



ORB-WEAVING SPIDERS OF BANGLADESH-II : GENUS *LARINIA* SIMON (ARANEAE : ARANEIDAE) WITH DESCRIPTION OF A NEW SPECIES

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INTRODUCTION

Members of the orb-weaving spider family Araneidae (=Argiopidae) are abundant throughout Bangladesh but have little attention on their study. Chowdhury and Pal (1984), Biswas, *et al.* (1993), Okuma, *et al.* (1993), Begum and Biswas (1997) and Biswas and Raychaudhuri (1998 & 2003) have made some contributions on these spiders from different parts of the country. Studies on these spiders in neighbouring countries like-India (Pocock, 1900; Tikader, 1970, '82; Tikader & Bal, 1981; Tikader & Biswas, 1981; Saha, *et al.*, 1995; Biswas, *et al.*, 1997), Burma (Thorell, 1895), Pakistan (Dyal, 1935), China (Chen & Zhang, 1991; Yin, *et al.*, 1997; Zhao, 1993; Song, *et al.* 1999) and Japan (Tanikawa, 1989; Yaginuma, 1986) are rather well documented. Beside these, Kaston (1948), Levi (1975) and Barrion and Litsinger (1995) have valuable contributions on these spiders in different parts of the globe.

The genus *Larina* Simon was recorded since 1992 from Bangladesh and composed of 3 (three) species of which *L. modhuchhandae* is recognised as new to science while *L. phthisica* (L. Koch) and *L. chloris* (Audouin) are new record for the country. An illustrated description of the new species together with the key are provided herewith.

The types are at present in the collection of the Department of Zoology, Government P.C. College, Bagerhat and will be deposited to the Museum of the Department of Zoology, University of Dhaka, Bangladesh in due course of time.

SYSTEMATICS

Genus *Larina* Simon

1874. *Larina* Simon, *Arach. de France*, 1: 115.
1948. *Larina* : Kaston, *Bull. Conn. St. Geol. nat. Hist. Surv.*, 70: 228.
1975. *Larina* : Levi, *Bull. Mus. comp. Tool. Harv.*, 145(3): 102.
1982. *Larina* : Tikader, *Fauna of India, Spiders (Araneidae : Gnaphosidae)* 2(1) : 205.
1986. *Larina* : Yaginuma, *Spiders of Japan in colour*, : 115.
1997. *Larina* : Yin, *et al.*, *Fauna Sinica, Arachnida (Araneae: Araneidae)* : 312.
1999. *Larina* : Song, *et al.*, *The Spiders of China* : 291.
2005. *Larina* : Majumder, *Mem. zool. Surv. India*, 20 (3): 12.

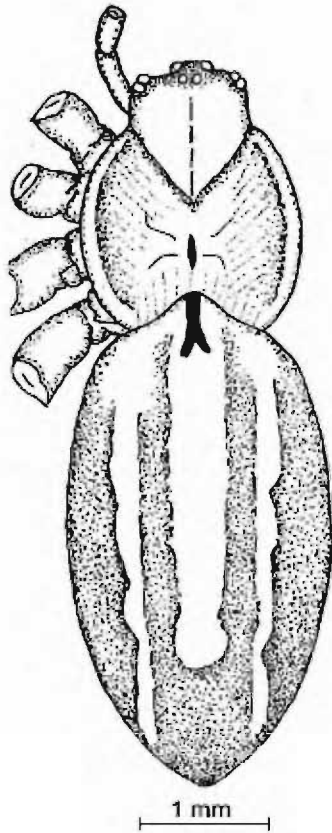
Diagnosis : Body elongate, abdomen 2-3 times longer than cephalothorax. Cephalothorax rather long, scarcely convex posteriorly, 2nd row of eyes nearly straight, laterals nearly equal and closely placed; posteromedians nearer, anteromedians widely separated; ocular area trapezoid. Chelicerae not long, thick, teeth variable. Maxillae longer than wide. Legs long and slender, clothed with strong spines and hairs.

