

ON A COLLECTION OF SPIDERS (ARANEAE) FROM THE DESERT AREAS OF RAJASTHAN (INDIA)

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(With 3 Text-figures)

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I—INTRODUCTION

This paper is a report on a small but extremely interesting collection of spiders made mainly by me as a member of the Rajasthan Survey Party, Zoological Survey of India, during 1956-57. The material contains about a dozen species, of which three are new to science. In addition to the notes on distribution, I have added summaries of my ecological field observations on each species. The specimens, including the types, are in the National Collections of Zoological Survey of India, Calcutta.

I take this opportunity of recording my sincere thanks to Dr. M. L. Roonwal, Director, Zoological Survey of India, for facilities and encouragement.

II—SYSTEMATIC ACCOUNT

Family 1. ERESIDAE

1. *Stegodyphus pacificus* Pocock

1900. *Stegodyphus pacificus* Pocock, *Fauna Brit. India, Arach.*, London, p. 209.

Specimens collected.—4 ♀♀, Kailana Desert Afforestation, ca. 11·2 Km. west of Jodhpur, 13-xii-1956. 1 ♀, from Bareganga, ca. 16 Km. north of Jodhpur, 17-xii-1956.

Measurements.—Total length 15·70 mm. Carapace 7·50 mm. long, 5·50 mm. wide ; abdomen 9·20 mm. long, 8·00 mm. wide.

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Field notes.—This species lives on bushes of *Zizyphus* and *Acacia* sp., where they spin a large sheet-like web, with a tubular retreat. The spider lives alone, unlike *S. sarasinorum*. After cutting the tubular retreat, I found the dead mother spider partially eaten by young ones. The number of young ones in the nest was about one hundred. Another specimen was collected with a cocoon. November and December appear to be the breeding time.

Distribution.—INDIA : Western India ; Eastern Khandesh ; Poona.

Family 2. LYCOSIDAE

2. *Hippasa pisaurina* Pocock

1900. *Hippasa pisaurina* Pocock, *Fauna Brit. India, Arach.*, London, p. 250.

Specimens collected.—1 ♀ and 1 ♂, from Merta City, 13-xii-1956. 15 ♀♀ and 5 ♂♂, from Dungar College compound, Bikaner, 6-i-1957.

Measurements.—Total length 12.50 mm. Carapace 5.50 mm. long, 4.00 mm. wide ; abdomen 7.00 mm. long, 4.80 mm. wide.

Field notes.—This species lives on the ground, where it spins a sheet-like web on the surface of grass, with a tubular retreat. The spider rests on the upper surface of the sheet. When disturbed it takes shelter inside the tubular retreat.

Distribution.—INDIA : East Khandesh ; Poona ; Bangalore ; Western India.

3. *Lycosa birmanica* (Simon)

1884. *Pardosa birmanica* Simon, *Ann. Mus. Stor. Nat. Genova*, Genova, 20, p. 333. (*Type-locality* : Minhla, Lower Burma.)

Specimens collected.—10 ♀♀, 5 ♂♂, from Kailana tank, ca. 8 Km. west of Jodhpur, 14-xii-1956. 20 ♀♀, 5 ♂♂, from Bareganga, ca. 16 Km. north of Jodhpur, 20-xii-1956.

Measurements.—Total length 5.00 mm. Carapace 2.70 mm. long, 2.00 mm. wide ; abdomen 2.50 mm. long, 1.50 mm. wide.

Distribution.—INDIA : Western India, Bombay ; Mysore ; Bangalore ; U. P. ; Nagpur ; Bengal. Also CEYLON and BURMA.

4. *Lycosa punctipes* Gravely

1924. *Lycosa punctipes* Gravely, *Rec. Indian Mus.*, Calcutta, 26, p. 603. (*Type-locality* : Bangalore.)

Specimens collected.—2 ♀♀, Merta city, 26-xii-1956.

Measurements.—Total length 5.60 mm. Carapace 3.00 mm. long, 1.60 mm. wide ; abdomen 2.60 mm. long, 1.70 mm. wide.

Field notes.—*Lycosa birmanica* and *L. punctipes* occur on damp soil mainly near the edges of tanks and lakes. They are very fast runners. *L. birmanica* also runs over the surface of water.

