

THE FAUNA OF INDIA

ARANEAE

Vol. I

Part 1

THOMISIDAE (CRAB-SPIDERS)

By

B. K. TIKADER, Ph.D., D.Sc.
Zoological Survey of India

Part 2

LYCOSIDAE (WOLF-SPIDERS)

By

B. K. TIKADER, Ph.D., D.Sc.
Zoological Survey of India

AND

M. S. MALHOTRA, Ph.D.

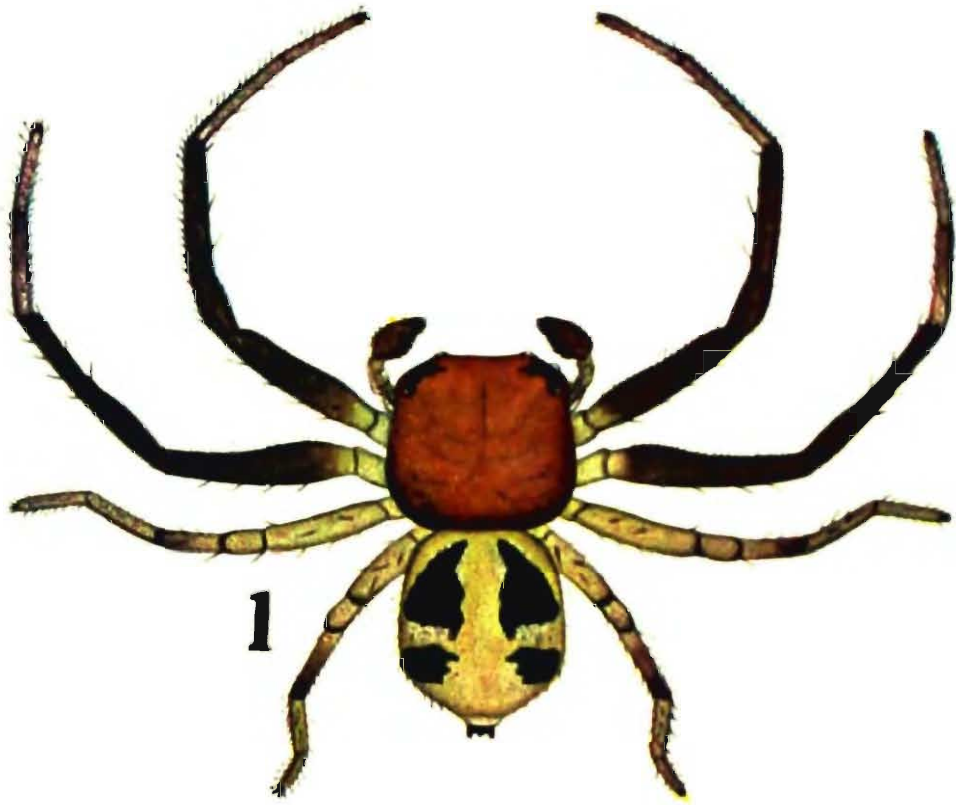
Issued by the Zoological Survey of India, Calcutta. Published by
the Manager of Publications, Government of India, Delhi.
Printed in India by Sangam Press Pvt. Ltd., Poona 29.

1980

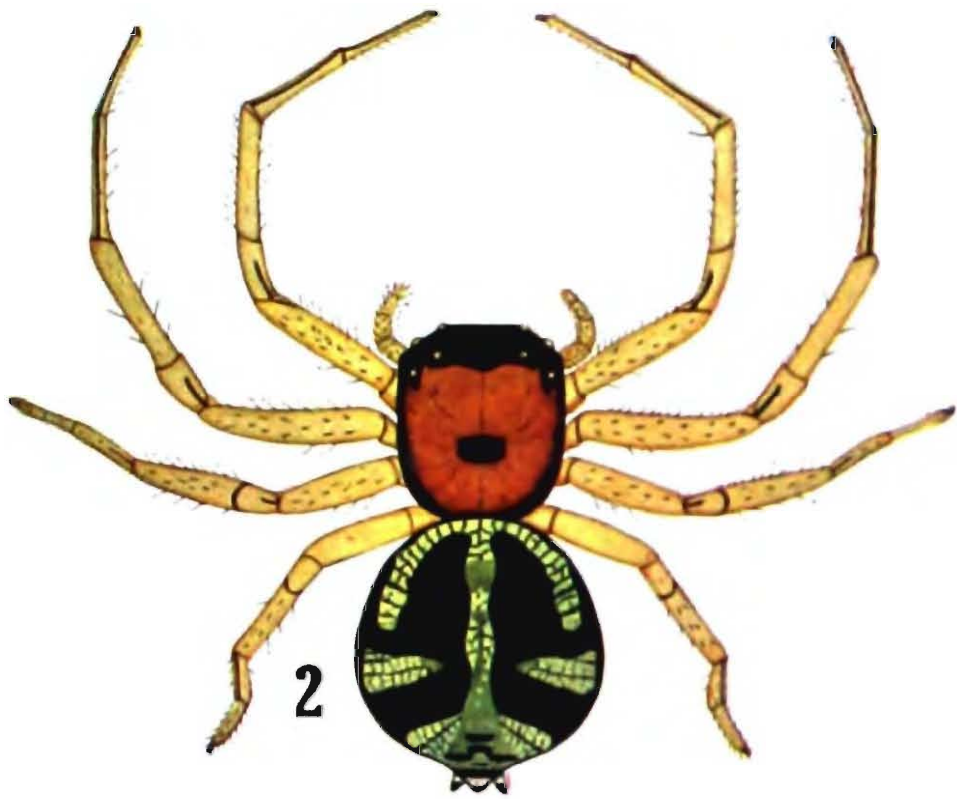
© COPYRIGHT, 1980, GOVERNMENT OF INDIA.

Published in April, 1980

Price : India : Rs. 100/00
Foreign £ 10/- or \$ 20/00



1. *Camaricus formosus* Thorell (Male).



2. *Camaricus formosus* Thorell (Female).

EDITOR'S PREFACE

After independence the responsibility for publication of "Fauna of British India" passed on from the Secretary of State for India (to the British Government) to the Government of India and the Director, Zoological Survey of India, was entrusted with the task of editing the series. In keeping with the changed political setup after August 1947, the title of the series was changed to "Fauna of India" It was also decided to select authors for this prestigious series of Zoological publication from amongst reputed specialists on diverse groups of animals available in India, as far as possible.

Under the new setup nine volumes have already been published dealing with Rodents (Mammalia), Butterflies, Coleoptera, Muscidae (Diptera), Gryllids, Polychaeta and Fishes and several others are in press, or in preparation. The present volume on "Spiders" by Dr. B. K. Tikader, Joint Director, Zoological Survey of India and a specialist on Indian Spiders, is the tenth to appear under the new setup.

Spiders are among the most ubiquitous arthropods that are too conspicuous to escape notice, and the Indian subcontinent has a large diversity of spider fauna rich in variety as well as abundance. Yet after Pocock's (1900) work on Arachnida no consolidated account of Indian Spiders is available. During this period considerable addition has been made to the knowledge of Indian spiders and it was considered necessary to bring all available information together.

The present volume is divided into two parts. The first part by Dr. B. K. Tikader deals with 115 Indian species of the family Thomisidae comprising of what are popularly known as crab-spiders. The second part, containing 81 species of the family Lycosidae is written jointly by Dr. Tikader and Dr. M. S. Malhotra.

It has been our endeavour to maintain uniformity of treatment of the subject matter in different volumes of the fauna, but this has not been always possible. In some groups of animals as in the case of Indian Spiders there is considerable knowledge gap on

aspects of Zoogeography, phylogenetic relationships etc., and the authors did not find it possible to cover these aspects for want of necessary information. It is hoped that the present work will provide a handy tool to specialists and research students in India and elsewhere in the study of Indian spiders.

Calcutta
30th *April*, 1980

T N. ANANTHAKRISHNAN
Director
Zoological Survey of India

AUTHOR'S PREFACE

The crab-spiders which comprise the family Thomisidae are very common and abundant in our country but have received little attention by the taxonomists. The typical members have a peculiar crab-like appearance. The first two pairs of legs are long and stout and frequently move sideways as in a crab.

Pocock (1900) in his "*Fauna of British India Arachnida*," volume has dealt with spiders which are common and conspicuous. Apart from Scorpions, Uropygi, Amblypygi, Solifugae he recorded about two hundred species of spiders from India, Burma and Sri Lanka. Many common and well known families like Thomisidae were not reported from India.

The present volume deals with one hundred and fifteen species, contained in twenty-five genera of the family Thomisidae. Of these, twenty-three species are new to science. A detailed account of morphology of spiders, characters of taxonomic importance, habitat, food and feeding habits and a list of families and higher categories has been given. As far as possible keys for identification of genera and species of the family Thomisidae as well as the diagrams for each species have been provided.

I wish to take this opportunity to express my grateful thanks to my colleagues in the Zoological Survey of India and Dr. B. H. Patel, Professor and Head of the department of Zoology, Sir, P. P. Institute of Science, Bhavnagar, Gujarat; Dr. Manoranjan Barman, Head of the Dept. of Zoology, Lady Keane College, Shillong, Meghalaya; Shri K. D. Ghorpade,¹ C.S.I.R. Research fellow, University of Agricultural Science, Bangalore., who have rendered the work possible by lending or collecting specimens for my study.

My thanks are due to Dr. T. N. Ananthakrishnan, Director, Zoological Survey of India for encouragement and offering me useful suggestions during the preparation of this volume and

for placing the valuable types, named and unnamed thomisid spiders collection of Zoological Survey of India, Calcutta, at my disposal. My deepest appreciation for the invaluable aid and encouragement which was primarily responsible for initiating a detailed study on this interesting group of animals goes especially to Dr. M. S. Mani, former Deputy Director, Zoological Survey of India, Calcutta.

I am thankful to Shri G. Sivagurunathan, Publication Production Officer and Dr. A. K. Ghosh, Superintending Zoologist, Fauna Unit, Zoological Survey of India, Calcutta for assisting in various ways for quick publication of this volume.

Thanks are due to Dr. M. Babu Rao, Dr. R. H. Kamble, Dr. M. S. Malhotra, Dr. U. A. Gajbe and Dr. Bijan Biswas of Zoological Survey of India, Western Regional Station, Poona and Calcutta, for assisting in various ways during the preparation of the manuscript. I am also indebted to Shri S. K. Chanda and Shri P. W. Garde, Artists of Zoological Survey of India, Western Regional Station, for preparation of illustrations and to Shri K. H. Valecha, Stenographer, for typing the manuscript.

Lastly I would like to express my grateful thanks to the Department of Science and Technology, Government of India, for honouring me by assigning the writing up of fauna volumes on spiders.

P O O N A

30th April, 1980.

Buddha Purnima.

B. K. TIKADER

CONTENTS

	PAGE
TAXONOMIC CHARACTERS OF SPIDERS	1
MORPHOMETRIC MEASUREMENTS	11
HABITAT, FOOD AND FEEDING HABITS	11
FAMILIES AND HIGHER CATEGORIES OF SPIDERS	16
KEY TO THE FAMILIES OF INDIAN SPIDERS	19
FAMILY THOMISIDAE	26
SUB-FAMILY MISUMENINAE (Mi-su-me-ni-nae)	27
KEY TO GENERA OF THE SUB-FAMILY MISUMENINAE	29
Genus 1. <i>Thomisus</i> Walckenaer	30
Key to species of the genus <i>THOMISUS</i> Walck..	30
1. <i>Thomisus sikkimensis</i> Tikader	32
2. <i>T. shivajiensis</i> Tikader	33
3. <i>T. pooneus</i> Tikader	35
4. <i>T. lobosus</i> Tikader	36
5. <i>T. katrajghatus</i> Tikader	38
6. <i>T. andamanensis</i> sp. nov.	39
7. <i>T. projectus</i> Tikader	40
8. <i>T. dhakuriensis</i> Tikader	42
9. <i>T. memae</i> Sen and Basu	43
10. <i>T. rishus</i> Tikader	45
11. <i>T. sorajaii</i> Basu	46
12. <i>T. pugilis</i> Stoliczka	48
13. <i>T. bulani</i> Tikader	50
14. <i>T. shillongensis</i> Sen	51
15. <i>T. beautifularis</i> Basu	52
16. <i>T. cherapunjeus</i> Tikader	54
17. <i>T. elongatus</i> Stoliczka	56

	PAGE
Genus 2. <i>Runcinia</i> Simon	58
Key to species of the genus <i>RUNCINIA</i> Simon .	58
18. <i>Runcinia escheri</i> Reimoser	59
19. <i>R. chauhani</i> Sen and Basu	60
20. <i>R. roonwali</i> Tikader	62
21. <i>R. ghorpadei</i> sp. nov.	64
Genus 3. <i>Pistius</i> Simon	65
Key to species of the genus <i>PISTIUS</i> Simon	66
22. <i>Pistius bhadurii</i> Basu	66
23. <i>P. gangulyi</i> Basu	68
24. <i>P. robusta</i> Basu	70
25. <i>P. sreepanchamii</i> Tikader	71
26. <i>P. kanikae</i> Basu	73
27. <i>P. kalimpus</i> Tikader	74
28. <i>P. barchensis</i> Basu	76
29. <i>P. roonwali</i> Basu	78
Genus 4. <i>Oxyptila</i> Simon	79
Key to species of the genus <i>OXYPTILA</i> Simon	80
30. <i>Oxyptila khasi</i> Tikader	80
31. <i>O. manii</i> Tikader	82
32. <i>O. reena</i> Basu	83
33. <i>O. maratha</i> (Tikader)	85
34. <i>O. amkhasensis</i> sp. nov.	86
35. <i>O. chandosiensis</i> sp. nov.	88
Genus 5. <i>Misumena</i> Latreille	90
Key to species of the genus <i>MISUMENA</i> Latreille	90
36. <i>Misumena menoka</i> Tikader	91
37. <i>M. horai</i> Tikader	93
38. <i>M. mridulai</i> Tikader	94
39. <i>M. indra</i> Tikader	95
40. <i>M. silveryi</i> Tikader	97

CONTENTS

iii

	PAGE
41. <i>M. annapurna</i> Tikader	98
42. <i>M. greenae</i> Tikader	100
43. <i>M. nicobarensis</i> sp. nov.	102
44. <i>M. decorata</i> sp. nov.	103
Genus 6. <i>Diaea</i> Thorell	105
45. <i>Diaea jaintious</i> Tikader	105
Genus 7. <i>Xysticus</i> Koch	107
Key to species of the genus <i>XYSTICUS</i> Koch	108
46. <i>Xysticus kamakhyai</i> Tikader	109
47. <i>X. hindusthanicus</i> Basu.	111
48. <i>X. roonwali</i> Tikader	112
49. <i>X. shyamrupus</i> Tikader	113
50. <i>X. sikkimus</i> Tikader	115
51. <i>X. kashidi</i> Tikader	116
52. <i>X. mandali</i> Tikader	118
53. <i>X. minutus</i> Tikader	120
54. <i>X. sujatai</i> Tikader	121
55. <i>X. pynurus</i> Tikader	123
56. <i>X. jayantius</i> Tikader	124
57. <i>X. shillongensis</i> Tikader	126
58. <i>X. bengalensis</i> Tikader & Biswas	127
59. <i>X. himalayaensis</i> Tikader & Biswas	129
60. <i>X. kali</i> Tikader & Biswas	130
61. <i>X. khasiensis</i> sp. nov.	132
Genus 8. <i>Synaema</i> Simon	134
Key to species of the genus <i>SYNAEMA</i> Simon	134
62. <i>Synaema brunettii</i> Tikader	134
63. <i>S. decorata</i> Tikader	136
64. <i>S. mysorensis</i> sp. nov.	138

	PAGE
Genus 9. <i>Bomis</i> Koch	139
Key to species of the genus <i>BOMIS</i> Koch	140
65. <i>Bomis bengalensis</i> Tikader	140
66. <i>B. khajuriai</i> sp. nov.	141
Genus 10. <i>Monaeses</i> Thorell	143
Key to species of the genus <i>MONAESES</i> Thorell	143
67. <i>Monaeses parvati</i> Tikader	144
68. <i>M. mukundi</i> sp. nov.	145
Genus 11. <i>Tmarus</i> Simon	147
Key to species of the genus <i>TMARUS</i> Simon	147
69. <i>Tmarus kotigeharus</i> Tikader	147
70. <i>T. pachpediensis</i> sp. nov..	149
Genus 12. <i>Misumenoides</i> Cambridge	150
Key to species of the genus <i>MISUMENOIDES</i> Cambridge	150
71. <i>Misumenoides kripalaniae</i> Tikader	151
72. <i>M. deccanes</i> Tikader	152
73. <i>M. shulli</i> Tikader	154
Genus 13. <i>Misumenops</i> Cambridge	156
Key to species of the genus <i>MISUMENOPS</i> Cambridge	156
74. <i>Misumenops khandalaensis</i> Tikader	156
75. <i>M. kumaonensis</i> sp. nov.	157
76. <i>M. andamanensis</i> sp. nov.	159
Genus 14. <i>Pasias</i> Simon	161
Key to species of the genus <i>PASIAS</i> Simon	161
77. <i>Pasias puspagiri</i> Tikader	161
78. <i>P. marathas</i> Tikader	163
Genus 15. <i>Strigoplus</i> Simon	164
79. <i>Strigoplus netravati</i> Tikader	165
Genus 16. <i>Regillus</i> Cambridge.	166
80. <i>Regillus elephantus</i> Tikader	167

CONTENTS

v

	PAGE
Genus 17. <i>Amyciaea</i> Simon	168
81. <i>Amyciaea forticeps</i> (Cambridge)	169
Genus 18. <i>Platythomisus</i> Dolesch.	170
Key to species of the genus <i>PLATYTHOMISUS</i> Dolesch.	171
82. <i>Platythomisus bazarus</i> Tikader	171
83. <i>P. sudeepi</i> Biswas	172
Genus 19. <i>Camaricus</i> Thorell	174
Key to species of the genus <i>CAMARICUS</i> Thorell	174
84. <i>Camaricus formosus</i> Thorell	175
85. <i>C. khandalaensis</i> sp. nov.	176
SUB-FAMILY PHILODROMINAE (Phil-od-ro-minae).	178
KEY TO GENERA OF THE SUB-FAMILY PHILODROMINAE	178
Genus 20. <i>Ebo</i> Keyserling	179
86. <i>Ebo bharatae</i> Tikader	179
Genus 21. <i>Philodromus</i> Walckenaer	181
Key to species of the genus <i>PHILODROMUS</i> Walck.	181
87. <i>Philodromus domesticus</i> Tikader	183
88. <i>P. assamensis</i> Tikader	185
89. <i>P. betrabatai</i> Tikader	187
90. <i>P. shillongensis</i> Tikader	189
91. <i>P. kendrabatai</i> Tikader.	191
92. <i>P. devhutai</i> Tikader	193
93. <i>P. manikae</i> Tikader	195
94. <i>P. decoratus</i> Tikader	196
95. <i>P. mohiniae</i> Tikader	198
96. <i>P. bhagirathai</i> Tikader	200
97. <i>P. maliniae</i> Tikader	202
98. <i>P. durvei</i> sp. nov.	204
99. <i>P. chambaensis</i> sp. nov.	206
100. <i>P. barmani</i> sp. nov.	108
101. <i>P. tiwarii</i> Basu	211

	PAGE
Genus 22. <i>Tibellus</i> Simon	213
Key to species of the genus <i>TIBELLUS</i> Simon	213
102. <i>Tibellus chaturshingi</i> Tikader	214
103. <i>T. poonaensis</i> Tikader	215
104. <i>T. elongatus</i> Tikader	217
105. <i>T. pashanensis</i> sp. nov. ..	219
106. <i>T. katrajghatus</i> Tikader	220
107. <i>T. pateli</i> sp. nov.	222
Genus 23. <i>Thanatus</i> Koch	224
Key to species of the genus <i>THANATUS</i> Koch	224
108. <i>Thanatus lanceolatus</i> Tikader	225
109. <i>T. dhakuricus</i> Tikader	226
110. <i>T. mandali</i> Tikader	228
111. <i>T. stripatus</i> sp. nov.	229
Genus 24. <i>Apollophanes</i> Cambridge	231
112. <i>Apollophanes bangalores</i> Tikader	231
Genus 25. <i>Dieta</i> Simon	233
Key to species of the genus <i>DIETA</i> Simon ..	233
113. <i>Dieta elongata</i> sp. nov.	234
114. <i>D. greenae</i> sp. nov.	235
115. <i>D. kapuri</i> sp. nov.	237
BIBLIOGRAPHY	241
ALPHABETICAL INDEX	245

TAXONOMIC CHARACTERS OF SPIDERS

(Figs. 3-18)

The body of a 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*. The anterior margin of the sternum articulates movably with the *labium*. With few exceptions, in most of the spiders, 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 that lies between

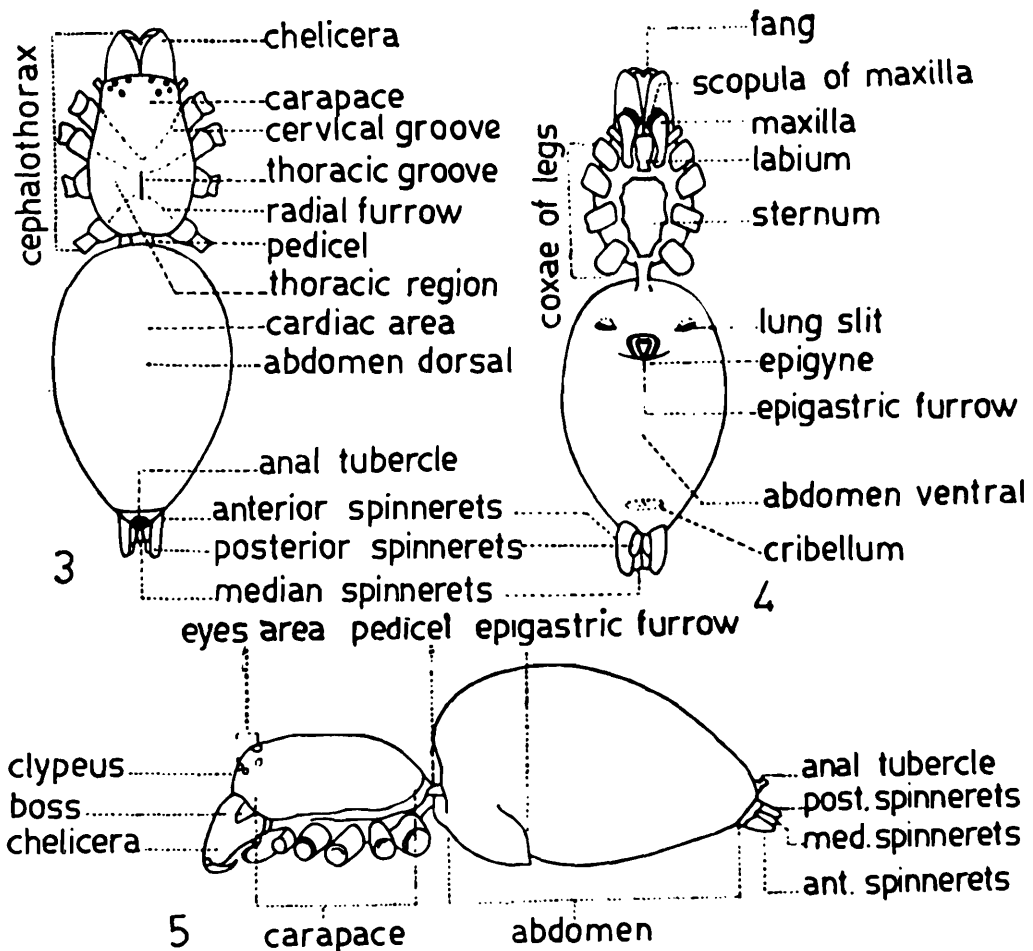


FIG. 3. Dorsal view of a typical spider, legs omitted.

FIG. 4. Ventral view of a typical spider, legs omitted.

FIG. 5. Lateral view of a typical spider, legs omitted.

the lateral edges of the carapace and sternum. On the cephalothorax we may distinguish an anterior *cephalic region* and a posterior *thoracic region* separated by a thoracic groove on the dorsum. On the cephalic region are situated six to eight simple eyes. The eyes are generally of two kinds, viz., black or *diurnal* and white or *nocturnal* eyes. When only one type is present, the condition is described as *homogeneous*, in contradistinction to the *heterogeneous* condition, where both the types are present. The eyes are usually arranged in two rows viz., the *anterior row* and the *posterior row*. Each row usually contains four eyes. The eye row is described as *recurved*, when the concavity is turned backwards. 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 the *ocular area*. The area of the four median eyes is termed the *ocular quad*. The area between the anterior row of eyes and the base of chelicerae is the *clypeus*. 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 the *thoracic groove*. A convex, lens like, black or deep brown mark called the *fovea* replaces the thoracic groove in the family Gnaphosidae.

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 teeth on each side; the outer row of these teeth is described as *promarginal* and the inner row as *retromarginal*. There are sometimes long stout hairs on the promargin to constitute the so-called *fang-scopulae*.

The pedipalpi are the second pair of appendages. Their broad and cushion-shaped bases are termed maxillary lobes. The anterior row and dorsal surfaces of each maxillae are furnished with scopulae of long hairs. A row of small tooth-like *serrula* is borne on the head of the maxilla. The palp proper is composed of six segments, viz., *coxa*, *trochanter*, *femur*, *patella*, *tibia* and *tarsus*.

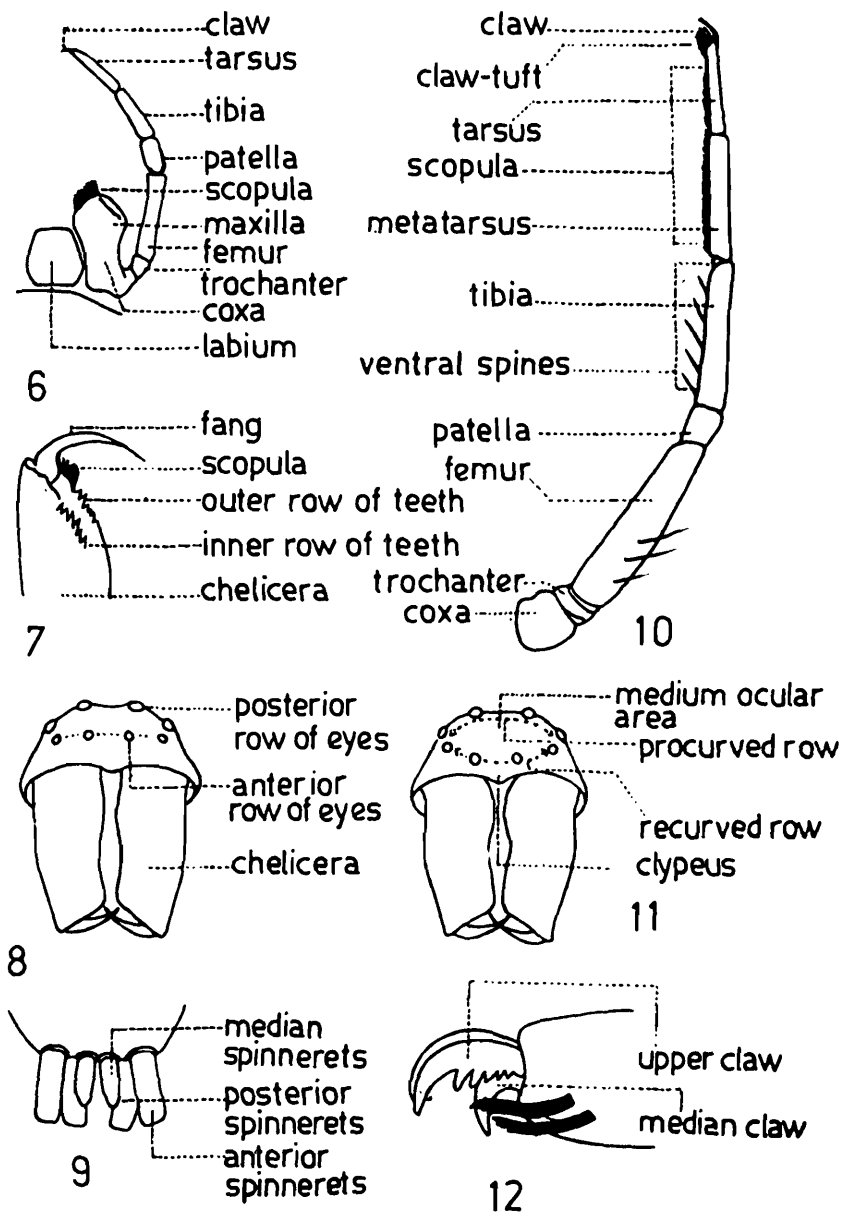


FIG. 6. Labium, maxilla and pedipalp of female.

FIG. 7. Inner view of chelicera.

FIG. 8. Face, front view of a typical spider showing eyes.

FIG. 9. Ventral view of spinnerets.

FIG. 10. Lateral view of a leg.

FIG. 11. Face, front view, of a typical spider.

FIG. 12. Claw.

In the female, the tarsus usually bears a monopectinate claw; the male lacks a claw. The tarsus in the male is hollowed below

to receive the palpal or copulatory organs. 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*. The legs are variously clothed with spines, spinules, bristles and hairs of various types. The tarsus ends in 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 *leg-scopulae* below the metatarsi and tarsi. Spines on the dorsal side of legs are distinguished as *dorsal spines* and those on the ventral side as *ventral spines*.

The abdomen is produced posteriorly into a conical *anal tubercle* and bears three pairs of spinners or spinnerets ventrally, viz., the first or the *anterior pair*, the second or the *median pair* and the third or the *posterior pair* of spinners or spinnerets.

The ventral surface of abdomen is provided with one or two pairs of book-lungs followed by one or two paired spiracles. The female genital opening is the *vulva* or *epigyne*, with a transverse fold, known as the *epigynal fold*, or *epigastric fold*.

The tarsi of spiders are often armed with hairs of the type known as *tenent hairs*, i.e., hairs dilated at their tips, and as in insects secrete an adhesive fluid. Setae which are stout apically and club-shaped, as in *Oxyptila*, are called *clavate hairs*. When the hairs are very fine, as in Argiopidae, they are known as *pubescence*. Sometimes the hairs are modified as *spiny-hairs* as in fig. 20.

What are spiders?

Spiders are not insects. Together with scorpions, pseudoscorpions, solpugids, ticks, mites and daddy-long-legs they belong to the Class Arachnida. They may be readily separated from the daddy-long-legs (harvestmen), with which they are often confused by the fact that the latter have the abdomen noticeably segmented and broadly jointed to the cephalothorax and also lack the spinnerets at the hind end of the abdomen.

Spiders are placed in the Order Araneae, and can be easily separated from insects by the following characters:-

<i>Parts of body</i>	<i>Spider</i>	<i>Insect</i>
Body regions	Two: cephalothorax and abdomen, which is not segmented.	Three: head, thorax and abdomen, with segmented abdomen.
Antennae	Lacking.	One pair.
Legs	Four pairs	Three pairs
Pedipalps	One pair of six segments; modified in male for sperm store and transmission to the female genitalia.	Absent.
Poison apparatus	Opening on fangs of chelicerae.	If present, usually opening at posterior end of abdomen.
Wings	Always absent.	Most commonly present.
Eyes	Always simple ocelli; most commonly 8 or 6	Commonly compound sometimes 2 or 3 ocelli in addition.
Silk apparatus	Always present, opening at hind end of abdomen below anus.	Absent, present only in some larvae, opening at lower lip.
Genital pore	On ventral side near anterior end of abdomen.	Terminal, just below anus at posterior end of abdomen.
Development	Direct, no larval stages; spiderlings resemble their parents.	May have a metamorphosis with larval and pupal stages, or with nymphs.

Morphology

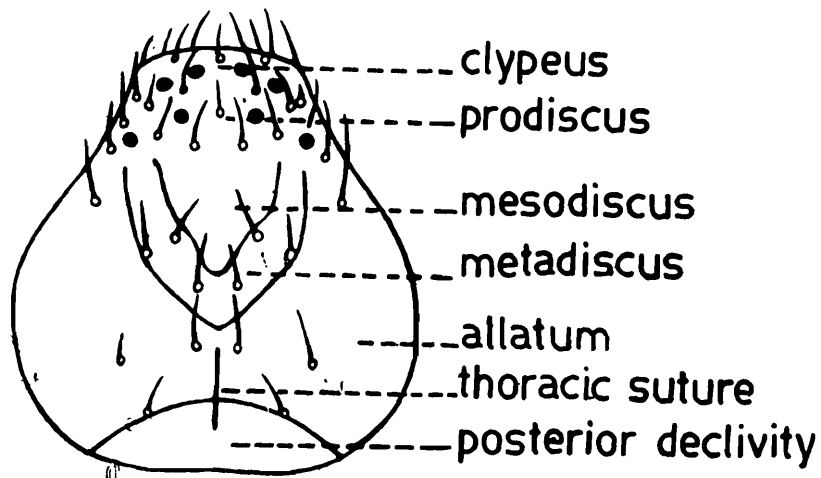
Some of the cuticular morphological features of the Thomisidae, pertinent to the present study, are summarized below. The terminology used in topological, and homologies with other groups of arthropods have not been clearly established. Some new terminology was proposed by Schick (1965). For fuller reference to the terminologies of the male and female genitalia, reference may be made to the excellent works of Comstock (1910) and Ger- ing (1953).

The body of a spider is divisible into a cephalothorax and abdomen joined together by a narrow pedicel.

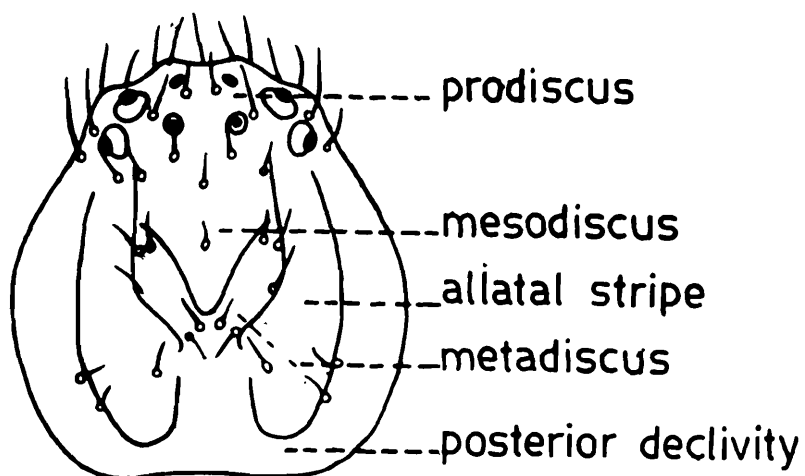
Cephalothorax

The cephalothorax can be divided into three regions, the clypeus, the disc, and bilateral allata. The clypeus is the area that lies between the cephalic margin of the cephalothorax and the anterior median eyes, terminating laterally near the level of the posterior lateral eyes.

The disc is a broad and elongated median region that extends from the levels of the anterior median eyes to thoracic suture or ~~to~~ ~~over~~. The disc can be subdivided into: (1) Prodiscus, the anterior portion lying in the ocular area. (2) Mesodiscus, the intermediate and the longest portion delineated cephalad by the posterior



13



14

FIG. 13. Cephalothorax of *Philodromus*, dorsal view.

FIG. 14. Cephalothorax of *Xysticus*, dorsal view.

median eyes, caudad by the metadiscus and laterad by the cervical groove or, when the groove is not developed, by a narrow stripe through setae or by difference in coloration of the allatum, and (3) Metadiscus, the posterior portion developed as a usually distinct and white V-shaped marking.

The allatum is lateral and caudal to the disc and it may be unpigmented, uniformly pigmented, mottled or have a lateral or mesial pigmented stripe (figs. 13, 14).

Eyes

Oriental Thomisidae have eight eyes, arranged in two transverse rows of four eyes each, an anterior row and a posterior row. The eyes are designated in pairs: anterior median eyes (AME), anterior lateral eyes (ALE), posterior median eyes (PME) and posterior lateral eyes (PLE). When the lateral eyes in a row of eyes are situated posteriorly when compared to the median eyes that row is termed as "recurved" and when the lateral eyes are situated anterior to the median eyes, that row is termed as "procurved"

Male Genitalia

The male genitalia in spiders are usually referred to the palpus or palp which is the intromittent organ. The primary reproductive opening, the gonopore, is situated in the epigastric furrow. The mature male spider spins a small sheet of web upon which it deposits a drop of semen, passed out through the gonopore. The genital bulb, contained in the distal end of the palpus, is a complexly developed but essentially hollow, bulb-like structure. It is placed in contact with the semen, and the fluid passes into the hollow internal part (the receptaculum seminis) to be stored until copulation. At the time of copulation the tip of the genital bulb is inserted into the female genital orifice and the semen is ejected.

The palpus consists of seven segments (coxa, trochanter, femur, patella, tibia, tarsus and pretarsus), but only the three terminal segments (also rarely the fourth, the patella) are modified to take part in copulation. There is a progressive increase in specialization distally in these three or four segments, the pretarsus being the most specialized.

The *cymbium* is the tarsal segment of the palpus specialized for the reception of the genital bulb. There are several structural modifications of the cymbium for this purpose. The *alveolus* is a ventral depression, which receives the basal and middle divisions of the genital bulb. Although usually described as a cup-like depression, the *alveolus* is actually a ringed depression to the inner margin of which is joined the basal hematodoch (the membranous basal portion of the genital bulb). The *tutaculum* functionally supplants the conductor and is present only in the Thomisidae. Generally it is formed as a shallow, membranous, tatarular groove developed peripherally along the distal end usually on the retrolateral margins of the alveolus.

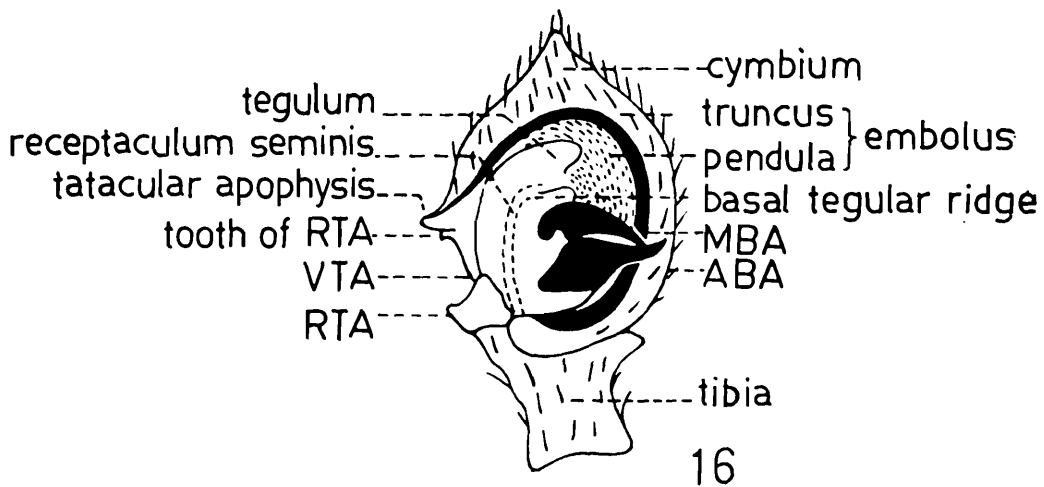
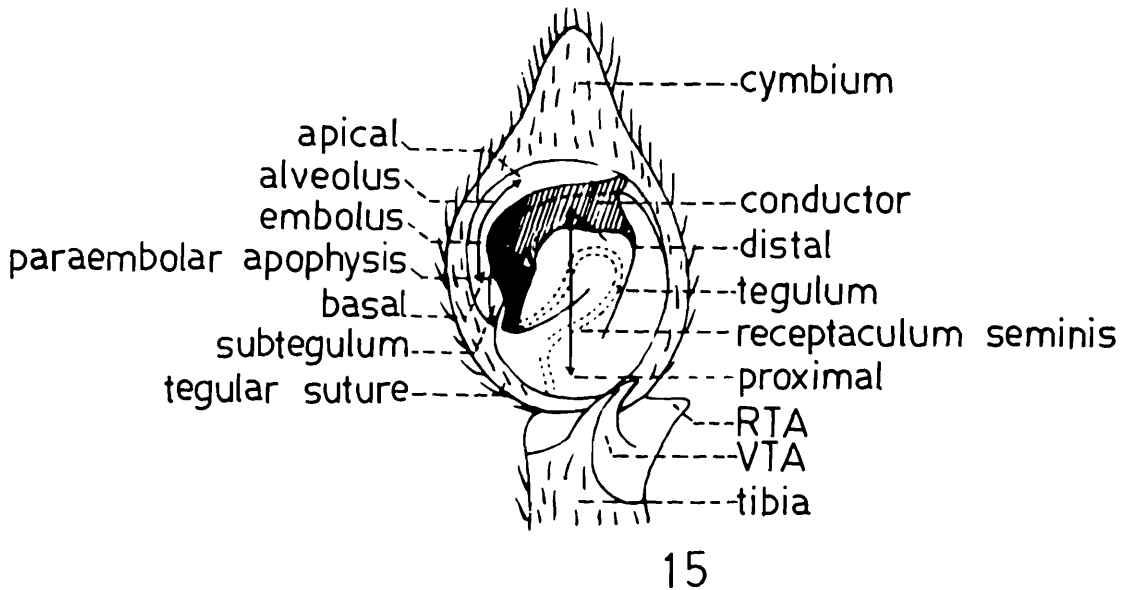


FIG. 15. Male palp of *Philodromus assamensis* Tikader.

FIG. 16. Male palp of *Xysticus sujatai* Tikader.

The genital bulb is the terminal segment of the palpus. It is a hollow organ, with external elaborations. The genital bulb is divided into three divisions: (1) Basal division, (2) Middle division, (3) Apical division (after Comstock 1910).

Basal Division: The basal hematodocha is sclerotized basally to form a somewhat triangular sclerite, the petiole, the base of which articulates or is partially fused with the inner margin of the alveolus. The *subtegulum* is a comma-shaped sclerite of which the bulbous apical end articulates with the tegulum.

Middle Division: The tegulum, a discoidal sclerite, is the main portion of the middle division. The tegulum may bear apophysis, a conductor or other structures.

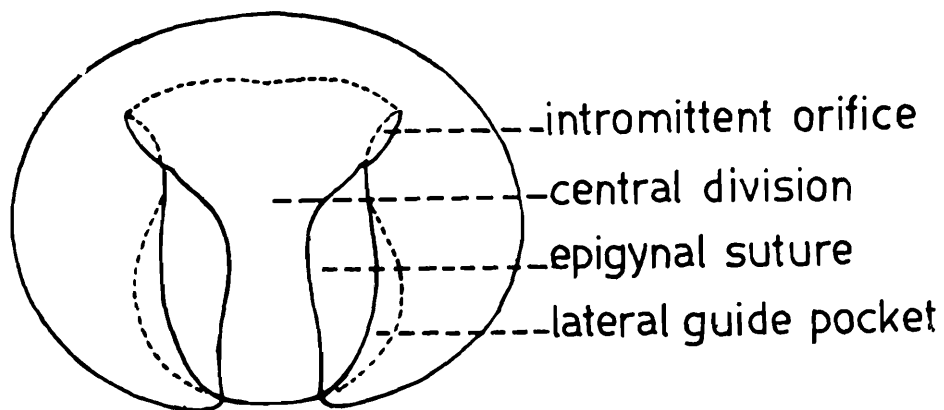
Apical Division: The *conductor* and the embolic subdivision comprise the apical division of the bulb (Comstock 1910). The conductor is a distal membranous or sclerotized outgrowth of the tegulum which accommodates the apical portion of the embolus. The embolic sub-division consists of the embolus in the Thomidae. The embolus is the actual intromittent part of the genital bulb (figs. 15, 16).

Female Genitalia

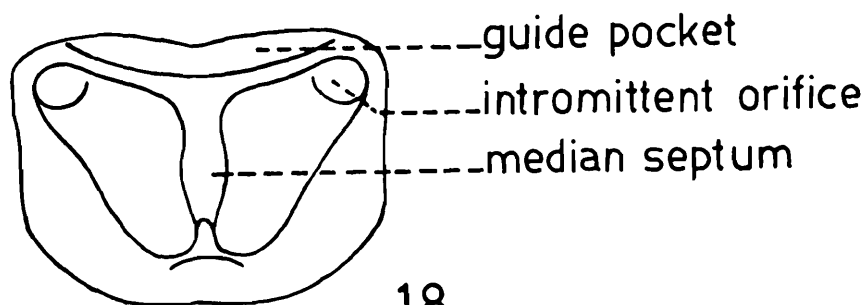
The term female genitalia refers to both an external epigynum and a pair of longitudinal internal canals which are invaginations of the epigynal integument. The *epigynum* is a poorly to well-defined, median, sclerotized area developed about the intromittent orifices on the venter of the abdomen cephalad of the epigastric furrow and may bear structures of which some, at least, serve to accommodate the male palpus during copulation. Each internal canal is divided into an anterior receptaculum and a posterior fertilization tube. The anterior end of the internal epigynum opens into the epigynum or epigyne as the intromittent orifice and the posterior end into the vagina (Comstock 1910).

Epigynum or Epigyne: Several types of structures, perhaps, serve as guides for the male palpus. The guide pocket is a concavity overlain by a sclerotized plate, the hood; the guide pocket may

be antemedial on the epigynum and unpaired or bilaterally paired. The median septum, if any, is a raised mediolongitudinal structure; cephalad the rim of the septum may curve laterad, forming the arch of the median septum. In some cases a basin like depression, the atrium, is formed in the epigynum, and the surrounding rim may serve as a palpal guide. Often the median septum divides the epigynum into bilateral atria.



17



18

FIG. 17. Epigyne of *Philodromus assamensis* Tikader.

FIG. 18. Epigyne of *Bomis bengalensis* Tikader.

The receptaculum is usually sub-divided transversely into a morphologically, anterior intromittent division and a posterior spermatheca. These are functional sub-divisions and may not be homologous in the different groups. In relation to the designation of directions along the axis of the receptaculum the term 'proximal' refers to a direction towards the intromittent orifice, and the term 'distal' to the direction towards the fertilization cunal orifice (figs. 17, 18).

Morphometric Measurements

The measurements were taken by the help of objective micrometer scale using camera lucida (Tube-type). The objective micrometer which is marked for 1 mm. is placed under Binocular at the same height as that of the specimen (1mm. mark comes in focus only at that height). But in doing this, the adjustment knobs of the binoculars are not moved. Micrometer scale is placed on two polystyrene balls and pressed down till it comes in focus. This 1 mm. is noted with the camera lucida on paper, and this scale shows the measurement.

HABITAT, FOOD AND FEEDING HABITS

Spiders are a primitive group of animals occurring almost everywhere, on or near water, inside or on the ground; from the seashore to the tops of the high mountains and in various climates from deserts to snowlands. They are distributed extensively in the fields, thick forest floors as well as in the human habitations and deserted buildings, under stones and logs and on tree trunks, etc.

There are about eighty families of spiders recorded from the world and out of these forty three families are so far represented from India. Some of these are true orbweb weavers, some make the irregular webs, a few make the umbrella-shaped inverted complicated webs and others make the sheet webs which expand on the ground with a funnel retreat. Some spiders restrict themselves to very damp situations and others live successfully in dry habitats. According to their web building ability, generally the spiders are considered as weavers or non-weavers. The weavers make the snares to trap insects as their food while the non-weavers hunt the prey by chasing or by stalking. Among the true orb-web weaving spiders of the family Araneidae, the spiders of the genus *Araneus* make the wheel-shaped web with spokes and a central hub. The spider waits at the centre or at the corner of the web for the prey. When any insect prey is caught in the web, the spider quickly comes and injects the poison through its cheliceral fangs into the prey to kill it, often biting it repeatedly, and ultimately suck the prey. The orb-webs of the spiders of the genera *Araneus*, *Argiope*, *Leucauge* and *Gasteracantha* are made within the branches of

low bushes or on small trees and in between the rocks. Generally they make their new webs every night or repair their damaged webs. They not only catch flying insects in their webs but also entangle leaping and jumping insects. The spiders of the family Uloboridae also prepare webs similar to those of Araneidae, to catch the prey. The members of the family Pholcidae prepare their irregular snares at the inside corners of houses as well as on the inner side of roofs and the pholcid spiders hang upside down from their snares. The insects such as houseflies and mosquitoes caught in these webs are devoured by the pholcids. Thus they contribute a lot, not only in minimising the number of these insects in the houses but also help in the biological control of insects. The family Eresidae prepare compact nests with many holes of entrance and exit on the leaves and branches of the bushes and trees. Some part of the nest is expanded like a broad sheet. These nests are commonly seen in India on the *Acacia* trees and shrubs. The flying and jumping insects caught in the sticky sheet are killed on the sheet and dragged inside the nest by the spiders. Their social behaviour is evident because a number of individuals take part in one hunt or suck a single prey. Insects belonging to the Orders Orthoptera, Lepidoptera, Coleoptera, Hemiptera, Diptera and Hymenoptera are usual prey for these spiders. Body remains of the prey are not thrown out of the nest. Such nests of the family Eresidae are seen in considerable numbers in any one locality and are also located in the dry areas like the Rajasthan deserts. This social phenomenon is shown by the members of the family Eresidae. In India this family is represented by the genus *Stegodyphus* only.

The spiders of the family Lycosidae (Wolf-spider) are unique in having both weavers as well as hunters. Only the spiders of genus *Hippasa* prepare expanded sheet-like webs on the ground with funnel retreats wherein they hide. This spider waits inside for the prey to fall on the expanded sheet and as soon as some prey is caught on the web, the spider comes out of the funnel retreat to bite, kill and suck the prey. There is no particular location of the webs on the ground. They may be present at the bases of large trees, on the sides of big boulders, on the ground within crevices or holes, on the sloping or vertical edges of nullahs and in small ditches. The tube retreat always extends deep into the soil

under a stone as much as six inches to one foot from the expanded sheet. When these spiders sense any danger, they go deep to the extreme end of the tube to escape from it. These webs are very conspicuous in the mornings due to the deposition of dew drops on them. The spiders of the family Agelenidae also prepare webs similar to those of *Hippasa*.

Spiders of the families Theridiidae and Tetragnathidae may be mentioned among other weaving spiders. The Tetragnathidae prefer humid habitats and are found on the edges of swamps, ponds and rivers with their long silk threads between bushes.

Apart from this, the other group of spiders prepare no such webs or snares to catch their insect prey for food. These are commonly called hunting or running spiders. The spiders of the families Lycosidae, Gnaphosidae, Clubionidae, Sparassidae, Salticidae, Oxyopidae and Thomisidae belong to this group. They either chase their prey and catch them by running down as in Lycosidae (Wolf-spiders), Gnaphosidae, Clubionidae, Oxyopidae and Sparassidae or wait and stalk their prey as in Thomisidae.

For the hunting spiders, acute sight is very essential for chasing and stalking, but in the case of the weavers the sense of touch is much more developed than sight. Lycosids (Wolf-spiders) inhabit varied habitats. They are found on dry ground, under stones, in grass meadows, near water sources and in underground tubes. Some are diurnal and some are nocturnal hunters. Usually the lycosid forms present near the water sources and meadows are diurnal hunters and are frequently seen catching flies and bugs in the morning hours. On the other hand the nocturnal lycosids are seen in large numbers running amongst leaves on the ground, chasing their prey. Their eyes reflect the torch or head lamp light in the night. The larger forms of Lycosidae which live in ground tubes come out of their tubes and hunt at night. The inner margin of their tubes are lined with silk. Sometimes insect remains are seen inside the tubes if they are opened. Spiders of the genera *Pardosa* and *Arctosa* seem to prefer the humid atmosphere of the streams, rivers and lakes. They are abundant in these areas and devour the small insects amongst the grass. They are frequently seen running with the egg sacs attached to their spinnerets. Insects belonging to the orders of Diptera, Hemiptera, Collembola.

Dermaptera, small Coleoptera, small butterflies and moths are used as food by the lycosid spiders.

Other hunting spiders of the families Gnaphosidae, Clubionidae and Sparassidae mostly live in rolled up dried leaves and come out of their rolled retreats to run down their prey and sucking it. These hunting spiders can occasionally be seen in human habitations at night, evidently in search of food or mate. Some Clubionids mimic ants and walk rapidly like ants with their front legs raised high up from the ground to resemble antennae.

The other forms of hunting spider which stalk their prey include the families Salticidae and Thomisidae. The salticids are jumping spiders with keen eye sight. They are specialized in their beautiful art of stalking their prey and subsequently pouncing upon it and devouring it. These spiders commonly stalk for smaller insects, usually flies. It is interesting to note that like most beasts of prey, a spider knows that the most delicate part of the victim is the neck and so it usually tries to get its fangs where the head joins the thorax. The eight eyes that most spiders have are arranged in different patterns on the top of their round heads. But in the jumping spiders, four of their eyes, usually two larger and two smaller are in a line in front of the square head, and this arrangement gives them wonderful sight and great accuracy in locating and leaping on their prey. Due to the big size of their front median eyes their task of stalking becomes easy.

Another interesting family of hunting spiders is Thomisidae. These spiders look like small crabs in their appearance due to the arrangement of their legs. Most of the legs of these spiders move side-wise like those of a crab, and the common name for these spiders is crab-spiders. Crab spiders are one of the most handsome forms of spiders, possessing bright and beautiful colours. A large variety of crab-spiders live on plants, especially on the flowering shrubs and bushes and still other forms prefer green leaves. Generally these spiders have short, wide, considerably flattened bodies and some of the legs are extended laterally almost at right angles to the body. The crab-spiders wander on the ground and on plants. Their flattened body helps them to live in narrow crevices, under bark or in debris. Rarely the crab-spiders come out at night but most seem to be dependent on day-flying insects.

The crab-spiders are fortified with extremely potent venom, in compensation for weak chelicerae.

Amongst thomisid spiders we also find the long and narrow bodied crab-spider like *Dieta* and *Tmarus*. The spider of the genus *Dieta* are green in colour with spots on the body and they sit in postures so that their long body and legs assume a long shape on the branch and they are difficult to see. They catch ants and small flies. Spiders of the genus *Philodromus* live on plants and they attach two leaves together to form a hiding place in which they rest. If any insect approaches nearby, they come out from the retreat to catch it. Since they are dorsoventrally flattened, this flat retreat suits them. Some species of *Philodromus* prefer the brightly coloured leaves, under which they attach their egg sacs. The members of *Tibellus* are dirty brown and straw coloured and frequent grass meadows and lie parallel to and close against the stem to keep themselves unnoticed.

The spiders of the sub-family *Misumeninae* include the short, wide bodied forms. Their legs are very unequal in size, the first two pairs are very long and robust and the posterior two pairs considerably shorter and weaker. These spiders are very sluggish. They are usually found on flower heads where they wait at leisure for the insects which come to the flowers for pollen or nectar. Some spiders of the genus *Misumena*, *Misumenops*, *Misumenoides*, *Thomisus* and *Xysticus* can also change their colour according to the colour of the flower. They can change their colour from white to yellow and from yellow to white. These spiders sit motionless in the flower and pounce on the insect as soon as it alights.

Some crab-spiders are not good climbers and live under stones. The spiders of the genera *Oxyptila* and *Xysticus* mainly live on the ground. Their dull brown and grey colours mingle with the dried leaves and the debris of the soil and they feed on ants and other small insects and conceal themselves in the crevices of bark and other cracks.

Some delicate green spiders of the genus *Synaema* essentially live on green foliage.

The majority of crab-spiders thus wait for their prey to come within their reach and for this they can even change their colour

to become inconspicuous. However, members of some genera like *Tibellus*, *Thanatus* and *Philodromus* are fast runners and catch their prey with the help of the sense of touch as well as by sight.

The abundance of the spiders can be summarized in the following few sentences of Gertsch (1949): "Spiders are among the dominant predators of any terrestrial community. When the fauna of the soil and its plant cover is analysed, they come to light in vast numbers, in such convincing abundance that it is evident that they play a significant part in the life of every habitat"

FAMILIES AND HIGHER CATEGORIES OF SPIDERS

Order ARANEAE

Orthognatha

Mesothelae (Atypical tarantulas)

Family

1. LIPHISTIIDAE Thorell 1869.
2. ANTRODIAETIDAE Gertsch 1940.
4. MECICOBOTHRIIDAE Holmberg 1882.
- * 4. ATYPIDAE Bertkau 1878.

Opisthothelae (Typical tarantulas)

Family

- * 5. THERAPHOSIDAE Thorell 1869.
6. PARATROPIDIDAE Pocock 1903.
7. PYCNOTHELIDAE Petrunkevitch 1923.
- * 8. BARYCHELIDAE Pocock 1897.
9. MIGIDAE Pocock 1897.
- * 10. DIPLURIDAE Pocock 1897.
- * 11. CTENIZIDAE Thorell 1887.
- * 12. ACTINOPODIDAE Pocock 1903.

Labidognatha

Hypochiloidea

Family

13. HYPOCHILIDAE Marx 1888.
14. GRADUNGULIDAE Forster 1955.

Neocribellatae

Family

- * 15. FILISTATIDAE Ausserer 1867.
- * 16. OECOBIIDAE Blackwall 1862.
- * 17. ERESIDAE Koch 1850.
- * 18. DINOPIDAE Koch 1850.
- * 19. ULOBORIDAE Cambridge 1871.
- * 20. DICTYNIDAE Cambridge 1871.
- * 21. AMAUROBIIDAE Bertkau 1878.
- * 22. PSECHRIDAE Simon 1890.
- 23. TENGELLIDAE Dahl 1908.
- 24. ZOROPSIDAE Bertkau 1882.
- 25. ACANTHOCTENIDAE Cambridge 1902.

Ecribellatae

Haplogynae

(Primitive hunters and weavers)

Family

- 26. SICARIIDAE Keyserling 1880.
- * 27. SCYTODIDAE Blackwall 1852.
- * 28. LOXOSCELIDAE Gertsch 1949.
- 29. DIGUETIDAE Gertsch 1949.
- 30. PLECTREURIDAE Banks 1898.
- 31. CAPONIIDAE Simon 1890.
- * 32. OONOPIDAE Simon 1890.
- * 33. TETRABLEMMIDAE Cambridge 1873.
- 34. OCHYRO CERATIDAE Fage 1912.
- 35. LEPTONETIDAE Simon 1890.
- 36. TELEMIDAE Petrunkevitch 1923.
- 37. DYSDERIDAE Koch 1837.
- 38. SEGESTRIIDAE Petrunkevitch 1933.

Entelognyae

Trionycha

(Higher web weavers)

Family

- * 39. PHOLCIDAE Koch 1850.
- 40. SYMPHYTOGNATHIDAE Hickman 1931
- * 41. THERIDIIDAE Sundevall 1833.
- 42. NESTICIDAE Dahl 1926.

- 43. HADROTARSIDAE Thorell 1881
- * 44. LINYPHIIDAE Blackwall 1859.
- 45. MICRYPHANTIDAE Bertkau 1872.
- 46. THERIDIOSOMATIDAE Vellard 1924.
- * 47. ARANEIDAE (= ARGIOPIDAE) Dahl 1912.
- * 48. TETRAGNATHIDAE Menge 1866.
- * 49. AGELENIDAE Koch 1837.
- 50. ARGYRONETIDAE Menge 1871
- 51. DESIDAE Pocock 1895.
- * 52. HAHNIIDAE Bertkau 1878.

Three Clawed hunters

Family

- * 53. HERSILIIDAE Thorell 1869.
- * 54. UROCTEIDAE Thorell 1869.
- 55. MIMETIDAE Simon 1890.
- 56. ARCHAEIDAE Koch 1854.
- * 57. ZODARIIDAE Thorell 1881.
- * 58. PALPIMANIDAE Cambridge 1871.
- * 59. PISAURIDAE Simon 1890.
- * 60. LYCOSIDAE Sundevall 1833.
- * 61. OXYOPIDAE Thorell 1869.
- 62. SENOCULIDAE Simon 1890.
- 63. TOXOPIDAE Hickman 1940.

Dionycha (two clawed hunting spiders)

Family

- 64. AMMOXENIDAE Simon 1893.
- * 65. GNAPHOSIDAE Pocock 1884.
- 66. PRODIDOMIDAE Simon 1894.
- * 67. HOMALONYCHIDAE Petrunkevitch 1923.
- 68. CITHAERONIDAE Caporiacco 1937.
- * 69. CLUBIONIDAE Wagner 1888.
- 70. ANYPHAENIDAE Bertkau 1878.
- 71. AMAUROBIOIDIDAE Hickman 1949.
- 72. ZORIDAE Dahl 1912.
- * 73. CTENIDAE Keyserling 1876.
- * 74. SPARASSIDAE Bertkau 1872.
- * 75. HETEROPODIDAE Pocock 1896.

- * 76. SELENOPIIDAE Cambridge 1900.
- * 77. PLATORIDAE Simon 1890.
- * 78. THOMISIDAE Sundevall 1833.
- 79. APHANTOCHILIDAE Thorell 1873.
- * 80. SALTICIDAE Blackwall 1841.
- * 81. LYSSOMANIDAE Banks 1892.
- * The families so far reported from India.

KEY TO THE FAMILIES OF INDIAN SPIDERS

1. Chelicerae paraxial, i.e. projecting forward horizontally and fang articulated with chelicerae in a vertical plane and movable in a plane more or less parallel to the median plane of the body; fang closing backward. With two pairs of book lungs. ...Suborder ORTHOGNATHA-2
 Chelicerae diaxial i.e. projecting downward and fang articulated with chelicerae in a vertical plane and movable in a more or less transverse plane. Commonly with one pair of book lungs. .Suborder LABIDOGNATHA-7
2. Abdomen with one to nine sclerotized tergites. Furrow of cheliceral fang indistinct. Anal tubercle not immediately behind spinnerets, but separated from the spinnerets by considerable distance .Atypical tarantulas-3
 Abdomen without sclerotized tergites. Anal tubercle immediately behind the four spinnerets. Furrow of cheliceral fang distinct Typical tarantulas-4
3. Maxillae normal. Eight spinnerets situated in the lower middle of abdomen. .Family LIPHISTIIDAE
 Maxillae strongly developed and labium fused with sternum. Six spinnerets, situated in the lower end of abdomen. .Family ATYPIDAE
4. Tarsi with a small median claw and two large lateral claws, and without claw tufts. .6
 Tarsi with only two claws and with claw tufts.. .5
5. Chelicerae without a rastellum. Apical segment of the posterior spinnerets cylindrical and at least as long as the 2nd segment. .. .Family THERAPHOSIDAE

- Chelicerae with a rastellum. Apical segment of the posterior spinnerets small and shorter than the segments that precede it.. .Family BRACHELIDAE
6. Chelicerae with a rastellum. Posterior spinnerets short or moderately long, anterior spinnerets close together at base. Head region much higher than the thoracic region.Family CTENIZIDAE
- Chelicerae without rastellum. Posterior spinnerets very long, anterior spinnerets separated by at least their length. Head region not higher than the thoracic region.Family DIPLURIDAE
7. With a cribellum in front of spinnerets and a calamistrum on metatarsus IV, varying from just a few bristles to a row along the entire length of the metatarsus.Section CRIBELLATAE-8
- Without a cribellum and calamistrum.Section ECRIBELLATAE-15
8. With two pairs of lungs.Family HYPOCHILIDAE
- With only one pair of lungs.9
9. Anal tubercle large and prominent, two segmented with a fringe of long hairs. Posterior median eyes triangular or irregular in shape. Small spiders 2 to 2.50 mm. long with carapace sub-circular.Family OECOBIDAE
- Anal tubercle of the usual type, without a conspicuous fringe of hairs. Posterior median eyes circular.10
10. Head region large, rounded, high, posterior lateral eyes remote from the restFamily ERESIIDAE
- Head low, narrowed, posterior lateral eyes very rarely remote from the others.11
11. Tarsi furnished with unguis tufts and inferior claw.....Family PSECHRIDAE
- Tarsi without unguis tufts and inferior claw.12
12. Chelicerae fused together at the base. Labium fused to the sternum. Tracheal spiracle considerably in advance of the spinnerets. Calamistrum short..Family FILISTATIDAE

- Chelicerae not fused at base. Labium free. Tracheal spiracle in the usual position close to the spinnerets. Calamistrum much longer. 13
13. Tarsi with a dorsal row of trichobothria. Eight eyes, all light in colour, homogeneous.. .Family AMAUROBIIDAE
- Tarsi without trichobothria. Eight eyes, either all dark or heterogeneous.. . 14
14. Eyes eight, homogeneous, dark, both rows recurved. Metatarsus IV compressed and concave above.. . .Family ULOBORIDAE
- Eyes eight, heterogeneous, the anterior medians alone dark. Metatarsus IV of the usual shape. .Family DICTYNIDAE
15. Tibia and metatarsus I and II with a pro-lateral row of long spines, at the intervals between which is a row of much shorter spines, curved near their ends and increasing in length distally. .Family MIMETIDAE
- Tibia and metatarsus I and II without pro-lateral row of spines... 16
16. Sternum much wider than, long, the posterior coxae widely separated. .Family PLATORIDAE
- Sternum not wider than long, posterior coxae not widely separated 17
17. Posterior spinnerets absent or much shorter than the anterior... .,18
- Posterior spinnerets present, not shorter than anterior.. .20
18. Tarsi bear three claws. All legs short and are nearly equal in length and do not bear scopulae.. .Family ZODARIIDAE
- Tarsi bear two claws. I and II legs enlarged and bear scopulae... .19
19. Labium completely fused with the sternum. Two large and remnants of posterior four spinnerets present. Both I and II legs enlarged and relative leg segment lengths normal.. .Family STENOCHILIDAE

- Labium not fused with the sternum. Only two spinnerets present. I leg very much enlarged and modified. Patella is greatly elongated (longer than the tibia), metatarsus is shorter than the tarsus.. .Family PALPIMANIDAE
20. Posterior spinnerets enormously long, usually longer than the abdomen. .Family HERSILIIDAE
 Posterior spinnerets shorter and thick .21
21. Anal tubercle very large, fringed with long hairs, ocular group compact. .Family UROCTEIDAE
 Anal tubercle small, not fringed, ocular group not compact.. .22
22. Tarsi long and flexible. Labium broader than long, legs very long and slender.. .Family PHOLCIDAE
 Tarsi of the usual type. Labium longer than wide, legs not very long... .23
23. With less than eight eyes. .24
 With eight eyes .27
24. Eyes six in three groups. .25
 Eyes two, four or six in one group. .26
25. Carapace round and high behind. Sternum round behind. .Family SCYTODIDAE
 Carapace flat and depressed. Sternum pointed behind.. .Family LOXOSCELIDAE
26. Eyes six, median eyes larger than the laterals. Labium not joined with sternum. Epigastric furrow at the normal region.Family OONOPIIDAE
 Eyes two, four or six, almost equal in size. Labium joined with sternum. Epigastric furrow far behind the normal region. .Family TETRABLEMMIDAE
27. Anterior row with six eyes. .Family SELENOPIIDAE
 Anterior row with four or two eyes. . . .28
28. Tarsi with two claws with claw tufts. .29
 Tarsi with three claws without claw tufts. .39
29. Tarsal claws without teeth. .Family HOMALONYCHIDAE
 Tarsal claws with usual teeth. .30

THOMISIDAE : KEY TO THE FAMILIES

23

30. Eyes in three or four rows. 31
- Eyes in the more common arrangement
 of two rows. 34
31. Eyes in four rows, the front eyes very
 large. Family LYSSOMANIDAE
- Eyes in three rows. 32
32. Front row of eyes more or less situated
 vertically; median eyes enormously large,
 second row of two eyes usually very small,
 often minute, third row of two eyes of
 medium size. Family SALTICIDAE
- Front row of eyes not vertical, and eyes of
 this row smaller than those of the second,
 eyes of third row as large as second row. 33
33. First row of two eyes, second row with
 four and third row with two. Anterior
 laterals much closer to the posterior late-
 rals than to the anterior medians. Retro-
 margin of cheliceral fang furrow with at
 least three teeth. Family CTENIDAE
- First row with four eyes, second and third
 row each with two. Anterior laterals much
 closer to anterior medians than to the
 posterior laterals. Retromargin of cheliceral
 fang furrow with two teeth. Family ZORIDAE
34. Tracheal spiracle in advance of the spin-
 nerets at least one-third of the distanc-
 e between the latter and epigastric furrow. Family ANYPHAENIDAE
- Tracheal spiracle in the usual place just in
 front of spinnerets 35
35. Legs, at least, I and II laterigrade, crab-
 like. 36
- Legs usually prograde type. 38
36. Colulus absent. Retromargin of cheliceral
 fang furrow armed with teeth. 37
- Colulus present. Retromargin of cheli-
 ceral fang furrow smooth Family THOMISIDAE

37. Cephalothorax as long as wide. Posterior row of eyes recurved, anterior row straight or procurved, lateral eyes larger. Apex of metatarsus without a soft trilobate membrane.. .
 .Family HETEROPODIDAE
- Cephalothorax as long as wide or slightly longer than wide. Posterior row of eyes straight or slightly procurved, anterior row usually straight and subequal, lateral not larger than medians. Apex of metatarsus with a soft trilobate membrane.. .
 .Family SPARASSIDAE
38. Anterior spinnerets conical, contiguous. Maxillae without a transverse or oblique depression. Eyes homogeneous or almost so (with few exceptions).
 .Family CLUBIONIDAE
- Anterior spinnerets cylindrical, and separated by a distance about equal to the diameter of one. Maxillae with an oblique depression. Eyes distinctly heterogeneous, the anterior medians dark; the posterior medians often oblique, oval, or triangular.
 .Family GNAPHOSIDAE
39. The six spinnerets in a more or less transverse row. Tracheal spiracle removed from the spinnerets at least one third of the distance to epigastric furrow.. .
 .Family HAHNIIDAE
- The six spinnerets not in a transverse row, but of the usual arrangement. Tracheal spiracle in the usual place in front of the spinnerets.40
40. Eyes group hexagonal, the posterior row procurved, and anterior row recurved, with the clypeus high. Abdomen pointed behind and legs with very conspicuous spines.. .
 .Family OXYOPIDAE
- Eyes group not forming a hexagon, and clypeus much lower. Abdomen not pointed and legs without conspicuous spines.41
41. Tarsus IV, usually, provided with a ventral row of 6 to 10 serrated bristles, forming a comb, for at least one sixth its length from the distal end; this may be poorly developed in males.
 .Family THERIDIIDAE

- Tarsus IV not provided with comb of serrated bristles..... .42
42. Tarsi with trichobothria. .43
- Tarsi without trichobothria. .45
43. Tarsi with single row of trichobothria. Trochanters not notched (most species living in sheet webs with a funnel, over which they run rapidly in an upright position). .Family AGELENIDAE
- Tarsi with numerous trichobothria, but irregularly distributed. All trochanters with a curved notch..... .44
44. Posterior row of eyes so strongly recurved that it may be considered to form two rows. Median claw smooth or with a single tooth. Anterior piece of lorum rounded behind and fitting into a notch of the posterior piece. Egg sac carried attached to spinnerets and young carried on mother's back. .Family LYCOSIDAE
- Posterior row of eyes not forming two distinct rows, but only slightly recurved. Median claw with two or three teeth. Anterior piece of lorum with a notch into which the posterior piece fits. Egg sac held under cephalothorax. Young not carried by mother .Family PAISAURIDAE
45. Clypeus, in most, lower than the height of the median ocular area. Eyes homogeneous (most are orb-weavers). .46
- Clypeus usually as high as or more commonly higher than, height of the median ocular area. Eyes heterogeneous (the majority are not orb-weavers). .47
46. Epigastric furrow between lung slits procurved. No boss on chelicerae. In most cases the chelicerae are large and powerful. .Family TETRAGNATHIDAE
- Epigastric furrow nearly straight. Boss present on chelicerae though rudimentary in some cases. (True orb-weavers). Chelicerae not very large. .. .Family ARANEIDAE
(= ARGIOPIDAE)

47. Tibia of male pedipalp without apophysis (though the tibia may be dilated distally). Palp of female in most species with a claw at the end of the tarsus. Tibia IV in most species with two dorsal spines, or if only one spine is present then there is one short spine on metatarsi I and II.

. Family LINYPHIIDAE

Tibia of male pedipalp in most species with at least one apophysis. Palp of female without a claw at end of tarsus. Tibia IV with a single dorsal spine or bristle, and with the metatarsi spineless. . .

. Family MICRYPHANTIDAE

Note : Family Hypochilidae and some other families are so far not recorded from India. They are included in the key just to satisfy the couplet characters.

FAMILY THOMISIDAE

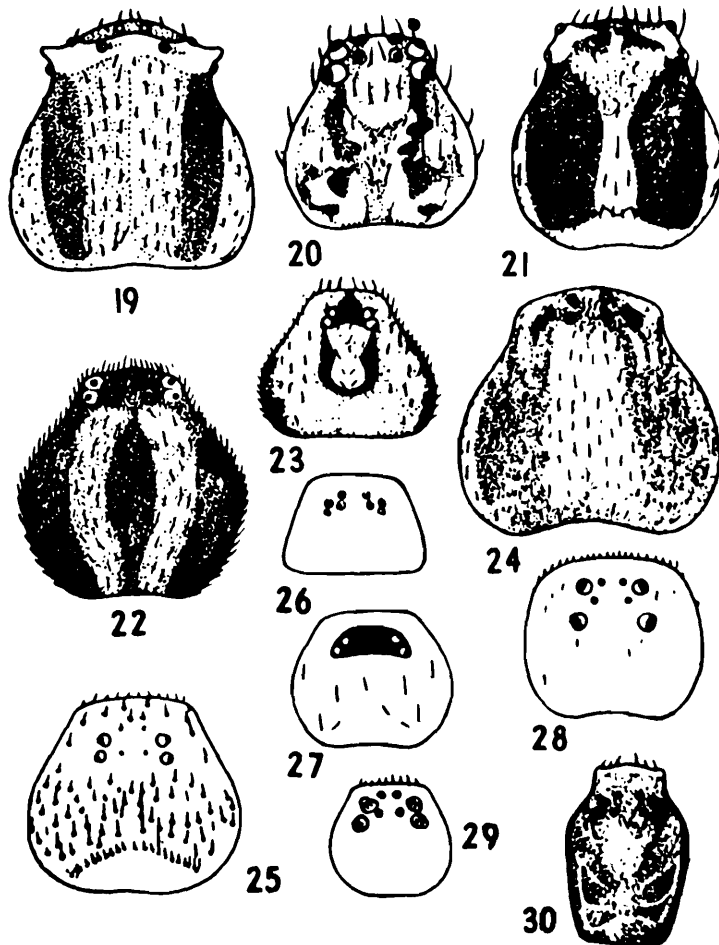
1833. Thomisidae Sundevall, *Conspectus arachnidum* London. : 27.
 1869. Thomisidae : Stoliczka. *J. Asiat. Soc. Bengal*, 38 : 225.
 1895. Thomisidae : Simon, *Histoire Nat. Araignees*, Paris. 1(4) : 949.
 1935. Thomisidae : Dyal, *Bull. Dep, Zool Punjab Univ.*, 1 : 209.
 1960. Thomisidae : Tikader, *J. Bombay nat. Hist. Soc.*, 57 : 180.
 1962. Thomisidae : Tikader, *J. Linn. Soc.*, London. 44 : 569.
 1971. Thomisidae : Tikader, *Mem. zool. Surv. India*, 15 (3) : 1-90.

The typical members have a peculiar crab-like appearance. Cephalothorax and abdomen are usually short and broad; but somewhat elongated in genera *Tibellus* and *Thanatus*. Homogeneously coloured eyes (however, in life the anterior median eyes appear lighter than the others); free rather than fused chelicerae, the lower margin of which is indistinct and unarmed; presence of two toothed tarsal claws on each laterigrade leg, one pair of book-lungs, a single median tracheal opening near the spinnerets, and the absence of cribellum and calamistrum characterize the family. The first two pair of legs are long and stout and frequently move sideways as in a crab; the legs are less obviously laterigrade in the genera *Philodromus* and *Thanatus*, and not at all in *Tibellus*. The members of the genus *Oxyptila* have the integument furnished with some characteristic clavate setae, but in the other genera the hairs and spines are normal.

Two subfamilies of THOMISIDAE so far known from India are *MISUMENINAE* and *PHILODROMINAE*.

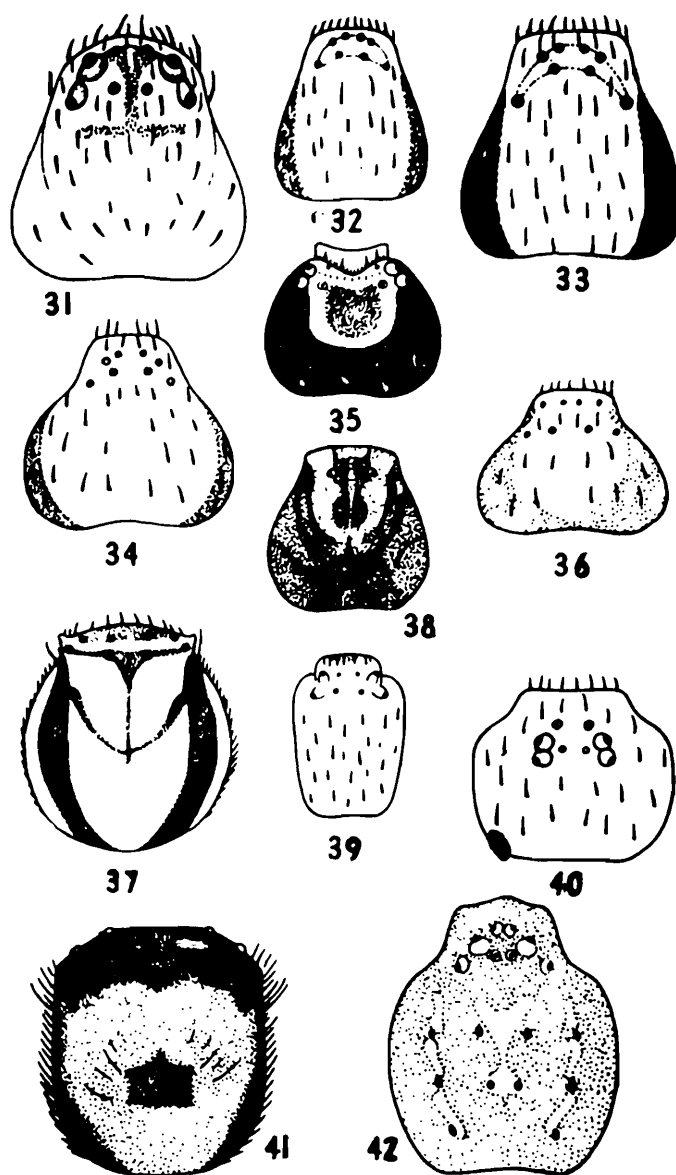
Subfamily *MISUMENINAE* (Mi-su-me-ni'-nae)

In this subfamily the tarsi of the first and second pairs of legs are not furnished with scopulae in either sex. I and II legs much longer than III and IV; the hairs of the body are filiform or rod-shaped or erect; and the upper margin of the furrow of the chelicerae is without tooth.



- FIG. 19. Cephalothorax of *Thomisus* Walck.
 FIG. 20. Cephalothorax of *Xysticus* Koch.
 FIG. 21. Cephalothorax of *Diaea* Thorell.
 FIG. 22. Cephalothorax of *Regillus* Cambridge.
 FIG. 23. Cephalothorax of *Misumenops* Cambridge.
 FIG. 24. Cephalothorax of *Misumenoides* Cambridge.
 FIG. 25. Cephalothorax of *Pistius* Simon.
 FIG. 26. Cephalothorax of *Bomis* Koch.
 FIG. 27. Cephalothorax of *Apollophanes* Cambridge.
 FIG. 28. Cephalothorax of *Amyciaea* Simon.
 FIG. 29. Cephalothorax of *Synaema* Simon.
 FIG. 30. Cephalothorax of *Tmarus* Simon.

This subfamily includes the majority of our species of crab-spiders. The genera occurring in the Indian sub-continent can be distinguished as follows:-



- FIG. 31. Cephalothorax of *Oxyptila* Simon.
 FIG. 32. Cephalothorax of *Thanatus* Koch.
 FIG. 33. Cephalothorax of *Tibellus* Simon.
 FIG. 34. Cephalothorax of *Philodromus* Walck.
 FIG. 35. Cephalothorax of *Strigoplus* Simon.
 FIG. 36. Cephalothorax of *Ebo* Keyserling.
 FIG. 37. Cephalothorax of *Runcinia* Simon.
 FIG. 38. Cephalothorax of *Platythomisus* Dolesch.
 FIG. 39. Cephalothorax of *Monaeses* Thorell.
 FIG. 40. Cephalothorax of *Pasias* Simon.
 FIG. 41. Cephalothorax of *Camaricus* Thorell.
 FIG. 42. Cephalothorax of *Dieta* Simon.

KEY TO GENERA OF MISUMENINAE

- | | | | |
|-----|---|----------------------------|-----|
| 1. | Lateral eyes on strong conical protuberance | | .2 |
| | Lateral eyes not on conical protuberance. | | .3 |
| 2. | Abdomen widened and truncated behind. | <i>.Thomisus</i> Walck. | |
| | Abdomen long, lateral sides with longitudinal muscular corrugation | <i>.Runcinia</i> Simon | |
| 3. | Abdomen broadened and truncated behind.. | ... <i>.Pistius</i> Simon | |
| | Abdomen broadened but not truncated behind. | | .4 |
| 4. | Integument clothed with some clavate setae | <i>.Oxyptila</i> Simon | |
| | Integument not clothed with clavate setae. | | .5 |
| 5. | Cephalic region as wide as thoracic region. | <i>.Camaricus</i> Thorell | |
| | Cephalic region narrower than the thoracic region | | .6 |
| 6. | Anterior eyes nearly equidistant. | <i>.Misumena</i> Latr. | |
| | Anterior eyes not equidistant. | | 7 |
| 7. | Body covered with conspicuous spines. | <i>Diaea</i> Thorell | |
| | Body not covered with conspicuous spines. | | .8 |
| 8. | Anterior median eyes closer to the lateral eyes than to each other. ... | <i>.Xysticus</i> Koch. | |
| | Anterior median eyes not closer to lateral eyes. | | .9 |
| 9. | Tarsal claws of I leg with 6-12 teeth. | <i>.Synaema</i> Simon | |
| | Tarsal claws of I leg without teeth. | | 10 |
| 10. | Cephalothorax wider than long. | <i>.Bomis</i> Koch | |
| | Cephalothorax longer than wide.. | | .11 |
| 11. | Abdomen produced well beyond the spinnerets. | <i>.Monaeses</i> Thorell | |
| | Abdomen not produced beyond the spinnerets. | | 12 |
| 12. | Abdomen high, with caudal tubercle. | <i>.Tmarus</i> Simon | |
| | Abdomen not high, without caudal tubercle. | | 13 |
| 13. | Clypeus with a distinct, white transverse carina and carapace flat | <i>.Misumenoides</i> Camb. | |
| | Clypeus without white transverse carina carapace not flat | | .14 |

- | | | | |
|-----|--|-------------------------------|-----|
| 14. | Anterior lateral eyes larger than the median eyes. | <i>Misumenops</i> Camb. | |
| | Anterior lateral eyes not larger than the median eyes | | .15 |
| 15. | Legs clothed with conspicuous spines | <i>Pasias</i> Simon | |
| | Legs not clothed with conspicuous spines | | .16 |
| 16. | Margin of clypeus with one row of small clavate hairs .. | <i>Strigoplus</i> Simon | |
| | Margin of clypeus without clavate hairs | | .17 |
| 17. | First pair of legs conspicuously robust ... | <i>Regillus</i> Camb. | |
| | First pair of legs not conspicuously robust ... | | .18 |
| 18. | Ant like spiders. | <i>Amyciaea</i> Simon | |
| | Not ant like spiders. | <i>Platythomisus</i> Dolesch. | |

Genus 1. *Thomisus* Walckenaer

1805. *Thomisus* Walckenaer, *Tabl. Aron.* p. 28.
 1869. *Thomisus* : Stoliczka, *J. Asiat. Soc. Bengal*, **38** : 225.
 1895. *Thomisus* : Simon, *Hist. Nat. Araign.*, Paris., **1(4)** : 1023.
 1935. *Thomisus* : Dyal, *Bull. Dep. Zool. Punjab Univ.*, **1** : 200.
 1962. *Thomisus* : Tikader, *J. Linn. Soc.*, London, **44(300)** : 569.
 1965. *Thomisus* : Tikader, *Proc. Indian Acad. Sci.*, Bangalore, **61(5)** : 283.
 1971. *Thomisus* : Tikader, *Mem. zool. Surv. India*, **15(3)** : 13.

Characters: Cephalothorax truncated in front, with the upper fore-corners strongly and conically protruberant and divergent, bearing the lateral eyes. Eyes very small. Abdomen narrow and truncated in front, enlarging to a considerable width behind, where at either corner of the dorsal side is a short blunt conical protruberance. Legs long, I and II much longer than III and IV Typical crab-like appearance.

Type-species : *Thomisus albus* (Gmelin).

Distribution : Europe, Africa, Asia, Australia and America.

Key to species of the genus THOMISUS Walckenaer

- | | | |
|----|--|-----|
| 1. | Abdomen wider than long.. | .2 |
| | Abdomen longer than wide | .15 |
| 2. | First pair of legs with conspicuous black spots. | .3 |
| | First pair of legs without black spots. | .12 |

THOMISIDAE : THOMISUS

31

- | | | | |
|-----|---|-------------------------------|----|
| 3. | Cephalothorax with black patches | | .4 |
| | Cephalothorax without black patches | | 7 |
| 4. | Abdomen with a transverse black band | <i>.sikkimensis</i> Tikader | |
| | Abdomen without transverse black band | | .5 |
| 5. | Abdomen rectangular | <i>.shivajiensis</i> Tikader | |
| | Abdomen nearly round. | | .6 |
| 6. | Base of abdomen with a triangular deep brown marking. | <i>.pooneus</i> Tikader | |
| | Antero-lateral part of abdomen with some black spots | <i>.lobosus</i> Tikader | |
| 7. | Abdomen basally with a triangular black marking | <i>.katrajghatus</i> Tikader | |
| | Abdomen without triangular black marking | | .8 |
| 8. | First legs without black spot | <i>.andamanensis</i> sp. nov. | |
| | First legs with black spot | | .9 |
| 9. | Broadest portion of abdomen tuberculated laterally and black spots on the tubercle | <i>.projectus</i> Tikader | |
| | Broadest portion of abdomen without tubercle | | 10 |
| 10. | Abdomen with paired elliptical black spots | <i>.dhakuriensis</i> Tikader | |
| | Abdomen without black spots | | 11 |
| 11. | Abdomen with three paired irregularly shaped black patches. | <i>.memae</i> Sen & Basu | |
| | Abdomen without black patches | <i>.rishus</i> Tikader | |
| 12. | Abdomen with a transverse black band | <i>.sorajaii</i> Basu | |
| | Abdomen without transverse black band | | 13 |
| 13. | Abdomen with a pair of shoulder tubercles, each with a black spot situated inwardly in the middle | <i>.pugilis</i> Stoliczka | |
| | Abdomen without shoulder tubercles | | 14 |
| 14. | Abdomen with three pairs of longitudinally arranged reddish brown spots. | <i>.bulani</i> Tikader | |
| | Abdomen without longitudinal spots. | | 16 |
| 15. | Broadest end of abdomen with a transverse black mark | <i>.shillongensis</i> Tikader | |
| | Broadest end of abdomen without transverse mark | <i>.beautifularis</i> Basu | |

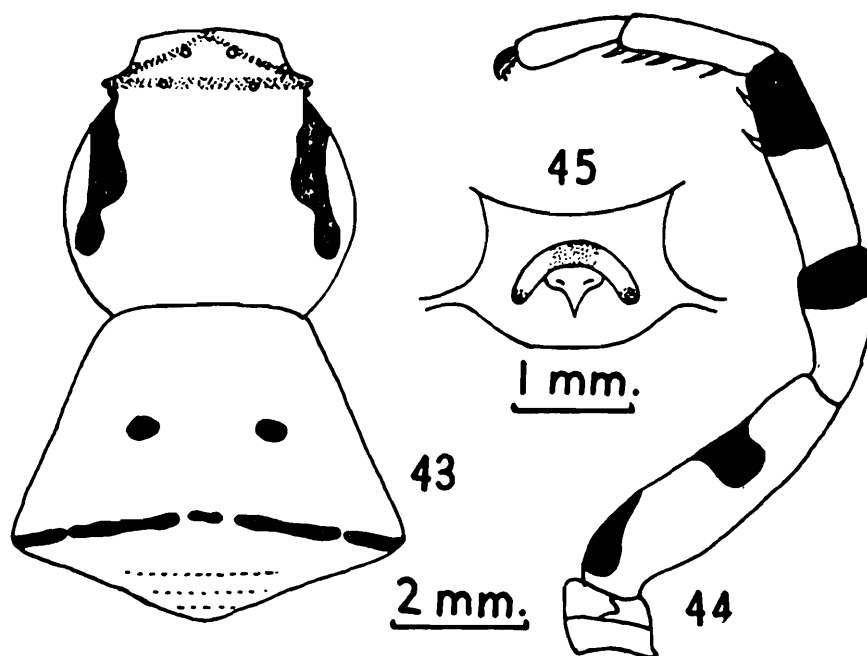
16. Cephalothorax with lateral longitudinal deep brown bands *.cherapunjeus* Tikader
 Cephalothorax without lateral longitudinal bands *.elongatus* Stoliczka

1. *Thomisus sikkimensis* Tikader

(Figs. 43—45)

1962. *Thomisus sikkimensis* Tikader, *J. Linn. Soc.*, London, 44 (300) : 569.

General: Cephalothorax and legs brownish-green, ocular area yellowish-brown, with small chalk-white patches. Abdomen chalk-white. Total length 9.20 mm. Carapace 4.60 mm. long, 4.60 mm. wide; abdomen 5.00 mm. long, 6.20 mm. wide.



FIGS. 43-45. *Thomisus sikkimensis* Tikader
 43. Dorsal view of female, legs omitted
 44. Front view of I leg.
 45. Epigyne.

Cephalothorax: Broadest posteriorly, slightly narrowing in front, as long as wide. Antero-lateral sides with conspicuous longitudinal black bars. Ocular area encircled by an yellowish-brown, triangle. Eyes black, posterior median eyes somewhat smaller than the anterior medians. Clypeus long, subrectangular. Legs long and stout I and II legs longer than III and IV legs. I and II

legs with conspicuous black spots on trochanter, basally and apically below on femur, a black transverse band apically on patella and tibia. Tibia of I apically with two pairs of ventral spines and metatarsi with five pairs of stout ventral spines; III and IV pairs of legs unspotted and without spine.

Abdomen: Pentagonal, slightly overlapping the posterior region of cephalothorax in front, broadest just behind the middle; a black transverse incomplete line on the broadest region and two spots just in front of the transverse line, subapically with a broad black patch; posterior end with conspicuous transverse muscular corrugation. Epigyne as in fig. 45.

Type-locality: Rishi, West Sikkim, INDIA. *Holotype:* ♀, in the National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2560/18

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

2. *Thomisus shivajiensis* Tikader

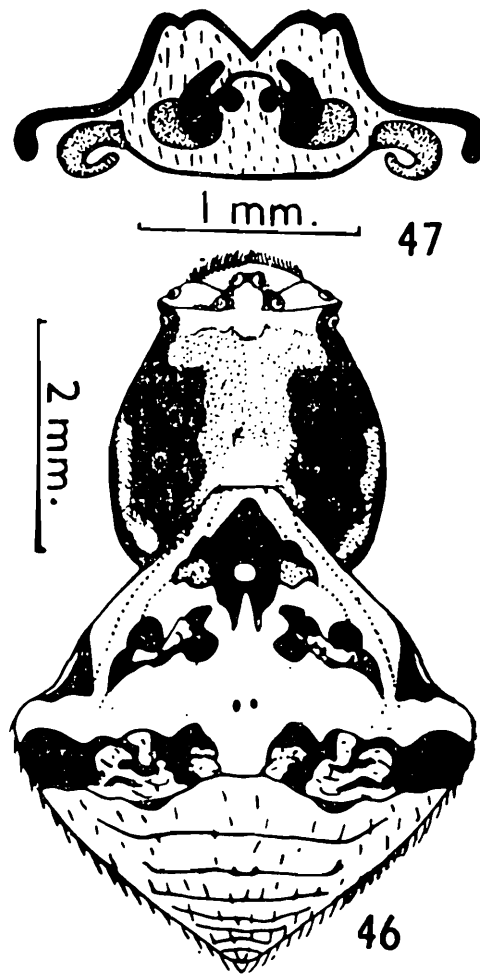
(Figs. 46—47)

1965. *Thomisus shivajiensis* Tikader, *Proc. Indian Acad. Sci.*, Bangalore, **61** : 284.

General: Cephalothorax and legs light greenish-brown, abdomen white. Total length 5.80 mm. Carapace 2.50 mm. long, 2.30 mm. wide; abdomen 3.90 mm. long, 3.90 mm. wide.

Cephalothorax: High, nearly as long as wide. Anterolateral sides with longitudinal deep brown bars. Eyes round, black; ocular area encircled by a yellowish-brown triangle. Clypeus long, margin provided with spine like hairs. Sternum heart-shaped, pale with two conspicuous longitudinal black marks. Legs long and stout, I and II legs longer than III and IV. I and II legs with conspicuous black spots on trochanter, apically with four and metatarsi with five pairs of ventral spines.

F..3



FIGS. 46-47. *Thomisus shivajiensis* Tikader
 46. Dorsal view of female, legs omitted.
 47. Epigyne.

Abdomen: Nearly rectangular, broadest near the middle, strongly overlapping the posterior region of cephalothorax in front. Dorsum basally with a more or less triangular deep brown marking and similar incomplete transverse band on the broadest area. Ventral side pale, with a conspicuous black round spot on the middle. Epigyne as in fig. 47.

Type-locality: Shivajinagar, Poona, Maharashtra, INDIA.
Holotype: ♀, in the National Zoological Collection, Zoological Survey of India, Calcutta. Regd. No. 3159/18

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

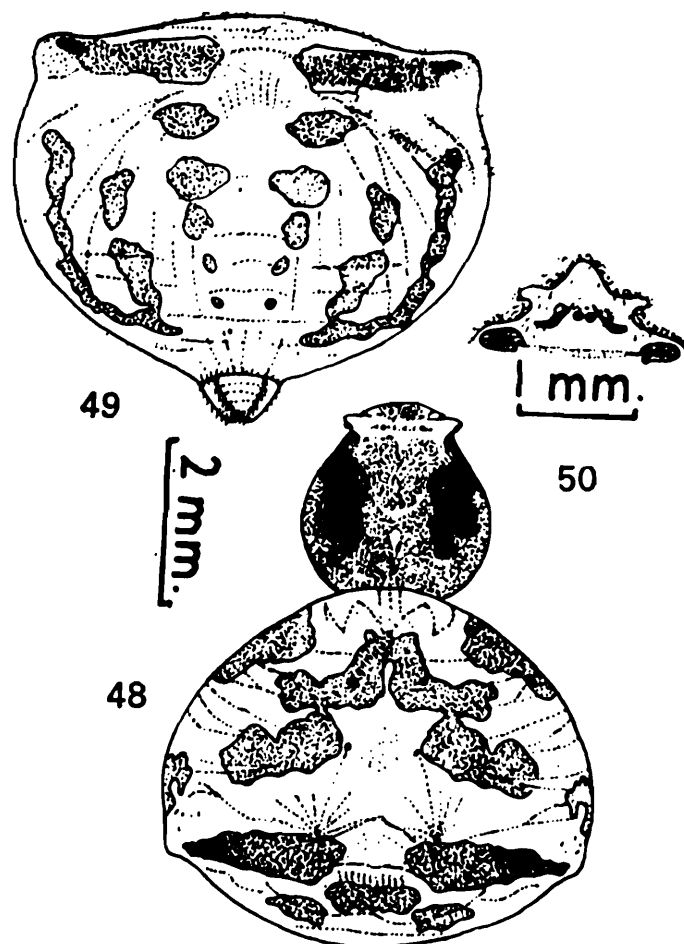
3. *Thomisus pooneus* Tikader

(Figs. 48—50)

1965. *Thomisus pooneus* Tikader, *Proc. Indian Acad. Sci*, Bangalore, 61(5) : 283.

General: Cephalothorax light brown, legs light green and abdomen white. Total length 6.90 mm. Carapace 2.50 mm. Long, 2.40 mm. wide; abdomen 4.50 mm. long, 5.20 mm. wide.

Cephalothorax: High, nearly as long as wide. Anterolateral sides with conspicuous longitudinal black bars. Eyes round, black, anterior row strongly recurved, anterior median eyes slightly larger than posterior medians; ocular area chalk-white. Clypeus



FIGS. 48-50. *Thomisus pooneus* Tikader
 48. Dorsal view of female, legs omitted.
 49. Posterior view of abdomen of female.
 50. Epigyne.

long, subrectangular, margin provided with spine-like hairs. Legs long and stout, I and II longer than III and IV legs, with black or dark brown spots apically below on femur and tibia. Tibiae of I apically with two pairs and metatarsi with six pairs of ventral spines.

Abdomen: Round, slightly overlapping the posterior region of cephalothorax in front, broadest just behind the middle, laterally on the broadest portion with muscular tubercles and from this region the posterior portion of abdomen abruptly bent down up to the spinnerets. Dorsum on the base with a triangular deep brown marking and similar incomplete transverse bands present on the spinnerets. Epigyne as in fig. 50.

Type-locality: Poona University Compound, Poona, Maharashtra, INDIA. *Holotype:* ♀, in the National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3156/18

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

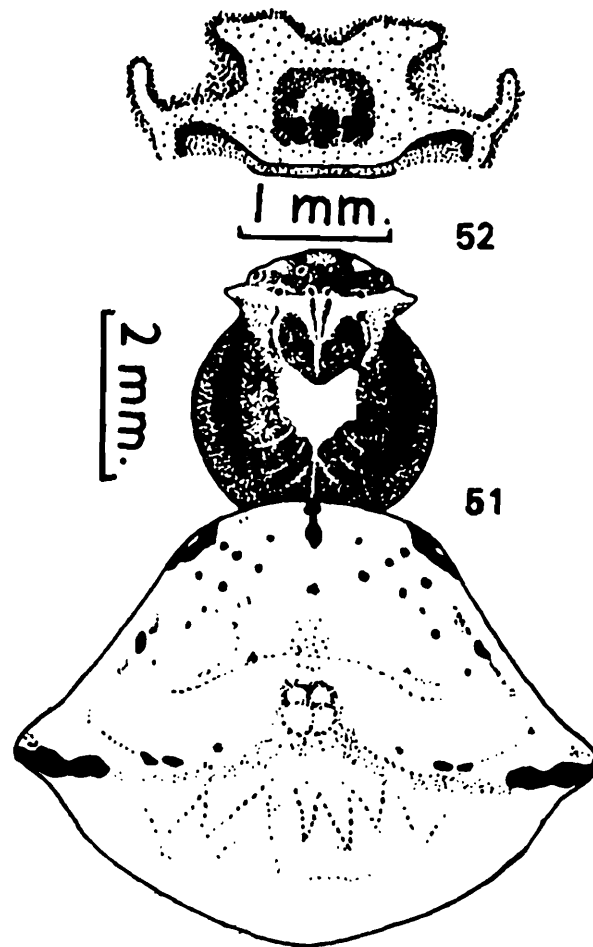
4. *Thomisus lobosus* Tikader

(Figs. 51—52)

1965 *Thomisus lobosus* Tikader, *Proc. Indian Acad. Sci.*, Bangalore, 61(5) : 285.

General: Cephalothorax brown, legs light green and abdomen chalk-white. Total length 8.50 mm. Carapace 3.50 mm. long, 3.00 mm. wide; abdomen 5.50 mm. long, 7.00 mm. wide.

Cephalothorax: High, as long as wide. Antero-lateral sides with longitudinal light brown to deep brown patches and on the centre a V-shaped white conspicuous marking. Eyes round, black, ocular area chalk-white and provided with a transverse yellow line from left lateral eyes to right laterals. Clypeus long. Sternum pale, heart-shaped with a black dot near the anterior end. Legs long and stout, I and II longer than III and IV legs. I and II legs with black or dark brown band apically on tibia. Tibiae of I and II apically with two pairs and metatarsi with four pairs of ventral spines.



FIGS. 51-52. *Thomisus lobosus* Tikader
 51. Dorsal view of female, legs omitted.
 52. Epigyne.

Abdomen: Nearly round, slightly overlapping the posterior region of cephalothorax in front, broadest just behind the middle, laterally on the broadest portion with muscular elevation and this portion provided with a transverse conspicuous black line. Anterolateral border of abdomen with some black spots. Ventral side uniform pale colour. Epigyne as in fig. 52.

Type-locality: Law College compound, Poona, Maharashtra, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3154/18

Distribution: So far this species is known only from its type locality.

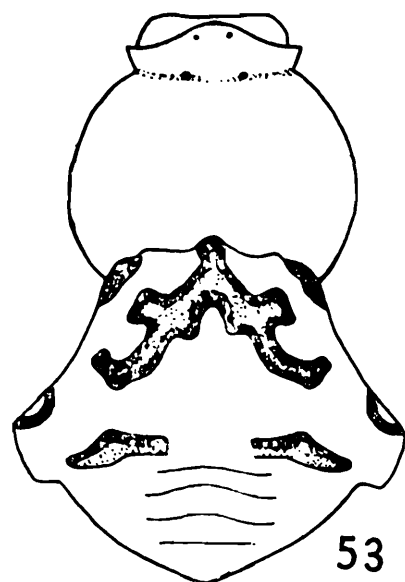
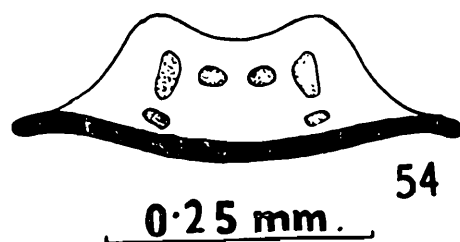
Remark: Description based on a single female specimen.

5. *Thomisus katrajghatus* Tikader
(Figs. 53—54)

1963. *Thomisus katrajghatus* Tikader, *Proc. Indian Acad. Sci.*, Bangalore, 58 (5) : 259.

General: Cephalothorax and legs greenish,, abdomen white. Total length 5.00 mm. Carapace 2.50 mm. long, 2.50 mm. wide; abdomen 3.00 mm. long, 3.40 mm. wide.

Cephalothorax: High, as long as wide. Eyes round, black, anterior row strongly recurved, anterior medians slightly larger than posterior medians; ocular area chalk-white. Clypeus moderately high and subrectangular, white as in the ocular area. Legs long and stout, I and II longer than III and IV; legs I with conspicuous black spots on the middle of femur and near the end of the tibia,



FIGS. 53-54. *Thomisus katrajghatus* Tikader
53. Dorsal view of female, legs omitted.
54. Epigyne.

and with three spines arising from black pigmented spots on each femur prolaterally; metatarsi I and II with five pairs of ventral spines. Legs III and IV without spine.

Abdomen: Roughly hexagonal, overlapping the posterior region of cephalothorax in front, broadest just behind the middle; dorsum on the base with a conspicuous, triangular, black marking and a similarly coloured, incomplete, transverse band on the broadest region; posterior end with conspicuous transverse muscular corrugation. Epigyne as in fig. 54.

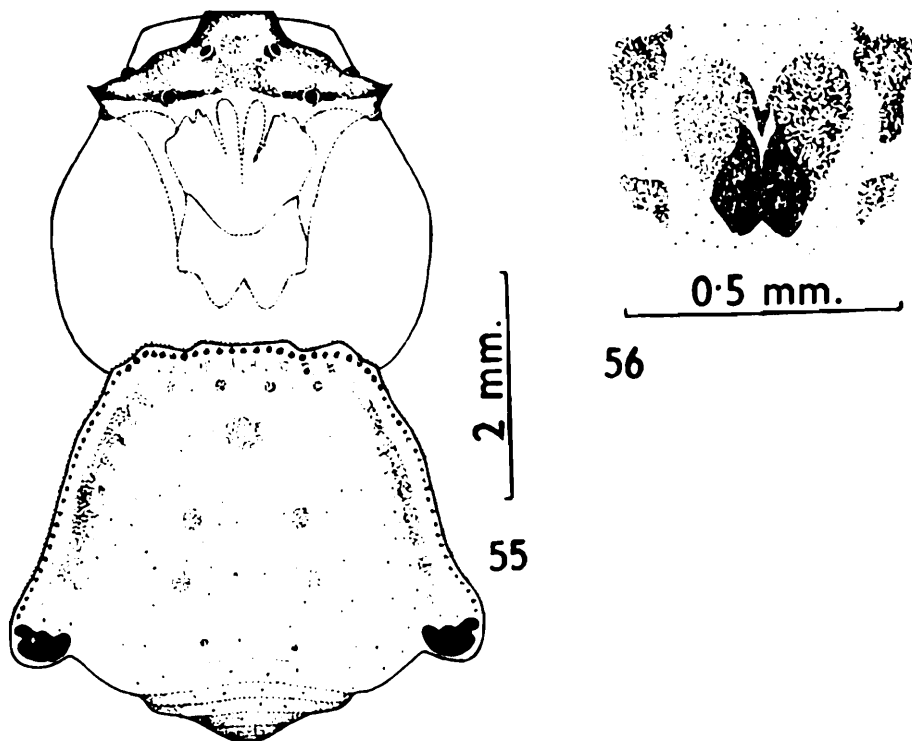
Type-locality: Katrajghat, Poona, Maharashtra, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3152/18

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

6. *Thomisus andamanensis* sp. nov.

(Figs. 55—56)



FIGS. 55-56. *Thomisus andamanensis* sp. nov.
55. Dorsal view of female, legs omitted.
56. Epigyne.

General: Cephalothorax and legs brownish green, abdomen chalk-white. Total length 6.80 mm. Carapace 3.30 mm. long, 3.50 mm. wide; abdomen 3.80 mm. long, 4.50 mm. wide.

Cephalothorax: Pentagonal in shape, with a transverse yellow band on ocular area; narrowing slightly in front, maximum width slightly less than length. Eyes black, anterior median eyes slightly smaller than the anterior lateral, both rows recurved (as seen from in front). Clypeus long, subrectangular. Legs long and stout, I and II longer than III and IV. Tibiae and metatarsi of I provided with two and four pairs of ventral spines respectively.

Abdomen: Nearly pentagonal, slightly overlapping the posterior region of cephalothorax in front, broadest at the middle, this portion tuberculating laterally and a black conspicuous spot on the top of tubercle. Ventral side uniform chalk-white. Epigyne as in fig. 56.

Holotype: ♀, in spirit. Deposited in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 4611/18.

Type-locality: Sipighat, Port Blair, South Andaman, INDIA. 4.vi.1971. Coll. B. K. Tikader.

This species resembles *Thomisus projectus* Tikader but can be distinguished from it as follows: (i) I leg without black spot but in *T. projectus*, I leg decorated with black spot. (ii) Epigyne structurally different.

7. *Thomisus projectus* Tikader

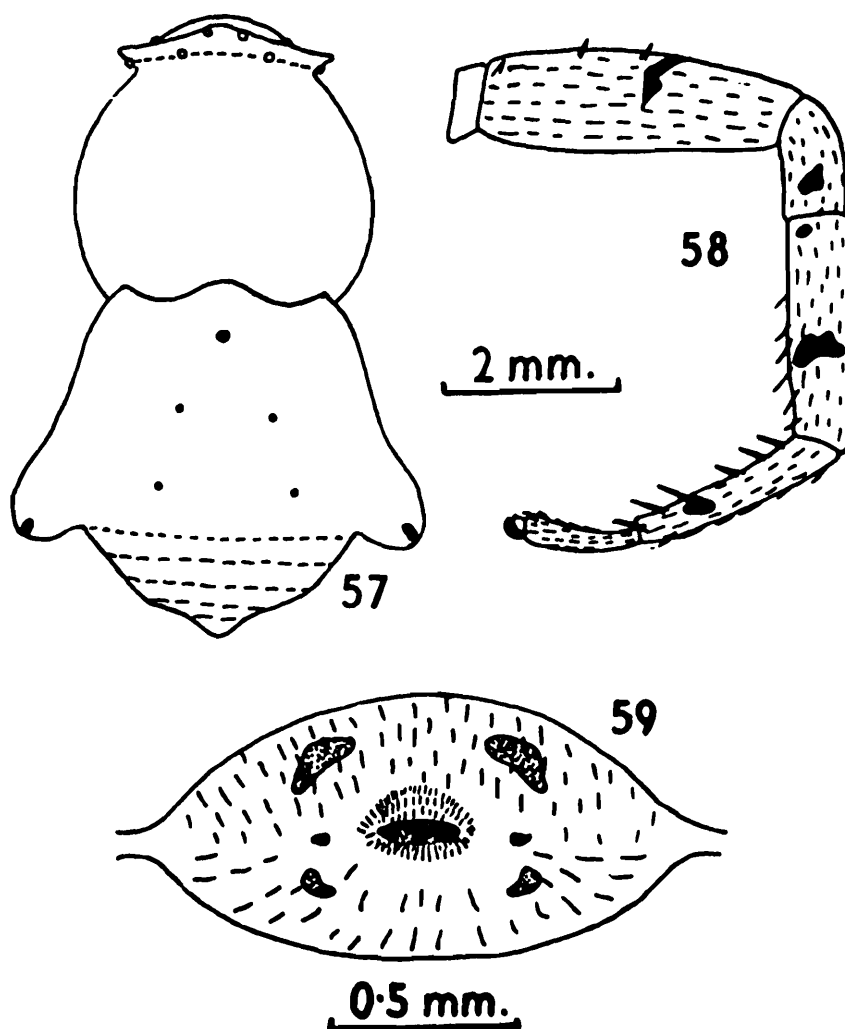
(Figs. 57—59)

1960. *Thomisus projectus* Tikader, *J. Bombay nat. Hist. Soc.*, 57 : 182.

General: Cephalothorax greenish, clypeus and abdomen chalk-white. Total length 6.80 mm. Carapace 3.80 mm. long, 3.40 mm. wide; abdomen 4.00 mm. long, 4.10 mm. wide.

Cephalothorax: Nearly pentagonal in shape, with a transverse yellow band on the ocular area; narrowing slightly in front, maximum width slightly less than length. Anterior median eyes slightly smaller than the anterior lateral eyes. Clypeus long, sub

rectangular. Legs long and stout, I and II longer than III and IV. I legs with conspicuous incomplete transverse black mark anteriorly above on femur, a narrow black spot in front on patella, a small spot on the base, a large black spot subapically on tibia in front and a faint brown patch on the tip of metatarsus; I pair of legs with three spines above on femur; II legs with a small black spot on patella and a black spot subapically on tibia in front; metatarsi I and II with six pairs of ventral spines; III and IV pairs without spot and spine.



FIGS. 57-59. *Thomisus projectus* Tikader
 57. Dorsal view of female, legs omitted.
 58. Front view of first leg.
 59. Epigyne.

Abdomen: Pentagonal, slightly overlapping the posterior region of cephalothorax in front, broadest at the middle, this portion tuberculating laterally with a black spot on the top of tubercle

an yellow spot just on inner side of black spot; posterior half of abdomen with prominent transverse muscular corrugation. Epigyne as in fig. 59.

Type-locality: Habra, near Calcutta, West Bengal, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2526/18

Distribution: So far this species is known only from its type locality.

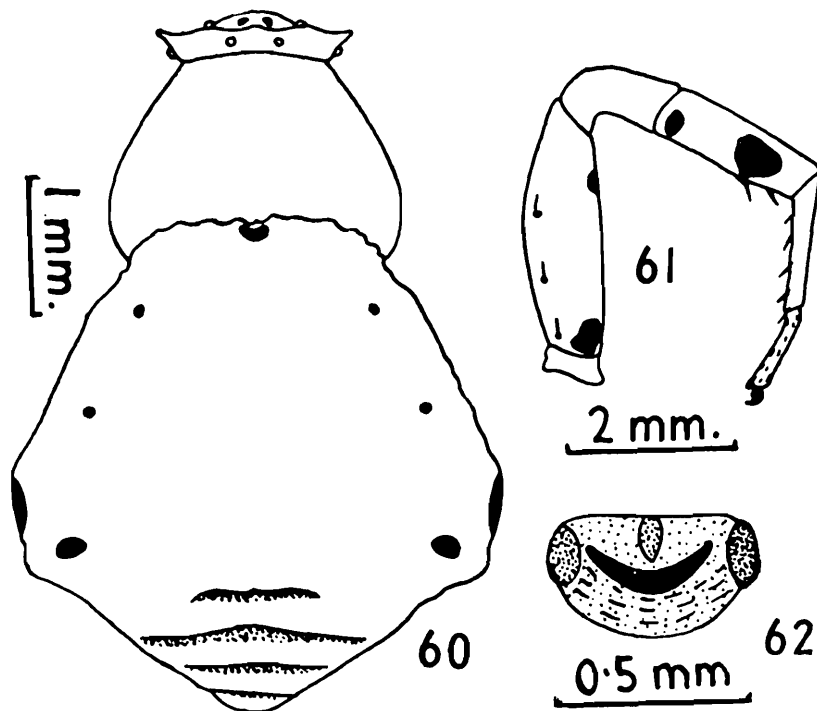
Remark: Description based on a single female specimen.

8. *Thomisus dhakuriensis* Tikader

(Figs. 60—62)

1960. *Thomisus dhakuriensis* Tikader, *J. Bombay nat. Hist. Soc.*, 57 : 180.

General: Cephalothorax brownish-green. Abdomen chalk-white. Total length 5.50 mm. Carapace 2.50 mm. long, 3.00 mm. wide; abdomen 4.00 mm. long, 3.70 mm. wide.



FIGS. 60-62. *Thomisus dhakuriensis* Tikader
60. Dorsal view of female, legs omitted.
61. Front view of I leg.
62. Epigyne.

Cephalothorax: Broadest posteriorly, slightly narrowing in front, maximum width slightly more than length. Eyes black, ocular area yellowish-brown, with small chalk-white patches; anterior median eyes somewhat smaller than the anterior laterals; clypeus long, subrectangular. Legs long and stout, I and II legs longer than III and IV legs, I legs with conspicuous black spots at the base, below on femur, a narrow black spot subapically on tibia in front; with three spines originating from black pigmented spots on each femur in front; II legs with a black spot on the base, below on femur and a narrow black spot in front on tibia, metatarsi of I and II with five pairs of ventral spines, III and IV without spot and spine.

Abdomen: Pentagonal, overlapping the posterior region of cephalothorax in front, broadest just behind the middle, with four elliptical black spots laterally, two on each side, one near the broadest region and the other near the anterior region. Three pairs of very dark brown spots subapically on dorsal surface; black spots arranged in longitudinal rows; posterior pair being largest; a single minute crescent-shaped black spot medially at anterior margin, posterior end with conspicuous transverse muscular corrugation. Epigyne as in fig. 62.

Type-locality: Dhakuria, Calcutta, West Bengal, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2525/18

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

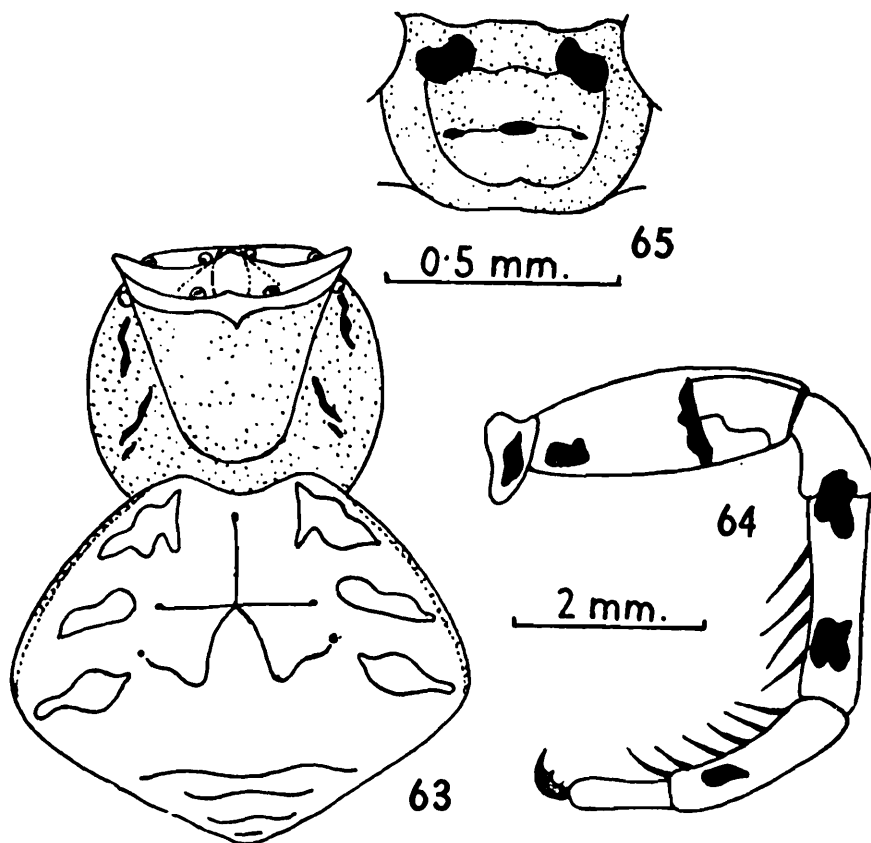
9. *Thomisus memae* Sen and Basu

(Figs. 63—65)

1963. *Thomisus memae* Sen and Basu *Sci. & Cult.*, Calcutta, 29 (19) : 515.

General: Cephalothorax yellowish-brown, abdomen chalk-white. Total length 10.12mm. Carapace 4.16 mm. long, 4.72 mm. wide; abdomen 6.00 mm. long, 7.20 mm. wide.

Cephalothorax: Slightly broader than long, and narrowing anteriorly, cephalic region high and convex; ocular quad broader



FIGS. 63-65. *Thomisus memae* Sen and Basu
 63. Dorsal view of female, legs omitted.
 64. Front view of I leg.
 65. Epigyne.

than long; posterior median eyes smaller than the anterior medians. Clypeus moderately rectangular, sloping anteriorly and devoid of spines. Sternum hairy and heart-shaped. Legs I and II sub-equal and longer than III and IV; tibiae and metatarsi I and II with four and six pairs of ventral spines respectively; III and IV without spines. Coxa I with a black patch dorsally and coxae of all legs provided with ventrally dark brown spots and small patches; trochanters I and II dorsally with black patches; femora I and II with dark brown transverse bands and III and IV with patches of the same colour lying just a little above the mid-dorsal region; femora I and II proximally with dark brown spots at the anterodorsal margin and II with two sub-equal spots of about the same colour at the proximal end; patella and tibiae of I and II dorsally with dark brown patches at the distal and the proximal ends respectively; metatarsi I and II with dark brown patches dorsally.

Abdomen: Nearly pentagonal in shape, dorsally with two dark brown spots, one on each side near the tuberculating regions; anterior portion of abdomen irregular in shape, demarcated with brown lines, running parallel to the antero-lateral sides of the abdomen, posterior end with transverse muscular corrugation. Epigyne as in fig. 65.

Type-locality: Santoshpur near Calcutta, West Bengal, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2802/18

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

10. *Thomisus rishus* Tikader

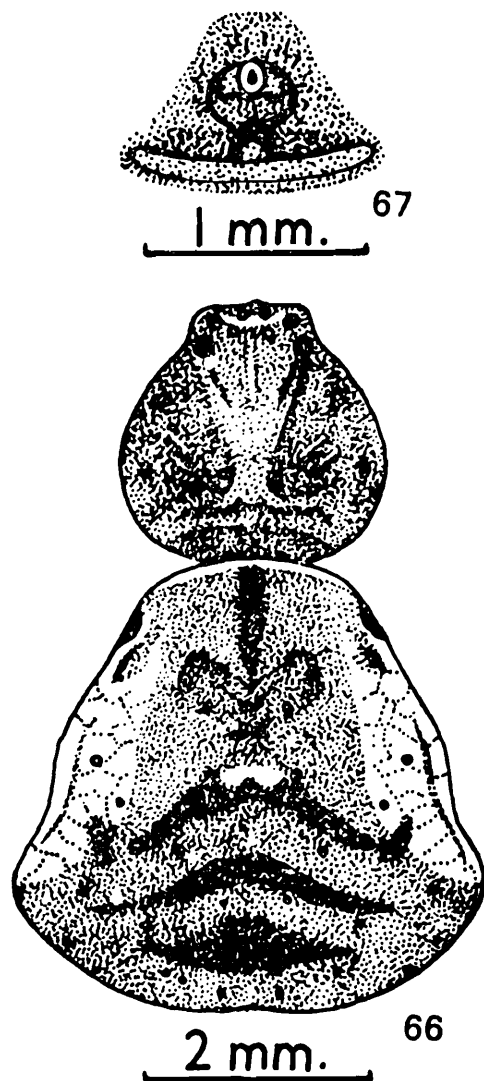
(Figs. 66—67)

1970. *Thomisus rishus* Tikader, *Rec. zool. Surv. India*, Calcutta, 64 : 48.

General: Cephalothorax and legs deep-brown and whitish patches, abdomen dirty chalk-white. Total length 6.50 mm. Carapace 2.30 mm. long, 2.20 mm. wide; abdomen 4.00 mm. long, 4.20 mm. wide.

Cephalothorax: Nearly as long as wide, convex, narrowing in front. Eyes black and tuberculate, both rows recurved but posterior row more recurved than the anterior. Lateral eyes larger than others. Ocular quad nearly as long as wide, a transverse elevated muscular bar passing through the middle of ocular area. Clypeus long, subrectangular. Legs long and stout; I and II longer than III and IV. Tibiae and metatarsi of I and II legs provided with five and seven pairs of ventral spines respectively and III and IV legs without spine.

Abdomen: Nearly pentagonal, broadest behind the middle; minute brownish dots scattered irregularly all over the dorsum; posterior end with inconspicuous transverse muscular corrugation Epigyne as in fig. 67.



FIGS. 66-67. *Thomisus rishus* Tikader

66. Dorsal view of female, legs omitted.

67. Epigyne.

Type-locality: Rishi, West Sikkim, India. *Holotype*: ♀, in the National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3158/18.

Distribution: So far this species is known only from its type locality.

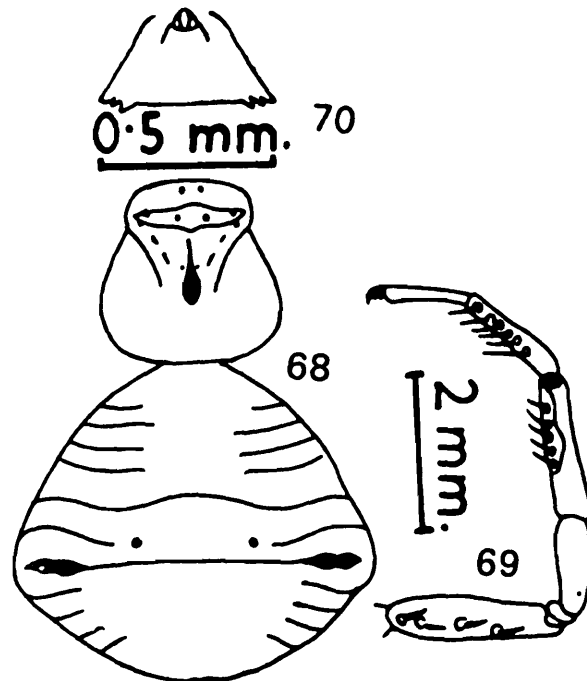
Remark: Description based on a single female specimen.

11. *Thomisus sorajaii* Basu

(Figs. 68-70)

1963. *Thomisus sorajaii* Basu, *Sci. & Cult.*, Calcutta, 29 (2) : 606.

