

*Rec. zool. Surv. India* : 108(Part-1) : 43-57, 2008

**DESCRIPTION OF SIX NEW SPECIES OF SPIDERS OF THE  
GENERA *LATHYS* (FAMILY : DICTYNIDAE), *MARPISSA* (FAMILY :  
SALTICIDAE), *MISUMENOIDES* (FAMILY : THOMISIDAE), *AGROECA*  
(FAMILY : CLUBIONIDAE), *GNAPHOSA* (FAMILY : GNAPHOSIDAE)  
AND *FLANONA* (FAMILY : LYCOSIDAE)—FROM INDIA**

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**INTRODUCTION**

Spiders though ubiquitous, have remained a neglected group from India. About 100 years ago, a consolidated volume on the entire class Arachnida was published by Pocock (1900) in the Fauna of British India, which includes 215 species of spiders only. During last 40 years, mainly through the work Tikader (1962-1987), enormous amount of information on Indian Spiders has been gathered. The work on Indian spiders was initiated by Fabricius (1733), and subsequently followed by Simon (1894), Thorell (1898), Walckenaer (1805), Sundavall (1833), Gravely (1921), Gajbe (1999), besides Tikader as mentioned above. Apart from these, Simon (1884) worked on genus *Lathys* under the family Dictynidae from Canada; Westring (1961) studied on the genus *Agroeca* under the family Clubionidae from New England; Simon (1898) studied on the genus *Flanona* under the family Lycosidae from Sri Lanka. Recently Biswas (present author) has been working on Statewise occurrence and distribution of spider fauna of this country and documenting the same under the State Fauna Series. As a result of these studies a total of 1442 species belonging to 361 genera under 59 families are so far known from the Indian Sub-continent. This is merely 3.58% of the world spider species, since 39,000 species belonging to 3600 genera under 110 families have been reported from the globe.

All the type specimens are deposited in the National Collection of the Zoological Survey of India, Kolkata.

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Genus *Lathys* Simon

1884. *Lathys* Simon, *Bull. Soc. Zool. France*, **9** : 321

1858. *Lathys* : Chamberlin, R. V. and Gertsch, W. J. *The Spider Family-Dictynidae in America North of Mexico*, : 25.

1972. *Lathys* : Kaston, B. J. *How to know the Spider* "Pictured key nature series : 79.

*Diagnosis* : This species is much larger in size than the previously recorded species of the genus *Lathys*, which possesses dark brown cephalothorax and tiger-like ornamentation on their dorsal and ventral side of abdomen.

*Type-species* : *Lathys varia* Menge

*Distribution* : New England, Canada, Asia.

1. *Lathys mussooriensis* sp. nov.

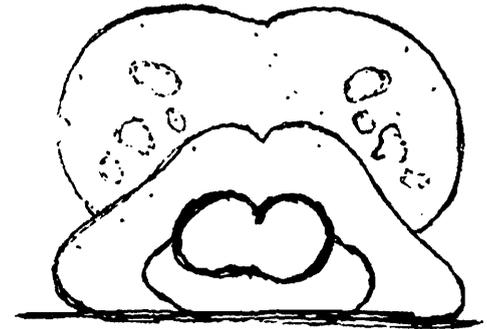
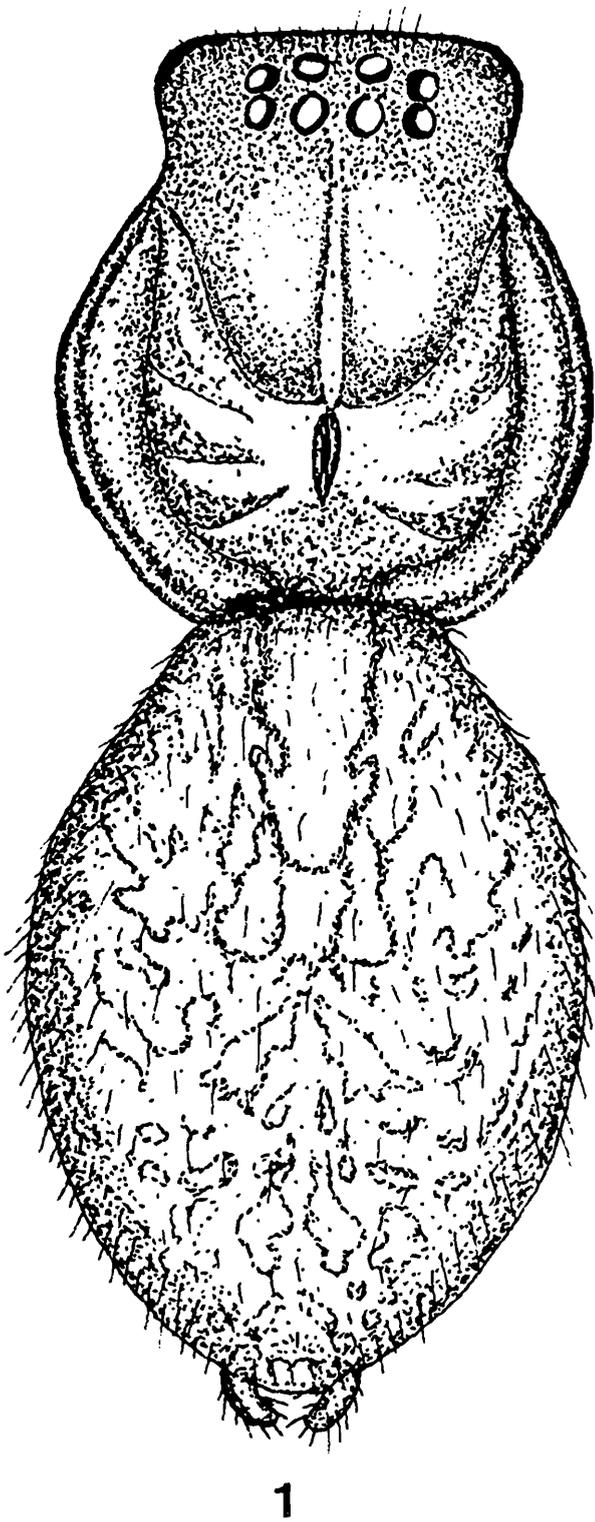
(Figs. 1-3)

