

WOLF SPIDERS OF BANGLADESH-II : GENUS *LYCOSA* LATREILLE (AREANEAE : LYCOSIDAE)

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INTRODUCTION

Spiders of the family Lycosidae (or wolf-spiders) are one of the common ground-dwelling predators of pest insects in different agricultural crops. Pocock (1900), Gravely (1924), Dyal (1935), Tikader (1970, '77a, '77b), Tikader and Biswas (1981), Tikader and Malhotra (1976, '80) and Tikader and Mkerjee (1971) made valuable contributions on the lycosids of Indian Sub-continent.

Recently, Biswas and Biswas (1992), Saha, *et al.* (1994), Majumber (2004, 2005, 2007) in India and Chowdhury and Nagari (1981), Chowdhury and Pal (1984), Biswas *et al.* (1993), Okuma *et al.* (1993), Begum and Biswas (1997) and Biswas and Raychudhuri (2003) recorded and described few lycosids of Bangladesh.

The present paper deals with the genus *Lycosa* Latreille represented by 6 (six) species from Bangladesh. Of these, 3 (three) species namely - *L. gravelyi*, *L. japhlongensis* and *L. picta* are recognised as new to science and the other 3 ones are new record for the country. The new species are described and illustrated. A key to the species together with the generic diagnosis is also provided.

The identity of the species were confirmed from the 'Zoological Survey of India', Kolkata. The types are at present in the collection of the

Department of Zoology, Govt. P.C. College, Bagerhat, Bangladesh and will be deposited to the Museum of the Department of Zoology, University of Dhaka, Bangladesh, in due course of time.

SYSTEMATICS

Genus *Lycosa* Latreille, 1804

1804. *Lycosa* Latreille, *Nouv. Dict., d' Hist. Nat.*, **XXIV** : 135.

Diagnosis: Cephalothorax rather long with cephalic region raised; ocular quad anteriorly narrowing and posteriorly broad. Labium always longer than wide, basal excavation prominent, usually rd of maxilla. Legs rather long and slender; tibia I and II armed with 3 pairs of ventral spines; IV metatarsi never longer than tibia and patella taken together.

Type-species: *Lycosa tarantula* Rossi.

Distribution : ASIA ; AFRICA ; AUSTRALIA ; AMERICA and EUROPE.

Key to the species

1. Abdomen decorated; without posteriorly pointed dorsal longitudinal band2
- Abdomen not decorated; atmost with central longitudinal posteriorly pointed whitish band..... 3
2. Cephalothroax on either side with brown longitudinal band, but without any radii (fig. 11); inner and outer margins of chelicerae with

- 3 and 2 teeth respectively (fig. 12); sternum posteriorly produced (fig. 14); maxillae balloon-shaped (fig. 13)..... *mackenziei*
- Cephalothorax without any such band, with few distinct radii (fig. 18); inner and outer margins of chelicerae with 1 and 2 teeth respectively (fig. 19); sternum posteriorly not produced (fig. 21); maxillae cylindroid (fig. 20).....*picta* n. sp.
- 3. Abdomen with a whitish dagger-shaped band; leg formula 4213..... 4
- Abdomen without any such band; leg formula 4123 5
- 4. Outer margin of chelicerae with 3 teeth (fig. 7); sternum globose (fig. 9); cheliceral fang segmented (fig. 7); epigynum as in fig. 10..*japhlongensis* n. sp.
- Outer margin of chelicerae with 2 teeth (fig. 31); sternum elongate (fig. 33); fang not segmented; epigyne as in fig. 34 *tista*
- 5. Cephalothorax with a distinct ‘V’-shaped marking the fovea; radii distinct (fig. 1); outer margin of chelicerae with 2 teeth (fig. 2); sternum heart-shaped, posteriorly with a short projection (fig. 4); ocular quad squarish*gravelyi* n. sp.
- Cephalothorax without any such marking; radii absent (fig. 24); outer margin of chelicerae with 1 tooth (fig. 25); sternum globose, posteriorly not produced (fig. 27); ocular quad rectangular *shyamae*

1. *Lycosa gravelyi* sp. nov.
(Figs. 1-5)

General : Male : Cephalothorax and legs dark brown; abdomen light brown. Total length 5.00

mm. Carapace 2.00 mm long, 1.90 mm wide; abdomen 3.00 mm long, 2.00 mm wide.

Cephalothorax: Longer than wide, broad, narrowing anteriorly, clothed with few spines; cephalic region raised. Anterior row of eyes straight; 2nd and 3rd row of eyes similar, basally with black patch; ocular quad squarish, a ‘V’-shaped structure distinct between the deeply distinct black central fovea and the 3rd row of eyes. Chelicerae broad, moderately strong, each of inner and outer margins with 2 teeth, fang extremely elongated (fig. 2). Maxillae broad and scopulate anteriorly and narrowed posteriorly (fig. 3). Labium bowl-shaped, scopulate (fig. 3). Sternum brown, oval, broad below the middle, pointed posteriorly, clothed with sharp spines (fig. 4). Legs long and strong, covered with fine hairs and spines; leg formula 4123 and the measurements (in mm) as in Table-1. Male palp as in fig. 5.

