

THE WOLF SPIDERS OF AUSTRALIA (ARANEAE: LYCOSIDAE): 11

A NEW SPECIES FROM LORD HOWE ISLAND

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ABSTRACT

A new species, *Lycosa howensis*, is described from Lord Howe Island. A redescription of *Lycosa gloriosa* Rainbow 1920 is provided.

Lord Howe Island (31°32'S, 159°04'E), situated some 630 kilometres off the coast of northern New South Wales, consists of a narrow twelve kilometre strip of land dominated by the twin peaks of Mount Gower (866 m) and Mount Lidgbird (765 m) to the south. For a bibliography of Lord Howe Island see Recher (1974).

The first account of the spiders of Lord Howe Island was provided by Rainbow (1920) on the collections made by A. M. Lea. During January-February 1971 a comprehensive collection of the spiders of the island was made by Mr M. R. Gray of the Australian Museum (Gray 1974). Two *Lycosa* species were collected during the 1971 survey, *Lycosa gloriosa* Rainbow 1920, and a *Lycosa* recognised by Mr Gray as representing an undescribed species. Mr Gray generously forwarded this material for inclusion in my revisional studies on the Australian species of the family Lycosidae.

Lycosa howensis sp. nov. (Fig. 1A-E)

MATERIAL EXAMINED

HOLOTYPE: Australian Museum KS60, mature female, C.L. 4.7 mm, Lord Howe Island, near beachfront, collected by M. R. Gray.

PARATYPES: Lord Howe Island; AM KS61, 4 juveniles; AM KS62, 2 mature males; AM KS63, 1 mature male.

DESCRIPTION (Based on the holotype).

Carapace pale brown with a lighter median longitudinal stripe that commences behind the PL eyes and narrows abruptly before the fovea and continues to the posterior margin where it merges with a similarly coloured marginal band; some

slightly darker stripes radiate out from the centre of the carapace over the light brown sides; paturon dark brown, contrasting markedly with the colour of the carapace, fang dark red-brown; labium and maxillae brown; sternum light brown with a conspicuous dark brown to blackish V-shaped marking (Fig. 1B), coxae light brown. Abdomen light brown to yellowish-brown with a very faint slightly darker anterior dorsal stripe surrounded by a vague light longitudinal median stripe which continues to the spinnerets; ventral surface uniform light yellow-brown. Legs uniform yellow-brown becoming darker distally; spines dark brown.

Anterior row of eyes slightly procured, the AM larger than the AL. Ratio of eyes AM:AL:PM:PL = 16:12:31:25; distance AM-AM 7, AM-AL 4, AM-PM 8, AL-PM 9, PM-PM 17. Clypeus to AM 11. Length of first eye row 67; length of second eye row 72.

Chelicerae with three retromarginal teeth on each side. Labium as wide as long.

TABLE 1: MEASUREMENTS OF LEG SEGMENTS OF
LYCOSA HOWENSIS IN MM

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus |
|------|-------|---------|-------|------------|--------|
| 1 | 3.1 | 1.8 | 2.4 | 2.4 | 1.6 |
| 2 | 3.1 | 1.7 | 2.2 | 2.1 | 1.8 |
| 3 | 2.8 | 1.5 | 2.0 | 2.5 | 1.6 |
| 4 | 4.0 | 1.8 | 3.0 | 4.1 | 2.2 |
| Palp | 1.7 | 0.6 | 0.9 | — | 1.1 |

VARIATION: Juveniles have a broad pale longitudinal median stripe and a broad pale median band, the sides of the carapace are slightly darker or pale brownish with black hairs, occasionally marked with vague radiating stripes

of dark brown or black; the abdomen is pale yellow-brown, with the anterior slopes dark brown to black, and the dorsal surface blotched with dark brown in a vague pattern of paired spots or blotches extending posteriorly; venter of abdomen and sternum without markings; legs pale yellow.

Adult males vary in colour pattern; one male is very pale with faint stripes on the carapace and uniform abdomen and legs; two males are patterned with dark blotches on the dorsal and lateral surfaces of the abdomen, median and lateral pale bands are present, and the sternum has a dusky V-shaped marking similar to that of the holotype; one male has the femora banded (Fig. 1A).

The eye dimensions of the male are similar to those of the female. Ratio of eyes (measured from the lens of the eye) AM:AL:PM:PL = 10:7:20:22, the PM eyes measured across the base are 26 units in diameter; distance AM-AM 9, AM-AL 5, PM-PM between bases 14; length of first eye row 54; length of second eye row 61.

The promarginal cheliceral teeth are 3+3; the retromarginal teeth are 2+2 in the two males, 3+3 in the other; juveniles are 2+2.

The adult male has a conspicuous pointed tubercle on the outer curve of the fang; females and juveniles lack the tubercle.

The epigynum of the holotype is illustrated in Fig. 1C. The male palpal organ has a plate-like median apophysis with a pointed cusp on the inner proximal edge (Fig. 1D) and a curved, medially expanded plate-like embolic guide (Fig. 1E).