*General* : Cephalothorax dark-brown in colour and larger in-size than the previous recorded species of the genus *Lathys*. Total length 15.00 mm. Carapace 7.00 mm. long, 5.00 mm wide; abdomen 8.00 mm. long, 6.00 mm wide. These spiders are peculiar in their body shapes look like as Theridiid, having the elongated abdomen. Detailed study of different morphological features, clearly shows that they are allied to Lycosidae.

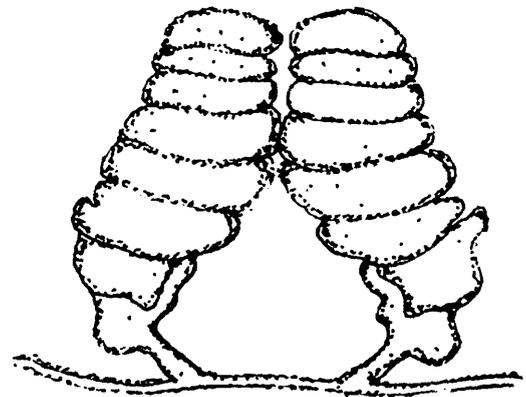
*Cephalothorax* : Cephalothorax is dark-brown in colour with characteristic shade, look like *Hippasa* (Lycosidae) with obscure border and median band longer than wide, convex, cephalic region slightly high and narrowing in front, clothed with fine hair, clypeus is low, centre is provided with a prominent and depressed fovea. Anterior row is slightly procurved and posterior row of eyes are slightly recurved. Out of eight heterogenous eyes, antero-median eyes are smaller than postero-median eyes. Antero-median eyes are pearly white in appearance, lateral eyes are close and each situated on a brown tubercle. Strong, stout and long chelicerae are provided with two teeth in inner margin and one prominent tooth in outer margin. Strong and stout fang present. Sternum sheiled-shaped, pointed behind and brown in colour. Labium as long as wide, brown, clothed with spine like hair and is provided with prominent scopulae. Legs are long, stout and strong, clothed with hair and spines having uniseriate calaminstrium on IV matatarsi and bear three tarsal claws. Male is not known till.

*Abdomen* : Elongated, oval clothed with spine-like hair. Dorsum of the abdomen covered with blackish brown tiger-like ornamentation. Ventral side also same as like as dorsal side. Epigyne and internal ganitalia as in text figs. (2 & 3).

*Type species* : Holotype female, paratype two females immature preserved in rectified spirit (70%). Registration numbers are 5582-83/18.



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Figs. 1-3. : (*Lathys mussoriensis*) sp. nov. ♀

1. Dorsal view (legs are omitted)

2. Epigyne

3. Internal genitalia

*Type-locality* : Mussoorri (Alt. about 8000 ft.), Uttaranchal, India, 21.x.2005, coll. Rakhi Roy from a corner of a wall within a heap of dry leaves.

*Distribution* : India : Mussoorri, Uttaranchal (New record). Elsewhere : North America, Canada).

*Remarks* : This species having some similarities with *Lathys foxii* Marx but differs from it in these successive characters (1) Size, length, colour and abdominal ornamentation of *Lathys mussooriensis* Sp. nov. differs from *Lathys foxii* Marx (2) Size and appearance eyes greatly varies from *Lathys foxii* Marx (3) Prominent and depressed fovea is present in *Lathys mussooriensis* Sp. nov. but no such fovea in *Lathys foxii* Marx (4) Epigyne and internal genitalia are also structurally different.