Abdomen: Broad, elongate, wider posteriorly, clothed with hairs and spines; dorsum anteriorly with a ‘V’-shaped markings; ventrally pale.

Female: Unknown.

Holotype: Male in spirit.

Paratype: 1♂, Shikaerpur, Jhenidah, 8.IV, 1993, Coll. V. Biswas.

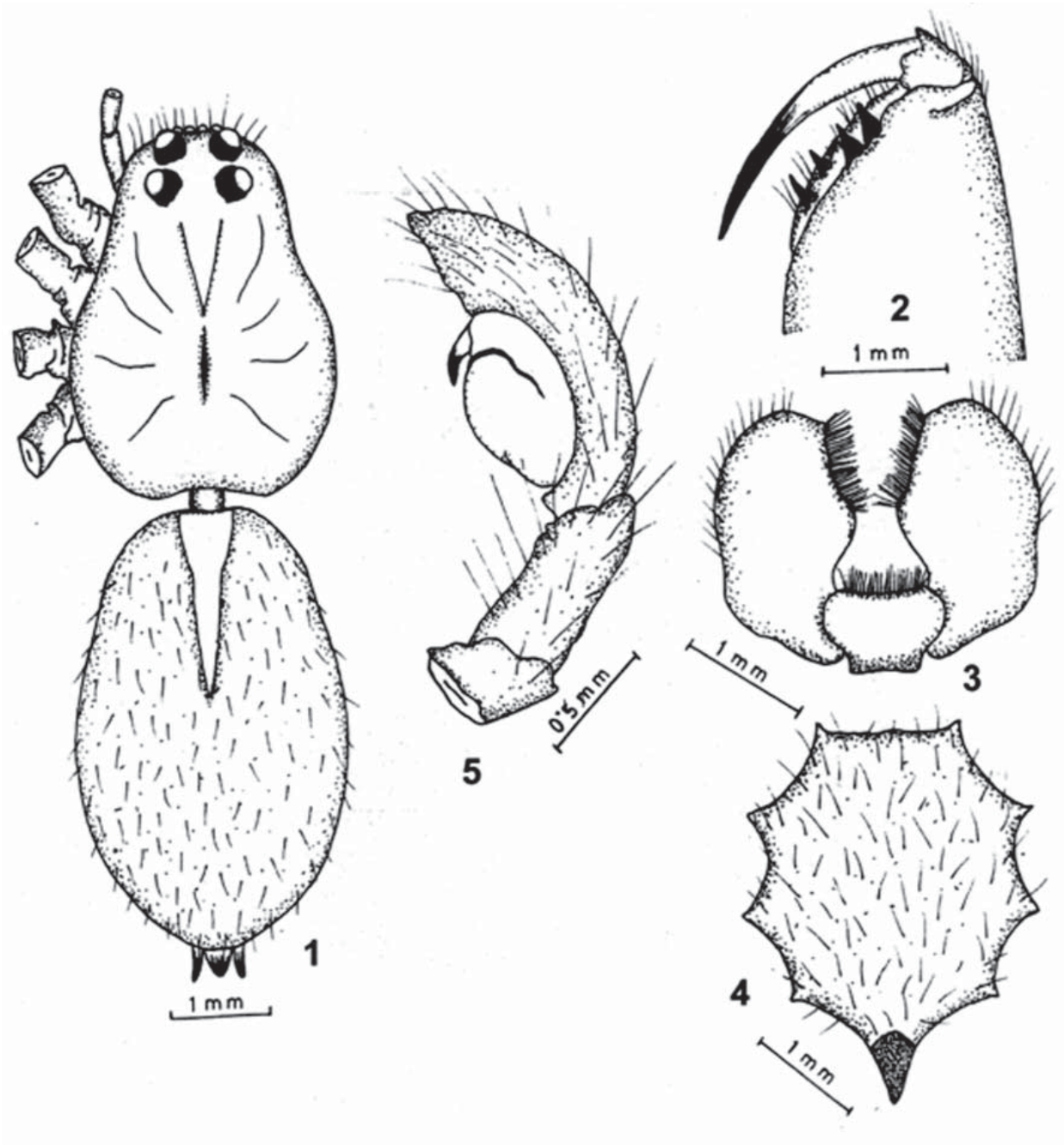
Distribution: BANGLADESH: Bagerhat, Jhenidah (type locality).

Etymology: The species is named after the famous Arachnologist Dr. F.H. Gravely.

Diagnosis: Present species *L. gravelyi* sp. nov. in having anterior row of eyes straight and total length less than 10 mm relates to *L. himalayensis* / *tista* / *distriata* group (Tikader & Malhotra, 1980) but none of the species lack a dorsal longitudinal band on the cephalothorax. Further these species

Table-1. Measurements (mm) of leg segments of male holotype of *Lycosa gravelyi* sp. nov.

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	2.9 / 2.9	0.9 / 0.9	2.4 / 2.4	3.0 / 3.0	1.9 / 1.9	11.10 / 11.10
II	2.8 / 2.8	0.8 / 0.8	2.4 / 2.4	2.9 / 2.9	1.7 / 1.7	10.60 / 10.60
III	2.6 / 2.6	0.6 / 0.6	2.3 / 2.3	2.8 / 2.8	1.7 / 1.7	10.00 / 10.00
IV	3.0 / 3.0	1.0 / 1.0	2.5 / 2.5	3.1 / 3.1	2.0 / 2.0	11.60 / 11.60



Figs. 1-5. *Lycosa gravely* sp. nov.