Distribution.—INDIA : Western India ; Bangalore ; Lucknow ; Bihar ; Bengal.

Family 3. PHOLCIDAE

5. *Artema atlenta* Walckenaer

1837. *Artema atlenta* Walckenaer, *Apteres*, 1, p. 656.

Specimens collected.—1 ♀ Merta City, 27-xii-1956. 6 ♀♀, Jorebir; ca. 16 Km. south-east of Bikaner, 11-i-1957.

Measurements.—Total length 6.10 mm. Carapace 2.60 mm. long, 2.50 mm. wide; abdomen 3.50 mm. long, 2.50 mm. wide.

Field notes.—See under *Crossopriza lyoni* below.

Distribution.—INDIA : Western India; Travancore; Meerut; Poona; Punjab. Also BURMA (Tharrawady).

6. *Crossopriza lyoni* (Blackwall)

1867. *Pholcus lyoni* Blackwall, *Ann. Mag. nat. Hist.*, London, 19(3), p. 302.

Specimens collected.—5 ♀♀, Mandore, ca. 11 Km. north of Jodhpur, 12-xii-1956. 16 ♀♀, Bhagat-ki-kuthi, ca. 7 Km. south-west of Jodhpur, 21-xii-1956.

Measurements.—Total length 4.60 mm. Carapace 1.60 mm. long, 2.00 mm. wide; abdomen 3.00 mm. long, 2.50 mm. wide.

Field notes.—*Crossopriza lyoni* is a common house spider. It spins an extremely fine but irregular cobweb from which it lies suspended upside down. It prefers dark, old and abandoned houses. No cocoon is made but eggs are glued together and carried in the chelicerae of the mother till they hatch. *Artema atlenta* often occurs in the same situations and has habits similar to *C. lyoni*, but is larger and stronger, so that it often kills the latter and occupies its web. Both the species are nocturnal.

Distribution.—INDIA : Western India; Madras; Meerut; Allahabad; Punjab. Also BURMA.

Family 4. ARGIOPIDAE

7. *Arigope arcuata* Simon

1884. *Arigope arcuata* Simon, *Ann. Mus. Stor. Nat. Genova*, Genova, 20, p. 343. (*Type-locality* : Burma.)

Specimens collected.—2 ♀♀, Jamsar roadside, ca. 17.5 Km. north of Bikaner, 10-i-1957.

Measurements.—Total length 11.70 mm. Carapace 3.30 mm. long, 2.90 mm. wide; abdomen 8.30 mm. long, 5.40 mm. wide.

Field notes.—*Arigope arcuata* makes its web very nicely. The web is often suspended between adjoining branches of lowgrowing plants and is large and orb-shaped, with very characteristic four white zigzag lines marking a cross "X" in the centre of the web. These white lines serve as supports for the legs. The web is spun vertically and the spider hangs vertically head downward.

Distribution.—INDIA : Western India; South India. Also BURMA and ARABIA.

8. *Cyrtophora citricola* (Forskål)

1775. *Aranea citricola* Forskål, *Descript. Animalium*, p. 86.

Specimens collected.—10 ♀ ♀, Merta City, 26-xii-1956.

Measurements.—Total length 6.80 mm. Carapace 3.00 mm. long, 2.20 mm. wide ; abdomen 4.30 mm. long, 3.10 mm. wide.

Field notes.—This species spins a very fine web which is roughly conical but may have several stages below the dome. The web commonly hangs under bushes of *Zizyphus* sp. The spider hangs downwards at the apex of the inverted bowl of the web. The webs are placed together to form a colony on a single bush.

Distribution.—INDIA : Western India ; Bangalore ; Chingleput ; Kanara ; Punjab. Also BURMA, CEYLON, AUSTRALIA, MADAGASCAR, AFRICA and SOUTH EUROPE.

9. *Araneus nauticus* Koch

1875. *Araneus nauticus* Koch, *Aegypt. Abyssin. Arach.*, p. 17.

Specimens collected.—1 ♀, Kailana tank, ca. 8 Km. west of Jodhpur, 14-xii-1956.

