

Two New Species of the Genus *Gnaphosa* and *Scotophaeus* (Gnaphosidae) from Pakistan

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ABSTRACT

Two new species of Gnaphosidae viz, *Gnaphosa eucalyptus* and *Scotophaeus faisalabadiensis* have been described. These specimens were collected from the ground surface of the cotton fields located in Faisalabad-Pakistan.

Key Words: *Gnaphosa eucalyptus*; *Scotophaeus faisalabadiensis*

INTRODUCTION

An examination of spiders collected from the floor of the cotton fields located in Faisalabad-Punjab (Pakistan), two new species one each belonging to genera *Gnaphosa* and *Scotophaeus* of the family Gnaphosidae were recorded. The genus *Gnaphosa* has been described from the Oriental region by Dyal (1935), Tikader and Gajbe (1977), Tikader (1982), Ovtsharenko (1992) while genus *Scotophaeus* by Simon (1893), Tikader (1962, 1966), Tikader and Biswas (1981), and Barrion and Litsinger (1995). This paper describes the two new species viz., *Gnaphosa eucalyptus* and *Scotophaeus faisalabadiensis*.

MATERIALS AND METHODS

Spiders were collected and identified from the cotton fields, University of Agriculture, Faisalabad following the standard procedures. The specimens were preserved in alcohol. The drawings of spiders were made using an eyepiece square grid. The type specimens are deposited in the Museum of the Department of Zoology and Fisheries, University of Agriculture, Faisalabad.

RESULTS AND DISCUSSION

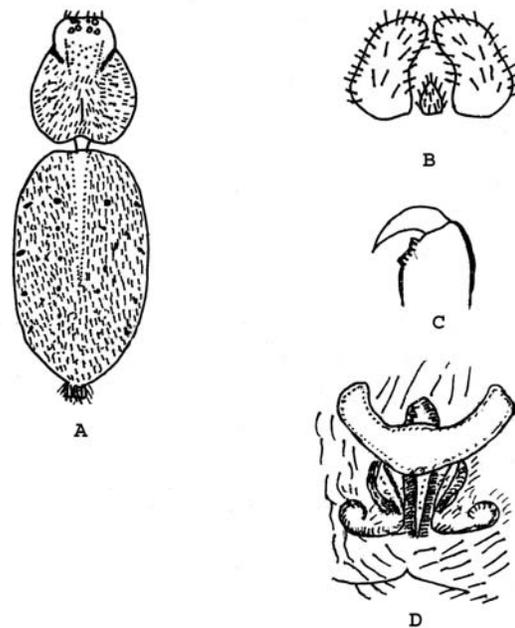
Gnaphosa eucalyptus sp. Nov ((Figs. 1A-D)

Male:

Size rather small (5.70-7.50 mm). Cephalothorax and legs brown in color while clypeus is lighter than cephalothorax. Abdomen dirty white

Cephalothorax. Cephalothorax heart-shaped, relatively broad in front, convex with a fovea, clothed with spine-like hairs and a brown narrow, line encircling almost the entire border of cephalothorax, the tufts of dark brownish hairs, three on each side. The anterior row of eyes slightly procurved (as seen from front). AME slightly smaller and darker than the anterior laterals; the posterior row recurved and longer than the anterior row, posterior medians white with irregular outline, slightly larger than the laterals and further away from each other than

Fig. 1. A. *Gnaphosa eucalyptus* sp nov., B. Labium, Maxilla, C. Chelicera, D. Epigynum ventral view



laterals. Clypeus less narrow, margin not bearing spines, directed forward. Sternum oval somewhat flat, pointed behind, densely clothed with spiny hairs. Inner margin of chelicera provided with a keel-like. Legs long, stout, with spiny-hairs and strong spines interspersed; I and IV legs longer than others, tibia I with two pairs of ventral spines and a single spine in between the former, metatarsi I and II with two pair of ventral spines. Scopulae does not extend upto the base of metatarsi I and II.

Abdomen. Elliptical, not covered with hairs, a dagger-shaped line more white than the ground colour of abdomen, this line extends from the base of the anterior mid-dorsal to the middle of abdomen. Several irregular tufts of dark brown hairs on the middle of abdomen. Ventral surface uniform less white than dorsal side, not clothed with hairs.

Female. It is similar to male, but differs in the following characters: Chelicerae reddish brown, vertical, promargin with three teeth and retromargin with one tooth. Spermathecae ball-like. Epigynum (Fig. 1D).