1. Whole body (dorsal view); 2. Chelicerae; 3. Maxillae and Labium; 4. Sternum; 5. Male palp

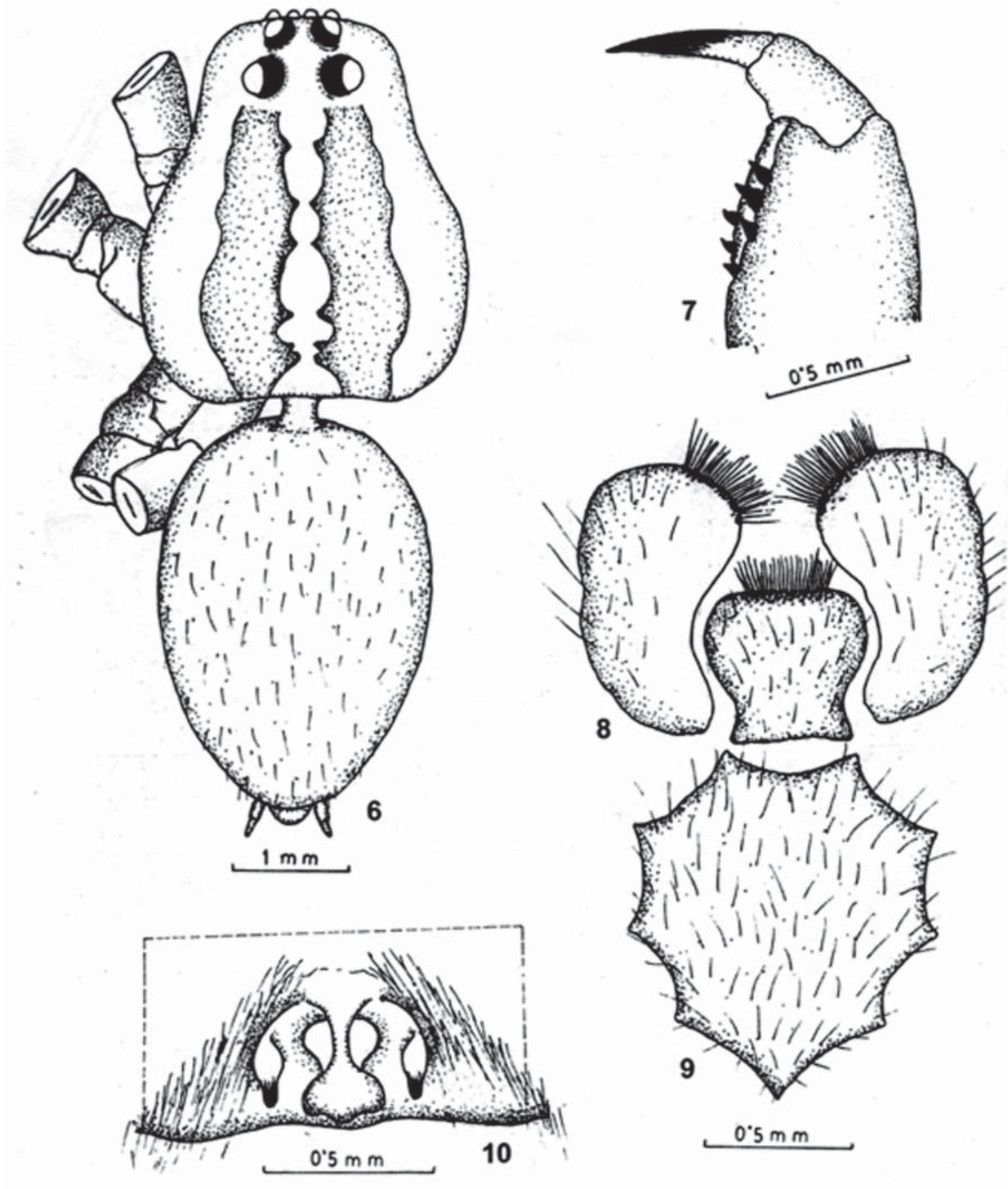
are with weakly to distinctly constricted cephalic region.

The species also shows a general resemblance with that of *L. suzuki* Yaginuma (Yaginuma, 1986; Paik, 1988) but differs in many respect.

The species, in therefore, described as new to science.

2. *Lycosa japhlongensis* sp. nov.
(Figs. 6-10)

General: Female: Cephalothorax and legs dark brown; abdomen yellowish brown with brown hairs and pubescence. Total length 6.30 mm. Carapace 2.50 mm long, 2.20 mm wide; abdomen 3.80 mm long, 4.05 mm wide.



Figs. 6-10. *Lycosa japhlongensis* sp. nov.

6. Whole body (dorsal view); 7. Chelicerae; 8. Maxillae and Labium; 9. Sternum; 10. Epigynum.

Cephalothorax: Light brown, broad, wider basally, narrowing anteriorly, clothed with fine hairs and spines; ocular area blackish. Anterior row of eyes straight; similar, slight longer than 2nd

row; eyes of 2nd and 3rd row with black patches basally; 3rd row of eyes larger and widely placed; ocular quad squarish. Dorsum of cephalothorax with 2 black longitudinal bands extended upto

Table-2. Measurements (mm) of leg segments of holotype of *Lycosa japhlongensis* sp. nov.

