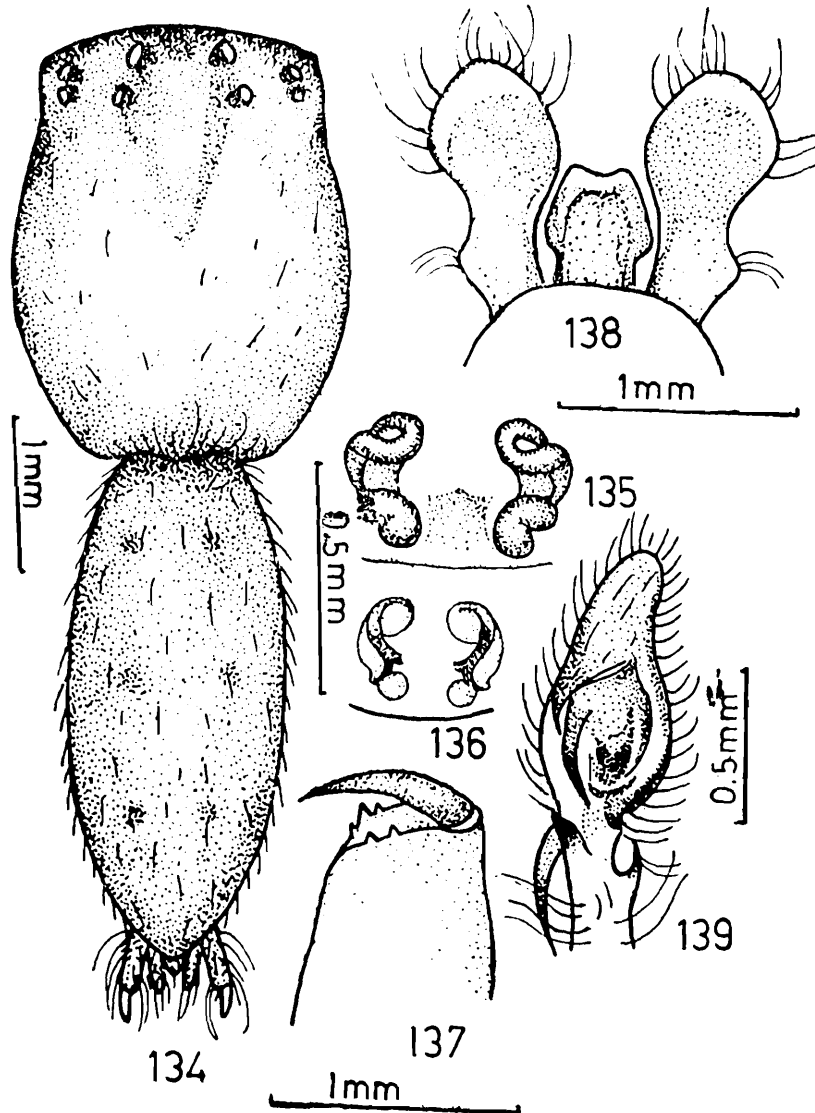
Cephalothorax : Longer than wide, wider in front, clothed with fine hair, cephalic region slightly high and moderately convex than the thoracic region, fovea usually absent. Eyes in two rows, pearly white in colour, except anterior medians. The anterior row of eyes slightly recurved, medians oval and white in colour, larger than the laterals. The posterior row of eyes longer than the anterior row, procurved, medians larger than the laterals ; both the lateral eyes are in contiguous. Ocular quadrate wider than long. Chelicerae strong, nearly vertical and dark brown in colour, inner margin provided with 2 equal teeth but the outer margin with one large tooth and the other very small (Fig. 137). Maxillae and labium longer than wide, deep brown in colour scopulated anteriorly (Fig. 138). Sternum heart shaped pointed posteriorly, clothed with hair. Legs moderately strong, clothed with hair and spines, legs, formula 1 4 3 2. Femora I and II provided with a dorsal spine, tarsi long and scopulated. Tibia of the male palp with long retrolateral apophysis and a curved ventral apophysis, cymbium with long and curved basal spur at its base, tegulum rounded and convex, embolus long and elongated (Fig. 136).

Abdomen : Rather long, narrowed posteriorly, clothed with pubescence and some long spine like hair. Epigyne as round and convex sclerotized plate with copulatory opening on either lateral side of the plate (Fig. 136). Internal genitalia with small and rounded spermatheca, copulatory tube short (Fig. 136).

Type locality : Holotype : female, Borivi National Park, Bombay, Maharashtra, India. 25.1.1974. Coll. J. C. Daniel. Allotype : one male, Western Regional Station, Zoological Survey of India, Shivajinagar, Poona. 31.1.1974. Coll. B. K. Tikader.

Distribution : Known from the type locality.

Remarks : The present description and illustration are mainly based on examining holotype and allotype materials, deposited at National Collection of Z. S. I. Reg. No. Nil. Beside original description, the description of internal genitalia given here elaborately.



Figs. 134-139. 134. Dorsal view of female, legs omitted ; 135. Epigyne ; 136. Internal genitalia ; 137. Chelicera showing arrangements of teeth ; 138. Maxillae and labium ; 139. Male palp.

27. *Cheiracanthium saraswati* Tikader (Figs. 140-145)

1962. *Cheiracanthium saraswati* Tikader, *J. Linn. Soc. London*, 44 : 568.

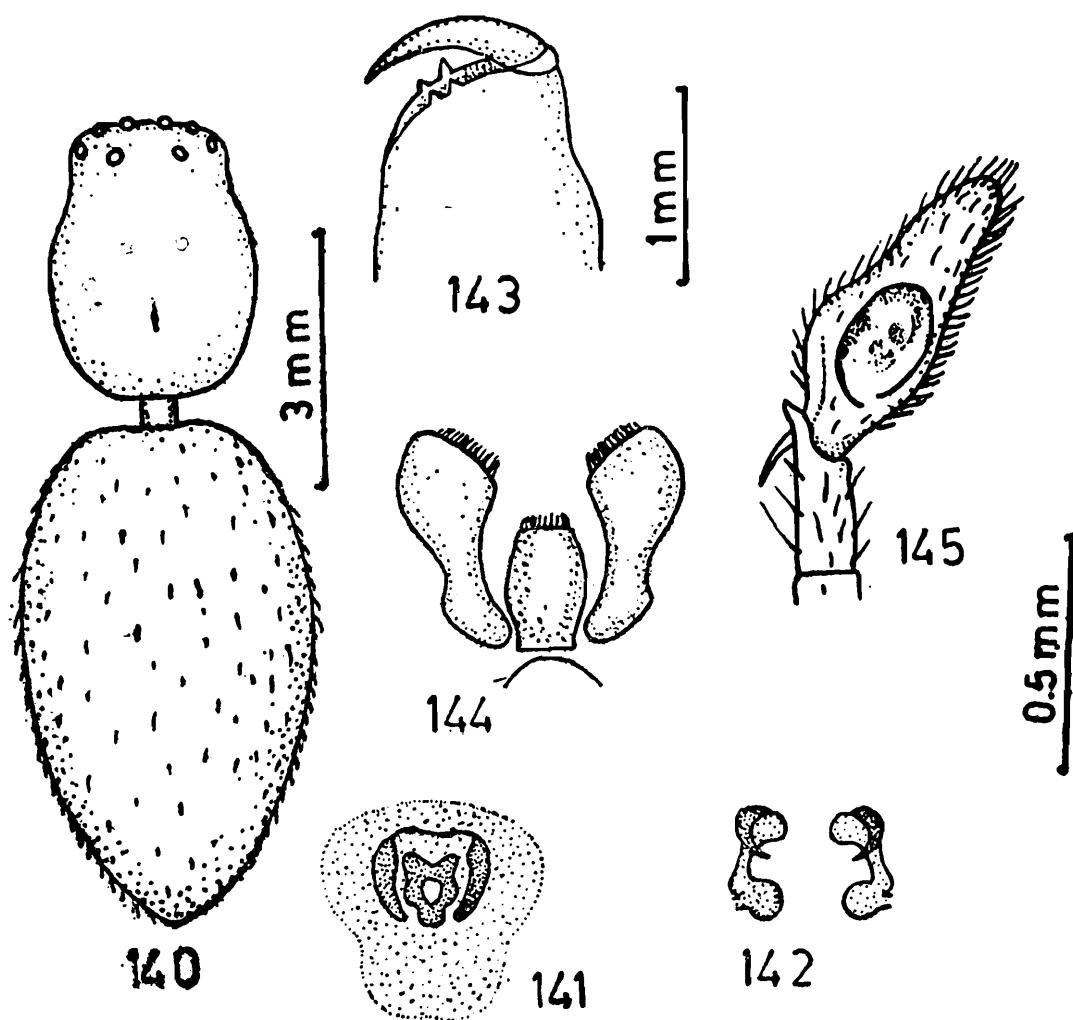
1968. *Cheiracanthium saraswati* Tikader, *J. Assam Science Society*, 9 : 157.

Specimen examined : 1 ♀, Shillong, 1.12.1975. Coll. B. K. Tikader. 1 ♀, Miki, Balaghat, M. P 9.2.1957. Coll. B. K. Tikader.

General ; Cephalothorax radish brown, abdomen and legs pale green in colour. Total length 9.40 mm. Carapace 3.40 mm. long and

2.20 mm. wide ; abdomen 5.80 mm. long and 3.70 mm. wide.

Cephalothorax : Longer than wide, rather flat and wide in front, covered with fine pubescence, provided with fovea at the middle of carapace. Eyes silvery white in colour arranged in two transverse series anterior and posterior, both the lateral eyes anterior and posterior close to each other. The anterior row slightly recurved, the posterior row procurved, longer than the anterior row, both the medians anterior and posterior larger than the laterals and separated from each other. Ocular quadrate wider than long, wider posteriorly. Chelicerae strong



Figs. 140-145. 140. Dorsal view of female, legs omitted ; 141, Epigyne ; 142. Internal genitalia ; 143. Chelicera showing arrangements of teeth ; 144. Maxillae and labium ; 145. Male palp,

nearly vertical, inner margin provided with 2 teeth and the outer margin with one large tooth another small (Fig. 143). Maxillae and labium longer than wide, maxillae constricted at the middle (Fig. 144). Sternum ovals pointed behind, margin provided with dark spot opposite the coxa. Legs long and stout. Legs formula 1 3 4 2. Femora I and II provided with 4 dorsal spines. Tibia and metatarsi of I and II provided with 2 and 1 pair of ventral spines, tarsi long and scopulated. Tibia of

the male palp provided with long and straight retrolateral apophysis, cymbium with long and stout spur at its base, tegulum with tegular apophysis, embolus long (Fig. 145).

Abdomen : Longer than wide, narrower posteriorly. A faint dorsal marking extending from the base of the mid dorsum. Ventral side lighter than dorsum. Epigyne with rounded plate (Fig. 141). Internal genitalia with short small and rounded spermatheca, copulatory tube long and elongated (Fig. 142).

Type locality : Holotype : female ; paratypes : three females ; allotype : one male ; Kench's trace, Shillong, Assam, India. 28.1.1960. Coll. B. K. Tikader.

Distribution : India : Shillong ; M. P : Gujarat.

Remarks : The present description and illustration are made on the basis of examining the holotype, paratypes and allotype materials deposited at National Collection of Z. S. I. Reg. No. Nil. Beside this 2 specimens of this species were collected and identified.

28. *Cheiracanthium murina* Thorell (Figs. 146-150)

1895. *Cheiracanthium murina* Thorell, *Spider of Burma*, : 406.

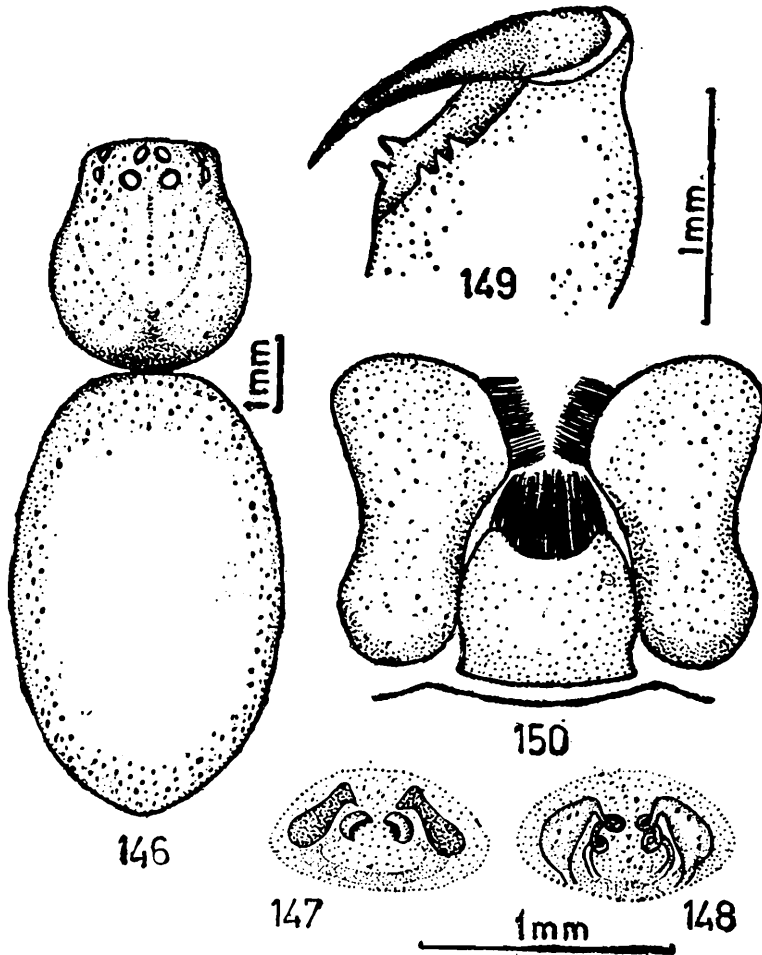
1931. *Cheiracanthium murina* : Gravely, *Rec. Indian Mus.*, 33 (3) : 263.

Specimen examined : 1 ♀, Murdhari village, Poona, Maharashtra, 4.9.1962. Coll. B. K. Halder. 3 ♀ ♀, Kalimpong, Darjeeling, W. Bengal. 1930. Coll. Southerland. 2 ♀ ♀, Kalimpong, Darjeeling. 1930. Coll. Southerland. Reg. No. 1742/18.

General : Cephalothorax, legs and abdomen light brown in colour. Total length 10.6 mm. Cephalothorax 3.6 mm. long and 3.00 mm. wide ; abdomen 7.00 mm. long and 4.20 mm. wide.

Cephalothorax : Longer than wide, convex anteriorly, wider posteriorly, covered with fine pubescence, fovea usually absent. Eyes silvery white, arranged in two transverse series. The anterior row slightly recurved, posterior row slightly procurved and longer than the anterior row, both the median eyes anterior and posterior larger than the laterals, lateral eyes not very close to each other. Ocular quadrate wider than long, narrower anteriorly. Chelicerae longer than wide, more or less vertical, inner margin provided with 3 teeth and the outer margin with 2 teeth (Fig. 149). Maxillae and labium longer than wide sculptated anteriorly, a constriction present at the middle of the maxillae

(Fig. 150). Sternum oval, covered with fine pubescence. Legs long and slender, clothed with hair and spine. Legs formula 1 4 3 2. Tibia and metatarsi of I and II provided with 2 pairs of ventral spines on each, tarsi long and less scopulated.



Figs. 146-150. 146. Dorsal view of female, legs omitted; 147. Epigyne; 148. Internal genitalia; 149. Chelicera showing arrangements of teeth; 150. Maxillae and labium.

Abdomen : Oval in shape, longer than wide, covered with fine pubescence. Ventral side uniformly light coloured than dorsum. Epigyne as flat and convex plate, conspicuous copulatory opening present (Fig. 147). Internal genitalia with longer spermatheca, divisible into two parts, copulatory tude short and coiled (Fig. 148).

Type locality : Types : Tharrawaddy, Burma.

Distribution : India : Maharashtra (Poona); West Bengal (Kalimpong, Darjeeling); Burma.

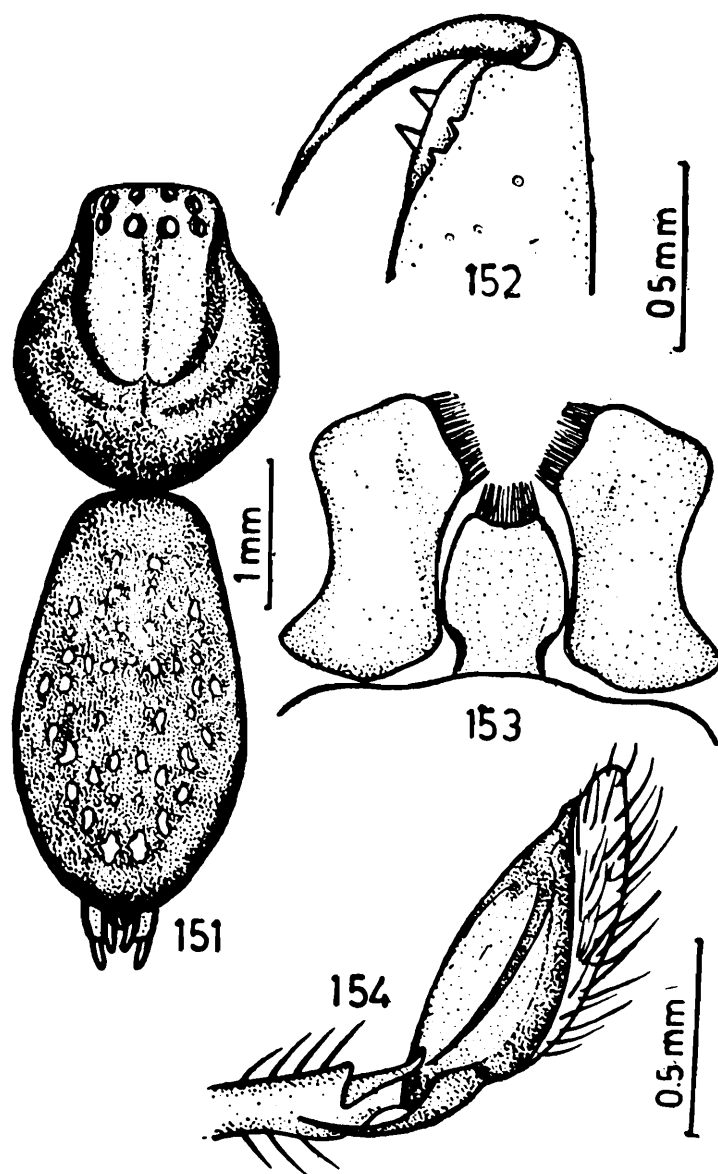
Remarks : The present description and illustration are based on examining authenticated identified female specimen deposited at National Collection of Z.S.I. Reg. No. 1742/18. Beside original description, the description of internal genitalia are given here elaborately. In addition to this 1 female specimen of this species was collected and identified.

29. **Cheiracanthium trivittatum** Simon
(Figs. 151-154)

1906. *Cheiracanthium trivittatum* Simon, *Ann. Soc. ent. France*, 75 : 297

Specimen examined : 2 ♂♂, East South Genji, Coromandel, Tamil Nadu, India. Reg. No. 17551 Paris.

General : Cephalothorax redish brown, less light brown ; abdomen yellowish in colour with multiple whitish patches. Total length 5.10 mm. Carapace 2.10 mm. long and 1.80 mm. wide ; abdomen 3.00 mm. long and 1.60 mm. wide.



Figs. 151-154. 151. Dorsal view of female, legs omitted ; 152. Chelicera showing arrangements of teeth ; 153. Maxillae and labium ; 154. Male palp.

Cephalothorax : Usually short not longer enough, broad and rounded behind with abruptly tapering anterior end, covered by fine pubescence, provided with fine fovea located posterior to the carapace, few

indistinct brownish lines radiating from the dorsal groove area and proceeding towards cephalic areas. Eyes pearly white in colour ; the anterior row recurved, medians smaller than the laterals, separated from each other. The posterior row procurved, arranged in equal distance, longer than the anterior row, medians slightly larger than the laterals ; both the lateral eyes close to each other. Ocular quadrate longer than wide. Chelicerae moderately strong and stout, longer than wide, inner and outer margin provided with 2 small and 2 big teeth (Fig. 152). Maxillae and labium longer than wide, yellowish brown in colour, covered with fine pubescence. Maxillae provided with shallow depression on both inner and outer side (Fig. 153). Sternum heart shaped with pointed posterior end. Legs long and slender not so strong, covered by hair and spine, legs formula 1 4 3 2. Tibia and metatarsi of I and II provided with 3 and 2 pairs of ventral spines. Tibia of the male palp provided with long retrolateral apophysis sinuous at its distal end, cymbium with long spur at its base which is curved and pointed ; tegulum flat and convex with tegular apophysis, embolus short (Fig. 154).

Abdomen : Elongated in form, tapering anteriorly and broader posteriorly, covered by fine pubescence, dorsum ornamented by multiple white patches (Fig. 151), ventral side uniformly pale coloured.

Type locality : Holotype : male, Genji, Coromandel, Tamil Nadu, India.

Distribution : Known only from the type locality.

Remarks : Two male type specimen borrowed from Paris Museum Reg. No. 17551 were critically examined. The present description and illustration are given here based upon that.

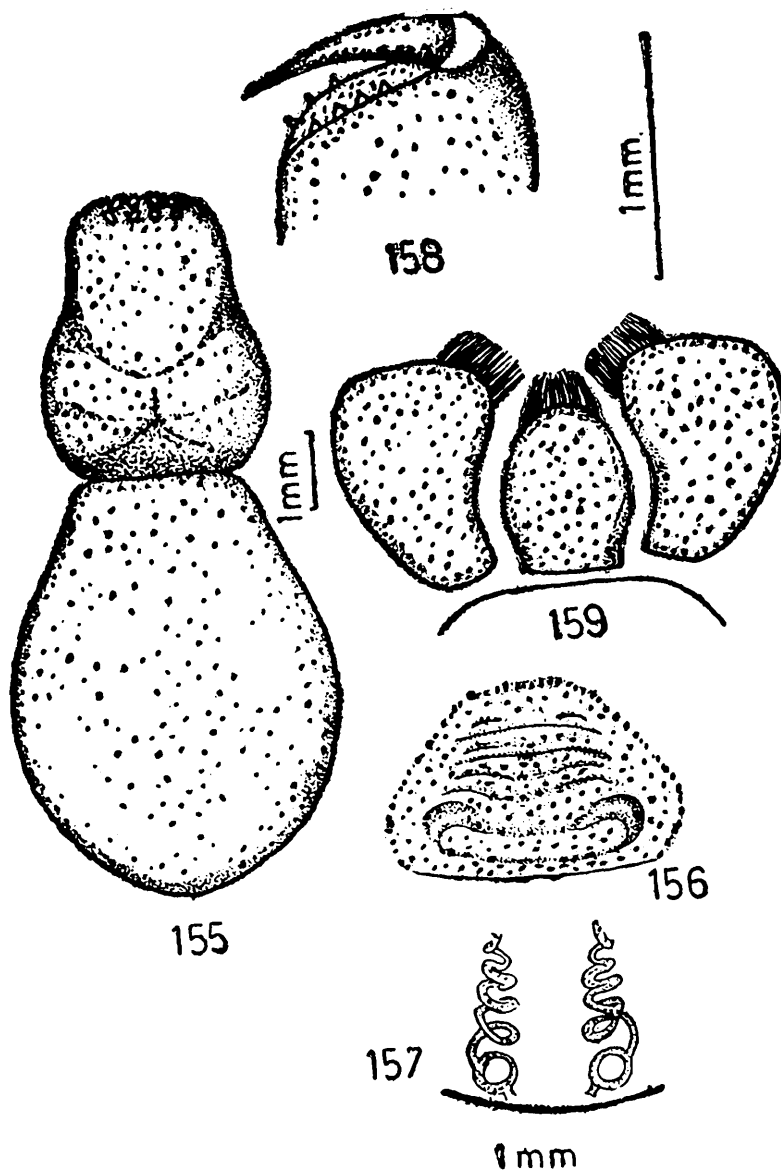
30. *Cheiracanthium pauriensis* sp. nov.

(Figs. 155-159)

General : Cephalothorax and legs yellowish brown ; abdomen yellowish in colour. Total length 10.00 mm. Carapace 4.00 mm. long and 2.4 mm. wide ; abdomen 6.00 mm. long and 4.7 mm. wide.

Cephalothorax : Longer than wide, narrow anteriorly and broad posteriorly, covered by dark spine like hair, provided with central fovea, cephalic region slightly high and narrower anteriorly. Eyes pearly white in colour arranged in two transverse series anterior and posterior. The anterior row slightly recurved, medians smaller than the

laterals ; posterior row slightly recurved, longer than the anterior row, medians slightly smaller than the laterals and both the laterals anterior and posterior very close to each other. Ocular quadrate almost square. Chelicerae more or less parallel, deep brownish in colour, inner and outer margin provided with 4 and 3 teeth (Fig. 158). Maxillae and labium longer than wide with no constriction at the middle (Fig. 159). Sternum oval in shape covered by fine pubescence. Legs long and slender covered by hair and spines, Legs formula 4 1 2 3. Tibia and



Figs. 155-159. 155. Dorsal view of female, legs omitted ; 156. Epigyne ; 157. Internal genitalia ; 158. Chelicera showing arrangements of teeth ; 159. Maxillae and labium.

metatarsi of I provided with 2 pair of ventral spines on each, the tibia and metatarsi of II provided with 1 pair of ventral spine on each. Tarsi relatively long and scopulated by long spine like hair, provided with 2 claws and thick claw tufts.

Abdomen : Longer than wide, oval in shape, broader posteriorly

and narrower anteriorly, covered by long spine like hair. Epigyne as rounded sclerotized plate with conspicuous copulatory opening (Fig. 156). Internal genitalia with small rounded spermatheca divided into 2 parts, copulatory tube long and coiled (Fig. 157).

Type locality : Holotype : 1 ♀, Reg. No. 5155/18 Pauri, U. P., India. 1.6.1968. Coll. B. K. Tikader. Paratype : 1 ♀, Reg. No. 5156/18 Richmond Hills, Darjeeling, W Bengal, India. 14.4.1975. Coll. Bijan Biswas.

Distribution : India : U. P (Pauri) ; W. Bengal (Darjeeling).

Remarks : This species resembles to *Cheiracanthium himalayensis* Gravely in general appearance but differs from that due to the following particulars :

1. Chelicerae more or less parallel, inner margin provided with 4 teeth whereas in *C. himalayensis* chelicerae not parallel, inner margin provided with 2 teeth.
2. Labium pointed anteriorly whereas in *C. himalayensis* the labium not pointed anteriorly and the maxillae not wider anteriorly.
3. Epigyne structurally different.

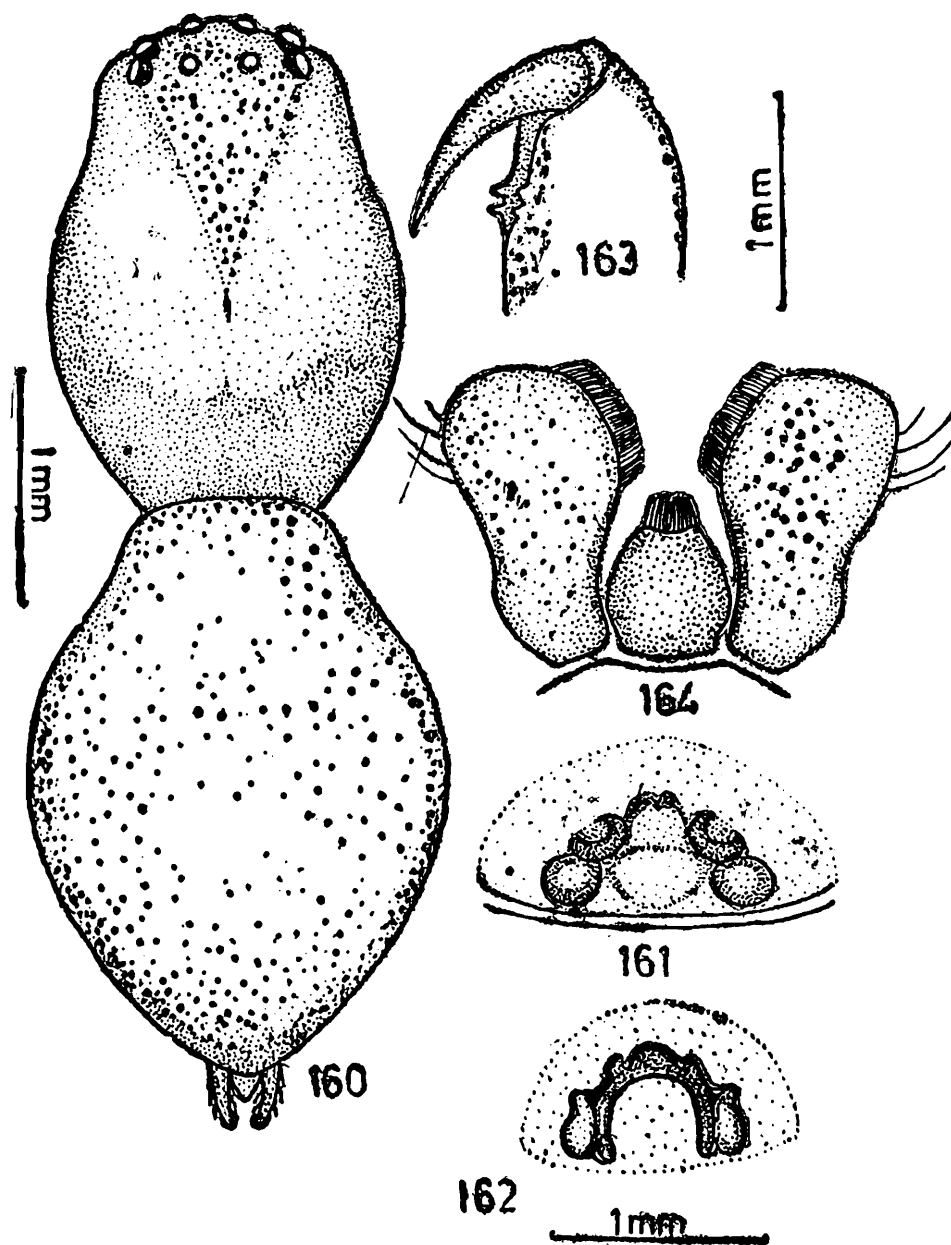
31. *Cheiracanthium sikkimensis* sp. nov.

(Fig. 160-164)

General : Cephalothorax and legs yellowish brown ; abdomen pale yellow in colour. Total length 4.70 mm. Carapace 2.10 mm. long and 1.50 mm. wide ; abdomen 2.60 mm. long and 2.10 mm. wide.

Cephalothorax : Longer than wide, covered with fine hair, broader at the middle, tapering both the ends, cephalic region slightly high anteriorly with no fovea. Clypeus narrow. Eyes in two rows anterior and posterior, pearly white in colour. The anterior row slightly recurved, medians smaller than laterals ; posterior row of eyes slightly recurved, longer than the anterior row, medians smaller than the laterals. Lateral eyes both anterior and posterior remote from the medians and close to each other. Ocular quadrate more or less square. Chelicerae longer than wide, brownish in colour, inner and outer margin provided with 2 equal teeth on each (Fig. 163). Maxillae and labium longer than wide, yellowish in colour (Fig. 164). Labium extends beyond the middle of the maxillae, anteriorly narrow and

scopulated ; maxillae constricted at the middle anteriorly broad and scopulated. Sternum heart shaped with pointed posterior end. Legs long and elongated, legs formula 1 4 2 3. The tibia and metatarsi of I and II provided with 1 pair of ventral spine on each ; tarsi long and scopulated with narrower posteriorly, provided with 2 claws and claw tufts.



Figs. 160-164. 160. Dorsal view of female, legs omitted ; 161. Epigyne ; 162. Internal genitalia ; 163. Chelicera showing arrangements of teeth ; 164. Maxillae and labium.

Abdomen : Elongated in form tapering both the ends, clothed with fine pubescence. Epigyne as convex sclerotized plate with rounded conspicuous copulatory opening (Fig. 161). Internal with rounded spermatheca (Fig. 162).

Type locality : Holotype : 1 ♀, Reg. No. 5157/18, Naya Bazar,

Sikkim, 22.7.1959. Coll. B. K. Tikader. Paratype : 1 ♀, Reg. No. 5158/18. Naya Bazar, Sikkim, 17.7.1959. Coll. B.K. Tikader.

Distribution : Known only from the type locality.

Remarks : This species resembles to *Cheiracanthium melanostoma* (Thorell) in general appearance but differs from that due to the following particulars :

1. The posterior row recurved, medians smaller than laterals whereas *C. melanostoma* posterior row procurved, medians larger than laterals.
2. Cephalothorax with inconspicuous fovea, abdomen elongateb from with no blackish dots where as in *C. melanostoma* cephalothorax with prominent fovea and the abdomen oval in shape provided with blackish dots.
3. Epigyne structurally different.

32. *Cheiracanthium mysorensis* sp. nov.

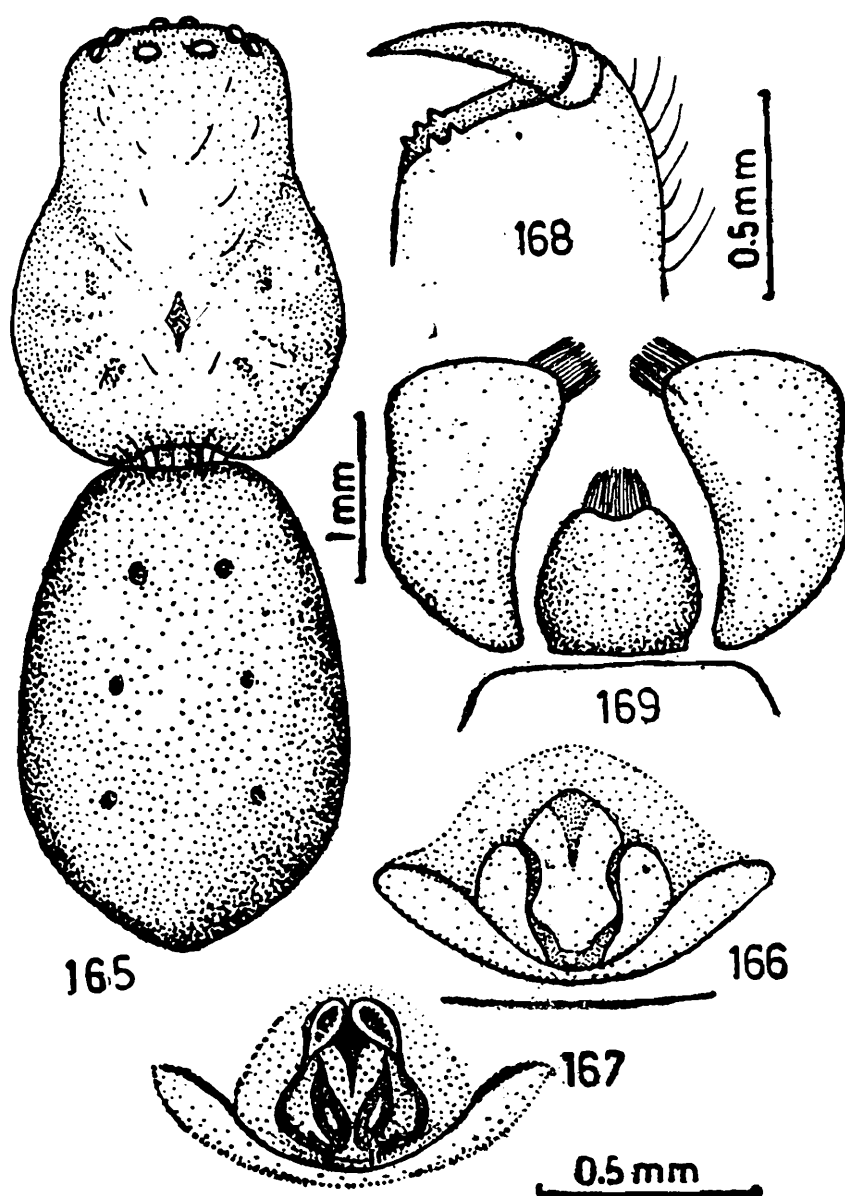
(Figs. 165-169)

General : Caphalothorax and legs redish brown ; abdomen pale yellow in colour. Total length 5.60 mm. Carapace 2.60 mm. long and 2.00 mm. wide ; abdomen 3.00 mm. long and 2.00 mm. wide.

Cephalothorax : Longer than wide, narrow anteriorly and broad posteriorly, covered with fine pubescence and few spine like hair, cephalic region slightly high anteriorly, fovea usually present at the middle of the carapace. Clypeus narrow. Eyes in two rows anterior and posterior, more or less equal size, pearly white in colour. The anterior row slightly recurved, medians slightly smaller than the laterals, posterior row slightly recurved, longer than the anterior row, medians larger than the laterals and also larger than the anterior medians ; both the laterals eyes close to each other. Ocular quadrate wider than long, broad posteriorly and narrower anteriorly. Chelicerae strong and stout, longer than wide, deep brownish in colour, inner and outer margin provided with 2 and 3 teeth (Fig. 168). Maxillae and labium longer and wide, blackish in colour, maxillae slightly depressed at the middle with broader anterior end, the labium narrower anteriorly (Fig. 169). Sternum heart shaped, covered with fine pubescence. Legs long and slender, strong and stout, legs formula 1 4 3 2. Tibia and metatarsi of I and II provided with 3 pairs of ventral spines on each, tarsi relatively shorter and scopulated.