General: Cephalothorax and abdomen yellowish-white, legs greenish. Total length 16.00 mm. Carapace 6.50 mm. long, 4.00 mm. wide; abdomen 10.00 mm. long, 8.00 mm. wide.



FIGS. 68-70. *Thomisus sorajaii* Basu
 68. Dorsal view of female, legs omitted.
 69. Front view of I leg.
 70. Epigyne.

Cephalothorax: Longer than wide, subquadrangular, somewhat narrowed anteriorly. Ocular quad white in colour. Eyes black, nearly equal in size excepting the two posterior medians which slightly larger than the others. Clypeus rectangular with definite whitish area in front and yellowish behind. Cephalic region high, with an elongated white streak; shape triangular at the base and projecting forward. Two minute white dots each on both the sides of the streak and two more smaller white streaks below the ocular area well developed. Legs I and II sub-equal; trochanter I white in colour. Femur I with five spines, and distally with a chalk-white patch. Patella I with minute yellow dot. Tibia and metatarsus of I with five pairs of ventral spines. Tibia I with a minute yellow dot at the base, white patch in front and a whitish area along the anterior margin; base of the second and third spines somewhat greyish, and that of the third spine of the metatarsus I white, III and IV legs shorter and without spines.

Abdomen: Nearly round, projecting over the cephalothorax anteriorly, maximum width at the posterior two third region and tuberculating laterally at this widest region. Two well developed black patches at the tuberculating region which are connected with each other by a black transverse band. Dorsally with irregular few transverse ridges being well developed laterally and incomplete in the middle excepting one, as in fig. 67. Epigyne as in fig. 70.

Type-locality: Dum Dum, Calcutta, West Bengal, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta.

Distribution: So far this species is known only from its type locality.

Remarks: Description based on a single female specimen.

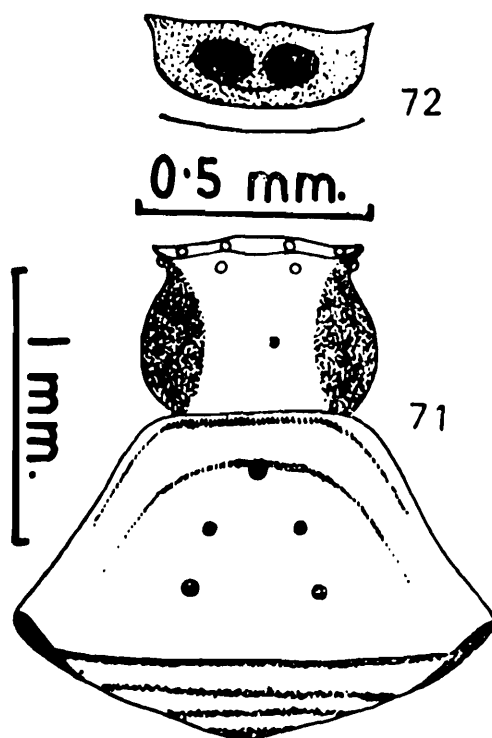
12. *Thomisus pugilis* Stoliczka

(Figs. 71—72)

1869. *Thomisus (Xysticus) (Sic) pugilis* Stoliczka, *J. Asiat. Soc., Bengal*, 38 : 225.
1929. *Thomisus pugilis* : Sherriffs, *Ann. Mag. nat. Hist.* 4 (10) : 243.
1935. *Thomisus pugilis* : Dyal, *Bull. Dep. Zool. Punjab univ.* 1 : 201.
1971. *Thomisus pugilis* : Tikader, *Mem. Zool. Surv. India*, 15 (3) : 21.

Cephalothorax: Broader than long, produced forward into two lateral conical processes, pale brown in colour, and light in the middle. Anterior-lateral eyes larger and situated on the anterolateral edge on the cones; posterolateral midway on the posterior face of the cones; ocular quad slightly wider than long and narrower anteriorly. Clypeus very high and a pair of white streaks extending up to the top of the cephalic prominence. Sternum broadly oval. Anterior metatarsi provided with five pairs of ventral spines; posterior legs without spine.

Abdomen: Subquadrate, and a pair of conical shoulder tubercles each with a black spot situated inwardly in the middle. Colour of the abdomen white or yellowish-white with transverse gooves in the posterior half of abdomen. Average length about 6 mm. Epigyne as in fig. 72.



FIGS. 71-72. *Thomisus pugilis* Stoliczka
 71. Dorsal view of female, legs omitted.
 72. Epigyne.

Male is very small; its abdomen coloured with dark reddish brown, interspersed sparsely with white.

Female is commonly found on light coloured rose which it resembles so closely that it is neither detected by enemies nor evaded by flower-visiting insects on which it preys. During mating season the male pursues the female who flees rather than attacking it. The male, as it gets near the female, jumps on her back and settles on the posterior half of her abdomen. At first the female tries to shake off the male, but as her attempt is usually unsuccessful, she submits and the male is seen riding her till copulation takes place in the course of three or four days. The male has also been sometimes seen riding on the back of a young female till she casts her last molt and is ready for copulation.

Type-locality: Calcutta, West Bengal, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3551/18.

Distribution. West Bengal, Madras and Punjab, INDIA. Lahore, PAKISTAN.

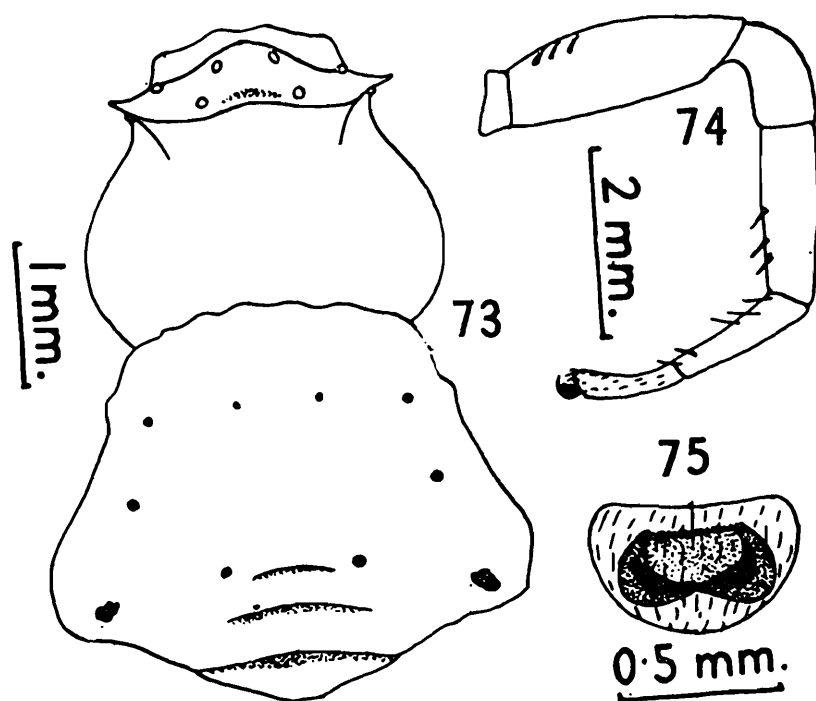
Remark: Description based on a single female specimen.

13. *Thomisus bulani* Tikader

(Figs.73-75)

1969. *Thomisus bulani* Tikader, *J. Bombay nat. Hist. Soc.*, 57 (1) : 178.

General: Cephalothorax greenish, ocular area whitish, triangular with a transverse yellow patch between the posterior median eyes. Abdomen chalk-white. Total length 5.00 mm. Carapace 2.50 mm. long, 2.30 mm. wide; abdomen 3.40 mm. long, 3.60 mm. wide.



FIGS. 73-75. *Thomisus bulani* Tikader

73. Dorsal view of female, legs omitted.

74. Front view of I leg.

75. Epigyne.

Cephalothorax: High, as long as wide. Anterior median and anterior lateral eyes more or less equal. Clypeus moderate, sub-rectangular. Legs long and stout, I and II legs longer than III and IV, metatarsi of I and II with five pairs of ventral spines,

posterior legs without spines; I pair of legs with three spines in each femur in front but not arising from black pigmented spots. Sternum heart-shaped, pointed behind.

Abdomen: Pentagonal, overlapping the posterior region of cephalothorax in front, broadest just behind the middle, with three pairs of reddish-brown spots on dorsal surface near the lateral border; the spots arranged in longitudinal rows, the posterior pairs of spots the largest; four very minute reddish-brown spots present on the middle and some times only two spots; posterior end with conspicuous transverse muscular corrugation. Epigyne as in fig. 75.

Type-locality: Dhakuria, Calcutta, West Bengal. INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2524/18.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

14. *Thomisus shillongensis* Sen

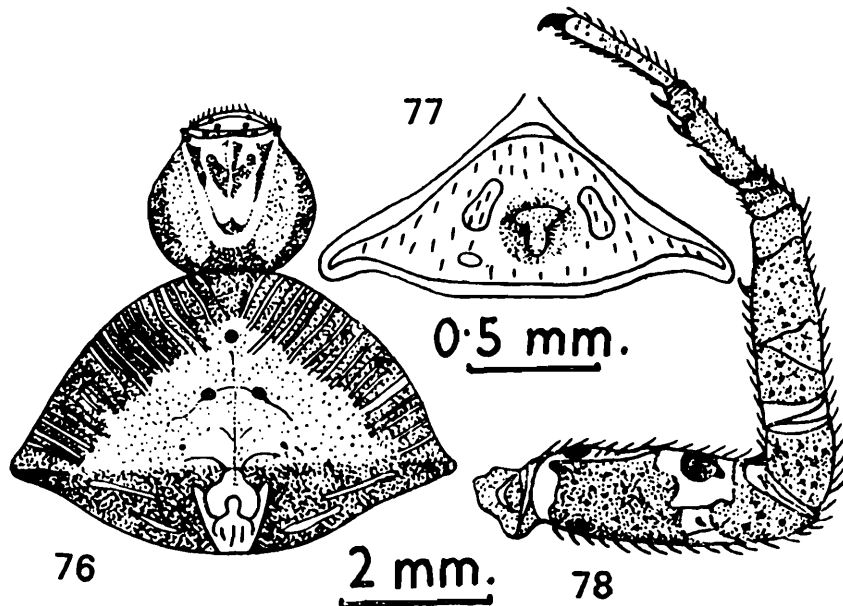
(Figs. 76-78)

1963. *Thomisus shillongensis* Sen, *Sci. & Cult.*, Calcutta, 29(12) : 610.

General: Cephalothorax and legs light brown, abdomen dirty white. Total length 8.00 mm. Carapace 3.80 mm. long, 3.80 mm. wide; abdomen 5.00 mm. long, 6.30 mm. wide.

Cephalothorax: As long as broad, narrow in front. Anterior median eyes a little smaller than the anterior laterals, posterior eyes almost equal in size. Clypeus moderate, sub-rectangular. Cephalic region with V-shaped white marking on the centre and the limbs of 'V' directed forward. Legs stout and I and II longer than III and IV, the II being the longest. Tibiae of I with three pairs of ventral spines. III and IV legs without spines. Distal end of femur of leg I with conspicuous dark brown spot surrounded by white patch on the ventral aspect.

Abdomen: Wider than long, dorsally with each cone having a transverse black mark on top; faint white lines arising on the



FIGS. 76-78. *Thomisus shillongensis* Sen
 76. Dorsal view of female, legs omitted.
 77. Epigyne.
 78. Front view of I leg.

anterior and lateral margin and running inwards for a little distance and the posterior portion with dark brown markings. Epigyne as in fig. 77.

Type-locality: Kench's Tarace, Shillong, Meghalaya, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2803/18.

Distribution: So far this species is known only from its type locality.

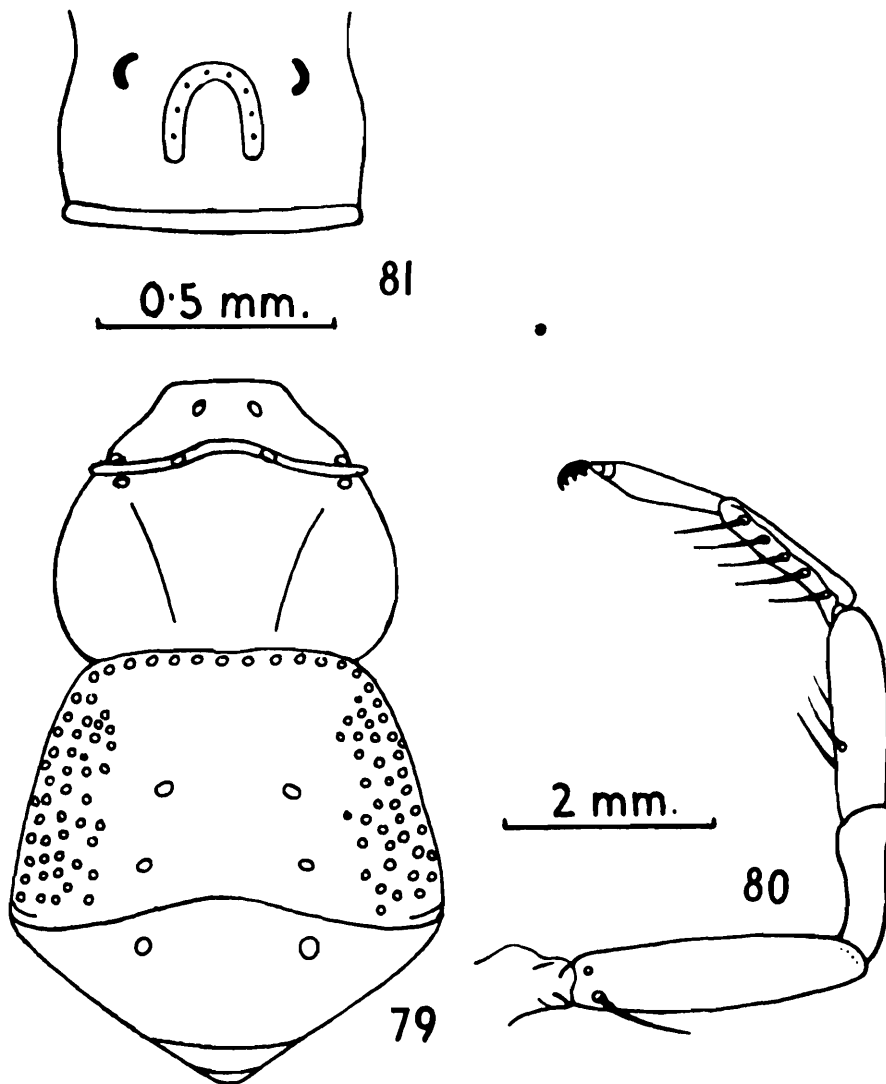
Remark: Description based on a single female specimen.

15. *Thomisus beautifularis* Basu

(Figs. 79-81)

1963. *Thomisus beautifularis* Basu, *J. Asiat. Soc. Bengal*, 5(1-2) : 23.

General: Cephalothorax faintly yellowish, abdomen chalk-white. Total length 9.20 mm. Carapace 3.50 mm. long, 4.30 mm. wide; abdomen 5.00 mm. long, 5.00 mm. wide.



FIGS. 79-81. *Thomisus beautifularis* Basu

79. Dorsal view of female, legs omitted.

80. Front view of I leg.

81. Epigyne.

Cephalothorax: High, oval, wider than long. The area just below the ocular region slightly curved. Ocular area light brown in front and whitish behind. Eyes black, posterior median eyes slightly larger than the others. Clypeus moderate more or less trapezoidal and granulated. Legs long and stout, I and II longer than III and IV. Metatarsus I with five pairs of spines and with a faint brown area occurring in between the spines two to four and with a minute yellow spot on the tibia and metatarsal joint. Tibia I with three spines, arising from a greyish area; a yellow spot

at the base of the metatarsus I and a yellow spot in the frontal region adjacent with metatarsal joint. Patella I with a yellow spot in front. Femur I with a spine and a yellow spot just below the tibial joint. Metatarsus II with five pairs of spines. Tibia II with a minute yellow spot at the base and a single spine in the middle. Legs III and IV without spine and spot. Sternum oval, yellow in colour.

Abdomen: Pentagonal, projecting over the base of the cephalothorax in front, broadest just below the middle, faintly tuberculated laterally and with deep brown transverse area at the broadest region. This region with a brown transverse band faintly developed at the middle and well prominent laterally. Posterior part of abdomen with prominent muscular corrugations. Epigyne as in fig. 81.

Type-locality: Tulshimanjuri, private road, Dum Dum, Calcutta, West Bengal, INDIA. *Holotype:* ♀, in National Zoological collections, Zoological Survey of India, Calcutta.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

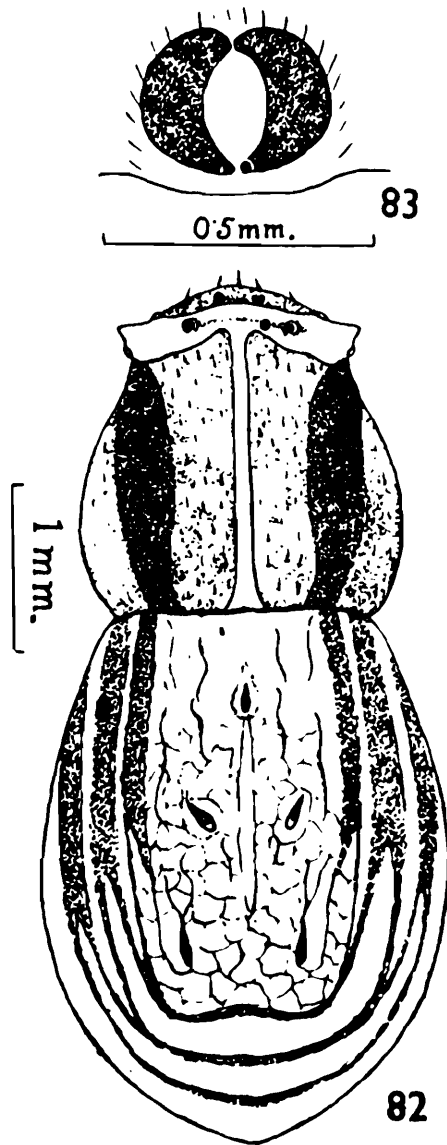
16. *Thomisus cherapunjeus* Tikader

(Figs. 82-83)

1966. *Thomisus cherapunjeus* Tikader, *Proc. Indian Acad. Sci.*, Bangalore, 64(1) : 54.

General: Cephalothorax and legs deep to light green, abdomen brown and mixed with dirty white. Total length 5.20 mm. Carapace 2.20 mm. long, 2.00 mm. wide; abdomen 3.40 mm. long, 2.50 mm. wide.

Cephalothorax: Slightly longer than wide, clothed with fine hairs, cephalic region slightly high and narrow, lateral two sides provided with conspicuous longitudinal broad deep brown patch extending from base of lateral eyes to base of thorax. Ocular tubercle high and laterally pointed and transversely joined with an elevated ridge and chalk white in colour; mid-dorsally provided



FIGS. 82-83. *Thomisus cherapunjeus* Tikaker

82. Dorsal view of female, legs omitted.

83. Epigyne.

with a narrow longitudinal chalk-white line extending from ocular area to base of thorax. Eyes black, both rows recurved but posterior row less recurved and longer than anterior row; both lateral eyes situated on the base of opposite side of lateral conical tubercle, anterior lateral eyes larger than others. Ocular quad longer than wide and narrow in front. Clypeus moderate, margin of clypeus provided with seven small spines directed forward except the middle one which is directed upward. Sternum heart-shaped, pointed behind, clothed with hairs. Legs I and II pairs very long

and stout; tibiae of I with five and metatarsi with eight pairs of robust ventral spines.

Abdomen: Longer than wide, nearly elliptical in shape, maximum width behind the middle. Dorsal side provided with five sigilla marked with deep brown or black. Lateral sides of abdomen provided with three or four longitudinal deep brown thin lines and all lines joined respectively on the posterior side of abdomen. Ventral side uniform pale green colour and two sides provided with longitudinal parallel muscular elevations. Epigyne as in fig. 83.

Type-locality: Kench's Trace, Shillong, Meghalaya, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3792/18.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

17. *Thomisus elongatus* Stoliczka

(Figs. 84-85)

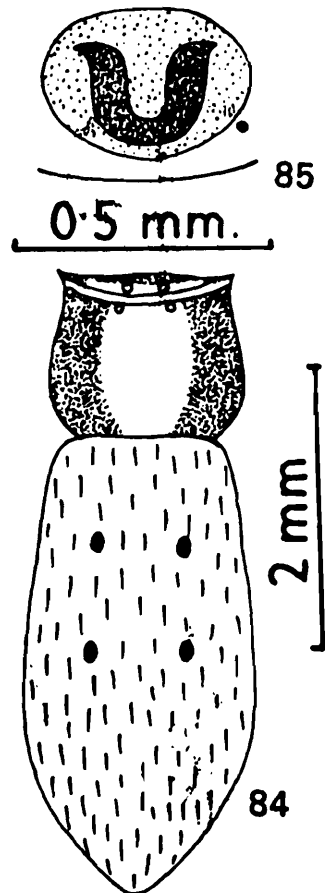
1869. *Thomisus (Xysticus) (Sic) elongatus* Stoliczka, *J. Asiat. Soc. Bengal*, **38**: 227.

1971. *Thomisus elongatus* : Tikader, *Mem. zool. Surv. India*, **15**(3) : 25.

General: Cephalothorax and abdomen greyish-white. Total length 8.50 mm. Carapace 2.50 mm. long, 2.10 mm. wide; abdomen 6.00 mm. long, 2.30 mm. wide.

Cephalothorax: Quadrangular, convex, the ocular portion in front truncate, a little narrow with projecting corners, the posterior lateral margins of the thorax being slightly curved; a broad white band runs posteriorly from the antero-lateral corners, it occupies the whole length of the thorax, and slightly black on each side of its base. The margins of cephalothorax provided with a very thin brown stripe. First pair of the middle, and the corresponding pair of the lateral eyes, placed on the perpendicular front side of the thorax; the former on a slight protruberance close together, the latter a little larger, near the edges below the projecting corners; on the other side, still nearer to the outer

point, the posterior laterals situated, directed backward; the posterior central eyes above, but not quite on the front ridge, they nearly twice as far apart from each other than the anterior middles; in size they hardly differ. Legs I and II longer and stouter than III and IV



FIGS. 84-85. *Thomisus elongatus* Stoliczka
 84. Dorsal view of female, legs omitted.
 85. Epigyne.

Abdomen: Sub-cylindrical, slightly narrow and truncate in front, where it partially covers the base of the thorax; in the middle somewhat flattened; pointed and slightly elevated at the posterior end. The upper side marked with numerous raised lines, which become closer towards the posterior part of the abdomen. Ventral side a number of similar raised lines, separated from former by a broad whitish band, they begin at the side of the trachean opercula and coverage towards the spinnerets. The genital opening very small, furnished on each side with a minute tubercle. Epigyne as in fig. 85.

Type-locality: Calcutta, West Bengal, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

Genus 2. *Runcinia* Simon

1875. *Runcinia* Simon, *Ar.Fr.*, 2 : 254.
 1895. *Runcinia* : Simon, *Hist. Nat. Araign.*, 1 (4) : 1024.
 1934. *Runcinia* : Reimoser, *Revue suisse Zool.*, 41 (32) : 465.
 1964. *Runcinia* : Chrysanthus, *Nova Guinea zool.*, 10 (28) : 99.
 1965. *Runcinia* : Tikader, *Proc. Indian Acad. Sci.*, 61 (5) : 277.

Characters: Cephalothorax slightly wider than long; cephalic region with prominent ocular tubercles, clothed with hairs and spines. Legs long and stout, I and II remarkably longer than others. Abdomen long, spined, narrower behind. Lateral sides with conspicuous longitudinal muscular corrugation.

Type-species : *Runcinia lateralis* (Koch).

Distribution : EUROPE, AFRICA, ASIA and AUSTRALIA.

Key to species of the genus RUNCINIA Simon

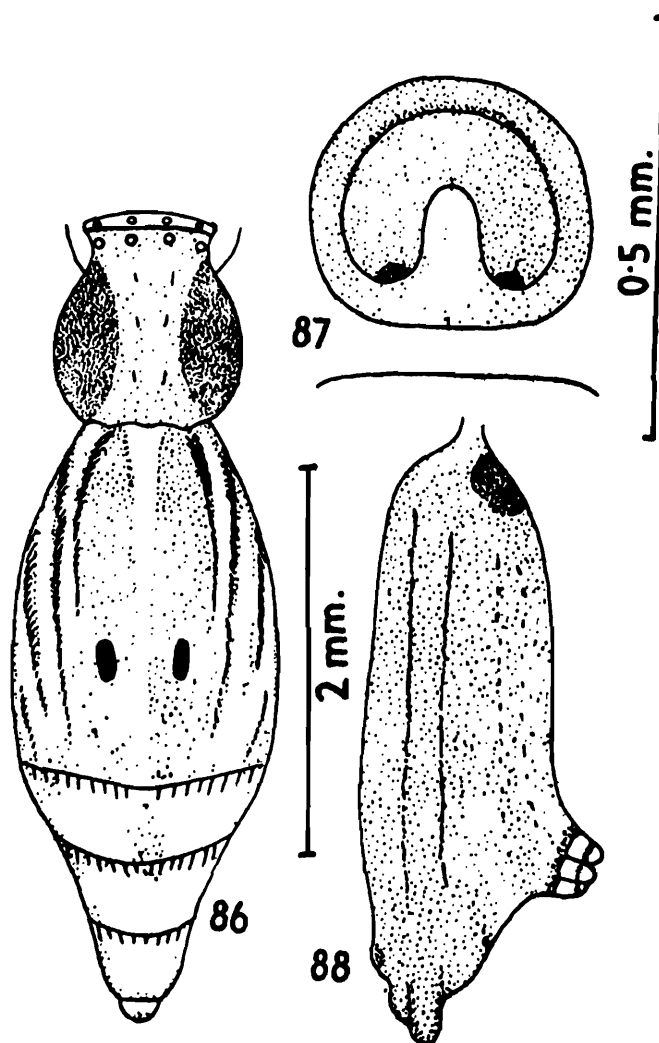
- | | |
|---|------------------------------|
| 1. Tibiae of I pair of legs with 4 or 5 pairs of ventral spines | .2 |
| Tibiae of I pair of legs more than 5 pairs of ventral spines | .3 |
| 2. Tibiae and metatarsi of I and II with 5 and 6 pairs of ventral spines respectively | . <i>escheri</i> Reimoser |
| Tibiae and metatarsi of I and II with 4 and 8 pairs of ventral spines respectively | . <i>chauhani</i> Sen & Basu |
| 3. Metatarsi of I and II legs with 7 pairs of ventral spines | . <i>roorwali</i> Tikader |
| Metatarsi of I and II legs with 12 pairs of ventral spines | . <i>ghorpadei</i> sp. nov. |

18. *Runcinia escheri* Reimoser

(Figs. 86-88)

1934. *Runcinia escheri* Reimoser, *Revue suisse Zool.*, **41** (32) : 487.1964. *Runcinia escheri* : Chrysanthus, *Nova Guinea Zool.*, **10** (28) : 100.1971. *Runcinia escheri* : Tikader, *Mem. zool. Surv. India*, **15** (3) : 26.

General: Cephalothorax, abdomen and legs pale-yellow. Total length 7.90 mm. Carapace 2.40 mm. long, 2.40 mm. wide; abdomen 5.50 mm. long, 2.20 mm. wide.

FIGS. 86-88. *Runcinia escheri* Reimoser

86. Dorsal view of female, legs omitted.

87. Epigyne.

88. Lateral view of abdomen of female.

Cephalothorax: Nearly as long as wide, clothed with short hairs and few spines. Lateral sides provided with deep brown longitudinal patch. Clypeus with long hairs and mandibles brown in the basal half and pale-yellow in the anterior half. Sternum heart-shaped, pale yellow, spotted with black and clothed with hairs. Legs long, clothed with hairs and spines. Tibiae and metatarsi of I and II provided with five and six pairs of ventral spines respectively.

Abdomen: Long, narrow posteriorly, clothed with hairs. Dorsally at each side provided with five parallel longitudinal muscular ridges or folds and each ridge provided with a row of short hairs. Mid-dorsally with a pair of brown spots. Ventral side uniform pale colour. Epigyne circular as in fig. 87.

Type-locality: Masnigudi, Andhra Pradesh, INDIA.

Holotype: ♀, in Museum d' Histoire Naturelle, Geneva, Switzerland.

Distribution: Andhra Pradesh, INDIA.

I am giving here the remarks of Dr. Chrysanthus (1964) in his paper on spiders from South New Guinea "I have been able to compare the holotype of *R. escheri* Reimoser 1934. The species of *R. acuminata* (Thorell), *R. elongata* (Koch) and *R. escheri* Reimoser are very much alike as to their general aspect; the only differences are: (1) the number of spines at the underside of legs I and II are somewhat larger in *elongata* than in *escheri*, (2) the shape of the epigyne, (3) *elongata* is a little larger than *escheri*. It seems to me that *escheri* may prove to be but a subspecies of *acuminata*"

19. *Runcinia chauhani* Sen and Basu

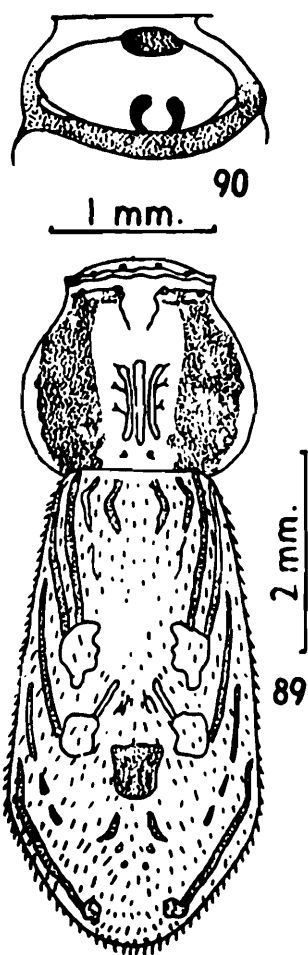
(Figs. 89-90)

1972. *Runcinia chauhani* Sen and Basu, *J. zool. Soc. India*, 24 : 103-104.

General: Cephalothorax yellowish-brown, abdomen light brown and legs pale in colour. Total length 7.57 mm. Carapace 2.4 mm. long, 2.27 mm. wide; abdomen 5.27 mm. long, 2.13 mm. wide.

Cephalothorax: Slightly longer than broad; narrowing anteriorly, with rounded lateral edges; truncated in front; clothed with

spines and spiny hairs. Anterior median eyes slightly larger than posterior medians but much smaller than the anterior laterals. The posterior median eyes similarly very much smaller than posterior laterals. Eyes of both the rows recurved. Clypeus brown and sub-rectangular, narrowing anteriorly and with stout spines pointing forward. Legs I and II much longer and more spiny than III and IV, first being the longest. Femora of Legs I and II with 4 and 2 dorsal spines respectively. Tibiae and metatarsi of legs I and II with 4 pairs and 8 pairs of ventral spines respectively. Carapace with broad dark brown patch running laterally on both sides from postero-lateral eyes to hinder most end, covering the whole of dorso-lateral area except a narrow strip on posterolateral edges, mid-dorsally with a pair of brown bands and white areas and with a yellowish transverse band running in between two rows of eyes.



FIGS. 89-90. *Runcinia chaunhani* Sen & Basu
 89. Dorsal view of female, legs omitted.
 90. Epigyne.

Abdomen: Long, cylindrical, broadest at a point one-third the length from posterior end, sloping down antero-ventrally from caudal end with spinnerets at the foot of the slope; the anterior region of abdomen that overlaps the cephalothorax is truncated and covered with large number of spiny hairs and spines. Dorsally light brown with white patches half-way dorsally, forming four corners of an imaginary square; a big dark brown spot just behind the square; very broad and beaded lines running anteroposteriorly from two antero-lateral sides; getting broken posteriorly after turning inwards. Epigyne as in fig. 90.

Type-locality: Upper Shillong, Meghalaya, INDIA.

Holotype: ♀, in the National Zoological Collections, Zoological Survey of India, Calcutta.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

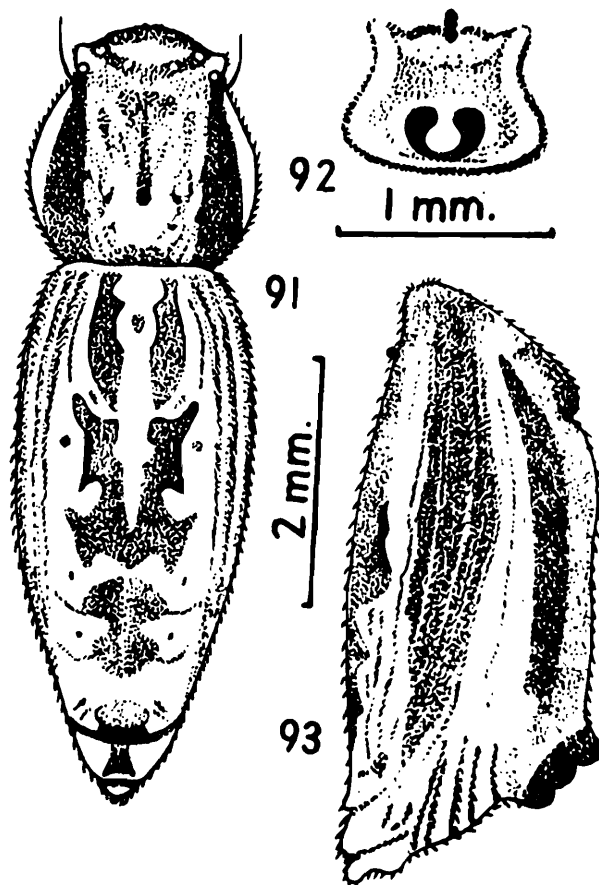
20. *Runcinia roonwali* Tikader

(Figs. 91-93)

1965. *Runcinia roonwali* Tikader, *Proc. Indian Acad. sci.*, Bangalore, **61**(5): 278.

General: Cephalothorax and abdomen light brown, legs light green. Total length 5.30 mm. Carapace 1.80 mm. long, 1.50 mm. wide; abdomen 5.30 mm. long, 1.70 mm. wide.

Cephalothorax: Slightly longer than wide, spined, sides with broad longitudinal dark-brown patches but lateral margins, with conspicuous whitish band. Carapace truncated in front and ocular area moderately protruberant and divergent laterally. Eyes black, anterior row more strongly recurved than the posterior row; ocular quad longer than wide, narrowing in front. Clypeus with a row of spines directed forward, but middle spine directed upward, two conspicuous strong spines originate just behind the posterior lateral eyes. Legs long and stout, I and II remarkably longer than others. Metatarsi of I and II legs with seven pairs of ventral spines, posterior legs without spine.



FIGS. 91-93. *Runcinia roonwali* Tikader

91. Dorsal view of female, legs omitted.
 92. Epigyne.
 93. Lateral view of abdomen of female.

Abdomen: Long, cylindrical, spined, narrow behind, very slightly overlapping the posterior region of cephalothorax, dorsum with a long median broad-pigmented discontinuous line from the base to the end of abdomen. Lateral sides with conspicuous longitudinal muscular corrugations and elevated muscular ridges each provided with a row of spines. Ventral side uniform pale colour. Epigyne as in fig. 92.

Type-locality: Chaturshingi, Poona, Maharashtra, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3147/18.

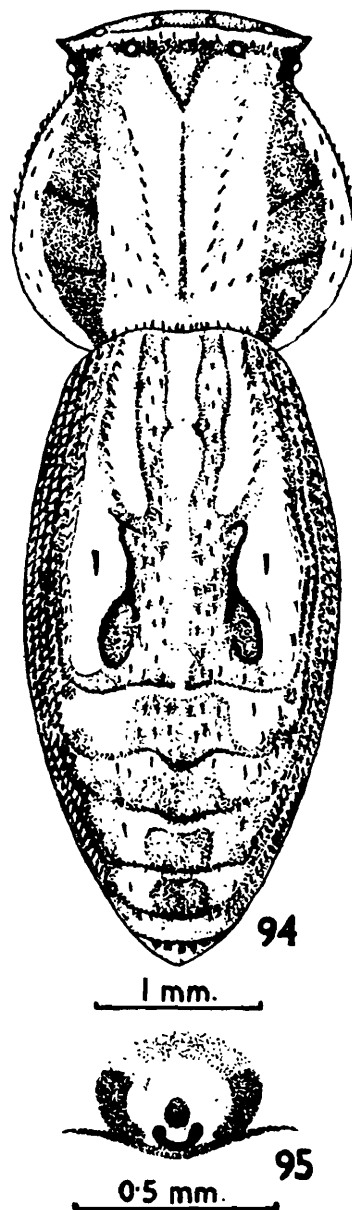
Distribution: Poona, Maharashtra, Shillong, Meghalaya, INDIA.

Remark: Description based on a single female specimen.

21. *Runcinia ghorpadei* sp. nov.

(Figs. 94-95)

General: Cephalothorax, abdomen and legs light brown. Total length 6.00 mm. Carapace 2.50 mm. long, 2.00 mm. wide; abdomen 4.00 mm. long, 2.00 mm. wide.



FIGS. 94-95. *Runcinia ghorpadei* sp. nov.

94. Dorsal view of female, legs omitted.

95. Epigyne.

Cephalothorax: Slightly longer than wide, clothed with short spines, the lateral sides with broad longitudinal dark brown patch,

middle and lateral margins provided with conspicuous chalk-white bands. Carapace truncated in front and ocular area moderately protruberant and divergent laterally. Eyes black, anterior row slightly recurved than the posterior row. Ocular quad longer than wide narrowing in front. Clypeus curved in front and a row of spines situated on the border of clypeus. Legs long and stout, I and II remarkably longer than others. Ventral side of femora of I and II provided with deep brown dots. Metatarsi of I and II legs with twelve pairs of ventral spines. Posterior legs without spines.

Abdomen: Long, cylindrical, spined, slightly narrow behind, overlapping the posterior region of cephalothorax, lateral sides with discontinuous longitudinal brown pigmented line. Dorsum with a two conspicuous depressions with deep brown colour. Posterior end of abdomen dorsally with three inconspicuous brown spots with elevated muscular transverse ridge. Ventral side uniform pale coloured. Epigyne as in fig. 95.

Holotype: ♀, *paratypes* 3 immature ♀ ♀, *allotype* 1 immature ♂, in spirit. Deposited in Zoological Survey of India, Calcutta. Regd. No. 4585/18.

Type-locality: Doddagubbi, near Bangalore, Karnataka, INDIA. 1.xii.1972, Coll. K. D. Ghorpade.

This species is very closely related to *Runcinia roonwali* Tikader but separated as follows: (i) Metatarsi of I and II legs with twelve pairs of ventral spines but in *R. roonwali* Tikader metatarsi of I and II legs with seven pairs of ventral spines. (ii) Epigyne also structurally different.

Genus 3. *Pistius* Simon

1875. *Pistius* Simon, *Ar. Fr.*, 2 : 257

1951. *Pistius* : Locket and Millidge, *British Spiders*, London, 1 : 175.

1962. *Pistius* : Tikader, *J. Linn. Soc.*, London, 44 (300) : 571.

1965. *Pistius* : Basu, *Proc. Zool. Soc.*, Calcutta, 18 : 71.

Characters: Cephalothorax armed with short fine spines, narrow anteriorly. Eyes small, medians forming practically a square, lateral eyes on shallow tubercle, anterior eyes subequal. F..5

Abdomen much widened and truncated behind, particularly in the female.

Type-species : *Pisttus truncatus* (Pallas).

Distribution : EUROPE, CENTRAL ASIA, INDIA, JAPAN.

Key to species of the genus PISTIUS Simon

- | | | |
|----|--|-------------------------------|
| 1 | A coloured continuous band surrounding the abdomen frontally and laterally | .2 |
| | No coloured continuous band surrounding the abdomen frontally and laterally | .3 |
| 2 | Cephalothorax with minute spines, clypeus with marginal hairs projecting forward; tibia I with two pairs of ventral spines | <i>.bhadurii</i> Basu |
| | Cephalothorax without any spine; clypeus without marginal hair; tibia I with four pairs of ventral spines | <i>.gangulyi</i> Basu |
| 3. | Abdomen without thomisid punctures | .. .4 |
| | Abdomen with five thomisid punctures. | .5 |
| 4 | Tibia I with seven pairs of ventral spines, abdomen with greyish spots | <i>.robusta</i> Basu |
| | Tibia I with three pairs of ventral spines; no greyish spots on abdomen | <i>.sreepanchamii</i> Tikader |
| 5 | Metatarsus I with six pairs of ventral spines | .6 |
| | Metatarsus I with seven pairs of ventral spines | 7 |
| 6 | Clypeus with no marginal hairs | <i>.kanikae</i> Basu |
| | Clypeus with small marginal hairs | <i>.kalimpus</i> Tikader |
| 7 | Tibia II with four pairs of ventral spines | <i>.barchensis</i> Basu |
| | Tibia II with three pairs of ventral spines . . | <i>.roonwali</i> Basu |

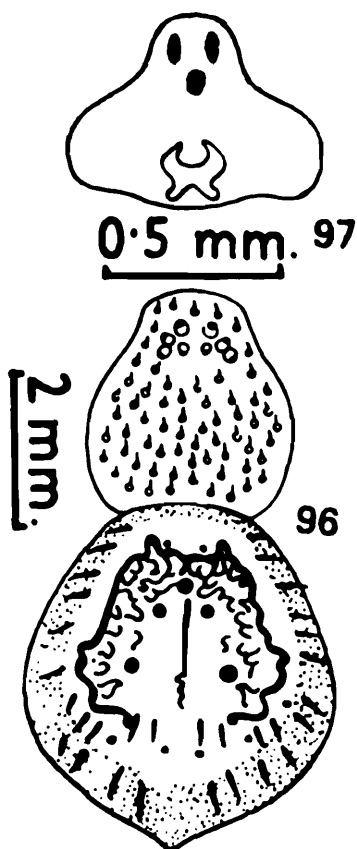
22. *Pistius bhadurii* Basu

(Figs. 96-97)

1965. *Pistius bhadurii* Basu, *Proc Zool Soc*, Calcutta, 18 : 71.

General: Cephalothorax and abdomen whitish-yellow, legs greenish-white. Total length 7.13 mm. Carapace 3.10 mm. long, 2.50 mm. wide; abdomen 4.00 mm. long, 3.80 mm. wide.

Cephalothorax: Oval, high, longer than broad, somewhat narrowed anteriorly and with numerous green spots throughout the cephalothorax, excepting the ocular area. Almost all green spots with central spines projecting upward. Clypeus broad, truncated in front with green spots and with a few hairs originating from the anterior margin. Chelicera whitish-yellow, with green spots and bristles originating from the frontal and inner margins. Pedipalp whitish, hairy and spiny. Eyes black and provided with whitish tubercles. Ocular quad squarish. Anterior median and anterior lateral eyes larger than the posterior median and posterior lateral eyes respectively, anterior lateral eyes being largest. Legs whitish-yellow and hairy; legs I and II longer than III and IV; femur I with five and II with one dorsal spines; patella III with one dorsal spine; tibia I with two pairs and II with one pair of ventral spines and III with two dorsal spines; metatarsi I and II armed ventrally with six pairs of spines and dorsally with a single spine.



FIGS. 96-97. *Pistius bhadurii* Basu
 96. Dorsal view of female, legs omitted.
 97. Epigyne.

Abdomen: Slightly longer than broad, a light reddish band with orange tint surrounds the abdomen laterally and frontally and on it deep red minute dots present; besides these dots, more minute reddish dots lying within the area bounded by the band; there are bigger deep red dots encircled by orange dots present outside the banded area; five circular well developed thomisid punctures. Posterior margin with muscular corrugations. Epigyne as in fig. 97.

Type-locality: Hardwar, Saharanpur district, Uttar Pradesh, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta.

Distribution: So far this species is known only from its type locality.

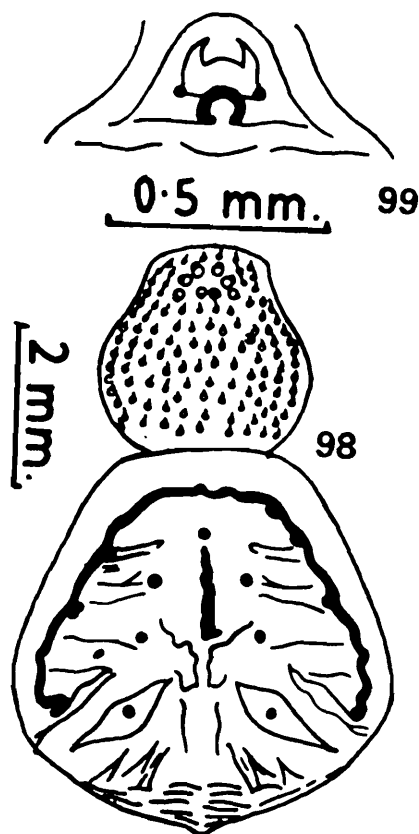
Remark: Description based on a single female specimen.

23. *Pistius gangulyi* Basu (Figs. 98-99)

1965. *Pistius gangulyi* Basu, *Proc. Zool. Soc.*, Calcutta, 18 : 73.

General: Cephalothorax orange red, abdomen creamy yellow and legs yellowish-green. Total length 10.80 mm. Carapace 3.90 mm. long, 3.80 mm. wide; abdomen 6.90 mm. long, 6.70 mm. wide.

Cephalothorax: Nearly as long as wide, with green spots all over, excepting the ocular area. Clypeus truncated in front and with green spots. Chelicerae orange yellow and with green spots. Pedipalp yellowish, hairy. Ocular area somewhat raised. Eyes black and beset with whitish tubercles; antero-lateral and anterior median eyes larger than the postero-laterals and posterior-medians respectively. Ocular quad squarish. Clypeus high and without any hair or spine. Legs I and II subequal. Femora I and II with four dorsal spines, patella II with two and III and IV with single dorsal spine in each, tibiae I and II with four pairs of ventral spines and III and IV with one ventral and dorsal spine respectively; metatarsi I and II armed with seven pairs of ventral spines and I also with single dorsal spine; tarsi I hairy. Sternum heart-shaped, and light yellow in colour.



FIGS. 98-99. *Pistius gangulyi* Basu
 98. Dorsal view of female, legs omitted.
 99. Epigyne.

Abdomen: Longer than broad, partly overlapping the base of the cephalothorax in front. A deep grey irregular band surrounds the abdomen frontally and laterally and brown dots present at the posterior part of the abdomen; four prominent circular areas with deep orange spot in the middle along the lateral inner margin and two similar circular areas, one on the lower and one in front present outside the banded area. Five circular thomisid punctures well developed. Epigyne as in fig. 99.

Type-locality: Rishikesh, Dehra Dun, Uttar Pradesh, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta.

Distribution: So far this species is known only from its type locality.

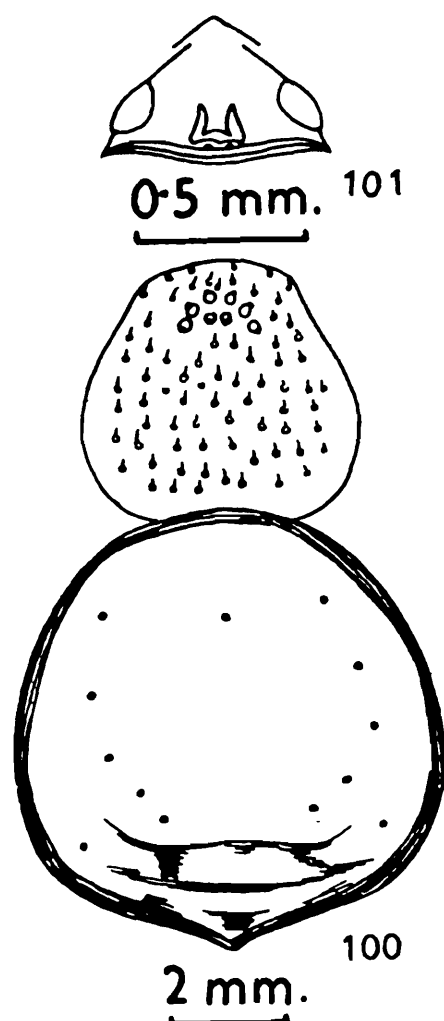
Remark: Description based on a single female specimen

24. *Pistius robusta* Basu

(Figs. 100-101)

1965. *Pistius robusta* Basu. *Proc. Zool. Soc.*, Calcutta, 18 : 75.

General: Cephalothorax orange red, abdomen yellowish-white and legs whitish-yellow. Total length 12.70 mm. Carapace 4.70 mm. long, 4.70 mm. wide; abdomen 8.10 mm. long, 8.10 mm. wide.



FIGS. 100-101. *Pistius robusta* Basu
 100. Dorsal view of female, legs omitted.
 101. Epigyne.

Cephalothorax: High, oval, as long as wide, somewhat narrow anteriorly, with green spots throughout, excepting the ocular area. Clypeus truncated in front, with green spots and without any marginal hairs. Chelicerae light yellow, hairy, with green spots

throughout, and with the anterior and inner margins hairy. Pedipalp, whitish-yellow with two dorsal tibial spines, one in front and one in the middle and the patella armed with a single marginal spine. Eyes black, beset with white tubercles; anterior-median and antero-lateral eyes larger than the posterior-median and postero-laterals respectively, antero-lateral eyes being the largest of all. Ocular quad squarish. Legs whitish yellow; leg I and II much longer than III and IV, leg I being the longest. Femur I with three dorsal smaller spines. Patellae III and IV each with one ventral spine; tibiae I with seven pairs plus one ventral spines and II and III with six pairs and one ventral spines respectively; metatarsi I and II each with seven pairs of ventral and one dorsal spines and IV with a single ventral spine only. Sternum yellowish, shield-shaped.

Abdomen: Much longer than the cephalothorax, slightly projecting over the base of the cephalothorax in front, as long as wide, with as many as twenty greyish spots distributed all over the abdomen; posterior region with prominent muscular corrugations. Epigyne as in fig. 101.

Type-locality: Rishikesh, Dehra Dun, Uttar Pradesh, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

25. *Pistius sreepanchamii* Tikader

(Figs. 102-104)

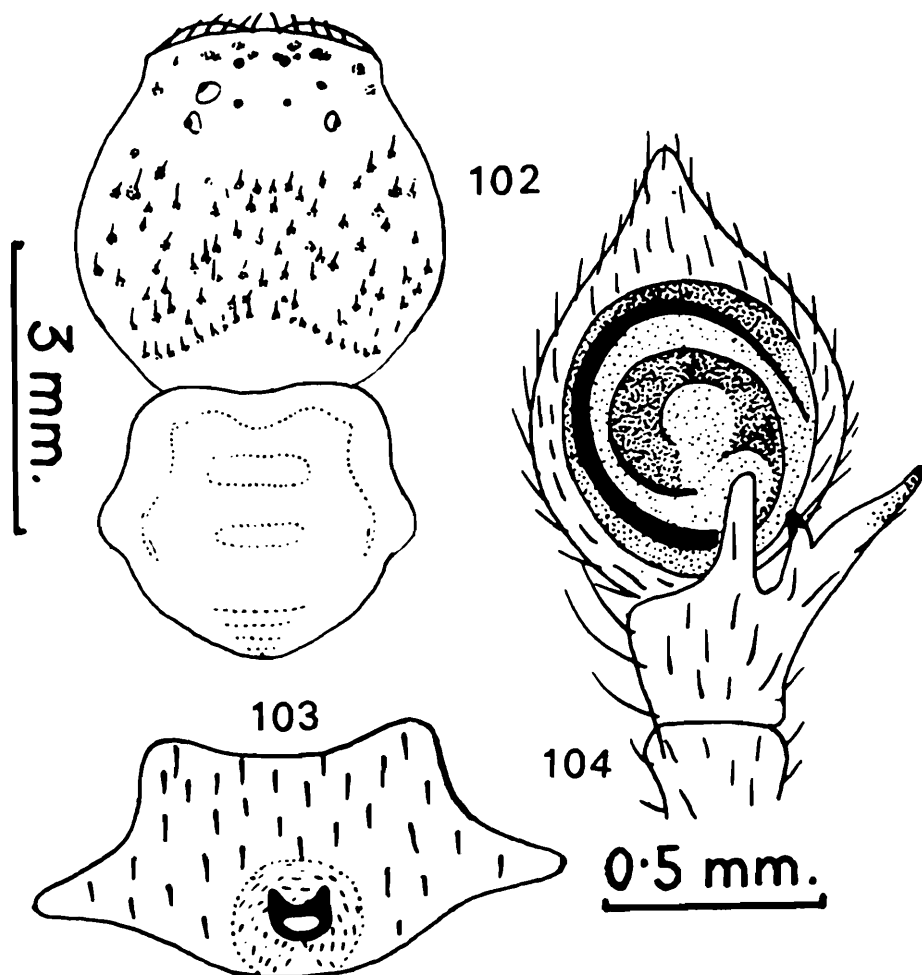
1962. *Pistius sreepanchamii* Tikader, *J. Linn. Soc.*, London, **44** (300) : 571

1962. *Pistius sreepanchamii* : Daniel, *J. Bombay nat. Hist. Soc.*, **59** (2) : 681.

1971. *Pistius sreepanchamii* : Tikader, *Mem. zool. Surv. India*, **15** (3) : 30.

General: Cephalothorax and legs white, mottled with green, abdomen white and mottled with brown. Total length 6.50 mm. Carapace 3.90 mm. long, 3.80 mm. wide; abdomen 2.80 mm. long, 3.20 mm. wide.

Cephalothorax: Convex, high, oval in outline, somewhat narrow in front; almost all green spots with a central short spine; ocular and posterior areas without green spots. Eyes black; anterior medians slightly closer than posterior medians, the median ocular area slightly longer than wide; lateral eyes large on low white tubercles and anterior laterals larger than the posterior laterals; anterior row of eyes equidistant, subequal, recurved,



FIGS. 102-104 *Pistius sreepanchamii* Tikader
 102. Dorsal view of female, legs omitted.
 103. Epigyne.
 104. Male-palp, ventral view.

the posterior row, also equidistant and subequal but less recurved than the anterior row. Clypeus high and obtuse, spotted like carapace, margin provided with small hairs, directed forward. Sternum oval, pointed behind. Legs I and II much longer than III and IV, tibiae I and II armed ventrally with three pairs of spines and on the metatarsi eight pairs of ventral spines. Male palp as in fig. 104.

Abdomen: After oviposition almost round but margins not uniformly straight; slightly overlapping the posterior region of cephalothorax, posterior half with conspicuous transverse corrugation, moderately truncated. Epigyne as in fig. 103.

Type-locality: Botanical garden, Shillong, Meghalaya, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2561/18.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

26. *Pistius kanikae* Basu

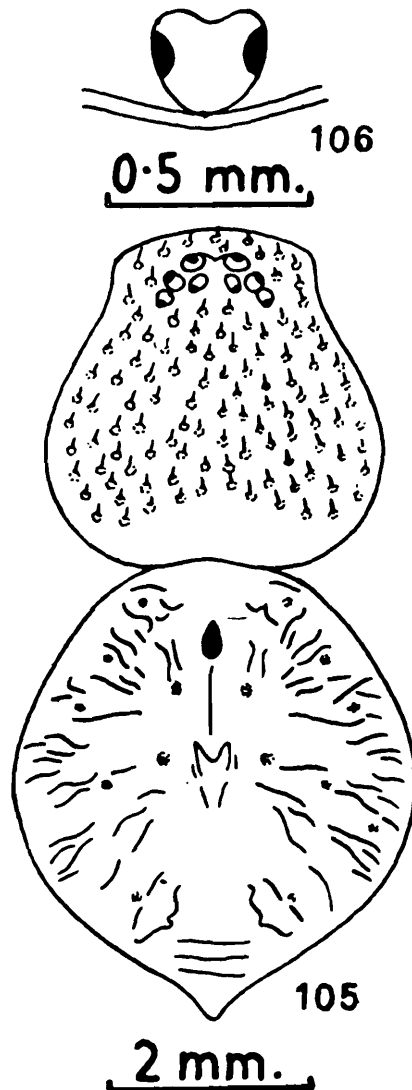
(Figs. 105-106)

1964. *Pistius kanikae* Basu, *J. Bengal nat. Hist. Soc.*, Darjeeling, 32(2) : 107.

General: Cephalothorax orange red in colour, abdomen light yellowish. Total length 7.30 mm. Carapace 3.10 mm. long, 3.00 mm. wide; abdomen 4.20 mm. long, 4.00 mm. wide.

Cephalothorax: Longer than broad, with green spots. Clypeus slightly arched anteriorly with green spots and without any hair. Chelicerae with green spots and without hair. Pedipalp yellowish. Eyes black, beset with milky white tubercles, ocular quad almost squarish and with single green spot; posterior medians and posterior laterals strongly recurved, anterior laterals procurved. Legs yellowish, tibiae I with four pairs and II with two pairs of ventral spines, metatarsi I with six pairs and III with seven pairs of ventral and three dorsal spines. Sternum greenish yellow, pointed behind.

Abdomen: Slightly longer than wide, slightly overlapping the posterior region of cephalothorax in front; dorsally with five thomisid punctures; as many as fifteen reddish circular areas with deep red centres arranged a little inner to the lateral and anterior sides and three similar areas present laterally; three more similar spots of which two a little above the first thomisid and one a little below the last thomisid punctures are well developed; two black dots present at the posterior-most region and this region with muscular corrugation. Epigyne as in fig. 106.



FIGS. 105-106. *Pistius kanikae* Basu

105. Dorsal view of female, legs omitted.

106. Epigyne.

Type-locality: Lakshmanjhoola, Dehra Dun, Uttar Pradesh, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta.

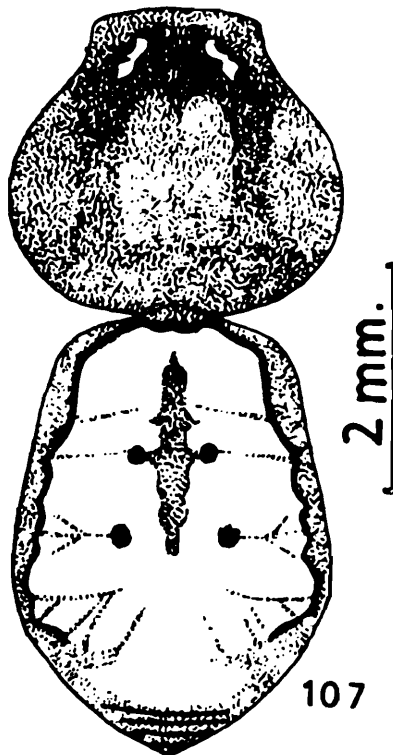
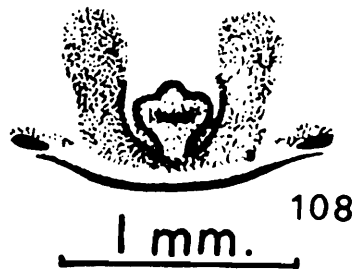
Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

27. *Pistius kalimpus* Tikader
(Figs. 107-108)

1970. *Pistius kalimpus* Tikader, *Rec. zool. Surv. India*, Calcutta, 64 : 53.

General: Cephalothorax and legs green, abdomen chalk-white. Total length 6.50 mm. Carapace 2.80 mm. long, 2.90 mm. wide; abdomen 4.00 mm. long, 2.90 mm. wide.



FIGS. 107-108. *Pistius kalimpus* Tikader
 107. Dorsal view of female, legs omitted.
 108. Epigyne.

Cephalothorax: Nearly as long as wide, convex, oval in outline, somewhat narrow in front. Eyes black, posterior medians slightly closer than anterior medians; the median ocular area longer than wide, lateral eyes large and provided with contiguous white tubercles; the eyes of anterior row equidistant, recurved, white, the posterior row of eyes less recurved. Clypeus high and obtuse, margin provided with small hairs. Sternum oval, pointed

behind. Legs I and II much longer than III and IV; tibiae and metatarsi I and II armed ventrally with four and six pairs of spines respectively.

Abdomen: Longer than wide, dorsally with chalk-white patches and mixed with some yellow tint on it and lateral and front sides of these patches, encircled by a conspicuous black line. Ventral side uniform pale colour. Epigyne as in fig. 108.

Type-locality: Kalimpong, Dist. Darjeeling, West Bengal, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3143/18.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

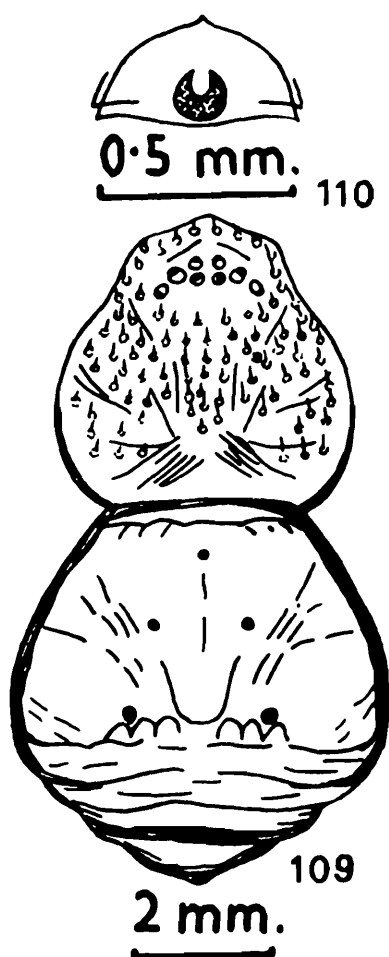
28. *Pistius barchensis* Basu

(Figs. 109-110)

1965. *Pistius barchensis* Basu, *Proc. zool. Soc.*, Calcutta, **18** : 74.

General: Cephalothorax reddish-yellow, abdomen light yellow and legs yellowish. Total length 9.00 mm. Carapace 4.10 mm. long, 3.90 mm. wide; abdomen 5.10 mm. long, 4.70 mm wide.

Cephalothorax: Longer than wide, somewhat narrowed anteriorly; and with green spots all over, excepting ocular area. Clypeus truncated in front and without any hair or spine. Chelicerae reddish yellow with green spots, hairy and with bristles on frontal and inner margins. Pedipalp yellowish and hairy. Cephalic region high. Ocular quad squarish. Eyes black; anterior row of eyes longer than the posterior row of eyes and anterior lateral eyes largest; all eyes beset with whitish tubercles. Legs I slightly longer than II; tibiae I and II armed with four pairs of ventral spines in each and III with a single dorsal spine only; metatarsi I and II with seven pairs of ventral spines in each, III with one ventral and two dorsal spines and IV with a single ventral spine only; metatarsus and tarsus III without spine.



FIGS. 109-110. *Pistius barchensis* Basu

109. Dorsal view of female, legs omitted.

110. Epigyne.

Abdomen: Partly overlapping the base of the cephalothorax in front. Frontal region somewhat raised, irregular and somewhat corrugated and with a light brown irregular strap. Five circular thomisid punctures well marked. Some brownish spots scattered all over the dorsal surface. Abdomen slightly tuberculating laterally at about the posterior one third of the abdomen. Muscular corrugation well developed posteriorly. Epigyne as in fig. 110.

Type-locality: Rishikesh, Dehra Dun, Uttar Pradesh, INDIA.

Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta.

Distribution: So far this species is known only from its type locality.

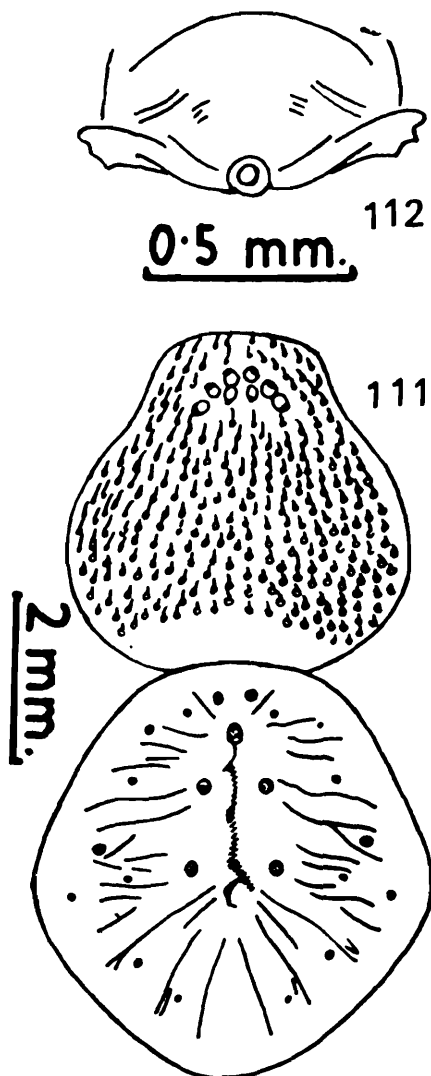
Remark: Description based on a single female specimen.

29. *Pistius roonwali* Basu

(Figs. 111-112)

1964. *Pistius roonwali* Basu, *J. Bengal nat. Hist. Soc.*, Darjeeling, 32(2) : 104.

General: Cephalothorax and abdomen yellowish-white. Total length 7.80 mm. Carapace 3.75 mm. long, 3.40 mm. wide; abdomen 4.50 mm. long, 4.50 mm. wide.

FIGS. 111-112. *Pistius roonwali* Basu

111. Dorsal view of female, legs omitted.

112. Epigyne.

Cephalothorax: Longer than broad, slightly narrowed anteriorly and with green spots excepting the ocular region. Clypeus arched anteriorly and a few hairs projecting forward from its anterior

margin. Chelicerae yellowish with green spots and with upwardly projecting hairs. Pedipalp spiny and hairy. Eyes black and beset with whitish tubercles; anterior laterals larger, both rows of eyes slightly recurved. Legs hairy; femur I with three dorsal spines; tibia I with four pairs, and II with three pairs of ventral spines; metatarsi I and II with seven pairs of ventral spines and a single dorsal spine in each but IV armed ventrally with a single spine. Sternum greenish-yellow and pointed behind.

Abdomen: Nearly as long as wide, slightly overlapping in front of the cephalothorax; with some reddish spots arranged laterally and frontally; slightly tuberculating laterally a little behind the mid-region and this region with two reddish spots, one on each side; five thomisid punctures present. Epigyne as in fig. 112.

Type-locality: Hardwar, Uttar Pradesh, INDIA.

Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

Genus 4. *Oxyptila* Simon

1864. *Oxyptila* Simon, *Hist. Nat. Ar.*, 1 : 439.
 1940. *Oxyptila* : Comstock, *Spider Book*, New York. : 543.
 1951. *Oxyptila* : Locket and Millidge, *British Spiders*, London, 1 : 187.
 1960. *Oxyptila* : Tikader, *Proc. Zool. Soc.*, Calcutta, 13 (2) : 115.
 1964. *Oxyptila* : Tikader, *Sci. & Cult.*, Calcutta, 30 (3) : 152.
 1964. *Oxyptila* : Basu, *Sci. & Cult.*, Calcutta, 30 (3) : 154.

Characters: Cephalothorax, abdomen and legs clothed with some clavate or spatulate hairs; clypeus with a row of clavate hairs. The number of clavate hairs varies somewhat from species to species but is not a very reliable character as the hairs are broken off readily. Eyes black, median ocular trapezium longer than broad; posterior medians closer to one another than to laterals. Legs stout and short; tibiae I and II armed ventrally with two pairs of spines. The cuticle clothed with setae of various types,

some of them pointed while others clavate or spatulate. These spiders are found on low plants or bushes and under stones.

Type-species: Oxyptila brevipes (Hahn).

Distribution: All tropical and sub-tropical countries and North temperate regions of the world.

Key to species of the genus OXYPTILA Simon

- | | |
|---|---------------------------------|
| 1. Legs with pale or dark spots | .2 |
| Legs without spots | .3 |
| 2. Tibiae I and II armed ventrally with two pairs of strong spines | . <i>khasi</i> Tikader |
| Tibiae I and II armed ventrally with three or more pairs of spines | .4 |
| 3. Abdomen uniform light brown | . <i>manii</i> Tikader |
| Abdomen with two dark grey transverse bands | . <i>reenae</i> Basu |
| 4. Abdomen with rounded brownish spots arranged in a V-shape on dorsum. | . <i>maratha</i> (Tikader) |
| Abdomen without any V-shaped pattern on dorsum | .5 |
| 5. Margin of clypeus provided with 13 clavate hairs | . <i>amkhasensis</i> sp. nov. |
| Margin of clypeus provided with 11 clavate hairs | . <i>chandosiensis</i> sp. nov. |

30. *Oxyptila khasi* Tikader

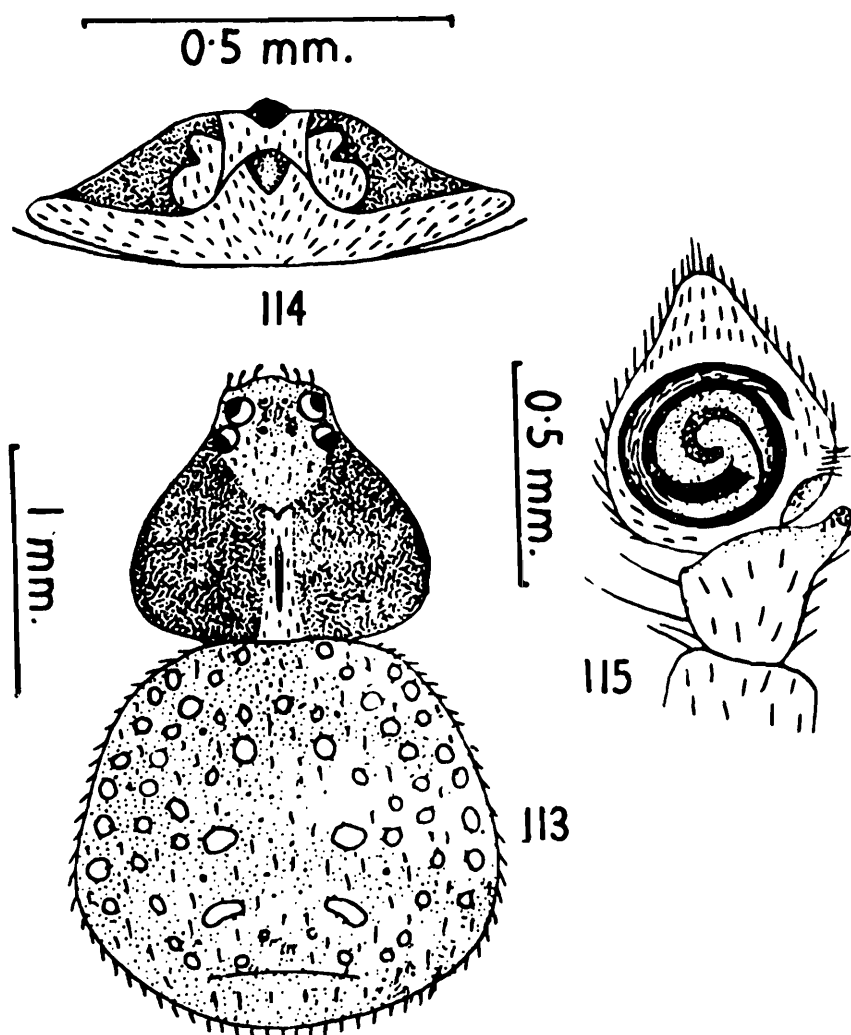
(Figs. 113-115)

1960. *Oxyptila khasi* Tikader, *Proc. zool. Soc.*, Calcutta, 13 (2) : 116.

General: Cephalothorax and legs deep brown, abdomen light yellowish-brown. Total length 2.70 mm. Carapace 1.00 mm. long, 1.20 mm. wide; abdomen 1.80 mm. long, 1.90 mm. wide.

Cephalothorax: Slightly wider than long, narrowing anteriorly, bearing a few clavate hairs on the cephalic area; with a pair of white broad lines from the cephalic region to base of cephalothorax on either side of the median longitudinal line. Eyes ringed with dirty-white tubercles, the lateral eyes large but the anterior

laterals largest. Clypeus high, margin bearing six clavate hairs directed forward. Sternum heart-shaped, slightly pointed behind, densely clothed with hairs, white margins with black spots between coxae. Legs I and II longer than III and IV, irregular pale spots or patches on the legs. Femora III and IV pale except subapically, tibiae I and II armed ventrally with two pairs of strong spines. Male palp as in fig. 115.



FIGS. 113-115. *Oxyptila khasi* Tikader
 113. Dorsal view of female, legs omitted.
 114. Epigyne.
 115. Male-palp, ventral view.

Abdomen: Ovate, wider behind, densely clothed with short clavate hairs and numerous rounded whitish pigments on the dorsum, arranged more or less in longitudinal row. Epigyne as in fig. 114.

Type-locality: Kench's Trace, Shillong, Meghalaya, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2542/18.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

31. *Oxyptila manii* Tikader

(Figs. 116-117)

1960. *Oxyptila manii* Tikader, *Proc. zool. Soc.*, Calcutta, 13 (2) : 115.

General: Cephalothorax deep brown, legs and abdomen light



FIGS. 116-117. *Oxyptila manii* Tikader
 116. Dorsal view of female, legs omitted.
 117. Epigyne.

brown. Total length 5.80 mm. Carapace 2.60 mm. long, 2.80 mm. wide; abdomen 3.60 mm. long, 4.20 mm. wide.

Cephalothorax: Slightly wider than long, bearing a few clavate hairs on the cephalic region. Eyes ringed with whitish tubercle, except posterior medians, ocular quad longer than wide, both rows of eyes recurved but anterior row strongly recurved. Ocular quad provided with four clavate hairs arranged in a quadrangular pattern. Clypeus high, margin bearing seven clavate hairs directed forward. Sternum heart-shaped, clothed with fine pointed hairs. Legs I and II longer than others, irregular dark brown spots or patches on the legs. More than half portion from the base of femora III and IV pale in colour; tibiae I and II armed ventrally with spines, outer row with three and inner row with four spines.

Abdomen: Ovate, wider behind, clothed with numerous clavate or spatulate hairs, ventral side clothed with spiny hairs. Epigyne as in fig. 117.

Type-locality: Habra ca 48 kilometres north-east of Calcutta, West Bengal, INDIA.

Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2541/18.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

32. *Oxyptila reena* Basu

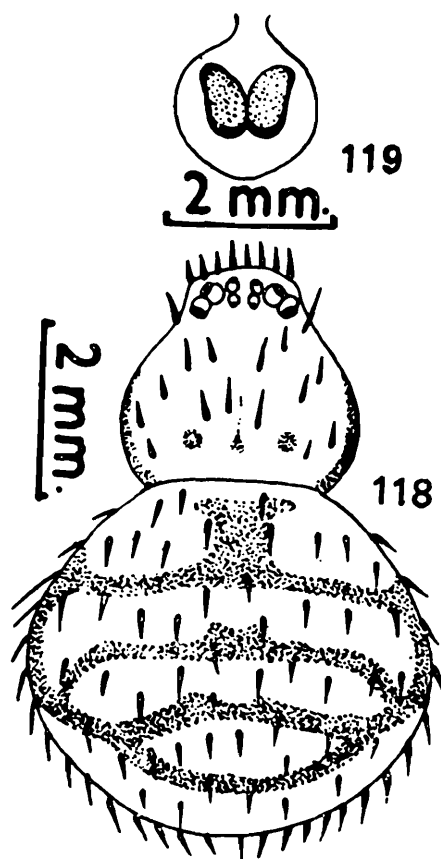
(Figs. 118-119)

1964. *Oxyptila reena* Basu, *Sci. & Cult.*, Calcutta 30 : 154.

General: Cephalothorax reddish-yellow, abdomen whitish-grey and legs reddish-grey. Total length 6.40 mm. Carapace 2.43 mm. long, 2.75 mm. wide; abdomen 4.00 mm. long, 4.37 mm. wide.

Cephalothorax: Wider than long, somewhat narrowed anteriorly, greyish along with reddish-yellow tint in between the greyish area. Chelicerae and pedipalp hairy and spiny, reddish-yellow

and greyish in colour respectively. Clypeus strong and with eight marginal hairs projecting forward. Eyes black, but posterior medians beset with whitish tubercles; postero-lateral eyes recurved, but anterior-medians and antero-laterals procurved; ocular quad slightly longer than wide and with two hairs projecting upward; ocular area somewhat raised, cephalic region with a few clavate hairs. Legs I and II much longer than III and IV; femur I with two dorsal spines; tibiae and metatarsi I with four and three pairs of ventral spines respectively. Metatarsi II with two pairs plus one ventral and a single dorsal spine; legs III and IV subequal. Sternum shield-shaped with few hairs.



FIGS. 118-119. *Oxyptila reeneae* Basu
 118. Dorsal view of female, legs omitted.
 119. Epigyne.

Abdomen: Ovoidal, wider behind, greyish with whitish area on the dorsum and provided with clavate or spatulate hairs; antero-lateral margins somewhat wavy. Two dark grey transverse bands on the abdomen. Epigyne as in fig. 119.

Type-locality: Guptipara, Dist. Hooghly, West Bengal, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India; Calcutta.

Distribution: So far this species is known only from its type locality.

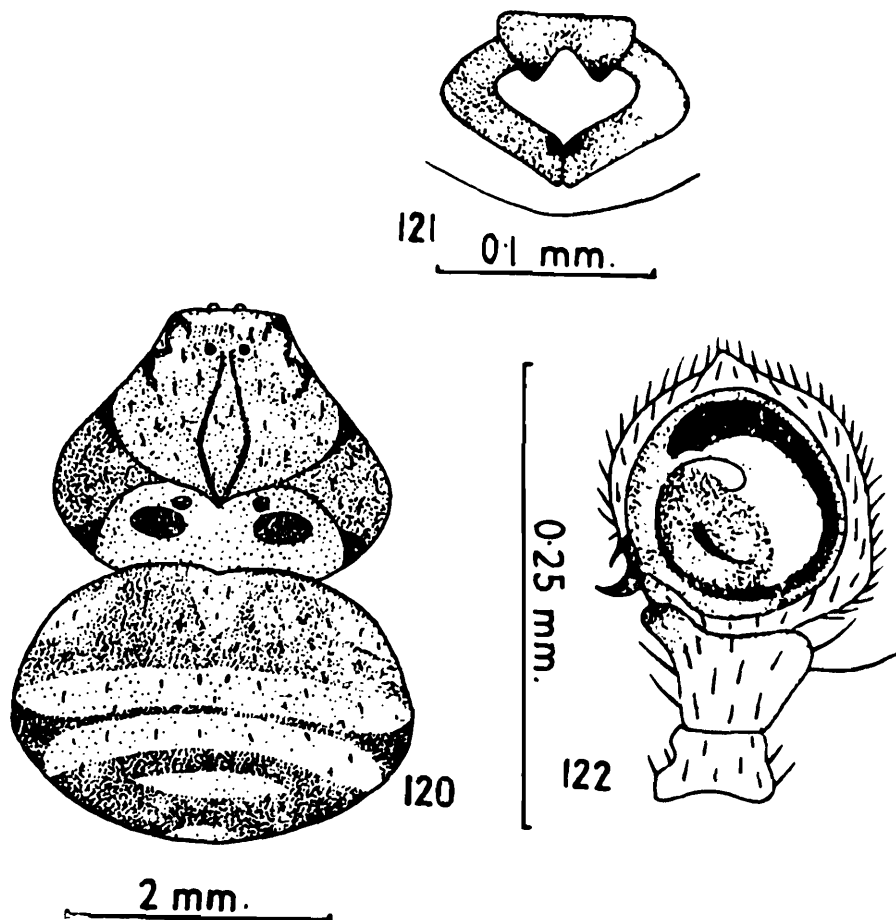
Remarks: Description based on a single female specimen.

33. *Oxyptila maratha* (Tikader)

(Figs. 120-122)

1964. *Oxyptila gertschi* Tikader, *Sci. & Cult.*, Calcutta, 30(3) : 152.

1974. *Oxyptila maratha* Tikader, new name, *Maharashtra Fauna district Gazetteer*, : 303.



FIGS. 120-122. *Oxyptila maratha* (Tikader)
 120. Dorsal view of female, legs omitted.
 121. Epigyne.
 122. Male-palp, ventral view.

General: Cephalothorax and abdomen deep brown, legs light brown. Total length 4.10 mm. Carapace 2.20 mm. long, 2.60 mm. wide; abdomen 2.10 mm. long, 3.00 mm. wide.

Cephalothorax: Slightly wider than long, bearing clavate hairs on the cephalic region. Eyes ringed with brownish tubercles except posterior medians, ocular quad longer than wide, both rows of eyes recurved but anterior row strongly recurved. Ocular quad provided with three clavate hairs in a triangular pattern. Clypeus high, margin bearing seven clavate hairs directed forward but middle one directed upward. Posterior portion of cephalothorax light in colour and provided with two round dark brown spots. Sternum heart-shaped, slightly pointed behind, clothed with hairs, light in colour, margin with black spots between coxae. Legs I and II robust and longer than III and IV, some dark brown spots or patches on the legs. Femora I with three conspicuous strong spines on the front and base of spines encircled by a black ring. Tibiae and metatarsi I and II with three pairs of strong ventral spines. Male palp as in fig. 122.

Abdomen: Ovate, slightly wider behind, densely clothed with short clavate hairs and some rounded brownish spots on the mid-dorsal, arranged in a V-shape. Epigyne as in text-fig. 121.

Type-locality: Poona University Compound, Poona, Maharashtra, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3120/18.

Distribution: Poona, Maharashtra; Jabalpur, Madhya Pradesh, INDIA.

Remark: Description based on a single female specimen.

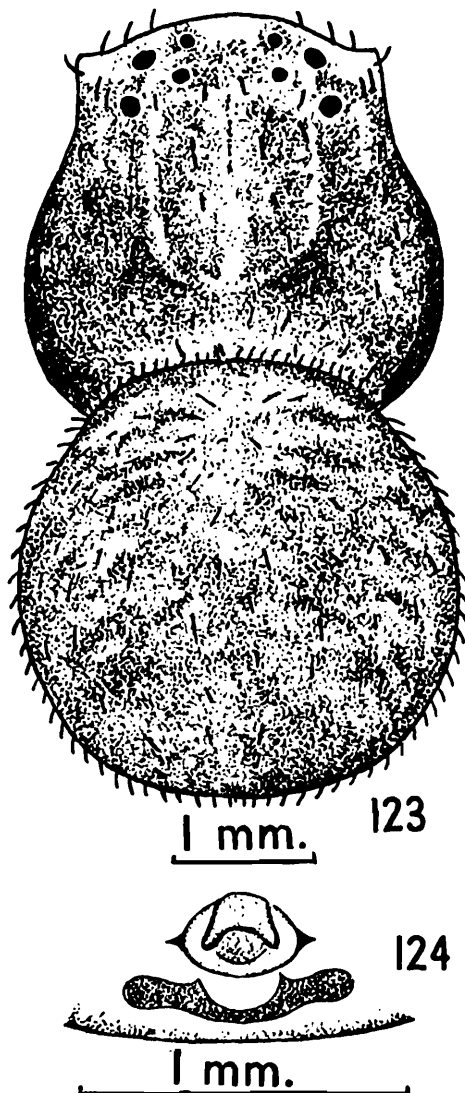
34. *Oxyptila amkhasensis* sp. nov.

(Figs. 123-124)

General: Cephalothorax deep brown, abdomen and legs light brownish pale. Total length 5.70 mm. Carapace 3.00 mm. long, 3.00 mm. wide; abdomen 3.20 mm. long, 3.20 mm. wide.

Cephalothorax: Longer than wide, bearing clavate hairs on the cephalic region. Eyes ringed with whitish tubercles except

posterior medians. Ocular quad longer than wide; both rows of eyes recurved but anterior row strongly recurved. Clypeus high, margin bearing 13 clavate hairs directed forward but middle one directed upwards. Lateral margin of cephalothorax provided with deep brown patches and middle portion provided with longitudinal light patches as in fig. 123. Sternum heart shaped, slightly pointed behind, clothed with fine hairs and light in colour. Legs I and II robust and longer than III and IV, some dark brown patches on the legs. Femur I with three short spines on the front and base of spines encircled by dark ring. Tibiae and metatarsi I and II with four pairs of strong ventral spines.



FIGS. 123-124. *Oxyptila amkhasensis* sp. nov.
 123. Dorsal view of female, legs omitted.
 124. Epigyne.

Abdomen: Ovate, slightly longer than wide, broadest behind the middle, densely clothed with hairs and spines, ventral side slightly lighter than dorsal. Epigyne as in fig. 124.

Holotype: ♀, in spirit. Deposited in Zoological Survey of India. Calcutta. Regd. No. 4589/18.

Type-locality: Amkhas, Dist. Jabalpur, M.P., INDIA. 4.iv.1967, Coll. V S. Durve.

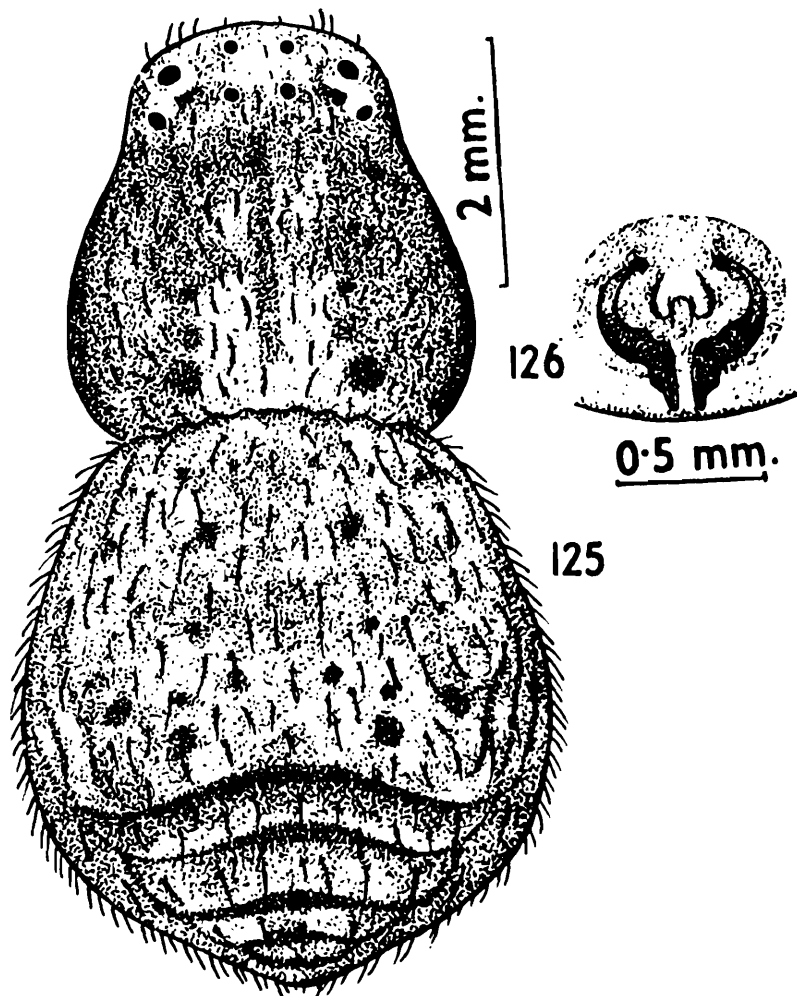
This species resembles *Oxyptila maratha* (Tikader) but can be distinguished from it as follows: (i) Tibiae and metatarsi of I and II legs provided with four pairs of ventral spines but in *Oxyptila maratha* tibiae and metatarsi of I and II legs with three pairs of ventral spines. (ii) Margin of clypeus provided with 13 clavate hairs but in *O. maratha* provided with 7 clavate hairs. (iii) Epigyne also structurally different.

35. *Oxyptila chandosiensis* sp. nov.

(Figs. 125-126)

General: Cephalothorax, legs and abdomen brownish white. Total length 7.80 mm. Carapace 3.50 mm. long, 3.30 mm. wide; abdomen 4.60 mm. long, 4.20 mm. wide.

Cephalothorax: Longer than wide, broader in front, clothed with hairs and some clavate hairs on the cephalic region. Eyes black ringed with whitish tubercles except posterior medians. Ocular quad slightly wider than long or nearly square; both rows of eyes recurved but anterior row more recurved than the posterior row. Clypeus high, margin bearing eleven clavate hairs directed forward but middle one directed upwards. Lateral row of eyes large with prominent contiguous tubercles. Lateral sides of cephalothorax provided with light brown patches and middle portion provided with broad longitudinal light brown patches as in text-fig. 125. Sternum nearly oval, slightly pointed behind, clothed with fine hairs and some brown pigmented dots, cloth with fine hairs. Legs I and II robust and longer than III and IV, clothed with spines and hairs. Femur I with three short spines on the front. Tibiae and metatarsi of I and II with three pairs of strong ventral spines.



FIGS. 125-126. *Oxyptila chandosiensis* sp. nov.

125. Dorsal view of female, legs omitted.

126. Epigyne.

Abdomen: Nearly ovate, slightly longer than wide, broadest behind the middle, clothed with thick hairs, lateral side provided with longitudinal muscular corrugation which join posteriorly as in fig. 125. Ventral side more lighter in colour than the dorsal, mid-ventrally provided with a longitudinal broad pale patch extending from epigastric fold to spinnerets. Epigyne as in fig. 126.

Holotype: ♀, *paratype* 1 ♀ in spirit. Deposited at Zoological Survey of India, Calcutta. No. 4590/18

Type-locality: Suta Ashram, Chandosi, Dist. Moradabad (U.P.) INDIA. 3.iii.1973, Coll. A. Husain, *Paratype*: Sot Nadi Amroha, Dist. Moradabad (U.P.) INDIA. 12.iii.1973, Coll. A. Husain.

This species resembles *Oxyptila amkhasensis* sp. nov. but differs from it as follows : (i) Tibiae and metatarsi of I and II provided with three pairs of ventral spines but in *O. amkhasensis* tibiae and metatarsi of I and II with four pairs of ventral spines. (ii) Ocular quad nearly square but in *O. amkhasensis* ocular quad longer than wide. (iii) Epigyne also structurally different.

Genus 5. *Misumena* Latreille

1804. *Misumena* Latreille, *Nouv. Dict. Hist. Nat.*, **24** : 135.
 1869. *Misumena* : Thorell, *Eur. Spiders, etc.*, **7(3)** : 184.
 1875. *Misumena* : Simon, *Ar. Fr.*, **2** : 241.
 1940. *Misumena* : Comstock, *The Spider Book*, New York, : 538.
 1951. *Misumena* : Locket and Millidge, *British Spiders*, London, **1** : 174.
 1962. *Misumena* : Tikader, *J. Linn. Soc.*, London, **44** (300) : 573.

Characters: Cephalothorax armed with only very few short fine spines. The eyes of the anterior row are equidistant and in a more or less recurved line. The median ocular area is a little narrower in front than behind. Lateral eyes situated in slightly elevated confluent tubercles. Legs I and II much longer than III and IV Spiders of this genus generally are fond of flowers and low plants or bushes.

Type-species : *Misumena vatia* (Clerck)

Distribution : EUROPE, AMERICA and ASIA.

Key to species of the genus MISUMENA Latreille

- | | |
|--|-------------------|
| 1. Abdomen ornamented by black or white patches | .2 |
| Abdomen not ornamented by black or white patches | .5 |
| 2. Cephalothorax with brown patches | .3 |
| Cephalothorax without brown patches | .4 |
| 3. Cephalic region with a U-shaped dark brown patch. | .menoka Tikader |
| Cephalic region with no such patch. | .6 |
| 4. Abdomen with more or less longitudinal row of 6-10 black spots, no sigilla on dorsum | .horai Tikader |
| Abdomen with an incomplete longitudinal light brown line mid-dorsally and five small sigilla on the dorsum | .mridulai Tikader |

- | | | |
|---|-------------------------------|----|
| 5. Abdomen with irregular, rounded whitish dots on dorsum | <i>.indra</i> Tikader | |
| Abdomen with chalk-white and brown pigmented dots | | .8 |
| 6. Abdomen silvery white in colour | <i>.silveryi</i> Tikader | |
| Abdomen not silvery white in colour | | 7 |
| 7. Cephalothorax yellowish-brown and abdomen chalk-white | <i>.annapurna</i> Tikader | |
| Cephalothorax light brown and abdomen greenish-pale | <i>.greenae</i> Tikader | |
| 8. Ventral side of abdomen uniform brown coloured | <i>.nicobarensis</i> sp. nov. | |
| Ventral side of abdomen pale except posterior lateral sides with deep brown patches | <i>.decorata</i> sp. nov. | |

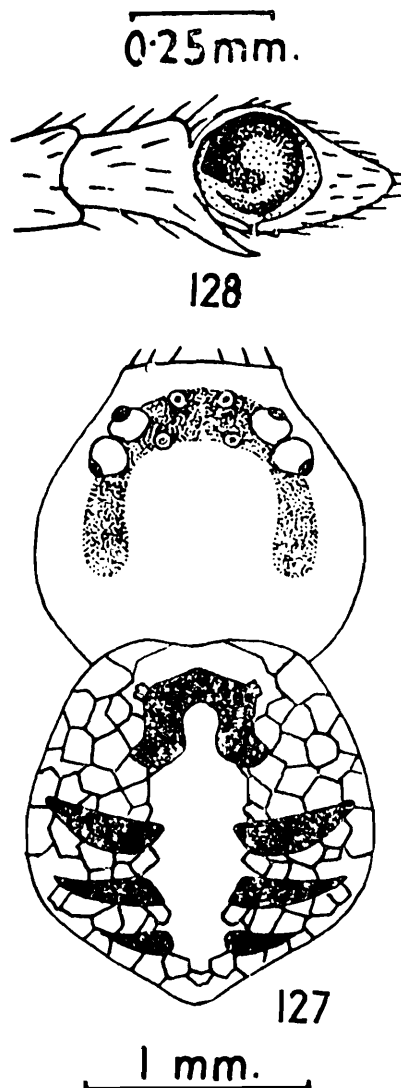
36. *Misumena menoka* Tikader

(Figs. 127-128)

1963. *Misumena menoka* Tikader, *Proc. Indian Acad. Sci.*, Bangalore, **58** (2) : 254.

General: Cephalothorax yellowish-brown, abdomen silvery-white, legs light green. Total length 2.80 mm. Carapace 1.20 mm. long, 1.50 mm. wide; abdomen 1.50 mm. long, 1.50 mm. wide.

Cephalothorax: Convex, slightly wider than long, clothed with fine pubescence and a few spines; cephalic region slightly elevated with a U-shaped broad, dark brown patch on the cephalothorax, the base of the U lying in the ocular area and the limbs directed backward on the cephalothorax. Clypeus broad, the margin provided with six spines directed forward. Eyes round, posterior row slightly recurved and almost equal and equidistant; anterior row more recurved than the posterior; lateral eyes situated on elevated, confluent, white tubercles; antero-lateral eyes larger than the other; the median ocular area a little narrower in front than behind. Legs I and II much longer than III and IV, clothed with hairs and spines. Distal end of femora and tibiae I and II with a dark transverse band; femur I with two pairs of ventral spines. Male palp as in fig. 128.



FIGS. 127-128. *Misumena menoka* Tikader
 127. Dorsal view of male, legs omitted.
 128. Male-palp, ventral view.

Abdomen: Round, broadest just behind the middle, dorsally on the posterior half with three incomplete, transverse, black patches and on the base of abdomen with a V-shaped mark.

Type-locality: Kotigehara, Dist. Chikmagalur, Karnataka, INDIA. *Holotype:* ♂, in National Zoological Collections, Zoological Survey of India, Clacutta. Regd. No. 3116/18

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single male specimen.

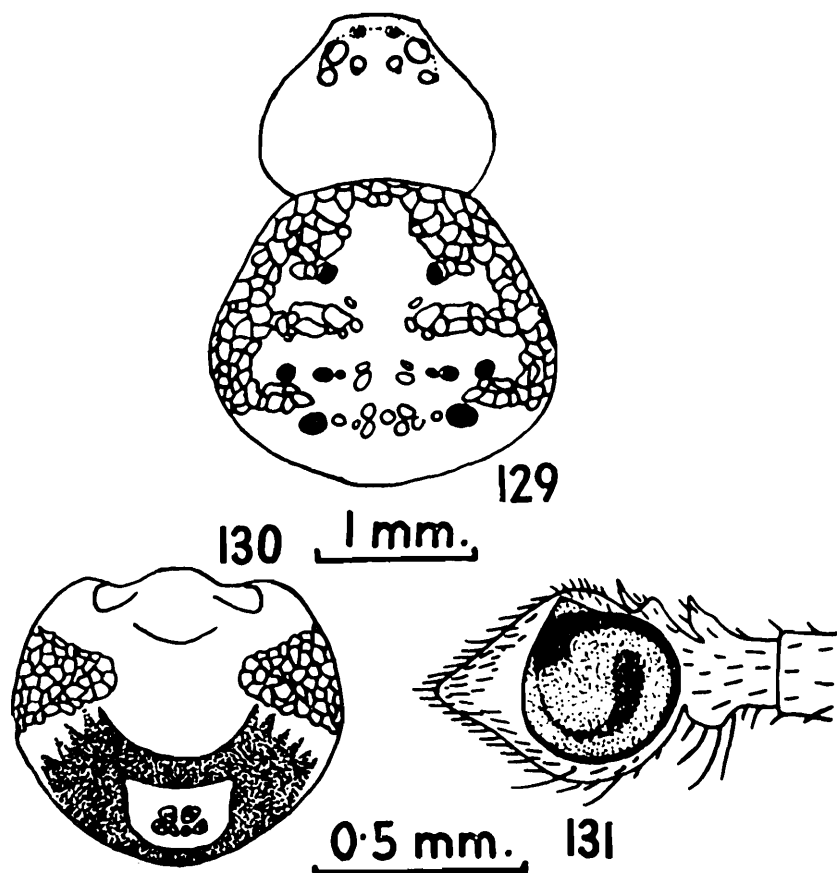
37. *Misumena horai* Tikader

(Figs. 129-131)

1962. *Misumena horai* Tikader, *J. Linn. Soc.*, London, 44 (300) : 573.

General: Cephalothorax and abdomen yellowish-brown, legs pale brown. Total length 3.00 mm. Carapace 1.30 mm. long, 1.50 mm. wide; abdomen 2.00 mm. long, 2.30 mm. wide.

Cephalothorax: Convex, slightly wider than long, clothed with fine pubescence and a few spines; cephalic region slightly high. Posterior row of eyes slightly recurved and almost equal and equidistant, anterior row more recurved than posterior row, lateral eyes situated on the elevated confluent white tubercles; anterior lateral eyes larger than others, the median ocular area a little narrower in front than behind. Clypeus high. Legs I and II

FIGS. 129-131. *Misumena horai* Tikader

129. Dorsal view of female, legs omitted.

130. Ventral view of abdomen of female.

131. Male-palp, ventral view.

much longer than III and IV, armed with three front and two dorsal spines on the femur I; on tibiae I with three pairs and metatarsi with four pairs of ventral spines; clothed with fine hairs. Sternum heart-shaped, slightly pointed behind. Male palp as in fig. 131.

Abdomen: Round, broadest just behind the middle, dorsally with two longitudinal rows of 6-10 black spots, antero-lateral area with irregular chalk-white patches. Ventral side yellowish but the surrounding area of spinnerets with very dark brown patch.

Type-locality: Kench's Trace, Shillong, Meghalaya, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2563/18

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

38. *Misumena mridulai* Tikader

(Figs. 132-133)

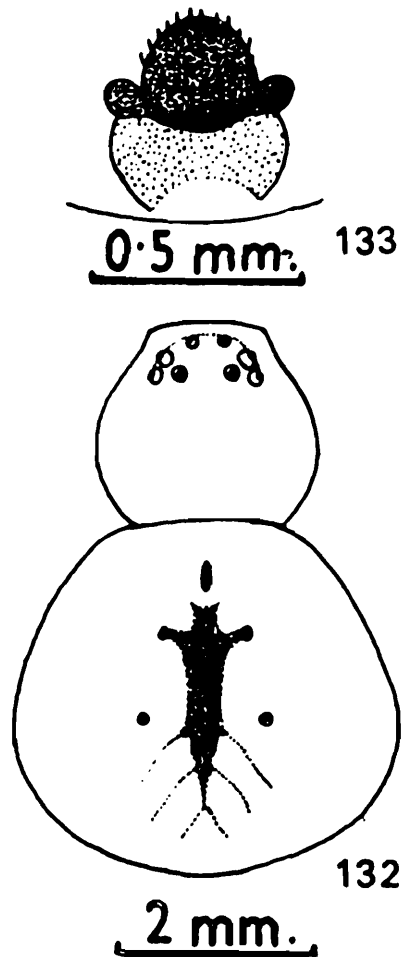
1962. *Misumena mridulai* Tikader, *J. Linn. Soc.*, London, 44 (300) : 573.

General: Cephalothorax, legs and abdomen yellowish. Total length 6.10 mm. Carapace 2.40 mm. long, 2.40 mm. wide; abdomen 3.90 mm. long, 4.00 mm. wide.

Cephalothorax: Convex, as long as wide, cephalic region slightly high. Eyes of the posterior row slightly recurved and almost equidistant. The anterior row more recurved than the posterior row, lateral eyes situated on the elevated confluent white tubercles; antero-laterals larger than others. The median ocular area a little narrower in front than behind. Clypeus high. Legs I and II much longer than III and IV, armed ventrally on tibiae I with five pairs and metatarsi with six pairs of robust spines, legs clothed with fine hairs. Sternum heart-shaped, slightly pointed behind, clothed with fine hairs.

Abdomen: Round, slightly overlapping the posterior region of the cephalothorax in front, broadest just behind the middle; an incomplete light brown line mid-dorsally and five small sigilla

like depressions on posteriorly, diverging line on either side of the mid-dorsum. Epigyne as in fig. 133.



FIGS. 132-133. *Misumena mridulai* Tikader
 132. Dorsal view of female, legs omitted.
 133. Epigyne.

Type-locality: Kench's Trace, Shillong, Meghalaya, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2544/18

Distribution: So far this species is known only from its type locality.

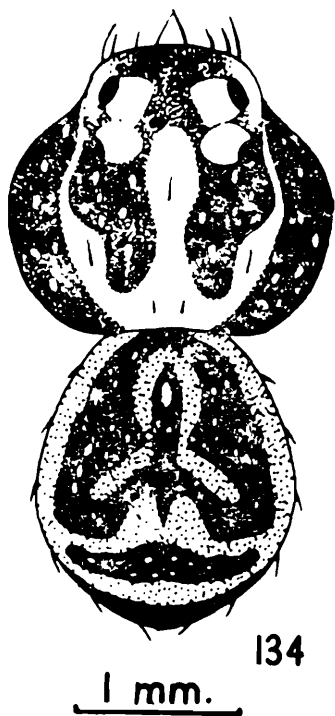
Remark: Description based on a single female specimen.

39. *Misumena indra* Tikader (Figs. 134-135)

1963. *Misumena indra* Tikader, *Proc. Indian Acad. Sci.*, Bangalore, **58** (5): 265.

General: Cephalothorax and abdomen greyish-brown, legs light green. Total length 3.20 mm. Carapace 1.60 mm. long, 1.90 mm. wide; abdomen 1.70 mm. long, 1.60 mm. wide.

Cephalothorax: Slightly convex, wider than long, clothed with fine pubescence and a few spines; cephalic region slightly elevated; two kidney shaped longitudinal, deep-brown, broad bands on the cephalothorax extending from the ocular area to nearly the base of cephalothorax, the lateral margins also provided with longitudinal, deep-brown bands. Clypeus high, the margin with six long spines directed forward. Eyes round and black, ringed with dirty-white tubercles, the posterior row more recurved than



FIGS. 134-135. *Misumena indra* Tikader
 134. Dorsal view of male, legs omitted.
 135. Male-palp, ventral view.

the anterior; antero-lateral eyes larger than the rest; tubercles of the lateral eyes contiguous. Legs I and II much longer than III and IV, clothed with hairs and strong spines; tibiae I with three pairs and metatarsi with two pairs of ventral spines. Sternum heart-shaped, pointed behind. Male palp as in fig. 135.

Abdomen: Round, broadest just behind the middle, clothed with hairs and a few spines; dorsally with irregular, rounded, whitish dots or pigments, surrounded by deep-brown background.

Type-locality: Kotigehara, Dist. Chikmagalur, Karnataka, INDIA. *Holotype:* ♂, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3125/18

Distribution: Chikmagalur, Karnataka; Poona, Maharashtra, INDIA.

Remark: Description based on a single male specimen.

40. *Misumena silveryi* Tikader

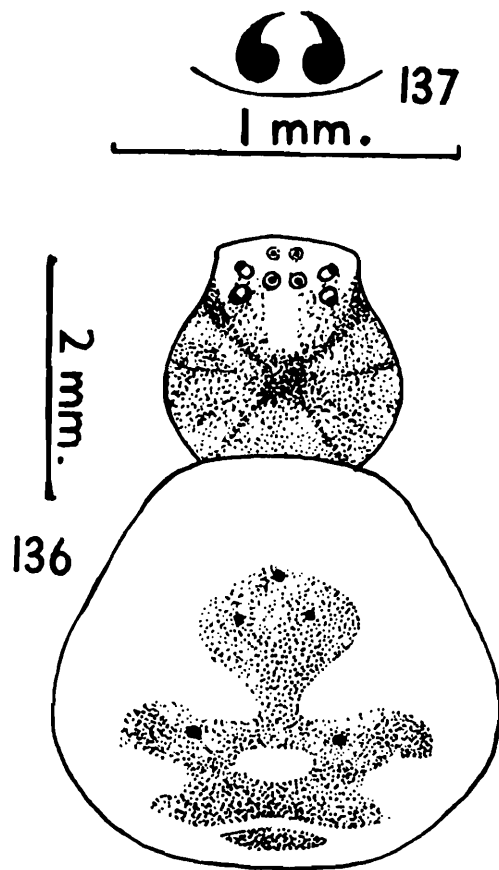
(Figs. 136-137)

1965. *Misumena silveryi* Tikader, *Proc. Indian Acad. Sci.*, Bangalore. **61** (5): 282.

General: Cephalothorax and legs light brownish-green, abdomen silvery white. Total length 5.20 mm. Carapace 2.00 mm. long, 2.00 mm. wide; abdomen 3.40 mm. long, 4.00 mm. wide.

Cephalothorax: Convex, as long as wide, clothed with fine pubescence; cephalic region slightly high. Eyes round, black, both rows recurved but anterior row more recurved than posterior row. Lateral eyes provided with prominent tubercles, anterior lateral row of eyes longer than others, the median ocular area a little narrower in front than behind. Clypeus high. Legs I and II much longer than III and IV, tibiae I with three pairs and metatarsi with six pairs of ventral spines; clothed with fine hairs. Sternum heart-shaped, pointed behind.

Abdomen: Round, broadest just behind the middle, dorsally with five sigilla-like depressions arranged in V-shape. Ventral side less silvery than dorsal side. Epigyne as in fig. 137.



FIGS. 136-137. *Misumena silveryi* Tikader
 136. Dorsal view of female, legs omitted.
 137. Epigyne.

Type-locality: Poona University Compound, Poona, Maharashtra, INDIA. *Holotype* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3113/18

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

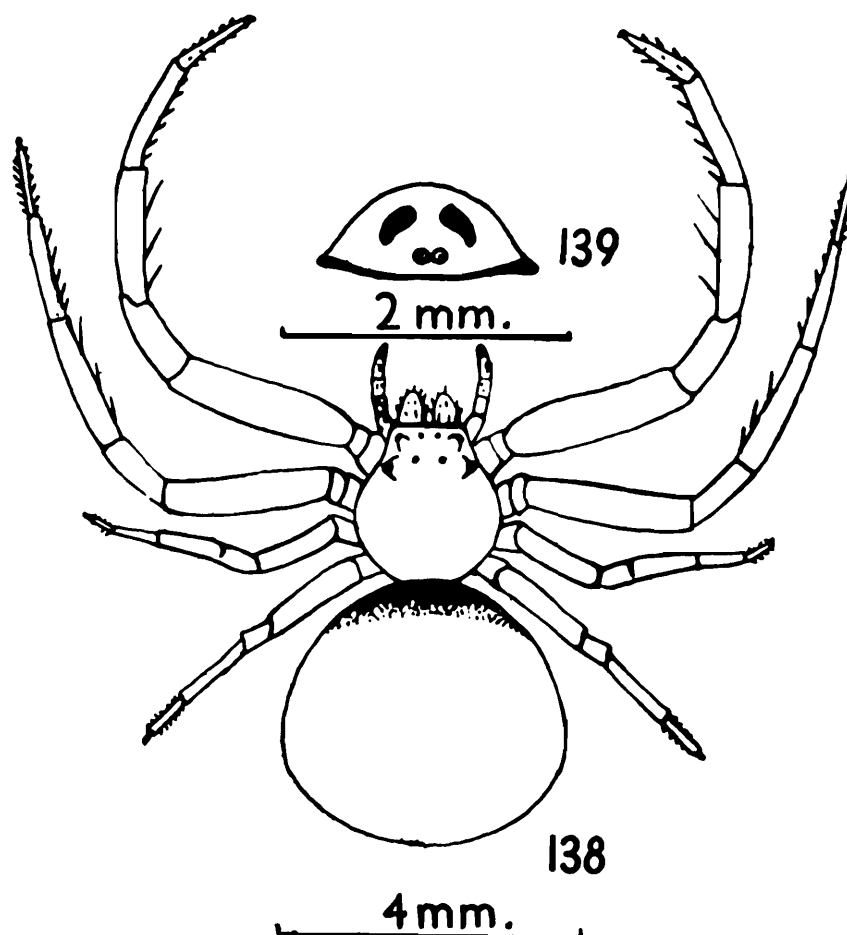
41. *Misumena annapurna* Tikader

(Figs. 138-139)

1963. *Misumena annapurna* Tikader, *Proc. Indian Acad. Sci.*, Bangalore, 58 (5) : 256.

General: Cephalothorax and legs yellowish-brown, abdomen chalk-white. Total length 5.10 mm. Carapace 1.90 mm. long, 1.90 mm. wide; abdomen 3.20 mm. long, 3.60 mm. wide.

Cephalothorax: Convex, as long as wide, the cephalic region slightly elevated and with a whitish, longitudinal, middle band; clothed with a few spines. Clypeus median in height, its margin provided with seven strong spines directed forward except the middle one which is directed upward. Eyes round and black, ocular area chalk-white, the posterior row slightly more recurved than the anterior row; lateral eyes situated on elevated, confluent, white tubercles; anterior laterals larger than the others. The median ocular area a little narrower in front than behind. Legs I and II much longer than III and IV, armed ventrally on tibiae and metatarsi of I with four pairs and six pairs of robust spines respectively; legs clothed with fine hairs.



FIGS. 138-139. *Misumena annapurna* Tikader
 138. Dorsal view of female, with legs.
 139. Epigyne.

Abdomen: Round, broadest just behind the middle; two small sigilla on the dorsum. Ventral side uniform pale colour. Epigyne as in fig. 139.

Type-locality: Kotigehara, Dist. Chikmagalur, Karnataka, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3109/18

Distribution: Chikmagalur, Karnataka; Poona, Maharashtra, INDIA.

Remark: Description based on a single female specimen.

42. *Misumena greenae* Tikader

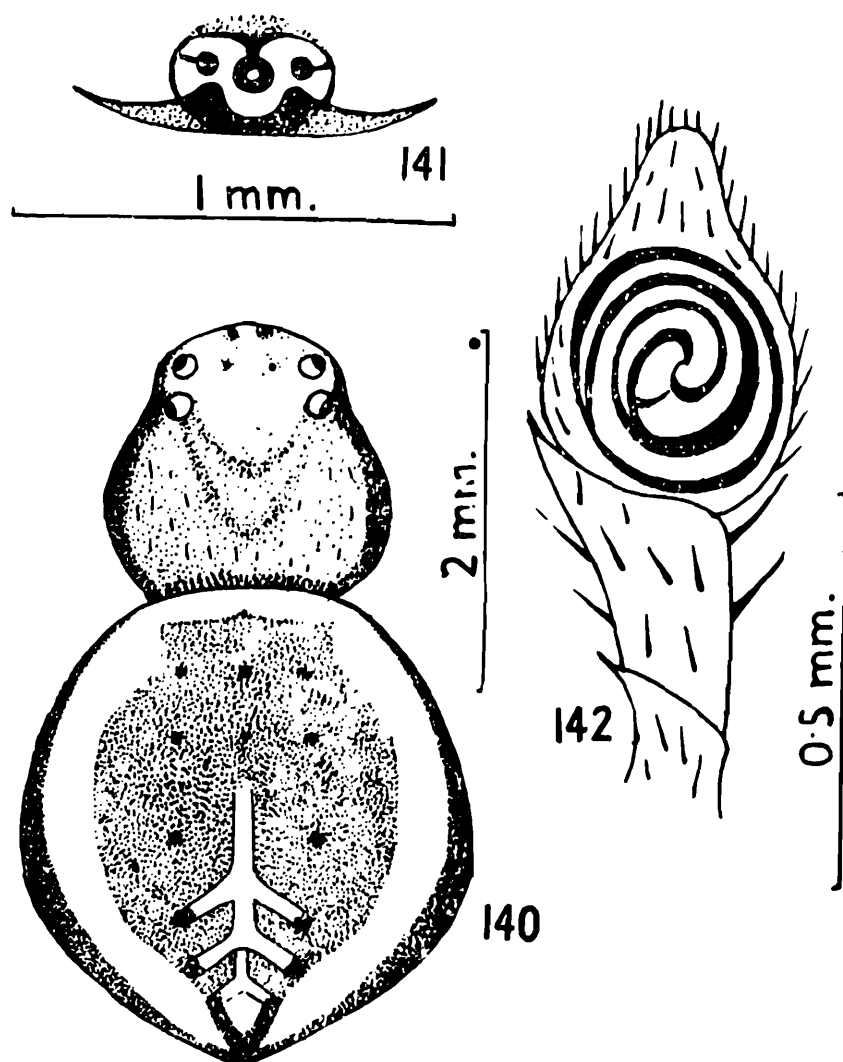
(Figs. 140-142)

1965. *Misumena greenae* Tikader, *Proc. Indian Acad. Sci.*, Bangalore, 61(5) : 281.

General: Cephalothorax and legs light brown, abdomen greenish pale. Total length 4.00 mm. Carapace 1.50 mm. long, 1.50 mm. wide; abdomen 2.60 mm. long, 2.50 mm. wide.

Cephalothorax: Convex, as long as wide, cephalic region slightly high, clothed with a few spines. Eyes black with tubercles, both rows recurved, posterior row longer and eyes almost equidistant but median eyes smaller than others; anterior lateral eyes larger than others, the median ocular area a little narrower in front than behind. Clypeus moderate, margin provided with seven spiny hairs. Legs I and II much longer than III and IV, tibiae I and II armed ventrally with four pairs of spines and metatarsi with three pairs of ventral spines. Male palp as in fig. 142.

Abdomen: Round, broadest just behind the middle, dorsally with deep greenish patch, encircled by dirty white patches on the margin of abdomen; behind the middle on the dorsal side provided with two longitudinal rows of black spots and these rows join posteriorly at the end of abdomen. Ventral side uniform pale colour. Epigyne as in fig. 141. Male smaller than female, legs long and cylindrical, tibiae and metatarsi of I and II with conspicuous deep brown colour.



FIGS. 140-142. *Misumena greenae* Tikader
 140. Dorsal view of female, legs omitted.
 141. Epigyne.
 142. Male-palp, ventral view.

Type-locality: National Chemical Laboratory Compound, Poona, Maharashtra, INDIA. *Holotype*: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3110/18

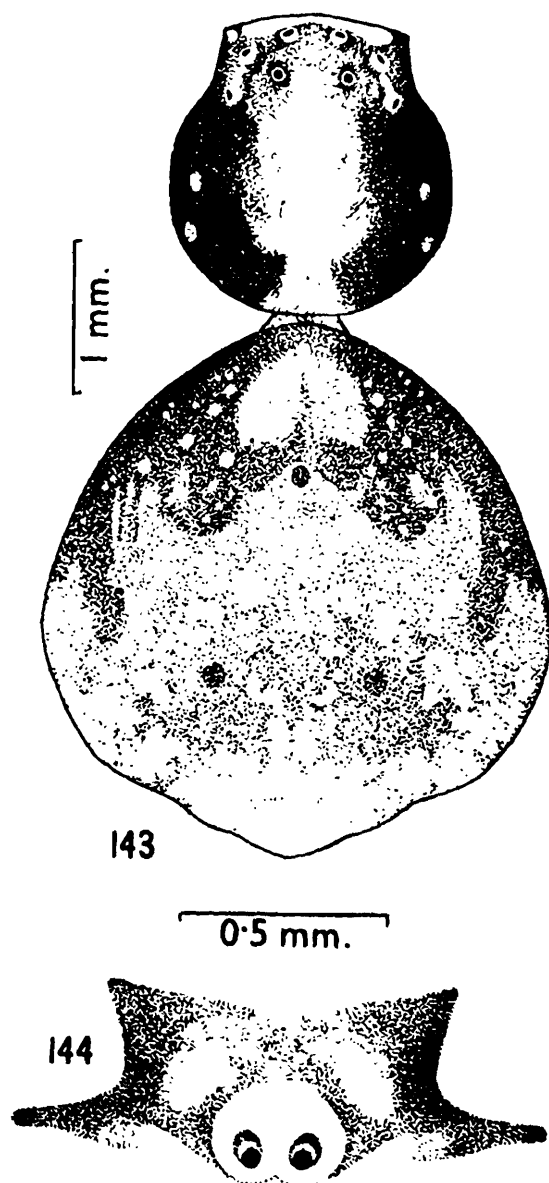
Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

43. *Misumena nicobarensis* sp. nov.

(Figs. 143-144)

General: Cephalothorax and legs greenish brown, abdomen brownish white. Total length 5.80 mm. Carapace 2.00 mm. long, 1.90 mm. wide; abdomen 3.60 mm. long, 3.50 mm. wide.



FIGS. 143-144. *Misumena nicobarensis* sp. nov.
 143. Dorsal view of female, legs omitted.
 144. Epigyne.

Cephalothorax: Slightly longer than wide, narrowing in front, two lateral sides provided with conspicuous broad dark brown

patch, clothed with fine pubescence. Cephalic region slightly high. Eyes of the posterior row slightly recurved and almost equidistant. The anterior row more recurved than the posterior row, lateral eyes situated on the elevated confluent white tubercles; anterior lateral larger than others. The median ocular area longer than wide and a little narrow in front than behind. Clypeus high. Legs I and II much longer than III and IV, decorated with conspicuous transverse brown bands. Sternum heart-shaped, slightly pointed behind; clothed with fine hairs and brown pigmented dots.

Abdomen: Round, broadest just behind the middle, dorsally decorated with chalk-white and brown pigmented dots. Ventral side uniform brown in colour. Epigyne as in fig. 144.

Holotype: ♀, in spirit. Deposited at Zoological Survey of India, Calcutta. Regd. No. 4588/18

Type-locality: Kakana village, Car-Nicobar, INDIA.
9.iii.1970, Coll. B. K. Tikader.

This species resembles *Misumena horai* Tikader but it can be distinguished from it as follows: (i) Cephalothorax provided with conspicuous broad dark brown patch but in *M. horai* there is no such patch. (ii) Abdomen dorsally provided with chalk-white and brown pigmented dots but in *M. horai* abdomen dorsally with two longitudinal rows of 6-10 black spots. (iii) Epigyne also structurally different.

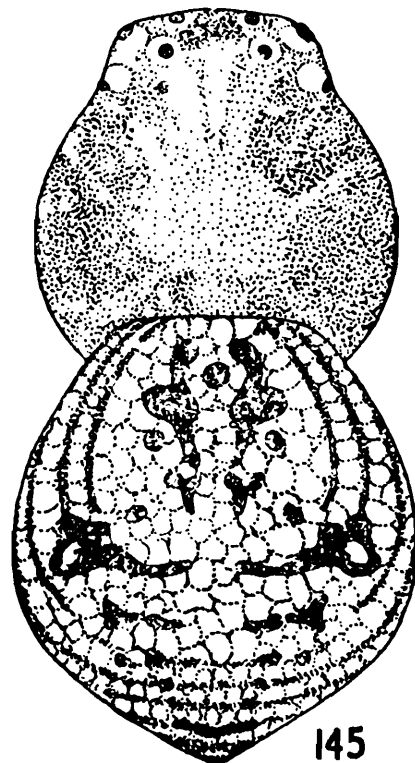
44. *Misumena decorata* sp. nov.

(Figs. 145-146)

General: Cephalothorax and legs uniform light green, abdomen chalk-white with chocolate brown patches. Total length 3.00 mm. Carapace 1.50 mm. long, 1.50 mm. wide, abdomen 1.70 mm. long, 1.60 mm. wide.

Cephalothorax: Nearly as long as wide, convex, clothed with pubescence, highest at the middle. Eyes black, both rows recurved but posterior row less recurved, than anterior row; lateral eyes provided with conspicuous white tubercles, all eyes situated nearly equidistance to each other; anterior lateral eyes larger than the

others. Ocular quad slightly wider behind as in fig. 145. Clypeus high. Sternum heart shaped, pointed behind. Legs I and II much longer than III and IV Tibiae and metatarsi I and II provided with two and four pairs of ventral spines respectively.



1 mm.



0.5 mm.

FIGS. 145-146. *Misumena decorata* sp. nov.
 145. Dorsal view of female, legs omitted.
 146. Epigyne.

Abdomen: Slightly longer than wide, widest behind the middle, narrowing posteriorly. Dorsal side chalk-white with some chocolate brown irregular patches as in text-fig. 145. Ventral side pale, posterior lateral sides provided with conspicuous deep brown patches. Epigyne as in fig. 146.

Holotype: ♀ in spirit. Deposited at Zoological Survey of India, Calcutta. Regd. No. 4584/18.

Type-locality: Mukund Nagar, Poona, Maharashtra, INDIA. 26.x.1975, Coll. B. K. Tikader.

This species resembles *Misumena horai* Tikader, but can be distinguished from it as follows: (i) Cephalothorax uniform light green but in *M. horai* cephalothorax yellowish-brown. (ii) Tibiae I with two pairs of ventral spines but in *M. horai* tibiae I with three pairs of ventral spines. (iii) Epigyne also structurally different.

Genus 6. *Diaea* Thorell

1869. *Diaea* Thorell, *Eur. Spid. Etc.*, : 184.

1875. *Diaea* : Simon, *Ar. Fr.*, 2 : 260.

1895. *Diaea* : Simon, *Hist. Nat. Araign.* 1(4) : 1035.

1935. *Diaea* : Dyal, *Bull. Dep. Zool. Punjab Univ.*, 1 : 199.

1951. *Diaea* : Locket and Millidge, *British Spiders*, London, 1 : 172.

1966. *Diaea* : Tikader, *Proc. Indian Acad. Sci.*, Bangalore., 64 (1) : 59.

Characters: Cephalothorax armed with a number of long, spines. Eyes black, medians form a rectangle slightly longer than wide; laterals on separate shallow tubercles. Abdomen oval, slightly broadened behind, clothed with long hairs. Legs armed with numerous long spines; legs I and II much longer than III and IV, exceptionally so in the male.

Type-species *Diaea dorsata* (Fabricius)

Distribution : EUROPE, AFRICA, ASIA and AMERICA.

