

## ON THE MYGALOMORPH SPIDER GENUS *XAMIATUS* RAVEN (DIPLURINAE : DIPLURIDAE) WITH THE DESCRIPTION OF A NEW SPECIES

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### ABSTRACT

The female of *Xamiatus kia* Raven and a new species, *X. ilara*, are described. *X. ilara* is the first *Xamiatus* described from open forest.

### INTRODUCTION

*Xamiatus* Raven, 1981 is one of Australia's largest diplurine spiders (carapace length about 14 mm, leg span about 100 mm) and is diagnosed by large feathery hairs on the coxae of leg I and of the palp. *Xamiatus* is known from the rainforests of the Evelyn Tableland (*X. magnificus*), northeast Queensland, from Bulburin State Forest (*X. bulburin*) and from the D'Aguilar, Conondale and Jimna Ranges (*X. rubrifrons*) in southeast Queensland, and from the Coff's Harbour region (*X. kia*), north coastal New South Wales (Raven, 1981). This paper adds a fifth and only (known) open forest species from the Blackdown Tableland, mid-east Queensland. Generic characters are given in Raven (1981) and not repeated here. The abbreviations AM = Australian Museum and QM = Queensland Museum; other abbreviations, methods and terminology are explained in Raven (1981). All measurements are in millimetres.

### *XAMIATUS KIA* RAVEN

Figs. 1-4, Table 1

*Xamiatus kia* Raven, 1981, p. 358.

Female AM KS6999.

Carapace 14.30 long, 12.60 wide. Abdomen 16.1 long, 9.00 wide.

COLOUR IN ALCOHOL: Carapace and legs orange brown, chelicerae red-brown. Dorsal and ventral abdomen dark brown.

CARAPACE: Numerous brown bristles on posterior lateral carapace margin. Striae well defined as glabrous areas between ridges covered with lanceolate grey hairs and some black bristles. 6-8 bristles criss-cross on clypeal edge; some anteromedial bristles. Fovea strongly procurved. 1 pair of foveal bristles discernible. Clypeus about 0.19 wide.

EYES: On a low tubercle. Group is 0.22 times head-width, and 2.58 times wider than long. Front-row centres procurved; back-row centres slightly recurved. Ratio of AME:ALE:PME:PLE, 16:15:9:11. Ratio of MOQ back-width:front-width:length, 34:53:22. Eye interspaces: AME-AME, 5; AME-ALE, 4; ALE-PLE, 4; PME-PLE, 1.

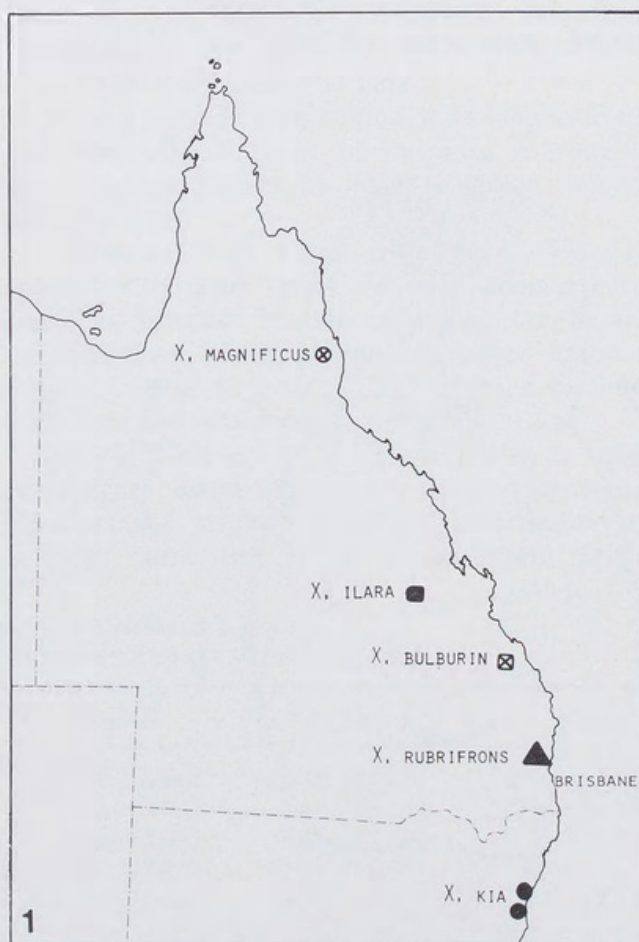


FIG. 1. Distribution of *Xamiatus*. Eastern Australia.



