

NEW SPECIES AND RECORDS OF ASTIEAE (ARANEAE: SALTICIDAE)  
FROM AUSTRALIA AND PAPUA NEW GUINEA

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*Arasia eucalypti* sp. nov. and *Helpis minitabunda* (Koch) are first records of each genus from Papua New Guinea. *Helpis gracilis* sp. nov. and *Tauala athertonensis* sp. nov. are described from NEQueensland. □ *Astieae*, *Arasia*, *Helpis*, *Tauala*, Australia, Papua New Guinea.

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Wanless (1988) listed 6 genera of Astieae comprising 32 species, to which Zabka (1995) added monotypic *Megaloastia mainae*; all are of Australian origin. Some genera (*Astia*, *Helpis*, *Arasia*) are associated with *Eucalyptus* forests, others (*Sondra*, *Jacksonoides*, *Tauala*) are rainforest dwellers. The genera are endemic to Australia except *Helpis* which extends to New Zealand. It is not surprising to find some in Papua New Guinea, an island with a common geological history with Australia, especially in its southern part with similar floristic characteristics (*Eucalyptus* savannah) to NE Australia (Zabka, 1990, 1991, 1993).

MATERIAL AND METHODS

Material from PNG is deposited in the Queensland Museum, Brisbane (QM). Comparative material was borrowed from the Australian Museum, Sydney (AMS). Measurements are in millimetres. The drawings were made using a grid system. Dissected epigynes were digested in lactic acid. Abbreviations used are: AEW=anterior eyes width, ag=accessory gland, AL=abdominal length, CH=cephalothorax height, CL=cephalothorax length, co=copulatory opening, CW=cephalothorax width, e=embolus, EFL=eye field length, fd=fertilisation duct, id=insemination duct, mk=membranous keel, PEW=posterior eyes width, s=spermatheca, sr=seminal reservoir, ta=retrolateral tibial apophysis, tg=tégulum, tl=tégular lobe.

Order ARANEAE  
Family SALTICIDAE  
Tribe ASTIEAE  
*Arasia* Simon, 1901

*Astia* Koch, 1880: 1158. (part)

*Arasia* Simon, 1901: 432, 436-438; Roewer, 1954: 968; Bonnet, 1955: 632; Brignoli, 1983: 626; Wanless, 1988: 81-84, 115-119; Davies & Zabka, 1989: 206, 210.

TYPE SPECIES. *Astia mollicoma* Koch, 1880, by original designation.

*Arasia eucalypti* sp. nov.  
(Figs 1A-E, 2A-D)

MATERIAL EXAMINED. PNG: HOLOTYPE, QMS28896, ♂, National Capital District, Waigani, university campus, under *Eucalyptus* bark, 15.07.1988, D. J. Court, M. Zabka. PARATYPES, QMS28897, ♀, same data except 28.06.1988; QMS28898, 5 ♀, 2 ♂; QMS30725 ♀; QMS30726 ♀, 2 juveniles, same data except 25.06.88-14.09.88; QMS28899 ♀, Central Province, Sinumu Dam., 1.05.88, D.J. Court. QMS30723, ♀, ♂, 2 juveniles, Port Moresby, 25.06.88, D.J. Court, M. Zabka; QMS30724, ♀, ♂, Boroko, 14.09.86, D.J. Court.

DESCRIPTION. Compared to *A. mollicoma* (Fig. 1F), larger, body lighter coloured (Figs 1A, 2A). Tegulum of the palpal organ more robust, seminal reservoir curved, membranous keel accompanying embolus not distinctive (Fig. 1D,E,G,H). Distal part of the insemination ducts in epigynes shorter and wider apart (Fig. 2D,E).

MALE. Cephalothorax (Fig. 1A,B) wide and flat, orange beige with narrow darker margin, covered with scattered stiff brown hairs and white fine marginal hairs. Eyes surroundings black; light guanine spots in the centre of the eye field; eyes fringed by white hairs. Abdomen (Fig. 1A) pale greyish, with pattern of darker markings and white guanine spots, with scattered white and brown hairs. Spinnerets pale grey. Clypeus orange beige with numerous white hairs. Chelicerae of similar colour, plurident, with 3 promarginal and 4 retromarginal teeth (Fig. 1C).