Abdomen elongate, with a single median, blunt, pointed in front; caudal process absent; ventrally with longitudinal white band guarded laterally by black patches between epigastric furrow and spinnerets.

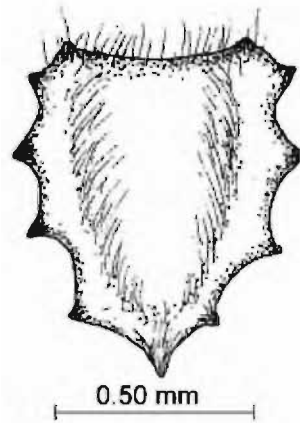
Type-species : *Larina lineata* (Lucas).

1. Present Address : Department of Zoology, Khulna Govt. Women's College, Khulna-9000, Bangladesh.

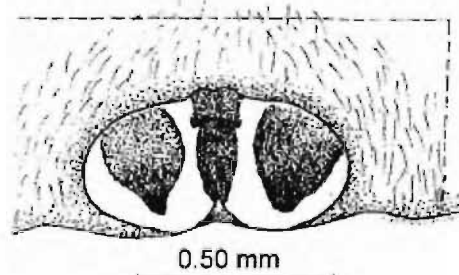
Figs. 1-6 : *Larinia chloris* (Savigny & Audouin)



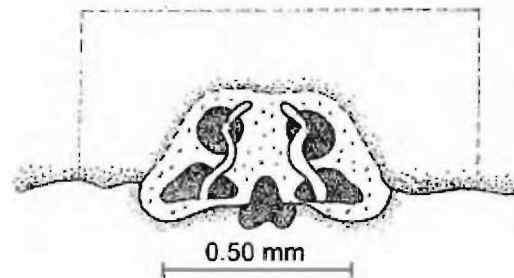
Figs. 1. Female dorsal view (legs omitted)