Measurements (mm): 10 ♂, 10 ♀

	Male		Female	
	Range	Mean±S.D.	Range	Mean±S.D.
B.L.	5.70-7.50	6.32±0.61	5.85-8.00	6.90±0.80
C.L.	2.80-4.20	3.56±0.53	3.00-4.60	3.55±0.53
C.W.	2.10-3.00	2.59±0.31	2.05-3.10	2.37±0.33
A.L.	2.00-3.10	2.63±0.47	2.20-3.20	2.45±0.26
A.W.	2.60-2.70	2.63±0.04	2.50-2.80	2.60±0.09

B.L. = body length from anterior edge of cephalothorax tip of abdomen, CL = carapace length, CW = carapace width, AL = abdominal length, AW = abdominal width, S.D. = standard deviation

Material examined: 90

Holotype: 1 female, 21-VII-93, RCF (reference cotton field)

Allotype:

3 ♂, 21-VII-93, RCF; 6 ♂ 2 ♀, 19-VIII-93, RCF; 4 ♂ 1 ♀, 21-IX-93, RCF; 2 ♂ 1 ♀, 19-X-93, RCF; 3 ♂, 21-XI-93, RCF; 2 ♂, 19-XII-93, RCF; 2 ♂ 1 ♀, 19-VI-93, TCF (treated cotton field); 4 ♂ 2 ♀, 21-VII-93, TCF; 1 ♂, 19-VIII-93, TCF; 1 ♀, 21-IX-93, TCF; 1 ♂, 19-X-93, TCF; 1 ♂, 21-XI-93, TCF; 2 ♂ 2 ♀, 19-VI-94, RCF; 5 ♂ 3 ♀, 19-VIII-94, RCF; 9 ♂ 6 ♀, 21-IX-94, RCF; 6 ♂ 4 ♀, 19-X-94, RCF; 1 ♂ 3 ♀, 21-XI-94, RCF; 3 ♂, 19-XII-94, RCF; 2 ♂, 19-VI-94, TCF; 1 ♂ 2 ♀, 21-VII-94, TCF; 1 ♂ 1 ♀, 19-VIII-94, TCF; 1 ♂, 21-IX-94, TCF.

Derivation of name. The name of this species has been derived from Eucalyptus, as two traps in the cotton field were located under its fallen leaves.

Repository. The holotype and allotype of this species have been deposited in the Museum, Department of Zoology and Fisheries, University of Agriculture, Faisalabad, Pakistan.

Habitat. It has been collected from the leaf-litter under dense plantation.

This species differs from *Gnaphosa kailana* Tikader as follows: i. Epigyne of two species are structurally different.

ii. Markings on the ventral surface of abdomen is quite different in two species, iii. *Clypeus* in two species is quite different, iv. The scopulae are lacking not extending to the base of metatarsi I and II in *G. eucalyptus* while it is extending in *G. Kailana*, v. Sternum in *G. kailana* is oval while in *G. eucalyptus* it is somewhat flat.

***Scotophaeus faisalabadiensis* sp. nov (Figs. 2A-D)**

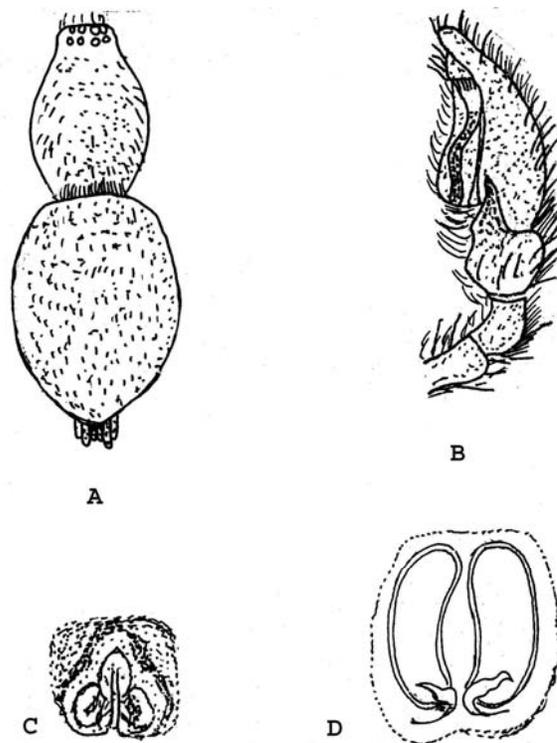
Male

Size small (7.55-8.90 mm). Cephalothorax reddish brown, legs light yellow and abdomen greenish in colour.