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	2.6 / 2.6	0.6 / 0.6	1.8 / 1.8	2.5 / 2.5	1.7 / 1.7	9.20 / 9.20
II	2.8 / 2.8	0.8 / 0.8	2.0 / 2.0	2.6 / 2.6	1.8 / 1.8	10.00 / 10.00
III	2.5 / 2.5	0.5 / 0.5	1.6 / 1.6	2.4 / 2.4	1.6 / 1.6	8.60 / 8.60
IV	3.0 / 3.0	0.9 / 0.9	2.1 / 2.1	2.8 / 2.8	2.0 / 2.0	10.80 / 10.80

the posterior margin. Chelicerae moderately strong, fang segmented, with broad base, each of inner and outer margins with 3 teeth (fig. 7). Maxillae anteriorly wide and scopulate, clothed with spines (fig. 8). Labium broad, vase-shaped, constricted basally, anteriorly wide and scopulate (fig. 8). Sternum globose, middle wide, narrowing posteriorly, covered with few spines (fig. 9). Legs long, strong and slender, covered with spines and hairs; leg formula 4213 and the measurements (in mm) as in Table-2.

Abdomen: Oval, longer than wide, anteriorly broad and posteriorly narrowing; clothed with hairs; ventrally pale, with few brown spots; epigyne as in fig. 10.

Male: Unknown.

Holotype: Female in spirit.

Paratype: 2 ♀, Otherwise data same as for the holotype.

Distribution: BANGLADESH: Japhlong, Sylhet (type locality).

Etymology: The species is named after the type locality.

Diagnosis: The closest rally of the species *L. japhlongensis* sp. nov. seems to be *L. tista* Tikader (Tikader & Malhotra, 1980) because of the presence of straight anterior row of eyes, cephalothorax larger than abdomen, with a median longitudinal band and each of cheliceral margins with 3 teeth. The species stands distinct from the

latter in not having the abdomen overhanging the cephalothorax, 2nd row of eyes larger (3rd row of eyes largest), fang unsegmented and dissimilar epigynum. There is however an apparent simili in the epigynum with that of *L. wulsini* Fox (Fox, 1933).

The species, in therefore, described as new to science.

3. *Lycosa mackenziei* Gravely

(Figs. 11-17)

1924. *Lycosa mackenziei* Gravely, *Rec. Indian Mus.*, **26**: 606.

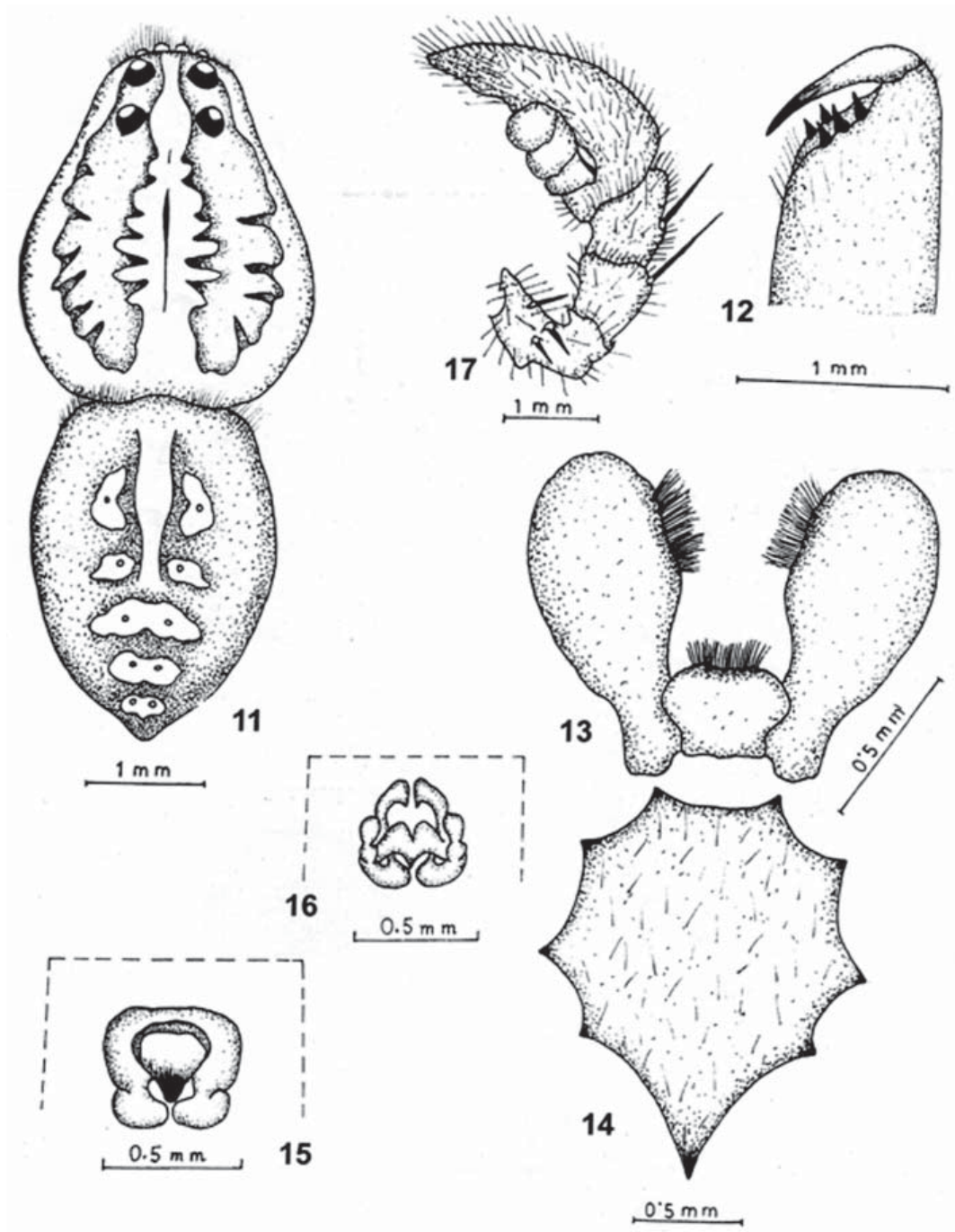
1980. *Lycosa mackenziei*: Tikader & Malhotra, *Fauna of India, Spiders (Lycosidae)*, **1(2)**: 419.