Abdomen : Elongated in form covered with fine pubescence and

some black spine like hair, dorsum provided with 3 pairs of sigilla (Fig. 165). Ventral side uniformly light coloured than the dorsum. Epigyne as elongated convex plate with copulatory opening at the lateral side of the plate (Fig. 166). Internal genitalia with elongated spermatheca (Fig. 167).



Figs. 165-169. 165. Dorsal view of female, legs omitted ; 166. Epigyne ; 167. Internal genitalia ; 168. Chelicera showing arrangements of teeth ; 169. Maxillae and labium.

Type locality ; Holotype : 1 ♀, Reg. No. 5159/18. Mahabalaswar, Mysore, India. 23.12.1960. Coll. B. K. Tikader. Paratype : 1 ♀, Reg. No. 5160/18. Bagna Bandh, Sundarban, 24-Parganas, West Bengal, India. 12.9.1983. Coll. A. K. Hazra. 1 ♀, Reg. No. 5161/18 Miki, Banjan Valley, Karnataka, India. 12.9.1957. Coll. B. Biswas, 4 ♀♀, Reg. No. 5162. Bhabnagar, Gujarat, India. 1.6.1974. Coll. S. K. Gupta. 1 ♀, Reg. No. 5163/18. Bandana, Dist. Betul, M. P., India. 4.11.1971.

Coll. V. D. Srivastava.

Distribution : India : Mysore ; West Bengal, Krrnataka, Gujarat ; M. P.

Remarks ; This species resembles to *C. conflexum* Simon in general appearance but differs from that due to the following particulars :

1. Chelicerae more or less parallel, outer margin provided with 3 teeth where as in *C. conflexum* chelicerae not parallel and the outer margin with 2 teeth.
2. Maxillae angulates distally at its inward side where as in *C. conflexum*, maxillae angulates at its outer side.
3. Epigyne structurally different.

33. *Cheiracanthium conflexum* Simon

(Figs. 170-174)

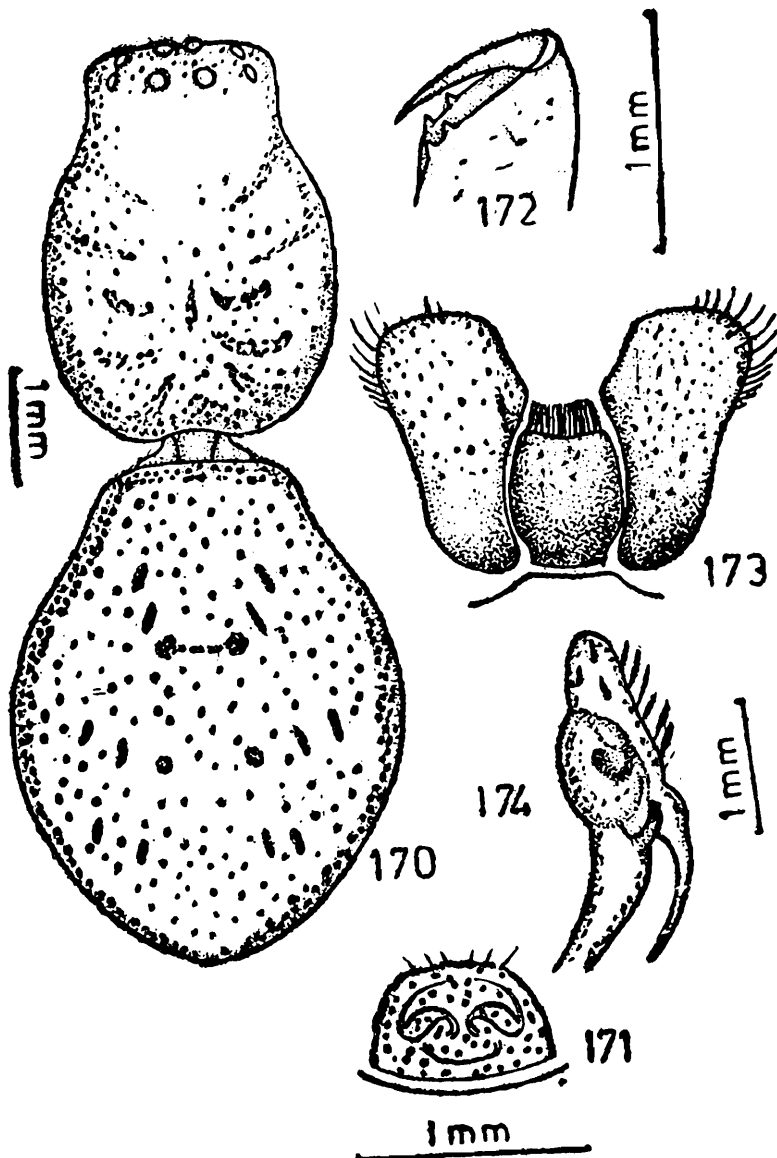
1906. *Cheiracanthium conflexus* Simon, *Ann. Soc. ent. France*, 75 : 297.

Specimen examined : 1 ♀, 1 ♂, Coonoor, Nilgiri, Tamil Nadu, India. Reg. No. 17490, Paris.

General : Cephalothorax yellowish red, legs yellowish brown ; abdomen pale yellow in colour. Total length 7.6 mm. Cephalothorax 3.5 mm. long and 2.4 mm. wide ; abdomen 4.1 mm. long and 3.4 mm. wide.

Cephalothorax : Longer than wide, narrow anteriorly and broad posteriorly, clothed with fine pubescence, fovea present at the middle of the carapace, radiating streaks originate from fovea. Eyes in two rows, silvery white, more or less equal size and distributed in equal distance. The anterior row slightly recurved, posterior row slightly procurved, longer than the anterior row, Ocular quadrate wider than long, narrower anteriorly and wider posteriorly. Chelicerae strong and stout, longer than wide, redish brown in colour, inner and outer margin provided with 2 teeth on each (Fig. 172). Maxillae and labium longer than wide, redish brown in colour, scopulated anteriorly, maxillae slightly constricted at the middle and broad anteriorly (Fig. 173). Sternum oval in shape covered by fine pubescence, brownish red in colour. Legs long and slender, strong and stout covered with hair and spine. Legs formula 1 4 2 3. Tibia and metatarsi of I and II provided with 2 ventral spines on each. Femora provided with 2 dorsal spines. Tibia of the male palp provided with short and curved retrolateral apophysis, cymbium

with long and curved spur at its base. Tegulum convex, embolus arises from the retrolateral side of the tegular apophysis (Fig. 174).



Figs. 170-174. 170. Dorsal view of female, legs omitted; 171. Epigyne; 172. Chelicera showing arrangements of teeth; 173. Maxillae and labium; 174. Male palp.

Abdomen : Longer than wide, oval in shape, covered with pubescence and few spine like hair. Epigyne with semicircular plate, prominent copulatory opening situated on either lateral side of the plate (Fig. 171).

Type locality : Types : Coonoor, Nilgiri, Tamil Nadu, India ; deposited at M. N. H. S. Paris. Reg. No. 17490.

Distribution : Known from the type locality.

Remarks : The type specimen one male and one female, deposited at Paris Museum were critically examined. The present description and illustration are based upon that. The permission to dissect out the genitalia could not be procured, in view of that, the description of internal genitalia not possible to include here.

34. *Cheiracanthium inornatum* Cambridge
(Figs. 175-180)

1874. *Cheiracanthium inornatum* Cambridge, *Proc. zool. Soc. London*, : 290.

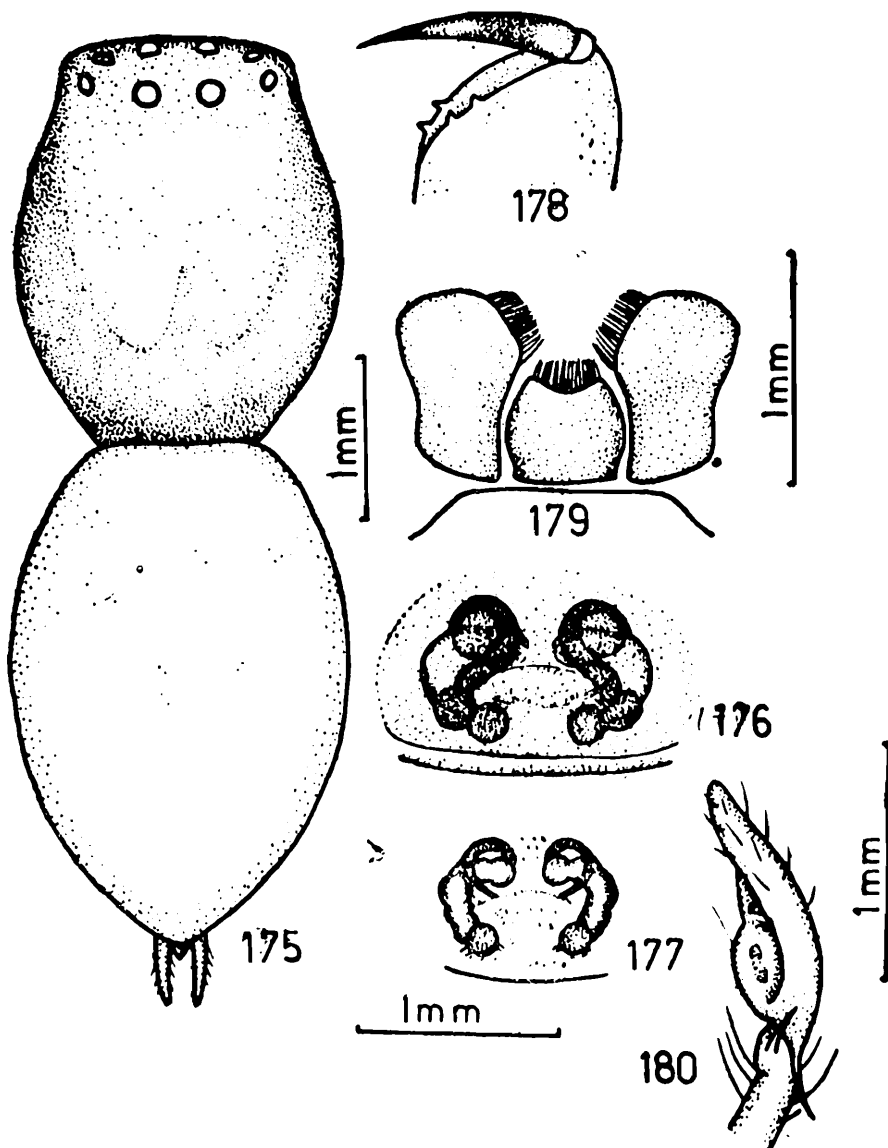
1897. *Cheiracanthium inornatum* : Simon, *Bull. Mus. hist. nat.*, 7 : 290.

1928. *Cheiracanthium inornatum* Laurence, *Ann. S. Afr. Mus.*, 25 (1) : 43.

Specimen examined ; 5 ♀ ♀, 1 ♂, Bombay, Maharashtra, India.
Coll. Julian Hobson.

General : Cephalothorax and legs yellowish brown ; abdomen pale yellow in colour. Total length 5.6 mm. Carapace 2.5 mm. long and 2.00 mm. wide ; abdomen 3.1 mm. long and 2.1 mm. wide.

Cephalothorax : Longer than wide, cephalic region slightly convex with no fovea, clothed with silky hair. Eyes pearly white in colour, arranged in 2 rows anterior and posterior. The anterior row slightly recurved, medians larger than the laterals ; posterior row procurved,



Figs. 175-180. Dorsal view of female, legs omitted ; 176. Epigyne ; 177. Internal genitalia ; 178. Chelicera showing arrangements of teeth ; 179. Maxillae and labium ; 180. Male palp.

longer than the anterior row, medians larger than the laterals and close to each other than the laterals, lateral eyes both anterior and posterior are in contiguous and placed on a tubercle. Ocular quadrate longer than wide. Chelicerae dark brown in colour, inner and outer margin provided with 2 teeth on each (Fig. 178). Maxillae duller red, longer than wide, wider and scopulated anteriorly, constricted at the middle (Fig. 179). Labium usually short not extend beyond the middle of the maxillae. Legs long and slender, legs formula 1 4 2 3. The tibia and metatarsi of I and II provided with 2 and 3 pairs of ventral spines. Tibia of the male palp provided with short and stout retrolateral apophysis. Cymbium with long spur curved outwardly, Tegulum oval, embolus long and slender arises from the retrolateral side of the tegular apophysis (Fig. 180).

Abdomen : Oval in shape, longer than wide, covered by fine silky hair. Ventral side more lighter than dorsum. Epigyne as flat and concave plate with conspicuous copulatory opening (Fig. 176). Internal genitalia with small rounded spermatheca, copulatory tube short (Fig. 177).

Type locality : Types : Bombay, Maharashtra, India. deposited at O.U.M. Oxford. Reg. No. Nil.

Distribution : India ; Africa.

Remarks : 5 female, 1 male type specimens were critically examined deposited at O.U.M, Oxford, Reg. No. Nil. The present description and illustration are based upon that. Beside original description, the description of internal genitalia given here elaborately by dissecting out the genitalia from the type material.

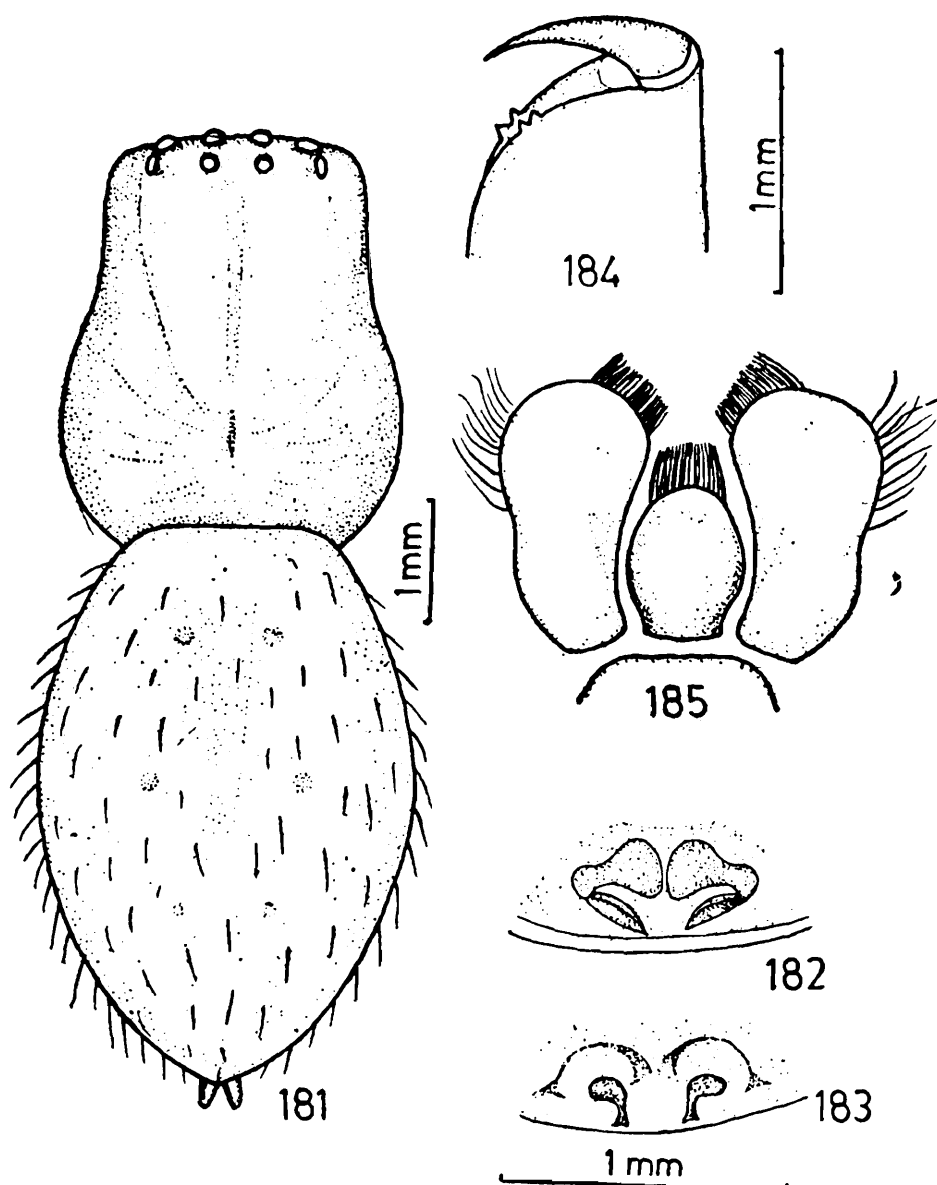
35. **Cheiracanthium poonaensis** sp. nov.

(Figs. 181-185)

General : Cephalothorax and legs blackish red and abdomen light brown in colour. Total length 8.5 mm. Carapace 3.5 mm. long and 3.0 mm. wide ; abdomen 5.0 mm. long and 3.4 mm. wide.

Cephalothorax : Longer than wide, narrow anteriorly and broad posteriorly, cephalic region high anteriorly covered with black spine like hair, provided with median fovea, radiating streaks originate from the median fovea. Eyes in two rows anterior and posterior, pearly white in colour. The anterior row slightly recurved, medians smaller than the laterals ; the posterior row slightly procurved, longer than the anterior row, medians smaller than the laterals, both the lateral eyes close to each

other and remote from the medians. Ocular quadrate almost square. Clypeus narrow. Chelicerae longer than wide, parallel, dorsally scopulated by long black spine like hair, inner and outer margin provided with 2 teeth on each (Fig. 184). Maxillae and labium deep brownish in colour, longer than wide, scopulated anteriorly ; maxillae slightly constricted at the middle and wider anteriorly, the labium narrower



Figs. 181-185. 181. Dorsal view of female, legs omitted ; 182. Epigyne ; 183. Internal genitalia ; 184. Chelicera showing arrangements of teeth ; 185. Maxillae and labium.

anteriorly (Fig. 185). Sternum oval in shape, covered with spine like hair. Legs strong and stout, scopulated by hair and blackish long spine like hair, legs formula 1 4 2 3. Coxa provided with 2-3 indistinct longitudinal blackish lines. Tibia and metatarsi of I and II provided with 1 and 2 pairs of ventral spines, tarsi usually short provided with 2 claws and thick claw tufts.

Abdomen : Longer than wide, covered with pubescence and long

black spine like hair. Dorsum provided with 2 pairs of sigilla (Fig. 181). Ventral side uniformly light coloured than dorsum. Epigyne as flat convex semicircular plate with conspicuous copulatory opening (Fig. 182). Internal genitalia with oval spermatheca, and short copulatory tube (Fig. 183).

Type locality : Holotype : 1 ♀, Reg. No. 5164/18. N.C.L. Compound, Poona, Maharashtra, India. 10.9.1962. Coll. B. K. Tikader.

Distribution : Known only from the type locality.

Remarks : This species resembles to *C. inornatum* Cambridge in general appearance but differs from that due to the following particulars :

1. Cephalothorax with tovea, abdomen provided with 2 pairs of sigilla whereas in *C. inornatum* Cambridge fovea and sigilla absent.
2. Labium longer and extends beyond the middle of the maxillae whereas in *C. inornatum* shorter and not extends beyond the middle of the maxillae.
3. Epigyne structurally different.

36. *Cheiracanthium jabalpurensis* sp. nov.

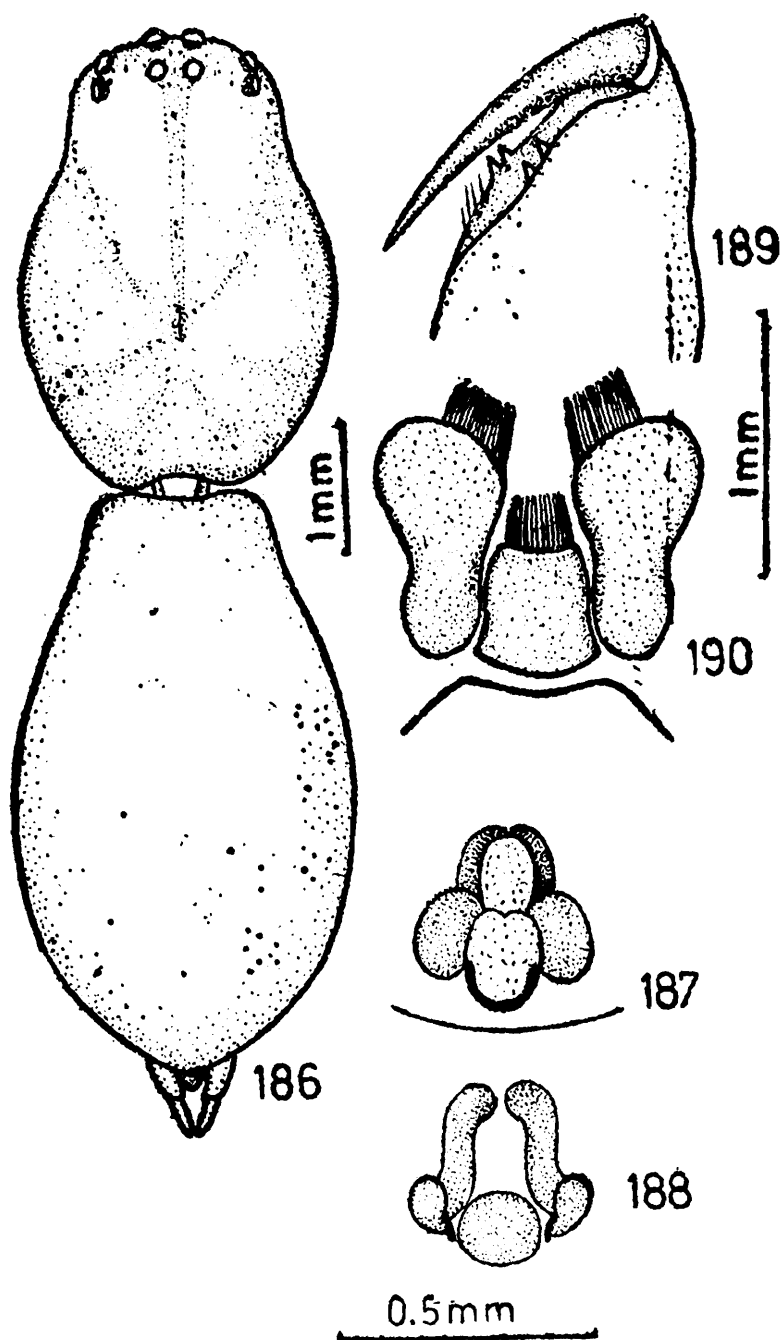
(Figs. 186-190)

General : Cephalothorax and chelicerae redish brown, legs and abdomen pale yellow in colour. Total length 8.10 mm. Carapace 3.60 mm. long and 2.40 mm. wide ; abdomen 4.50 mm. long and 2.60 mm. wide.

Cephalothorax : Longer than wide, wider at the middle, narrower both anterior and posterior, covered with fine pubescence, fovea present posterior to the carapace. Eyes more or less equal size and pearly white in colour arranged in two rows anterior and posterior. The anterior row slightly recurved, medians close to each other, the posterior row slightly recurved, longer than the anterior row, medians close to each other ; both the laterals anterior and posterior are in contiguous. Ocular quadrate almost square. Chelicerae longer than wide, strong and stout, redish brown in colour, inner and outer margin provided with 2 equal teeth on each (Fig. 189). Maxillae and labium redish brown in colour, longer than wide (Fig. 190). Maxillae wider anteriorly with slight concavity at its outer side. Legs more longer and slender, legs I and II longer than III and IV. Legs formula 1 2 4 3. Femora I and II curved ventrally and the femora III and IV curved dorsally. Tibia and metatarsi of I and II provided with 3 pairs of ventral spines on each, tarsi

long, provided with 2 claws and thin claw tufts.

Abdomen : Elongated in form, wider posteriorly and narrower anteriorly, covered with fine pubescence. Epigyne as elongated plate, copulatory opening oval on either lateral side of the plate (Fig. 187). Internal genitalia with elongated spermatheca divided into two parts (Fig. 188).



Figs. 186-190. 186. Dorsal view of female, legs omitted; 187. Epigyne; 188. Internal genitalia; 189. Chelicera showing arrangement of teeth; 190. Maxillae and labium.

Type locality : Holotype : 1 ♀ Reg. No. 5165/18. Madan Mahal, Jabalpur, M.P., India. 17.2.1967. Coll. A. K. Khajuria.

Distribution : Known only from the type locality.

Remarks : This species resembles to *C. sadanai* Tikader in general

appearance but differs from that due to following particulars :

1. Labium longer and extends beyond the middle of the maxillae where as in *C. sadanai* labium shorter not extent beyond the middle of the maxillae.
2. Ocular quadrate almost squire, median eyes rounded where as in *C. sadanai* ocular quadrate wider than long and the median eyes oval.
3. Epigyne structurally different.

37. *Cheiracanthium vorax* Cambridge (Figs. 191-196)

1874. *Cheiracanthium vorax* Cambridge, *Proc. Zool. Soc. London* : 410.

Specimen examined : 5 ♀ ♀, 1 ♂, Bombay, Maharashtra, Coll. Julian Hobson, O.U.M. Reg. No. Nil.

General : Cephalothorax deep redish brown, legs pale yellow and the abdomen dull pale yellow in colour. Total length 8.5 mm. Carapace 3.20 mm. long and 3.00 mm. wide ; abdomen 5.30 mm. long and 4.20 mm. wide.

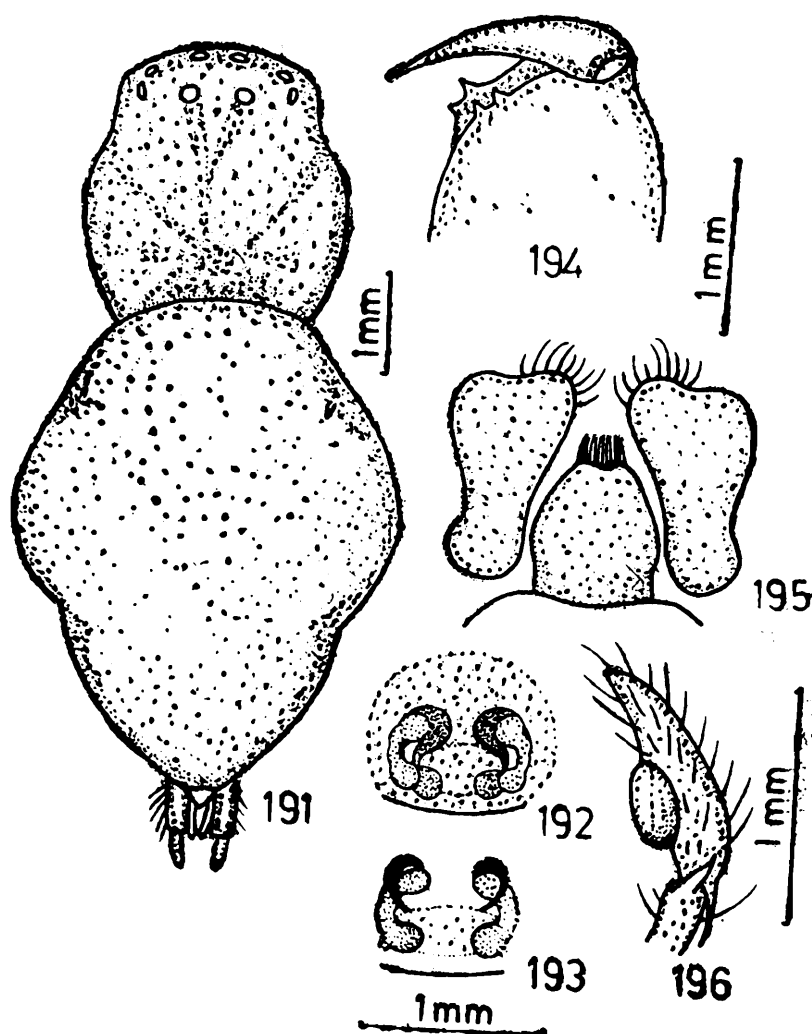
Cephalothorax : Short, broad and rounded behind, cephalic region slightly high and convex anteriorly and broad posteriorly, covered with short rather pale hair with no fovea. Clypeus low. Eyes pearly white, arranged in two rows anterior and posterior. The anterior row of eyes slightly recurved, medians slightly larger than the laterals and close to each other. The posterior row slightly procurved, longer than the anterior row, medians slightly smaller than the laterals, both the laterals eyes close to each other and are obliquely arranged in a tubercle. Ocular quadrate longer than wide. Chelicerae strong and stout, redish brown in colour, inner and outer margin provided with 2 teeth on each (Fig. 194). Maxillae and labium longer than wide, redish brown in colour with narrower posterior end. Maxillae broader and concave anteriorly, slightly constricted at the middle (Fig. 195). Sternum oval in shape with its pointed posterior end. Legs moderately strong and stout, legs formula 1 4 2 3. Tibia and metatarsi of I and II provided with 2 and 3 pairs of ventral spines, tarsi long and less scopulated. Tibia of the male palp with retrolateral apophysis, cymbium with strong spur at its base, tegulum rounded, embolus long (Fig. 196).

Abdomen : Longer than wide, oval in shape, abruptly tapering both anterior and posterior end, wider at the middle, covered with fine hair of various length, some on the upper side of the dorsum bearing

very slender and long spine like hair. Epigyne as rounded and concave plate with conspicuous copulatory opening (Fig. 192). Internal genitalia with small and rounded spermatheca (Fig. 193).

Type locality : Types : Bombay, Maharashtra, India, deposited at O. U. M., Oxford. Reg. No. Nil.

Distribution : Known from the type locality.



Figs. 191-196. 191. Dorsal view of female, legs omitted ; 192. Epigyne ; 193. Internal genitalia ; 194. Chelicera showing arrangements of teeth ; 195. Maxillae and labium ; 196. Male palp.

Remarks : Five female and one male type specimens deposited at O. U. M. Oxford, Reg. No. Nil, were critically examined. The present description and illustration are based upon that. Beside original description, the description of genitalia and internal genitalia are given here elaborately by dissecting out the genitalia from the type material.

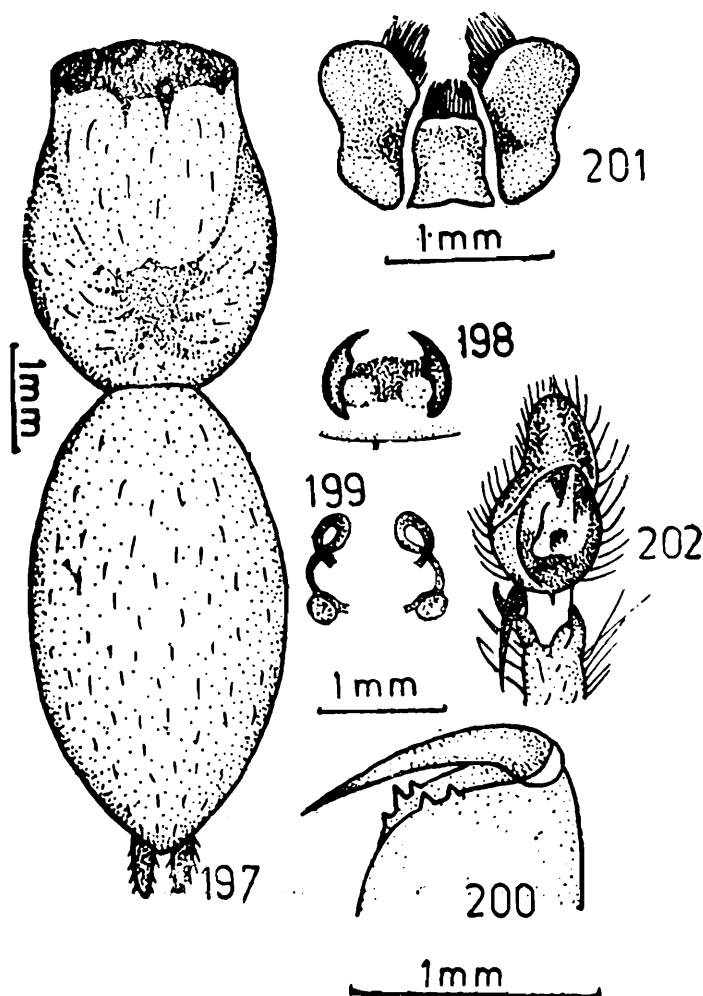
38. **Cheiracanthium sadanai** Tikadar
(Figs. 197-202)

1976 *Cheiracanthium Sadanai* Tikader, *J. Bombay nat. Hist. Soc.*, 73 (1) : 175.

Specimen examined : 1 ♀, Dhosa, Bhabnagar, Gujarat, 25.12.1973. Coll. S. K. Gupta.

General : Cephalothorax abdomen and legs light green. Total length 8.00 mm. Cephalothorax 3.20 mm. long and 2.30 mm. wide ; abdomen 4.80 mm. long and 2.50 mm. wide.

Cephalothorax : Longer than wide, wider in front, clothed with fine hair and few spine like hair, cephalic region slightly high and moderately convex anteriorly, provided with median fovea. Eyes pearly white arranged in two rows. Anterior row slightly recurved, medians oval in shape slightly larger than laterals and close to each other ; posterior



Figs. 197-202. 197. Dorsal view of female, legs omitted ; 198. Epigyne ; 199. Internal genitalia ; 200. Chelicera showing arrangements of teeth ; 201. Maxillae and labium ; 202. Male palp.

row procurved slightly longer than the anterior row, medians oval and larger than the laterals, both the laterals are in contiguous. Ocular quadrate longer than wide and slightly wider behind. Chelicerae strong

nearly vertical dark brown in colour, inner margin provided with 2 small teeth, outer margin with one large tooth another smaller one (Fig. 200). Maxillae longer than wide, deep brown in colour, constricted at the middle (Fig. 201). Labium usually short not extend beyond the middle of the maxillae, scopulated anteriorly. Sternum heart shaped, pointed behind clothed with fine hair. Legs long and slender clothed with hair and spine, anterior legs longer than the posterior, legs formula 1 3 2 4. Tibia and metatarsi of I and II provided with no ventral spine, tarsi long and scopulated. Tibia of the male palp with stout retrolateral apophysis and a short rudimentary ventral apophysis, cymbium with stout spur at its base, tegulum rounded and embolus usually long (Fig. 202).

Abdomen : Rather long narrow posteriorly, clothed with fine pubescence and some long spine like hair (Fig. 197). Ventral side uniformly pale coloured. Epigyne with broad and concave plate, conspicuous rounded copulatory opening present on either lateral side (Fig. 198). Internal genitalia with small and rounded spermatheca, copulatory tube short (Fig. 199).

Type locality : Holotype : 1 ♀, Allotype : 1 ♂, Ludhiana Agricultural University Compound, Punjab, India. 12.10.1975. Coll. J. L. Sadana, deposited at National Collection of Z.S.I. Reg. No. Nil.

Distribution : India : Punjab, Gujarat.

Remarks : The holotype and allotype were critically examined and the description and illustration are based on holotype material. Beside original description, the description of the internal genitalia given here by dissecting out the genitalia from the holotype material.

39. *Cheiracanthium nalsaroverensis* Patel & Patel

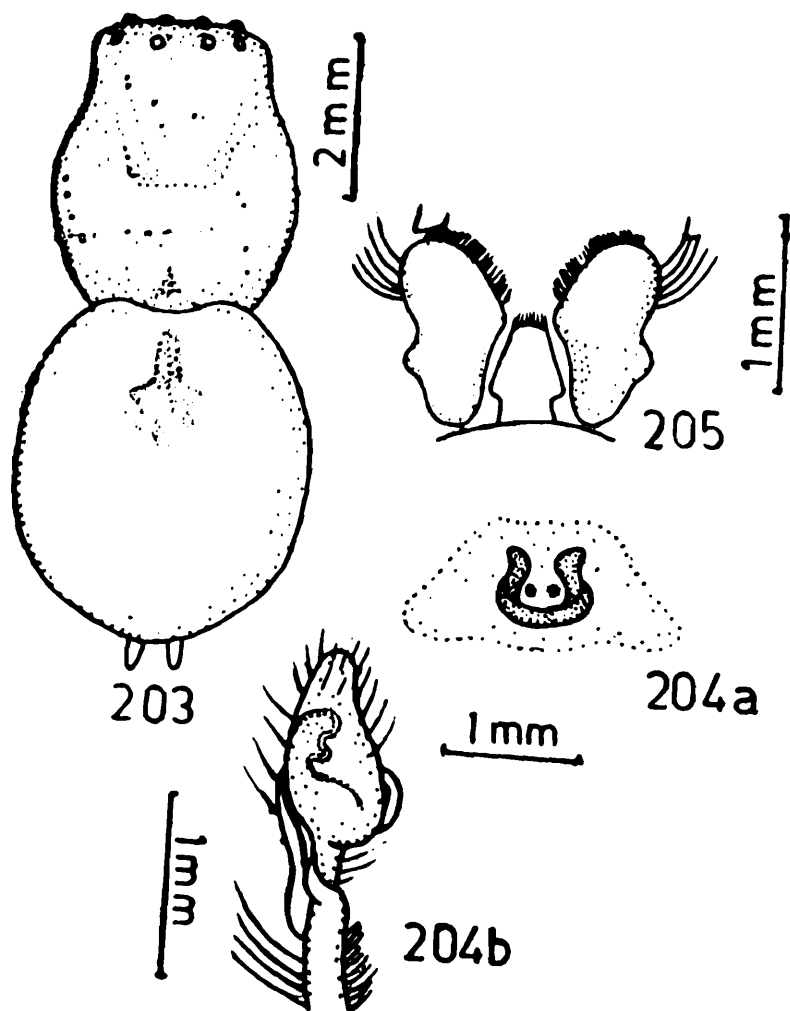
(Figs. 203-205)

1974. *Cheiracanthium nalsaroverensis* Patel & Patel, *Proc. Indian Acad. Sci.*, 78(1): 4.