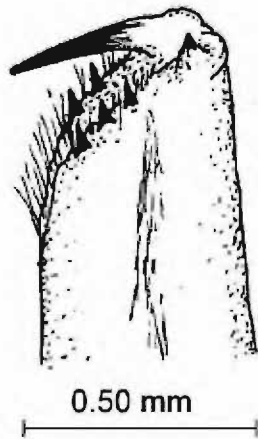
Figs. 4. Sternum



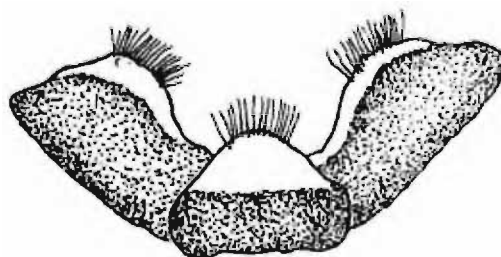
Figs. 5. Epigynum



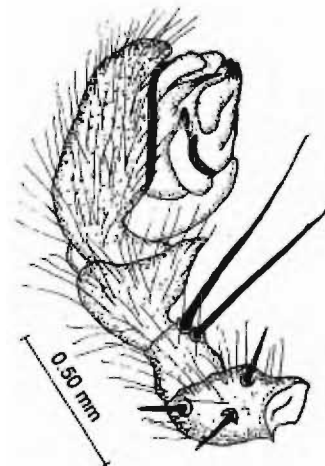
Figs. 6. Internal genitalia



Figs. 2. Chelicerae

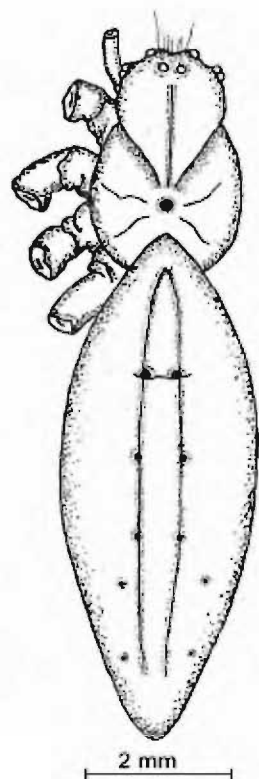


Figs. 3. Maxillae and Labium

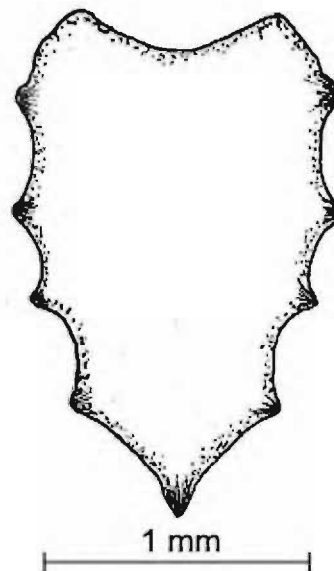


Figs. 7. Male palp

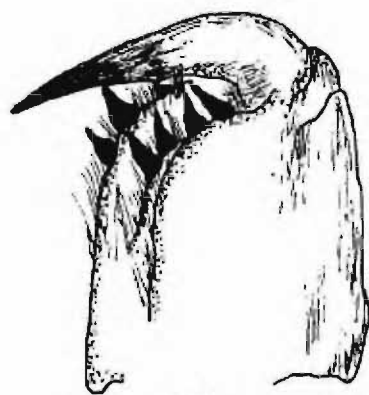
Figs. 8-13 : *Larinia modhuchhandae* sp. n.



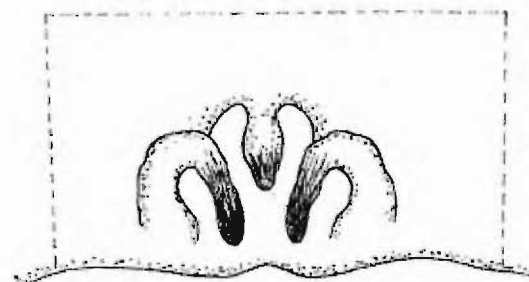
Figs. 8. Female dorsal view (legs omitted)