*Comments* : *Lathys* is one of the important genus under the family Dictynidae which was only found in America and Europe. Two genus as *Argenna* and *Dictyna* were recorded from India before. *Lathys mussooriensis* new species from Mussoorri is not only remarkable from Indian Sub-continent but also adds a new line to science of spider fauna from South East Asia.

#### Genus *Marpissa* Koch

1845. *Marpissa* Koch, Die. Arachn., 13 : 56.

1981. *Marpissa* : Tikader and Biswas, *Rec. zool. Surv. India*, occ. pap. No. (1) : 93.

*Diagnosis* : Cephalothorax longer than wide, cephalic region flat and low, widest behind the dorsal eyes. Eye region occupying little more than one-third of the cephalothorax; ocular trapezium about 1.5 times broader than long, parallel sided. Chelicerae with one tooth on inner margin and two teeth on outer margin. Sternum narrowed in front. Legs usually 1423 in the male and 4132 in female. In both sexes tibiae and matatarsi I and II provided with three and two pairs of ventral spines respectively.

*Type-species* : *Marpissa muscosa* Clerck.

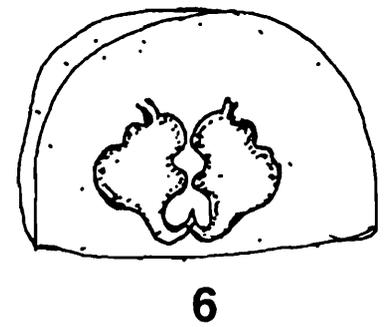
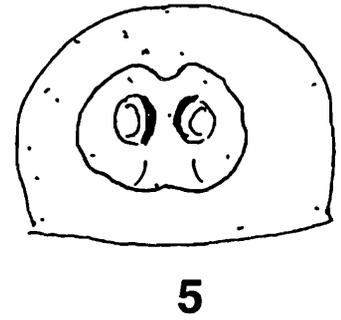
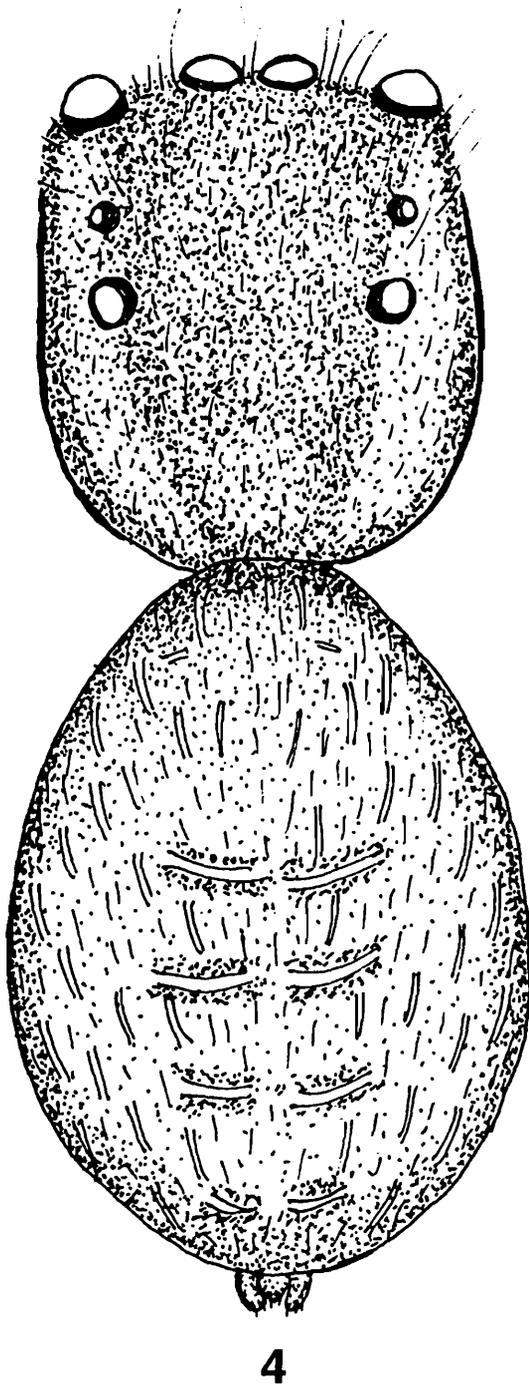
*Distribution* : Cosmopolitan.

#### 2. *Marpissa pauariensis* sp. nov.

(Figs. 4-6)

*General* : Cephalothorax deep brown, yellowish brown and legs are light brown in colour. Total length 7.50 mm. Carapace 3.50 mm. long, 3.00 mm. wide; abdomen 4.50 mm. long, 3.00 mm. wide.