**CHELICERAE:** Stout. Covered with 3 bands of brown bristles, most medial band interspersed with grey lanceolate hairs. Promargin of furrow with 15 teeth of uniform size; basomesally with 10 finer teeth. Pseudorastellum of 20 conical teeth on inner edge of chelicerae.

**LABIUM:** 3.35 wide, 1.81 long. Separated from sternum by two separate narrow sigilla. Cuspules absent.

**MAXILLAE:** 6.06 long behind, 4.39 long in front, 2.97 wide. Heel slightly incurved over labium. With about 100 cuspules confined to roughly triangular area anteriorly.

**STERNUM:** 7.10 long, 6.58 wide. Six sigilla, shape, length and distance from lateral margin: posterior, long oval, 1.00, 0.81; middle, long oval, 0.58, 0.65; anterior, oval, 0.35, 0.42.

**LEGS:** 4123. Feathery hairs on interface of posterior maxillae and coxae I, on prolateral palpal femur and prolateral femur I, and on prolateral and retrolateral palpal trochanter. Scopula on metatarsi and tarsi I, II and on papal tarsi.

**SPINES:** No spines on leg tarsi. *Leg 1:* femur, pl; patella, 0; tibia, p2v6; metatarsus, p2v6. *Leg 2:* femur, pl; patella, 0; tibia, p2v6; metatarsus, p2v6. *Leg 3:* femur, p3r3; patella, p2; tibia, p2r3v6; metatarsus, p4r3v10. *Leg 4:* femur, rl;

patella, rl; tibia, p2r4v7; metatarsus, p5r4v12. *Palp:* femur, pl; patella, 0; tibia, v7; tarsus, v2.

**CLAWS:** STC of legs I and II with 4–5 teeth per row; STC of legs III and IV with 1–4 teeth per row. ITC bare, short. Palpal claw with 5 teeth in a prolateral row.