2009. *Lycosa mackenziei*: Biswas, *Flora & Fauna of Bangladesh, Arachnida*, **18(1)**: 221.

2014. *Lycosa mackenziei*: Platnick, *World Spider Catalogue*, Version 14.5. American Museum of Natural History, New York.

Material examined: 2 ♀, Faridpur, 12.III.1992, Coll. V. Biswas; 1 ♀, Dumuria, Khulna, 8.IX.1991, Coll. V. Biswas; 1 ♀, 1 ♂, Khajura, Jessore, 3.VII.1990, Coll. V. Biswas; 2 ♂, Mymensingh, 18.IX.1991, Coll. V. Biswas; 1 ♀, 1 ♂, Pirojpur, Rangpur, 17.VIII.1992, Coll. V. Biswas.

Distribution: BANGLADESH: Faridpur, Jessore, Khulna, Mymensingh, Pirjopur, Rajshahi and Rangpur; INDIA; PAKISTAN (Tikader and Malhotra, 1980)



Figs. 11-17. *Lycosa mackenziei* Gravely

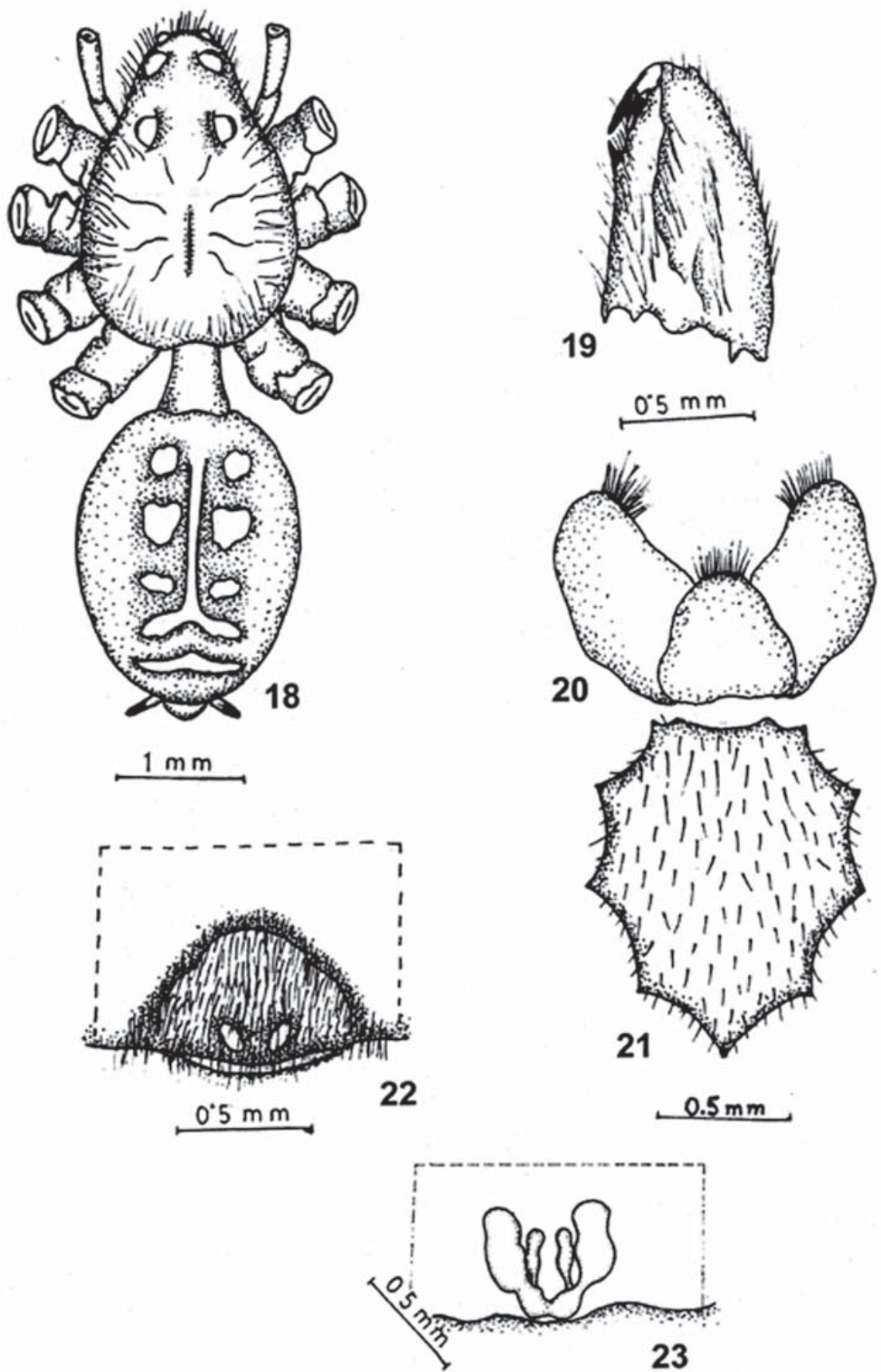
11. Whole body (dorsal view); 12. Chelicerae; 13. Maxillae and Labium; 14. Sternum;
15. Epigynum; 16. Internal genitalia; 17. Male palp