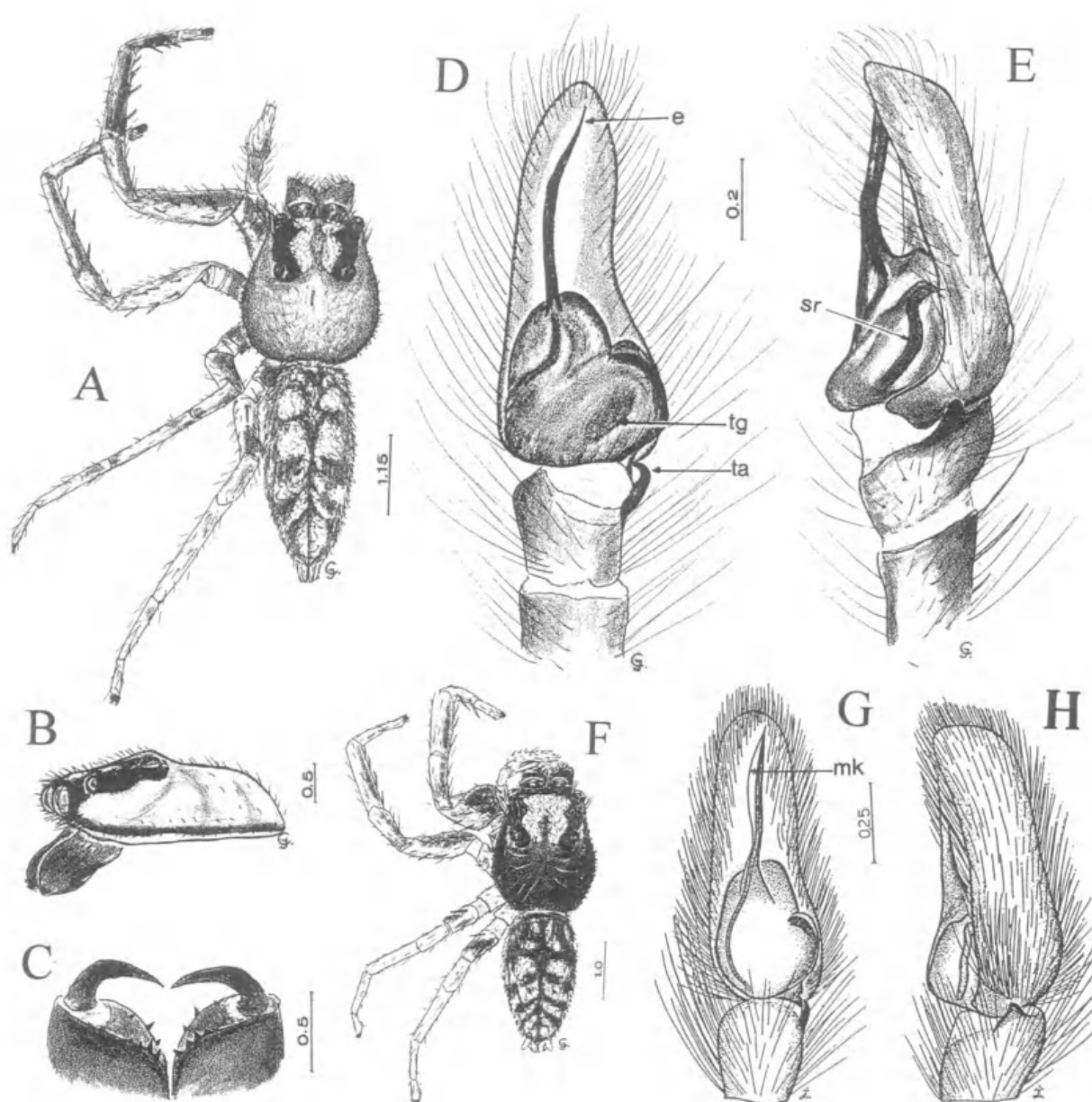


FIG. 1. A-E, *Arasia eucalypti* sp. nov., ♂. A, dorsal view. B, cephalothorax, lateral view. C, cheliceral dentition. D,E, palpal organ, ventral and retrolateral views. F-H, *Arasia mollicoma* (Koch, 1880), ♂. F, dorsal view. G,H, pedipalp in ventral and retrolateral views. (G,H from Davies & Zabka, 1989).

Maxillae and labium orange with lighter tips. Sternum pale yellow with darker margins. Venter yellow-grey. Legs yellowish-orange or pale yellow, anteriors darker, clothed in white and ambery hairs, spines moderately strong; tibia I with 6 prolateral and 6 retrolateral spines, metatarsus I with 3 prolateral and 3 retrolateral spines. Pedipalps yellow with long white and ambery hairs, their structure shown in Fig. 1D,E.

*Dimensions.* CL 2.70, CW 2.50, CH 0.80, EFL 1.10, AEW 1.60, PEW 1.40, AL 3.90.

**FEMALE.** Cephalothorax (Fig. 2A) similar in colour and shape to that in the ♂, however, abdomen little darker. Chelicerae robust with 2 or 3 promarginal and 5 retromarginal teeth (Fig. 2B). Legs yellow-orange, darker on tarsi and metatarsi; tibia I with 5 prolateral and 5 or 6 retrolateral spines, metatarsus I with 3 or 4 prolateral and 4 retrolateral spines. Palps yellow with darker tips, clothed in long whitish hairs. Epigyne (Fig. 2C,D) is similar to that in *A. mollicoma* (see arrows on Fig. 2E), except for different course of