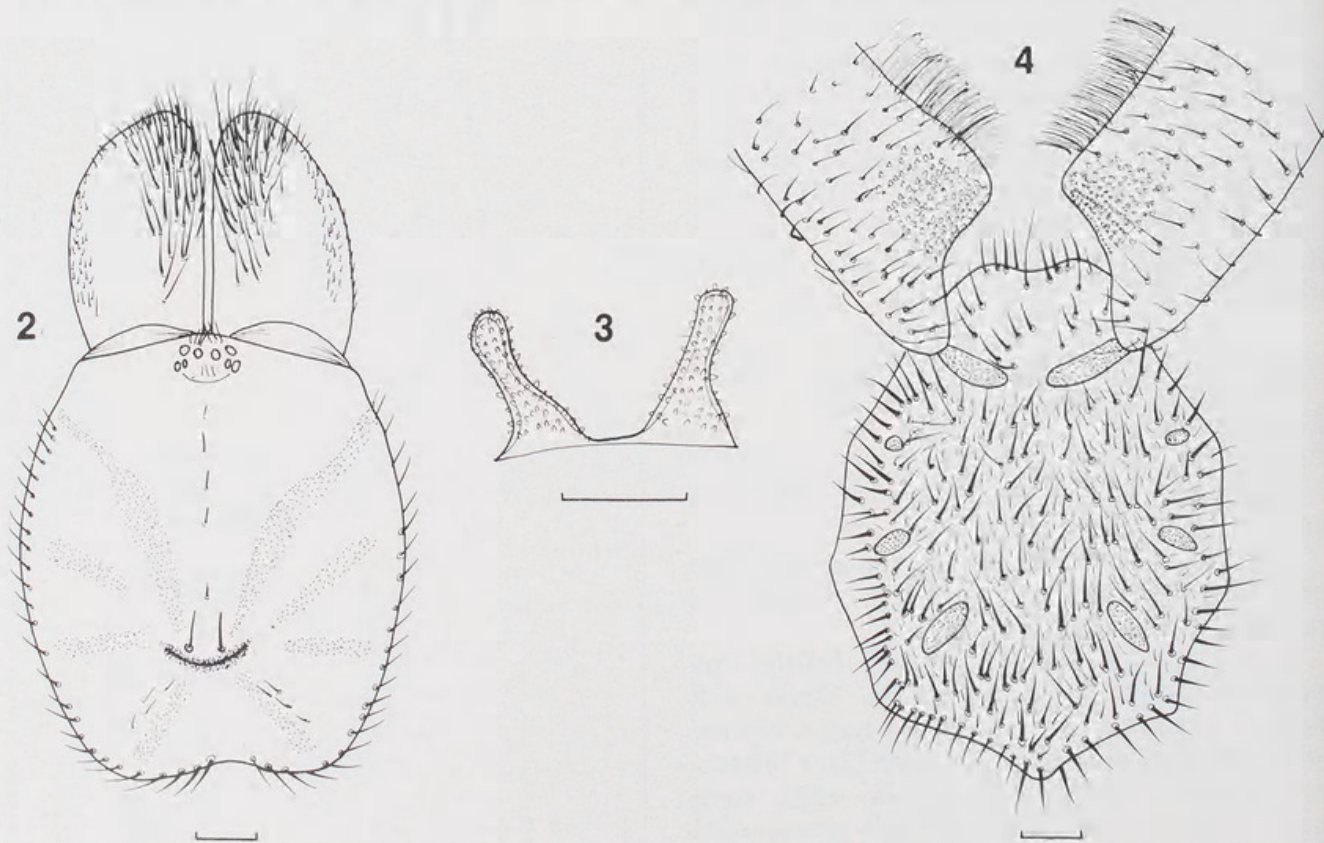
**TRICHOBOTHRIA:** About 10 in each row on tibiae for proximal two-thirds; an irregular row of about 25 on metatarsi; about 25 in an irregular row on tarsi. Tarsal organ distinct, raised.

**SPINNERETS:** PMS 1.81 long, 0.65 wide, and 1.16 apart. Basal, middle, apical, and total segments of PLS, 3.35, 2.06, 3.35, 8.76 long respectively.

**SPERMATHECAE:** Elongate digitiform.

TABLE 1. LEG MEASUREMENTS OF *XAMIATUS KIA*, VALUES ARE FOR FEMALE AM KS6999.

	Leg I	Leg II	Leg III	Leg IV	Palp
Femur	11.10	9.80	8.55	10.90	8.15
Patella	6.05	5.47	5.25	5.65	4.55
Tibia	8.10	7.03	5.40	8.15	5.60
Metatarsus	7.45	7.26	7.57	11.40	—
Tarsus	4.25	4.01	4.58	4.71	5.85
Total	36.95	33.57	31.35	40.81	24.15



FIGS 2–4. *Xamiatus kia*, female: 2, Cephalothorax and chelicerae; 3, Spermathecae; 4, Sternum, maxillae and labium. Scale lines = 1 mm, except Fig. 2 = 2 mm.



## REMARKS:

The elongate spermathecae of *X. kia* resemble those of *X. magnificus* from north Queensland. If the elongate spermathecae are synapomorphic for those two species, then the two type-localities were continuous with each other but not with the intervening areas. I consider that possibility highly unlikely and the hypothesis of the monophyly of *X. kia* and *X. magnificus* falsified. A more parsimonious hypothesis is that the elongate spermathecae are plesiomorphic or are parallelisms.