4. *Lycosa picta* sp. nov.
(Figs. 18-23)

General : Female : Cephalothorax pale brown;
leg yellow with brown patches and abdomen
brown black. Total length 6.30 mm. Carapace

2.30 mm long, 2.10 mm wide; abdomen 4.00
mm long, 3.00 mm wide.

Cephalothorax: Ovoid, narrowing anteriorly,
basally wide, longer than wide, clothed with
hairs and pubescence; cephalic region raised with



Figs. 18-23. *Lycosa picta* sp. nov.

18. Whole body (dorsal view); 19. Chelicerae; 20 Maxillae and Labium;
21. Sternum; 22. Epigynum; 23. Internal genitalia

ocular area brownish. Anterior row of eyes slightly recurved, similar; eyes of 2nd and 3rd rows similar

and widely placed; ocular quad black, rectangular, posteriorly broad. Thoracic region medially with

Table-3. Measurements (mm) of leg segments of holotype of *Lycosa picta* sp. nov.

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	3.0 / 3.0	0.9 / 0.9	2.4 / 2.4	3.0 / 3.0	2.4 / 2.4	11.70 / 11.70
II	2.8 / 2.8	0.6 / 0.6	2.2 / 2.2	2.7 / 2.7	2.1 / 2.1	10.40 / 10.40
III	2.9 / 2.9	0.8 / 0.8	2.3 / 2.3	2.9 / 2.9	2.3 / 2.3	11.20 / 11.20
IV	3.1 / 3.1	1.0 / 1.0	2.5 / 2.5	3.1 / 3.1	2.5 / 2.5	12.20 / 12.20

dark brown fovea; radii distinct; on either side with longitudinal brown band extending upto the base; lateral edges with brown markings; clothed with fine hairs and pubescence. Chelicerae brown, rather strong, inner margin with 2 teeth and outer margin with 1 tooth (fig. 19). Maxillae brown, cylindroid, longer than wide, anteriorly scopulate (fig. 20). Sternum yellow, medially broad and narrowing interiorly, clothed (fig. 21). Labium brown, basally broad, anteriorly narrowing and scopulate (fig. 20) with spine (fig. 21). Legs long and slender, covered with spines and hairs; leg formula 4132 and the measurement (in mm) as in Table-3.

Abdomen: Oval, posteriorly blunt, clothed with hairs and spines; dorsum decorated with yellowish patches; epigyne and internal genitalia as in figs. 22 and 23.

Male: Unknown.

Holotype: Female in spirit.

Paratype: 1 ♀, Otherwise data same as for the holotype.

Distribution: BANGLADESH : Pirojpur (type locality).

Etymology: The species is named due to the blackish nature of the body.

Diagnosis: The very typical epigynum of the

species *L. picta* sp. nov. separates it out from the Indian congeners that are with straight or nearly straight anterior row of eyes (Tikader and Malhotra, 1980). The species does not show any resemblance to the other congeneric species known from elsewhere (Paik, 1988; Yaginuma, 1986; Chen & Zhang, 1991; Shikai & Takano, 1984; Koh, 1989; Thanka, 1990).

The species, in therefore, described as new to science.

5. *Lycosa shyamae* Tikader

(Figs. 24-29)

