

## A new species of *Austrarchaea* (Araneae: Archaeidae) from Western Australia

Mark S. Harvey

Department of Terrestrial Invertebrates, Western Australian Museum,  
Francis Street, Perth, Western Australia 6000, Australia

**Abstract** – A new species of *Austrarchaea*, *A. robinsi*, is described from the Stirling Range National Park. It most closely resembles the only other named Western Australian archaeid, *A. mainae* Platnick, in the morphology of the female genitalia, but differs in the lack of abdominal tubercles.

### INTRODUCTION

Spiders of the family Archaeidae hold a special place in the minds of many arachnologists (see Forster and Platnick, 1984) – firstly, as the original species were described from fossilised remains in Baltic Amber prior to the discovery of Recent species in Madagascar, and secondly, as indicators of the ancient links between the southern continents, where the Recent fauna is known only from Australia, Madagascar and South Africa. The Australian fauna consists of four named species attributed to the genus *Austrarchaea* Forster and Platnick: *A. nodosa* (Forster), the type species, from south-eastern Queensland, *A. daviesae* Forster and Platnick from north-eastern Queensland, *A. hickmani* (Butler) from Victoria and New South Wales, and *A. mainae* Platnick from south-western Australia (Butler, 1929; Forster, 1956; Forster and Platnick, 1984; Platnick, 1991). Main (1995) recorded several juvenile archaeids from two forested localities near Pemberton in south-western Australia, but the identity of these populations will require the collection and study of adult specimens.

The collection of numerous spiders from the Stirling Range National Park by Sarah Barrett of the Department of Conservation and Land Management in 1996 yielded an adult archaeid which proved to be distinct from all of the previously named species of *Austrarchaea*. This species is named here.

### SYSTEMATICS

#### Family Archaeidae

#### Genus *Austrarchaea* Forster and Platnick

*Austrarchaea robinsi* sp. nov.  
Figures 1–4

### Material Examined

#### Holotype

♀, Ellen Peak, Stirling Range National Park, Western Australia, Australia, 34°21'20"S, 118°19'45"E, 28 May 1996, pitfall traps, S. Barrett (Western Australian Museum T42580).

### Diagnosis

*Austrarchaea robinsi* differs from *A. mainae*, *A. nodosa* and *A. daviesae* by the lack of abdominal tubercles (Figure 1), and from *A. hickmani* by the presence of seta-bearing tubercles on the lateral and posterior margins of the carapaceal neck (Figure 1), and the presence of a petiolar sclerite which does not fully encircle the petiole. *Austrarchaea robinsi* appears to be the sister species to *A. mainae* as both possess numerous elongate spermathecae which fan out on either side of the gonopore (Figure 3).

### Description

#### Female (holotype)

Colour: carapace, chelicerae and sternum

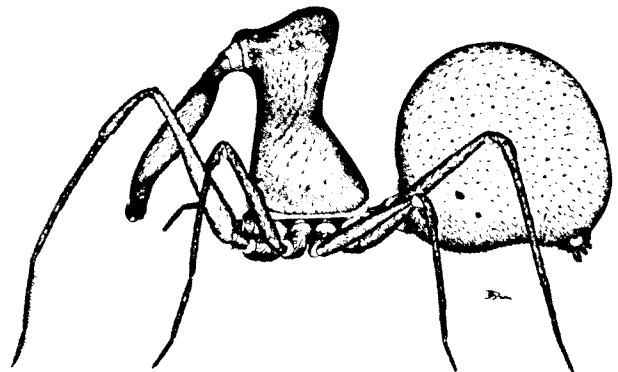
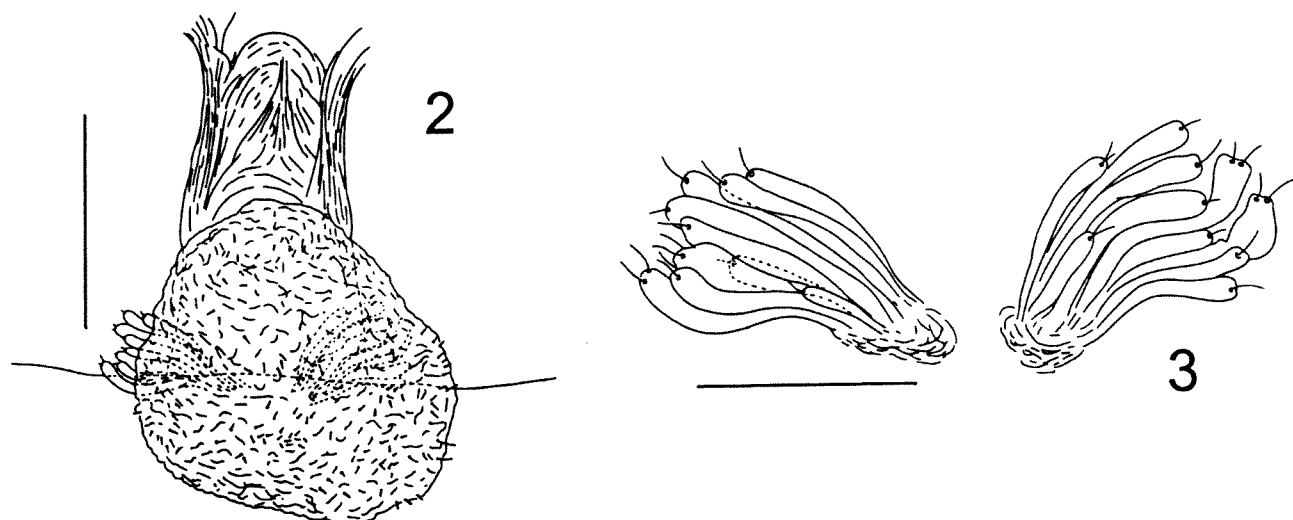