Measurements.—Total length 5.50 mm. Carapace 2.60 mm. long, 2.30 mm. wide ; abdomen 3.40 mm. long, 3.50 mm. wide.

Distribution.—INDIA : Western India ; Poona ; Eastern Khandesh ; Darjeeling. Also PAKISTAN and BURMA.

10. *Tetragnatha mandibulata* Walckenaer

1873. *Tetragnatha mandibulata* Walckenaer, *Hist. Nat. des. Inst.*, 2, p. 211.

Specimens collected.—8 ♀ ♀, 7 ♂ ♂, Kailana tank, ca. 8 Km. west of Jodhpur, 14-xii-1956.

Measurements.—Total length 8.40 mm. Carapace 2.00 mm. long, 1.50 mm. wide ; abdomen 6.70 mm. long, 3.20 mm. wide.

Field notes.—These spiders were collected from twigs of *Acacia arabica* overhanging a tank. The spiders rest by day with their legs stretched out before and behind and are only active at night. They spin large orb-webs at sundown among grasses and other foliage usually in the vicinity of water.

Distribution.—INDIA : Western India ; Bengal ; Nicobar Islands. Also BURMA and the AUSTRO-MALAYSIA.

Family 5. GNAPHOSIDAE

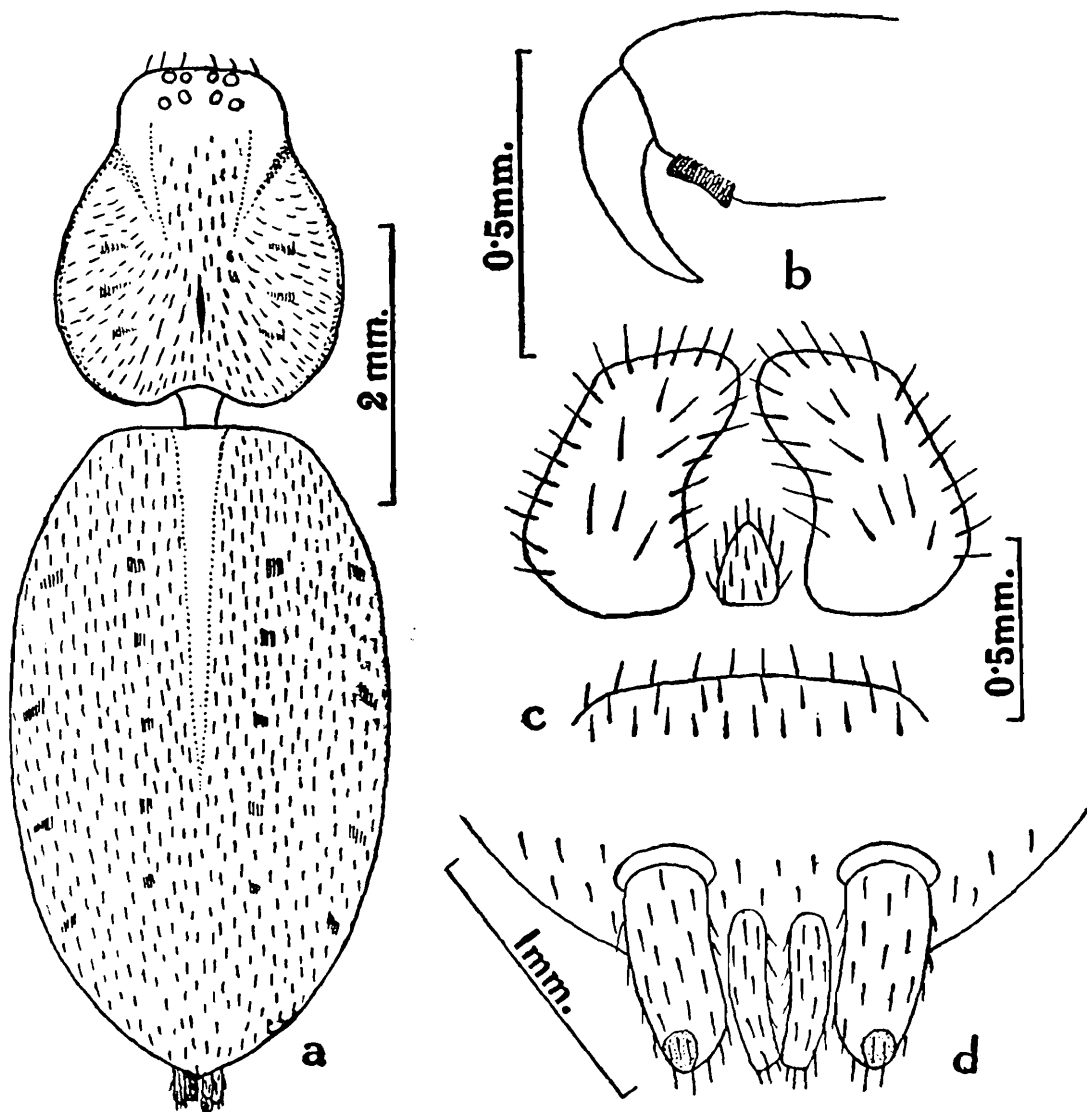
Genus *Gnaphosa* Latreille

11. *Gnaphosa kailana* sp. nov.

Material.—1 ♀, Kailana Desert Afforestation, ca. 11.2 Km. west of Jodhpur, 13-xii-1956. 1♀, Nagaur, Merta Dist, 26-xii-1956. 1♀, Lallgarh, Bikaner, 8-i-1957. All coll. B. K. Tikader.

Description.—*General* : Cephalothorax brown, legs and clypeus lighter than cephalothorax ; abdomen dirty white. Total length 8.30 mm., carapace 2.90 mm. long, 2.20 mm. wide ; abdomen 5.30 mm. long, 3.30 mm. wide.

Cephalothorax.—Heart-shaped, relatively broad in front, convex with a fovea, clothed with spine-like hairs and a brown narrow line encircling almost the entire border of cephalothorax, the tufts of dark brownish hairs, three on each side. Eyes viewed from front : anterior row of eyes slightly procurved ; anterior median eyes slightly smaller and darker than the anterior laterals ; the posterior row recurved and longer than the anterior row, posterior medians white, with irregular outline, slightly larger than the laterals and further away from each other than from laterals. Clypeus narrow, margin bearing spines, directed