45. *Diaea jaintious* Tikader

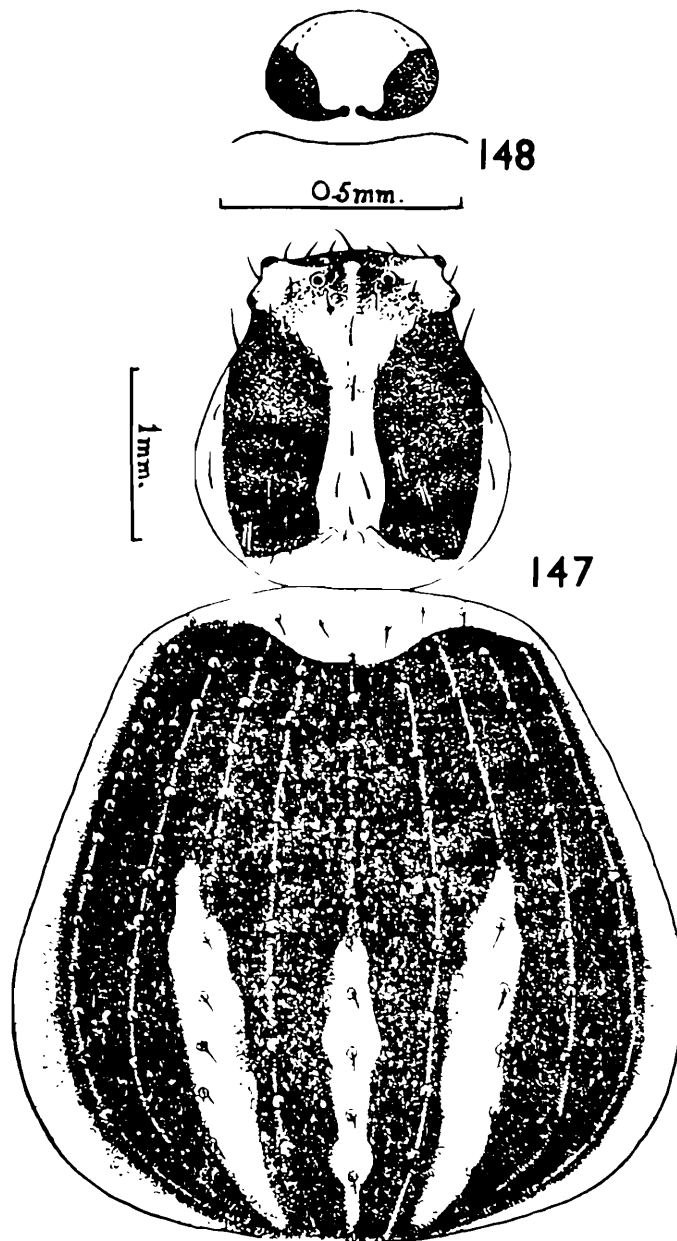
(Figs. 147-148)

1966. *Diaea jaintious* Tikader, *Proc. Indian Acad. Sci.*, Bangalore, 64 (1) : 59.

General: Cephalothorax and abdomen light to deep brown, legs light green. Total length 6.00 mm. Carapace 2.00 mm. long. 1.80 mm. wide; abdomen 4.00 mm. long, 4.80 mm. wide.

Cephalothorax: Longer than wide, convex, narrowing in front, clothed with spines, lateral two sides provided with cons-

picuous longitudinal deep brown patches extending from base of lateral eyes to near the base of thorax; mid-dorsally with a longitudinal white broad patch extending from ocular area to base of thorax. Eyes black, lateral eyes situated on the shallow tubercles; ocular quad wider than long and narrowing in front. Clypeus moderate, margin provided with seven spines directed forward except the middle one which is directed upward. Sternum



FIGS. 147-148. *Diaca jointious* Tikader
 147. Dorsal view of female, legs omitted.
 148. Epigyne.

heart-shaped, clothed with hairs. Legs I and II conspicuously long, clothed with hairs and spines; II pair of legs darker in colour than I pair; metatarsi of I and II pairs of legs provided with six pairs of ventral spines, III and IV pairs of legs comparatively very short and without ventral spine.

Abdomen: Oval, prominently dilated behind, clothed with spiny hairs, some spines arranged longitudinally on the dorsum and base of each hair with a white dot. Dorsal side almost deep brown in colour but lateral sides and posterior half provided with some whitish longitudinal patches. Ventral side uniform pale colour. Epigyne as in fig. 148.

Type-locality: Risha colony, Shillong, Meghalaya, INDIA
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3804/18.

Distribution: Shillong, Cherapunjee, Meghalaya, INDIA.

Remark: Description based on a single female specimen.

Genus 7. *Xysticus* Koch

1835. *Xysticus* Koch, *H. Schaeff. Deutschl. Ins.*, : 35.
 1895. *Xysticus* : Simon, *Hist. Nat. Araignees*, 1 (4) : 1035.
 1940. *Xysticus* : Comstock, *The Spider Book*, New York, : 545.
 1951. *Xysticus* : Locket and Millidge, *British Spiders*, London, 1 : 175.
 1960. *Xysticus* : Tikader, *J. Bombay nat. Hist. Soc.*, 57 (1) : 173.
 1962. *Xysticus* : Tikader, *J. Linn. Soc.*, London, 44 (300) : 576.

Characters: Cephalothorax rather square-fronted, clothed with simple isolated hairs and spines, which are usually pointed, rarely blunt, but never clavate. Posterior eyes nearly equidistant, medians smaller than laterals; the anterior medians usually a little further from each other than from the anterior laterals. The lateral eyes situated in low subconfluent tubercles. The tibiae and metatarsi of the anterior legs usually furnished with more than three pairs of inferior spines. Tarsal claws furnished with five or six isolated teeth. Abdomen much wider behind than in front, usually bearing a dentate band on its dorsal surface. These spiders live under stones and leaves or under loose bark; a few live on small plants and bushes.

Type-species: Xysticus critatus (Clerck).

Distribution : EUROPE, AFRICA, ASIA and AMERICA.

KEY TO SPECIES OF THE GENUS XYSTICUS Koch

- | | |
|--|---------------------------------------|
| 1. Cephalothorax with dark brown patches | .2 |
| Cephalothorax without dark brown patches | .12 |
| 2. Cephalothorax with a broad U-shaped dark brown patch | <i>.kamakhyai</i> Tikader |
| Cephalothorax without U-shaped patch. | .3 |
| 3. Allatum with longitudinal broad dark brown patch | .4 |
| Allatum without longitudinal dark brown patch | <i>.hindusthanicus</i> Basu |
| 4. Abdomen with deep brown patches. | .5 |
| Abdomen without deep brown patches | <i>.roonwali</i> Tikader |
| 5. Abdomen with longitudinal deep brown or black patches | .6 |
| Abdomen with transverse deep brown or black patches | .9 |
| 6. Abdomen laterally with complete broad longitudinal black or deep brown lines | 7 |
| Abdomen laterally with incomplete broad longitudinal deep brown lines | <i>.shyamrupus</i> Tikader |
| 7. Abdomen of female laterally with black or deep brown bars extending from base to end. | .8 |
| Abdomen of male laterally with deep brown broad bars extending from base to end | <i>.sikkimus</i> Tikader |
| 8. Abdomen with two black spots dorsally and no lines | <i>.kashidi</i> Tikader |
| Abdomen with laterally two conspicuous black lines extending from base to end and no spots | <i>.mandali</i> Tikader |
| 9. Abdomen with a single transverse complete deep brown line | <i>.minutus</i> Tikader |
| Abdomen with more than one transverse lines | .10 |
| 10. Abdomen with complete transverse white or pale lines | <i>.sujatai</i> Tikader |
| Abdomen with incomplete transverse white or pale lines | 11 |

11. Abdomen mid-ventrally with longitudinal broad brownish-red band . *pynurus* Tikader
 Abdomen mid-ventrally with two longitudinal brown lines extending from base to spinnerets . *jayantius* Tikader
12. Abdomen with two conspicuous black spots nearly on the anterior lateral margin and one-third of the posterior portion black *shillongensis* Tikader
 Abdomen with more than two black conspicuous spots on dorsum and posterior portion not black 13
13. Cephalothorax uniform dark 15
 Cephalothorax not uniform dark 14
14. Cephalothorax light to deep brown . *bengalensis* Tikader & Biswas
 Cephalothorax pale green . *himalayensis* Tikader & Biswas
15. Tibiae and metatarsi of I and II legs with two pairs of ventral spines each. . *kali* Tikader & Biswas
 Tibiae and metatarsi of I and II legs with three and four pairs of ventral spines respectively . *khasiensis* sp. nov.

46. *Xysticus kamakhyai* Tikader

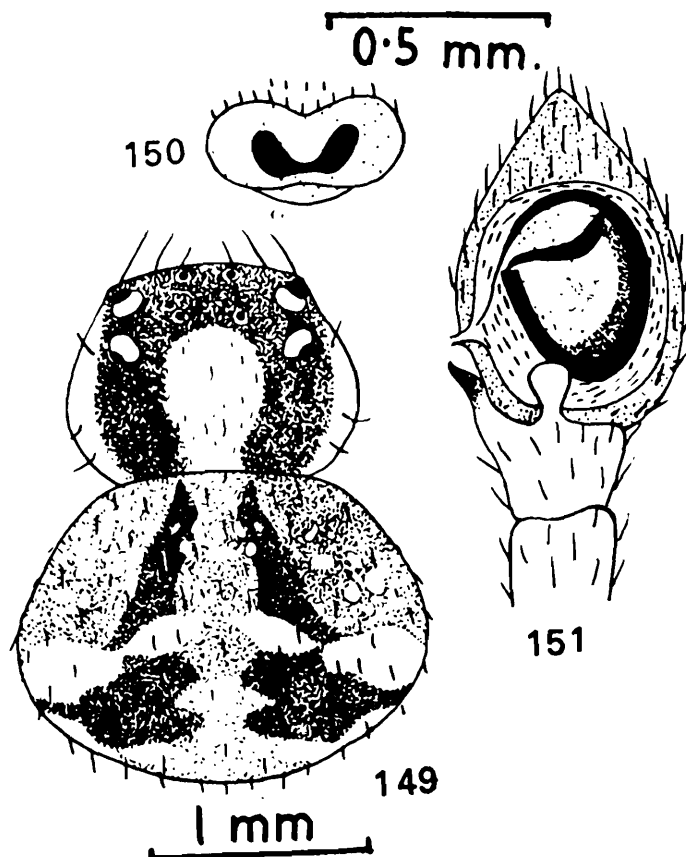
Figs. (149-151)

1962. *Xysticus kamakhyai* Tikader, *J. Linn. Soc.*, London, 44 (300) : 575.

General: Cephalothorax dirty yellowish, legs brownish-yellow, abdomen dirty yellowish-brown. Total length 2.40 mm. Carapace 1.10 mm. long, 1.30 mm. wide; abdomen 1.50 mm. long, 1.90 mm. wide.

Cephalothorax: Wider than long, spined, a U-shaped broad, dark brown patch, with base of the U in the ocular area and the limbs directed backward and sublaterally on the cephalothorax. Clypeus high, and broad, margin provided with six strong spines directed forward. Eyes round, black, ringed with whitish-brown tubercles; both rows recurved but posterior row longer, lateral eyes large but anterior medians smaller than the posterior medians. Sternum oval, pointed behind, moderately and densely clothed with fine hairs. Legs strong and spined; legs I and II longer than others, on the front side of I femur with three conspicuous strong

spines; tibiae with two pairs of ventral spines and metatarsi with three pairs of ventral spines. Male palp as in fig. 151.



FIGS. 149-151. *Xysticus kamakhyai* Tikader
 149. Dorsal view of female, legs omitted.
 150. Epigyne.
 151. Male-palp, ventral view.

Abdomen: Ovate, wider than long, clothed with spines, dorsal side with two longitudinal deep brown irregular broad patches interrupted by a transverse pale yellowish line on the middle. Ventral side pale brown. Epigyne as in fig. 150.

Type-locality: Kench's Trace, Shillong, Meghalaya, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2546/18

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

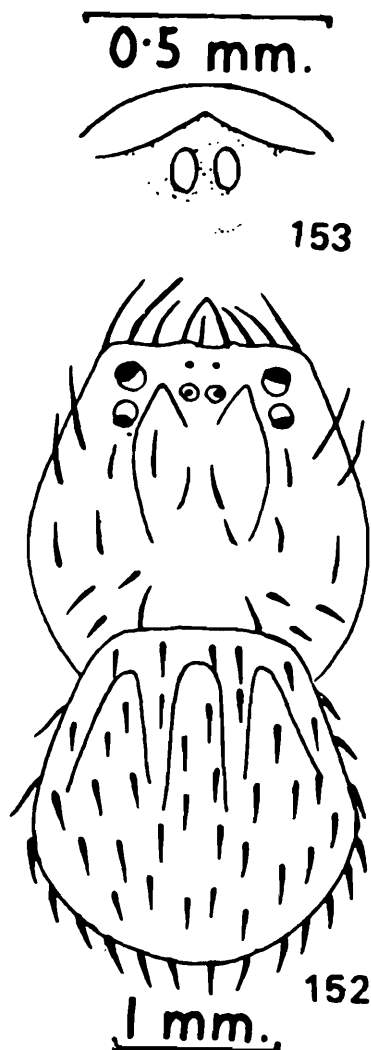
47. *Xysticus hindusthanicus* Basu

(Figs. 152-153)

1963. *Xysticus hindusthanicus* Basu, *J. Asiat. Soc. Bengal*, 5 (1-2) : 23.

General: Cephalothorax brown, legs black, abdomen brownish. Total length 3.80 mm. Carapace 2.00 mm. long, 1.90 mm. wide; abdomen 1.90 mm. long, 1.90 mm. wide.

Cephalothorax: As long as wide, spined; three light brown areas along the posterior median eyes extending well below the thorax; the mid-region of the cephalic base reddish. Clypeus



FIGS. 152-153. *Xysticus hindusthanicus* Basu
 152. Dorsal view of female, legs omitted.
 153. Epigyne.

median with eight strong spines all directed forward. Eyes round, ringed with whitish tubercles. Ocular quad as long as wide, lateral eyes large; posterior median eyes larger than the anterior median eyes. Legs black excepting the metatarsi and tarsi, hairy and spined. Tibiae I and II with three pairs of ventral spines; metatarsi I and II with five dorsal spines.

Abdomen: Nearly as long as wide, spined, projecting over the base of the cephalothorax in front, oval, dorsum deep brown in colour excepting the anterior part which is white. Epigyne as in fig. 153.

Type-locality: Modern Colony, Dum Dum, near Calcutta, West Bengal. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta.

Distribution: Dum Dum, Dist. 24-Parganas, West Bengal, INDIA.

48. *Xysticus roonwali* Tikader

(Figs. 154-156)

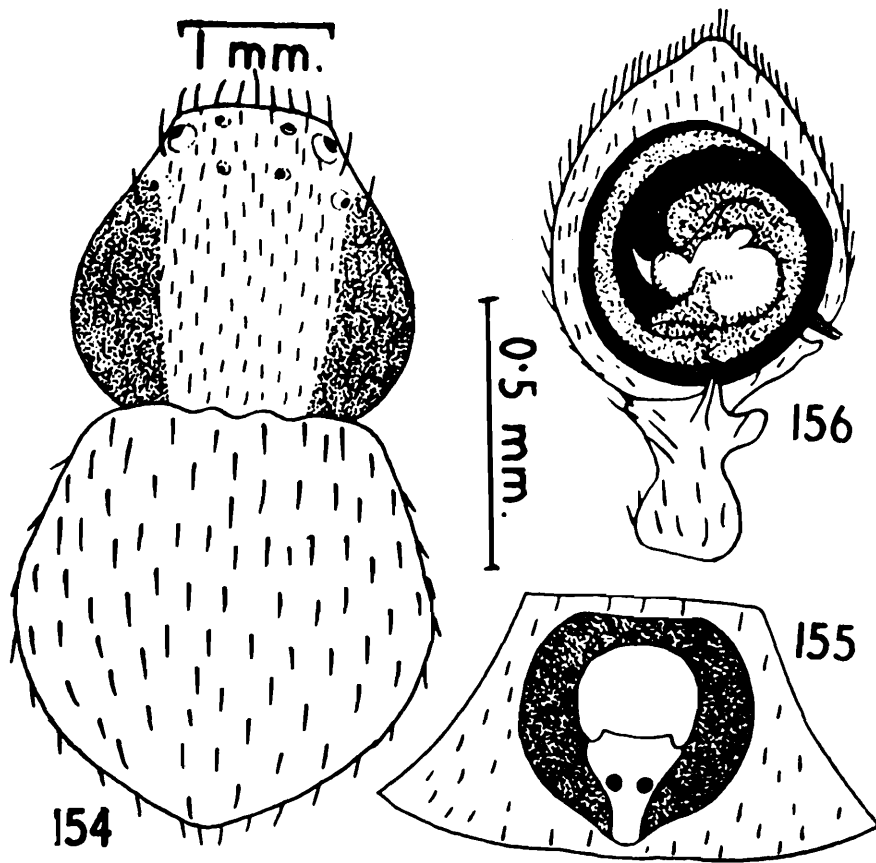
1964. *Xysticus roonwali* Tikader, *Rec. Indian Mus.*, 59 (3) : 264.

General: Cephalothorax, legs pale brown, abdomen a little deep-brown. Total length 4.70 mm. Carapace 2.20 mm. long, 2.20 mm. wide; abdomen 2.60 mm. long, 2.60 mm. wide.

Cephalothorax: As long as wide, spined, the lateral margins with longitudinal dark brown broad patches. Clypeus moderate, margin with nine strong spines directed forward. Eyes round, black, ringed with dirty white tubercles; ocular quad slightly longer than wide, space of the anterior median eyes a little smaller than that of posterior; lateral eyes larger, posterior median eyes smaller than anterior median eyes. Sternum heart-shaped, pointed behind, with black pigmented spots. Legs spined, strong and stout, spotted with black dots; tibiae I and II with three pairs of ventral spines, three spines on the I femur in front. Male palp as in fig. 156.

Abdomen: Oval, as long as wide, dorsum spined, more conspicuously in front; distinctly overlapping the posterior region

of cephalothorax in front. Ventral surface pigmented like sternum. Epigyne as in fig. 155.



FIGS. 154-156. *Xysticus roonwali* Tikader
 154. Dorsal view of female, legs omitted.
 155. Epigyne.
 156. Male-palp, ventral view.

Type-locality: Base camp on way to Mt. Everest c 5,151 m. high in NEPAL. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2484/18

Distribution: Sikkim, INDIA. NEPAL.

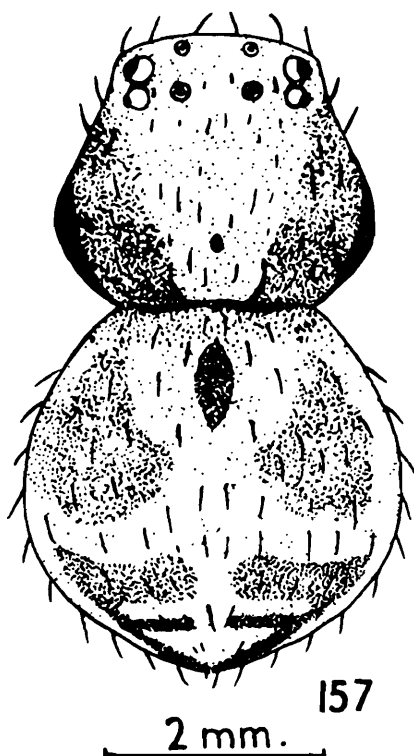
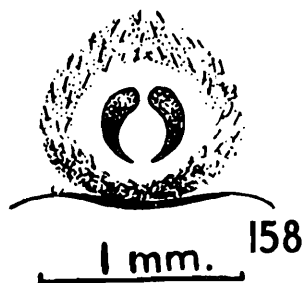
Remark: Description based on a single female specimen.

49. *Xysticus shyamrupus* Tikader

(Figs. 157-158)

1966. *Xysticus shyamrupus* Tikador, *Proc. Indian Acad. Sci.*, Bangaloe, 64(1) : 57.

General: Cephalothorax, legs and abdomen light brown or deep brown. Total length 6.00 mm. Carapace 3.00 mm. long, 3.40 mm. wide; abdomen 3.80 mm. long, 3.40 mm. wide



FIGS. 157-158. *Xysticus shyamrupus* Tikader
 157. Dorsal view of female, legs omitted.
 158. Epigyne.

Cephalothorax: Slightly wider than long, convex, cephalic region slightly high and broad, clothed with conspicuous long and stout spines, lateral two sides provided with longitudinal broad deep-brown patches, mid-dorsally provided with wide longitudinal light patch extending from ocular area to base of thorax. Eyes black, lateral eyes large and provided with conspicuous high tubercles. Ocular quad almost square or slightly

wider than long. Clypeus high, margin provided with nine robust spines directed forward except the middle one which is directed upward. Sternum heart-shaped, pointed behind, clothed with hairs and pigmented brown dots. Legs I and II robust and longer than III and IV, tibiae with three pairs of robust ventral spines and metatarsi with four or five pairs of ventral spines.

Abdomen: Oval, slightly wider than long, clothed with conspicuous spines, maximum width behind the middle. Dorsally ornamented with brown and dirty white patches. Ventral side uniform light colour, clothed with hairs. Epigyne as in fig. 158.

Type-locality: Mawphlong, Shillong, Meghalaya, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3797/18

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

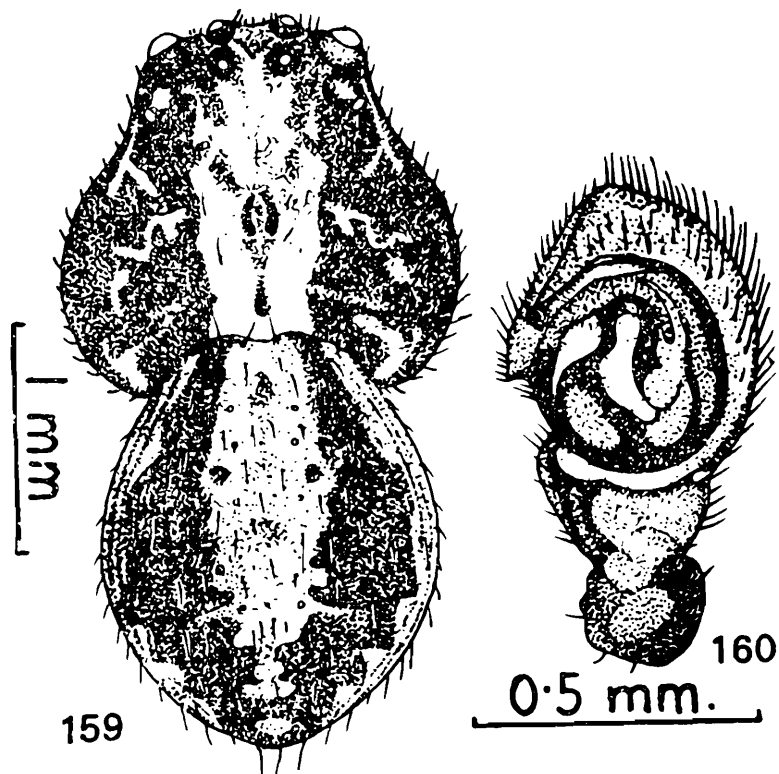
50. *Xysticus sikkimus* Tikader

(Figs. 159-160)

1970. *Xysticus sikkimus* Tikader, *Rec. zool. Surv. India*, Calcutta, 64 : 51.

General: Cephalothorax, legs and abdomen dark-brown. Total length 3.10 mm. Carapace 1.60 mm. long, 1.70 mm. wide; abdomen 1.80 mm. long, 1.50 mm. wide.

Cephalothorax: Nearly as long as wide, densely and conspicuously spined; middle of cephalothorax provided with a broad longitudinal light patch from ocular area to base of thorax. Eyes round, black lateral eyes large and ringed with contiguous brown tubercles, ocular quad wider than long, medians almost equal in size. Sternum broadly oval, slightly pointed behind, dark colour. Legs strong and spined; I and II longer than III and IV, from base to patella of I and II with deep brown and remaining portion of legs pale in colour. Tibiae and metatarsi of I and II with three and four pairs of ventral spines respectively. Male palp as in fig. 160



FIGS. 159-160. *Xysticus sikkimus* Tikader
 159. Dorsal view of male, legs omitted.
 160. Male-palp, ventral view.

Abdomen: Shortly ovate, wider behind, clothed with numerous spines, mid-dorsally with a longitudinal broad light patch, extending from base to end of abdomen. Ventral side deep-brown or black.

Type-locality: Satmaila, (near Gangtok) East Sikkim, INDIA.
Holotype: ♂, deposited in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3167/18

Distribution: So far this species is known only from its type locality.

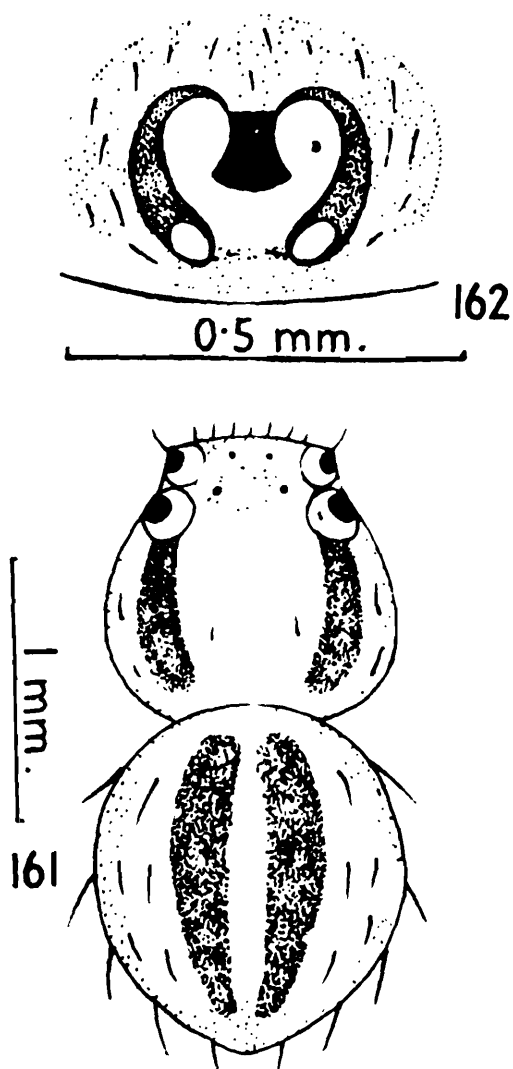
Remark: Description based on a single male specimen.

51. *Xysticus kashidi* Tikader

(Figs. 161-162)

1963. *Xysticus kashidi* Tikader, *Proc. Indian Acad. Sci.*, Bangalore, **58** (5): 261.

General: Cephalothorax and legs pale green, abdomen greenish white. Total length 2.30 mm. Carapace 1.10 mm. long, 1.20 mm. wide; abdomen 1.30 mm. long, 1.20 mm. wide.



FIGS. 161-162. *Xysticus kashidi* Tikader
 161. Dorsal view of female, legs omitted.
 162. Epigyne.

Cephalothorax: Broadest behind, slightly narrower in front, maximum width slightly more than length, covered with fine hairs and a few spines, with two broad, longitudinal, deep brown patches extending from base of lateral eyes to base of cephalothorax; middle and cephalic region provided with irregular small brown dots. Clypeus moderate. Eyes black, round, ringed with white tubercles, ocular quad slightly wider than long, space of the ante-

rior median eyes a little smaller than the posterior; lateral eyes larger. Legs spined, with irregular brown dots; I and II longer than others; tibiae and metatarsi I and II with three pairs of ventral spines.

Abdomen: Oval, slightly overlapping the cephalothorax in front clothed with hairs and spines, on the middle of dorsum one pair of brown spots, and irregular brown small dots almost all over abdomen. Epigyne as in fig. 162.

Type-locality: Kotigahara, Dist. Chikmagalur, Karnataka, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3165/18

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

52. *Xysticus mandali* Tikader

(Figs. 163-164)

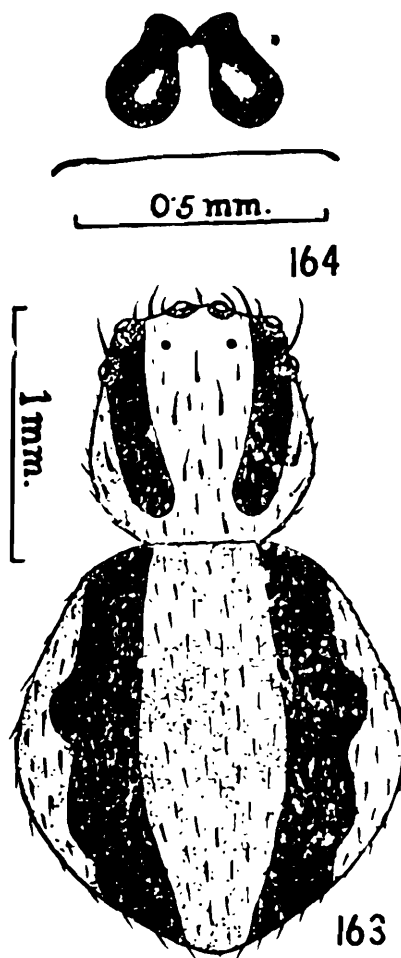
1966. *Xysticus mandali* Tikader, *Proc. Indian Acad. Sci.*, Bangalore, 64 (1) : 58.

General: Cephalothorax, legs and abdomen light green. Total length 2.80 mm. Carapace 1.00 mm. long, 0.90 mm. wide; abdomen 1.80 mm. long, 1.60 mm. wide.

Cephalothorax: Nearly as long as wide, spined, the sides provided with broad longitudinal conspicuous black bands, extending from the base of lateral eyes to near the base of thorax. Clypeus high, margin with five spines, directed forward except the median which is directed upward. Eyes round, black ringed with dirty white tubercles; ocular quad slightly wider than long, space of the anterior median eyes a little smaller than that of posterior. Posterior median eyes smaller than the anterior medians; lateral eyes large but anterior laterals largest. Legs I and II pair long and stout, spined, tibiae I and II with two pairs of ventral spines.

Abdomen: Almost oval, dorsum provided with spines and hairs, slightly overlapping the posterior region of cephalothorax, dorsal

side provided with two conspicuous black broad longitudinal bands extending from base to end of the abdomen but in some specimens these bands not continuous. Abdomen broadest just behind the middle. Lateral sides provided with a black spot. Ventral side uniform light green. Epigyne as in fig. 164.



FIGS. 163-164. *Xysticus mandali* Tikader
 163. Dorsal view of female, legs omitted.
 164. Epigyne.

Type-locality: Risha Colony, Shillong, Meghalaya, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3795/18

Distribution: Shillong, Mawphlong, Meghalaya, INDIA.

Remark: Description based on a single female specimen.

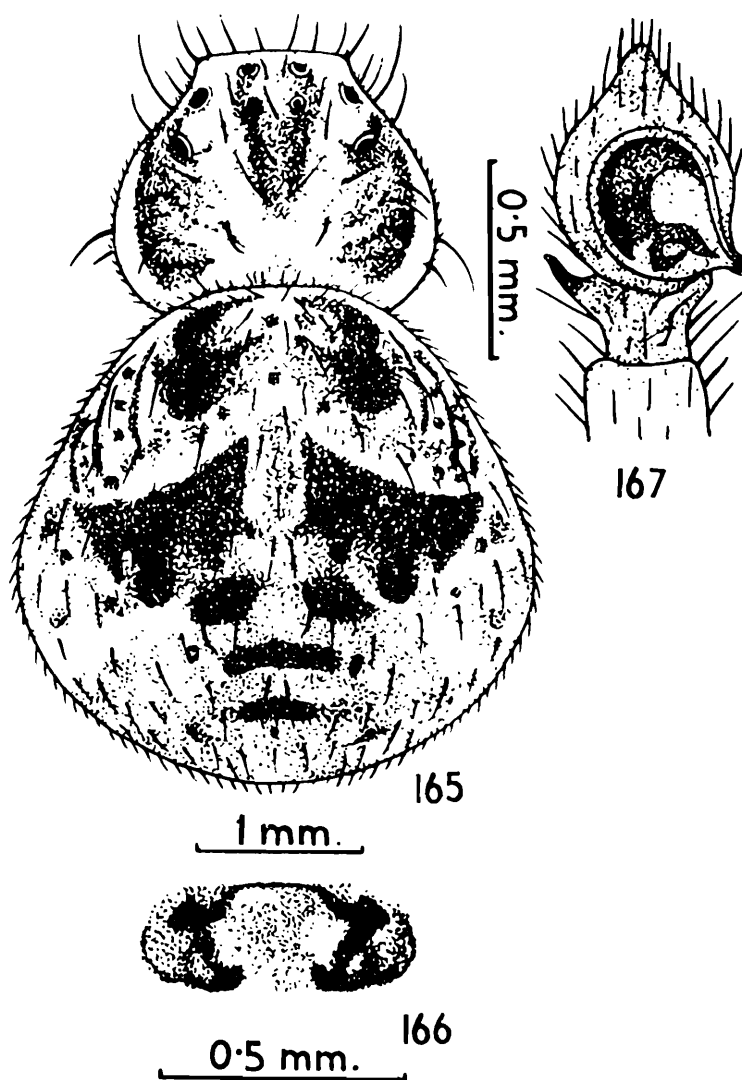
53. *Xysticus minutus* Tikader

(Figs. 165-167)

1960. *Xysticus minutus* Tikader, *J. Bombay nat. Hist. Soc.*, 57(1) : 173.

General: Cephalothorax light brown, legs greenish, abdomen light brown. Total length 2.20 mm. Carapace 1.00 mm. long, 1.00 mm. wide; abdomen 1.30 mm. long, 1.20 mm. wide.

Cephalothorax: As long as wide, spined, the sides with broad longitudinal dark brown patches, a pair of long pale brown irre-



FIGS. 165-167. *Xysticus minutus* Tikader
 165. Dorsal view of female, legs omitted.
 166. Epigyne.
 167. Male-palp, ventral view.

gular lines from the base of posterior median eyes, extending to middle of the thorax. Clypeus median, margin with seven strong spines, directed forward except the median which is directed upward. Eyes black, round, ringed with dirty white tubercles; ocular quad slightly wider than long, space of the anterior median eyes a little wider than that of posterior; lateral eyes larger; posterior median eyes smaller than anterior median. Legs spined, with brown transverse bands, tibiae I and II with two pairs of ventral spines. The apex of tibiae I and II with broad dark brown patches. Male palp as in fig. 167

Abdomen: Oval, dorsum spined, slightly overlapping the posterior region of cephalothorax, dorsal surface with dentate bands beautifully coloured with admixture of white, dark brown and red. Epigyne as in fig. 166.

Type-locality: Dhakuria, Calcutta, West Bengal, INDIA.

Holotype: ♀ in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2520/18

Distribution: West Bengal, Poona, Shillong, Gujarat, INDIA.

Remark: Description based on a single female specimen

54. *Xysticus sujatai* Tikader

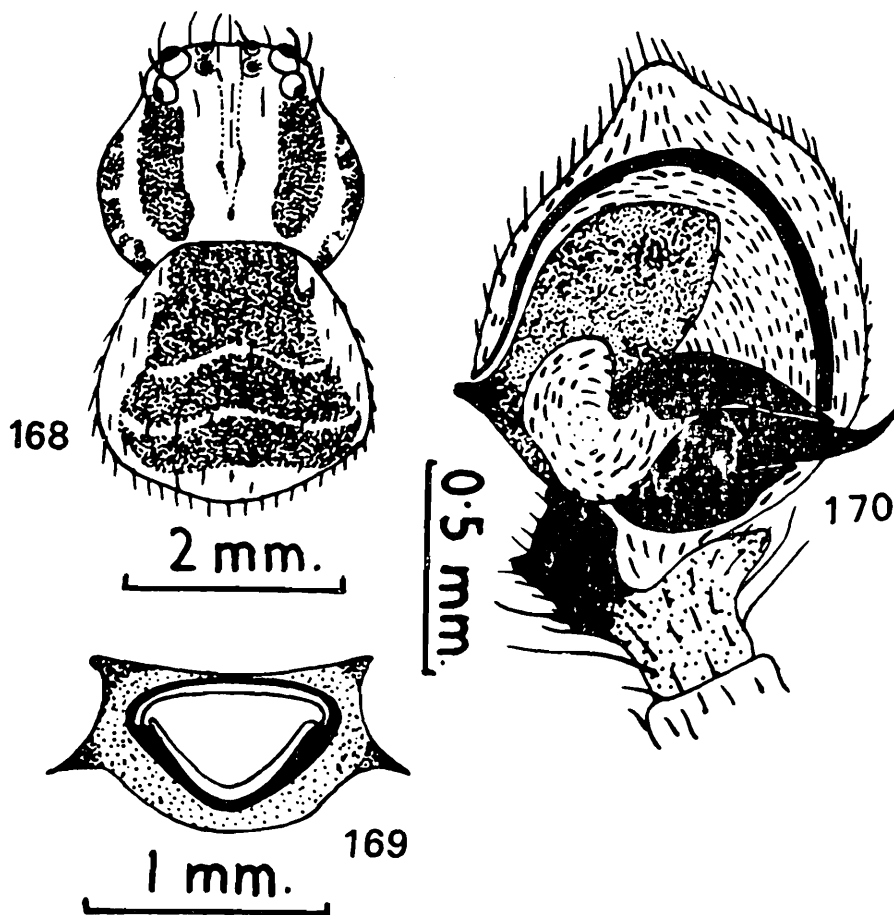
(Figs. 168-170)

1962. *Xysticus sujatai* Tikader, *J. Linn. Soc., London*, 44 (300) : 577.

General: Cephalothorax and legs dirty white, abdomen brown or greyish-white. Total length 4.20 mm. Carapace 2.20 mm. long, 2.20 mm. wide; abdomen 2.50 mm. long, 2.50 mm. wide.

Cephalothorax: As long as wide, densely and conspicuously spined, the lateral margin with dark brown and two longitudinal broad dark brown bands, extending from both the lateral eyes to nearly the base of cephalothorax. Clypeus high, margin of clypeus with seven long strong spines directed forward except the middle one which is directed upward. Eyes round, lateral eyes large and nearly contiguous, ringed with dirty white tubercles, ocular quad wider than long, medians almost equal in size. Sternum broadly oval, slightly pointed behind with thick spiny hairs.

Legs strong and spined with irregular deep brown or black dots, and these dots more conspicuous on the III and IV legs. Tibia I with three pairs of ventral spines. Two longitudinal brown parallel lines extending from the base of patella and upto the end of tibia on the dorsal side of I and II legs. Male palp as in fig. 170.



FIGS. 168-170. *Xysticus sujatai* Tikader
 168. Dorsal view of female, legs omitted.
 169. Epigyne.
 170. Male-palp, ventral view.

Abdomen: Short ovate, wider behind, clothed with spines, dorsal side with paired transverse white lines, laterally and ventrally, lighter than dorsally. Adult male black, I and II legs deep black upto the end of patella. Epigyne as in fig. 169.

Type-locality: Kench's Trace, Shillong, Meghalaya, INDIA.

Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2548/18

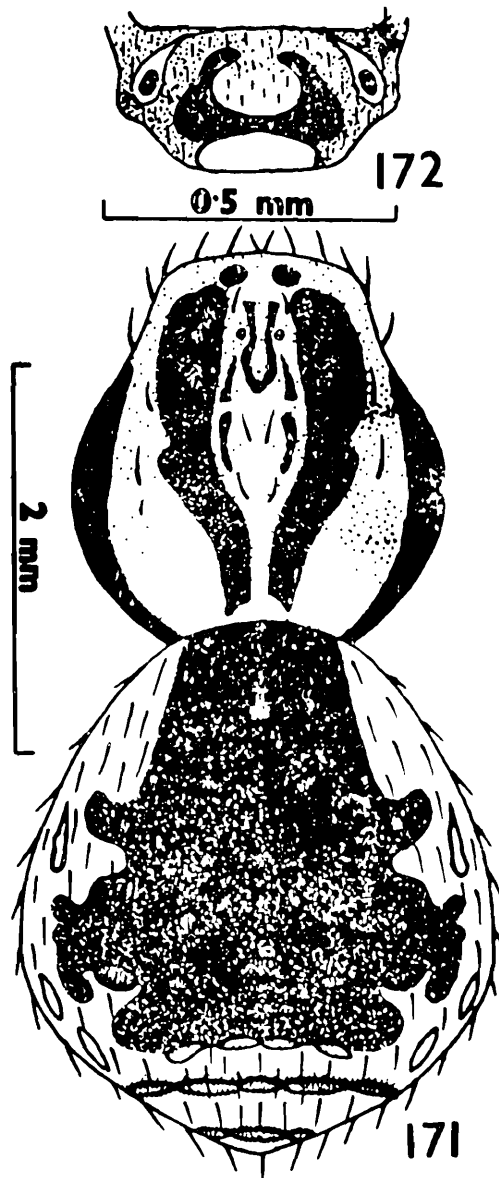
Distribution: Shillong, Meghalaya, Kamong, Arunachal Pradesh, INDIA.

Remark: Description based on a single female specimen.

55. *Xysticus pynurus* Tikader

(Figs. 171-172)

1966. *Xysticus pynurus* Tikader, *J. Asiat. Soc. Bengal*, Calcutta, 8(4) : 249.



FIGS. 171-172. *Xysticus pynurus* Tikader
 171. Dorsal view of female, legs omitted.
 172. Epigyne.

General: Cephalothorax and legs brownish green, abdomen white. Total length 4.80 mm. Carapace 2.00 mm. long, 1.80 mm. wide; abdomen 2.80 mm. long, 2.50 mm. wide.

Cephalothorax: Slightly longer than wide, clothed with conspicuous spines, the lateral margins with dark brown and two conspicuous longitudinal broad dark brown bands, extending from lateral eyes to near the base of the cephalothorax. Clypeus high, margin of clypeus with seven spines directed forward except the middle one which is directed upward. Eyes round and black, lateral eyes large and ringed with dark brown tubercles, anterior medians slightly larger than posterior median eyes, ocular quad longer than wide; sternum heart-shaped, pointed behind, clothed with thick hairs. Legs strong and spined, provided with irregular deep brown or black dots, and these dots more conspicuous on the I and II legs. Tibiae and metatarsi of I provided with five pairs of ventral spines.

Abdomen: Nearly ovate, wider behind the middle, clothed with numerous spines. Dorsally with a broad brown patch, provided with conspicuous white dots. Ventral side less whitish than dorsal side and mid-ventrally provided with a longitudinal broad brownish-red band, extending from epigastric fold to near the base of spinnerets. Epigyne as in fig. 172.

Type-locality: Pynursla, Dist. Khasi and Jaintia Hills, Meghalaya, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3799/18

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

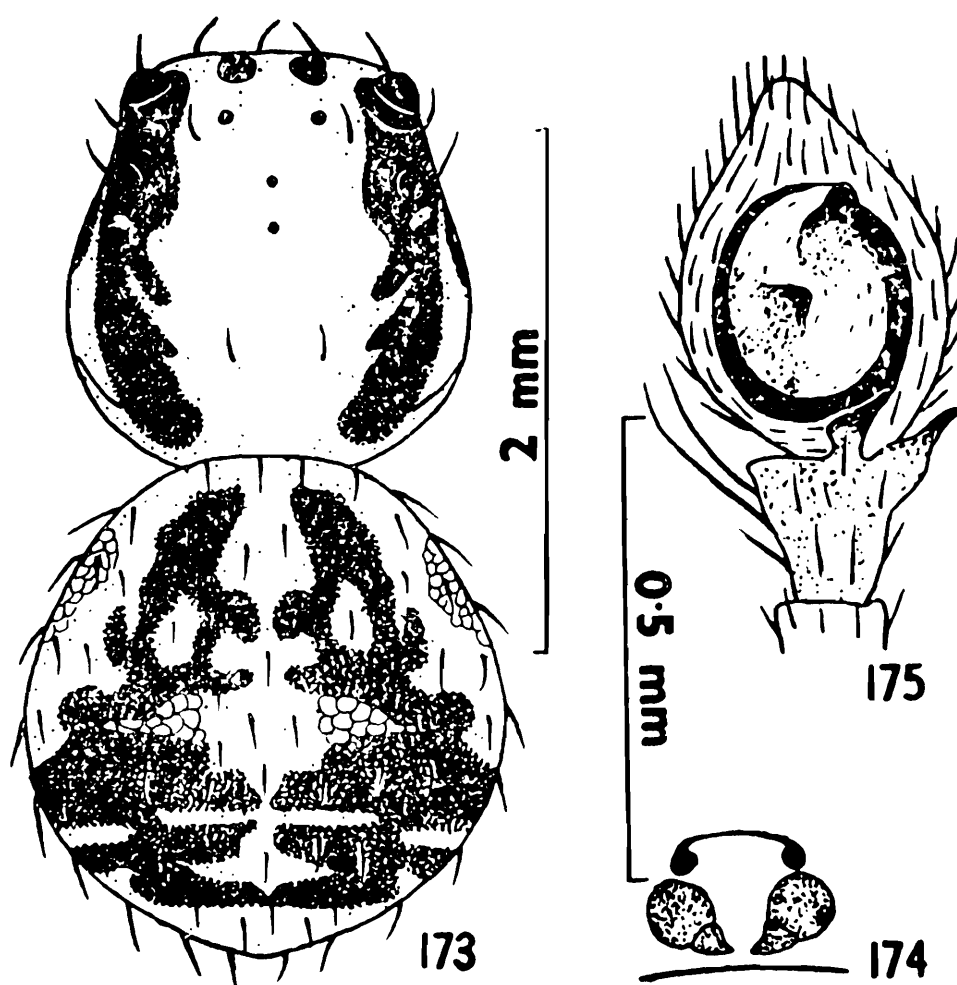
56. *Xysticus jayantius* Tikader

(Fig. 173-175)

1966. *Xysticus jayantius* Tikader, *J. Asiat. Soc., Bengal*, 8 (4) : 250.

General: Cephalothorax and legs light brownish-green, abdomen brown. Total length 3.50 mm. Carapace 1.80 mm. long, 1.50 mm. wide; abdomen 2.00 mm. long, 1.90 mm. wide.

Cephalothorax: Slightly longer than wide, broad in front, clothed with six conspicuous spines, two conspicuous lateral longitudinal broad dark brown bands, extending from lateral eyes to near the base of cephalothorax. Clypeus high, margin of clypeus with five spines directed forward except middle one which is directed upward. Eyes round and black, lateral eyes large and ringed with dark tubercles, anterior median larger than posterior median eyes, ocular quad slightly longer than wide. Sternum heart-shaped, clothed with hairs. Legs strong and spined. Tibiae and metatarsi I and II legs provided with two pairs of ventral spines. Male palp as in fig. 175.



FIGS. 173-175. *Xysticus jayantius* Tikader

173. Dorsal view of female, legs omitted.

174. Epigyne.

175. Male-palp, ventral view.

Abdomen: Nearly ovate, wide in the middle, clothed with spines. Dorsally provided with symmetrically longitudinal deep brown patches as in fig. 173. Ventral side pale colour but two longitudinal brown mid-lines, extending from base of spinnerets to near the middle of abdomen. Epigyne as in fig. 174. Male nearly same colour like female, but abdomen slightly long and legs also longer than female.

Type-locality: Mawphlong, Dist. Khasi and Jaintia Hills, Meghalaya, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3800/18.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

57. *Xysticus shillongensis* Tikader

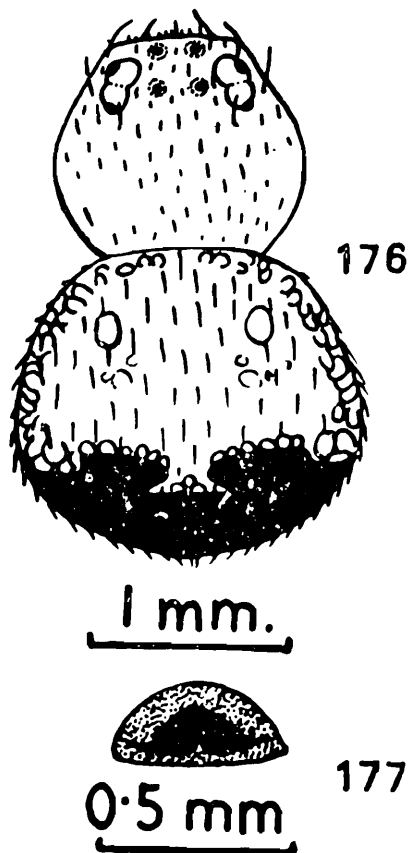
(Figs. 176-177)

1962. *Xysticus shillongensis* Tikader, *J. Linn. Soc.*, London, 44(300) : 572.

General: Cephalothorax, legs and abdomen yellowish-brown. Total length 2.80 mm. Carapace 1.20 mm. long, 1.20 mm. wide; abdomen 1.80 mm. long, 1.90 mm. wide.

Cephalothorax: As long as wide, clypeus high, marginally with five strong spines, directed forward. Eyes round, black, lateral eyes large and contiguous, ringed with white tubercles, ocular quad as long as wide; posterior medians slightly smaller than anterior medians; median ocular space slightly smaller in front than behind; anterior laterals largest. Sternum heart-shaped, pointed behind, clothed with fine hairs. Legs strong and spined, tibiae and metatarsi I with three pairs of ventral spines.

Abdomen: Broadly oval, wider behind, clothed with stiff hairs. Two conspicuous brownish-black spots nearly on the anterolateral margin; one-third of the posterior portion black. Ventral side uniform pale brown but margin encircled by a black line. Epigyne as in fig. 177.



FIGS. 176-177. *Xysticus shillongensis* Tikader
 176. Dorsal view of female, legs omitted.
 177. Epigyne.

Type-locality: Kench's Trace, Shillong, Meghalaya, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2550/18.

Distribution: So far this species is known only from its type locality.

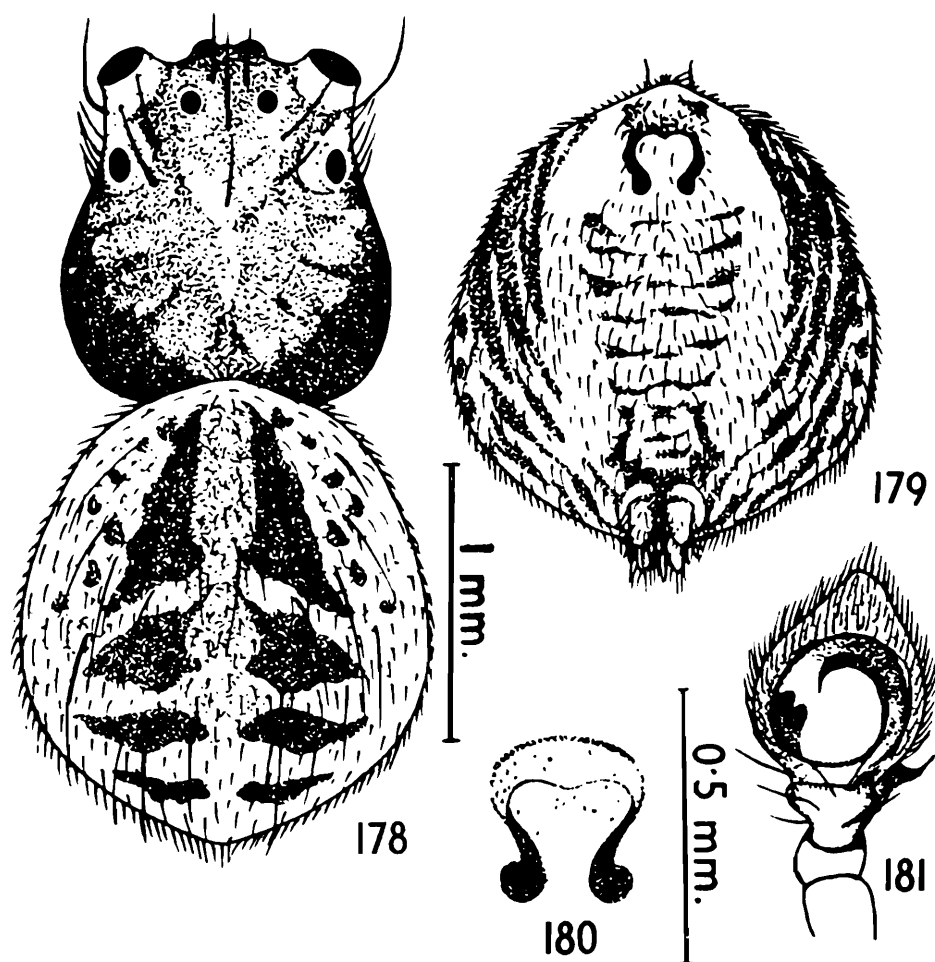
Remark: Description based on a single female specimen.

58. *Xysticus bengalensis* Tikader & Biswas
 (Figs. 178-181)

1974. *Xysticus bengalensis* Tikader & Biswas, *Proc. Ind. Acad. Sci.*, Bangalore, 80(6) : 262-263.

General: Cephalothorax light to deep brown, legs green, abdomen light brown. Total length 3.00 mm. Carapace 1.30 mm. long, 1.10 mm. wide; abdomen 1.80 mm. long, 1.50 mm. wide.

Cephalothorax: Nearly as long as wide, broader in front, clothed with spine-like hairs. Eyes round, black and ringed with dirty white tubercles; ocular quad slightly longer than wide narrowing in front. Both rows recurved but posterior row strongly recurved. Lateral eyes larger and conspicuous. Legs strong and stout clothed with spines and hairs, I and II pairs of legs more dark in colour and stronger than III and IV. Tibiae and metatarsi of I and II provided with two pairs of ventral spines. Sternum heart-shaped, pointed behind, clothed with fine hairs. Male nearly the same colour as female; male palp as in fig. 181.



FIGS. 178-181. *Xysticus bengalensis* Tikader and Biswas
 178. Dorsal view of female, legs omitted.
 179. Ventral view of abdomen of female.
 180. Epigyne.
 181. Male-palp, ventral view.

Abdomen: Longer than wide, broader in behind, the middle clothed with conspicuous hairs and spine-like hairs. Anterior

dorsal side provided with two longitudinal deep brown marks, followed by three transverse deep brown incomplete bands as in fig. 178. Ventral side pale colour with deep brown dots as in fig. 179. Epigyne as in fig. 180.

Type-locality: Rai Villa, Darjeeling, West Bengal, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 4592/18.

Distribution: So far this species is known only from its type-locality.

Remark: Description based on a single female specimen.

59. *Xysticus himalayaensis* Tikader and Biswas

(Figs. 182-185)

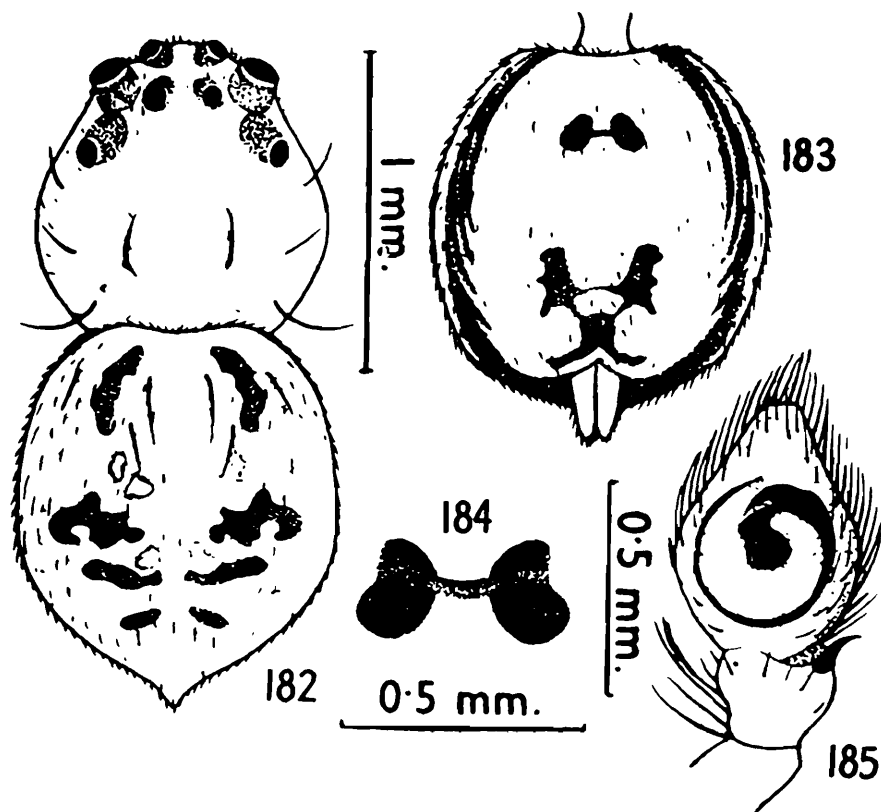
1974. *Xysticus himalayaensis* Tikader and Biswas, *Proc. Ind. Acad. Sci.*, Bangalore, 80(6) : 265.

General: Cephalothorax and legs pale green, abdomen whitish. Total length 2.10 mm. Carapace 1.00 mm. long, 0.80 mm. wide; abdomen 1.10 mm. long, 1.00 mm. wide.

Cephalothorax: Slightly longer than wide, broader in front and high, clothed with spine like hairs. Eyes black and tuberculated, ocular quad longer than wide, narrowing in front. Both rows recurved but posterior row strongly recurved. Anterior lateral eyes larger than others. Both lateral eyes nearly contiguous. Legs strong, stout and clothed with hairs and conspicuous spines. Tibiae and metatarsi provided with two pairs of long conspicuous ventral spines. I and II pair of legs long, stronger than III and IV. Sternum heart-shaped, pointed behind, clothed with fine hairs. Male nearly same colour and size as female. Male palp as in fig. 185.

Abdomen: Nearly oval, slightly longer than wide, clothed with fine hairs and some spine like hairs. Anterior dorsal side of abdomen provided with two longitudinal dark and chalk-white bands followed by three transverse dark brown and chalk-white incomplete bands as in fig. 182. Ventral side white, lateral side provided with a conspicuous longitudinal deep brown bands and

posterior ventral side provided with 'V' shaped marking as in the fig. 183. Epigyne as in fig. 184.



FIGS. 182-185. *Xysticus himalayensis* Tikader and Biswas
 182. Dorsal view of female, legs omitted.
 183. Ventral view of abdomen of female.
 184. Epigyne.
 185. Male-palp, ventral view.

Type-locality: Rai Villa, Darjeeling, West Bengal, INDIA.

Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 4594/18.

Distribution: So far this species is known only from its type-locality.

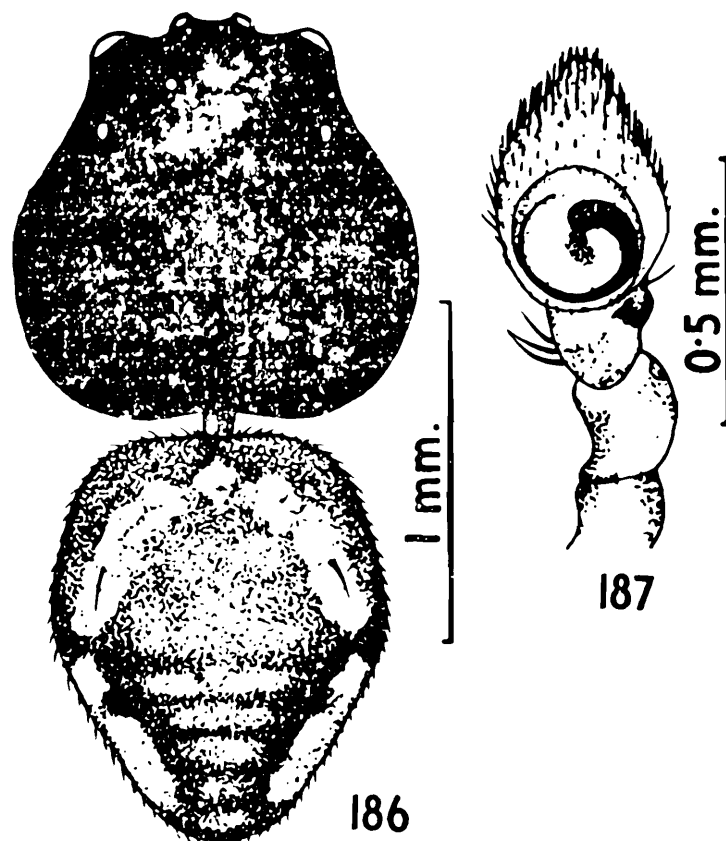
Remark: Description based on a single female specimen.

60. *Xysticus kali* Tikader and Biswas
 (Figs. 186-187)

1974. *Xysticus kali* Tikader and Biswas, *Proc. Ind. Acad. Sci.*, Bangalore,
 80 (6) : 265-266.

General: Cephalothorax metallic black, legs green, abdomen brown. Total length 2.50 mm. Carapace 1.10 mm. long, 1.10 mm. wide; abdomen 1.10 mm. long, 1.00 mm. wide.

Cephalothorax: Longer than wide, high in front, clothed with black hairs and spines. Eyes black, both rows recurved; ocular quad nearly as long as wide. All eyes tuberculated but lateral eyes prominently tuberculated. Legs strong and stout, clothed with spines and hairs. I and II pairs of legs stronger than III and IV. Tibiae and metatarsi of I and II legs with two pairs of ventral spines respectively. Extreme end of the I and II pair of legs provided with conspicuous black band. Sternum heart-shaped, deep shiny brown coloured, with fine hairs. Male palp as in fig. 187. Female cephalothorax is slightly light metallic black in colour than male and legs comparatively shorter than male.



FIGS. 186-187. *Xysticus kali* Tikader and Biswas
 186. Dorsal view of male, legs omitted.
 187. Male-palp, ventral view.

Abdomen: Longer than wide clothed with fine hairs and spines. Anterior portion of abdomen provided with a semi-circular chalk-white markings as in fig. 186. Posterior portion of abdomen provided with an inconspicuous dark band as in fig. 186. Ventral side light coloured with a broad longitudinal brown band extending from epigastric fold to nearly the base of spinnerets.

Type-locality: Richmond Hill, Darjeeling, West Bengal, INDIA.
Holotype: ♂, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 4597/18.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single male specimen.

61. *Xysticus khasiensis* sp. nov.

(Figs. 188-189)

General: Cephalothorax deep brown, legs yellowish-green, abdomen light brownish-green. Total length 3.80 mm. Carapace 1.70 mm. long, 1.70 mm. wide; abdomen 2.20 mm. long, 2.10 mm. wide.

Cephalothorax: Nearly as long as wide, convex, cephalic region slightly high, clothed with conspicuous long spines, mid-dorsally provided with a Y-shaped light red patch. Eyes black, both rows recurved, anterior lateral and posterior lateral eyes larger than the anterior and posterior medians and the lateral eyes provided with conspicuous high tubercles. Ocular quad slightly longer than wide and wider behind than in front. Clypeus high, margin provided with five robust spines directed forward except the middle one which directed upward. Sternum heart-shaped, pointed behind, clothed with hairs. Legs I and II longer and stronger than III and IV, clothed with hairs and spines. Tibiae and metatarsi of I and II provided with three and four pairs of ventral spines respectively.

Abdomen: Longer than wide, clothed with hairs and spine-like hairs, widest behind the middle. Dorsally ornamented with two pairs of deep brown patches as in fig. 188. Ventral side uniformly lighter than the dorsal, clothed with fine hairs. Epigyne as in fig. 189.



FIGS. 188-189. *Xysticus khasiensis* sp. nov.
 188. Dorsal view of female, legs omitted.
 189. Epigyne.

Holotype: ♀, in spirit. Deposited at Zoological Survey of India, Calcutta. Regd. No. 4600/18

Type-locality: Botanical garden, Shillong, Maghalaya, INDIA. 20.vii.1970, Coll. *M. Barman*.

This species resembles *X. shyamrupus* Tikader but differs from it as follows: (i) Cephalothorax as long as wide but in *X. shyamrupus* cephalothorax slightly wider than long. (ii) Mid-dorsally cephalothorax with Y-shaped patch but in *X. shyamrupus* lateral

sides of cephalothorax with longitudinal deep-brown patches. (iii) Margin of clypeus provided with five robust spines but in *X shyamrupus* margin of clypeus with nine spines. (iv) Epigyne also structurally different.

Genus 8. *Synaema* Simon

1864. *Synaema* Simon, *Hist. Nat. Ar.*, **1** : 70.
 1884. *Synaema* : Keyserling, *Verh. Zool. bot. Ges. Wien*, **33** : 667.
 1892. *Xysticus* : Emerton, *Trans. Connect. Acad. Sci.*, **8** (21) : 366.
 1940. *Synaema* : Comstock, *The Spider Book*, New York, : 553.
 1960. *Synaema* : Tikader, *J. Bombay nat. Hist Soc.*, **57** (1) : 174.
 1962. *Synaema* : Tikader, *J. Linn. Soc.*, London, **44** (300) : 578.

Characters: The genus *Synaema* is closely allied to *Xysticus* but differs in the following characters: The median ocular area is a little more narrow in front than behind, the anterior eyes equidistant or even with the median nearer to each other than to the lateral eyes; the tarsal claws of the first two pairs of legs furnished with more than five or six teeth, and the teeth extend beyond the middle of the claw; the cuticle smooth. Abdomen dorsoventrally compressed. These spiders are found on the foldings of leaves of lower plants and bushes.

Type-species : *Synaema globosum* (Fabr).

Distribution : ASIA, AMERICA and AFRICA

Key to species of the genus SYNAEMA Simon

- | | |
|--|-----------------------------|
| 1. Tibiae of I and II legs with two pairs of ventral spines | <i>.brunettii</i> Tikader |
| Tibiae of I and II legs with more than two pairs of ventral spines | .2 |
| 2. Tibiae of I and II legs with four pairs of ventral spines | <i>.decorata</i> Tikader |
| Tibiae of I and II legs with three pairs of ventral spines | <i>.mysorensis</i> sp. nov. |

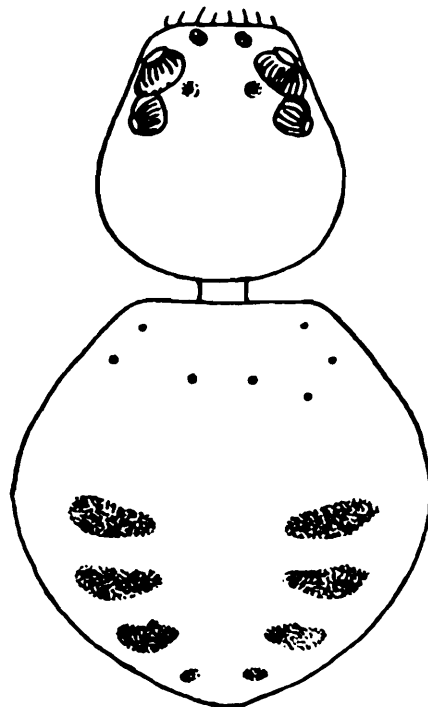
62. *Synaema brunettii* Tikader

(Figs. 190-191)

1962. *Synaema brunettii* Tikader, *J. Linn. Soc.*, London, **44** (300) : 578.

General: Cephalothorax and legs greenish, abdomen light brown. Total length 2.80 mm. Carapace 1.10 mm. long, 1.10 mm. wide; abdomen 1.50 mm. long, 1.60 mm. wide.

Cephalothorax: As long as wide, cephalic region high, lateral margin encircled by a deep brown line. Eyes black, ringed with chalk-white tubercles, lateral tubercles contiguous, ocular quad slightly longer than wide, space of anterior median eyes a little smaller than that of the posterior medians; both rows strongly recurved. Clypeus high, vertical. Sternum heart-shaped, pointed behind. Legs not very strong, I and II pairs longer than III and IV, tibiae I and II with two pairs of ventral spines.



1 mm. 190



0.5 mm. 191

FIGS. 190-191. *Synaema brunetti* Tikader
 190. Dorsal view of female, legs omitted.
 191. Epigyne.

Abdomen: Oval, scattered chalk-white patches on the dorsum, four pairs of irregular black patches on the posterior half of abdomen arranged in longitudinal rows, the anterior pair larger and posterior pair smaller, and the anterior half provided with black dots; lateral sides with deep brown patches; ventral surface uniform pale. Epigyne as in fig. 191.

Type-locality: Darjeeling, West Bengal, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2552/18

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

63. *Synaema decorata* Tikader

(Figs. 192-195)

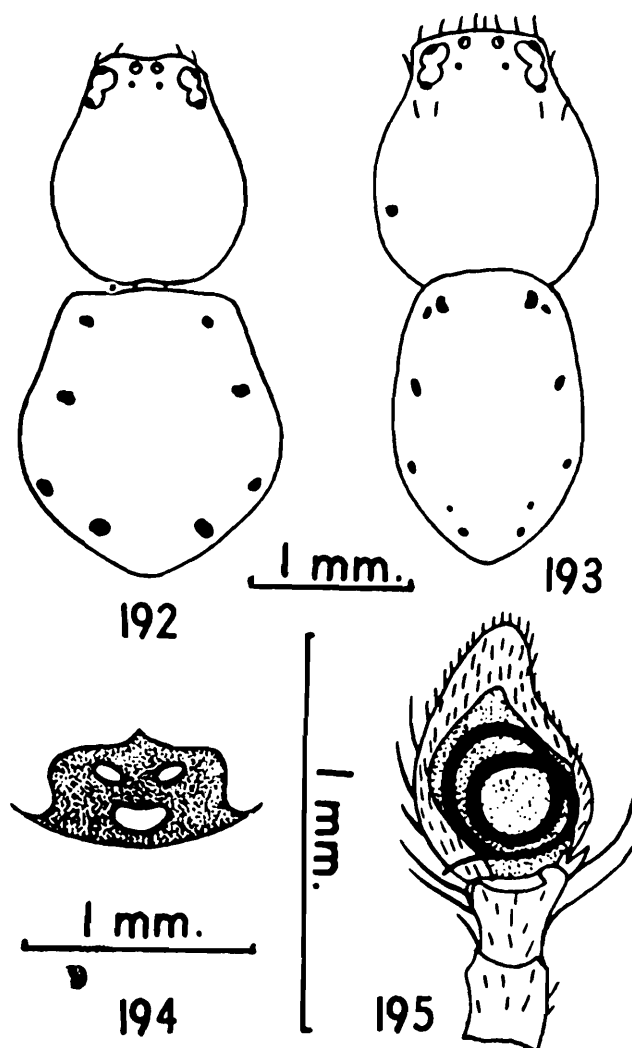
1960. *Synaema decorata* Tikader, *J. Bombay nat. Hist. Soc.*, 57 (1) : 174.

General: Cephalothorax green, ocular tubercles chalk-white, eyes black, legs and abdomen green. Total length 3.40 mm. Carapace 1.40 mm. long, 1.40 mm. wide; abdomen 2.00 mm. long, 1.80 mm. wide.

Cephalothorax: As long as wide, eyes four pairs, lateral eyes larger, posterior median eyes smaller than the anterior medians, except the posterior median eyes all ringed with chalk-white, ocular tubercles contiguous; ocular quad slightly wider than long, space of anterior median eyes a little smaller than that of the posterior medians. Clypeus narrow, margin of clypeus bearing slender spines. Legs I and II pairs longer than the III and IV, tibiae of legs with four pairs of ventral spines, base of spines black, the first pair of spines shortest. Male palp as in fig. 195.

Abdomen: More or less elliptical, dorso-ventrally flattened. Very slightly overlapping the cephalothorax, four pairs of circular

black spots on the dorsum near the lateral margin, the posterior pair largest. Epigyne as in fig. 194.



FIGS. 192-195. *Synaema decorata* Tikader
 192. Dorsal view of female, legs omitted.
 193. Dorsal view of male, legs omitted.
 194. Epigyne.
 195. Male-palp, ventral view.

Type-locality: Dhakuria, Calcutta, West Bengal, INDIA. *Holo-*
type: ♀, in National Zoological Collections, Zoological Survey
 of India, Calcutta. Regd. 2521/18

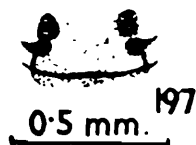
Distribution: West Bengal, Karnataka, Maharashtra, INDIA.

Remark: Description based on a single female specimen.

64. *Synaema mysorensis* sp. nov.

(Figs. 196-197)

General: Cephalothorax and legs light brown, abdomen with chalk white and brown patches, Total length 4.00 mm. Carapace 2.00 mm. long, 2.00 mm. wide; abdomen 3.00 mm. long, 2.20 mm. wide.



FIGS. 196-197. *Synaema mysorensis* sp. nov.
196. Dorsal view of female, legs omitted.
197. Epigyne.

Cephalothorax: Almost as long as wide, slightly narrowing in front, clothed with spine-like hairs; thoracic region slanting backwardly, clypeus vertical, provided with small spines directed forward. Base of all eyes surrounded by contiguous white

tubercles. Anterior as well as posterior row of eyes slightly recurved. Eyes black and tuberculated except the anterior medians. Medians very slightly smaller than the lateral eyes. Ocular quad slightly narrow anteriorly as in fig. 196. I and II pair of legs stout and longer than III and IV pairs, all legs clothed with hairs and spines. Tibiae I and II with three pairs of ventral spines; metatarsi of I and II provided with three pairs of ventral robust spines.

Abdomen: Longer than wide, wider behind the middle, clothed with hairs, lateral margins of the anterior half of the dorsal side provided with chalk-white patches as in fig. 196. Middle and posterior half also provided with alternating patches of chalk-white and brown colour; few brown spots also present. Ventral side pale. Epigyne as in fig. 197.

Holotype: ♀, in spirit. Deposited at Zoological Survey of India. Calcutta Regd. No. 4620/18

Type-locality: Doddagubbi, near Bangalore, Karnataka, INDIA. 1.xii.1972, Coll. K. D. Ghorpade.

This species resembles *Synaema decorata* Tikader but it can be distinguished from it as follows: (i) Abdomen provided with chalk-white and brown colour but in *S. decorata* abdomen provided with four pairs of circular black spots. (ii) Tibiae of I and II pair of legs with three pairs of ventral spines but in *S. decorata* tibiae of I and II pair of legs with four pairs of ventral spines. (iii) Epigyne also structurally different.

Genus 9. **Bomis** Koch

1873. *Bomis* Koch., *Ar. Auster.*, 10 : 528.

1895. *Bomis* : Simon, *Hist. Nat. Araign.*, 1 (4) : 1005.

1962 *Bomis* : Tikader, *J. Linn. Soc.*, London, 44 (300) : 580.

Characters: Cephalothorax wider than long, convex, posteriorly subvertical. Eyes small, equal and equidistant, posterior slightly recurved, medians remote to each other than the laterals, distinctly recurved, median ocular area large, slightly narrower in front. Clypeus flat, sloping abruptly from the ocular area. Sternum narrow, pointed behind. Labium broad at base, apically reduced. Legs short, stout, metatarsi very short. Abdomen broad,

convex, truncated in front, posterior rounded and transversely furrowed.

Type-species : *Bomis larvata* Koch.

Distribution: NORTH HOLLANDIA, INDIA.

Key to species of the genus BOMIS Koch

1. Abdomen nearly rectangular, provided with white pattern of closely set minute acute tubercles and paired black circles sub-anteriorly on either side of dorsum. *.bengalensis* Tikader
- Abdomen nearly simicircular, provided with white spine like pattern decorated in simicircular way on dorsum. No paired black circles sub-anteriorly. *.khajuriai* sp. nov.

65. ***Bomis bengalensis*** Tikader

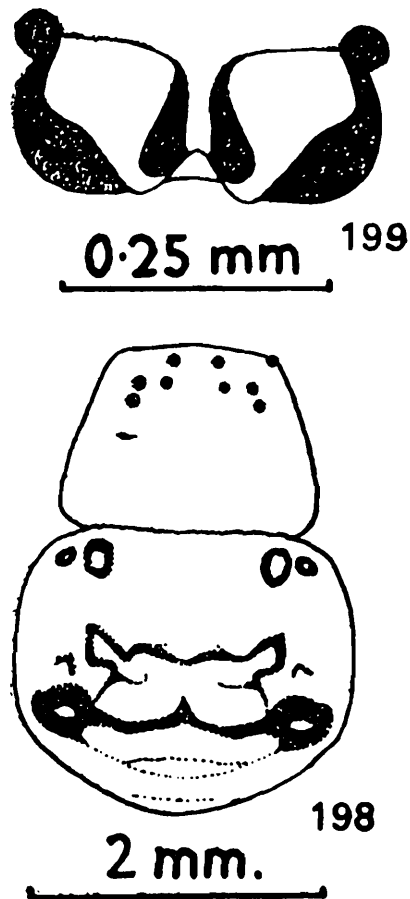
(Figs. 198-199)

1962. *Bomis bengalensis* Tikader, *J Linn. Soc.*, London, **44** (300) : 580.

General: Cephalothorax and legs yellowish-brown, abdomen pale yellowish. Total length 3.10 mm. Carapace 1.20 mm. long, 1.60 mm. wide; abdomen 1.90 mm. long, 2.20 mm. wide.

Cephalothorax: Rectangular, wide behind, convex, clothed with uniform fine pubescence. Eyes round, black, ringed with white tubercles, both rows recurved but posterior row less recurved than anterior and longer; ocular quad wider than long, lateral eyes slightly larger and tubercles nearly contiguous. Posterior medians further away from each other than from the laterals. Clypeus high and sloping downward. Legs stout, short, clothed with hairs or spiny hairs; almost equal in length; claw tuft very prominent. Sternum heart-shaped, clothed with fine hairs.

Abdomen: Wider than long, nearly rectangular with white characteristic pattern of closely set minute acute tubercles on the dorsum, paired black circles sub-anteriorly on either side, the inner circle being larger and nearly in the middle; an irregular transverse black band on the posterior side. Ventral side pale yellow, margin encircled by two or three muscular elevated ridges with characteristic white tubercles. Epigyne as in fig. 199.



FIGS. 198-199. *Bomis bengalensis* Tikader
 198. Dorsal view of female, legs omitted.
 199. Epigyne.

Type-locality: Habra, c 48 kilometres North-East of Calcutta. West Bengal, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2553/18

Distribution: So far this species is known only from its type locality.

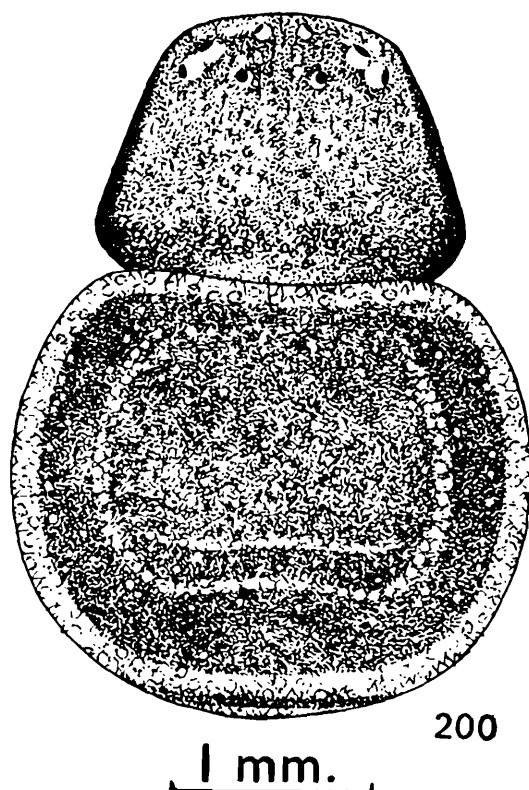
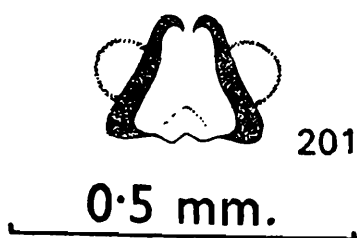
Remark: Description based on a single female specimen.

66. *Bomis khajuriai* sp. nov.

(Figs. 200-201)

General: Cephalothorax and legs brownish green. Abdomen brown. Total length 3.60 mm. Carapace 1.30 mm. long, 1.80 mm. wide; abdomen 2.20 mm. long, 2.60 mm. wide.

Cephalothorax: Rectangular, wide behind, convex, clothed with uniform short hairs. Eyes round, dark ringed with white tubercles, both rows recurved but posterior row less recurved than anterior and longer; ocular quad longer than wide, lateral eyes slightly larger and tubercles contiguous. Posterior medians further away from each other than from the adjacent laterals. Clypeus high and sloping downwards. Legs stout, short, clothed with hairs or spiny short hairs; almost equal in length; claw tufts very prominent. Sternum heart-shaped, clothed with fine hairs.



FIGS. 200-201. *Bomis khajuriae* sp. nov.

200. Dorsal view of female, legs omitted.

201. Epigyne.

Abdomen: Wider than long, nearly semi-circular in shape, clothed with characteristic white spine like pattern decorated in semi-circular way on abdomen as in fig. 200. Ventral side uniform pale brown but posterior portion encircled by three ridges of semicircular white spine like pattern. Epigyne as in fig. 201.

Holotype: ♀, in spirit. Deposited at Zoological Survey of India, Calcutta. Regd. No. 4607/18

Type-locality: Lamata ghat, Dist. Jabalpur, Madhya Pradesh, INDIA. 7.ix.1967, Coll. H. Khajuria.

This species in general resembles *Bomis bengalensis* Tikader, but is distinguished from it as follows: (i) Abdomen clothed with characteristic white spine like pattern decorated in semi-circular way but in *B. bengalensis* abdomen decorated with characteristic white pattern of closely set minute acute tubercles on dorsal side. (ii) Epigyne also structurally different.

Genus 10. *Monaeses* Thorell

1870. *Monaeses* : Thorell, *Eur. Spiders etc.*, 1 & 2 : 182.

1895 *Monaeses* : Simon, *Hist. Nat. Araign.* 1 (4) : 995.

1963 *Monaeses* : Tikader, *Proc. Indian Acad. Soc.*, Bangalore, 58 (5) : 249.

Characters: Cephalothorax longer than wide, slightly wider in front. Eyes black and round, both rows nearly straight or slightly recurved, lateral eyes with prominent tubercles. Legs I and II conspicuously long and strong. Abdomen very long and narrowing posteriorly, clothed with conspicuous spines.

Type-species : *Monaeses paradoxus* (Lucas).

Distribution : ASIA, INDIA, JAPAN, BURMA, HOLLAND, and AFRICA.

Key to species of the genus MONAESSES Thorell

1. Lateral sides of abdomen provided with five white longitudinal almost parallel lines extending the whole length and abdomen produced well beyond the spinnerets *.parvati* Tikader
- Lateral sides of abdomen provided with eight ridges, spinnerets situated at the posterior end of the abdomen *.mukuudi* sp. nov.

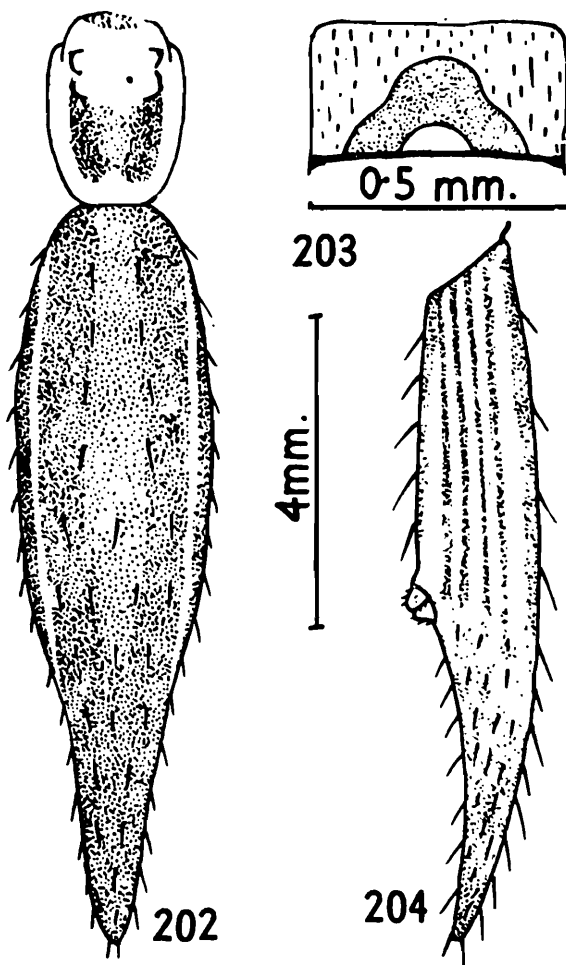
67. *Monaeses parvati* Tikader

(Figs. 202-204)

1963. *Monaeses parvati* Tikader, *Proc. Indian Acad. Sci.*, Bangalore, **58** (5):249.

General: Cephalothorax pale yellowish-olive green, legs green, abdomen olive-green. Total length 7.00 mm. Carapace 1.50 mm. long, 1.00 mm. wide; abdomen 5.50 mm. long, 1.40 mm. wide.

Cephalothorax: Very long, strongly convex and sparsely spined; clypeus long and rectangular. Eyes dark in two rows, lateral eyes larger and ringed with white tubercles; anterior row slightly procurved, the posterior slightly more recurved than the anterior; median ocular area narrower in front. Chelicerae long



FIGS. 202-204. *Monaeses parvati* Tikedar
 202. Dorsal view of female, legs omitted.
 203. Epigyne.
 204. Lateral view of abdomen of female.

and directed forward, provided with thick, long spines. Legs long, especially I and II clothed with spiny hairs.

Abdomen: Very long and slender pointed behind, slightly overlapping the posterior region of cephalothorax in front, clothed with long spines. In adult specimens each lateral side provided with five white, longitudinal, almost parallel lines extending from the anterior extremity to near the spinnerets. Abdomen produced well beyond the spinnerets. Epigyne as in fig. 203.

Type-locality: Parvati Hill, Poona, Maharashtra, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3145/18

Distribution: Poona, Maharashtra; Chandigarh, Punjab, INDIA.

Remark: Description based on a single female specimen.

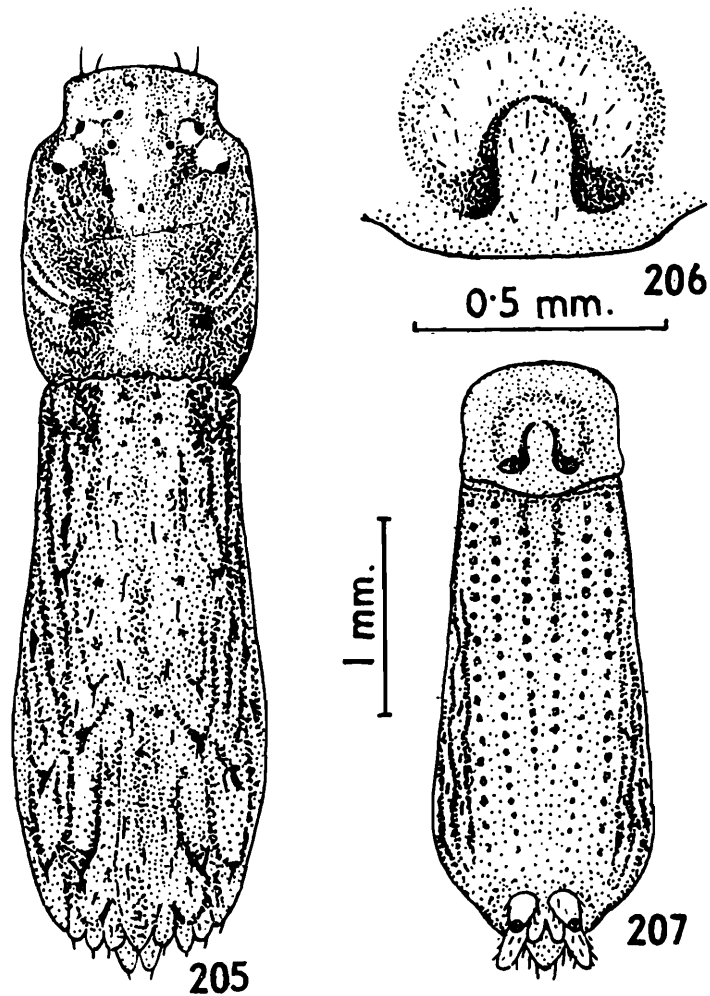
68. *Monaeses mukundi* sp. nov.

(Figs. 205-207)

General: Cephalothorax and legs yellowish brown, abdomen chalk-white. Total length 5.50 mm. Carapace 2.00 mm. long, 1.50 mm. wide; abdomen 4.00 mm. long, 1.30 mm. wide.

Cephalothorax: Longer than wide and slightly wider in front but ocular area abruptly narrow. Clypeus wide and rectangular, margin provided with fine spines directed forward. Eyes black with prominent tubercles, anterior row slightly procurved and posterior row recurved. Ocular area narrower in front than behind. Chelicerae long and directed forward and provided with thick long spines. I and II legs slender and longer than the III and IV and clothed with spines and hairs.

Abdomen: Very long and slender. Slightly overlapping the base of cephalothorax in front, dorsally clothed with short spines and provided with few black spots. In adult specimens lateral sides provided with eight, white longitudinal, almost parallel ridges extending from the anterior extremity to near the spinnerets. Posterior end of abdomen provided with fine rows of small muscular tubercles and spinnerets situated just behind the end of abdomen. Ventral side grey. Epigyne as in fig. 206.



FIGS. 205-207. *Monaeses mukundi* sp. nov.
 205. Dorsal view of female, legs omitted.
 206. Epigyne.
 207. Ventral view of abdomen of female.

Holotype: ♀, *paratypes* 2 ♀♀, in spirit. Deposited at Zoological Survey of India, Calcutta. Regd No. 4608/18.

Type-locality: Mukund nagar, Poona, Maharashtra, INDIA. 6.vii.1975, Coll. B. K. Tikader.

This species resembles *Monaeses parvati* Tikader but can be separated from it as follows: (i) Lateral sides of abdomen provided with eight, white longitudinal almost parallel ridges extending from the anterior extremity to near the spinnerets but in *M. parvati* lateral sides of abdomen with only five such ridges. (ii) Spinnerets situated at the posterior end of abdomen but in *M. parvati* spinnerets situated well beyond the posterior end towards ventrally. (iii) Epigyne also structurally different.

Genus 11. **Tmarus** Simon

1875. *Tmarus* Simon, *Ar. Fr.*, 2 : 259.
 1880. *Tmarus* : Keyserling, *Spin, Amer. Later.*, 1 : 137.
 1940. *Tmarus* : Comstock, *Spider Book*, New York, : 537.
 1963. *Tmarus* : Tikader, *Proc. Indian Acad. Sci.*, 58(5) : 251.

Characters: The members of this genus are easily distinguished from other Crab-spiders occurring in Indian fauna by the fact that the abdomen is elevated and pointed behind. The lateral eyes of each side are on two distinct tubercles, of which the posterior is the larger.

These spiders live on plants and can run with greater rapidity. Their colour is more or less protective when one of these spider is at rest upon a twig, it clasps the twig closely with its legs, and the form of the body is such that the spider appears like a bud or a stump of a petiole.

Type-species : *Tmarus piger* (Walckenaer).

Distribution: ASIA, AMERICA, AFRICA and JAPAN.

Key to species of the genus TMARUS Simon

1. Clypeus provided with seven spines and tibiae I and II with three pairs of ventral spines. *.kotigeharus* Tikader
- Clypeus provided with six spines and tibiae I and II with four pairs of ventral spines. *.pachpediensis* sp. nov.

69. Tmarus kotigeharus Tikader

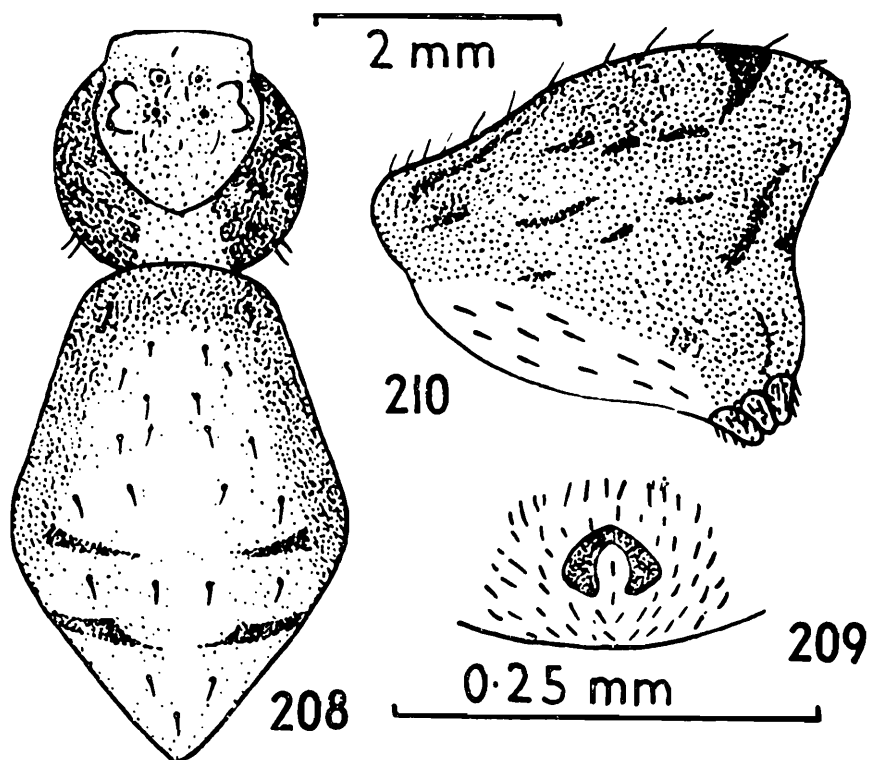
(Figs. 208-210)

1963. *Tmarus kotigeharus* Tikader, *Proc. Indian Acad. Sci.*, Bangalore, 58(5) : 250.

General: Cephalothorax yellowish-brown, legs pale green, abdomen brownish-grey. Total length 5.90 mm. Carapace 2.00 mm. long, 1.90 mm. wide; abdomen 4.00 mm. long, 2.60 mm. wide.

Cephalothorax: Longer than wide, cephalic region high, clothed with spines; clypeus moderately high, its margin with seven

spines directed forward but the middle one directed upward; sides with broad longitudinal, dark brown patches. Eyes round, black, both rows recurved but posterior row longer than anterior, the lateral eyes larger than the others and ringed with brown tubercles; anterior median eyes smaller than posterior medians; the median ocular area narrower in front than behind. Legs I and II much longer than III and IV clothed with hairs and spines; tibiae I and II with three pairs of ventral spines.



FIGS. 208-210. *Tmarus kotigeharus* Tikader
 208. Dorsal view of female, legs omitted.
 209. Epigyne.
 210. Lateral view of abdomen of female.

Abdomen: High and pointed behind, broadest behind the middle, clothed with spines, on the posterior half transversely banded by two dark, incomplete bands. Epigyne as in fig. 209.

Type-locality: Kotigehara, Dist. Chikmagalur, Karnataka, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3163/18

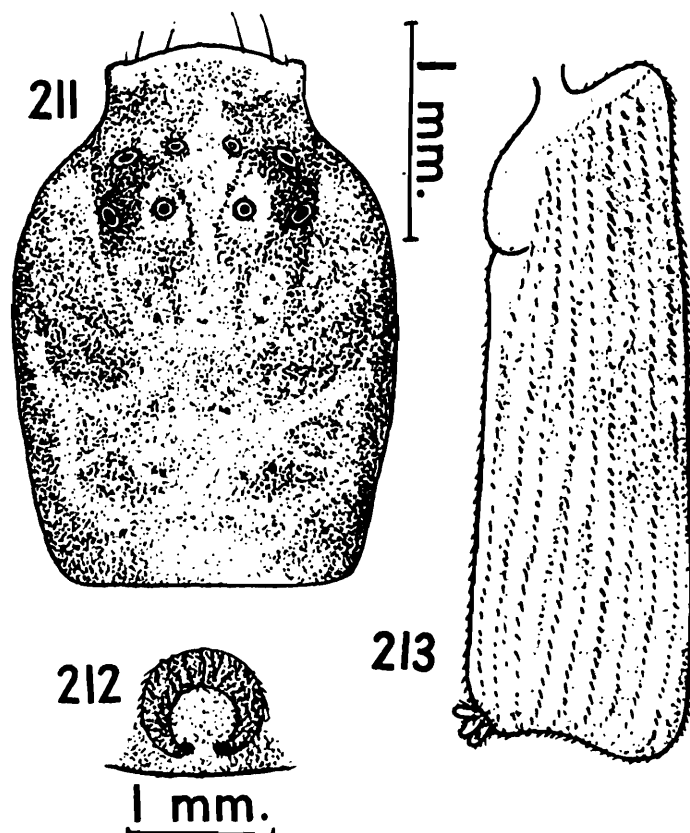
Distribution: Chikmagalur district, Karnataka; Poona, Maharashtra; Pynursala, Dist. Khasi and Jayantia Hills, Meghalaya, INDIA.

Remark: Description based on a single female specimen.

70. *Tmarus pachpediensis* sp. nov.

(Figs. 211-213)

General: Cephalothorax pale yellowish brown, abdomen whitish, legs brownish green. Total length 5.30 mm. Carapace 2.50 mm. long, 1.70 mm. wide; abdomen 3.20 mm. long, 1.50 mm. wide.



FIGS. 211-213. *Tmarus pachpediensis* sp. nov.

211. Dorsal view of cephalothorax of female, legs omitted.

212. Epigyne.

213. Lateral view of abdomen of female.

Cephalothorax: Longer than wide, cephalic region slightly high, clothed with spines and hairs; clypeus moderately high, its

margin with six spines directed forward. Eyes round, black, anterior row straight and posterior row slightly recurved. Lateral eyes large and nearly contiguous, tuberculated. Ocular quad wider than long, narrowing in front. Legs I and II nearly double in length of III and IV, clothed with hairs and spines; tibiae I and II with four pairs of ventral spines.

Abdomen: Very long, slightly high, posterior end broader than front, clothed with rows of conspicuous spine like hairs as in fig. 213. Epigyne as in fig. 212.

Holotype: ♀, in spirit. Deposited at Zoological Survey of India, Calcutta. Regd. No. 4610/18.

Type-locality: Pachpedi, Jabalpur town, M.P., INDIA. 1.vii.1972, Coll. H. Khajuria.

This species appears to resemble *Tmarus kotigeharus* Tikader, but can be distinguished from it as follows: (i) Clypeus long and provided with six spines but in *T kotigeharus* clypeus is provided with seven spines. (ii) Tibiae I and II with four pairs of ventral spines but in *T. kotigeharus* with three pairs of ventral spines. (iii) Epigyne also structurally different.

Genus 12. *Misumenooides* Cambridge

1900. *Misumenooides* Cambridge, *Biol. Centr. Amer. Zool.*, 2 : 136.
 1939. *Misumenooides* : Gertsch, *Bull. Amer. Mus. Nat. Hist.*, 76 : 309.
 1940. *Misumenooides* : Comstock, *Spider Book*, New York, : 540.
 1963. *Misumenooides* : Tikader, *Proc. Indian Acad. Sci.*, 58(5) : 258.
 1965. *Misumenooides* : Tikader, *Proc. Indian Acad. Sci.*, 61(5) : 279.

Characters: Cephalothorax relatively flatter, clypeus vertical, with a white anterior carina curving to allatum; lateral eyes situated on a common and strongly projecting processes. Tibiae I and II without prolateral spiniforms and without a proventroapical spiniform; tarsi I and II without prolateral spiniforms. Abdomen oval, wider behind the middle.

Type-species : *Misumenooides magna* (Keyserling)

Distribution: AMERICA and ASIA.

Key to species of the genus MISUMENOIDES Cambridge

- | | |
|---|----------------------------|
| 1. Abdomen rectangular | <i>kripalaniae</i> Tikader |
| Abdomen rounded | .2 |
| 2. Lateral sides of abdomen with muscular corrugations, and metatarsi I provided with seven pairs of ventral spines | <i>.deccanes</i> Tikader |
| Lateral sides of abdomen without muscular corrugations and metatarsi I provided with eight pairs of ventral spines | <i>.shulli</i> Tikader |

71. *Misumenoides kripalaniae* Tikader

(Figs. 214-215)

1963. *Misumenoides kripalaniae* Tikader, *Proc. Indian Acad. Sci.*, Bangalore, 58(5) : 258.

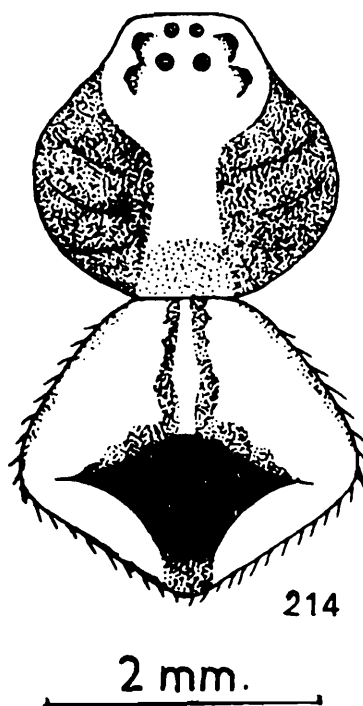
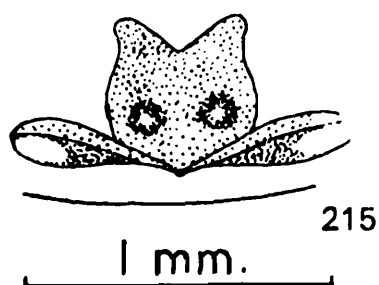
General: Cephalothorax and abdomen light brown to deep brown, legs light brown. Total length 4.30 mm. Carapace 2.10 mm. long, 2.10 mm. wide; abdomen 2.20 mm. long, 2.50 mm. wide.

Cephalothorax: Depressed posteriorly cephalic region high, as long as wide, clothed with hairs; a broad, whitish, median longitudinal band from the ocular area of the middle of cephalothorax. Clypeus narrow, the margin provided with long spine like hairs directed forward. Eyes round and black, both rows recurved; all eyes forming a more or less crescent-shaped group, the anterior row shorter than posterior row; the posterior medians nearer to each other than to the laterals. Sternum heart-shaped, pointed behind, clothed with hairs and a few spines. Legs relatively long, II slightly longer than I, clothed with fine hairs and a few spines; tibiae I and II with three pairs and metatarsi with two pairs of ventral spines.

Abdomen: Rectangular, broadest nearer the middle; a lens-shaped, transverse black band on the middle at the broadest region; posterior end somewhat angular. Epigyne as in fig. 215.

Type-locality: Kotigehara, Dist. Chikmagalur, Karnataka, INDIA.

Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3137/18.



FIGS. 214-215. *Misumenoides kripalaniae* Tikader
 214. Dorsal view of female, legs omitted.
 215. Epigyne.

Distribution: Chikmagalur district, Karnataka; Andaman Islands, INDIA.

Remark: Description based on a single female specimen.

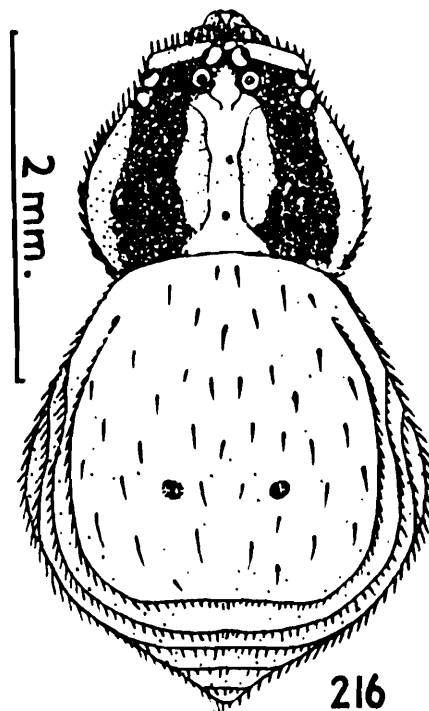
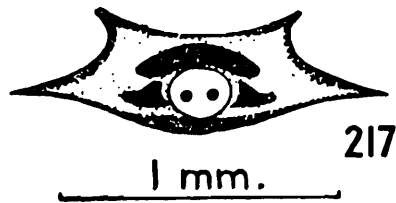
72. *Misumenoides deccanes* Tikader
 (Figs. 216-217)

1965. *Misumenoides deccanes* Tikader, *Proc. Indian Acad. Sci.*, Bangalore, 61(5) : 279.

General: Cephalothorax light brown, abdomen dirty white, legs light green to pale. Total length 4.10 mm. Carapace

1.50 mm. long, 1.70 mm. wide; abdomen 2.70 mm. long, 2.30 mm. wide.

Cephalothorax: Slightly wider than long, convex, allatum with broad longitudinal deep brown patches. Clypeus moderate, margin provided with seven spines directed forward but middle one directed upward. Eyes black, ringed with tubercles; anterior row strongly recurved, posterior row slightly recurved; tubercles of lateral eyes contiguous, posterior medians smaller than others. A transverse band or ridge from left anterior lateral eye to right lateral eye. Sternum pale with hairs, heart-shaped, pointed behind. Legs I and II longer than others and metatarsi of I and II provided with seven pairs of ventral spines. A longitudinal deep brown line on the dorsal side of metatarsi of II leg.



FIGS. 216-217. *Misumenoides deccanes* Tikader
 216. Dorsal view of female, legs omitted.
 217. Epigyne.

Abdomen: Slightly longer than wide, clothed with spiny hairs and posterior half wider. Lateral sides provided with faint longitudinal muscular corrugations. Ventral side uniform pale. Epigyne as in fig. 217.

Type-locality: Poona University Compound, Poona, Maharashtra, INDIA.

Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3119/18.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

73. *Misumenoides shulli* Tikader

(Figs. 218-219)

1965. *Misumenoides shulli* Tikader, *Proc. Indian Acad. Sci.*, Bangalore, 61(5) : 280.

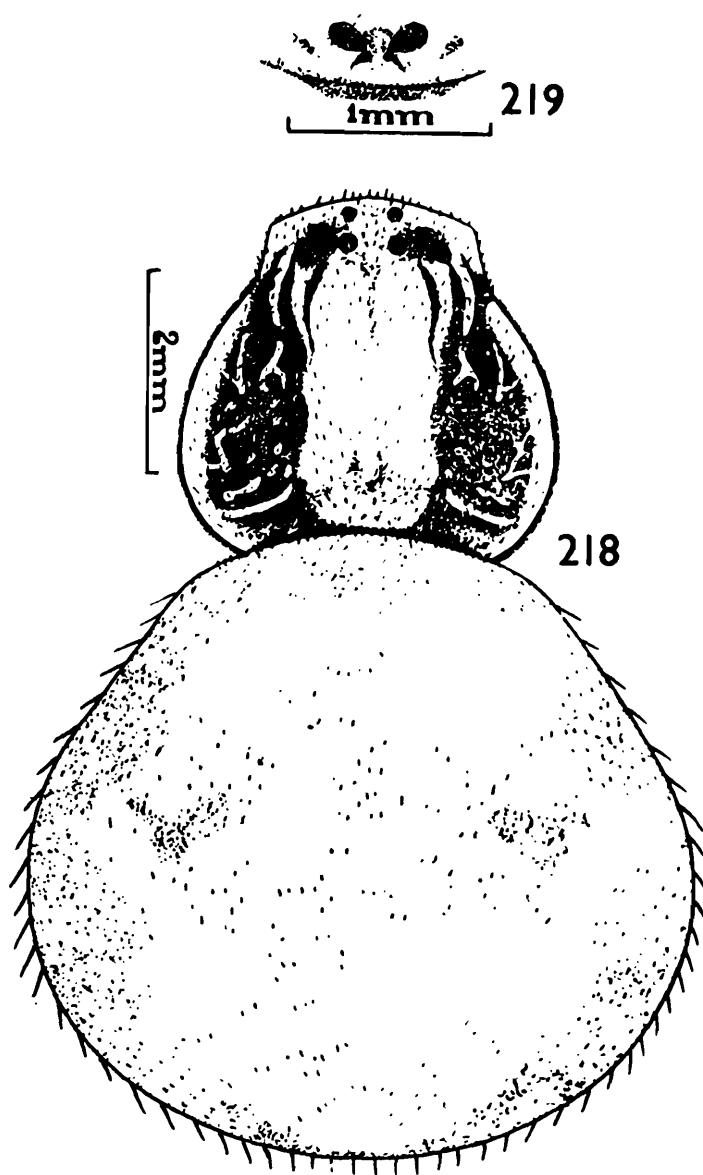
General: Cephalothorax brown, legs light green and abdomen white. Total length 9.60 mm. Carapace 3.60 mm. long, 3.80 mm. wide; abdomen 6.00 mm. long, 6.70 mm. wide.

Cephalothorax: Nearly as long as wide, relatively flat, clothed with small hairs. Allatum with longitudinal deep brown patches. Eyes round, black, both rows recurved but anterior row more recurved than posterior. Lateral eyes provided with prominent tubercles and the tubercles contiguous. Ocular area as long as wide. Legs long and stout, I and II longer than III and IV legs. Tibiae of I and II apically with four pairs and metatarsi with eight pairs of strong ventral spines.

Abdomen: Round, nearly as long as wide, broadest just behind the middle, clothed with similar small hairs as on cephalothorax. Ventral side uniform pale. Epigyne as in fig. 219.

Type-locality: Mussoorie, Uttar Pradesh, INDIA.

Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3118/18.



FIGS. 218-219. *Misumenoides shulli* Tikader
 218. Dorsal view of female, legs omitted.
 219. Epigyne.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

Genus 13. *Misumenops* Cambridge

1900. *Misumenops* Cambridge, *Biol. Centr. Amer. Zool.*, **2** : 141.
 1939. *Misumenops* : Gertsch, *Bull. Amer. Mus. Nat. Hist.*, **76** : 318.
 1940. *Misumenops* : Comstock, *Spider Book*, New York, : 542.
 1965. *Misumenops* : Schick, *Bull. Amer. Mus. Nat. Hist.*, **129**(1) : 108.
 1965. *Misumenops* : Tikader, *Proc. Indian Acad. Sci.*, **61**(5) : 287.

Characters: This genus is closely allied to *Misumena* but differs in having large and prominent spines on the femora of the I and II legs, and the upper surface of tibiae of the same legs. The cephalothorax and abdomen are more spiny in *Misumena*. The tubercles of the lateral eyes are joined by a round ridge.

Type-species: *Misumenops oblonga* (Keyserling)

Distribution: AMERICA, ASIA and AFRICA.

Key to species of the genus MISUMENOPS Cambridge

- | | |
|---|--------------------------------|
| 1. Metatarsi of I with four pairs of ventral spines | .2. |
| Metatarsi of I with seven pairs of ventral spines | . <i>khandalaensis</i> Tikader |
| 2. Tibia of I with five pairs of ventral spines. | . <i>kumaonensis</i> sp. nov. |
| Tibia of I with three pairs of ventral spines. | . <i>andamanensis</i> sp. nov. |

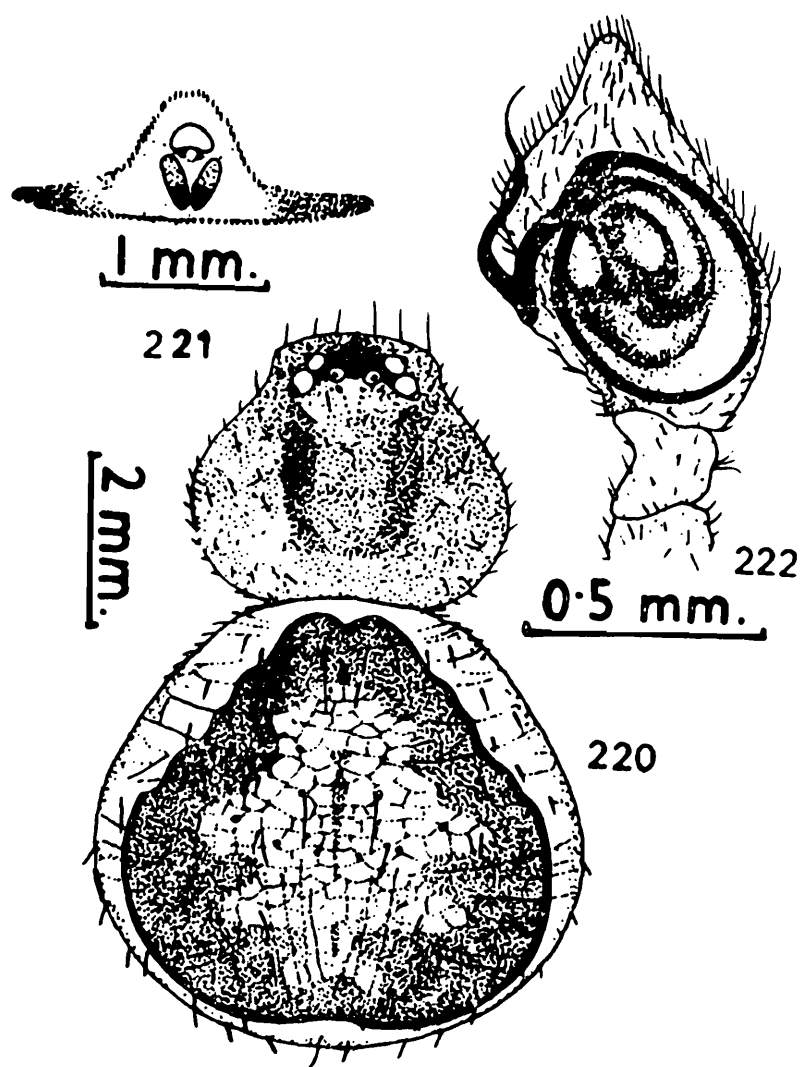
74. *Misumenops khandalaensis* Tikader
(Figs. 220-222)

1965. *Misumenops khandalaensis* Tikader, *Proc. Indian Acad. Sci.*, Bangalore, 61(5) : 287.

General: Cephalothorax and legs light brownish-green; abdomen white. Total length 8.10 mm. Carapace 3.20 mm. long, 3.50 mm. wide; abdomen 5.90 mm. long, 6.20 mm. wide.

Cephalothorax: Nearly as long as wide, clothed with spines, convex, cephalic region slightly high. Eyes round, black, both rows recurved, ringed with tubercles but lateral eyes situated on prominent tubercles; ocular area with deep brown patches, and ocular quad as long as wide. Clypeus high, margin provided with seven spines directed forward. Sternum heart-shaped, pointed behind. Legs long and stout, I and II legs longer than III and IV. I and II legs clothed with prominent spines. Tibiae of I with six pairs and metatarsi with seven pairs of ventral spines. Male palp as in fig. 222.

Abdomen: Round, slightly wider than long, clothed with long spines, and with oval shaped conspicuous brown patch on the dorsum and outer border of the patch provided with prominent black line. Ventral side uniform pale colour. Epigyne as in fig. 221.



FIGS. 220-222. *Misumenops khandalaensis* Tikader
 220. Dorsal view of female, legs omitted.
 221. Epigyne.
 222. Male-palp, ventral view.

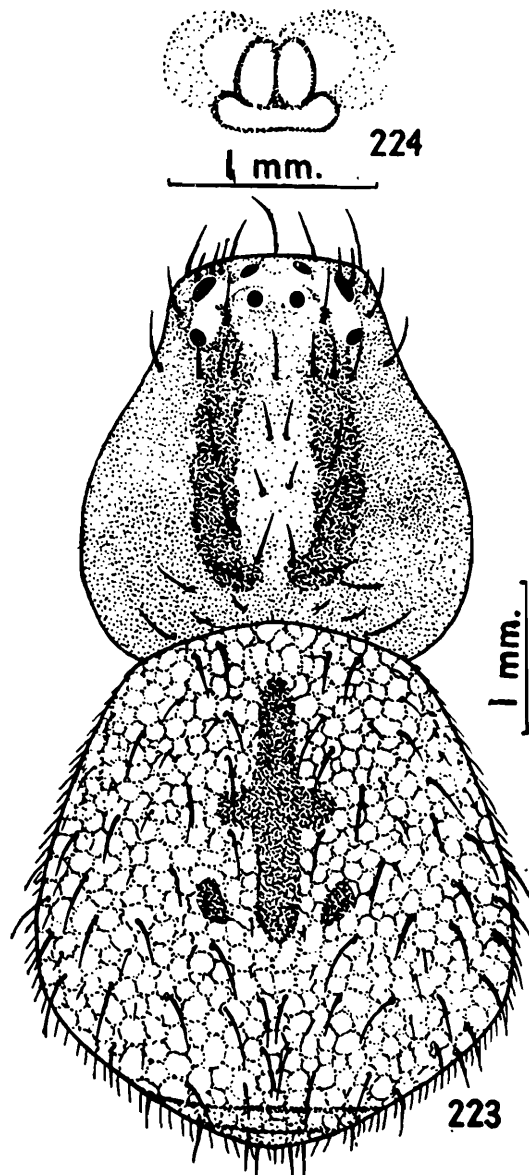
Type-locality: Near Khandala Hotel, Khandala Ghat, Dist. Poona, Maharashtra, India. *Holotype:* ♀, in National Zoological collections, Zoological Survey of India, Calcutta. Regd.No. 3106/18.

Distribution: Khandala Ghat, Dist. Poona, Maharashtra, INDIA.

75. *Misumenops kumaonensis* sp. nov.
 (Figs. 223-224)

General: Cephalothorax and legs light brownish green; abdomen dirty chalk-white. Total length 6.00 mm. Carapace 2.70 mm. long, 2.60 mm. wide; abdomen 3.50 mm. long, 3.00 mm. wide.

Cephalothorax: Slightly longer than wide, clothed with spines, convex, cephalic region slightly high. Eyes round, black, both rows recurved but anterior row strongly recurved, ringed with white tubercles, lateral eyes situated on prominent tubercles; ocular quad longer than wide and parallel sided. Clypeus high, margin provided with five spines directed forward. Sternum heart-shaped, pointed behind, clothed with fine hairs. Legs long and stout, I and II much longer than III and IV I and II legs clothed with conspicuous spines. Tibiae of I with five pairs and metatarsi with four pairs of ventral spines.



FIGS. 223-224. *Misumenops kumaonensis* sp. nov.
 223. Dorsal view of female, legs omitted.
 224. Epigyne.

Abdomen: Round, slightly wider than long, posterior half wider than anterior half, clothed with conspicuous long spines. Antero-dorsal portion of abdomen provided with a light brown cross markings as in text-fig. 223. Ventral side uniform pale colour. Epigyne as in fig. 224.

Holotype: ♀, in spirit. Deposited at Zoological Survey of India, Calcutta. Regd. No. 4583/18.

Type-locality: Wachham, Dist. Almora, Kumaon, U.P., INDIA. 13.x.1971, Coll. *Dr. Samir Chakrabarty*.

This species is closely related to *Misumenops khandalaensis* Tikader but it can be distinguished from it as follows: (i) Margin of clypeus provided with five spines but in *M. khandalaensis* margin of clypeus with seven spines. (ii) Tibiae of I with five pairs and metatarsi with four pairs of ventral spines but in *M. khandalaensis* tibiae of I with six pairs and metatarsi with seven pairs of ventral spines. (iii) Epigyne also structurally different.

76. *Misumenops andamanensis* sp. nov.

(Fig. 225)

General: Cephalothorax and legs light brown, abdomen pale with red spots. Total length 5.60 mm. Carapace 3.00 mm. long, 2.80 mm. wide; abdomen 2.80 mm. long, 3.00 mm. wide.

Cephalothorax: Nearly as long as wide, clothed with spines, narrowing anteriorly. Eyes round, black, both rows recurved, medians provided with tubercles laterals situated on prominent tubercles. Medians smaller than the laterals. Ocular quad as long as wide as in fig. 225. Clypeus high and margin provided with eight spines directed forward. Sternum oval, pointed behind, pale, clothed with some spine like hairs. Legs long and stout, uniformly coloured, I and II legs longer than III and IV I and II legs clothed with prominent hairs and spines as compared to III and IV Tibiae and metatarsi of I leg with three and four pairs of ventral robust spines respectively.

Abdomen: Nearly round, slightly wider behind the middle, provided with prominent spines. Dorsally provided with chalk-

white patches and also middle with a longitudinal light brown patch as in fig. 225. Ventral side uniform pale colour.

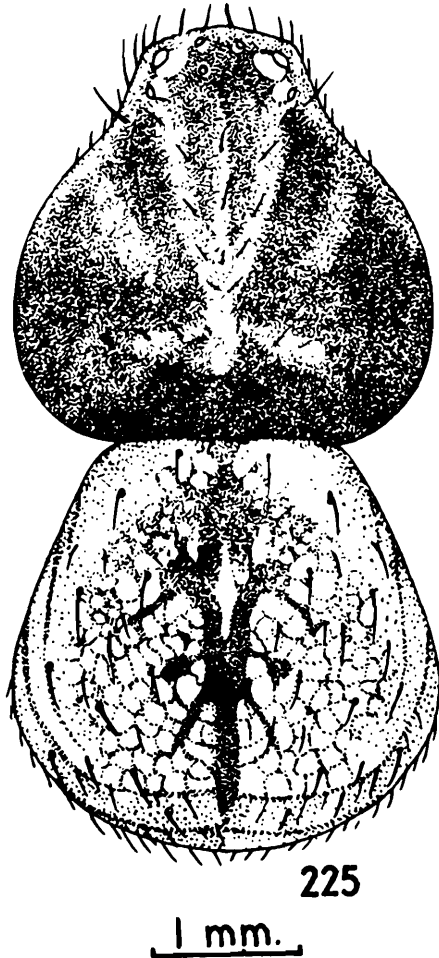


FIG. 225. *Misumenops andamanensis* sp. nov. Dorsal view of male, legs omitted.

Holotype: One immature ♂, *allotype* one immature ♀, in spirit. Deposited at Zoological Survey of India, Calcutta. Regd. No. 4581/18.

Type-locality: Rest House Campus, Long Island, Middle Andaman, INDIA. 17.v.1971. Coll. B. K. Tikader.

This species is closely related to *Misumenops khandalaensis* Tikader but can be distinguished from it as follows: (i) Margin of the clypeus provided with eight spines but in *M. khandalaensis* margin of the clypeus with seven spines. (ii) Tibiae and metatarsi of I leg provided with three and four pairs of ventral spines respectively but in *M. khandalaensis* tibiae and metatarsi of I leg provided with six and seven pairs of ventral spines respectively.

Genus 14. **Pasias** Simon

1895. *Pasias* Simon, *Hist. Naturelle des Araign.*, Paris, 1(4) : 984.
 1963. *Pasias* : Tikader *Proc. Indian Acad. Sci.*, Bangalore, 58(5) : 253.
 1971. *Pasias* : Tikader, *Mem. zool. Surv. India*, 15(3) : 61.

Characters: Cephalothorax wider than long, cephalic region slightly high. Eyes round and black, anterior row strongly recurved so that it looks like two distinct rows; lateral eyes situated on elevated, confluent tubercles; posterior row less recurved than anterior row; median ocular area much longer than wide, and wider in front. Legs I and II longer than III and IV, clothed with hairs and long spines as in family Oxyopidae. Abdomen longer than wide.

Type-species : *Pasias luzonus* Simon.

Distribution: PHILIPPINES and INDIA.

Key to species of the genus PASIAS Simon

1. Dorsal side of abdomen provided with a pair of oblong black spots at the middle and posterior half provided with four incomplete, transverse black bands. .*puspagiri* Tikader
- Dorsal side of abdomen with a pair of round black spots and posterior half without any black bands. .*murathas* Tikader

77. *Pasias puspagiri* Tikader

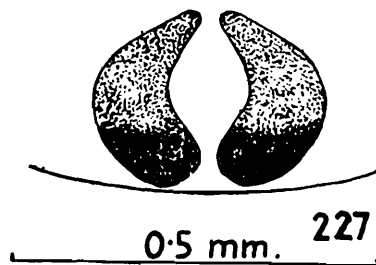
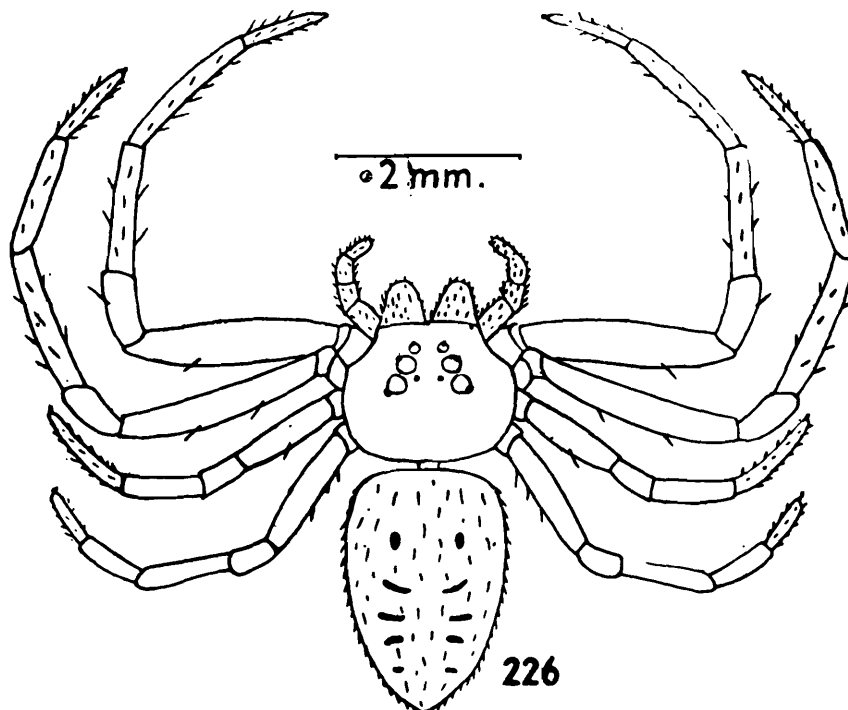
(Figs. 226-227)

1963. *Pasias puspagiri* Tikader, *Proc. Indian Acad. Sci.*, Bangalore, 58(5) : 253.