## MATERIAL EXAMINED:

The types and the following: ♀, Nambucca Heads, 30°39'S, 153°00'E, 25.xi.1957, B. Pickett, AM KS6999; ♂, near Bellinger River, 7 km from Bellingen, 30°27'S, 152°54'E, Oct. 1958, B.J. Casey, AM KS970; ♂, Bellingen, 11.xi.1933, Dr G.H. Hewitt, AM KS7001; ♂, Macksville, 30°43'S, 152°55'E, 14.xi.1978, R. Lamberth, AM KS2324; ♂, Nambucca Heads, N.S.W., 30°39'S, 153°01'E, 25.x.1977, Coll. Peterkin, AM KS971; ♂, Bowraville, 30°39'S, 152°51'E, 13.xii.1977, AM KS3465. All in New South Wales.

*XAMIATUS ILARA*, SP. NOV.

Figs. 1, 5–12, Table 2

## TYPES:

Holotype, ♂, allotype ♀, Blackdown Tableland, Queensland, 23°48'S, 149°08'E, 2–6.ii.1981, D. Rentz, D. Wynne, G. Monteith, R. Raven, QM S741,2; 5 ♀, same data but, coll. R. Raven, QM S743.

## DIAGNOSIS:

Very large spiders, carapace length about 14 mm. Males with small retrolateral distal spur and megaspine on tibia I; metatarsus I slightly excavate; palpal bulb roughly spherical with broad embolic origin; embolus wide with broad flattened scoop-shaped flange. Spermathecae of females, each a broad cup-shaped lobe, medially joined.

## MALE HOLOTYPE: QM S741

Carapace 14.60 long, 12.78 wide. Total length (including chelicerae) 30.87.

COLOUR IN ALCOHOL: Carapace and chelicerae deep reddish brown, legs deep reddish brown. Abdomen grey black.

CARAPACE: Uniformly hirsute with fine black bristles and grey lanceolate hairs adpressed to surface on interstitial ridges. 2 long curved bristles between AME; several fine bristles criss-cross on clypeal edge; striae narrow, well-defined. Fovea deeply procurved in front of which is transverse groove. Thick black bristles on posterior and lateral margins.

EYES: On a distinct raised tubercle. Group is 0.27 times head-width, and 2.13 times wider than long. Front-row centres procurved; back-row centres recurved. Ratio of AME:ALE:PME:PLE, 24:19:14:20. Ratio of MOQ back-width: front-width: length, 61:46:35. Eye interspaces: AME-AME, 10; AME-ALE, 7; ALE-PLE, 7; PME-PLE, 4.

CHELICERAE: Short, stout. Covered with short lanceolate hairs and long black bristles in darker bands. Prolateral distal edge with 19 coniform teeth forming rastellum. Promargin of furrow with 12 teeth; basomesally with 8 finer teeth. Maxillary lyra absent.

LABIUM: 2.56 wide, 1.31 long.

MAXILLAE: 5.31 long behind, 4.38 long in front, 2.31 wide. With about 60 cuspules in roughly quadrangular pattern in tight group on mound. Serrula absent.