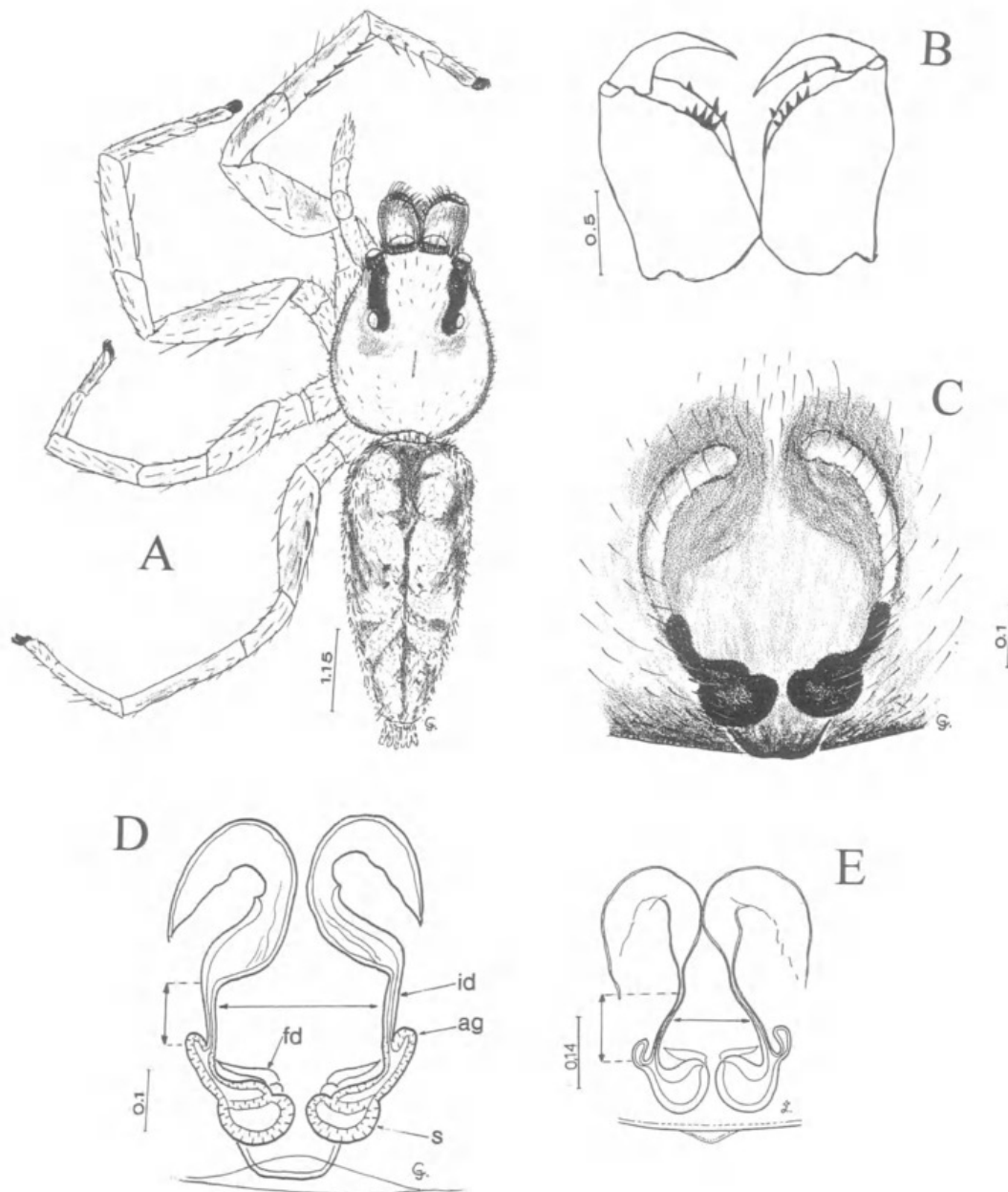


FIG. 2. A-D, *Arasia eucalypti* sp. nov., ♀. A, dorsal view. B, cheliceral teeth. C, epigyne. D, internal structures. E, *Arasia mollicoma*, internal genitalia (E from Davies & Zabka, 1989).

insemination ducts (Proszynski, 1984, 1987; Davies & Zabka, 1989).

*Dimensions.* CL 3.60, CW 3.30, CH 1.30, EFL 1.40, AEW 2.00, PEW 1.90, AL 6.00.

*DISTRIBUTION.* Southern PNG, on *Eucalyptus* tree trunks.

**Helpis** Simon, 1901

*Astia* Koch, 1880: 1160.(part)

*Helpis* Simon, 1901: 432, 436-438; Waterhouse, 1912: 125; Neave, 1939:600; Roewer, 1954: 969; Bonnet, 1957: 2150; Brignoli, 1983: 627; Wanless, 1988: 81-84, 94-102; Davies & Zabka, 1989: 206, 212.

*TYPE SPECIES.* *Astia minitabunda* Koch, by original designation.

***Helpis minitabunda*** (Koch, 1880)  
(Figs 3,4,5F)

*Astia minitabunda* Koch, 1880: 1160.

