

## FIRST DESCRIPTION OF MALE LYNX SPIDER *OXYOPES BHARATAE* GAJBE, 1999 (ARANEAE: OXYOPIDAE)

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ABSTRACT: The male of lynx spider *Oxyopes bharatae* Gajbe, 1999 is first time described here along with detailed taxonomic description of female. Also natural history of the species is provided.

KEY WORDS: Delhi, taxonomy, *Oxyopes bharatae*, male

The lynx spider family Oxyopidae Thorell, 1870 is represented by nine genera and 451 species in the world, of which, 71 species under four genera viz., *Hamadruas* Deeleman-Reinhold, 2009; *Hamataliwa* Keyserling, 1887; *Oxyopes* Latreille, 1804; *Peucetia* Thorell, 1869 have been reported from India (World Spider Catalog, 2014).

The genus *Oxyopes* is a diverse group with worldwide distribution that includes 300 species from all over the world (World Spider Catalog, 2014). Of which, 46 species have been reported from India (Gajbe, 2008; Sen et al., 2011; Bodkhe & Vankhede, 2012; Kulkarni & Deshpande, 2012; World Spider Catalog, 2014). During our surveys in various parts of Delhi, we collected many specimens of *Oxyopes* spp. The most common species in Delhi recorded was *O. bharatae* Gajbe, 1999. While going to through literature, we found that so far, the male of this species was not described. Therefore, here, we describe male of lynx spider *O. bharatae* Gajbe, 1999 for the first time based on collections made in Delhi. We also provide additional description of female.

### MATERIAL AND METHOD

The specimens were collected by hand picking method and preserved in 70% ethyl alcohol with little glycerine. Measurements of body parts, except for the eyes, were taken with a Mitutoyo™ Vernier Caliper. Eye measurements were done with calibrated ocular micrometer. Legs and pedipalp measurements were taken dorsally for the left side. All measurements are in millimetres. Genitalia were dissected and cleared in concentrated lactic acid in 100°C water bath for 15–20 minutes. All illustrations were prepared with the help of a drawing attachment attached to an Olympus SZX10 stereomicroscope.

Abbreviations: AL = abdomen length, ALE = anterior lateral eye, AME = anterior median eye, AW = abdomen width, CD = copulatory duct; CL = cephalothorax length, CW = cephalothorax width, PLE = posterior lateral eye, PME = posterior median eye, ALS = anterior lateral spinnerets, PMS = posterior median spinnerets, PLS = posterior lateral spinnerets, TL = total length (excludes chelicerae), RTA = retrolateral tibial apophysis, VTA = ventral tibial apophysis. Abbreviations used for hair and spines count are d = dorsal, fe = femur, mt =

metatarsus, p = prolateral, pa = patella, r = retrolateral, ta = tarsus, ti = tibia, v = ventral. All specimens are deposited at Indraprastha University Museum (IPUM), New Delhi, India.

## RESULTS

### *Oxyopes bhadatae* Gajbe, 1999

(Plates-1.A-D, 2.A,B; Tables 1, 2)

**Material examined:** 2 males, IPU-ARACH-72, IPU-ARACH-73; 1 female, (IPU-ARACH-71): Garhi Mandu city forest, Wazirabad, New Delhi, India (28° 42' 35" N and 77° 14' 12" E), 24.06.2014, coll. S. Sahoo.