General : Cephalothorax redish brown ; Legs pale brown, abdomen pale yellow in colour. Total length 7.90 mm. Carapace 3.65 mm. long and 3.00 mm. wide ; abdomen 4.30 mm. long and 4.00 mm. wide.

Cephalothorax : Longer than wide, wider in front rather flat and convex anteriorly, clothed with fine pubescence with no fovea. Eyes in two rows anterior and posterior. The anterior row procurved, longer than the posterior row, medians oval slightly larger than the laterals

and close to each other than the laterals, posterior row slightly pro-curved. Ocular quadrate slightly longer than wide, narrower in front. Chelicerae strong dark brown in colour nearly vertical with 2 equal teeth on the inner margin and 3 teeth on the outer margin. Maxillae longer than wide, scopulated anteriorly, slightly constricted at the middle (Fig. 205). Labium longer than wide. Sternum pale brownish with darker margin covered with fine hair. Leg long and stout clothed with hair. Tibia and metatarsi of I with 3 and 1 pair of ventral spine. Tibia and metatarsi of II provided with 1 and 2 pairs of ventral spines.



Figs. 203-205. 203. Dorsal view of female, legs omitted; 204(a). Epigyne; 204(b). Male palp; 205. Maxillae and labium.

Abdomen: Oblonged narrower posteriorly, clothed with fine pubescence. A dorsal pale marking with white chalky-white lateral dots extends from the base of the abdomen to the mid-dorsum. Ventral side more lighter than dorsum. Epigyne as rounded plate, with conspicuous copulatory opening (Fig. 204).

Type locality: Holotype: 1 ♀, allotype: 2 ♂♂, Nalsarover, Amedabad, Gujarat, India. 10.12.1967. Coll. B. H. Patel. Type specimen with author, not deposited at Z.S.I. National Collection.

Distribution : Known from the type locality.

Remarks : The present description and illustration given here based upon the original description and illustration of the author in his Ph. D. thesis, since the type could not be procured.

40. *Cheiracanthium conspersum* Thorell

1891. *Cheiracanthium conspersum* Thorell, *Kongt. Sv. Vet. Acad. Handle*, 24 (2) : 27.

General : Cephalothorax yellowish brown ; abdomen olivaceous green. Total length 8.5 mm. Carapace 3.00 mm. long ; abdomen 5.5 mm. long and 3.00 mm. wide.

Cephalothorax : Longer than wide, fovea centrally placed. Eyes in two rows anterior and posterior. The eyes of the anterior row almost equal size, posterior medians larger than the laterals and separated from each others. Chelicerae longer than wide more or less parallel. Maxillae and labium longer than wide. Legs long and slender. Legs formula 1 4 2 3.

Abdomen : Elongated in form. Four pairs of sigilla present on the dorsum, superior pair rounded, 2nd pair double broader than long, other 2 pairs longer than wide.

Type locality : Holotype : female, Nicobar Island, India.

Distribution : Known only from the type locality.

Remarks : Neither the types nor any other materials could be procured. Therefore, the description given here based upon the original Latin literature of Thorell (1891) after translating it into English.

41. *Cheiracanthium incompta* Thorell

1891. *Cheiracanthium incompta* Thorell, *Kongl. Sv. Vet. Acad. Handle*, 24 (2) : 29.

General : Cephalothorax yellowish abdomen pale yellowish in colour. Total length 7.7 mm. Carapace 2.7 mm. long ; abdomen 5.00 mm. long and 3.00 mm. wide.

Cephalothorax : Longer than wide. Fovea present at the middle of the carapace. Eyes in two rows anterior and posterior. The anterior row slightly recurved, medians larger than laterals, the posterior medians smaller than laterals and far distance from the laterals. Maxillae and labium longer than wide. Sternum oval in shape. Legs long and slender. Legs formula 1 4 2 3.

Abdomen : Longer than wide, oval in shape. Four pairs of sigilla present on the dorsum, superior pair cylindrical, 2nd pair slightly broad, other two pairs longer than broad.

Type locality : Holotype : female, Nicobar Island, India.

Distribution : Known only from the type locality.

Remarks : In spite of best efforts the type of this species could not be procured, therefore, the diagnosis which is given here based upon the original Latin literature of Thorell (1891) after translating it into English.

The following two species which are also known from India under this genus are mentioned here giving the original reference and distributional data since neither the relevant literature nor the types could be procured.

42. *Cheiracanthium approximatum* Cambridge

1885. *Cheiracanthium approximatum* Cambridge, *Sci. Res. Soc. Yarkand. Miss. Aran.*, : 26.

Type locality : Yarkand, N. W Himalayas, India.

Distribution : Known only from the type locality.

43. *Cheiracanthium adjacens* Cambridge

1885. *Cheiracanthium adjacens* Cambridge, *Sci. Res. Soc. Yarkand Miss. Aran.*, : 24.

1935. *Cheiracanthium adjacens* : Caporiacco, *Mem. Soc. ent. ital.*, 13 : 219.

Type locality : Yarkand, N. W. Himalayas, India.

Distribution : India : N. W Himalayas ; Africa.

Genus *Simalio* Simon

1897. *Simalio* Simon, *Histoire naturelle des Araign*, 2 (1) : 77.

1928. *Simalio* : Petrunkevitch, *Trans. Connect. Acad. Art. Sci.*, 29 : 172.

1906. *Simalio* : Simon, *Ann. Soc. ent. Fr.*, 75 : 299.

Diagnosis : Cephalothorax small, nearly parallel, pale and radiating towards yellow. Fovea usually absent, if present, very inconspicuous. Eyes in two rows, anterior and posterior, the anterior row

slightly recurved, medians blackish, smaller than laterals, and closer to each other. Posterior row usually longer than the anterior row, medians larger than all eyes, widely separated from each other and closer to the laterals. Ocular quadrate, wider than long, narrow anteriorly and wide posteriorly. Chelicerae light brown, strong and convex, Sternum more or less oval, whitish muddy. Maxillae relatively longer than wide slightly constricted at the middle. Legs relatively short. Male palp longer than wide. Tibia of the male palp provided with retrolateral apophysis ; cymbium without spur, tegulum without apophysis, embulus short. Abdomen oblong or oval, covered with fine silky hair, no ornamentation present on the dorsum.

The genus *Simalio* Simon bears similarities with *Clubiona* Latreille in general appearance but differs from it in having inconspicuous fovea, the posterior median eyes larger and widely separated where as in *Clubiona* Latreille prominent fovea present and the post median eyes not larger and widely separated.

The spiders of the genus *Simalio* spend the daylight hours in silken sac, then emerge at night and forage. Their claw tuft and legs scopulae provide a secured footing on plant surface. Their bodies are of various hues as yellow, pale orange, grey, etc.

Type species : *Simalio petilus* Simon, 1897.

Distribution : Mexico ; Philippines ; Trinidad ; Luzon ; Ceylon ; India.

Key to the species of the genus *Simalio* Simon from India

- | | |
|--|---------------------|
| 1. Labium scopulated, wide posteriorly, narrow anteriorly ;
retrolateral apophysis of the male palp sinuous in two
angular structure. | <i>castaneiceps</i> |
| Labium not scopulated, more or less parallel, retrolateral
apophysis not sinuous in two angular structure. | 2 |
| 2. Cephalothorax yellow brown, narrow anteriorly and broad
posteriorly, without black border. | <i>biswasi</i> |
| Cephalothorax pale yellow, not narrow anteriorly, more or
less parallel, with black border. | <i>parcomis</i> |

44. *Simalio castaneiceps* Simon

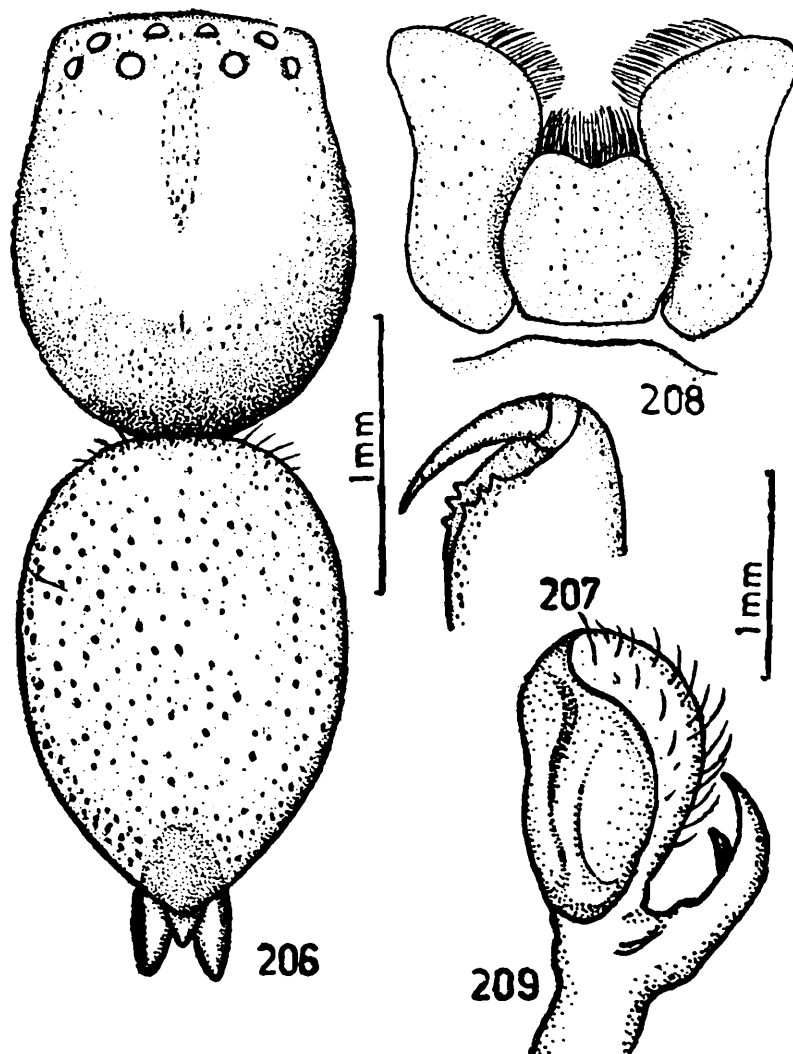
(Figs. 206-209)

1906. *Simalio castaneiceps* Simon, *Ann. Soc. ent. Fr.*, 75 : 299.

Specimen examined : 1 ♂, Nilgiri hills, Tamil Nadu, India. Reg, No. 22592, deposited in Paris Museum.

General : Cephalothorax and legs redish brown in colour ; abdomen light yellow. Total length 3.2 mm. Carapace 1.5 mm. long and 1.00 mm. broad ; abdomen 1.8 mm. long and 1.2 mm. broad.

Cephalothorax : Small more or less parallel, slightly longer than broad, covered with pubescence provided with inconspicuous median furrow and situated just below the median half of the cephalothorax. Eyes in two rows, anterior and posterior ; the anterior row of eyes usually shorter, slightly recurved, medians blackish, slightly smaller than the laterals and close to each other than the laterals ; posterior row of eyes usually longer than the anterior



Figs. 206-209. 206. Dorsal view of male, legs omitted ; 207. Chelicera showing arrangements of teeth ; 208. Maxillae and labium ; 209. Male palp.

row, not in equal size, the medians are the largest of all eyes and widely separated and closer to the laterals. Ocular quadrate wider than long, narrow anteriorly and wider posteriorly. Chelicerae ovatocylindrical convex, redish brown in colour, inner and outer margin provided with 3

teeth on each (Fig. 207). Maxillary lobe longer than wide, covered with thin pubescence, narrow anteriorly and broad posteriorly (Fig. 208). Labium light brown in colour, scopulated anteriorly, moderately elongated; posteriorly broad, anteriorly narrow. Sternum oval in shape reddish brown in colour. Legs relatively short and strong. Legs formula 1 2 4 3. Coxa long, trochanter and patella short. Femur, tibia and metatarsi relatively long. Tibia and metatarsi of I and II provided with 4 pairs of ventral spines. Femora I, II, III, IV provided with 2 dorsal spines on each. Tarsi of all legs provided with 2 claws and less claw tufts. Tibia of the male palp provided with curved retrolateral apophysis with double hooked structure, cymbium without spur (Fig. 209).

Abdomen : Longer than wide, oval in shape, covered by fine silky hair. No ornamentation present on the dorsum. Ventral side lighter than the dorsum.

Type locality : Holotype : male, Coonoor, Nilgiri Hills, Tamil Nadu, India.

Distribution ; Known only from the type locality.

Remarks : The present description and illustration are based on examining one male type specimen housed in M.N.H.S., Paris, Reg. No. 22592.

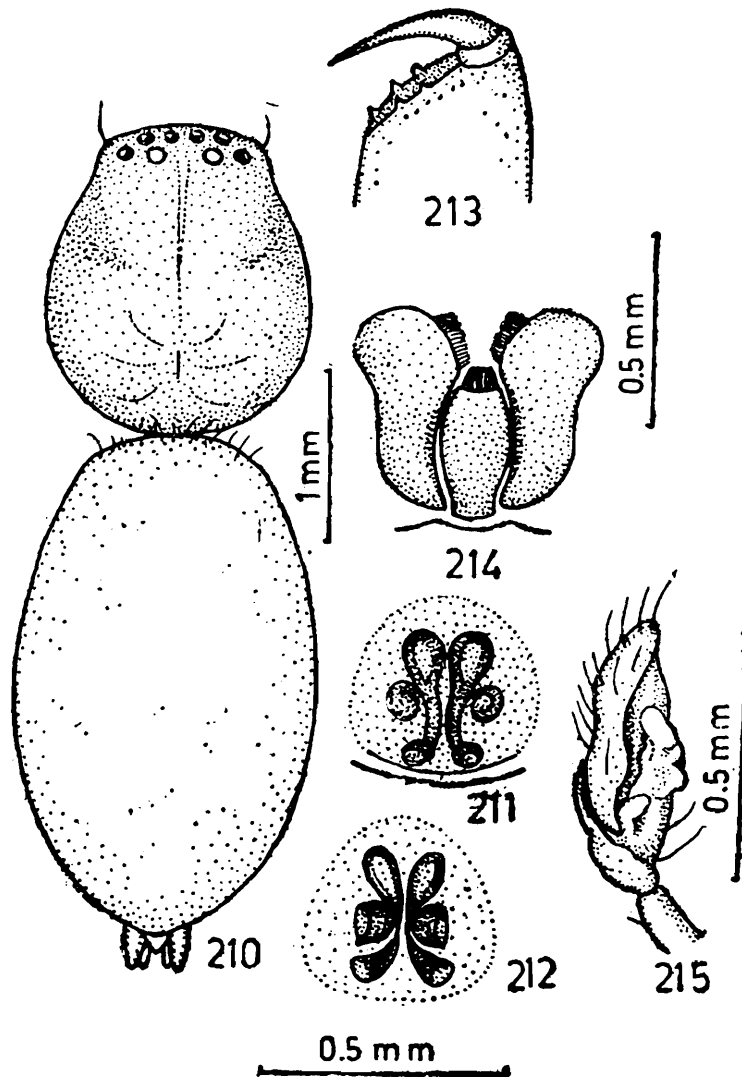
45. *Simalio biswasi* sp. nov.

(Figs. 210-215)

General : Cephalothorax and legs yellowish brown; abdomen pale yellow in colour. Total length 4.5 mm. Carapace 1.8 mm. long and 1.2 mm. wide; abdomen 2.7 mm. long and 1.5 mm. wide.

Cephalothorax : Small, longer than wide, narrow anteriorly and broad posteriorly, covered with thinly pubescence, provided with inconspicuous fovea situated just below the median half of the cephalothorax. Clypeus narrow. Eyes in two rows anterior and posterior, anterior row slightly recurved, medians smaller than the laterals and close to each other than the laterals. The posterior row usually longer than the anterior row, more or less straight, the medians largest of all eyes, widely separated from each other and closer to the laterals. Ocular quadrate wider than long, narrow anteriorly and broad posteriorly. Chelicerae moderately strong, pale yellow in colour, inner margin provided with 2 teeth and outer margin with 3 teeth (Fig. 213). Maxillae longer than broad, narrow anteriorly and broad posteriorly slightly depressed at the middle (Fig. 214), covered with fine pubescence, reddish

brown in colour. Labium yellowish in colour moderately elongated more or less parallel not scopulated anteriorly. Sternum oval in shape, redish brown in colour, pointed behind, covered by fine silky hair. Legs relatively short and strong. Legs formula 4 1 2 3. Coxa long, trochanter and patella short and convex. Femur, tibia and metatarsi relatively long. Femora I, II provided with 2 pairs of dorsal spines.



Figs. 210-215. 210. Dorsal view of female, legs omitted ; 211. Epigyne ; 212. Internal genitalia ; 213. Chelicera showing arrangements of teeth ; 214. Maxillae and labium ; 215. Male palp.

Tibia and metatarsi of I and II provided with 2 pairs of ventral spines respectively. Tarsi of all legs relatively long and less scopulated. Tibia of male palp provided with retrolateral apophysis which is long and slender ; tegulum without apophysis, embolus long and narrow (Fig. 215). The male specimen have less flattened abdomen than the female.

Abdomen : Longer than wide, oval in shape, broader posteriorly and narrow anteriorly. Dorsum without ornamentation, covered with fine silky hair, provided anteriorly with a cluster of semierrect setae. Venter side lighter than dorsum. Epigyne as X shaped elongated plate

with rounded copulatory opening (Fig. 211). Internal genitalia with elongated spermatheca (Fig. 212).

Type locality : Holotype : 1 ♀, Reg. No. 5166/18. Paratypes : 2 ♀ ♀, Reg. No. 5167/18. Zoo Garden, Alipore, Calcutta, West Bengal, India. 4.3.1983. Coll. Bijan Biswas. Allotype : 1 ♂ Reg. No. 5168/18. Mysore, India. 7.1.1971. Coll. B. K. Tikader.

Distribution : Known only from the type locality.

Remarks : This species resembles to *S. petilus* Simon in general appearance but differs from that due to the following particulars :

1. Lateral eyes of anterior and posterior row separated where as in *S. petilus* close to each other.
2. The tibia and metatarsi of I and II provided with 2 pairs of ventral spines where as in *S. petilus* there is 1 pair of ventral spine.
3. Epigyne structurally different.

* This species is named after Dr. B. K. Biswas who collect it. This appears to be an useful predator.

46. *Simalio parcomis* Simon

(Figs. 216-219)

1906. *Simalio parcomis* Simon, *Ann. Soc. ent. France*, 75 : 299.

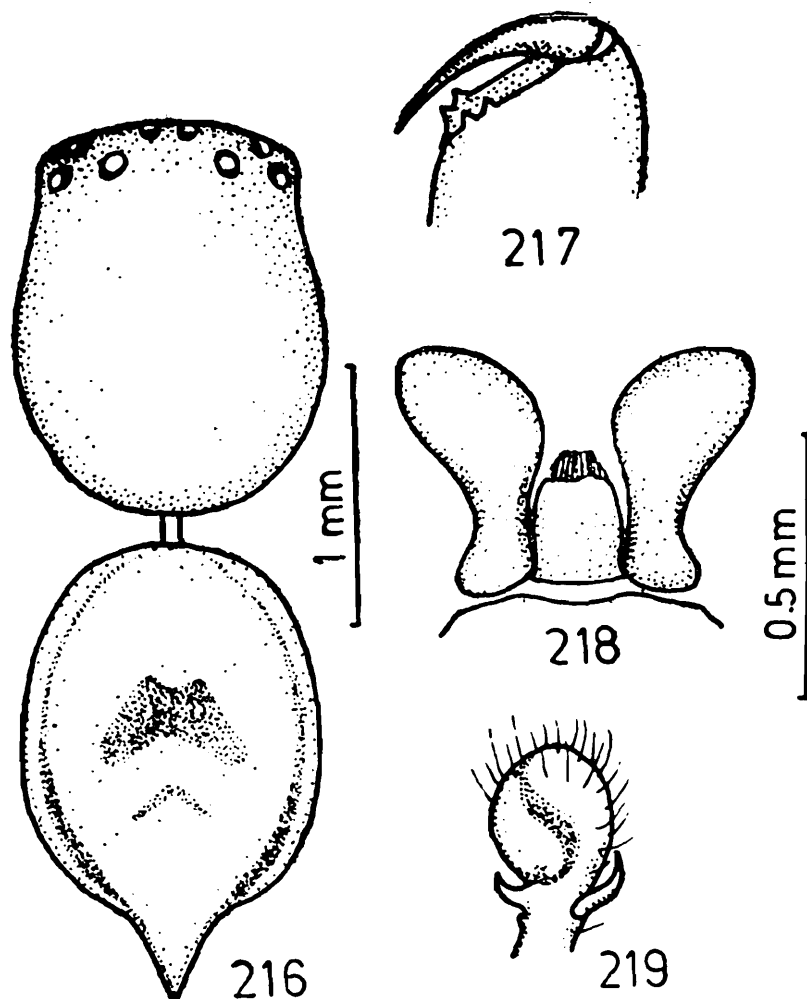
Specimen examined : 1 ♂, Coonoor, Nilgiri hills, Tamil Nadu, India. Reg. No. 14736. Paris.

General : Cephalothorax and legs yellowish with black borders ; abdomen pale yellowish in colour. Total length 3.00 mm. Carapace 1.4 mm. long and 1.2 mm. wide ; abdomen 1.6 mm. long and 1.2 mm. wide.

Cephalothorax : Small, more or less parallel slightly wider anteriorly covered by fine pubescence, inconspicuous fovea at the middle of of the carapace. Eyes in two rows—the anterior and posterior. The anterior row slightly recurved, medians blackish and close to each other ; posterior row longer than the anterior row, medians larger and widely separated from each other. Ocular quadrate wider than long with narrower anteriorly. Chelicerae strong and stout, inner and outer margin provided with 2 teeth on each (Fig. 217). Maxillae and labium longer than wide, labium scopulated anteriorly, maxillae slightly depressed at the middle (Fig. 218). Sternum short, muddy in colour, oval in shape. Legs short, legs formula 1 4 2 3. Tibia and metatarsi of I and II provided with 1 and 2 pairs of ventral spines. Tibia of the

male palp provided with long retrolateral apophysis. Genital bulb oval, tegulum convex, embolus short (Fig. 219).

Abdomen : Oval in shape, longer than wide, covered by fine pubescence.



Figs. 216-219. 216. Dorsal view of male, legs omitted ; 217. Chelicera showing arrangements of teeth ; 218. Maxillae and labium ; 219. Male palp.

Type locality : Holotype : male, Coonoor, Nilgiri hills, Tamil Nadu, India, deposited at Paris Museum.

Distribution : Known only from type locality.

Remarks : The present description and illustration based upon one male type specimen deposited at Paris Museum, Reg. No. 14736.

Genus *Eutichurus* Simon

1896. *Eutichurus* Simon, *Ann. Soc. ent. Fr.*, 65 : 502.

1927. *Eutichurus* : Mello-Leitao, *Biol. Mus. Nat. Rio de Janeiro*, 2 : 5.

1941. *Eutichurus* : Mello-Leitao, *Ann. Acad. Bras. Sci. Rao.*, 13 : 319.

1944. *Eutichurus* : Mello-Leitao, *Rev. Mus. La Plata n. s. Zool.*, 2 no 12 : 175.

Diagnosis : Cephalothorax longer than wide, clothed with long feathery hair, provided with prominent fovea. Eyes in two rows anterior, smaller in size, silvery white in colour, the space between the eyes 3 times longer than its diameter. The anterior row straight or slightly recurved and the posterior row procurved, the anterior medians two times larger than the posterior medians, both the medians far remote from the laterals and close to each other. Ocular quadrate wider than long. Chelicerae strong and stout more or less parallel. Maxillae and labium longer than wide ; maxillae with no depression at the middle. Sternum heart shaped covered by long curved black spine like hair. Legs not very long, strong and stout, legs formula 1 2 4 3. Coxa and trochanter often covered with yellowish hair. Tibia have the same length with patella. Tibial apophysis of the male palp straight or slightly curved. Abdomen oblonged in shape covered with long spine like hair. Genitalia convex and elongated plate, black and hairy anteriorly.

The genus *Eutichurus* Simon bears similarities with *Cheiracanthium* Koch in general appearance but differs from it due to the larger size, the presence of prominent fovea and the post median eyes very small and closer, where as in *Cheiracanthium* smaller size, no fovea and the posterior median eyes not smaller and closer.

The spiders of the genus *Eutichurus* larger in size, olivaceous green in colour found in bushes in low hilly region as well as high altitude.

Type specimen : *Eutichurus ferox* Simon 1896.

Distribution : Ecuador ; Loja (Goujon) ; Cuenca ; Colombia ; India, new report.

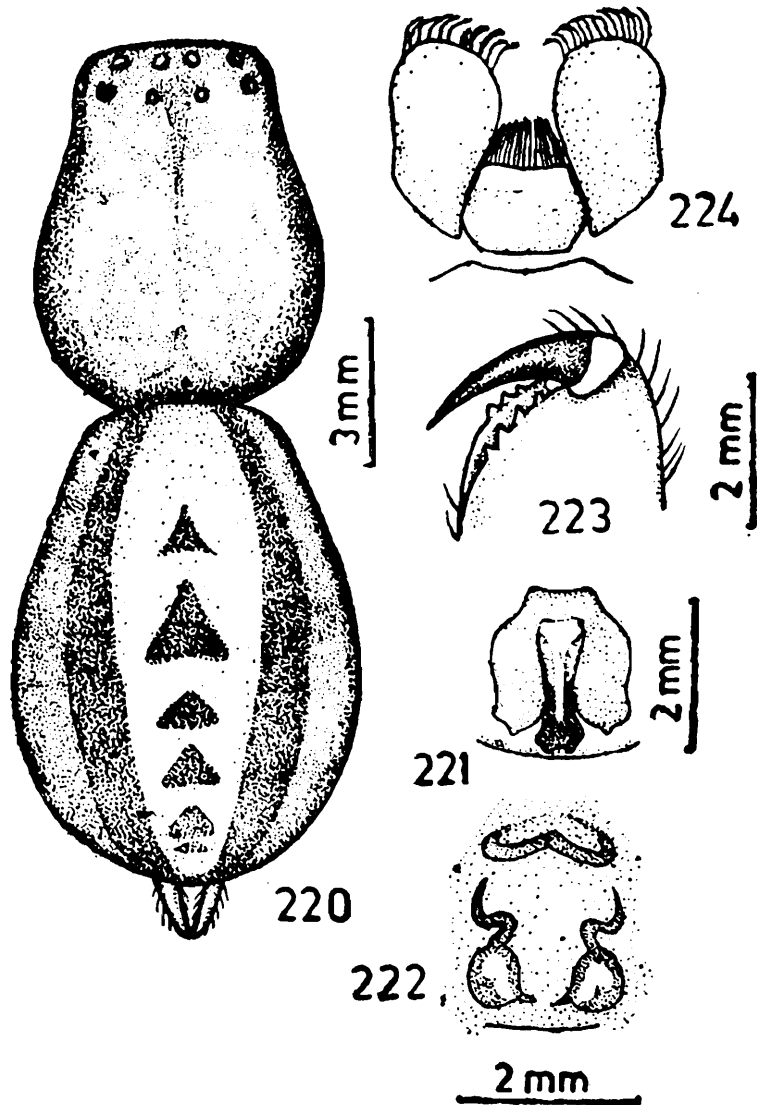
***Eutichurus chingliputensis* sp. nov.**

(Figs. 220-224)

General : Cephalothorax olivaceous green with blackish borders, legs blackish red ; abdomen with yellowish ornamentation. Total length 17.00 mm. Carapace 7.20 mm. long and 6.00 mm. wide ; abdomen 9.80 mm. long and 8.00 mm. wide.

Cephalothorax : Longer than wide, narrow and convex anteriorly, broad posteriorly, covered with fine spine like hair, prominent fovea present just below the median half of the carapace. Clypeus narrow and slanting. Eyes in two rows—anterior and posterior, silvery white, smaller in size, distributed in the distance which are at least 3 times longer than the diameter of the eyes. The anterior row straight, medians two times larger than the posterior medians and close to each other.

The posterior row procurved, longer than the anterior row, medians smaller than the laterals and close to each other than the laterals, both the laterals further remote from the medians. Ocular quadrate wider than long, narrow anteriorly and broad posteriorly. Chelicerae strong



Figs. 220-224. 220. Dorsal view of female, legs omitted ; 221. Epigyne ; 222. Internal genitalia ; 223. Chelicera showing arrangements of teeth ; 224. Maxillae and labium.

and stout, blackish in colour, clothed with long black spine like hair, inner and outer margin provided with 4 and 3 teeth (Fig. 223). Maxillae and labium longer than wide, maxillae not depressed at the middle, anteriorly wider, labium wider posteriorly and narrower and scopulated anteriorly (Fig. 224). Sternum heart shaped, yellowish in colour, covered by number of curved black hair. Legs strong and stout not very long. Legs formula 1 2 4 3. Tibia and metatarsi of I and II provided with 5 and 1 pair of ventral spines. Femora provided with 3 pairs of dorsal spines, tarsi relatively short and provided with 2 claws and thick claw tufts,

Abdomen : Spindle shaped, longer than wide, covered by long spine like hair. Dorsum decorated by a pattern of yellow and blackish colouration, triangular blackish patches present along the mid-dorsal line, on either side of which yellowish patches present. Vulva area rounded anteriorly, long and slender blackish impression extending from the anterior end of the epigyne to the genital groove. Conspicuous rounded copulatory opening present on either lateral side of the scutum (Fig. 221). Internal genitalia with rounded spermatheca divisible into two parts provided with short copulatory tube (Fig. 222),

Type locality : Holotype : 1 ♀, Reg. No. 5169/18. Vedhanthangal, Dist. Chingliput, Madras, Tamil Nadu, India. 11.2.1965. Coll. J. K. Sen.

Distribution : Known from the type locality.

Remarks : This species resembles to *E. ferox* Simon in similar structure and colouration of the body but differs from it on the following particulars :

1. Tibia longer than patella and the tarsi usually short where as in *E. ferox* tibia and patella always in same length and the tarsi long.
2. Abdomen decorated by black and yellowish pattern and spindle in shape where as in *E. ferox* no black and yellowish Pattern present and oval in shape.
3. Epigyne structuraliy different.

Genus *Tolophus* Thorell

1891. *Tolophus* Thorell, *Kongl. Sv. Vet. Acad. Handle*, 24 (2) : 25.

1897. *Tolophus* : Simon, *Histoire naturelle des Araigness*, 2 (1) : 89.

1928. *Tolophus* : Petrunkevitch, *Trans. Conn. Acad. Art. Sci.*, 29 : 172.

Diagnosis : The cephalothorax concave and egg shaped. The shield is not very conspicuous or prominent. The median furrow is very short, generally situated centrally. There are eight eyes, arranged in two transverse series, the anterior and posterior. The anterior row very close to the margin of the clypeus, recurved, medians are widely separated from each other than the laterals. The posterior row occupies almost whole the breadth of the front, much longer than anterior row, medians larger than laterals and not widely separated. Chelicerae parallel longer than broad. Maxillae twice longer than broad almost parallel. Labium slightly longer than broad. Legs are small. Legs formula 4 2 1 3. Metatarsi armed with two claws, the claws are long. The 1st metatarsi more scopulated. Abdomen narrow and elongated, covered with pubescence.

The spiders of the genus *Tolophus* Thorell resemble to *Clubiona* Latreille in similar structure but differs from that due to the wider distance between the median frontal eyes where as closer in *Clubiona* Latreille.

These spiders have elongated body like *Clubiona* Latreille.

Type species : *Tolophus submaculatus* Thorell 1891.

Distribution : America ; India.

48. *Tolophus submaculatus* Thorell

1891. *Tolophus submaculatus* Thorell, *Kongl. Sv. Vet. Acad. Handle*, 24 (2) : 25.

General : Total length 6.2 mm. Cephalothorax yellowish brown ; abdomen brownish red.

Cephalothorax : Longer than wide with short median furrow. Eyes in two rows, the anterior row of eyes very close to the margin of the clypeus, slightly recurved medians larger than laterals and widely separated from each other than the laterals. The posterior row much longer than the anterior row, medians larger not widely separated. Chelicerae and Maxillae longer than wide, more or less parallel. Labium longer than wide. Legs not very strong usually short. Legs formula 4 2 1 3. Tibia and metatarsi of I and II provided with 2 and 2 ventral spines. Tarsi provided with long and black claws. Metatarsi I more scopulated.

Abdomen : Longer than wide, oval in shape.

Type locality : Holotype : male, Nicobar, India.

Distribution : Known from the type locality.

Remarks : The author could not make any collection of this species and it was not possible either to get the types. Therefore, in order to make this account a complete one, a brief description of this species is given here basing upon the original description which is in Latin and translating it into English.

Genus *Matidia* Thorell

1878. *Matidia* Thorell, *Ann. Mus. Civ. Stor. nat. Genova*, 13 : 317.

1882. *Matidia* : Scudder, *Bull. U. S. Nat. Mus.*, 19 : 202.

1897. *Matidia* : Simon, *Ann. Soc. ent. Fr.*, (6) 7 : 261.

1928. *Matidia* : Petrunkevitch, *Trans. Connect Acad. Arts. Sci.*, 29 : 172.

1945. *Matidia* : Mello-Leitao, *Rev. Mus. Plata (n. s.) 4 Zool.*, 29 : 261.

Diagnosis : Cephalothorax concave provided with longitudinal

median furrow. Eyes are in two rows anterior and posterior, and are disposed to occupies all the breadth of the front. The anterior row are close to the margin of the clypeus arranged in equal distance. The posterior row of eyes longer than the anterior, more or less straight medians widely separated from each other than the laterals. Chelicerae small and long. The maxillae is smooth four times longer than the labium. The labium is much longer than broad and wider at its distal end. The legs are small. The 1st and 2nd legs longer than the others. Tarsi furnished with claws. Abdomen narrow and elongated. The vulva area is not clear.

This genus very similar with *Clubiona* Latreille in general appearance but differs from that due to the 2nd legs much longer than the others, absence in *Clubiona*.

Type species : *Matidia virens* Thorell 1878.

Distribution : Ambionia ; Celebes ; Pinang ; Java ; Argentina ; India.

49. *Matidia incurvata* Reimoser

1934. *Matidia incurvata* Reimoser, *Rev. Suisse zool.*, 41 (32) : 489.

General : Cephalothorax yellow, legs pale yellowish and abdomen uniformly light coloured. Total length 49 mm. Carapace 2.3 mm. long and 1.6 mm. broad ; abdomen 2.6 mm. long and 1.4 mm. broad.

Cephalothorax : Longer than wide, distinct fovea present at the middle. Eyes in two rows anterior and posterior, the anterior row arranged in an equal distance, the medians slightly smaller than the laterals. The posterior row usually longer than the anterior row, slightly procurved, the medians are in wider distance from each other than the laterals. Chelicerae pale whitish, outer row with 5 teeth and the inner row with 4 teeth. Sternum yellowish in colour. They are not very strong. Patella 3 and 4 provided with a long dorsal spines. Tibia and metatarsi of I and II provided with 2 and 1 pair of ventral spines. The tibia and metatarsi of III and IV provided with 2 and 3 pairs of ventral spines. Tibial apophysis of male palp with rectangularly curved apophysis.

Abdomen : Long and narrow, uniformly light coloured, no ornamentation present on the dorsum.

Type locality : Holotype : male, Mariyan Shola, South India.

Distribution : Known only from type locality.

Remarks : It is not possible either to get the type or any other collection of this species. Therefore, in order to make this account or complete one a brief description of this species is given here basing upon the original description which is in German and translating it into English.

Subfamily LICCRSNINAE

The spiders of this subfamily the labium is not at all or barely longer than wide, and does not extends beyond the middle of the endites. The endities are not narrower in the middle than the ends. The last segment of the hind spinnerets is distinct and conical. The tibia and the metatarsi of first pairs of legs are armed with double series of long spines. This subfamily represent only one genus—*Syrisca* Simon in this thesis.

Genus *Syrisca* Simon

- 1885. *Syrisca* Simon *Ann. Soc. ent. France*, 6 (5) : 374.
- 1906. *Syrisca* : Simon, *Wien. Sitz Ber. Ak. Wiss.*, 115 : 1168.
- 1925. *Syrisca* : Petrunkevitch, *Trans. Conn. Acad. Art. Sci.*, 27 : 154.
- 1929. *Syrisca* : Lessert, *Rev. Suisse zool.*, T. 36 No. 4 : 150.
- 1931. *Syrisca* : Gravely, *Rec. Indian Mus.*, 33 : 267.
- 1932. *Syrisca* : Badcock, *J. Linn. Soc. London*, 38 : 32.
- 1940. *Syrisca* : Comstock, *The Spider Book*, New York, : 586.
- 1941. *Syrisca* : Mello-Leitao, *Ann. Acad. Bras. Sci. Rio.*, 13 : 287.
- 1963. *Syrisca* : Schenkel, *Mem. Mus. Hist. nat. Paris, N. S. Zool.*, 25A : 264.