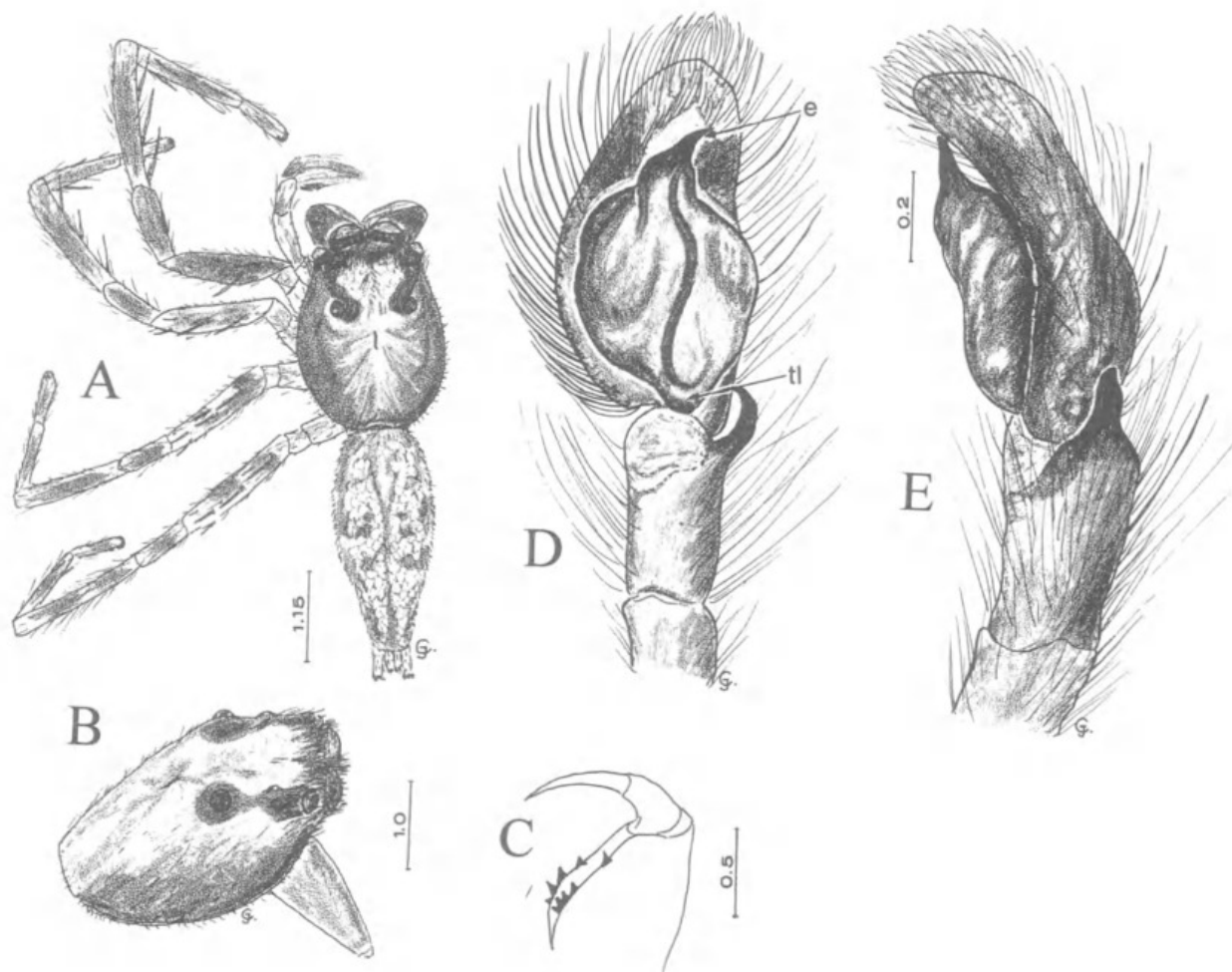


FIG. 3. *Helpis minitabunda* (Koch, 1880), ♂. A, dorsal view. B, cephalothorax, lateral view. C, cheliceral teeth. D,E, pedipalp, ventral and retrolateral views.

*Helpis minitabunda* Simon, 1901: 431, 432, 436, 438; Rainbow, 1911: 280; Roewer, 1954: 969; Bonnet, 1957: 2151; Proszynski, 1971: 417; Wanless, 1988: 94-98; Davies & Zabka, 1989: 206, 212.

**MATERIAL EXAMINED.** PNG: QMS28900, 30728, ♂, ♀, Mt. Hagen, Hagen Park Hotel, under *Eucalyptus* bark, 4.07.1986, D.J. Court; QMS28901, ♂, Calanthe, Goroke, Norman Cruttwell's residence, 11.04.87, D.J. Court.

**DESCRIPTION.** Male. Cephalothorax (Fig. 3A,B) moderately low, pale brown-orange, darker marginally with orange guanine spots in the centre of eye field and scattered whitish and pale brown hairs. Surroundings of eyes black with fine white hairs. Abdomen (Fig. 3A) grey with pattern of white guanine spots and grey-brown markings. Spinnerets grey. Clypeus,

chelicerae (Fig. 3C) and maxillae and labium orange-brown. Sternum pale orange-brown with darker margins. Venter light grey with light spots. First legs orange with brown markings on femora, tibiae and patellae; other legs paler; tibia I with 3 prolateral and 3 retrolateral spines, metatarsus with 2 prolateral and 2 retrolateral ones. Palpal organ (Figs 3D,E).