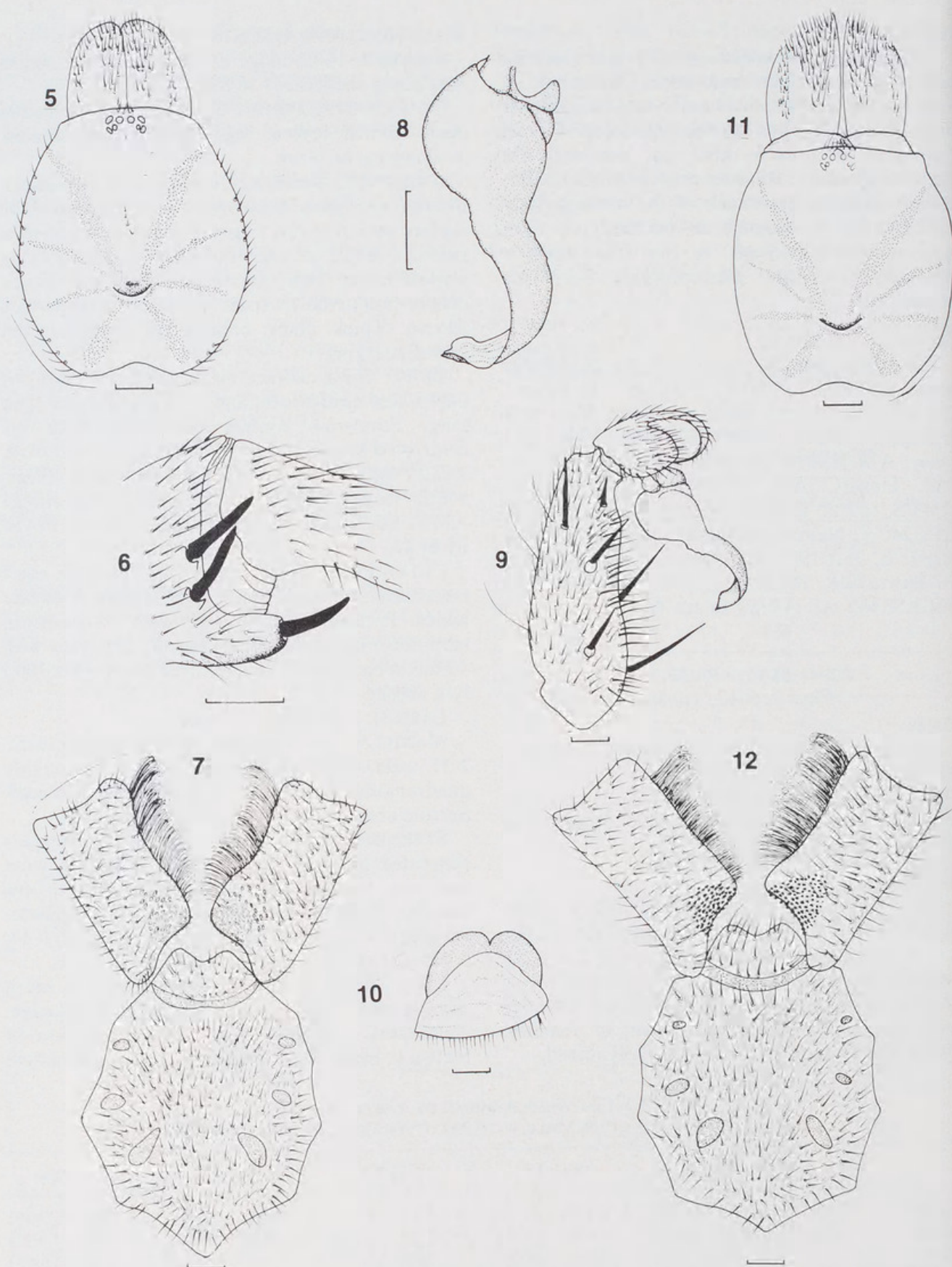
STERNUM: 7.30 long, 6.40 wide. Margins concealed by inner coxae. With lanceolate hairs and long bristles. Six sigilla, shape, length and distance from lateral margin: posterior, spindle-shaped, 0.93 (0.52 wide), 0.76; middle, oval, 0.44, 0.40; anterior, sub-circular, 0.28, 0.60.

LEGS: (Table 2). 4123. Tibia I with a small retrolateral distal spur and small megaspine; metatarsus I slightly excavate. Distribution of feathery hairs: full length of prolateral palpal

TABLE 2. LEG MEASUREMENTS OF *XAMIATUS ILARA*.  
VALUES ARE FOR HOLOTYPE MALE, WITH ALLOTYPE FEMALE IN PARENTHESES.