Diagnosis : Cephalothorax oval in shape narrow in front broad posteriorly median striae inconspicuous not deep enough. Eyes in two rows anterior and posterior, anterior row slightly recurved, posterior row straight longer than the anterior row, posterior medians slightly larger than laterals, both laterals are in close to each other. Ocular quadrate almost square. Chelicerae parallel, little longer than broad. Maxillae longer than wide but the labium not longer than wide, much convex at its apex and obliquely transacted. Sternum oval. Legs robust and stout, tarsi and metatarsi of I and II very thick and scopulated. Tibia of female usually unspined where as in male specimen bear 2 and 3 pairs of spines. Legs formula 4 1 2 3. Abdomen long and elongated, covered by number of long spine like hair. The terminal joint of hind spinneret is very long and slender.

This genus similar to *Syspira* Simon, in general appearance but differs from that in having the posterior row of eyes straight where as in *Syspira* the posterior row recurved.

The spiders of this genus spend considerable time in foliage of leaves and under loose bark of trees.

Type species : *Syrisca pictialis* Simon 1885.

Distribution : Senegabien ; Egiptian Sudan ; Somaliland ; Panama ; Colombia ; Mongolia ; India.

50. *Syrisca barkudensis* Gravely 1931 (Figs. 225-229)

1931. *Syrisca barkudensis* Gravely, *Rec. Indian Mus.*, 33 : 267.

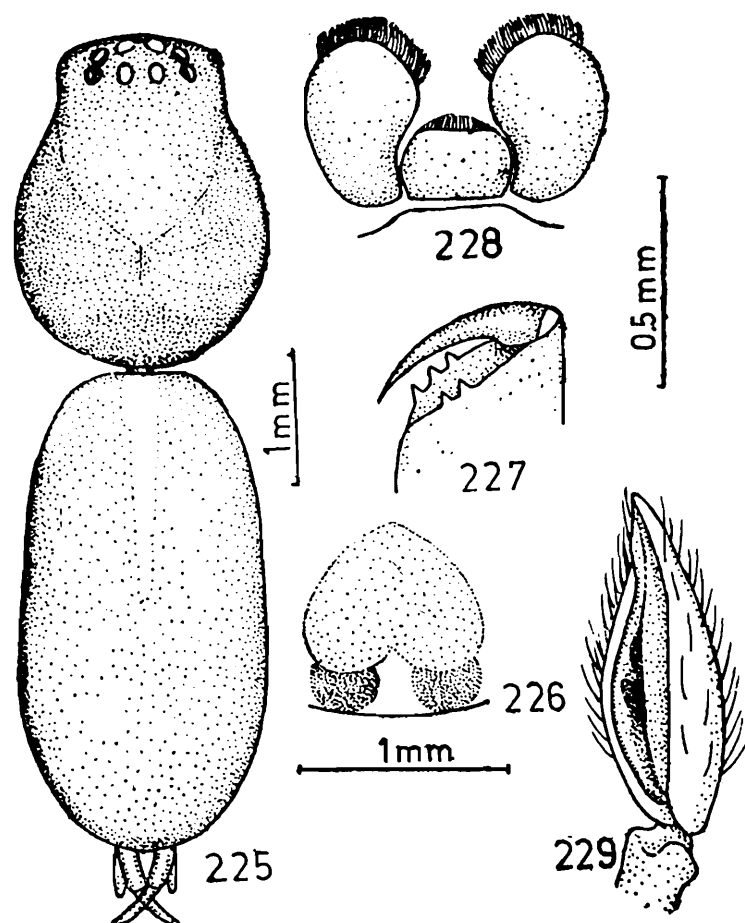
1934. *Syrisca barkudensis* : Reimoser, *Rev. Suisse Zool.*, 41 (32) : 489.

Specimen examined : 1 ♀, 1 ♂, chilka lake, Barkuda Island, Ganjam Dist., Orissa. 9.8.1919. Coll. F. H. Gravely. Reg. No. 1512/18
1 ♂, Barkuda Island, Chilka lake, Ganjam Dist. Orissa. 1.8.1919. Coll. F. H. Gravely. Reg. No. 1774/18.

General : Cephalothorax and legs brownish and abdomen somewhat greenish in colour. Total length 7.00 mm. Carapace 3.00 mm. long and 2.2 mm. wide ; abdomen 4.00 mm. long and 2.3 mm. wide.

Cephalothorax : Oval in shape, narrow and convex anteriorly, posteriorly broad covered by long spine like hair. median striae not deep enough situated just below the median half of the cephalothorax. Eyes in two rows anterior and posterior, posterior row essentially straight longer than anterior row and distinctly separated from each other, the median slightly larger than lateral. The anterior row of eyes slightly recurved, the medians slightly larger than lateral. Both the lateral eyes anterior and posterior are close to each other. The ocular quadrate almost square. Chelicerae little longer than broad nearly parallel and transcuted at their bases, inner margin provided with 2 similar teeth and the outer margin provided with 3 dissimilar teeth (Fig. 227). Maxillae longer than broad redish brown in colour rounded anteriorly (Fig. 228). Labium convex at the apex and not longer than broad. Sternum heart shaped pointed posteriorly. Tarsi and metatarsi of I and II usually unspined in case of female specimens where as in male specimen bears two pairs of ventral spine. Legs usually short and robust. Legs formula 4 1 2 3. Tibia of the male palp longer than broad, provided with rudimentary retrolateral apophysis. Genital bulb long and elongated, embolus without spur, embolus long (Fig. 229),

Abdomen: Elongated in shape, covered by long spine like hair. The terminal joint of the hind spinneret is very long. Epigyne anteriorly convex and posteriorly broad and rounded with conspicuous copulatory opening on either posterolateral side of the epigynal plate (Fig. 226).



Figs. 225-229. 225. Dorsal view of female, legs omitted ; 226. Epigyne ; 227. Chelera showing arrangements of teeth ; 228. Maxillae and labium ; 229. Male palp.

Type locality : Holotype : female, allotype : male, Chilka lake, Ganjam Dist., Orissa, India, deposited at National Collection of Z.S.I.

Distribution : Known only from the type locality.

Remarks : The present description and illustration based upon the holotype and allotype deposited at National Collection of Z.S.I. Reg. No. 1512/18. The description of the internal genitalia could not be possible to include here, therefore, the condition of the type is out of dissection.

Subfamily CORINNINAE

In this subfamily the median furrow of the thorax is distinct, the apex of the endites is rounded, not angulate at outside and not depress-

ed at the middle ; the tarsi of the anterior legs are not usually long ; and the sternum is distinctly margined. In this subfamily the last segment of the hind spinneret is very short frequently indistinct and sub-spherical. Only 2 genera under this subfamily represent in this thesis.

Key to the genera of the subfamily CORINNINAE

1. Posterior row of eyes strongly curved ; sternum distinctly margined ; absence of ventral notch in IV trochanter. ... *Trachelas*
- Posterior row of eyes not strongly curved ; sternum not distinctly margined ; ventral notch present in the IV trochanter. ... *Oedignatha*

Genus *Trachelas* Koch

1866. *Trachelas* Koch, L., *Die. Arach. Fam. Drassiden*, : 346.
 1872. *Trachelas* : Cambridge, *Proc. Zool. Soc. London*, : 256,
 1872. *Trachelas* : Koch, L., *Abh. nat. Ges. Nurnberg*, 6 : 146.
 1887. *Trachelas* : Keyserling, *Verh. Zool. bot. Ges. Wien.*, 37 : 439.
 1898. *Trachelas* : Banks, *P. Calif. Ac.*, 1, No. 7 : 225.
 1906. *Trachelas* : Simon, *An. Soc. ent. Fr.*, 75 : 297.
 1923. *Trachelas* : Lessert, *Rev. Suisse, zool.*, G. 30 : 197.
 1931. *Trachelas* : Petrunkevitch, *Trans. Conn. Acad. Arts. Sci.*, 31 : 108.
 1937. *Trachelas* : Chickering, *Trans, Amer. Micr. Soc.*, : 43.
 1938. *Trachelas* : Mello-Laitao, *Rev. Mus. La Plata (N. S.) Zool.*, 1 : 118.
 1971. *Trachelas* : Schmidt, *Zool. Beitr.*, 17 : 398.
 1974. *Trachelas* : Platnick, *Am. Mus. Novit.*, No. 2553 : 7.

Diagnosis : Cephalothorax ovoid, redish brown to dark brown in colour, covered with short pale erect setae, dorsal groove usually distinct, located on the posterior half of carapace. Eyes in two transverse rows anterior and posterior, moderately large uniform in size. The anterior row of eyes slightly recurved medians slightly closer to laterals than to each other. Posterior row of eyes longer than the anterior row, strongly recurved, medians slightly closer to laterals than to each other. Chelicerae stout and large, dark orange in colour covered with minute tubercles, outer margin with 3 teeth, inner margin with two teeth. Maxillae longer than wide, anteriorly rounded not depressed at the middle convex on lateral margin. Legs long rather slender, orange red in colour with dark claw tufts, trochanter IV without ventral notch at distal end. The 1st leg more larger and stouter than the others. Tibia of male palp as long as wide or slightly longer than wide with single short apophysis. Tegulum convex without apophysis, embolus

short erect, coiled or straight, situated at the tip of the tegulum. Abdomen pale orange yellow to orange yellow in colour, ovoid in shape with short pale semierect setae without long erect setae at the anterior end. Epigyne with rounded, flat convex plate with or without small hood, copulatory opening small funnel like. Copulatory tube and spermathecae terminating in two branches in different length.

This genus resemble to *Oedignatha* Thorell in general appearance but differs from that due to the 1st legs larger and stouter than other and the 4th trochanter without ventral notch at their distal end, whereas in *Oedignatha* 1st legs not longer and stouter and the 4th trochanter with ventral notch.

The spiders of this genus characteristically have shiny red carapace, they spend considerable time in retreats spun in rolled leaves or under loose bark of trees and under object on the ground.

Type species : *Teachelas minor* Cambridge 1872.

Distribution : America ; Africa ; Zululand ; Panama ; India.

Key to the species of the genus *Trachelas* Koch from India*

1. Abdomen broad posteriorly and provided with 3 pairs of sigilla ;
 eyes of the posterior medians smaller than laterals. ... *fronto*
 Abdomen not broad posteriorly, not provided with 3 pairs of
 sigilla. Eyes of the posterior median larger than laterals. ... *oriophilus*
- * Due to nonavailability of original literature and the types, the species, *Trachelas costatus* Cambridge could not be included in the key.

51. *Trachelas fronto* Simon (Figs. 230-234)

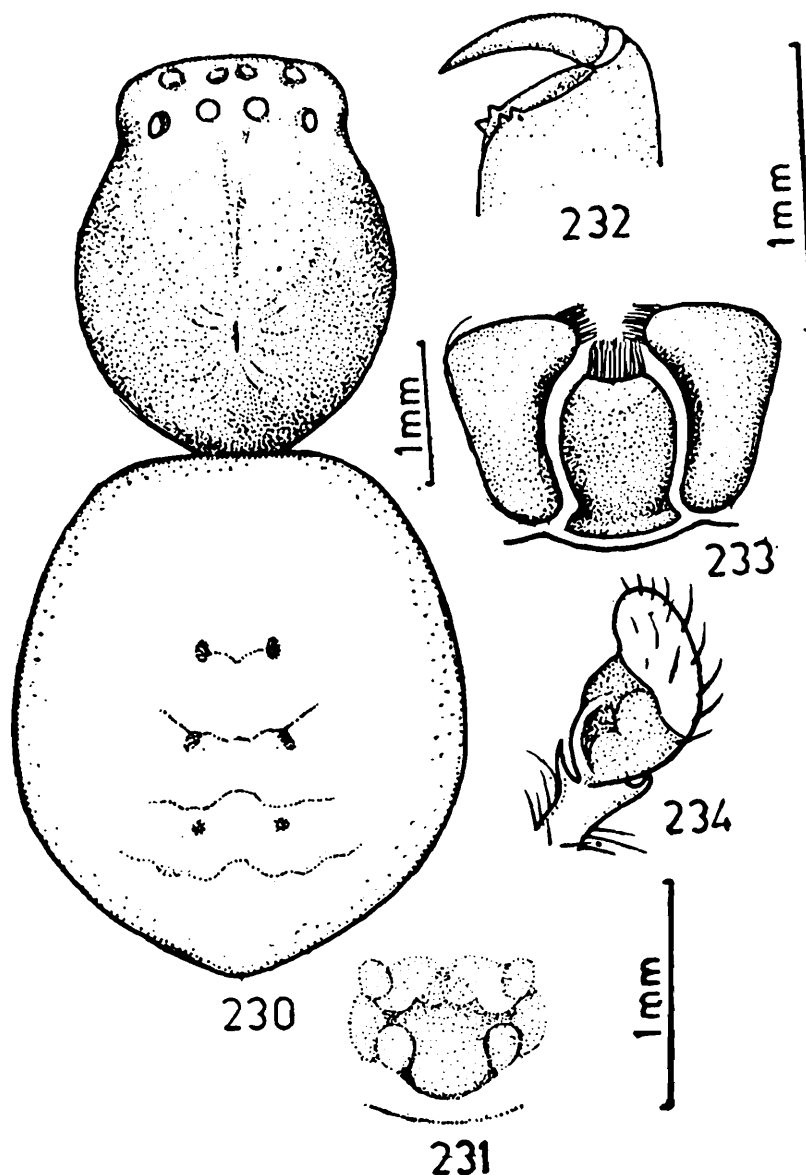
1906. *Trachelas fronto* Simon, *Ann. Soc. ent. Fr.*, 75 : 297.

Specimen examined : 3 ♀♀, 1 ♂, Kodai Kanal Palni Hills, Trichinopoly, S. India. Coll. Simon. Reg. No. 16753 Paris Museum.

General : Cephalothorax dark and legs orange yellow ; abdomen pale yellow in colour. Total length 6.5 mm. Carapace 3.00 mm. long and 2.3 mm. wide. Abdomen 3.5 mm. long and 1.5 mm. broad.

Cephalothorax : Cephalothorax longer than broad oval in shape, covered with short erect setae, provided with prominent fovea situated just below the median half of the carapace. Eyes in two rows anterior and posterior. The anterior row slightly recurved, usually blackish in colour, medians smaller than the laterals and close to each other than

the laterals. The posterior row of eyes longer than the anterior row, strongly recurved, pearly white in colour, medians smaller than the laterals and close to each other, the laterals far remote from the medians. Ocular quadrate longer than wide, narrow anteriorly and wide



Figs. 230-234. 230. Dorsal view of female, legs omitted , 231. Epigyne , 232. Chelicera showing arrangements of teeth , 233. Maxillae and labium , 234. Male pslp.

posteriorly. Chelicerae strong and stout more or less parallel, dark red in colour. inner and outer margin provided with 2 equal teeth on each (Fig. 232). Maxillae longer than wide orange red brown in colour, broad and rounded anteriorly and convex at its outer surface, slightly scopulated anteriorly (Fig. 233). Labium longer than wide orange red in colour covered with fine pubescence, a constriction present posteriorly and slightly scopulated anteriorly. Sternum distinctly margined, oval in shape, blackish red in colour, covered with black hair. Legs long and slender, legs formula 1 4 2 3. The 1st leg larger and longer than

the others, blackish red in colour, where as the other legs paler. The tibia and metatarsi of all legs provided with number of long spine like hair, tarsi furnished with dark claw tufts. Tibia of male palp longer than wide, provided with short apophysis, tegulum convex without apophysis, embolus short (Fig. 234).

Abdomen : Oval in shape, covered with fine pubescence, dorsum provided with 3 pairs of sigilla arranged on either side of the mid-dorsal line. Epigyne with rounded flat convex plate, with conspicuous rounded copulatory opening (Fig. 231).

Type locality : Types : Palni hills, Kodaikanal, Trichinopoly, Tamil Nadu, India ; deposited at Paris Museum.

Distribution : Known only from the type locality.

Remarks : The present description and illustration based upon examining 3 female and one male type specimens deposited at M.N.H.N. Paris Reg. No. 16753. The description of internal genitalia not possible to include here, therefore, the permission to dissect out the genitalia could not be procured.

52. *Trachelas oriophilus* Simon (Figs. 235-239)

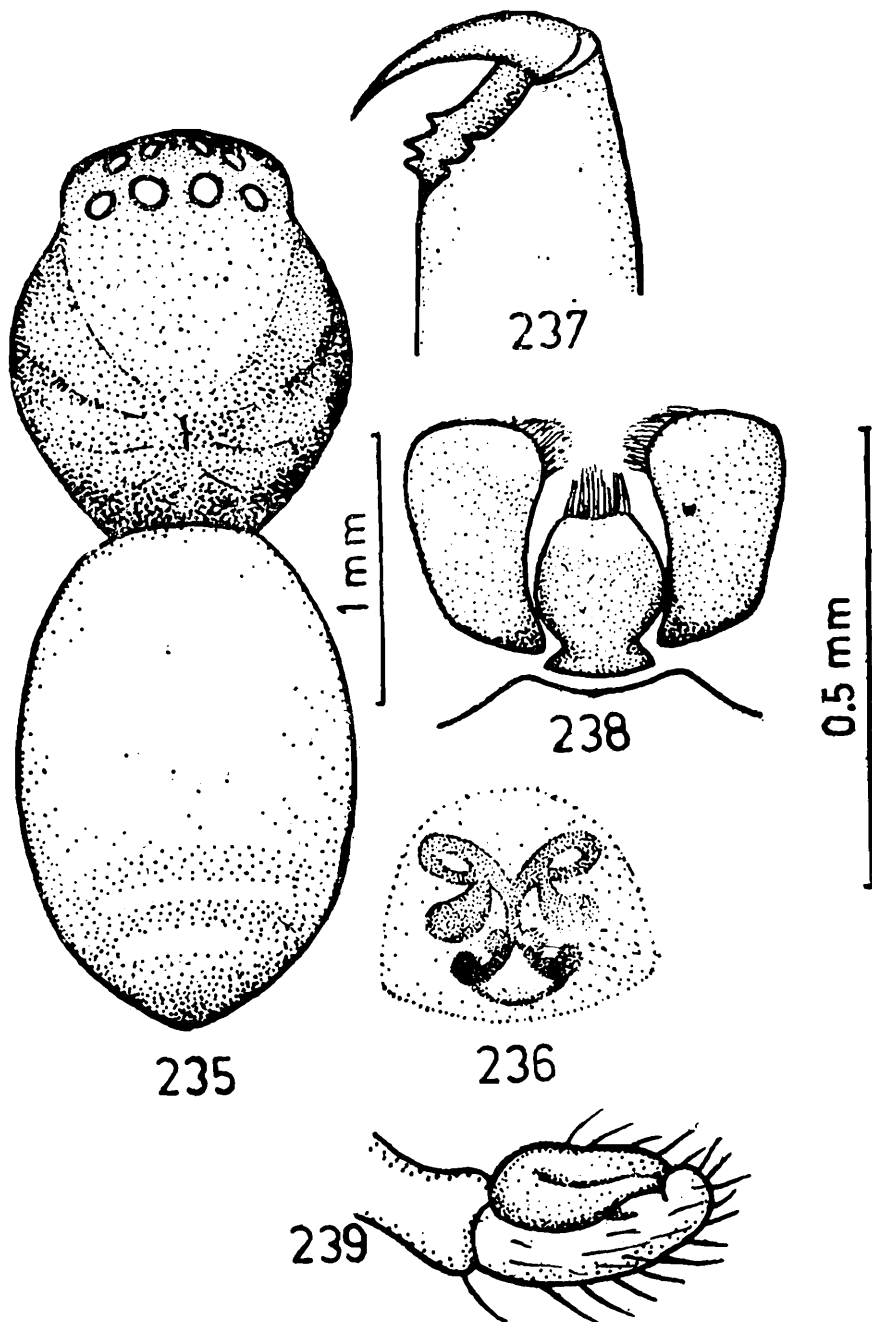
1906. *Trachelas* Simon, *Ann. Soc. Fr.*, 75 : 303.

Specimen examined : 3 ♀ ♀, 1 ♂, Coromondel, Genji, Tamil Nadu, India. Reg. No. 18318. Paris Museum.

General : Cephalothorax and legs dark orange in colour ; abdomen pale yellow. Total length 3.3 mm. Carapace 1.4 mm. long and 1.5 mm. wide ; abdomen 1.9 mm. long and 1.2 mm. wide.

Cephalothorax : Longer than wide narrower both anterior and posterior, covered with short erect setae, provided with distinct median furrow located on the posterior half of the carapace. Eyes in row anterior and posterior, the anterior row of eyes slightly recurved and blackish in colour more or less equal size, medians slightly closer to laterals than to each other. The posterior row of eyes usually longer than the anterior row, strongly recurved pearly white in colour, medians larger than the laterals and not in close to the laterals. Ocular quadrate longer than wide, wider posteriorly and narrower anteriorly. Chelicerae strong and stout, longer than wide, dark red in colour more or less parallel, covered with fine spine like hair, inner margin provided with 2 and the outer margin with 3 equal teeth (Fig. 237). Maxillae more or

less orange red brown in colour, longer than wide, broad and rounded anteriorly not depressed at the middle (Fig. 238). Labium longer than wide, extend beyond the middle of the maxillae, narrower and scopulated anteriorly and constricted posteriorly. Sternum oval or heart



Figs. 235-239. 235. Dorsal view of female, legs omitted; 236. Epigyne; 237. Chelicera showing arrangements of teeth; 238. Maxillae and labium; 239. Male palp.

shaped, distinctly margined covered with fine hair, redish in colour. Legs long and slender. Legs formula 1 4 2 3. The 1st leg larger and longer than the others and bluish red in colour, other legs paler. The tibia and metatarsi of I provided with 2 and 1 pairs of ventral spines. The tibia and metatarsi of II provided with number of spine like hair, tarsi less scopulated and furnished with blackish claw tufts. The tibia

of the male palp longer than wide provided with blunt apophysis. Tegulum convex, embolus short (Fig. 239).

Type locality : Types : Genji, Coromandel, Tamil Nadu, India ; deposited at M.N.H.N. Paris.

Distribution : Known only from the type locality.

Remarks : Three female and one male type specimens borrowed from M.N.H.N. Paris, Reg. No. 18318, were critically examined and the present description and illustration mainly based upon that. The permission to dissect out the genitalia could not be procured, in view of that, the description of internal genitalia not possible to include here.

The following species which is also known from India under this genus is mentioned here giving the original reference and distributional data, since neither the relevant literature nor the types could be procured.

53. *Trachelas costatus* Cambridge

1885. *Trachelas costatus* Cambridge, *Sci. Res. Soc. Yarkand Miss. Aran.*, 28.

Type locality : Holotype : female, Yarkand, Western Himalayas, India.

Distribution : Known only from the type locality.

Genus *Oedignatha* Thorell

1881. *Oedignatha* Thorell, *Ann. Mus. Civ. Stor. Nat. Genova*, 18 : 209.

1890. *Oedignatha* : Thorell, *Ann. Mus. Civ. Stor. Nat. Genova*, (2) 8 : 345.

1897. *Oedignatha* : Simon, *Ann. Soc. Ent. Bengal*, 41 : 14.

1905. *Oedignatha* : Simon, *Mt. Mus. Humburg*, 22 : 70.

1906. *Oedignatha* : Simon, *Ann. Soc. ent. Fr.*, 75 : 302.

1921. *Oedignatha* : Gravely, *Rec. Indian Mus.*, 22 : 418.

1931. *Oedignatha* : Gravely, *Rec. Indian Mus.*, 33 : 264.

1934. *Oedignatha* : Reimoser, *Proc. Zool. Soc. London*, (1) : 15.

1978. *Oedignatha* : Saaristo, *Ann. Zool. fenn.*, 15 (2) : 99.

Diagnosis : Cephalothorax oblonged, not narrow in front, sufficiently high with a very short central fovea. The cephalic shield coming up to the posterior median eyes. There are 8 eyes arranged in two transverse rows almost in equal size coming close to the extremities and occupy two third of the breadth of the front. The frontal row slightly recurved and the posterior row longer than the anterior row, slightly procured. The ocular quadrate almost square. Chelicerae twice longer

than its breadth, inner margin provided with 5 to 9 teeth, outer margin with 3 teeth. Maxillae longer than wide anterior end broad and rounded, at the middle slightly constricted. Labium longer than broad. Sternum oval in shape. Legs are slender not very strong. Tibia and metatarsi of I and II provided with 5-7 pairs of ventral spines. Legs formula 4 1 2 3. Tibia of the male palp longer than wide with tibial apophysis, Cymbium without spur, embolus narrower. Abdomen oblonged covered with sclerotized dorsal shield ornamented by whitish spot, some times dorsum provided by dorsal scutum. Epigyne flat, rounded, convex plate with elliptical or oval copulatory openings. Spermathecae terminating in two branches.

This genus similar with *Trachelas* Koch in general appearance but differs from that due to the slight lateral constriction of maxillae and the trochanter IV notched ventrally whereas these characters absent in *Trachelas* Koch.

The spiders of this genus are found in high altitude and low hilly region on foliage leaves.

Type species : *Oedignatha scrobiculata* Thorell 1881.

Distribution : Ceylon ; Java, Kratakau ; Penang ; India.

Key to the species of the genus *Oedignatha* Thorell from India.

- | | | |
|---|-----|---------------------|
| 1. Abdominal shield provided with 6 whitish patches on either side of the mid dorsal line. | ... | <i>Scrobiculata</i> |
| Abdominal shield not provided with 6 whitish patches on either side of the mid-dorsal line | ... | 2 |
| 2. Lateral eyes both anterior and posterior close to each other... | ... | <i>microsculata</i> |
| Lateral eyes both anterior and posterior not close to each other | ... | 3 |
| 3. Cephalothorax more or less parallel, broad anteriorly. | ... | <i>poonaensis</i> |
| Cephalothorax not parallel, narrower anteriorly. | ... | 4 |
| 4. Chelicerae brownish red in colour. | ... | <i>carli</i> |
| Chelicerae blackish in colour. | ... | 5 |
| 5. Tibia of the male palp with sharp apophysis | ... | <i>procerula</i> |
| Tibia of the male palp without apophysis. | ... | 6 |
| 6. Chelicerae provided with 3 teeth on its inner margin and 4 dissimilar teeth on the outer margin. | ... | <i>dentifera</i> |
| Chelicerae provided with 6 teeth on the inner margin and 3 similar teeth on the outer margin. | ... | 7 |
| 7. Epigyne with 2 oval cavities between which one small cavity present. | ... | <i>lesserti</i> |
| Epigyne with 2 elliptical pockets between which no small cavity present. | ... | 8 |
| 8. Dorsal scutum brownish with yellow spots. | ... | <i>escheri</i> |
| Dorsal scutum grey brown with a row of 5-6 white spot. | ... | 9 |

- | | | |
|--|-----|---------------------|
| 9. Sternum black red with black border. | ... | <i>albofasciata</i> |
| Sternum red yellowish without black border. | ... | 10 |
| 10. Tibia of the male palp provided with 2 apophysis, larger one with double hooked structure. | ... | <i>tricaspidata</i> |
| Tibia of the male palp with single apophysis. | ... | <i>uncata</i> |

54. *Oedignatha scrobiculata* Thorell 1881

(Figs. 240-245)

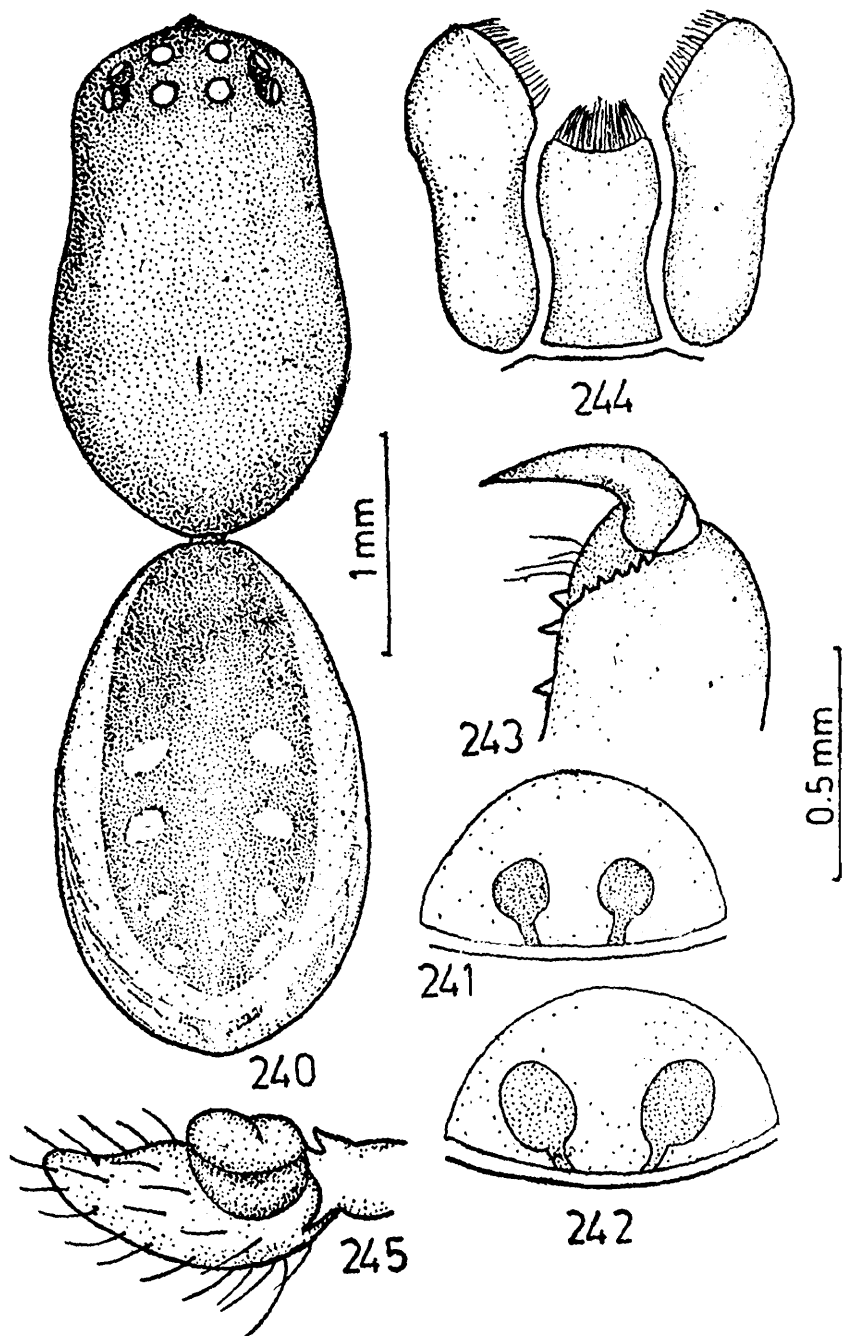
1881. *Oedignatha scrobiculata* Thorell, *Ann. Mus. Civ. Nat. Genova*, 18 : 209.
 1890. *Oedignatha scrobiculata* : Thorell, *Ann. Mus. Civ. Stor. Nat. Genova*, (2) 8 : 345.
 1897. *Oedignatha scrobiculata* : Simon, *Ann. Soc. Ent. Bengal*, 41 : 14.
 1905. *Oedignatha scrobiculata* : Simon, *Mt. Mus. Humburg*, 22 : 70.
 1906. *Oedignatha scrobiculata* : Simon, *Ann. Soc. ent. France*, 75 : 302.
 1921. *Oedignatha scrobiculata* : Gravely, *Rec. Indian Mus.*, 22 : 418.
 1931. *Oedignatha scrobiculata* : Gravely, *Rec. Indian Mus.*, 33 : 264.
 1934. *Oedignatha scrobiculata* : Reimoser, *Proc. zool. Soc. London*, : 15.
 1978. *Oedignatha scrobiculata* : Saariato, *Ann. Zool. fenn.*, 15 (2) : 99.

Specimen examined : 6 ♀ ♀, Barkuda Island, Chilka lake, Dist. Ganjam, Orissa. 1916. F.H. Gravely. 1 ♀, Barkuda Island, Chilka lake, Dist. Ganjam, Orissa. 1920. F.H. Gravely. 4 ♀ ♀, Serampore, West Bengal. October 1918. Mrs. Dake. 2 ♀ ♀, Barkuda Island, Chilka lake, Orissa. 19.10.1919. F. H. Gravely. Reg. No. 2849/H. 1 ♀, Madras, Tamil Nadu. 1930. F.H. Gravely. Reg. No. 5759/H. 1 ♀, Birbhum, West Bengal. 1819. Mrs. Dake. 1 ♀, Calcutta Museum compound, West Bengal. 25.4.1910. F.H. Gravely. Reg. No. 5768/H. 5 ♀ ♀, Barkuda Island, Chilka lake, Dist. Ganjam, Orissa. 22.8.1916. F. H. Gravely, Reg. No. 2895/H. 1 ♀, Serampore, West Bengal. 1.7.1919. Mrs. Dake. Reg. No. 5765/H. 1 ♂, Tallygunge, Calcutta, West Bengal. Gravely. 15.4.1917. F. H. Gravely. Reg. No. 5767/H. 3 ♀ ♀, Poona University compound, Maharashtra. 5.7.1975. B. K. Tikadar. 1 ♂, Darjeeling-Zoo, Darjeeling, West Bengal, 1.7.1974. Coll. Bijan Biswas.

General : Cephalothorax and legs black, abdomen blackish but decorated by two longitudinal lines of six white patches. Total length 4.50 mm. Carapace 2.20 mm. long and 1.30 mm. broad ; abdomen 2.30 mm. long and 1.40 mm. wide.

Cephalothorax : Oblonged longer than broad, black coarsely punctured, narrow posteriorly and broad anteriorly, provided with central fovea situated posterior to the carapace. The cephalic shield coming up to the frontal median eyes, a prominent median tubercle situated just below the median frontal eyes in front of the cephalothorax,

clypeus narrow. Eyes in two rows anterior and posterior, anterior row slightly recurved more or less equal size, medians not so close to each other. The posterior row longer than the anterior row, slightly procurved, medians slightly larger than laterals. Both the laterals anterior and



Figs. 240-245. 240. Dorsal view of female, legs omitted ; 241. Epigyne ; 242. Internal genitalia ; 243. Chelicera showing arrangements of teeth ; 244. Maxillae and labium ; 245. Male palp.

posterior close to each other, Ocular quadrate almost square. Chelicerae blackish in colour twice longer than its breadth, scopulated distally with long blackish hair, inner margin provided with 5 small teeth and the outer margin with 3 big teeth (Fig. 243). Maxillary lobe blackish red, as longer twice its breadth, slightly depressed at the middle, distal end broad and rounded, provided with tuft of long spine like hair (Fig. 244),

Labium redish brown in colour, longer than wide and slightly depressed at the middle and extends beyond the middle of maxillary lobe, distal end scopulated with tuft of long hair. Sternum oval, blackish grey in colour, covered with fine pubescence. Legs slender and long not very strong. Legs formula 4 1 2 3. The coxa, trochanter and femur relatively long. The tibia and metatarsi of I and II provided with 5 and 7 pairs of ventral spines. Tarsi relatively long, provided with 2 claws and tenate hair. Tibia of the male palp with short retrolateral apophysis, tegulum convex, cymbium without spur (Fig. 245).

Abdomen : Oblonged, longer as the same length of carapace. Dorsum provided with hard sclerotized shield decorated by 6 pairs of white patches extends longitudinally on either side of the mid dorsal line, sometimes longer than broad above the spinnerets in some specimens. Ventral side lighter than dorsum and not in uniformly coloured. Epigyne with more or less rounded plate with conspicuous copulatory opening (Fig. 241). Spermatheca divided into 2 pairs, connected by copulatory tube (Fig. 242).

Type locality : Types : Penang.

Distribution : Java ; Ceylong ; India : Tamil Nadu (Madras), Orissa (Ganjam Dist.) ; West Bengal (Calcutta, Serampore, Birbhum), Maharashtra (Poona, new report).

Remarks : The present description and illustration are based on examining the authenticated male and female specimen deposited at Z.S.I. collection, Reg. No. 2895/H2. In addition to these 3 females and one male were collected and identified, the description of internal genitalia given here by dissecting out the genitalia from the identified materials.