**Dimensions.** CL 2.70, CW 2.10, CH 1.40, EFL 1.40, AEW 1.80, PEW 1.60, AL 3.70.

**FEMALE.** Cephalothorax (Fig. 4A) yellow-brown, paler in the centre; eye region with yellow guanine spots. Surroundings of lateral eyes I, II, and III black with white hairs. Abdomen pale grey with brown and white spots. Clypeus orange brown with rows of white hairs. Chelicerae of similar colour with 5 promarginal and 6 retromar-

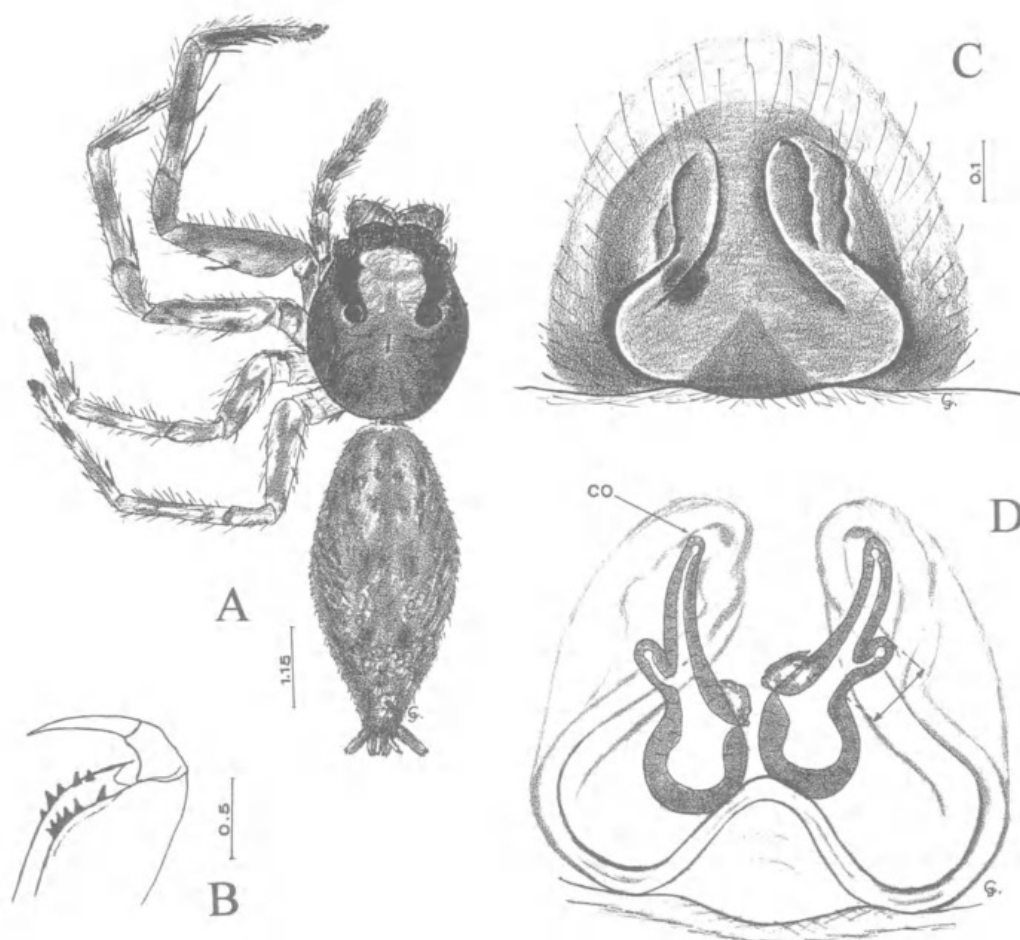


FIG. 4. *Helpis minitabunda* (Koch, 1880), ♀. A, dorsal view. B, cheliceral teeth. C, epigyne. D, internal structures.

ginal teeth (Fig. 4B). Maxillae and labium as in the ♂. Sternum orange-brown. Venter light grey. Legs similar in colour and spination to those in the ♂. Pedipalps generally yellow, darker distally, clothed in white hairs. Epigyne (Fig. 4C,D).

*Dimensions.* CL 3.80, CW 3.30, CH 1.50, EFL 1.50, AEW 2.20, PEW 2.00, AL 7.20.

**COMPARISON.** *H. minitabunda* differs from other species by the shape of embolus and tegular lobe in the ♂ palpal organ (Figs 3D,E, 5D,E, G). Accessory glands of the epigyne more distant from the spermathecae (Figs 4D, 6D,E).

**DISTRIBUTION.** NSW, QLD, TAS, NZ, PNG.

***Helpis gracilis* sp. nov.**  
(Figs 5A-E, 6A-D)

**MATERIAL EXAMINED.** Holotype: ♂, New South Wales, Morton National Park, SW Nowra, Sally Creek

Valley, under bark of snow gums, 23.04.1988, M. Zabka. Allotype: ♀, same data. Paratype ♀, same data. All AMS.

**DIAGNOSIS.** Shape of embolus and tegular lobe distinctive within the genus (Fig. 5D-G). In comparison to *H. minitabunda* the accessory glands more distant from the spermathecae (Figs 4D, 6D).