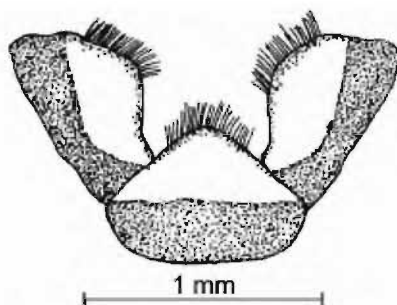
Figs. 11. Sternum



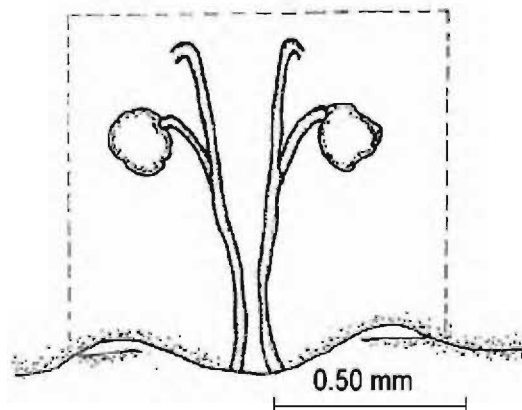
Figs. 9. Chelicerae



Figs. 12. Epigynum

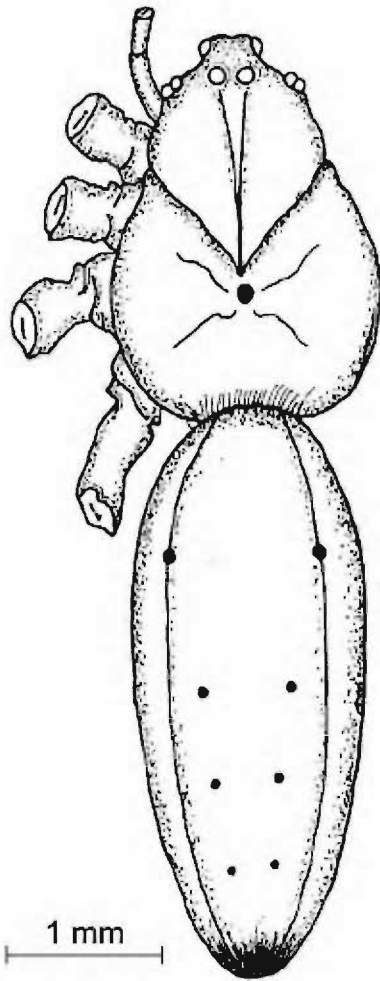


Figs. 10. Maxillae and Labium

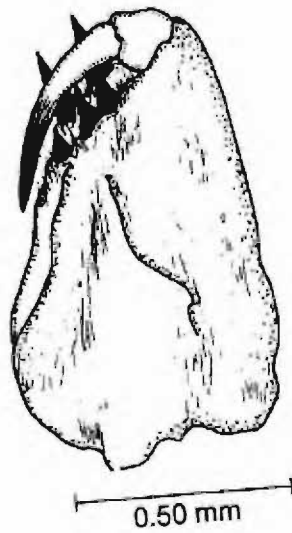


Figs. 13. Internal genitalia

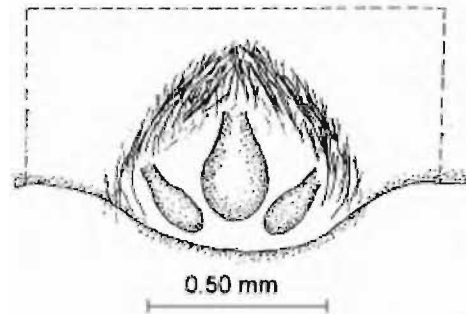
Figs. 14-19 : *Larinia phtisica* (L. Koch)



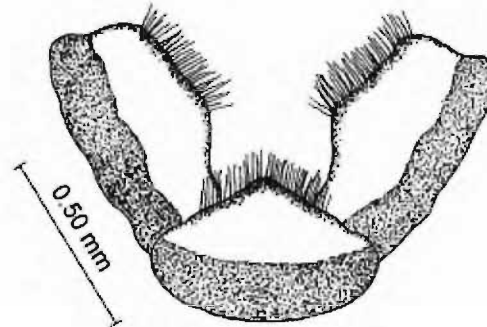
Figs. 14. Female dorsal view (legs omitted)



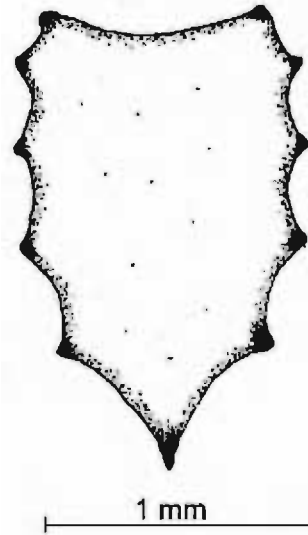
Figs. 15. Chelicerae



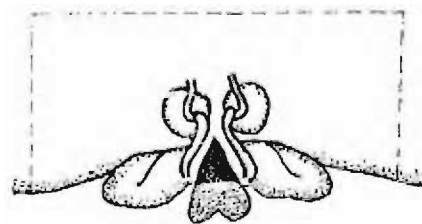
Figs. 16. Maxillae and Labium



Figs. 17. Sternum



Figs. 18. Epigynum



Figs. 19. Internal genitalia

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

Key to the species

1. Abdomen spindle-shaped, more or less pointed at both ends; cephalic region anteromedially never produced; inner margin of chelicerae with 4 teeth; epigyne and internal genitalia as in figs. 12 and 13
*madhuchhandae* sp. n.