55. *Oedignatha microsculata* Reimoser

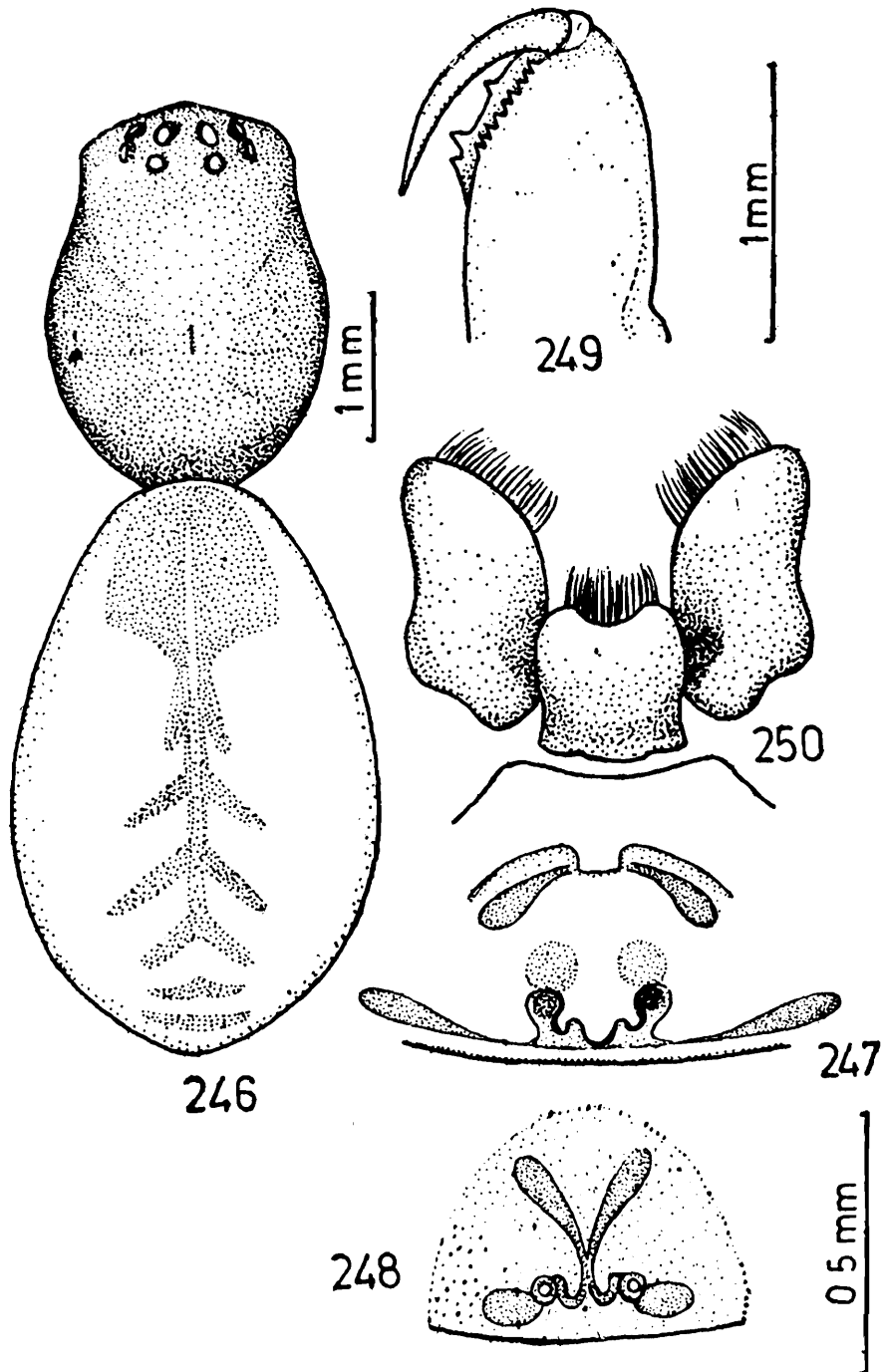
(Figs. 246-250)

1934. *Oedignatha microsculata* Reimoser, *Rev. Suisse. zool.*, 41 (32) : 495.

Specimen examined : 1 ♀, Kavalai, Cochin State, India, 24.9.1914. Coll. F. H. Gravely. 1 ♀, Parambikulam, Cochin State. 16.9.1914. Coll. F. H. Gravely. 1 ♀, Chahaia, Maurbhanj, Orissa. 27.1.1971. Coll. A. K. Mandal. 1 ♀, Otakamund, S. India. 24.8.1914. Coll. T. B. Fletcher. Reg. No. 1813/18.

General : Cephalothorax and legs deep brownish red ; abdomen partly blackish and partly yellowish. Total length 7.3 mm. Carapace 3.00 mm. long and 2.1 mm. wide ; abdomen 4.3 mm. long and 3.00 mm. wide.

Cephalothorax: Longer than wide, wider at the middle slightly narrower both anterior and posterior, cephalic shield prominent with central fovea situated just below the median half of the cephalothorax, median tubercle absent. Eyes in two rows anterior and posterior, the



Figs. 246-250. 246. Dorsal view of female, legs omitted; 247. Epigyne; 248. Internal genitalia; 249. Chelicera showing arrangements of teeth; 250. Maxillae and labium.

anterior row usually recurved, medians larger than laterals and close to each other than the laterals. The posterior row usually longer than the anterior row, slightly procurved, medians smaller than the laterals and also smaller than the anterior medians and not in close to each other. Ocular quadrate wider than long, narrower anteriorly and broader

posteriorly. Chelicerae yellowish red, enormous in size project forward to the cephalothorax. Inner margin provided with 9 small teeth and the outer margin with 3 big teeth (Fig. 249). Maxillae longer than broad, redish yellow in colour, slightly depressed at the middle, distal end yellowish and scopulated by a number of long spine like hair (Fig. 250). Labium longer than wide not extends beyond the middle of the maxillary lobe, yellowish red in colour, a constriction present at the posterior end. Sternum yellowish red more or less heart shaped pointed posteriorly, covered with short spine like hair, and provided with 3 black radial impression on both side just below the coxa. Legs long and slender, very strong. Legs formula 4 2 1 3. Tibia and metatarsi of I and II provided with 5 and 7 pairs of ventral spines. Tarsi less scopulated, provided with 2 claws.

Abdomen : Longer than wide, spindle shaped narrower both anterior and posterior. Dorsal sclerotized scutum present just above the median half of the dorsum, redish yellow in colour (Fig. 246). Epigyne with semicircular plate with 2 Small vesicular pocket like copulatory opening (Fig. 247). Spermatheca longer than wide with coiled copulatory tubes (Fig. 248).

Type locality : Holotype : Female, Coonoor, Tamil Nadu, India.

Distribution : India : Cochin (Kavalai ; Parambicum) ; Otakamund, South India ; Orissa (Chahala, Maurbhanj).

Remarks : The present description and illustration are based on examining 3 female specimens collected by Gravely. Gravely left these materials up to generic level. On examination of these materials and comparing the same with the original description and illustration of Reimoser (1934), it was found that the female genitalia, number of teeth and size of the chelecerae etc., perfectly agreed with the *O. microsculata* Reimoser. In addition to this 1 female specimen was collected and identified.

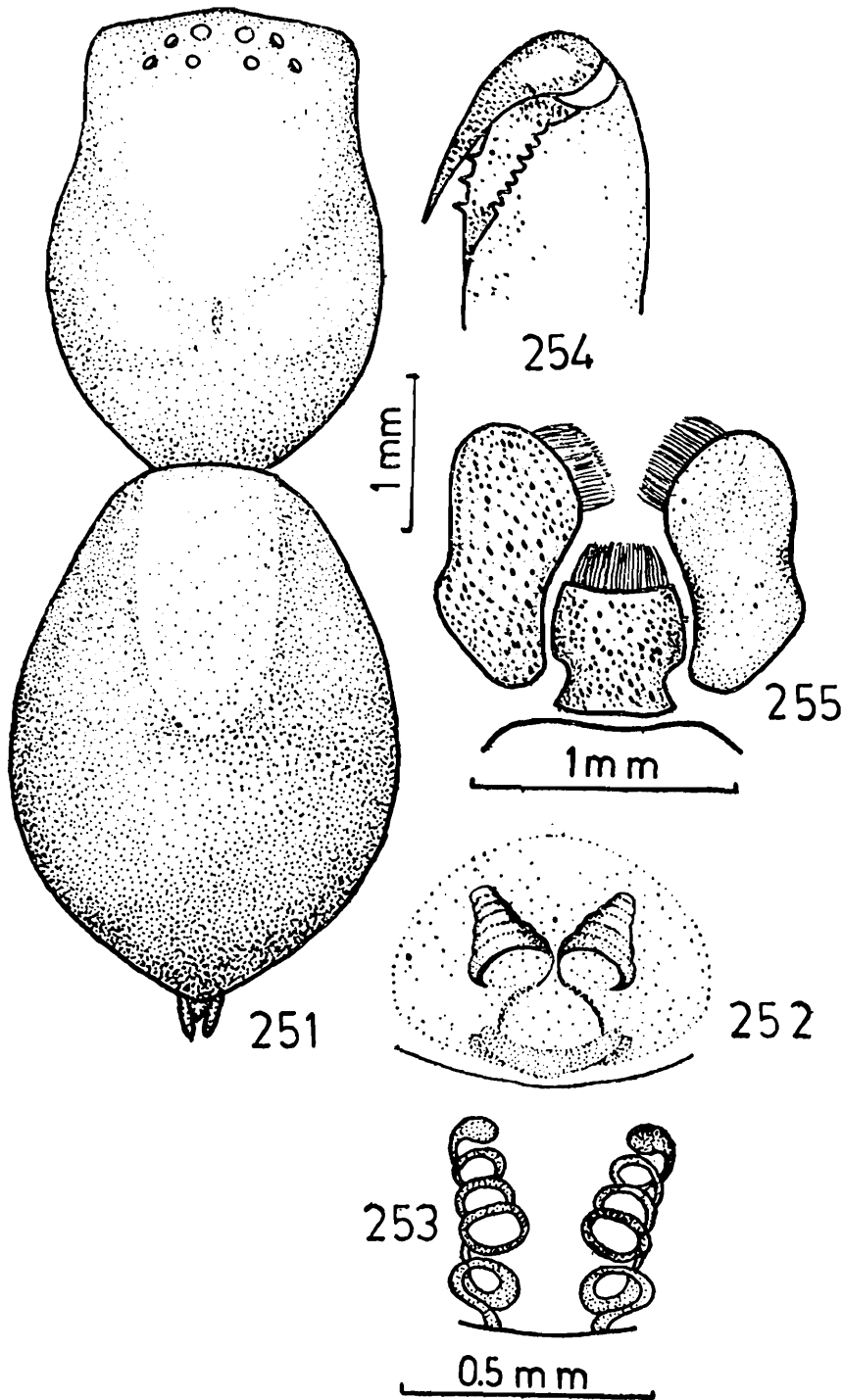
56 *Oedignatha poonaensis* Sp. nov.

(Figs. 251-255)

General : Cephalothorax and legs blackish red, abdomen blackish yellow in colour. Total length 6.5 mm. Carapace 3.00 mm. long and 2.5 mm. broad ; abdomen 3.5 mm. long and 2.5 mm. wide.

Cephalothorax ; Longer than wide, parallel with broader anterior end, more or less convex, covered with fine spine like hair, prominent cephalic shield present. Fovea usually present, located at the middle of

the carapace, median tubercle absent. Clypeus narrow. Eyes pearly white in colour arranged in two rows anterior and posterior ; anterior row slightly recurved, distributed in equal distance, medians slightly larger than laterals. The posterior row of eyes longer than the anterior



Figs. 251-255. 251. Dorsal view of female, legs omitted ; 252. Epigyne ; 253. Internal genitalia ; 254. Chelicera showing arrangements of teeth ; 255. Maxillae and labium.

row, slightly procurved, medians smaller than the laterals and also twice smaller than the anterior medians. Ocular quadrate wider than long, wider posteriorly and narrower anteriorly. Chelicerae twice longer than the labium, deep brown in colour, inner margin provided with 7 small

teeth outer margin with 3 big teeth (Fig. 254). Maxillae longer than wide, redish brown in colour, slightly constricted at the middle, anterior end rounded and whitish in colour, scopulated by long tuft hair (Fig. 255). Labium longer than wide, redish black in colour, anterior end broader and scopulated, slightly constricted posteriorly. Sternum oval in shape, redish brown in colour, covered by spine like hair. Legs long and slender, strong and stout covered by spine like hair. Legs long and slender, strong and stout covered by hair and spines. Legs formula 1 2 4 3. Femore I and II slightly curved than the femora III and IV. The tibia and metatarsi of I and II provided with 7 pairs of ventral spines on each. The tarsi of all legs are less scopulated and each provided with 2 claws, tarsi of the 1st legs shorter than the others.

Abdomen : Oblonged in shape longer than wide, covered by spine like hair. Dorsum provided anteriorly by sclerotized scutum, yellowish in colour (Fig. 251). The uncovered part of the dorsum decorated by pattern of yellowish and blackish networks, ventral side uniformly pale coloured than the dorsum. Edigyne as elongated convex plate with distinct copulatory opening (Fig. 252). Spermatheca, divisible into two parts with coiled copulatory tube (Fig. 253).

Type locality : Holotype : 1 ♀, Reg. No. 5170/18. Aund, Poona, Maharashtra, India ; 27.6.1967. Coll. R. N. Chopra. Paratype : 1 ♀, Reg. No. 5171/18. Amednagar, Maharashtra, India, 19.5.1974. Coll. M. S. Malhotra.

Distribution : As known only from the type locality.

Remarks : This species resemble to *Oedignatha microsculata* Reimoser in general appearance but it is separated as follows :

1. Cephalothorax parallel and broad anteriorly whereas in *Oedignatha microsculata* not parallel, not broader anteriorly.
2. The lateral eyes both anterior and posterior well separated and the anterior row of eyes recurved, whereas in *O. microsculata* the lateral eyes very close and the anterior row procurved.
3. Epigyne structurally different.

57. *Oedignatha carli* Reimoser

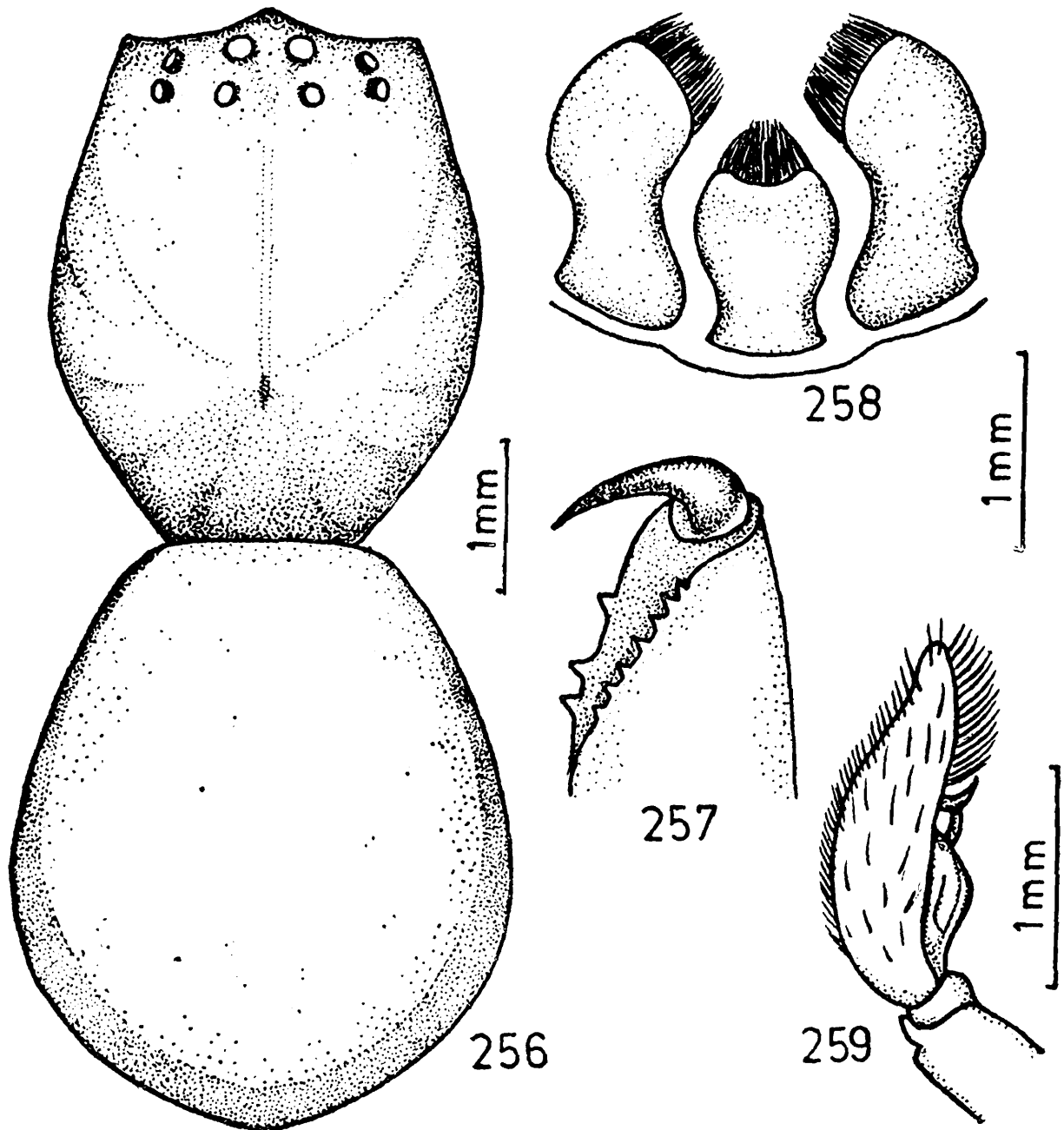
(Figs. 256-259)

1934. *Oedignatha carli* Reimoser, *Rev. Suisse zool.*, 41 (32) : 492.

Specimen examined : 1 ♂, Darjeeling Zoo Garden, Darjeeling, West Bengal. 7.4.1974. Coll. Bijan Biswas. 2 ♂ ♂, Darjeeling Zoo Garden, Darjeeling, West Bengal. 20.9.1974. Coll. Bijan Biswas. 1 ♂, Parambi-

culum, Cochin State, India. 16.9.1914. Coll. F. H. Gravely. 1 ♂, Sirpur, Saran, Bihar. 13.8.1930. Coll. F. H. Gravely, Reg. No. 1815/18. 1 ♂, Kavalai, Cochin, India. 24.9.1914. Coll. F. H. Gravely. Reg. No. 1808/18.

General : Cephalothorax and legs brown in colour ; abdomen partly black and partly yellowish network. Total length 7·8 mm. Cara-



Figs. 256-259. 256. Dorsal view of female, legs omitted ; 257, Chelicera showing arrangements of teeth ; 258. Maxillae and labium ; 259. Male palp.

pace 3·8 mm. long and 3·00 mm. wide ; abdomen 4·00 mm. long and 3·4 mm. wide.

Cephalothorax : Longer than wide, narrower both anterior and posterior, wider at the middle provided by prominent cephalic shield. A prominent fovea present posteriorly to the carapace, median tubercle

present just below the median frontal eyes in front of the carapace. Eyes in two rows anterior and posterior, anterior row slightly recurved and are in equal distance from each other, medians larger than the laterals, whitish in colour. Posterior row comparatively smaller than the anterior row, slightly procurved and are almost in equal distance, median smaller than the laterals and also smaller than the anterior medians. Both lateral eyes anterior and posterior close to each other. Ocular quadrate wider than long, narrow anteriorly and broad posteriorly. Chelicerae enormous in size, strong and robust extends forward as the length of the cephalothorax, inner margin provided with 7 smaller teeth and the outer margin with 3 big teeth (Fig. 257). Maxillae longer than broad, redish brown in colour, depressed at the middle (Fig. 258). Labium longer than wide, redish brown in colour, a depression present posteriorly. Sternum blackish red, more or less heart shaped, covered by fine hair. Legs long and slender, strong and stout. Legs formula 1 4 2 3. Femur I and II slightly curved and the femur III and IV have very little curve. The femur IV have minute swelling. Tibia and metatarsi of I and II provided with 2 claws. Tibia of the male palp longer than wide with short retrolateral apophysis, tegulum convex, embolus short arises at the base of the tegulum ; cymbium without spur (Fig. 259).

Abdomen : oblonged in shape, anteriorly narrower and posteriorly broad, one sixth of the abdomen free from abdominal shield which is yellow quence line, the abdominal shield covering the yellow portion.

Type locality : Holotype : male, Coonoor, Tamil Nadu, India.

Distribution : India : Bihar (Saran) ; Cochin (Kovalai, Parambicum) ; West Bengal (Darjeeling).

Remarks : The present description and illustration are based on examining 3 male specimens collected by Gravely. Gravely left these materials up to generic level. On re-examination of these materials and comparing the same with the original description and illustration of Reimoser (1934), it was found that the number of teeth and size of the chelicerae, male palp, etc., perfectly agreed with the *O. carli* Reimoser. In addition to these 2 male were collected and identified.

58. *Oedignatha procerula* Simon

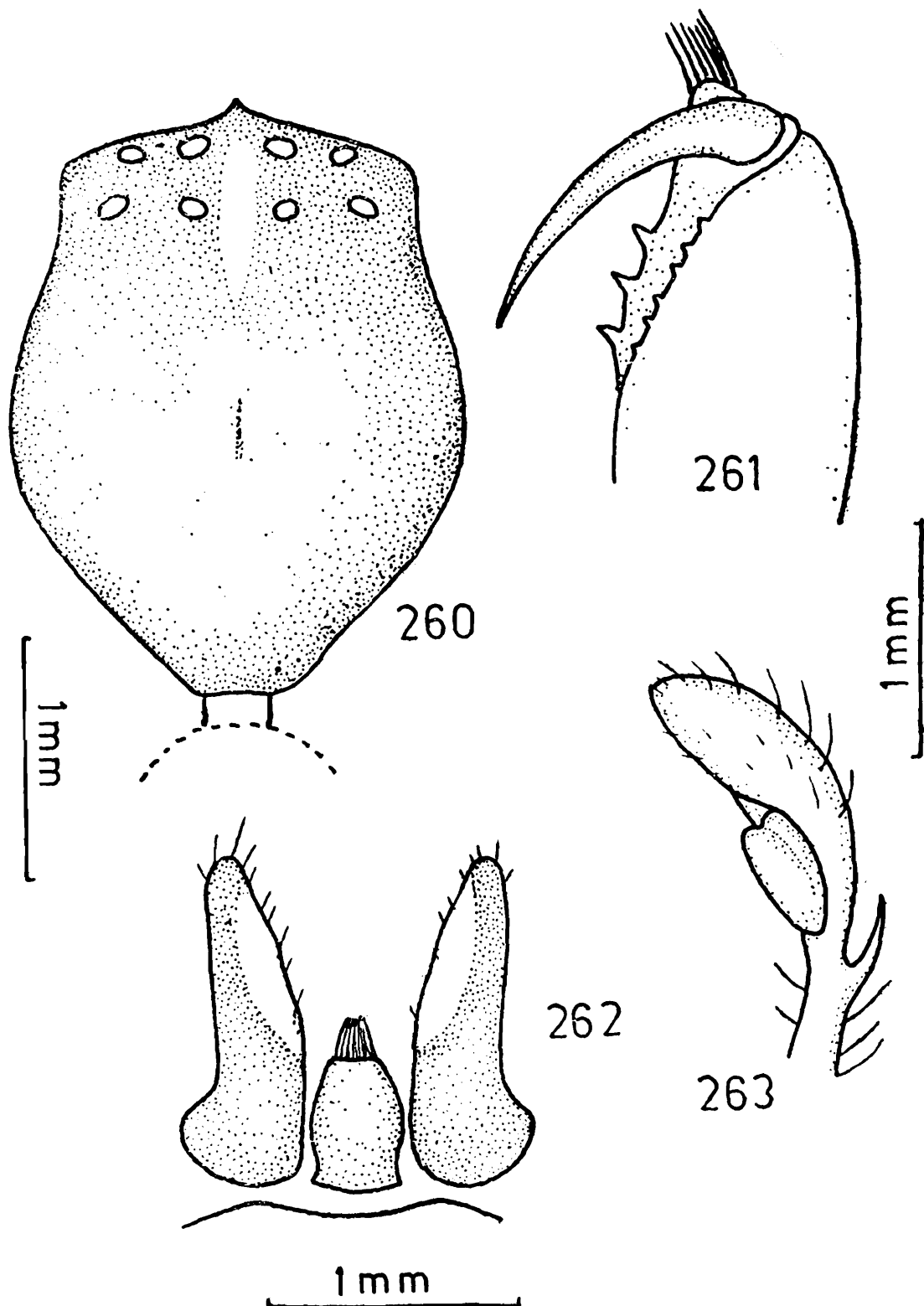
(Figs. 260-263)

1897. *Oedignatha procerula* Simon, *Mem. Soc. Zool. Fr.*, 19 (2) : 261.

Specimen examined : 2 ♂♂, (Cephalothorax without abdomen) ; Dehra Dun, U.P., India. Reg. No. Nil. Paris Museum.

General : Cephalothorax and legs black. Total length 5.00 mm. Carapace 2.3 mm. long and 2.00 mm. wide ; abdomen 2.7 mm. long.

Cephalothorax : Longer than wide, anteriorly broad and convex, provided by cephalic shield with median furrow, clothed by fine pube-



Figs. 260-263. 260. Dorsal view of female, legs omitted ; 261. Chelicera showing arrangements of teeth ; 262. Maxillae and labium ; 263. Male palp.

scence, a median tubercle present just below the median frontal eyes. Eyes pearly white in colour ; anterior row slightly recurved, posterior

row procurved, longer than the anterior row, anterior median larger than the posterior medians. Ocular quadrate wider than long. Chelicerae enormously long, black in colour at the distal end provided with tuft of hair, inner margin with 6 small teeth and the outer margin with 3 big teeth (Fig. 261). Maxillae and labium longer than wide, anteriorly narrow, posteriorly wide (Fig. 262). Sternum blackish red, heart shaped, covered by fine pubescence. Legs long and stout, legs formula 1 3 2 4. The Tibia and metatarsi of I and II provided by 7 and 5 pairs of ventral spines. Tibia of the male palp provided with sharp retrolateral apophysis, tegulum convex, with tegular apophysis, embolus long (Fig. 263).

Abdomen : Longer than wide provided by dorsal scutum, regarding original description on Simon (1897).

Type locality : Holotype : male, Dehra Dun, U.P., India.

Distribution : Known only from the type locality.

Remarks : The description and illustration are provided here based upon examining two males type specimen (only cephalothorax with male palp, abdomen detached) Reg. No. Nil, deposited at M.N.H.N. Laboratories, Paris. The description of abdomen is provided here on the basis of original description of Simon (1897).

59. *Oedignatha dentifera* Reimoser

1934. *Oedignatha dentifera* Reimoser, *Rev. Suisse zool.*, 41 (32) : 495.

General : Total length 3.69 mm. Cephalothorax 1.54 mm. long and 1.16 mm. broad ; abdomen 2.15 mm. long and 1.16 mm. broad.

Cephalothorax : Longer than wide. Eyes in two rows anterior and posterior. The eyes of the anterior medians larger and in equal distance. Chelicerae horizontally placed inner margin provided with 3 teeth outer margin with 1 big and 3 small teeth. Sternum yellowish red. Tibia and metatarsi of I and II provided with 7 and 5 pairs of ventral spines.

Abdomen : Longer than broad, half of the dorsum covered by dorsal shield and remaining half yellowish brown in colour.

Type locality : Holotype : male, Attakatti, Tamil Nadu, India.

Distribution : Known from the type locality.

Remarks : The description of this species based upon the original German literature of Reimoser (1934) after translating it into English, since the type of this species could not be procured.

60. *Oedignatha lesserti* Reimoser

1934. *Oedignatha lesserti* Reimoser, *Rev. Suisse zool.*, 41 (32) : 497.

General : Cephalothorax redish brown in colour. Cephalothorax 1.9 mm. long and 1.25 mm. broad.

Cephalothorax : Broader than long. Eyes in two rows—anterior and posterior. The anterior median larger than the laterals and in equally distributed. Chelicerae redish brown in colour, inner row provided with 6 teeth and the outer row with 3 teeth. Sternum redish brown in colour. Tibia and metatarsi of I and II have 7 and 5 pairs of ventral spines. Tibia and metatarsi of III and IV have no ventral spines.

Abdomen : Oval, provided with dorsal scutum, dark brown in colour. Epigyne with 2 small oval epigynal opening.

Type Locality : Holotype : female, Mudumalai, S. India.

Distribution : Known from the type locality.

Remarks : The present description given here based upon the original German literature of Reimoser (1934) after translating it into English since neither the types nor any other materials could be procured.

61. *Oedignatha escheri* Reimoser

1934. *Oedignatha escheri* Reimoser, *Rev. Suisse zool.*, 41 (32) 496.

General : Cephalothorax redish brown in colour ; abdomen yellowish in colour. Total length 4.30 mm. Carapace 2.00 mm. long and 1.25 mm. broad ; abdomen 2.30 mm. long and 1.30 mm. broad.

Cephalothorax : Longer than broad. Eyes in two rows anterior and posterior ; anterior median usually larger than laterals and are equally distributed. Chelicerae yellowish red, teeth of the inner margin indifferent. Tibia and metatarsi of I and II provided with 8 and 5 pairs of ventral spines.

Abdomen : Longer than broad provided with small brown dorsal scutum, yellowish spots present at the middle of the scutum. Epigyne with 2 small elliptical pockets.

Type locality : Holotype : female, Kukkal, Shola, South India.

Distribution : Known from the type locality.

Remarks : In spite of the best efforts, the types of this species could not be procured and therefore, the diagnosis given here based upon the original German description of Reimoser (1934) after translating it into English.

62. *Oedignatha albofasciata* Strand

1907. *Oedignatha albofasciata* Strand, *Zool. Anz.*, 31 : 563.

1909. *Oedignatha albofasciata* : Strand, *Abb. Nat. Ges. Gorlitz*, 26 : 47.

General : Cephalothorax dark red and abdomen^d dark grey brown in colour. Total length 7.5 mm. long Carapace 3.5 mm. long and 2.5 mm. broad ; abdomen 4.00 mm. long and 2.3 mm. broad.

Cephalothorax : Longer than wide. Chelicerae little lighter in colour. Sternum black red with black borders. Legs yellowish red.

Abdomen : Longer than wide provided with sclerotized dorsal scutum, 5 to 6 small whitish spots present on the scutum.

Type locality : Holotype : male, India.

Distribution : Known from the type locality.

Remarks : Neither the types nor other materials of this species was available. Therefore, the description given here is based upon the original German description made by Strand (1907) after translating it into English.

63. *Oedignatha tricuspidata* Reimoser

1934. *Oedignatha tricuspidata* Reimoser, *Rev. Suisse zool.*, 41 (32) : 494.

General : Cephalothorax brownish red, abdomen redish brown. Total length 3.75 mm. long. Carapace 1.85 mm. long, 1.52 mm. broad ; abdomen 1.90 mm. long and 1.35 mm. broad.

Cephalothorax : Longer than wide. Eyes in two rows anterior and posterior. The anterior medians larger than laterals and close to each other than the laterals. Chelicerae brownish red, inner margin provided with 11 small teeth, outer margin with 5 teeth. Sternum red yellowish in colour. Tibia and metatarsi of I and II provided with 6 and 4 pairs of ventral spines. Tibia of male palpus provided with 2 apophysis upper one curved and pointed, lower one is large and divided into 2 hooked structure.

Abdomen : Longer than broad, half the portion of the dorsum provided by dorsal scutum, redish brown in colour.

Type locality : Holotype : male, (Attakatti, Coonoor) Tamil Nadu, S. India.

Distribution : Known only from the type locality.

Remarks : The description of this species is based upon the original German description of Reimoser (1934) after translating it into English, since neither the type or any other materials could be procured.

64. *Oedignatha uncata* Reimoser

1934. *Oedignatha uncata* Reimoser, *Rev. Suisse zool.*, 41 (32) : 493.

General : Cephalothorax dark red brown, the legs are yellow red ; abdomen provided with dorsal shield deep brown in colour. Total length 3.8 mm. Cephalothorax 1.8 mm. long and 1.3 mm. broad ; abdomen 2.00 mm. long and 1.25 mm. broad.

Cephalothorax : Longer than wide covered with fine pubescence. Two rows of eyes anterior and posterior arranged in two transverse series. The anterior row arranged in an equal distance, median larger than the laterals. Chelicerae light yellow in colour ; the teeth present on the chelical margin are in different. Sternum redish yellow, black at the margin. Tibia and metatarsi of I and II have 7 and 5 pairs of long ventral spines. The tibia and metatarsi of III and IV have no ventral spine.

Abdomen : Longer than wide 1/2 the portion of the dorsum covered with dorsal shield,

Type locality : Holotype : male, Mariyan Shola, S. India.

Distribution : Known only from the type locality.

Remarks : As the type material was not procured, hence the description of this species given here based upon original German description made by Reimoser (1934) after translating it into English.

Subfamily MICARIINAE

In this subfamily the apex of the endites is sub quadrate, forming an angle on the outside and slightly depressed in the middle and the sternum is not barely margined. The tarsi of the anterior legs are usually long. The spiders of this subfamily characterised the last segment of the hind spinnerets is very short, and frequently indistinct and sub-spherical. Six genera under this subfamily represent in this thesis.

Key to the genera of the subfamily MICARIINAE

1. Cephalothorax with median furrow. The posterior row of eyes is slightly procurved, the posterior lateral eyes not far from the posterior median. ... *Castianeira*
- Cephalothorax without median furrow. The posterior row of eyes strongly recurved, the posterior lateral eyes far from the posterior median. ... 2
2. Abdomen oval or rounded, 6 dots of whitish patches present

on the dorsum.	...	<i>Coenoptychus</i>
Abdomen elongated, 6 dots of whitish patches absent on the dorsum.	...	3
3. Abdomen provided with ventral shield.	...	<i>Sphingius</i>
Abdomen not provided with ventral shield.	...	4
4. Cephalothorax without lateral marginal impression, transverse ridges present on the abdominal shield.	...	<i>Apochinomma</i>
Cephalothorax with lateral marginal impression, transverse ridge absent on the dorsal shield.	...	5
5. Anterior median eyes equal in size to the anterior laterals and distributed in equal distance from each other.	...	<i>Aetius</i>
Anterior median eyes larger in size than the anterior laterals and widely separated from each other.	...	<i>Corinnomma</i>

Genus *Castianeira* Keyserling

1879. *Castaneira* Keyserling, *Verh. Zool. Bot. Ges. Win.*, 29 : 334.
 1882. *Castaneira* : Scudder, *Bull. U.S. Nat. Mus.*, 19 : 61.
 1909. *Castaneira* : Emerton, (New Haven. Conn), *Trans. Acad. Arts. Sci.*, 14 : 216.
 1910. *Castaneira* : Banks, *Bull. U.S. Nat. Mus.*, 172 : 11.
 1927. *Castaneira* : Mello-Leitao, *Biol. Mus. Nat. Rio de Janeiro*, 2 : 12.
 1929. *Castaneira* : Chamberling & Woodbury, *Proc. Biol. Soc. Washington*, 42 : 139.
 1931. *Castaneira* : Gravely, *Rec. Indian Mus.*, 33 (3) : 272.
 1932. *Castianeira* : Mello-Leitao, *Arach. Mus. Nac. Rio de Janeiro*, 32 : 68.
 1969. *Castianeria* : Reisking, *Bull. Mus. Comp. Zool. Harv. Univ.*, 138 : 182.
 1981. *Castianeria* : Tikader, *Bull. zool. Surv. India*, 4 (3) : 257.
 1984. *Castianeria* : Biswas, *Bull. zool. Surv. India*, 6 (1-3) : 120.

Diagnosis : Cephalothorax elongated, ovoid, with prominent cephalic shield usually dark to dark brown in colour provided with median fovea, short sparse scale like recumbent setae and with few longer setae present in front of the carapace. Eyes small and uniform size arranged in two transverse series anterior and posterior. The anterior row slightly recurved medians slightly closer to laterals than to each other. The posterior row distinctly procurved slightly longer than the anterior row, medians slightly closer to laterals than to each other. Chelicerae moderately long and stout with rarely 3 teeth on retromargin. Maxillae not constricted at the middle more or less convex on its outer side. Legs rather long and slender orange to dark brown or black in colour with short dense dark claw tufts. Tibia of the male palp as long as wide. Cymbium rounded at the base, long and slender distally, embolus usually long and slender spirally twisted. Abdomen elongated, ovoid rather slender often with transverse band. Dorsum without long

cluster of erect setae at the anterior end. Epigyne as rounded convex hairy plate, copulatory opening small and rounded or elliptical, well separated and distinct, spermatheca longer than wide, copulatory tube short.

This genus similar to *Sphingius* Thorell in general appearance but differs from that due to the absence of lateral constriction of the maxillary lobe, where as constriction present in *Sphingius*.

The spiders of this genus have elongated ant like bodies, the carapace and abdomen are heavily sclerotized and shiny. The movement of these spiders are decidedly ant like, usually found in leaf litter in shaddy deciduous forest or under logs and stone in more open habitat.

Type species : *Castianeira rubicunda* Keyserling 1879.

Distribution : Africa ; Asia ; Malayasia ; America ; Canada ; India.