Cephalothorax. Longer than wide, covered with hairs,

narrow in front, posterior provided with conspicuous fovea. The anterior row of eyes procurved; anterior medians circular,

Fig. 2. A. *Scotophaeus faisalabadiensis* sp nov., B. Palp lateral view, C. Epigynum ventral view, D. Internal genitalia



black, larger than laterals, and closer to the adjacent laterals than to each other. The posterior row of eyes slightly longer than the anterior row, procurved, more or less equal and equidistant from each other. posterior medians silvery white, elliptical in shape. Clypeus narrow. Sternum nearly elliptical, pointed behind, clothed with hairs. Labium not triangular, longer than wide, anterior margin of maxillae provided with conspicuous scopulae. Legs relatively long and strong, clothed with hairs and some spines, scopulae extend upto the base of metatarsi I and II. Legs formula 4123. Pedipalpi brown, each with dark brown retro-lateral tibial apophysis acutely pointed. Each cymbium short with a minute embolus.

Abdomen. Pale yellow brown, longer than wide, more or less elliptical; slightly narrowed behind, clothed with hairs. Ventral side slightly pale in colour. Spinnerets very prominent, posterior spinnerets longer than the rest.

Female. It tallies with the male except the following characters: Cephalothorax dark brown, carapace with markings, covered with silvery pubescence; sternum oval, slightly pointed behind; chelicerae vertical, inner and outer margins with three small teeth each. Epigynum (Fig. 2C).

Measurements (mm): 10 ♂ 10 ♀

	Male		Female	
	Range	Mean± S.D.	Range	Mean± S.D.
B.L.	7.55-8.90	7.86±0.54	8.00-8.95	8.49±0.48
C.L.	3.55-4.23	3.76±0.32	3.70-4.35	4.02±0.33
C.W.	2.66-3.20	2.87±0.27	2.80-3.35	3.06±0.28
A.L.	4.19-4.98	4.65±0.39	4.25-5.10	4.74±0.45
A.W.	1.97-2.35	2.25±0.15	2.10-2.40	2.25±0.15

Material examined: 15**Holotype:** 1 ♂, 19-VIII-93, RCF**Paratypes:**

2 ♂ 3 ♀, 19-VIII-93, RCF; 3 ♂ 1 ♀, 21-IX-93, RCF; 4 ♂ 1 ♀, 19-XI-93, RCF.

This species has a close resemblance to *Scotopachus poonaensis* Tikader but can be easily distinguished by the following characters:

- i. The labium of *Scotopachus faisalabadiensis* is not triangular as in *S. poonaensis*.
- ii. The markings on the dorsal surface of abdomen in two species are quite different.
- iii. The structure of female genitalia in the two species is also different.

Derivation of name. This species has been named, as it has been described for the first time.

Repository. The type material has been deposited in the

Museum, Department of Zoology and Fisheries, University of Agriculture, Faisalabad, Pakistan.

REFERENCES

- Barrion, A.T. and J.A. Litsinger, 1995. *Riceland spiders of Southeast Asia*. International Research Institute, Philippines, pp. 1-716.
- Dyal, S., 1935. *Fauna of Lahore, 4 spiders of Lahore*. Bull. Deptt. Zool. Punjab Univ., Lahore, 1: 117-252.
- Ovtsharenko, V.I., N.I. Platnick and D.X. Song, 1992. A review of the North Asian ground spiders of the genus *Gnaphosa* (Araneae, Gnaphosidae). *Bull. Amer. Mus. Nat. Hist.*, 212: 1-88.
- Simon, E., 1893. *Histoire Naturelle des Araignees*, Paris, 1: 257-488.
- Tikader, B.K. and U.A. Gajbe, 1977. Studies on some spiders of genus *Gnaphosa* Latreille and *Callilepis* Westring (Family gnaphosidae) from India. *Rec. Zool. Surv. India*, 73: 43-52.
- Tikader, B.K., 1982. The fauna of India, Spiders: Araneae. Director Zoological Survey of India, Calcutta. Vol. II pp: 1-533.
- Tikader, B.K., 1962. Studies on some Indian spiders (Araneae: Arachnida). *J. Linn. Soc. Lond.*, 44: 561-584.
- Tikader, B.K., 1966. On a collection of spider (araneae) from the desert area of Rajasthan (India). *Rec. Indian Mus.*, 59: 435-43.
- Tikader, B.K. and B. Biswas, 1981. Spider fauna of Calcutta and vicinity. Part I. *Rec. Zool. Surv., India, Occ. Pap.* No. 30: 1-148.

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