Abdomen elongately oval, but never boat shaped; uphalic region anteromedially produced into a protuberance; inner margin of chelicerae with 3 teeth.....2

2. Cephalic region with 'Y'-shaped marking; fovea in the thoracic region round, radii distinct; abdomibal dorsum with sigilla; epigyne and internal genitalia as in figs. 18 and 19.....
*phthisica*

Cephalic region without any such marking; fovea in the thoracic region eongate, radii indistinct; abdominal dorsum without any sigilla; epigyne and internal genitalia never as above, figs. 5 and 6
*chloris*

**1. *Larinia chloris* (Audouin)
 (Figs. 1-7)**

- 1825. *Epeira chloris* Audouin, Descr. de l'Egripte, **22** : 347.
- 1872. *Argiope epeiroides* : O.P. Cambridge, *Proc. zool. Soc. Lond.*, : 301.
- 1911. *Larinia epeiroides* : Petrunkevitch, *Bull. Am. Mus. nat. Hist.*, **29** : 353.
- 1937. *Larinia chloris* : Bodenheimer, *Mem. Inst. Egypte.*, **33** : 238.
- 1982. *Larinia chloris* : Tikader, *Fauna of India, Spiders*, **2(1)** : 206.

Material examined : 2♀, Durbarchar, Sunderban forest, Bagerhat, 15. XII. 1991, Coll. V. Biswas; 10, Jessore, 19. IX. 1992, Coll. V. Biswas; 1♂ 1♀, Mymensingh, 15. V. 1993, Coll. V. Biswas; 1♀, Tangail, 2. V. 1993, Coll. V. Biswas.

Distribution : BANGLADESH : Bagerhat (Sunderban), Jessore, Mymensingh, Tangail; EGYPT; INDIA; ISRAEL; LIBIYA; SYRIA; UGANDA (Tikader, 1982).

**2. *Larina madhuchhandae* sp. n
 (Figs. 8-13)**

General : Cephalothorax brownish-yellow; legs pale yellow; abdomen yellowish with light brown spots. Total body length (Holotype) 9.00 mm. Carapace 3.00 mm. long, 2.00 mm wide; abdomen 6.00 mm long, 2.20 mm wide.

Cephalothorax : Longer than wide, anteriorly narrowing; cephalic region raised, constricted anteromedially with two distinct cervical furrows, medially with a longitudinal brown line. Eyes pearly-white, similar; anterior row strongly recurved while posterior row nearly straight; lateral eyes close, placed marginally; anteromedians situated on 2 protuberances; ocular quad ateriorly wide and posteriorly narrowing. Thoracic region wide, with distinct radii. Chelicerae brown, broad, each of inner and outer margins with 4 dissimilar and 3 similar teeth (Fig. 9). Maxillae brown, longer than wide, anteriorly broad and scopulate (Fig. 10). Labium brown, wider than long, anteriorly bluntly pointed and scopulate (Fig. 10). Sternum elongate, cylindrical, posteriorly pointed, anteriorly wide and concave (Fig. 11). Legs long and slender, clothed with spines and hairs; leg formula 1243 and measurments (in mm) as in Table-1.

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	2.70/2.70	1.10/1.10	2.70/2.70	4.20/4.20	1.10/1.10	11.80/11.80
II	2.50/2.50	0.85/0.85	2.20/2.20	2.50/2.50	0.80/0.80	8.85/8.5
III	1.30/1.30	0.50/0.50	1.00/1.00	1.10/1.10	0.50/0.50	4.40/4.40
IV	2.65/2.65	0.90/0.90	2.00/2.00	2.20/2.20	0.60/0.60	8.35/8.35

Table-1. Length of legs of female (O) holotype of *Larinia madhuchhandae* sp. n.

Abdomen : Elongated, boat-shaped, both ends pointed; dorsum with median white longitudinal band and 5 pairs of sigilla, clothed with sharp hairs; ventrally pale; epigyne and internal genitalia as in figs. 12 and 13.

Male : Unknown.