	Leg I	Leg II	Leg III	Leg IV	Palp
Femur	12.53 (10.68)	11.56 (9.58)	10.72 (8.81)	12.75 (11.00)	8.30 (7.76)
Patella	6.55 (6.10)	6.05 (5.80)	5.50 (4.84)	6.14 (5.84)	4.56 (4.35)
Tibia	9.85 (7.71)	8.42 (6.43)	7.06 (5.38)	9.65 (8.11)	6.45 (5.65)
Metatarsus	10.20 (6.48)	9.36 (6.37)	9.77 (7.85)	13.31 (10.65)	—
Tarsus	6.75 (4.28)	5.86 (4.20)	5.70 (3.76)	5.76 (4.73)	3.30 (5.35)
Total	45.88 (35.25)	41.25 (32.38)	38.75 (30.64)	47.61 (40.33)	22.61 (23.11)





FIGS 5-12. *Xamiatus ilara*, male holotype, female allotype. 5-9, Male: 5, Cephalothorax and chelicerae; 6, prolateral tibia and metatarsus I; 7, sternum, maxillae and labium; 8, palpal bulb; 9, prolateral tibia and tarsus, palp. 10-12, Female: 10, Spermathecae; 11, Cephalothorax and chelicerae; 12, sternum, maxillae and labium. All scale lines = 1 mm except for Figs 5, 11 = 2 mm.



trochanters; prolateral coxae, trochanters and femora I; prolateral coxae II–IV with short hairs. Upper surface of prolateral coxae I–IV with stout bristles. Scopulae on metatarsi I and II, on tarsi I–IV; scattered scopuliform hairs on metatarsi III and IV. Scopulae on all tarsi with pattern of hair colours: laterally black with orange-yellow medial band divided by two narrow bands of black hair.

**PALP:** No scopula on tarsi. Tarsi elongate, ventrally excavate. Bulb roughly spherical with broad embolic origin; embolus wide with broad flattened flange.

**SPINES:** No spines on leg tarsi. *Leg 1:* femur, p2r2; patella, p1; tibia, p3r2v6 + megaspine; metatarsus, v2. *Leg 2:* femur, p3d1r3; patella, p2; tibia, p2r1v7; metatarsus, p2v6. *Leg 3:* femur, p2d1r2; patella, p2r1; tibia, p2r3v7; metatarsus, p4r4v12. *Leg 4:* femur, p3d3r1; patella, p2r1; tibia, p2r3v7; metatarsus, p5r3v15. *Palp:* femur, p1, patella, 0; tibia, p1v6; tarsus, 0.

**CLAWS:** STC of all legs with 5–6 teeth per row; ITC short, bare.

**TRICHOBOTHRIA:** About 12 small on each row on tibiae; about 25 on metatarsi; about 16 on tarsi. Tarsal organ concealed by hair on leg I, a low elevated mound on leg IV.

**SPINNERETS:** PMS 1.19 long, 0.50 wide, and 0.81 apart. Basal, middle, apical and total segments of PLS, 1.88, 1.63, 2.06, 5.57 long respectively.

#### FEMALE ALLOTYPE QM S742

Capapace 14.00 long, 12.10 wide. Total length (including chelicerae) 37.90.

**COLOUR IN ALCOHOL:** Carapace orange-brown, chelicerae red brown, legs brown with paler glabrous longitudinal strips. Abdomen grey-black.

**CARAPACE:** With uniform covering of grey spathulate hairs. Interstrial ridges and margins with black bristles. 3 long bristles curve over AME; bristles on clypeal edge; few fine anteromedial bristles. Fovea procurved with 'crease' in front.

**EYES:** On a distinct raised tubercle. Group is 0.21 times head-width, and is wider behind than in front; back width: front width: length, 77:70:38. Front-row centres procurved; back-row centres recurved. Ratio of AME:ALE:PME:PLE, 21:15:12:19. Ratio of MOQ back-width: front-width: length, 57:38:30. Eye interspaces: AME-AME, 9; AME-ALE, 5; ALE-PLE, 9; PME-PLE, 0.

**CHELICERAE:** Stout. Sparsely covered with long black bristles and lanceolate hairs in darker zones. Promargin of furrow with 11 stout and 4 small teeth; basomesally with 10 finer teeth. About 12

coniform teeth on prolateral distal edge forming rastellum.