*Cephalothorax* : Longer than wide, slightly high in front, gradually slopping towards posterior and lateral sides. Flat cephalic region with profuse fine hair and few comparatively long hair at the front of the cephalothorax. Three rows of eyes. Pearly white antero-median eyes are longer than the laterals. Second row of eyes are very small and situated more or less in equidistant from antero-



**Figs. 4-6. :** (*Marpissa pauriensis*) sp. nov. ♀

4. Dorsal view (legs are omitted)

5. Epigyne

6. Internal genitalia

lateral to postero-laterals. Posterior row of eyes larger than the second row of eyes. Chelicerae with one tooth on inner and very small two teeth on outer margin. Labium longer than wide, maxillae provided with scopulae. Sternum nearly oval narrowing anteriorly covered with whitish hair. Legs I and II provided with two pairs of ventral spines. Legs formulae are 4321.

*Abdomen* : Longer than wide, light brown, clothed with fine whitish hair. Ventral side pale in colour.

*Type species* : Holotype female preserved in rectified spirit (70%). Registration number is 5584/18.

*Type-locality* : Duga, District Pauri, Uttaranchal, India, 26.vi.2004, coll. S.K. Chatterjee & party.

*Distribution* : India : Uttaranchal, Duga.

*Remarks* : This species nearly resembles with *Marpissa decorata* Tikader but it is separated as follows (1) Colour pattern of abdomen is different. (2) There is no whitish lateral and longitudinal band in *Marpissa pauriensis* Sp. nov. which is present in *Marpissa decorata* Tikader (3) Epigyne and internal genitalia are also structurally different.

### Genus *Misumenoides* Cambridge

1900. *Misumenoides* Cambridge, *Biol. Centr. Amer. Zool.*, **2** : 136.

1963. *Misumenoides* : Tikader, *Proc. Indian Acad. Sci.*, **58** (5) : 258.

1965. *Misumenoides* : Tikader, *Proc. Indian Acad. Sci.*, **61**(5) : 279.

*Diagnosis* : Cephalothorax relatively flatter, clypeus vertical, with a white anterior carina curving to allatum; lateral eyes situated on a common and strongly projecting processes. Tibiae I and II without prolateral spiniforms and without a proventroapical spiniform; tarsi I and II without prolateral spiniforms. Abdomen oval, wider behind than the middle.

*Type species* : *Misumenoides magna* (Keyserling)

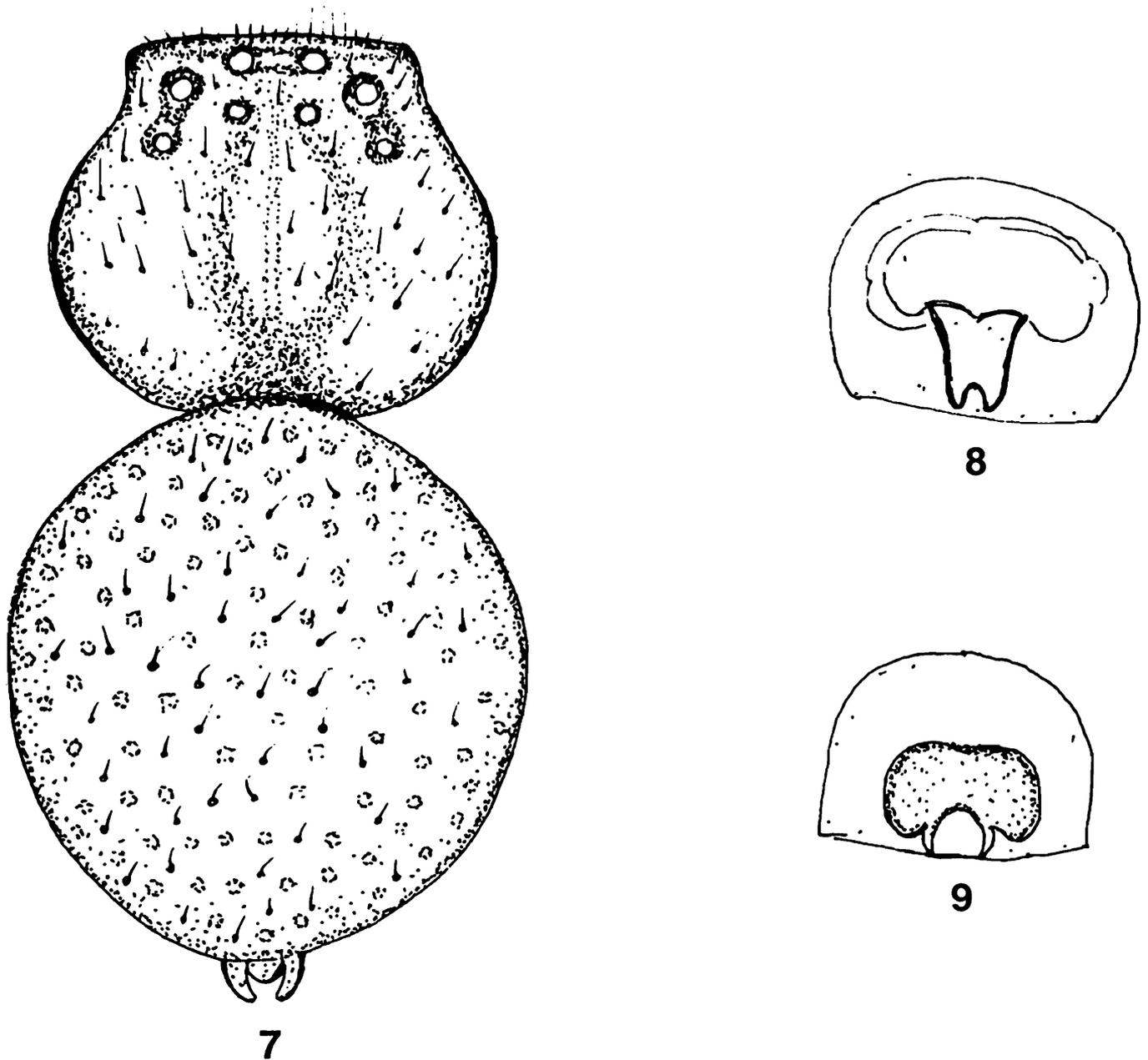
*Distribution* : America, Asia.