Holotype : Female in spirit.

Paratype : 2♀, Bagerhat (Sunderban), 12. IX. 1992, Coll. V. Biswas.

Type-locality : BANGLADESH : Durbarchar and Hironpoint, Sunderban forest, Dist. Bagerhat, 15. XII. 1991 & 12. IX. 1992, Coll. V. Biswas.

Etymology : The species has been named after one of my laboratory mate Mrs. Madhuchhanda Kundu who helped me in many ways during the course of present study.

Remarks : The species appears close to *L. tyloridia* Patel (Patel, 1975) because of the typical wedge-shaped abdomen, maxillae, labium and sternum. But however, it stands distinct in having strongly raised and produced cephalic region, deeply distinct cervical furrows, rounded fovea, four strong teeth on inner margin of chelicerae besides the epigynum. None of the other *Larinia* species (Tikader, 1982; Tanikawa, 1989; Yaginuma, 1986; Kaston, 1948) seem to show any similarity with the present species. And accordingly, the species is described as new to science.

3. *Larina phthisica* (L. Koch) (Figs. 14-19)

1871. *Epeirtaphthisica* L. Koch, *Die Arachniden Australiens*, 1(1) : 193.
1878. *Lipocrea phthisica* : Thorell, *Annali. Mus. civ. Geneva*, 13 : 6.
1887. *Epeira phthisica* : Keyserling, *Die Arachniden Australiens*, 2 : 171.
1887. *Larinia phthisica* : Simon, *Annl. Soc. ent. Fr.*, 7(6) : 186.

1900. *Araneus phthisica* : Hogg, *Proc. Soc. Victoria (N.S.)*, 13(1) : 74.
1982. *Epeira phthisica* : Tikader, *Fauna of India, Spiders*, 2(1) : 208.
1995. *Larinia phthisica* : Barrion & Litsinger, *Rice-land spiders of South and South East Asia, IRRJ*, : 614.
1997. *Larinia phthisica* : Yin, *et al.*, *Fauna Sinica, Spiders* : 321.
2005. *Larinia phthisica* : Majumdar, *Mem. Zool. Surv. India*, 20(3) : 12.

Material examined : 1♀, Barisal, 12. VIII. 1992, Coll. V. Biswas; 1♀, Jhenidah, 19. V. 1993, Coll. V. Biswas; 1♀, Faridpur, 19. IX. 1992, Coll. V. Biswas; 1♀, Faridpur, 29. IX. 1992, Coll. V. Biswas.

Distribution : BANGLADESH : Barisal, Jhenidah, Faridpur; INDIA (Tikader, 1982); JAPAN (Yaginuma, 1986); CHINA (Yin, *et al.*, 1997; Song, 1999); THE PHILIPPINES (Barrion & Litsinger, 1995).

SUMMARY

The present paper deals with 3 (three) species of orb-weaving spiders of the genus *Larinia* Simon from Bangladesh. Of these, *L. madhuchhanda* is recognised as new to science while *L. chloris* (Audouin) and *L. phthisica* (L. Koch) are new record for the country.

The study on these spiders was started in 1992 have revealed the existence of the above species of a particular area of Bangladesh. Identity of the species were later confirmed from the Zoological Survey of India, Kolkata.

ACKNOWLEDGEMENTS

The authors are grateful to Dr. S.C. Majumder, Scientist-SD (Retd.), Sunderban Field Research Station, Zoological Survey of India, Canning, West Bengal, for confirmation of the identity of the species and the Head of the Department of Zoology, University of Calcutta, for Providing laboratory facilities.

REFERENCES

- Barrion, A.T. and J.A. Litsinger, 1995, *Riceland spiders of Asia and South East Asia*, CAB1-IRRI: 1-700 4- 8 plates.
Begum, A. and V. Biswas, 1997 A. list of spider fauna of Barisal division, Bangladesh (Araneae ; Arachnida). *Bangladesh. Zool.*, 25(2): 207-210.