TEXT-FIG. 1.—*Gnaphosa kailana* sp. nov. Female. *Holotype*. (a). Dorsal view of whole body. (b). Right chelicera. (c). Maxillae and labium. (d). Spinners.

forward. Sternum oval, pointed behind, densely clothed with spiny-hairs. Labium, maxillae and chelicerae. Text-fig. 1, b, c. Legs long, stout, with spiny-hairs and strong spines interspersed, I and IV legs longer than others, tibia I with two pairs of ventral spines and a single spine in between the former, metatarsi I and II with two pairs of ventral spines. Scopulae extend upto the base of metatarsi I and II.

Abdomen.—Elliptical, covered with hairs, a dagger-shaped line more white than the ground colour of abdomen, this line extends from the base of the anterior mid-dorsal to the middle of abdomen; several irregular tufts of dark brown hairs on the abdomen. Ventral surface uniform less white than dorsal side, clothed with hairs. Spinners Text-fig. 1d.

Type-specimens.—*Holotype*: 1 female, Z. S. I. Reg. No. 2490/18. *Paratypes*: 2 females, Z. S. I. Reg. No. 2491/18.

Type-locality.—Kailana Desert Afforestation, ca. 11.2 Km. west of Jodhpur, Rajasthan, India.

Geographical distribution.—INDIA: Western Rajasthan: Near Jodhpur; Merta city, Dist. Nagaur; Bikaner.

Comparison.—This species resembles *Gnaphosa occidentalis* Simon but is separated as follows.—(i) Cephalothorax brown and three tufts of dark brownish hairs on each side (in *G. occidentalis* cephalothorax uniform dark brown). (ii) Abdomen dirty white, several irregular tufts of dark brown hairs on the dorsum (in *G. occidentalis* abdomen uniform dark brown).

Genus *Scotophaeus* Simon

12. *Scotophaeus rajasthanus* sp. nov.

Material.—1 ♀, Merta city, Dist. Nagaur, 27-xii-1956, coll. B. K. Tikader.