### 3. *Misumenoides naginae* sp. nov.

(Figs. 7-9)

*General* : Cephalothorax brownish yellow, legs yellowish brown, abdomen creamy in colour. Total length 8.50 mm. Carapace 3.00 mm. long, 2.50 mm. wide; abdomen 6.00 mm. long, 5.00 mm. wide.

*Cephalothorax* : Cephalothorax slightly longer than wide, scanty hair present. Cephalic region slightly high. Eyes are round, black, both rows recurved. Posterior row of eyes are strongly recurved than the anterior row. Eyes are ringed with white tubercle. Anterior and posterior lateral eyes are



**Figs. 7-9. :** (*Misumenoides naginae*) sp. nov. ♀

7. Dorsal view (legs are omitted)

8. Epigyne

9. Internal genitalia

situated on prominent white tubercles. Ocular quad wide than long. Clypeus high, margin provided with seven spines directed forwardly. Posterior median region of cephalothorax is slightly yellowish in colour and slightly high than the laterals. Presence of number of "red-dots" with hair on cephalic region. Sternum heart-shaped, pointed behind with fine hair. Legs are long and stout. Legs formulae are 2134. Tibiae of I and II with six pairs of spine-like projections and metatarsus with seven pairs of ventral spines.

*Abdomen* : Round, sac-like in appearance. Dorsum of the abdomen ornamented with number of red-dots having spiny projections from it. Posterior end of abdomen slightly pointed than the anterior. Middle part of ventral side of abdomen with chalk-white dots. Epigyne with characteristic features.

*Type species* : Holotype female preserved in rectified spirit (70%). Registration number is 5586/18.

*Type-locality* : Haridwar, Garwall Hills, Uttaranchal, India, 26.x.2003, coll. Bijan Biswas.

*Distribution* : India : Haridwar, Uttaranchal.

*Remarks* : *Misumenoides naginae* Sp. nov. is closely related to *Misumenoides shulli* Tikader but it can be distinguished from it as follows (1) Ocular area with deep brown patch present on *Misumenoides shulli* Tikader but there is no such *Misumenoides naginae* Sp. nov. (2) Postero-median of cephalothorax yellowish in colour in *Misumenoides naginae* Sp. nov. but in *Misumenoides shulli* Tikader there is no such colour. (3) Epigyne and internal genitalia are also structurally different.

#### Genus *Agroeca* Westring

1961. *Agroeca* Westring, *Araneae Svocicae Descriptae*, Goathoburgi : Sumter at Litteris, D.F. Bennier.

1940. *Agroeca* : Comstock, J.H. *The Spider Book*, : 588.

1972. *Agroeca* : Kaston, B.J. *How to know the spiders*, : 219.

*Diagnosis* : Cephalothorax rather flat, about three fourths as wide as long, usually orange brown with dusky blotches and with a black marginal stripe. Both row of eyes are procurved. The abdomen is orange brown with grey blotches.

*Type-species* : *Agroeca protensis* Westring

*Distribution* : New England.

#### 4. *Agroeca gangotrae* sp. nov.

(Figs. 10-12)

*General* : Cephalothorax deep brown; abdomen and legs are light brown in colour. Total length 12.00 mm. Carapace 6.50 mm. long, 4.50 mm. wide; abdomen 7.50 mm. long, 5.00 mm. wide.