SIZE RANGE: Mature female C.L. 4.7 mm. Mature males C.L. 3.4 to 4.0 mm.

DIAGNOSIS: *Lycosa howensis* differs from *L. gloriosa* the other species recorded from Lord Howe Island in shape of epigynum, male palpal organ and the presence of a tubercle on the fang of mature males. The epigynum differs markedly from that of *Lycosa strenua* Rainbow, from Norfolk Island (Rainbow 1920, pl. 30, Fig. 93).

HABITAT

This new species was collected from disturbed rainforest near the beachfront. 'Scalybark' (*Cleistocalyx fullageri*) and the 'greybark' (*Drypetes australasica*) were the dominant trees with grasses below. *Lycosa gloriosa* was also present at this site (station 25).

DISCUSSION

Lycosa howensis belongs to the 'arenaris' group of species (McKay 1974) which includes such

Australian species as *L. arenaris*, *L. pullastra*, *L. lapidosa*, *L. furcillata*, and *Venator fuscus* (type species of the genus *Venator*). An expanded diagnosis of the genus *Venator* to include the species above is premature without a survey of all the *Lycosa* species in which the male has a tubercle on the outer surface of the fang. *Trochosa ruricola* (de Geer), the type species of the genus *Trochosa*, has a tubercle on the fang of mature males, and the epigyna of the *Trochosa* species resembles those of the 'arenaris' group; the anterior row of eyes (AM+AL) is wider than the second row (PM) in *Trochosa* but smaller in most specimens belonging to the 'arenaris' group of species. Locket, Millidge and Merrett (1974, p.37) record that as result of the work of Engelhardt in Germany, eleven percent of *T. ruricola* males lacked the tubercle on the outside of the fang. All mature males examined (over 200) belonging to the 'arenaris' group of species possessed the tubercle on the outside of the fang.

Lycosa gloriosa Rainbow 1920 (Fig. 1F-K)

Lycosa gloriosa Rainbow, 1920, pp. 261-2, pl. 30, figs. 94, 95, Lord Howe Island; Roewer, 1954, p. 272; Bonnet, 1957, p. 2643; McKay, 1973, p. 379.

MATERIAL EXAMINED

HOLOTYPE: South Australian Museum, mature female labelled '*Lycosa gloriosa* Rainb. Lord Howe Is. TYPE'. The holotype is in good condition and agrees with the description by Rainbow (1920). The epigynum is illustrated (Fig. 1F).

OTHER MATERIAL: Lord Howe Island; AM KS52, 1 mature female, 1 mature male, 11 juveniles; AM KS53, 1 mature female; AM KS54, 1 mature female; AM KS55, 1 mature female; AM KS56, 1 mature female with young, 2 juveniles; AM KS57, 1 penultimate female, 2 juveniles; AM KS58, 1 mature female; AM KS59, 1 juvenile.

DESCRIPTION (after Rainbow 1920, pp. 261-262)

Carapace yellow with dark brown markings, marginal band yellow; paturon yellow; labium and maxillae yellow; sternum yellow with paler margins. Abdomen yellow above with dark brown markings and spots; sides yellow, spotted with dark brown; ventral surface spotted with dark brown and having two broad dark brown bars commencing at the epigastric furrow and converging towards the spinnerets. Legs yellow, banded with dark brown.

VARIATION: Anterior row of eyes slightly procurved, AM larger than AL, about a diameter apart; PM eyes slightly less or slightly more than