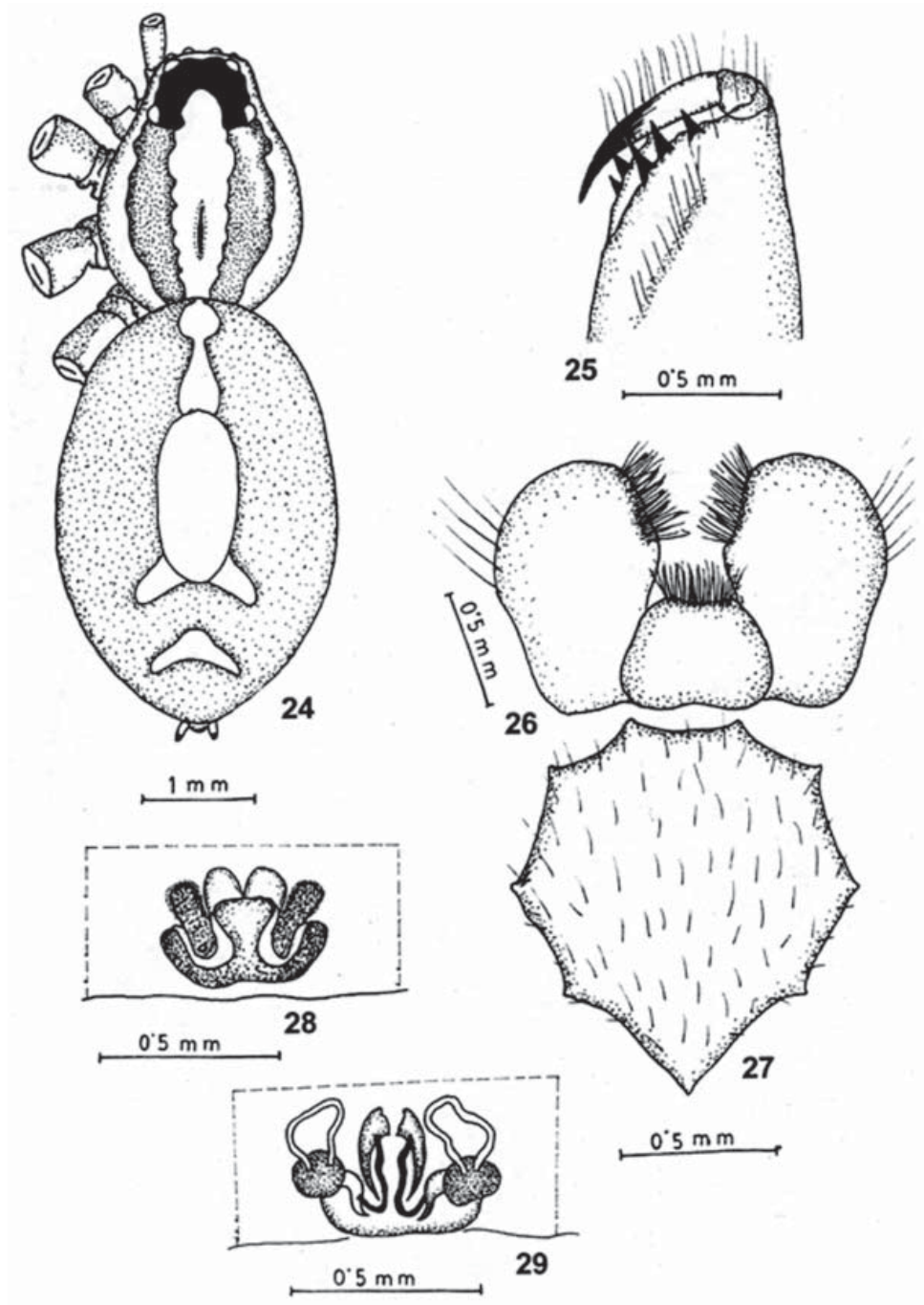
1970. *Lycosa shyamae* Tikader, *Rec. Zool. Surv. India*, **64**(1-4) : 67.

2009. *Lycosa shyamae* : Biswas, *Flora & Fauna of Bangladesh*, Arachnida, **18**(1) : 221.

2014. *Lycosa shyamae* : Platnick, *World Spider Catalogue*, Version 14.5. American Museum of Natural History, New York.

Material examined : 2 ♀, Bagerhat, 9.IX.1991, Coll. V. Biswas; 2 ♀, Fairdpur, 13.VII.1992, Coll. V. Biswas; 2 ♀, Jhenidah, 18.VIII.1989, Coll. V. Biswas; 1 ♀, Jessore, 9.IX.1992, Coll. V. Biswas; 1 ♀, Kustia, 19.XII.1991, Coll. V. Biswas.

Distribution: BANGLADESH: Bagerhat, Fairdpur, Jhenidah, Jessore, Kustia; INDIA (Tikader and Malhotra, 1980)



Figs. 24-29. *Lycosa shyamae* Tikader

24. Whole body (dorsal view); 25. Chelicerae; 26. Maxillae and Labium; 27. Sternum;
28. Epigynum; 29. Internal genitalia

6. *Lycosa tista* Tikader
(Figs. 30-35)

