

Description of Two New Species of Araneid Spiders from Pakistan

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ABSTRACT

Two new species of spiders, described and illustrated in this paper were collected from cotton field Faisalabad, Pakistan. These species belong to genera *Cyclosa* and *Nephila*.

Key Words: *Cyclosa*; *Nephila*; Spiders; Pakistan

INTRODUCTION

Some spider species play important predatory role in the control of harmful insects of crops. In their classical work Pocock (1900), Dyal (1935) described few representatives of genus *Cyclosa* Costa and *Nephila* Leach (family Araneidae). Likewise, Tikader (1963), Tikader and Biswas (1981) and Barrion and Litsinger (1995) published some work on these genera from India and Southeast Asia. Pakistan is also rich in spider fauna, but no serious attention has been given to explore it. The present paper contains the description of two new species of spiders collected from the cotton fields, University of Agriculture, Faisalabad.

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

Cyclosa punjabiensis sp. nov (Figs. 1A-C)

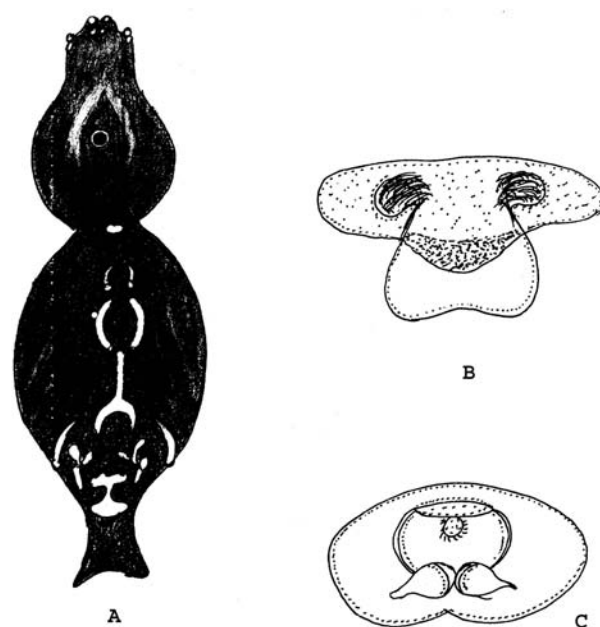
Male. Unknown

Female

Size rather small (11-16 mm); Cephalothorax and legs pale brown, skinny; Abdomen dark brown

Cephalothorax. Longer than wide, narrower in front and clothed with hair; Cephalic region distinctly separated from thorax by cephalic grooves; Thoracic fovea circular pit like; Ocular quad forming a trapezium, wider in front than behind; Eyes pearly white; anterior median larger than posterior medians; Posterior medians very close, nearly touching and encircled by black rings; Lateral eyes subequal in size, close and situated on prominent tubercles; Both rows of eyes recurved; Sternum heart-shaped, pointed behind, blackish in color, clothed with hair; Labium slightly wider than long,

Fig. 1. A. *Cyclosa punjabiensis* sp nov., B. Epigynum dorsal view, C. Epigynum ventral view



blackish with pale distal margin; Maxillae broad, blackish provided with distinct scopulae; Chelicerae small with some blackish shades having distinct boss; Legs moderately long, femora I and II completely black but femora III and IV provided with one transverse distinct yellowish band on each; Other segments with yellow and brownish bands, clothed with hair and spines

Abdomen. Elongated, provided with one forked caudal hump and two pairs of lateral humps, of which posterior one conspicuous; Dorsum of abdomen provided with four pairs of sigilla patches; Epigyne with scape but no bulge like structure

Material examined: 50

Holotype: 1 ♀, 19-VI-93, RCF.

Paratypes: 4 ♀, 19-VI-93, RCF (reference cotton field); 3 ♀, 21-VII-93, RCF; 4 ♀, 19-VIII-93, RCF; 5 ♀, 21-IX-93, RCF; 4 ♀, 19-X-93, RCF; 2 ♀, 19-XII-93, RCF, 1 ♀ 19-VI-93, TCF (treated cotton field); 3 ♀, 21-VII-93, TCF; 3 ♀, 19-VIII-94, RCF; 8 ♀, 21-IX-94, RCF; 6 ♀, 19-IX-94, RCF; 3 ♀, 19-XII-

94, RCF; 3 ♀, 21-VII-94, TCF

Measurements (mm): 10 ♀

Female		
	Range	Mean±S.D.
B.L.	8.40-13.10	9.63±1.47
C.L.	3.15-5.25	4.13±0.73
C.W.	2.20-3.50	2.75±0.42
A.L.	6.10-8.70	6.89±0.88
A.W.	2.10-4.60	3.25±0.87

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

This species is closest to *Cyclosa moonduensis* Tikader but can be separated from it as follows

I. Epigyne of *Cyclosa punjabiensis* with scape but no bulging like structure as described for *Cyclosa moonduensis*.

II. The L-shaped streak extending postero-laterally from each third row in *Cyclosa moonduensis* is lacking in *Cyclosa punjabiensis*.

III. In *Cyclosa moonduensis*, the sides of Cephalothorax are blackish brown and abdomen dark black. These patches are absent in *Cyclosa punjabiensis*.