Description.—*General*: Cephalothorax, legs and clypeus brown; abdomen dark brown. Total length 6.60 mm.; carapace 2.30 mm. long, 1.90 mm. wide; abdomen 3.90 mm. long, 2.20 mm. wide.

Cephalothorax.—Narrowed in front, convex, with a conspicuous fovea, clothed with fine hairs. Eyes viewed from front: anterior row slightly procurved; anterior medians considerably larger than the laterals and black. Posterior row slightly longer than the anterior row and procurved; eyes posterior row more or less equal and equidistant of each other, the posterior median white, the two laterals moderately dark. Clypeus narrow. Sternum oval, slightly pointed behind, clothed with hairs. Labium triangular and almost contiguous with the maxillae. Text-fig. 2b. Chelicerae vertical, margin without tooth. Legs long, spined, IV legs longer than others. Scopulae extend upto the base of metatarsi I and II.

Abdomen.—More or less elliptical, narrowed behind, clothed with fine pubescence, mid-anteriorly with an obscure white patch; ventral surface darker than the dorsal, with small widely placed white dots.

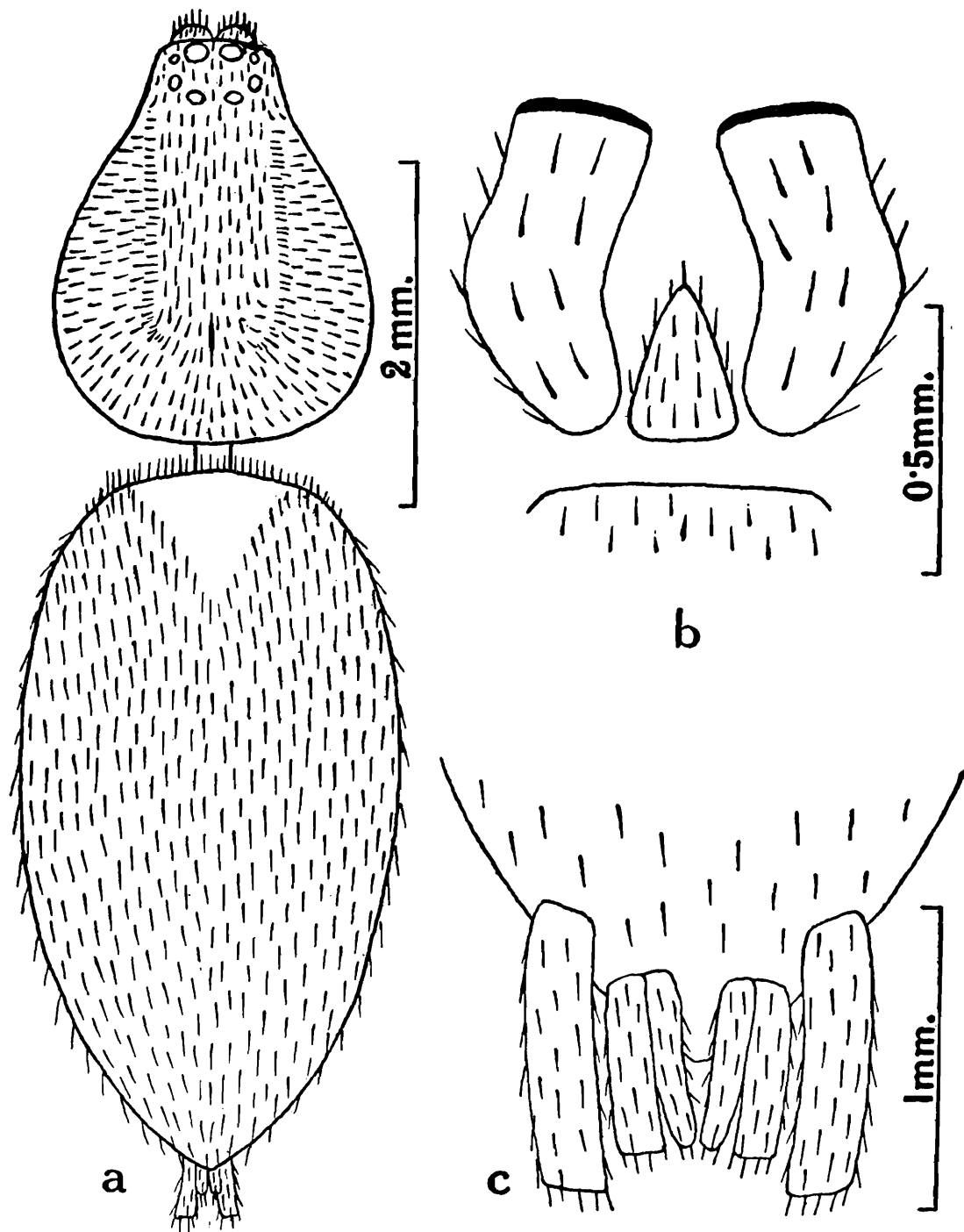
Type-specimen.—*Holotype*: 1 female, Z. S. I. Reg. No. 2492/18.

