Records of the Australian Museum (2008) Vol. 60: 13–44. ISSN 0067-1975
doi:10.3853/j.0067-1975.60.2008.1493

A New Subfamily of Spiders with Grate-shaped Tapeta from Australia and Papua New Guinea (Araneae: Stiphidiidae: Borralinae)

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ABSTRACT. Five new genera of stiphidiid spiders are described from forest habitats in Australia and Papua New Guinea. They include *Couranga* n.gen. (*C. kioloa* n.sp., *C. diehappy* n.sp.), *Jamberoo* n.gen. (*J. johnnoblei* n.sp., *J. boydensis* n.sp., *J. actensis* n.sp. *J. australis* n.sp.) and *Elleguna* n.gen. (*E. major* n.sp., *E. minor* n.sp.) from eastern Australia; *Karriella* n.gen. (*K. treenensis* n.sp., *K. walpolensis* n.sp.) from southwestern Australia; *Asmea* n.gen. from Papua New Guinea (*A. akrikensis* n.sp., *A. hayllari* n.sp., *A. capella* n.sp., *A. mullerensis* n.sp.). A new subfamily, the Borralinae, characterized by the presence of grate-shaped tapeta in all posterior eyes, is proposed. It includes the 5 genera described here plus *Therlinya* (Gray & Smith, 2002), *Borrala* and *Pillara* (Gray & Smith, 2004). The relationships of these putative stiphidiid genera are briefly discussed and the Kababininae is provisionally referred from the Amphinectidae to the Stiphidiidae. Observations on epigynal mutilation as a post-mating sperm protection mechanism are presented. Differences in visible tapetal structure between borraline spiders and *Stiphidion* are figured and discussed.

GRAY, MICHAEL R., & HELEN M. SMITH, 2008. A new subfamily of spiders with grate-shaped tapeta from Australia and Papua New Guinea (Araneae: Stiphidiidae: Borralinae). *Records of the Australian Museum* 60(1): 13–44.

In two previous papers the stiphidioid genera *Therlinya, Borrala* and *Pillara*, all from eastern Australia, were described (Gray & Smith, 2002, 2004). The five additional genera described here resemble *Borrala* and *Pillara* in having a carapace with a longitudinally striped pattern (the "striped group" genera) and a profile in males that is typically highest at the fovea. *Therlinya* differs from the "striped" genera in having a carapace with a more or less arched profile in both sexes and no patterning. These genera are united by the presence of a grate-shaped tapetum in the PLE and PME, a tegular lobe on the male palpal bulb and wide female copulatory ducts. The eight genera included within this "grate-shaped tapetum group" are widely distributed along the coastal and highland forest regions of eastern Australia (except Tasmania), with extensions into south-western Australia and the highlands of Papua New Guinea. All of these spiders are forest dwelling species with simple cribellate sheet webs in which they run hanging below the sheet. Several species exhibit what may be a unique form of paternity assurance involving female genital mutilation.

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Material and methods

Specimen examinations, measurements and drawings were made using a Wild M5 or Leica MZ 12 microscope with graticule and drawing attachment. The eye tapetal structures were examined in living and freshly killed spiders in 70% ethanol (routine characterization of the grate-shaped tapetum can be difficult because it is often obscured as a visible entity in preserved specimens [see techniques noted in Griswold, 1993]). Observations were made using a Leica MZ 12 microscope with two lateral cold light sources or a vertical