Key to the species of the genus *Castianeira* Keyserling from India

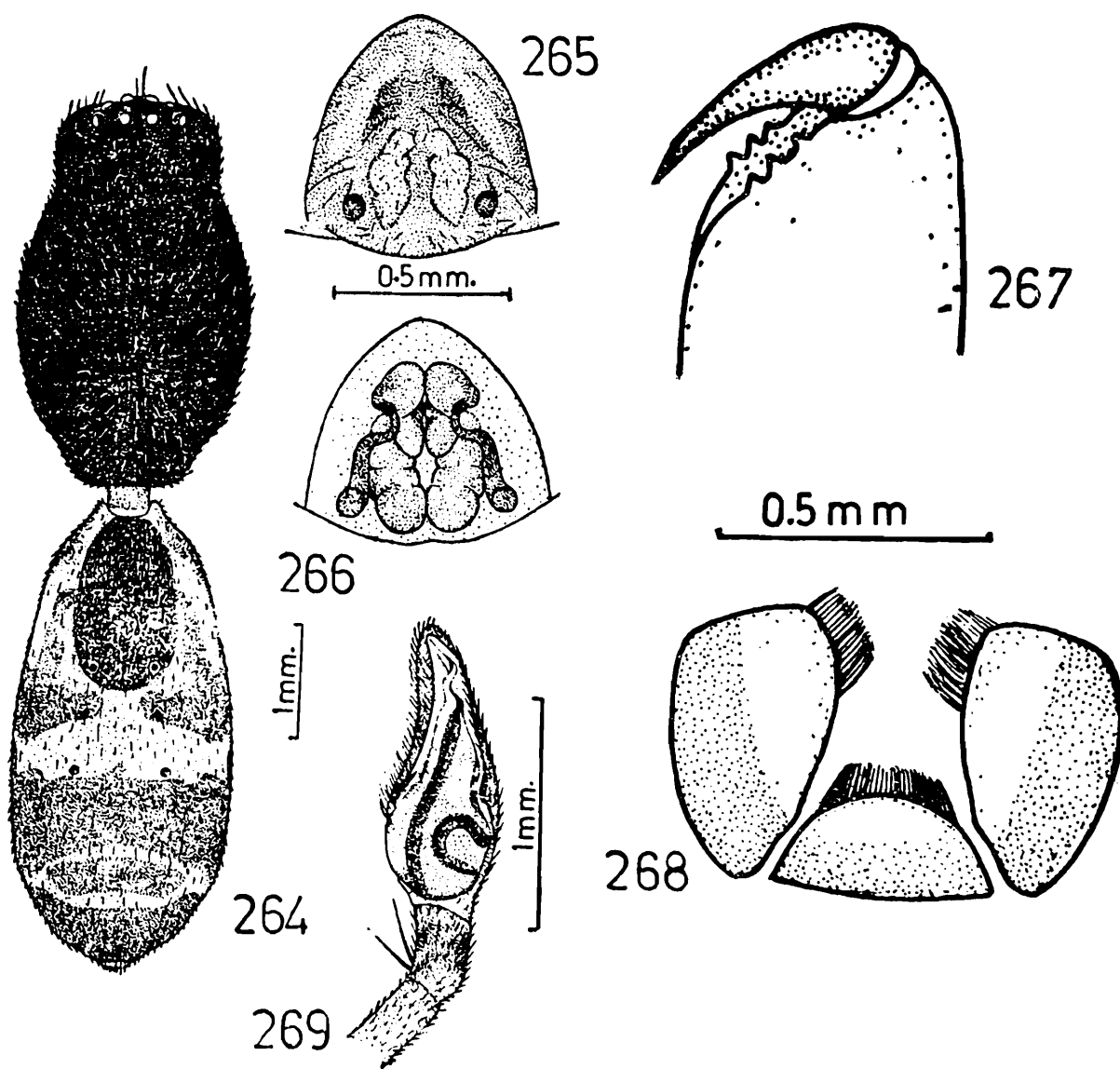
- | | |
|---|-----------------------|
| 1. Eyes approximately uniform size, two lines almost parallel slightly convergent distally ; anterior coxa very dark, almost black, the remaining coxa paler. ... | <i>Zetes</i> |
| Eyes not of uniform size, two lines not parallel, strongly convergent laterally, coxa more uniformly coloured. ... | 2 |
| 2. Anterior median eyes much larger than the anterior laterals ; chelicerae enormous size, inner margin with 6 teeth. ... | <i>indica</i> |
| Posterior median eyes much larger than posterior laterals ; Chelicerae moderate size, inner margin with 2 teeth. ... | 3 |
| 3. Maxillae whitish in colour, without concavity outside and not scopulated. ... | <i>flavipes</i> |
| Maxillae deep brown in colour with concavity outside and scopulated. ... | 4 |
| 4. Legs without longitudinal markings or white band, posterior tibia not dark and without conspicuous band at the apex ... | <i>himalayensis</i> |
| Legs with strong longitudinal marking, posterior tibia dark with conspicuous band at the apex. ... | 5 |
| 5. Labium whitish in colour not broader than long and not scopulated anteriorly. ... | <i>albopicta</i> |
| Labium redish brown in colour, longer than broad, scopulated anteriorly. ... | 6 |
| 6. Dorsum provided with three transverse whitish band with well marked dark plate anteriorly. ... | <i>tinae</i> |
| Dorsum not provided with 3 whitish transverse bands and no dark plate anteriorly. ... | 7 |
| 7. The anterior row of eyes slightly recurved the anterior medians not widely separated and not closer to anterior laterals. ... | <i>bengalensis</i> |
| The anterior row of eyes straight, the anterior medians widely separated and closer to anterior laterals ... | <i>quadrimaculata</i> |

65. *Castianeira zetes* Simon

(Figs. 264-269)

1897. *Castaneira zetes* Simon, *Bull. Mus. Hist. nat. Paris*, 3 (7) : 294.
 1906. *Castaneira zetes* : Simon, *Ann. Soc. ent. Fr.*, 75 : 302.
 1931. *Castaneira zetes* : Gravely, *Rec. Indian Mus.*, 33 (3) : 302.
 1954. *Castianeira zetes* : Rower, *Katalog der Araneae*, 2 : 609.
 1981. *Castianeira zetes* : Tikader & Biswas, *Rec. zool. Surv. India, occ. pap. No. 30* (1) : 73.
 1981. *Castianeira zetes* : Tikader, *Bull. zool. Surv. India*, 4 (3) : 259.

Specimen examined : 6 ♀ ♀, Dum Dum, Calcutta, West Bengal.
 8.5.1969. Coll. D. Sinha. 1 ♀, Mangaldai, Assam, 26.12.1910. Coll. S.



Figs. 264-269. 264. Dorsal view of female, legs omitted ; 265. Epigyne ; 266. Internal genitalia ; 267. Chelicera showing arrangements of teeth ; 268. Maxillae and labium ; 269. Male palp.

Kemp. 3 ♀ ♀, Barkuda Island, Chilka lake, Orissa. 19.8.1919. Coll. F. H. Gravely. 4 ♀ ♀, Barkuda Island, Chilka lake, Orissa. 1916. Coll.

F. H. Gravely. Reg. No. 3785/H2. 1 ♂, Kalimpong, Darjeeling, West Bengal. 1930. Coll. Southerland. Reg. No. 5787/H2.

General : Cephalothorax, abdomen and legs deep brown in colour. Total length 9.20 mm. Carapace 4.20 mm. long and 2.50 mm. wide ; abdomen 4.8 mm. long and 2.10 mm. wide.

Cephalothorax : Longer than wide, convex and broad anteriorly, cephalic region slightly high, clothed with fine hair, provided with central fovea. Eyes in two rows pearly white in colour, uniform in size. The anterior row slightly recurved, posterior row more or less straight. Ocular quadrate almost square. Chelicerae moderately strong, dark brown in colour, inner and outer margin provided with 3 teeth on each (Fig. 267). Maxillae longer than wide dark brown in colour ; labium not longer than wide convex anteriorly (Fig. 268). Sternum oval in shape. Legs moderately strong, legs formula 4 1 2 3. Tibia and metatarsi of I and II provided with 3 and 2 pairs of ventral spines. Male palp longer than wide, cymbium long and slender rounded at its base, embolus long and spirally twisted (Fig. 269).

Abdomen : Longer than wide, clothed with fine hair, provided with 3 pairs of sigilla and small sclerotized scutum placed just above the median half of the dorsum (Fig. 264). Epigyne longer than wide, convex anteriorly with rounded conspicuous copulatory opening on either lateral side of the vulva (Fig. 265). Internal genitalia with long and elongated spermatheca (Fig. 266).

Type locality : Types : Deccan, India.

Distribution : India : Tamil Nadu (Madras) ; Orissa (Chilka lake) ; Bangalore ; Assam ; Maharashtra ; Bhutan ; West Bengal (Darjeeling, Kalimpong).

Remarks : The present description and illustration based on authenticated identified male and female specimens deposited at National Collection of Z. S. I. Reg. No. 5787/H2.

66. *Castianeira indica* Tikader

(Figs. 270-275)

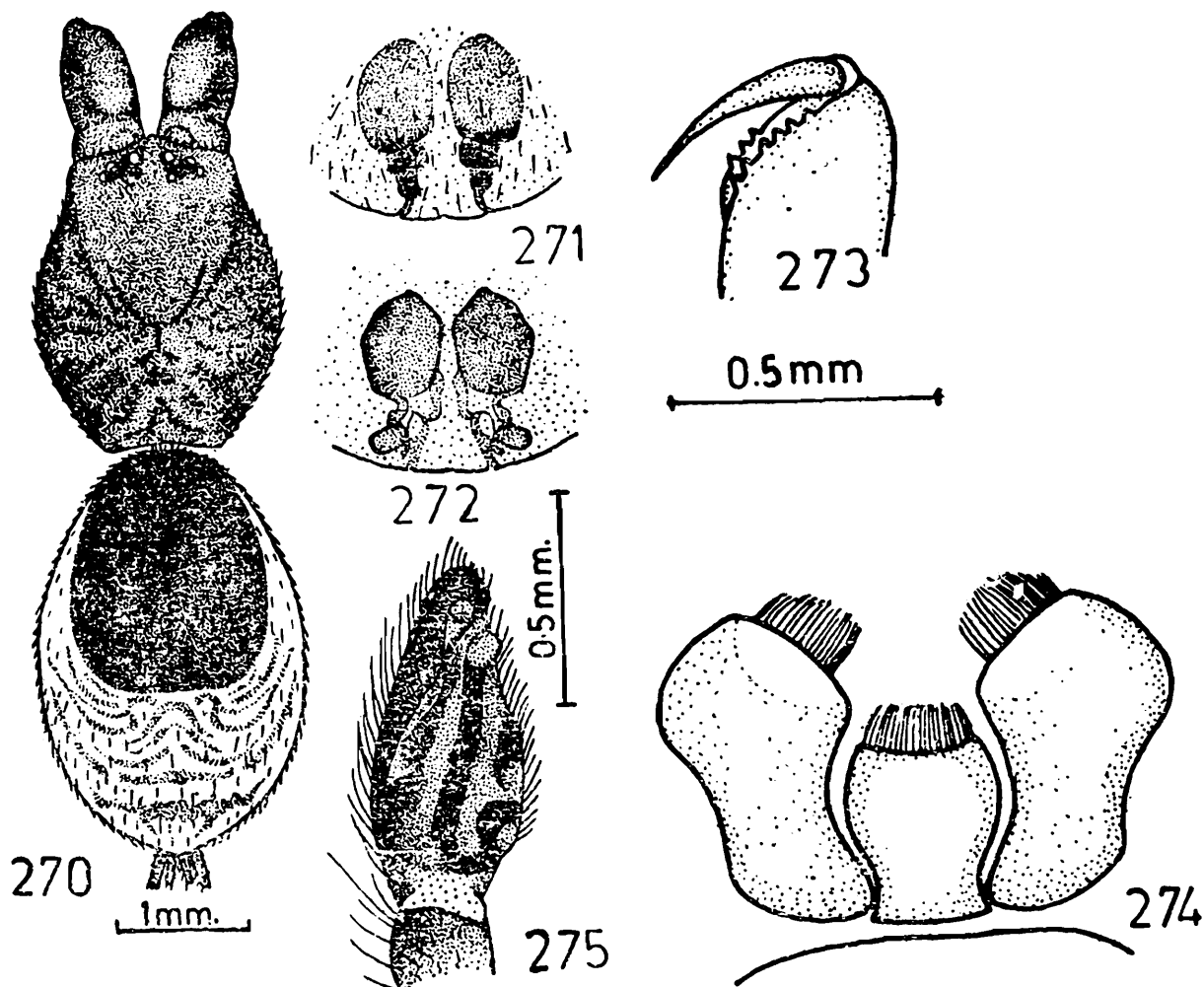
1981. *Castianeira indica* Tikader, *Bull. zool. Surv. India*, 4 (3) : 260.

Specimen examined : 2 ♀ ♀, 1 ♂, Darjeeling Zoo Garden, Darjeeling, West Bengal. 7.4.1974. Coll. Bijan Biswas.

General : Cephalothorax deep brown, abdomen brown and legs reddish brown. Total length 5.30 mm. Carapace 2.20 mm. long and 1.90

mm. wide ; abdomen 3.00 mm. long and 2.00 mm. wide.

Cephalothorax: Longer than wide, wider in front, clothed with spine like hair, cephalic region slightly high anteriorly, fovea present posterior to the carapace. Eyes pearly white arranged in two transverse series anterior and posterior. The anterior row slightly recurved, medians much larger than the laterals ; posterior row longer than the laterals ;



Figs. 270-275. 270. Dorsal view of female, legs omitted ; 271. Epigyne ; 272. Internal genitalia ; 273. Chelicera showing arrangements of teeth ; 274. Maxillae and labium ; 275. Male palp.

posterior row longer than the anterior row, slightly procurved, medians smaller than the laterals. Ocular quadrate wider than long, narrower anteriorly. Chelicerae enormously long, inner and outer margin provided with 6 and 3 teeth (Fig. 273). Maxillae and labium red in colour, longer than wide (Fig. 274). Sternum heart shaped clothed with fine pubescence. Legs moderately strong, clothed with hair and spine, legs formula 1 4 2 3. Tibia and metatarsi of I and II provided with 8 and 5 pairs of ventral spines. Tibia of the male palp without apophysis, cymbium long and elongated, narrower both the end (Fig. 275).

Abdomen : Longer than wide, clothed with spine like hair. Dorsum provided anteriorly with sclerotized scutum (Fig. 270). Epigyne as

elongated convex plate with copulatory opening on posterolateral side of the plate (Fig. 271). Internal genitalia with oval large spermatheca, coiled copulatory tube present (Fig. 272).

Type locality : Holotype : female, Flower Garden, Poona University compound, Poona, Maharashtra, India. 12.10.1979. Coll. B. K. Tikader. Paratypes : 11 ♀ ♀, allotype : 1 ♂, locality, date and collector same as holotype.

Distribution : India : West Bengal (Darjeeling) new report ; Maharashtra (Poona).

Remarks : The holotype, paratypes and allotype deposited at National Collection of Z.S.I. Reg. No. 5096-98/18. The description and illustration given here based upon that. In addition to this, 2 female and 1 male were collected and identified.

67 *Castianeira flavipes* Gravely (Figs. 276-281)

1931. *Castanira flavipes* Gravely, *Rec. Indian Mus.*, 33 (3) : 275.

1954. *Castianeira flavipes* Rower, *Katalog der Araneae*, 2 : 611.

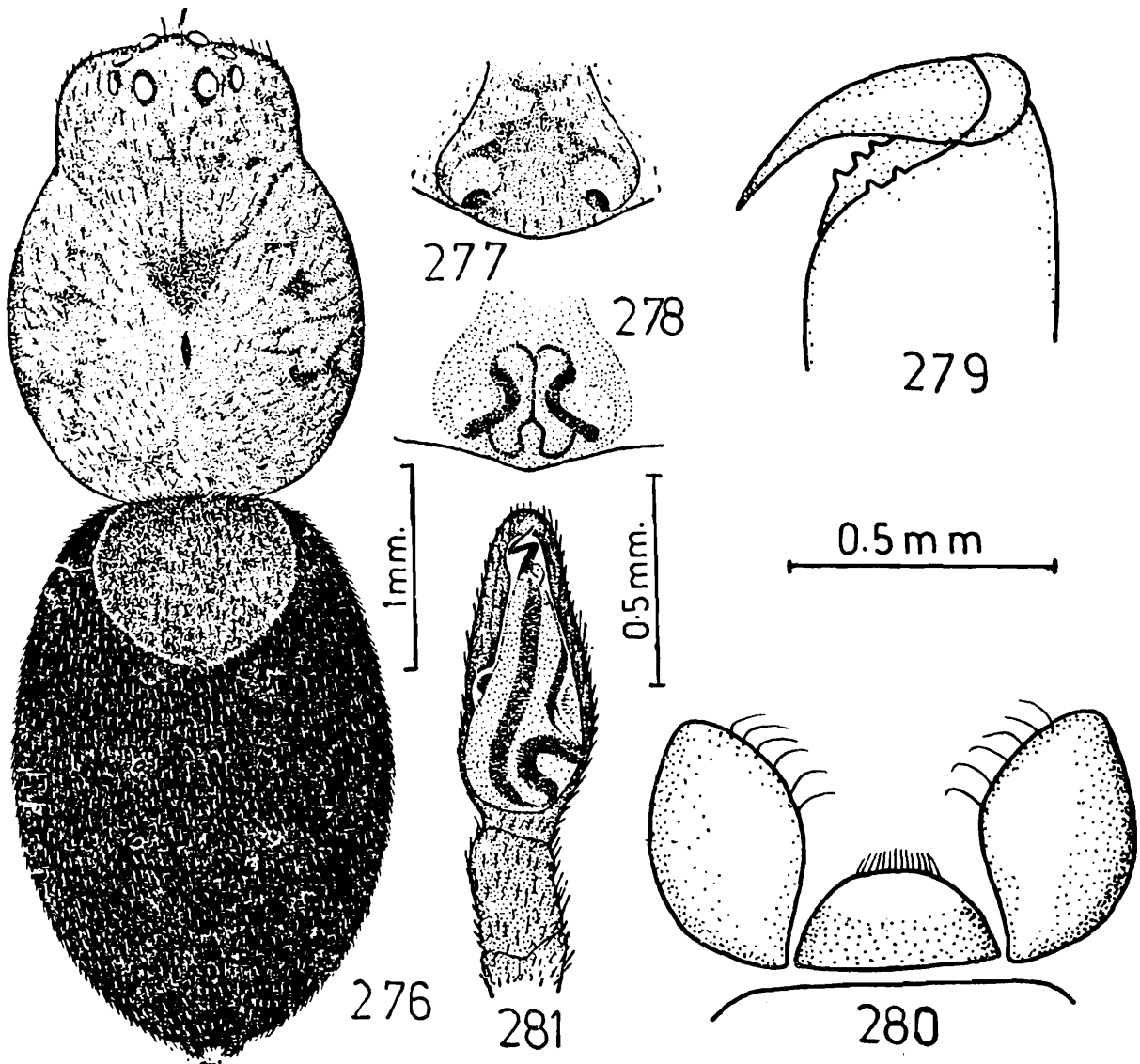
1981. *Castianeira flavipes* : Tikader, *Bull. zool. Surv. India*, 4 (3) : 260.

Specimen examined : 1 ♀, Bangalore, Mysore 6.12.1921. Coll. F. H. Gravely. 1 ♀, Barkuda Island, Chilka lake, Orissa. 21.6.1914. Coll. F. H. Gravely. 8 ♀ ♀, Chilka lake, Orissa, 19.8.1919. Coll. F. H. Gravely. 1 ♀, 6 ♂ ♂, Chilka lake, Orissa. 1930. Coll. F. H. Gravely. Reg. No. 5782/18.

General : Cephalothorax, legs and abdomen brown in colour. Total length 5.00 mm. Carapace 2.20 mm. long and 1.80 mm. wide ; abdomen 2.80 mm. long and 1.80 mm. wide.

Cephalothorax : Longer than wide, slightly wider in front, convex, clothed with fine hair, fovea present at the middle. Eyes pearly white, bases encircled by blackish patches. Anterior row recurved, medians larger than the laterals, posterior row slightly longer than the anterior row, procurved, medians larger than the laterals. Ocular quadrate almost square. Chelicerae moderately strong, inner and outer margin provided with 2 and 3 teeth (Fig. 279). Maxillae longer than wide with no depression at the middle ; labium wider than long, convex anteriorly (Fig. 280). Sternum nearly oval, deep brown in colour. Legs moderately strong ; legs formula 1 3 2 4. Tibia and metatarsi of I and II provided with 3 and 2 pairs of ventral spines. Male palp longer than wide, with elongated cymbium, embolus spirally twisted (Fig. 281).

Abdomen : Longer than wide, clothed with spine like hair, small sclerotized scutum present anterior end of the dorsum (Fig. 276). Epigyne as elongated plate, broader posteriorly with conspicuous copulatory opening (Fig. 277). Spermatheca elongated divisible into two parts (Fig. 278).



Figs. 276-281. 276. Dorsal view of female, legs omitted; 277. Epigyne; 278. Internal genitalia; 279. Chelicera showing arrangements of teeth; 280. Maxillae and labium; 281. Male palp.

Type locality : Holotype : 1 ♀, allotype : 1 ♂, Barkuda Island, Orissa, India. 14.10.1920. Coll. F. H. Gravely; deposited at Z.S.I. National Collection. Reg. No. 5780/H2.

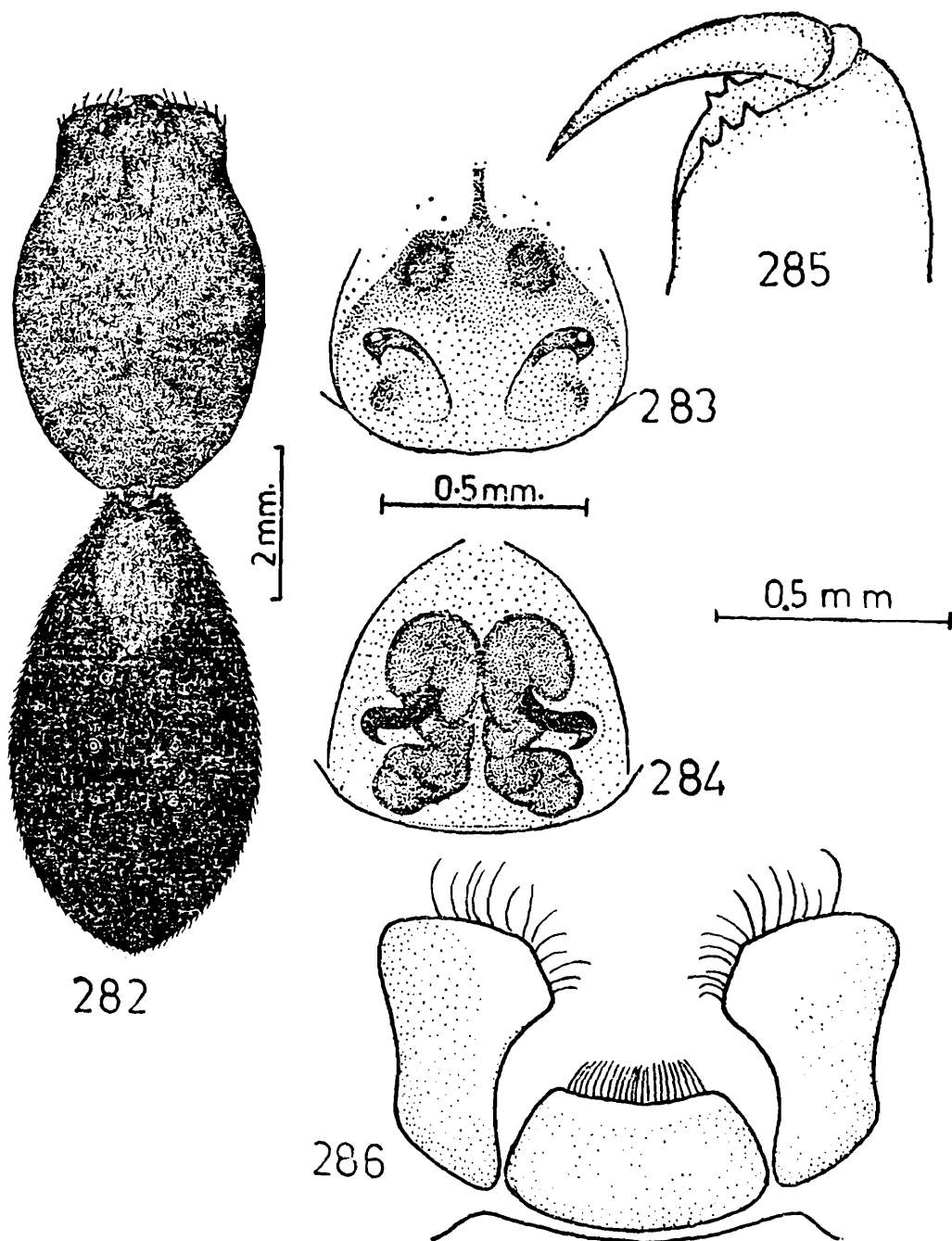
Distribution : India : Orissa (Chilka lake, Barkuda Island); Bangalore; Karnataka; Tamil Nadu (Nilgiri).

Remarks : The authenticated identified male and female specimen deposited at Z.S.I. Collection. Reg. No. 5782/18. The present description and illustration are given here based upon that.

68. *Castianeira himalayensis* Gravely
(Figs. 282-286)

1931. *Castaneira himalayensis* Gravely. *Rec. Indian Mus.*, 33 (3) : 275.
 1954. *Castianeira himalayensis* : Roewer, *Katalog der Araneae*, 2 : 611.
 1981. *Castianeira himalayensis* : Tikader & Biswas, *Rec. zool. Surv. India. occ. pap. No. 30* (1) : 72.
 1981. *Castianeira himalayensis* : Tikader, *Bull. zool. Surv. India*, 4 (3) : 265.

Specimen examined : 2 ♀ ♀, Eden Garden, Calcutta, West Bengal.
 18.10.1975. Coll. Bijan Biswas.



Figs. 282-286. 282. Dorsal view of female, legs omitted; 283. Epigyne; 284. Internal genitalia; 285. Chelicera showing arrangements of teeth; 286. Maxillae and labium.

General : Cephalothorax, legs and abdomen light brown. Total length 11.40 mm. Carapace 5.10 mm. long and 3.00 mm. wide ; abdomen 6.00 mm. long and 3.20 mm. wide.

Cephalothorax : Longer than wide, slightly wider in front, convex, cephalic region slightly high with median fovea ; Eyes pearly white, anterior row recurved, medians larger than the laterals ; posterior row straight and slightly longer than the anterior row. Ocular quadrate slightly longer than broad. Chelicera strong, longer than wide, inner and outer margin provided with 2 and 3 teeth (Fig. 285). Maxillae longer than wide slightly depressed at the middle (Fig. 286). Labium wider than long, anteriorly convex and scopulated. Sternum oval in shape. Legs long and moderately strong, legs formula 4 2 1 3. Tibia and metatarsi of I and II provided with 3 and 2 pairs of ventral spines.

Abdomen : Longer than wide, clothed with spine like hair, small sclerotized scutum present anterior end of the dorsum (Fig. 282). Epigyne as rounded plate with conspicuous copulatory opening (Fig. 283). Internal genitalia with elongated spermatheca posteriorly convoluted, anteriorly rounded, copulatory tube short (Fig. 284).

Type locality : Holotype : 1 ♀, Tindharia, Darjeeling, West Bengal, India, 9.10.1915. Coll. Mrs. Drake ; deposited at Z.S.I. National Collection, Reg. No. 5778/H2

Distribution : India : West Bengal (Calcutta, Darjeeling).

Remarks : The authenticated identified females deposited at the Z. S. I. Collection, Reg. No. 4419/18, were critically examined and the present description and illustration mostly based upon that.

69. *Castianeira albopicta* Gravely

(Figs. 287-291)

1931. *Castianeira albopicta* Gravely, *Rec. Indian Mus.*, 33 (3) 275.

1954. *Castianeira albopicta* : Rower, *Katalog der Araneae*, 2 : 611.

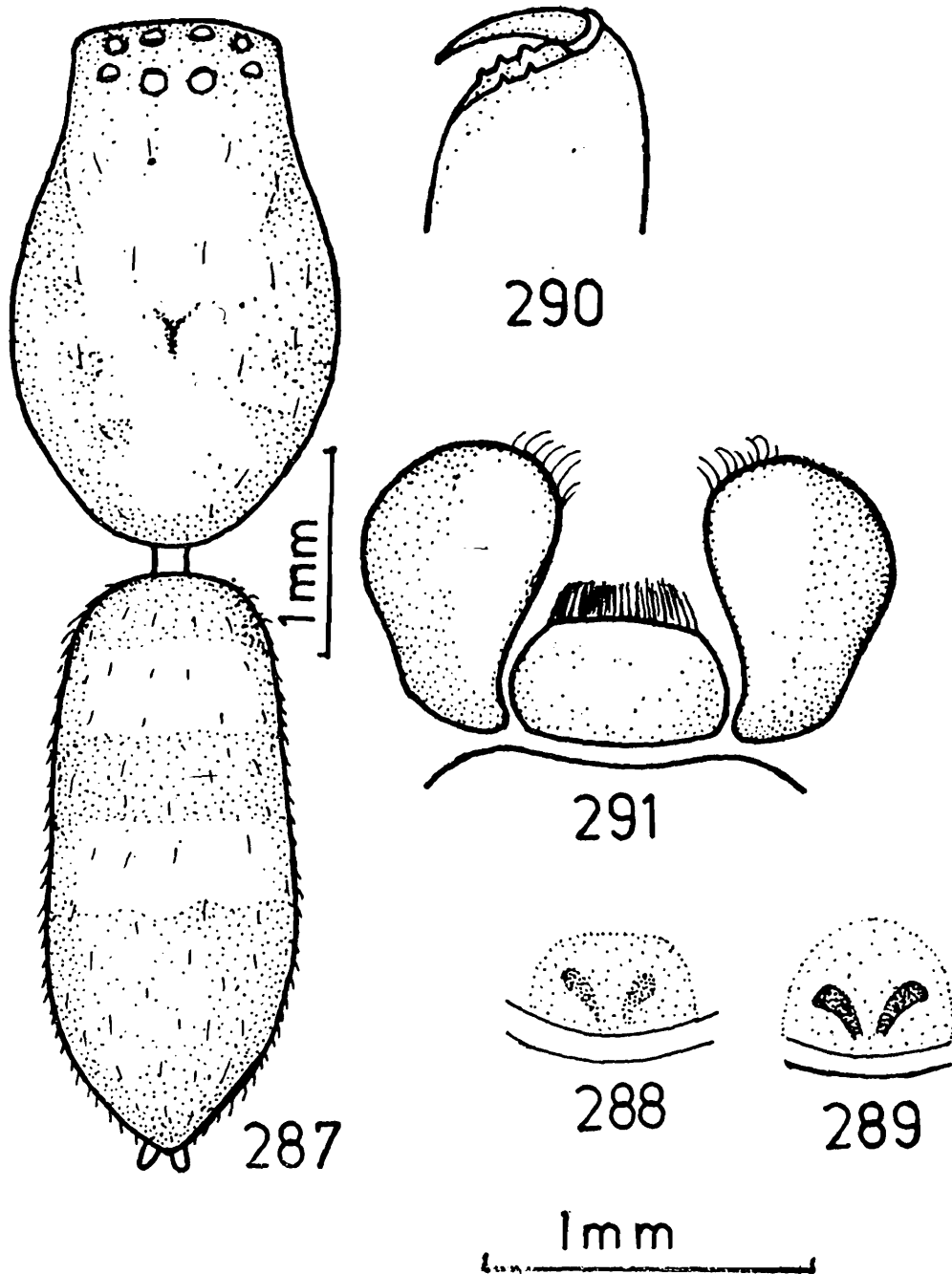
1981. *Castianeira albopicta* : Tikader, *Bull. zool. Surv. India*, 4 (3) : 263.

Specimen examined : 1 ♀, pashok, Darjeeling, West Bengal. 25.5.1916. Coll. F. H. Gravely. Reg. No. 5777/H2. 1 ♀, Chotonagpur, Dist. Singhbhum, Bihar. 26.1.1955. Coll. A. P. Kapur. 2 ♀ ♀, Wadgaon, Banagkench, Gujarat. 15.11.1974. Coll. B. Dutta.

General : Cephalothorax, legs and abdomen light brown. Total length 5.80 mm. Carapace 2.80 mm. long and 1.80 mm. wide ; abdomen 3.00 mm. long and 1.30 mm. wide.

Cephalothorax : Longer than wide, slightly wider in front, convex,

clothed with fine hair, provided with median fovea. Eyes pearly white uniform size, bases of all eyes encircled by black patch. Anterior row slightly rocurved ; posterior row straight, slightly longer than the anterior row. Ocular qnadrate nearly squire. Chelicerae strong, inner and



Figs. 287-291. 287. Dorsal view of female, legs omitted ; 288. Epigyne ; 289. Internal genitalia ; 290. Chelicera showing arrangement of teeth ; 291. Maxillae and labium.

outer margin provided with 2 and 3 teeth (Fig. 290). Maxillae longer than wide scopulated anteriorly (Fig. 291). Labium as long as wide. Sternum nearly heart shaped. Legs moderately strong, marked with longitudinal marking ; legs formula 4 1 3 2. Tibia and metatarsi of I and II provided with 3 and 2 pairs of ventral spines.

Abdomen : Long and cylindrical. Clothed with hair and spine

like hair. Epigyne as semicircular in shape with conspicuous copulatory opening (Fig. 288). Internal genitalia with small spermatheca divisible into two parts (Fig. 289).

Type locality : Holotype : 1 ♀, Pashok, Darjeeling, West Bengal, India. 6.8.1916. Coll. F. H. Gravely ; deposited at Z. S. I. National Collection. Reg. No. 5776/H2.

Distribution : India : Bihar (Manoharpur, Singbhum) new report ; Gujarat (Wadgaon) new report ; West Bengal (Darjeeling).

Remarks : The present description and illustration are given here based upon freshly collected materials. In addition to this, the description of genitalia and internal genitalia are given here elaborately.

70. *Castianeira tinae* Patel & Patel (Figs. 292-296)

1974. *Castianeira tinae* Patel & Patel, *Proc. Indian Acad. Sci.*, 78 (1) : 6

Specimen examined : 1 ♀, Palta, 24-Parganas, West Bengal. 1.7.1974. Coll. Bijan Biswas.

General : Cephalothorax and abdomen dark brown, legs yellowish brown. Total length 6.50 mm. Carapace 3.00 mm. long, 1.90 mm. wide ; abdomen 3.50 mm. long and 1.90 mm. wide.

Cephalothorax : Longer than wide, clothed with fine pubescence, convex anteriorly, provided with median fovea. Eyes in two rows, the anterior row slightly recurved, medians blackish and slightly smaller than the laterals ; posterior row longer than the anterior row, medians smaller than the laterals. Ocular quadrate wider than long. Chelicerae strong, inner and outer margin provided with 2 teeth on each (Fig. 295). Maxillae and labium longer than wide angulate distally with no depression at the middle (Fig. 296). Legs long and strong, covered by hair and spines. Legs formula 4 2 1 3. Tibia and metatarsi of I and II provided with 1 and 2 pairs of ventral spines. Femora I and II are black other lighter in colour.

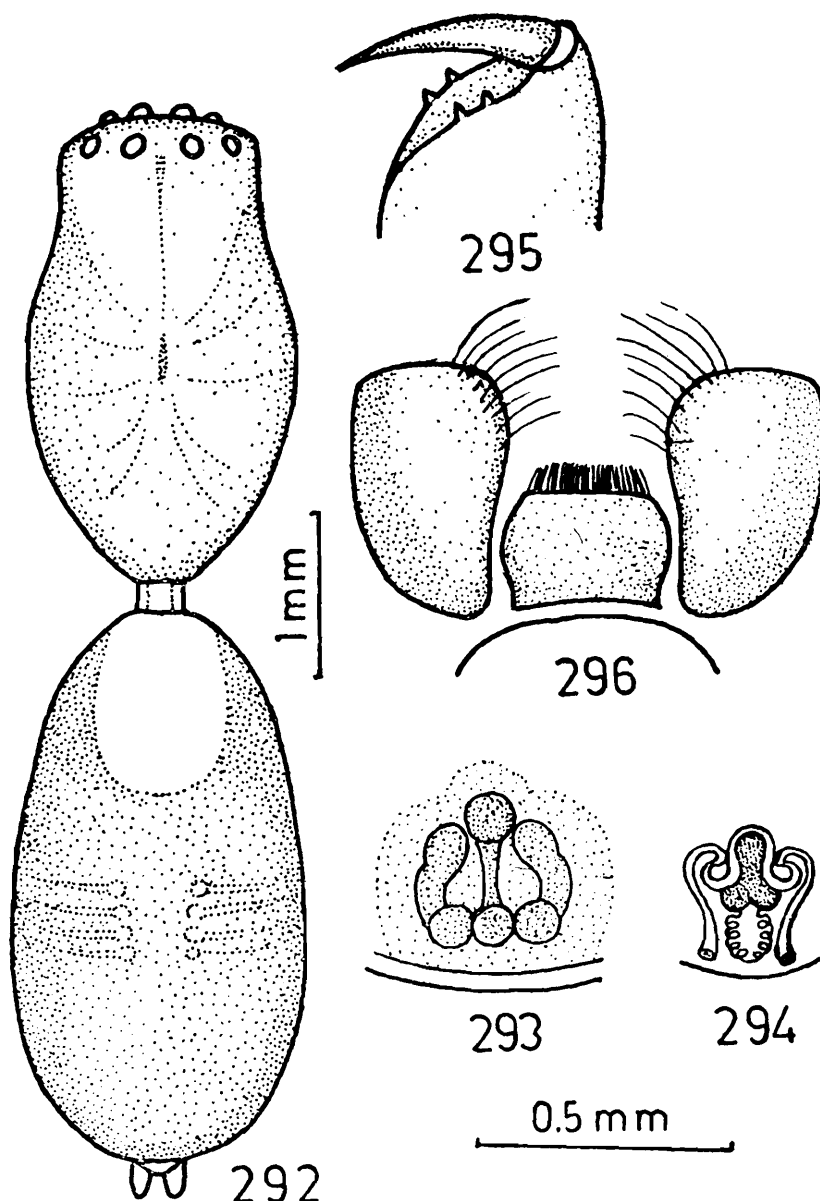
Abdomen : Longer than wide, ovate, broader posteriorly, dorsum marked with dorsal scutum and 3 white or bright coloured transverse bands (Fig. 292). Epigyne rounded plate with conspicuous rounded copulatory opening (Fig. 293). Internal genitalia with small and rounded spermatheca (Fig. 294).

Type locality : Holotype : female ; allotype : male, Vallabh, Vidyanagar, Dist. Kaira, Gujarat (type with author not deposited at

Z. S. I. National Collection).

Distribution : India : Gujarat, West Bengal (Palta) new report.