Type-locality.—Merta city, Dist. Nagaur, Rajasthan, India.

Geographical distribution.—Known only from the type-locality.

Comparisons.—This species resembles *Scotophaeus blackwalli* (Thorell) but is separated as follows.—(i) Cephalothorax brown (in *S. blackwalli* cephalothorax light to deep reddish-brown). (ii) Chelicerae vertical,

margin without tooth (in *S. blackwalli* chelicerae vertical, outer margin with three teeth and inner with one).



TEXT-FIG. 2.—*Scotophaeus rajasthanus* sp. nov. Female. Holotype (a). Dorsal view of whole body. (b). Maxillae and labium. (c). Spinners.

Family 6. THOMISIDAE

Genus *Thanatus* Koch

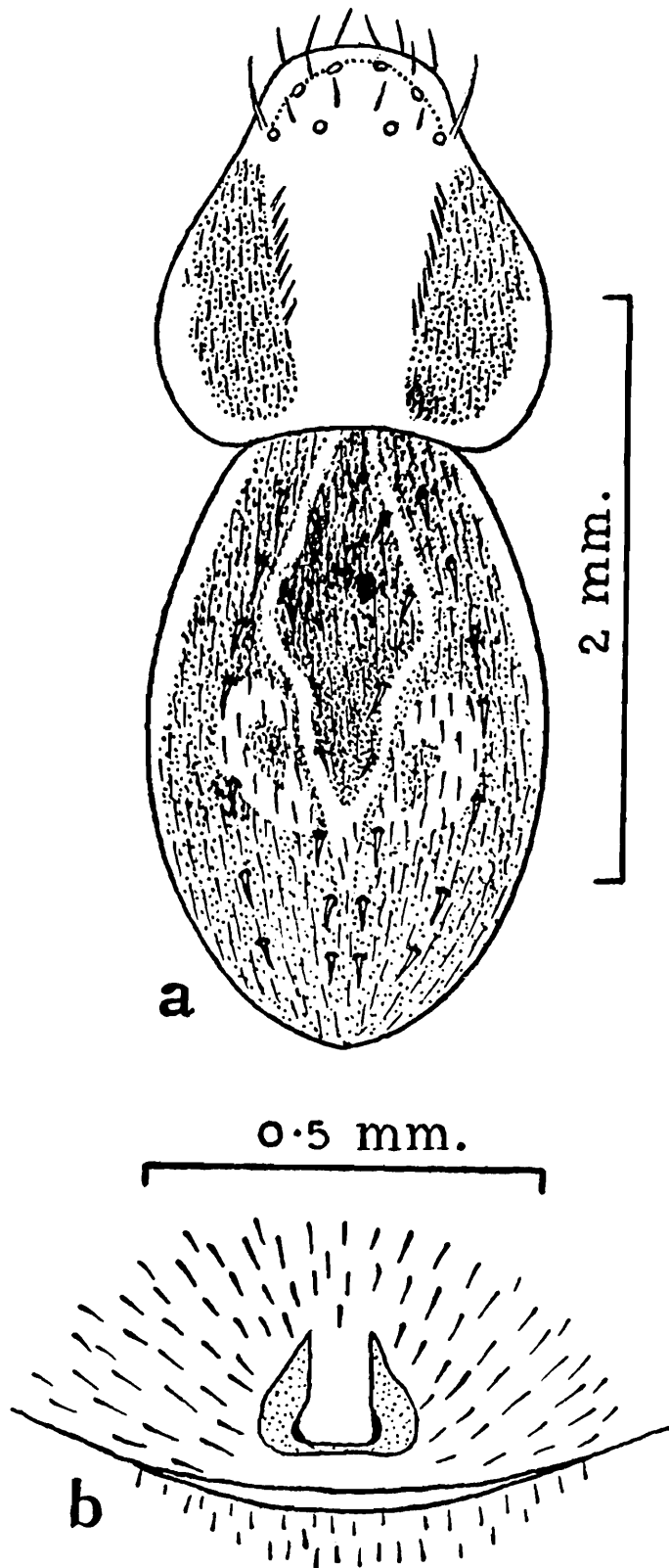
13. *Thanatus lanceoletus* sp. nov.