- Biswas, V., H.R. Khan, N.Q. Kamal and A. Begum, 1993. A preliminary study of the rice-field spiders of Jhenidah, Bangladesh. *Bangladesh. Zool.*, **21**(1); 85-92.
- Biswas, V., S. Saha and D. Raychaudhuri, 1997. Araneidae and Therididae of Buxa Tiger Reserve, West Bengal : Genera *Leucauge* White, *Cyrtophora* Stoliczka and *Theridula* Emerton. *Entomon*, **22** (3 & 4): 229-233.
- Biswas, V. and D. Raychaudhuri, 1998. Spiders of the genus *Cyclosa* Menge (Araneae : Araneidae) from Bangladesh. *Entomon*, **23**(2): 45-53.
- Chen, Z.F. and Z.H. Zhang, 1991. Fauna of Zhejiang, Araneida. Zhejiang Sci. and Tech. Pub. House, : 356.
- Chowdhury, S.H. and S.K. Pal, 1984. Further report on rice-field spiders from Bangladesh. *Chittagong Univ. Studies*, II, **8** : 25-39.
- Dyal, S. 1935. Fauna of Lahore-4. Spiders of Lahore. *Bull Dept. Zool. Panjab Univ.*, **1** : 119-252.
- Kaston, B.J. 1948. Spiders of Connecticut. *Bull Conn. St. Geol. nat. Bist. Surv.*, **70** : 1-874.
- Okuma, C, N.Q. Kamal, Y. Hirashima, Z. Alam and T. Ogata, 1993. *Illustrated Monograph on the rice-field spiders of Bangladesh*. IPSA-JAICA, Salna, Gazipur. : 1-93.
- Patel, B.H. 1975. Studies on some spiders of the family Argiopidae (Arachnida : Araneae) from Gujrat, India. *Vidya J. Gujrat Univ. B(Sci.)*, XVI (1) : 153-167.
- Pocok, R.I. 1900. *The Fauna of British India*, Arachnida. Taylor & Francis, London: 279.
- Saha, S., V. Biswas, S.C. Majumder and D. Raychaudhuri, 1995. Araneidae of Buxa Tiger Reserve, West Bengal. *Acta arachnol.*, **44**(1) : 11-14.
- Song, D.X. M.S. Zhu and J. Chun, 1999. *The spiders of China*. Hebei Sci. Tech. Pub. House, 640.
- Tanikawa, A. 1989. Japanese spiders of the genus *Larinia* Simon (Araneae : Araneidae) *Acta arachnol.*, **38**(2) : 31-47.
- Thorel, T. 1895. *Descriptive Catalogue of the Spider of Burma*. British Meseum (Nat. Hist.), London : 1-406.
- Tikader, B.K 1970. Spider Fauna of Sikkim. *Rec. zool. Surv. India*, **64**(1-4) : 1-84.
- Tikdaer, B.K. 1982, *Fauna of India*, Spiders (Aranedidae), **2**(1) : 205-209.
- Tikader, B.K. and A. Bal, 1981. Studies on some orb-weaving spiders of the genera *Neoscona* Simon and *Araneus* Clerck of the family Araneidae (=Argiopidae) from India. *Rec. zool. Surv. India*, Occ. pap. no. **24** : 1-60.
- Tikader, B.K. and B. Biswas, 1981. Spider fauna of Calcutta and Vicinity. *Rec. zool. Surv. India., Occ. Pap. No.*, **30** : 1-149.
- Yaginuma, T. 1986. *Spiders of Japan in colour*. Hoikusha Pub. Co. Ltd., Osaka, 305.
- Yin, CM., J.F. Wang, M.S. Zhu, L.P. Xie, X.N. Peng and Y.H. Bao, 1997. *Fauna Sinica*, Spiders (Araneae : Araneidae). Science Press, Beijing, 460.
- Zhao, J.Z. 1993. *Spiders in the cotton fields in China*. Wuhan Press, China. 552.