#### **Description** (all measurements in mm)

**Male:** TL 7.00-8.50, CL 3.00-3.50, CW 2.00-2.75, AL 4.00-5.00, AW 1.30-1.80.

**Cephalothorax:** Longer than wide, brownish-yellow, convex, clothed with pubescence and provided with four thick dark hairy longitudinal stripes extending between posterior median and lateral eyes to posterior end of carapace; median stripes straight, parallel and very close to each other with small vertical inconspicuous fovea in between them, lateral stripes curved outwards and well separated from median stripes on each side. Eye diameters and inter-distances: AME 0.13, ALE 0.25, PME 0.25, PLE 0.20, AME-AME 0.13, PME-PME 0.25, PLE-PLE 0.25. Eyes black, anterior row of eyes strongly recurved, medians much smaller than laterals and nearly equidistance from each other, posterior row of eyes strongly procurved, equal in size and equidistance from each other, anterior laterals and posterior row of eyes forms hexagon, all with black rim around them; ocular quad slightly longer than wide, clypeus yellow 0.35 high, pair of dark hairy vertical band extending from AMEs till base of fangs. Sternum heart shaped, cordate, light yellowish-green, clothed with scattered long, black, erect hairs and spines, chelicerae vertical, orange in colour, fangs small, yellowish-brown and with single tooth on each margin. Labium and maxillae longer than wide, labium slightly concave anteriorly and protrudes medially, maxillae posteromedially constricted and apically scopulate.

**Abdomen:** Longer than wide, posteriorly narrow; mid-dorsally provided with broad dark orange band running for length; laterally with yellowish-white and black patches. Ventral side lighter than dorsal, mid ventrally provided with two longitudinal dark green stripes starting from epigastric furrow to spinnerets.

**Legs:** Legs long, strong and clothed with spines, yellowish-green, reddish annulations on joints of ti and mt of Leg IV, femora of all legs laterally provided with black line. Leg formula 1243 (Table 1). Spines, I: fe, v=1, r=3; pa, d=1, p=2, r=2; ti, v=1, p=3, r=3; mt, d=1, p=3, r=3, II: fe, v=2, p=2, r=2; pa, p=2, r=2, ti, p=3, r=3; mt, p=3, r=3, III: fe, d=1, v=2, p=3, r=2; pa, p=2, r=1; ti, p=2, r=2; mt, p=3, r=3, IV: fe, v=4, r=2; pa, p=2, r=1; ti, p=3, r=2; mt, p=3, r=3.

**Spinnerets:** Dark brown, ecribellate and without colulus, three pairs: ALS, PMS, PLS; PMS conical, single segment, smallest and hidden between ALS and PLS; ALS and PMS cylindrical with two segments each; PLS largest.

**Palp:** Tibia with two tibial apophysis, RTA and VTA. RTA large, wide and nearly pentagonal. VTA digitiform. Cymbium with two ventral spines; three long hairs on tibia; two long hairs on patella Embolus long covered with conductor; conductor wider with bifurcated pointed tips; median apophysis triangular with pointed tip.

**Female:** TL 9.50, CL 3.50, CW 2.50, AL 6.00, AW 2.00.

Cephalothorax and abdomen almost same to males with slight difference in colour pattern; cephalothorax in females greenish-yellow, abdomen anteromedially with silvery white lanceolate patch on dorsal side and laterally bordered with silvery white stripe with black bands within. Eye diameters and inter-distances: AME 0.12; ALE 0.25; PME 0.25; PLE 0.2; AME-AME 0.13; PME-PME 0.25; PLE-PLE 0.25. Eye arrangement, chelicerae, sternum, maxillae, labium and spinnerets similar as in male. Legs also similar to males except spines (Table 2). Spines, I: fe, p=3, r=2; pa, d=1; ti, p=3, r=2; mt, d=2, p=3, r=3, II: fe, r=3; pa, p=1, r=1; ti, v=1, p=1, r=3; mt, p=3, r=3, III: fe, r=2; pa, p=2, r=1; ti, p=3, r=3; mt, p=3, r=3, IV: fe, r=2; pa, p=1, r=1; ti, p=3, r=2; mt, p=3, r=3, Palp: fe, v=3, p=1, r=1; pa, p=1, r=1; ti, p=3, r=2; ta, r=2.

Epigyne: Spermathecal lobes longer, CD very prominent and twisted in S shaped covering spermathecal lobes completely. Fertilization ducts at base near copulatory duct openings.

**Natural history:** *O. bhadatae* was observed inside scrub vegetation near water bodies. It certainly preferred open and exposed microhabitats, as the species found on long grasses and on leaves of shrubs. Females were found nesting during most of August-October. Males and females found wandering together on vegetation.