**MALE.** Cephalothorax (Fig. 5A,B) chestnut-brown with paler median stripe, eye field dark orange. Surroundings of eyes black, covered with brown hairs. Abdomen (Fig. 5A) pale grey, darker laterally, covered with brown hairs. Spinnerets grey. Clypeus orange-brown, fringed by white hairs. Chelicerae relatively long, pale brown, with 5 promarginal and 6 retromarginal teeth (Fig. 5C). Maxillae and labium brown with paler tips, clothed in brown hairs. Sternum orange with narrow darker margins. Venter dark grey. Legs: anteriors orange-brown with brown mark-



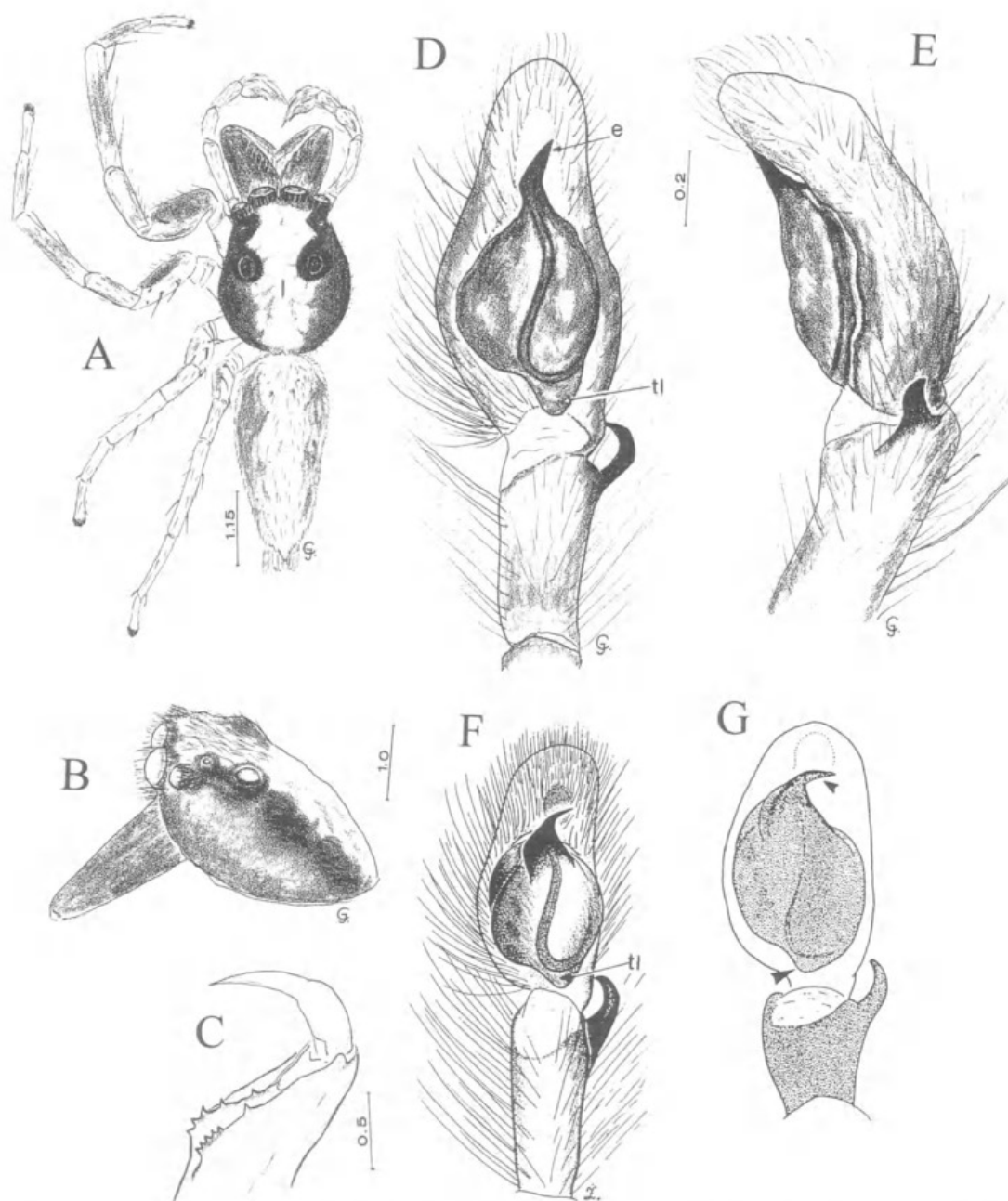


FIG. 5. A-E, *Helpis gracilis* sp. nov., ♂. A, dorsal view. B, cephalothorax, lateral view. C, cheliceral teeth. D, E, pedipalp, ventral and retrolateral views. F, *Helpis minitabunda* (Koch, 1880), pedipalp, ventral view. G, *Helpis occidentalis* (Simon, 1901), pedipalp, ventral view. (F from Davies & Zabka, 1989; G from Wanless, 1988).

ings, especially around the spines, others yellow with brown markings; tibia I with 3 prolateral and 3 retrolateral spines, metatarsus I with 2 prolateral and 2 retrolateral ones. Pedipalps brown-beige with dense, rather long hairs on basal segments (Fig. 5D,E).

*Dimensions.* CL 3.10, CW 2.75, CH 2.30, EFL 1.40, AEW 2.15, PEW 1.85, AL 4.50.