General: Cephalothorax yellowish-brown, abdomen and legs light green to white. Total length 3.90 mm. Carapace 1.40 mm. long, 1.80 mm. wide; abdomen 2.30 mm. long, 1.50 mm. wide.

Cephalothorax: Wider than long, clothed with fine hairs, cephalic region slightly higher than behind. Clypeus high. Eyes round and black, anterior row strongly recurved so that it looks like two distinct rows; lateral eyes situated on elevated, confluent, bluish-white tubercles; posterior row less recurved than anterior row; median ocular area much longer than wide and wider in front;

both lateral eyes larger and posterior medians smaller than anterior median. Legs I and II longer than III and IV, clothed with hairs and long spine; tibiae I with two pairs of ventral spines; tarsal scopulae not well developed but claw tufts prominent.



FIGS. 226-227. *Pasias puspagiri* Tikader

226. Dorsal view of female, with legs.

227. Epigyne.

Abdomen: Long, cylindrical, narrowed behind and spined. One pair of oblong black spots on the middle of dorsum and posterior half provided with four incomplete, transverse, black bands. Epigyne as in fig. 227.

Type-locality: Sakalespur, Dist. Hassan, Karnataka, INDIA.
Holotype: ♀, in the National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3124/18.

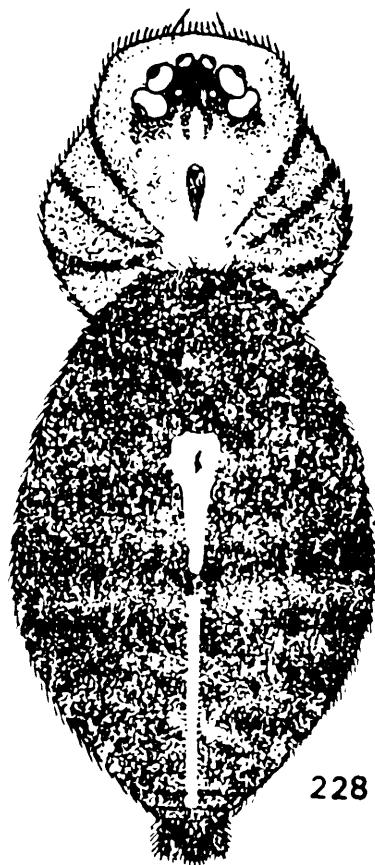
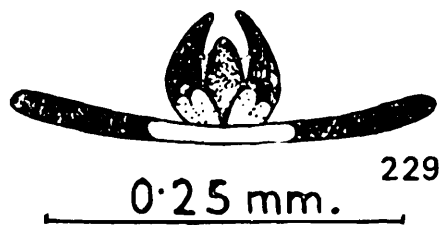
Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

78. *Pasias marathas* Tikader

(Figs. 228-229)

1965. *Pasias marathas* Tikader, *Proc. Indian Acad. Sci.*, Bangalore, 61(5) : 286.



FIGS. 228-229. *Pasias marathas* Tikader
 228. Dorsal view of female, legs omitted.
 229 Epigyne.

General: Cephalothorax and legs light brown, and abdomen white to dark colour. Total length 6.10 mm. Carapace 2.10 mm. long, 2.20 mm. wide; abdomen 4.30 mm. long, 2.70 mm. wide.

Cephalothorax: Slightly wider than long, clothed with fine hairs; cephalic region slightly higher than behind. Clypeus high, margin provided with five spines directed forward. Eyes round and black, both rows recurved but anterior row more recurved than posterior. Lateral eyes situated on elevated confluent tubercles; ocular area much longer than wide and slightly wider in front, both lateral eyes larger and posterior medians smaller than anterior median. Legs I and II longer than III and IV, clothed with hairs and long spines. Tibiae I with two pairs and metatarsi with five pairs of ventral spines; tarsal scopulae not well developed but claw tuft prominent.

Abdomen: Long, cylindrical, narrowed behind and spined. One pair of round black spots on the middle of dorsum. Ventral side uniform pale. Epigyne as in fig. 229.

Type-locality: Poona University Compound, Poona, Maharashtra, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3122/18.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

Genus 15. **Strigoplus** Simon

1885. *Strigoplus* Simon, *Bull. Soc. Zool. Fr.*, **10** : 444.

1891. *Strigoplus* : Thorell, *K. Sv. V. Akad. Handle.*, **24**(2) : 88.

1895. *Strigoplus* : Simon, *Hist. Nat. Araign.*, Paris, **1**(4) : 967.

1963. *Strigoplus* : Tikader, *Proc. Indian Acad. Sci.*, Bangalore, **58**(5) : 252.

Characters: Cephalothorax slightly wider than long, clothed with hairs and spines. Clypeus broad and conspicuously projecting, the sides and middle of the margin concave and provided with one row of small clavate hairs. Eyes round, black, both rows recurved, lateral eyes with prominent confluent tubercles. Legs I and II much longer than III and IV, clothed with hairs and spines. Abdomen oval, clothed with hairs and spines.

Type-species: *Strigoplus albostriatus* Simon,

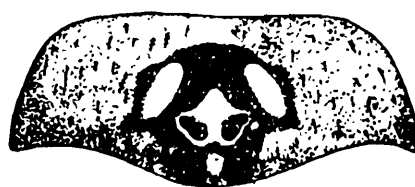
Distribution: MALAYSIA, BURMA, JAVA and INDIA.

79. *Strigoplus netravati* Tikader

(Figs. 230-231)

1963. *Strigoplus netravati* Tikader. *Proc. Indian Acad. Sci.*, Bangalore, 58(5) : 252.

General: Cephalothorax, legs and abdomen dark. Total length 3.10 mm. Carapace 1.40 mm. long, 1.50 mm. wide; abdomen 1.90 mm. long, 1.90 mm. wide.



231

1 mm.



230

2 mm.

FIGS. 230-231. *Strigoplus netravati* Tikader
230. Dorsal view of female, legs omitted.
231. Epigyne.

Cephalothorax: Slightly wider than long, clothed with hairs and spines; cephalic region wider than behind. Clypeus broad and conspicuously projecting, the sides and middle of the margin concave and provided with one row of small clavate hairs. Eyes round and black, both rows recurved, lateral eyes ringed with dirty-white, confluent tubercles; anterior lateral eyes slightly larger than posterior laterals; medians of both rows nearly the same size; ocular area much wider than long; middle of ocular area provided with small clavate hairs; a broad, whitish, longitudinal patch from margin of clypeus to middle of cephalothorax. Legs I and II much longer than III and IV, but II longer than I, dorsal side of femur and base of tibiae I and II with conspicuous, chalk-white patches. Coxae, trochanters and femora of I and II with black on ventral side, clothed with hairs and spines; femora of III and IV pale white.

Abdomen: Oval, the dorsum spined, slightly overlapping the posterior region of cephalothorax; dorsal surface with transverse, dentate, white bands beautifully coloured with admixture of yellow, dark brown and blue. Ventral side black. Epigyne as in fig. 231.

Type-locality: Netravati near Dharmashala, Dist. South Kanara, Karnataka, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3148/18.

Distribution: Chikmagalur dist. and South Kanara dist., Karnataka, INDIA.

Remark: Description based on a single female specimen.

Genus 16. **Regillus** Cambridge

1884. *Regillus* Cambridge, *Proc. zool. Soc.*, Lond., 1884 : 203.

1895. *Regillus* : Simon, *Hist. Nat. Ariagn.*, Paris, 1(4) : 1055.

1966. *Regillus* : Tikader, *Proc. Indian Acad. Sci.* Bangalore 64(1) : 54.

Characters: Cephalothorax longer than wide and narrow in front. Eyes recurved, lateral eyes large and situated on the prominent tubercles. Ocular quad longer than wide. Legs robust with conspicuous spines, I leg very long and robust, anterior half of I femur very wide and inner side provided with four robust spines.

Abdomen longer than wide and wider posteriorly, clothed with hairs and spines.

Type-species: *Regillus asper* Cambridge

Distribution: AFRICA, MALAYSIA and INDIA.

80. *Regillus elephantus* Tikader

(Figs. 232-233)

1966. *Regillus elephantus* Tikader, *Proc. Indian Acad. Sci. Bangalore*, 64(1) : 54.

General: Cephalothorax, legs, abdomen light to deep brown. Total length 8.20 mm. Carapace 4.00 mm. long, 3.30 mm. wide; abdomen 4.20 mm. long, 3.50 mm. wide.

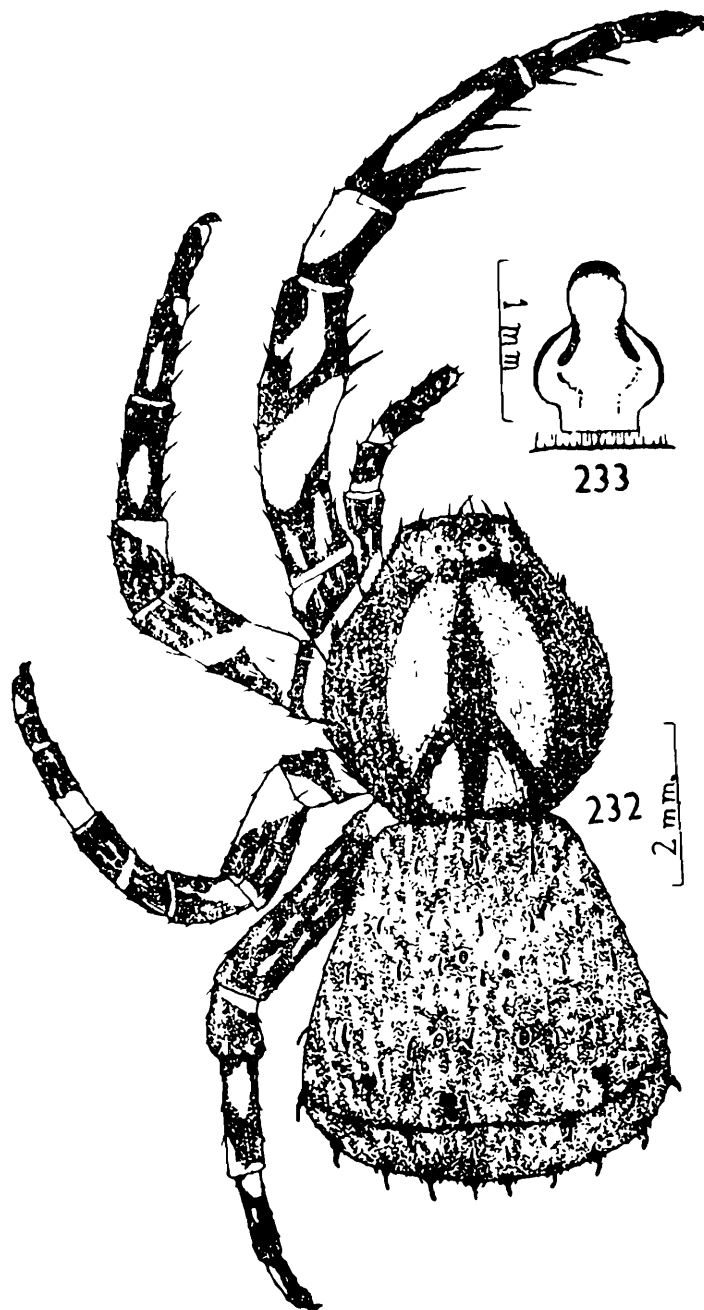
Cephalothorax: Longer than wide nearly flat but cephalic region mid-dorsally provided with high longitudinal ridge and narrow in front. Eyes both rows recurved, lateral eyes large and situated on the prominent tubercles. Ocular quad longer than wide and slightly narrow in front. Clypeus high, margin of clypeus provided with seven spines directed forward. Sternum nearly oval, clothed with hairs and few spines. Legs robust with conspicuous spines, I leg very long and robust than others; anterior half of I femur very wide and inner side provided with four robust spines and tibiae provided with five pairs of long ventral spines and metatarsi with three pairs of ventral spines.

Abdomen: Longer than wide, widest behind the middle, dirty brown, clothed with conspicuous blunt spines and base of spines slightly elevated. Ventral side light coloured than dorsal and provided with hairs and spines. Epigyne as in fig. 233.

Type-locality: Elephant falls, Upper Shillong, Meghalaya, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3803/18

Distribution: Upper Shillong, Mawphlong, Khasi and Jaintia Hills, Meghalaya, INDIA.

Remark: Description based on a single female specimen.



FIGS. 232-233. *Regillus elephantus* Tikader
 232. Dorsal view of female, one side leg omitted.
 233. Epigyne.

Genus 17. *Amyciaea* Simon

1885. *Amyciaea* Simon, *Bull. Soc. Zool. Fr.*, 10 : 447.
 1895. *Amyciaea* : Simon, *Hist. Nat. Araign.*, Paris, 1(4) : 988.
 1963. *Amyciaea* : Tikader, *J. Univ. Poona Sci. Tech.*, 24 : 52.

Characters: Cephalothorax as long as wide, high, cephalic region sloping in front. Eyes round, lateral eyes ringed with pro-

minent tubercles; both rows recurved but posterior row strongly recurved, lateral eyes conspicuously larger than medians. The spiders of this genus have typically ant-like appearance. Abdomen longer than wide, clothed with fine hairs. Legs not very strong, like ant's legs.

Type-species: *Amyciaea forticeps* (Cambridge).

Distribution: AFRICA, BURMA, MALAYSIA; HOLLAND and INDIA.

81. *Amyciaea forticeps* (Cambridge)

(Figs. 234-236)

1873. *Amycle forticeps* Cambridge, *Proc. zool. Soc., Lond.*, **1873** : 122.
1885. *Amyciaea forticeps* : Simon, *Bull. Soc. Zool. Fr.*, **10** : 447.
1895. *Amyciaea forticeps* : Simon, *Hist. Nat. Araign.*, Paris, **1(4)** : 988.
1963. *Amyciaea forticeps* : Tikader, *J. Univ. Poona Sci. & Tech.*, **24** : 52.

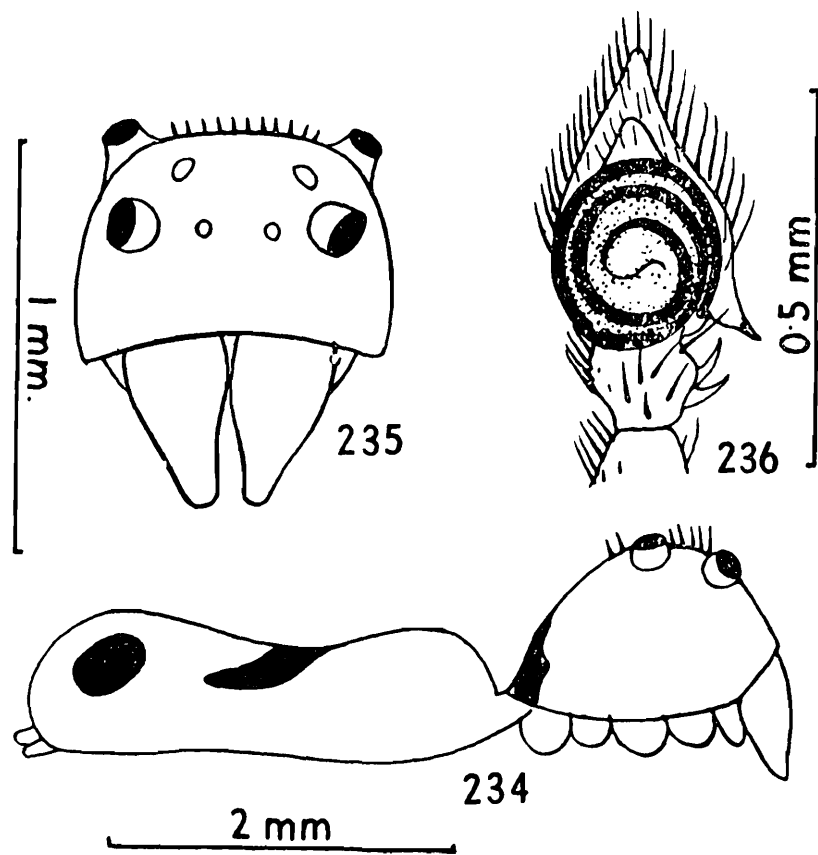
General: Cephalothorax and legs reddish-brown, abdomen light-brown. Total length 5.50 mm. Carapace 2.00 mm. long, 2.00 mm. wide; abdomen 3.00 mm. long, 2.00 mm. wide.

Cephalothorax: As long as wide, cephalic region high and sloping in front, clothed with hairs. Eyes round, ringed with brown tubercles; both rows recurved but posterior row strongly recurved, lateral eyes conspicuously larger than medians; ocular quad slightly longer than wide; space of the anterior median eyes a little smaller than that of posterior. Legs not very strong, like ant's legs. Male palp as in fig. 236.

Abdomen: More or less elliptical, narrow in front, a V-shaped dark brown marking on the anterior half of abdomen; the base of 'V' in the anterior end of abdomen and two conspicuous black round spots on the posterior lateral sides of abdomen. Apparently the spider looks like a red ant.

Distribution: Poona, INDIA, BURMA and MALAYSIA.

Remark: Description based on a single male specimen.



FIGS. 234-236. *Amyciaea forticeps* (Cambridge)
 234. Lateral view of female, legs omitted.
 235. Front view of face.
 236. Male-palp, ventral view.

Genus 18. *Platythomisus* Dolesch.

1859. *Platythomisus* Dolesch., *Acta Soc. Ind. Neerl.*, 5(5) : 59.

1895. *Platythomisus* : Simon *Hist. Nat. Araign.*, Paris 1(4) : 1017.

Characters: Cephalothorax longer than wide, convex, cephalic region slightly high. Eyes black and tuberculated; both rows of eyes nearly straight. Ocular quad longer than wide and narrow in front. Legs long and stout, I and II longer than III and IV, all legs provided with hairs and spines. Tibiae and metatarsi of I and II provided with conspicuous ventral spines.

Type-species: *Platythomisus octamaculatus* (Koch)

Distribution: AFRICA, MALAYSIA and Sikkim, Shillong, INDIA.

Key to species of the genus PLATYTHOMISUS Dolesch.

1. Metatarsi I and II provided with five and three pairs of ventral robust spines and abdomen dorsally with irregular chalk-white small patches, and mid-dorsally with a longitudinal deep brown bar extending from base to behind the middle and conspicuous reddish brown dot like depressions in the middle *.bazarus* Tikader
- Metatarsi I and II not provided with ventral spines, abdomen dorsally with three broad transverse black patches; no reddish brown dot like depressions. *.sudeepi* Biswas

82. *Platythomisus bazarus* Tikader

(Figs. 237-239)

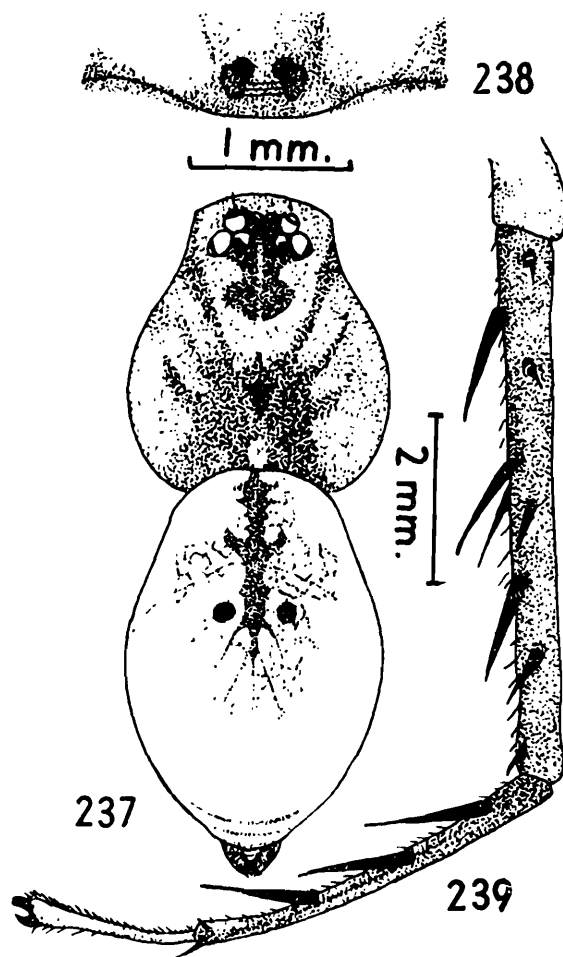
1970. *Platythomisus bazarus* Tikader, *Rec. zool. Surv. India*, Calcutta, **64** : 50.

General: Cephalothorax and legs light brownish green, abdomen dirty chalk-white. Total length 7.10 mm. Carapace 3.20 mm. long, 2.80 mm. wide; abdomen 4.00 mm. long, 2.80 mm. wide.

Cephalothorax: Longer than wide, cephalic region high. Eyes black with prominent tubercles; both rows straight but posterior row longer, lateral eyes larger; tubercles of two laterals and posterior median eyes contiguous. Ocular quad longer than wide and narrow in front. Sternum heart-shaped. Legs long and stout, I and II longer than III and IV; all legs provided with hairs and conspicuous spines. Tibiae and metatarsi of I and II provided with five and three pairs of ventral robust spines respectively. Tarsal scopulae weakly developed and claw tufts prominent.

Abdomen: Longer than wide, posterior half wide and end tapering, irregular chalk-white small patches all over the dorsum. Mid-dorsally a longitudinal deep brown bar extending from base to behind the middle and two conspicuous reddish-brown dot like depressions in the middle. Epigyne as in fig. 238.

Type-locality: Nayabazar, West Sikkim, INDIA. *Holotype*: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3144/18.



FIGS. 237-239. *Platythomisus bazarus* Tikader
 237. Dorsal view of female, legs omitted.
 238. Epigyne.
 239. Distal end of I leg.

Distribution: So far this species is known only from its type locality.

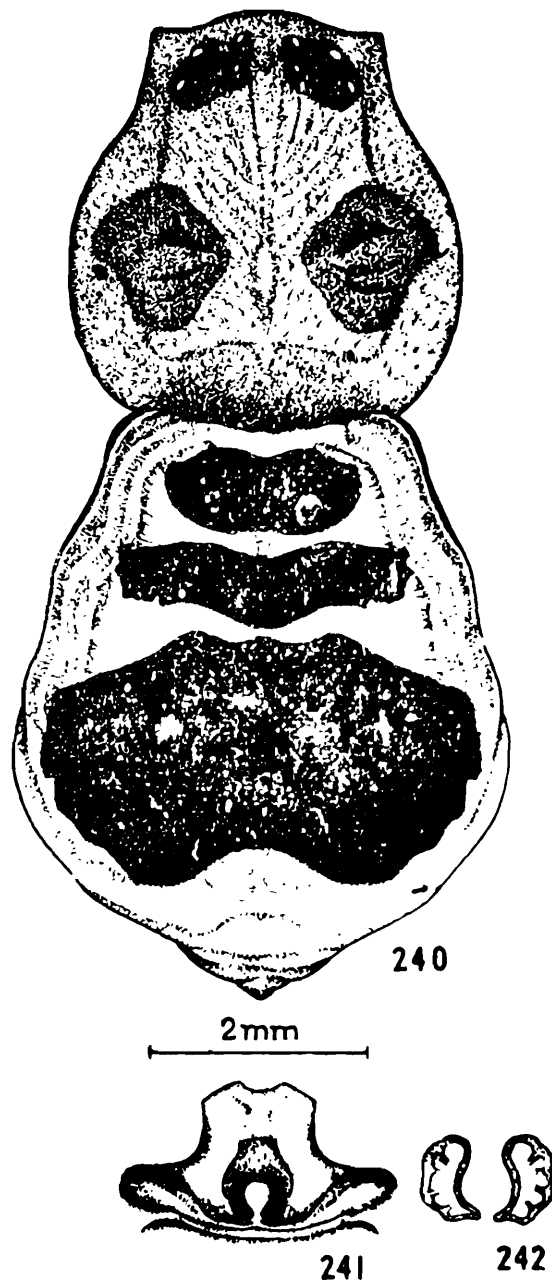
Remark: Description based on a single female specimen.

83. *Platythomisus sudeepi* Biswas

(Figs. 240-242)

1977. *Platythomisus sudeepi* Biswas, *J. Bombay nat. Hist. Soc.*, 74(2) : 332-334.

General: Cephalothorax and legs brown, abdomen yellow with black transverse bars. Total length 9.31 mm. Carapace 4.00 mm. long, 3.75 mm. wide; abdomen 5.31 mm. long, 4.50 mm. wide.



FIGS. 240-242. *Platythomisus sudcepi* Biswas
 240. Dorsal side of female, legs omitted.
 241. Epigyne.
 242. Internal genitalia.

Cephalothorax: High and rounded, a little longer than wide, dorsolateral side abruptly depressed and anterior portion conical, provided with four rounded black spots, and the eyes situated within the anterior black spots, posterior pair of spots larger. Both rows of eyes recurved, anterior laterals larger, posterior medians smaller and anterior medians pearly white. Sternum brown,

longer than wide and triangular in shape. Legs I and II brown; longer and subequal. Femora III and IV light yellow in colour. Legs without spines and metatarsi of legs dorsolaterally yellowish-white, except apical portion.

Abdomen: Longer than wide, broad and conical behind, provided with three transverse black patches. First one provided with a light brown round spots on the middle, second with two round brown spots on the sides and the last bar is very broad and provided with two longitudinal brown lines on the sides. Ventral side black bordered with yellow colour, spinnerets brown at the base, encircled with yellow. Epigyne and internal genitalia as in figs. 241-242.

Type-locality: Pollibetta, Coorg, Karnataka, INDIA. *Holotype* ♀, *paratype* one ♀, in National Zoological Collections, Zoological Survey of India, Calcutta, Regd. No. 4411/18.

Distribution: So far this species is known only from its type locality.

Remark: Description based on female specimen.

Genus 19. *Camaricus* Thorell

1887. *Camaricus* Thorell, *Ann. Mus. Civ. stor. nat. Gen.* 5(2) : 261.

1895. *Camaricus* : Simon, *Hist. Nat. Araign.*, 1(4) : 1012.

1892. *Camaricus* : Workman, *Malaysian Spiders.* 1 : 4.

Characters: Cephalothorax moderately high, wider in front side nearly parallel, clothed with hairs. Eyes in two rows, both are recurved, middle eyes nearer to the laterals. Crab-like appearance. Abdomen decorated and clothed with hairs.

Type-species: *Camaricus maugei* (Walck).

Distribution: Tropical AFRICA, INDIA, MALAYSIA.

Key to species of the genus CAMARICUS Thorell

1. Femora, patella and tibiae of I and II legs mid-dorsally not provided with light brown streaks; cephalothorax red and sternum pale in colour *.formosus* Thorell
- Femora, patella and tibiae of I and II legs mid-dorsally provided each with a light brown streak; cephalothorax light brown and sternum light green in colour .. *.khandalaensis* sp. nov.

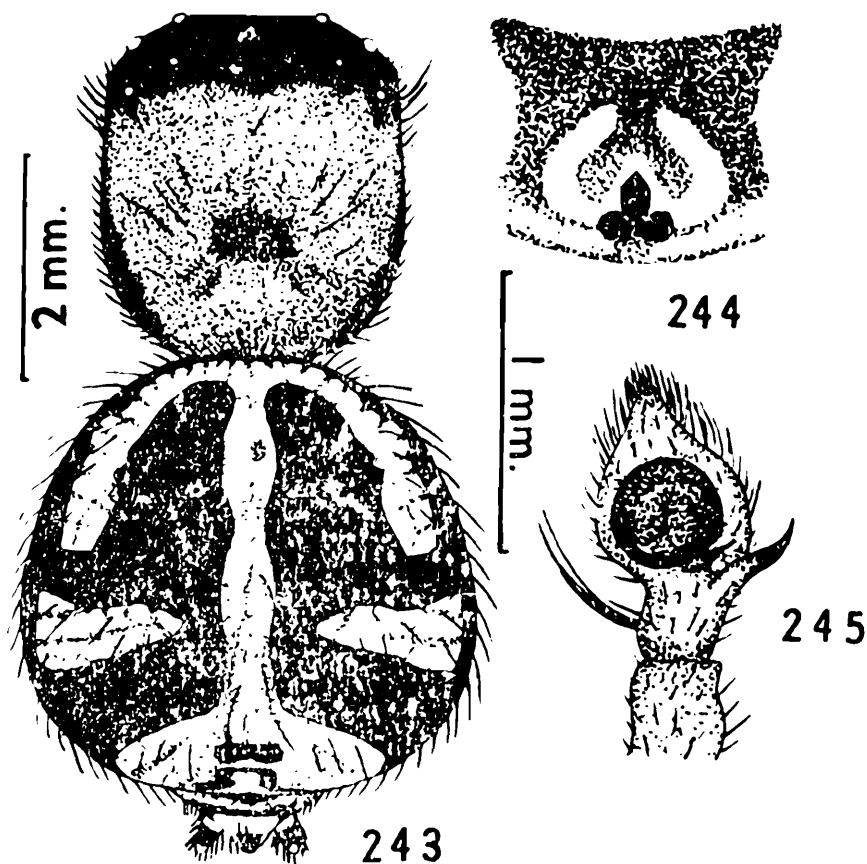
84. *Camaricus formosus* Thorell

(Figs. 243-245)

1887. *Camaricus formosus* Thorell, *Ann. Mus. Civ. stor. nat. Gen.*, 5(2) : 261.1890. *Camaricus fornicatus* Thorell, *Arach. Nies. de. Sumatra*, 10(2) : 60.1892. *Camaricus formosus* : Workman, *Malaysian Spider*, 1 : 4.

General: Cephalothorax red, legs light greenish, abdomen dark brown. Total length 7.40 mm. Carapace 3.00 mm. long, 2.50 mm. wide, abdomen 4.20 mm. long, 4.00 mm. wide.

Cephalothorax: High, clothed with black hairs, wider in front, anterior portion and the lateral sides of cephalothorax provided with conspicuous deep brown or black patches. Centre of cephalothorax provided with deep brown patch but in male specimen



FIGS. 243-245. *Camaricus formosus* Thorell
 243. Dorsal view of female, legs omitted.
 244. Epigyne.
 245. Male-palp, ventral view.

no such patch. Eyes in two rows, both rows recurved, posterior row slightly longer than anterior row. Middle eyes situated adjacent to lateral eyes. Ocular quad longer than wide. Legs robust, clothed with hairs and spines and ornamented with black patches, but in male I and II pair complete dark brown in colour. Tibiae and metatarsi of I and II provided with three pairs of ventral spines. Chelicerae moderate dark brown. Sternum heart-shaped, pointed behind, clothed with fine hairs. Male palp as in fig. 245.

Abdomen: Longer than wide, widest behind the middle, clothed with black hairs, conspicuously decorated longitudinally and laterally by chalk-white bands as in text-fig. 243. Ventral side light brown, mid-ventral side provided with longitudinal broad brown patch extending from epigastric fold to near the base of spinnerets. Epigyne as in fig. 244.

Distribution: Andaman Islands; West Bengal, INDIA, BURMA. Sumatra, INDONESIA.

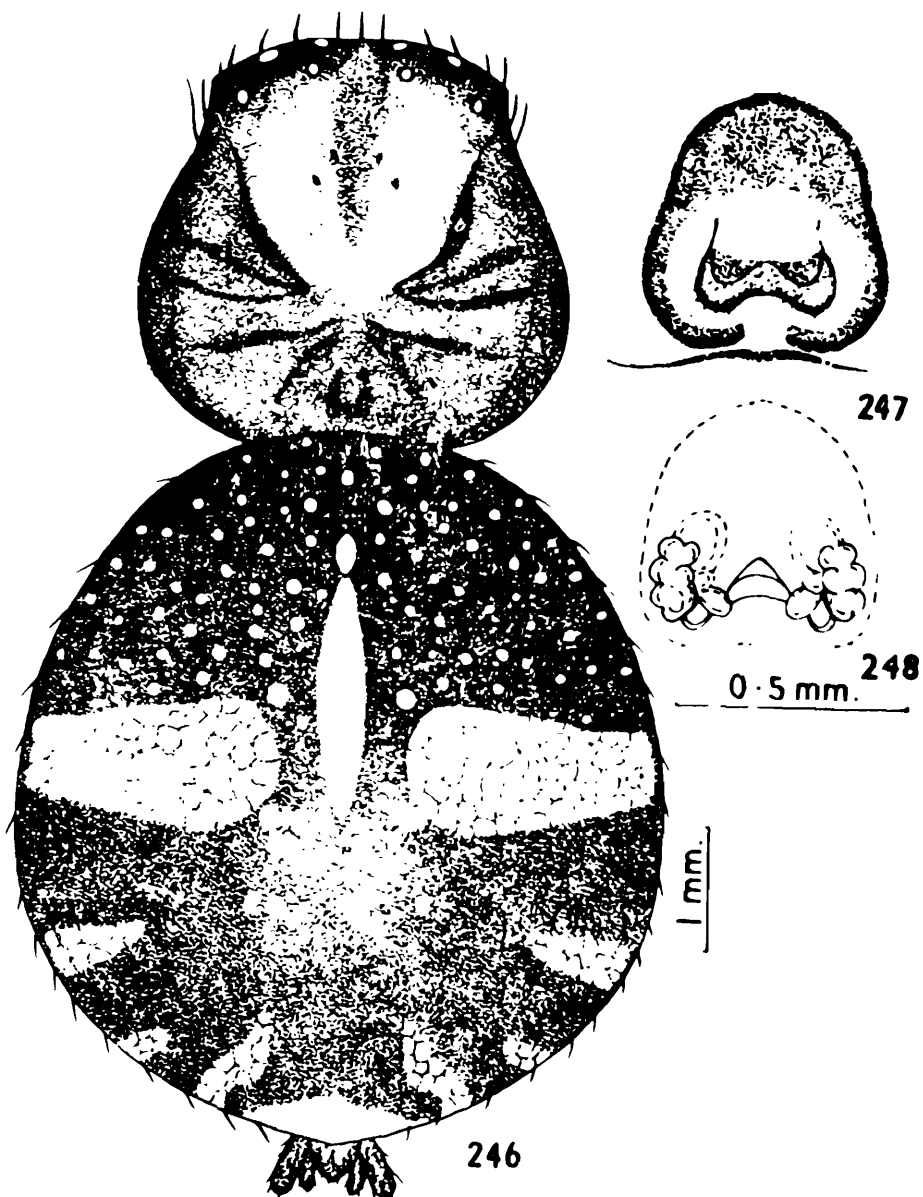
Remarks: This species was first reported by Thorell (1887) and subsequently described by Workman (1896). But their descriptions are very inadequate, moreover, Workman has mentioned that he has examined only male. I am describing and illustrating the male and female for future help to recognise this species easily. Description based on a single female specimen. Female and male specimens were collected from Andaman islands and colour illustration of male and female are given on the front page.

85. *Camaricus khandalaensis* sp. nov.

(Figs. 246-248)

General: Cephalothorax light brown, I and II legs and abdomen chocolate brown, III and IV legs pale yellow. Total length 9.50 mm. Carapace 3.30 mm. long, 3.50 mm. wide; abdomen 6.20 mm. long, 5.20 mm. wide.

Cephalothorax: Highest at the middle, sloping posteriorly, provided with some spine like hairs, slightly narrowing anteriorly. Margin of clypeus provided with eight spine like hairs directed forward as in fig. 248. Eyes in two rows, both rows recurved, posterior row slightly longer than the anterior row. Bases of lateral eyes with prominent tubercles as in fig. 246. Ocular quad



FIGS. 246-248. *Camaricus khandalaensis* sp. nov.
 246. Dorsal view of female, legs omitted.
 247. Epigyne.
 248. Internal genitalia.

very slightly wider than long. Sternum heart-shaped, pointed behind, light green in colour, anterior portion provided with few spine like hairs. Labium dark brown. Maxillae brown, wider at the distal end and clothed with hairs. Chelicerae strong. Legs robust, clothed with fine hairs and spines, I and II legs chocolate brown. Femora, patella, and tibiae of I and II legs mid-dorsally provided each with a light brown longitudinal streaks. Legs III

land IV shorter and pale than I and II. Tibiae and metatarsi of I and II provided with three pairs of ventral spines.

Abdomen: Longer than wide broadest just behind the middle, clothed with hairs, decorated mid-dorsally and dorsolaterally with chalk white conspicuous patches as in text-fig. 246. Some pale spots also present anterio-dorsally as in text-fig. 246. Mid-ongitudinal area on the ventral side with a conspicuous longitudinal brown patch extending from the epigastric furrow upto the base of spinnerets. Epigyne and internal genitalia as in figs. 247 & 248.

Holotype: ♀, *paratypes* 9 ♀ ♀, in spirit. Deposited at Zoological Survey of India, Calcutta. Regd. No. 4605/18.

Type-locality: West side of Khandala hotel, Khandala, Dist. Poona, Maharashtra, INDIA. 10.xi.1963, Coll *B. K. Tikader*.

This species resembles with *Camaricus formosus* Thorell but can be distinguished from it as follows: (i) Cephalothorax light brown but in *C. formosus* cephalothorax red. (ii) Sternum light green in colour but in *C. formosus* sternum pale brown. (iii) Epigyne also structurally different.

Subfamily *PHILODROMINAE* (Phil-od-ro-minae)

In this subfamily the tarsi of the first and second pair of legs furnished with scopulae. Legs approximately equal in length; except *Ebo*. The upper margin of the furrow of the chelicerae armed with one or two teeth. These spiders are very active and pursue their prey with great rapidity. Most of the species live on plants; when at rest, the body is closely applied to the supporting objects, with the legs stretched out separately or in pairs.

Key to genera of the sub-family PHILODROMINAE

1. Second pair of legs little longer than the first pair .2
 Second pair of legs very much longer than the others. *Ebo* Keyserling
2. Anterior lateral eyes nearer to the anterior median eyes than to the posterior median eyes *Philodromus* Walck.
 Anterior lateral eyes nearer to the posterior median eyes than to the anterior median eyes .3

- | | |
|--|-----------------------------|
| 3. Posterior eyes strongly recurved | .4 |
| Posterior eyes not strongly recurved. | .5 |
| 4. Cephalothorax much longer than wide.
Posterior lateral eyes conspicuously removed behind. | <i>Tibellus</i> Simon |
| Cephalothorax not much longer than wide.
Posterior lateral eyes not removed behind | . <i>Dieta</i> Simon |
| 5. Posterior median eyes slightly nearer to each other than to laterals or equidistant and anterior lateral eyes not equidistant from the anterior medians and posterior medians | <i>Thanatus</i> Koch |
| Posterior median eyes not nearer to each other than to the laterals and anterior lateral eyes equidistant from the anterior medians and posterior medians | . <i>Apollophones</i> Camb. |

Genus 20. Ebo Keyserling

1884. *Ebo* Keyserling, *Verh. Z. b. G. Wien.*, 33 : 678.
 1895. *Ebo* : Simon, *Hist. Nat. Araign.*, 1(4) : 1063.
 1940. *Ebo* : Comstock, *Spider Book*, New York, : 560.
 1965. *Ebo* : Schick, *Bull. Amer. Mus. Nat. Hist.*, 129(1) : 73-86.
 1965. *Ebo* : Tikader, *Proc. Indian Acad. Sci.*, 61(5) : 278.

Characters: Cephalothorax wider than long, flat, clothed with hairs. Legs II pairs conspicuously longer than the others. Eyes in two rows, posterior row almost straight. Abdomen nearly round and flat, clothed with hairs.

Type-species: *Ebo latithorax* Keyserling.

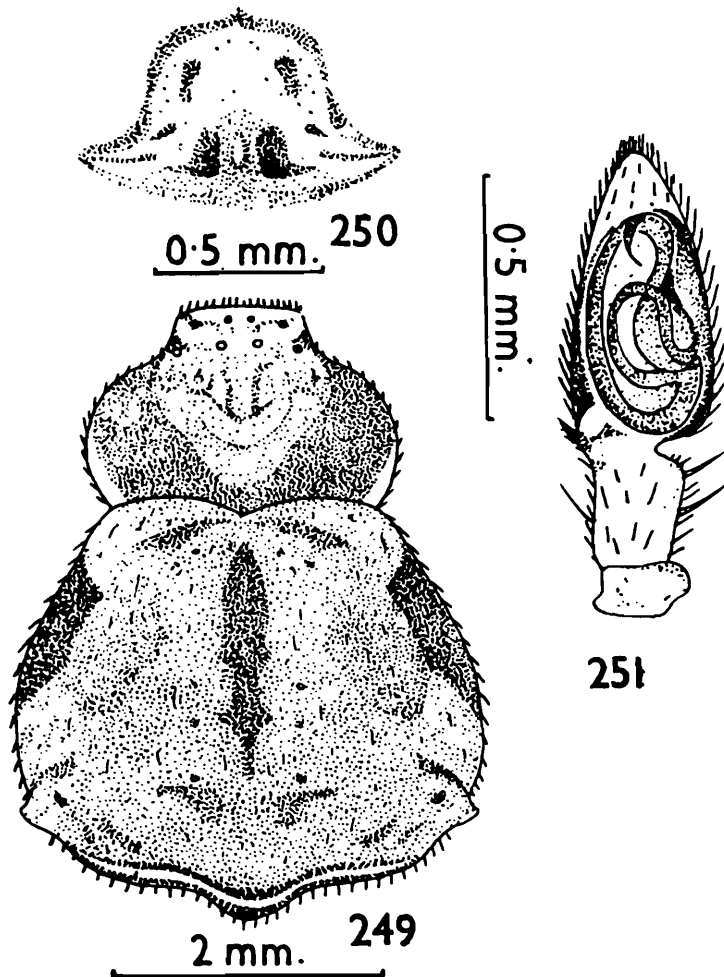
Distribution: AMERICA and INDIA.

86. *Ebo bharatae* Tikader (Figs. 249-251)

1965. *Ebo bharatae* Tikader, *Proc. Indian Acad. Sci.*, Bangalore, 61(5) : 278.

General: Cephalothorax deep brown, abdomen light brown and legs light green. Total length 4.20 mm. Carapace 1.50 mm. long, 2.10 mm. wide; abdomen 2.90 mm. long, 4.50 mm. wide.

Cephalothorax: Wider than long, flat, convex, and cephalic region slightly high, lateral sides with broad deep-brown pigmented patches. Clypeus high, margin provided with long hairs. Eyes black, both rows slightly recurved but posterior row less recurved or nearly straight and longer; posterior median eyes further from each other than from the laterals. Ocular quad longer than wide and narrow in front. Sternum pale with hairs, heart-shaped, pointed behind. Legs relatively long, II legs conspicuously longer than others; clothed with hairs and spines and provided with brown dots. Male palp as in fig. 251.



FIGS. 249-251. *Ebo bharatae* Tikader
 249. Dorsal view of female, legs omitted.
 250. Epigyne.
 251. Male-palp, ventral view.

Abdomen: Wider than long, nearly pentagonal in shape, convex, provided with hairs and pigmented dots. Posterior half wide and this portion laterally provided with two muscular protruberances. Ventral side pale and flat. Epigyne as in text 250.

Type-locality: Poona University Compound, Poona, Maharashtra, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3103/18.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

Genus 21. *Philodromus* Walckenaer

1825. *Philodromus* Walckenaer, *Ent. Fr. Ar.*, : 86.
 1895. *Philodromus* : Simon, *Hist. Nat. Araign.*, Paris, 1 (4) : 1063.
 1895. *Philodromus* : Thorell, *Spiders of Burma*, London, : 279.
 1962. *Philodromus* : Tikader, *J. Linn. Soc.*, London, 44 (300) : 581.
 1962. *Philodromus* : Tikader, *Proc. zool. Soc.*, Calcutta, 15 (1) : 39.
 1966. *Philodromus* : Tikader, *Proc. Linn. Soc.*, London, 177 (1) : 35.

Characters: Cephalothorax broader than long, relatively narrow in front. Eyes small and uniform in size and in a smaller crescent-shaped group with the anterior row shortest, posterior strongly recurved, the medians further from each other than from the laterals. Abdomen usually oval, not appreciably widened or truncated behind. Legs relatively long, II pair of legs generally longer than I pair; III and IV pairs a little shorter than I and II pairs.

Most of the species of this genus occur on plants; but a few are found inside houses and on fencing.

Type-species: *Philodromus aureolus* (Clerck).

Distribution: All over the world.

Key to species of the genus PHILODROMUS Walckenaer

- | | |
|--|----------------------------|
| 1. Posterior half of abdomen with chevrons | .2 |
| Posterior half of abdomen without chevrons | .4 |
| 2. Cephalothorax with a hammer-shaped white band. | <i>.domesticus</i> Tikader |
| Cephalothorax without white band | .3 |
| 3. Abdomen high and with lateral brown patch | <i>.assamensis</i> Tikader |
| Abdomen flat and white triangular patch on either side | <i>.betrabatai</i> Tikader |

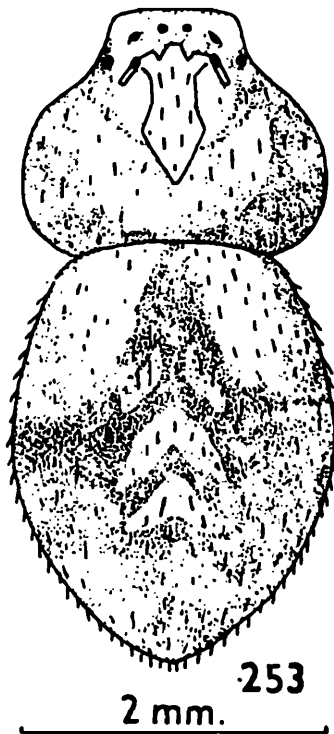
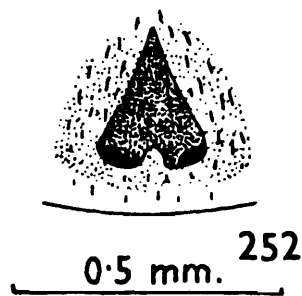
- | | | |
|-----|---|-------------------------------|
| 4. | Body dorsoventrally compressed, leaf like. | .5 |
| | Body not so much dorsoventrally compressed | .6 |
| 5. | Lateral margin of cephalothorax with pigmented patch | <i>.shillongensis</i> Tikader |
| | Lateral margin of cephalothorax without pigmented patch | <i>.kendrabatai</i> Tikader |
| 6. | Abdomen with longitudinal black band or a mark | 7 |
| | Abdomen without longitudinal black band or mark | .8 |
| 7. | Abdomen with continuous longitudinal black bands | <i>.devhutai</i> Tikader |
| | Abdomen with discontinuous longitudinal black bands or line. | <i>.manikae</i> Tikader |
| 8. | Abdomen with irregular chalk-white patch... | <i>.decoratus</i> Tikader |
| | Abdomen without chalk-white patch | .9 |
| 9. | Abdomen uniform pale colour and without marking | <i>.mohinia</i> Tikader |
| | Abdomen with some black or brown markings | .10 |
| 10. | Abdomen with irregular deep brown dots | <i>.bhagirathai</i> Tikader |
| | Abdomen with irregular deep brown patches | 11 |
| 11. | Base of tibiae and metatarsi of all legs provided with conspicuous black patches | <i>.malinia</i> Tikader |
| | Base of tibiae and metatarsi of legs not provided with black patches. | .12 |
| 12. | Margin of clypeus with not more than 6 spines | 13 |
| | Margin of clypeus with more than 6 spines... | .14 |
| 13. | Femora provided with four conspicuous dorsal spines | <i>.durvei</i> sp. nov. |
| | Femora provided with three conspicuous dorsal spines | <i>.chambaensis</i> sp. nov. |
| 14. | Ventral side of abdomen provided with a broad longitudinal deep-brown band extending from the epigastric fold to the base of spinnerets | <i>.barmani</i> sp. nov. |
| | Ventral side of abdomen not provided with any such band | <i>.tiwarii</i> Basu |

87. *Philodromus domesticus* Tikader

(Figs. 252-253)

1962. *Philodromus domesticus* Tikader, *Proc. zool. Soc., Calcutta*, 15(1) : 39.

General: Cephalothorax and legs very dark brown and abdomen darker than cephalothorax. Total length 4.10. Carapace 1.60 mm. long, 1.90 mm. wide; abdomen 2.70 mm. long, 2.10 mm. wide.



FIGS. 252-253. *Philodromus domesticus* Tikader
 252. Epigyne.
 253. Dorsal view of female, legs omitted.

Cephalothorax: Depressed but cephalic region high, wider than long, a hammer-shaped, whitish median longitudinal band from the ocular area to almost near the base of cephalothorax, with

the head of the hammer pointed forward, clothed with stiff hairs. Clypeus narrow, margin provided with long spine like hairs directed forward. Eyes round and black, both rows recurved, all eyes form a crescent shaped group, the anterior row short, the posterior medians further from each other than from the laterals. Sternum oval, pointed behind, clothed with hairs, yellowish brown margin with black spots close to the coxal base. Legs relatively long, II leg slightly longer than I, clothed with fine hairs. Femora with irregular white patches, tibiae I and II with three pairs of ventral spines, tarsal scopulae well developed and claw tufts prominent.

Measurements of legs :

	I	II	III	IV
	(mm)	(mm)	(mm)	(mm)
Femur	1.90	2.00	1.80	1.70
Patella	0.80	0.90	0.70	0.60
Tibia	1.50	1.70	1.20	1.10
Metatarsus	1.20	1.40	1.00	0.80
Tarsus	0.80	1.00	0.60	0.50
Total	6.20	7.00	5.30	4.70

Abdomen: Longer than wide, depressed, clothed with long hairs, posterior end obtusely pointed, base with pale triangular patch on either side of the median line and with three faint pale chevrons on the posterior half. Epigyne as in fig. 252.

Type-locality: Kench's Trace, Shillong, Meghalaya, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2554/18.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

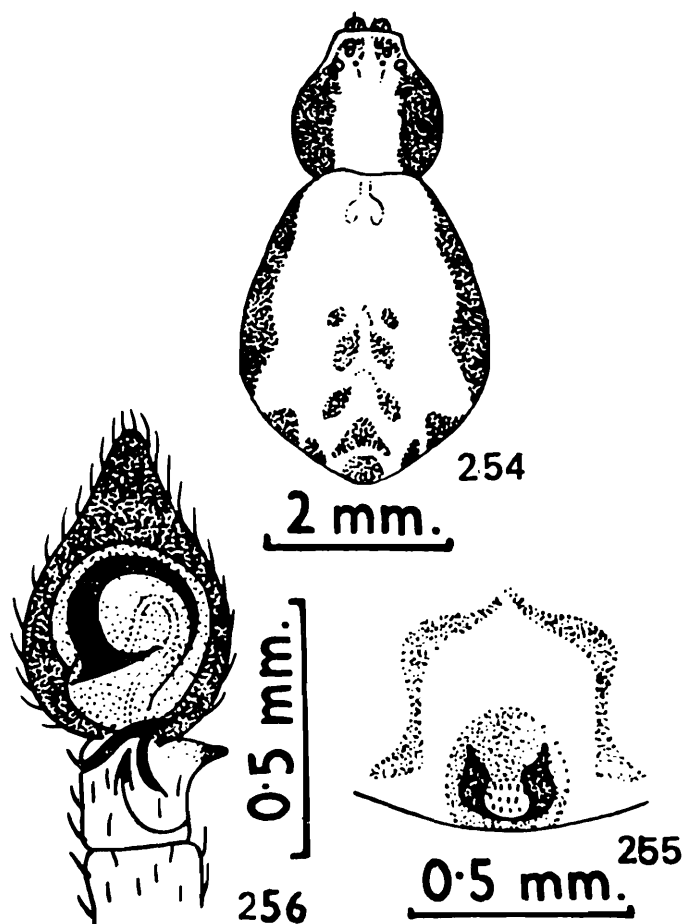
88. *Philodromus assamensis* Tikader

(Figs. 254-256)

1962. *Philodromus assamensis* Tikader, *J. Linn. Soc.*, London, 44(300) : 581

General: Cephalothorax, legs and abdomen light to deep brown. Total length 4.90 mm. Carapace 1.80 mm. long, 1.80 mm. wide; abdomen 3.20 mm. long, 2.70 mm. wide.

Cephalothorax: Depressed but cephalic region high, as long as wide, a white median longitudinal broad band extends from the ocular area to base of cephalothorax, clothed with fine pubescence. Clypeus high, margin provided with long spine-like hairs directed forward. Eyes round and black, both rows recurved, all eyes form-



FIGS. 254-256. *Philodromus assamensis* Tikader
 254. Dorsal view of female, legs omitted.
 255. Epigyne.
 256. Male-palp, ventral view.

ing a crescent-shaped group, the anterior row much shorter than the posterior, the posterior medians further from each other than from the laterals, posterior laterals slightly larger than others. Sternum oval, very narrowly produced behind, clothed with stiff hairs. Legs relatively long, II leg slightly longer than the I, clothed with hairs. Femora, patella and tibiae with irregular white patches. Tibiae and metatarsi of I and II with two pairs of ventral spines; tarsal scopulae well developed and claw tufts prominent. Male palp as in fig. 256.

Measurement of legs ;

	I	II	III	IV
	(mm)	(mm)	(mm)	(mm)
Femur	2.10	2.40	1.90	1.80
Patella	0.60	0.90	0.70	0.50
Tibia	1.80	2.00	1.50	1.40
Metatarsus	1.80	1.90	1.20	1.10
Tarsus	0.90	1.10	0.90	0.70
Total	7.20	8.30	6.20	5.50

Abdomen: Longer than wide, posterior half wide and end tapering, at the sides with dark brown patches; posterior half of abdomen medially with deep brown chevrons. Epigyne as in fig. 255.

Type-locality: Shillong Hills, Shillong, Meghalaya, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2555/18.

Distribution: So far this species is known only from its type locality.

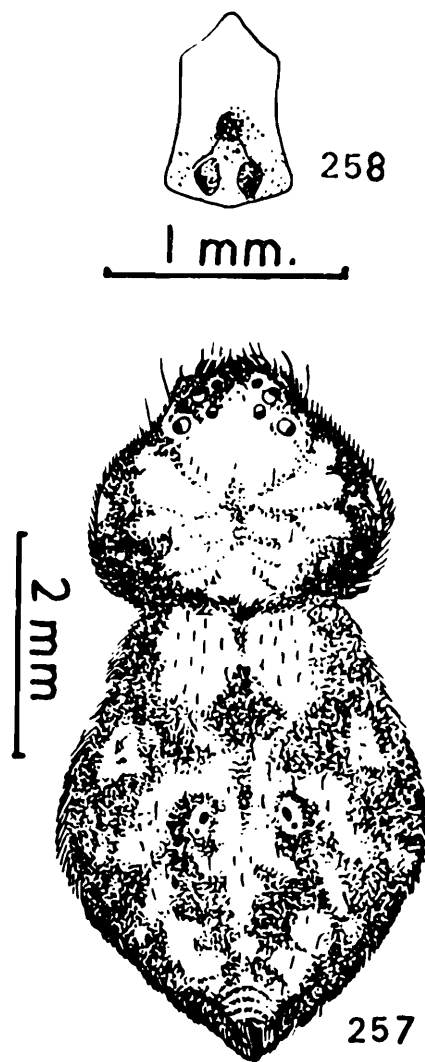
Remark: Description based on a single female specimen.

89. *Philodromus betrabatai* Tikader

(Figs. 257-258)

1966. *Philodromus betrabatai* Tikader, *Proc. Linn. Soc.*, London, 177(1) : 35.

General: Cephalothorax and legs light yellowish brown, abdomen darker than cephalothorax. Total length 6.00 mm. Carapace 2.20 mm. long, 2.70 mm. wide; abdomen 4.00 mm. long, 3.20 mm. wide.



FIGS. 257-258. *Philodromus betrabatai* Tikader
 257. Dorsal view of female, legs omitted.
 258. Epigyne.

Cephalothorax: Depressed but cephalic region slightly high, wider than long, narrow in front, lateral margins with pigmented

patches, clothed with hairs and a few spines. Ocular area and posterior cephalic ridge provided with pigmented dots. Clypeus narrow, margin provided with hairs and small spines. Eyes round and black, the posterior medians further from each other than from the laterals. Ocular quad longer than wide and narrow in front, lateral eyes ringed with prominent tubercles. Sternum pale, with hairs, heart-shaped, pointed behind. Legs relatively long, II leg slightly longer than I, clothed with fine hairs and provided with brown dots. Femora provided with three conspicuous dorsal spines, tarsal scopulae well developed and claw tufts prominent.

Measurements of legs :

	I	II	III	IV
	(mm)	(mm)	(mm)	(mm)
Femur	2.50	4.00	2.50	2.20
Patella	1.00	1.30	1.00	1.00
Tibia	2.20	3.00	1.50	1.30
Metatarsus	2.00	2.70	1.00	0.95
Tarsus	1.10	1.50	0.90	0.85
Total	8.80	12.50	6.90	6.30

Abdomen: Longer than wide, depressed, clothed with hairs, posterior end obtusely pointed, base with pale triangular patch on either side of the median line and faint pale chevrons on the posterior half. Epigyne as in fig. 258.

Type-locality: Sinhagad Fort, near Poona City, Maharashtra, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3127/18.

Distribution: So far this species is known only from its type locality.

Remark. Description based on a single female specimen.

90. *Philodromus shillongensis* Tikader

(Figs. 259-260)

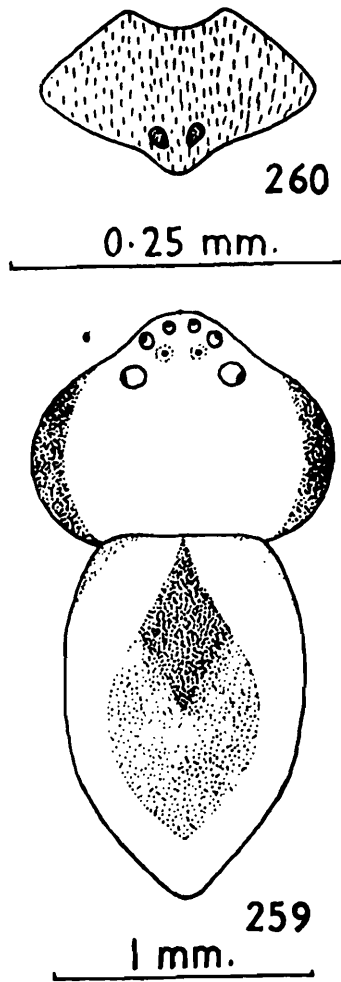
1962 *Philodromus shillongensis* Tikader, *Proc. zool. Soc.*, Calcutta, 15(1) : 40-42.

General: Cephalothorax light green at lateral margins and whitish centrally; legs greenish, abdomen white with brownish tinge. Total length 2.20 mm. Carapace 0.90 mm. long, 1.20 mm. wide; abdomen 1.40 mm. long, 0.90 mm. wide.

Cephalothorax: Depressed, wider than long, both lateral margins with pigmented patches, posterior region slightly over-lapped by the abdomen. Clypeus narrow, margin provided with small hairs directed forward. Sternum oval. Eyes round and black, ringed with white tubercles; anterior row slightly recurved, almost equal in size, posterior longer and somewhat more recurved than the anterior, posterior laterals larger than others; ocular quad longer than wide, space between the anterior medians less than that of posterior medians. Posterior medians further from each other than from the adjacent laterals. Legs relatively long, II leg slightly longer than I, clothed with fine pubescence, dorsal side of I femur with one pair of spines directed outward; tibiae of I and II with two pairs of ventral spines, metatarsi provided with two pairs of ventral spines, tarsal scopulae not so well developed as in *P. domesticus* Tikader and claw tufts prominent.

Measurements of legs :

	I (mm)	II (mm)	III (mm)	IV (mm)
Femur	1.20	1.30	1.10	1.00
Patella	0.40	0.40	0.30	0.20
Tibia	0.80	0.90	0.60	0.50
Metatarsus	0.70	0.70	0.70	0.70
Tarsus	0.60	0.60	0.50	0.40
Total	3.70	3.90	3.20	2.80



FIGS. 259-260. *Philodromus shillongensis* Tikader
 259. Dorsal view of female, legs omitted.
 260. Epigyne.

Abdomen: Longer than wide, depressed, clothed with very fine pubescence, posterior end less obtusely pointed than *P. domesticus* Tikader, dorsum pigmented with irregular brown dots, antero-medially dorsum with a longitudinal spear shaped light brown marking. Ventral side uniform brown. Epigyne as in fig. 260

Type-locality: Kench's Trace, Shillong, Meghalaya, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2557/18.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

91. *Philodromus kendrabortai* Tikader

(Figs. 261-262)

1966. *Philodromus kendrabortai* Tikader, *Proc. Linn. Soc.*, London, 177(1) : 38-39.

General: Cephalothorax and legs pale greenish, abdomen more light green than cephalothorax. Total length 5.50 mm. Carapace 2.00 mm. long, 2.50 mm. wide; abdomen 4.00 mm. long, 2.50 mm. wide.

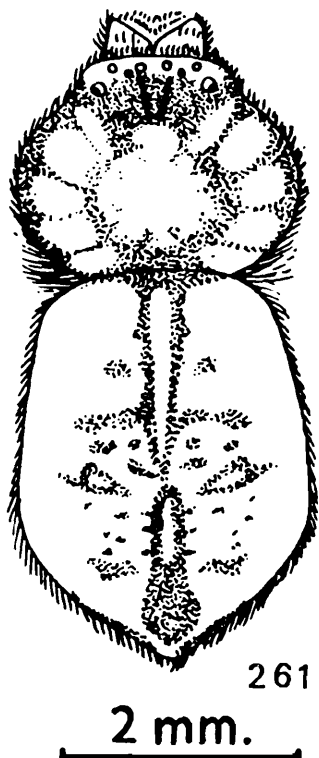
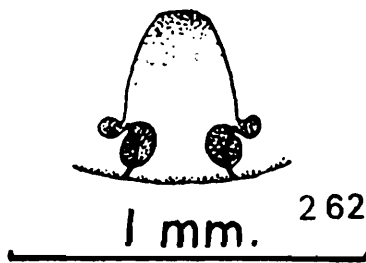
Cephalothorax: More depressed than in other Indian species, wider than long, clothed with fine hairs. Clypeus very narrow. Eyes round and black, anterior row a little recurved or straight, posterior row long and more recurved, all eyes provided with tubercles, except posterior medians; the anterior row short, the posterior medians further from each other than from laterals. Both rows of eyes very close, and eyes do not form a crescent-shaped group. Sternum oval, clothed with fine hairs. Legs relatively long, II leg longer than I, clothed with fine hairs. Tibiae I and II with three pairs of ventral spines and metatarsi with two pairs of ventral spines, tarsal scopulae well developed and claw tufts prominent.

Measurements of legs :

	I	II	III	IV
	(mm)	(mm)	(mm)	(mm)
Femur	1.50	2.00	2.70	1.40
Patella	0.40	0.50	0.40	0.30
Tibia	1.10	1.50	1.00	0.90
Metatarsus	1.00	1.30	1.00	0.50
Tarsus	0.50	1.00	0.50	0.20
Total	4.50	6.30	5.60	3.30

Abdomen: Longer than wide, depressed like cephalothorax, clothed with fine pubescence, posterior end obtusely pointed, two

sides of the caudal tip provided with a brown or black line. Epigyne as in fig. 262.



FIGS. 261-262. *Philodromus kendrabatai* Tikader

261. Dorsal view of female, legs omitted.

262. Epigyne.

Type-locality: Peacock bay, N.D.A., Khadakvasla, Poona, Maharashtra, INDIA.

Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3134/18.

Distribution: Poona, Maharashtra and Bangalore, Karnataka, INDIA.

Remark: Description based on a single female specimen.

92. *Philodromus devhutai* Tikader

(Figs. 263-264)

1966. *Philodromus devhutai* Tikader, *Proc. Linn. Soc.*, London, 177(1) : 42-43.

General: Cephalothorax, legs and abdomen light to deep brownish green. Total length 2.90 mm. Carapace 1.20 mm. long, 1.40 mm. wide; abdomen 1.80 mm. long, 1.80 mm. wide.

Cephalothorax: Depressed but cephalic region slightly high, wider than long, narrowing in front, lateral sides of cephalothorax with conspicuous pigmented patch, clothed with fine hairs and few spines. Clypeus medium and margin provided with spines



FIGS. 263-264. *Philodromus devhutai* Tikader
 263. Dorsal view of female, legs omitted.
 264. Epigyne.

directed forward. Eyes round and black, both rows recurved, all eyes form a crescent-shaped group, the anterior row short, posterior medians further from each other than from the laterals. Ocular quad longer than wide and narrow in front, eyes ringed with tubercles. Sternum oval, clothed with fine hairs. Legs relatively long, II leg longer than I, clothed with fine hairs, base of tibiae I and II legs with conspicuous black or deep brown patches, and also provided with two pairs of ventral spines, tarsal scopulae well developed and claw tufts prominent.

Measurements of legs :

	I (mm)	II (mm)	III (mm)	IV (mm)
Femur	1.90	2.50	1.50	1.40
Patella	0.60	1.00	0.50	0.40
Tibia	1.00	2.00	0.90	0.80
Metatarsus	1.00	2.00	1.00	0.90
Tarsus	0.50	1.00	0.40	0.30
Total	5.00	8.50	4.30	3.80

Abdomen: As long as wide, not very depressed, clothed with hairs, posterior end obtusely pointed, mid-dorsal of abdomen provided with conspicuous white longitudinal broad patch; lateral sides of this white patch demarcated by very prominent black broad bands; a deep brown longitudinal line on the middle of the anterior half and two deep brown or black lines on the posterior half of abdomen. Ventral side uniform pale. Epigyne as in fig. 264.

Type-locality: National Chemical Laboratory Compound, Poona, Maharashtra, India. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3132/18.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

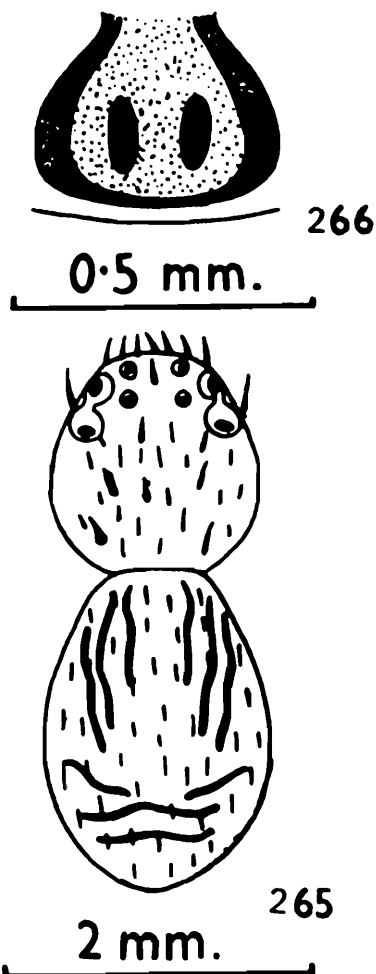
93. *Philodromus manikae* Tikader

(Figs. 265-266)

1971. *Philodromus manikae* Tikader, *Mem. zool. Surv. India*, 15(3) : 75.

General: Cephalothorax and legs light brownish green, abdomen greenish-white. Total length 3.60 mm. Carapace 1.50 mm. long, 1.20 mm. wide; abdomen 2.10 mm. long, 1.50 mm. wide.

Cephalothorax: Slightly longer than wide, clothed with fine hairs and spines. Eyes black, with prominent white tubercles, both rows recurved, anterior and posterior lateral eyes contiguous with tubercles; lateral eyes larger than the median eyes. Clypeus high, margin provided with seven spines directed forward except the middle one which is directed upward. Sternum heart-shaped,



FIGS. 265-266. *Philodromus manikae* Tikader
 265. Dorsal view of female, legs omitted.
 266. Epigyne.

pointed, behind, clothed with hairs. Legs long and clothed with hairs and spines; I and II pairs longer than III and IV, II pair being longest.

Measurements of legs :

	I	II	III	IV
	(mm)	(mm)	(mm)	(mm)
Femur	1.50	1.60	1.00	1.00
Patella	0.25	0.30	0.20	0.20
Tibia	1.60	1.80	0.80	0.60
Metatarsus	0.80	0.90	0.60	0.50
Tarsus	0.50	0.60	0.30	0.20
Total	4.65	5.20	2.90	2.50

Abdomen: Longer than wide, clothed with fine hairs. Antero-dorsally provided with three pairs of conspicuous longitudinal black lines as in fig. 265, and posterior half also provided with similar black transverse three lines. Ventral side pale white. Epigyne as in fig. 266.

Type-locality: Upper Shillong, Meghalaya, INDIA.

Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta.

Distribution. So far this species is known only from its type locality.

Remark. Description based on a single female specimen.

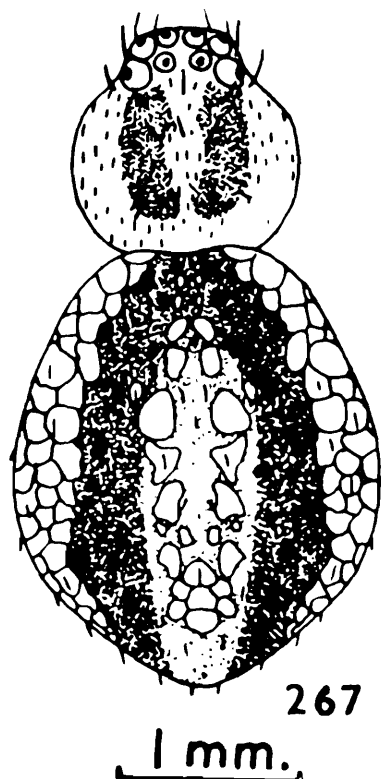
94. ***Philodromus decoratus*** Tikader

(Figs. 267-268)

1962. *Philodromus decoratus* Tikader, *J. Linn. Soc.*, London, 44(300) : 582.

General: Cephalothorax, legs light brown, abdomen deep brown. Total length 3.60 mm. Carapace 1.20 mm. long, 1.20 mm. wide; abdomen 2.20 mm. long, 2.10 mm. wide.

Cephalothorax: Depressed but cephalic region high and narrow, nearly as long as wide, two kidney-shaped, longitudinal, deep brown broad bands, extending from ocular area to the middle of cephalothorax; clothed with fine pubescence and a few spines. Clypeus high, margin with five long spines directed forward except middle one which is directed upward. Eyes round and black, ringed with prominent white tubercles both rows recurved, all eyes form a crescent-shaped group, posterior medians closer to each other than from the laterals; lateral eyes large and the tubercles contiguous. Sternum heart-shaped, clothed with fine pubescence. Legs relatively long, II slightly longer than the I, clothed with hairs and spines. Femora of I with three strong frontal spines, tibiae with two pairs and metatarsi with three pairs of ventral spines. Tarsal scopulae weakly developed and claw tufts prominent.



FIGS. 267-268. *Philodromus decoratus* Tikader
 267. Dorsal view of female, legs omitted.
 268. Epigyne.

Measurements of legs :

	I	II	III	IV
	(mm)	(mm)	(mm)	(mm)
Femur	1.20	1.40	0.80	0.70
Patella	0.60	0.70	0.40	0.30
Tibia	1.00	1.20	0.60	0.60
Metatarsus	0.80	0.80	0.40	0.30
Tarsus	0.60	0.60	0.30	0.20
Total	4.20	4.70	2.50	2.10

Abdomen: Longer than wide, posterior half wide and end tapering, irregular chalk-white patches all over the dorsum; two longitudinal rows of black or brown spots on either side of median line. Ventral side also with irregular chalk-white patches. Epigyne as in fig. 268.

Type-locality: Kench's Trace, Shillong, Meghalaya, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2559/18.

Distribution: Shillong, Mawphlong, Dist. Khasi and Jaintia Hills, Meghalaya, INDIA.

Remark: Description based on a single female specimen.

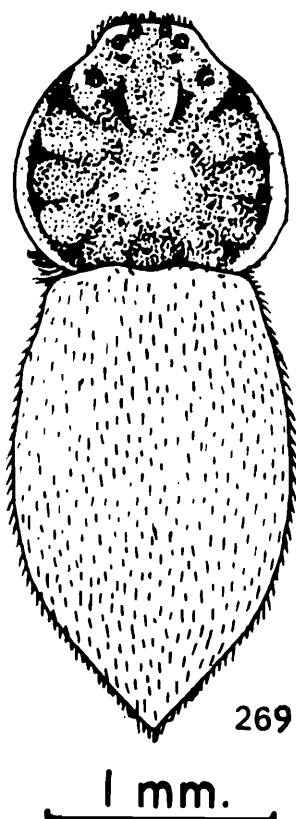
95. *Philodromus mohiniae* Tikader

(Figs. 269-270)

1966. *Philodromus mohiniae* Tikadar, *Proc. Linn. Soc.*, London, 177(1) : 40-42.

General: Cephalothorax and legs greenish brown, abdomen greenish. Total length 3.20 mm. Carapace 1.10 mm. long, 1.20 mm. wide; abdomen 2.10 mm. long, 1.20 mm. wide.

Cephalothorax: Uniformly depressed, slightly wider than long, lateral margins provided with conspicuous white patch, middle with almost uniform greenish brown, clothed with very fine pubescence. Clypeus very narrow. Eyes round and black, provided with tubercles; anterior rows short, the posterior medians further from each other than from laterals. Both rows recurved, all eyes form some how a crescent-shaped group. Ocular quad longer than wide and narrow in front. Sternum oval, clothed with fine pubescence. Legs relatively long, II leg longer than I, clothed with fine hairs. Tibiae I and II with two pairs of ventral spine, tarsal scopulae not very well developed and claw tufts prominent.



FIGS. 269-270. *Philodromus mohiniae* Tikader
 269. Dorsal view of female, legs omitted.
 270. Epigyne.

Measurements of legs :

	I	II	III	IV
	(mm)	(mm)	(mm)	(mm)
Femur	1.20	1.50	1.15	1.10
Patella	0.20	0.30	0.20	0.15
Tibia	1.30	1.50	1.00	1.00
Metatarsus	0.90	1.00	0.80	0.70
Tarsus	0.50	0.60	0.40	0.30
Total	4.10	4.90	3.55	3.25

Abdomen: Longer than wide, depressed like cephalothorax, clothed with fine pubescence, posterior end obtusely pointed. Ventral side uniform pale green. Epigyne as in fig. 270.

Type-locality: Peacock bay, N.D.A. Khadakvasla, Poona, Maharashtra, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3141/18.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

96. *Philodromus bhagirathai* Tikader

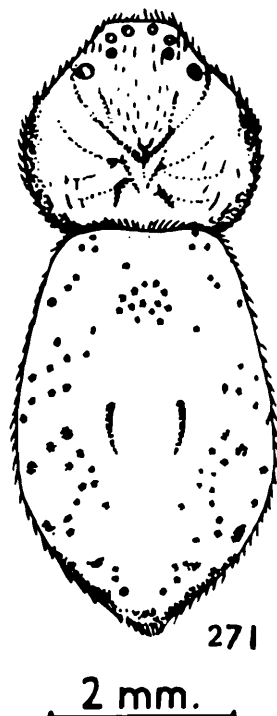
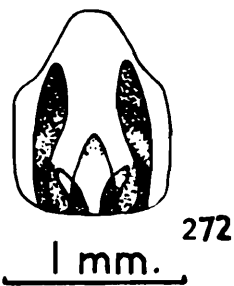
(Figs. 271-272)

1966. *Philodromus bhagirathai* Tikader, *Proc. Linn. Soc.*, London, 177(1) : 36-37

General: Cephalothorax and legs pale yellow, abdomen yellowish white. Total length 6.70 mm. Carapace 2.00 mm. long, 2.90 mm. wide; abdomen 4.50 mm. long, 3.00 mm. wide.

Cephalothorax: Depressed but cephalic region a little high, wider than long, narrow in front, lateral margins with faint pig

mented patches, posterior region slightly overlapped by the abdomen, clothed with fine hairs and a few small spines. Clypeus narrow, margin provided with long spine like hairs. Eyes round and black provided with tubercles, anterior row slightly recurved and eyes almost equal in size, posterior longer and more recurved than the anterior, posterior laterals larger than others. Posterior medians separated from each other than from the adjacent laterals. Legs relatively long, II leg slightly longer than I, clothed with hairs and a few spines, dorsal side of I femur with three spines directed outwards; tibiae of I and II with three pairs of ventral spines; metatarsi provided with two pairs of ventral spines, tarsal scopulae well developed and claw tuft prominent.



FIGS. 271-272. *Philodromus bhagirathai* Tikader
 271. Dorsal view of female, legs omitted.
 272. Epigyne.

Measurements of legs :

	I	II	III	IV
	(mm)	(mm)	(mm)	(mm)
Femur	3.00	4.00	2.50	2.50
Patella	0.90	1.00	0.90	0.90
Tibia	2.50	3.00	2.00	1.90
Metatarsus	1.50	2.10	1.00	1.00
Tarsus	0.50	1.20	1.00	0.90
Total	8.40	11.30	7.40	7.20

Abdomen: Longer than wide, depressed, clothed with fine pubescence, irregular brown dots on the dorsum and lateral sides of the caudal end of the abdomen provided with long contiguous brown patches. Ventral side uniform pale. Epigyne as in fig. 272.

Type-locality: Sangham Ghat, Allahabad, U.P., INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3129/18.

Distribution: Allahabad, U.P., and Tamil Nadu, INDIA.

Remark: Description based on a single female specimen.

97. *Philodromus maliniae* Tikader

(Figs. 273-274)

1966. *Philodromus maliniae* Tikader, *Proc. Linn. Soc.*, London, 177(1) : 39-40.

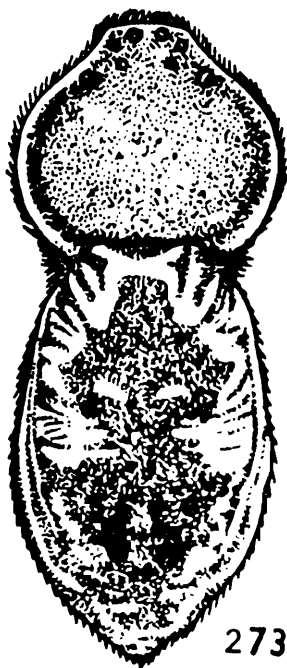
General: Cephalothorax light brown, legs green, abdomen pale brown. Total length 3.10 mm. Carapace 1.20 mm. long, 1.40 mm. wide; abdomen 2.00 mm. long, 1.20 mm. wide.

Cephalothorax: Uniform depressed, slightly wider than long; lateral margins provided with white patch, middle with light brownish colour, provided with irregular deep brown dots; clothed with very fine pubescence. Clypeus very narrow. Eyes round and black, provided with tubercles, anterior row short, posterior medians separated further from each other than from laterals. Both rows of eyes very close, and eyes not forming a crescent shaped group. Sternum oval, not pointed behind, clothed with very fine pubescence and margin provided with irregular dark brown dots. Legs relatively long, II leg slightly longer than I, clothed with fine hairs. Base of tibiae and metatarsi of all legs provided with conspicuous black patches. Tarsal scopulae not very well developed and claw tufts prominent.



274

1 mm.



273

1 mm.

FIGS. 273-274. *Philodromus maliniae* Tikader
 273. Dorsal view of female, legs omitted.
 274. Epigyne.

Measurements of legs :

	I	II	III	IV
	(mm)	(mm)	(mm)	(mm)
Femur	1.20	1.50	1.00	0.95
Patella	0.50	0.50	0.30	0.20
Tibia	1.20	1.40	1.00	0.95
Metatarsus	1.00	1.20	0.95	0.75
Tarsus	0.60	0.70	0.50	0.45
<hr/>				
Total	4.50	5.30	3.75	3.30

Abdomen: Longer than wide, depressed, clothed with fine pubescence, posterior end obtusely pointed. Dorsal side of abdomen provided with white and light brown patches and also with some irregular conspicuous deep brown dots. Ventral side uniform pale brown, provided with conspicuous deep brown dots. Epigyne as in fig. 274.

Type-locality: Poona University Compound, Maharashtra, INDIA.

Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3139/18.

Distribution: So far this species is known only from its type locality.

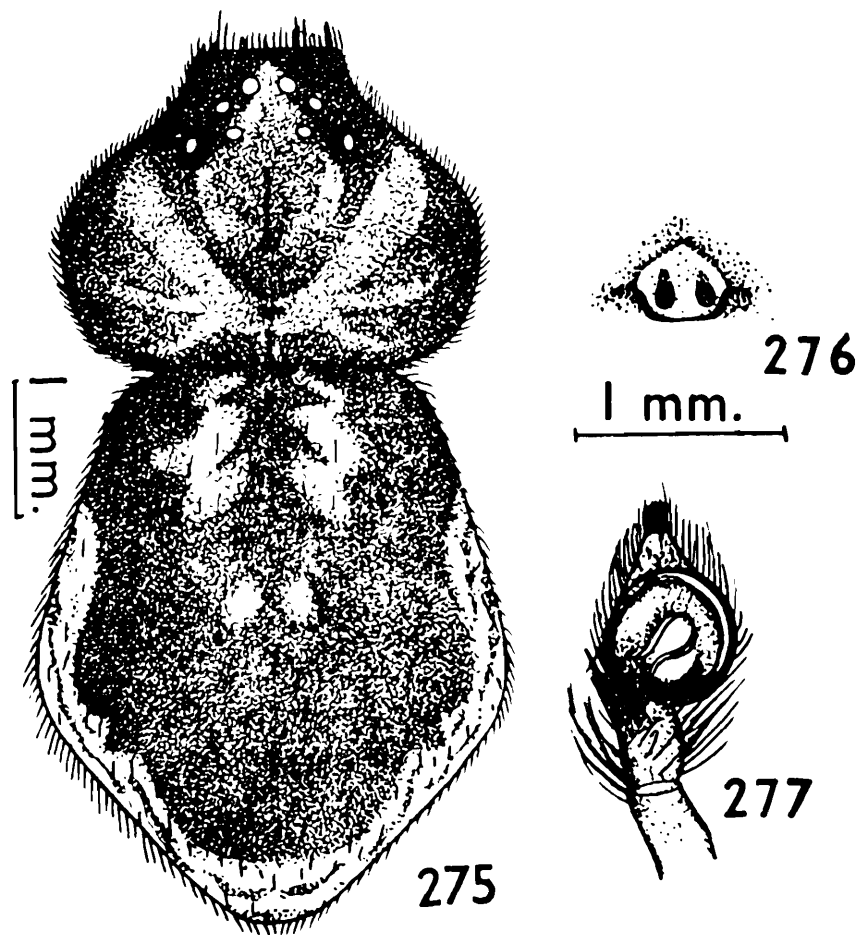
Remark: Description based on a single female specimen.

98. **Philodromus durvei** sp. nov.

(Figs. 275-277)

General: Cephalothorax, abdomen and legs light to deep brownish-green. Total length 6.30 mm. Carapace 2.50 mm. long, 3.00 mm. wide; abdomen 4.00 mm. long, 3.30 mm. wide.

Cephalothorax: Depressed but cephalic region slightly high, wider than long; narrowing in front, lateral sides and cephalic region provided with pigmented dots. Clypeus narrow, margin provided with hairs. Eyes round and black, both rows recurved, all eyes form a crescent shaped group, anterior median and posterior laterals slightly larger than others, the anterior row short, the posterior median further from each other than from the adjacent laterals. Ocular quad longer than wide and narrowing in front. Sternum pale, clothed with hairs, nearly oval shaped, pointed behind. Legs relatively long. II leg slightly longer than I, clothed with fine hairs and provided with brown dots. Femora provided with four conspicuous dorsal spines. Tarsal scopulae well developed and claw tuft prominent. Male palp as in fig. 277.



FIGS. 275-277. *Philodromus durvei* sp. nov.
 275. Dorsal view of female, legs omitted.
 276. Epigyne.
 277. Male-palp, ventral view.

Measurements of the legs :

	I	II	III	IV
	(mm)	(mm)	(mm)	(mm)
Femur	3.00	4.00	3.50	2.70
Patella	1.40	2.00	1.50	1.20
Tibia	2.10	2.25	2.40	1.70
Metatarsus	2.00	2.50	2.10	1.60
Tarsus	1.20	1.30	1.00	1.00
Total	9.70	12.05	10.50	8.20

Abdomen: Longer than wide, depressed, clothed with hairs, posterior end obtusely pointed, dorsal side provided with deep-brown patches, ventral side light pale but provided with a conspicuous broad longitudinal band extending from epigastric fold to near the base of spinnerets. Epigyne as in fig. 276.

Holotype: ♀, *allotype* ♂, in spirit. Deposited at Zoological Survey of India, Calcutta. Regd. No. 4603/18.

Type-locality: Jabalpur City; Dist. Jabalpur, M. P., INDIA. 5.ii.1968. Coll. V S. Durve,.

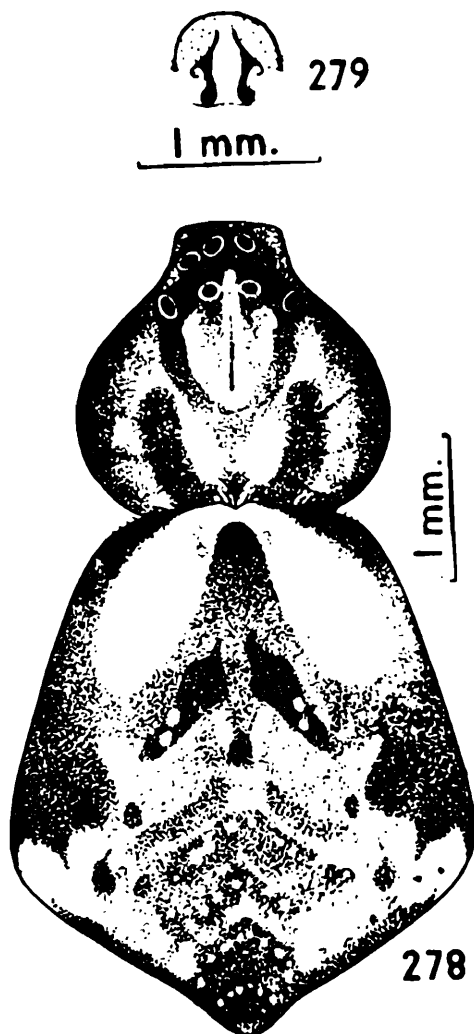
This species appears closer to *Philodromus betrabatai* Tikader but can be distinguished from it as follows: (i) Ventral side of abdomen provided with a conspicuous broad longitudinal deep-brown band; but in *P. betrabatai* ventral side of abdomen uniform colour. (ii) Female epigyne and male palp also structurally different.

99. ***Philodromus chambaensis*** sp. nov.

(Figs. 278-279)

General: Cephalothorax and abdomen brownish white, legs brownish green. Total length 5.50 mm. Carapace 2.00 mm. long, 2.20 mm. wide; abdomen 3.50 mm. long, 3.10 mm. wide.

Cephalothorax: Cephalothorax depressed but cephalic region slightly high, wider than long, narrowing in front, lateral sides with pigmented patches, clothed with hairs and few spines. Ocular area and anterior cephalic region provided with deep brown patches. Clypeus narrow, margin provided with hairs and small spines. Eyes round and black, both rows recurved, forming a crescent, the anterior row short, the posterior medians slightly further from each other than from the laterals. Ocular quad longer than wide and narrowing in front, lateral eyes ringed with prominent tubercles. Sternum pale, heart-shaped pointed behind, lateral margins provided with conspicuous pigmented dots. Legs relatively long, II leg slightly longer than I, clothed with fine hairs and provided with conspicuous brown dots. Femora provided with three pairs of conspicuous dorsal spines, tarsal scopulae well developed and claw-tufts prominent.



FIGS. 278-279. *Philodromus chamaensis* sp. nov.
 278. Dorsal view of female, legs omitted.
 279. Epigyne.

Measurements of legs :

	I	II	III	IV
	(mm)	(mm)	(mm)	(mm)
Femur	2.70	3.50	2.80	2.60
Patella	1.20	1.20	1.00	1.00
Tibia	2.20	2.70	2.20	2.10
Metatarsus	2.00	2.50	2.10	2.00
Tarsus	1.20	1.40	1.00	1.00
Total	9.30	11.30	9.10	8.70

Abdomen: Slightly longer than wide, depressed, clothed with hairs, posterior half widest and end of abdomen obtusely pointed, dorsal side provided with deep brown patches as in fig. 278. Ventral side provided with pigmented dots. Epigyne as in fig. 279.

Holotype: ♀, in spirit. Deposited at Zoological Survey of India, Calcutta. Regd. No. 4602/18

Type-locality: Chamba forest, Dist. Tehri (U.P.), INDIA. 9.ii.1972. Coll. J. C. Tripathi.

This species resembles *Philodromus durvei* sp. nov. but it can be distinguished from it as follows: (i) Ventral side of abdomen uniform pale but in *P. durvei* ventral side of abdomen provided with conspicuous broad longitudinal deep brown band. (ii) Female epigyne also structurally different.

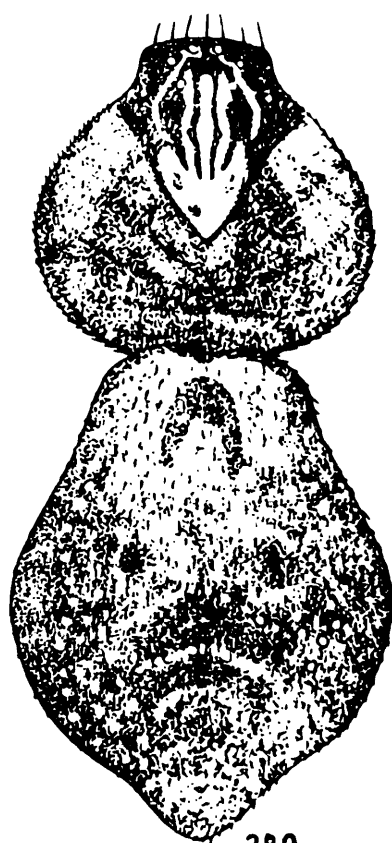
100. ***Philodromus barmani* sp. nov.**

(Figs. 280-281)

General: Cephalothorax and legs light-brown, abdomen brown. Total length 7.00 mm. Carapace 2.80 mm. long, 3.00 mm. wide; abdomen 4.40 mm. long, 3.40 mm. wide.

Cephalothorax: Wider than long, depressed but cephalic region slightly high, three pairs of irregular longitudinal deep-brown bands starting from the ocular area upto the middle of cephalothorax, clothed with fine hairs. Clypeus narrow, margin provided

with long spine like hairs directed forward. Eyes round and black, antero-medians provided with white patch, both rows recurved, all eyes form a crescent shaped group, the posterior row longer than the anterior, posterior medians slightly close to adjacent laterals than from each other. Ocular quad longer than wide and wider behind than in front. Sternum heart-shaped, pointed behind, clothed with hairs, margin of sternum provided with deep brown spots. Legs relatively long, II leg slightly longer than I, clothed with fine hairs. Femora with irregular white patches, tibiae I and II with two pairs of ventral spines, tarsal scopulae well developed and claw tufts prominent.



280

1 mm.



281

0.5 mm.

FIGS. 280-281. *Philodromus barmani* sp. nov.
 280. Dorsal view of female, legs omitted.
 281. Epigyne.

Measurements of the legs :

	I	II	III	IV
	(mm)	(mm)	(mm)	(mm)
Femur	3.40	4.00	3.30	3.10
Patella	1.50	1.60	1.50	1.20
Tibia	3.00	3.40	2.70	2.40
Metatarsus	2.50	3.00	2.20	2.10
Tarsus	1.50	1.80	1.10	1.10
Total	11.90	13.80	10.80	9.90

Abdomen: Longer than wide, widest just behind the middle, posterior end obtusely pointed, clothed with fine hairs. Dorsum provided with two pairs of white patches at the antero-median area, and posterior half with six light chevron like light patches as in fig. 280. Ventral side slightly lighter than the dorsal and provided with broad longitudinal deep brown band with two rows of pale dots extending from epigastric fold to the base of spinnerets. Epigyne as in fig. 281.

Holotype: ♀, in spirit. Deposited at Zoological Survey of India, Calcutta. Regd. No. 4601/18.

Type-locality: Lawshtun, Khasi Hills, Meghalaya, INDIA. 28.ii.1969. Coll. *Dr. M. Barman.*

This species resembles *P. domesticus* Tikader but differs from it as follows: (i) Cephalothorax provided with three pairs of irregular longitudinal deep-brown bands but in *P. domesticus* cephalothorax with hammer-shaped, whitish median longitudinal band. (ii) Abdomen provided with whitish round small spots and six chevrons but in *P. domesticus* abdomen without whitish small spots and with three chevrons. (iii) Tibiae I and II with two pairs of ventral spines but in *P. domesticus*, tibiae I and II with three pairs of ventral spines. (iv) Epigyne also structurally different.

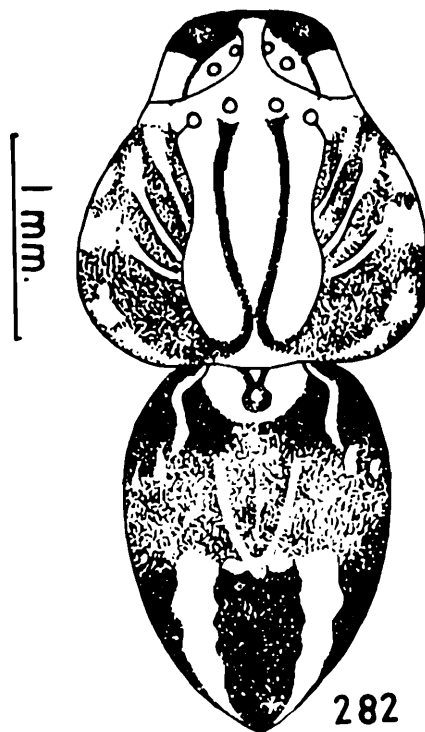
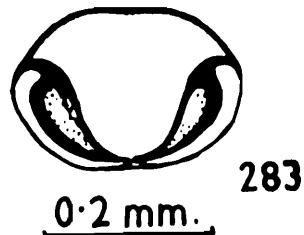
101. *Philodromus tiwarii* Basu

(Figs. 282-283)

1973. *Philodromus tiwarii*, Basu, *Sci. & Cult.*, Calcutta, 39 : 231-232.

General: Cephalothorax light to dark brown, clypeus and abdomen dark brown; legs light brown. Total length 3.75 mm. Carapace 1.75 mm. long, 2.00 mm. wide; abdomen 2.00 mm. long, 1.50 mm. wide.

Cephalothorax: As long as wide, sparsely spined, sides with dark brown area extending from postero-lateral eyes to the posterior extremity. Clypeus of moderate size and rectangular bearing



FIGS. 282-283. *Philodromus tiwarii* Basu
 282. Dorsal view of female, legs omitted.
 283. Epigyne.

eight forwardly directed spines. All eyes of equal size, in an anterior and a posterior crescentic row, the posterior row more recurved. Legs spined, somewhat unequal in length. II leg slightly longer than the I and longest of all, well developed, and darker than the rest. Scopulae well developed. Tibiae and metatarsi of legs I and II with two pairs of ventral spines.

Measurements of legs :

	I	II	III	IV
	(mm)	(mm)	(mm)	(mm)
Femur	1.50	2.00	1.75	2.00
Patella	0.70	0.80	0.80	0.75
Tibia	1.20	1.45	1.25	1.45
Metatarsus	0.70	1.30	1.00	1.30
Tarsus	0.70	1.00	1.00	0.50
<hr/>				
Total	4.80	6.55	5.80	6.00

Abdomen: Longer than wide, elliptical, dark in the middle, overlapping slightly on posterior margin of cephalothorax, clothed with spines. Epigyne oval, with a large broad based, tongue like scape protruding posteriorly to its distal margin as in fig. 283. Crescent-shaped lateral guide., one on each side, flanking the scape, leading towards the spermathecal openings. Epigyne as in fig. 283.

Type-locality: Shillong, Meghalaya, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

Genus 22. *Tibellus* Simon

1875. *Tibellus* Simon, *Ar. Fr.*, 2 : 307.
 1895. *Tibellus* : Simon, *Hist. Nat. Araign.*, 1(4) : 1065.
 1940. *Tibellus* : Comstock, *The Spider Book*, New York, : 562.
 1951. *Tibellus* : Locket and Millidge, *British Spiders*, Ray Society, London, 1 : 202.
 1960. *Tibellus* : Tikader, *J. Bombay nat. Hist. Soc.*, 57(1) : 176.
 1962. *Tibellus* : Tikader, *J. Univ. Poona, Sci & Tech.*, 22 : 133.

Characters: Cephalothorax appreciably longer than wide. The change in position of the eyes have gone further than in the genus *Thanatus*, and the eyes of the anterior row, with the posterior median pair, form a small compact hexagonal group from which the posterior laterals conspicuously removed. Abdomen long and cylindrical or cigar-shaped. Legs relatively long, bearing scopulae on both tarsi and metatarsi. These spiders are found in grass and on bushes; when at rest the legs are stretched out longitudinally, two pairs forward and two pairs backward.

Type-species: *Tibellus oblongus* (Walckenaer).

Distribution: EUROPE, AMERICA, AFRICA and ASIA.

Key to species of the genus TIBELLUS Simon

- | | | |
|--|-----|-------------------------------|
| 1. Abdomen dorsally with lens-shaped deep brown longitudinal band | .2 | |
| Abdomen dorsally without lens-shaped marking | ... | .5 |
| 2. Abdomen with irregular tuft of black-hairs on the dorsum | | . <i>chaturshingi</i> Tikader |
| Abdomen without tuft of hairs on the dorsum | | .3 |
| 3. Posterior end of abdomen with two conspicuous small black spots | | . <i>poonaensis</i> Tikader |
| Posterior end of abdomen without black spots | | .4 |
| 4. Posterior end of abdomen with a V-shaped black marking | | .5 |
| Posterior end of abdomen without V-shaped black marking | | . <i>elongatus</i> Tikader |

5. Margin of clypeus with four spines directed forward .*pashanensis* sp. nov.
 Margin of clypeus with more than four spines directed forward .6
6. Tibiae of I and II legs with three pairs of ventral spines .*katrajghatus* Tikader
 Tibiae of I and II legs with two pairs of ventral spines .*pateli* sp. nov.

102. *Tibellus chaturshingi* Tikader

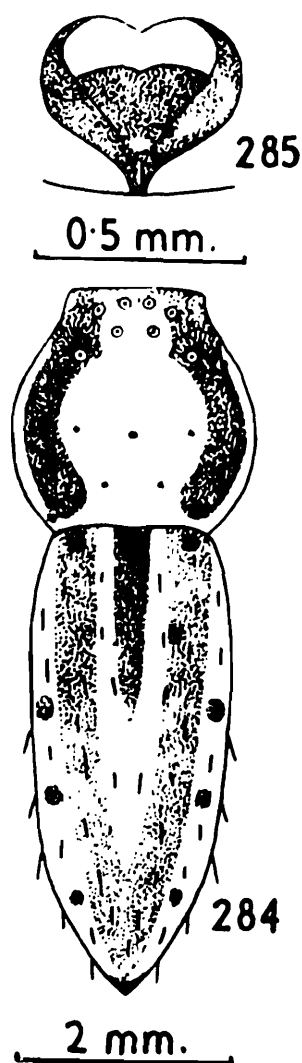
(Figs. 284-285)

1962. *Tibellus chaturshingi* Tikader, *J. Univ. Poona Sci. and Tech.*, **22** : 133.

General: Cephalothorax pale greenish, eyes black, legs pale green, abdomen brownish. Total length 6.50 mm. Carapace 2.30 mm. long, 2.20 mm. wide; abdomen 4.20 mm. long, 1.90 mm. wide.

Cephalothorax: Longer than wide, sparsely spined, two longitudinal broad dark brown bands extending from postero-lateral eyes to the base of cephalothorax. Clypeus medium, margin of clypeus with six spines directed forward. Anterior row of eyes close, recurved, anterior four eyes and posterior two median eyes form a wide hexagonal area, the postero-lateral eyes largest and remote from other eyes. Sternum heart-shaped, pointed behind, clothed with spiny hairs and the pointed end provided with a black spot. Legs long, spined, bearing some black pigmented dots; I, II and IV pairs of legs long but I and II pairs longer and robust than IV, tibiae and metatarsi of I and II with two pairs of ventral spines; well developed claw tufts and scopulae present on tarsi and extending upto the middle of metatarsi.

Abdomen: Long, cylindrical, spined, narrow behind, slightly overlapping the posterior region of cephalothorax in front, irregular tufts of black hairs on the dorsum; two longitudinal broad light brown bands extending from anterior lateral side of abdomen and joined together at the posterior end of abdomen. Ventral side with four longitudinal light brown bands from epigastric fold to near the spinnerets. Epigyne as in fig. 285.



FIGS. 284-285. *Tibellus chaturshingi* Tikader
 284. Dorsal view of female, legs omitted.
 285. Epigyne.

Type-locality: National Chemical Laboratory Compound, Poona, Maharashtra, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2957/18.

Distribution: So far this species is known only from its type locality.

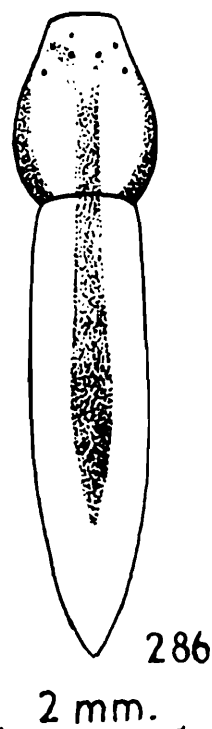
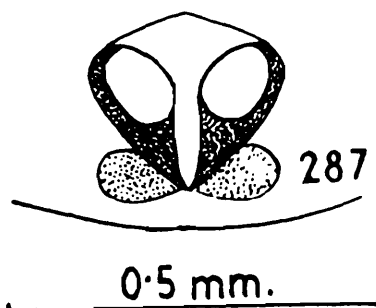
Remark: Description based on a single female specimen.

103. *Tibellus poonaensis* Tikader
 (Figs. 286-287)

1962. *Tibellus poonaensis* Tikader, *J. Univ. Poona Sci. and Tech.*, **22** : 135.

General: Cephalothorax and abdomen pale yellow, eyes black, legs light green. Total length 7.40 mm. Carapace 2.10 mm. long, 1.50 mm. wide; abdomen 5.40 mm. long, 1.20 mm. wide.

Cephalothorax: Longer than wide, narrow in front, sparsely spined, one middle and two lateral longitudinal brown bands extending from ocular area to base of the cephalothorax. Clypeus medium, margin of clypeus with five spines directed forward but middle one directed upward, Anterior row of eyes close, recurved, equal and equidistant; anterior four eyes and posterior two median eyes form a small hexagonal area, the posterior lateral eyes largest and removed from other eyes. Sternum pale and heart-shaped



FIGS. 286-287. *Tibellus poonaensis* Tikader
 286. Dorsal view of female, legs omitted.
 287. Epigyne.

clothed with hairs. Legs long, spined, I, II and IV pairs of legs long but I and II pairs longer and more robust than IV, tibiae I and II with three pairs and metatarsi with two pairs of ventral spines; well developed claw tufts and scopulae present on tarsi and upto middle of metatarsi.

Abdomen: Long, cylindrical, spined, narrow behind, slightly overlapping the posterior region of cephalothorax in front; anterior mid-dorsally a lens-shaped light brown band and two small black spots on the dorsum near the posterior end of abdomen. Ventral side with light brown broad longitudinal band from epigastric fold to near the spinnerets. Epigyne as in fig. 287.

Type-locality: National Chemical Laboratory Compound, Poona, Maharashtra, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2959/18.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

104. *Tibellus elongatus* Tikader

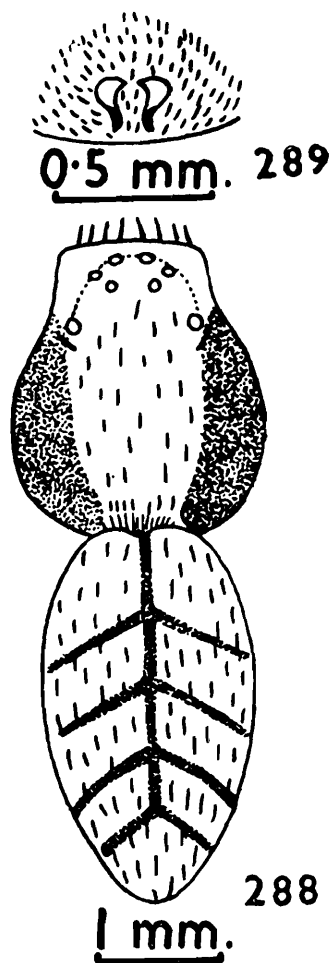
(Figs. 288-289)

1960. *Tibellus elongatus* Tikader, *J. Bombay nat. Hist. Soc.*, **57**(1) : 177.

General: Cephalothorax pale-greenish, eyes black, legs pale-green. Clypeus green, abdomen brownish. Total length 8.90 mm. Carapace 4.00 mm. long, 3.50 mm. wide; abdomen 5.00 mm. long, 2.80 mm. wide.

Cephalothorax: Longer than wide, sparsely spined, sides about one fourth portion with dark brown pigmented patches; clypeus medium, margin of clypeus with eight spines directed forward. Anterior row of eyes close, recurved, anterior four eyes and posterior two median eyes form a wide hexagonal area, posterior lateral eyes remote from other eyes and the largest. Legs long, spined, bearing numerous black pigmented dots, I and II pairs of legs longer than the others, tibiae I and II with three pairs of ventral spines on the apical three-fourth of legs.

Abdomen: Long, cylindrical, spined, narrow behind, very slightly overlapping the posterior region of cephalothorax, with a long median black pigmented line extending from the base to tip of abdomen, four pairs of transverse pigmented lines from the median line to the lateral margins, these four pairs almost parallel with each other. Epigyne as in fig. 289.



FIGS. 288-289. *Tibellus elongatus* Tikader
 288. Dorsal view of female, legs omitted.
 289. Epigyne.

Type-locality: Dhakuria (Calcutta), West Bengal, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2522/18

Distribution: West Bengal, Poona, Maharashtra, India.

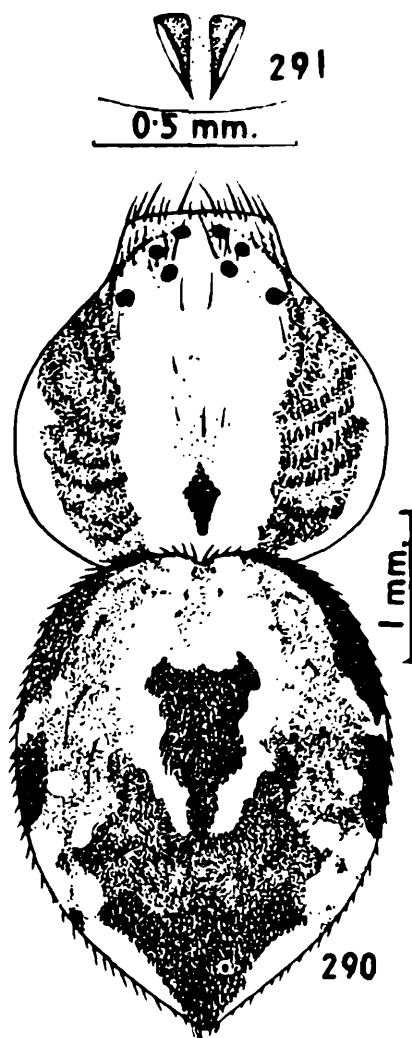
Remark: Description based on a single female specimen.

105. *Tibellus pashanensis* sp. nov.

(Figs. 290-291)

General: Cephalothorax and legs greenish brown, abdomen light brownish pale. Total length 5.50 mm. Carapace 2.50 mm. long, 2.50 mm. wide; abdomen 3.20 mm. long, 2.50 mm. wide.

Cephalothorax: Longer than wide; broadest behind, narrow in front and clothed with hairs and spines; lateral sides provided with conspicuous longitudinal deep brown patches. Middle of cephalothorax also provided with thin longitudinal brown line extending from ocular area to base of thorax. Eyes black, eight



FIGS. 290-291. *Tibellus pashanensis* sp. nov.
290. Dorsal view of female, legs omitted.
291. Epigyne.

in two rows, both rows recurved but the posterior row longer and more recurved than the anterior row; posterior lateral eyes slightly larger than others, anterior four eyes and posterior median eyes form a wide hexagonal area; the posterior lateral eyes remote from other eyes. Ocular quad longer than wide and narrowing in front. Clypeus long, margin of clypeus with four spines directed forward. Sternum heart-shaped, pointed behind, clothed with hairs. Legs long and stout, provided with spines and dark brown pigmented dots. Metatarsi of I and II with two pairs of ventral spines; tarsal scopulae well developed and claw-tufts prominent.

Abdomen: Longer than wide, posterior half wider and end tapering, clothed with hairs and few spines and white net like structure as in fig. 290. Anterior mid-dorsally provided with a conspicuous deep brown lens-shaped band and posterior end provided with a nearly V-shaped brown mark. Ventral side pale with four longitudinal deep brown lines extending from epigastric fold to near the base of spinnerets. Epigyne as in fig. 291.

Holotype: ♀, *paratype* 1 ♀, in spirit. Deposited at National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 4614/18

Type-locality: Pashan, Poona (Maharashtra), India. 4.ix.1974, Coll. U. A. Gajbe.

This species resembles *Tibellus katrajghatus* Tikader but it is separated from it as follows: (i) Margin of clypeus with four spines directed forward but in *T. katrajghatus* margin of clypeus with seven spines. (ii) Ventral side with four longitudinal deep brown lines extending from epigastric fold to near the base of spinnerets but in *T. katrajghatus* ventral side with three longitudinal lines. (iii) Epigyne also structurally different.

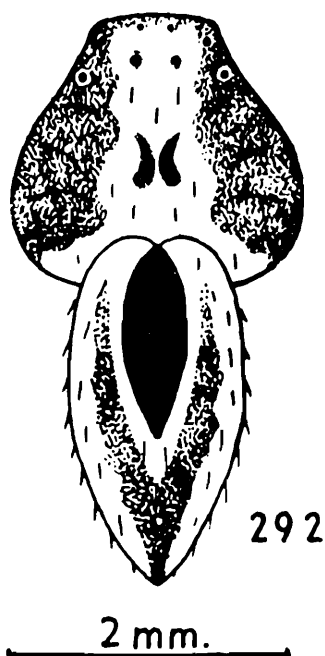
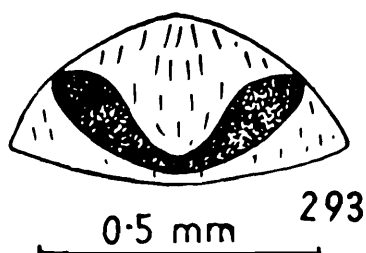
106. *Tibellus katrajghatus* Tikader

(Figs. 292-293)

1962. *Tibellus katrajghatus* Tikader, *J. Univ. Poona Sci. and Tech.*, **22** : 136.

General: Cephalothorax and legs light yellowish green, abdomen brown. Total length 4.10 mm. Carapace 1.90 mm. long, 1.90 mm. wide; abdomen 2.50 mm. long, 1.20 mm. wide.

Cephalothorax: As long as wide, sparsely spined, two lateral broad longitudinal dark brown bands, extending from posterior lateral eyes to the base of cephalothorax; a V-shaped dark brown marking on the centre of the cephalothorax. Clypeus medium, margin of clypeus with seven spines directed forward but middle directed upward. Anterior row of eyes close, recurved, anterior four eyes and posterior two median eyes form a wide hexagonal area, the posterolateral eyes largest and remote from other eyes. Sternum heart-shaped, pointed behind, margin provided with black spots. Legs long spined, bearing many black pigmented patches or spots; I, II and IV pairs of legs long but II pairs longer than I, tibiae of I and II with three pairs and metatarsi with two pairs of ventral spines; well developed claw tufts and scopulae present on tarsi.



FIGS. 292-293. *Tibellus katrajghatus* Tikader
 292. Dorsal view of female, legs omitted.
 293. Epigyne.

Abdomen: Long, cylindrical, spined, narrow behind, strongly overlapping the posterior region of cephalothorax in front, a black lens-shaped longitudinal band on the mid-dorsal and a 'V' shaped black marking on the posterior end of abdomen. Ventral side with three longitudinal dark brown bands from epigastric fold to near the spinnerets. Epigyne as in fig. 293.

Type-locality: Katrajghat, Poona, Maharashtra, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2961/18

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

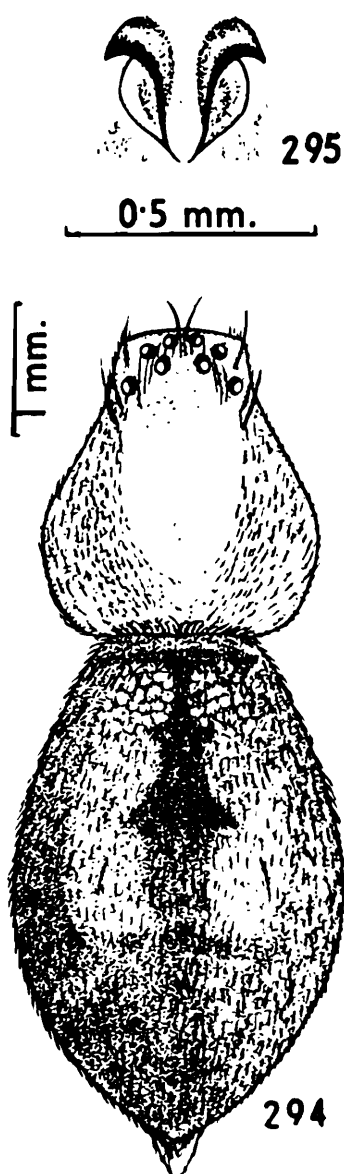
107. **Tibellus pateli** sp. nov.

(Figs. 294-295)

General: Cephalothorax, legs and abdomen light brownish yellow. Total length 6.50 mm. Carapace 2.50 mm. long, 2.20 mm. wide; abdomen 4.20 mm. long, 2.50 mm. wide.

Cephalothorax: Longer than wide, sparsely spined lateral borders with longitudinal dark bands, extending from posterior lateral eyes to the base of cephalothorax. Clypeus high, margin of clypeus with seven spines directed forward but middle one directed upwards. Anterior row of eyes close, nearly of same size, recurved, anterior four eyes and posterior median eyes form a wide hexagonal area, the posterior lateral eyes larger and remote from other eyes. Sternum heart-shaped, pointed behind, margin provided with irregular brown spots and clothed with hairs. Legs long with conspicuous spines, bearing many black pigmented dots or spots; I, II and IV pairs of legs long, but II pair longer than I, tibiae I and II with two pairs of ventral spines; well developed claw-tufts and scopulae present on the tarsi.

Abdomen: Long, narrowing behind, clothed with fine hairs and spine like conspicuous hairs. Lens-shaped brown marking on anterior dorsal side surrounded by white markings and posterior dorsal half provided with 'V' shaped dark brown markings as in fig. 294. Ventral side light uniform coloured. Epigyne as in fig. 295.



FIGS. 294-295. *Tibellus pateli* sp. nov.
 294. Dorsal view of female, legs omitted.
 295. Epigyne.

Holotype: ♀, *paratypes* 2 ♀♀, in spirit. Deposited at Zoological Survey of India, Calcutta. Regd. No. 4616/18

Type-locality: Pavagadh, Dist. Panchmahala, Gujarat, INDIA. 10.ix.1972, Coll. Dr. B. H. Patel.

This species is closely related to *Tibellus katarajghatus* Tikader but differs from it as follows: (i) Tibiae of I and II with two pairs of ventral spines but in *T. katarajghatus* tibiae of I and II with

three pairs of ventral spines. (ii) Ventral side with uniform colour but in *T. katrajghatus* three longitudinal dark brown bands from epigastric fold to spinnerets. (iii) Epigyne also structurally different.

Genus 23. *Thanatus* Koch

1837. *Thanatus* Koch, *Ueb. Ar. Syst.*, 1 : 25.
 1895. *Thanatus* : Simon, *Hist. Nat. Araign.*, Paris, 1(4) : 1064.
 1940. *Thanatus* : Comstock, *The Spider Book*, New York, : 561.
 1951. *Thanatus* : Locket and Millidge, *British Spiders*, Ray Society, London, 1 : 201.
 1960. *Thanatus* : Tikader, *J. Bombay nat. Hist. Soc.*, 57(1) : 177.
 1966. *Thanatus* : Tikader, *Rec. Indian Mus.*, 59(4) : 441.

Characters: This genus differs from *Philodromus* in the relative position of the eyes, and in the relative length of the legs. Carapace scarcely longer than wide. Anterior row of eyes close together and both rows recurved and form together a crescent-shaped area; posterior eyes equidistant. Abdomen oval, not appreciably enlarged or truncated behind and abdomen marked with a lens shaped band. Tarsi and metatarsi armed with scopulae.

The spiders live on ground or lower plants and high grasses.

Type-species: *Thanatus formicinus* (Clerck.)

Distribution: EUROPE, AMERICA, AFRICA, and ASIA.

Key to species of the genus Thanatus Koch.

- | | |
|---|--------------------------------|
| 1. Posterior end of abdomen with two longitudinal bands | .2 |
| Posterior end of abdomen without band. | <i>. lanceolatus</i> Tikader |
| 2. Margin of clypeus with four spines | <i>. dhakuricus</i> Tikader |
| Margin of clypeus with seven spines | .3 |
| 3. Abdomen dorsally without any patches | <i>. mandali</i> Tikader |
| Abdomen dorsally with a lens-shaped patch | .. <i>. stripatus</i> sp. nov. |

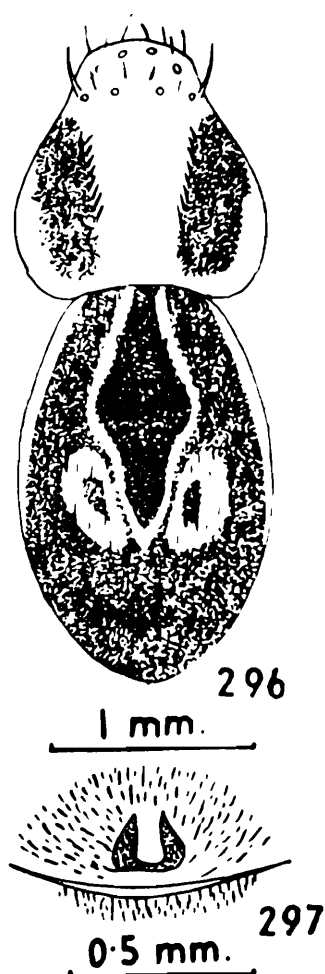
108. *Thanatus lanceolatus* Tikader

(Figs. 296-297)

1966. *Thanatus lanceolatus* Tikade , *Rec. Indian Mus.*, 59(4) : 443.

General: Cephalothorax and abdomen dirty-white, eyes black, legs concolours with cephalothorax; clypeus white. Total length 4.60 mm. Carapace 1.60 mm. long, 1.50 mm. wide; abdomen 3.20 mm. long, 2.20 mm. wide.

Cephalothorax: Broader behind, narrow in front, clothed with hairs and scanty spines; a pale band encircles almost an entire margin of cephalothorax and oblong dark brown broad patches sub-laterally. Eyes black, two rows, both rows recurved, but the posterior row longer than the anterior row, both the rows form a



FIGS. 296-297. *Thanatus lanceolatus* Tikader
 296. Dorsal view of female, legs omitted.
 297. Epigyne.

crescent-shaped area. Clypeus long, margin with five spines, directed forward. Sternum pale-white and hairy. Legs long, stout, spined; femora, patella and tibiae with irregular longitudinal dark brown bands.

Abdomen: Oval, clothed with fine hairs, a longitudinal dark brown lens-like spot in front on the middle, two longitudinal light bluish bands on the posterior half of the abdomen, four to six longitudinal rows of spines from the black pigmented spot on the dorsal surface of abdomen. Ventral surface pale white, with numerous irregular brown dots especially on the sides. Epigyne as in fig. 297.

Type-locality: Bikaner town, Rajasthan, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2493/18

Distribution. So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

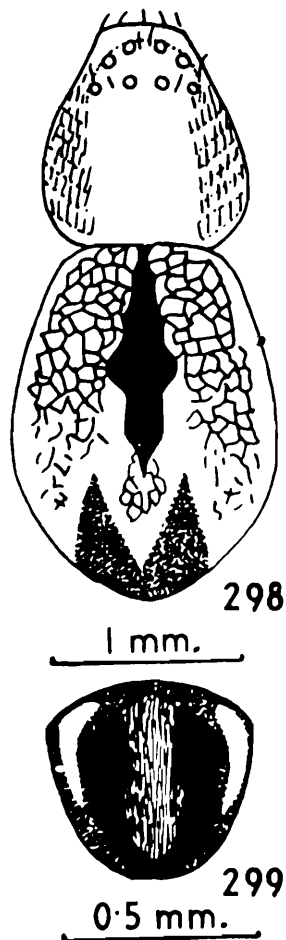
109. **Thanatus dhakuricus** Tikader

(Figs. 298-299)

1960. *Thanatus dhakuricus* Tikader, *J. Bombay nat. Hist. Soc.*, 57(1) : 177.

General: Cephalothorax pale greenish, eyes black, legs green, clypeus concolours with cephalothorax, abdomen green, with white patches. Total length 3.20 mm. Carapace 1.20 mm. long, 1.10 mm. wide; abdomen 2.00 mm. long, 1.50 mm. wide.

Cephalothorax: Broadest behind, narrow in front, maximum width slightly less than length, covered with small hairs, the sides about 1/4 portion tinted with very light yellowish and ornamented by irregular dark pigmented patches, this area clothed with many small spines. Eyes black, equal size, eight in two rows, both rows recurved but the posterior row longer; both the rows form together a crescent-shaped area. Clypeus long, margin of clypeus with four spines directed forward. Legs relatively short and stout, spined and dark brown pigmented dots.



FIGS. 298-299. *Thanatus dhakuricus* Tikader
 298. Dorsal view of female, legs omitted.
 299. Epigyne.

Abdomen: Oval, clothed with pubescence, with irregular shaped white granular patches; longitudinal brown lens-shaped band anteriorly in the mid-dorsal, two longitudinal deep brown bands on either side of the posterior end. Epigyne as in fig. 299.