**Distribution:** Endemic to India.

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### LITERATURE CITED

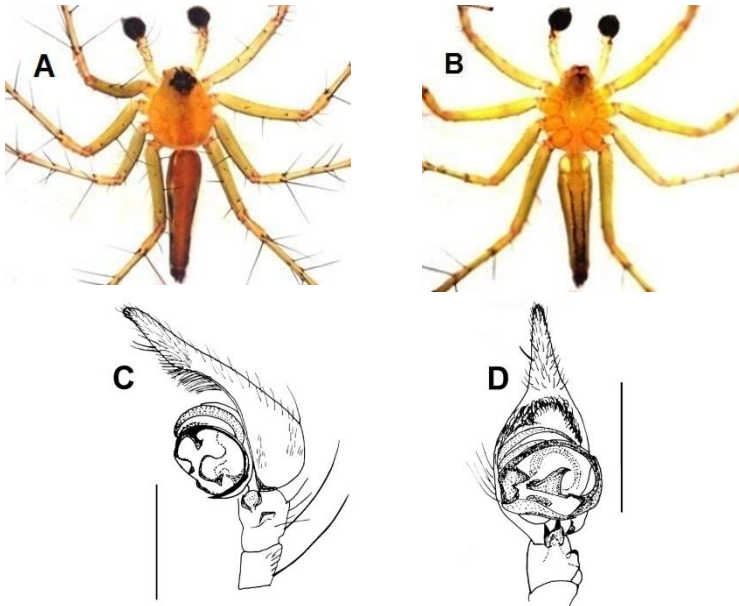
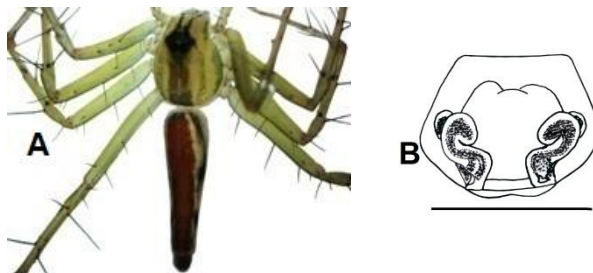
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Table 1. Morphometry of legs of male *O. bhadatae* (IPU-ARACH-72, IPU-ARACH-73).

	<b>Leg I</b>	<b>Leg II</b>	<b>Leg III</b>	<b>Leg IV</b>	<b>Palp</b>
<b>Femur</b>	4.25-4.50	4.00	3.00-3.25	4.25-4.50	1.25-1.50
<b>Patella</b>	1.00	0.50-1.00	1.00	0.75-1.00	0.25
<b>Tibia</b>	4.50	4.00-4.50	3.00	3.50	0.50
<b>Metatarsus</b>	4.00-4.50	4.00	2.75-3.00	4.00	-
<b>Tarsus</b>	1.50-2.00	1.50-1.75	0.75-1.00	1.25	1.75
<b>Total</b>	<b>15.25-16.50</b>	<b>14.50-14.75</b>	<b>10.50-11.25</b>	<b>13.75-14.25</b>	<b>3.75-4</b>

Table 2. Morphometry of legs of female *O. bhadatae* (IPU-ARACH-71).

	Leg I	Leg II	Leg III	Leg IV	Palp
<b>Femur</b>	5.00	5.00	4.00	5.00	1.00
<b>Patella</b>	1.50	1.00	1.00	1.00	0.50
<b>Tibia</b>	6.00	5.25	4.00	4.00	1.00
<b>Metatarsus</b>	5.25	5.00	4.75	5.75	-
<b>Tarsus</b>	2.00	2.00	1.50	1.50	1.25
<b>Total</b>	<b>19.75</b>	<b>18.25</b>	<b>15.25</b>	<b>17.25</b>	<b>3.75</b>

Plate-1. *Oxyopes bhadatae* ♂ (IPU-ARACH-72) A: Dorsal view; B: Ventral view; C: Palp retrorolateral view (scale 1mm); D: Palp ventral view (scale 1 mm).Plate-2. *Oxyopes bhadatae* ♀ (IPU-ARACH-71) A: Ventral view; B: Internal genitalia (scale 1 mm).