Remarks : The type of this species could not be procured. However, the present description and illustration are given here based on



Figs. 292-296. 292. Dorsal view of female, legs omitted ; 293. Epigyne ; 294. Internal genitalia ; 295. Chelicera showing arrangements of teeth ; 296. Maxillae and labium.

examining the freshly collected specimen. The present materials compared with the original description and illustration as given in his Ph. D. thesis which are in full agreement with the original description.

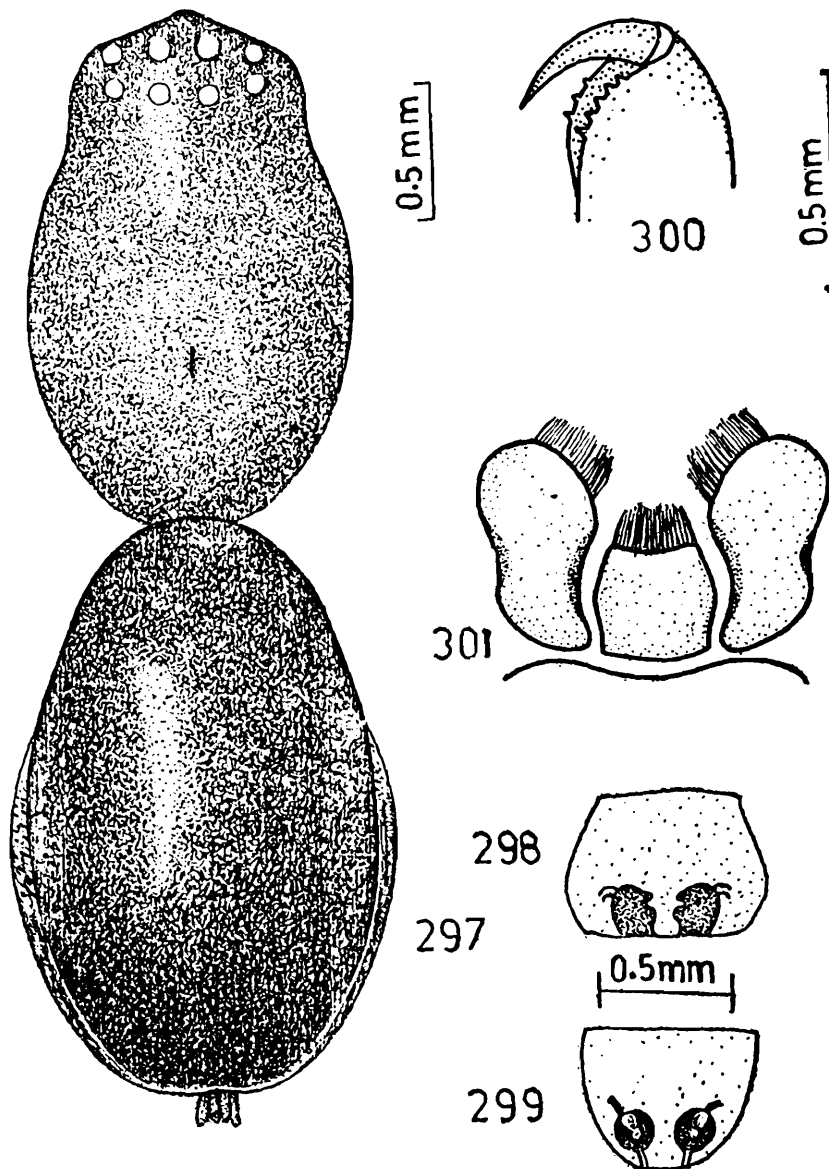
71. *Castianeira bengalensis* Biswas (Figs. 297-301)

1984. *Castianeira bengalensis* Biswas, *Bull. zool. Surv. India*, 6 (1-3) : 120.

General : Cephalothorax and abdomen with shiny deep brown to

chocolate colour, legs are brown in Colour. Total length 3.90 mm. Carapace 1.80 mm. long and 1.30 mm. wide ; abdomen 2.10 mm. long and 1.50 mm. wide.

Cephalothorax : Nearly oval, longer than wide and wider in front,



Figs. 297-301. 297. Dorsal view of female, legs omitted ; 298. Epigyne ; 299. Internal genitalia ; 300. Chelicera showing arrangements of teeth ; 301. Maxillae and labium.

cephalic region slightly high, clothed with fine pubescence provided with fovea posterior to the carapace. Eyes rounded and silvery white. Anterior row slightly recurved, medians larger than laterals ; posterior row procurved and all eyes nearly same size. Ocular quad slightly longer than wide. Chelicerae strong inner and outer margin provided with 5 and 3 teeth (Fig. 300). Maxillae and labium longer than wide (Fig. 301). Sternum heart-shaped pointed behind, deep brown in colour. Legs long and slender clothed with hair and spines. Tibia and metatarsi of I and II provided with 7 and 5 pairs of ventral spines respectively.

Abdomen : Longer than wide, narrow in front. Nearly total area of the dorsum provided by large sclerotized scutum (Fig. 297). Ventral side light brown to whitish. Epigyne as rounded plate with conspicuous copulatory opening (Fig. 298). Internal genitalia with small and oval spermatheca, copulatory tube long (Fig. 299).

Type locality : Holotype : female, Zoo Garden, Alipore, Calcutta, India. 1.9.1982. Coll. Bijan Biswas. Paratypes : 2 ♀ ♀, Zoo Garden, Alipore, Calcutta, India. 12.3.1984. Coll. Bijan Biswas.

Distribution : Known only from the type locality.

Remarks : The holotype and paratypes present in Z. S. I Collection, Reg. No. 5115/18, were critically examined and the present description and illustration given here based upon that.

72. *Castianeira quadrimaculata* Reimoser (Figs. 302-305)

1934. *Castianeira quadrimaculata* Reimoser, *Rev. Suisse zool.* 41 (32) : 490.

Specimen examined : 1 ♂, Palta, 24 Parganas, West Bengal, 29.10.1980. Coll. Bijan Biswas.

General : Cephalothorax and abdomen yellowish red, legs red yellow in colour. Total length 6.50 mm. Carapace 3.00 mm. long and 2.10 mm. wide ; abdomen 3.50 mm. long and 1.80 mm. wide.

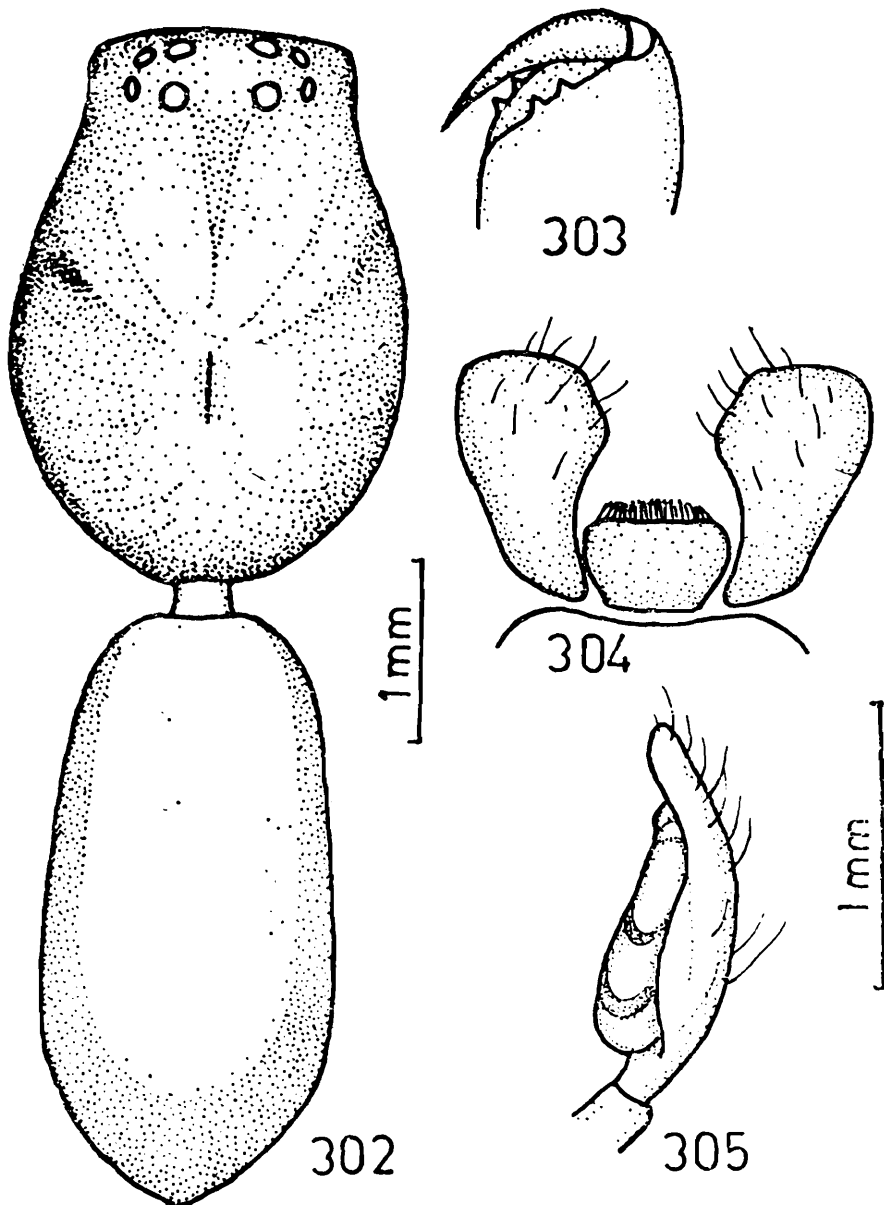
Cephalothorax : Longer than wide, covered by fine hair provided with median fovea. Eyes pearly white, anterior row almost straight medians larger and separated from each other. Posterior row slightly recurved longer than the anterior row, medians larger and separated from each other than the laterals. Ocular quad wider than long. Chelicerae yellowish brown, longer than wide, inner and outer margin provided with 2 teeth on each (Fig. 303). Maxillae longer than wide, anteriorly broad and posteriorly narrower (Fig. 304). Labium as long as wide. Sternum nearly oval in shape. Legs long and strong. Legs formula 4 3 1 2. Tibia and metatarsi of I and II provided with 2 and 1 ventral spine on each. Tibia of the male palp without apophysis. Cymbium long and slender, tegulum convex, embolus spirally twisted (Fig. 305).

Abdomen : Elongated in form, two third of the dorsum covered by sclerotized scutum (Fig. 302).

Type locality : Holotype : male, Kokumalai, S. India.

Remarks : The type of this species could not be procured. However, the present description and illustration are given here based

on examining the freshly collected specimen. The present materials compared with the original description and illustration of Reimoser



Figs. 302-305. 302. Dorsal view of male, legs omitted ; 303. Chelicera showing arrangements of teeth ; 304. Maxillae and labium ; 305. Male palp.

(1934), which is in full agreement with original description and illustration.

Genus *Coenoptychus* Simon

- 1885. *Coenoptychus* Simon, *Bull. Soc. Zool France*, 10 (1) : 214.
- 1912. *Coenoptychus* : Green, *Spolia Zeylanica*, 8 : 92
- 1928. *Coenoptychus* : Petrunkevitch, *Trans. Connect. Acad. Arts Science*, 29 : 179.
- 1931. *Coenoptychus* : Gravely, *Rec. Indian Mus.*, 33 : 229.

Diagnosis : Cephalothorax elongated, parallel, slightly convex an-

teriorly, cephalic shield without median fovea, covered with feathery hair. Eyes in two rows anterior and posterior. The anterior row straight or slightly recurved, distinctly separated from each other ; posterior row longer double than the anterior row. Strongly recurved, laterals far remote from the medians, larger than the medians and seems to be slightly stalked. Ocular quadrate almost square. Clypeus more or less vertical. Chelicerae strong and convex. Maxillae longer than wide, rounded anteriorly without any constriction at the middle. Labium wider than long semicircular in shape. Sternum egg shaped. Legs strong and stout, legs formula 4 1 2 3. Tibia and metatarsi of I and II provided with ventral spines. Abdomen oval or rounded, 6 dots of whitish patches present on the dorsum. Epigyne as oval plate, wider posteriorly and narrower anteriorly with distinct copulatory opening. Spermatheca longer than wide divisible into two parts with short copulatory tube.

This remarkable genus belonging to the group Corinninae Karsch but it differs from Corinninae due to absence of median striae of the Cephalothorax and the posterior row of eyes strongly recurved.

The spiders of this genus have ant like bodies heavily sclerotized. They are found in leaf litters in deciduous forest or under stone.

Type species : *Coenoptychus pulcher* Simon 1885.

Distribution : Ceylon ; Ramnad ; India.

73. *Coenoptychus pulcher* Simon (Figs. 306-310)

1885. *Coenoptychus pulcher* Simon, *Bull. Soc. Zool. France*, 10 (1) : 215.

1912. *Coenoptychus pulcher* : Green, *Spolia Zeylanica*, 8 : 93

1928. *Coenoptychus pulcher* : Petrunkevitch, *Trans. Conn. Acad. Art. Sci.*, 29 : 180.

1931. *Coenoptychus pulcher* : Gravely, *Rec. Indian Mus.*, 33 : 276.

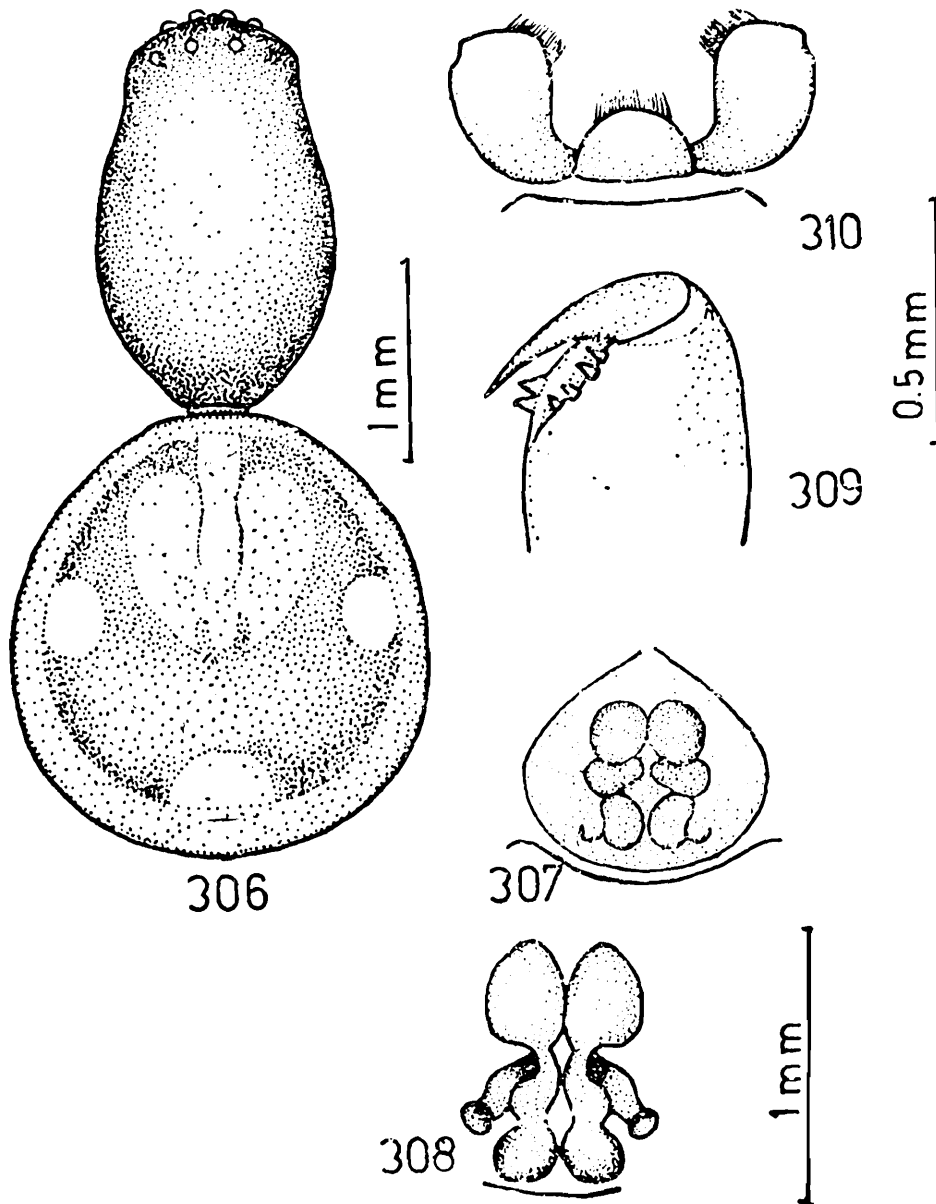
1932. *Coenoptychus pulcher* : Berland, *Biol. Encycloentomogique, Paris*, 16 : 149.

Specimen examined : 2 ♀ ♀, Madras, Tamil Nadu, India.
1.11.1924. Coll. Gravely. Reg. No. 1769/18.

General : Cephalothorax redish brown, legs brownish red and abdomen brownish red with six dots of whitish patch. Total length 4.10 mm. Carapace 1.90 mm. long and 1.20 mm. wide ; abdomen 2.10 mm. long and 2.00 mm. wide.

Cephalothorax : Longer than wide, almost parallel, slightly convex anteriorly, covered with rough hair, fovea usually absent. Eyes in two rows anterior and posterior, pearly white in colour. The anterior row

straight or slightly recurved distinctly separated from each other, medians slightly smaller than laterals and close to each other. Posterior row twice longer than the anterior row, strongly recurved, laterals far remote from the medians and larger than the medians. Clypeus more or less vertical,



Figs. 306-310. 306. Dorsal view of female, legs omitted; 307. Epigyne; 308. Internal genitalia; 309. Chelicera showing arrangements of teeth; 310. Maxillae and labium.

Ocular quadrate wider than long, slightly narrower anteriorly. Chelicerae strong and stout more or less convex, inner and outer margin provided with 3 similar and 2 dissimilar teeth (Fig. 309). Maxillae longer than wide, broad and rounded anteriorly (Fig. 310). Labium wider than long, semicircular in shape, redish brown in colour, Sternum oval in shape clothed with fine pubescence, broad anterior and pointed posteriorly. Legs short and strong, legs formula 4 3 2 1. Tibia and metatarsi of I and II provided with 3 and 2 pairs of ventral spines.

Abdomen : As long as wide, almost rounded or oval in shape,

covered with sclerotized plate about $\frac{3}{4}$ of the total length. Dorsum provided with six dots of whitish patches, the first one rounded, middle elongated and posterior also rounded (Fig. 306). Genitalia as oval sclerotized plate, broad and round posteriorly, pointed anteriorly with prominent copulatory opening (Fig. 307). Internal genitalia with larger spermatheca longer than wide, divisible into 2 parts with short copulatory tube (Fig. 308).

Type locality : Holotype : female, Ramnad.

Distribution : India : Tamil Nadu (Madras) ; Ceylon ; Ramnad.

Remarks : Description and illustration are provided here based upon examining authenticated identified two females specimens, Reg. No. 1769/18 deposited at National Collection of Z.S.I. As the original description was very brief, more detailed description of chelicerae, maxillae, genitalia and internal genitalia are provided here with modern taxonomic concept.

Genus *Sphingius* Thorell

1890. *Sphingius* Thorell, *Ann. Mus. Civ. Stor. nat. Genova*, 30 : 285.
1897. *Thamphilus* : Simon, *Histoire naturelle des Araign.*, 2 (1) : 154
1903. *Sphingius* : Simon, *Ann. Soc. ent. Belgique*, 47 : 33.
1928. *Sphingius* : Petrunkevitch, *Trans. Connect. Acad. Arts. Sci.*, 29 : 180.
1931. *Sphingius* : Gravelly *Rec. Indian Mus.*, 33 : 269.

Diagnosis : Cephalothorax longer than broad with prominent central fovea. Cephalic shield high enough with the diameter of the middle eyes. Eyes not in uniform size, arranged in two transverse series the anterior and posterior. The anterior row straight or recurved, medians rounded or ovoid in shape. The posterior row longer than the anterior row, straight or procurved, medians oval or rounded, laterals not so close to each other. Ocular quadrate not almost square. Chelicerae sufficiently long, robust and straight, the inner and outer margin provided with 3 and 2 teeth. Maxillae twice longer than wide, slightly constricted at the middle. Legs are long and slender not very strong, partly black and partly compressed, tarsi slightly long. Tibia of male palp longer than wide with long and strong retrolateral apophysis. Cymbium without spur, tegulum convex, embolus arises at the distal end of tegulum. Abdomen elongated, both dorsal and ventral shield present. Epigyne with elongated plate, rarely rounded with a pair of conspicuous copulatory openings as simple cavities in epigynal plate, copulatory tubes long and slender. Spermatheca club shaped.

The specimens of the genus *Sphingius* Thorell closely resemble to *Castianeira* Keyserling in general appearance, but differs from the latter due to the presence of lateral constriction of Maxillary lobe where as lateral constriction absent in *Castianeira* Keyserling.

The spider of this genus have elongated body rather thin and slender legs, carapace heavily sclerotized rather thinly pubescence. General coloration of these spiders varies from reddish brown to dark brown and sometimes blackish in colour. These spiders generally found in leaf litter or under logs and stones.

Type species : *Sphingius thecatus* Thorell 1890.

Distribution : Pinang ; Ceylon ; Burma ; Annam ; India.

Key to the species of the genus *Sphingius* Thorell from India

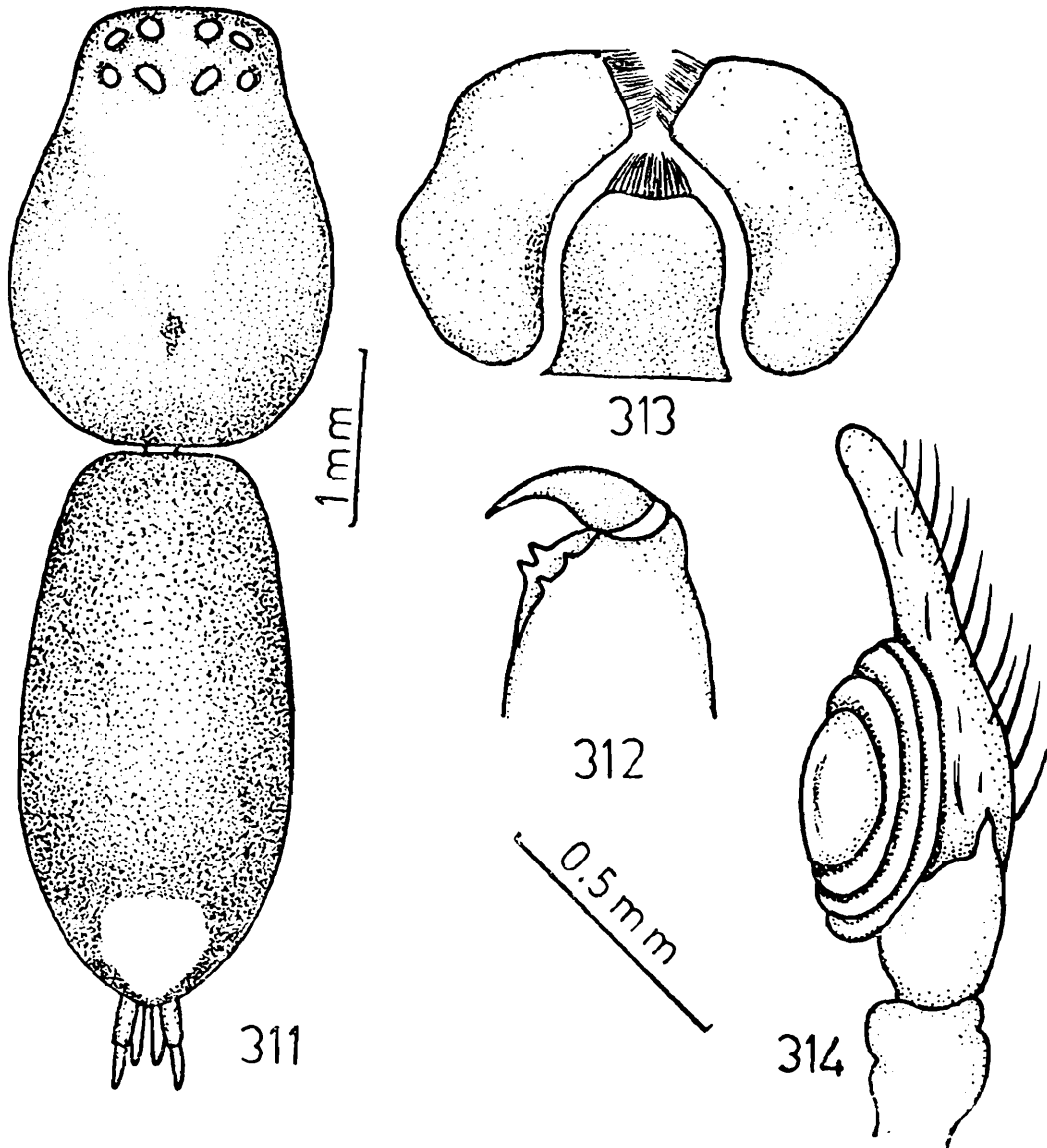
1. Legs very long and slender ; pale marking absent on abdomen and legs ; tegular apophysis of the male palp coiled round its equatorial plane. ... *longipes*
- Legs normal not very long ; pale marking present on abdomen and legs ; tegular apophysis not coiled round its equatorial plane. ... 2
2. Vulva confined to posterior half of genital segment ; abdomen normally with whitish patches. ... *caniceps*
- Vulva not confined to posterior half of genital segment, extending from end to end of the genital segment ; abdomen without white patches. ... 3
3. Tibia of the male palp provided with long slender retrolateral apophysis ... *barkudensis*
- Tibia of the male palp not provided with long slender retrolateral apophysis. ... 4
4. Labium wider than long. Maxillae without lateral constriction at the middle. ... *kambakamensis*
- Labium longer than wide ; Maxillae with lateral constriction at the middle. ... 5
5. Anterior row of eyes recurved, medians not blackish ; Abdomen not provided with series of pair of white spots. ... *nilgiriensis*
- Anterior row of eyes procurved. medians blackish ; abdomen provided with series of pair of white spots. ... *bilineatus*

74. *Sphingius longipes* Gravely (Figs. 311-314)

1931. *Sphingius longipes* Gravely, *Rec. Indian Mus*, 33 : 270.

Specimen examined : 1 ♂, Pattambi, Malabar Dist., Kerala, 28.5. 1930. Coll. F. H. Gravely.

General : Cephalothorax greenish brown, legs uniformly light coloured ; abdomen somewhat darker than carapace. Total length 5.7 mm. Carapace 2.5 mm. long and 1.7 mm. wide ; abdomen 3.2 mm. long and 1.7 mm. wide.



Figs. 311-314. 311. Dorsal view of female, legs omitted ; 312. Chelicera showing arrangements of teeth ; 313. Maxillae and labium ; 314. Male palp.

Cephalothorax : Longer than wide, narrow anteriorly and broad posteriorly covered by thinly pubescence. Cephalic shield high enough with Y shaped cephalic groove. Eyes in two parallel series anterior and posterior. The anterior row slightly recurved, medians rounded and larger than the laterals, well separated from each other. The posterior row usually longer than the anterior row, slightly procurved, medians ovate and larger than the laterals, well separated from the laterals. Ocular quadrate approximately square. Chelicerae strong and stout, twice longer than broad, redish brown in colour, inner and outer margin provided with 2 teeth on each (Fig. 312). Maxillae and labium twice

longer than wide, redish brown in colour, narrower and scopulated anteriorly (Fig. 313). Sternum heart shaped covered with fine pubescence, redish brown in colour. Legs long, partly black and partly compresssd. Legs formula 4 1 3 2. Femora and trochanter are not comparatively long. The tibia and metatarsi of all legs provided with a number of short spine like hair. Tibia of the male palp with short retrolateral apophysis, cymbium without spur, tegular apophysis coiled round its equitorial plane, embolus cylindrical (Fig. 314).

Abdomen : Narrow and elongated, covered with thinly pubescence, dorsal shield without ornamentation. The abdominal shield not very prominent, extends little beyoud the middle of the abdomen.

Type locality : Holotype : Male, Puttambi, Malabar, Kerala, India ; deposited at Z. S. I. Collection Reg. No. 1513/18.

Distribution : Known from the type locality.

Remarks : The present description and illustration are made on the basis of examining the male type specimen deposited in Z. S. I. National Collection, Calcutta, Reg. No. 1513/18.

75. *Sphingius caniceps* Simon (Figs. 315-319)

1906. *Sphingius caniceps* Simon, *Ann. Soc. ent. Fr.*, 75 : 301.

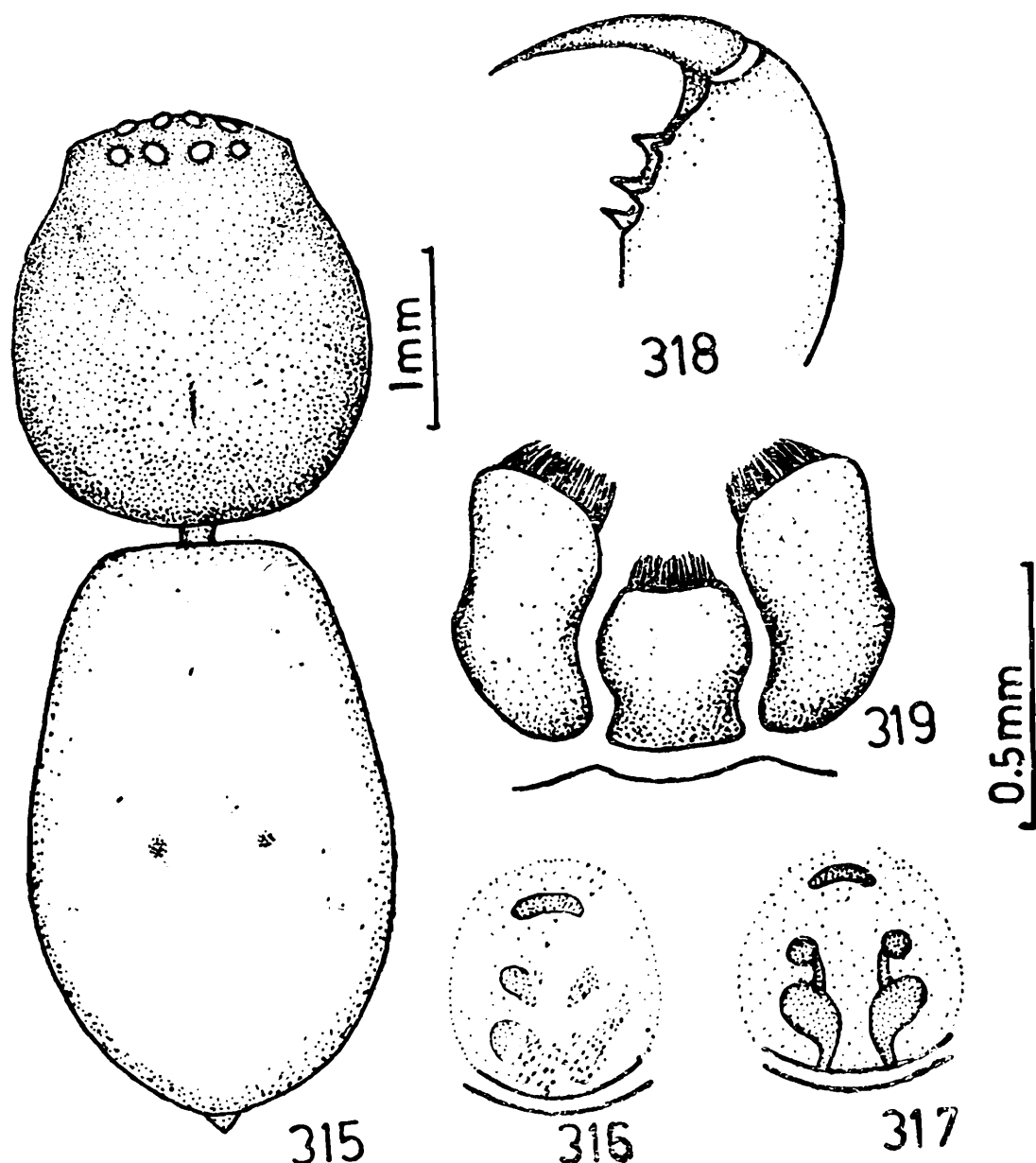
1931. *Sphingius caniceps* : Gravely, *Rec. Indian Mus.*, 33 : 271.

Specimen examined : 4 ♀ ♀, Madras, Tamil Nadu. 1930. Coll. F. H. Gravely. Reg. No. 5752/H. 1 ♀, Purnakote, Dist. Denkanal, Orissa. 1.12.1972. Coll. J. K. Sen.

General : Cephalothorax redish brown in colour, legs light brown ; abdomen blackish grey. Total length 5.9 mm. Carapace 2.5 mm. long and 2.2 mm. wide ; abdomen 3.4 mm. long and 2.1 mm. wide.

Cephalothorax : Longer than broad, wider at the middle narrower both anterior and posterior, covered with thinly pubescence. Cephalic shield prominent with central fovea at the middle. Eyes silvary white in colour except anterior medians, the anterior row slightly recurved, medians slightly smaller than the laterals, blackish in colour and ovate in shape. The posterior row slightly longer than the anterior row, medians larger than the laterals and ovate in shape. Ocular quadrate almost squire. Chelicerae twice longer than wide, convex, redish brown in colour, inner margin provided with 2 teeth and the outer margin with 3 teeth (Fig. 318). Maxillae redish brown in colour twice longer than wide, slightly constricted at the middle (Fig. 319). Labium longer than

broad, scopulated anteriorly and extends beyond the middle of the maxillae, a constriction present just below the median half (Fig. 319). Sternum oval in shape, redish brown in colour, covered by fine pubescence. Legs not very strong, long and slender. Legs formula 4 1 2 3.



Figs. 315-319. 315. Dorsal view of female, legs omitted ; 316. Epigyne ; 317. Internal genitalia ; 318. Chelicera showing arrangements of teeth ; 319. Maxillae and labium.

The coxa and trochanter relatively longer, tarsi relatively long not scopulated. The tibia and metatarsi of all legs provided with number of long spine like hair.

Abdomen : Longer than wide, more or less oval in shape ; abdominal shield prominent with golden pile. One pair of sigilla present on the dorsum situated on either side of the mid-dorsal line. Ventral side more lighter than the dorsum. Epigyne with elongated plate, with a pair of prominent copulatory opening (Fig. 316). Copulatory tube slender and

spermatheca club shaped (Fig. 317).

Type locality : Holotype : female, Gingee, Coromandel Coast, Tamil Nadu, India.

Distribution : India ; Tamil Nadu (Madras) ; West Bengal (Museum Compound, Calcutta), Orissa (Denkanal).

Remarks : The present description and illustration are on the basis of examining, the authenticated identified specimen deposited in Z. S. I. National Collection Reg. No. 5752/H. In addition to this 1 female specimen was collected and identified.

77. *Sphingius barkudensis* Gravely (Figs. 320-325)

1931. *Sphingius barkudensis* Gravely, *Rec. Indian Mus.*, 33 : 271.

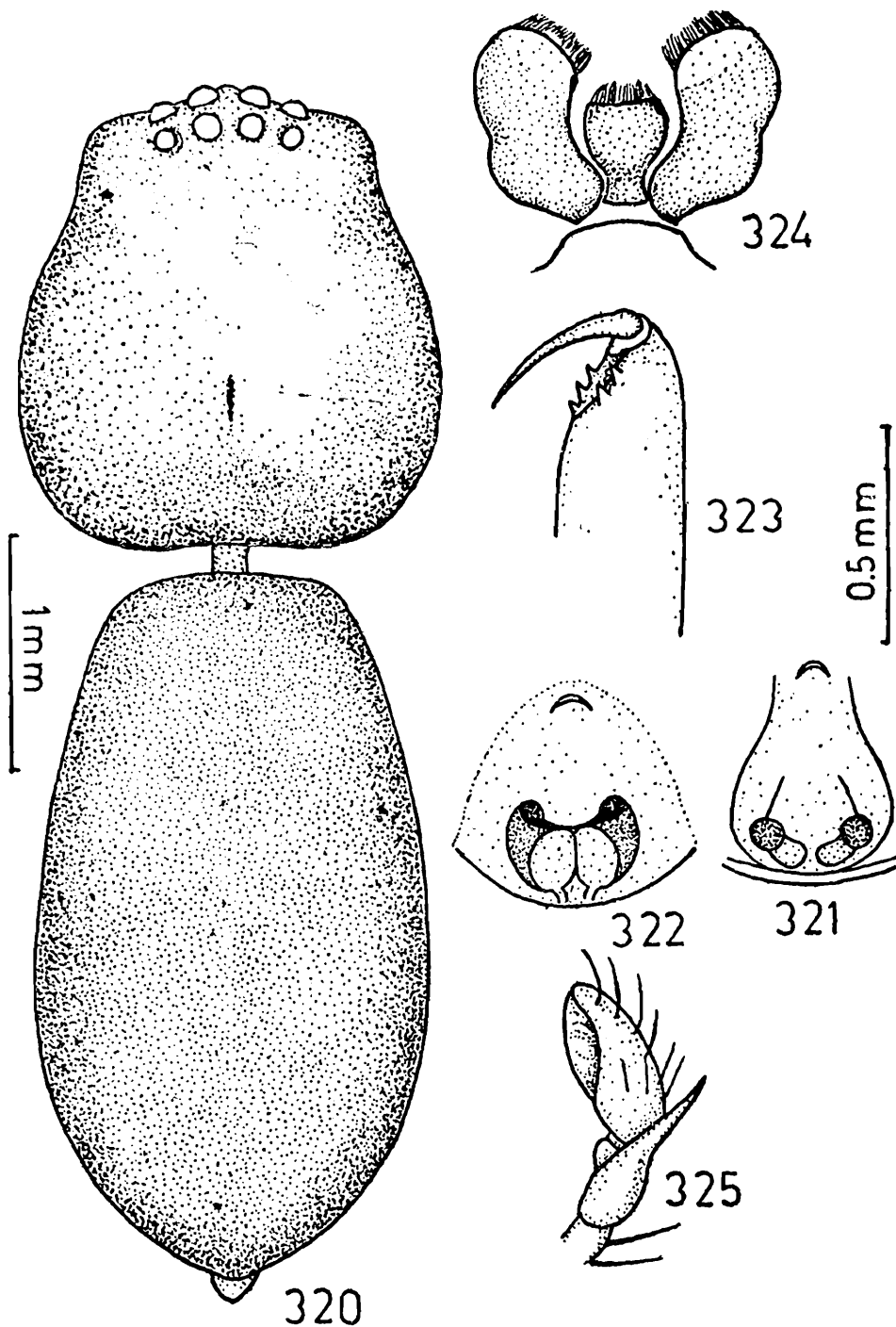
Specimen examined : 1 ♀, 1 ♂, Barkuda Island, 1930. Coll. F. H. Gravely. 3 ♀♀, Chilka Lake, Orissa. 19.8.1919. Coll. F. H. Gravely. Reg. No. 1770/18.