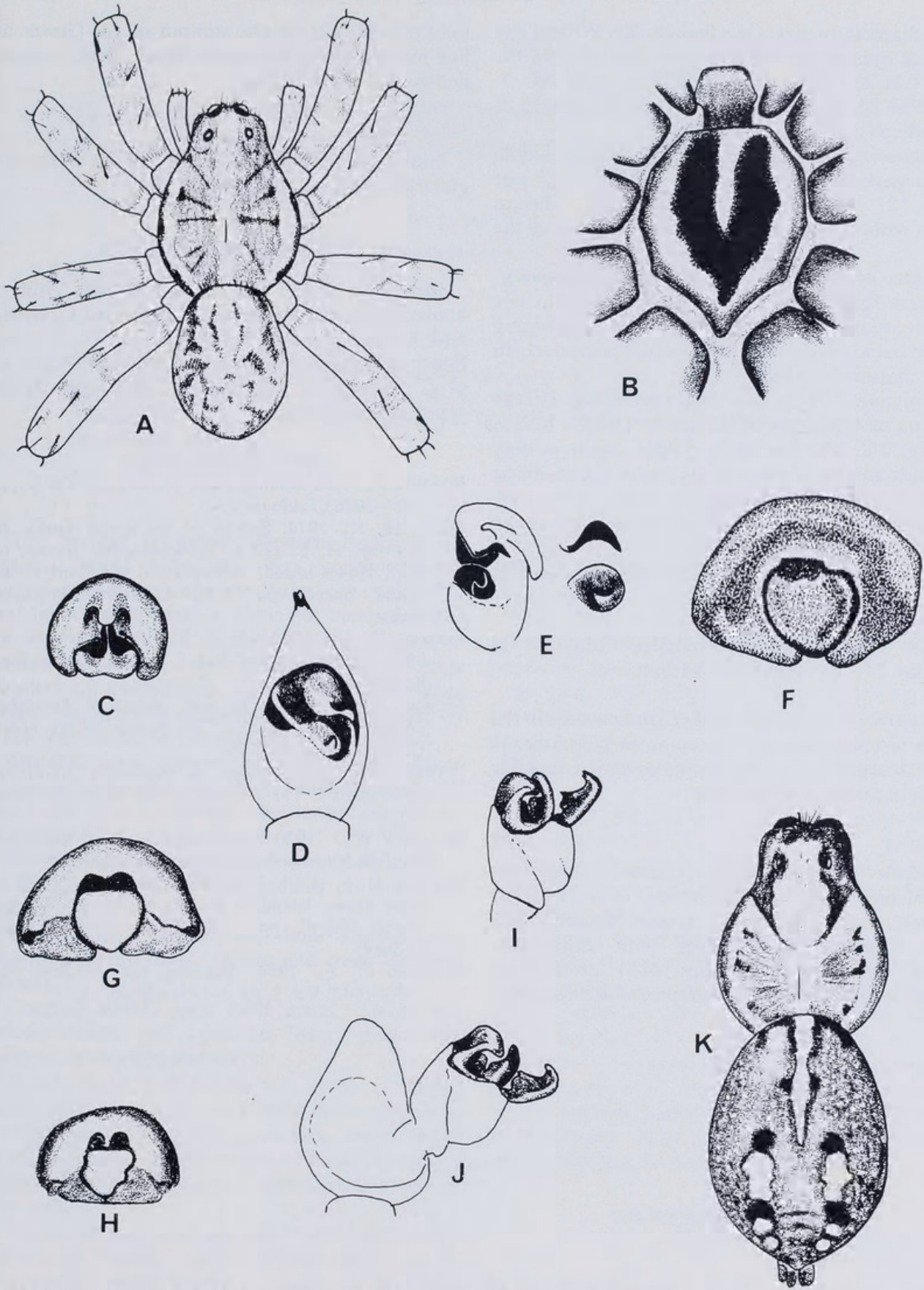


FIG. 1: *Lycosa howensis*. A-E; A, paratype male; B, sternum of holotype; C, epigynum of holotype; D, palpal organ of paratype male; E, embolic guide and median apophysis of paratype male palpal organ.
Lycosa gloriosa. F-K; F, epigynum of holotype female; G-H, epigyna of two females showing variation; I-J, palpal organ of mature male shown in an expanded condition from two positions, one lateral and one anterolateral; K, mature female.

their diameter apart. One female (KS55) had the ratio of eyes in micrometer units AM:AL:PM:PL = 9:7:21:20; distance AM-AM 9, AM-AL 7, PM-PM 24. Length of first eye row 52, length of second eye row 65.

Chelicerae with 3 promarginal teeth, the middle one largest; retromarginal teeth 3+3 (1♂ 2♀) or 4+4 (2♀ mature 1♀ penultimate). Mature males without tubercle on the outer surface of the fang.

Venter of abdomen with three brown converging bars fusing before base of spinnerets in one mature female, and the normal two converging brown bars that do not fuse together posteriorly in other mature females.

Epigynum of holotype illustrated in Fig. 1F, the epigyna of two additional females (KS53, KS55) in Fig. 1G, H. The male palpal organ is very complex and must await study under the scanning electron microscope; the palpal organ of the only mature male is illustrated from two positions in an expanded condition in Fig. 1I, J.

One mature female (KS56) is illustrated in Fig. 1K.

SIZE RANGE: Mature females C.L. 3.4 to 6.2 mm. Mature male C.L. 3.1 mm.

DIAGNOSIS: Differs from *Lycosa howensis* in the shape of epigynum and the complex palpal organ of the mature male. Mature males lack a tubercle on the outer curve of the fang.

HABITAT

Lycosa gloriosa was collected from the beachfront with a disturbed *Cleistocalyx*-*Drypetes* association and grasses (station 25), from lowland palm groves with *Pandanus*-*Howea* association (stations 4-5) or lowland mixed rainforest *Howea*-*Drypetes*-*Cleistocalyx*

(stations 38, 42), to the summit of Mt Gower at 866 metres with a low mossy forest, ferns, mosses, lichens and small palms.

DISCUSSION

Nothing is known of the life history of *Lycosa gloriosa* and *Lycosa howensis*.

ACKNOWLEDGMENTS

Mr M. R. Gray, Australian Museum, Sydney, kindly forwarded the material of *Lycosa howensis* and *Lycosa gloriosa* for study. Mr D. C. Lee, South Australian Museum forwarded the holotype of *L. gloriosa* for examination. Mrs Janet Byrne typed the manuscript.

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