Type-locality: Dhakuria (Calcutta), West Bengal, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 2523/18

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

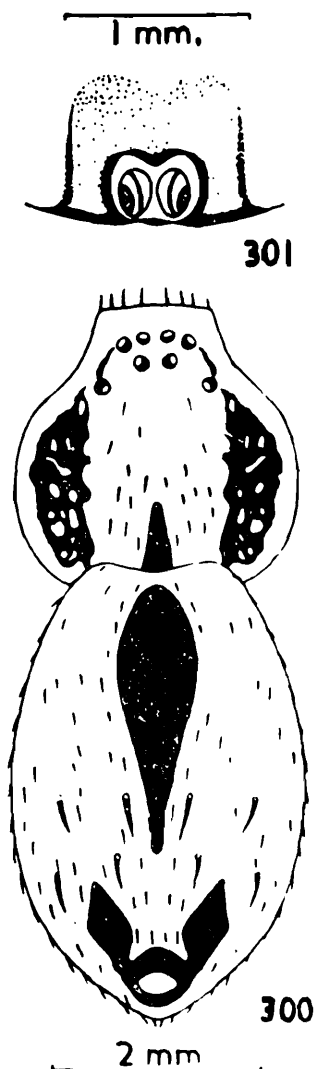
110. *Thanatus mandali* Tikader

(Figs. 300-301)

1965. *Thanatus mandali* Tikader, *Sci. & Cult.*, Calcutta, 31 : 39.

General: Cephalothorax and legs greenish-brown, abdomen brown. Total length 7-10 mm. Carapace 3.50 mm. long, 2.80 mm. wide; abdomen 4.50 mm. long, 3.00 mm. wide.

Cephalothorax: Longer than wide, broadest behind, narrow in front and clothed with hairs and few spines; lateral sides provided with conspicuous longitudinal deep brown patches. Middle



FIGS. 300-301. *Thanatus mandali* Tikader
 300. Dorsal view of female, legs omitted.
 301. Epigyne.

of cephalothorax also provided with a thin longitudinal brown line extending from ocular area to base of thorax. Eyes black, eight in two rows both rows recurved but the posterior row longer and more recurved than the anterior row; posterior lateral eyes larger than others, both rows of eyes form together a crescent-shaped area. Ocular quad longer than wide and narrowing in front. Clypeus long, margin of clypeus with seven spines directed forward. Sternum heart-shaped, pointed behind, clothed with hairs and brown pigmented dots. Legs long and stout, provided with spines and dark-brown pigmented dots. Metatarsi of I and II with two pairs of ventral spines; tarsal scopulae well developed and claw tufts prominent.

Abdomen: Longer than wide, posterior half wide and end tapering, clothed with hairs and few spines and brown pigmented dots. Anterio-mid-dorsally provided with a conspicuous deep brown lens-shaped band and posterior end provided with a V-shaped brown mark. Ventral side pale with some brown pigmented dots or line. Epigyne as in fig. 301.

Type-locality: Mukund Nagar, Poona, Maharashtra, INDIA.
Holotype: ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3150/18

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

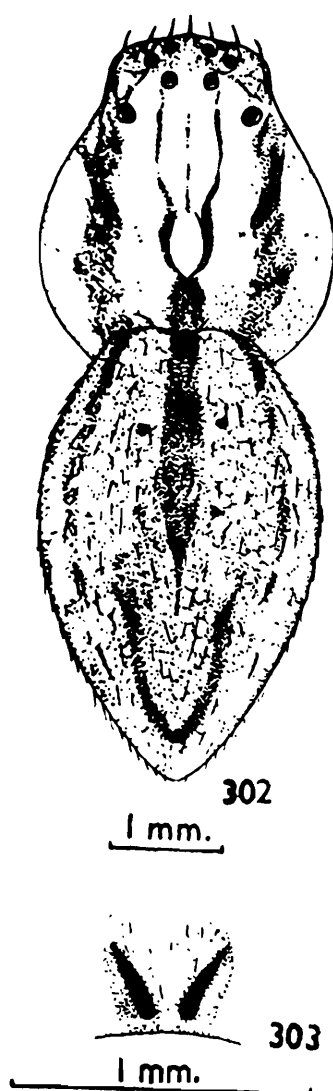
111. *Thanatus stripatus* sp. nov.

(Figs. 302-303)

General: Cephalothorax and legs greenish yellow, abdomen yellowish brown. Total length 7.00 mm. Carapace 3.00 mm. long, 2.50 mm. wide; abdomen 4.00 mm. long, 2.50 mm. wide.

Cephalothorax: Slightly longer than wide, narrowing in front, clothed with hairs and some spines, greenish brown, conspicuous longitudinal bands extend from cephalic region to the base of cephalothorax sub-laterally. Middle also provided with thin longitudinal stripes extending from the base of posterior median

eyes to the base of cephalothorax. Eyes black, both the rows are recurved but the posterior row longer and strongly recurved as in fig. 302. Bases of eyes black. Ocular quad slightly wider behind than in front as in fig. 302. Clypeus long, margin with seven spines directed forward. Sternum oval, pointed behind, pale, except few black spots on margins, provided with spines. Legs long, slender and clothed with hairs and many spines. Femora, patella and tibiae with irregular longitudinal dark brown patches. Metatarsi and tibiae of I and II legs with two pairs of ventral spines.



FIGS. 302-303. *Thanatus stripatus* sp. nov.
 302. Dorsal view of female, legs omitted.
 303. Epigyne.

Abdomen: Oval, pointed behind clothed with pubescence and few spines; a longitudinal, dark brown, lens-shaped marking

on anterior middle portion on the dorsum; sub-lateral margins also provided with brown markings as in fig. 302. Ventral side pale brown with three black longitudinal bands extending from the epigastric fold to the base of spinnerets. Epigyne as in fig. 303.

Holotype: ♀, *paratypes* 2 ♀ ♀, in spirit. Deposited at Zoological Survey of India, Calcutta. Regd. No. 4618/18

Type-locality: Mukund Nagar, Poona, Maharashtra, INDIA. 28.ix.1975, Coll. B. K. Tikader.

This species resembles *Thanatus dhakuricus* Tikader but it can be separated from it as follows: (i) Margin of clypeus provided with seven spines directed forward but in *T dhakuricus* margin of clypeus with four spines. (ii) Ventral side of abdomen with three black longitudinal bands but in *T dhakuricus* no such bands (iii) Epigyne also structurally different.

Genus 24. *Apollophanes* Cambridge

1898. *Apollophanes* Cambridge, *Biol. Centre Amer. Zool.*, **1** : 252.
 1900. *Apollophanes* : Cambridge, *Boil. Centre Amer. Zool.*, **2** : 131.
 1940. *Apollophanes* : Comstock, *The Spider Book*, New York, : 558.
 1963. *Apollophanes* : Tikader, *Proc. Indian Acad. Soc.*, Bangalore, **58**(5): 260.

Characters: Cephalothorax as long as broad or slightly longer than broad, posterior row of eyes more strongly recurved than in *Philodromus*; the eyes of the posterior row equidistant. The anterior lateral eyes equidistant from the anterior medians and the posterior medians, forming with them an equilateral triangle on each side. Legs clothed with hairs and spines; tarsi with well developed claw tufts and scopulae.

Type-species: *Apollophanes punctipes* Cambridge.

Distribution: AMERICA and ASIA.

112. *Apollophanes bangalores* Tikader

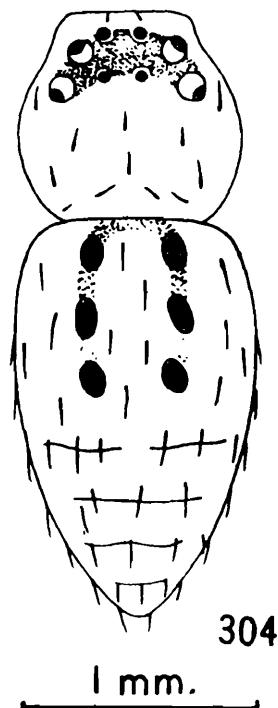
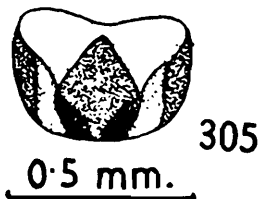
(Figs. 304-305)

1963. *Apollophanes bangalores* Tikader, *Proc. Indian Acad. Sci.*, **58**(5) : 260.

General: Cephalothorax pale yellowish-green, eyes black, legs pale green, abdomen more light green than cephalothorax. Total

length 2.70 mm. Carapace 1.00 mm. long, 0.90 mm. wide; abdomen 1.80 mm. long, 1.00 mm. wide.

Cephalothorax: Nearly circular, sparsely spined; clypeus median high, margin with seven spines directed forward but the median directed upward. Eyes round, lateral, ringed with dirty-brown tubercles, entire ocular area with a deep brown crescent-shaped patch. Anterior row of eyes close, recurved; anterior four eyes and posterior median eyes forming a wide hexagonal area; posterior row longer than the anterior row. The anterior lateral eyes equidistant from the anterior median and the posterior median, forming with them an equilateral triangle on each side. Legs long, spined, tibiae I and II with two pairs of ventral spines; tarsi with well-developed claw tufts and scopulae.



FIGS. 304-305. *Apollophanes bangalores* Tikader
 304. Dorsal view of female, legs omitted.
 305. Epigyne.

Abdomen: Long, cylindrical, spined, narrow behind, very slightly overlapping the posterior region of cephalothorax; three pairs of round black spots on the dorsum, arranged longitudinally on the anterior half of abdomen; posterior half provided with four transverse, zig-zag, black lines. Epigyne as in fig. 305.

Type-locality: Lalbagh (Botanical Garden), Bangalore City, Karnataka, INDIA. *Holotype:* ♀, in National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 3161/18.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

Genus 25. *Dieta* Simon

1880. *Dieta* Simon, *Ann. Soc., ent. Fr.*, 10 (5) : 108.

Characters: Cephalothorax flat, longer than wide and abruptly narrowing anteriorly on the ocular area. Eyes prominently tuberculated, lateral eyes larger than medians, both rows recurved but anterior row more recurved than the posterior row. The four median eyes form a rectangular area as wide behind as in front. Legs I and II remarkably long and spinnerets situated at the posterior end of abdomen.

Type-species: *Dieta parnassia* Simon

Distribution: AFRICA; ASIA; Oriental region and JAPAN.

Key to species of species of the genus DIETA Simon

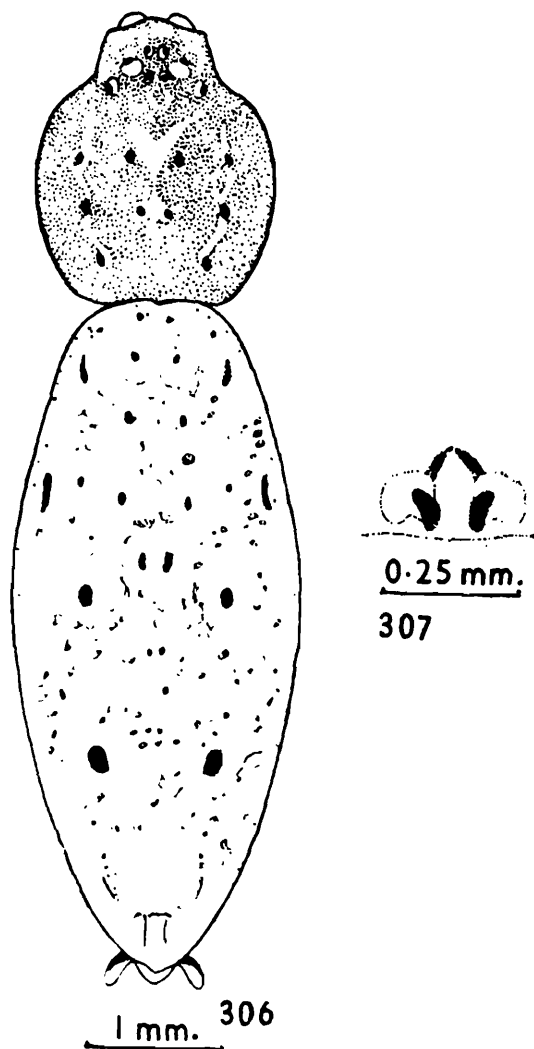
- | | |
|--|---------------------------|
| 1. Carapace decorated with pink spots and the prolateral distal extremity of I tibiae with a brown conspicuous patch | <i>.elongata</i> sp. nov. |
| Carapace without spots and the prolateral distal extremity of I tibiae without any patch | .2 |
| 2. Tibiae I and II with four pairs of ventral robust spines .. | <i>.greenae?</i> sp. nov. |
| Tibiae I and II with two pairs of ventral robust spines | <i>.kapuri</i> sp. nov. |

113. *Dieta elongata* sp. nov.

(Figs. 306-307)

General: Cephalothorax and legs light brownish and abdomen dirty chalk-white. Total length 8.00 mm. Carapace 2.50 mm. long, 2.30 mm. wide; abdomen 6.00 mm. long, 2.50 mm. wide.

Cephalothorax: Slightly longer than wide, cephalic region abruptly narrowing in front and at the base of cephalothorax comparatively narrow; thoracic region provided with conspicuous pink spots and lateral margins of thoracic region also lined with pink colour as in fig. 306. Eyes black and bases of all eyes provided



FIGS. 306-307. *Dieta elongata* sp. nov.
 306. Dorsal view of female, legs omitted.
 307. Epigyne.

with prominent silvery tubercles. Anterior row of eyes strongly recurved and shorter than the posterior row, anterior-medians smaller than the anterior laterals; posterior medians also smaller than the posterior laterals. Ocular quad slightly longer than wide and as wide behind as in front as in fig. 306. Clypeus with two spines directed forward. I and II pair of legs remarkably longer and cylindrical and all legs clothed with hairs and spine. Tibiae and metatarsi of I and II legs provided with four pairs of ventral robust spines. End of tarsi provided with well developed claw-tufts. The prolateral distal extremity of I tibiae provided with a brown conspicuous patch.

Abdomen: Long, narrow, tapering behind, slightly overlapping in front on cephalothorax, clothed with fine hairs. Dorsally provided with inconspicuous brown markings. Spinnerets situated at the posterior tip of the abdomen. Ventral side uniform light coloured. Epigyne as in fig. 307. Live specimens light greenish in colour and easily camouflaged with green leaves.

Holotype: ♀, *paratype* ♀, in spirit. Deposited at National Collection, Zoological Survey of India. Calcutta. Regd. No.4576/18.

Type-locality: Shivajinagar, Poona, Maharashtra, INDIA. 12.viii.1974, Coll. *M. S. Malhotra*. *Paratype:* Mukund Nagar, Poona, Maharashtra, INDIA. 25.viii.1975, Coll. *B. K. Tikader*.

This species resembles *Dieta argenteo-oculata* Simon but differs from it as follows: (i) Cephalothorax provided with conspicuous brown spots but in *D. argenteo-oculata* Simon cephalothorax without brown spots. (ii) Abdomen dorsally provided with conspicuous brown spots but in *D. argenteo-oculata* no such spots on the abdomen. (iii) Epigyne also structurally different.

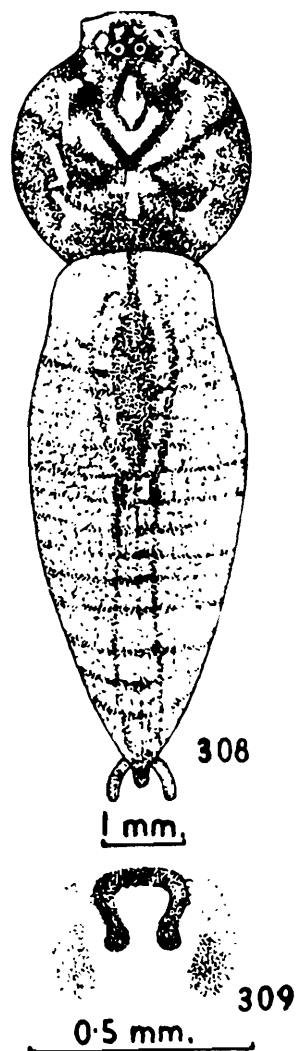
114. ***Dieta greenae*** sp. nov.

(Figs. 308-309)

General: Cephalothorax and legs light brown, abdomen pale. Total length 10.00 mm. Carapace 3.50 mm. long, 3.20 mm. wide; abdomen 7.00 mm. long, 3.20 mm. wide.

Cephalothorax: Slightly longer than wide, cephalic region abruptly narrowing in front and base of cephalothorax also com-

paratively narrow. Thoracic region provided with white patches. Eyes black and bases of all eyes provided with prominent silvery tubercles. Anterior row of eyes strongly recurved than the posterior row and shorter than the posterior row; medians smaller than the laterals. Ocular quad slightly longer than wide and as wide behind as in front as in fig. 308. Legs clothed with spines and hairs, I and II pair of legs remarkably longer and cylindrical than III and IV pairs. Tibiae of I and II legs provided with four pairs of ventral robust spines and metatarsi of I and II legs with five pairs of ventral robust spines. End of tarsi provided with well developed claw-tufts.



FIGS. 308-309. *Dieta greenae* sp. nov.
308. Dorsal view of female, legs omitted.
309. Epigyne.

Abdomen: Long, pale, narrowing posteriorly and anterior region slightly overlapping on cephalothorax. Antero-mid-dorsally with a longitudinal lens-shaped light brown marking as in fig. 308. Posterior end of the abdomen also provided with a red patch. Spinnerets situated at the posterior tip of the abdomen and posterior spinnerets with red patch. Posterior spinnerets much longer than the anterior spinnerets. Ventral side pale. Epigyne as in fig. 309. Male smaller in size than female, but same in colour. When collected the specimens were light greenish.

Holotype: ♀, in spirit. Deposited at National Collection, Zoological Survey of India, Calcutta. Regd. No. 4578/18.

Type-locality: Chiriatapu, South Andaman, INDIA. 29.v.1971. Coll. B. K. Tikader.

This species resembles *Dieta elongata* sp. nov. but differs from it as follows: (i) Cephalothorax and abdomen not decorated with spots but in *D. elongata* sp. nov. cephalothorax and abdomen decorated with pink spots. (ii) Metatarsi of I and II legs provided with five pairs of ventral robust spines but in *D. elongata* four pairs of ventral robust spines. (iii) Epigyne also structurally different.

115. ***Dieta kapuri*** sp. nov.

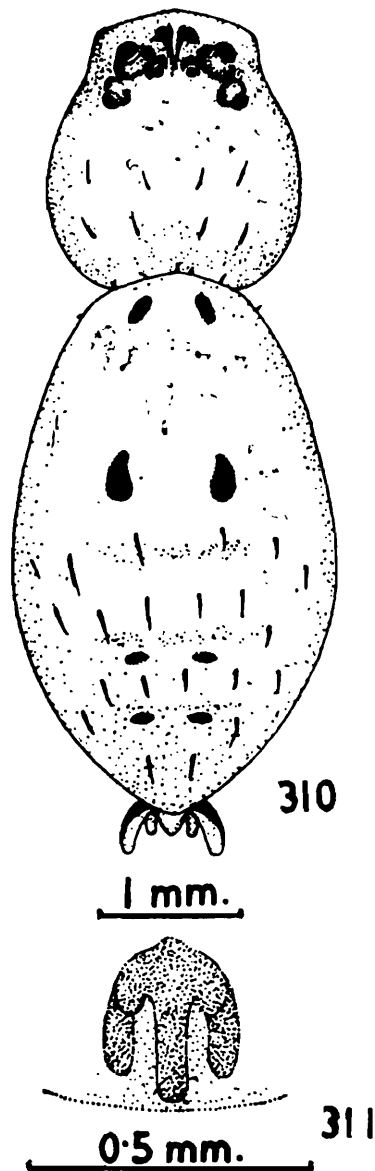
(Figs. 310-311)

General: Cephalothorax and legs pale yellowish, legs light green. Total length 6.00 mm. Carapace 2.00 mm. long, 1.80 mm. wide; abdomen 4.20 mm. long, 2.30 mm. wide.

Cephalothorax: Slightly longer than wide, narrowing anteriorly, uniform pale yellow. Eyes black and tuberculated but lateral eyes prominently tuberculate. Anterior row of eyes strongly recurved and shorter than the posterior row. Median eyes smaller than the respective laterals. Ocular quad longer than wide and as wide behind as in front as in fig. 310. Clypeus flat. I and II pair of legs remarkably longer and cylindrical than the III and IV. Legs clothed with hairs and spines. Tibiae and metatarsi I and II provided with two and three pairs of ventral spines respectively.

Abdomen: Nearly oval, longer than wide, pointed behind, clothed with hairs and posterior dorsum region provided with

conspicuous long spine like hairs. Mid-dorsally provided with two longitudinal rows of four pink spots. Dorsal side of posterior spinnerets also with conspicuous red patch. Ventral side of abdomen pale. Epigyne as in fig. 311.



FIGS. 310-311. *Dieta kapuri* sp. nov.
 310. Dorsal view of female, legs omitted.
 311. Epigyne.

Holotype: ♀, in spirit. Deposited at National Zoological Collections, Zoological Survey of India, Calcutta. Regd. No. 4580/18.

Type-locality: Mukund Nagar, Poona, Maharashtra, INDIA. 18.ix.1975. Coll. B. K. Tikader.

This species resembles *Dieta elongata* sp. nov. but can be distinguished from it as follows: (i) Abdomen oval in shape and decorated with four pairs of pink spots and carapace without such spots but in *D. elongata* sp. nov. abdomen very much elongated and sharply pointed behind and carapace as well as abdomen decorated with numerous pink spots. (ii) Metatarsi I and II provided with three pairs of ventral robust spines but in *D. elongata* metatarsi I and II with four pairs of ventral spines. (iii) Epigyne also structurally different.

BIBLIOGRAPHY

- BASU, B. D. 1963. A new spider of the family Thomisidae (Araneae) from India, *Sci. & Cult.*, Calcutta, 29 : 606-670.
- BASU, B. D. 1963. On the description of two new spiders of the family Thomisidae (Arachnida : Araneae) from India. *J. Asiat. Soc., Bengal*, Calcutta, 5 (1-2) : 23-26.
- BASU, B. D. 1964. Diagnosis of two new species of *Pistius* (Thomisidae : Araneae : Arachnida) from India, *J. Bengal nat. Hist. Soc.*, Darjeeling, 32 (2) 104-109.
- BASU, B. D. 1964. Morphology of an Indian spider of the family Thomisidae (Araneae : Arachnida). *Sci. & Cult.*, Calcutta, 30 (3) : 154-155.
- BASU, B. D. 1965. Four new species of the spider genus *Pistius* Simon (Arachnida : Araneae : Thomisidae) from India. *Proc. zool. Soc.*, Calcutta, 18 : 71-77.
- BASU, K. C. 1973. A new spider of the genus *Philodromus* Walck. (Arachnida : Araneae : Thomisidae) from Meghalaya, *Sci. & Cult.*, Calcutta, 39 : 231-232.
- BISWAS, A.T. 1977. A new species of spider of the genus *Platythomisus* Simon (Family : Thomisidae) from Coorg, Karnataka, India. *J. Bombay nat. Hist. Soc.*, 74 (2) : 332-334.
- BONNET, P. 1945. *Bibliographia Araneorum*, Toulouse, 1 : 1-832.
- BONNET, P. 1955-1959. *Bibliographia Araneorum*, Toulouse 2 : 1-5058.
- BONNET, P. 1961, *Bibliographia Araueorum*, Toulouse, 3 : 1-591.
- CAMBRIDGE, O. P. 1873. On some new genera and species of Araneidea. *Proc. zool. Soc. Lond.*, : 112-129.
- CAMBRIDGE, O. P. 1884. On two new genera of spiders. *Proc. zool. Soc. Lond.*, : 196-205.
- CAMBRIDGE, O. P. 1898. Araneidae, in : *Biologia. Centrali-Americana.* (London) 1 : 233-288.
- CAMBRIDGE, F. O. P. 1900. Araneidae, in : *Biologia. Centrali-Americana.* (London) 2 : 89-192.
- CHRYSANTHUS, FR. 1964. Spiders from South New Guinea VI. *Nova Guinea*, New Se. 10 (28) : 87-104.
- COMSTOCK, J. H. 1910. The palpi of male spiders. *Ann. Ent. Soc. Amer.*, 3 : 161-185.
- COMSTOCK, J. H. 1940. *The Spider Book*, (Comstock publishing Association), New York, 1-729.
- DANIEL, J. C. 1962. Abdominal markings of a thomisid spider. *J. Bombay nat. Hist. Soc.*, 59 (2) : 681.

- DOLESCHALL, L. 1859. Tweede Bijdr. tot de Kenn. d. Arachn. v. d. Ind. Archipel., *Acta Soc. Ind. Neerl.*, 5(5) : 1-60.
- DYAL, S. 1935. Spiders of Lahore. *Bull. Dep. Zool. Punjab Univ.*, 1 : 117-252.
- EMERTON, I. H., 1893. New England spiders of the family Thomisidae. *Trans. Connect. Acad. Sci.*, 8 (21) : 359-381.
- GERING, R. L. 1953. Structure and function of the genitalia in some American-agelenid spiders. *Smithsonian Misc. Publ.*, 121(4) : 84.
- GERTSCH, W. J. 1939. A Revision of the typical crab-spiders (Misumeninae) of America North of Mexico. *Bull. Amer. Mus. Nat. Hist.*, 76 (7):277-442,
- GERTSCH, W. J. 1949. *American Spiders* (D. Van Nostrand Company Princeton). New Jersey, : 1-285.
- KEYSERLING, E. 1880. Die Spinnen Amerikas. I. (Laterigradae). : 1-283.
- KEYSERLING, E. 1884. Neue Spinnen aus Amerika. V. -*Verh. Zool. Bot. Ges. Wien.*, 33 : 649-684.
- KOCH, C. L. 1835. Deutschlands Crustaceen, Myriapoden und Arachniden. *H. Schaeff. Deutschl. Ins.*, : 1-40.
- KOCH, C. L. 1837. Uebersicht des Arachnidensystems. (*Nurnberg*), 1 : 1-39.
- KOCH, L. 1873. Die Arachniden Australiens. (*Nurnberg*), 1 : 369-528.
- LATREILLE, P. A. 1804. Tableau methodique des insectes. *N. Dic. hist. nat.* 24 : 129-200.
- LATREILLE, P. A. 1816. (Articles sur les Araignees). *N. Dic. hist. nat.*, 2 : 275-295.
- LOCKET, G. H and Millidge, A. F. 1951. *British Spiders - I Ray Society*. London, : 310.
- PETRUNKOVITCH, A. 1933. An inquiry into the natural classification of spiders based on a study of their internal anatomy. *Trans. Connect. Acad. Sci.*, 31 : 303-389.
- POCOCK, R. I. 1900. *Fauna of British India, Arachnida*, London. : 153-279.
- REIMOSER, E. 1934. Araneae aus Sud-Indien. *Rev. suisse Zool.*, 41 (32) : 465-511.
- ROEWER, 1954. Katalog der Araneae, Brussels, Vol. 2, part A. : 1041-1751.
- SCHICK, R. X. 1965. The crab-spiders of California (Araneida : Thomisidae). *Bull. Am. Mus. nat. Hist.*, 129(1) : 1-180.
- SEN, J. K. 1963. On a new species from India belonging to the genus *Thomisus* Walckenaer 1805. (Thomisidae : Arachnida) *Sci. & Cult.*, Calcutta, 29 : 610-611.
- SEN, J. K. and BASU, B. D. 1963. *Thomisus mimae*, new spider (Thomisidae : Arachnida) from Calcutta. *Sci. & Cult.*, Calcutta, 29 (10) : 515-516.
- SEN, J. K. and BASU, K. C. 1972. A new spider of the genus *Runcinia* Simon (Thomisidae : Arachnida) from India. *J. zool Soc., India* 24 : 103-104,
- SHERRIFFS, W. R. 1919. A contribution to the study of South Indian Arachnology, I. *Ann. Mag. Nat. Hist.*, 4(9) : 220-253.
- SHERRIFFS, W. R. 1929. South Indian Arachnology. Part IV. *Ann. Mag. Nat. Hist.*, 4 (10) : 233-249.

- SIMON, E. 1864. Histoire Naturelle des Araignees (Araneides), Paris, 1 : 1-540.
- SIMON, E. 1875. Les Arachnides de France (Paris) 2 : 1-350
- SIMON, E. 1880. Arachnides des envir. de Pekin. *Ann. Soc. Ent. Fr.*, (5) 10 : 97-128.
- SIMON, E. 1885. Materiaux pour servir a la faune arachnologique de l'Asie meridionale. *Bull. Soc. Zool. Fr.*, 10 : 436-455.
- SIMON, E. 1895. Histoire Naturelle des Araignees, Paris. 1 (4) : 761-1084.
- STOLICZKA, F. 1869. Contribution towards the knowledge of Indian Arachnoidea *J. Asiat. Soc. Bengal*, 38 : 201-251.
- SUNDEVALL, J. C. 1833. *Conspectus arachnidum, Londoni Gothorum* : 1-39.
- THORELL, T. 1869. On European spiders. (Upsala), *Nova Acta Reg. Soc. Sci. Upsaliae.*, 7 (1) : 1-108.
- THORELL, T. 1870. On European spiders. *Nova Acta Reg. Soc. Sci. Upsalins.*, 7 (2-3) : 109-242.
- THORELL, T. 1887. Primo saggio sui ragni Birmani, *Ann. Mus. Civ. Genova*, 25 : 5-417.
- THORELL, T. 1890. Arachnidi di Nias e di Sumatra racc. dal Modigliani, *Ann. Mus. Civ. Genova.*, 30 : 5-106.
- THORELL, T. 1891. Spindler fran Nikobarerna och andrer delar of Sodra Asien., *Svensk. Vet. Ak. Handl.*, 24 (2) : 1-149.
- TIKADER, B. K. 1960. On some new species of spider (Arachnida) of the family Thomisidae from India. *J. Bombay nat. Hist. Soc.*, 57(1) : 173-183.
- TIKADER, B. K. 1960. On two new species of the spiders of the genus *Oxyptila* (Family : Thomisidae) from India. *Proc. zool. Soc.*, Calcutta, 13(2) : 115-118.
- TIKADER, B. K. 1962. On some new species of spiders of the genus *Tibellus* (Family : Thomisidae) from India. *J. Univ. Poona, Sci. and Tech.*, 22 : 133-137.
- TIKADER, B. K. 1962. Studies on some Indian spiders (Aranae : Arachnida). *J. Linn. Soc. London*, 44(300) : 561-584.
- TIKADER, B. K. 1962. On two new species of spiders of the genus *Philodromus* (Family: Thomisidae) from India. *Proc. zool. Soc.*, Calcutta, 15 (1):39-42.
- TIKADER, B. K. 1963. Studies on some spider fauna of Maharashtra and Mysore States, Part I. *J. Univ. Poona, Sci. and Tech.*, 23 : 29-54.
- TIKADER, B. K. 1963. Studies on interesting South Indian Crab-spiders (Family : Thomisidae). *Proc. Indian Acad. Sci.*, Bangalore, 58(5) : 249-262.
- TIKADER, B. K. 1964. A new species of spider of the genus *Oxyptila* (Family: Thomisidae) from India. *Sci. & Cult.*, Calcutta, 30(3) : 152-153.
- TIKADER, B. K. 1964. Zoological results of the Indian Cho-Oyu Expedition (1958) in Nepal, Part-8. Arachnida. *Rec. Indian Mus.*, New Delhi, 59 (3) : 257-267.
- TIKADER, B. K. 1965. A new species of spider of the genus *Thanatus* (Family: Thomisidae) from India. *Sci. & Cult.*, Calcutta, 31(1) : 39-40

- TIKADER, B. K. 1965 On some new species of spiders of the Family Thomisidae from India *Proc Indian Acad. Sci.*, Bangalore, 61(5) : 277-289.
- TIKADER, B. K. 1966. On some new species of spiders of the genus *Philodromus* (Family : Thomisidae) from India. *Proc. Linn. Soc.*, London, 177 (1) : 35-44.
- TIKADER, B. K. 1966. Studies on some crab-speiders (Family : Thomisidae) from Khasi and Jaintia Hills, Assam, India. *Proc. Indian Acad. Sci.*, Bangalore, 64 (1) : 53-61.
- TIKADER, B. K. 1966. On a collection of spiders (Araneae) from the desert area of Rajasthan (India). *Rec. Indian Mus.*, New Delhi, 59 (4) : 435-443.
- TIKADER, B. K. 1966. Description of two new spiders of the genus *Xysticus* (Family : Thomisidae) from India. *J. Asiat. Soc. Bengal*, Calcutta, 8 (4) : 249-252.
- TIKADER, B. K. 1969. Spider Fauna of India : Catalogue and Bibliography, Part I. *J. Bombay nat. Hist. Soc.*, 66 (1) : 81-91.
- TIKADER, B. K. 1970 Spider Fauna of India : Catalogue and Bibliography, Part II. *J. Bombay nat. Hist. Soc.*, 66 (3) : 491-499.
- TIKADER, B. K. 1970. Spider Fauna of India : Catalogue and Bibliography, Part III. *J. Bombay nat. Hist. Soc.*, 67(2) : 212-221.
- TIKADER, B. K. 1970. The Spider Fauna of Sikkim. *Rec, zool. Surv. India*, Calcutta, 64 (1-4) : 1-84.
- TIKADER, B. K. 1971. Revision of Indian Crab-spiders (Araneae : Thomisidae) (Monograph) *Mem. zool. Surv. India*, Calcutta, 15(3) : 1-90.
- TIKADER, B. K. 1972. Spider Fauna of India : Catalogue and Bibliography, Part IV. *J. Bombay nat. Hist. Soc.*, 68(3) : 609-618.
- TIKADER, B. K. 1972. Spider Fauna of India : Catalogue and Bibliography, Part V. *J. Bombay nat. Hist. Soc.*, 69(1) : 91-101.
- TIKADER, B. K. 1973. Spider Fauna of India : Catalogue and Bibliography, Part VI. *J. Bombay nat. Hist. Soc.*, 70(1) : 95-103.
- TIKADER, B. K. and BISWAS, B. 1974. Studies on some spiders of the genus *Xysticus* (Family : Thomisidae) from Darjeeling, India. *Proc. Indian Acad. Sci.*, Bangalore, 80(6) : 262-266.
- WALCKENAER, C. A. 1805. de, Tableau des Araneides (Paris) p. 1-88.
- WORKMAN, T. 1896. *Malaysian Spiders*, Vol. I. Balfast, p. 1-104.

ALPHABETICAL INDEX

PAGE

N.B. : Names in italics indicate pages containing
detailed description.

ABA	8	carapace	6
abdomen	1	cardiae area	6
abdomen dorsal	1	Central division	6
abdomen ventral	1	cephalothorax	6
allatal stripe	6	cervical groove	6
allatum	6	<i>chambaensis (Philodromus)</i>	206
alveolus	8	<i>chandosiensis (Oxyptila)</i>	88
<i>amkhasensis (Oxyptila)</i>	86	<i>chaturshingi (Tibellus)</i>	214
<i>Amyciaea</i>	168	<i>chauhani (Runcinia)</i>	60
anal tubercle	1	chelicera	3
<i>andamanensis (Misumenops)</i>	159	<i>cherapunjeus (Thomisus)</i>	54
<i>andamanensis (Thomisus)</i>	39	claw	3
<i>annapurna (Misumena)</i>	98	claw-tuft	3
anterior row	3	clypeus	3
anterior spinnerets	3	conductor	9
apical	8	coxa	3
<i>Apollophanes</i>	231	coxae of legs	3
<i>assamensis (Philodromus)</i>	185	cribellum	1
<i>bangalores (Apollophanes)</i>	231	cymbium	8
<i>barchensis (Pistius)</i>	76	<i>deccanes (Misumenooides)</i>	152
<i>barmani (Philodromus)</i>	208	<i>decorata (Misumena)</i>	103
basal	8	<i>decorata (Synaema)</i>	136
basal tegular ridge	8	<i>decoratus (Philodromus)</i>	196
<i>bazarus (Platythomisus)</i>	171	<i>devhutai (Philodromus)</i>	193
<i>beautifularis (Thomisus)</i>	52	<i>dhakuricus (Thanatus)</i>	226
<i>bengalensis (Bomis)</i>	140	<i>dhakuriensis (Thomisus)</i>	42
<i>bengalensis (Xysticus)</i>	127	<i>Diaea</i>	105
<i>betrabatai (Philodromus)</i>	187	<i>Dieta</i>	233
<i>bhadurii (Pistius)</i>	66	distal	3
<i>bhagirathai (Philodromus)</i>	200	<i>domesticus (Philodromus)</i>	183
<i>bharatae (Ebo)</i>	179	<i>durvei (Philodromus)</i>	204
<i>Bomis</i>	139	<i>Ebo</i>	179
boss	1	<i>elephantus (Regillus)</i>	167
<i>brunettii (Synaema)</i>	134	<i>elongata (Dieta)</i>	234
<i>bulani (Thomisus)</i>	50	<i>elongatus (Thomisus)</i>	56
<i>Camaricus</i>	174	<i>elongatus (Tibellus)</i>	217

embolus	8	<i>manii</i> (<i>Oxyptila</i>)	82
epigastric farrow	1	<i>manikae</i> (<i>Philodromus</i>)	195
epigyne	10	<i>maratha</i> (<i>Oxyptila</i>)	85
Epigynal suture	10	<i>marathas</i> (<i>Pasias</i>)	163
<i>escheric</i> (<i>Runcinia</i>)	59	maxilla	3
eyes area	3	MBA	8
fang	3	median claw	3
femur	3	median ocular area	3
<i>formosus</i> (<i>Camaricus</i>)	175	median septum	8
<i>forticeps</i> (<i>Amyciaea</i>)	169	medium spinnerets	3
<i>gangulyi</i> (<i>Pistius</i>)	68	<i>memae</i> (<i>Thomisus</i>)	44
<i>ghorpadei</i> (<i>Runcinia</i>)	64	<i>menoka</i> (<i>Misumena</i>)	91
<i>greenae</i> (<i>Dieta</i>)	235	mesodiscus	6
<i>greenae</i> (<i>Misumena</i>)	100	metadiscus.	6
Guide pocket	10	metatarsus	6
<i>himalayaensis</i> (<i>Xysticus</i>)	129	<i>minutus</i> (<i>Xysticus</i>)	120
<i>hindustanicus</i> (<i>Xysticus</i>)	111	<i>Misumena</i>	.. 90
<i>horai</i> (<i>Misumena</i>)	93	<i>Misumenoides</i>	150
<i>indra</i> (<i>Misumena</i>)	95	<i>Misumenops</i>	155
inner row of teeth	3	<i>mohiniaie</i> (<i>Philodromus</i>)	198
Intromittent orifice	9	<i>Monaeses</i>	143
<i>jaintious</i> (<i>Diaea</i>)	105	<i>mridulai</i> (<i>Misumena</i>)	94
<i>jayantius</i> (<i>Xysticus</i>)	124	<i>mukundi</i> (<i>Monaeses</i>)	145
<i>kali</i> (<i>Xysticus</i>)	130	<i>mysorensis</i> (<i>Synaema</i>)	134
<i>kalimpus</i> (<i>Pistius</i>)	74	<i>netravati</i> (<i>Strigoplus</i>)	165
<i>kamakhyai</i> (<i>Xysticus</i>)	109	<i>nicobarensis</i> (<i>Misumena</i>)	102
<i>kanikae</i> (<i>Pistius</i>)	73	outer row of teeth	3
<i>kapuri</i> (<i>Dieta</i>)	237	<i>Oxyptila</i>	79
<i>kashidi</i> (<i>Xysticus</i>)	116	<i>pachpediensis</i> (<i>Tmarus</i>)	149
<i>katrajghatus</i> (<i>Thomisus</i>)	38	paraembolar apophysis	8
<i>katrajghatus</i> (<i>Tibellus</i>)	220	<i>parvati</i> (<i>Monaeses</i>)	144
<i>kendrabatai</i> (<i>Philodromus</i>)	191	<i>pashanensis</i> (<i>Tibellus</i>)	219
<i>khajuriai</i> (<i>Bomis</i>)	141	<i>Pasias</i>	161
<i>khandalaensis</i> (<i>Misumenops</i>)	156	<i>pateli</i> (<i>Tibellus</i>)	222
<i>khandalaensis</i> (<i>Camaricus</i>)	176	Patella	3
<i>khasi</i> (<i>Oxyptila</i>)	80	pedicel	1
<i>khasiensis</i> (<i>Xysticus</i>)	132	pendula	1
<i>kotigeharus</i> (<i>Tmarus</i>)	147	<i>Philodromus</i>	181
<i>kripalaniae</i> (<i>Misumenoides</i>).	151	<i>Pistius</i>	65
<i>kumaonensis</i> (<i>Misumenops</i>)	157	<i>Platythomisus</i>	170
labium	3	<i>poonaensis</i> (<i>Tibellus</i>)	215
<i>lanceolatus</i> (<i>Thanatus</i>)	225	<i>pooneus</i> (<i>Thomisus</i>)	35
lateral guide pocket	10	posterior declivity	8
<i>lobosus</i> (<i>Thomisus</i>)	36	posterior row	3
lung slit	1	posterior spinnerets	3
<i>maliniaie</i> (<i>Philodromus</i>)	202	procurved row	.. 3
<i>mandali</i> (<i>Thanatus</i>)	228	prodiscus	6
<i>mandali</i> (<i>Xysticus</i>)	118	<i>projectus</i> (<i>Thomisus</i>).	40

proximal	1	<i>sreepanchamii</i> (<i>Pistius</i>).	71
<i>pugilis</i> (<i>Thomisus</i>)	48	sternum	1
<i>puspagiri</i> (<i>Pasias</i>)	161	<i>Strigoplus</i>	164
<i>pynurus</i> (<i>Xysticus</i>)	123	<i>stripatus</i> (<i>Thanatus</i>)	230
radial furrow	8	subtegulum	8
receptaculum seminis	8	<i>sujatai</i> (<i>Xysticus</i>)	121
recurved row.	3	<i>sudeepi</i> (<i>Platythomisus</i>)	172
<i>reenae</i> (<i>Oxyptila</i>)	83	<i>Synaema</i>	134
<i>Regillus</i>	166	tarsus	3
<i>rishus</i> (<i>Thomisus</i>)	45	tatacular apophysis	8
<i>robusta</i> (<i>Pistius</i>)	70	tegular suture	8
<i>roonwali</i> (<i>Pistius</i>)	78	tegulum	8
<i>roonwali</i> (<i>Runcinia</i>)	62	<i>tiwarii</i> (<i>Philodromus</i>)	211
<i>roonwali</i> (<i>Xysticus</i>)	112	<i>Thanatus</i>	224
RTA	8	<i>Thomisus</i>	30
<i>Runcinia</i>	58	thoracic groove	6
scopula	3	thoracic region	6
scopula of maxilla	3	thoracic suture	6
<i>shillongensis</i> (<i>Philodromus</i>)	189	<i>Tibellus</i>	213
<i>shillongensis</i> (<i>Thomisus</i>)	51	tibia	3
<i>shillongensis</i> (<i>Xysticus</i>)	126	<i>Tmarus</i>	147
<i>shivajiensis</i> (<i>Thomisus</i>)	34	tooth of RTA	8
<i>shulli</i> (<i>Misumenoides</i>)	154	trochanter	3
<i>shyamrupus</i> (<i>Xysticus</i>)	113	truncus	3
<i>sikkimensis</i> (<i>Thomisus</i>)	32	upper claw	3
<i>sikkimus</i> (<i>Xysticus</i>)	115	ventral spines	3
<i>silveryi</i> (<i>Misumena</i>)	97	VTA	8
<i>sorajii</i> (<i>Thomisus</i>)	46	<i>Xysticus</i>	107

THE FAUNA OF INDIA

ARANEAE

Vol. I

Part 2

LYCOSIDAE

(WOLF-SPIDERS)

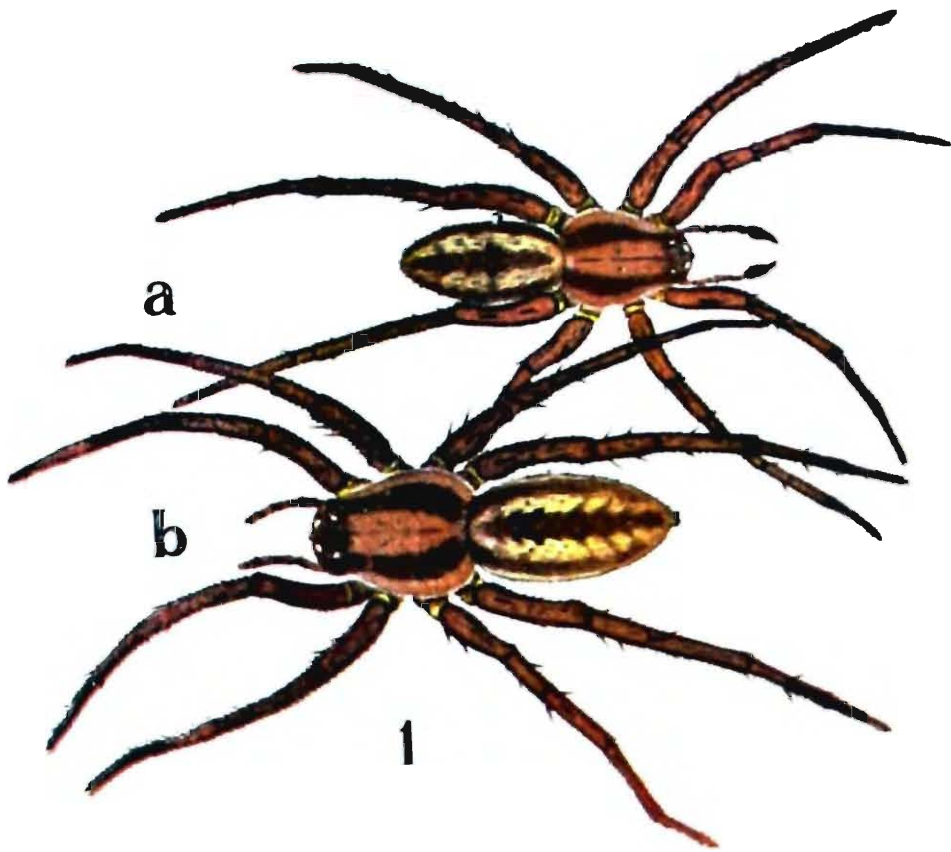
By

B. K. TIKADER, Ph.D., D.Sc.

Zoological Survey of India

AND

M. S. MALHOTRA, Ph.D.



Lycosa mahabaleshwarensis sp. nov.

a. Male.

b. Female.

AUTHORS' PREFACE

The Wolf-spiders which comprise the family Lycosidae are very common and abundant in our country but have received very little attention by the taxonomists. Superficially the lycosid spiders are all much alike, being of a dull brownish colour, so that they do not attract the attention of collectors in the field, except for the abundance of certain species.

There is no comprehensive work on this group in our country. Simon (1884), Cambridge (1870) and Pocock (1900-1901) were the pioneer workers, who described many species from India, Burma and Sri Lanka, but unfortunately their descriptions are very inadequate for specific identification and are practically without illustrations. Subsequently Gravely (1924) made some attempts to work out this neglected group of spiders but he also could not provide the desired descriptions and illustrations.

Pocock (1900) has recorded only seventeen species of the family Lycosidae in his "*Fauna of British India*" volume. Out of seventeen species, he has described three species belonging to the genera *Eucamptopus*, *Euprosthonops* and *Thalassius*. We have examined the types of these species and found that they do not belong to the family Lycosidae, but belong to the family Pisauridae.

We felt it very essential to examine the type materials of the above mentioned works and to provide redescriptions and detailed illustrations for clearing the confusion of the workers in this field. Fortunately we have received and studied the type material of Gravely from the National Collections of the Zoological Survey of India, Calcutta, type materials of Simon from Museum National de Histoire Naturelle, Paris, type materials of Cambridge from Oxford University Museum, Oxford and type materials of Pocock from the British Museum (Natural History) London. Only due to the availability of these type materials this faunal work was possible.

The present volume deals with eighty one species contained in nine genera of the family Lycosidae. Of these, eighteen species

are new to science. We have given a detailed account of external anatomy, characters of taxonomic importance of spiders in the family Lycosidae, pictured key for identification of genera and key to the species as well as the diagrams for each species of the family for easy identification.

The measurements are given related to the holotypes only. The descriptions are also based on holotypes. Where holotypes are not designated, the description and measurements are based on a syntype. (That syntype specimen being separated and kept in a separate tube and labelled as "drawn and described").

Registration numbers of holotypes or syntypes are given. Type specimens of new species described in this account are deposited in the National Collections of Zoological Survey of India, Calcutta. Other material studied are deposited in the Collection of Western Regional Station of Zoological Survey of India, Poona.

This study could not be brought to completion without many kinds of help from numerous individuals and institutions. We take this opportunity to express our gratitude for loans of type-specimens and many lycosid specimens and other helps to :

Prof. Dr. M. Vachon, Museum National d' Histoire Naturelle, Paris, France; Mr. F. R. Wanless, Arachnida Section, British Museum (Natural History), London; Dr. E. Taylor, Department of Entomology, Oxford University Museum, Oxford; Dr. N. I. Platnick, Assistant Curator, Arachnida, American Museum of Natural History, New York and Dr. P. Tongiorgi, Universito Di Modena, Italy.

The following gentlemen were kind enough to supply the spider material for our studies:

Dr. G. L. Sadana, Punjab Agricultural University, Ludhiana, Punjab; Shri Baldev Prashad, Division of Entomology, Indian Agricultural Research Institute, New Delhi; Dr. Amalesh Choudhury, Department of Zoology, Calcutta University, Calcutta; Dr. S. M. Chatterjee, Division of Entomology, Central Rice Research Institute, Cuttack, Orissa; Dr. B. H. Patel, Department of Zoology, Saurashtra University, Bhavnagar, Gujarat; Dr.

AUTHORS' PREFACE

Samiran Chakraborty, Kalyani University, Dist. Nadia, West Bengal; Dr. B. S. Lamba, Zoological Survey of India, Northern Regional Station, Dehra Dun, U. P.; Dr. T. G. Vazirani Zoological Survey of India, Desert Regional Station, Jodhpur; Dr. A. K. Ghosh, Zoological Survey of India, Eastern Regional Station, Shillong; Dr. H. Khajuria, Zoological Survey of India, Central Regional Station, Jabalpur; Dr. A. Kumar, Zoological Survey of India, High Altitude Zoology Field Station, Solan.

We are extremely glad to express our grateful thanks to Dr. T. N. Ananthakrishnan, Director, Zoological Survey of India, for encouragement and offering us useful suggestions during the preparation of this volume and for placing the valuable types, named and unnamed lycosid spiders collection of Zoological Survey of India, Calcutta at our disposal.

We are indebted to Shri Iqbal Shaikh, Photographer, Shri S. K. Chanda and Shri P. W. Garde, Artists, Zoological Survey of India, Western Regional Station, for preparation of photographs as well as some illustrations and to Shri K. H. Valecha, Stenographer, for typing the manuscript.

Lastly we would like to express our grateful thanks to the Department of Science and Technology, Government of India, for honouring one of us (BKT), by assigning the writing up of fauna volumes on spiders.

P O O N A
30th April, 1980
Buddha Purnima.

B. K. Tikader
and
M. S. Malhotra

CONTENTS

	PAGE
MORPHOLOGICAL CHARACTERS	259
HABITAT, FOOD AND FEEDING HABITS OF LYCOSID SPIDERS	266
FAMILY LYCOSIDAE (Ly-cos-idae)	268
KEY TO THE GENERA OF FAMILY LYCOSIDAE.	269
Genus 1. <i>Hippasa</i> Simon	272
Key to the species of the genus <i>HIPPASA</i> Simon.	275
1. <i>Hippasa greenalliae</i> (Blackwall)	277
2. <i>H. loundesi</i> Gravely.	280
3. <i>H. himalayensis</i> Gravely	281
4. <i>H. olivacea</i> (Thorell)	283
5. <i>H. mahabaleshwarensis</i> sp. nov.	285
6. <i>H. lycosina</i> Pocock	287
7. <i>H. madraspatana</i> Gravely	289
8. <i>H. partita</i> (Cambridge)	291
9. <i>H. agelenoides</i> (Simon)	293
10. <i>H. holmerae</i> Thorell	295
11. <i>H. madhuae</i> sp. nov.	298
12. <i>H. pisaurina</i> Pocock	300
Genus 2. <i>Evippa</i> Simon.	302
Key to the species of the genus <i>EVIPPA</i> Simon	302
13. <i>Evippa sohani</i> sp.nov.	303
14. <i>E. banarensis</i> sp. nov.	305
15. <i>E. rajasthanus</i> sp.nov.	306
16. <i>E. solanensis</i> sp. nov.	308
17. <i>E. praelongipes</i> (Cambridge)	310

TIKADER & MALHOTRA : FAUNA OF INDIA : ARANEAE

18.	<i>E. shivajii</i> sp.nov.	312
19.	<i>E. rubiginosa</i> Simon	213
Genus 3. <i>Pardosa</i> Koch.		315
Key to the species of the genus <i>PARDOSA</i> Koch.		316
20.	<i>Pardosa minutus</i> Tikader & Malhotra	319
21.	<i>P. timida</i> (Simon)	321
22.	<i>P. pusiola</i> (Thorell)	323
23.	<i>P. atropalpis</i> Gravely	325
24.	<i>P. mukundi</i> sp.nov.	326
25.	<i>P. altitudus</i> sp. nov.	328
26.	<i>P. birmanica</i> Simon	329
27.	<i>P. mysorensis</i> (Tikader & Mukerji)	332
28.	<i>P. kupupa</i> (Tikader)	333
29.	<i>P. amkhasensis</i> Tikader & Malhotra	335
30.	<i>P. oakleyi</i> Gravely	337
31.	<i>P. burasantiensis</i> Tikader & Malhotra	338
32.	<i>P. songosa</i> Tikader & Malhotra	340
33.	<i>P. rhenockensis</i> (Tikader)	342
34.	<i>P. shyamae</i> (Tikader)	343
35.	<i>P. heterophthalmus</i> (Simon)	345
36.	<i>P. sutherlandi</i> (Gravely)	347
37.	<i>P. leucopalpis</i> Gravely.	349
38.	<i>P. annadalei</i> (Gravely)	351
39.	<i>P. sumatrana</i> (Thorell)	353
40.	<i>P. fletcheri</i> (Gravely)	355
41.	<i>P. chambaensis</i> Tikader & Malhotra	357
42.	<i>P. tatensis</i> (Tikader)	358
43.	<i>P. ladakhensis</i> Tikader	360
44.	<i>P. alii</i> Tikader	362

CONTENTS

Genus 4. <i>Ocyale</i> Audouin	363
45. <i>Ocyale atalanta</i> Audouin	364
Genus 5. <i>Flanona</i> Simon	366
46. <i>Flanona puellula</i> Simon	367
Genus 6. <i>Arctosa</i> Koch	368
Key to the species of the genus <i>ARCTOSA</i> Koch	369
47. <i>Arctosa himalayensis</i> sp. nov.	369
48. <i>A. indicus</i> sp. nov.	371
49. <i>A. mulani</i> (Dyal)	373
50. <i>A. khudiensis</i> (Sinha)	375
Genus 7. <i>Lycosa</i> Latreille	377
Key to the species of the <i>LYCOSA</i> Latr..	377
51. <i>Lycosa himalayensis</i> Gravely	382
52. <i>L. tista</i> Tikader	384
53. <i>L. bistriata</i> Gravely	385
54. <i>L. chaperi</i> Simon	387
55. <i>L. kempi</i> Gravely	389
56. <i>L. choudhuryi</i> sp. nov.	390
57. <i>L. poonaensis</i> sp. nov.	392
58. <i>L. masteri</i> Pocock	394
59. <i>L. madani</i> Pocock	396
60. <i>L. phipsoni</i> Pocock	398
61. <i>L. wroughtoni</i> Pocock	400
62. <i>L. goliathus</i> Pocock	402
63. <i>L. shillongensis</i> sp. nov.	403
64. <i>L. nigrotibialis</i> Simon	405
65. <i>L. carmichaeli</i> Gravely	407
66. <i>L. prolifica</i> Pocock	409
67. <i>L. indagatrix</i> Walck.	411
F. 17	

TIKADER & MALHOTRA : FAUNA OF INDIA : ARANEAE

68. <i>L. geotubalis</i> sp. nov.	413
69. <i>L. iranii</i> Pocock	415
70. <i>L. barnesi</i> Gravely	417
71. <i>L. mackenziei</i> Gravely.	419
72. <i>L. moulmeinensis</i> Gravely	421
73. <i>L. quadrifer</i> Gravely	422
74. <i>L. pictula</i> Pocock ..	424
75. <i>L. yerburyi</i> Pocock	426
76. <i>L. fuscana</i> Pocock	428
77. <i>L. mahabaleshwarensis</i> sp. nov.	429
78. <i>L. lambai</i> sp. nov.	431
Genus 8. <i>Venonia</i> Thorell	433
79. <i>Venonia himalayensis</i> Gravely	434
Genus 9. <i>Trochosa</i> Koch	435
80. <i>Trochosa punctipes</i> (Gravely)	436
81. <i>T. himalayensis</i> sp.nov.	437
BIBLIOGRAPHY	441
ALPHABETICAL INDEX	445

MORPHOLOGICAL CHARACTERS

(Figs. 2-21)

The body of a 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*. The anterior margin of the sternum articulates movably with the *labium*. With few exceptions, in most of the spiders, 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 that lies between

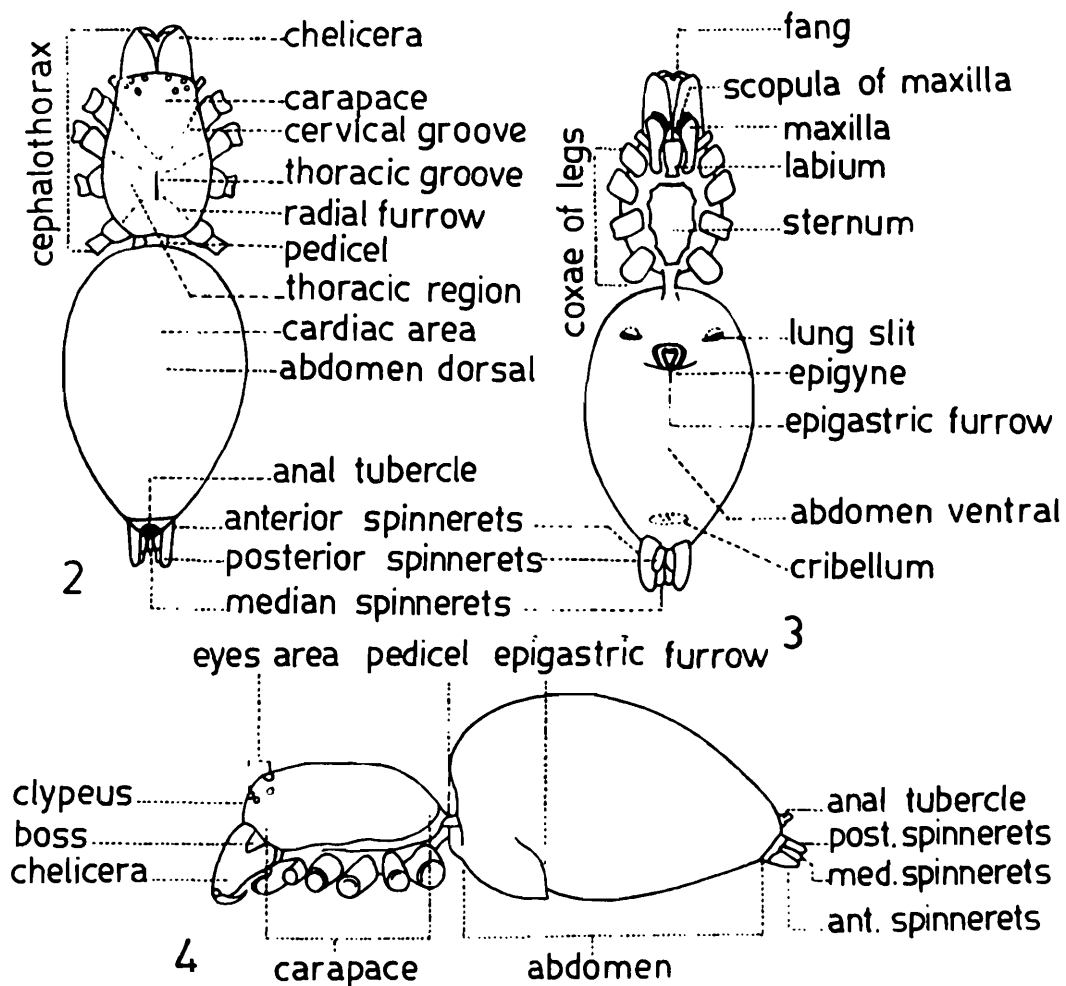


FIG. 2. Dorsal view of a typical spider, legs omitted.

FIG. 3. Ventral view of a typical spider, legs omitted.

FIG. 4. Lateral view of a typical spider, legs omitted.

the lateral edges of the carapace and sternum. On the cephalothorax we may distinguish an anterior *cephalic region* and a posterior *thoracic region* separated by a thoracic groove on the dorsum. On the cephalic region are situated six to eight simple eyes. The eyes are generally of two kinds, *viz.*, black or *diurnal* and white or *nocturnal* eyes. When only one type is present, the condition is described as *homogeneous*, in contradistinction to the *heterogeneous* condition, where both the types are present. The eyes are usually arranged in two rows *viz.*, the *anterior row* and the *posterior row*. Each row usually contains four eyes. The eye row is described as *recurved*, when the concavity is turned backwards. 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 the *ocular area*. The area of the four median eyes is termed the *ocular quad*. The area between the anterior row of eyes and the base of chelicerae is the *clypeus*. 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 the *thoracic groove*. A convex, lens like, black or deep brown mark called the *fovea* replaces the thoracic groove in the family Gnaphosidae.

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 teeth on each side; the outer row of these teeth is described as *promarginal* and the inner row as *retromarginal*. There are sometimes long stout hairs on the promargin to constitute the so-called *fang-scopulae*.

The pedipalpi are the second pair of appendages. Their broad and cushion-shaped bases are termed maxillary lobes. The anterior row and dorsal surfaces of each maxillae are furnished with scopulae of long hairs. A row of small tooth-like *serrula* is borne on the head of the maxilla. The palp proper is composed of six segments, *viz.*, *coxa*, *trochanter*, *femur*, *patella*, *tibia* and *tarsus*.

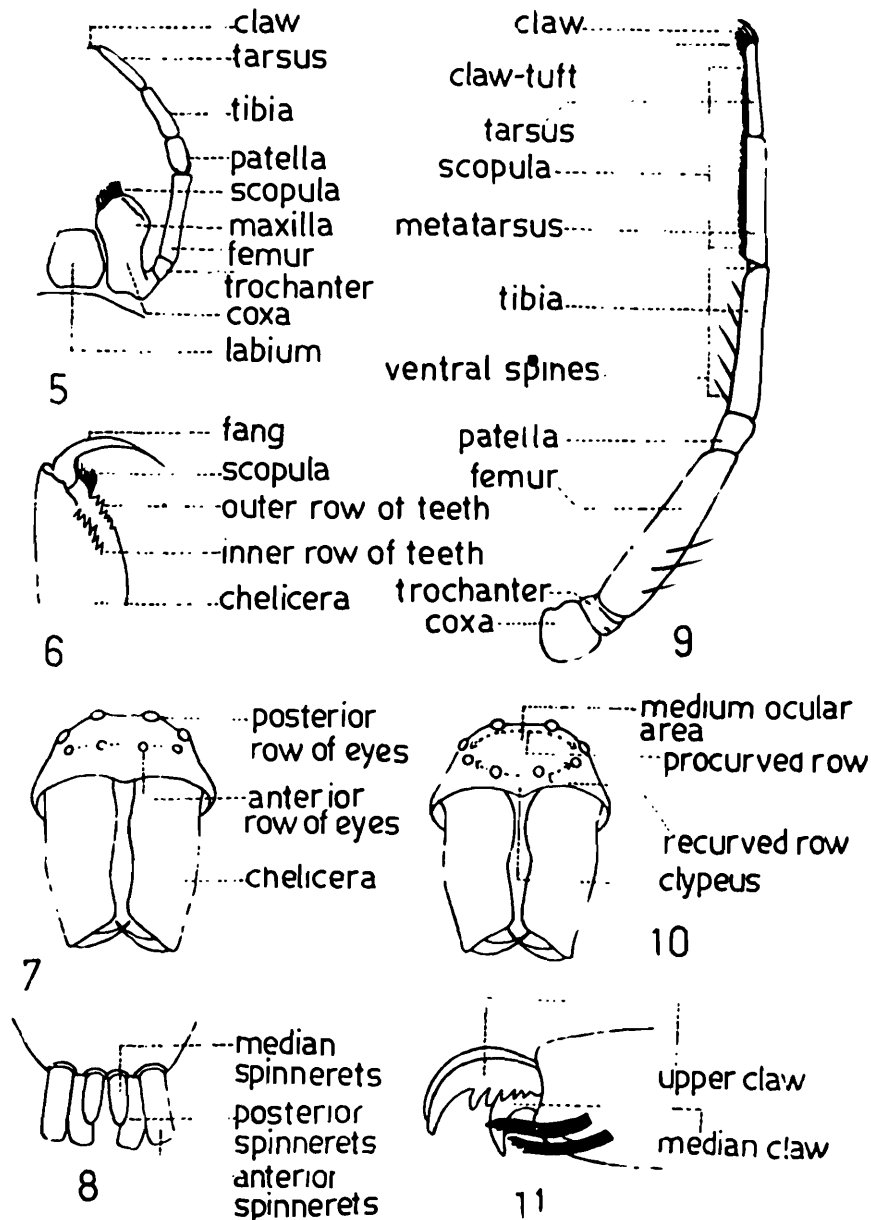


FIG. 5. Labium, maxilla and pedipalp of female.

FIG. 6. Inner view of chelicera.

FIG. 7. Lateral view of a leg.

FIG. 8. Face, front view of a typical spider.

FIG. 9. Face, front view of a typical spider showing arrangement of eyes.

FIG. 10. Ventral view of spinnerets.

FIG. 11. Distal end of tarsus showing claws.

In the female, the tarsus usually bears a monopectinate claw; the male lacks a claw. The tarsus in the male is hollowed below to receive the palpal or copulatory organs. There are four pairs of legs designated I, II, III and IV respectively. Each leg is com-

posed of seven segments, viz., *coxa*, *trochanter*, *femur*, *patella*, *tibia*, *metatarsus* and *tarsus*. The legs are variously clothed with spines, spinules, bristles and hairs of various types. The tarsus ends in 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 *leg-scopulae* below the metatarsi and tarsi. Spines on the dorsal side of legs are distinguished as *dorsal spines* and those on the ventral side as *ventral spines*.

The abdomen is produced posteriorly into a conical *anal tubercle* and bears three pairs of spinners or spinnerets ventrally, viz., the first or the *anterior pair*, the second or the *median pair* and the third or the *posterior pair* of spinners or spinnerets.

The ventral surface of abdomen is provided with one or two pairs of book-lungs followed by one or two paired spiracles. The female genital opening is the *vulva* or *epigyne*, with a transverse fold, known as the *epigynal fold*, or *epigastric fold*.

Cephalothorax is longer than wide and narrowing anteriorly. Cephalic region bears eight eyes and they are placed very peculiarly, forming three rows. Anterior row consists of four eyes and may be straight, slightly procurved or slightly recurved; anterior medians are slightly larger than anterior laterals. The posterior row is very much recurved so as to form two rows of two eyes each. Therefore the second row consists of two posterior median eyes and third row consists of two posterior lateral eyes. The dimensions of posterior quadrangle varies from genus to genus. Posterior median eyes (second row) are generally larger than the others and bases of posterior two rows of eyes are generally provided with conspicuous black patches as in fig. 1.

Centre of thoracic region is provided with a *fovea*. The basal excavation of the labium is prominent. Distal broader end of the *maxillae* usually provided with scopulae. *Chelicerae* are strong, inner margin of fang furrow provided with two to four teeth. *Trochanters* of all legs are notched on the apical ventral side as in fig. 12. Tarsi bears three claws, i.e. two superior claws and one inferior claw. Superior claws are either toothed on the whole inner side or only at the base.

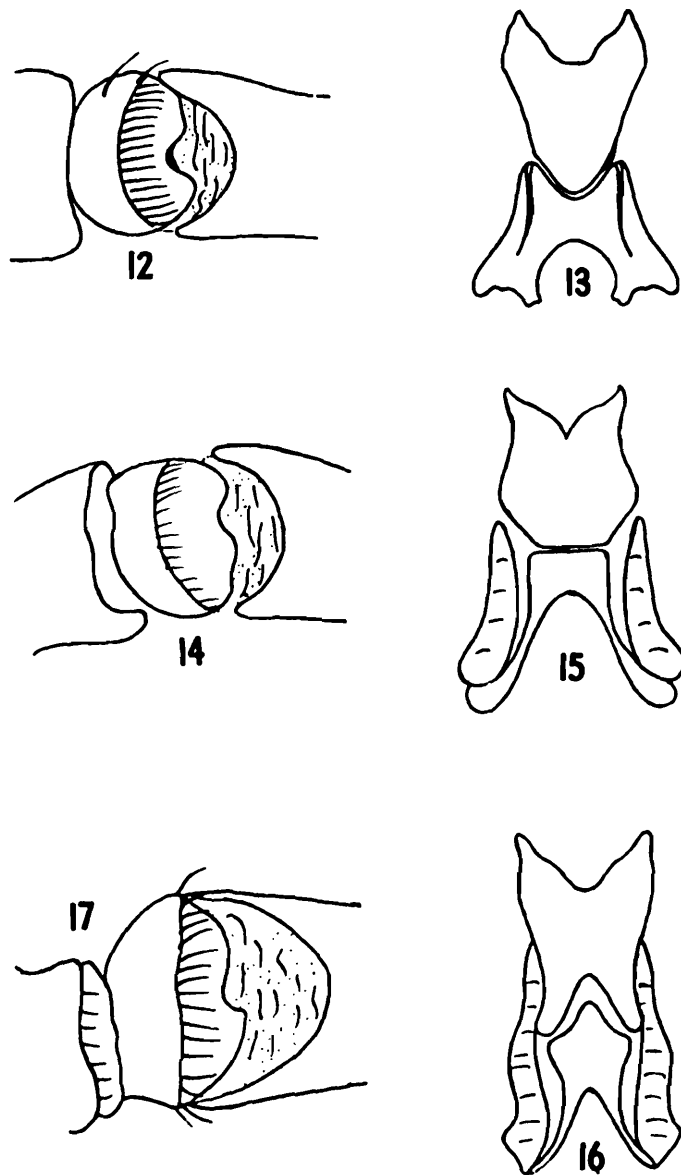


FIG. 12. Ventral view of trochanter of a lycosid spider showing notch.

FIG. 13. Dorsal view of pedicel of a lycosid spider.

FIG. 14. Ventral view of trochanter of a pisaurid spider showing notch.

FIG. 15. Dorsal view of pedicel of a pisaurid spider.

FIG. 16. Dorsal view of pedicel of a ctenid spider.

FIG. 17. Ventral view of trochanter of ctenid spider.

The tarsal joint of the male is enlarged and forms a spoon shaped *cymbium* containing the genital bulb of the palpal organ within its cavity. The cavity is called as *alveolus*. The genital bulb consists of a sperm storing tube called *receptaculum seminis* and many other sclerites. The cup shaped sclerites at the basal position is

called as *subtegulum* (Fig. 18 S. Teg.) and contains the proximal portion of the *receptaculum seminis* within its cavity. Above the *subtegulum* a large sclerite is present called the *tegulum* (Fig. 18 Teg.). A coiled reservoir lies internally in the immediate connection with the *tegulum*. The *ejaculatory duct* (Fig. 18 Ej. D) arises from the distal end of the reservoir as a thin, slender tube. This duct follows a circular course along a coiled, sclerotized, narrow sclerite called as *embolus* (Fig. 18 Emb.). The *conductor* (Fig. 18 Con.) is an elongated, sclerotized structure which is pointed distally and is attached to the median wall of the tegulum, Bhtanagar and Sadana (1963). It is grooved longitudinally along its inner margin over which the embolus rests. Distally, conductor is produced into a process that fits closely into the furrow sac of

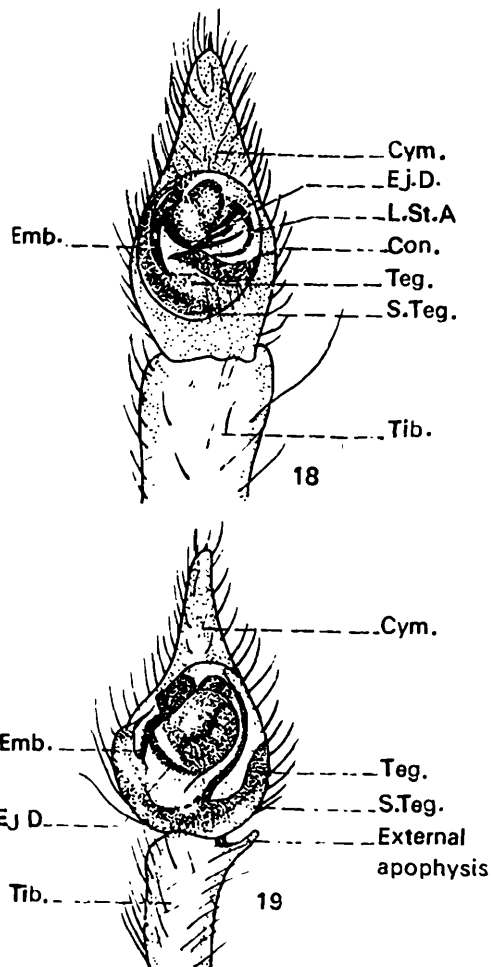


FIG. 18. Ventral view of the left male palp of *Lycosa pictula* Pocock, showing different parts.

FIG. 19. Ventral view of the left male palp of *Euprosthenoops ellioti* (Camb.) showing external apophysis and other parts.

the epigynum at the time of copulation and also guides the embolus during copulation. Tibia of the male palp is not furnished with the external apophysis as in pisaurids.

Posterior piece of lorum of *pedicel* is notched to receive the anterior piece as in fig. 13. Three pairs of spinnerets are present. The *posterior spinnerets* are longer in some genera and their apical piece is conical.

The female genitalia of lycosid spiders is covered externally by the heavily sclerotized plate called the *epigynal plate*. The *epigynal plate* is more or less rounded or oval in shape and generally possess a mid-longitudinal (inverted 'T') shaped ridge or guide which divides the depressed area longitudinally into two furrows as in fig. 20. Each furrow leads internally into the *spermatheca*. The transverse arm of the guide usually covers the opening of the *spermathecae*. The *spermathecae* may be *sclerotized*. A pair of

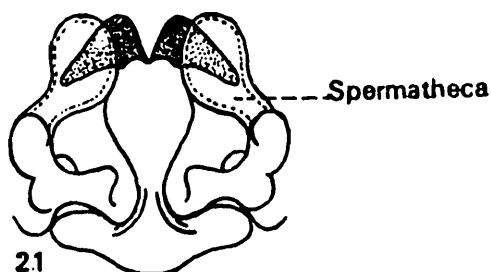
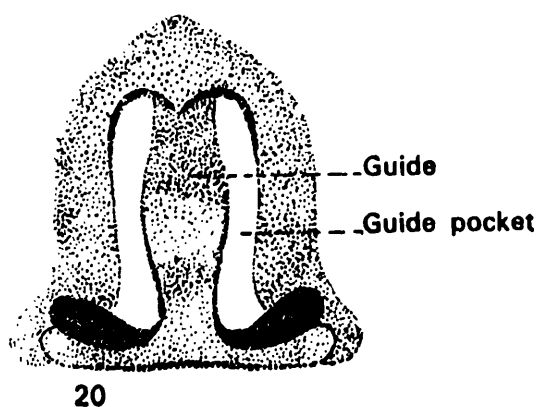


FIG. 20. Epigyne of *Lycosa nigrotibialis* Simon.

FIG. 21. Internal genitalia of *L. nigrotibialis*.

narrow curved tubes called *fertilization tubes* originate from the posterior median margin of *spermathecae* and lead dorsally into the *vaginal tube* as in fig. 21.

The two families *viz.* Lycosidae and Pisauridae are similar in appearance in some cases, thus it is confusing sometimes. But the families can be separated from each other by the following taxonomic features: though a *notch* is present on the apical ventral margin of trochanters of legs in both the families, the Lycosids possess a deeper notch (Fig. 12) than the pisaurids which are in possession of a shallow *notch* as in fig. 14. Apart from this character, tibia of male palp of pisaurids possess an external *apophysis* as in fig. 19, which is lacking in lycosids. Another distinguishing character is that the *posterior piece* of *lorum* of *pedicel* in lycosids is notched to receive the *anterior piece* as in fig. 13 but in pisaurids the two pieces of *lorum* are either united by a *transverse suture* as in fig. 15 or the *anterior piece* is notched behind to receive the projection of the posterior piece as in fig. 16. The position of eyes is also different.

HABITAT, FOOD AND FEEDING HABIT OF LYCOSID SPIDERS

In general the lycosid spider are found everywhere and can be easily seen running on the grassy land as well as on rocky ground and are strictly ground dwellers. Their body colour is brown and dull, so that they are inconspicuous on the ground and the collector notices them only when the spiders are disturbed by the ground vibration and they run inside the grass and hide. Lycosid spiders occupy a variety of habitats from sea-shore to the high mountains, according to the specific requirements *viz.* availability of food humidity, temperature etc. Most of the wolf-spiders are nocturnal. Though the lycosid spiders in general do not spin webs, yet only the genera *Hippasa* and *Sosippus* are seen to build the funnel retreats, the outside of which expands into a sheet web. Spiders wait inside for the prey to fall on the expanded sheet and as soon as some prey is caught on the web, they come out of the funnel retreat to bite, kill and suck the prey. There is no particular location of these webs on the ground. These webs can be located at the bases of stems of large trees, under boulders with expanded

sheet outside, on the ground with crevices or holes, on the sloping or vertical edges of nullahas and in small ditches. Almost always the tube retreat is deep into the soil or crevices and may extend from six inches to one foot deep from the expanded sheet. When these spiders sense danger, they go to the extreme end of the tube and may escape even from the end. While travelling in vehicles or trains in the morning, the webs (Pl. I, Fig. 4) of *Hippasa* look very conspicuous on the road sides due to the deposition of dew drops on them.

Lycosids of the genus *Lycosa* Latr. also inhabit varied habitats. They are found on dry ground, under stones and logs, in crevices and in the vertical or slanting tubes (Pl. I, Fig. 3) inside the ground, the inner surfaces of which are lined with silk like secretions. These tubes may extend upto one foot inside the ground. The spiders inhabiting these tubes are usually bigger in size (4 to 6 cm. in total length) and they come out for food at night only. Some species of *Lycosa* are seen in large numbers near the heaps of cow dung, kept for drying. It may be interpreted that these lycosids gather there for preying on insects like Diptera which come to lay their eggs in the cow dung and other insects attracted by smell. At night the spiders of the genus *Lycosa* are seen in large numbers chasing their prey and occasionally coming in the human habitations in search of food. Some members of *Lycosa* prefer the cool, moist cavities under stones, where they lie in the day time.

Species of the genera *Pardosa* and *Arctosa* seems to prefer the humid atmosphere, since they are frequently found near the edges of ponds, lakes, rivers etc. *Pardosa birmanica* Simon, *Pardosa sumatrana* (Thorell) and *Arctosa maratha* sp. nov. are found in large numbers near the water sources. When disturbed, they run to hide on the sides of stones. *Pardosa birmanica* Simon and *P. sumatrana* (Thorell) are seen jumping in water and running on the surface of water like small frogs upto eight feet in one stretch, for their defence, when disturbed and some species of *Pardosa* even go under water holding the water twig, for defence. Lycosid spiders are seen in large numbers accumulated around the drying water holes, obviously for the insects which visit these

places attracted by the smell of putrifying fishes and other organisms and the lycosid spiders catch and feed on these insects.

The egg sac of lycosid spiders is spherical and is composed of two halves with a seam around it and is carried by the females (Pl. I, fig. 2) attached with their spinnerets. After hatching, the young-ones climb up on the mother's abdomen and carapace (Pl. I, fig. 1) and are carried by her for a considerable time.

The chief food of lycosid spiders is insects. These spiders feed on a variety of insects like Diptera, Lepidoptera, Dictyoptera, Hymenoptera, Coleoptera, Collembola, Dermaptera, etc. They may even consume the young spiders of their own species as well as of different species showing cannibalism. Usually these spiders feed in the night. Lycosids chase their prey, catch and bite them to inject the poison through the fangs and narcotise them. Then they suck the juices of the body of the prey. The chitinised remains of the insects can be seen in the ground tubes of some *Lycosa* species which inhabit the tubes.

The family Lycosidae is distributed throughout Indian Sub-continent as well as all over the world.

ABBREVIATIONS USED IN THE TEXT

ZSI (National Collections of Zoological Survey of India, Calcutta). BMNH (British Museum (Natural History), London). MNHN (Museum National d' Histoire Naturelle, Paris). OUM (Oxford University Museum, Oxford).

FAMILY LYCOSIDAE (Ly-cos-idae) (Wolf-spiders)

1833. *Lycosidae* Sundevall, *Conspectus Arachnidum*, : 1-39.
 1895. *Lycosidae* : Thorell, *Spiders of Burma*, London, : 406.
 1898. *Lycosidae* : Simon, *Hist. Nat. des Araignees*, 2 (2) : 317-365.
 1900. *Lycosidae* : Pocock, *Fauna Brit. India, Arachnida*, : 244-254.
 1924. *Lycosidae* : Gravely, *Rec. Indian Mus.*, Calcutta, 26 : 587-613.
 1951. *Lycosidae* : Sinha, *Rec. Indian Mus.*, Calcutta, 48 (2) : 9-52.
 1970. *Lycosidae* : Tikader, *Rec. Zool. Surv. India*, Calcutta, 64 (1-4): 62-69.

Type-genus : *Lycosa* Latreille.

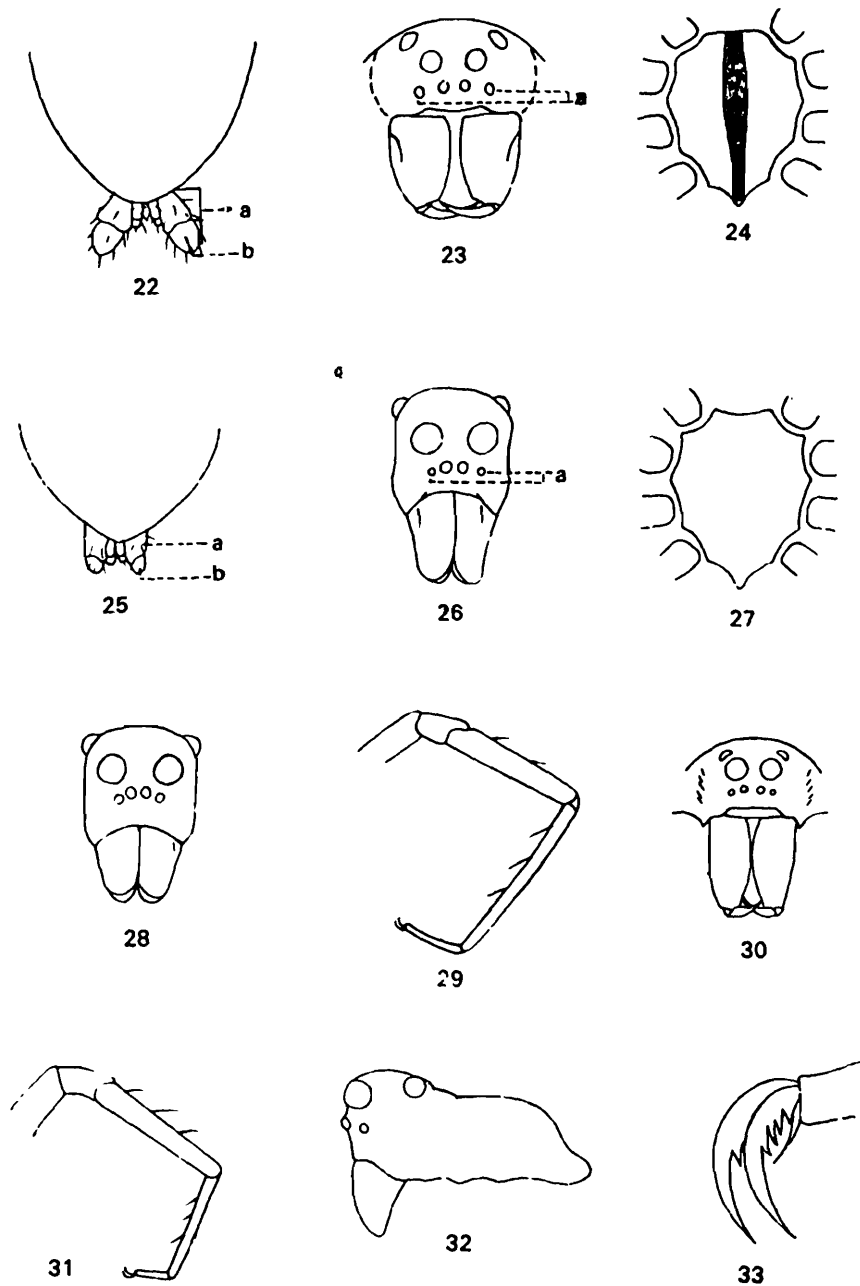
Distribution : Cosmopolitan.

This family was erected by Sundevall (1833). The Lycosidae are hunting spiders and chase their prey like a wolf. For this reason the typical genus was named *Lycosa*, which is derived from the Greek word for wolf. Due to their habit of chasing the prey, they got the common name "Wolf-spiders". The wolf-spiders are very common; they run through grass or lurk under stones, especially in damp situations. Many species dig tunnels in the ground, and some build snares which expand into a sheet-like structure on the ground. They are also found in dry areas.

KEY TO THE GENERA OF FAMILY LYCOSIDAE

(Figs. 22-44)

1. Posterior spinnerets (Fig. 22 a) distinctly longer than the anterior, with apical segment (Fig. 22 b) conical and as long as the basal. Anterior row of eyes (Fig. 23 a) little wider than the second row. Sternum generally provided with mid-longitudinal dark marking (Fig. 24) *(Hippasa* Simon
 Posterior spinnerets (Fig. 25 a) at most only slightly longer than the anterior and apical segment (Fig. 25 b) hemispherical and very short. Anterior row of eyes (Fig. 26 a) shorter than the second row. Sternum without longitudinal marking (Fig. 27).. .2
2. Clypeus (Fig. 28) from side vertical. Fourth metatarsus longer than or as long as tibia and petella IV together (Fig. 29). .3
 Clypeus from front slanting (Fig. 30). Fourth metatarsus shorter than tibia and patella IV together (Fig. 31) .4
3. Cephalic region somewhat abruptly elevated from thoracic region (Fig. 32). Superior claws long and slender and toothed only at the base (Fig. 33). *.Evipa* Simon
 Cephalic region not much elevated from thoracic region (Fig. 34). Superior claws not long and slender and toothed all-over the length of claw (Fig. 35). *.Pardosa* Koch
4. Third pair of legs longer than the first pair. *.Ocyale* Audouin
 Third pair of legs shorter than the first pair. .5



- FIG. 22. Posterior end of the abdomen of *Hippasa* showing anterior and posterior (a) spinnerets.
- FIG. 23. Front view of the face of *Hippasa* showing arrangement of eyes.
- FIG. 24. Sternum, showing the mid-longitudinal black band.
- FIG. 25. Posterior end of the abdomen of *Lycosa* showing anterior and posterior (a) spinnerets.
- FIG. 26. Front view of face showing arrangement of eyes.
- FIG. 27. Sternum, without mid-longitudinal black band.
- FIG. 28. Front view of face showing clypeus.
- FIG. 29. IV leg showing respective length of different segments.
- FIG. 30. Front view of face showing clypeus.
- FIG. 31. IV legs showing respective length of different segments.
- FIG. 32. Lateral view of the cephalothorax of *Evippa*, legs omitted.
- FIG. 33. Superior and inferior claw of *Evippa*.

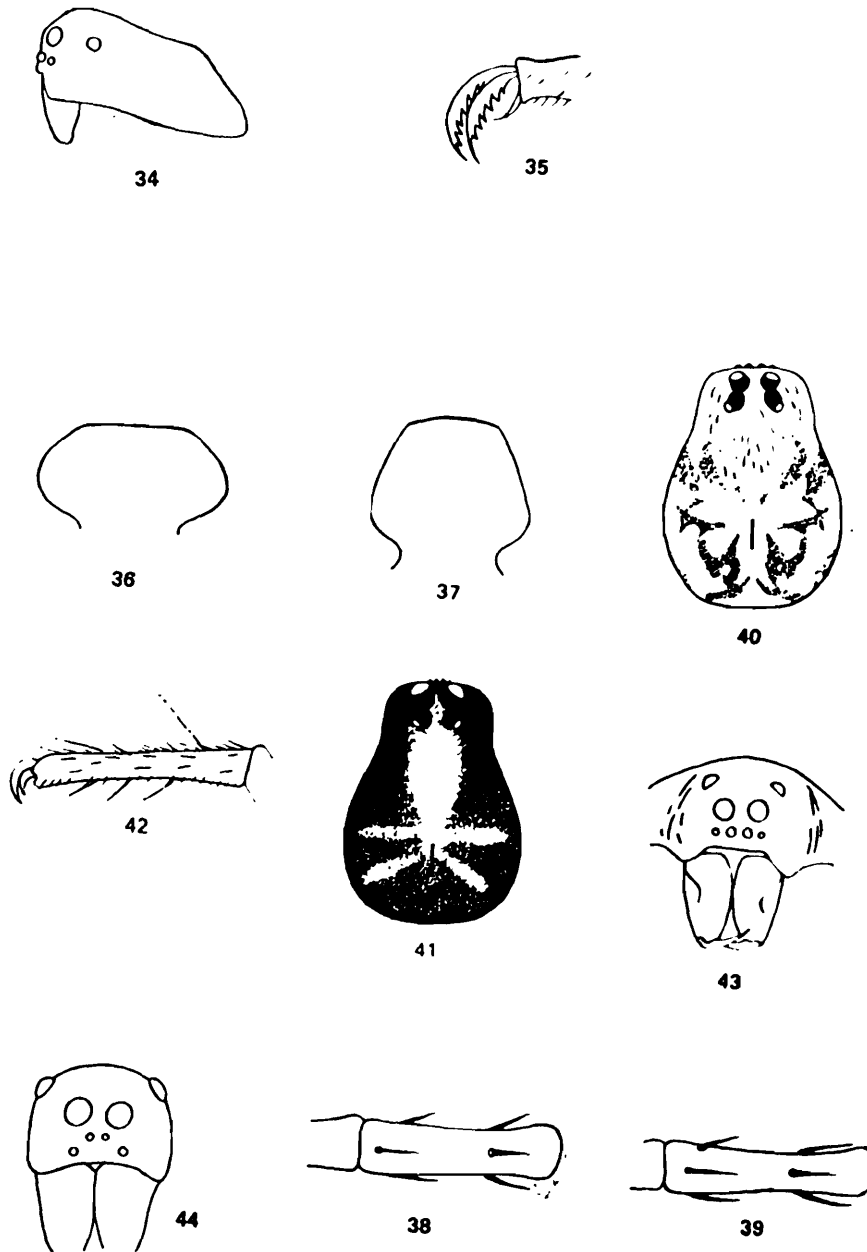


FIG. 34. Lateral view of the cephalothorax of *Pardosa*, legs omitted.

FIG. 35. Superior and inferior claw of *Pardosa*.

FIG. 36. Labium, wider than long.

FIG. 37. Labium, longer than wide.

FIG. 38. Dorsal view of tibia IV.

FIG. 39. Dorsal view of tibia IV.

FIG. 40. Dorsal view of cephalothorax of *Trochosa*, legs omitted.

FIG. 41. Dorsal view of cephalothorax of *Arctosa*, legs omitted.

FIG. 42. Lateral view of tarsus I of *Arctosa*.

FIG. 43. Front view of face showing arrangement of eyes.

FIG. 44. Front view of face showing arrangement of eyes.

5. Labium wider than long (Fig. 36). Anterior lateral and posterior median eyes pearly white
.Flanona Simon
- Labium longer than wide (Fig. 37) Anterior lateral and posterior median eyes not pearly white. .6
6. Tibia IV dorsally with the proximal spine usually thinner or more drawn out than the distal one, sometimes reduced to a bristle (Fig. 38).. 7
 Tibia IV with the two dorsal spines about equally stout (Fig. 39). .8
7. Carapace hirsute (hairy) (Fig. 40) and tarsus I without a dorso-basal thin, long bristle. *.Trochosa Koch*
- Carapace glabrous or nearly so (Fig. 41) and tarsus I with a dorso-basal bristle which is drawn out thin and fine at the end and is much longer than the hairs and trichobothria (Fig. 42). *.Arctosa Koch*
8. Anterior row of eyes straight or slightly procurved. Anterior median eyes never smaller than the anterior laterals (Fig. 43).. *.Lycosa Latr.*
 Anterior row of eyes strongly procurved. Anterior median eyes smaller than the anterior laterals (Fig. 44). *Venonia Thorell*

Genus 1. *Hippasa* Simon

1885. *Hippasa* Simon, *Bull. Soc. Zool. Fr.*, **10** : 31.
 1900. *Hippasa* : Pocock, *Faun. Brit. Ind. Arach.*, : 249.
 1924. *Hippasa* : Gravely, *Rec. Indian Mus.*, **26** : 588.
 1935. *Hippasa* : Dyal, *Bull. Dept. Zool. Punjab Univ.*, **1** : 142.
 1951. *Hippasa* : Sinha, *Rec. Indian Mus.*, **48** (2) : 11.

Diagnosis: This genus is allied to *Lycosa* but differs from it in having posterior spinnerets considerably longer than the anterior spinnerets and the apical piece of the posterior spinnerets is as long as the basal piece. Anterior row of eyes little wider than the second row and the space enclosed between the posterior eyes is much wider behind than in front. In almost all species, a black mid-longitudinal band is present on the sternum. In habits these

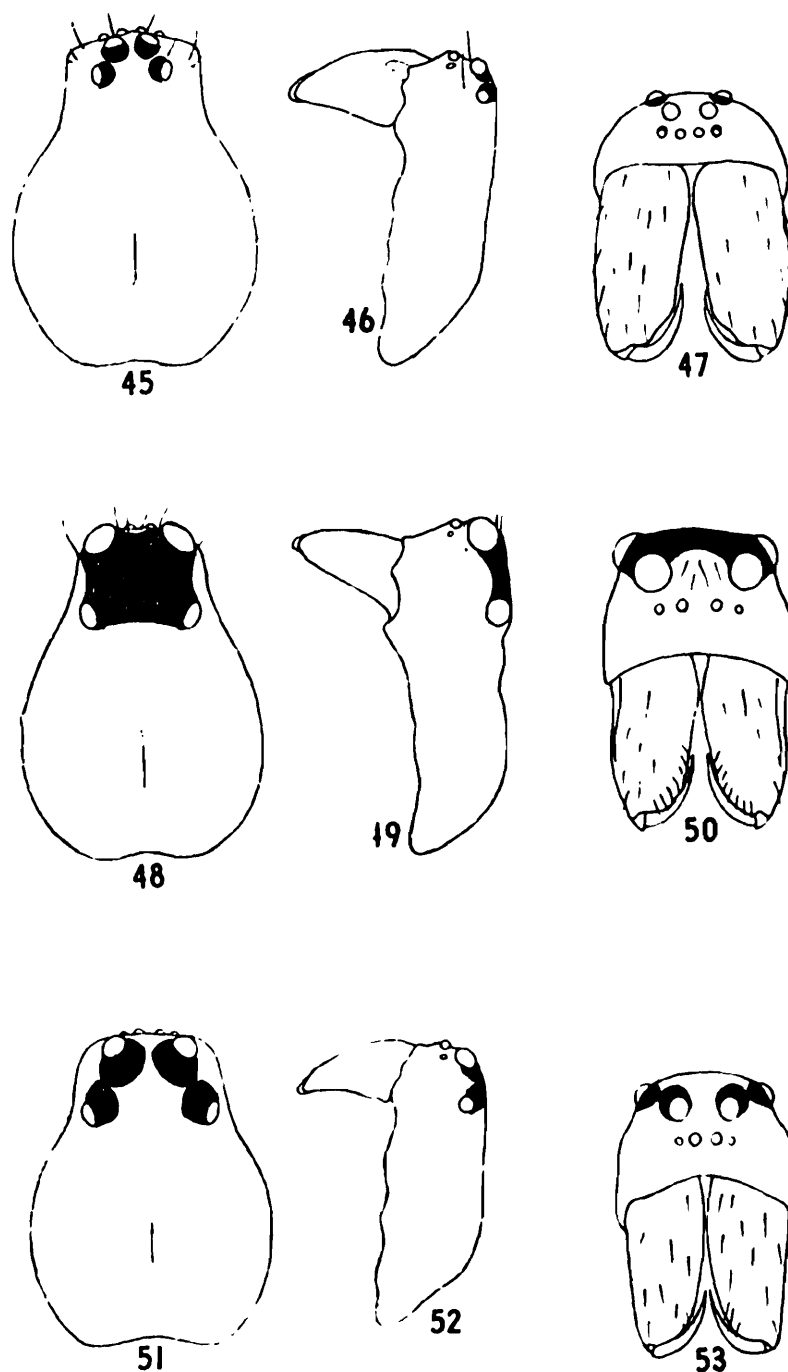


FIG. 45. Dorsal view of cephalothorax of *Hippasa*, legs omitted.

FIG. 46. Lateral view of cephalothorax of *Hippasa*, legs omitted.

FIG. 47. Front view of face of *Hippasa*.

FIG. 48. Dorsal view of cephalothorax of *Evippa*, legs omitted.

FIG. 49. Lateral view of cephalothorax of *Evippa*, legs omitted.

FIG. 50. Front view of face of *Evippa*.

FIG. 51. Dorsal view of cephalothorax of *Pardosa*, legs omitted.

FIG. 52. Lateral view of cephalothorax of *Pardosa*, legs omitted.

FIG. 53. Front view of face of *Pardosa*.

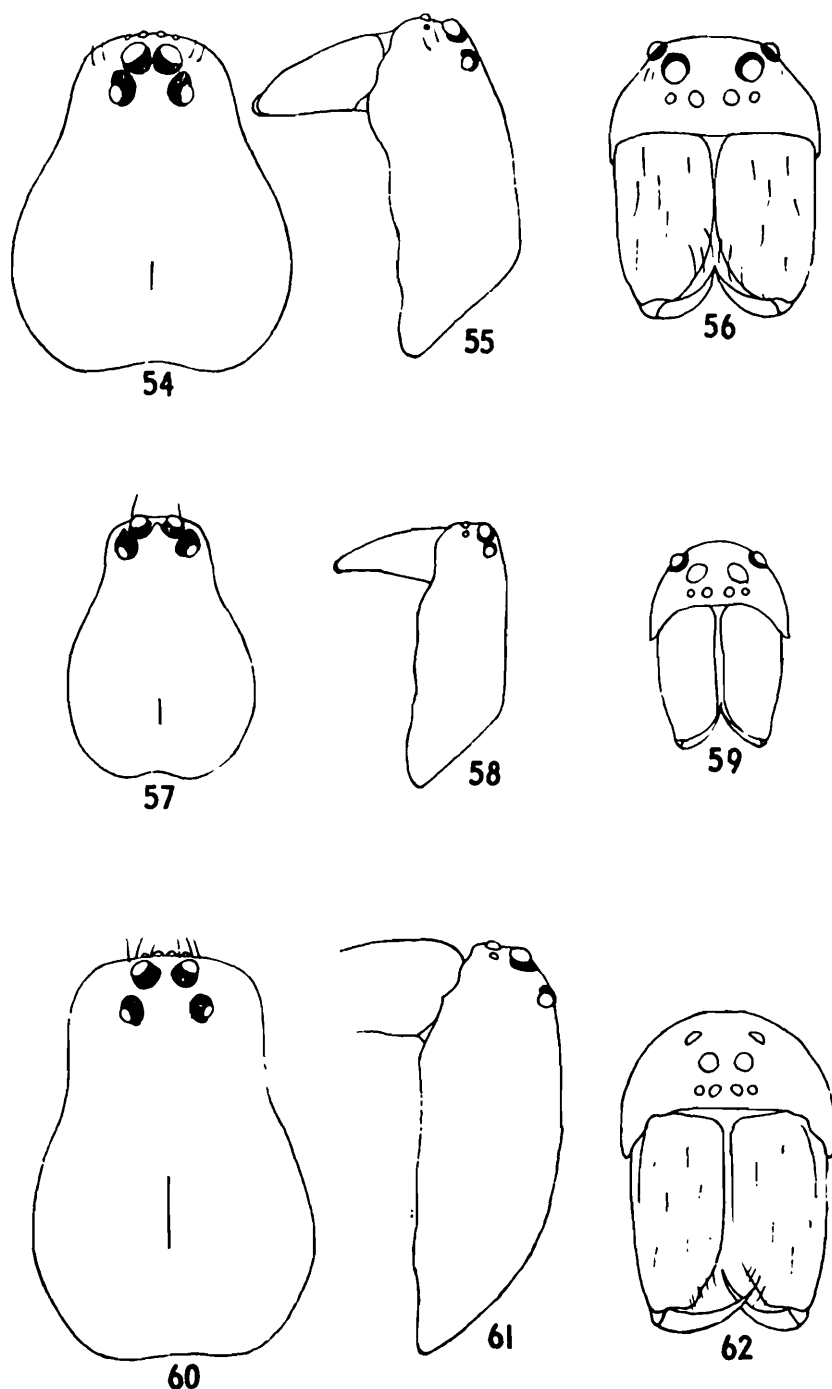


FIG. 54. Dorsal view of cephalothorax of *Ocyale*, legs omitted.

FIG. 55. Lateral view of cephalothorax of *Ocyale*, legs omitted.

FIG. 56. Front view of face of *Ocyale*.

FIG. 57. Dorsal view of cephalothorax of *Flanona*, legs omitted.

FIG. 58. Lateral view of cephalothorax of *Flanona*, legs omitted.

FIG. 59. Front view of face of *Flanona*.

FIG. 60. Dorsal view of cephalothorax of *Arctosa*, legs omitted.

FIG. 61. Lateral view of cephalothorax of *Arctosa*, legs omitted.

FIG. 62. Front view of face of *Arctosa*.

spiders are a typical for the family. They build sheet-like webs with a funnel retreat over which they run like members of the family Agelenidae, hence the name *Hippasa agelenoides* is given by Simon to the type species of the genus.

Type-species: Hippasa agelenoides (Simon)

Distribuiion: MADAGASCAR: AFRICA: ARABIA: MALAYSIA: INDIA.

Key to the species of the genus HIPPIASA Simon.

- | | | |
|---|------------------|-----------------------------|
| 1. Spiders of large size (Total length more than 10 mm.) | . 2 | |
| Spiders of small size (Total length less than 10 mm.) | 7 | |
| 2. Pit of vulva covered by a chitinous plate | . 3 | |
| Pit of vulva without chitinous plate | . 4 | |
| 3. Chitinous plate covering the pit of vulva bifurcated posteriorly, producing a pair of large elevated triangular plates (Fig. 73) | | <i>.greenalliae</i> |
| Chitinous plate covering the pit of vulva deeply invaginated mid-anteriorly and posterior margin with slight median notch and with unelevated small side convexities. (Fig. 78) | | <i>.loundesi</i> |
| 4. Pit of vulva triangular in front (Fig. 81) and dorsal side of abdomen with dark brown spots and white chevrons | | <i>.himalayensis</i> |
| Pit of vulva rounded in front and dorsal side of abdomen without dark brown spots and chevrons | 5 | |
| 5. Pit of vulva arch shaped anteriorly | 6 | |
| Pit of vulva transversely elliptical (Fig. 84).. | <i>.olivacea</i> | |
| 6. Arch of vulva semicircular anteriorly (Fig. 86) and abdomen with an anterior-mid dorsal lens shaped marking (Fig. 85).. | | <i>.mahabaleshwariensis</i> |
| Arch of vulva pointed mid-anteriorly (Fig. 91) and abdomen without any anterior-mid dorsal lens shaped marking | | <i>.lycosina</i> |

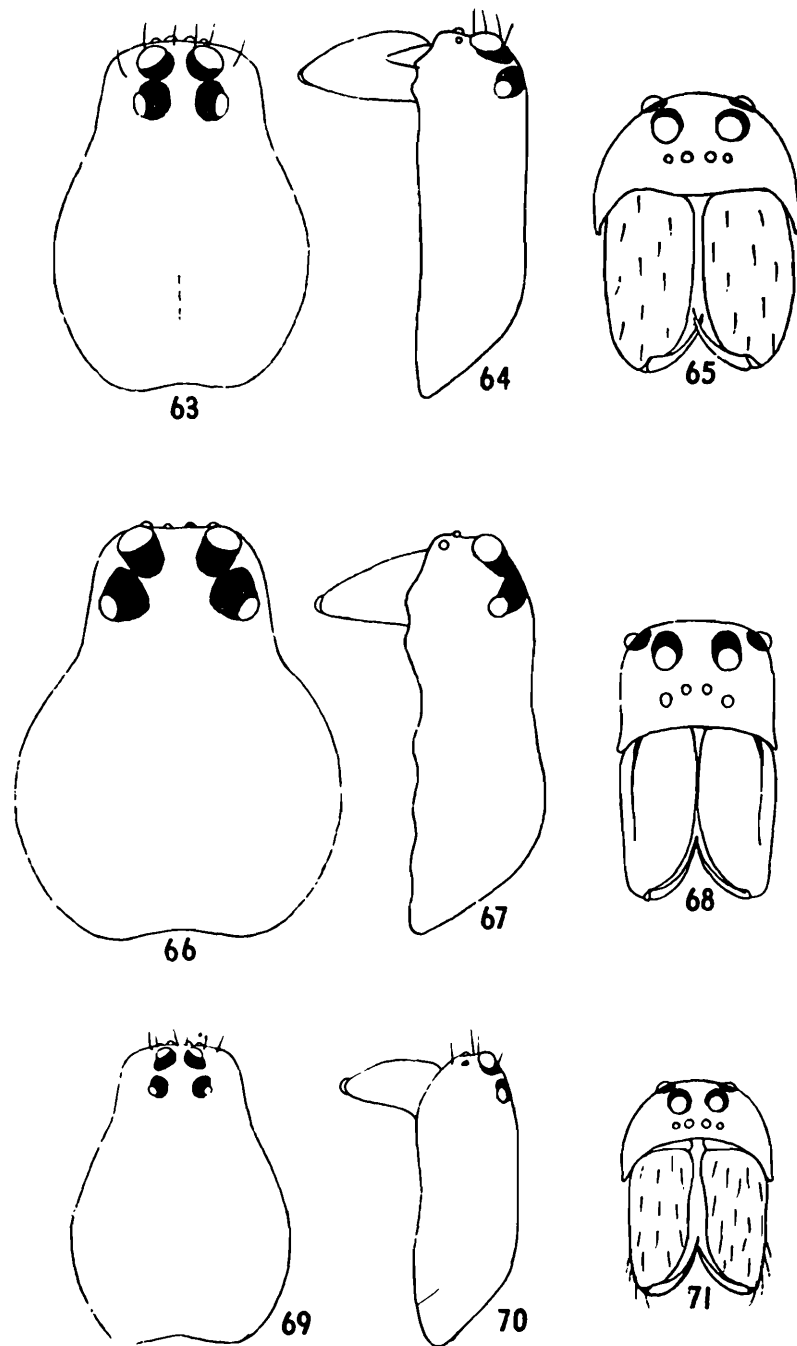


FIG. 63. Dorsal view of cephalothorax of *Lycosa*, legs omitted.
 FIG. 64. Lateral view of cephalothorax of *Lycosa*, legs omitted.
 FIG. 65. Front view of face of *Lycosa*.
 FIG. 66. Dorsal view of cephalothorax of *Venonia*, legs omitted.
 FIG. 67. Lateral view of cephalothorax of *Venonia*, legs omitted.
 FIG. 68. Front view of face of *Venonia*.
 FIG. 69. Dorsal view of cephalothorax of *Trochosa*, legs omitted.
 FIG. 70. Lateral view of cephalothorax of *Trochosa*, legs omitted.
 FIG. 71. Front view of face of *Trochosa*.

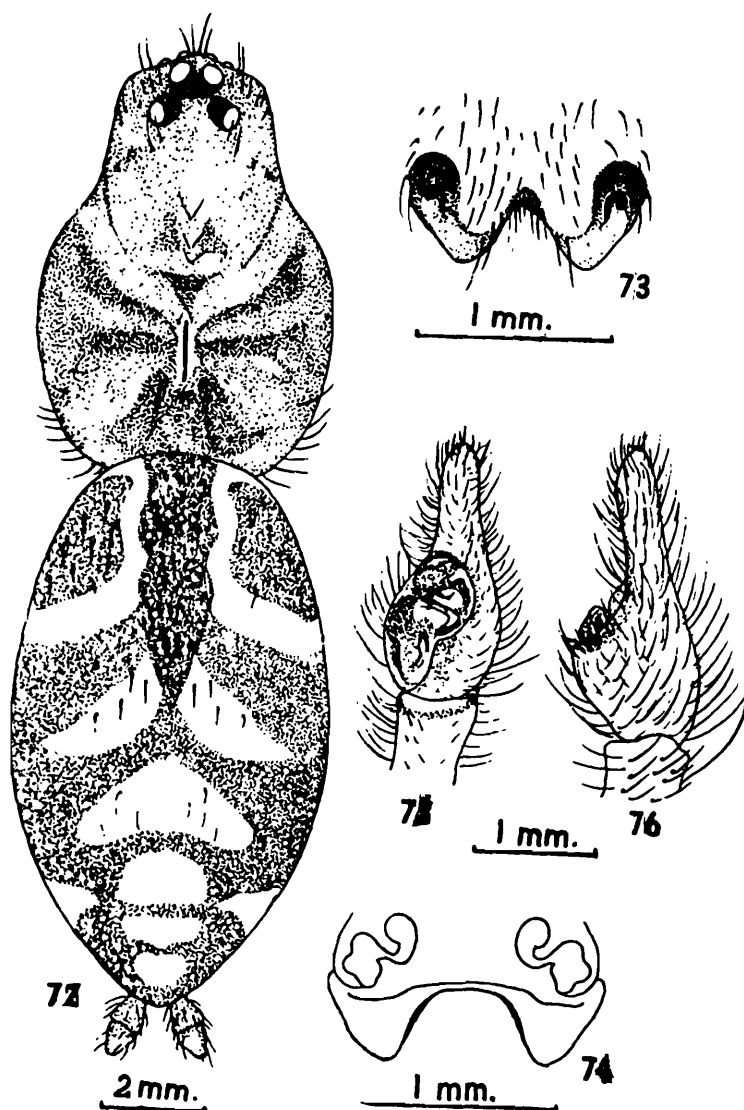
- | | |
|--|----------------------|
| 7. Sternum with dark mid-longitudinal band
(as in all preceding species) | .8 |
| Sternum uniform coloured .. | <i>.madraspatana</i> |
| 8. Plate of vulva invaginated anteriorly | .9 |
| Plate of vulva pointed posteriorly | 10 |
| 9. Plate of vulva slightly invaginated anteriorly and hence without distinct posteriorly directed truncate processes (Fig. 98). Abdomen pale ventrally with three longitudinal dark bands extending from the epigastric fold to the base of spinnerets | <i>.partija</i> |
| Plate of vulva strongly invaginated in front and hence with two distinct posteriorly directed truncate processes (Fig. 100) | |
| Abdomen pale ventrally with chalk white patches | <i>.agelenoides</i> |
| 10. Plate of vulva triangular with the posterior pointed angle not much drawn out. | 11 |
| Plate of vulva produced into a tongue-like process very much drawn out posteriorly (Fig. 103) | <i>.holmerae</i> |
| 11. Posterior projection of the plate of vulva with a small notch at the posterior extremity (Fig. 107). | <i>.madhuae</i> |
| Posterior projection of the plate of vulva without any notch (Fig. 112). | <i>.pisaurina</i> |

1. *Hippasa greenalliae* (Blackwall)

(Figs. 72-76)

1867. *Lycosa greenalliae* Blackwall, *Ann. Mag. Nat. Hist.*, (3), **19** : 387.
 1885. *Hippasa greenalliae* : Simon, *Bull. Soc. Zool. Fr.*, **10** : 31.
 1899. *Hippasa pantherina* : Pocock, *J. Bombay nat. Hist. Soc.*, **12** : 752.
Syn. n.
 1900. *Hippasa pantherina* : Pocock, *Faun. Brit. Ind. Arach.*, : 250.
 1924. *Hippasa pantherina* : Gravely, *Rec. Indian Mus.*, **26** : 594.
 1951. *Hippasa pantherina* : Sinha, *Rec. Indian Mus.*, **48** (2) : 14.
 1970. *Hippasa pantherina* : Tikader, *Rec. zool. Surv. India*, **64** (1-4) : 62.

General: Cephalothorax and legs brown, abdomen pale brown. Total length 19.50 mm. Carapace 8.00 mm. long, 5.80 mm, wide; abdomen 12.00 mm. long, 6.00 mm. wide,



FIGS. 72-76. *Hippasa greenalliae* (Blackwall)
 72. Dorsal view of female, legs omitted
 73. Epigyne.
 74. Internal genitalia.
 75. Left male palp, ventral view.
 76. Left male palp, lateral view.

Cephalothorax: Longer than wide, convex, clothed with fine hairs and lateral margins with spine-like hairs. Cephalic region high and abruptly narrowing from the thoracic region and anterior half of the cephalic region dark. Anterior row of eyes straight, slightly longer than the second row, anterior medians and anterior laterals nearly of the same size. Eyes of the second row larger than the others. Space enclosed between posterior eyes wider than

long and slightly narrow in front as in fig. 72. Bases of posterior eyes provided with conspicuous black patches and hairs. Centre provided with a distinct fovea and dark bands radiating from it towards the lateral sides. Sternum heart-shaped, light brown, pointed behind, provided with hairs and a conspicuous longitudinal median black band. Labium longer than wide with basal excavation prominent. Maxillae broader in front and distal end provided with distinct scopulae. Chelicerae strong and inner margin provided with three prominent teeth. Legs long and strong and clothed with hairs and spines. Male palp as in figs. 75 & 76.

Abdomen: Longer than wide, pointed behind, pale brown, clothed with pubescence. Anterior median area with longitudinal brown patch followed by transverse patches. Ventral side pale. Epigyne as in fig. 73. Internal genitalia as in fig. 74. Male also of similar colour as female but slightly smaller than female.

Type-specimens: *Syntypes* one ♀, one ♂ and two immature ♀♀ in spirit in good condition, deposited in MNHN. Regd. No. 4089.

Type-locality: Collegal, Trichinopoly, Tamil Nadu, INDIA.

Distribution: INDIA: Trivandrum, Travancore, Trichur, Cochin, Kerala; Ootacamund, Coimbatore, Ramnad, Krusadi Island, Gulf of Manar, Tamil Nadu; Bangalore, Karnataka; Poona, E. Khandesh, Nagpur, Maharashtra; Barkuda Island, Chilka Lake, Orissa; Sikkim; Darjeeling, W. Bengal; Sri Lanka : Trincomali.

Remark: We have studied the type material of *Hippasa greenalliae* (Blackwall) described Simon 1885 as well as type specimen of *H. pantherina* Pocock 1899, which were deposited in the MNHN, Paris and BMNH, London, respectively. Our study has revealed that the type specimens of *H. pantherina* belong to the species *Hippasa greenalliae* (Blackwall) agreeing in all respects with the type specimen. So we are putting *H. pantherina* Pocock as a synonym of *H. greenalliae* (Blackwall).

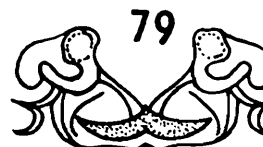
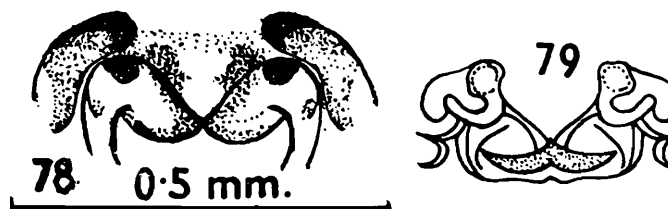
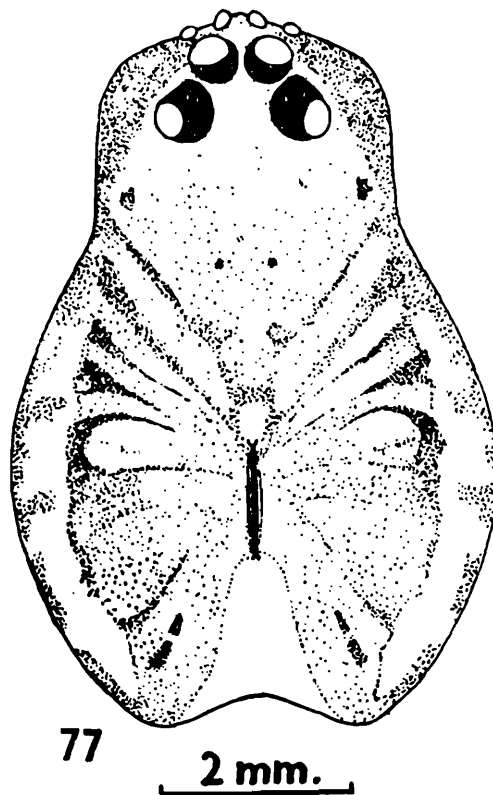
2. *Hippasa loundesi* Gravely

(Figs. 77-79)

1924. *Hippasa loundesi* Gravely, *Rec. Indian Mus.*, 26 : 594.

1951. *Hippasa loundesi* : Sinha, *Rec. Indian Mus.*, 48 (2) : 14.

General: Cephalothorax and legs light brown, abdomen with brownish black patches. Total length 14.00 mm. Carapace 7.50 mm. long, 5.10 mm. wide; abdomen 8.00 mm. long, 4.50 mm. wide.



FIGS. 77-79. *Hippasa loundesi* Gravely

77. Dorsal view of cephalothorax of female, legs omitted.

78. Epigyne.

79. Internal genitalia.

Cephalothorax: Longer than wide, convex, clothed with fine hairs and some spine-like hairs. Cephalic region high and sloping on the sides. Middle of cephalothorax provided with conspicuous fovea from which thin brown bands radiate towards the lateral sides and lateral margins of thoracic region light brown. Anterior row of eyes almost straight, and slightly wider than the second row, anterior medians slightly larger than laterals. Eyes of the second row larger than the others. Space enclosed between posterior eyes, wider than long and narrowing in front as in fig. 77. Bases of posterior eyes provided with conspicuous black patches. Sternum heart-shaped, pointed behind, pale brown, clothed with spine-like hairs and provided with a mid-longitudinal black band. Labium longer than wide and basal excavation prominent. Maxillae wider at the distal end and provided with scopulae. Chelicerae strong, stout and prominent. Legs strong and clothed with hairs and spines.

Abdomen: Longer than wide, clothed with pubescence and spine-like hairs. Dorsally decorated with an admixture of black and brown patches. Ventral side pale with spine-like hairs and one black longitudinal line on lateral sides. Epigyne as in fig. 78. Internal genitalia as in fig. 79. Male unknown.

Type-specimen: *Syntype* one ♀ in spirit (Cephalothorax and abdomen detached) and one cocoon, deposited at ZSI. Regd. No. 5225/H₂.

Type-locality: Yercaud, Shevaroy Hills, South INDIA.

Distribution: INDIA: Yercaud, Nagalaur, Shevaroy Hills; Nadur, Javadi Hills; Eastern Ghats, Tamil Nadu, South INDIA.

Remark: We have studied the type designated by Gravely (1924) and illustrated and described in detail on the basis of above type. Unfortunately Gravely has not described a single line about the characters of this species. Only he has given diagrammatic figure of epigyne. Therefore we have given the full description and detailed illustration for the easy identification of this species.

3. *Hippasa himalayensis* Gravely

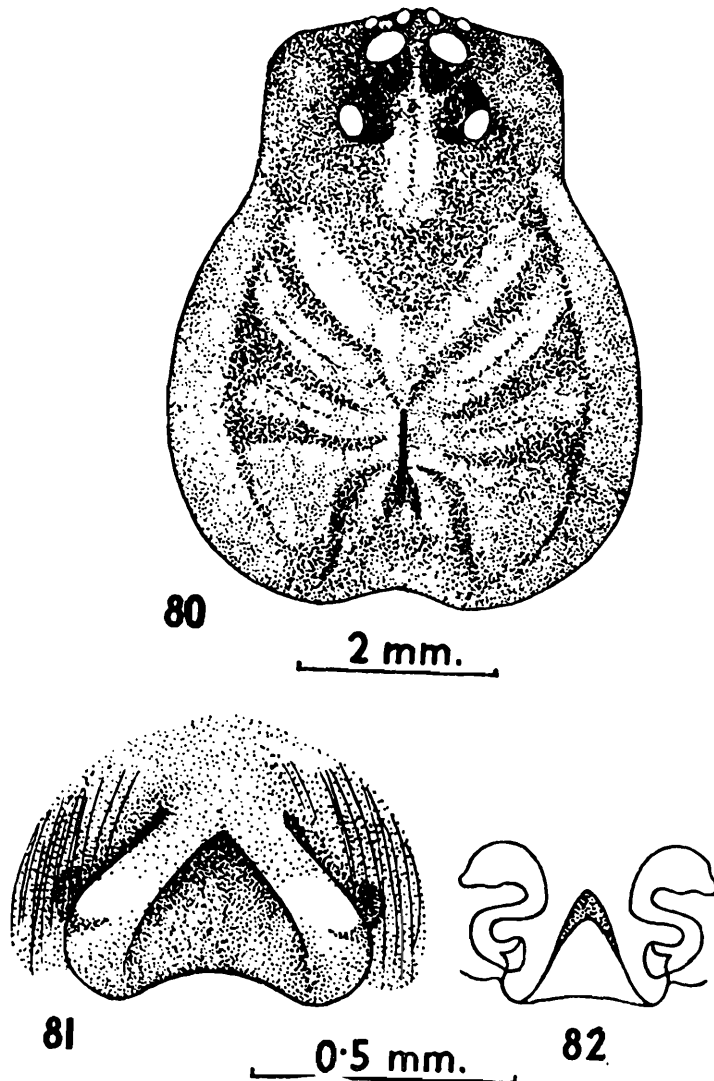
(Figs. 80-82)

1924. *Hippasa himalayensis* Gravely, *Rec. Indian Mus.*, 26 : 593.

1951. *Hippasa himalayensis* : Sinha, *Rec. Indian Mus.*, 48 (2) : 11.

General: Cephalothorax and legs yellowish-brown, abdomen pale with brown spots. Total length 14.00 mm. Carapace 6.50 mm. long, 5.00 mm. wide; abdomen 8.50 mm. long, 5.50 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with fine hairs and lateral margins clothed with spine-like hairs. Cephalic region high, narrow; anterior half of cephalic area dark brown. Anterior row of eyes straight, slightly longer than the second row, anterior medians and laterals nearly of the same size. Eyes of the second row larger than the others; bases of the posterior eyes



FIGS. 80-82. *Hippasa himalayensis* Gravely
 80. Dorsal view of cephalothorax of female, legs omitted.
 81. Epigyne.
 82. Internal genitalia.

provided with black patches. Space enclosed between posterior eyes, wider than long and wider behind than in front as in fig. 80. Centre provided with a conspicuous fovea from which brown bands radiate towards lateral sides. Sternum heart-shaped, pointed behind, light brown in colour, clothed with hairs and spine-like hairs and provided with a conspicuous mid-longitudinal dark brown band. Labium longer than wide, with basal excavation prominent. Maxillae broader in front and anterior end provided with scopulae. Chelicerae strong. Legs long, moderately strong and clothed with hairs and spines.