*Cephalothorax* : Longer than wide, cephalic region high. Eyes are in two rows. Both rows are slightly recurved. Both laterals are very close to each others. Posterior median eyes comparatively



larger in size and pearly white in colour. Markings along the radial furrows are very faint. Sternum heart-shaped, pointed behind. Maxillae longer than wide, stout and with pubescence. Labium moderate size with hair. Chelicerae covered with dense hair and with eleventh teeth on outer margin and nine teeth on inner margin. Legs are long, stout and covered with hair and spines.

*Abdomen* : Oval in shape, covered with spine-like hair, light brown in colour. Dorsum of the abdomen covered with broad and small white patches. Two pairs of sigilla present. Lateral side of the dorsum with deep brown longitudinal patches. Epigyne with characteristic features.

*Type species* : Holotype female, paratype five females preserved in rectified spirit (70%). Registration numbers are 5588-89/18.

*Type-locality* : Forest area ca 3 K.M. from Sandar on Chaubata Road, Dist. Pitoragarh, Uttaranchal, India, 19.xii.1989 (1900 Mtrs.), coll. S. C. Verma.

*Distribution* : India : Uttaranchal, Pittoragarh, Elsewhere : New England.

*Remarks* : *Agroeca gangotrae* Sp. nov. is closely related to *Agroeca ornata* Bank due to their morphological characters but differs of the two such as (1) Size, length, colour and abdominal ornamentation of two varied. (2) Presence of eleventh teeth on outer and nine teeth on inner margin of chelicerae in *Agroeca gangotrae* Sp. nov. but no such in *Agroeca ornata* Bank. (3) Epigyne and internal genitalia are also structurally different.

### Genus *Gnaphosa* Latreille

1804. *Gnaphosa* Latreille, *Nouv. Dict. Hist. Nat.*, **24** : 134.

1948. *Gnaphosa* : Kaston, *Bull. Conn. St. goel. nat. Hist. Surv.*, **70** : 1-87.

1966. *Gnaphosa* : Tikader, *Rec. Indian Mus.*, **59**(4) : 439.

1982. *Gnaphosa* : Tikader, *Fauna of India, Araneae : Spiders*, **2**(2) : 329.

*Diagnosis* : Cephalothorax nearly oval and broader in front, not attenuated. Pattern of widening streaks diverging from short fovea. Anterior row of eyes procurved occupying one third to one-half width of head. Posterior row considerably longer than anterior row and rather strongly recurved, medians irregular in outline, larger than laterals and further than each other. Sternum oval, pointed behind. Chelicerae not strong, inner margin with a prominent chitinous ridge, whose edge is concave and serrated. Outer margin with two teeth. Legs uniform in colour as carapace. Abdomen black or deep brown with generally six faint marks or impressions dorsally. Male palp with a strong single tibial apophysis.

*Type-species* : *Gnaphosa lucifuga* (Walckenaer)

*Distribution* : Europe, Asia, Africa, America.

5. *Gnaphosa kankhalae* sp. nov.

(Figs. 13-15)

*General* : Cephalothorax and legs are reddish brown, abdomen look like a leopard. Total length 10.50 mm. Carapace 4.50 mm. long, 3.00 mm. wide; abdomen 6.00 mm. long, 3.50 mm. wide.

*Cephalothorax* : Much longer than wide, gradually narrowing in front, convex, a prominent fovea at the middle of posterior part of the cephalothorax. Middle region of the cephalothorax comparatively light in colour, margin provided with the deep brown markings. A tuft of brownish hair present at the front of the cephalothorax. Two row of eyes, anterior row moderately recurved. Where as posterior row more or less straight or slightly procurved. Posterior median eyes comparatively large, elliptical in shape and pearly white in nature. Antero and postero lateral eyes are close to each other. Sternum nearly oval narrowing posteriorly. Broad labium not convergent in nature. Plate like maxillae with scopulae. Chelicerae strong, inner margin with very small three and outer margin with moderately big three teeth present. Legs are relatively strong, long and stout clothed with hair. Legs formulae are 4132.

*Abdomen* : Nearly elliptical, clothed with fine hair, beautifully ornamented with black and yellow stripes, like tiger. Ventral side pale yellow with brown dots. Three pairs of spinnerets.

*Type species* : Holotype female preserved in rectified spirit (70%). Registration number is 5585/18.

*Type-locality* : Rishikesh, Garwall Hills, Uttaranchal, India, 25.x.2003, coll. Bijan Biswas.

*Distribution* : India : Uttaranchal, Rishikesh.

