Spiders of the Genus *Oxyopes* LATREILLE (Araneae: Oxyopidae) of Buxa Tiger Reserve, West Bengal

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Abstract Five new species of the genus *Oxyopes* (Araneae: Oxyopidae), *O. elongatus* n. sp., *O. minutus* n. sp., *O. ovatus* n. sp., *O. reticulatus* n. sp. and *O. subimali* n. sp. are recorded from Buxa Tiger Reserve, West Bengal, India. A total of 9 *Oxyopes* species are reported from the area.

Indian spiders of the genus *Oxyopes* LATREILLE (Oxyopidae) attracted attention since 1901 when POCKOCK described 4 new species. SHERRIFFS (1951), TIKADER (1965, 1969, 1970), PATEL (1978) and TIKADER and BISWAS (1981) contributed to the knowledge of *Oxyopes* in India.

Our visit to Buxa Tiger Reserve during April, 1993 (SAHA, *et al.*, 1994) and May, 1994, have yielded in the recognition of 11 species of the genus *Oxyopes* of which two species were not identifiable because of their immaturity. The other 9 species are reported in this paper. Of these, 5 species are described as new to science.

The type specimens are deposited in the collection of the Entomology Laboratory, Department of Zoology, University of Calcutta, Calcutta, India.

Oxyopes elongatus n. sp. (Figs. 1-7)

Male (holotype). Measurements (in mm). Total length 7.0; carapace length 3.0, width 2.0; abdomen length 4.0, width 1.0; legs as in Table 1.

Cephalothorax yellow, longer than wide, anteriorly narrow, posteriorly broad; cephalic region raised, cervical furrows weakly impressed; thoracic region medially with longitudinal fovea. Anteriormost eyes smallest; the other eyes white, each eye basally with a black patch; anterior row of eyes recurved, posterior row procurved; ocular area with short spiny hairs rather scarcely distributed, decorated as in Fig. 2. Clypeus and anterior surfaces of chelicerae with a pair of black bands extending from anteriormost

Table 1. Lengths of legs of ♂ holotype of *Oxyopes elongatus* n. sp. (in mm).

Leg	Femur	Patella & Tibia	Metatarsus	Tarsus	Total
I	1.8	2.1	2.0	1.5	7.4
II	2.5	4.2	2.5	1.5	10.7
III	2.2	3.5	3.0	1.1	9.8
IV	2.5	3.5	3.5	1.6	11.1

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Figs. 1-7. *Oxyopes elongatus* n. sp., male holotype.—1. Whole body. 2. Cephalic region showing the eye pattern and black line from anteriormost eyes to the fangs. 3. Chelicerae. 4. Maxillae and labium. 5. Sternum. 6. Male palp (ventral view). 7. Male palp (retrolateral view).

eyes to fangs. Chelicerae yellow, inner margin with a tooth and outer margin with 2 teeth close to each other; fangs brown, strongly curved. Maxillae and labium yellow, apically somewhat brownish, elongate, anteriorly broad and scopulate. Sternum yellow, heart-shaped, medially somewhat wide, with a few long, spiny, brown hairs and with white pubescence all over the surface, anteriorly densely so. Legs yellow, each femur inwardly with 2 longitudinal brown stripes; leg formula 4231. Male palp as in Figs. 6-7. Abdomen grey, long, cylindrical, anteriorly wide, scaly, posteriorly narrow; anteriorly whitish, antero-medially with a ovoid longitudinal brownish-yellow marking; posteriorly and laterally with spiny hairs; ventrally with broad longitudinal black band, densely hairy.

Female. Unknown.

Etymology. The species is named due to its elongate nature of the body.

Material examined. Holotype; ♂, 9. V. 1994, Jayanti, Buxa Tiger Reserve, Jalpaiguri, West Bengal, India (B. KUNDU).

Remarks. The species appears close to *Oxyopes pawani* GAJBE, *O. macilentus* L. KOCH and *O. sikkimensis* TIKADER in its general appearance. Presence of a pair of black bands extending from the anteriormost eyes to fangs brings the species closer to *O. sikkimensis* TIKADER. However, it stands distinct in having rather elongate cephalothorax (broad in the related species) and abdomen. The male palp appears extremely typical as compared to *O. sikkimensis* TIKADER and *O. macilentus* L. KOCH. These sufficiently justify its recognition as a new species.

***Oxyopes minutus* n. sp.**

(Figs. 8-13)

Female (holotype). Measurements (in mm). Total length 3.0; carapace length 1.0, width 0.5; abdomen length 2.0, width 1.0; legs as in Table 2.