Abdomen: Longer than wide, narrowing behind, pale, clothed with hairs and spine-like hairs. Dorsal side decorated with dark brown spots and cheveron. Ventral side pale with brown spots. Epigyne as in fig. 81. Internal genitalia as in fig. 82. Male unknown.

Type-specimen: *Syntype* one ♀ in spirit in good condition, deposited at ZSI. Regd. No. 2268/18.

Type-locality: Darjeeling, W. Bengal, INDIA.

Distribution: INDIA: Sevoke, Pashok, Kalimpong, Darjeeling, West Bengal; Simla, Himachal Pradesh; Agumbighat, Dist. Shimoga, Karnataka.

Remark: Descriptions and illustrations given here on the basis of type-specimen.

4. *Hippasa olivacea* (Thorell)

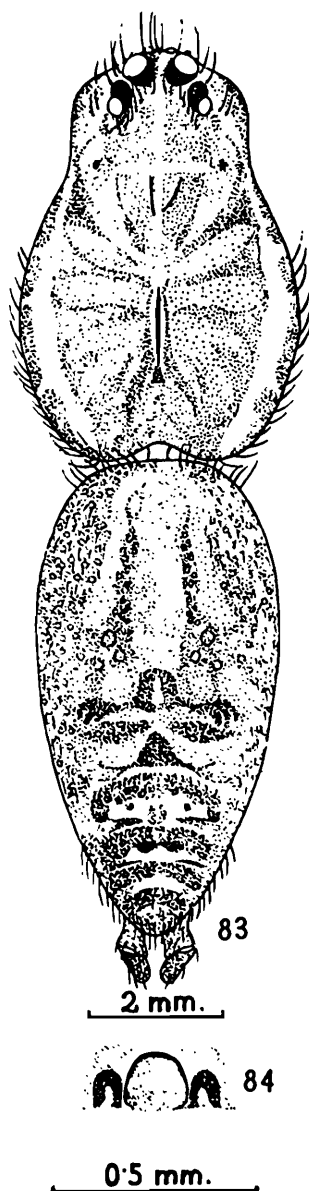
(Figs. 83-84)

1887. *Dipontia olivacea* Thorell, *Ann. Mus. civ. stor. nat. Genova*, 5 (2) : 297.
 1895. *Hippasa olivacea* : Thorell, *Spiders of Burma*, : 217.
 1900. *Hippasa olivacea* : Pocock, *Fauna Brit. India, Arach.*, : 250.
 1924. *Hippasa olivacea* : Gravely, *Rec. Indian Mus.*, 26 : 593.

General: Cephalothorax and legs light brown, abdomen brownish green. Total length 13.00 mm. Carapace 6.00 mm. long, 4.50 mm. wide; abdomen 7.50 mm. long, 4.00 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence. Centre provided with a distinct fovea and thin conspicuous

brown bands extend from it to the lateral sides. Anterior row of eyes slightly procurved and anterior laterals larger than anterior medians. Eyes of the second row larger than the others. Bases of posterior eyes (second and third row provided) with conspicuous black patches as in fig. 83. Ocular quad wider than long. Space enclosed between posterior eyes wider than long and narrow in front as in fig. 83. Sternum heart-shaped, pointed behind, provided with some spine like hairs and a median longitudinal black band. Labium as long as wide with the basal excavation prominent.



FIGS. 83-84. *Hippasa olivacea* (Thorell)
 83. Dorsal view of female, legs omitted.
 84. Epigyne.

Maxillae broader at the distal end and distal end provided with conspicuous scopulae. Chelicerae strong and inner margin of fang groove provided with three teeth. Legs long and especially IV pair conspicuously longer.

Abdomen: Longer than wide, tapering at the posterior end, clothed with pubescence and some spines. Dorsally covered with dark greenish and pale patches arranged alternately. Ventral side pale and provided with few spines. Posterior spinnerets longer than the anterior spinnerets and the terminal piece of posterior spinnerets as long as the basal piece. Epigyne as in fig. 84. Male unknown.

Type-specimens: *Syntypes* one mature ♀ and one immature ♀ in spirit in good condition; deposited at MNHN, Paris. Regd. No. 19891.

Type-locality: Rangoon and Bassein, BURMA.

Distribution: BURMA: Rangoon, Tharrawaddy, Tenasserin, Bhamo, Me-tan-ja, Kyeikpadem, Pegu, Bassein.

Remark: We have examined one female specimen of *H. olivacea* (Thorell) received from MNHN, Paris, which is an authenticated identified specimen by E. Simon, and we have described and illustrated on the basis of the same.

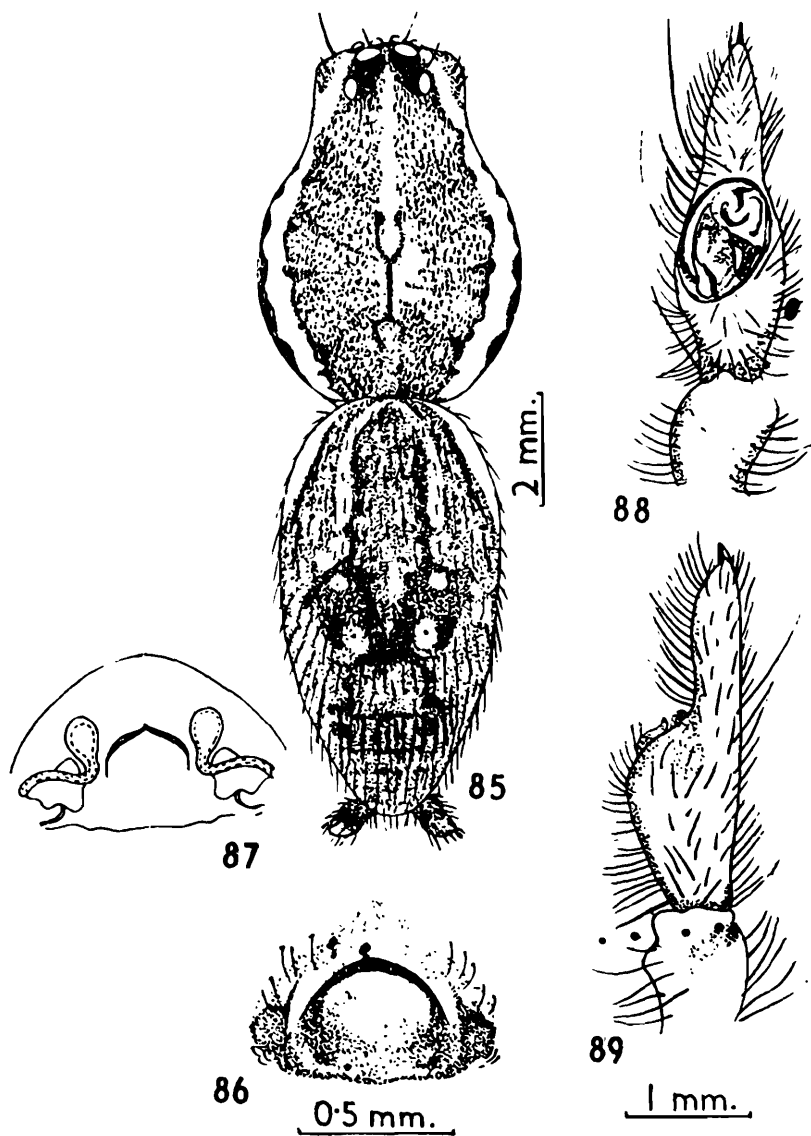
5. *Hippasa mahabaleshwarensis* sp. nov.

(Figs. 85-89)

General: Cephalothorax and legs pale brown, abdomen reddish brown with black spots. Total length 14.50 mm. Carapace 6.50 mm. long, 5.00 mm. wide; abdomen 8.00 mm. long, 4.00 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence. Cephalic region narrowing in front. Centre of thoracic region with a fine fovea and lateral margins of thoracic region with black patches; faint brown bands extend from the fovea to the lateral sides as in fig. 85. Anterior row of eyes straight, slightly wider than the second row, anterior medians and laterals nearly of the same size, bases of anterior laterals provided with black

patches. Eyes of the second row larger than the others. Ocular quad slightly wider behind than in front. Bases of posterior eyes provided with conspicuous black patches as in fig. 85. Space enclosed between the posterior eyes wider behind than in front as in fig. 85. Sternum heart-shaped, pointed behind, pale and clothed with pubescence and spine-like hairs, mid-longitudinally provided with a conspicuous black band. Labium longer than wide, dark brown in colour and provided with spine like hairs. Distal end of



FIGS. 85-89. *Hippasa mahabaleshwarensis* sp. nov.
 85. Dorsal view of female, legs omitted.
 86. Epigyne.
 87. Internal genitalia.
 88. Left male palp, ventral view.
 89. Left male palp, lateral view.

maxillae much broader and provided with conspicuous scopulae. Chelicerae strong, chocolate brown in colour. Legs long, clothed with spines and hairs, femur, patella and tibiae dorsally with light green irregular patches. Male palp as in figs. 88 and 89.

Abdomen: Longer than wide, oval, pointed behind, clothed with pubescence and spine like hairs, dorsally provided with dark brown, pale and black patches. Anterior mid-dorsal side with a longitudinal broad lens shaped reddish brown patch as in fig. 85. Ventral side pale. Epigyne as in fig. 86. Internal genitalia as in fig. 87. Male and female of similar colour and size but male more hairy.

Holotype: ♀, *paratypes* three ♀♀, *allotypes* two ♂♂ in spirit, deposited at ZSI. Regd. No. 4651/18

Type-locality: Mahabaleshwar, Dist. Satara, Maharashtra, INDIA. 26. iii. 1976, Coll. B. K. Tikader.

Discussion: This species resembles *Hippasa lycosina* Pocock but differs from it as follows: (i) Anterior row of eyes straight but in *H. lycosina* Pocock anterior row of eyes slightly procurved. (ii) Plate of vulva semicircular anteriorly but in *H. lycosina* plate of vulva pointed anteriorly.

6. *Hippasa lycosina* Pocock

(Figs. 90-92)

1900. *Hippasa lycosina* Pocock, *Faun. Brit. India, Arach.*, : 250.

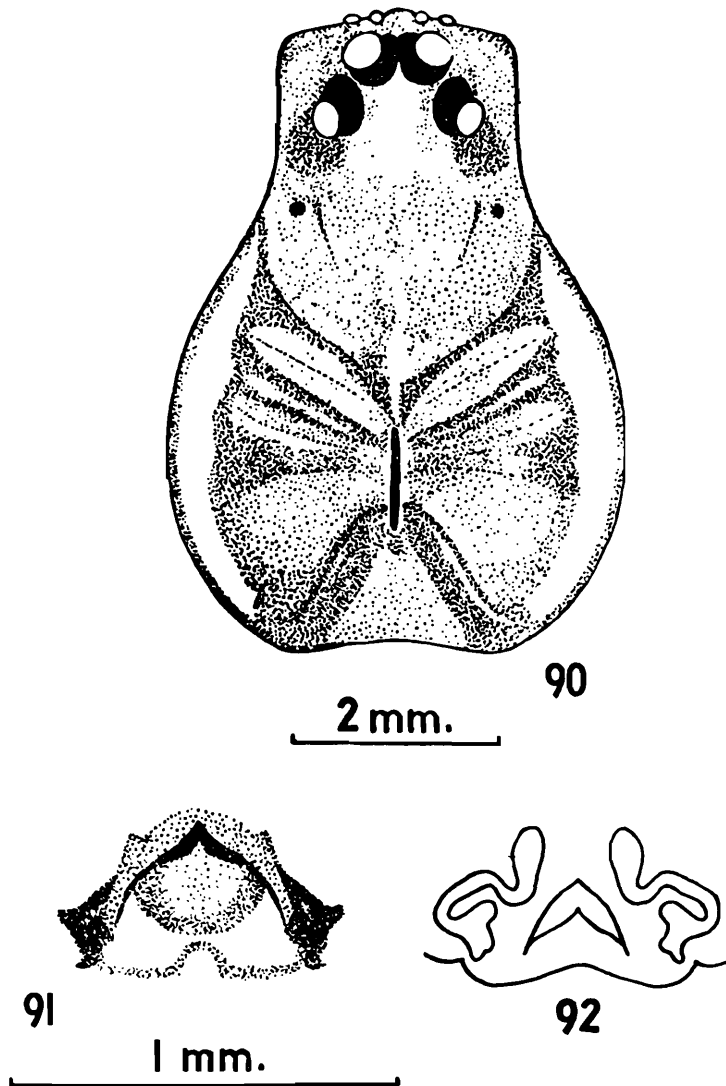
1924. *Hippasa nilgiriensis* : Gravely, *Rec. Indian Mus.*, 26 : 593. *Syn.n.*

1951. *Hippasa nilgiriensis* : Sinha, *Rec. Indian Mus.*, 48 (2) : 12.

General: Cephalothorax and legs yellowish brown, abdomen with greenish brown patches. Total length 16.00 mm. Carapace 6.40 mm. long, 4.60 mm. wide, abdomen 10.00 mm. long, 5.10 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence. Cephalic region high and narrow. Anterior row of eyes slightly procurved and longer than the second row, anterior medians slightly larger than laterals. Eyes of the second row larger than others. Ocular quad wider behind and narrowing in front. Space

enclosed between posterior eyes, wider behind and narrowing in front and bases of posterior eyes provided with conspicuous black patches as in fig. 90. Middle of cephalothorax provided with conspicuous fovea and thin light brown bands radiate from it to the lateral sides. Sternum heart-shaped, pointed behind, pale brown, clothed with spine-like hairs and provided with a median longitudinal black band. Labium longer than wide. Maxillae broader in front and distal end provided with scopulae. Chelicerae strong. Legs long and moderately strong and clothed with hairs and spines.



FIGS. 90-92. *Hippasa lycosina* Pocock.

- 90. Dorsal view of cephalothorax of female, legs omitted.
- 91. Epigyne.
- 92. Internal genitalia.

Abdomen: Longer than wide, clothed with hairs. Anterior middle half of the dorsal side provided with a longitudinal lens shaped marking. Ventral side pale. Epigyne as in fig. 91. Internal genitalia as in fig. 92. Male unknown.

Type-specimen: *Syntypes* two ♀ ♀ in spirit in good condition, deposited at BMNH. Regd. No. 1899. 11.2.37-38.

Type-locality: Nasik, Maharashtra, INDIA.

Distribution: INDIA: Satara, Nasik, Poona, Bombay, Kanara, Maharashtra; Nilgiris, Tamil Nadu; Mussoorie, Dehra Dun, Uttar Pradesh; Pykara, Mary-Land, Attakutti, Kerala.

Remark: *Hippasa nilgiriensis* Gravely is the synonym of *H. lycosina* Pocock. We have examined the types of *H. lycosina* Pocock as well as *H. nilgiriensis* Gravely. Both the specimens are exactly alike and the structure of the epigyne is same. Only the type specimen of *H. lycosina* Pocock is slightly larger than the type specimen of *H. nilgiriensis* Gravely. And we have examined some more specimens recently collected by us from Mussoorie, Dehra Dun, U. P. and Mahabaleshwar, Maharashtra. Both these species are same and according to priority we have merged both the species under the name of *H. lycosina* Pocock.

7. *Hippasa madraspatana* Gravely

(Figs. 93-96)

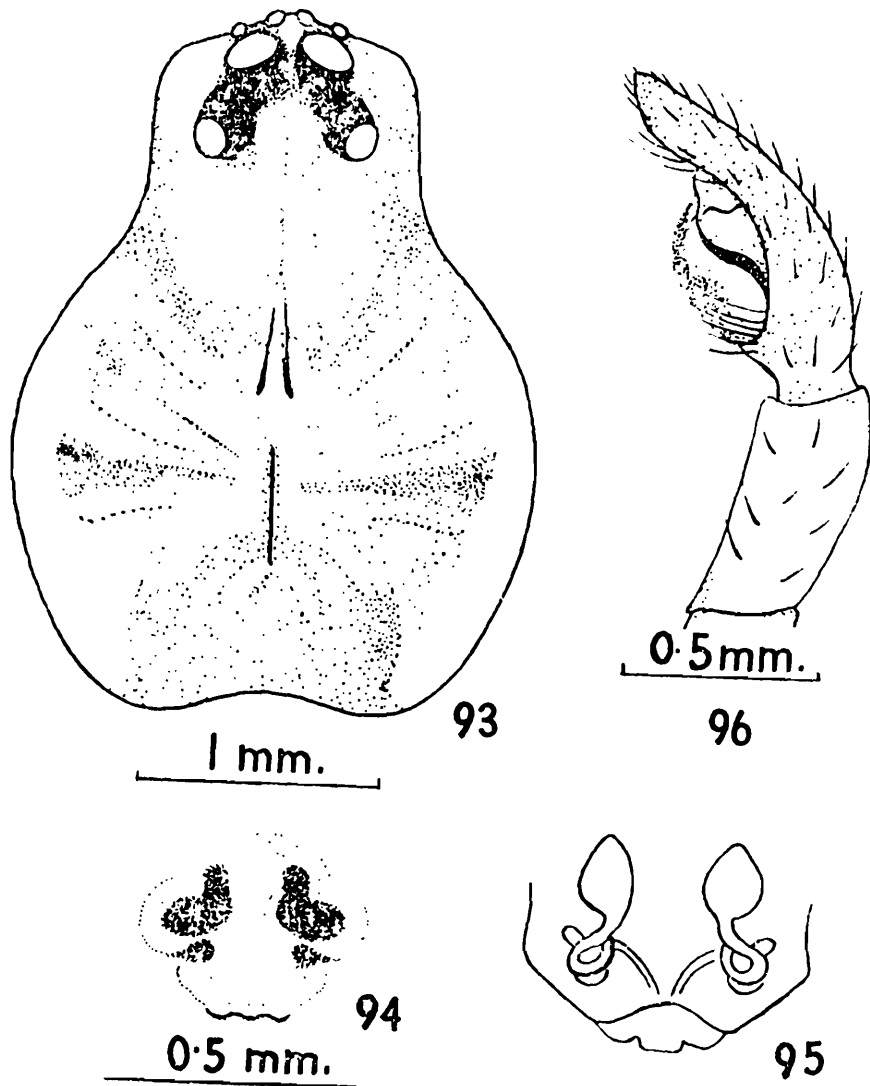
1924. *Hippasa madraspatana* Gravely, *Rec. Indian Mus.*, **26** : 595.

1951. *Hippasa madraspatana* : Sinha, *Rec. Indian Mus.*, **48** (2) : 18.

General: Cephalothorax and legs yellowish brown, abdomen pale and anterior median area brown. Total length 6.50 mm. Carapace 3.00 mm. long, 2.10 mm. wide; abdomen 4.00 mm. long, 2.50 mm. wide.

Cephalothorax : Longer than wide, convex, clothed with pubescence, cephalic region slightly high and narrowing in front and centre provided with conspicuous fovea from which thin brown

bands radiate laterally. Carapace with a wide border of whitish hair. Anterior row of eyes straight and approximately as wide as second row, anterior medians and laterals of same size. Eyes of the second row larger than the others. Space enclosed between posterior eyes longer than wide and wider behind than in front as in fig. 93. Bases of eyes of the posterior rows provided with black patches. Sternum heart-shaped, narrowing behind, pale, clothed with pubescence and without mid-longitudinal black band. Maxillae wider in front and anterior end provided with scopulae.



FIGS. 93-96. *Hippasa madraspatana* Gravely
 93. Dorsal view of cephalothorax of female, legs omitted.
 94. Epigyne.
 95. Internal genitalia.
 96. Left male palp, lateral view.

Chelicerae moderately strong, inner margin provided with three teeth. Legs moderately strong and clothed with hairs and spines. Male and female almost of same size and colour. Male palp as in fig. 96.

Abdomen: Longer than wide, oval, clothed with pubescence. Dorsal side of abdomen rather pale ochraceous or with golden brown hue often with a distinct anterior median browner area. Ventral side pale. Epigyne as in fig. 94. Internal genitalia as in fig. 95.

Type-specimens: *Syntypes* one ♀ and one ♂ in spirit in good condition, deposited at ZSI. Regd. No. 5224/H₂.

Type-locality: Madras city, Tamil Nadu, South INDIA.

Distribution: INDIA: Madras, Tamil Nadu; Chitteri Hills, Javadai Hills, Nadu, Eastern Ghats, South India and Gujarat.

Remark: Illustrated and described on the basis of type-specimens but the colour has disappeared due to long preservation, so we have incorporated the colour description from Gravely's paper.

8. *Hippasa partita* (Cambridge)

(Figs. 97-98)

1876. *Trochosa partita* Cambridge, *Proc. Zool. Soc.*, : 541-630.

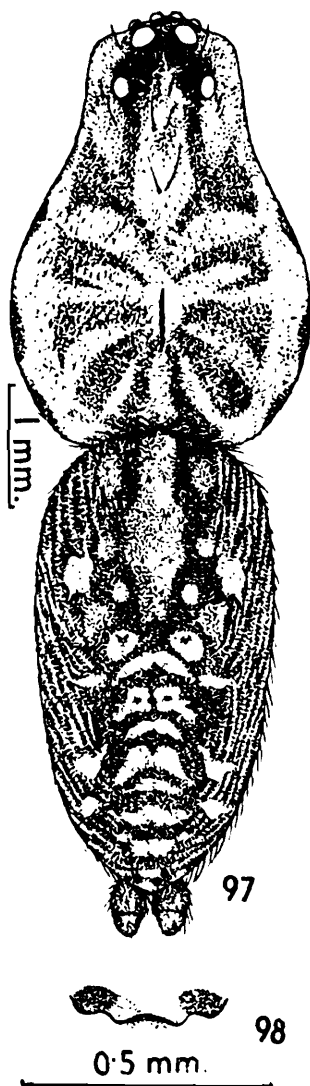
1897. *Hippasa deserticola* : Simon, *Bull. Mus. Hist. Nat.*, 3 (7) : 290.

1924. *Hippasa partita* : Gravely, *Rec. Indian Mus.*, 26 : 588.

General: Cephalothorax and legs pale brown, abdomen with greenish brown and pale patches. Total length 8.00 mm. Carapace 3.50 mm. long, 2.50 mm. wide; abdomen 4.50 mm. long, 2.00 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence, cephalic region abruptly tapering and narrowing. Anterior row of eyes very slightly procurved and wider than the second row. Bases of posterior eyes provided with conspicuous black patches. Space enclosed between posterior eyes much wider behind than in front as in fig. 97. Centre of thoracic region provided with a

conspicuous fovea. Thin brown bands radiate from fovea to the lateral margins. Sternum oval, pointed behind, clothed with hairs, pale and provided with a median longitudinal dark band. Labium as long as wide, with the basal excavation prominent. Maxillae pale and distal end broader than the proximal end. Chelicerae strong, and retromargin of fang groove provided with three teeth. Legs long and slender, clothed with hairs and spines.



FIGS. 97-98. *Hippasa partita* (Cambridge)

97. Dorsal view of female, legs omitted.

98. Epigyne.

Abdomen: Longer than wide, oval, pointed behind, clothed with pubescence and anterior dorsal middle half provided with a pale lens shaped marking, rest of abdomen provided with green-

ish brown and pale patches as in fig. 97. Ventral side pale with three longitudinal dark bands extending from the epigastric fold to the base of spinnerets. Apical piece of posterior spinnerets as long as the basal piece. Epigyne as in fig. 98. Male unknown.

Type-specimens: Syntypes two mature ♀ ♀ and one immature ♂ in spirit, in good condition; deposited in OUM. Regd. No. 1573/19.

Type-locality: Near Alexandria.

Distribution: ALEXANDRIA, EGYPT, ARABIA, Central ASIA; Karachi PAKISTAN.

Remark: We have studied O. P. Cambridge's type (two mature females) from OUM, Regd. No. 1573/19, as well as four named female immature specimens determined by E. Simon, from MNHN, Regd. No. 15.9.04. As Simon's specimens are immature, we were unable to compare them with the type-specimens of O. P. Cambridge. We have described and illustrated on the basis of O. P. Cambridge's type specimens. We are including this species in this fauna volume because this species was recorded from Karachi by Gravely (1924) and we presume this species may be available in Gujarat and Rajasthan areas, because there are some ecological affinities of Karachi with these regions.

9. *Hippasa agelenoides* (Simon)

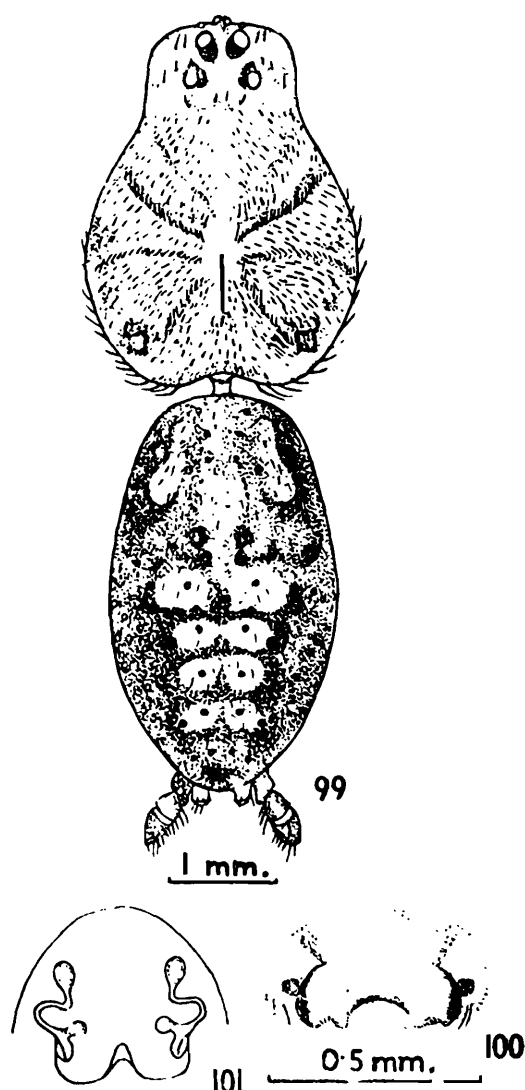
(Figs. 99-101)

1884. *Pirata agelenoides* Simon, *Ann. Mus. civ. stor. nat. Genova*, **20** : 334.
 1895. *Hippasa agelenoides* : Thorell, *Spiders of Burma*, : 218.
 1900. *Hippasa agelenoides* : Pocock, *Fauna Brit. India, Arach.*, : 251.
 1924. *Hippasa agelenoides* : Gravely, *Rec. Indian Mus.*, **26** : 595.
 1951. *Hippasa agelenoides* : Sinha, *Rec. Indian Mus.*, **48** (2) : 16.

General: Cephalothorax and legs light brown, abdomen reddish brown with black spots. Total length 7.80 mm. Carapace 3.50 mm. long, 2.50 mm. wide; abdomen 4.20 mm. long, 2.20 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence. Cephalic region slightly high and abruptly narrowing from

the thoracic region. Anterior row of eyes slightly procurved as long as the second row, anterior medians and laterals nearly of the same size, bases of anterior laterals provided with conspicuous black patches. Eyes of the second row larger than the others. Ocular quad slightly wider behind and narrowing in front. Bases of posterior eyes provided with conspicuous black patches as in fig. 99. Space enclosed between posterior eyes much wider behind and narrowing in front. Centre of thoracic region with a fine fovea. Sternum heart shaped, pointed behind, pale and clothed with hairs, mid-longitudinally provided with a conspicuous black



FIGS. 99-101. *Hippasa agelenoides* (Simon)

99. Dorsal view of female, legs omitted.
 100. Epigyne.
 101. Internal genitalia.

band. Labium as long as wide. Distal end of maxillae broader and provided with scopulae. Chelicerae brown and retromargin of the fang furrow provided with three teeth. Legs thin and long, clothed with spines and hairs, provided with conspicuous greenish brown irregular patches.

Abdomen: Longer than wide, clothed with pubescence and hairs, dorsally provided with reddish brown patches and black spots. Anterior mid-dorsally with a longitudinal lens shaped brown marking as in fig. 99. Ventral side pale with two longitudinal brown stripes ending at the base of anterior spinnerets. Epigyne as in fig. 100. Internal genitalia as in fig. 101. Male unknown.

Type-specimens: *Syntypes* two sub-adult ♀♀ in spirit in good condition, deposited at MNHN. Regd. No. 6655.

Type-locality: Minhala, BURMA.

Distribution: INDIA: Prambikulam, Cochin, Kerala; Eastern Ghats, Mathiapalle, Yercaud, Shevaroy Hills, North Malabar, Belgaum, Kotigehar, Karnataka; Gudalur, Madras, Tamil Nadu; Dehra Dun, Uttar Pradesh; Mahabaleshwar, Maharashtra; Kondon; BURMA: Minhala, Tharrawaddy and Rangoon.

Remark: Simon (1884) described this species as *Pirata ageleoides* and subsequently he has erected a new genus *Hippasa* and the type species of the genus was made *H. agelenoides* from Minhala, BURMA. We have examined the Simon's types, 2 females. They are immature. We have collected mature females from Mahabaleshwar, Maharashtra, which appear to be conspecific with the type specimens. We have described fully and illustrated epigynum from our specimen which was identified with the help of the types. We have also examined the named species of *H. agelenoides* identified by Gravely.

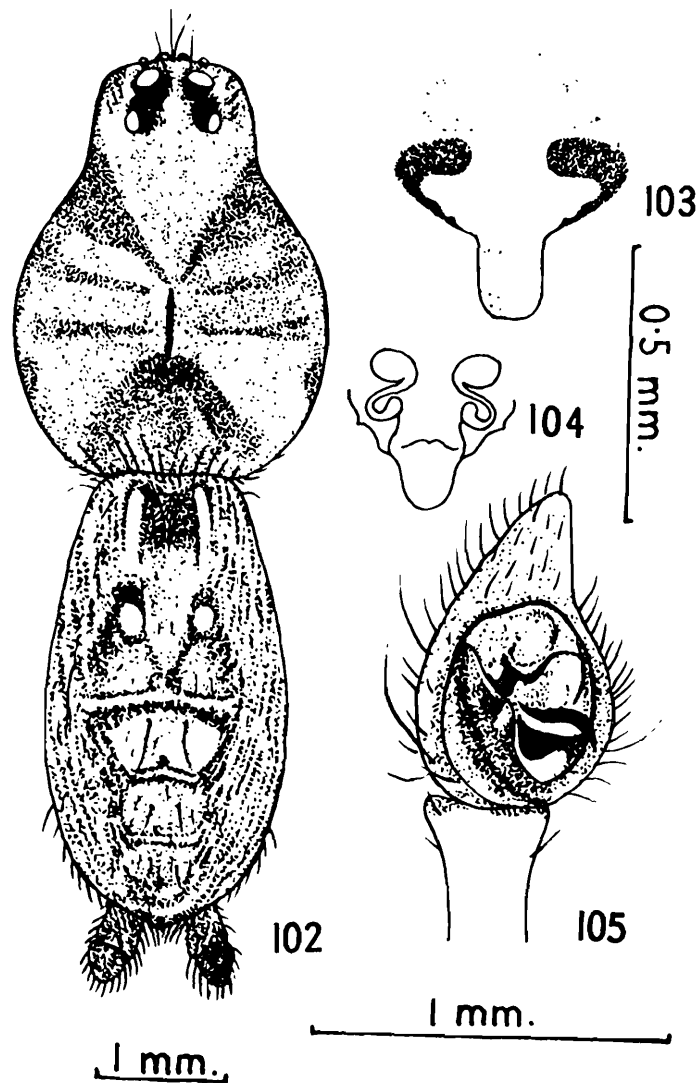
10. *Hippasa holmerae* Thorell

(Figs. 102-105)

1895. *Hippasa holmerae* Thorell, *Spiders of Burma*, : 218.
 1900. *Hippasa holmerae* : Pocock, *Fam. Brit. India, Arach.*, : 251.
 1924. *Hippasa holmerae* : Gravely, *Rec. Indian Mus.*, 26 : 595.
 1951. *Hippasa holmerae* : Sinha, *Rec. Indian Mus.*, 48 (2) : 17.

General: Cephalothorax, legs and abdomen light brown. Total length 7.00 mm. Carapace 3.50 mm. long, 2.50 mm. wide; abdomen 4.00 mm. long, 2.00 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence. Cephalic region abruptly narrowing in front. Middle of thoracic region provided with a distinct fovea from which thin brown bands radiate towards the lateral sides. Anterior row of eyes slightly procurved and wider than the second row. Eyes of anterior row nearly equal in size and bases of anterior laterals



FIGS. 102-105. *Hippasa holmerae* Thorell
 102. Dorsal view of female, legs omitted.
 103. Epigyne.
 104. Internal genitalia.
 105. Left male palp, ventral view,

provided with conspicuous black patches. Eyes of the posterior rows almost equal in size and space between them, much wider behind than in front as in fig. 102. Bases of posterior eyes provided with conspicuous and contiguous black patches as in fig. 102. Ocular quad wider than long. Sternum heart-shaped, pointed behind, clothed with spine-like hairs mid-longitudinally provided with a dark band. Labium wider than long, maxillae slightly wider at the distal end. Chelicerae moderately strong and inner margin of fang provided with three teeth. Legs long and thin, clothed with spines and hairs, and uniform light brown in colour. IV pair of legs exceptionally longer. Male palp as in fig. 105.

Abdomen: Longer than wide, dorsally provided with spine-like hairs and pubescence, light brown and decorated with greenish brown and white spots and patches as in fig. 102. Posterior spinnerets much longer than the anterior and the apical piece of posterior spinnerets as long as the basal piece and clothed with hairs. Ventral side pale, mid-longitudinally provided with chalk-white spots. Epigyne with posteriorly directed tongue-like process as in fig. 103. Internal genitalia as in fig. 104.

Type-specimens: *Syntypes* one ♀ and one ♂ in spirit in good condition, deposited in BMNH. Regd. No. 1895.9.21. 731-732.

Type-locality: Tharrawaddy, Lower BURMA.

Distribution: INDIA: Kalimpong, Darjeeling, W Bengal; Manipur; Eastern India; Dehra Dun, Uttar Pradesh; BURMA: Tharrawaddy; W CHINA: Between Tengueh and Nan Tien, Yanan; SINGAPORE.

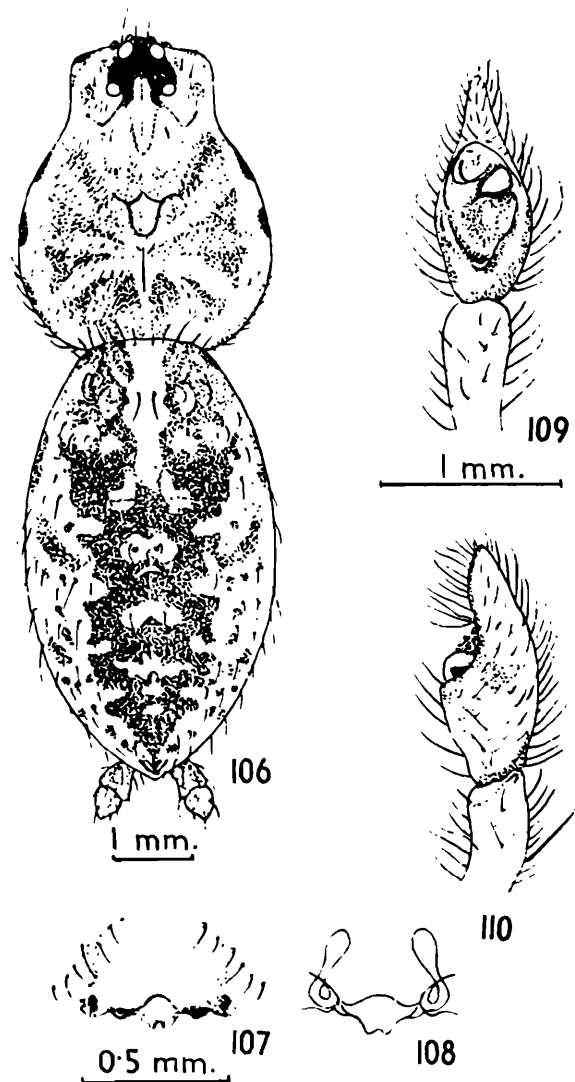
Remark: We have illustrated and described on the basis of above mentioned type and subsequently we have studied one female specimen collected from Manipur, Eastern India and one female from Dehra Dun, Uttar Pradesh, India, which were compared with the types. These named specimens are deposited in the National Collection of Zoological Survey of India, Calcutta.

11. *Hippasa madhuae* sp. nov.

(Figs. 106-110)

General: Cephalothorax and legs light brown, abdomen with greenish black and pale patches. Total length 9.80 mm. Carapace 4.00 mm. long, 3.20 mm. wide; abdomen 6.00 mm. long, 3.10 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence, cephalic region slightly high and abruptly narrowing in front. Centre of thoracic region provided with a sharp fovea and brown bands radiate from fovea to the lateral sides. Lateral margins of thoracic region with small irregular black patches as



FIGS. 106-110. *Hippasa madhuae* sp. nov.

- 106. Dorsal view of female, legs omitted.
- 107. Epigyne.
- 108. Internal genitalia.
- 109. Left male palp, ventral view.
- 110. Left male palp, lateral view.

in fig. 106. Anterior row of eyes very slightly procurved (as seen from in front), wider than the second row, bases of anterior laterals provided with conspicuous black patches. Eyes of second and third row almost equal in size. Ocular quad slightly wider behind and narrowing in front. Bases of second and third row of eyes provided with conspicuous black patches thus making the ocular quadrangle black as in fig. 106. Space enclosed between posterior eyes much wider behind and narrowing anteriorly as in fig. 106. One 'L' shaped streak extends postero-laterally from each eye of the third row. Sternum heart shaped, pointed posteriorly, clothed with hairs, pale except a mid-longitudinal conspicuous black band extending its whole length. Labium as long as wide, greenish brown in colour. Distal end of maxillae broader and provided with scopulae. Chelicerae dark brown and bears three strong teeth on the inner margin of the fang furrow. Legs thin and long, clothed with spines and hairs, femora, patella and tibiae of all legs provided with conspicuous, irregular greenish brown patches. Male of same colour but slightly smaller in size. Male palp as in figs. 109 and 110.

Abdomen: Longer than wide, pointed posteriorly, dorsally clothed with pubescence and spine like hairs and anterior mid dorsally provided with a longitudinal lens shaped light brown marking, followed posteriorly by irregular greenish black and pale patches as in fig. 105. Ventral side chalk white. Epigyne as in fig. 107. Internal genitalia as in fig. 108.

Holotype: ♀, *allotype* one ♂ in spirit, deposited at ZSI. Regd. No. 4665/18

Type-locality: Camp, Ahmednagar, Dist. Ahmednagar, Maharashtra, INDIA. 17.viii.1974, Coll. M. S. Malhotra.

Discussion: This species resembles *Hippasa pisaurina* Pocock but can be separated from it as follows: (i) Posterior projection of the epigynal plate is notched at the centre but in *H. pisaurina* Pocock, the posterior projection of the epigynal plate is not notched and conical in shape.

12. *Hippasa pisaurina* Pocock

(Figs. 111-115)

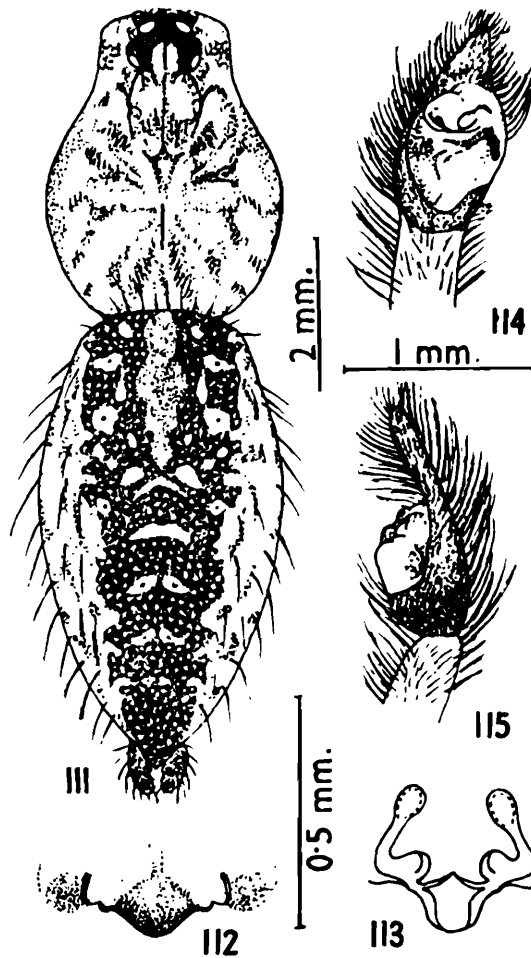
1900. *Hippasa pisaurina* Pocock, *Faun. Brit. India, Arach.*, : 250.
 1924. *Hippasa pisaurina* : Gravely, *Rec. Indian Mus.*, 26 : 595.
 1935. *Hippasa pisaurina* : Dyal, *Bull. Dept. Zool. Punjab Univ.*, 1 : 143.
 1951. *Hippasa pisaurina* : Sinha, *Rec. Indian Mus.*, 48 (2) : 16.

General: Cephalothorax and legs light brown, abdomen with greenish black and pale patches and spots. Total length 10.50 mm. Carapace 4.10 mm. long, 3.20 mm. wide; abdomen 6.50 mm. long, 3.30 mm. wide.

Cephalothorax: Longer than wide, convex, cephalic region slightly high and narrowing in front. Centre of thoracic region provided with a sharp fovea and thin brown bands radiate from it towards the lateral sides; lateral margins of the thoracic region greenish black as in fig. 111. Anterior row of eyes slightly procurved, wider than the second row; bases of anterior laterals provided with conspicuous black patches. Anterior medians and eyes of second and third row almost equal in size. Ocular quad slightly wider behind. Bases of second and third row of eyes provided with conspicuous black patches. Ocular area black and hairy as in fig. 111. Posterior quadrangle wider behind and narrowing anteriorly as in fig. 111. A conspicuous 'Y' shaped mark extends from the posterior extremity of the eyes of third row towards the posterior side. Sternum heart shaped, pointed posteriorly, pale, clothed with hairs and spine like hairs and mid-longitudinally provided with a conspicuous black band extending the whole length of sternum. Labium as long as wide, greenish brown in colour. Distal end of maxillae broader and provided with inconspicuous scopulae. Chelicerae reddish brown in colour and inner margin of the fang furrow provided with three unequal teeth. Legs moderately strong and long, clothed with spines and hairs; trochanter, femora, patella, tibiae and metatarsi provided with conspicuous greenish brown irregular patches. Male of same colour as female but slightly smaller in size. Male palp as in fig. 114 and 115.

Abdomen: Longer than wide, pointed posteriorly, dorsally clothed with pubescence and spine like hairs and anterior mid

dorsally provided with a reddish brown longitudinal lens shaped marking, posteriorly followed by greenish black and light brown patches as in fig. 111. Ventral side provided with three longitudinal greenish brown streaks extending from the epigastric furrow to the base of spinnerets. Epigyne as in fig. 112. Internal genitalia as in fig. 113.



FIGS. 111-115. *Hippasa pisaurina* Pocock

- 111. Dorsal view of female, legs omitted.
- 112. Epigyne.
- 113. Internal genitalia.
- 114. Left male palp, ventral view.
- 115. Left male palp, lateral view.

Type-specimen: Syntype one ♀ in spirit in bad condition, deposited at BMNH, Regd. No. 1899, 12.5.123.

Type-locality: Poona, Maharashtra, INDIA.

Distribution: INDIA: Poona, Ahmednagar, Satara, Maharashtra; Bangalore, Karnataka; Siripur, Saran, Bihar; Gujarat
PAKISTAN: Lahore; IRAQ: Baghdad.

Remark: Since the type is not in good condition the description and illustrations are based on the named female and male specimens collected from Shivaji Nagar, Poona, Maharashtra, India (determined by comparison with the type-specimen). Named specimens deposited in National Collection of Zoological Survey of India, Calcutta.

Genus 2. *Evippa* Simon

1882. *Evippa* Simon, *Ann. Mus. civ. stor. Nat. Genova.*, **18** : 222.

1924. *Evippa* : Gravely, *Rec. Indian Mus.*, **26** : 611.

1951. *Evippa* : Sinha, *Rec. Indian Mus.*, **48** (2) : 48.

Diagnosis: Anterior portion of cephalothorax somewhat abruptly elevated thus forming an angle with its posterior portion of thoracic region. Anterior row of eyes procurved. Superior claws of the legs long, slender and toothed only at the base. Tibiae I provided with six pairs of ventral robust spines. Metatarsi IV is longer than the tibia plus patella together, or at least not shorter. Clypeus vertical. Labium wider than long. Inner margin of chelicerae bears only two teeth, while the outer margin armed with three teeth.

Type-species : *Evippa arenaria* (Audouin)

Distribution : AFRICA, EGYPT, ASIA.

Key to the species of the genus EVIPPA Simon

- | | | |
|----|---|---------------------|
| 1. | Total length not more than 8.00 mm. | .2 |
| | Total length more than 8.00 mm. | .5 |
| 2. | Sternum uniform pale and maxillae with conspicuous scopulae | .3 |
| | Sternum brown in colour and maxillae with inconspicuous scopulae (Fig. 131) | . <i>solanensis</i> |
| 3. | Abdomen dorsally provided with alternate patches of black and reddish colour (Fig. 116) | . <i>sohani</i> |

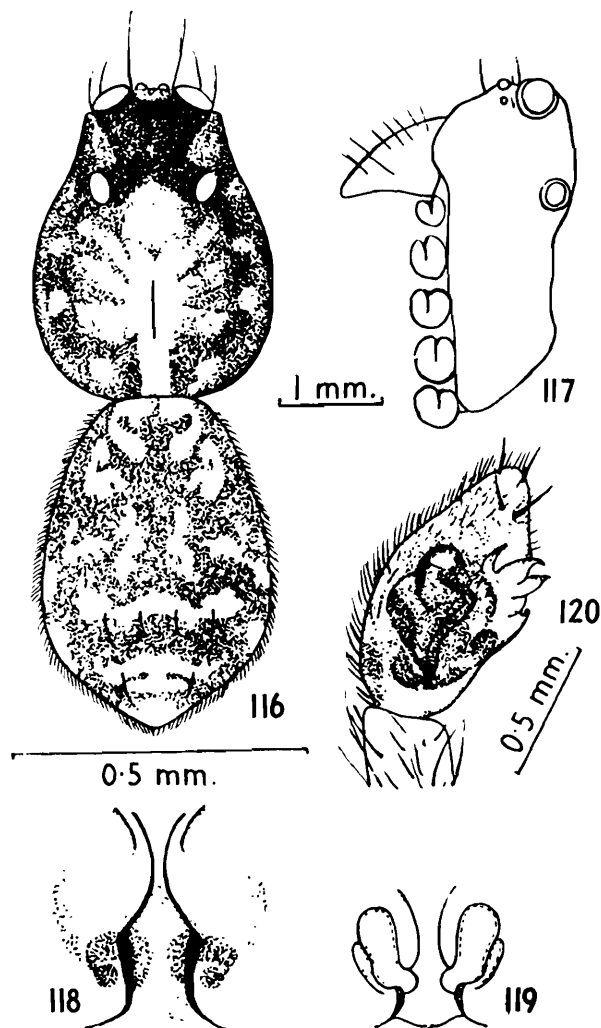
- Abdomen dorsally not provided with such patches .4
4. Abdomen dorsally provided with broad white patches (Figs. 138) .shivajii
 Abdomen dorsally provided with a few greenish brown irregular patches (Fig. 143) .rubiginosa
5. Sternum pale and legs dorsally provided with conspicuous brown transverse patches .banarensis
 Sternum light brown, and legs dorsally provided with dark brown spots or irregular greenish patches .6
6. Abdomen dorsally provided with irregular brown patches .rajasthanus
 Abdomen dorsally provided with regular greenish brown patches .praelongipes

13. *Evippa sohani* sp. nov.

(Figs. 116-120)

General: Cephalothorax dark brown, legs pale brown, abdomen reddish black. Total length 6.50 mm. Carapace 3.00 mm. long, 2.30 mm. wide; abdomen 3.20 mm. long, 2.20 mm. wide.

Cephalothorax: Longer than wide, narrowing anteriorly, clothed with pubescence. Cephalic region abruptly elevated, thus forming a distinct angle with the thoracic region as in fig. 117. Anterior row of eyes procurved and shorter than the second row; anterior medians larger than the anterior laterals. Eyes of the second row larger than the others. Ocular area dark. Space enclosed between posterior eyes as long as wide as in fig. 116. Middle of cephalothorax provided with a sharp fovea. A broad median, longitudinal pale band extends from bases of third row of eyes to the base of cephalothorax, margins provided with conspicuous pale spots as in fig. 116. Sternum heart-shaped, pointed behind, uniform pale and provided with a few spine-like hairs. Labium wider than long. Maxillae provided with scopuole at the distal end. Chelicerae moderately strong, inner margin provided with two teeth and outer margin with three teeth. Legs long and slender and dorsally transversely banded with conspicuous brown patches. Tibiae I provided with six pairs of ventral robust spines. Male of similar colour and size as female. Male palp as in fig. 120.



FIGS. 116-120. *Evippa sohani* sp. nov.

116. Dorsal view of female, legs omitted.
 117. Lateral view of cephalothorax, legs omitted.
 118. Epigyne.
 119. Internal genitalia.
 120. Left male palp, ventral view.

Abdomen: Longer than wide, pointed posteriorly, clothed with pubescence and some spines, dorsally provided with alternate transverse patches of black and reddish colour. Ventral side pale, with few spine-like hairs. Epigyne as in fig. 118. Internal genitalia as in fig. 119.

Holotype: ♀, *allotype* three ♂♂ in spirit, deposited at ZSI. Regd. No. 4675/18

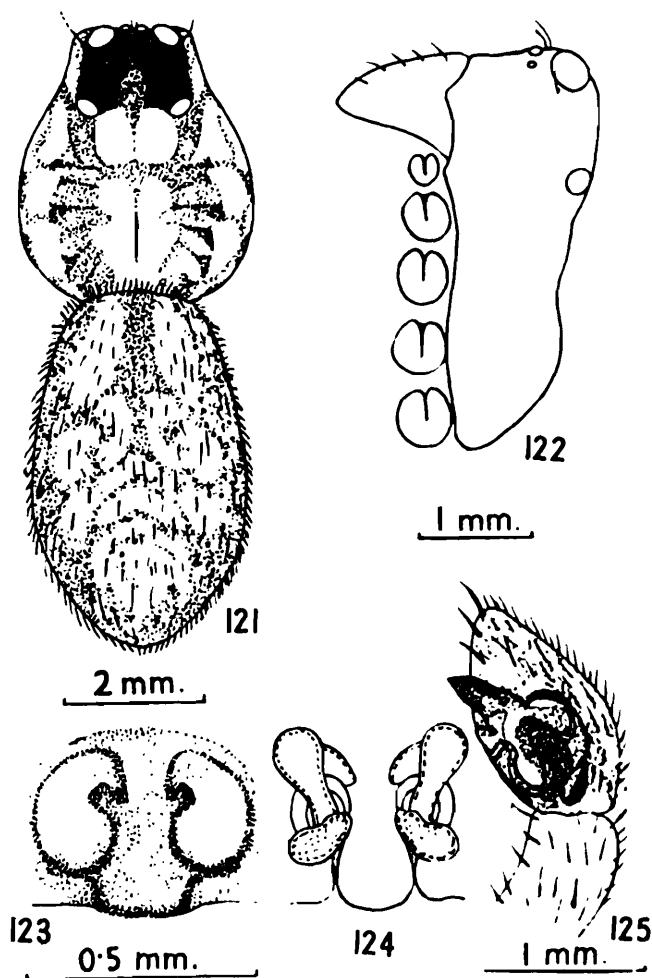
Type-locality: Cantonment area, Ahmednagar, Dist. Ahmednagar, Maharashtra, INDIA. 8. vi. 1974, Coll. *M. S. Malhotra*.

Discussion: This species resembles *Evippa rubiginosa* Simon but differs from it as follows : (i) Sternum uniform light brown in colour but in *E. rubiginosa* sternum pale in colour. (ii) Epigyne also structurally different.

14. *Evippa banarensis* sp. nov.

(Figs. 121-125)

General: Cephalothorax, legs and abdomen brown. Total length 8.50 mm. Carapace 4.00 mm. long, 3.20 mm. wide; abdomen 5.00 mm. long, 3.00 mm. wide.



FIGS. 121-125. *Evippa banarensis* sp. nov.
 121. Dorsal view of female, legs omitted.
 122. Lateral view of cephalothorax, legs omitted.
 123. Epigyne.
 124. Internal genitalia.
 125. Left male palp, ventral view.

The colour and external characters of this species very much resemble with the previous species i.e. *Evippa sohani* sp. nov. Therefore the description of external characters are not given. However, this species very much differs from the foregoing species in the morphological details of epigyne and internal genitalia (figs. 123 and 124).

Holotype: ♀, *allotype* one ♂ in spirit, deposited in ZSI. Regd. No. 4643/18

Type-locality: Banar village, Jodhpur, Raiasthan, INDIA, 7.vii.1967, Coll. V C. Agarwal.

Discussion: This species resembles *Evippa rubiginosa* Simon but differs from it as follows : (i) Lateral margins of thoracic region provided with continuous pale band extending to the whole length but in *E. rubiginosa* lateral margins of thoracic region with conspicuous pale spots. (ii) Epigyne also structurally different.

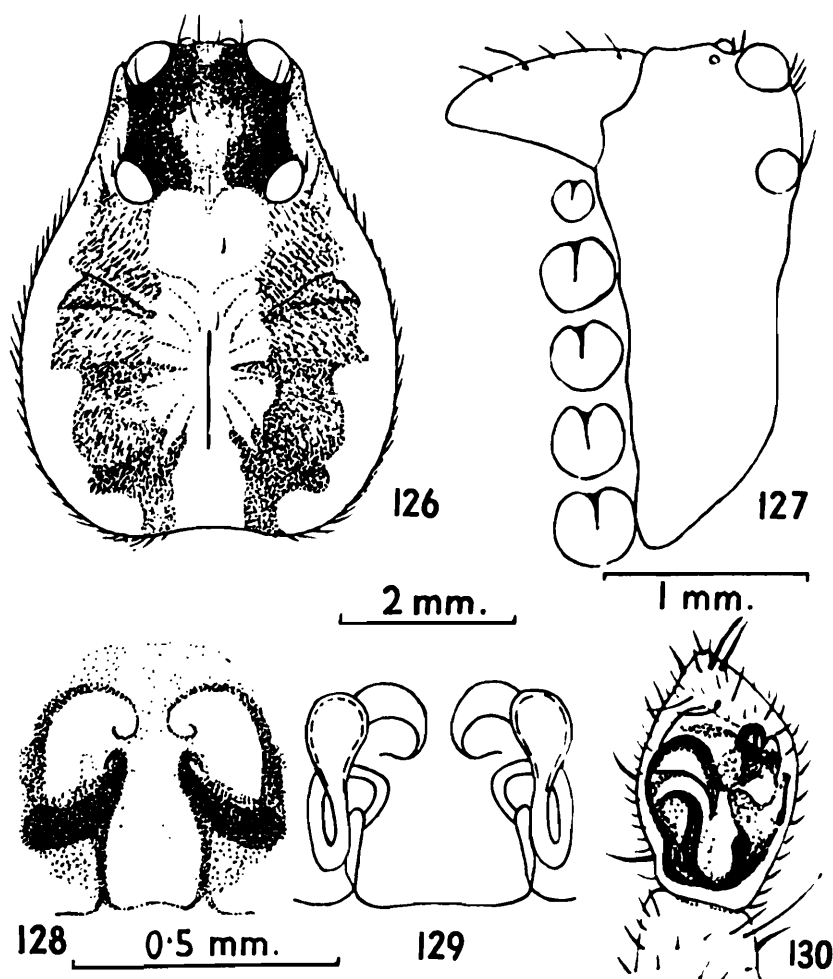
15. *Evippa rajasthaneus* sp. nov.

(Figs. 126-130)

General: Cephalothorax brown, abdomen and legs pale brown. Total length 13.00 mm. Carapace 5.80 mm. long, 4.40 mm. wide; abdomen 7.50 mm. long, 5.00. mm. wide.

Cephalothorax: Longer than wide, narrowing in front, clothed with pubescence; cephalic region abruptly elevated, thus forming a distinct angle with thoracic region as in fig. 127. Anterior row of eyes slightly procurved and shorter than the second row, anterior medians larger than the anterior laterals. Eyes of the second row larger than the others, bases of posterior eyes black, ocular area dark. Space enclosed between posterior eyes as long as wide and slightly narrowing in front as in fig.126. Middle of cephalothorax provided with a distinct fovea. A broad median longitudinal band extend from bases of third row of eyes to the base of cephalothorax, lateral sides also provided with longitudinal pale bands as in fig. 126. Sternum heart-shaped, pointed behind, light brown, and clothed with few spine-like hairs. Labium wider than long. Distal end of maxillae provided with conspicuous scopulae. Chelicerae moderately strong, inner

margin provided with two teeth and outer margin with three teeth. Legs long and strong, tibiae I provided with six pairs of robust ventral spines. Male similar in colour as female but smaller in size. Male palp as in fig.130.



FIGS. 126-130. *Evippa rajasthanensis* sp. nov.

126. Dorsal view of cephalothorax of female, legs omitted.
 127. Lateral view of cephalothorax, legs omitted.
 128. Epigyne.
 129. Internal genitalia.
 130. Left male palp, ventral view.

Abdomen: Longer than wide, oval, pointed behind, dorsally clothed with pubescence and spine-like hairs and provided with irregular brown patches. Ventral side pale. Epigyne as in fig. 128. Internal genitalia in fig. 129.

Holotype: ♀, *paratype* one ♀, *allotype* two ♂♂ in spirit, deposited at ZSI. Regd. No. 4648/18

Type-locality: Mandore, Jodhpur, Rajasthan, INDIA, 24.viii. 1963, Coll. R. C. Sharma.

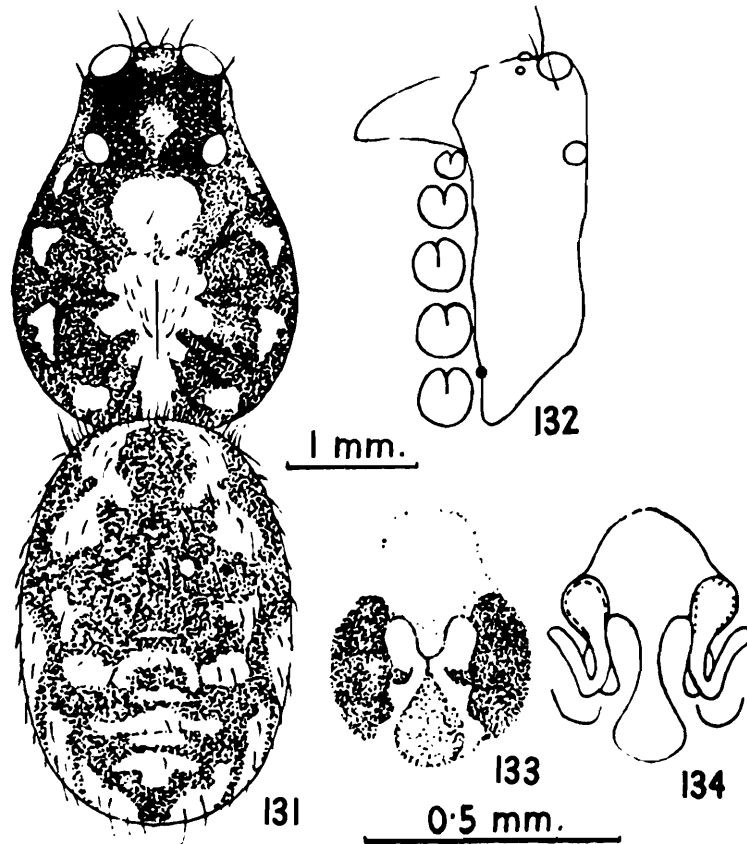
Discussion: This species resembles *Evippa praelongipes* (Cambridge) but can be separated from it as follows : (i) Legs uniformly pale brown except for a few dark spots dorsally but in *E. praelongipes* legs dorsally provided with irregular transverse, greenish brown patches and bands. (ii) Sternum light brown in colour but in *E. praelongipes* sternum pale. (iii) Epigyne also structurally different.

16. *Evippa solanensis* sp. nov.

(Figs. 131-134)

General: Cephalothorax and abdomen dark brown. Total length 6.10 mm. Carapace 3.00 mm. long, 2.20 mm. wide; abdomen 3.10 mm. long, 2.20 mm. wide.

Cephalothorax: Longer than wide, narrowing in front, clothed with pubescence, cephalic region abruptly elevated thus forming a distinct angle with the thoracic region as in fig.132. Anterior row of eyes procurved and shorter than the second row, anterior medians larger than the anterior laterals. Eyes of the second row larger than the others. Bases of posterior eyes provided with conspicuous black patches. Ocular area dark. Space enclosed between posterior eyes slightly longer than wide as in fig. 131. Middle of cephalothorax provided with a sharp fovea. Area behind third row of eyes pale and area surrounding fovea also pale, lateral sides provided with submarginal broken pale bands as in fig. 131. Sternum heart-shaped, pointed behind, brown and provided with few spine-like hairs. Labium wider than long. Distal end of maxillae provided with inconspicuous scopulae. Chelicerae strong, inner margin provided with two teeth and outer margin with three teeth. Legs long and dorsally transversely banded with conspicuous dark brown patches, tibiae I provided with six pairs of robust ventral spines.



FIGS. 131-134. *Evippa solanensis* sp. nov.

131. Dorsal view of female, legs omitted.
 132. Lateral view of cephalothorax, legs omitted.
 133. Epigyne.
 134. Internal genitalia.

Abdomen: Longer than wide, dorsally clothed with pubescence and spine-like hairs and provided with white and dark brown patches. Ventral side pale, clothed with pubescence. Epigyne as in fig. 133. Internal genitalia as in fig 134. Male unknown.

Holotype: ♀ in spirit, deposited ZSI. Regd. No. 4673/18.

Type-locality: Kilar, Dist. Chamba, Himachal Pradesh, INDIA. 5.ix.1974, Coll. *Raj Tilak*.

Discussion: This species resembles *Evippa rubiginosa* Simon but differs from it as follows : (i) Sternum brown in colour but in *E. rubiginosa* sternum pale. (ii) Epigyne also structurally different.

17. *Evippa praelongipes* (Cambridge)

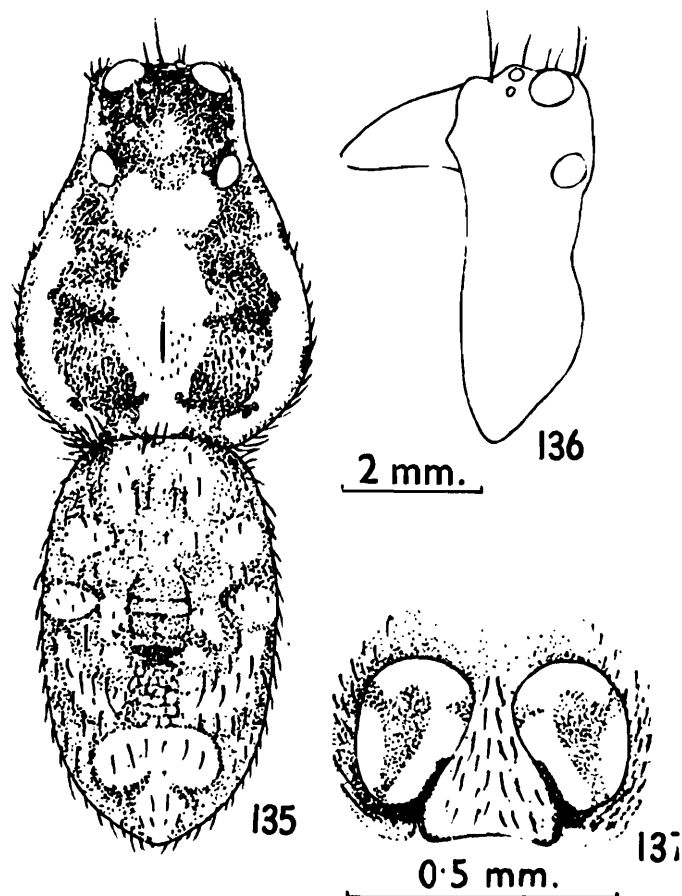
(Figs. 135-137)

1870. *Lycosa praelongipes* Cambridge, *Proc. Zool. Soc. Lond.*, : 822.
 1897. *Evippa praelongipes* : Simon, *Bull. Mus. Hist. Nat. Paris*, : 289-297.
 1924. *Evippa praelongipes* : Gravely, *Rec. Indian Mus.*, 26 : 611.
 1951. *Evippa praelongipes* : Sinha, *Rec. Indian Mus.*, 48 (2) : 49.

General: Cephalothorax brown with pale median longitudinal band, legs pale with brown transverse bands dorsally, abdomen pale with greenish brown patches. Total length 11.00 mm. Carapace 5.50 mm. long, 4.00 mm. wide; abdomen 6.00 mm. long, 3.50 mm. wide.

Cephalothorax: Longer than wide, narrowing in front, clothed with pubescence. Cephalic region abruptly elevated thus forming a distinct angle with the thoracic region as in fig.136. Clypeus vertical. Centre of the thoracic region provided with a distinct fovea. A median longitudinal, broad pale band extends from the bases of third row of eyes to the base of cephalothorax. Submarginal area of thoracic region also pale as in fig. 135. Anterior row of eyes slightly procurved and less wider than the second row. Anterior medians larger than the anterior laterals and slightly closer to adjacent laterals than to each other. Eyes of the second row larger than the others. Bases of posterior eyes dark. Ocular area dark and space enclosed between posterior eyes nearly as long as wide as in fig. 135. Sternum heart-shaped, pointed behind, pale brown and provided with hairs and few spines. Labium wider than long, brown, with distal end pale. Maxillae not much broader in front and distal end of maxillae provided with less conspicuous scopulae. Chelicerae moderately strong and inner margin provided with two prominent teeth. Legs long and thin, and dorsally with irregular transverse, greenish-brown bands and patches. Tibiae I provided with six pairs of ventral robust spines; metatarsi IV leg as long as tibiae plus patella together. Superior claws long, slender and toothed only at the base.

Abdomen: Longer than wide, oval, dorsally provided with greenish-brown patches and clothed with pubescence. Ventral side pale. Epigyne as in fig. 137. Male unknown.



FIGS. 135-137. *Evippa praelongipes* (Cambridge)

135. Dorsal view of female, legs omitted.

136. Lateral view of cephalothorax, legs omitted.

137. Epigyne.

Type-specimen: Syntype one ♀ in spirit in bad condition, deposited in OUM. Regd. No. 1594.

Type-locality: Sinai, West ASIA.

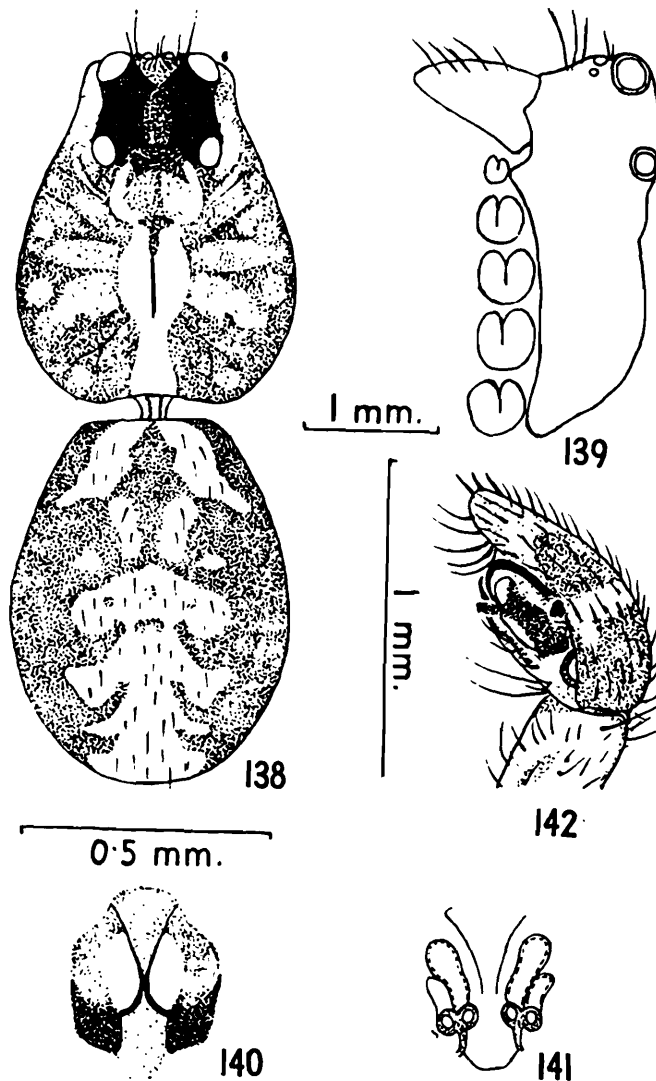
Distribution: INDIA: Kutch, Gujarat; Rajasthan; Assam, Punjab. PAKISTAN: Karachi, Rawalpindi and Sinai, West ASIA.

Remark: We have studied and illustrated on the basis of one of the two female specimens identified by E. Simon collected from Karachi, Pakistan and compared with type. The condition of this specimen is good, deposited in the MNHN, Paris, Regd. No. 19441. Though we have received the Cambridge's type from the Oxford University Museum, but due to its bad condition, we are unable to study and illustrate the type.

18. *Evippa shivajii* sp.nov.

(Figs. 138-142)

General: Cephalothorax and legs brown, abdomen dark brown with white patches. Total length 5.80 mm. Carapace 2.60 mm. long, 2.20 mm. wide; abdomen 3.00 mm. long, 2.20 mm. wide.



FIGS. 138-142. *Evippa shivajii* sp. nov.

138. Dorsal view of female, legs omitted.

139. Lateral view of cephalothorax, legs omitted.

140. Epigyne.

141. Internal genitalia.

142. Left male palp, ventral view.

Cephalothorax: Longer than wide, narrowing anteriorly, clothed with pubescence; cephalic region abruptly elevated, thus forming

a distinct angle with the thoracic region as in fig. 139. Anterior row of eyes procurved and shorter than the second row, anterior medians larger than the anterior laterals. Eyes of the second row larger than the others, ocular area dark. Space enclosed between posterior eyes slightly longer than wide as in fig. 138. Middle of cephalothorax provided with a sharp fovea. A broad median longitudinal pale band extends from bases of third row of eyes to base of cephalothorax, lateral margins provided with longitudinal broken pale bands as in fig. 138. Sternum heart-shaped, pointed behind, uniform pale and provided with few spines. Labium wider than long. Distal end of maxillae broader and provided with scopulae. Chelicerae moderately strong, inner margin provided with two teeth and outer margin with three teeth. Legs long and transversely banded with conspicuous brown patches, tibiae I provided with six pairs of robust ventral spines. Male slightly smaller than the female but of similar colour. Male palp as in fig. 142.

Abdomen: Longer than wide, oval, pointed behind, dorsally clothed with pubescence and few spine-like hairs and provided with broad white patches. Ventral side pale. Epigyne as in fig. 140. Internal genitalia as in fig. 141.

Holotype: ♀, *paratype* one ♀ *allotype* two ♂♂ in spirit, deposited at Z S I. Regd. No. 4645/18

Type-locality: Shivajinagar, Poona, Maharashtra, INDIA, 29.ix.1974, Coll. M. S. Malhotra.

Discussion: This species resembles *Evippa rubiginosa* Simon but differs from it as follows: (i) Abdomen dorsally provided with broad white patches but in *E. rubiginosa* abdomen dorsally provided with a few greenish brown irregular patches. (ii) Epigyne also structurally different.

19. *Evippa rubiginosa* Simon

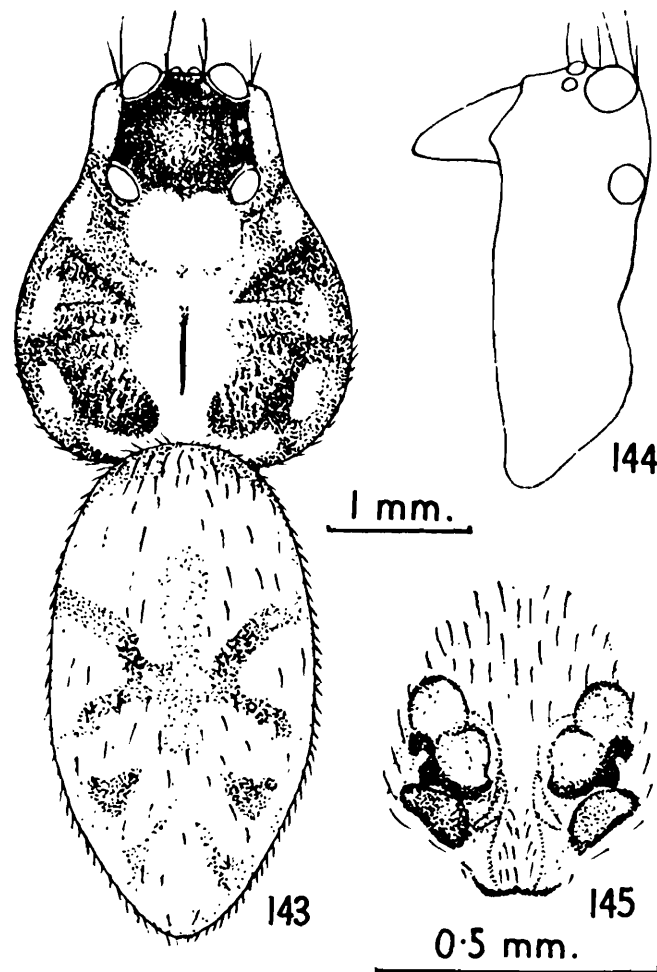
(Figs. 143-145)

1885. *Evippa rubiginosa* Simon, *Bull. Soc. Zool. Fr.*, **10** : 11.

1924. *Evippa rubiginosa* : Gravely, *Rec. Indian Mus.*, **26** : 611.

1951. *Evippa rubiginosa* : Sinha, *Rec. Indian Mus.*, **48** (2) : 48.

General: Cephalothorax brown with median longitudinal pale band. Legs yellow with brown bands. Abdomen pale with greenish brown patches. Total length 6.50 mm. Carapace 3.00 mm. long, 2.50 mm. wide; abdomen 3.50 mm. long, 2.00 mm. wide.



FIGS. 143-145. *Evippa rubiginosa* Simon

143. Dorsal view of female, legs omitted.

144. Lateral view of cephalothorax, legs omitted.

145. Epigyne.

Cephalothorax: Longer than wide, narrowing anteriorly, clothed with pubescence. Cephalic region abruptly elevated thus forming a distinct angle with thoracic region as in fig. 144. Clypeus vertical. Centre of thoracic region provided with a distinct fovea. From the bases of third row of eyes a median broad pale band extends upto the base of cephalothorax. Lateral margins of thoracic region also provided with conspicuous pale spots otherwise cephalic region brown. Anterior row of eyes slightly procurved and shorter

in width than the second row of eyes, anterior medians larger than the anterior laterals. Eyes of the second row larger than the others. Ocular area dark and provided with pubescence. Space enclosed between posterior eyes nearly as long as wide and slightly wider behind as in fig. 143. Sternum heart-shaped, pointed behind, pale and provided with spine like hairs. Labium wider than long. Maxillae broader at the distal end and provided with conspicuous scopulae at the distal end. Chelicerae moderately strong, inner margin provided with two teeth. Legs long and slender and dorsally transversely banded with conspicuous brown bands. Tibiae I provided with six pairs of ventral robust spines; IV metatarsi as long as IV tibia and patella together. Superior claws long, slender and toothed only at the base.

Abdomen: Longer than wide, oval, pointed behind, clothed with pubescence and spines. Dorsally provided with a few greenish-brown irregular patches. Ventral side pale, clothed with pubescence. Epigyne as in fig. 145. Male unknown.

Type-specimen: *Syntype* one ♀ in spirit in good condition, deposited at MNHN. Regd. No. 6995.

Type-locality: Guntakal, Andhra Pradesh, INDIA.

Distribution: INDIA: Guntakal, Andhra Pradesh; Samagooting, Assam; Cuddapah, Tamil Nadu.

Remark: Illustrations and description based on the single female type specimen.

Genus 3 *Pardosa* Koch

1848. *Pardosa* Koch, *Die. Arachnide*, 14 : 100.
 1898. *Pardosa* : Simon, *Hist. Nat. des Araignees*, 2 (2) : 361.
 1908. *Lycosa* : Dahl, *Halle. Nova Acta Leop.*, 88 : 371.
 1924. *Pardosa* : Gravely, *Rec. Indian Mus.*, 26 : 609.
 1935. *Pardosa* : Dyal, *Bull. Dept. Zool. Punjab Univ.*, Lahore, 1 : 144.
 1951. *Pardosa* : Sinha, *Rec. Indian Mus.*, 48 (2) : 45.

Diagnosis: Cephalic region elevated, clypeus vertical and chelicerae much smaller than in most other lycosids so that their height

is less than the height of the head. Cephalic region almost entirely occupied by posterior two rows of eyes. The anterior row of eyes shorter than the second row. Labium usually wider than long with the basal articular notches. Legs relatively long and thin and provided with long spines. Metatarsus IV usually longer than or at least as long as patella plus tibia together. Tibia I provided with three pairs of ventral spines. These spiders are generally found in dry open woods, as well as on wet ground near ponds and streams. The egg-sac is lenticular, usually greenish when fresh, changing to dirty grey when older. Genus *Acroniops* is the synonymy of *Pardosa*. [See discussion under species *Pardosa heterophthalmus*.]

There is much similarity between genera *Pardosa* and *Lycosa* and due to this similarity in general appearance some species belonging to the genus *Pardosa* i.e. *Pardosa mysorensis*, *P. kupupa*, *P. rhenockensis*, *P. shyamae*, *P. sutherlandi*, *P. annandalei*, *P. fletcheri* and *P. tatensis* were confused with those of *Lycosa* and previously they are placed in the genus *Lycosa*. More detailed studies have revealed that these species belong to the genus *Pardosa* and not to the genus *Lycosa*, therefore we have included the above species in the genus *Pardosa*.

The genus *Lycosa* differs from *Pardosa* in having labium longer than wide, sides of face slanting so that head at top is narrower than at clypeus and metatarsus IV shorter than tibia plus patella IV together or at least not longer.

Type-species: Pardosa striatipes Koch.

Distribution: EUROPE, AMERICA, ASIA.

Key to the species of the genus PARDOSA Koch

- | | |
|--|------------------|
| 1. Spiders of small size. Total length not more than 7 mm. | 2 |
| Spiders of bigger size. Total length more than 7 mm. | .13 |
| 2. Anterior row of eyes slightly procurved | .3 |
| Anterior row of eyes straight or slightly recurved | .9 |
| 3. Sternum with a conspicuous 'V' shaped mark | . <i>minutus</i> |
| Sternum without such mark. | .4 |

4. Sternum uniform pale .5
 Sternum uniform dark brown in colour. 7
5. Abdomen dorsal mid-longitudinally provided with white chevrons and sides with greenish brown and pale patches. (Fig. 149) .*timida*
 Abdomen dorsal mid-longitudinally not provided with such pattern. .6
6. Dorsal side of abdomen dark brown with minute pale spots and mid-longitudinal area pale (Fig. 151). .*pusiola*
 Dorsal side of abdomen pale with few small dark brown spots .*atropalpis*
7. Abdomen mid-dorsally provided with a broad longitudinal pale band and light brown irregular patches. Sub-lateral sides with black patches and pale spots (Fig. 157).. .*mukundi*
 Abdomen with not such pattern dorsally .8
8. Proximal end of the chelicerae pale and distal end with a black patch (as seen from anterior side). Patella of all legs provided with a longitudinal thin black streak dorsally .*altitudus*
 Proximal end of chelicerae not pale and chelicerae uniform in colour. Patella not provided with any longitudinal black streak dorsally. .*birmanica*
9. Legs without patches, and carapace provided with 'V' shaped markings just behind the third row of eyes (Fig. 168) .*mysorensis*
 Legs provided with patches and carapace without 'V' shaped markings behind the third row of eyes 10
10. Sternum uniform dark brown in colour. Legs reddish brown, coxae of all legs provided with dark brown patches .*kupupa*
 Sternum pale. Legs pale, coxae of legs not provided with patches. 11
11. Middle of cephalothorax provided with a pale, broad longitudinal band and posterior eyes not parallel to each other and ocular areas not much dark. 12

- Middle of cephalothorax without any pale longitudinal band and posterior eyes parallel to each other and ocular area very dark (Fig. 176). *.amkhasensis*
12. Anterior row of eyes straight (Fig. 179) and femora of legs without any patches. *.oakleyi*
 Anterior row of eyes slightly recurved and femora of legs with greenish brown transverse patches. *.burasantiensis*
13. Sternum with a 'V' shaped mark.. 14
 Sternum without a 'V' shaped mark 17
14. Anterior row of eyes slightly procurved. Dorsal posterior half of the abdomen provided with pale chevron pattern *.songosa*
 Anterior row of eyes straight. Dorsal posterior half of the abdomen provided with dark patches. 15
15. Ventral side of abdomen uniform pale and dorsal side with greenish black & pale patches (Fig. 191). *.rhenockensis*
 Ventral side of abdomen not uniform pale and dorsal side with brown patches. 16
16. Abdomen ventrally provided with sub-lateral longitudinal irregular greenish brown patches. *.shyamae*
 Abdomen ventrally provided with two lateral irregular brown patches on the sides of spinnerets *.heterophthalmus*
17. Sternum pale in colour. 18
 Sternum uniform brown or black in colour. 21
18. Cephalothorax dorsally without a median longitudinal broad pale band (Fig. 199). *.sutherlandi*
 Cephalothorax dorsally with a median longitudinal broad pale band. 19
19. Legs not provided with greenish brown patches and chelicerae not strong. *.leucopalpis*.
 Legs provided with greenish brown patches and chelicerae strong. 20

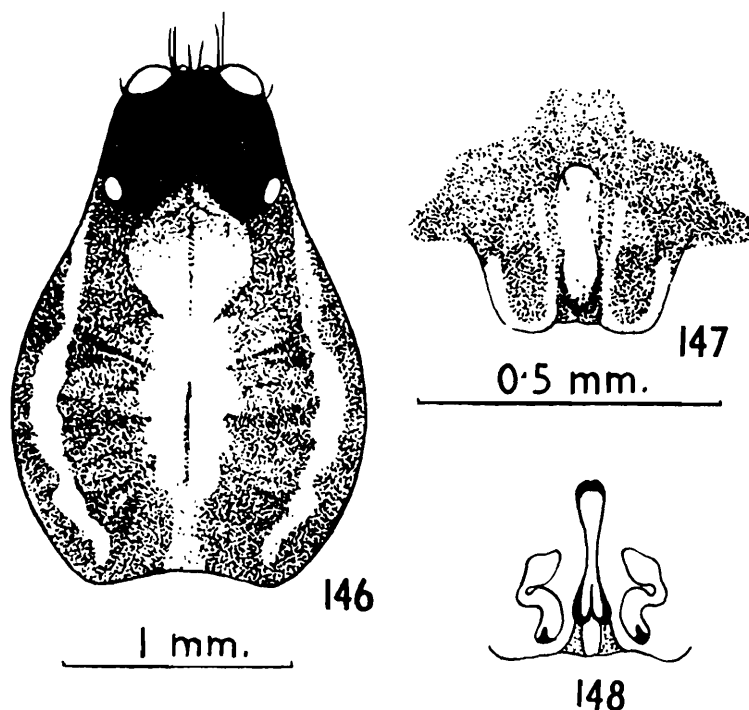
20. Ocular area black and hairy (Fig. 207) and maxillae provided with inconspicuous scopulae. .annandalei
 Ocular area not black (except bases of posterior eyes) and hairy (Fig. 211) and maxillae provided with conspicuous scopulae. .sumatrana
21. Dorsal side of cephalothorax provided with a very broad mid-longitudinal pale band and posterior quadrangle much wider behind than in front (Fig. 216). .fletcheri
 Dorsal side of cephalothorax provided with narrow mid-longitudinal light brown band and posterior quadrangle not much wider behind. .22
22. Carapace and legs brown, abdomen greenish black dorsally and coxae of all legs pale and without any patches. .chambaensis
 Carapace, legs and abdomen brown dorsally and coxae of all legs provided with light brown patches. .23
23. Median dorsal area of carapace not provided with a longitudinal pale area. Abdomen broadest behind the middle (Fig. 222) .latensis
 Median dorsal area of carapace provided with a longitudinal pale area. Abdomen broadest in the middle. .24
24. Femora of all legs provided with irregular greenish brown patches and sternum black. .ladakhensis
 Femora of all legs provided with two longitudinal broad bands dorsally and sternum dark brown. .alit

20. *Pardosa minutus* Tikader & Malhotra
 (Figs. 146-148)

1976. *Pardosa minutus* Tikader & Malhotra, *Proc. Indian Acad. Sci.*, **83** (3): 126-128.

General: Cephalothorax, legs and abdomen brown. Total length 5.20 mm. Carapace 3.00 mm. long, 2.00 mm. wide; abdomen 2.90 mm. long, 2.00 mm. wide.

Cephalothorax: Longer than wide, convex, narrow in front, clothed with pubescence, cephalic region almost entirely occupied by the posterior two rows of eyes. Clypeus vertical. Anterior row of eyes slightly procurved and shorter than the second row of eyes, anterior medians larger than the anterior laterals; eyes of the second row larger than the others. Ocular quad slightly longer than wide and narrow in front, ocular area black as in fig. 146. Middle of cephalothorax provided with a fovea. Longitudinal broad, brown bands extend from the bases of third row of eyes to the base of cephalothorax on each side. Lateral sides of carapace also provided with longitudinal black patches as in fig. 146. Sternum heart-shaped, pointed behind, provided with a conspicuous dark brown 'V' shaped mark, clothed with hairs and spines. Labium wider than long. Distal end of maxillae wider and provided with scopulae. Chelicerae moderately strong. Legs long and thin and provided with transverse black bands, clothed with hairs and spines. Metatarsi IV as long as or slightly longer than tibia and patella together.



FIGS. 146-148. *Pardosa minutus* Tikader & Malhotra
 146. Dorsal view of cephalothorax of female, legs omitted.
 147. Epigyne.
 148. Internal genitalia.

Abdomen: Longer than wide, oval, mid-dorsally with a light reddish patch extending to the whole length, dorsolaterally with longitudinal black patches. Ventral side pale with some small brown patches. Epigyne as in fig. 147. Internal genitalia as in fig. 148. Male unknown.

Type-specimen: *Holotype* ♀, *paratype* one ♀ in spirit, in good condition, deposited at ZSI. Regd. No. 4684/18.

Type-locality: Banikhet, Dist. Chamba, Himachal Pradesh, INDIA.

Distribution: INDIA: Chamba, Himachal Pradesh.

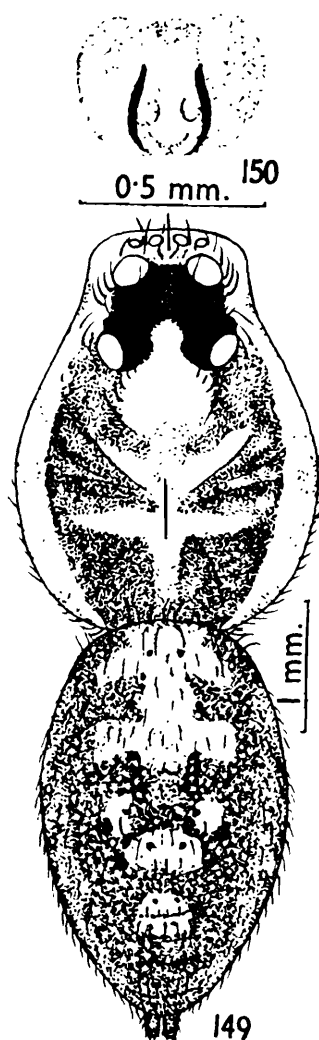
21. *Pardosa timida* (Simon)

(Figs. 149-150)

1882. *Lycosa timida* Simon, *Ann. Mus. civ. stor. nat. Genova*, **18** : 207-260.

General: Cephalothorax brown, legs pale brown, abdomen with dark brown and pale patches. Total length 7.00 mm. Carapace 3.50 mm. long, 2.50 mm. wide; abdomen 3.50 mm. long, 2.00 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence, cephalic region almost entirely occupied by the posterior eyes. Clypeus vertical. Anterior row of eyes slightly procurved and shorter than the second row, anterior medians slightly larger than laterals and slightly closer to adjacent laterals than to each other. Eyes of the second row larger than the other. Bases of posterior eyes provided with conspicuous contiguous black patches as in fig. 149. Ocular quad wider behind than in front. Space enclosed between posterior eyes slightly wider behind than in front as in fig. 149. Centre of thoracic region provided with a distinct fovea. Lateral margins of cephalothorax with pale longitudinal bands extending from clypeus to base of cephalothorax. Sternum heart-shaped, pointed behind, pale and clothed with hairs. Labium as wide as long and pale in colour. Maxillae pale, broader at the distal end and provided with inconspicuous scopulae. Chelicerae moderately strong and provided with three teeth on the inner margin of the fang furrow. Legs long and slender and clothed with hairs and spines.



FIGS. 149-150. *Pardosa timida* (Simon)
149. Dorsal view of female, legs omitted.
150. Epigyne.

Abdomen: Longer than wide, oval, pointed behind, clothed with pubescence and spine like hairs dorsally, mid-longitudinally provided with white chevrons and sides with greenish brown and pale patches and spots. Ventral side pale. Epigyne as in fig. 150. Male unknown.

Type-specimen: Syntype one ♀ in spirit in good condition, deposited at MNHN. Regd. No. 14697.

Type-locality: Tes, YEMEN, South West ASIA.

Distribution: Tes, YEMEN, South West ASIA; PAKISTAN: Karachi and SRI LANKA.

Remark: We presume that this species is available in the Indian sub-continent, though we have no record so far of this species occurring in India proper, but it was recorded from PAKISTAN as well as from SRI LANKA by Simon (1882). Description based on a single female specimen.

22. *Pardosa pusiola* (Thorell)

(Figs. 151-152)

1891. *Lycosa pusiola* Thorell, *Sv. Ak. Handl.*, 24 (2) : 65.

1905. *Pardosa pusiola* : Simon, 'Arach. de Java', *Mt. Mus. Humburg*, 22 : 51-73.

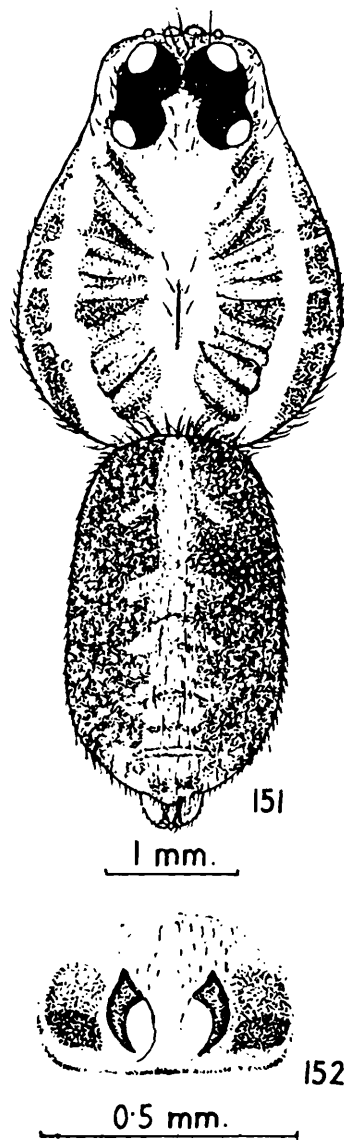
1924. *Pardosa pusiola* : Gravely, *Rec. Indian Mus.*, 26 : 609.

1951. *Pardosa pusiola* : Sinha, *Rec. Indian Mus.*, 48 (2) : 45.

General: Cephalothorax dark brown with pale longitudinal bands, legs pale brown and abdomen dark brown with pale spots. Total length 6.20 mm. Carapace 3.00 mm. long, 2.50 mm. wide; abdomen 3.00 mm. long, 1.60 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence, cephalic region almost entirely occupied by the posterior eyes. Clypeus vertical. Anterior row of eyes slightly procurved and shorter than the second row and anterior medians slightly larger than the laterals and placed equi-distant to each other. Eyes of the second row larger than the others. Bases of posterior eyes provided with conspicuous black patches as in fig. 151. Space enclosed between posterior eyes slightly wider behind than in front as in fig. 151. Centre of thoracic region provided with conspicuous fovea. A median, longitudinal broad, pale band extends from ocular quad upto the base of cephalothorax. Two conspicuous dark-brown, longitudinal bands extend from the third row of eyes to the base of cephalothorax. Marginal dark brown, broken, longitudinal bands also present as in fig. 151. Sternum heart-shaped, pointed behind, pale and provided with hairs. Labium wider than long. Maxillae broader at the distal end and provided with conspicuous scopulae. Chelicerae moderately strong. Legs strong and clothed with hairs and spines. Metatarsi IV as long as tibia and patella together.

Abdomen: Longer than wide, oval, pointed behind, dorsal



FIGS. 151-152. *Pardosa pusiola* (Thorell)

151. Dorsal view of female, legs omitted.

152. Epigyne.

side dark brown with minute pale spots, mid-longitudinal area provided with a pale stripe. Ventral side pale. Epigyne as in fig. 152. Male unknown.

Type-specimen: Syntype one ♀, in spirit, in good condition, deposited at MNHN. Regd. No. 5578.

Type-locality: Java.

Distribution: INDIA: Sureil, Dist. Darjeeling, West Bengal; SRI LANKA: Peradeniya; BURMA: Tharrawaddy, Ajer-Mancior

and Kajee, Nias and Pinang; INDONESIA: SUMATRA, BORNEO and JAVA.

Remark: Description based on a single female specimen of Java. We could not examine specimens recorded from India.

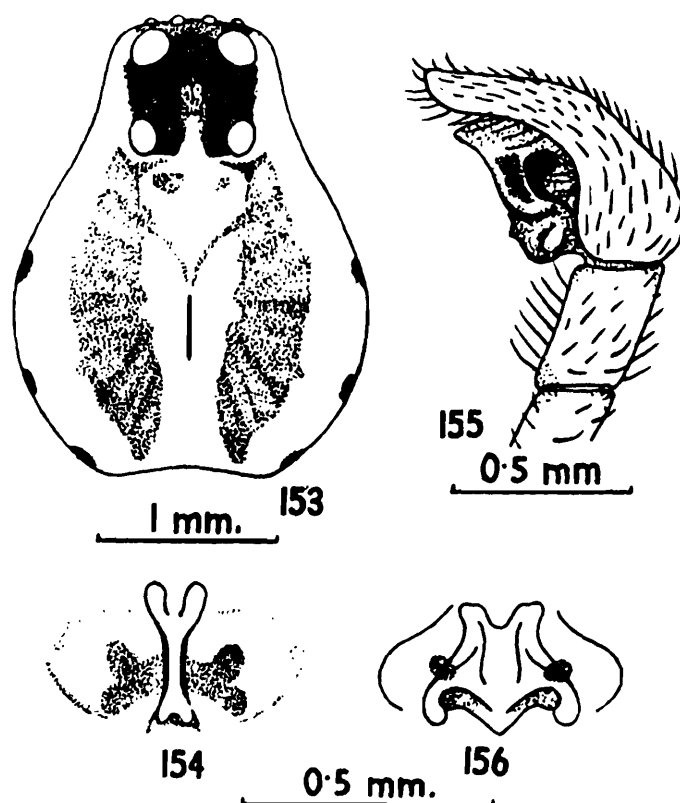
23. *Pardosa atropalpis* Gravely

(Figs. 153-156)

1924. *Pardosa atropalpis* Gravely, *Rec. Indian Mus.*, 26 : 610.

1951. *Pardosa atropalpis* : Sinhā, *Rec. Indian Mus.*, 48 (2) : 46.

General: Cephalothorax, legs and abdomen brownish yellow in colour. Total length 4.75 mm. Carapace 2.50 mm. long, 2.00 mm. wide; abdomen 2.50 mm. long, 1.75 mm. wide.



FIGS. 153-156. *Pardosa atropalpis* Gravely

153. Dorsal view of cephalothorax of female, legs omitted.

154. Epigyne.

155. Internal genitalia.

156. Left male palp. lateral view.

Cephalothorax: Longer than wide, convex, clothed with pubescence; cephalic region high, narrow and almost occupied by the posterior four eyes. Clypeus vertical. Middle of cephalothorax provided with a sharp fovea. Anterior row of eyes slightly procurved and less wider than the second row; anterior medians larger than the anterior laterals. Eyes of the second row larger than the others. Space enclosed between posterior eyes as wide as long as in fig. 153. Bases of the posterior eyes provided with conspicuous black patches. Sternum heart-shaped, pointed behind, pale and clothed with pubescence. Labium as long as wide. Maxillae wider in front and anterior end provided with scopulae. Chelicerae moderately strong. Legs long, IV leg longest, pale and clothed with hairs and spines. Male slightly smaller in size. Male palp as in fig. 156.

Abdomen: Longer than wide, oval, pointed behind, dorsally with few small dark brown spots and clothed with hairs and spine-like hairs. Ventral side pale. Epigyne as in fig. 154. Internal genitalia as in text-fig. 155.

Type-specimen: Syntype one ♀ and one ♂ in spirit, in good condition, deposited at ZSI Regd. No. 7726/H₂.

Type-locality: Madras City, Tamil Nadu.

Distribution: INDIA: Madras city, Gudalur, Foot of Nilgiris, Tamil Nadu; Dist. Chittoor, Nellore, Andhra Pradesh; Bangalore, Bandipur, Karnataka; Barkuda Island, Chilka Lake, Dist. Ganjam, Orissa; Inanpur, Raghunathpur, Durgapur, Mugma, Chaurasi, Kanja Pahar, Dist. Manbhum, Bihar; Barakar, Dist. Burdwan, West Bengal.

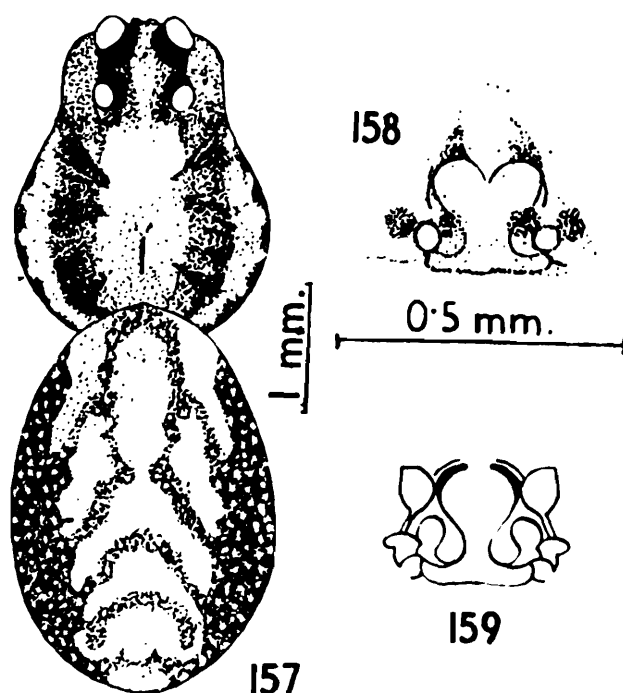
24. *Pardosa mukundi* sp. nov.

(Fig.s 157-159)

General: Cephalothorax and legs dark brown, abdomen pale dorsally. Total length 5.70 mm. Carapace 2.70 mm. long, 2.10 mm. wide; abdomen 3.20 mm. long, 2.10 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence, and some spines, cephalic region slightly high. Thoracic region pale brown mid-longitudinally and centre provided with

a fine fovea from which dark brown, thin bands extend to the sub-lateral sides as fig-157. Anterior row of eyes procurved, less wider than the second row (posterior medians), anterior medians larger than the anterior laterals. Ocular quad wider behind and narrowing in front. Posterior eyes of the same size and bases provided with conspicuous black patches as in fig.157. Space enclosed between posterior eyes longer than wide and posterior eyes longitudinally parallel to each other as in fig. 157. Sternum heart-shaped, pointed posteriorly, uniform brown, clothed with pubescence and some spines. Labium dark brown, wider than long. Distal end of maxillae broad and provided with scopulae. Chelicerae dark brown, moderately strong, inner margin of fang furrow with three teeth. Legs thin and long. Femora of all legs black, patella and tibiae of all legs with dark brown irregular patches.



FIGS. 157-159. *Pardosa mukundi* sp. nov.

157. Dorsal view of female, legs omitted.

158. Epigyne.

159. Internal genitalia.

Abdomen: Longer than wide, oval, broadest behind the middle, clothed with pubescence and some spines. Mid-dorsally provided with the broad longitudinal pale band and light brown irregular

patches as in fig. 157. Sub-lateral sides with black patches and pale spots as in fig 157. Ventral side pale. Epigyne as in fig. 158. Internal genitalia as in fig. 159. Male unknown.

Type specimen: Holotype ♀ with cocoon, Paratypes three ♀ ♀ in spirit, deposited at ZSI. Regd. No. 4641/18.

Type-locality: Mukund Nagar, Poona, Maharashtra, INDIA. 28.ix.1975, Coll. Dr. B. K. Tikader.

Discussion: This species resembles *Pardosa rhenockensis* (Tikader) but can be separated from it as follows : (i) Space enclosed between posterior eyes longer than wide and not wider behind but in *P. rhenockensis* the space enclosed between posterior eyes is wider behind and narrowing in front. (ii) Sternum uniform brown in colour but in *P. rhenockensis* sternum mid-longitudinally provided with a 'V' shaped black band. (iii) Epigyne also structurally different.

25. *Pardosa altitudus* sp. nov.

(Figs. 160-162)

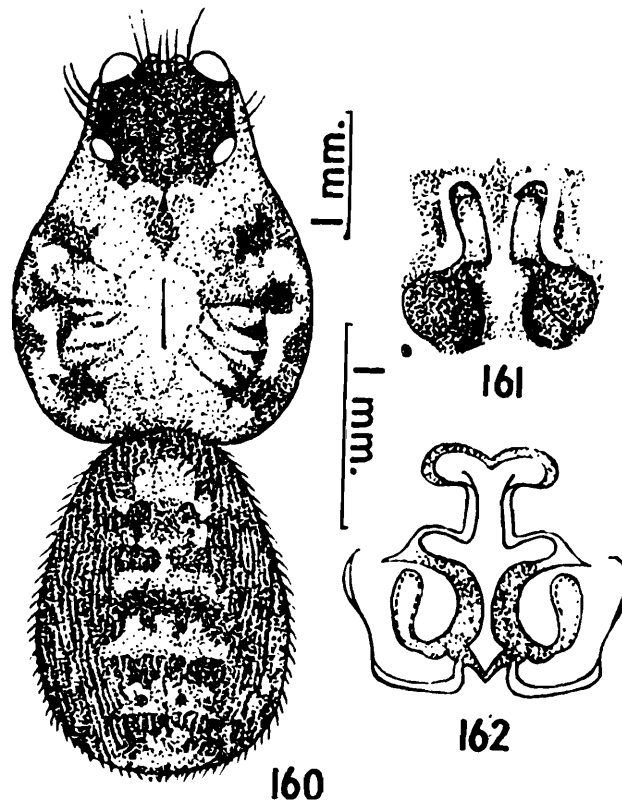
General: Cephalothorax and legs dark brown, abdomen brownish black. Total length 6.00 mm. Carapace 3.30 mm. long, 2.50 mm. wide; abdomen 2.90 mm. long, 2.10 mm. wide.

The colour and external characters of this species very much resemble with the previous species i.e. *Pardosa mukundi* sp. nov. Therefore the description of external characters are not given, However, this species very much differs from the foregoing species in the morphological details of epigyne and internal genitalia (Figs. 161 and 162). Male unknown.

Type-specimen: Holotype ♀, paratype one ♀ in spirit, deposited at ZSI. Regd. No. 4639/18.

Type-locality: Musoorie, Uttar Pradesh, INDIA, 20.vi.1975, Coll. S. Chakraborty.

Discussion: This species closely resembles with *Pardosa tastensis* (Tikader) but can be separated from it as follows: (i) Anterior row of eyes slightly procurved but in *P. tastensis* anterior row



FIGS. 160-162. *Pardosa altitudus* sp. nov.
 160. Dorsal view of female, legs omitted.
 161. Epigyne.
 162. Internal genitalia.

of eyes straight. (ii) Chelicerae pale and distal end provided with a conspicuous black patch as seen from anterior side but in *P. tatensis*, chelicerae uniform dark brown in colour. (iii) Epigyne also structurally different. (Figs. 161 and 223)

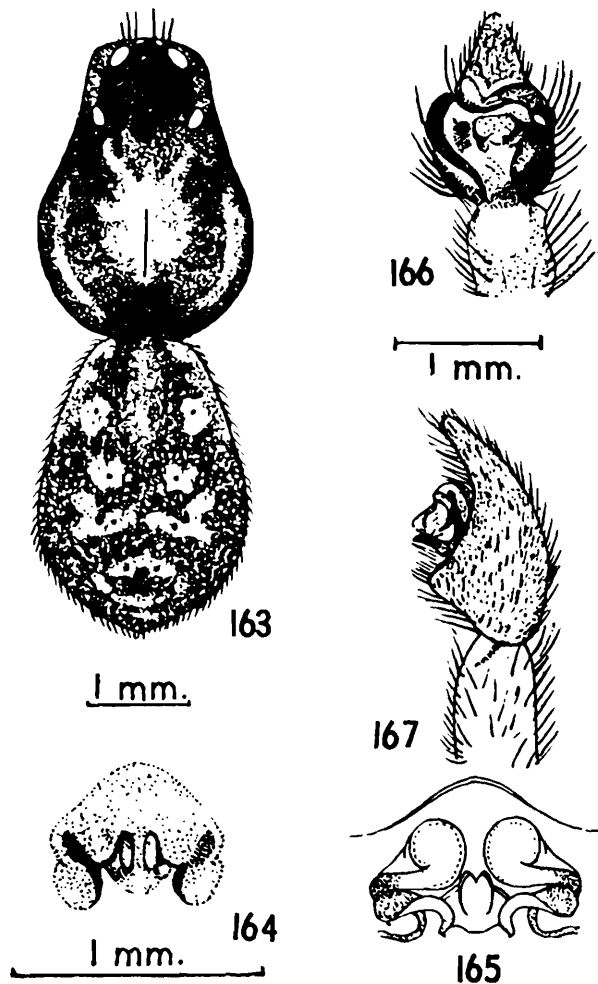
26. *Pardosa birmanica* Simon

(Figs. 163-167)

1884. *Pardosa birmanica* Simon, *Ann. Mus. civ. stor. nat. Genova*, **20** : 333
 1890. *Pardosa ipnochoera*: Thorell, *Ann. Mus. civ. stor. nat. Genova*, **10** (2) : 138. *Syn.n.*
 1895. *Lycosa birmanica* : Thorell, *Descriptive catalogue of spiders of Burma*, : 242. *Syn.n.*
 1924. *Lycosa birmanica* : Gravelly, *Rec. Indian Mus.*, **26** : 607.
 1935. *Lycosa birmanica* : Dyal, *Bull. Dept. Zool. Punjab Univ.*, Lahore, **1**: 136.
 1951. *Lycosa birmanica* : Sinha, *Rec. Indian Mus.*, **48**(2) : 40.
 1972. *Pardosa bhatnagari* : Sadana, *Ent. Monthly Mag.*, **107** : 226. *Syn.n.*

General: Cephalothorax and legs dark brown, abdomen with black and pale patches. Total length 6.20 mm. Carapace 3.00 mm. long, 2.10 mm. wide; abdomen 3.20 mm. long, 2.20 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence, cephalic region narrowing in front and slightly high. Centre of thoracic region light brown and middle provided with a sharp fovea. Ocular area black. Anterior row of eyes slightly procurved, less wider than the second row, medians larger than laterals and bases of laterals provided with black patches. Eyes of the second row larger than the others. Ocular quad wider behind



FIGS. 163-167. *Pardosa birmanica* Simon

- 163. Dorsal view of female, legs omitted.
- 164. Epigyne.
- 165. Internal genitalia.
- 166. Left male palp, ventral view.
- 167. Left male palp, lateral view.

and narrowing in front. Bases of posterior eyes provided with conspicuous black patches as in fig. 163. Space enclosed between posterior eyes black and very slightly wider behind than in front. Sternum heart-shaped, pointed behind, clothed with pubescence and hairs and uniform dark brown in colour. Labium nearly as long as wide, dark brown in colour. Distal end of maxillae broader and provided with distinct scopulae. Chelicerae moderately strong and inner margin of fang furrow provided with three unequal teeth. Legs thin and long, clothed with spines and hairs, all segments (except tarsi) of all legs provided with conspicuous transverse greenish dark brown patches. Male of same colour and size as female. Male palp as in figs. 166 & 167.

Abdomen: Longer than wide, oval, pointed behind, broadest behind the middle, clothed with pubescence and some hairs. Ventral side pale. Epigyne as in fig. 164. Internal genitalia as in fig. 165.

Type-locality: Minhla, BURMA.

Distribution : INDIA : Panchgani, Poona, Bombay, Ahmednagar, Maharashtra; Ludhiana, Khewra, Salt range, Punjab; Gujarat; Berhampore, Burdwan, Gurdanga, Gmatia, Birbhum, Calcutta, Dum Dum, Singla, Darjeeling, West Bengal; Barkuda Island, Chilka lake, Brijal Sagar, Orissa; Mowai, Bara Banki, Mirzapur, Dehra Dun, Uttar Pradesh; Udaipur, Jodhpur, Rajasthan; Rajkot, Jamnagar, Mehsana, Gujarat; Poota, Kangra, Solan, Sirmour, Kot Khal, Chamba, Himachal Pradesh; Mandla, Jabalpur, Broach, Burhanpur, Rewa state, Madhya Pradesh; Garo Hills, Shillong, Meghalaya; Manbhum, Siripur, Saran, Chai-bassa, Chakradharpur, Bihar; Ootacamund, Nilgiris, Madras city, Tamil Nadu; Horsleykonda, Ennur, Chingleput, Andhra Pradesh. BURMA: Minhla, Tavory, Tharrawaddy and Rangoon, Java. ALEXANDRIA. PAKISTAN : Lahore.

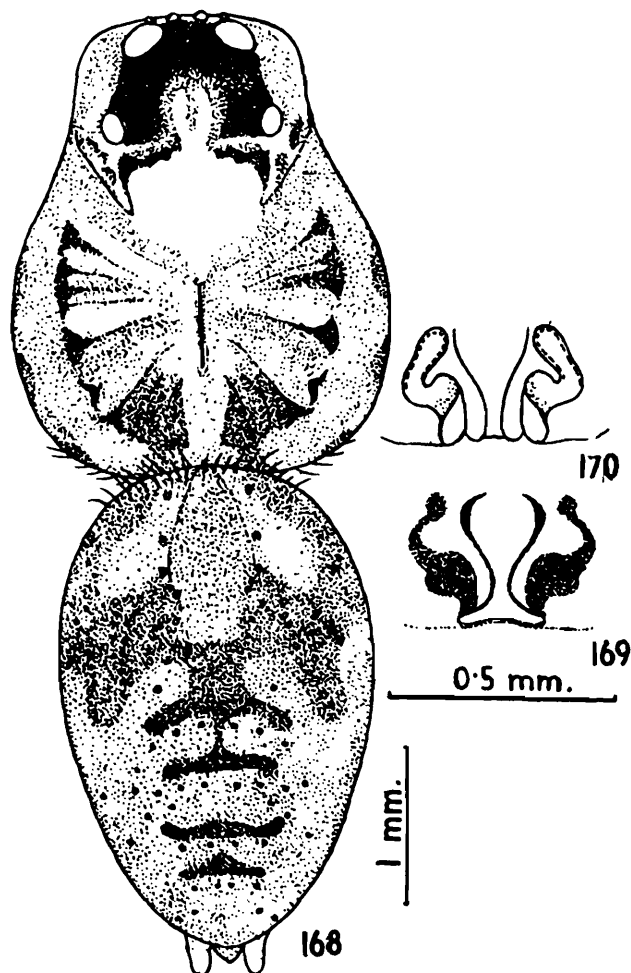
Remark: Description and illustrations based on the authenticated identified specimens (1 ♀ 1 ♂) collected from Poona, Maharashtra, India, as we could not get the type-specimens.

27. *Pardosa mysorensis* (Tikader & Mukerji)

(Figs. 168-170)

1971. *Lycosa mysorensis* Tikader & Mukerji, *Sci. & Cult.*, 37 : 531.

General: Cephalothorax and abdomen greenish brown, legs light brown. Total length 6.20 mm. Carapace 3.00 mm. long, 2.50 mm. wide; abdomen 3.30 mm. long, 2.00 mm. wide.



FIGS. 168-170. *Pardosa mysorensis* (Tikader & Mukerji)
 168. Dorsal view of female, legs omitted.
 169. Epigyne.
 170. Internal genitalia.

Cephalothorax: Longer than wide, convex, clothed with pubescence, cephalic region almost entirely occupied by the posterior two rows of eyes. Centre of thoracic region provided with a sharp fovea. Clypeus vertical. Anterior row of eyes straight, less wider than the second row and anterior medians slightly larger

than the anterior laterals. Eyes of the second row larger than the others. Ocular quad wider behind and narrowing in front. Bases of posterior eyes provided with conspicuous black patches thus making the ocular area black as in fig. 186. Base of cephalothorax provided with one greenish brown dark patch on each side as in fig. 168. Sternum heart-shaped, pointed behind and pale. Labium light brown and slightly wider than long. Distal end of maxillae broad and provided with scopulae. Chelicerae moderately strong and inner margin of fang furrow provided with three teeth. Legs thin and long, clothed with hairs and spines and light brown in colour.

Abdomen: Longer than wide, oval, pointed posteriorly. Dorsal anterior-middle region pale; posterior half provided with greenish brown patches alternating with pale colour and small black spots. Ventral side pale. Epigyne as in fig. 169. Internal genitalia as in fig. 170. Male unknown.

Type-specimen: *Holotype* ♀ and *paratypes* two ♀ ♀ in spirit in good condition, deposited in ZSI. Regd. No 3433/18.

Type-Localities: Tunga Anicuite, Gajnur, Dist. Shimoga, Karnataka, India.

Distribution: So far this species is known only from its type locality.

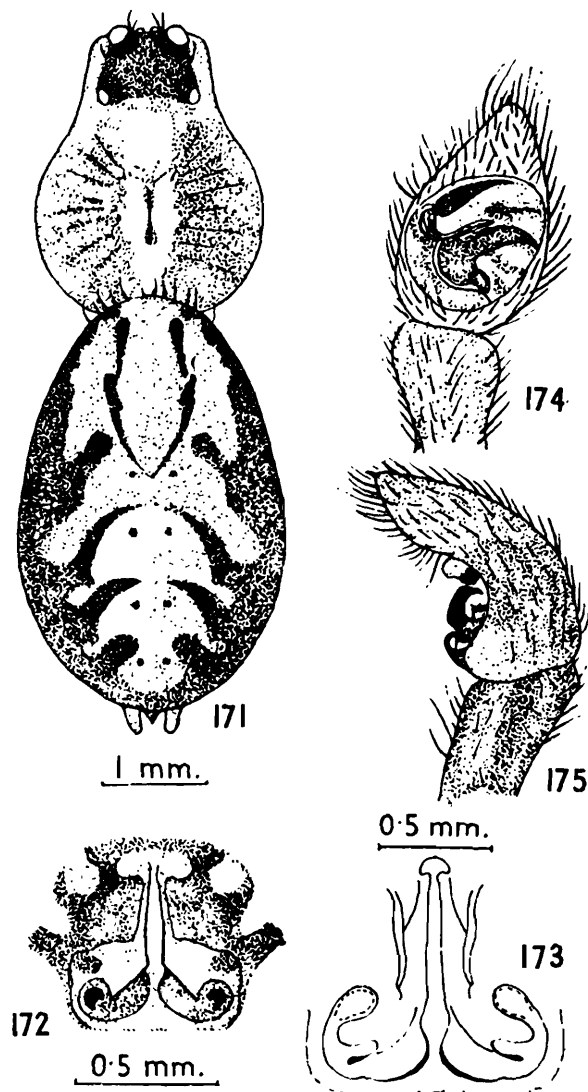
28. *Pardosa kupupa* (Tikader)

(Figs.171-175)

1970. *Lycosa kupupa* Tikader, *Rec. zool. Surv. India*, 64 (1-4) : 66.

General: Cephalothorax deep brown, legs reddish brown with black patches, abdomen reddish brown. Total length 6.80 mm. Carapace 2.80 mm. long, 2.20. mm wide; abdomen 4.20 mm. long, 2.50 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with fine hairs and some spine like hairs, slightly high and narrowing in front, middle provided with a conspicuous broad longitudinal light patch and centre of thoracic region with a fovea. Anterior row of eyes straight, shorter than the second row and anterior me-



FIGS. 171-175. *Pardosa kupupa* (Tikader)
 171. Dorsal view of female, legs omitted.
 172. Epigyne.
 173. Internal genitalia.
 174. Left male palp, ventral view.
 175. Left male palp, lateral view.

dians almost of same size as anterior laterals. Eyes of the second row larger than the others. Ocular quad slightly wider behind and narrowing in front. Space enclosed between posterior eyes slightly wider behind than in front as in fig.171. Sternum heart-shaped, pointed behind, dark brown, and clothed with hairs and pubescence. Labium wider than long. Distal end of maxillae broad and provided with scopulae. Chelicerae moderately strong and inner margin of fang furrow with three teeth. Legs long and thin and provided with hairs and spines. Femora of all legs

with very conspicuous black, transverse patches. Patella and tibiae of all legs also provided with conspicuous transverse brown patches. Male smaller than female but similar in colour. Male pale as in fig. 174 & 175.

Abdomen: Oval, broadest just behind the middle, clothed with pubescence and few spine like hairs dorsally. Anterior-mid-dorsal side provided with a longitudinal lens shaped marking followed by black patches alternating with the reddish brown colour as in fig. 171. Ventral side pale. Epigynæ as in fig. 172. Internal genitalia as in fig. 173.

Type-specimen: *Holotype* ♀, *paratypes* thirteen ♀ ♀ and *allotypes* five ♂ ♂ in spirit in good condition deposited in ZSI, Regd. No. 3235/18.

Type-locality: Kupup, East Sikkim, INDIA.

Distribution: So far this species is known only from its type locality.

Remark: Description and illustrations are based on one paratype and one allotype.

29. *Pardosa amkhasensis* Tikader & Malhotra

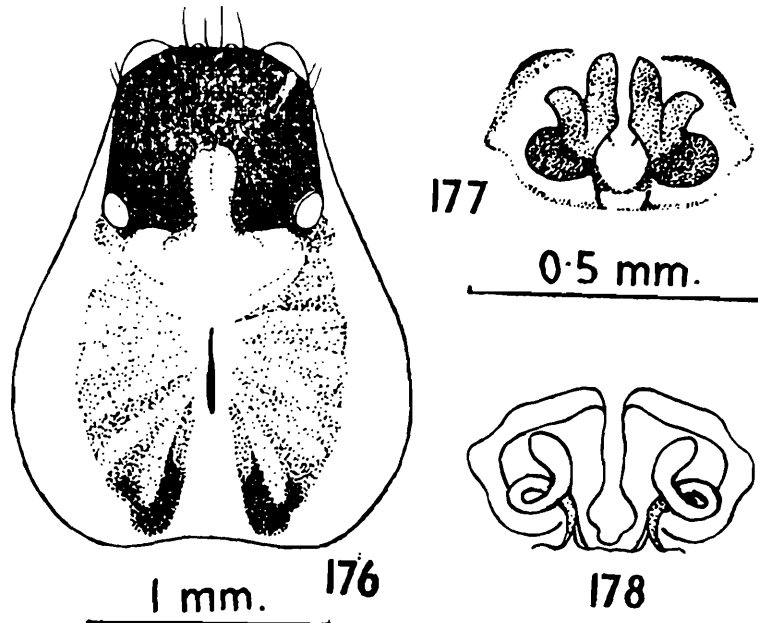
(Figs. 176-178)

1976. *Pardosa amkhasensis* Tikader & Malhotra, *Proc. Indian Acad. Sci.*, 83 (3) : 124-126.

General: Cephalothorax and legs greenish-brown, abdomen brown with black and white patches. Total length 4.30 mm. Carapace 2.00 mm. long, 1.80 mm. wide; abdomen 2.00 mm. long, 1.50. mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence, cephalic region almost entirely occupied by posterior two row of eyes. Clypeus vertical. Anterior row of eyes straight and shorter than the second row, anterior medians larger than the anterior laterals. Eyes of the second row larger than the others. Ocular quad longer than wide and very slightly narrow in front. Bases of posterior eyes provided with conspicuous black patches thus making ocular area black as in fig.176. Middle of cephalothorax provided with a short fovea. Broad light brown patches

extend from bases of third row of eyes to the base of cephalothorax on each side as in fig. 176. Sternum heart-shaped, pointed behind, pale and provided with some spine-like hairs. Labium slightly wider than long. Distal end of maxillae wider and provided with scopulae. Chelicerae moderately strong. Legs long and thin and clothed with hairs and spines. Metatarsi IV nearly as long as or slightly longer than the tibia and patella together.



FIGS. 176-178. *Pardosa amkhasensis* Tikader & Malhotra
 176. Dorsal view of cephalothorax, legs omitted.
 177. Epigyne.
 178. Internal genitalia.

Abdomen: Longer than wide, oval, pointed behind, clothed with hair. Anterio-mid-dorsally with a lens-shaped pale marking, followed by white patches. Dorso-laterally with black longitudinal patches on each side. Ventral side pale. Epigyne as in fig. 177. Internal genitalia as in fig. 178. Male unknown.

Type-specimen: *Holotype* ♀, in spirit in good condition, deposited at ZSI. Regd. No. 4680/18.

Type-locality: Amkhas, Dist. Jabalpur, Madhya Pradesh, INDIA.

Distribution: So far this species is known only from its type locality.

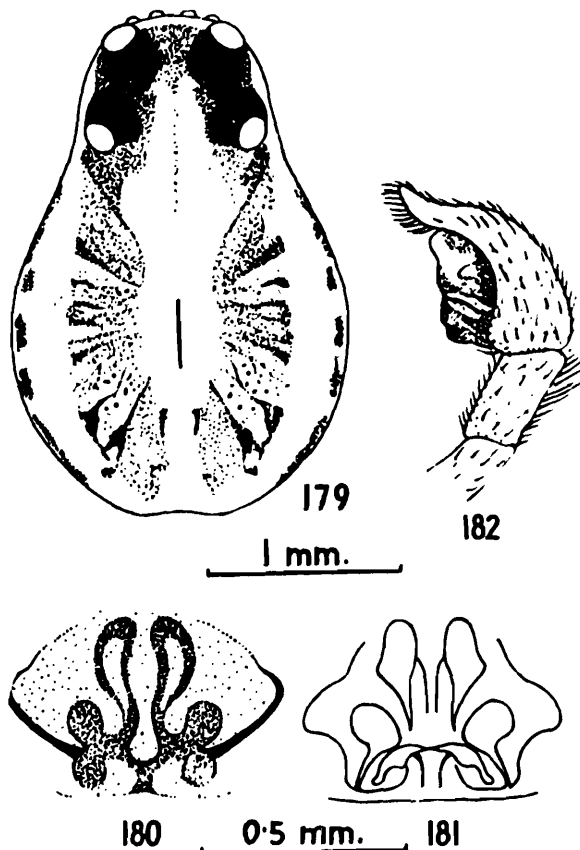
Remark: Description based on a single female specimen.