*Remarks* : *Gnaphosa kankhalae* Sp. nov. is compared with *Gnaphosa harpax* Cambridge due to their morphological closeness but differs few points as such : (1) Lateral eyes of *Gnaphosa harpax* Camb. are equal in size where as antero and postero lateral eyes of *Gnaphosa kankhalae* Sp. nov. differs in size. (2) Presance of prominent sigilla is one of the remarkable abdominal characater of *Gnaphosa harpax* Camb. but completely absent in *Gnaphosa kankhalae* Sp. nov. (3) Epigyne and internal ganitalia differs accordingly in two species.

Genus *Flanona* Simon

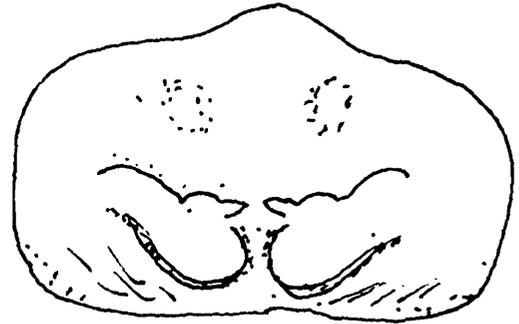
1898. *Flanona* Simon, *Hist. Nat. das Araignees.*, 2(2) : 349.

1924. *Flanona* : Gravely, *Rec. Indian Mus.*, 26 : 588.

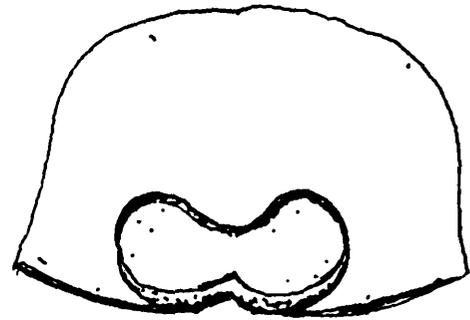
*Diagnosis* : This genus contains very small spiders (Total length not more than 2.00 mm.). Eyes of the anterior row equal in size; anterior laterals pearly white and anterior row of eyes as long as



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Figs. 13-15. : (*Gnaphosa kankhalae*) sp. nov. ♀

13. Dorsal view (legs are omitted)

14. Epigyne

15. Internal genitalia

the second row. Space enclosed between posterior eyes much wider behind than in front and long. Anterior and posterior spinnerets equal in length and apical pieces of both short and round.

*Type-species* : *Flanona puellula* Simon

*Distribution* : Sri Lanka.

#### 6. *Flanona harduarae* sp. nov.

(Figs. 16-18)

*General* : Cephalothorax is moderately brown where as abdomen brownish black and legs are yellowish brown with deep alternate bands. Total length 8.00 mm. Carapace 3.50 mm. long, 2.50 mm. wide; abdomen 4.50 mm. long, 3.00 mm. wide.

*Cephalothorax* : Longer than wide, convex, cephalic region abruptly narrow in front. Two rows of eyes both are slightly recurved. Postero-median eyes larger than antero-median eyes. Posterior row of eyes are pearly white in nature. Eyes are with black rim. Quad is wider than long. Centre of cephalic region provided with a distinct fovea and radiate few deep brown bands towards the marginal side. Sternum heart-shaped, pointed behind, deep brown colour and provided with hair. Labium brown, wide, tapers towards base. Maxillae broader at the distal end. Legs are long and slender with hair and spines. Legs formulae are 4231.

*Abdomen* : Longer than wide, anterior part of abdomen is abruptly taper. Dorsum of the abdomen clothed with fine hair. Ventral side of the abdomen is comparatively pale with brown patches at the middle region. Both pair of spinnerets are same size, short and round.

*Type species* : Holotype female preserved in rectified spirit (70%). Registration number is 5587/18.