Material.—2 ♀♀, Bikaner town, 12-i-1957, coll. B. K. Tikader.

Description.—*General*: Cephalothorax and abdomen dirty-white; eyes black, legs concolorous with cephalothorax; clypeus white. Total

length 6.40 mm. ; carapace 1.60 mm. long, 1.50 mm. wide ; abdomen 3.20 mm. long, 2.20 mm. wide.

Cephalothorax.—Broader behind, narrowing in front, clothed with hairs and scanty spines ; a pale band encircles almost the entire margin



TEXT-FIG. 3.—*Thanatus lanceoletus* sp. nov. Female. Holotype. (a). Dorsal view of whole body. (b). Epigynum.

of cephalothorax and two oblong dark brown broad patches sub-laterally. Eyes black, two rows, both recurved, but the posterior row longer, both the rows form a crescent-shaped area. Clypeus long, margin with five

spines, directed forward. Sternum pale-white and hairy. Legs long, stout, spined femora, petella and tibiae with irregular longitudinal dark brown bands.

Abdomen.—Oval, clothed with fine hairs, a longitudinal dark brown lance-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. Epigynum as seen in Text-fig. 3b.

Type-specimens.—*Holotype* : 1 female, Z. S. I. Reg. No. 2493/18, *Paratype* : 1 female, Z. S. I. Reg. No. 2494/18.

Type-locality.—Bikaner town, Rajasthan, India.

Geographical distribution.—Known only from type-locality (Bikaner, Rajasthan.)

Comparisons.—This species resembles *Thanatus striatus* Koch but is separated as follows.—(i) Cephalothorax dirty white and with two oblong dark brown broad patches sublaterally (in *T. striatus* cephalothorax yellow brown with two lateral bands of dark brown and a median brown stripe behind the posterior eyes). (ii) Sternum pale white with hairs (in *T. striatus* sternum yellow-brown, heavily spotted with dark brown).

III—SUMMARY

Three new species of spiders are described in this paper. All the species were collected from desert areas of Rajasthan. The new species belong to three genera and two families (Ganaphosidae and Thomisidae).

IV—REFERENCES

- COMSTOCK, J. H. 1940. *The Spiders Book*. Pp. 1-708.—New York.
- DYAL SUKH, 1935. Spiders of Lahore.—*Bull. Dept. Zool. Punjab Univ.*, Lahore, **1**, pp. 119-252.
- GRAVELY, F. G. 1924. Some Indian spiders of the family Lycosidae.—*Rec. Indian Mus.*, Calcutta, **26**, pp. 587-613.
- LOCKET, G. A. and MILLADGE, A. F. 1951. *British Spiders*, **1**, pp. 95-295.—London (Ray Society).
- PETRUNKOVITICH, A. 1911. Index Catalogue of spiders.—*Bull. Amer. Mus. nat. Hist.*, New York, **29**, pp. 1-790.
- POCOCK, R. I. 1900. *The Fauna of British India*. Arachnida, pp. 1-278.—London.
- THORELL, T. 1895. *Spiders of Burma*. Pp. 1-406.—London.
- WARKMAN, T. 1896. *Malayrian Spiders*. Pp. 1-96.—Belfast.