30. *Pardosa oakleyi* Gravely

(Figs. 179-182)

1924. *Pardosa oakleyi* Gravely, *Rec. Indian Mus.*, 26 : 610.1935. *Pardosa lahorensis* : Dyal, *Bull. Dept. Zool. Punjab, Univ.*, 1 : 145.1951. *Pardosa oakleyi* : Sinha, *Rec. Indian Mus.*, 48 (2) : 47.

General: Cephalothorax and legs yellowish brown, abdomen pale with brownish black patches. Total length 5.00 mm. Carapace 2.60 mm. long, 2.00 mm. wide; abdomen 3.00 mm. long, 2.00 mm. wide.

FIGS. 179-182. *Pardosa oakleyi* Gravely

179. Dorsal view of cephalothorax, legs omitted.

180. Epigyne.

181. Internal genitalia.

182. Left male palp, lateral view.

Cephalothorax: Longer than wide, convex, clothed with pubescence, cephalic region high and almost entirely occupied by posterior two rows of eyes. Clypeus vertical. Anterior row of eyes straight and shorter than the second row, anterior medians larger than the

others. Space enclosed between posterior eyes nearly as long as wide and slightly narrowing in front as in fig. 179. Bases of posterior eyes provided with conspicuous black patches. Middle of cephalothorax provided with a sharp fovea. A broad brown longitudinal patch extend from base of posterior eye to the base of cephalothorax on each side as in fig. 179. Sternum heart-shaped, pointed behind, pale and provided with some spine-like hairs. Labium slightly wider than long. Maxillae wider in front. Chelicerae moderately strong. Legs moderately strong and clothed with hairs and spines. Male and female almost of same size and colour. Male palp as in fig. 182.

Abdomen: Longer than wide, nearly oval, and anterior-mid-dorsally with a lens shaped marking followed behind by a pale band, sides with two broad longitudinal rows of brownish black patches from base to end. Ventral side pale. Epigyne as in fig. 180. Internal genitalia as in fig. 181.

Type-specimen: Syntypes one ♀ and one ♂ in spirit in good condition, deposited at ZSI. Regd. No. 7704/H₂.

Type-locality: Ootacamund, Nilgiris, Tamil Nadu.

Distribution: INDIA: Ootacamund, Nilgiris, Tamil Nadu; Agumbi ghat, Dist. Shimoga, Karnataka; Siripur, Saran, Mugma, Inanpur, Barakar, Manbhum, Bihar; Gujarat; Khewra, Salt Range, Punjab; PAKISTAN.

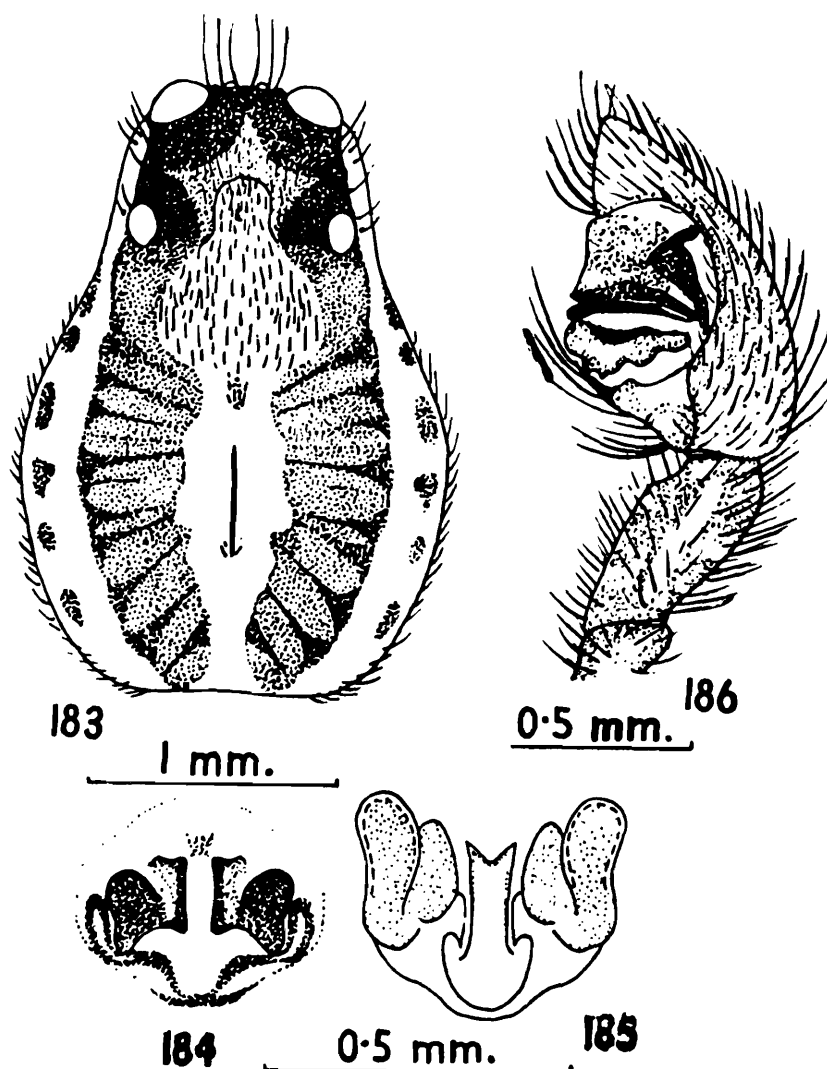
31. *Pardosa burasantiensis* Tikader & Malhotra

(Figs. 183-186)

1976. *Pardosa burasantiensis* Tikader & Malhotra, *Proc. Indian Acad. Sci.*, **83** (3) : 130-131.

General: Cephalothorax yellowish brown, abdomen greenish brown. Legs pale with greenish brown transverse bands. Total length 6.00 mm. Carapace 2.60 mm. long, 2.00 mm. wide; abdomen 3.00 mm. long, 2.00 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence. Cephalic region slightly high. Clypeus vertical. Anterior row of eyes slightly recurved and anterior medians larger than the



FIGS. 183-186. *Pardosa burasantiensis* Tikader & Malhotra
 183. Dorsal view of cephalothorax, legs omitted.
 184. Epigyne.
 185. Internal genitalia.
 186. Left male palp, ventrolateral view.

anterior laterals. Eyes of the second row largest. Ocular quad slightly wider than long and narrow in front. Bases of posterior eyes provided with conspicuous black patches as in fig. 183. Middle of cephalothorax provided with a conspicuous short fovea. Two longitudinal brown patches extend from the base of third row of eyes upto the base of cephalothorax as in fig. 183. Sternum heart-shaped, pointed behind, pale and provided with few spines. Labium wider than long. Distal end of maxillae provided with scopulae. Chelicerae moderately strong and retromargin of chelicerae pro-

vided with three teeth. Legs long and thin, provided with conspicuous light greenish brown transverse patches. Male slightly smaller than female but of same colour. Male palp as in fig. 186.

Abdomen: Longer than wide, oval, pointed behind, dorsally provided with irregular greenish brown patches. Ventral side pale. Epigyne as in fig. 184. Internal genitalia as in fig. 185.

Type-specimen: *Holotype* ♀, *paratype* one ♀, *allotype* two ♂♂ in spirit, in good condition, deposited at ZSI. Regd. No. 4681/18.

Type-locality: Burasanti, Singur, West Bengal, INDIA.

Distribution: So far this species is known only from its type locality.

32. *Pardosa songosa* Tikader & Malhotra

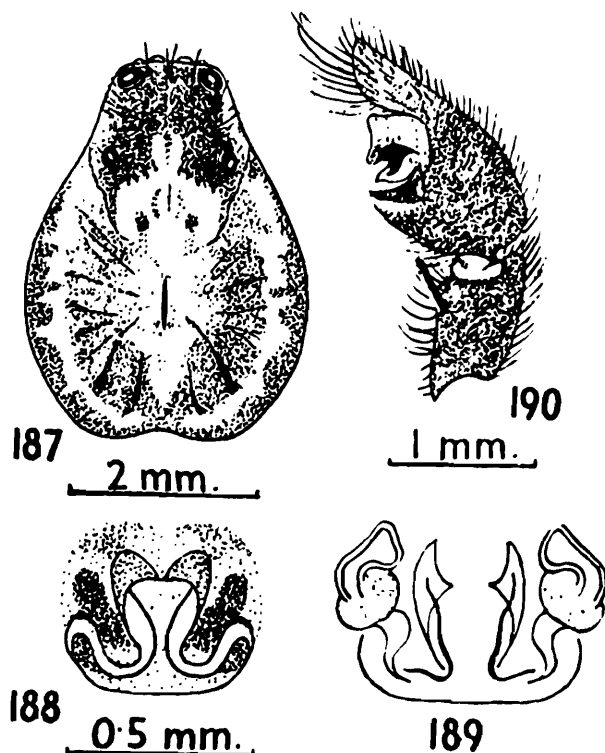
(Figs. 187-190)

1976. *Pardosa songosa* Tikader & Malhotra, *Proc. Indian Acad. Sci.*, **83** (3) : 128-130.

General: Cephalothorax and abdomen brown, legs brownish green. Total length 9.20 mm. Carapace 4.00 mm. long, 3.00 mm. wide; abdomen 5.00 mm. long, 3.50 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with fine hairs. Cephalic region high and narrow, the posterior four eyes occupy almost entire cephalic region. Clypeus vertical. Cephalothorax deep brown and middle provided with fine fovea, surrounded by pale markings as in fig. 187. Lateral sides with brown patches and some gaps of pale patches. Anterior row of eyes slightly procurved and much shorter than the second row, anterior medians slightly larger than the anterior laterals. Second row of eyes larger than the others. Posterior quadrangle as long as wide as in fig. 187. Sternum heart-shaped, pointed behind, clothed with fine hairs and spine-like hairs and with a 'V' shaped black mark. Labium nearly as long as wide. Distal end of maxillae wider and provided with scopulae. Chelicerae moderately strong and retromargin provided with three teeth. Legs long, thin, clothed with spines and hairs and banded with transverse brown patches. Metatarsi I provided with three pairs of ventral spines and apical spines very

short. Metatarsi IV nearly as long as or slightly longer than tibia and patella together. Male palp as in fig. 190.



FIGS. 187-190. *Pardosa songosa* Tikader & Malhotra
 187. Dorsal view of cephalothorax, legs omitted.
 188. Epigyne.
 189. Internal genitalia.
 190. Left male palp, lateral view.

Abdomen: Longer than wide, narrowing behind, clothed with fine hairs and some spine-like hairs. Posterior half provided dorsally with pale chevron pattern. Ventral side pale with some small black spots. Epigyne as in fig. 188. Internal genitalia as in fig. 189. Male also of similar colour but slightly smaller in size than female.

Type-specimen: *Holotype* ♀, *paratype* two ♀♀, *allotype* two ♂♂ in spirit, in good condition, deposited at ZSI. Regd. No. 4677/18.

Type-locality: Bank of Song river, Kansro, Dist. Dehra Dun, Uttar Pradesh, INDIA. *Paratype*: Dhalkhand Forest, Dist. Saharanpur, Uttar Pradesh, INDIA. *Allotype*: Mussoorie, Dist. Dehra Dun, Uttar Pradesh, INDIA.

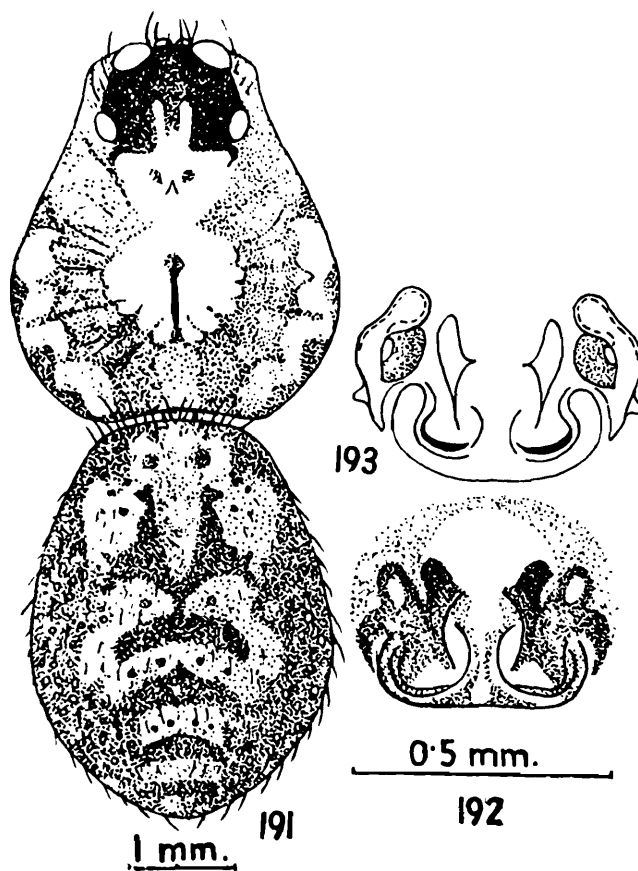
Distribution: INDIA: Dehra Dun, Saharanpur, Uttar Pradesh.

33. *Pardosa rhenockensis* (Tikader)

(Figs. 191-193)

1970. *Lycosa rhenockensis* Tikader, *Rec. zool. Surv. India*, 64 (1-4) : 68.

General: Cephalothorax and legs light brown, abdomen with pale and greenish black patches. Total length 7.50 mm. Carapace 3.70 mm. long, 3.00 mm. wide; abdomen 3.70 mm. long, 2.80 mm. wide.



FIGS. 191-193. *Pardosa rhenockensis* (Tikader)

191. Dorsal view of female, legs omitted.

192. Epigyne.

193. Internal genitalia.

Cephalothorax: Longer than wide, convex, clothed with pubescence, cephalic region slightly high and narrowing in front. Centre of thoracic region provided with a sharp fovea. Ocular area dark brown. Anterior row of eyes straight, shorter than the second row, anterior medians slightly larger than the anterior laterals. Ocular quad wider behind and narrowing in front. Bases

of posterior eyes provided with conspicuous black patches thus making the ocular area black as in fig. 191. Space enclosed between posterior eyes wider behind and narrowing in front as in fig. 191. Sternum heart-shaped, pointed behind, clothed with pubescence and some spine like hairs and mid-longitudinally provided with a 'V' shaped black band. Labium nearly as long as wide. Distal end of maxillae broader and provided with distinct scopulae. Chelicerae moderately strong and inner margin of fang furrow provided with three teeth. Legs long and provided with spines and hairs and femur, patella and tibiae of legs provided with conspicuous greenish brown irregular transverse patches.

Abdomen: Oval, pointed behind, broadest just behind the middle, clothed with pubescence and few spine like hairs dorsally. Anterior-mid-dorsal side provided with a longitudinal brown lens shaped marking followed by greenish black and pale patches and spots posteriorly as in text-fig. 191. Ventral side uniform pale. Epigyne as in fig. 192. Internal genitalia as in fig. 193. Male unknown.

Type-specimen: *Holotype* ♀, *paratypes* ten ♀♀ in spirit in good condition, deposited in ZSI. Regd. No. 3237/18.

Type-locality: Rhenock, East Sikkim, INDIA.

Distribution: So far this species is known only from its type-locality and Gujarat.

Remark: Description and illustrations are based on one of the paratypes.

34. *Pardosa shyamae* (Tikader)

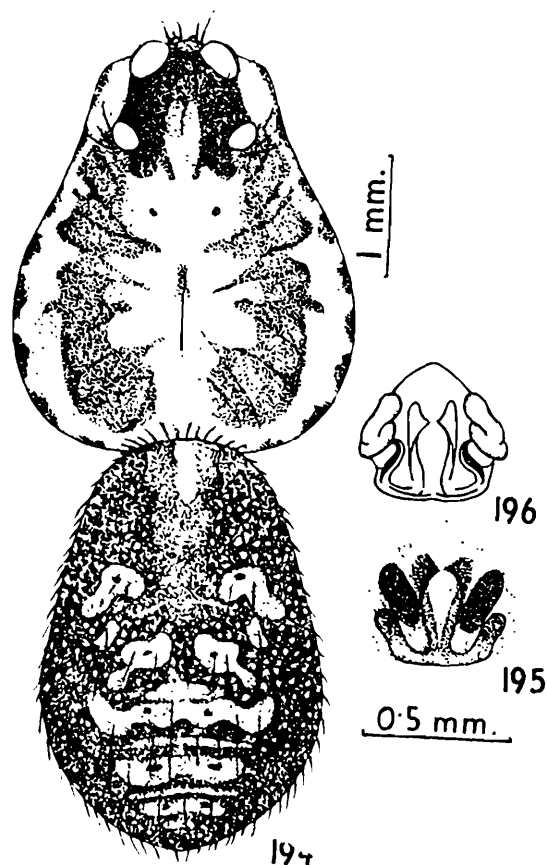
(Figs. 194-196)

1970. *Lycosa shyamae* Tikader, *Rec. zool. Surv. India*, **64** (1-4) : 67.

General: Cephalothorax, legs and abdomen brown. Total length 7.50 mm. Carapace 3.70 mm. long, 3.00 mm. wide; abdomen 3.50 mm. long, 2.50 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence, cephalic region slightly high and narrowing in front. Centre

of thoracic region provided with a sharp fovea. Ocular area dark brown and provided with some spine like hairs as in fig. 194. Anterior row of eyes straight, shorter than the second row; anterior medians slightly larger than the anterior laterals. Ocular quad wider behind and narrowing in front. Bases of posterior eyes provided with conspicuous black patches as in fig. 194. Space enclosed between posterior eyes wider behind and narrowing in front as in fig. 194. Sternum heart-shaped, pointed behind, mid-longitudinally provided with a 'V' shaped black band. Labium nearly as long as wide. Distal end of maxillae broader and provided with distinct scopulae. Chelicerae moderately strong and inner margin of fang furrow provided with three teeth. Legs long and femur, patella, tibiae and tarsi provided with transverse greenish brown distinct patches, and clothed with spines and hairs. Metatarsi IV longer than tibia plus patella IV together.



FIGS. 194-196. *Pardosa shyamae* (Tikader)
 194. Dorsal view of female, legs omitted.
 195. Epigyne.
 196. Internal genitalia.

Abdomen: Oval, slightly pointed anteriorly, dorsally clothed with hairs and pubescence provided with greenish brown patches alternating with pale patches. Few greenish brown spots also present dorsally. Ventrally mid-longitudinal area pale and sub-lateral sides provided with longitudinal irregular greenish brown patches. Epigyne as in fig. 195. Internal genitalia as in fig. 196. Male unknown.

Type-specimens: *Holotype* ♀, *paratypes* four ♀♀ in spirit in good condition, deposited in Z S I. Regd. No. 3242/18.

Type-locality: Samabiyong, Dist. Darjeeling, West Bengal, INDIA.

Distribution: So far this species is known only from its type locality.

Remark: This species was placed before in the genus *Lycosa*. After studying, it was found that its characters are similar to *Pardosa*, therefore we place it in the genus *Pardosa*. And we have described and illustrated it on the basis of one of the paratypes.

35. *Pardosa heterophthalmus* (Simon)

(Figs. 197-198)

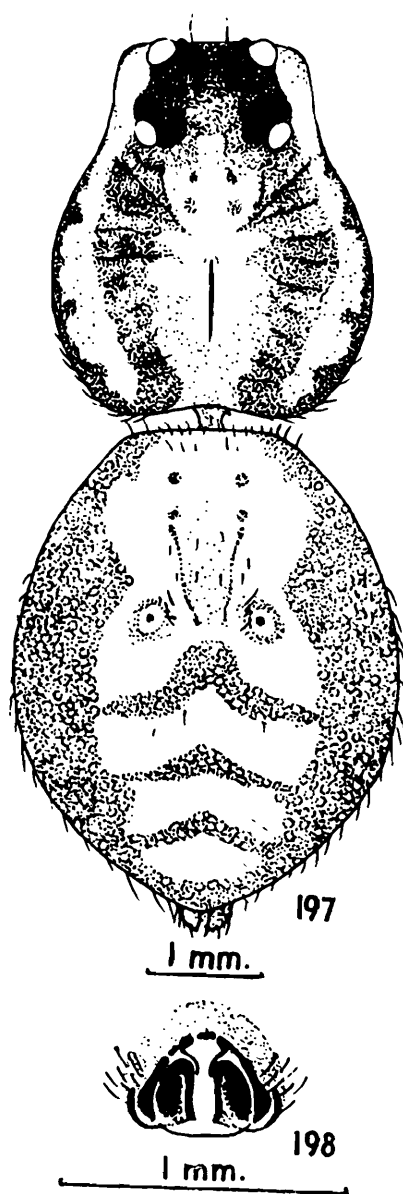
1898. *Acroniops heterophthalmus* Simon, *Hist. nat. des Araignees*, 2 : 362.

1924. *Acroniops heterophthalmus* : Gravely, *Rec. Indian Mus.*, 26 : 591

General: Cephalothorax brown, legs with greenish brown transverse bands, abdomen pale. Total length 7.80 mm. Carapace 3.20 mm. long, 2.80 mm. wide; abdomen 4.50 mm. long, 3.50 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence, cephalic region narrow. Anterior row of eyes comprises only two eyes, i.e. anterior laterals, anterior medians absent. Anterior row of eyes less wider than the second row. Eyes of the second row larger than the others. Bases of posterior eyes provided with conspicuous black patches as in fig. 197. Ocular area brown, ocular quad wider than long and narrowing in front. Space enclosed between posterior eyes wider than long as in fig. 197. Centre

of thoracic region provided with a sharp fovea. A median, broad, pale longitudinal band extends from the posterior eyes upto the base of cephalothorax as in fig. 197. From the bases of third row of eyes longitudinal broad, brown, bands extend to the base of cephalothorax on each side as in fig. 197. Lateral margins of thoracic region provided with conspicuous dark brown spots. Sternum heart-shaped, pointed behind, pale and clothed with spine-like hairs. A 'V' shaped black marking extends from the base to the anterior end σ_1 sternum. Labium brown and the distal



FIGS. 197-198. *Pardosa heterophthalmus* (Simon)
 197. Dorsal view of female, legs omitted.
 198. Epigyne.

end pale, wider than long. Maxillae broader at the distal end. Chelicerae strong and inner margin of fang furrow provided with three teeth. Legs stout, dorsal side provided with conspicuous greenish brown transverse bands and patches; legs clothed with hairs and long spines.

Abdomen: Longer than wide, pointed behind, widest behind the middle, clothed with pubescence and some spine like hairs, pale and provided dorsally with light brown patches and spots. Ventral side pale except two lateral irregular brown patches on sides of spinnerets. Epigyne as in fig. 198. Male unknown.

Type-specimen: *Syntype* one ♀ in spirit in good condition, deposited at MNHN. Regd. No. 18292.

Type-locality: Palabuan, Java.

Distribution: JAVA: Palabuan; INDIA: Madurai, Tamil Nadu.

Remark: The spiders of the family Lycosidae have eight eyes. The anterior row consists of four eyes and posterior row very much recurved so as to form two rows of two eyes each i.e. second and third row. E. Simon erected the genus *Acroniops* only by the difference in the absence of anterior median eyes and described the type species on the basis of a single female specimen which we have examined. It is a deformed specimen with two anterior medians missing. Recently while examining a spider collection from Madurai (India) we came across a specimen of this species having normal four eyes in the anterior row. So far there is no other species described under genus *Acroniops* and other characters of this resemble closely with that of *Pardosa*. As such genus *Aero-niops* has been considered as a synonym of the genus *Pardosa*.

36. *Pardosa sutherlandi* (Gravely)

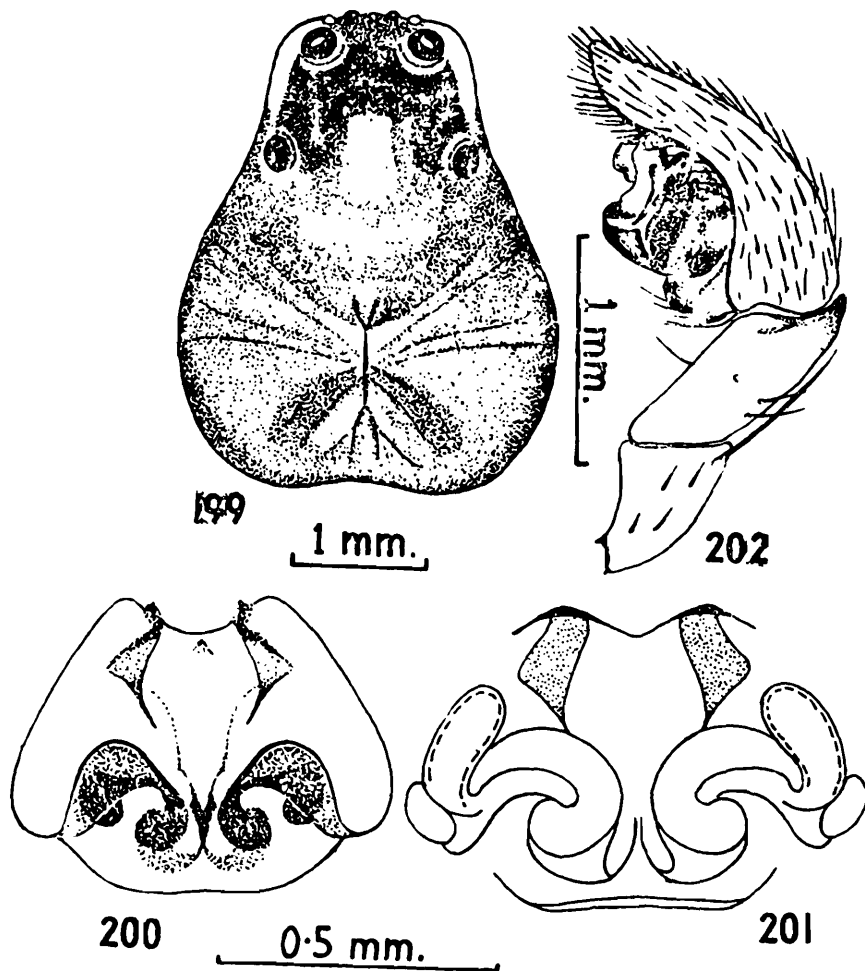
(Figs. 199-202)

1924. *Lycosa sutherlandi* Gravely, *Rec. Indian Mus.*, 26 : 606.

1951. *Lycosa sutherlandi* : Sinha, *Rec. Indian Mus.*, 48 (2) : 37.

General: Cephalothorax and abdomen light to deep brown, legs green. Total length 8.00 mm. Carapace 3.50 mm. long, 2.90 mm. wide; abdomen 5.00 mm. long, 2.70 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence, cephalic region slightly high and narrowing in front. Ocular area deep brown, cephalothorax mid-dorsally provided with a conspicuous fovea, from which thin deep brown lines radiate laterally, as in fig. 199. Anterior row of eyes short, straight, median eyes slightly larger than the laterals. Eyes of the second row larger than the others. Space enclosed between posterior eyes slightly longer than wide and narrowing in front. Sternum heart-shaped, pointed behind, pale and clothed with fine hairs. Legs long and stout, clothed with hairs and spines. Tibiae and metatarsi of I and II provided with four and three pairs of ventral spines respectively. Male and female almost of same colour and size. Male palp as in fig. 202.



FIGS. 199-202. *Pardosa sutherlandi* (Gravely)
 199. Dorsal view of cephalothorax, legs omitted.
 200. Epigyne.
 201. Internal genitalia.
 202. Left male palp, ventro-lateral view.

Abdomen: Longer than wide narrowing behind, clothed with fine hairs. Dorsally provided with pigmented brown and pale dots. Ventral side pale. Epigyne as in fig. 200. Internal genitalia as in fig. 201.

Type-specimen: *Syntypes* one ♀ and one ♂ in spirit in good condition, deposited at ZSI. Regd. No. 7719/H₂.

Type-locality: Singla, Darjeeling, W Bengal, INDIA.

Distribution: INDIA: Singla, Pashok, Kalimpong, Dist. Darjeeling, West Bengal.

37. *Pardosa leucopalpis* Gravely

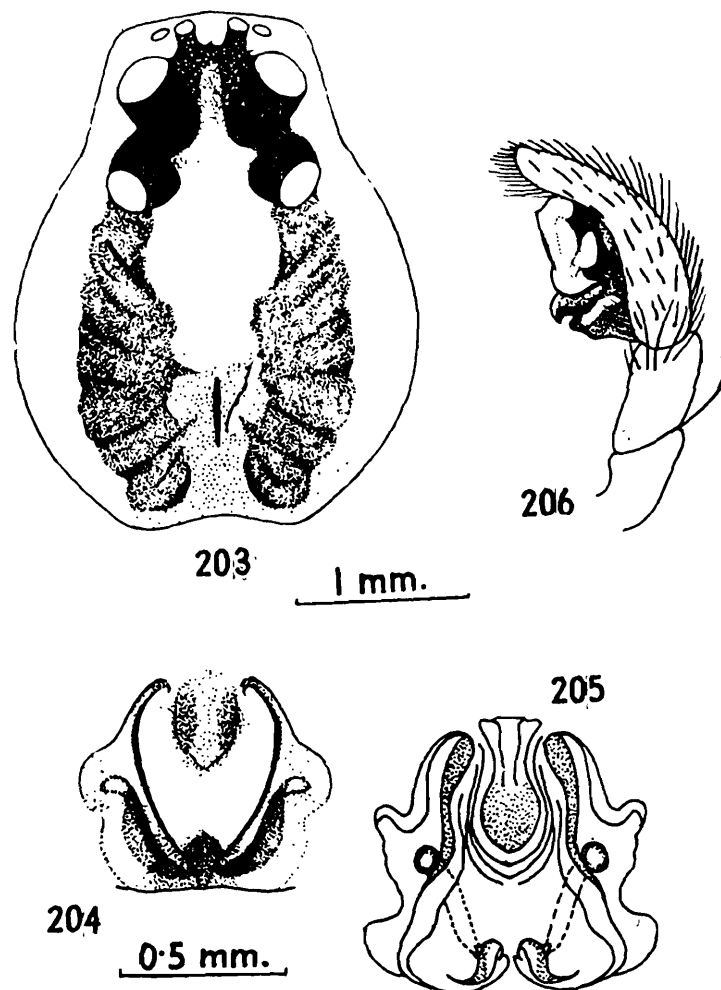
(Figs. 203-206)

1924. *Pardosa leucopalpis* Gravely, *Rec. Indian Mus.*, 26 : 610.

1951. *Pardosa leucopalpis* : Sinha, *Rec. Indian Mus.*, 48 (2) : 47.

General: Cephalothorax and legs yellowish brown, abdomen pale. Total length 7.50 mm. Carapace 3.00 mm. long, 2.50 mm. wide; abdomen 3.75 mm. long, 2.50 mm. wide.

Cephalothorax: Longer than wide, clothed with fine hairs, cephalic region high and almost entirely occupied by posterior two rows of eyes. Clypeus vertical. Anterior row of eyes almost straight and shorter than the second row, anterior medians larger than the anterior laterals. Eyes of the second row larger than the others. Space enclosed between posterior-eyes nearly as long as wide and slightly narrow in front as in fig. 203. Bases of posterior eyes provided with conspicuous black patches. Middle of cephalothorax provided with a sharp fovea. A broad brown longitudinal patch extend from base of posterior eye to the base of cephalothorax on each side. Sternum heart-shaped, pointed behind, pale and clothed with hairs and spine-like hairs. Labium as long as wide. Maxillae wider in front and anterior end provided with scopulae. Chelicerae not strong and inner margin provided with three teeth. Legs moderately strong, clothed with spines and hairs and without any patches. Male and female nearly of same size and colour. Male palp as in fig. 206.



FIGS. 203-206. *Pardosa leucopalpis* Gravely
 203. Dorsal view of cephalothorax, legs omitted.
 204. Epigyne.
 205. Internal genitalia.
 206. Left male palp, ventro-lateral view.

Abdomen: Longer than wide, pointed behind, pale, clothed with pubescence, antero-mid-dorsally provided with a inconspicuous light lens-shaped marking and posterior half with few small brown dots. Ventral side pale. Epigyne as in fig. 204. Internal genitalia as in fig. 205.

Type-specimen: *Syntypes* one ♀ and one ♂ in spirit in good condition, deposited at ZSI. Regd. No. 7748/H₂.

Type-locality: Madras city, Tamil Nadu.

Distribution: INDIA: Madras city, Ennur, Dist. Chingleput, Tamil Nadu; Chappanam Island, Cochin, Kerala; Vizagapatam,

Andhra Pradesh; Barkuda Island, Chilka Lake, Orissa; PAKISTAN: Lahore; SRI LANKA: Galle.

38. *Pardosa annandalei* (Gravely)

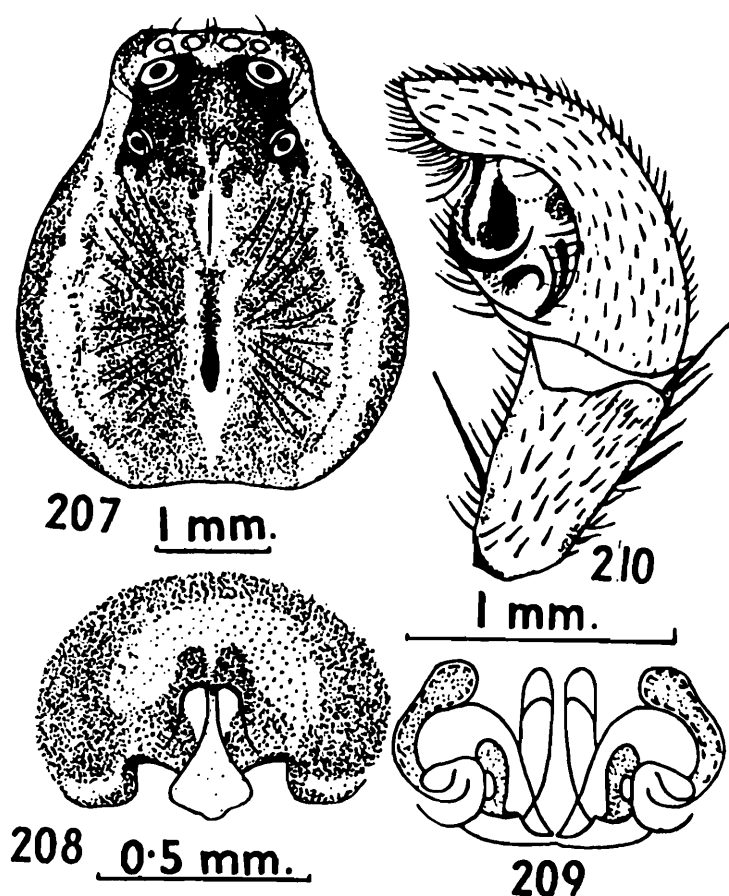
(Figs. 207-210)

1924. *Lycosa annandalei* Gravely, *Rec. Indian Mus.*, 26 : 606.

1935. *Lycosa basiri* : Dyal, *Bull. Dept. Zool. Punjab Univ.* 1 : 137.

1951. *Lycosa annandalei* : Sinha, *Rec. Indian Mus.*, 48(2) : 38.

General: Cephalothorax and abdomen deep brown, legs brownish green. Total length 8.00 mm. Carapace 5.00 mm. long, 4.00 mm. wide; abdomen 4.00 mm. long, 3.00 mm. wide.



FIGS. 207-210. *Pardosa annandalei* (Gravely)

207. Dorsal view of cephalothorax, legs omitted.

208. Epigyne.

209. Internal genitalia.

210. Left male palp, ventro-lateral view.

Cephalothorax: Longer than wide, convex, clothed with fine hairs, cephalic region slightly high and narrowing in front, middle portion provided with conspicuous broad longitudinal deep brown patches. Centre of cephalothorax provided with a short fovea surrounded by light mid-longitudinal band, lateral margins also provided with deep brown longitudinal borders as in fig. 207. Ocular area black and hairy. Anterior row of eyes straight and slightly shorter than the middle row. Anterior medians slightly larger than the anterior laterals. Eyes of the second row larger than the others. Ocular quad wider than long. Space enclosed between posterior eyes wider than long and narrowing in front. Sternum nearly oval, pointed behind, pale and clothed with spine-like hairs. Labium as long as wide and the basal excavation prominent. Maxillae broader in front, anterior end provided with inconspicuous scopulae. Chelicerae moderately strong, inner margin of furrow provided with three teeth and outer margin with two teeth. Legs moderately strong, clothed with spines and hairs, provided with inconspicuous transverse greenish brown patches. Tibiae I provided with three pairs of ventral spines. Male palp as in fig. 210.

Abdomen: Longer than wide, clothed with fine hairs and decorated with minute light spots all over the dorsal side. Ventral side pale. Epigyne as in fig. 208. Internal genitalia as in fig. 209.

Type-specimen: *Syntypes* one ♀ and one ♀ in spirit in good condition, deposited at ZSI. Regd. No. 7620/H₂.

Type-locality: Madras city, Tamil Nadu, South INDIA.

Distribution: INDIA: Trivandrum, Travancore, Kerala; Poona, Maharashtra; Bangalore, Karnataka; Horsley-Konda, Dist. Chittoor, Andhra Pradesh; Ootacamund, Tamil Nadu; Rewa State, Madhya Pradesh; Siripur, Saran, Dist. Manbhum, Bihar; Darjeeling, Birbhum, Durgapur, Dum Dum, Calcutta, Sehrampur Court, Siliguri, West Bengal; Cachar, Manipur, Assam; Gujarat; Chittagong, BANGLA DESH; Myitkyina, North Shan States, BURMA; PAKISTAN, Multan.

39. *Pardosa sumatrana* (Thorell)

(Figs. 211-215)

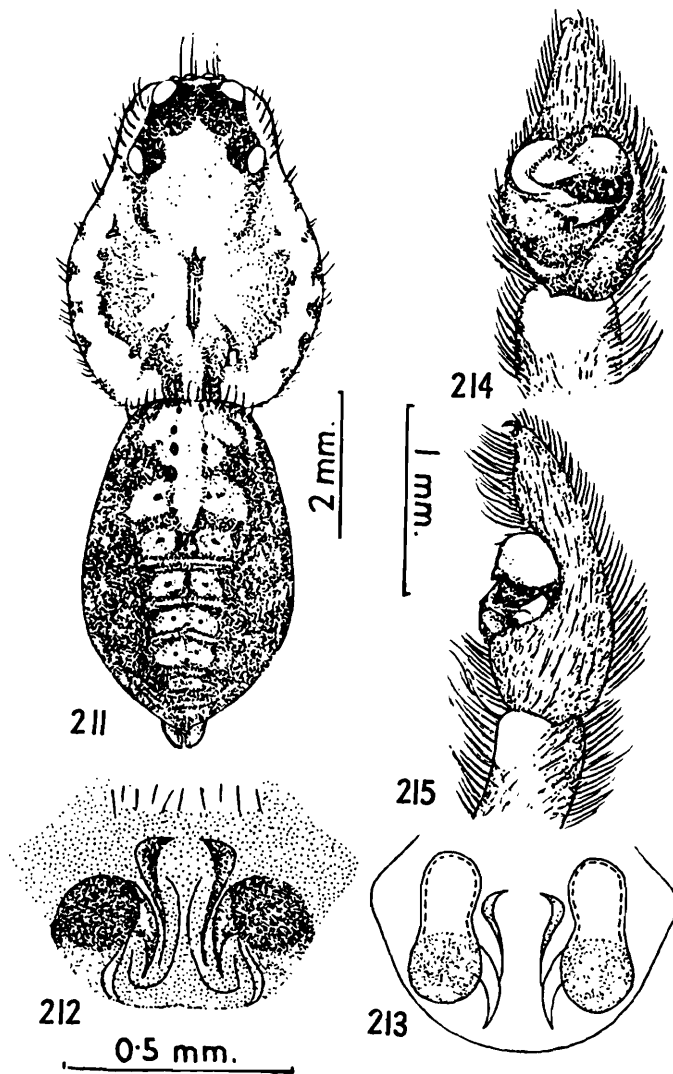
1890. *Lycosa sumatrana* Thorell, *Ann. Mus. Stor. nat. Genova*, **30** : 136.
1924. *Lycosa sumatrana* : Gravely, *Rec. Indian Mus.*, **26** : 604.
1935. *Lycosa arorai* : Dyal, *Bull. Dept. Zool. Punjab Univ.*, **1** : 140.
1951. *Lycosa sumatrana* : Sinha, *Rec. Indian Mus.*, **48** (2) : 33.

General: Cephalothorax and legs brown, abdomen dark brown. Total length 8.50 mm. Carapace 4.50 mm. long, 3.50 mm. wide; abdomen 4.70 mm. long, 3.00 mm. wide.

Cephalothorax: Longer than wide, convex, cephalic region slightly high and narrowing in front, clothed with pubescence and some hairs and spine like hairs on the clypeus. Centre of thoracic region with a distinct fovea. A median broad longitudinal pale band extend from the bases of posterior eyes to the base of cephalothorax. Ocular area black. Anterior row of eyes straight, less wider than the second row, medians slightly larger than the laterals and bases of laterals provided with conspicuous black patches. Eyes of the second row larger than the others. Ocular quad wider behind and narrowing in front. Bases of posterior eyes also provided with conspicuous black patches as in fig. 211. Space enclosed between posterior eyes wider posteriorly and narrowing anteriorly. Sternum heart-shaped, pointed posteriorly, pale and clothed with pubescence and hairs. Labium nearly as long as wide and brown in colour. Distal end of maxillae broader and provided with conspicuous scopulae. Chelicerae moderately strong, inner margin of fang furrow with three teeth. Legs thin and long, clothed with spines and hairs and provided dorsally with irregular greenish brown patches. Male of same colour and size. Male palp as in figs. 214 & 215.

Abdomen: Longer than wide, oval, pointed behind, clothed with pubescence and some hairs. Anterior-mid-dorsally with a lens shaped longitudinal marking. Rest of the abdomen provided with dark brown and pale patches and black spots as in fig. 211. Ventral side pale. Epigyne as in fig. 212. Internal genitalia as in fig. 213.

Type-specimen: Since we could not get the type specimen for examination.



FIGS. 211-215. *Pardosa sumatrana* (Thorell)

- 211. Dorsal view of female, legs omitted.
- 212. Epigyne.
- 213. Internal genitalia.
- 214. Left male palp, ventral view.
- 215. Left male palp, lateral view.

Descriptions and illustrations based on authenticated identified specimens of our collection.

Type-locality: Sumatra.

Distribution: INDIA: Prambikulam, Chalakudi, Cochin, Conoor Kerala; Bangalore, Bandipur, Karnataka; Madras, Nilgiris, Gudalur, Ootacamund, Ketu, Yercaud, Shevaroy, Tamil Nadu; Chingleput, Horsleykonda, Chittoor dist., Andhra Pradesh;

Bandra, Bombay, Poona, Ahmadnagar, Maharashtra; Siripur, Saran, Kierpur, Purnea, Gmatia, Birbhum dist., Bihar; Simla, Solan, Himachal Pradesh; Gmatia, Birbhum, Sukna, Singla, Ghumti, Tindharia, Pashok, Kalimpong, Suriel, Darjeeling, Dum Dum, Calcutta, West Bengal; Khasi Hills, Garo Hills, Upper Shillong, Tripura, Meghalaya; Kailana, Jodhpur, Rajasthan; Bhuj, Gujarat; Mandla, Jabalpur, Saugor, Madhya Pradesh; Simla, Himachal Pradesh; Arunachal Pradesh; Nepal valley, Eastern Himalayas, East Pakistan; Rañgamati hill tracts, Chittagong. Camorta, Nicobars; Mt. Singalang, Sungei Bulu, Ajer and Mancior, SUMATRA; SRI LANKA: Anuradhapur.

40. *Pardosa fletcheri* (Gravely)

(Figs. 216-218)

1924. *Lycosa fletcheri* Gravely, *Rec. Indian Mus.*, 26 : 606.

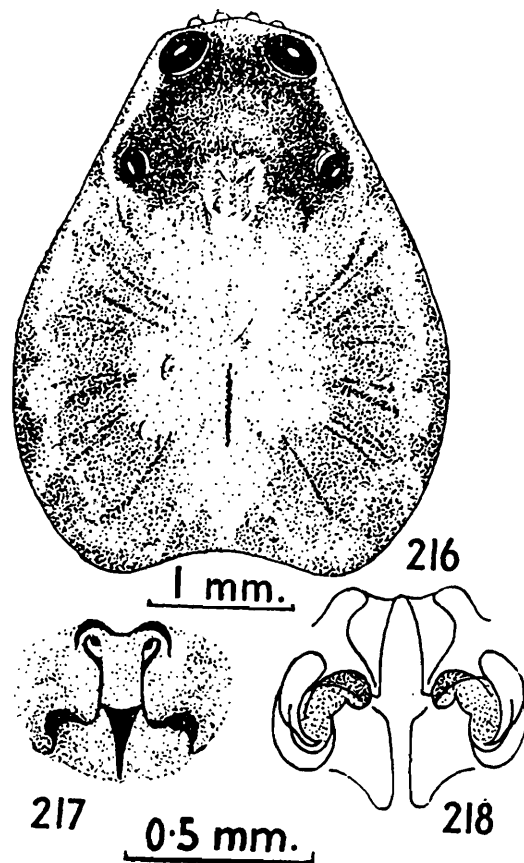
1951. *Lycosa fletcheri* : Sinha, *Rec. Indian Mus.*, 48 (2) : 36.

1970. *Lycosa rothaka* : Tikader, *Rec. zool. Surv., India.*, 64 (1-4) : 64.

General: Cephalothorax and abdomen pale brown, legs brownish green. Total length 10.00 mm. Carapace 5.00 mm. long, 4.00 mm. wide; abdomen 5.00 mm. long, 3.50 mm. wide.

Cephalothorax: Longer than wide, clothed with fine hairs and few spine-like hairs. Cephalic region very high, narrow and almost entire portion occupied by posterior two rows of eyes. Ocular area conspicuously dark in colour. Anterior row of eyes nearly straight, shorter than the second row; anterior medians slightly larger than anterior laterals. Eyes of the second row larger than the others as in fig. 216. Middle of cephalothorax provided with fovea, and longitudinal broad, brown patches extend from ocular area to the base of cephalothorax. Lateral sides also provided with longitudinal broad, brown patches as in fig. 216. Sternum heart-shaped, pointed behind, brown in colour and provided with hairs and spine-like hairs. Legs relatively long and thin, clothed with hairs and long spines. All legs provided with inconspicuous transverse brown bands. Metatarsi I provided with three pairs of ventral spines.

Abdomen: Longer than wide, narrowing behind, clothed with fine hairs. Mid-dorsally, anterior half provided with a lens shaped



FIGS. 216-218. *Pardosa fletcheri* (Gravely)

216. Dorsal view of cephalothorax, legs omitted.

217. Epigyne.

218. Internal genitalia.

light marking and other half with brown dots and cheveron
Ventral side pale. Epigyne as in fig. 217. Internal genitalia as in
fig. 218. Male unknown.

Type-specimen: Syntype one ♀ in spirit in good condition,
deposited at ZSI. Regd. No. 7743/H₂.

Type-locality: Abbottabad, Dist. Hazara, North West Frontier
Provinces, PAKISTAN.

Distribution: INDIA: Khewra, Dharamsala, Punjab; Sutlej
Valley below Simla, Dharampur, Himachal Pradesh; Govana,
Dist. Uttar Kashi, Uttar Pradesh; Rothak, West Sikkim; North
West Frontier, PAKISTAN.

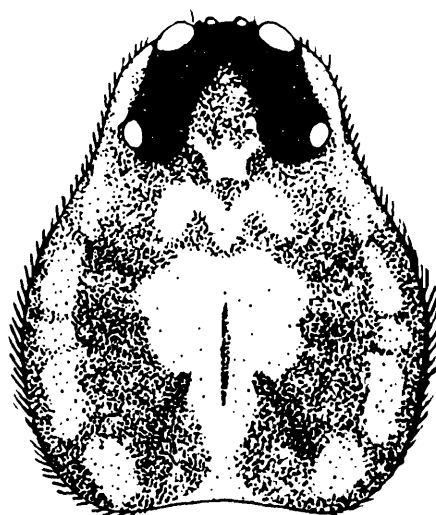
Remark: Description based on a single female specimen.

41. *Pardosa chambaensis* Tikader & Malhotra

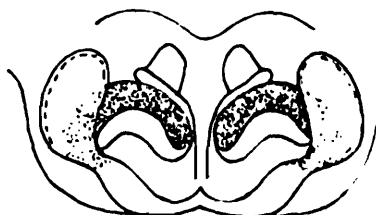
(Figs. 219-221)

1976. *Pardosa chambaensis* Tikader & Malhotra, *Proc. Indian Acad. Sci.*,
83 (3) : 128.

General: Cephalothorax and legs brown, abdomen greenish black. Total length 9.50 mm. Carapace 3.50 mm. long, 2.90 mm. wide; abdomen 5.50 mm. long, 3.00 mm. wide.

219 1 mm.

220



221

0.5 mm.

FIGS. 219-221. *Pardosa chambaensis* Tikader & Malhotra

219. Dorsal view of cephalothorax, legs omitted.

220. Epigyne.

221. Internal genitalia.

Cephalothorax: Longer than wide, convex, clothed with pubescence, cephalic region slightly high. Clypeus vertical. Anterior row of eyes straight and shorter than the second row of eyes; anterior medians larger than the anterior laterals. Eyes of the

second row larger than the others. Ocular quad wider than long and narrower in front than behind as in fig. 219. Bases of posterior eyes provided with conspicuous black patches. Middle of cephalothorax provided with a sharp fovea. Dark brown, thick longitudinal bands extend from bases of third row of eyes to the base of cephalothorax. Lateral edges of carapace also provided with longitudinal dark brown band as in fig. 219. Sternum heart-shaped, pointed behind, uniform brown and covered with pubescence. Labium wider than long. Distal end of maxillae wider and provided with scopulae. Chelicerae moderately strong. Retromargin of chelicerae with three teeth. Legs long, moderately strong and provided with brownish green transverse bands. Metatarsi IV nearly as long as or slightly longer than the tibia and patella together.

Abdomen: Longer than wide, pointed behind, anterior-mid-dorsally with a lens-shaped marking followed by few pale patches. Ventral side pale. Epigyne as in fig. 220. Internal genitalia as in fig. 221. Male unknown.

Type-specimen: *Holotype* ♀, *paratype* one ♀ in spirit in good condition, deposited at ZSI. Regd. No. 4637/18.

Type-locality: Banikhet, Dist. Chamba, Himachal Pradesh, INDIA.

Distribution: So far this species is known only from its type locality.

42. *Pardosa tatensis* (Tikader)

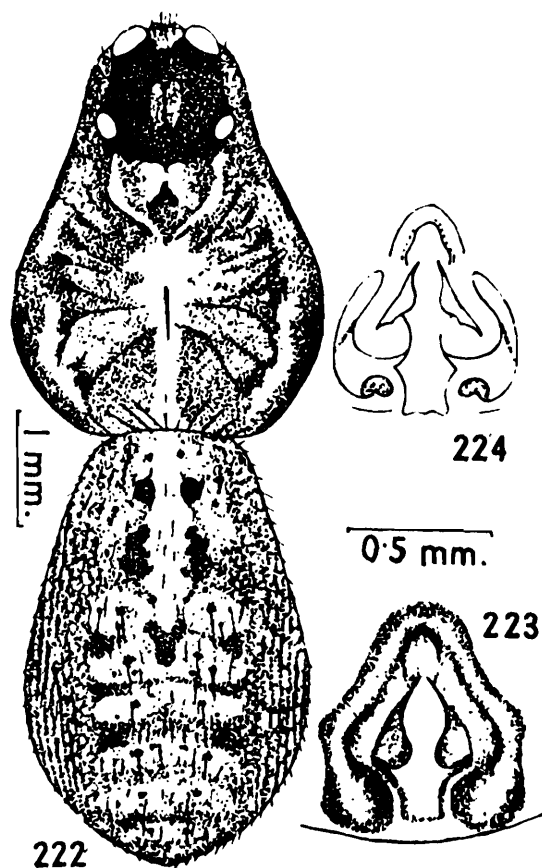
(Figs. 222-224)

1964. *Lycosa tatensis* Tikader, *Rec. Indian Mus.*, 59 (3) : 265.

General: Cephalothorax, legs and abdomen reddish brown. Total length 7.40 mm. Carapace 3.70 mm. long, 2.70 mm. wide; abdomen 3.80 mm. long, 2.50 mm. wide.

Cephalothorax: Longer than wide, convex, narrowing in front, and cephalic region high, clothed with pubescence and some spines. Centre of thoracic region with a sharp, dark fovea and thin dark brown bands radiate towards the sub-lateral side from the fovea. Area surrounding fovea pale. Anterior row of eyes straight,

shorter than the second row; bases of anterior eyes provided with conspicuous black patches; medians slightly larger than the laterals. Eyes of the second row larger than the others. Ocular quad wider behind and narrowing in front. Bases of posterior eyes provided with conspicuous black patches, thus making the posterior quadrangle black as in fig. 222. Space enclosed between posterior eyes very slightly wider behind and narrowing in front as in fig. 222. Sternum heart-shaped, pointed behind, uniform dark brown in colour, clothed with pubescence and some hairs. Labium brown and distal extremity pale, and as long as wide. Distal end of maxillae broader and bears conspicuous scopulae. Chelicerae uniform, dark brown, moderately strong, inner margin of the fang furrow with three small teeth. Legs thin and long clothed with spines and hairs, femora, patella and tibiae of all legs provided with conspicuous dark brown transverse irregular patches.



FIGS. 222-224. *Pardosa tatensis* (Tikader)
 222. Dorsal view of female, legs omitted.
 223. Epigyne.
 224. Internal genitalia.

Abdomen: Longer than wide, oval, pointed behind, broadest just behind the middle, clothed with pubescence. Anterior-mid-dorsally provided with a longitudinal lens shaped area followed by black and pale patches and black spots as in fig. 222. Ventral side pale except some sub-lateral brown irregular patches. Epigyne as in fig. 223. Internal genitalia as in fig. 224. Male unknown.

Type-specimen: *Holotype* ♀ in spirit in good condition, deposited in ZSI. Regd. No. 2485/18.

Type-locality: Tate, Central Himalaya, NEPAL.

Distribution: So far this species is known only from its type-locality.

Remark: Previously this species was placed in the genus *Lycosa*. Now we place it in the genus *Pardosa*. Description based on a single female specimen.

43. *Pardosa ladakhensis* Tikader

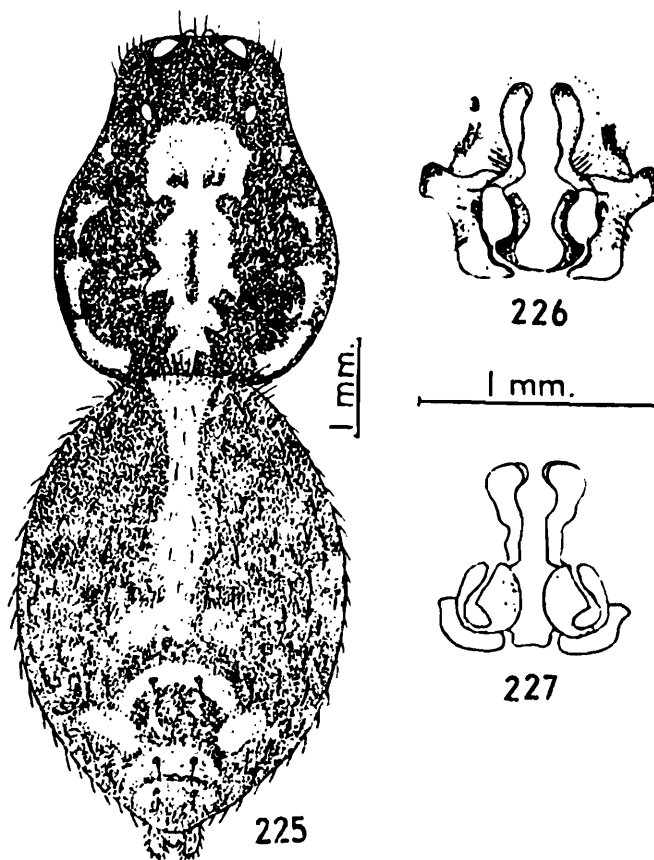
(Figs. 225-227)

1977. *Pardosa ladakhensis* Tikader, *J. Bombay nat. Hist. Soc.*, 74, (1) : 144.

General: Cephalothorax and legs pale brown with dark brown patches; abdomen greenish brown. Total length 8.50 mm. Carapace 3.70 mm. long, 2.80 mm. wide; abdomen 4.90 mm. long, 3.40 mm. wide.

Cephalothorax: Longer than wide, pointed anteriorly, clothed with hairs and pubescence. Centre of thoracic region provided with a conspicuous fovea. Ocular area dark brown and provided with some spine like hairs. Anterior row of eyes straight shorter than the second row, medians slightly larger than the laterals. Ocular quad wider behind and narrowing in front. Eyes of the second row larger than the others. Posterior eyes (second and third row) placed at the extremities of cephalic region and posterior quadrangle much wider behind than in front as in fig. 225. Two conspicuous dark brown patches present surrounded by a pale area just behind the third row of eyes as in fig. 225. Sub-marginal area of thoracic region provided with irregular pale patches as in fig. 225. Sternum black, heart-shaped, pointed behind and clothed

with pubescence and some spine like hairs. Labium dark brown and wider than long. Distal end of maxillae wider and provided with scopulae. Chelicerae moderately strong, inner margin of the fang furrow provided with three unequal teeth. Legs long, clothed with spines and hairs and coxae of femora, patella and tibiae provided with conspicuous irregular greenish brown-patches. Metatarsi IV longer than the tibia and patella together.



FIGS. 225-227. *Pardosa ladakhensis* Tikader
 225. Dorsal view of female, legs omitted.
 226. Epigyne.
 227. Internal genitalia.

Abdomen: Longer than wide, widest behind the middle, clothed with pubescence and hairs. Anterio-mid-dorsally provided with a longitudinal pale lens shaped marking as in fig. 225, and rest of the abdomen provided with some pale patches and spots as in fig. 225. Ventral side with irregular reddish brown patches. Epigyne and internal genitalia as in figs. 226 and 227.

Type-specimens: Holotype ♀, paratype one ♀ in spirit deposited at ZSI Regd. No. 4635/18.

Type-locality: Pulu (ca. 4633 m. high), Fuchu valley, Ladakh, Jammu and Kashmir, INDIA. 30.vii.1976, Coll. Dr. *Biswamoy Biswas*.

Distribution: So far this species is known only from its type locality.

44. *Pardosa alii* Tikader

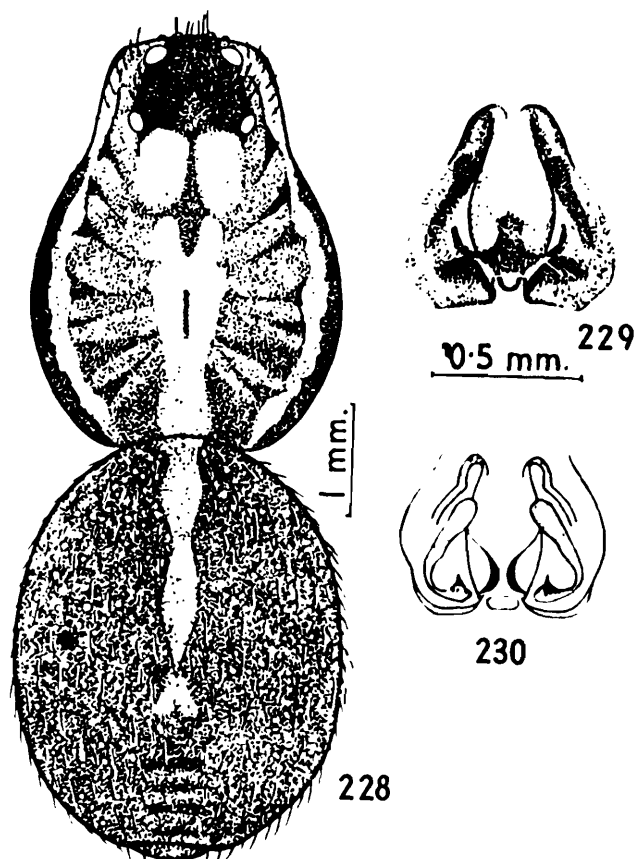
(Figs. 228-230)

1977. *Pardosa alii* Tikader, *J. Bombay nat. Hist. Soc.*, 74 (1) : 145.

General: Cephalothorax, legs and abdomen brown. Total length 7.10 mm. Carapace 3.60 mm. long, 2.70 mm. wide; abdomen 3.60 mm. long, 2.80 mm. wide.

Cephalothorax: Longer than wide, convex, narrower in front, clothed with fine grey and black hairs; cephalic region slightly high. Clypeus vertical. Anterior row of eyes slightly provided and shorter than the second row of eyes; anterior medians larger than the anterior laterals. Eyes of the second row larger than the others. Posterior quadrangle wider than long and narrower in front than behind as in fig. 228 and black in colour. Middle of cephalothorax provided with a sharp fovea. Dark brown broad two longitudinal bands extending from bases of third row of eyes to the base of cephalothorax. Lateral edges of cephalothorax provided with longitudinal inner pale and outer dark brown bands as in fig. 228. Sternum nearly heart-shaped, pointed behind, uniform dark brown and clothed with black pubescence. Labium wider than long. Distal end of maxillae wider and provided with scopulae. Chelicerae moderately strong and inner margin of chelicera provided with three teeth. Legs long, moderately strong, clothed with hairs and spines. Dorsal side of femora of all legs provided with two longitudinal brown bands. Metatarsi IV nearly as long as or slightly longer than the tibia and patella together.

Abdomen: Slightly longer than wide, nearly same wide both in front and behind. Antero-mid-dorsally provided with a lens-shaped pale marking; clothed with black hairs and pale dots. Ventral side pale. Epigyne and internal genitalia as in figs. 229 and 230.



FIGS. 228-230. *Pardosa alii* Tikader
 228. Dorsal view of female, legs omitted.
 229. Epigyne.
 230. Internal genitalia.

Type-specimens: Holotype ♀, paratype one ♀ in spirit. deposited at ZSI. Regd. No. 4633/18.

Type-locality: Chusul (ca. 4328 m. high) Ladakh, Jammu and Kashmir, INDIA, 2.vii.1976, Coll *Dr. Biswamoy Biswas*.

Distribution: So far this species is known only from its type locality.

Genus 4. *Ocyale* Audouin

1825. *Ocyale* Audouin, in Savigny's *Description de l' Egypte Arachnides* Paris, 1 : 150.
 1885. *Ocyale* : Simon, *Ann. Soc. ent. Fr.*, 5 (6) : 357.
 1900. *Ocyale* : Pocock, *Faun. Brit. India, Arach.*, : 251.
 1924. *Ocyale* : Gravely, *Rec. Indian Mus.*, 26 : 595.
 1951. *Ocyale* : Sinha, *Rec. Indian Mus.*, 48 (2) : 18.

Diagnosis: The genus *Ocyale* Aud. is allied to *Lycosa* but the III legs longer than the I; quadrangle of posterior eyes much wider behind than *Lycosa*. Eyes of anterior row slightly recurved, eyes of posterior two rows almost of similar size but in *Lycosa* eyes of the second row larger than the third row. Anterior spinnerets longer than the posterior spinnerets with apical piece short and round.

Distribution: INDIA EGYPT, ETHIOPIA, SRI LANKA, BURMA, SENEGAL, GUINEA, CONGO and EUROPE.

Type-species : *Ocyale atalantta* Aud.

45. *Ocyale atalanta* Audouin

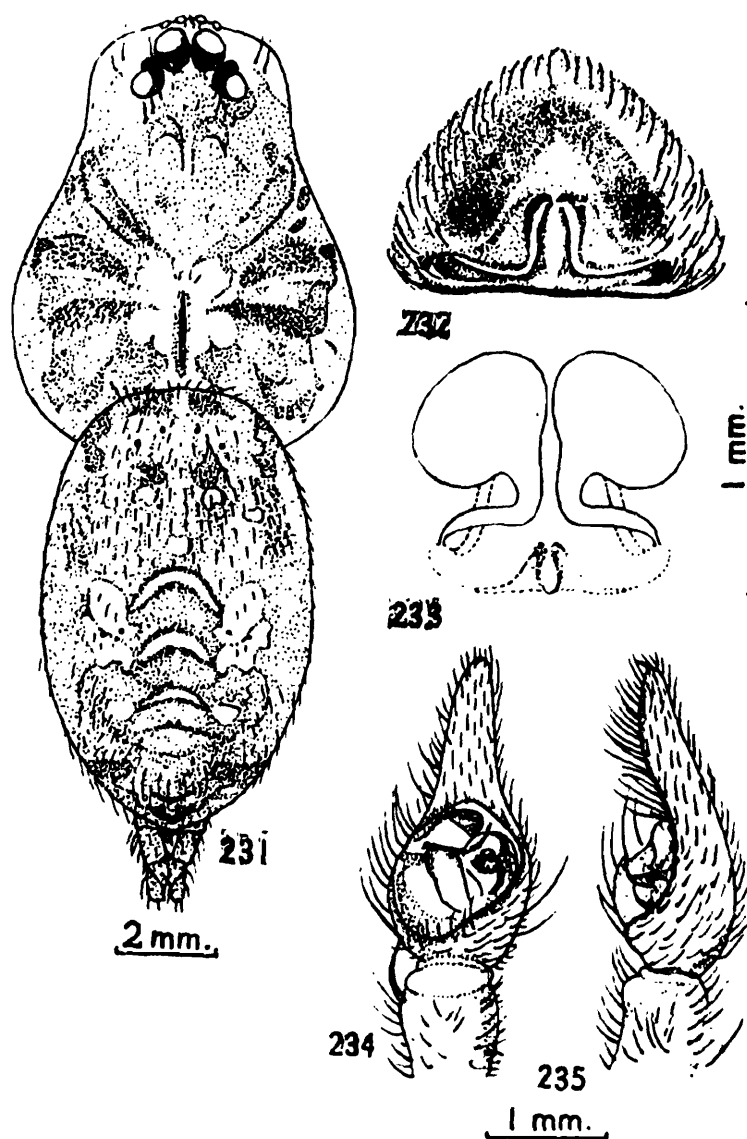
(Figs. 231-235)

1826. *Ocyale atalanta* Audouin, in Savigny's 'Description de' Egypte Arachnides', Paris, 1 : 150.
 1885. *Ocyale atalanta* : Simon, *Ann. Soc. ent. Fr.*, 5 (6) : 357.
 1898. *Ocyale atalanta* : Simon, *Hist. Nat. des Araignees*, 2 (2) : 345.
 1900. *Ocyale atalanta* : Pocock, *Faun. Brit. India, Arach.*, : 252.
 1924. *Ocyale atalanta* : Gravely, *Rec. Indian Mus.*, 26 : 595.
 1935. *Ocyale kumari* : Dyal, *Bull. Dept. Zool. Punjab Univ.*, 1 : 147.
 1951. *Ocyale atalanta* : Sinha, *Rec. Indian Mus.*, 48 (2) : 18.

General: Cephalothorax, legs and abdomen yellowish brown. Total length 18.00 mm. Carapace 8.50 mm. long, 7.00 mm. wide; abdomen 10.00 mm. long, 5.50 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence, centre with a prominent fovea and thoracic region provided with thin bands radiating laterally from fovea. Anterior row of eyes, slightly recurved, and slightly wider than second row of eyes, anterior medians larger than the anterior laterals. Eyes of the second and third row equal in size but very larger than the eyes of anterior row. The distance between the eyes of second row is less than their diameter. Bases of posterior eyes provided with conspicuous black patches. Space enclosed between posterior eyes much wider behind than in front as in fig. 231. Sternum heart-shaped, pointed behind, yellowish and clothed with spine like hairs. Boundaries of sternum with conspicuous pale markings. Lab-

ium slightly longer than wide, dark at the base with the basal excavation prominent. Maxillae very much wider at the distal end and provided with conspicuous scopulae at the distal end. Chelicerae strong and inner margin provided with three prominent teeth. Legs long and strong and clothed with hairs and spines. Legs formula 4312. Male palp as in figs. 234 and 235.



FIGS. 231-235. *Ocyale atalanta* Audouin

- 231. Dorsal view of female, legs omitted.
- 232. Epigyne.
- 233. Internal genitalia.
- 234. Left male palp, ventral view.
- 235. Left male palp, lateral view.

Abdomen: Oval, pointed, behind, clothed with pubescence and dorsally provided with irregular brown and yellow patches. Posterior spinnerets not longer than the anterior spinnerets and terminal piece of posterior spinnerets is shorter than the basal piece and rounded. Anterior spinnerets much cylindrical with the apical piece very short and round like a cap. Ventral side pale. Epigyne as in fig. 232. Internal genitalia as in fig. 233. Male also of similar colour but smaller in size than female.

Type-specimens: *Syntypes* two ♀♀ and two ♂♂ in spirit in good condition, deposited at MNHN. Regd. No. 3644.

Type-locality: EGYPT.

Distribution: INDIA: Barkuda Island, Chilka lake, Orissa; Siripur, Saran, Bihar; SRI LANKA : Haragama, Peradeniya; BURMA; AFRICA: EGYPT, ETHIOPIA, SENEGAL, GUINEA and CONGO Coats, Punduloya.

Remark: So far only one species *Ocyale atalanta* Aud. of this genus is recorded from Indian sub-continent. This species is widely distributed.

Genus 5. *Flanona* Simon

1898. *Flanona* Simon, *Hist. Nat. des Araignees.*, 2 (2) : 349.

1924. *Flanona* : Gravely, *Rec. Indian Mus.*, 26 : 588.

Diagnosis: This genus contains very small spiders (Total length not more than 2.00 mm.). Eyes of the anterior row equal in size; anterior laterals pearly white and anterior row of eyes as long as the second row. Space enclosed between posterior eyes much wider behind than in front and sternum elevated, so it is as high coxae. Labium wider than long. Anterior and posterior spinnerets equal in length and apical pieces of both short and round.

Type-species : *Flanona puellula* Simon

Distribution : SRI LANKA

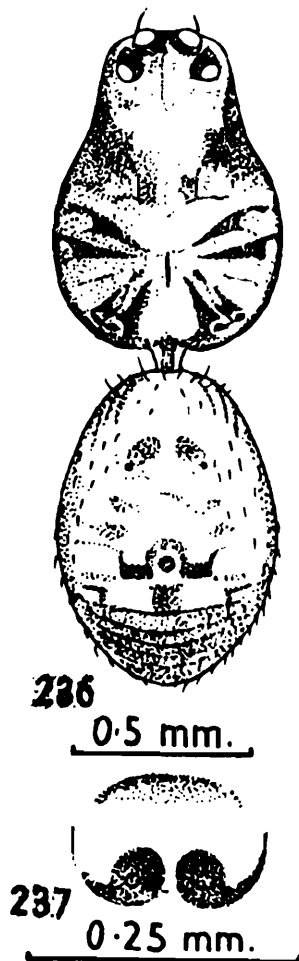
46. *Flanona puellula* Simon

(Figs. 236-237)

1898. *Flanona puellula* Simon, *Hist. Nat. des. Araignees*, 2 (2) : 349.1924. *Flanona puellula* : Gravely, *Rec. Indian Mus.*, 26 : 588.

General: Cephalothorax and legs light brown, abdomen greenish brown. Total length 1.80 mm. Carapace 0.80 mm. long, 0.60 mm. wide; abdomen 0.90 mm. long, 0.60 mm. wide.

Cephalothorax: Longer than wide, convex, cephalic region abruptly narrowing in the front. Eyes of the anterior row equal in size and anterior row straight, slightly longer or nearly of same length as the second row. Anterior laterals pearly white.



FIGS. 236-237. *Flanona puellula* Simon
 236. Dorsal view of female, legs omitted.
 237. Epigyne.

Eyes of the second row larger than the others. Posterior eyes also pearly white. Bases of posterior eyes provided with contiguous conspicuous black patches as in fig. 236. Space enclosed between posterior eyes wider than long and much wider behind than in front as in fig. 236. Centre of thoracic region provided with a small fovea and sides with irregular brown patches. Sternum heart-shaped, pointed behind, pale and provided with few spines. Labium brown and wider than long. Maxillae broader at the distal end. Chelicerae moderately strong. Legs long and slender, clothed with hairs and few spines.

Abdomen: Longer than wide, much wider behind the middle, pointed posteriorly; dorsally provided with greenish brown and pale patches clothed with fine pubescence. Ventral side pale but base of spinnerets light brown. Posterior spinnerets not longer than the anterior spinnerets and apical piece of both short and round. Epigyne as in fig. 237. Male unknown.

Type-specimen : Syntype one ♀ in spirit in good condition deposited at MNHN. Regd. No. 16196.

Type-locality : SRI LANKA : Taprobane.

Distribution: So far this species is known only from its type locality.

Remark: We presume that this species is available in Indian sub-continent also but due to their inconspicuous size it may not attract collector's attention in the field. Only the single species of this genus *Flanona* Simon is known from the world. Though this species is not recorded so far from Indian sub-continent we have included it in this faunal work because this genus was recorded from SRI LANKA by Simon. Description based on a single female specimen.

Genus 6. *Arctosa* Koch

1847. *Arctosa* Koch, *Die Arachniden*, 14 (3) : 94.

1951. *Arctosa* : Locket & Millidge, *British Spiders*, 1 : 283.

1972. *Arctosa* : Kaston, *How to Know the spiders*, p 198.

Diagnosis: Moderately large spiders. The general colouration greyish brown to black. Carapace with no properly defined longitudinal light band and is glabrous or nearly so. Legs more slender. Tarsi I provided with a dorso basal bristal which is drawn out thin and fine at the end, and is much longer than the hairs and trichobothria. Tibia IV dorsally with the proximal spine usually thinner or more drawn out than the distal one. Sometimes reduced to a bristle.

Type-species: *Arctosa cinerea* (Fabricius).

Distribution: INDIA, AMERICA, New ENGLAND, EUROPE

Key to the species of the genus ARCTOSA Koch

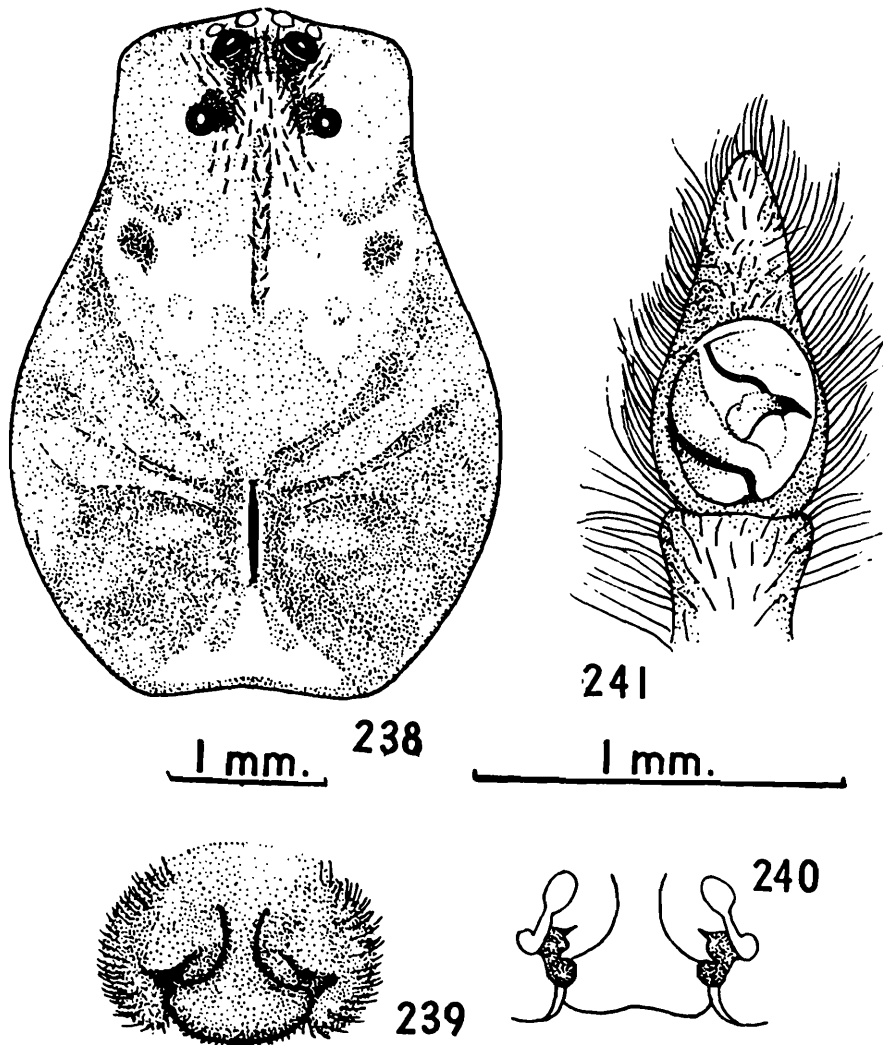
1. Total length more than 7.00 mm. and sternum brown. .2
 Total length less than 7.00 mm. and sternum pale. .3
2. Ventral side of femora of all legs without any patch or band and abdomen antero-mid-dorsally provided with a longitudinal lens shaped marking. *.himalayensis*
 Ventral side of femora of all legs provided with greenish brown broad transverse bands at the middle and at the distal extremity and abdomen not provided with a lens-shaped marking dorsally (Fig. 242). *.indicus*
3. Patches at the bases of second and third row of eyes contiguous and legs provided with conspicuous brownish green patches. *.mulani*
 Patches at the bases of second and third row of eyes separate and legs not provided with any patches. *.khudiensis*

47. *Arctosa himalayensis* sp. nov.

(Figs. 238-241)

General: Cephalothorax and legs brown, abdomen greenish brown with pale spots. Total length 9.50 mm. Carapace 4.50. mm. long, 3.20 mm. wide; abdomen 5.00 mm. long, 3.00 mm. wide.

Cephalothorax: Longer than wide, cephalic region very convex, clothed with pubescence; centre of thoracic region provided with sharp fovea. Posterior eyes occupy the small portion of the cephalic region. Anterior row of eyes straight and as long as the second row; medians and laterals of same size and bases of lateral eyes provided with black patches. Eyes of the second row larger than the others as in fig. 238. Ocular quad wider behind and narrowing in front. Posterior quadrangle wider behind and narrowing in front and bases of posterior eyes provided with conspicuous black patches as in fig. 238. Sternum brown, heart-shaped, pointed behind and clothed with hairs and pubescence. Labium longer



FIGS. 238-241. *Arctosa himalayensis* sp. nov.
 238. Dorsal view of cephalothorax, legs omitted.
 239. Epigyne.
 240. Internal genitalia.
 241. Left male palp, ventral view.

than wide, brown and clothed with hairs. Distal end of maxillae broad and provided with conspicuous scopulae. Inner margin of fang furrow of chelicerae provided with three small teeth. Legs moderately strong, clothed with spines and hairs. Male of similar colour as female, but slightly smaller in size. Male palp as in fig. 241.

Abdomen: Longer than wide, oval, pointed behind. Anterior-mid-dorsally provided with a longitudinal lens shaped pale marking, otherwise abdomen greenish brown. Ventral side pale. Epigyne as in fig. 239. Internal genitalia as in fig. 240.

Holotype: ♀, *paratype* one ♀, *allotype* one ♂ in spirit, deposited at ZSI. Regd. No. 4654/18.

Type-locality: Bank of Asan river, Dist. Dehra Dun, Uttar Pradesh, INDIA 26.x.1971, Coll. R. N. Chopra.

Discussion: This species resembles with *Arctosa alpigena* (Doleschal) but can be separated from it as follows: (i) Tibiae I and II with a single spine on the ventral side (except the apical one) but in *A. alpigena* tibiae I and II with two pairs of ventral spines (except the apical pair). (ii) Epigyne also structurally different.

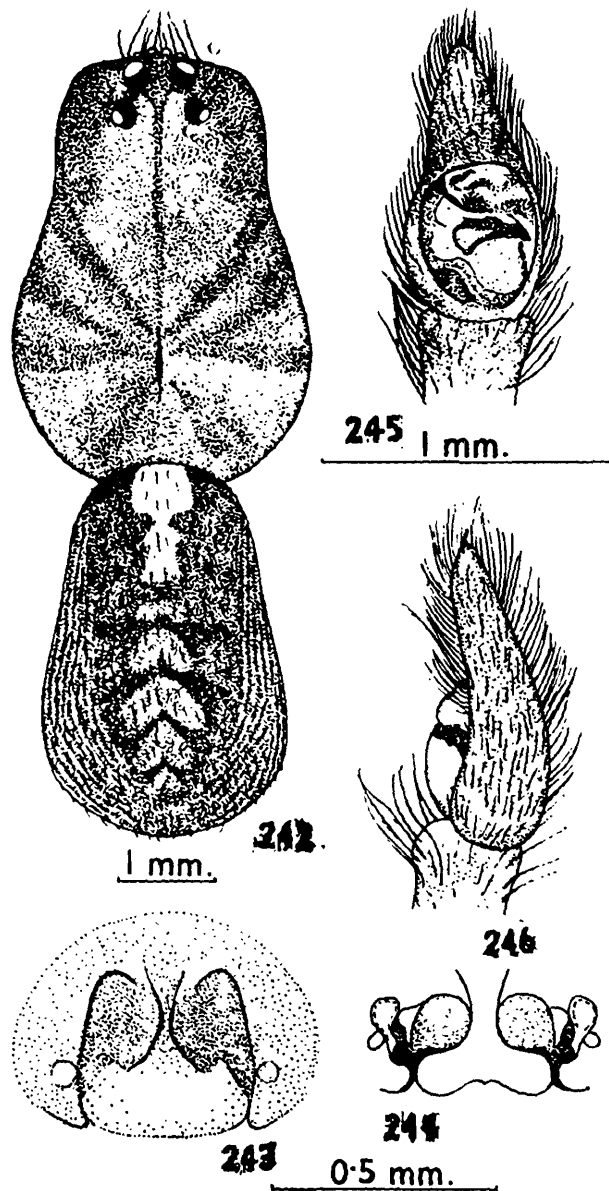
48. *Arctosa indicus* sp. nov.

(Figs. 242-246)

General: Cephalothorax dark brown, legs brown and abdomen brownish black. Total length 8.10 mm. Carapace 4.50 mm. long, 3.00 mm. wide; abdomen 3.90 mm. long, 2.70 mm. wide.

Cephalothorax: Longer than wide. Cephalic region glabrous and slightly elevated from the thoracic region, clothed with pubescence and some spine like hairs. Centre of thoracic region provided with a conspicuous fovea. Eyes occupy a smaller region on the cephalic region. Anterior row of eyes very slightly recurved, as long as the second row, medians larger than the laterals and bases of laterals provided with black patches. Eyes of the second and third row almost equal in size and bases of these eyes provided with conspicuous black patches as in fig. 242. Ocular quad wider behind and narrowing in front. Posterior quadrangle slightly

wider behind. Thin brown bands radiate towards the lateral sides from the fovea. Sternum brown, heart-shaped, pointed behind, clothed with pubescence and hairs. Labium slightly longer than wide. Distal end of maxillae broader and provided with scopulae. Chelicerae moderately strong, inner margin of fang furrow provided with three small teeth. Legs strong and stout, femora of all



FIGS. 242-246. *Arctosa indicus* sp. nov.
 242. Dorsal view of female, legs omitted.
 243. Epigyne.
 244. Internal genitalia.
 245. Left male palp, ventral view.
 246. Left male palp, lateral view.

legs conspicuously banded and provided with patches with greenish brown colour. Male similar in colour as female but slightly smaller. Male palp as in figs. 245 and 246.

Abdomen: Oval, clothed with pubescence and some hairs. Anterior-mid-dorsal area pale and rest of the dorsal side provided with greenish black and pale patches as in fig. 242. Ventral side light brown. Epigyne as in fig. 243. Internal genitalia as in fig. 244.

Holotype: ♀, *allotype* one ♂ in spirit. deposited at ZSI. Regd. No. 4671/18.

Type-locality: Shivaji Nagar, Poona, Maharashtra, INDIA. 24.ii.1975, Coll. *M. S. Malhotra*.

Discussion: This species resembles *Arctosa himalayensis* sp. nov. but can be separated from it as follows: (i) Ventral side of femora of all legs provided with greenish brown broad transverse bands at the middle and at the distal extremity but in *A. himalayensis* ventral side of femora of all legs without any patches or bands. (ii) Epigyne also structurally different.

49. *Arctosa mulani* (Dyal)

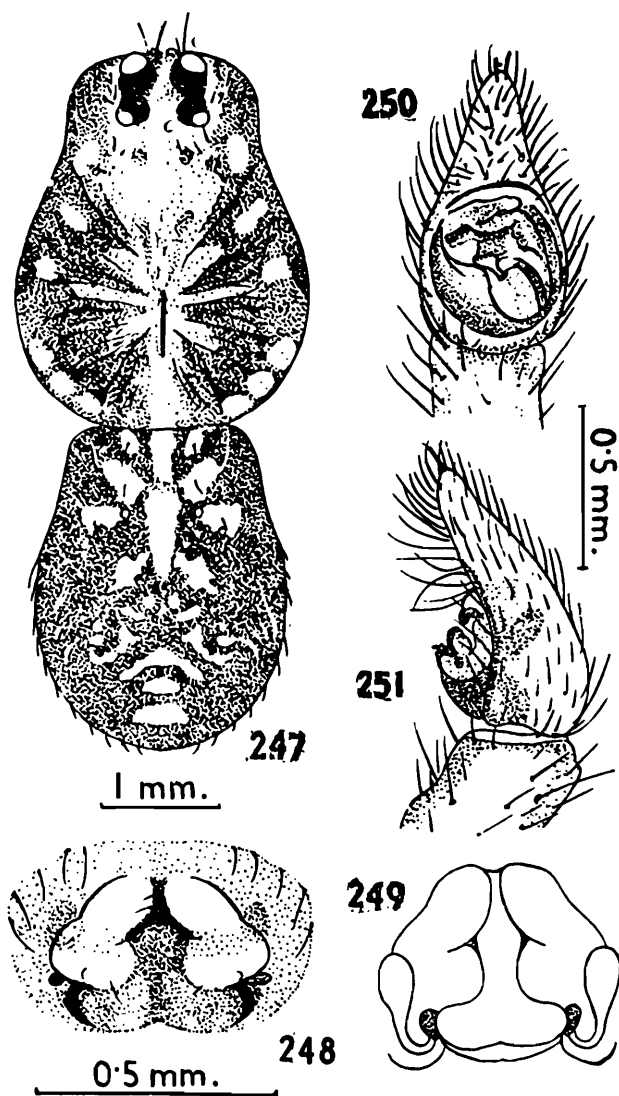
(Figs. 247-251)

1935. *Pardosa mulani* Dyal, *Bull. Dept. Zool. Punjab Univ.*, 1 : 146.

General: Cephalothorax and legs pale brown, abdomen greenish brown. Total length 6.00 mm. Carapace 3.20 mm. long. 2.50 mm. wide; abdomen 2.70 mm. long, 2.20 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence and some hair at the ocular area. Anterior row of eyes straight and bases of eyes provided with black patches; medians larger than the laterals. Eyes of the second row larger than the others. Ocular quad wider behind and narrowing in front. Bases of posterior eyes also provided with conspicuous contiguous black patches as fig. 247. Posterior quadrangle slightly wider behind than in front as in fig. 247. Sternum oval, pointed behind, pale and clothed with hairs. Labium dark brown, slightly longer than wide. Distal end of maxillae broader and provided with dis-

tinct scopulae. Chelicerae moderately strong, inner margin of fang furrow provided with three teeth. Legs long, clothed with hairs and spines. Femora, patella, tibiae and metatarsi of all legs provided with conspicuous brownish green transverse bands. Male slightly smaller than female but of the same colour. Male palp as in figs. 250 and 251.



FIGS. 247-251. *Arctosa mulani* (Dyal)
 247. Dorsal view of female, legs omitted.
 248. Epigyne.
 249. Internal genitalia.
 250. Left male palp, ventral view.
 251. Left male palp, lateral view.

Abdomen: Longer than wide, oval, clothed with pubescence and hairs. Dorsally provided with greenish brown and pale ir-

gular patches. Ventral side pale. Epigyne as in fig. 248. Internal genitalia as in fig. 249.

Neotypes: Six ♀ ♀ and two ♂ ♂ in spirit.

Neotype locality: Near Pratapgad rest house, Dist. Satara, Maharashtra, INDIA. 26.iii.1976, Coll. B. K. Tikader.

Type-locality: Mojpur, Lahore, PAKISTAN.

Distribution: INDIA: Satara Dist., Maharashtra; PAKISTAN: Mojpur, Lahore.

Remark: Since Dyal's type specimens are not available in any museum, we have designated the neotypes by comparing the specimens with his description and illustrations. The present description and illustrations are based on one of the female and male neotypes collected from Satara district.

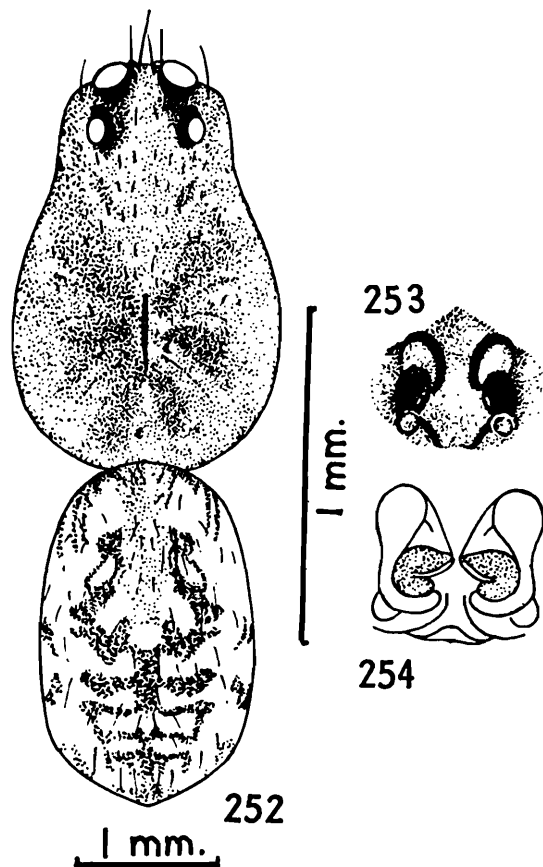
50. *Arctosa khudiensis* (Sinha)

(Figs. 252-254)

1951. *Lycosa khudiensis* Sinha, *Rec. Indian Mus.*, 48 (2) : 22.

General: Cephalothorax and legs yellowish brown, abdomen grey. Total length 5.50 mm. Carapace 2.90 mm. long, 2.00 mm. wide, abdomen 2.50 mm. long, 1.65 mm. wide.

Cephalothorax: Longer than wide, narrowing anteriorly, clothed with some hair. Centre of thoracic region provided with a sharp fovea. Anterior row of eyes straight, shorter than the second row, medians slightly larger than the laterals; bases of laterals provided with black patch. Eyes of the second row larger than the others. Ocular quad wider behind and narrowing in front. Posterior quadrangle wider posteriorly and narrowing anteriorly and bases of posterior two rows of eyes provided with conspicuous black patches as in fig. 252. Sternum pale, heart-shaped, pointed behind and provided with some hairs. Labium slightly longer than wide. Distal end of maxillae broad and provided with scopulae. Chelicerae strong and inner margin of fang furrow provided with three teeth. Legs thin and long, clothed with spines and hairs. Tibiae I and II with two pairs of ventral spines.



FIGS. 252-254. *Arctosa khudiensis* (Sinha)

252. Dorsal view of female, legs omitted.

253. Epigyne.

254. Internal genitalia.

Abdomen: Oval, clothed with pubescence and some spine like hairs. Anterio-mid-dorsally with a longitudinal grey lens shaped marking as in fig. 252. Ventral side pale. Epigyne as in fig 253. Internal genitalia as in fig. 254. Male unknown.

Type-specimens: *Holotype* ♀ with cocoon, *paratype* one ♀ in spirit in good condition, deposited in ZSI. Regd. Nos. 2273/18 and 2274/18.

Type-locality: On the bank of Khudi river, Dist. Manbhum, Bihar, INDIA.

Distribution: So far this species is known only from its type-locality.

Remark: This species was placed in the genus *Lycosa*. After studying it we feel that it should be included in the genus *Arctosa*.

Genus 7. *Lycosa* Latr.

1804. *Lycosa* Latr., *Nouv. Dist.d'Hist. Nat.*, 24 : 135.
 1898. *Lycosa* : Simon, *Hist. Nat. des Araignees.*, 2 (2) : 345.
 1900. *Lycosa* : Pocock, *Faun. Brit. India Arach.*, : 252.
 1924. *Lycosa* : Gravely, *Rec. Indian Mus.*, 26 : 588.
 1951. *Lycosa* : Sinha, *Rec. Indian Mus.*, 48 (2) : 19.
 1970. *Lycosa* : Tikader, *Rec. zool. Surv. India*, 64 (1-4) : 63.

Diagnosis: This is a very large genus including majority of species of wolf-spiders. Carapace long, facial area vertical and sides of the face slanting, four posterior eyes large and arranged in a quadrangle which is slightly wider behind than in front. The labium is always longer than wide and the basal excavation is prominent, usually one-third or more of the length of the labium. Clypeus is not vertical. Tibiae I and II are armed with three pairs of ventral spines. IV metatarsi never longer than tibia plus patella together. The species of this genus spin no web. The larger forms live in silk-lined burrows, and under stones. The females carry the cocoon attached to their spinnerets, and the young, after hatching swarm on the mother's back.

Type-species : *Lycosa tarantula* Rossi.

Distribution : All over the world.

Key to the species of the genus LYCOSA Latr.

- | | |
|---|----------------------|
| 1. Anterior row of eyes straight or nearly so. | .2 |
| Anterior row of eyes procurved or nearly so. | 16 |
| 2. Total length less than 10.00 mm. | .3 |
| Total length more than 10.00 mm. | .5 |
| 3. Carapace provided with a median broad, pale band extending from bases of second row of eyes to the base of cephalothorax (Fig. 255) and chelicerae strong. | <i>.himalayensis</i> |
| Carapace not provided with the broad pale band and chelicerae moderately strong. | .4 |

4. Coxae of all legs provided with brown patches, dorsal side of abdomen dark brown with small pale patches (Fig. 258). *.tista*
 Coxae of legs not provided with any patches, dorsal side of abdomen pale except the mid-longitudinal brown irregular marking. *.bistriata*
5. Sternum pale.6
 Sternum brown to reddish brown. .9
6. Ventral side of abdomen provided with a broad dark brown patch extending from the epigastric fold to the base of spinnerets. *.chaperi*
 Ventral side of abdomen pale and without such patch. 7
7. Carapace reddish brown and femora of legs provided with light green patches. *.kempi*
 Carapace brown to deep brown and femora of legs not provided with any patches. .8
8. Carapace uniform deep brown and without mid-longitudinal and sub-marginal pale bands. Coxae dorsally provided with brown irregular patches. Maxillae much broader at the distal end. *.choudhuryi*
 Carapace brown and provided with a mid-longitudinal and sub-marginal pale bands. Coxae not provided with any patches. Maxillae not much broader at the distal end. *.poonaensis*
9. Ventral side of abdomen pale. .10
 Ventral side of abdomen dark brown to black in colour. .. 11
10. Carapace mid-longitudinally provided with broad light brown band and ventral side of abdomen with two inclined rows of small red spots near the epigastric furrow. Tips of palps (female) not dark brown. *.masteri*

- Carapace mid-longitudinally not provided with light brown band (Fig. 279) and ventral side of abdomen uniform pale. Tips of palps dark brown in female. *.madani*
11. Anterior medians and lateral eyes of equal size. 12
 Anterior median eyes larger than the anterior lateral eyes. 13
12. Carapace much longer, labium dark brown at basal region and abdomen pale dorsally except a few brown spots. (Fig. 284). *.phipsoni*
 Carapace rounded at the thoracic region and abruptly narrow at the cephalic region (Fig. 288), labium light brown and abdomen antero-dorsally provided with two conspicuous black patches. *.wroughtoni*
13. Legs dark brown and labium black (except the distal pale brown extremity). 14
 Legs pale brown with inconspicuous greenish brown patches on femora and labium greenish or reddish brown (except the distal pale extremity). 15
14. Very large spiders (total length upto 32.00 mm.). Sternum and coxae black, ventral side of tibiae of III and IV legs provided with broad black bands at the extremities; Ventral side of patella of all legs reddish brown. *.goliathus*
 Moderately big spiders (total length upto 17.50 mm.), sternum and coxae dark brown. Ventral side of tibiae of III and IV legs not provided with broad black bands at the extremities; Ventral side of patella of all legs dark brown. *.shillongensis*
15. Carapace with a broad mid-longitudinal pale band (Fig. 297). Sternum reddish brown. Coxae of all legs dark brown ventrally and extremities of

- ventral side of IV tibiae provided with broad dark brown bands. Ventral side of abdomen black in colour..
Carapace without mid-longitudinal band (Fig. 300). Sternum dirty brown. Coxae of all legs pale ventrally and extremities of ventral side of IV tibiae without any band. Ventral side of abdomen dirty brown in colour..
- .nigrotibialis*
16. Ventral side of abdomen with a broad dark brown or black bands extending from the epigastric fold to the base of spinnerets. .17
Ventral side of abdomen pale to light brown. .20
17. Sternum pale brown and ventral side of abdomen with three longitudinal broad, dark brown conspicuous bands. *.prolifera*
Sternum dark brown and ventral side of abdomen uniform dark brown to black. .18
18. Dorsal side of abdomen uniform pale and without any patch. Carapace not provided with the mid-longitudinal broad pale brown band (Fig. 306). Coxae reddish brown. *.indagatrix*
Dorsal side of abdomen provided with a lens shaped pale brown marking anteriorly. Carapace provided with mid-longitudinal pale brown broad band. Coxae brown. .19
19. Proximal end of femora provided with light brown patches dorsally and distal end with two small longitudinal parallel brown streaks tapering distally. Tibiae, metatarsi and tarsi I and II dark brown ventrally. *.geotubalis*
Proximal end of femora without light brown patches dorsally and distal end without any streaks. Tibiae, metatarsi and tarsi I and II pale ventrally. *.iranii*

20. Sternum pale to light brown. .21
 Sternum dark brown to reddish or
 chocolate brown. .24
21. Carapace provided with the mid-
 longitudinal pale brown band. .22
 Carapace not provided with the mid-
 longitudinal pale band. .23
22. Femora of legs provided with cons-
 picuous irregular greenish brown
 patches. Labium and chelicerae dark
 brown. Ventral side of abdomen pale
 with small brown spots. *.barnesi*
 Femora of legs pale. Labium and
 chelicerae yellowish brown. Ventral
 side of abdomen chalk white. *.mackenziei*
23. Abdomen dorsally provided with
 a mid-longitudinal pale marking ex-
 tending the whole length and sternum
 provided with a mid-longitudinal light
 brown band. *.moulmeinensis*
 Abdomen antero-mid-dorsally pro-
 vided with a lens-shaped brown mark-
 ing and sternum not provided with
 any band. *.quadrifer*
24. Abdomen anterior-mid-longitudinally
 provided with a lens shaped
 greenish brown patch (Fig. 327).
 Vento-lateral side of abdomen with
 two longitudinal rows of irregular
 dark brown patches. *.pictula*
 Abdomen antero-mid-longitudinally
 without any lens shaped marking. Ven-
 tro-lateral sides without dark patches. .25
25. Carapace deep brown or chocolate
 brown and dorsal side of abdomen
 with irregular patches. .26
 Carapace yellowish brown and dorsal
 side of abdomen without irregular
 patches. .27

26. Posterior quadrangle of eyes slightly wider behind than in front (Fig. 331). Tibiae III and IV distinctly banded with dark brown colour ventrally at the extremities. *.yerburyi*
 Posterior quadrangle of eyes as long as wide (Fig. 333). Tibiae III and IV without bands at the extremities ventrally. *.fuscana*
27. Sternum mid-longitudinally provided with a conspicuous broad black band. Tibiae I and II uniform black ventrally and tibiae III and IV with dark brown, broad bands only at the ventral extremities. *.mahabaleshawarensis*
 Sternum without any black band. Tibiae I, II, III and IV with pairs of brown longitudinal streaks at the pro and retro-lateral sides of the extremities. *.lambai*

51. *Lycosa himalayensis* Gravely

(Figs. 255-257)

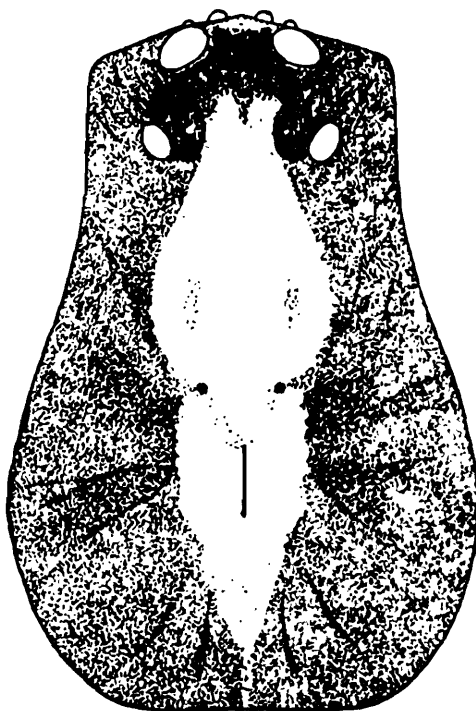
1924. *Lycosa himalayensis* Gravely, *Rec. Indian Mus.*, 26 : 603.

1951. *Lycosa himalayensis* : Sinha, *Rec. Indian Mus.*, 48 (2) : 30.

General: Cephalothorax deep brown, abdomen and legs brownish green. Total length 9.50 mm. Carapace 5.00 mm. long, 3.30 mm. wide; abdomen 4.50. long, 2.60 mm. wide.

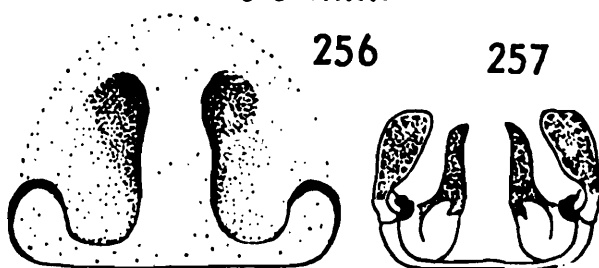
Cephalothorax: Longer than wide, convex, clothed with fine hairs. Middle of cephalothorax provided with a light broad longitudinal band which extends from base of the second row of eyes to the base of cephalothorax. Centre provided with a conspicuous fovea. Anterior row of eyes straight and slightly shorter than the middle row; anterior medians slightly larger than the anterior laterals. Eyes of the second row larger than the others and bases of eyes of the second and third row with conspicuous black patches as in fig. 255. Ocular quad wider than long and slightly wider behind than in front. Space enclosed between posterior eyes wider than long and slightly narrowing in front as in fig. 255. Sternum heart-shaped, pointed behind, light brown, clothed with spine-

like hairs. Maxillae broader in front, distal end provided with scopulae. Chelicerae strong, inner and outer margins both provided with three teeth. Legs strong, clothed with spines and hairs, provided with transverse, inconspicuous, brownish green patches. Tibiae I provided with three pairs of ventral spines.



255 1 mm.

0.5 mm.



FIGS. 255-257. *Lycosa himalayensis* Gravely

255. Dorsal view of cephalothorax, legs omitted.

256. Epigyne.

257. Internal genitalia.

Abdomen: Longer than wide, clothed with spine-like hairs. Dorsally, posterior half with black and deep brown patches. Ventral side pale with small deep brown spots. Epigyne as in fig. 256. Internal genitalia as in fig 257. Male unknown.

Type-specimen : Syntype one ♀ in spirit, in good condition, deposited in ZSI. Regd. No. 2271/18.

Type-locality: Kalimpong, Dist. Darjeeling, INDIA.

Distribution : INDIA : Darjeeling, West Bengal; Sonarpur, Assam.

Remark: Description based on a single female specimen.

52. *Lycosa tista* Tikader

(Figs 258-260)

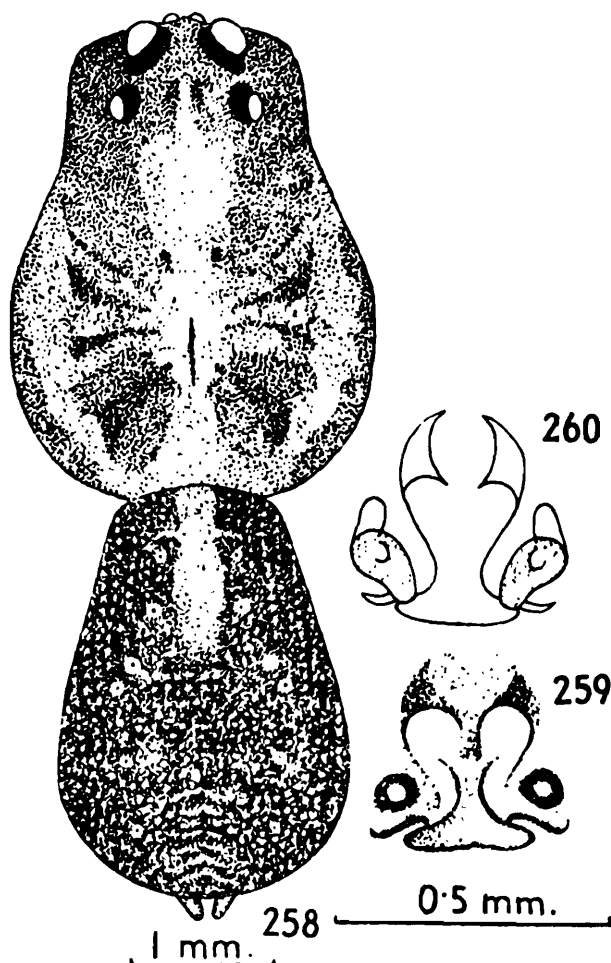
1970. *Lycosa tista* Tikader, *Rec. zool. Surv. India.*, 64 (1-4) : 67.

General: Cephalothorax and legs brown, abdomen dark brown. Total length 6.60 mm. Carapace 3.50 mm. long, 2.60 mm. wide; abdomen 3.20 mm. long, 2.10 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence, tapering anteriorly. Centre of thoracic region provided with a sharp black fovea and brown bands extend from it to the lateral sides. Anterior row of eyes nearly straight, shorter than the second row, medians larger than the laterals and bases of laterals provided with conspicuous black patches. Eyes of the second row larger than the others. Ocular quad wider behind and narrowing in front. Bases of posterior eyes provided with conspicuous black patches as in fig 258. Space enclosed between posterior eyes wider behind and narrowing in front. Sternum heart-shaped, pointed behind, pale and clothed with hairs. Labium longer than wide, dark brown with the basal excavation prominent. Distal end of maxillae broader and bears conspicuous scopulae. Chelicerae strong and the inner margin of fang furrow provided with three teeth. Legs stout, clothed with hairs and spines.

Abdomen: Longer than wide, oval, broad posteriorly, clothed with pubescence. Anterior mid-dorsally with a pale longitudinal marking as in fig. 258. Ventral side pale. Epigyne as in fig 259. Internal genitalia as in fig. 260. Male unknown.

Type-specimen: *Holotype* ♀ in spirit in good condition, deposited in ZSI. Regd. No. 3243/18.



FIGS. 258-260. *Lycosa tista* Tikader
 258. Dorsal view of female, legs omitted.
 259. Epigyne.
 260. Internal genitalia.

Type-locality: Rothak near Nayabazar, West Sikkim, INDIA.

Distribution: So far this species is known only from its type-locality.

Remark: Description based on a single female specimen.

53. *Lycosa bistriata* Gravely

(Figs 261-263)

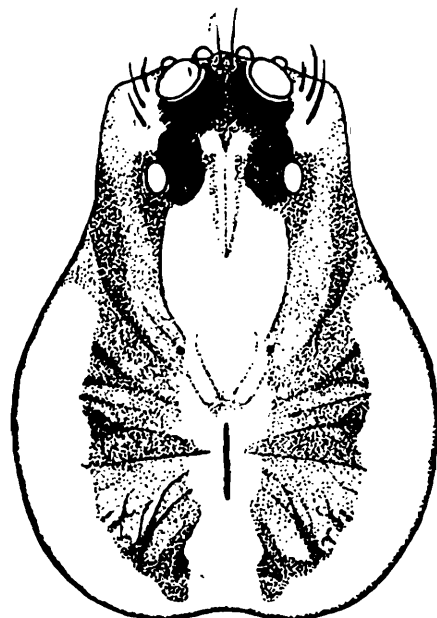
1924. *Lycosa bistriata* Gravely, *Rec. Indian Mus.*, 26 : 600.

1951. *Lycosa bistriata* : Sinha, *Rec. Indian Mus.*, 48 (2) : 21.

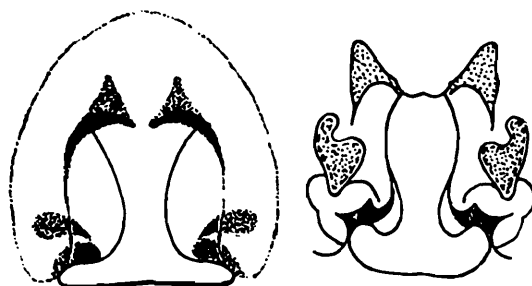
General: Cephalothorax and legs brownish green, abdomen
 F..25

light brown. Total length 7.80 mm. Carapace 3.80 mm. long, 2.80 mm. wide; abdomen 4.00 mm. long, 2.50 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with fine hairs. Lateral sides provided with longitudinal pale patches extending from bases of third row of eyes to the base of Cephalothorax; centre provided with a distinct fovea. Sub-lateral sides also provided with broad longitudinal brown patches as in fig. 261. Anterior row of eyes shorter than the second row and straight, anterior medians slightly larger than anterior laterals. Eyes of the second row, larger than others. Bases of second and



1 mm. 261



262

263

0.5 mm.

FIGS. 261-263. *Lycosa bistrata* Gravely
 261. Dorsal view of cephalothorax, legs omitted.
 262. Epigyne.
 263. Internal genitalia.

third row of eyes provided with conspicuous black patches as in fig. 261. Space enclosed between posterior eyes longer than wide and slightly narrow in front as in fig. 261. Sternum nearly oval, pointed behind, clothed with fine hairs. Labium slightly longer than wide. Distal end of maxillae broader and provided with scopulae. Legs long and strong, clothed with hairs and spines.

Abdomen: Longer than wide, nearly oval, broader behind the middle, clothed with pubescence. Mid-dorsally provided with longitudinal brown irregular markings. Ventral side pale. Epigyne as in fig. 262. Internal genitalia as in fig 263. Male unknown.

Type-specimen: Syntype one ♀ in spirit in good condition, deposited in ZSI. Regd. No. 2269/18.

Type-locality: Madras city. Tamil Nadu, South INDIA.

Distribution: INDIA : Madras city, Tamil Nadu; Gmatia, Dist. Birbhum, Calcutta, Darjeeling, West Bengal.

Remark: Description based on a single female specimen.

54. *Lycosa chaperi* Simon

(Figs. 264-267)

1885. *Lycosa chaperi* Simon, *Bull. Soc. zool. Fr.*, 10 : 8.

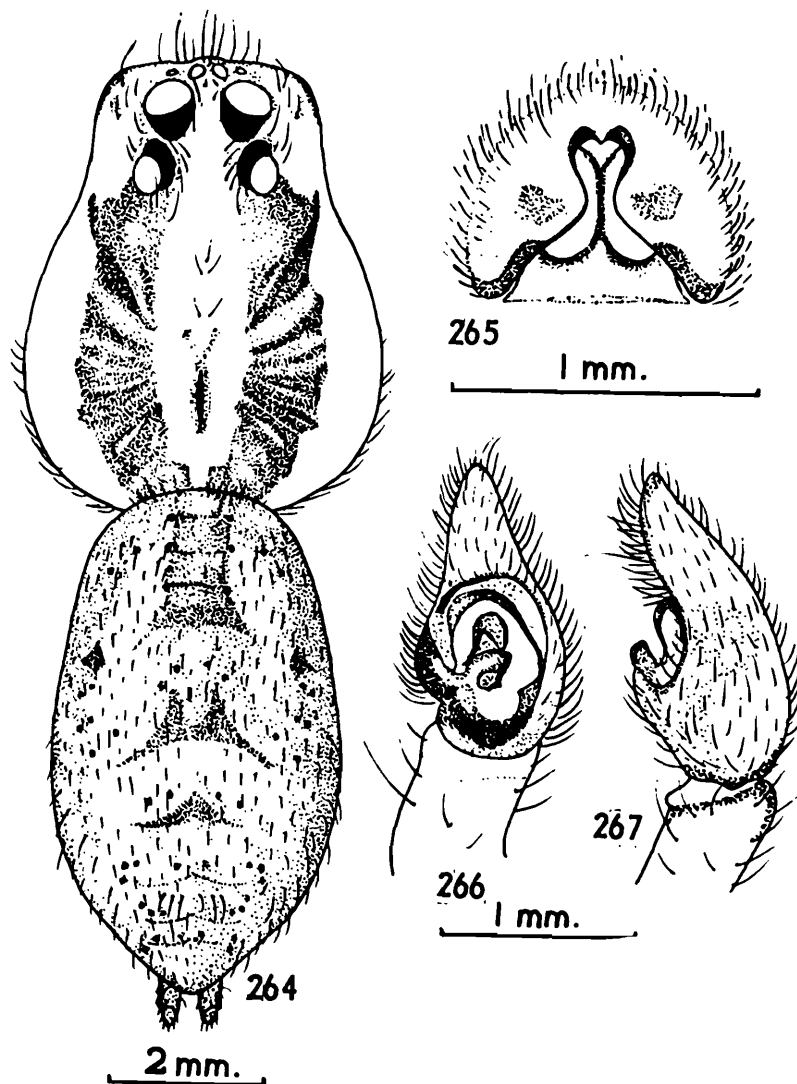
1900. *Lycosa chaperi* : Pocock, *Faun. Brit. Ind. Arach.*, : 254.

1924. *Lycosa chaperi* : Gravely, *Rec. Indian Mus.*, 26 : 589.

General: Cephalothorax, legs and abdomen reddish brown. Total length 12.00 mm. Carapace 6.00 mm. long, 5.00 mm. wide; abdomen 6.50 mm. long, 4.00 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence. Centre provided with a distinct fovea and a longitudinal median pale band. Two broad dark bands extend from the bases of posterior eyes to the base of cephalothorax, lateral sides pale. Anterior row of eyes nearly straight and shorter than the second row in width and anterior median eyes larger than the anterior lateral eyes. Eyes of the second row larger than the others. Bases

of posterior eyes (second and third row) provided with conspicuous black patches as in fig. 264. Space enclosed between posterior eyes as long as wide as in fig. 264. Sternum heart-shaped, pointed behind, pale and provided with hairs and spines. Labium as long as wide with the basal excavation prominent. Maxillae broader at the distal end and distal end provided with conspicuous scopulae. Chelicerae moderately strong and inner margin provided with three teeth. Legs strong and provided with spines and hairs. Male palp as in figs. 266 and 267. Male slightly smaller than female but of same colour.



FIGS. 264-267. *Lycosa chaperi* Simon
 264. Dorsal view of female, legs omitted.
 265. Epigyne.
 266. Left male palp, ventral view.
 267. Left male palp, lateral view.

Abdomen: Longer than wide, pointed behind, clothed with spine like hairs. Dorsally provided with reddish brown spots and patches. Ventral side provided with a broad dark brown patch extending from the epigastric fold to the base of spinnerets and clothed with hairs. Epigyne as in fig. 265.

Type-specimen : *Syntypes* one ♀ and one ♂ in spirit in good condition, deposited at MNHN. Regd. No. 6663.

Type-locality: Guntakal, Andhra Pradesh, INDIA.

Distribution : INDIA : Wagrakaroor near Guntakal, Bellary Dist., Andhra Pradesh; Chandigarh, Punjab.

55. *Lycosa kempi* Gravely

(Figs. 268-270)

1924. *Lycosa kempi* Gravely, *Rec. Indian Mus.*, **26** : 602.

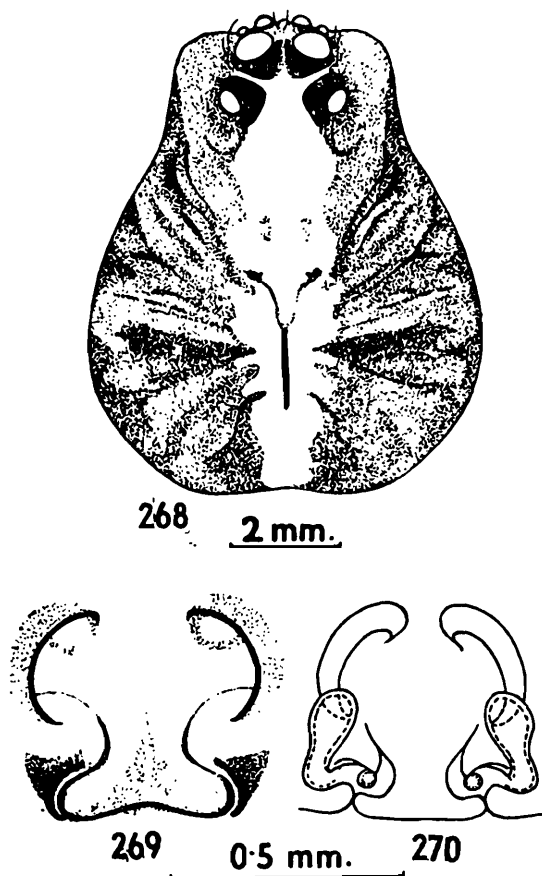
1951. *Lycosa kempi* : Sinha, *Rec. Indian Mus.*, **48** (2) : 28.

1970. *Lycosa kempi* : Tikader, *Rec. zool. Surv. India*, **64** : 65.

General: Cephalothorax and legs reddish brown and abdomen light greyish brown. Total length 18.00 mm. Carapace 8.50 mm. long, 7.00 mm. wide; abdomen 9.50 mm. long, 6.00 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with fine hairs, mid-dorsally with a conspicuous longitudinal broad pale band, extending from the base of second row of eyes to the base of cephalothorax; centre provided with distinct fovea. Anterior row of eyes short and straight, anterior medians larger than anterior laterals. Eyes of the second row fairly larger than others. Space enclosed between posterior eyes as long as wide and slightly wider behind than in front as in fig. 268. Bases of posterior eyes provided with conspicuous black patches as in fig. 268. Sternum oval, pale, pointed behind, clothed with hairs. Legs long and strong, clothed with hairs and spines; femora of legs with light green patches.

Abdomen: Longer than wide, nearly oval, clothed with fine hairs; broadest behind the middle. Ventral side pale. Epigyne as in fig 269. Internal genitalia as in fig. 270. Male unknown.



FIGS. 268-270. *Lycosa kempii* Gravely
268. Dorsal view of cephalothorax, legs omitted.
269. Epigyne.
270. Internal genitalia.

Type-specimen : *Syntype* one ♀ in spirit in good condition deposited in ZSI. Regd. No. 2270/18.

Type-locality: Dist. Mangaldai, Assam, INDIA.

Distribution : INDIA: Darjeeling, West Bengal; Assam—Bhutan, Frontier, Sikkim; Assam; PAKISTAN.

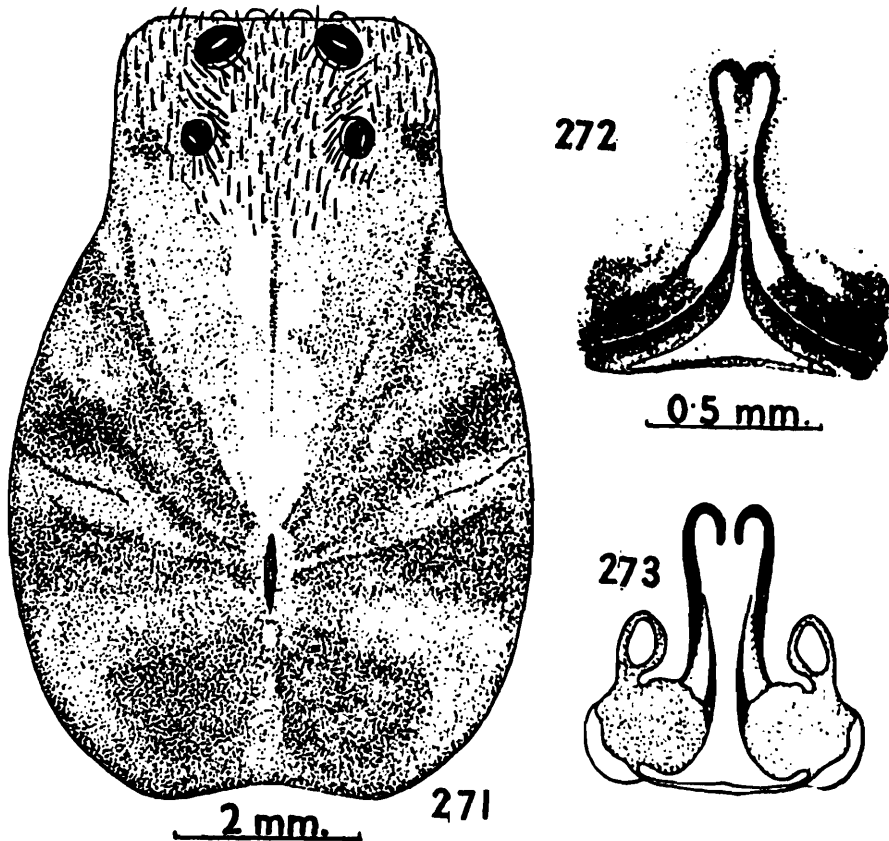
Remark: Description based on a single female specimen.

56. *Lycosa choudhuryi* sp. nov.

(Figs. 271-273)

General: Cephalothorax uniform deep brown, legs brownish green, abdomen light brown. Total length 19.40 mm. Carapace 8.40 mm. long, 5.50 mm. wide; abdomen 11.00 mm. long, 6.00 mm. wide.

Cephalothorax: Longer than wide, slightly wider in front, convex, clothed with fine hairs but ocular area densely clothed with hairs. Cephalic region slightly high and sides sloping. Ocular area slightly deep brown in colour, provided with conspicuous hairs; lateral sides with light brown patches originating from central foveal region. Anterior row of eyes nearly straight, anterior medians larger than the anterior laterals; anterior row of eyes as wide as the second row. Eyes of the second row larger than the others. Posterior two rows of eyes arranged in a quadrangle, little wider behind than in front as in fig. 271. Sternum nearly oval, pale, pointed behind and clothed with spine like hairs. Labium longer than wide and the basal excavation prominent. Maxillae much wider in front and provided with conspicuous scopulae. Chelicerae strong, stout and prominent; inner margin of the fang furrow provided with three and outer margins with two teeth. Legs long and strong, clothed with hairs and spines, dorsal side of coxae provided with brown irregular patches.



FIGS. 271-273. *Lycosa choudhuryi* sp. nov.
 271. Dorsal view of cephalothorax, legs omitted.
 272. Epigyne.
 273. Internal genitalia.

Abdomen: Longer than wide, clothed with hairs. Dorsally provided with two rows of longitudinal deep brown inconspicuous spots. Ventral side pale. Epigyne as in fig 272. Internal genitalia as in fig. 273. Male unknown.

Holotype: ♀, *paratype* three ♀♀ in spirit. deposited at ZSI. Regd No. 4667/18.

Type-locality: On the "beach in Mandirtala. Sagar Island, Dist. 24. Parganas, West Bengal, INDIA. 3. viii. 1974, Coll. Dr. A. Choudhury.

Discussion: This species closely resembles to *Lycosa kempi* Gravely but can be separated from it as follows: (i) Femora of legs without patches but in *L. kempi* femora of legs with light green patches. (ii) Epigyne also structurally different.

It is with much pleasure that we name this species in honour of Dr. Amalsh Choudhury, who collected this species for our studies.