*Female.* Cephalothorax (Fig. 6A) orange-beige-brown clothed in short white and brown hairs, with orange spots on the eye field. Surroundings of eyes black. Abdomen pale yellow-grey with pattern of darker spots, covered with brown hairs. Spinnerets pale yellow-grey. Clypeus pale brown with white long hairs. Chelicerae of similar colour, with 4 teeth on

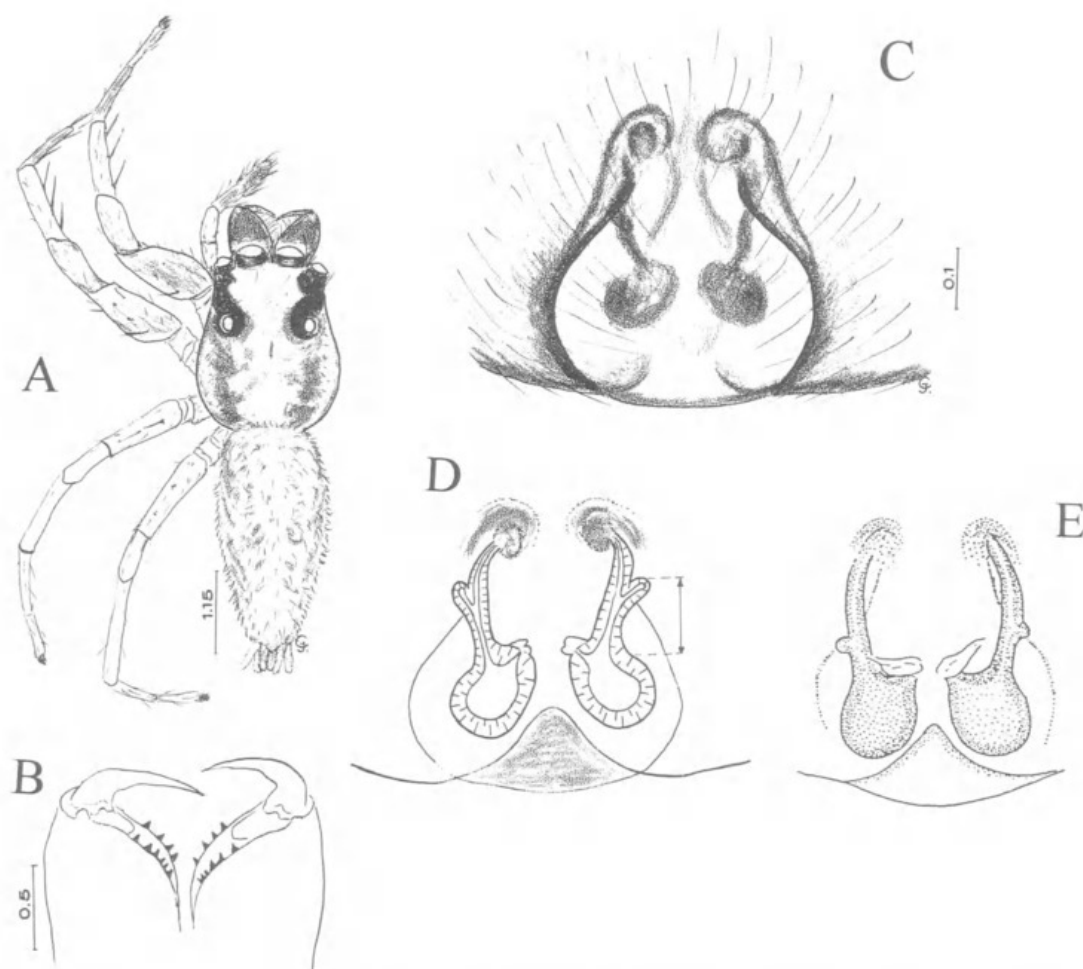


FIG. 6. A-D, *Helpis gracilis* sp. nov., ♀. A, dorsal view. B, cheliceral teeth. C, epigyne. D, internal structures. E, *Helpis occidentalis* (Simon, 1901), internal genitalia.

promargin and 6 on retromargin (Fig. 6B). Maxillae and labium pale brown with pale yellow tips. Sternum light yellow with brown margins. Venter pale yellow-grey, centrally darker. Legs: first pair pale brown-orange with some darker spots, others yellow with brown markings; spination of leg I as in the ♂. Pedipalps yellow, clothed in white hairs. Epigyne (Fig. 6C,D) very similar to *H. occidentalis* (Fig. 6E).

*Dimensions.* CL 3.40, CW 2.70, CH 1.60, EFL 1.50, AEW 2.20, PEW 1.95, AL 4.65.

*DISTRIBUTION.* Morton National Park, New South Wales.

#### **Tauala** Wanless, 1988

*Tauala* Wanless, 1988:81-84, 120-133; Davies & Zabka, 1989: 206, 209.

*TYPE SPECIES.* *Tauala lepidus* Wanless, 1988, by original designation.

#### **Tauala athertonensis** sp. nov. (Fig. 7A-E)

*MATERIAL EXAMINED.* NE Queensland: Holotype QMS28903, ♀, near Atherton, dry Eucalyptus forest, on grass, 10.11.1987, M. Zabka.

*DIAGNOSIS.* Course of insemination ducts distinctive (Fig. 7E,F).