Figure 1 *Austrarchaea robinsi* sp. nov., holotype ♀, lateral view.



Figures 2-3 *Austrarchaea robinsi* sp. nov., holotype ♀, genitalia, dorsal view: 2, entire genitalic region showing anterior and posterior receptacula, and spermathecae; 3, detail of spermathecae. Scale lines = 0.1 mm.

chestnut-brown, streaked with black markings; legs brown, with dark bands on distal end of femora, patellae, tibiae, and metatarsi; abdomen grey-yellow with sclerites all chestnut-brown. Carapace (Figure 1) with numerous white setae, generally anteriorly directed; without dorsal horns; with several rows of seta-bearing tubercles situated mostly on neck, a larger patch of tubercles situated on posterior portion of neck. Eight eyes in 2 rows; AME black, other eyes white; AMEs closer together than PMEs; ALE and PLE nearly contiguous. Chelicerae extremely elongate; without proximal lobe; distal end reflexed posteriorly; three rows of peg teeth, 17 in main row, 3 in anterior row and 1 situated posteriorly, large ridged area (presumptive stridulatory file) on subdistal region of external margin. Sternum with concave anterior margin and rounded posterior margin, lateral margins extending between coxae but not fused or adjoined to carapace. Pedipalp with small tarsal claw. Legs long and slender; formula 1423; femur II, III and, to a lesser extent, IV, with a sub-medial dorsal protuberance; tibiae I-III with 2 trichobothria, 1 sub-distal, 1 sub-basal; tibiae IV with 3 trichobothria, 2 sub-basal, 1 sub-distal; metatarsus with 1 sub-distal trichobothrium; all trichobothria associated with darkly pigmented bands on segments; each tarsus with 3 small claws. Abdomen (Figure 1) spherical, without tubercles, cuticle thin with little trace of thickening; sparsely covered with setae which are either black or white; epigastric region with four separate plates, a sub-triangular plate covering genital region, situated between two pulmonary plates, and petiolar sclerite which is only present on ventral portion of abdomen, not encircling petiole; sclerotized ridged plate (presumptive stridulatory file) above petiole; c. 16 small circular sclerites present between epigastric region and spinnerets,

with 4 pairs of larger sclerites laterally. Internal genitalia (Figures 2, 3) with c. 10 pairs of receptacula arranged in two groups, each receptaculum with thin translucent duct, terminal bulb and 1-2 distal tubules. Six spinnerets; anterior-lateral spinnerets largest, two-segmented; posterior-medial spinnerets very small; posterior-lateral spinnerets short; colulus absent.

Dimensions (mm): total length (excluding chelicerae) 4.30. Carapace length (measured at base) 1.20, width 1.10, height 1.90. Eye group width 0.87. Sternum length 0.70, width 0.44. Chelicera length 1.96. Pedipalp: femur 0.30, patella 0.17, tibia 0.35, tarsus 0.44, total 1.26. Leg I: femur 1.98, patella 0.83, tibia 1.62, metatarsus 0.89, tarsus 0.58, total 5.90. Leg II: femur 1.40, patella 0.41, tibia 1.32, metatarsus 0.58, tarsus 0.41, total 4.12. Leg III: femur 1.19, patella 0.41, tibia 1.10, metatarsus 0.49, tarsus 0.40, total 3.59. Leg IV: femur 1.81, patella 0.43, tibia 1.37, metatarsus 0.68, tarsus 0.39, total 4.68. Abdomen length 2.04, width 1.79, height (without spinnerets) 2.42.