Derivation of name. The name of this species has been derived from the province of Punjab (Pakistan).

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

Nephila pakistaniensis sp. nov (Figs. 2A-D)

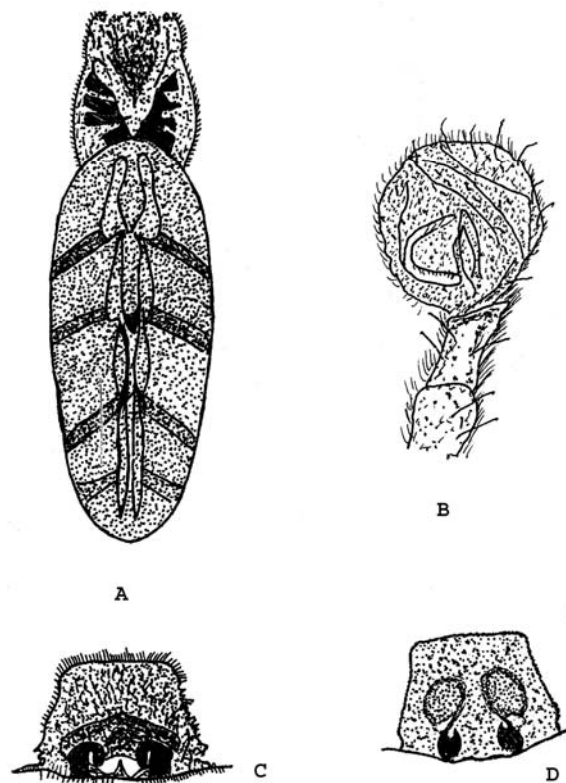
Male

Size large (13.35-25.10 mm); Cephalothorax and legs brown; Abdomen light yellow in color

Cephalothorax. Longer than wide, densely clothed spatulated hair with yellowish pubescence; Slightly narrower in front; Cephalic region provided with 'V' shaped yellowish patch posteriorly and lighter in color than thoracic region; No tubercle in cephalic region; Thoracic region light brown in color with shallow fovea; Ocular quad as long as wide behind and slightly narrower in front than behind; Median eyes equal in size; Lateral subequal in size; A little away from each other and situated on prominent tubercles; Both row of eyes slightly recurved; Sternum triangular, rather elongated, pointed behind, dark brown with a T-shaped yellowish patch, clothed with pubescence and hairs; Labium distinctly elongated than wide, dark brown with pale distal border; Maxillae broader distally, dark brown with pale outer margins, provided with distinct scopulae; Chelicerae strong and stout, reddish brown with moderate boss; Legs very long and strong, clothed with hairs and spines; Tarsi and metatarsi together longer than patellae and tibiae together; Femora and tibiae with yellowish transverse patches in the middle

Abdomen. Elongated, covered with hairs overlapping on the carapace; Dorsum of abdomen yellowish with five pairs of sigillae arranged mid-longitudinally; Ventral side olive brown

Fig. 2. A. *Nephila pakistaniensis* sp nov., B. Palp lateral view, C. Epigynum ventral view, D. Internal genitalia dorsal view



with some yellowish patches

Female

It is similar to male except the following characters: Sternum prominently rebordered along black lateral margin; Legs brown, hair tuft not prominent; Spinnerets small brown, and uniform in size; Spermathecae ovoid; Palp (Fig. 2B), Epigynum (Fig. 2C), Internal genitalia (Fig. 2D)

Measurements (mm): 10 ♂ 5 ♀

Male			Female	
	Range	Mean±S.D.	Range	Mean±S.D.
B.L.	7.40-12.00	7.94±1.43	10.25-13.00	10.81±1.22
C.L.	4.10-6.15	4.44±0.66	5.00-6.25	5.27±1.22
C.W.	2.7-3.00	2.81±0.11	3.50-4.10	3.84±1.22
A.L.	5.10-8.10	6.43±0.65	7.70-8.60	7.96±1.22
A.W.	2.00-4.00	2.38±0.64	2.50-3.80	2.79±0.57

Material examined: 23

Holotype: 1 ♂, 19-VI-93, RCF

Allotype: 1 ♂, 21-VII-93, RCF,

Paratypes

2 ♂ 1 ♀, 19-VI-93, RCF; 2 ♂, 21-VI-94, TCF; 1 ♂ 1 ♀, 21-VII-93, RCF; 1 ♂ 2 ♀, 19-VIII-93, RCF; 4 ♂ 1 ♀, 21-IX-93, RCF; 2 ♂, 19-X-93, RCF; 1 ♂, 19-VI-94, TCF; 2 ♂, 21-VII-94, TCF.

Nephila pakistaniensis and *Nephila clavata* L. Koch

differ from each other with respect to the following characters:

- i. In *N. pakistaniensis*, spatulate hairs on cephalothorax are present. No such type of hairs have been described for *N. clavata*.
- ii. Markings on the dorsal surface of the abdomen are different in the two species.
- iii. Epigyne and male palp of the two species are structurally different.

Derivation of name. The name of this species has been derived from the name of country Pakistan.

Repository. The type material has been deposited in the Museum, Department of Zoology and Fisheries, University of Agriculture, Faisalabad, Pakistan.

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