*DESCRIPTION.* Female. Cephalothorax (Fig. 7A,B) beige-brown with scattered short brown hairs and black surroundings of eyes. Abdomen pale grey with pattern of darker spots, clothed in ambery hairs. Spinnerets pale grey. Clypeus orange, edged in short hairs. Chelicerae dark orange with 3 teeth on promargin and 7 on retromargin (Fig. 7C). Maxillae orange-brown

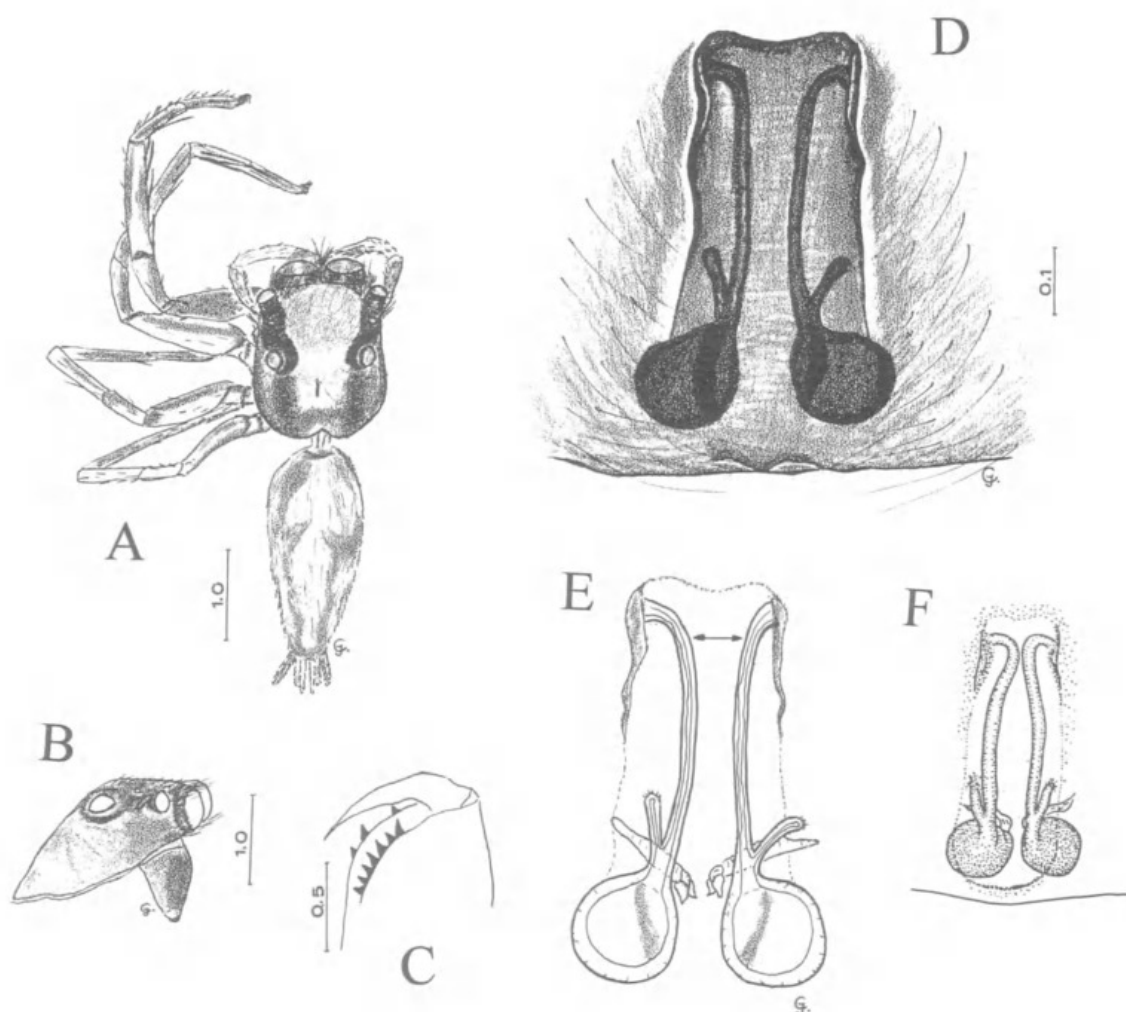


FIG. 7. A-E, *Tauala athertonensis* sp. nov., ♀. A, dorsal view. B, cephalothorax, lateral view. C, cheliceral teeth. D, epigyne. E, internal structures. F, *Tauala alveolatus* (Wanless, 1988), internal genitalia.

with paler inner margins, labium similar, with paler tips. Sternum yellow with darker margins. Legs yellow with brown markings on femora, tibiae and patellae; tarsi and metatarsi darker; tibia I with 4 prolateral and 3 retrolateral spines, metatarsus I with 2 prolateral and 2 retrolateral ones. Pedipalps pale yellow. Epigyne (Fig. 7D,E) with long, narrow insemination ducts, oval spermathecae accompanied by the accessory glands. Diagnostic characters marked with arrows.

*Dimensions.* CL 1.90, CW 1.50, CH 0.90, EFL 0.90, AEW 1.50, PEW 1.20, AL 2.50.

*DISTRIBUTION.* Near Atherton, NEQ.

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