#### Remarks

*Austrarchaea robinsi* shares with *A. hickmani* a lack of abdominal tubercles, but possesses small seta-bearing tubercles on the carapace which are absent in *A. hickmani*. As noted above, *A. robinsi* appears to represent the sister species of *A. mainae* as both possess numerous elongate spermathecae which fan out on either side of the gonopore (Figure 3, and Platnick, 1991, figure 7), a feature which is not found in any other archaeid, and which is markedly different from the eastern Australian species of *Austrarchaea*. This may indicate a separate radiation of the genus in Western Australia, based upon a shared ancestor. However, until the identity of the juveniles from the Pemberton region is ascertained, such hypotheses are speculative.

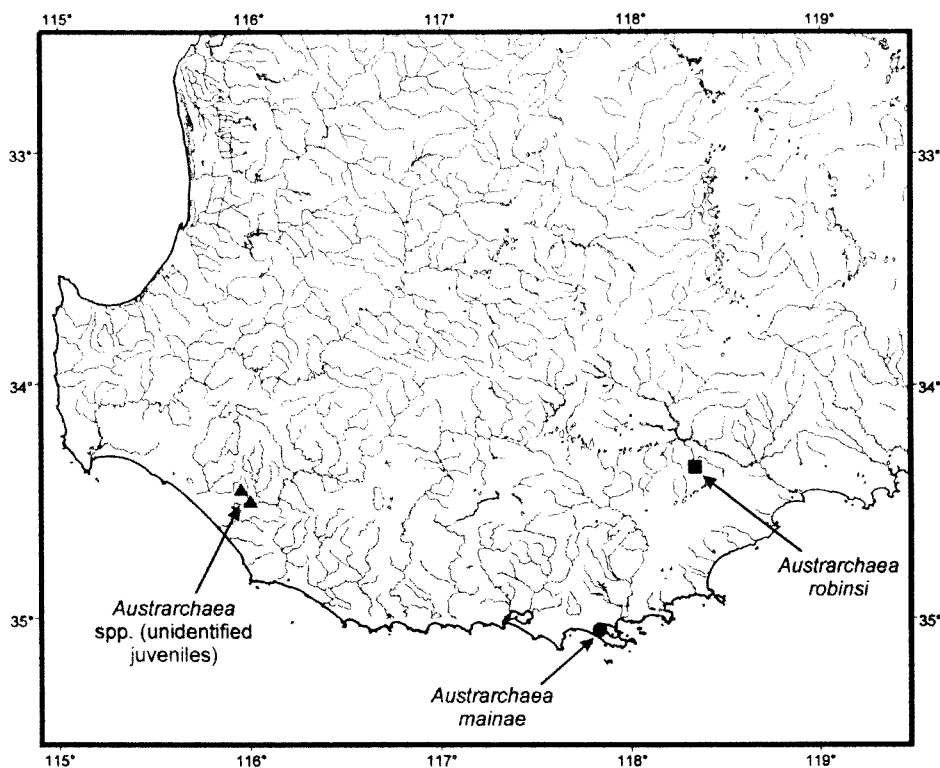


Figure 4 Map showing known distribution of *Austrarchaea* species in Western Australia: ● *A. mainae*, ■ *A. robinsi*, ▲ unidentified juveniles.

The species is currently known from only a single specimen collected in a pitfall trap placed on Ellen Peak in the eastern portion of the Stirling Range (Figure 4). The Stirling Ranges are internationally renowned for their endemic biota, which includes several endemic spiders such as the trapdoor spiders *Neohomogona stirlingi* Main (Main, 1985) and an undescribed species of *Moggridgea* (B.Y. Main, personal communication). It is highly likely that *Austrarchaea robinsi* is also endemic to the Stirling Range where it survives amongst montane heath vegetation on one or more peaks.

#### Etymology

This species is named for Western Australian paralympian Noel Robins, the first recipient in the Western Australian Museum's Live Forever program.

#### ACKNOWLEDGEMENTS

I am extremely grateful to Sarah Barrett for providing the only known specimen of this interesting species, and to Bradley Durrant for Figure 1.

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