Cephalothorax brown, longer than wide, posteriorly broad; cephalic region slightly raised; thoracic region posteromedially with 3 longitudinal hairy bands, medially with a longitudinal fovea. Ocular area black, anteriormost eyes smallest; the other eyes white, each eye basally ringed with a black band; anterior row of eyes recurved, posterior row procurved; clypeus and anterior surfaces of chelicerae with a pair of black bands extending from anteriormost eyes to fangs. Chelicerae yellow, inner and outer margins with a tooth respectively; fangs yellowish brown. Maxillae and labium yellowish brown, elongate; maxillae anteriorly wide and scopulate; labium medially constricted, anteriorly narrow and scopulate. Sternum dark brown, heart-shaped, posteriorly pointed, covered with a few white hairs. Legs yellowish, leg formula 2134. Abdomen brownish, elongate, oval, anteriorly wide, posteriorly narrow; anteromedially with

Figs. 8-13. *Oxyopes minutus* n. sp., female holotype.—8. Whole body. 9. Cephalic region showing the eye pattern and black lines from anteriormost eyes up to the fangs. 10. Chelicerae. 11. Maxillae and labium. 12. Sternum. 13. Epigyne.

Table 2. Lengths of legs of ♀ holotype of *Oxyopes minutus* n. sp. (in mm).

Legs	Femur	Patella & Tibia	Metatarsus	Tarsus	Total
I	1.5	1.1	1.9	0.9	4.4
II	1.8	1.5	1.2	0.9	5.4
III	1.4	1.2	1.0	0.7	4.3
IV	1.2	1.2	1.1	0.5	4.0

longitudinal reddish yellow band; venter yellowish brown, with brownish black ridge covered with white hairs. Epigyne as in Fig. 13.

Male. Unknown.

Etymology. The species is named because of the minute nature of the epigyne.

Material examined. Holotype: ♀, 9. V. 1994, Jayanti, Buxa Tiger Reserve, Jalpaiguri, West Bengal, India (B. KUNDU).

Remarks. The species may be related to *Oxyopes salticus* DONDALE et REDNER (DONDALE & REDNER, 1990) in the general appearance of the abdomen and because of the presence of a pair of black bands extending from the anteromedian eyes to the chelicerae. However, the species can be separated out by the typical epigyne. Again, because of the elongate nature of the epigynal scape, the species may be related to *O. parvus* PAIK (ZHAO, 1993) but stands distinct due to the bulbus nature of the scape which is apically somewhat pointed. The species is therefore, recognised as new to science.

***Oxyopes ovatus* n. sp.**

(Figs. 14–18, 30)

Female (holotype). Measurements (in mm). Total length 7.0; carapace length 3.0, width 2.0; abdomen length 2.0, width 3.0; legs as in Table 3.

Figs. 14–18. *Oxyopes ovatus* n. sp., female holotype.—14. Whole body. 15. Chelicerae. 16. Maxillae and labium. 17. Sternum. 18. Epigyne.

Table 3. Lengths of legs of ♀ holotype of *Oxyopes ovatus* n. sp. (in mm).

Leg	Femur	Patella & Tibia	Metatarsus	Tarsus	Total
I	4.0	4.5	2.0	1.2	11.7
II	5.0	4.5	2.5	1.5	13.5
III	3.0	3.0	1.5	1.0	14.0
IV	3.0	3.0	2.5	0.9	9.4

Cephalothorax yellowish, longer than wide, medially broad; cephalic region raised; thoracic region posteromedially with longitudinal fovea. Anteriormost eyes smallest; the other eyes pearly-white, each eye basally with a black band; ocular area brownish black, covered with white pubescence; anterior row of eyes recurved, posterior row procurved. Chelicerae yellow, inner margin with a tooth and outer margin with 2 teeth; fangs reddish brown, strongly curved. Maxillae and labium reddish brown, elongate; maxillae anteriorly wide and scopulate; labium posteromedially constricted, anteriorly narrow, scopulate. Sternum typically heart-shaped, covered with white, fine hairs throughout. Legs yellow, leg formula 3214. Abdomen yellowish, oval, anteriorly wide, posteriorly narrow, covered with white pubescence, anteriorly more densely; dorsum with a longitudinal brown marking anteriorly; each lateral side with 3 brown markings; ventrally yellowish, covered with hairs. Epigyne as in Fig. 18.

Male. Unknown.

Etymology. The species is named because of the typically ovoid nature of the abdomen.

Material examined. Holotype: ♀, 10. V. 1994, Hatipota, Buxa Tiger Reserve, Jalpaiguri, West Bengal, India (B. KUNDU).

Remarks. Present species at best be related to *Oxyopes ratnae* TIKADER (TIKADER, 1970) due to the similarity in general appearance, but can be separated out by the typical epigyne. Therefore, the species is described as new to science.

***Oxyopes reticulatus* n. sp.**

(Figs. 19–23, 31)

Female (holotype). Measurements (in mm). Total length 10.0; carapace length 4.0, width 3.0; abdomen length 6.0, width 3.0; legs as in Table 4.

Cephalothorax yellowish brown, longer than wide, posteriorly broad; cephalic

Figs. 19–23. *Oxyopes reticulatus* n. sp., female holotype. —19. Whole body. 20. Chelicerae. 21. Maxillae and labium. 22. Sternum. 23. Epigyne.

Table 4. Length of legs of ♀ holotype of *Oxyopes reticulatus* n. sp. (in mm).