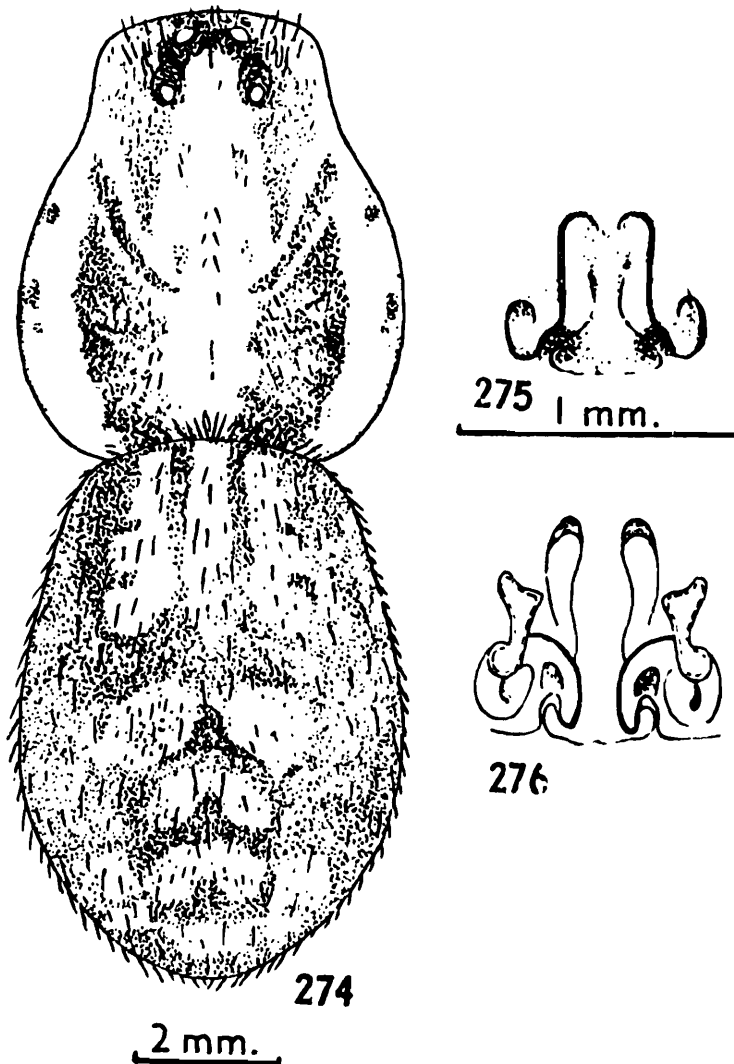
57. *Lycosa poonaensis* sp. nov.

(Figs. 274-276)

General: Cephalothorax brown and legs light brown, abdomen, pale with greenish black patches. Total length 13.50 mm. Carapace 6.10 mm. long, 5.50 mm. wide; abdomen 7.50 mm. long, 5.20 mm. wide.

Cephalothorax: Longer than wide, convex, slightly narrowing in front, clothed with pubescence and spine like hairs; centre of thoracic region provided with a conspicuous fovea. Ocular area provided with spine like hairs. Anterior row of eyes straight as wide as the second row, anterior medians and laterals of same size and bases of anterior laterals provided with conspicuous black patches. Eyes of the second row larger than the others. Ocular quad wider behind and narrowing in front. Space enclosed between posterior eyes wider than long and slightly narrowing in front. Bases of posterior eyes provided with conspicuous black patches as in fig. 274. Sternum heart-shaped, pointed behind, pale, and clothed with hairs. Labium brown, longer than wide, clothed

with hairs and the basal excavation prominent. Distal end of maxillae wider and provided with distinct scopulae. Chelicerae strong and chocolate brown in colour, clothed with hairs, not much wider at the distal end. Legs long and strong, clothed with hairs and spines, ventral side of metatarsi and tarsi of all legs darker than the other pale segments.



FIGS. 274-276. *Lycosa poonaensis* sp. nov.
 274. Dorsal view of female, legs omitted.
 275. Epigyne.
 276. Internal genitalia.

Abdomen: Longer than wide, oval, pointed behind, clothed with pubescence and hairs. Anterio-mid dorsally provided with a longitudinal lens shaped marking followed posteriorly by greenish black patches alternating with pale colour and black spots.

Ventral side pale and clothed with hairs and with a few black spots sub-laterally. Epigyne as in fig. 275. Internal genitalia as in fig. 276. Male unknown.

Holotype ♀, *paratypes* ten ♀ ♀ in spirit. deposited at ZSI. Regd. No. 4663/18.

Type-locality: Nimbadkarwadi, Near Katraj, Poona, Maharashtra, INDIA. 30. xii.1975, Coll. B. K. Tikader.

Discussion: This species resembles *Lycosa nigrotibialis* Simon but can be separated from it as follows : (i) Centre of cephalothorax dorsally provided with a longitudinal row of spine like hairs but in *L. nigrotibialis* the spine like hairs are absent. (ii) Ventral side of abdomen pale except a few sublateral black spots but in *L. nigrotibialis* ventral side of abdomen is dark brown in colour (iii) Epigyne also structurally different.

58. *Lycosa masteri* Pocock

(Figs. 277-278)

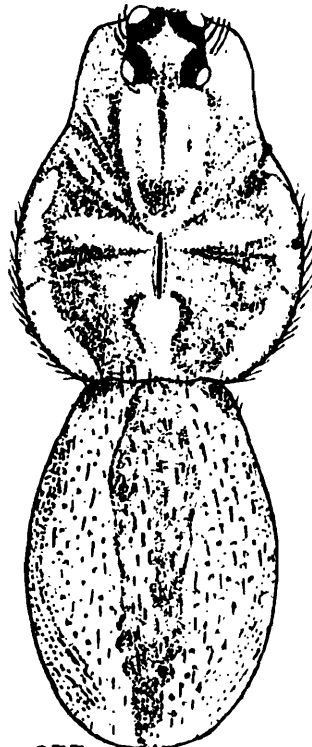
1901. *Lycosa masteri* Pocock, *J. Bombay nat. Hist. Soc.*, 13 (3) : 484-485.

1924. *Lycosa masteri* : Gravely, *Rec. Indian Mus.*, 26 : 589.

General: Cephalothorax and legs chocolate brown, abdomen dirty brown. Total length 21.50 mm. Carapace 10.50 mm. long, 7.50 mm. wide; abdomen 10.50 mm. long, 6.00 mm. wide.

Cephalothorax: Longer than wide, narrowing anteriorly, mid-longitudinally with conspicuous broad light brown band extending from the bases of posterior eyes up to the distinct fovea. Conspicuous dark brown patches extend from fovea to the sub-lateral sides. Anterior row of eyes straight, smaller than the second row, medians slightly larger than the laterals and bases of lateral eyes provided with conspicuous black patches. Eyes of the second row larger than the others; bases of posterior eyes provided with conspicuous black patches as in fig. 277. Ocular quad wider behind and narrowing in front. Sternum heart-shaped, pointed behind, brown, provided with spines. Labium longer than wide and the basal excavation prominent. Distal end of the maxillae broader and provided with conspicuous scopulae. Chelicerae strong

and black, inner margin with three stout teeth. Legs long and strong, clothed with hairs and spines; tibiae I and II provided with three pairs of ventral spines.



277 2 mm.



278 1 mm.

FIGS. 277-278. *Lycosa masteri* Pocock

277. Dorsal view of female, legs omitted.

278. Epigyne.

Abdomen: Longer than wide and oval, clothed with pubescence and spine-like hairs. Anterior mid-dorsal area provided with a conspicuous lens shaped marking as in fig. 277. Ventral side hairy and pale with two inclined rows of small red spots near the epigastric furrow. Epigyne as in fig 278. Male unknown.

Type-specimen : *Syntype:* one ♀ in spirit, deposited at BMNH, Regd. No. 94.4.21-397.

Type-locality: Jaoli in Satara, Maharashtra, INDIA.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

59. *Lycosa madani* Pocock

(Figs. 279-283)

1901. *Lycosa madani* Pocock, *J. Bombay nat. Hist. Soc.*, **13** (3) : 486.

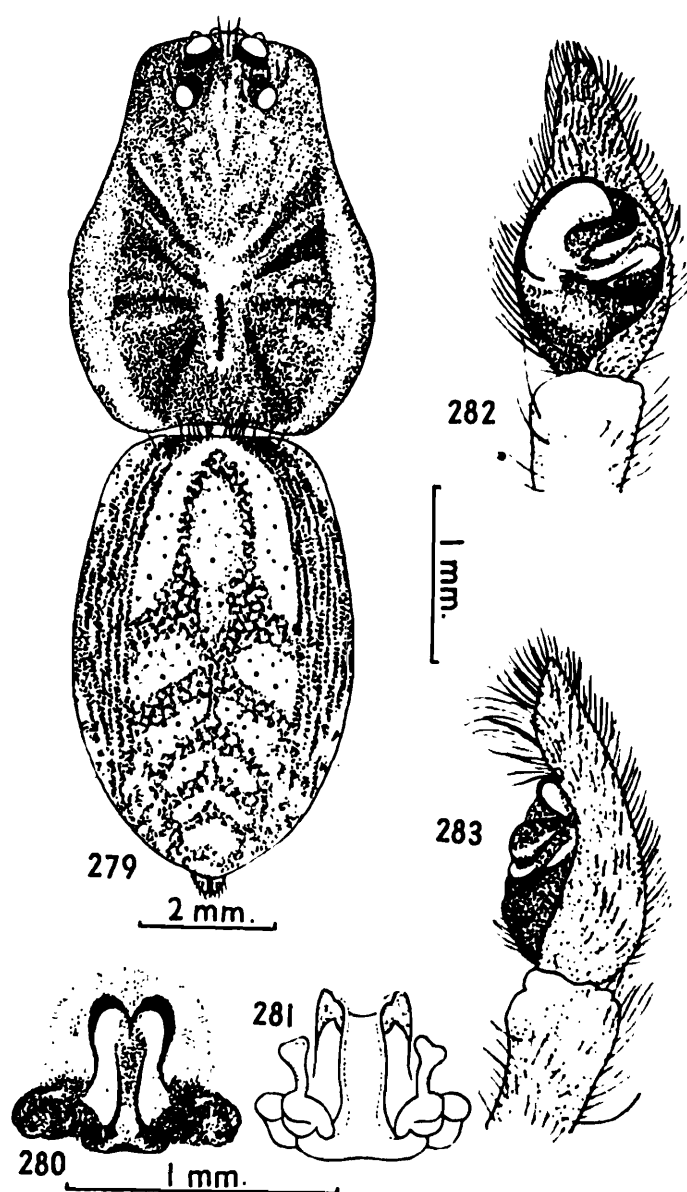
1924. *Lycosa madani* : Gravely, *Rec. Indian Mus.*, **26** : 602.

1951. *Lycosa madani* : Sinha, *Rec. Indian Mus.*, **48** (2) : 27.

General: Cephalothorax and legs brown, abdomen pale with greenish brown patches. Total length 12.50 mm. Carapace 6.00 mm. long, 4.50 mm. wide; abdomen 6.50 mm. long, 4.00 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence, centre with a conspicuous fovea and prominent brown bands radiate to the sub-lateral sides. Anterior row of eyes straight and almost as wide as the second row, anterior medians larger than the anterior laterals. Eyes of the second row larger than the others. Ocular quad wider behind and narrowing in front. Bases of posterior eyes provided with conspicuous black patches as in fig. 279. Space enclosed between posterior eyes as long as wide and slightly wider behind than in front as in fig. 279. Spine like hairs present in the ocular area. Sternum heart-shaped, pointed behind, brown and provided with spine like hairs. Labium dark brown, slightly longer than wide, basal excavation prominent. Distal end of maxillae wider and provided with scopulae, lateral sides of maxillae with prominent spine like hairs. Chelicerae strong and hairy. Legs uniform brown and provided with spines and hairs. Male palp as in figs. 282 and 283. Male and female of similar colour and size.

Abdomen: Longer than wide, pointed, behind, clothed with pubescence and some spine like hairs. Dorsally pale and provided with greenish brown patches as in fig. 279. Ventral side uniform pale. Epigyne as in fig. 280. Internal genitalia as in fig. 281.



FIGS. 279-283. *Lycosa madani* Pocock

279. Dorsal view of female, legs omitted.

280. Epigyne.

281. Internal genitalia.

282. Left male palp, ventral view.

283. Left male palp, lateral view.

Type-specimen : Syntypes five ♀♀ and one ♂ in spirit. One ♂ and ♀ separated for the studies and illustration, deposited at BMNH, Regd. No. 1899.9.21. 385-388.

Type-locality: Chopda, East Khandesh, Maharashtra, INDIA.

Distribution : INDIA: Chopda, East Khandesh, Maharashtra;

Kavalai, Javadi Hills, Cochin, Kerala; Karnataka; Horsleykonda, Chittoor Dist., Andhra Pradesh; Barkuda Island, Chilka lake, Siripur, Saran, Bihar.

Remark: Since original author has not indicated any holotype, we have separated one male and one female, out of six specimens in a separate vial and described and illustrated on the basis of these.

60. *Lycosa phipsoni* Pocock

(Figs 284-287)

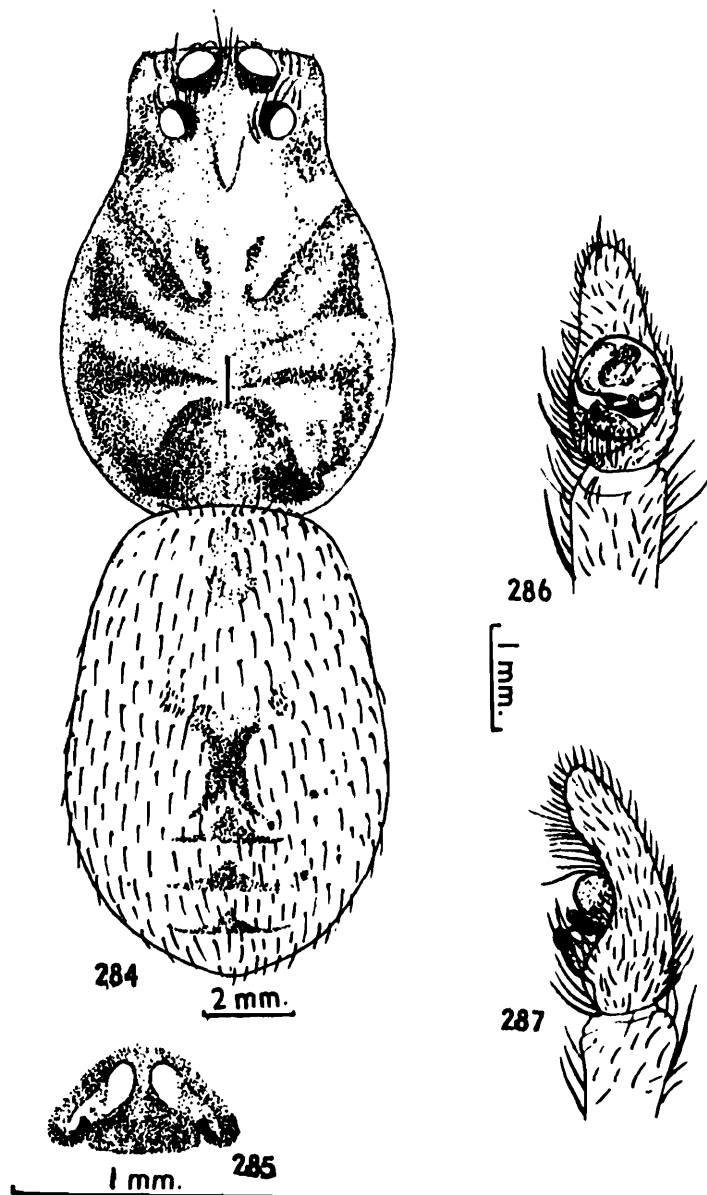
1899. *Lycosa phipsoni* Pocock, *J. Bombay nat. Hist. Soc.*, **12** : 751.

1900. *Lycosa phipsoni* : Pocock, *Fauna Brit. India Arachnida*, : 253.

1924. *Lycosa phipsoni* : Gravely, *Rec. Indian Mus.*, **26** : 590.

General: Cephalothorax and legs brown, abdomen pale. Total length 21.00 mm. Carapace 10.50 mm. long, 7.50 mm. wide; abdomen 10.50 mm. long, 7.20 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence, tapering anteriorly. Centre provided with a conspicuous fovea and brown bands extend from it towards the sub-lateral sides, cephalic region darker than the thoracic region. Anterior row of eyes straight, less wider than the second row and anterior medians and laterals of the same size. Eyes of the second row larger than the others. Ocular quad wider behind and narrowing in front. Bases of posterior eyes provided with dark brown patches as in fig. 284. Space enclosed between posterior eyes slightly wider behind than in front. Ocular area hairy. Sternum heart-shaped, pointed behind, light brown and clothed with pubescence and spine like hairs. Labium dark brown except the pale and hairy distal end and longer than wide with basal excavation prominent. Distal end of maxillae much wider and provided with conspicuous soplulae. Chelicerae very much stronger and deep brown in colour. Legs strong and stout and provided with hairs and spines; femora of all legs provided with two thin parallel longitudinal brown bands near the distal extremities on the dorsal side. Male also of similar colour and size as female. Male palp as in figs. 286 and 287.



FIGS. 284-287. *Lycosa phipsoni* Pocock

284. Dorsal view of female, legs omitted.

285. Epigyne.

286. Left male palp, ventral view.

287. Left male palp, lateral view.

Abdomen: Oval, broadest just behind the middle, pale and provided with hairs, few brown spots present dorsally. Ventral side provided with a broad longitudinal black patch extending from the epigastric fold to the base of spinnerets. Epigyne as in fig. 285.

Type-specimen: Syntypes one ♀ and one ♂ in spirit in good condition, deposited in BMNH, Regd. No. 1969.8.26.1-2.

Type-locality: Bombay, Maharashtra, INDIA.

Distribution : INDIA: Bombay, Poona, Jaoli, Satara, Uran, Kanara, Nasik, Maharashtra.

Remark : Description based on a single male and female specimen.

61. *Lycosa wroughtoni* Pocock

(Figs. 288-290)

1899. *Lycosa wroughtoni* Pocock, *J. Bombay nat. Hist. Soc.*, **12** : 751-752.

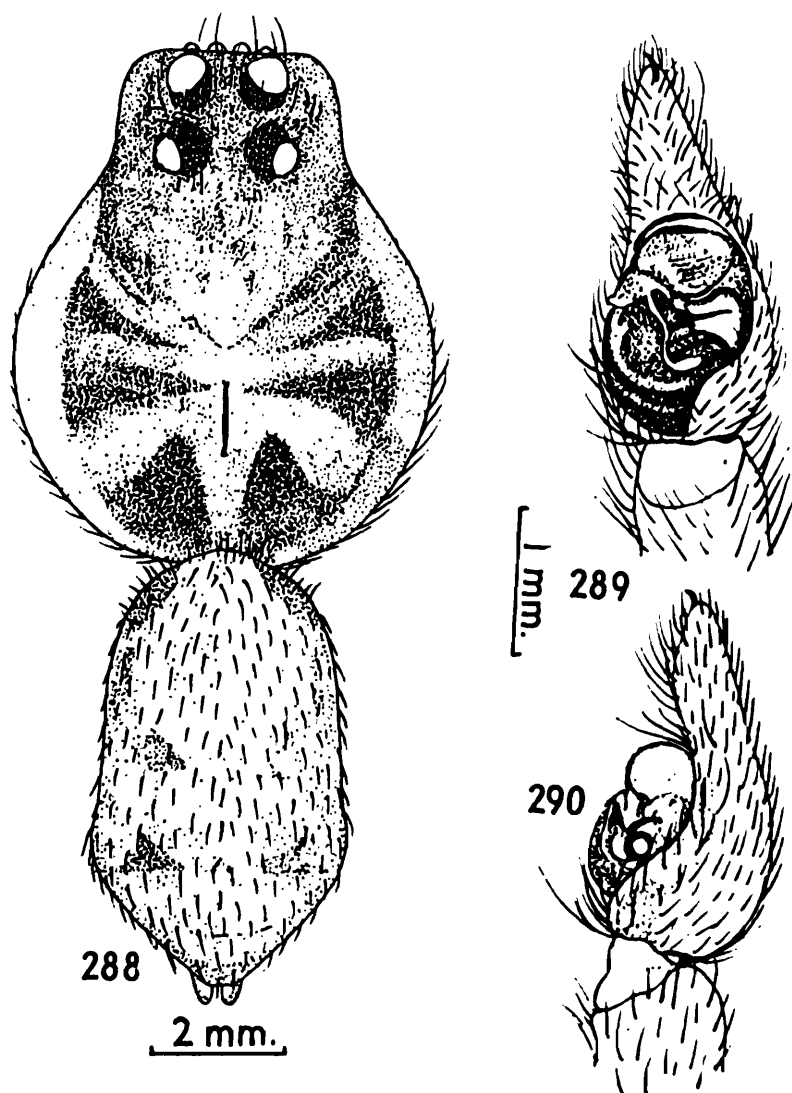
1900. *Lycosa wroughtoni* : Pocock, *Fauna Brit. India Arachnida*, : 253.

1924. *Lycosa wroughtoni* : Gravely, *Rec. Indian Mus.*, **26** : 590.

General: Cephalothorax and legs brown, abdomen pale with brown patches. Total length 15.50 mm. Carapace 8.50 mm. long, 6.70 mm. wide; abdomen 7.20 mm. long, 4.40 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence, thoracic region round and abruptly narrowing at the cephalic region. Centre of thoracic region provided with a conspicuous fovea and brown bands radiate from it towards the sub-ateral sides. Base of cephalothorax with conspicuous dark patches. Anterior row of eyes straight and less wider than the second row of eyes, anterior medians and laterals of the same size. Eyes of the second row larger than the others. Ocular quad wider behind and narrowing in front. Bases of posterior eyes provided with conspicuous black patches as in fig 288. Space enclosed between posterior eyes slightly longer than wide and narrowing in front as in fig. 288. Ocular area provided with hair. Sternum heart-shaped, pointed behind, brown and provided with spine-like hairs. Labium longer than wide, light brown, with the basal excavation prominent. Distal end of maxillae wider and provided with conspicuous scopulae, chelicerae strong and clothed with hairs. Legs long and strong, uniform brown, clothed with hairs and spines. Male palp as in fig. 289 and 290.

Abdomen: Longer than wide, pointed behind, clothed with hairs and some spine-like hairs. Dorsally pale and provided with few brown patches here and there. Anterio-dorsally black pat-



FIGS. 288-290. *Lycosa wroughtoni* Pocock

288. Dorsal view of male, legs omitted.

289. Left male palp, ventral view.

290. Left male palp, lateral view.

ches at the sub-lateral sides. Ventral side provided with broad, black longitudinal patch extending from the epigastric furrow to the base of spinnerets. Female unknown.

Type-specimen : Syntype one ♂ in spirit in good condition, deposited in BMNH, Regd. No. 4/98.

Type-locality: Bulsar, South Gujarat, INDIA.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single male specimen.

62. *Lycosa goliathus* Pocock

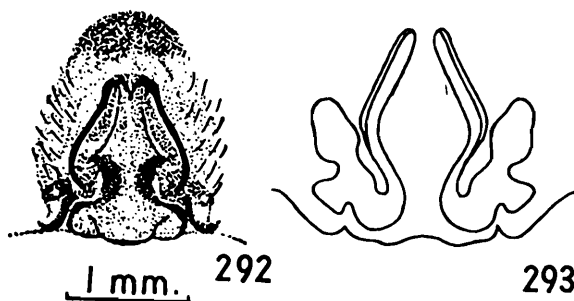
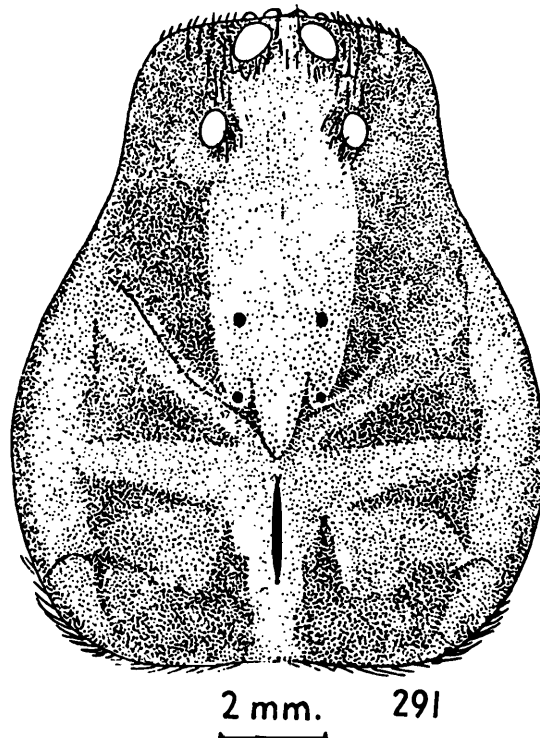
(Figs. 291-293)

1901. *Lycosa goliathus* Pocock, *J. Bombay nat. Hist. Soc.*, 13 (3) : 484.

1924. *Lycosa goliathus* : Gravely, *Rec. Indian Mus.*, 26 : 589.

General: Cephalothorax and legs dark brown, abdomen light brown. Total length 32.00 mm. Carapace 14.50 mm. long, 11.00 mm. wide; abdomen 16.50 mm. long, 10.00 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence; mid-longitudinal area light brown and centre provi-



FIGS. 291-293. *Lycosa goliathus* Pocock
291. Dorsal view of cephalothorax, legs omitted.
292. Epigyne.
293. Internal genitalia.

ded with a distinct fovea. Anterior row of eyes shorter than the second row, straight, medians slightly larger than the laterals. Eyes of the second row larger than the others as in fig. 291. Ocular quad wider than long and narrowing in front. Sternum heart-shaped, pointed behind, black and clothed with pubescence and spine like hairs. Labium longer than wide, black and distal end brown. Distal end of maxillae broader and provided with conspicuous scopulae. Chelicerae black and strong, inner margin provided with three stout teeth. Legs long and strong, dark brown, clothed with hairs and spines; ventral side of coxae black. Ventral side of tibiae of III and IV legs provided with broad black bands at the extremities; ventral side of patella of all legs reddish brown.

Abdomen: Oval, pointed behind, widest just behind the middle, clothed with pubescence and hairs. Anterio-mid-dorsally with a lens shaped longitudinal marking and two conspicuous dark brown 'comma' shaped marks. Ventral side black, clothed with hairs. Epigyne as in fig. 292. Internal genitalia as in fig. 293. Male unknown.

Type-specimen: Syntype one ♀ in spirit in good condition, deposited at BMNH. Regd. No. 0.6.12.13.14.

Type-locality: Helvak in Satara, Maharashtra, INDIA.

Distribution: INDIA: Helvak and Ambenali, Dist. Satara, Maharashtra.

Remark: Description based on a single female specimen.

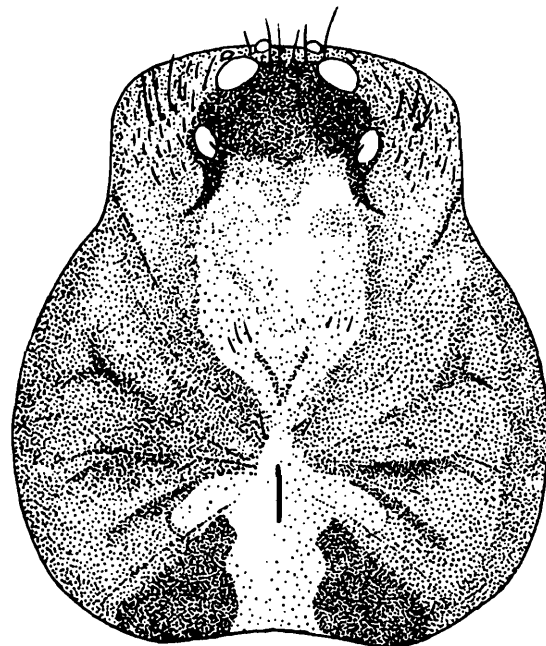
63. *Lycosa shillongensis* sp. nov.

(Figs. 294-296)

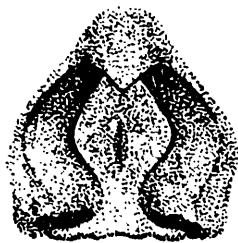
General: Cephalothorax and legs dirty brown, abdomen greenish brown. Total length 17.50 mm. Carapace 9.00 mm. long, 7.70 mm. wide; abdomen 9.10 mm. long, 6.00 mm. wide.

Cephalothorax: Longer than wide, tapering anteriorly, convex, clothed with pubescence and hairs. Centre of thoracic region provided with a sharp fovea; mid-longitudinal area light brown. Anterior row of eyes straight as wide as the second row, anterior

medians slightly larger than the anterior laterals. Eyes of the second row larger than the others as in fig. 294. Ocular quad wider behind and narrowing in front. Bases of posterior eyes provided with conspicuous dark brown patches. Space enclosed between posterior eyes slightly wider behind as in fig. 294. Spine-like hairs present on the anterior ocular area and on the lateral sides of the posterior eyes as in fig. 294. Base of cephalothorax provided with broad dark brown patches as in fig. 294. Sternum heart-shaped, pointed behind, dark brown and clothed with hairs and pubescence. Labium longer than wide, proximally black and distal end pale brown in colour; basal excavation prominent.



2 mm. 294



295



296

FIGS. 294-296. *Lycosa shillongensis* sp. nov.

294. Dorsal view of cephalothorax, legs omitted.

295. Epigyne.

296. Internal genitalia.

Maxillae much hairy, distal end broader and provided with conspicuous scopulae. Chelicerae black, strong, hairy and inner margin of fang furrow provided with three prominent teeth. Legs stout, clothed with hairs and spines and dark brown.

Abdomen: Longer than wide, wider posteriorly, heavily clothed with pubescence and spine like hairs. Anterior mid-dorsally provided with a longitudinal brown lens shaped marking, followed posteriorly in middle line by small black patches. Anterior middle end provided with a bunch of white hairs. Ventral side black. Epigyne as in fig. 295. Internal genitalia as in fig. 296. Male unknown.

Holotype: ♀ in spirit, deposited at ZSI Regd. No. 4686/18.

Type-locality: 1 km. West of Bagha, Inspection Bungalow, Meghalaya, INDIA. 18. iii. 1960, Coll. *B. K. Tikader*.

Discussion: This species resembles with *Lycosa carmichaeli* Gravely but can be separated from it as follows : (i) Coxae dark brown but in *L. carmichaeli* coxae pale. (ii) Labium black but in *L. carmichaeli* labium greenish brown. (iii) Epigyne also structurally different.

Remark: Description based on a single female specimen.

64. *Lycosa nigrotibialis* Simon

(Figs. 297-299)

1884. *Lycosa nigrotibialis* Simon, *Ann. Mus. Stor. Nat. Genova*, 20 : 330.

1895. *Tarentula nigrotibialis* : Thorell, *Spiders of Burma*, : 236.

1900. *Lycosa nigrotibialis* : Pocock, *Faun. Brit. India Arach.*, : 253.

1924. *Lycosa nigrotibialis* : Gravely, *Rec. Indian Mus.*, 26 : 600.

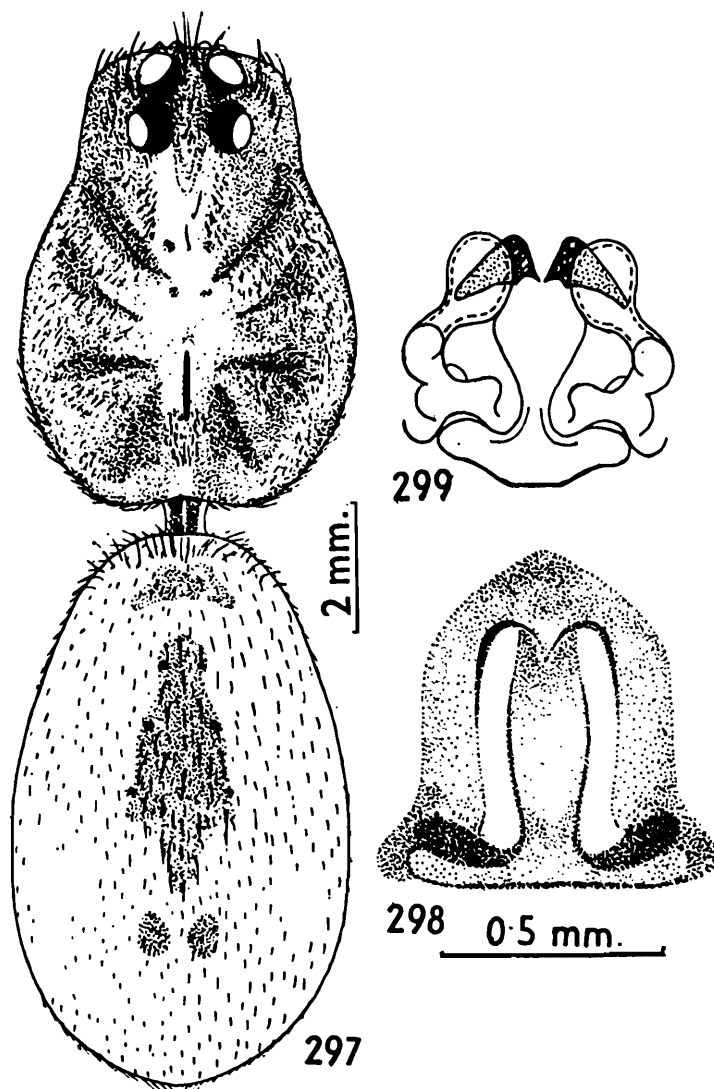
1951. *Lycosa nigrotibialis* : Sinha, *Rec. Indian Mus.*, 48 (2) : 23.

1964. *Lycosa nigrotibialis* : Tikader, *Rec. Indian Mus.*, 59 (3) : 266.

General: Cephalothorax and legs brown, abdomen pale brown. Total length 16.50 mm. Carapace 7.00 mm. long, 5.50 mm. wide; abdomen 9.00 mm. long, 5.50 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with fine hairs and provided with some dark patches extending laterally

Centre provided with a distinct fovea. Anterior row of eyes slightly shorter than the second, almost straight, anterior medians larger than the anterior laterals. Eyes of the second row larger than the others. Bases of posterior eyes provided with conspicuous black patches as in fig. 297. Space enclosed between posterior eyes longer than wide and slightly narrow in front, as in fig. 297. Sternum heart-shaped, pointed behind, brown and clothed with pubescence as well as spine like hairs. Labium longer than wide with basal excavation prominent. Maxillae broader in front and distal end provided with conspicuous scopulae. Chelicerae strong and inner margin of fang furrow provid-



F|7.: 297-299. *Lycosa nigrotibialis* Simon
 297. Dorsal view of female, legs omitted.
 298. Epigyne.
 299. Internal genitalia.

ed with three teeth. Legs long and strong, clothed with hairs and spines. Coxae dark brown ventrally. Extremities of III and IV tibiae ventrally with broad dark brown bands.

Abdomen: Longer than wide, oval, broadest behind the middle; clothed with pubescence. Anterior dorsal side provided with longitudinal dark patch. Ventral side black in colour. Epigyne as in fig. 298. Internal genitalia as in fig. 299. Male unknown.

Type-specimen : *Syntype* one ♀ in spirit in good condition but the colour is slightly faint. Deposited at MNHN. Regd. No. 6610.

Type-locality: Minhla, BURMA.

Distribution: INDIA : Satara Dist., Poona, Maharashtra; Gujarat; Simla, Dharampur, Himachal Pradesh; Sukna, Singla, Kalimpong, Darjeeling, Calcutta, West Bengal; Pusa, Sirpur, Saran, Purnea, Dist., Gmatia, Birbhum Dist., Bihar; Sikkim, Mangaldai Dist., Sibsagar, Garo Hills, Assam; Baluchistan, Zangi Nawar, Afghanistan; Pakistan : Rawalpindi; BURMA : Arakan, Rangoon, Kakhyin Hills, Irrawady, Tharrawaddy, Minhla, Tenasserim, Kosi Hah, Tale Sap, Singgora Province, Sam.

Remark: This species is very closely related to *L. phipsoni* Pocock. The ventral side of abdomen of *L. phipsoni* is more darker than the *L. nigrotibialis* Simon and arch of the epigyne of *L. nigrotibialis* pointed posteriorly at the middle while arch of epigyne of *L. phipsoni* Pocock is of the shape of semicircle in front. Extremity of ventral side of IV femur provided with a inconspicuous dark brown patch which is absent in *L. phipsoni* Pocock. Description based on a single female specimen.

65. *Lycosa carmichaeli* Gravely

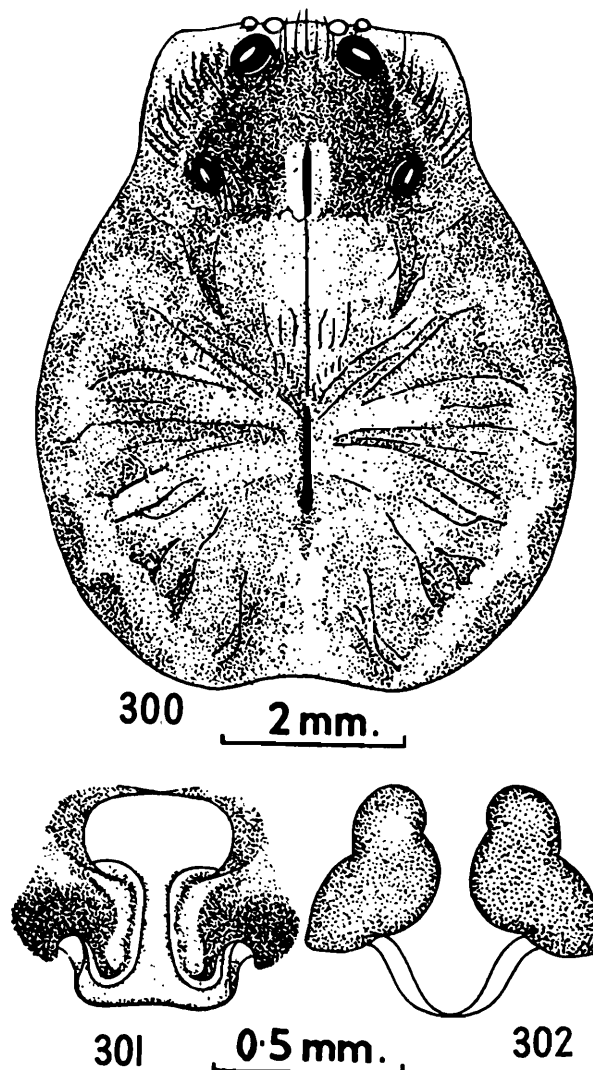
(Figs. 300-302)

1924. *Lycosa carmichaeli* Gravely, *Rec. Indian Mus.*, 26 : 604.

1951. *Lycosa carmichaeli* : Sinha, *Rec. Indian Mus.*, 48 (2) : 32.

General: Cephalothorax brown, legs greenish brown, abdomen greenish black. Total length 19.00 mm. Carapace 8.50 mm. long, 7.00 mm. wide; abdomen 9.50 mm. long, 6.00 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with fine hairs; cephalic region clothed with some spine-like hairs. Cephalic region slightly high and sides sloping. Ocular area deep brown. Middle of cephalothorax provided with conspicuous fovea. Two kidney shaped, light brown patches situated in between the posterior eyes as in fig. 300. Anterior row of eyes nearly straight and slightly shorter in width than the second row, anterior medians larger than the anterior laterals. Eyes of the second row larger than the others. Posterior two rows of eyes arranged in a quadrangle which is little wider behind than in front as in fig. 300. Sternum heart-shaped, narrowing behind, dirty brown and



FIGS. 300-302. *Lycosa carmichaeli* Gravely
 300. Dorsal view of cephalothorax, legs omitted.
 301. Epigyne.
 302. Internal genitalia.

clothed with fine hairs. Labium longer than wide and basal excavation prominent. Maxillae wider in front and anterior end provided with conspicuous scopulae. Chelicerae strong, stout and prominent; inner margin provided with three and outer margin with two teeth, respectively. Legs long and strong, clothed with hairs and spines.

Abdomen: Longer than wide, clothed with fine hairs. Dorsally, posterior half of abdomen provided with two rows of longitudinal deep brown inconspicuous spots. Ventral side dirty brown. Epigyne as in fig. 301. Interal genitalia as in fig. 302. Male unknown.

Type-specimen : Syntype one ♀ in spirit in good condition, deposited at ZSI. Regd. No. 7737/H₂.

Type-locality: Sevoke, Dist. Darjeeling, W. Bengal, INDIA.

Distribution : INDIA : Amangarh, Dist. Bijnoor, Kansro, Dehra Dun, Uttar Pradesh; Kumaon, Darjeeling, Sukhwani, West Bengal; Dist; Mangaldai, Assam.

Remark: Description based on a single female specimen.

66. *Lycosa prolifica* Pocock

(Figs. 303-305)

1901. *Lycosa prolifica* Pocock, *J. Bombay nat. Hist. Soc.*, **13** (3) : 485.

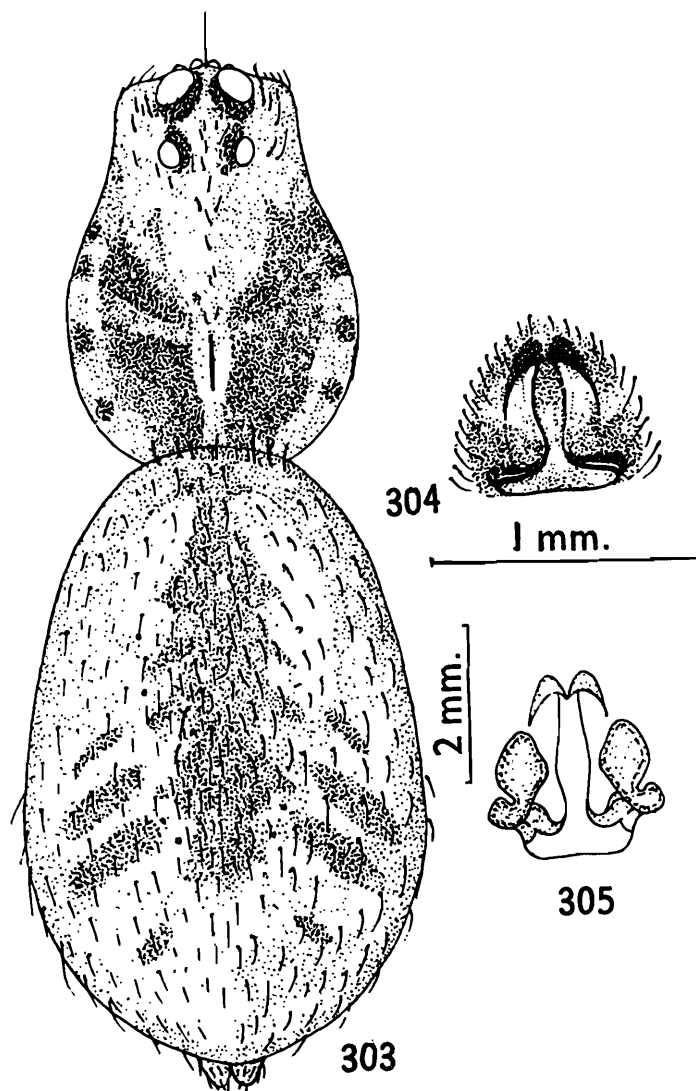
1924. *Lycosa prolifica* : Gravely, *Rec. Indian Mus.*, **26** : 600.

1951. *Lycosa prolifica* : Sinha, *Rec. Indian Mus.*, **48** (2) : 23.

General: Cephalothorax and legs brown, abdomen light brown. Total length 14.00 mm. Carapace 5.70 mm. long, 4.00 mm. wide; abdomen 6.40 mm. long, 5.30 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence and spines, provided with conspicuous, chocolate brown, longitudinal broad patch on each side of distinct fovea extending from the base of third row of eyes to the base of cephalothorax. Anterior row of eyes shorter than the second row, slightly procurved, medians slightly larger than the laterals and bases of lateral eyes with black patches. Eyes of the second row largest.

Space enclosed between the posterior eyes as long as wide as in fig. 303. Ocular quad wider than long and narrowing in front. Sternum pale brown; heart-shaped, pointed behind, clothed with hairs and spine-like hairs. Labium longer than wide. Distal end of maxillae broader and provided with conspicuous scopulae. Legs strong and clothed with hairs and spines; coxae dark brown.



FIGS. 303-305. *Lycosa prolifica* Pocock
 303. Dorsal view of female, legs omitted.
 304. Epigyne.
 305. Internal genitalia.

Abdomen: Longer than wide, light brown, broadest behind the middle, pointed behind, clothed with pubescence and spine-like hairs. Anterior mid-dorsal area provided with brown lens shaped marking. Ventral side mid-longitudinally provided with

broad dark brown conspicuous bands extending from the epigastric furrow to the base of spinnerets. Epigyne as in fig. 304. Internal genitalia as in fig. 305. Male unknown.

Type-specimen : Syntypes thirteen ♀ ♀ in good condition, preserved in a single tube. Deposited at BMNH. Regd. No. 1899. 11.2.13b-14b.

Type-locality: Eastern Poona, Maharashtra. INDIA.

Distribution: INDIA : Poona, Kas, Satara, Pimpalner, West Khandesh, Maharashtra; Nurpur, Kangra Valley, Punjab; Dehra Dun, Uttar Pradesh.

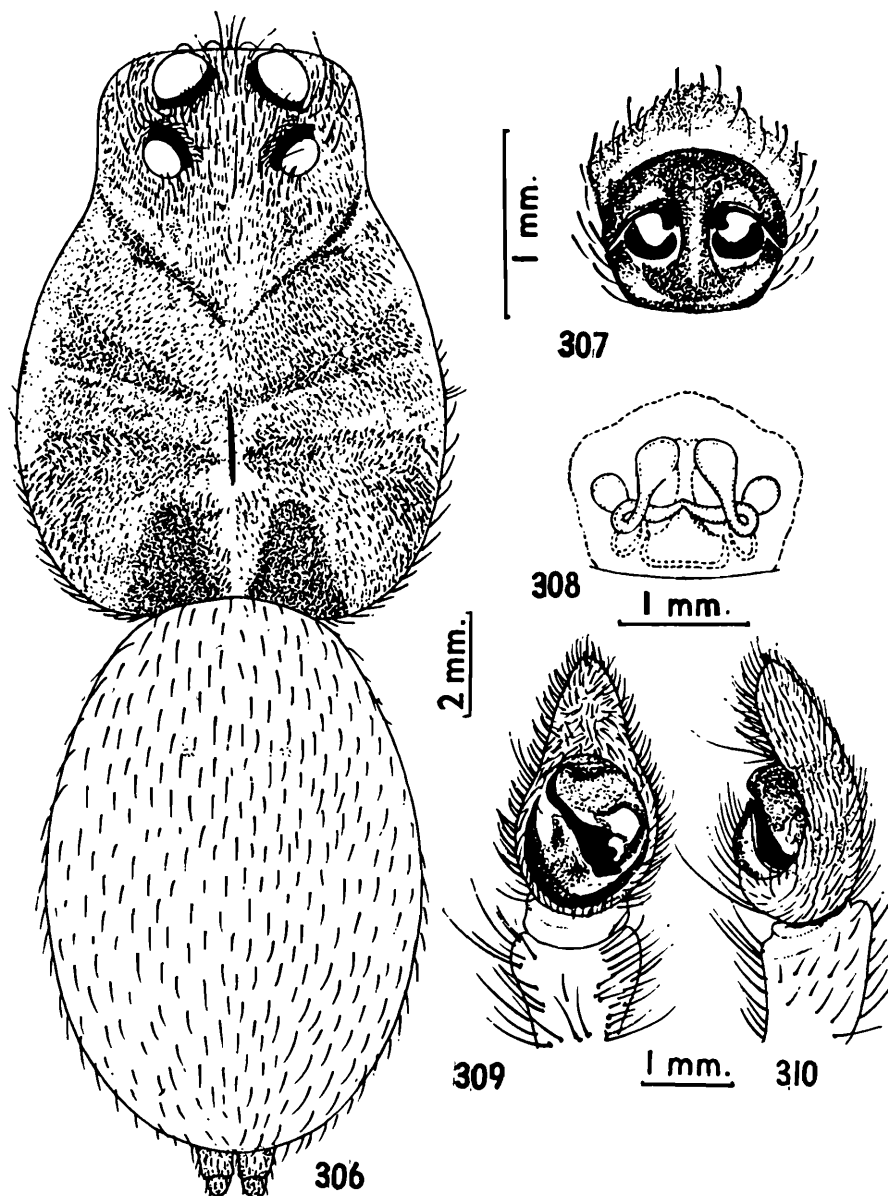
Remark: We have examined the type-specimens received from British Museum (Natural History), London, in a vial containing 13 females. Pocock (1901) has not designated any Holotype and he has not illustrated the species. Out of 13 syntypes, we have selected one female specimen for fresh description and illustration. We have separated this specimen from the syntypes and kept in a separate vial alongwith syntypes and informed this to the Keeper, Arachnida Section, BMNH. The structure and architecture of epigyne of almost all the syntypes is nearly same, but broadly there are slight variations in the dimensions of the epigyne, i.e. some epigynes are slightly longer than the diagram drawn.

67. *Lycosa indagatrix* Walckenaer

(Figs. 306-310)

1837. *Lycosa indagatrix* Walck. *Ins. Apt.*, 1 : 339.
 1898. *Lycosa indagatrix* : Simon, *Hist. Nat. Des Araignees*, 2 : 330.
 1900. *Lycosa indagatrix* : Pocock, *Faun. Brit. India Arach.*, : 254.
 1924. *Lycosa indagatrix* : Gravely, *Rec. Indian Mus.*, 26 : 599.
 1951. *Lycosa indagatrix* : Sinha, *Rec. Indian Mus.*, 48 (2) : 20.

General: Cephalothorax and legs reddish brown, abdomen pale. Total length 22.00 mm. Carapace 12.00 mm. long, 9.00 mm. wide; abdomen 12.00 mm. long, 7.50 mm. wide.



FIGS. 306-310. *Lycosa indagatrix* Walck.

- 306. Dorsal view of female, legs omitted.
- 307. Epigyne.
- 308. Internal genitalia.
- 309. Left male palp, ventral view.
- 310. Left male palp, lateral view.

Cephalothorax: Longer than wide, convex, clothed with pubescence. Centre provided with a conspicuous fovea and the lateral bands very faint except for two dark triangular patches at the base of thoracic region. Anterior row of eyes slightly procurved and shorter than the second row in width, anterior medians larger than the anterior laterals. Eyes of the second row largest. Bases

of posterior eyes provided with conspicuous black patches. Space enclosed between posterior eyes as long as wide and narrow in front as in fig. 306. Sternum oval, pointed behind, reddish brown and clothed with spines and hairs. Labium longer than wide, dark brown, with the basal excavation prominent. Maxillae dark, wider at the distal end and provided with conspicuous scopulae. Chelicerae strong, hairy and inner margin with three prominent teeth. Legs strong, coxae of legs reddish brown and each tibiae with one brown band at its each extremities. Male palp as in fig. 309 and 310. Male almost same in colour but smaller than female.

Abdomen: Longer than wide, oval, dorsally pale and clothed with hairs and spines. Ventral side with a broad, dark brown band from the epigastric fold to the base of spinnerets. Epigyne as in fig. 307. Internal genitalia as in fig. 308.

Type-specimen: Syntypes one ♀, one ♀, (detached cephalothorax) and one ♂ in spirit, deposited at MNHN. Regd. No. 5360.

Type-locality: Coromandel Coast, INDIA.

Distribution: INDIA: Coromandal Coast, Nagalur, Shevaroy Hills, Pallavaram, Dist. Chingleput, South Arcot, Jalarpet, Dist. Salem, Pondicherry, Madras, Tamil Nadu; Horsleykonda, Chittoor Dist., Wagrakaroor, Bellary Dist., Andhra Pradesh, SRI LANKA: Killinochchi.

Remark: Description based on a single female specimen.

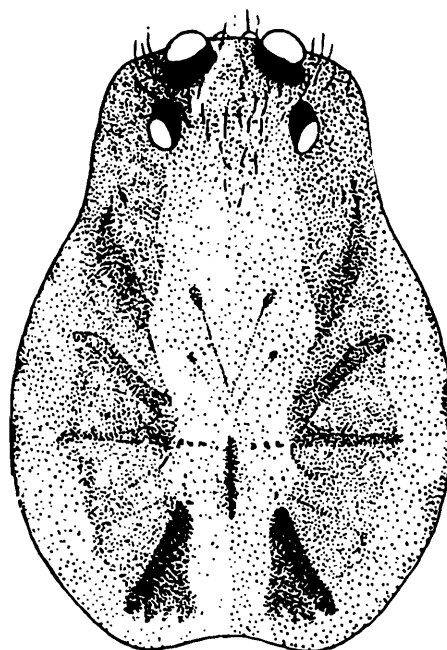
68. *Lycosa geotubalis* sp.nov.

(Figs. 311-313)

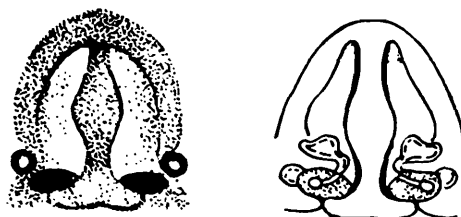
General: Cephalothorax brown, legs and abdomen pale brown. Total length 20.00 mm. Carapace 10.00 mm. long, 7.00 mm. wide, abdomen 10.00 mm. long, 6.00 mm. wide.

Cephalothorax: Longer than wide, tapering anteriorly, convex and clothed with pubescence. Centre of thoracic region provided with a fovea. Middle of cephalothorax with a longitudinal broad

pale band extending from the bases of third row of eyes to the base of cephalothorax. Sub-lateral sides with brown patches extending the whole length of carapace. Anterior row of eyes slightly procurved and shorter than the second row; anterior medians slightly larger than the anterior laterals. Eyes of the second row larger than the others. Ocular quad wider behind and narrowing in front. Bases of posterior eyes provided with conspicuous black patches and spine-like hairs as in fig. 311. Space enclosed between posterior eyes almost as long as wide as in fig. 311. Sternum heart-shaped, pointed behind, brown and clothed with hairs. Labium longer than wide, black, except the distal margin;



2 mm. 311



312 313
1 mm.

FIGS. 311-313. *Lycosa geotubalis* sp. nov.

311. Dorsal view of cephalothorax, legs omitted.

312. Epigyne.

313. Internal genitalia.

basal excavation prominent. Distal end of maxillae broader and provided with conspicuous scopulae. Chelicerae black and strong, inner margin of fang furrow with three prominent teeth. Legs long and stout, clothed with spines and hairs; coxae brown, ventral side of femora pale but dorsally proximal end of femora provided with light brown patches and distal end with two small longitudinal parallel brown streaks tapering distally. Tibiae, metatarsi and tarsi I and II dark brown ventrally; extremities of tibiae IV provided with conspicuous black patches ventrally.

Abdomen: Longer than wide, oval, pointed behind, clothed with pubescence and spine-like hairs. Anterior mid-dorsally provided with a longitudinal dark brown lens shaped marking followed posteriorly by median light brown patches, otherwise abdomen pale dorsally. Ventral side jet black. Epigyne as in fig. 312. Internal genitalia as in fig. 313. Male unknown.

Holotype: ♀, *paratypes* five immature ♀♀ in spirit. Deposited at ZSI Regd. No. 4669/18.

Type-locality: Near Sindhi Colony, Poona, Maharashtra, INDIA. 4.iv.1976, Coll. B. K. Tikader. It is also recorded from Gujarat.

Discussion: This species closely resembles with *Lycosa iranii* Pocock but can be separated from it as follows: (i) Proximal end of femora provided with light brown patches dorsally and distal end with two small longitudinal parallel brown streaks tapering distally but in *L. iranii* proximal end of femora without patches and distal end without streaks. (ii) Tibiae, metatarsi and tarsi I and II dark brown ventrally but in *L. iranii* tibiae, metatarsi and tarsi pale ventrally. (iii) Epigyne also structurally different.

69. *Lycosa iranii* Pocock

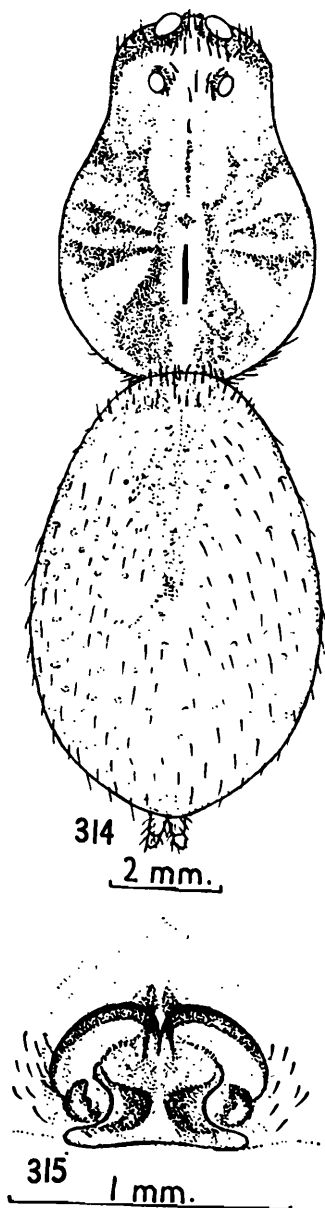
(Figs. 314-315)

1901. *Lycosa iranii* Pocock, *J. Bombay nat. Hist. Soc.*, 13 (3) : 485.

1924. *Lycosa iranii* : Gravely, *Rec. Indian Mus.*, 26 : 589.

General: Cephalothorax and legs brown, abdomen pale. Total length 16.50 mm. Carapace 7.50 mm. long, 5.00 mm. wide, abdomen 10.00 mm. long, 6.50 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence, mid-longitudinal area light brown and centre provided with a distinct fovea. Anterior row of eyes shorter than the second row, slightly procurved, medians larger than the laterals; eyes of the second row largest, about half their diameter apart and bases provided with dark patches as in fig. 314. Ocular quad wider behind and narrowing anteriorly. Sternum heart-shaped, pointed behind, brown and clothed with pubescence and spine-like hairs. Labium longer than wide and deep brown with basal excavation promi-



FIGS. 314-315. *Lycosa iranii* Pocock
 314. Dorsal view of female, legs omitted.
 315. Epigyne.

ment. Distal end of maxillae broad and provided with conspicuous scopulae. Chelicerae and fang black, strong and inner margin provided with three teeth. Legs stout and strong, clothed with hairs and spines.

Abdomen: Longer than wide, oval, broadest behind the middle, clothed with pubescence and spines. Anterior half provided with a mid-longitudinal pale brown lens shaped marking as in fig. 314. Ventral side with dark brown broad conspicuous patch broader in front and narrow behind, extending from epigastric fold to the base of spinnerets. Epigyne as in fig., 315. Male unknown.

Type-specimen: *Syntypes* two ♀ ♀ in spirit in good condition, deposited at BMNH. Regd. No. 99.11.213b.

Type-locality: Eastern district of Poona, Maharashtra, INDIA.

Distribution: So far this species is known only from its type locality.

Remark: We have examined the type of this species. Since Pocock in his original description has not described the holotype and not given the illustrations, we have separated one female and described and illustrated it. This female kept in a separate vial alongwith the other female specimens and we have informed this to the keeper, Arachnida Section, BMNH.

70. *Lycosa barnesi* Gravely

(Figs. 316-317)

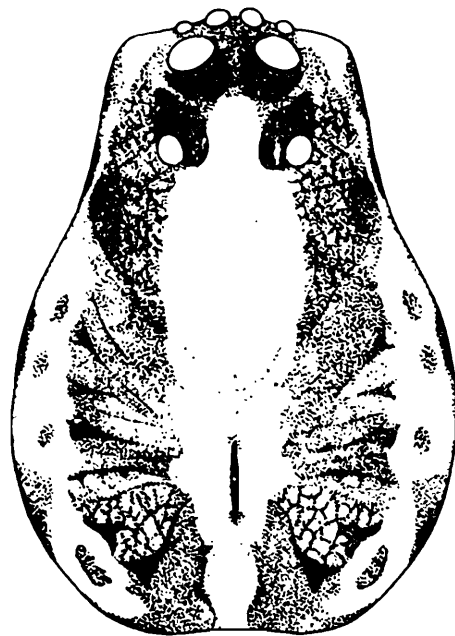
1924. *Lycosa barnesi* Gravely, *Rec. Indian Mus.*, 26 : 599.

1951. *Lycosa barnesi* : Sinha, *Rec. Indian Mus.*, 48 (2) : 21.

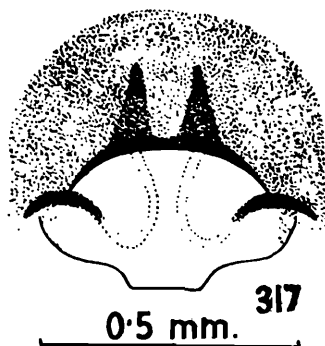
General: Cephalothorax and abdomen brownish, legs brownish green. Total length 11.00 mm. Carapace 5.00 mm. long, 3.50 mm. wide; abdomen 6.50 mm. long, 5.00 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with fine hairs. Mid-dorsally with conspicuous longitudinal, light broad patches extending from the base of second row of eyes to the base of cephalothorax; centre provided with a distinct fovea. Lateral sides also provided with broad longitudinal deep brown patches

as in fig. 316. Anterior row of eyes short and slightly recurved, anterior medians larger than the anterior laterals. Eyes of the second row fairly larger than others. Bases of posterior eyes provided with conspicuous black patches as in fig. 316. Space enclosed between posterior eyes longer than wide and slightly narrow in front as in fig. 316. Sternum nearly oval, pale, pointed behind, clothed with fine hairs. Labium deep brown in colour, longer than wide with the basal excavation prominent. Maxillae light brown, distal end provided with scopulae. Chelicerae strong, legs long and strong, clothed with hairs and spines, provided with conspicuous irregular greenish brown patches.



1 mm. 316



0.5 mm. 317

FIGS. 316-317. *Lycosa barnesi* Gravely
 316. Dorsal view of cephalothorax, legs omitted.
 317. Epigyne.

Abdomen: Longer than wide, nearly oval, broadest behind the middle, clothed with pubescence. Anterior dorsal side provided with V-shaped pale marking followed by three pairs of pale round markings. Ventral side pale, with small brown spots. Epigyne as in fig. 317. Male unknown.

Type-specimen: Syntype one ♀ in spirit in good condition, deposited at ZSI. Regd. No. 7699/H₂.

Type-locality: Dhoni Forest, South Malabar, INDIA.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

71. *Lycosa mackenziei* Gravely

(Figs. 318-321)

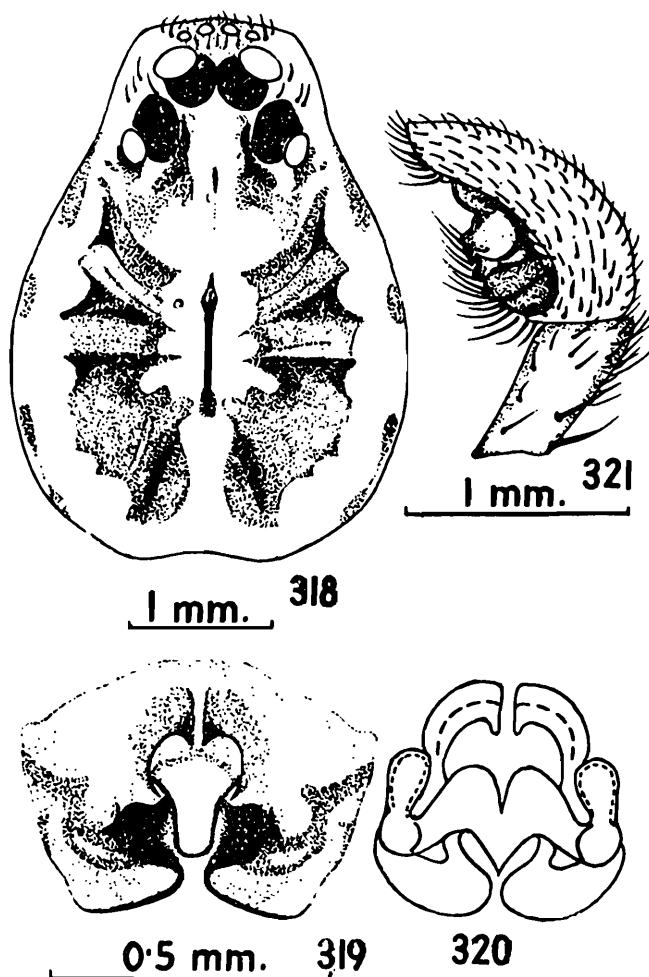
1924. *Lycosa mackenziei* Gravely, *Rec. Indian Mus.*, 26 : 606.

1951. *Lycosa mackenziei* : Sinha, *Rec. Indian Mus.*, 48 (2) : 37.

General: Cephalothorax and legs yellowish brown, abdomen pale with brown patches. Total length 8.50 mm. Carapace 4.00 mm. long, 2.80 mm. wide; abdomen 5.00 mm. long, 3.00 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with fine hairs, cephalic region slightly high and narrowing in front and middle of cephalothorax provided with conspicuous fovea. Cephalothorax provided with brown broad longitudinal bands extending from base of posterior eyes to the base of cephalothorax. Lateral edges of thoracic region also with small brown patches here and there. Anterior row of eyes slightly recurved and shorter than the middle row of eyes and anterior medians larger than anterior laterals. Eyes of the second row larger than the others and bases of posterior eyes provided with conspicuous black patches. Ocular quad wider than long. Space enclosed between posterior eyes wider than long as in fig. 318. Sternum heart-shaped, pointed behind, pale and clothed with spine-like hairs. Labium yellowish brown. Maxillae broader in front, anterior end provided with scopulae. Chelicerae moderately strong, inner margin provided

with three teeth. Legs moderately strong, clothed with spines and hairs. Male palp as in fig. 321.



FIGS. 318-321. *Lycosa mackenziei* Gravely
 318. Dorsal view of cephalothorax, legs omitted.
 319. Epigyne.
 320. Internal genitalia.
 321. Left male palp, lateral view.

Abdomen: Longer than wide, nearly oval, broadest behind the middle, clothed with hairs and spine-like hairs. Dorsally ornamented with beautiful pattern of dark brown patches which extend from bases to end of abdomen, a conspicuous V-shaped marking followed by pale cheverons. Ventral side pale. Epigyne as in fig. 319. Internal genitalia as in fig. 320.

Type-specimen : Syntype one ♀ and one ♂ in spirit in good condition, in ZSI. Regd. No. 7716/H₂.

Type-locality: Bangalore, Karnataka, INDIA.

Distribution: INDIA : Bangalore, Karnataka; Dalhousi, Punjab; Siripur, Saran, Dinapore, Ramgarh, Bihar; Calcutta, West Bengal; Lahore (Now in PAKISTAN).

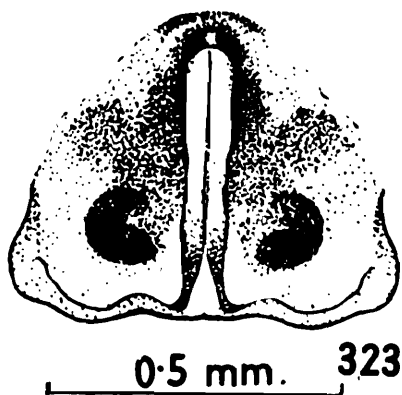
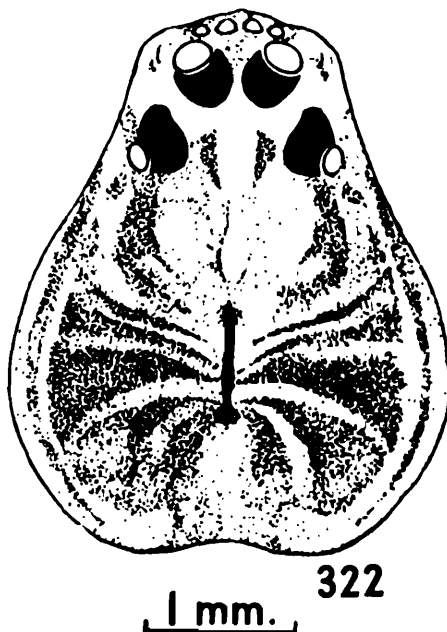
72. *Lycosa moulmeinensis* Gravely

(Figs. 322-323)

1924. *Lycosa moulmeinensis* Gravely, *Rec. Indian Mus.*, 26 : 604.

1951. *Lycosa moulmeinensis* : Sinha, *Rec. Indian Mus.*, 48 (2) : 32.

General: Cephalothorax and legs light brown, abdomen pale with brown patches. Total length 7.00 mm. Carapace 3.50 mm. long, 3.00 mm. wide; abdomen 3.60 mm. long, 2.50 mm wide.



FIGS. 322-323. *Lycosa moulmeinensis* Gravely
 322. Dorsal view of cephalothorax, legs omitted.
 323. Epigyne.

Cephalothorax: Longer than wide, convex, clothed with pubescence, cephalic region slightly high. Centre provided with fovea from which thin, light brown bands radiate towards lateral sides as in fig. 322. Anterior row of eyes slightly procurved and shorter than the middle row and anterior medians slightly larger than anterior laterals. Eyes of the second row larger than the others. Ocular quad wider than long. Bases of posterior eyes provided with conspicuous black patches. Sternum heart-shaped, pointed behind, pale and middle provided with inconspicuous longitudinal light brown band. Maxillae broader in front, anterior end provided with conspicuous scopulae. Chelicerae strong, inner margin provided with three teeth. Legs moderately strong and clothed with hairs and spines.

Abdomen: Longer than wide, clothed with fine hairs, provided with two longitudinal rows of brown patches laterally. Ventral side pale with dark brown irregular dots on the lateral sides. Epigyne as in fig. 323. Male unknown.

Type-specimen: Syntype one ♀ in spirit in good condition, deposited at ZSI. Regd No. 2272/18.

Type-locality: Moulmein, Lower BURMA.

Distribution: So far this species is known only from its type locality.

Remark : Description based on a single female specimen.

73. *Lycosa quadrifer* Gravely

(Figs. 324-326)

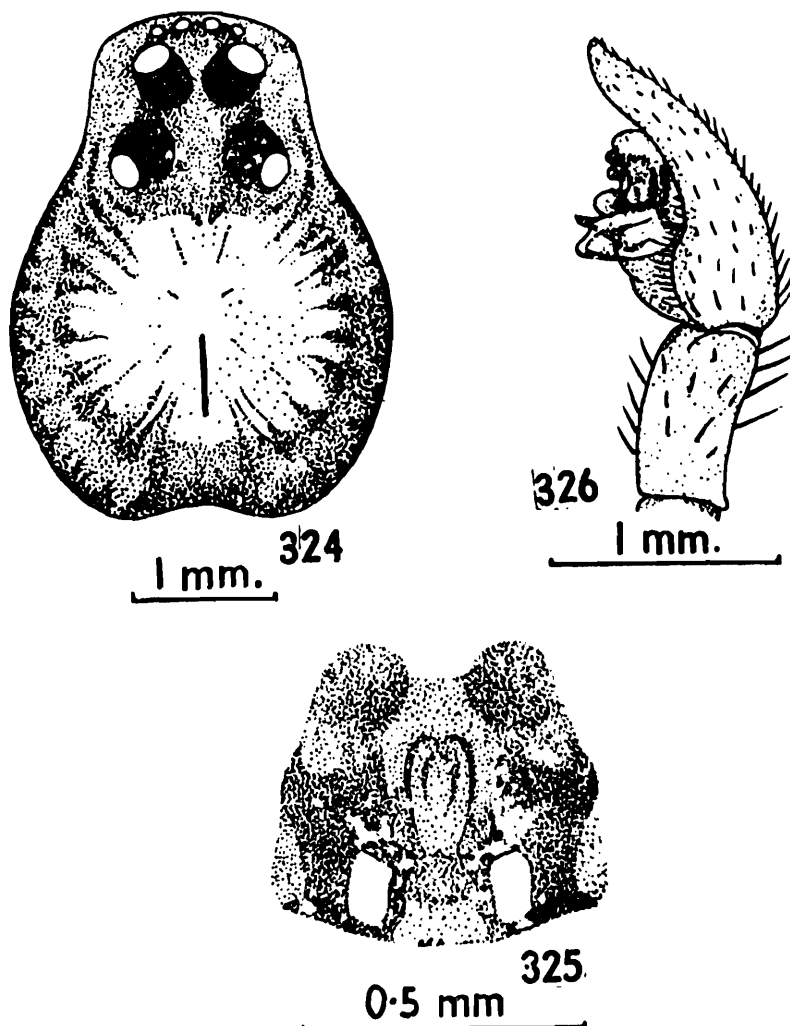
1924. *Lycosa quadrifer* Gravely, *Rec. Indian Mus.*, 26 : 608.

1951. *Lycosa quadrifer* : Sinha, *Rec. Indian Mus.*, 48 (2) : 42.

General : Cephalothorax and legs light brown, abdomen light brown with pale spots. Total length 8.50 mm. Carapace 3.50 mm. long, 2.70 mm wide; abdomen 5.00 mm. long, 3.00 mm wide.

Cephalothorax: Longer than wide, convex, narrowing in front and clothed with pubescence. Centre of cephalothorax provided with a conspicuous fovea. Anterior row of eyes slightly pro-

curved and shorter in width than the second row; anterior medians larger than the laterals. Eyes of the second row larger than the others. Space enclosed between posterior eyes nearly as long as wide and slightly narrowing in front as in fig. 324. Bases of posterior eyes provided with black patches and hairs. Sternum heart-shaped, pointed behind, pale brown and clothed with spine-like hairs. Labium longer than wide, basal excavation prominent. Maxillae broader in front and provided with scopulae. Chelicerae moderately strong. Legs moderately strong, provided with transverse inconspicuous brown bands; clothed with hairs and spines. Male much smaller than the female. Male palp as in fig. 326.



FIGS. 324-326. *Lycosa quadrifer* Gravely
 324. Dorsal view of cephalothorax, legs omitted.
 325. Epigyne.
 326. Left male palp, ventro-lateral view.

Abdomen: Longer than wide, oval, pointed behind, anterior-mid-dorsally with a lens-shaped brown marking and two longitudinal rows of inconspicuous pale spots. Ventral side pale. Epigyne as in fig. 325.

Type-specimen : Syntype one ♀ one ♂ in spirit in good condition, deposited at ZSI. Regd. No 7745//H2.

Type-locality : Anuradhapura, SRI LANKA.

Distribution: INDIA: Prambikulam, Cochin, Kerala; Mysore, Bangalore, Karnataka; Madras city, Ennur, Kambakkam Hills, Chingleput Tamil, Nadu; SRI LANKA : Anuradhapura, Hambantota, Peradeniya.

74. *Lycosa pictula* Pocock

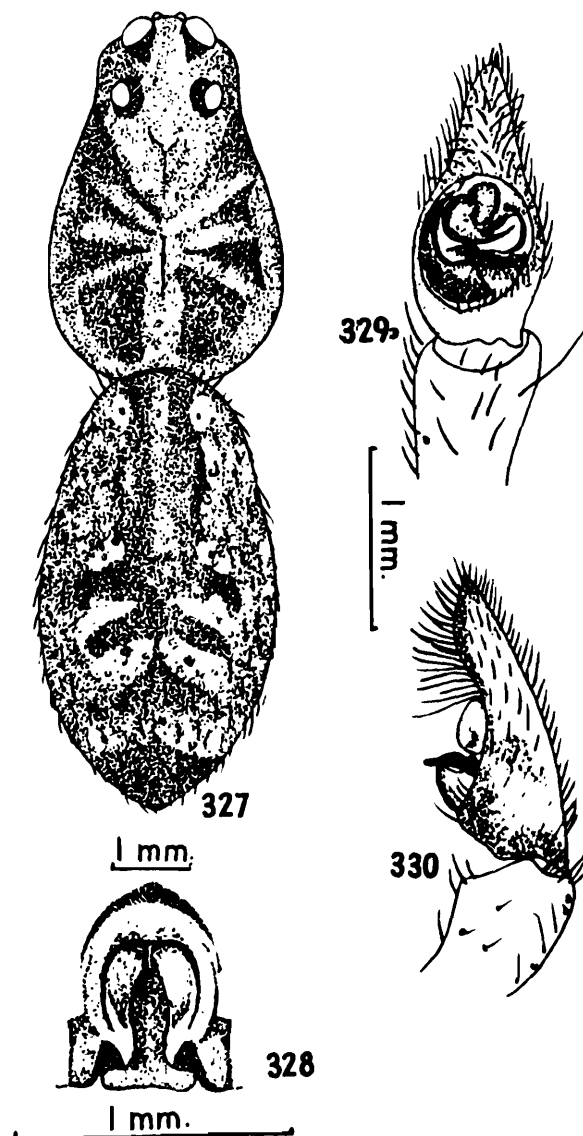
(Figs. 327-330)

1901. *Lycosa pictula* Pocock, *J. Bombay nat. Hist. Soc.*, **13** (3) : 486.

1924. *Lycosa pictula* : Gravely, *Rec. Indian Mus.*, **26** : 590.

General: Cephalothorax and legs chocolate brown, abdomen greenish brown. Total length 11.00 mm. Carapace 5.10 mm. long, 3.20 mm. wide; abdomen 6.10 mm. long, 3.30 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence, centre with a conspicuous fovea and dark brown bands radiate towards sub-lateral sides. Anterior row of eyes procurved, less wider than the second row, anterior medians larger than the anterior laterals. Eyes of the second row larger than the others. Ocular quad wider behind and narrowing in front. Bases of posterior eyes provided with conspicuous black patches as in fig. 327. Space enclosed between the posterior eyes slightly longer than wide as in fig. 327. Sternum heart-shaped, brown, provided with spine-like hairs. Labium dark brown except the pale distal end, and longer than wide with the basal excavation prominent. Distal end of maxillae broader and provided with conspicuous scopulae. Chelicerae moderately strong and dark brown in colour. Legs moderately strong and provided with spines and hairs. Femora of all legs provided with conspicuous dark brown patches dorsally. Male similar colour and size like female. Male palp as in figs. 329 and 330,



FIGS. 327-330. *Lycosa pictula* Pocock
 327. Dorsal view of female, legs omitted.
 328. Epigyne.
 329. Left male palp, ventral view.
 330. Left male palp, lateral view.

Abdomen: Longer than wide, pointed behind, dorsally provided with pubescence and spine like hairs and greenish brown patches and spots alternating with pale patches; Anterio-mid-longitudinally provided with a lens shaped greenish brown patch as in fig. 327. Ventral side pale except two longitudinal sub-lateral rows of irregular dark brown patches. Epigyne as in fig. 328.

Type-specimen : Syntype two ♀♀ and one ♂ in spirit in

good condition. One ♀ and one ♂ separated out for studies. Deposited in BMNH, Regd. No. 90. 99.9.21.389—91.

Type-locality: Chopda, East Khandesh, Maharashtra, INDIA.

Distribution: So far this species is known only from its type locality.

Remark: Since Pocock has not designated any holotype, we have separated out one female and one male for our studies in a separate vial.

75. *Lycosa yerburyi* Pocock

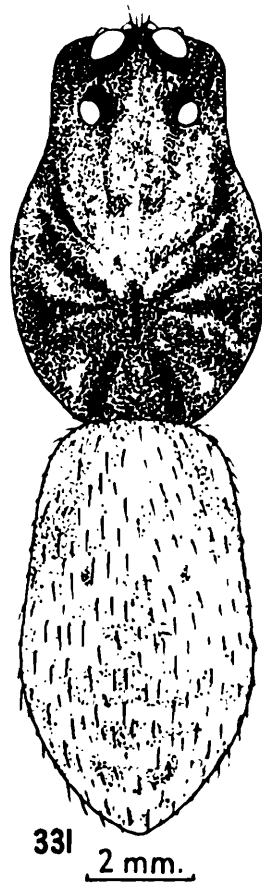
(Figs. 331-332)

1901. *Lycosa yerburyi* Pocock, *J. Bombay nat. Hist. Soc.*, **13** (3) : 486.

1924. *Lycosa yerburyi* : Gravely, *Rec. Indian Mus.*, **26** : 590.

General: Cephalothorax and legs deep brown, abdomen pale with brown patches. Total length 16.50 mm. Carapace 8.00 mm. long, 5.20 mm. wide; abdomen 8.20 mm. long, 4.70 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with pubescence. Centre provided with inconspicuous fovea and thin dark brown bands radiate towards the sub-lateral sides. Ocular area dark. Anterior row of eyes slightly procurved, less wider than the second row and anterior medians larger than anterior laterals. Eyes of the second row larger than the others. Ocular quad wider behind and narrowing in front. Bases of posterior eyes provided with conspicuous black patches as in fig. 331. Space enclosed between the posterior eyes as long as wide and very slightly wider behind than in front as in fig. 331. Ocular area with spine-like hairs. Sternum chocolate brown, heart-shaped, pointed behind, clothed with hairs and spines. Labium deep brown, slightly longer than wide, distal end provided with few hairs. Maxillae dark brown in colour, distal end very much broader and provided with distinct scopulae. Chelicerae moderately strong and black. Legs clothed with hairs and spines; tibiae III and IV distinctly banded ventrally at the extremities. Coxae of all legs chocolate brown as sternum,

331
2 mm.

1 mm. 332

FIGS. 331-332. *Lycosa yerburyi* Pocock
 331. Dorsal view of female, legs omitted.
 332. Epigyne.

Abdomen: Longer than wide, pointed behind, dorsally clothed with hair and pubescence and provided with irregular brown patches and spots as in fig. 331. Ventral side pale with two black longitudinal bands extending from the epigastric fold to the base of spinnerets. Epigyne as in fig 332. Male unknown.

Type-specimen: *Syntype* one ♀ in spirit in good condition. Deposited in BMNH, Regd. No. 98.3.21 52.

Type-locality: Trincomali, SRI LANKA.

Distribution: So far this species is known only from its type locality.

Remark: Description based on a single female specimen.

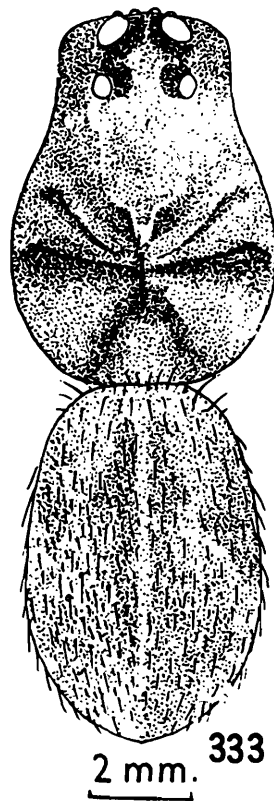
76. *Lycosa fuscana* Pocock

(Figs 333-334)

1901. *Lycosa fuscana* Pocock, *J. Bombay nat. Hist. Soc.*, 13 (3) : 485.

1924. *Lycosa fuscana* : Gravely, *Rec. Indian Mus.*, 26 : 589.

General: Cephalothorax, legs and abdomen deep chocolate brown. Total length 14.50 mm. Carapace 7.50 mm. long, 6.00 mm. wide, abdomen 7.00 mm. long, 4.50 mm. wide.



FIGS. 333-334. *Lycosa fuscana* Pocock
333. Dorsal view of female, legs omitted,
334. Epigyne,

Cephalothorax: Longer than wide, convex, narrowing anteriorly, centre provided with fovea, cephalic region with light 'V' shaped patches. Anterior row of eyes shorter than the second row, slightly procurved, medians larger than the laterals. Eyes of the second row largest and half the diameter apart from each other and bases of posterior eyes with black patches as in fig. 333. Ocular quad wider than long and narrowing in front. Space enclosed between posterior eyes as long as wide as in fig. 333. Sternum brown, heart-shaped, pointed behind, clothed with pubescence and spine-like hairs. Labium deep brown, longer than wide with basal excavation prominent. Maxillae deep brown, distal end broad and provided with scopulae. Chelicerae black and strong, inner margin with three teeth. Legs long and slender, clothed with hairs and spines.

Abdomen: Oval, pointed behind, clothed with pubescence, provided with few pale spots and patches. Ventral side pale except for the darker ventro-lateral sides. Epigyne as in fig. 334. Male unknown.

Type-specimen: : *Syntypes* two ♀ ♀ in spirit (one in good condition). Deposited at BMNH. Regd. No. 99.11.2.134-5.

Type-locality: Eastern district of Poona, Maharashtra, INDIA.

Distribution: So far this species is known only from its type-locality.

Remark: Description based on a single female specimen.

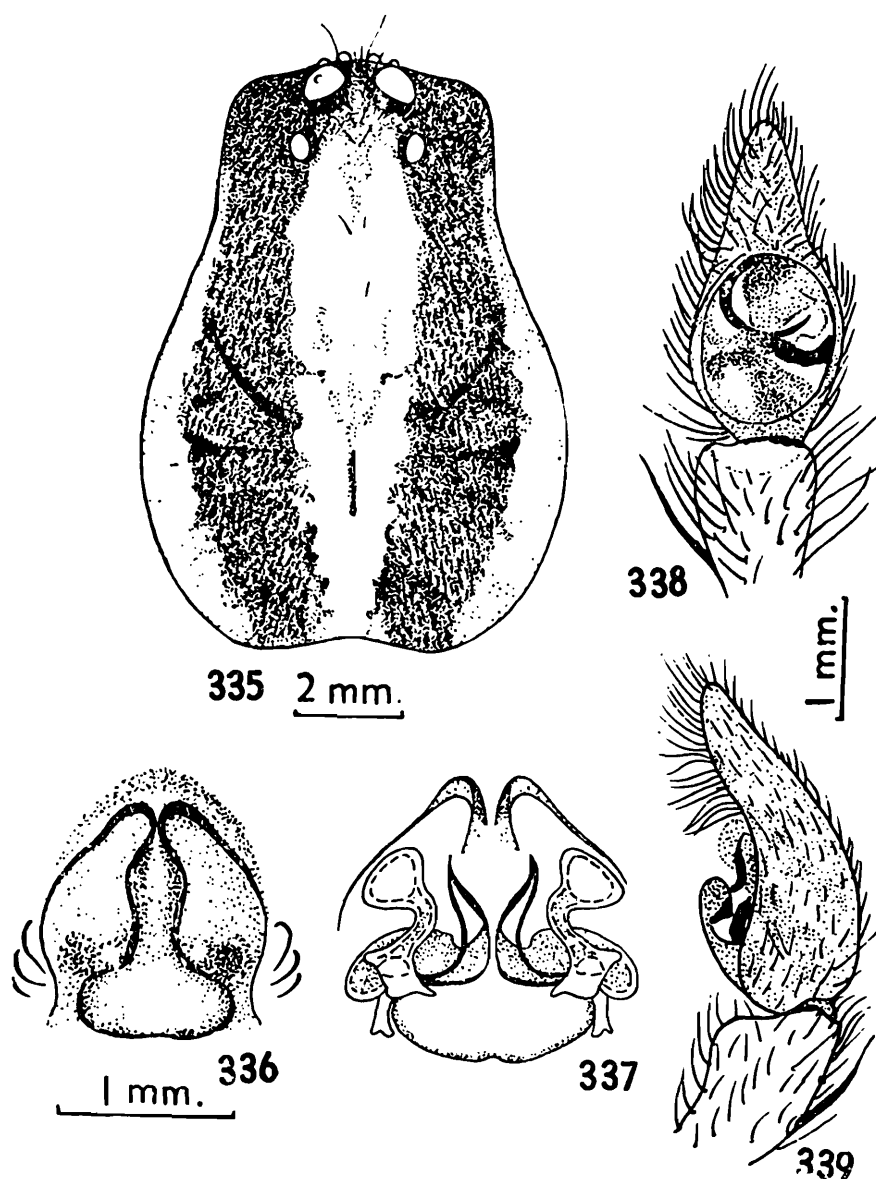
77. *Lycosa mahabaleshwarensis* sp. nov.

(Figs 335-339)

General: Carapace and abdomen yellowish brown, legs dark brown. Total length 26.00 mm. Carapace 11.20 mm. long; 8.00 mm. wide; abdomen 14.00 mm. long, 8.00 mm. wide.

Cephalothorax: Longer than wide, narrowing in front, convex, clothed with pubescence, centre of thoracic region provided with a distinct fovea. Ocular area provided with thick pubescence and some spine like hairs. Anterior row of eyes slightly procurved,

less wider than the second row and anterior medians slightly larger than the anterior laterals. Eyes of the second row larger than the others. Ocular quad wider behind and narrowing in front. Space enclosed between posterior eyes almost as long as wide and very slightly narrowing in front as in fig. 335. Bases of posterior eyes provided with conspicuous black patches as in fig. 335. One broad dark brown band extends the whole length of carapace on each side leaving the median area and sub-



FIGS. 335-339. *Lycosa mahabaleshwarensis* sp. nov.
 335. Dorsal view of cephalothorax, legs omitted.
 336. Epigyne.
 337. Internal genitalia.
 338. Left male palp, ventral view.
 339. Left male palp, lateral view.

lateral margins reddish yellow. Sternum heart-shaped, pointed behind, clothed with spine-like hairs, brown and mid-longitudinally provided with a broad black band. Labium dark brown, longer than wide with the basal excavation prominent. Distal end of maxillae wider and provided with scopulae. Chelicerae strong and black in colour, clothed with hairs. Legs long and strong, femora I and II jet black ventrally while II and IV dark brown. Patella brown, ventral side of tibiae provided with broad black bands at extremities. Male also of same colour like female but much smaller in size. Male palp as in figs. 338 and 339.

Abdomen: Longer than wide, oval, pointed behind, clothed with pubescence and hairs. Mid-longitudinally provided with a median broad black band and two reddish yellow broad bands on its sides and dark brown patches on the sub-lateral sides. Ventral side pale and provided with hairs; four stripes of reddish brown spots extend from the epigastric fold to the base of spinnerets. Epigyne as in fig. 336. Internal genitalia as in fig. 337.

Holotype: ♀, *paratype* one ♀ and *allotype* one ♂ in spirit. Deposited at ZSI. Regd. No. 4657/18.

Type-locality: Near Rose Garden, Mahabaleshwar, Dist. Satara, Maharashtra, INDIA. 26. iii. 1976. Coll. B. K. Tikader.

Discussion: This species resembles with *Lycosa nigrotibialis* Simon but can be separated from it as follows: (i) Femora I and II jet black ventrally but in *L. nigrotibialis* femora I and II light brown ventrally. (ii) Ventral side of abdomen pale but in *L. nigrotibialis* ventral side of abdomen dark brown. (iii) Epigyne also structurally different.

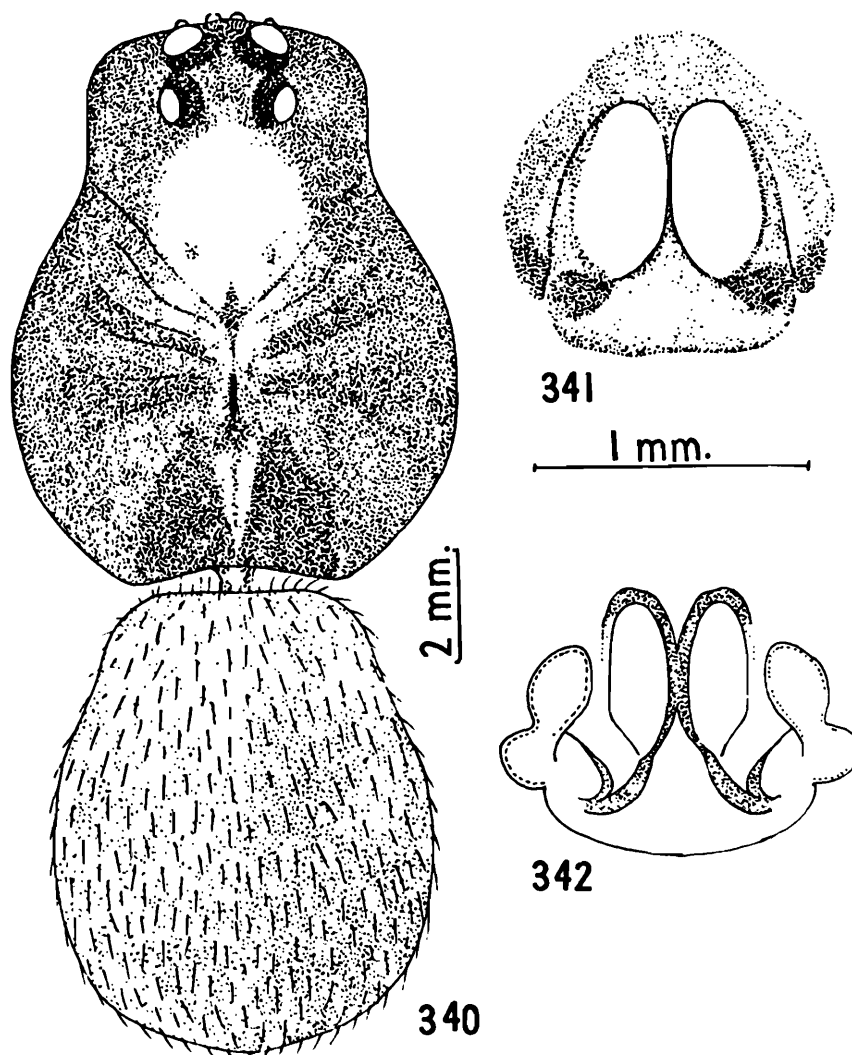
78. *Lycosa lambai* sp. nov.

(Figs. 340-342)

General: Cephalothorax and legs yellowish brown, abdomen pale brown. Total length 20.00 mm. Carapace 10.60 mm. long, 8.30 mm wide; abdomen 8.50 mm. long, 7.00 mm. wide.

Cephalothorax: Longer than wide, narrowing in front, convex and clothed with pubescence. Centre of thoracic region provided

with a distinct fovea. Anterior row of eyes slightly procurved, less wider than the second row and anterior medians larger than the anterior laterals. Eyes of the second row larger than the others. Ocular quad wider behind and narrowing in front. Posterior quadrangle slightly wider posteriorly as in fig. 340. Bases of posterior eyes provided with conspicuous black patches as in fig. 340. Base of cephalothorax provided with dark brown patches. Sternum with some scattered black patches, heart-shaped, pointed behind and provided with spine-like hairs. Labium dark brown, longer than wide with the basal excavation prominent. Distal end of maxillae broader and provided with distinct scopulae.



FIGS. 340-342. *Lycosa lambai* sp. nov.

340. Dorsal view of female, legs omitted.

341. Epigyne.

342. Internal genitalia.

Chelicerae chocolate brown, much hairy and inner margin of the fang furrow provided with three strong teeth. Legs long and strong, clothed with hairs and spines. Tibiae of all legs with pairs of brown longitudinal streaks at the pro and retro-lateral sides of the extremities.

Abdomen: Longer than wide, oval, clothed with hairs and pubescence; pale brown dorsally and without patches as in fig. 340. Ventral side pale except the mid-longitudinal dark brown thin streak extending from the epigastric furrow to the base of spinnerets. Epigyne as in fig. 341. Internal genitalia as in fig. 342. Male unknown.

Holotype: ♀ in spirit, deposited at ZSI. Regd. No. 4674/18.

Type-locality: Ratnagiri peak across the Mulshi lake, opposite Mulshi Dam, Ratnagiri, Maharashtra, INDIA. 27.iii.1965. Coll. B. S. Lamba,

Discussion: This species resembles with *Lycosa yerburyi* Pocock but can be separated from it as follows: (i) Tibiae of all legs with pairs of brown longitudinal streaks at the pro and retro-lateral sides of the extremities but in *L. yerburyi* Pocock no such streaks present. (ii) Sternum with scattered black patches but in *L. yerburyi* sternum uniform chocolate brown. (iii) Epigyne also structurally different.

It is with much pleasure that we name this species in honour of Dr. B. S. Lamba, who collected this species for our study.

Genus 8. *Venonia* Thorell

1894. *Venonia* Thorell, *Bull. Soc. Ent. Ital.*, 26 : 332.

1924. *Venonia* : Gravely, *Rec. Indian Mus.*, 26 : 608.

1951. *Venonia* : Sinha, *Rec. Indian Mus.*, 48 (2) : 43.

Diagnosis: Striking feature of this genus is that the anterior row of eyes is strongly procurved and anterior median eyes are smaller than the anterior laterals. Cephalic region is slightly elevated. Superior tarsal claws are heavily pectinated. Legs formula 4123.

Type-species : *Venonia coruscans* Thorell.

Distribution : SINGAPORE, New HOLLAND and INDIA.
F..28

79. *Venonia himalayensis* Gravely

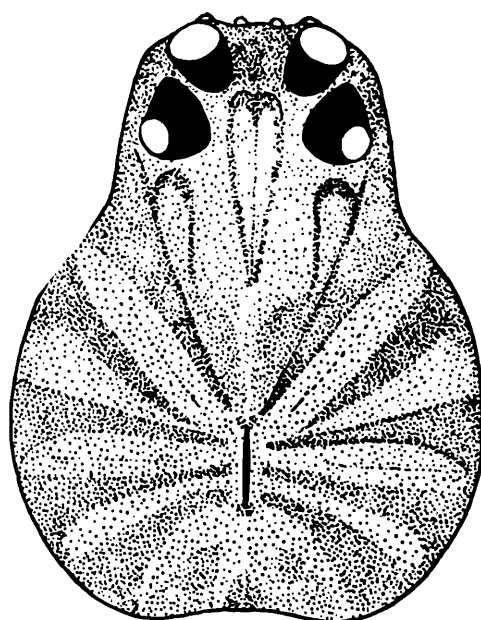
(Figs. 343-345)

1924. *Venonia himalayensis* Gravely, *Rec. Indian Mus.*, 26 : 608.

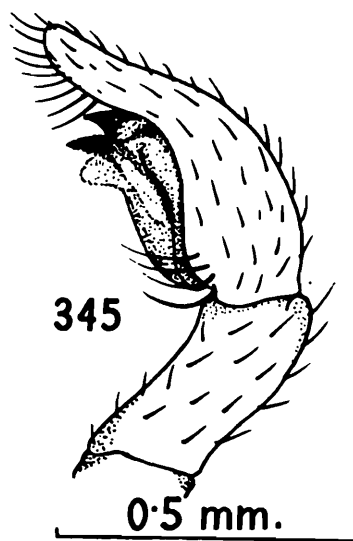
1951. *Venonia himalayensis* : Sinha, *Rec. Indian Mus.*, 48 (2) : 44.

General: Cephalothorax reddish brown, legs pale, abdomen dark brown. Total length 3.50 mm. Carapace 1.50 mm. long, 1.20 mm. wide; abdomen 2.00 mm. long, 1.50 mm. wide.

Cephalothorax: Longer than wide, clothed with fine hairs, cephalic region narrow and almost parallel sided. Middle of cephalothorax provided with conspicuous fovea from which reddish brown bands radiate towards lateral sides. Anterior row of eyes

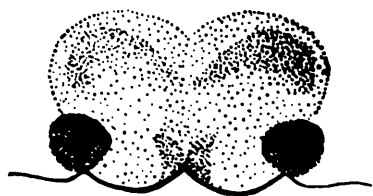


0.5 mm. 343



345

0.5 mm.



0.25 mm. 344

FIGS. 343-345. *Venonia himalayensis* Gravely

343. Dorsal view of cephalothorax, legs omitted.

344. Epigyne.

345. Left male palp, ventral view.

strongly procurved and less wider than the second row of eyes, anterior medians smaller than the anterior laterals. Eyes of the second row larger than the others. Ocular quad wider than long. Bases of posterior eyes provided with black patches as in fig. 343. Sternum heart-shaped, slightly high on the middle, pointed behind and ochraceous. Labium nearly as long as wide or slightly longer than wide. Maxillae wider in front. Chelicerae moderately strong. Legs long, moderately strong and clothed with hairs and spines. Male and female almost of same size and colour. Male palp as in fig. 345.

Abdomen : Longer than wide, oval, wider behind the middle, dorsal side dark brownish with inconspicuous pale spots arranged in three longitudinal rows, brown oblique stripes on the lateral sides extend upwards from the pale ventral side. Epigyne as in fig. 344.

Type-specimen : Syntypes one ♀ and one ♂ in spirit, in good condition. Deposited at ZSI. Regd. Nos. 7732/H₂ and 7744/H₂.

Type-locality: Rungneet Tea Estate, Darjeeling, West Bengal, INDIA.

Distribution: So far this species is known only from its type-locality and Gujarat.

Genus 9. *Trochosa* Koch

1847. *Trochosa* Koch, *Die Arachniden*, 14 (3): 95.

1951. *Trochosa* : Locket & Millidge, *British Spiders*, 1 : 278.

1972. *Trochosa* : Kaston, *How to know the spiders*, : 197.

Characters: Medium sized spiders, general colouration brown, body and legs hairy and characteristically marked. Anterior row of eyes slightly wider than the second row (posterior medians). Carapace hairy. Legs stout and not very long as compared to the body size. Tibia IV dorsally with the proximal spine usually thinner or more drawn out than the distal one, sometimes reduced to a bristle.

Type-species : *Trochosa rucicola* (DeGeer)

Distribution: INDIA, AMERICA, New ENGLAND, EUROPE.

80. *Trochosa punctipes* (Gravely)

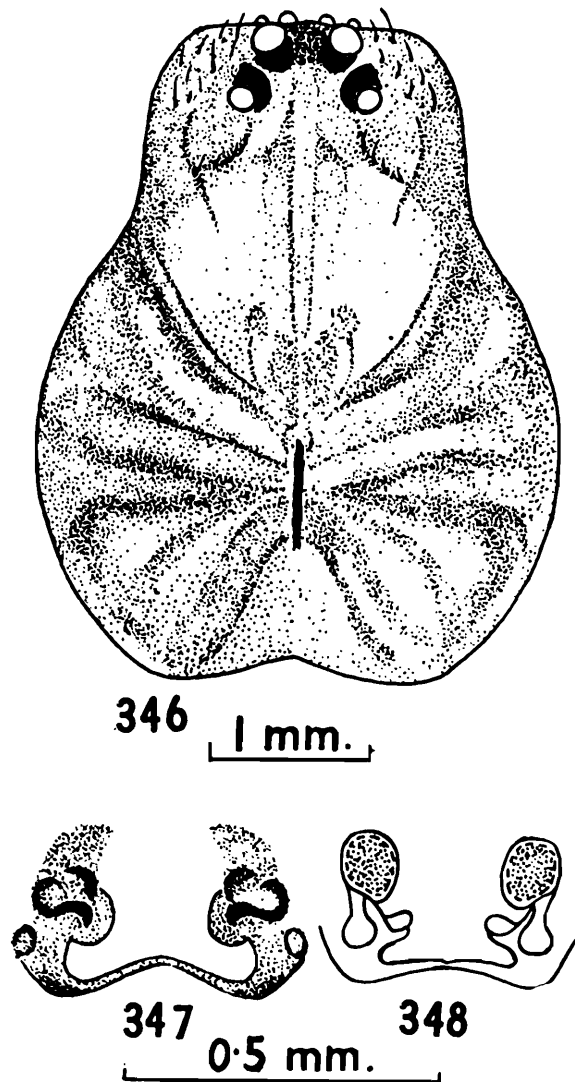
(Figs. 346-348)

1924. *Lycosa punctipes* Gravely, *Rec. Indian Mus.*, 26 : 603.

1951. *Lycosa punctipes* : Sinha, *Rec. Indian Mus.*, 48 (2) : 31.

General: Cephalothorax and abdomen brownish yellow, legs greenish yellow. Total length 8.00 mm. Carapace 4.10 mm. long, 3.20 mm. wide; abdomen 4.00. long, 2.50 mm. wide.

Cephalothorax: Longer than wide, convex, clothed with fine hairs and some spine-like hairs. Cephalic region high and



FIGS. 346-348. *Trochosa punctipes* (Gravely)
346. Dorsal view of cephalothorax, legs omitted.
347. Epigyne.
348. Internal genitalia.

slightly sloping in front. Middle of cephalothorax provided with a conspicuous fovea from which few light brown inconspicuous bands radiate to the lateral sides, as in fig. 346. Anterior row of eyes slightly recurved and anterior medians slightly larger than anterior laterals. Eyes of the second row larger than the others. Ocular quad wider than long and narrowing in front. Bases of posterior eyes provided with conspicuous black patches as in fig. 346. Sternum heart-shaped, narrowing behind, clothed with spine-like hairs. Labium longer than wide and basal excavation prominent. Maxillae wider in front and anterior end provided with conspicuous scopulae. Chelicerae strong. Legs long, strong and clothed with hairs and spines.

Abdomen: Longer than wide, clothed with fine hairs and spine-like hairs. Dorsally provided with two longitudinal rows of dark brown patches which extend the whole length. Ventral side pale. Epigyne as in fig. 347. Internal genitalia as in fig. 348. Male unknown.

Type-specimen : Syntypes two ♀ ♀ in spirit in good condition. Deposited at ZSI. Regd. No. 7736/H₂.

Type-locality: Bangalore, Karnataka, South INDIA.

Distribution: INDIA : Bangalore, Karnataka; Lucknow, Mirzapur, Uttar Pradesh; Siripur, Saran, Bijalia band, Bihar; Museum tank, Calcutta, Behrampur Court, West Bengal; Ennur, Dist. Chingleput, Tamil Nadu.

Remark: Description based on a single female specimen.

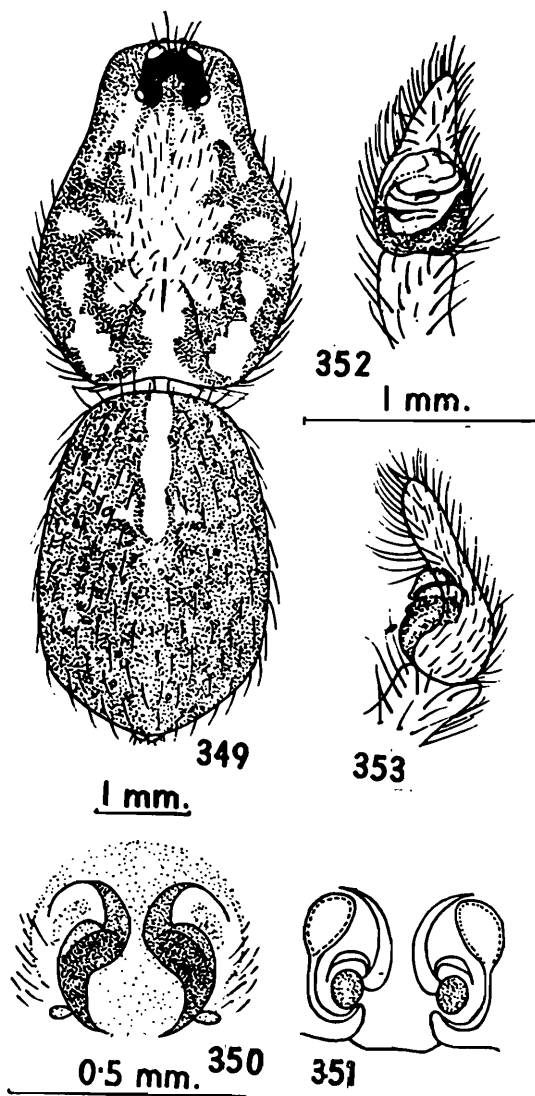
81. *Trochosa himalayensis* sp. nov.

(Figs 349-353)

General: Cephalothorax and legs light brown, abdomen with greenish brown and pale patches. Total length 7.40 mm. Carapace 3.65 mm. long, 2.90 mm. wide; abdomen 3.80 mm. long, 2.50 mm. wide.

Cephalothorax: Longer than wide, tapering anteriorly, clothed with hairs and pubescence, sides with irregular brown patches; centre of thoracic region with a conspicuous fovea. Anterior

row of eyes straight, shorter than the second row; anterior medians larger than the anterior laterals and bases of anterior lateral eyes provided with black patches. Ocular quad wider behind and narrowing in front. Eyes of the second row larger than the others and bases of posterior eyes provided with conspicuous black patches as in fig. 349. Posterior quadrangle slightly wider behind as in fig. 349. Ocular area much hairy. Sternum pale, heart-shaped, pointed behind and clothed with spine like hairs. Labium brown, slightly longer than wide and posteriorly tapering. Distal end of



FIGS. 349-353. *Trochosa himalayensis* sp. nov.
 349. Dorsal view of female, legs omitted.
 350. Epigyne.
 351. Internal genitalia.
 352. Left male palp, ventral view.
 353. Left male palp, lateral view.

maxillae broader and provided with scopulae. Inner margin of fang furrow of chelicerae provided with three teeth. Legs clothed with hairs, pubescence and spines and all segments provided with irregular light brownish green inconspicuous patches. The proximal spine on the dorsal side of IV tibiae thin. Male also of same colour as female but slightly smaller in size. Male palp as in figs. 352 and 353.

Abdomen: Longer than wide, oval, clothed with hairs and pubescence. Anterio-mid-dorsally provided with a pale brown lens shaped marking as in fig. 349. Ventral side pale. Epigyne as in fig 350. Internal genitalia as in fig. 351.

Holotype: ♀, *paratypes* three ♀ ♀, *allotype* one ♂ in spirit, Deposited at ZSI. Regd. No. 4660/18.

Type-locality: Dhikala, Corbett National Park, Dist., Pauri. Uttara Pradesh, INDIA. 29.xi.1971 Coll. *Asket Singh*.

Discussion: This species resembles *Trochosa punctipes* (Gravely) but can be separated from it as follows : (i) Sides of carapace provided with brown irregular patches but in *T. punctipes* no such patches present. (ii) Abdomen anterio-mid-dorsally with a lens shaped pale brown marking and rest of the abdomen provided with greenish brown and pale patches but in *T. punctipes* dorsal side of abdomen provided with two longitudinal rows of dark brown patches which extend the whole length. (iii) Epigyne also structurally different.

BIBLIOGRAPHY

- AUDOUIN, 1826. In Savigny's, "*Description de l' Egypte, Arachnides*". *Hist. Nat., Zoologie*, 1 : 99-186.
- BHATNAGAR, R. D. S. & SADANA, G. L. 1963. The functional anatomy of the male and female external genitalia of the wolf-spider, *Lycosa chaperi* Simon (Lycosidae : Araneida). *Res. Bull of Punjab Univ.*, 14 (3-4) : 207-214.
- BLACKWALL, J. 1867. Description of several species of East Indian spiders, apparently to be new or little known to Arachnologists. *Ann. Mag. Nat. Hist.* (3) 19 : 387-394.
- BONNET, P. 1945. *Bibliographia Araneorum*, Toulouse, 1 : 1-832.
- BONNET, P. 1955-1959. *Bibliographia Araneorum*, Toulouse, 2 : 1-5058.
- BONNET, P. 1961. *Bibliographia Araneorum*, Toulouse, 3 : 1-591.
- CAMBRIDGE, O. P. 1870. Notes on a collection of Arachnida made by J. K. Lord, Esq., in the Peninsula of Sinai and on the African Borders of the Red Sea. *Proc. zool. Soc. Lond.*, 1870 : 818-823.
- CAMBRIDGE, O. P. 1876. Catalogue of a collection of spiders made in Egypt with description of new species and characters of a new genus. *Proc. zool. Soc., Lond.*, 1876 : 541-630.
- DAHL, F. 1908. Die Lycosiden Deutschlands. *Nov. Act. Leopold.*, 88 : 175-678.
- DYAL, S. 1935. Fauna of Lahore, 4. Spiders of Lahore, *Bull. Dept. Zoology Punjab Univ. Lahore*, 1 : 117-252.
- GRAVELY, F. H. 1924. Some Indian spiders of the family Lycosidae. *Rec. Indian Mus.*, 26 : 587-613.
- KASTON, B. J. 1972. How to know the spiders, *Pictured key nature Series*, p. 289.
- KOCH C. L. 1846. Die Arachniden. Dreizehnter Band. *Nurnberg*, 13 : 1-234.
- KOCH C. L. 1847. System der Myriapoden mit Verzeichnissen und Berichten zu Deutschlands Crustaceen, Myriapoden und Arachniden. *Regensburg* 14 : 1-210.
- KOCH, C. L. 1848. Die Arachniden. Vierzehnter Band. *Nurnberg*. 14 : 1-210.
- LATREILLE, P. A. 1804. *Nouv. Dict. d' Hist. Nat., Araignees*, p. 275-295.
- LOCKET G. H. & MILLIDGE, A. F. 1952. *British spiders, I, Ray Society*, London, : 310.
- POCOCK, R. I. 1899. Diagnoses of some new Indian Arachnida. *J. Bombay nat. Hist. Soc.*, 12 : 744-753.
- POCOCK, R. I. 1900. *Fauna Brit. India Arachnida*, Taylor and Francis, London, : 244-254.

- POCOCK, R. I. 1901. Description of some new species of spiders from British India. *J. Bombay nat. Hist. Soc.*, 13 : 478-498.
- ROEWER, C. FR. 1954. Katalog der Araneae, Bruxelles. 2 : 1-923.
- SADANA, G. L. 1972. Description of new species of *Pardosa* Koch (Lycosidae, Araneida) from India. *Entom. monthl. Mag.*, 107 : 226-227.
- SIMON, E. 1882. Etude sur les Arachnides du Yemen meridional in Viaggio ad Assab nel Mar Rosso dei signori C. Doria ed O. Beccari con il r Aviso esploratero del 16 nov. 1879 ad 26 Feb. 1881. *Ann. Mus. Civ. stor. nat. Genova*, 18 : 207-260.
- SIMON, E. 1884. Arachnides recueillis en Birmanie par M. le chevalier J. B. Comotto et appartenant au Musee Civique d' Histoire Naturelle de Gene A. *Ann Mus. civ. stor. nat. Genova*, 20 : 325-372.
- SIMON, E. 1885. Materiaux pour servir a la faune arachnologique de l' Asie meridionale. I. Arachnides recueillis a Wagrakaroor pre's Gundacul, district de Bellary par M.M. Chaper. II. Arachnides recueillis a Ramnad, district de Madura par M. l' abbe' Fabre. *Bull. Soc. zool. Fr.* 10 : 1-26.
- SIMON, E. 1885. Etudes arachnologiques. 18 Memoire. XXVI. Materidux pour servir a' la faune des Arachnides du Senegal (Suivi d' un appendice intitule' : Descriptions de plusieurs especes africaines nouvelles). *Ann. Soc. ent. Fr.*, 5 (6) : 345-396.
- SIMON, E. 1897. Arachnides recueillis par M. M. Maindron a Kurrachee et a Matheran *Bull. Mus. Hist. Nat.*, Paris, 1897 (7) : 289-297.
- SIMON, E. 1898. Histoire Naturelle des Aracgnées (Paris), 2 (2) : 193-380.
- SIMON, E. 1905. Arachnides de Java. *Mitt. Mus. naturh. Hamburg*, 22 : 51-73.
- SINHA, T. B. 1951. On the collection of lycosid spiders in the Zoological Survey of India (Indian Museum) with critical notes on the species. *Rec. Indian Mus.*, 48 (2) : 9-52.
- SUNDEVALL, J. C. 1833. Conspectus Arachnidum. *Londini Gothorum* : 1-39.
- THORELL, T. 1887. Viaggio di L. Fea in Birmania e regioni vicine. II Primo saggio sui Ragni Birmani. *Ann. Mus. Civ. Stor. nat. Genova*, 5 (2) : 5-417.
- THORELL, T. 1890. Diagnoses Araneorum aliquot novarum in Indoa Mlesia inventarum. *Ann. Mus. Civ. stor. nat. Genova*, 10 (2) : 132-172.
- THORELL, T. 1890. Aracnidi di Nias e di Sumatra raccolti nel 1886, dal Sig. E. Modigliani. *Ann. Mus. civ. stor. nat. Genova*, 10(2) : 5-106.
- THORELL, T. 1891. Spindlar fran Nikobarerna och andra delar af Sodra Asien, etc. *Kongl. Svenska Vet. Akad. Handl.*; 24 (2) : 1-149.
- THORELL, T. 1894. Decas Araneorum in ins. Singapore a Cel. Th. Workman inventarum. *Bull. Soc. ent. ital.*, 26 : 321-355.
- THORELL, T. 1895. Descriptive catalogue of the spiders of Burma British Museum, London, : 1-406.
- TIKADER, B. K. 1964. Zoological results of the Indian Cho-Oyu Expedition (1958) in Nepal, Part-8, Arachnida. *Rec. Indian Mus.*, New Delhi, 59 (3) : 257-267.

- TIKADER, B. K. 1970. Spider fauna of Sikkim. *Rec. zool. Surv. India*, 64 (1-4) : 1-84.
- TIKADER, B. K. & MUKERJEE, S. 1971. A new species of spider of the genus *Lycosa* (Family: Lycosidae) from India. *Sci. & Cult.*, Calcutta, 37 : 531.
- TIKADER, B. K. & MALHOTRA, M.S. 1976. Studies on some spiders of the genus *Pardosa* Koch from India. (Family : Lycosidae). *Proc. Indian Acad. Sci.*, 83 (3) : 123-131.
- TIKADER, B. K. 1977. Description of two new species of wolf-spider (Family : Lycosidae) from Ladakh, India. *J. Bombay nat. Hist. Soc.*, 74 (1) : 144-146.
- TIKADER, B. K. 1977. Studies on Spider fauna of Andaman and Nicobar Islands, Indian Ocean. *Rec. zool. Surv. India*, 72 : 153-212.
- WALCKENAER, C. A. 1837. *Histoire Naturelles des Insectes. Apteres.* Paris. 1 : 1-682.

ALPHABETICAL INDEX

PAGE

N.B. : Names in italics indicate pages containing
detailed description.

abdomen	259	coxae,	259
abdomen dorsal	259	cribellum	259
abdomen ventral	259	cymbium	264
<i>agelenoides (Hippasa)</i>	293	ejaculatory duct	264
<i>alii (Pardosa)</i>	362	embolus	264
<i>altitudus (Pardosa)</i>	328	epigastric furrow	259
alveolus	263	epigyne	265
<i>amkhasensis (Pardosa)</i>	335	epigynal plate	265
anal tubercle	259	<i>Evippa</i>	302
<i>annandalei (Pardosa)</i>	351	external apophysis	264
apophysis	264	eyes	259
<i>Arctosa</i>	368	fang	261
<i>atalanta (Ocyale)</i>	364	fang furrow	261
<i>atropalpis (Pardosa)</i>	325	femur	261
<i>banarensis (Evippa)</i>	305	<i>Flanona</i>	366
<i>barnesi (Lycosa)</i>	417	<i>fletcheri (Pardosa)</i>	355
<i>birmanica (Pardosa)</i>	329	<i>fuscana (Lycosa)</i>	428
<i>bistriata (Lycosa)</i>	385	<i>geotubalis (Lycosa)</i>	413
boss	259	<i>goliathus (Lycosa)</i>	402
<i>burasantiensis (Pardosa)</i>	338	<i>greenalliae (Hippasa)</i>	277
calamistrum	266	<i>heterophthalmus (Pardosa)</i>	345
carapace	259	<i>himalayensis (Arctosa)</i>	369
cardiac area	259	<i>himalayensis (Hippasa)</i>	281
<i>carmichaeli (Lycosa)</i>	407	<i>himalayensis (Lycosa)</i>	382
cephalic region	259	<i>himalayensis (Trochosa)</i>	437
cephalothorax	259	<i>himalayensis (Venonia)</i>	434
cervical groove	259	<i>Hippasa</i>	.. 272
<i>chambaensis (Pardosa)</i>	357	<i>holmerae (Hippasa)</i>	295
<i>chaperi (Lycosa)</i>	387	<i>indagatrix (Lycosa)</i>	411
chelicera	259	<i>indicus (Arctosa)</i>	371
<i>choudhuryi (Lycosa)</i>	390	internal genitalia	265
claw	261	<i>iranii (Lycosa)</i>	415
claw tuft	261	<i>kempi (Lycosa)</i>	389
clypeus	261	<i>khudiensis (Arctosa)</i>	375
conductor	264	<i>kupupa (Pardosa)</i>	333

labium	261	<i>prolifera</i> (<i>Lycosa</i>)	409
<i>ladakhensis</i> (<i>Pardosa</i>)	360	<i>puellula</i> (<i>Flanona</i>)	367
<i>lambai</i> (<i>Lycosa</i>)	431	<i>punctipes</i> (<i>Trochosa</i>)	436
<i>leucopalpis</i> (<i>Pardosa</i>)	349	<i>pusiola</i> (<i>Pardosa</i>)	323
lorum	264	<i>quadrifer</i> (<i>Lycosa</i>)	422
<i>loundesi</i> (<i>Hippasa</i>)	280	<i>rajasthanus</i> (<i>Evippa</i>)	306
lung slit	259	<i>receptaculum seminis</i>	264
<i>Lycosa</i>	377	<i>rehenockensis</i> (<i>Pardosa</i>)	342
<i>lycosina</i> (<i>Hippasa</i>)	287	<i>rubiginosa</i> (<i>Evippa</i>)	313
<i>mackenziei</i> (<i>Lycosa</i>)	419	scopula	261
<i>madani</i> (<i>Lycosa</i>)	396	serrula	264
<i>madhuae</i> (<i>Hippasa</i>)	298	<i>shillongensis</i> (<i>Lycosa</i>)	403
<i>madraspata</i> (<i>Hippasa</i>)	289	<i>shivajii</i> (<i>Evippa</i>)	312
<i>mahabaleshwarensis</i> (<i>Hippasa</i>)	285	<i>shyamae</i> (<i>Pardosa</i>)	343
<i>mahabaleshwarensis</i> (<i>Lycosa</i>)	429	<i>sohani</i> (<i>Evippa</i>)	303
male palp	264	<i>solanensis</i> (<i>Evippa</i>)	308
<i>masteri</i> (<i>Lycosa</i>)	394	<i>songosa</i> (<i>Pardosa</i>)	340
maxillae	261	spermatheca	265
metatarsus	261	spinnerets anterior	259
<i>minutus</i> (<i>Pardosa</i>)	319	spinnerets median	259
<i>moulmeinensis</i> (<i>Lycosa</i>)	421	spinnerets posterior	259
<i>mukundi</i> (<i>Pardosa</i>)	326	sternum	259
<i>mulani</i> (<i>Arctosa</i>)	373	sub-tegulum	264
<i>mysorensis</i> (<i>Pardosa</i>)	332	<i>sumatrana</i> (<i>Pardosa</i>)	353
<i>nigrotibialis</i> (<i>Lycosa</i>)	405	<i>sutherlandi</i> (<i>Pardosa</i>)	347
<i>oakleyi</i> (<i>Pardosa</i>)	337	tarsus	261
ocelli	261	<i>tatensis</i> (<i>Pardosa</i>)	358
<i>Ocyale</i>	363	tegulum	264
<i>olivacea</i> (<i>Hippasa</i>)	283	thoracic groove (fovea)	259
<i>Pardosa</i>	315	thoracic region	259
<i>partita</i> (<i>Hippasa</i>)	291	tibia	261
patella	261	tibial apophysis	264
pedicel	261	<i>timida</i> (<i>Pardosa</i>)	321
pedipalp	261	<i>tista</i> (<i>Lycosa</i>)	384
<i>phipsoni</i> (<i>Lycosa</i>)	398	trochanter	263
<i>pictula</i> (<i>Lycosa</i>)	424	<i>Trochosa</i>	435
<i>pisaurina</i> (<i>Hippasa</i>)	300	<i>Venonia</i>	433
<i>poonaensis</i> (<i>Lycosa</i>)	392	<i>wroughtoni</i> (<i>Lycosa</i>)	400
<i>praelongipes</i> (<i>Evippa</i>)	310	<i>yerburyi</i> (<i>Lycosa</i>)	426

PLATE I



1



2



3



4

1. *Pardosa sumatrana*, female carrying young ones on its back.
2. *Pardosa sumatrana*, female carrying egg-sac.
3. Tunnel of *Lycosa geotubalis*, on the ground.
4. Web of *Hippasa pisaurina* on the ground.