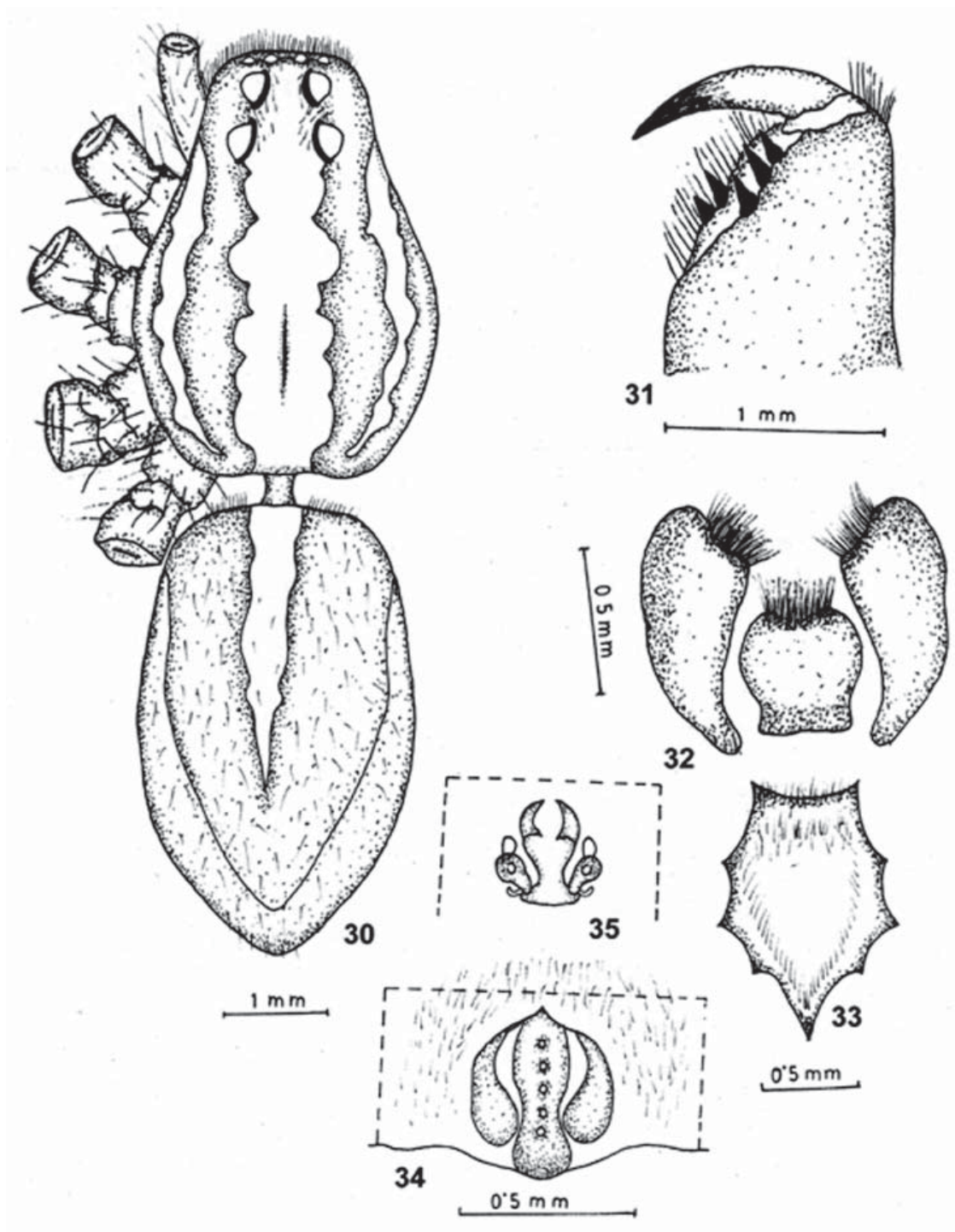
1970. *Lycosa tista* Tikader, *Rec. Zool. Surv. India*, **64**(1-4): 67.

1980. *Lycosa tista* Tikader & Malhotra, *Fauna of India, Spiders, Lycosidae*, **1**(2): 384.

2009. *Lycosa tista* : Biswas, *Flora & Fauna of Bangladesh, Arachnida*, **18**(1): 221.

2014. *Lycosa tista*: Platnick, *World Spider Catalogue, Version 14.5*. American Museum of Natural History, New York.

Material examined: 2 ♀, Bagerhat, 11.XII.



Figs. 30-35. *Lycosa tista* Tikader

30. Whole body (dorsal view); 31. Chelicerae; 32. Maxillae and Labium; 33. Sternum;
34. Epigynum; 35. Internal genitalia

1991, Coll. V. Biswas; 1♀, ADI, Fairdpur,
11.VIII.1992, Coll. V. Biswas; 1♀, Shikerpur,
Jhenidah, 8.VII.1991, Coll. V. Biswas; 2♀,
Khajura, Jessore, 1.X.1990, Coll. V. Biswas; 1♀,

Chalna, Khulna, 11.VII.1991, Coll. V. Biswas;
1♀, Kustia, 12.IX.1991, Coll. V. Biswas; 1♀,
Manikganj, 8.IX.1993, Coll. V. Biswas; 2♀,
Pirojpur, 5.III.1992, Coll. V. Biswas.

Distribution: BANGLADESH: Bagerhat, Fairdpur, Jhenidah, Jessore, Khulna, Kustia, Manikganj, Pirojpur; INDIA (Tikader and Malhotra, 1980)

started in 1994, has revealed the existence of the above species for a particular area of Bangladesh. Identity of the species were later confirmed by the 'Zoological Survey of India', Kolkata.

SUMMARY

The wolf spiders of the genus *Lycosa* Latreille, Bangladesh is represented by 6 (six) species namely *L. gravelyi* n. sp., *L. japhlongensis* n. sp., *L. mackenziei* Gravely, *L. shyamae* Tikader, *L. picta* n. sp. and *L. tista* Tikader.

The study of the spiders of this area was

ACKNOWLEDGMENTS

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