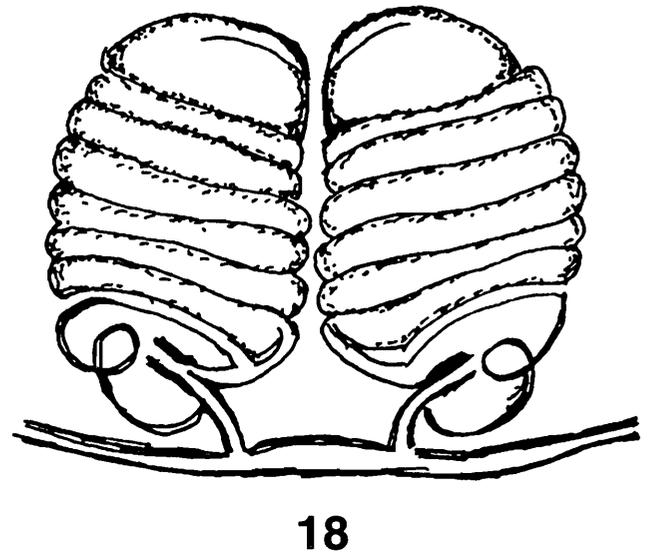
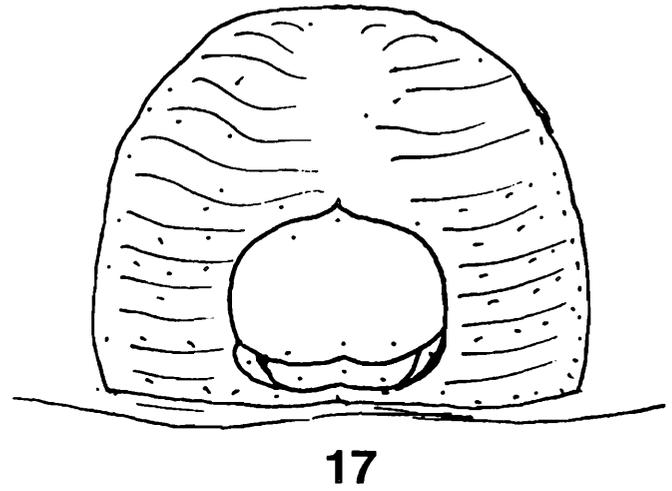
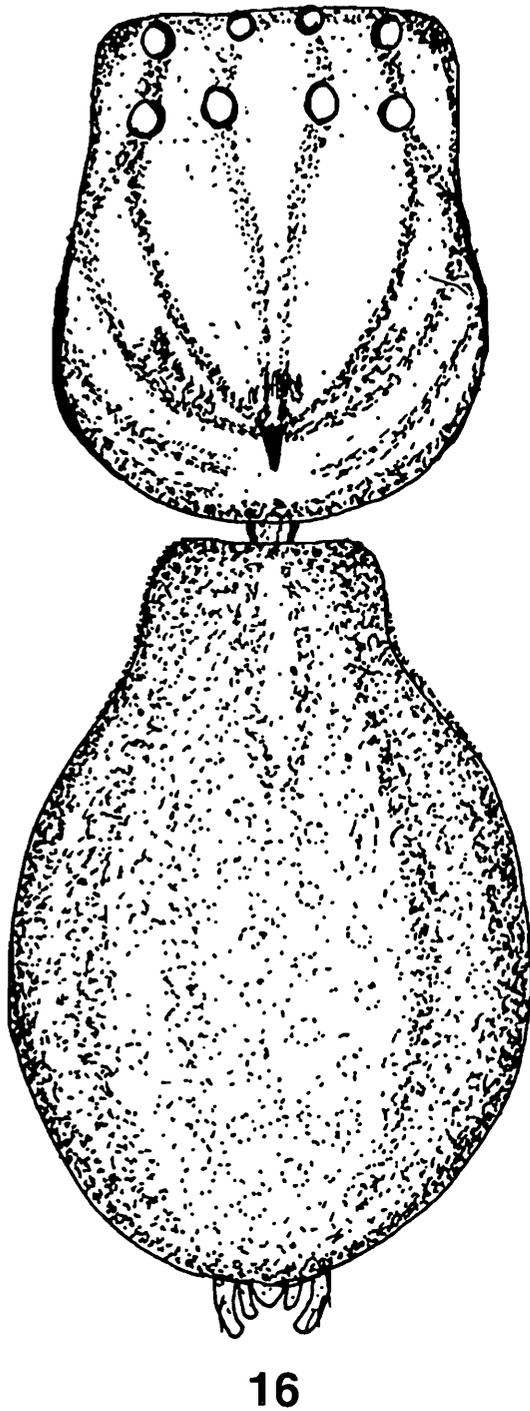
*Type-locality* : Copta, Chamoli, Garwall Hills, Uttaranchal, India, 19.vi.1978, coll. R.N. Bhargav.

*Distribution* : India : Uttaranchal, Copta; Chameli, Elsewhere : Sri Lanka.

*Remarks* : This species is closely similar to *Flanona puellula* Simon but differs from few points (1) The size of the body of *Flanona harduarae* Sp. nov. bigger than *Flanona puellula* Simon (2) Spinnerets are dissimilar in size (3) Epigyne and internal genitalia are also structurally different.

### SUMMARY

Six new species of spiders are described in this paper. Most of the species were collected from Uttaranchal, India. The new species belong to six genera under the families Dictynidae, Salticidae, Thomisidae, Clubionidae, Gnaphosidae and Lycosidae. Out of the six genera, three genera as such *Lathys*, *Agroeca* and *Flanona* are the first time recorded from Indian Sub-continent and also from South East Asia.



Figs. 16-18. : (*Flanona harduarae*) sp. nov. ♀

16. Dorsal view (legs are omitted)

17. Epigyne

18. Internal genitalia

## ACKNOWLEDGEMENT

Our sincere thanks to Dr. J.R.B. Alfred, Director, Zoological Survey of India for preparation of this paper.

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