General : Cephalothorax and legs redish brown, abdomen somewhat pale and olivaceous. Total length 5.00 mm. Carapace 2.00 mm. long and 1.80 mm. wide ; abdomen 3.00 mm. long and 1.70 mm. wide.

Cephalothorax : Longer than broad, narrow anteriorly and broad posteriorly, covered by fine pubescence, Cephalic shield prominent with central fovea. Eyes in two rows anterior and posterior. The anterior row slightly recurved, medians ovoid in shape and larger than the laterals, well separated from each other. The posterior row not longer than the anterior, more or less straight, medians ovoid and larger than the laterals. Ocular quadrate almost square. Chelicerae redish brown in colour, sufficiently longer than its wide, inner margin provided with 2 teeth and the outer margin with 3 teeth respectively (Fig. 323). Maxillae twice longer than wide, redish brown, slightly depressed at the outer surface (Fig. 324). Labium slightly longer than wide, wider anteriorly and narrower posteriorly. Sternum heart shaped, pointed behind, redish brown in colour, covered with thin pubescence. Legs not relatively long and absence of pale marking on legs. Legs formula 4 2 1 3. The tibia and metatarsi of I and II covered with number of short spine like hair. The tarsi relatively short not scopulated. Tibia of male palp with long slender retrolateral apophysis, cymbium without spur, tegulum convex, embolus not longer enough arises distally from the tegulum (Fig. 325).

Abdomen : Longer than wide, narrow anteriorly and broad poste-

riorly, covered with thinly pubescence. Ventral shield prominent. Epigyne as elongated plate with conspicuous pair of copulatory openings (Fig. 321). Copulatory tube short, spermatheca club shaped (Fig. 322). Copulatory tube short, spermatheca club shaped (Fig. 322).



Figs 320-325. 320. Dorsal view of female, legs omitted; 321. Epigyne; 322. Internal genitalia; 323. Chelicera showing arrangements of teeth; 324. Maxillae and labium; 325. Male palp.

Type locality : Holotype : female, Barkuda Island, Chilka Lake ; deposited at Z.S.I. Collection. Reg. No. 1516/18.

Distribution : India ; Orissa (Barkuda Island, Chilka lake) ; Tamil Nadu (Madras).

Remarks : Description and illustration are made after examining SP 20

holotype female and the allotype male type specimen, deposited in National Collection of Z. S. I. Reg. No. 1516/18.

76. *Sphingius kambakamensis* Gravely
(Figs. 326-329)

1931. *Sphingius kambakamensis* Gravely, *Rec. Indian Mus.*, 33 : 271.

Specimen examined : 1 ♂, Kambakam Hill, Dist. Chingleput, Madras. Coll. F. H. Gravely. 31.8.1928. Reg. No. 1515/18.

General : Cephalothorax and abdomen almost blackish legs uniformly light coloured. Total length 3.5 mm. Carapace 1.7 mm. long and 1.4 mm. wide ; abdomen 1.8 mm. long and 1.3 mm. wide.

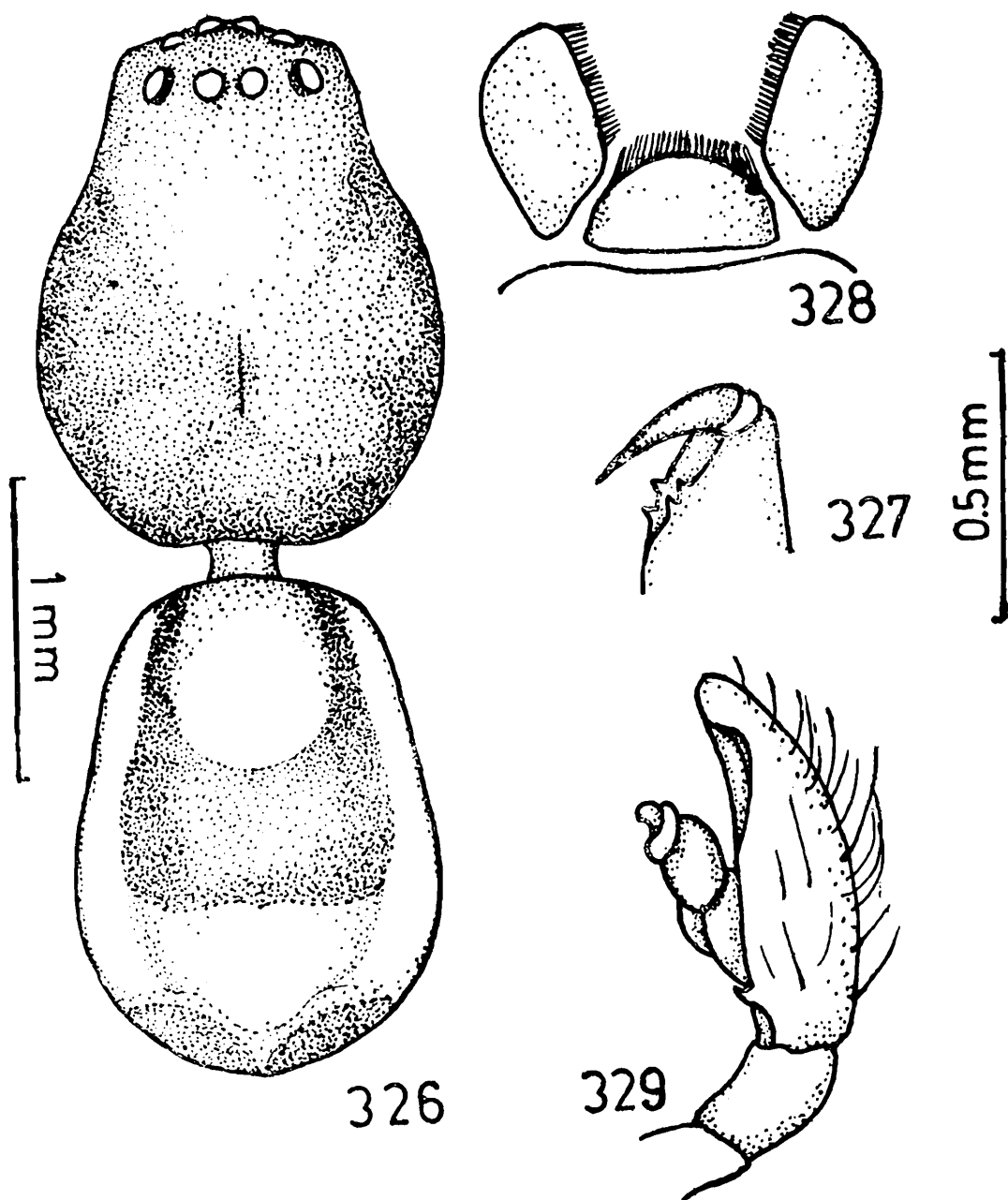
Cephalothorax : Longer than wide, broader at the middle, narrower anteriorly than posterior, covered with thinly pubescence. Cephalic shield prominent with central fovea. Eyes not in uniform size, anterior row slightly recurved, medians slightly smaller than the laterals slightly blackish and close to each other. The posterior row longer than the anterior row, more or less straight or slightly procurved, medians smaller than laterals, more or less rounded in shape. Ocular quadrate longer than wide. Chelicerae strong and stout, longer enough, redish brown, inner and outer margin provided with 2 teeth on each (Fig. 327). Maxillae without lateral constriction longer than wide, whitish and slightly scopulated anteriorly (Fig. 328). Labium redish brown, not longer than wide. Sternum more or less oval, covered by thinly pubescence, redish brown in colour. Legs not very strong, thin and slender, coxa and trochanter not longer enough, tarsi not so long and less scopulated. Legs formula 4 1 2 3. Femora of all legs relatively shorter, redish brown. Tibia and metatarsi of all legs are pale yellow, provided with a number of short spine like hair. Tibia of the male palp longer than wide, without retro-lateral apophysis, cymbium without spur, tegulum convex and embolus arises at the distal end of tegulum and usually short and twisted (Fig. 329).

Abdomen : Longer than broad, oval in shape, covered with thinly pubescence. Abdominal shield prominent with two broad band of whitish pile. On the ventral shield there is a patch of longer white pile on the side membranes of the posterior part of the genital segment.

Type locality : Holotype : male, Kambakam Hill, Chingliput dist., Madras, India.

Distribution : Known from the type locality.

Remarks : Description and illustration are made on the basis of examining the male type specimen deposited in Z. S. I. National Collection, bearing Reg. No. 1515/18.



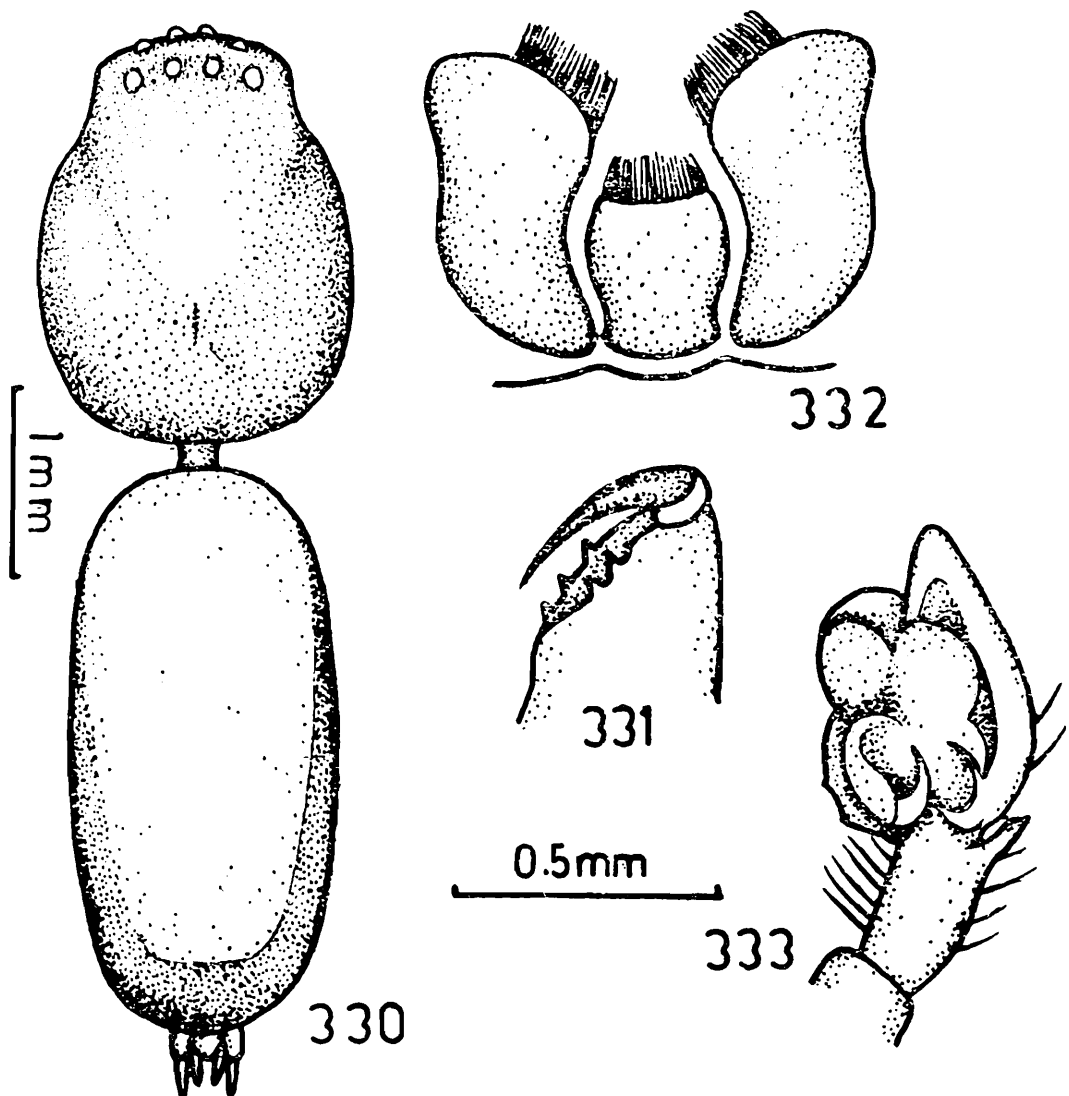
Figs. 326-329. 326. Dorsal view of male, legs omitted ; 327. Chelicera showing arrangements of teeth ; 328. Maxillae and labium ; 329. Male palp.

78. *Sphingius nilgiriensis* Gravely
(Figs. 330-333)

1931. *Sphingius nilgiriensis* Gravely, *Rec. Indian Mus.*, 33 : 271.

Specimen examined : 1 ♂, Kundas, Nilgiris. 24.3.1925. Coll. Barnes. Reg. No. 1514/18.

General: Cephalothorax redish brown, legs uniformly light coloured, abdomen somewhat brownish in colour. Total length 5.50 mm. long, carapace 2.00 mm. long and 1.80 mm. wide ; abdomen 2.00 mm. long and 1.90 mm. wide.



Figs. 330-333. 330. Dorsal view of male, legs omitted ; 331. Chelicera showing arrangements of teeth ; 332. Maxillae and labium ; 333. Male palp.

Cephalothorax : Longer than wide, narrower anteriorly and broad posteriorly, covered with thinly pubescence. Cephalic shield prominent with prominent fovea situated just below the median half of the cephalothorax. Eyes not in uniform size ; the anterior row slightly recurved, medians slightly smaller than the laterals. The posterior row longer than the anterior row, slightly recurved, medians more or less rounded and smaller than the laterals, posterior laterals not ovate in shape. Ocular quadrate not almost square slightly broader than long and slightly wider posteriorly. Chelicerae strong and stout, sufficiently long, redish brown in colour, inner margin provided with 2 teeth and the outer margin with

3 teeth (Fig. 331). Maxillae longer than wide, redish brown in colour, slightly depressed at the middle, whitish and scopulated anteriorly (Fig. 332). Labium longer than wide, anteriorly broad and scopulated, posteriorly narrow and constricted. Sternum big and heart shaped covered by fine pubescence. The legs are slender not strong enough. Legs formula 4 1 2 3. Tibia and metatarsi of all legs provided by a number of long spine like hair. Tarsi long and not scopulated provided with 2 claws. Tibia of male palp with short broad triangular apophysis, cymbium without spur, tegular apophysis with whitish membranous structure, embolus short (Fig. 333).

Abdomen : Longer than broad, cylindrical in shape, covered with fine pubescence. Dorsal shield without pale marking. Abdominal shield extending along the whole length of the abdomen.

Type locality : Holotype : male (Kundas, Nilgiris, India.

Distribution : As known from the type locality.

Remarks : The male type species deposited in Z. S. I. National Collection (Reg. No. 1514/18) was examined, the description and illustration given here are based upon that.

79. *Sphingius bilineatus* Simon

1906. *Sphingius bilineatus* Simon, *Ann. Soc. Ent. Fr.*, 75 : 301.

1931. *Sphingius bilineatus* : Gravely, *Rec. Indian Mus.*, 33 : 272.

General : Total length 4.5 mm. Cephalothorax blackish red.

Cephalothorax : Longer than wide covered by thinly pubescence. Cephalic shield provided by central fovea. Eyes in two rows anterior and posterior, distributed in equal distance but not in equal size. The anterior row slightly procurved, medians blackish and slightly smaller than the laterals. The posterior row slightly recurved and longer than the anterior row, medians slightly large, ovate in shape. Chelicerae strong and convex. Sternum oval redish black in colour. Legs long and slender.

Abdomen : Longer than wide, oval in shape. Abdominal shield bears a series of a pair of white spots. Dark spots present in posterior angles of vulva.

Type locality : Holotype : female, Malabar coast, Kerala, India.

Distribution : As known from the type locality.

Remarks : In spite of best efforts the type of this species could not be procured and therefore the diagnosis which is given here based upon the original description published by the author.

Genus *Apochinomma* Pavesi

1881. *Apochinomma* Pavesi, *Ann. Mus. Civ. Stor. Nat. Genova*, 16 : 546.
 1891. *Apochinomma* : Keyserling, *Brasilianische Spinnen Nurnberg*, 3 : 67,
 1897. *Apochinomma* : Simon, *Hist. Nat. Araign*, 2 (1) : 175.
 1910. *Apochinomma* : Simon, *Ann. Mus. Civ. Stor. Nat. Genova*, 44 : 375.
 1948. *Apochinomma* : Mello-Leitao, *Ann. Acad. Bras. Ciene Rio.*, 20 (2) : 182.

Diagnosis : Longer more than broad provided with prominent cephalic shield which is high enough more or less convex, distinct from the thoracic part with prominent central fovea. Eyes more or less equal size arranged in 2 transverse series anterior and posterior. The anterior row of eyes slightly recurved and in equally distributed ; the posterior row longer than the anterior row, procurved or straight, lateral eyes further remote from the medians. Chelicerae ovate, cylindrical, directed backward. Maxillae longer than wide not constricted at the middle, the distal end broader and angulate at the outer surface. Labium slightly longer than broad. Legs long and slender. Legs formula 4 1 2 3. Femur thicker comparatively than tibia. Femur V robust. Metatarsi I with 2 pairs of ventral spines and the metatarsi of IV have 3 pairs of ventral spines. Abdomen elongated or oval in shape with prominent abdominal shield which is transversely folded. Epigyne with convex rounded plate with conspicuous copulatory opening.

This genus resemble to *Aetius* Cambridge in general appearance but differs from the latter due to the presence of transversely folded abdominal shield and straight posterior row of eyes where as in *Aetius* Cambridge abdominal shield not transversely folded and the edges of posterior row of eyes strongly recurved.

This spiders of this genus have elongated ant like bodies and the carapace and abdomen heavily sclerotized. The movement of this spiders are ant like. They are found in leaf litters, in shady deciduous forest sometimes under stone or logs in more open habitat.

Type species : *Apochinomma formicaeformis* Pavesi, 1881.

Distribution : Burma ; Ceylon ; Africa ; India.

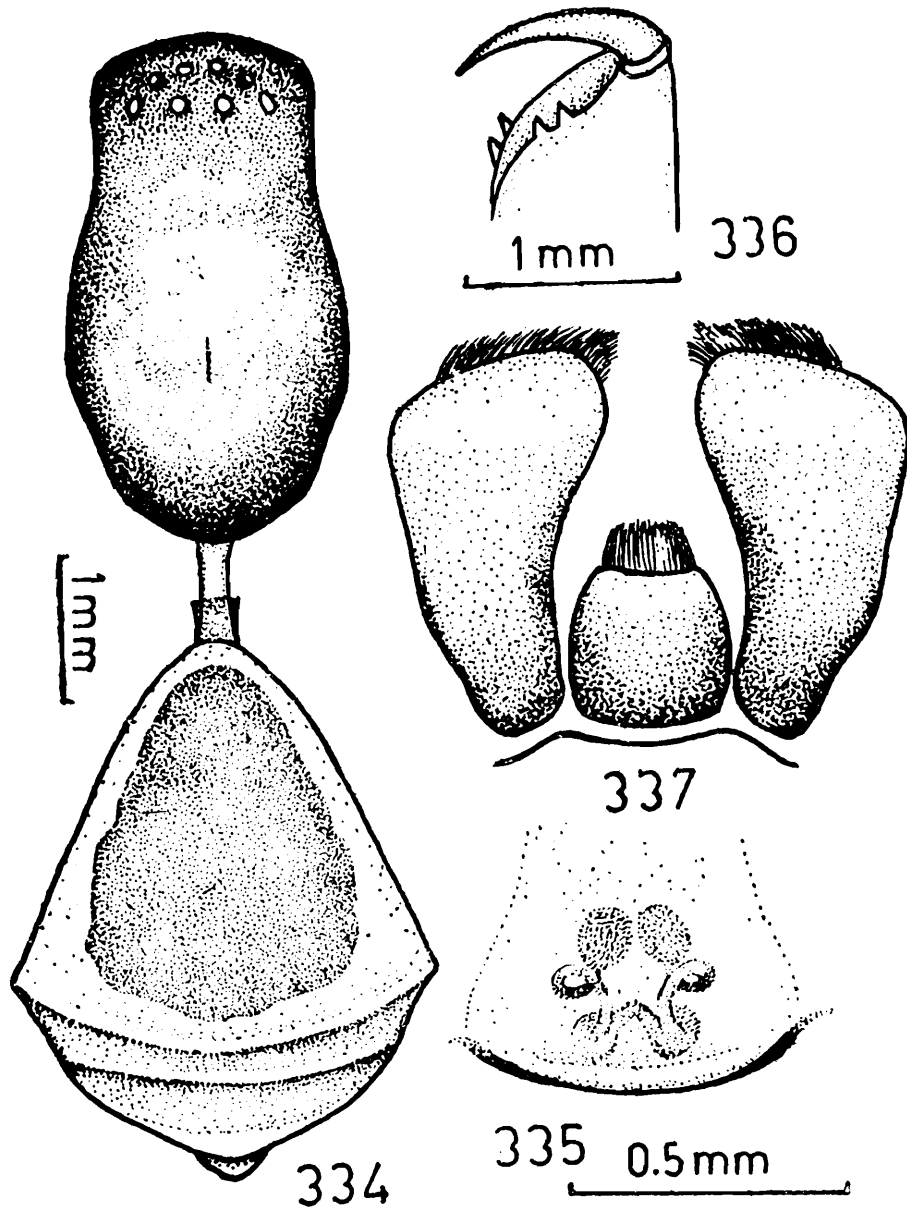
80. *Apochinomma dolosum* Simon

(Figs. 334 337)

1897. *Apochinomma dolosum* Simon, *Mem. Soc. Zool. France*, 19 (2) : 261.

Specimen examined : 2 ♀ ♀, Dehra Dun, U. P. Reg. No. 13446, Paris.

General : Cephalothorax dark, legs dark brown and abdomen blackish in colour. Total length 8.00 mm. Carapace with pedicel 4.40 mm. long and 2.00 mm. broad ; abdomen 3.60 mm. long and 3.20 mm. wide.



Figs. 334-337. 334. Dorsal view of female, legs omitted ; 335. Epigyne ; 336. Chelicera showing arrangements of teeth ; 337. Maxillae and labium.

Cephalothorax : Longer more than broad with prominent cephalic shield, high enough, distinct from the thoracic part provided with prominent fovea located at the middle of the carapace. Eyes pearly white in colour, The anterior row more or less same size and in equally spaced, slightly recurved. The posterior row more longer than the anterior row more or less equal size, slightly procurved, laterals further remote from the medians. Ocular quadrate wider than long, anteriorly narrower and broader posteriorly. Chelicerae redish black in colour, ovatocylindrical in form with strongly curved fang, inner and outer margin provided

with 2 teeth on each (Fig. 336). Maxillae longer than wide, redish brown in colour not depressed at the middle and broad and angulate distally (Fig. 337). Labium slightly longer than wide scopulated anteriorly. Sternum redish brown in colour, more or less heart shaped. Legs long and slender, stout and strong enough. Legs formula 4 2 1 3. Tibia and metatarsi of I and II provided with 2 pairs of ventral spines on each. Tarsi long and provided with 2 claws.

Abdomen : Longer than wide, oval in shape, anteriorly tapering and broader posteriorly ; abdominal shield more sclerotized and folded transversely (Fig. 334). Epigyne as rounded and convex plate with conspicuous rounded copulatory opening (Fig. 335).

Type locality : Holotype : female, Dehra Dun, U. P., India ; deposited at M. N. H. N., Paris. Reg. No. 13446.

Distribution : As known only from the type locality.

Remarks : 2 female type specimens borrowed from Paris Museum were critically examined and the present description and illustration mainly based upon that. The permission to dissect out the genitalia could not be procured, in view of this, the description of internal genitalia not possible to include here.

Genus *Aetius* Cambridge

1896. *Aetius* Cambridge, *Proc. zool. Soc. London*, : 1006.

1928. *Aetius* : Petrunkevitch, *Trans. Connect Acad. Arts Sci.*, 29 : 178.

Diagnosis ; Cephalothorax more longer than broad, provided with cephalic shield with central fovea, lateral marginal impression present at the lateral edges of the thorax. Eyes in two rows anterior and posterior, anterior row slightly recurved, medians larger than laterals and in equally distributed. Posterior row longer double than the anterior row, strongly recurved, more or less equal in size, laterals further remote from the medians. Ocular quadrate broader than long. Chelicerae short and moderately strong. Maxillae longer than broad without constriction at the middle, broad and angulate distally at its lateral margin. Labium broader than long, apex rounded. Sternum longer than broad, its edges are strongly emerginate with prominent angular chitinous points running beneath the margin proper. Legs not very long, rather slender, very unequal in size with similar chitinous kind of spines. Legs formula 4 2 1 3. Abdomen elongate oblonged or oval, broader and rounded behind, slightly constricted at the middle and connected with cephalothorax by long cylindrical pedicel. Spinnerets small and compact.

Epigyne as with elongated convex plate with conspicuous copulatory opening.

This genus similar to *Apochinomma* Simon in general appearance, but differs from the latter due to the presence of strongly recurved posterior row of eyes where as in *Apochinomma* not strongly recurved.

The spider of this genus resembles mutilid wasp in appearance and lives with the association of ant.

Type species : *Aetius decollatus* Cambridge 1896.

Distribution : Ceylon ; India.

81. *Aetius decollatus* Cambridge (Figs. 338-342)

1896. *Aetius decollatus* Cambridge, *Proc. zool. Soc. London*, : 1007.

1928. *Aetius decollatus* : Petrunkevitch, *Trans. Connect Acad. Arts Sci.*, 29 : 178.

1934. *Aetius decollatus* : Reimoser, *Rev. Suisse. zool.*, 41 (32) 491.

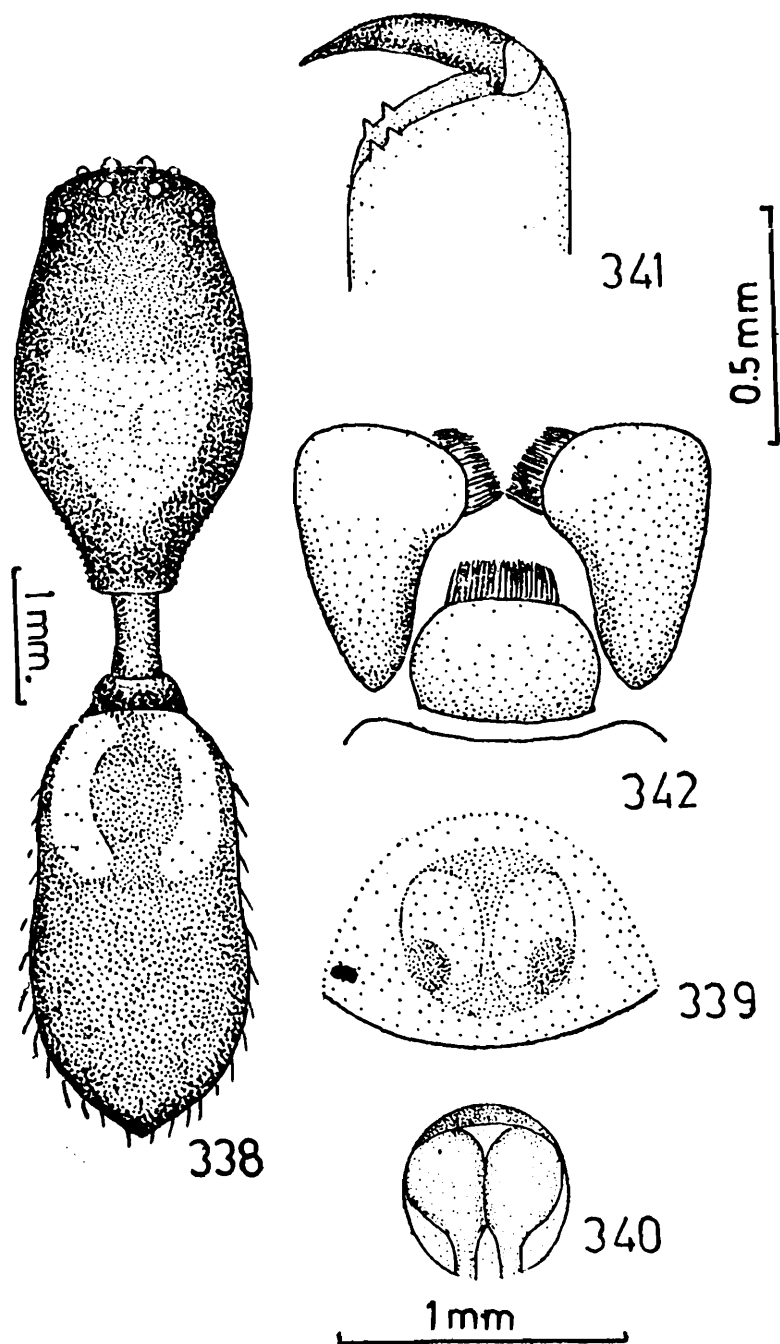
Specimen examined : 1 ♀, Ceylon from Oxford University Museum.

General : Cephalothorax black, legs orange yellow and abdomen black and yellowish red in colour. Total length 7.3 mm. Carapace with pedicel 3.9 mm. long and 2.00 mm. broad ; abdomen 3.4 mm. long and 1.9 mm. wide.

Cephalothorax : Longer more than broad with lateral marginal impressions at the lateral margin of the thoracic region, covered by short whitish pubescence on the side of the thorax, fovea usually present centrally. Eyes more or less equal size. The anterior row slightly recurved, medians slightly larger than laterals and in equally distributed. The posterior row double the length of the anterior row strongly recurved more or less equal size. The laterals further remote from the medians. Ocular quadrate broader than long. Chelicerae strong and stout with blackish red in colour with strongly curved fang, inner and outer margin provided with 2 teeth on each (Fig. 341). Maxillae blackish red, covered with fine pubescence, not depressed at the middle, distal end broad and angulate at its lateral margin (Fig. 342). Labium blackish in colour broader than long, apex rounded. Sternum longer than broad, its edges are strongly emerginate with prominent angular chitinous point. Legs not very long, rather slender unequal size. Legs formula 4 2 1 3. Femora black, tibia blackish red. Tibia and metatarsi of I and II provided with 2 and 3 pairs of ventral spines.

Abdomen : Abdomen elongated, oblonged or oval in form, broader

and well rounded posteriorly, at the middle slightly constricted, connected with the cephalothorax by long pedicel. At the anterior end of the dorsum there present a short curve orange red strip on either side of the mid dorsal line. Just behind the constriction a broad transverse



Figs. 338-342. 338. Dorsal view of female, legs omitted ; 339. Epigyne ; 340. Internal genitalia ; 341. Chelicera showing arrangements of teeth ; 342. Maxillae and labium.

irrescence greenish scale the coriaceous plate connected with the sheath of the pedicel, posteriorly abdomen clothed with white pubescence. Epigyne longer than wide with conspicuous copulatory opening on either posterolateral side of the plate (Fig. 339), spermatheca small and rounded (Fig. 340).

Type locality : Holotype : female, Ceylon, deposited at O. U. M. London. Reg. No. Nil.

Distribution : India : Madhumalai ; Ceylon.

Remarks : The description and illustration of the species given here are based upon the type material of Cambridge (1896) which was borrowed from O. U. M. London. The type material was collected from Ceylon. In addition to this type material, another male specimen of this species which was collected from India : Madumalai identified by Reimoser (1934) and deposited in Geneva Museum. Unfortunately, the Indian material could not be studied as it was not available and in view of this, no light could be thrown if the Indian specimen bears any variation in characters. The description given by Reimoser (1934) is too brief and is not accompanied with illustration and, hence, from that also nothing can be said if there is any variation in the Indian material. No further report of this species is available.

Genus **Corinnomma** Karsch

- 1880. *Corinnomma* Karsch, *Zeits. gesam Naturw.*, 53 : 374.
- 1891. *Corinnomma* : Keyserling, *Brasilianische Spinnen Nurnberg*, 3 : 67.
- 1897. *Corinnomma* : Simon, *Ann. Soc. Ent. Fr.*, (6) 7 : 260.
- 1928. *Corinnomma* Petrunkevitch, *Trans. Connect. Acad. Arts Sci.*, 29 : 174.

Diagnosis : Cephalothorax blackish with prominent cephalic shield. Eyes in two rows anterior and posterior. The anterior medians larger and widely separated. Clypeus very short. Sternum dark red pointed posteriorly. Legs long and strong not in uniformly coloured. Abdomen narrow and elongated, dorsum partly covered by scutum and half covered by feathery hair.

This genus similar to *Apochinomma* Pavesi in general appearance, but differs from that due to the size of the anterior median eyes which is large and widely separated where as in *Apochinomma* Pavesi the anterior median eyes not widely separated.

Type species : *Corinnomma severum* Thorell 1877.

Distribution : Celebes ; India ; America.

Key to the species of the genus *Corinnomma* Karsch from India

- | | | |
|---|-----|------------------|
| 1. Cephalothorax blackish brown, abdomen elongated in form. | ... | <i>rufofusca</i> |
| Cephalothorax black, abdomen oval in shape. | ... | 2 |
| 2. Labium longer than wide. | ... | <i>comulatum</i> |
| Labium wider than long. | ... | <i>harmandi</i> |

82. *Corinnomma rufofusca* Reimoser

1934. *Corinnomma rufofusca* Reimoser, *Rev. Suisse zool.*, 41 (32) : 491.

General : Cephalothorax blackish brown ; abdomen dark brown. Total length 6.00 mm. long. Carapace 2.75 mm. long and 1.56 mm. broad ; abdomen 3.2 mm. long and 1.75 mm. broad.

Cephalothorax : Longer than wide covered with feathery hair. Eyes in two rows anterior and posterior, anterior row slightly recurved, medians larger than laterals and widely separated. Chelicerae redish brown. Sternum dark red brown and pointed posteriorly. Coxa I and II dark red, III and IV yellow red, femora dark red, patella redish yellow, other part of the legs light redish yellow, tarsi brownish red.

Abdomen : Narrow and elongated, elliptical in form. Dorsum partly covered by scutum which possess one third of the abdomen. The posterior portion which are not covered by scutum blackish brown in colour.

Type locality : Holotype : female, Madumalai, South India.

Distribution : Madumalai, South India

Remarks : Neither the types nor other materials of this species was available. Therefore, the description of this species given here is based upon the original German description after translating it into English.

83. *Corinnomma comulatum* Thorell

1891. *Corinnomma comulatum* Thorell, *Su. Ak. Handb.*, 24 (2) : 23.

General : Cephalothorax black, abdomen dark and dark gold. Total length 8.25 mm. long.

Cephalothorax : Longer than broad, covered with small feathery hair. Eyes in two rows anterior and posterior, anterior row slightly recurved, medians larger than the laterals and remote from each other. The posterior row slightly procurved. Clypeus very short. Sternum dark. Labium longer than broad. Tibia and metatarsi of I provided with 3 and 2 pairs of ventral spines.

Abdomen : Longer than wide in the form of an egg, covered with feathery hair and two types of colours present on the dorsum darkish and dark gold.

Type locality : Holotype : female, Nicobar, India.

Distribution : India : Nicobar.

Remarks : The present description given here based upon the original Latin literature of Thorell (1891) after translating it into English, since neither the types nor any other materials was procured.

84. *Corinnomma harmandi* Simon

1886. *Corinnomma harmandi* Simon, *Ann. Soc. Linn. Bord.*, 40 : 158.
1887. *Corinnomma harmandi* : Thorell, *Ann. Mus. Civ. Stor. Nat. Genova*, 25 : 45.
1931. *Corinnomma harmandi* : Gravely, *Rec. Indian Mus.*, 33 : 276.

General : Cephalothorax olivaceous black ; abdomen blackish red in colour.

Cephalothorax : Longer than wide with cephalic shield. Eyes in two rows anterior and posterior. The anterior row slightly recurved, medians larger than the laterals. Posterior row longer than the anterior row. Ocular quadrate broader than long. Maxillae and labium double longer than wide, more or less blackish in colour. Labium wider than long, anteriorly more or less convex. Legs long and slender, tarsi with 2 claws.

Abdomen : Double longer than wide, blackish in colour.

Type locality : Deccan, South India.

Distribution : S. India.

Remarks : Neither the types nor any other materials could be procured, hence description based upon the original Latin description of Simon (1886), after translating it into English.

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