Leg	Femur	Patella & Tibia	Metatarsus	Tarsus	Total
I	4.5	4.8	2.8	1.9	14.0
II	4.0	4.2	2.3	1.5	12.0
III	2.6	3.0	1.8	1.0	8.4
IV	3.0	3.0	1.5	1.1	8.6

region slightly raised, cervical furrows weakly impressed; thoracic region marginally with white pubescence, anteriorly densely so, postertomedially with longitudinal fovea, radii distinct. Antermost eyes smallest; the other eyes white, each eye basally with a black patch; anterior row of eyes recurved, posterior row procurved. Chelicerae yellow, inner margin with a tooth and outer margin with 2 teeth, fangs brown. Maxillae and labium brownish, elongate, anteriorly wide and scopulate. Sternum yellow, typically heart-shaped with white pubescence. Legs yellowish brown, leg formula 1243. Abdomen grey, oval, anteromedially wide; dorsum with white reticulation, medially with a ovoid free area, each side of which with 2 pairs of sigilla; venter covered with white pubescence. Epigyne as in Fig. 23.

Male. Unknown.

Etymology. This species is named due to the reticulate abdomen.

Material examined. Holotype: ♀, 9. V. 1994, Jayanti, Buxa Tiger Reserve, Jalpaiguri, West Bengal, India (B. KUNDU).

Remarks. The closest ally of the species appears to be *Oxyopes subhadrae* TIKADER (TIKADER, 1970), because of the partly reticulate abdomen and general appearance of the epigyne. However, the points of differences as a new species are: 1) Cephalothorax anteriorly constricted, with cervical furrows, fovea and radii, 2) abdominal reticulation limited to anteromedian area only, 3) presence of two pairs of sigilla and 4) different epigyne.

Oxyopes shweta TIKADER, 1970

Oxyopes shweta TIKADER, 1970, Rec. zool. Surv. India, 64: 78-79.

Material examined. 7 ♀, 1 ♂, 5. IV. 1993, South Raydak, Buxa Tiger Reserve, Jalpaiguri, West Bengal, India; 1 ♀, 1 ♂, 9. V. 1994, Jayanti, Buxa Tiger Reserve, Jalpaiguri, West Bengal.

Oxyopes sikkimensis TIKADER, 1970

Oxyopes sikkimensis TIKADER, 1970, Rec. zool. Surv. India, 64: 76-78.

Material examined. 2 ♀, 9. V. 1994, Jayanti, Buxa Tiger Reserve, West Bengal.

Oxyopes subhadrae TIKADER, 1970

Oxyopes subhadrae TIKADER, 1970, Rec. zool. Surv. India, 64: 71-73.

Material examined. 1 ♂, 6. IV. 1993, South Raydak, Buxa Tiger Reserve, West

Bengal.

***Oxyopes subimali* n. sp.**

(Figs. 24-29, 32)

Male (holotype). Measurements (in mm). Total length 6.0; carapace length 3.0, width 2.0; abdomen length 3.0, width 1.5; legs as in Table 5.

Cephalothorax longer than wide, ovoid, medially broad, with a few white pubescence anteriorly; cephalic region raised, cervical furrows weakly impressed; thoracic region centrally with a longitudinal fovea. Eyes black, anteriormost eyes smallest, each with a black basal band, the other eyes each with a black patch. Chelicerae brown, inner and outer margins with 2 teeth, respectively. Maxillae and labium brown, elongate, maxillae anteriorly broad and scopulate, labium medially broad. Sternum yellow, heart-shaped, covered with white pubescence. Legs yellowish brown; leg formula 1234. Male palp (Figs. 28-29) with tibial apophysis. Abdomen yellowish brown, oval, anteriorly broad, posteriorly narrow, with whitish markings, covered with pubescence and hairs; venter medially grey, marginally orangish, strongly hairy.

Figs. 24-29. *Oxyopes subimali* n. sp., male holotype.—24. Whole body. 25. Chelicerae. 26. Maxillae and labium. 27. Sternum. 28. Male palp (retrolateral view). 29. Male palp (prolateral view).

Table 5. Length of legs of ♂ holotype of *Oxyopes subimali* n. sp. (in mm).

Leg	Femur	Patella & Tibia	Metatarsus	Tarsus	Total
I	4.0	3.5	2.5	1.4	11.4
II	3.5	3.5	2.3	1.2	10.5
III	2.0	2.5	1.2	1.0	6.7
IV	1.5	2.1	1.0	0.9	5.5

Figs. 30–31. 30 (Left). *Oxyopes ovatus* n. sp., female holotype. 31 (Center). *Oxyopes reticulatus* n. sp., female holotype. 32 (Right). *Oxyopes subimali* n. sp., male holotype.

Female. Unknown.

Etymology. The species is named after Mr. Subimal ROY, IFS, Chief Conservator of Forests and Chief Wildlife Warden, Govt. of West Bengal, India, who is greatly encouraging our endeavour.

Material examined. Holotype: ♂, 9. V. 1994, Jayanti, Buxa Tiger Reserve, Jalpaiguri, West Bengal, India (B. KUNDU).

Remarks. The new species at best may be related to *Oxyopes sokuntalae* TIKADER (TIKADER, 1970) in the general appearance of the abdomen and anterior part of the cephalothorax but can be separated out by the ovoid nature of the cephalothorax, abdomen not being decorated and the much different male palp.

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