**LABIUM:** 2.69 wide, 1.38 long.

**MAXILLAE:** 5.44 long behind, 4.31 long in front, 2.44 wide. With 80–90 cuspules on mound in broad triangular area. Lyra and serrula absent.

**STERNUM:** 7.20 long, 6.60 wide. Short thorn-like bristles on sternum behind maxillae and between coxae IV. Six sigilla, all oval: length and distance from margin of posterior, 0.85, 1.05; middle, 0.53, 0.50; anterior, 0.25, 0.38.

**LEGS:** (Table 2). 4123. All legs covered with fine adpressed hairs. All coxae with stout thorn-like bristles prolaterodorsally and on inner edges. Distribution of feathery hairs: full length of prolateral palpal femora; retrolateral palpal femur; prolateral femur; most noticeable on retrolateral palpal trochanters; prolateral coxae and trochanter I; and prolateral coxae II–IV. Thin scopula on palpal tarsi, entire and silvery black on metatarsi and tarsi I and II; no scopula on metatarsi III or IV or on tarsi IV; broadly divided on tarsi III.

**SPINES:** No spines on leg tarsi. *Leg 1:* femur, p2; patella, p1; tibia, p1v5; metatarsus, v5. *Leg 2:* femur, p2; patella, p1; tibia, p2v5; metatarsus, p1v5. *Leg 3:* femur, p2r3; patella, p2r1; tibia, p3r2v6; metatarsus, p4r3v11. *Leg 4:* femur, r1; patella, r1; tibia, p2r3v6; metatarsus, p4r4v12. *Palp:* femur, p1; patella, 0; tibia, p1v3; tarsus, v2.

**CLAWS:** STC of legs I and II with 4 teeth per row; STC of legs III and IV with 2–5 teeth per row; less on inner rows. ITC concealed by hair; short, bare. Palpal claw with 4 teeth.

**TRICHOBOTHRIA:** About 9 in each row on tibiae; about 18 on metatarsi; about 33 on tarsi. Tarsal organ low, domed on leg I and IV, and with aperture.

**SPINNERETS:** PMS 1.63 long, 0.63 wide, and 1.50 apart. Basal, middle, apical and total segments of PLS, 2.50, 1.31, 2.13, 5.94 long respectively.

**SPERMATHECAE:** Under unproduced lobe. Each a broad cup-shaped low lobe joined medially and discharging into a common atrium.

#### DISTRIBUTION AND HABITAT:

*X. ilara* is known only from the Blackdown Tableland, west of Rockhampton, Queensland. In that area, the spiders are found in open forest often dominated by *Casuarina*. Burrows are wide-mouthed (3–4 cm in diameter) and unbranched, extending for about 40 cms downwards along an inclined plane. Just below the mouth and at the bottom of the burrow is an



enlarged chamber about 5–7 cms long and 4–5 cms high. In the end chamber, the spider binds the prey resectamenta into the walls. The burrows are found in loose sandy soil or compact red soil and appeared to be commoner on hillsides or on slopes. Throughout the soil in the area where the types were collected, numerous specimens of the unusual new orthopteran family Cooloolidae were found.

REMARKS:

Males of *X. ilara* most closely resemble those of *Xamiatus bulburin* Raven, 1981. However, in *X. ilara*, the palpal embolus is very broad and scoop shaped, whereas in *X. bulburin*, the embolus is narrower. The occurrence of *Xamiatus* in the Blackdown Tableland poses several biogeographic questions because otherwise *Xamiatus* is known only from rainforests in the Conondale Range,

Many Peaks Range, Evelyn Tableland in Queensland and coastal forests near Coff's Harbour, New South Wales.

ACKNOWLEDGEMENTS

I am grateful to the Trustees of the Australian Museum and Mr M. Gray, Curator of Arachnids, for giving me the opportunity to examine specimens in their care, and to Dr Valerie Davies for her encouragement and for reading the manuscript, typed by Ms Robyn Owens.

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