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TASMABROCHUS, A NEW SPIDER GENUS FROM TASMANIA, AUSTRALIA (ARANEAE, AMPHINECTIDAE, TASMARUBRIINAE)

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ABSTRACT. Three species of *Tasmabrochus* new genus are described. The new species are *T. cranstoni* (type species), *T. montanus* and *T. turnerae*. They are placed with *Tasmarubrius* in a new subfamily Tasmarubriinae in the Amphinectidae.

Keywords: Taxonomy, Australia, new species, Gondwanan

The spiders here placed in the new genus *Tasmabrochus* were prominent among collections of Tasmanian spiders when describing *Tasmarubrius* (Davies 1998a). Before proceeding, I shall trace the history of *Amphinecta* Simon 1898 and the Amphinectidae. *Amphinecta* was described from New Zealand (type species *A. decemmaculata* Simon 1898) and placed in the Agelenidae. Lehtinen (1967) transferred it to the Amaurobiidae: Desinae and at the same time placed *Rubrius milvinus* Simon 1903 from Tasmania into a new combination, *Amphinecta milvina*. Forster & Wilton (1973) raised *Amphinecta* to a new family, the Amphinectidae, which comprised sixteen genera from New Zealand, thirteen of which were new. They dismissed Lehtinen's view that the Tasmanian spider *A. milvina* belonged in *Amphinecta* or the Amphinectidae. Davies (1998a) placed the Tasmanian *R. milvinus* in the genus *Tasmarubrius* and assigned it to the Amaurobiidae. However a recent cladistic analysis (Davies & Lambkin 2001) which included the type species of *Amaurobius, A. fenestralis* (Ström 1768) from Europe, among Australasian exemplars found the placement of *Amaurobius* ambiguous. In half (eighteen) of the MPTs it formed a third basal clade with *Badumna* (Davies & Lambkin 2001, fig. 10) while in the other half it was sister to a large clade that did not include *Tasmarubrius*. Thus *Tasmarubrius* is here provisionally transferred to its most closely related family, Amphinectidae.

The Metaltellinae is also considered a subfamily of the Amphinectidae. Lehtinen (1967) considered it a subfamily of the Amaurobiidae. It is a well defined group of genera found in South and Central America and in Australia. Davies (1998b) placed it in the Amphinectidae as the closest available family in the cladistic analysis. This was supported by Griswold et al. (1999) in their analysis of the cribellate entelegyne spiders. In their cladogram *Maniho* Marples 1959, the amphinectid exemplar and *Metaltella* Mello-Leitão 1931 were a sister group to the Desidae.

A new subfamily Tasmarubriinae is established for the reception of *Tasmarubrius* and the new genus described here, *Tasmabrochus*. It is interesting to note that Churchill (1993: 477) listed the male as *Mamoea* sp., an amphinectid from New Zealand and the female as 'gen. A sp.2'. As there is no clear diagnosis of the family Amphinectidae, the subfamily will be compared with the type genus, *Amphinecta*.

METHODS

Nearly all of the collection was from pitfall (PF) trapping in both the coastal heathland of north-eastern Tasmania and in the north-western highlands region. Notation of spines follows Platnick & Shadab (1975); measurements are in millimeters; the left male palp is used in illustrations. The usual abbreviations are used for body length, eyes, spinnerets and spigots. Abbreviations on figures are explained in the legend.

Specimens are deposited in the following museums: Queen Victoria Museum, Launceston, Tasmania (QVM), Tasmanian Museum,

Hobart, Tasmania (TM) and Queensland Museum, Brisbane, Queensland (QM).

SYSTEMATICS

Tasmarubriinae new subfamily

Diagnosis.—Like *Amphinecta*, the tasmarubriines are three-clawed ground living ecribellates found under logs and rocks. They share the following characters: geniculate chelicerae with two retromarginal teeth; cuticle ridged and without feathery hairs; preening combs present distally on some metatarsi; small membranous conductor; movable median apophysis and a distal RTA and dorsoretrolateral apophysis. They differ from *Amphinecta* in the division of the tegulum into proximal and distal parts, a short thick embolus, simple insemination ducts and cymbial apophyses. In contrast, *Amphinecta* has a long, coiled spiniform embolus, loosely coiled insemination ducts and lacks cymbial apophyses.

Description.—Reddish brown carapace, almost glabrous; dark brown abdomen with indistinct pattern of six pairs of pale spots, venter pale mottled with brown. From above, posterior eye row procurved (Fig. 2), anterior row slightly so; from the front both rows strongly procurved. AME reduced. Geniculate chelicerae (Fig. 1) with two retromarginal and two promarginal teeth (Fig 4). Sternum longer than wide, pointed posteriorly. Legs 4123: all tibiae and metatarsi have paired ventral spines which are longer on the posterior legs. Single row of trichobothria on metatarsi and tarsi; tarsal organ slit-like (Fig. 12). Epigynum with lateral gonopores. Tegulum of male palp with proximal and distal divisions, the latter bearing a short thick embolus, a small membraneous conductor, a large movable elongate median apophysis and usually a fixed tegular apophysis. Cymbium with small bulge on retrolateral edge and proximal projection (paracymbium). Palpal tibia with large retrolateral excavation with ventro-and dorso-retrolateral branches. Small D-shaped colulus. Two major ampullate spigots on ALS, the anterior larger than the posterior; the latter reduced to a nubbin in male.

Tasmabrochus new genus

Type species.—*Tasmabrochus cranstoni* new species.

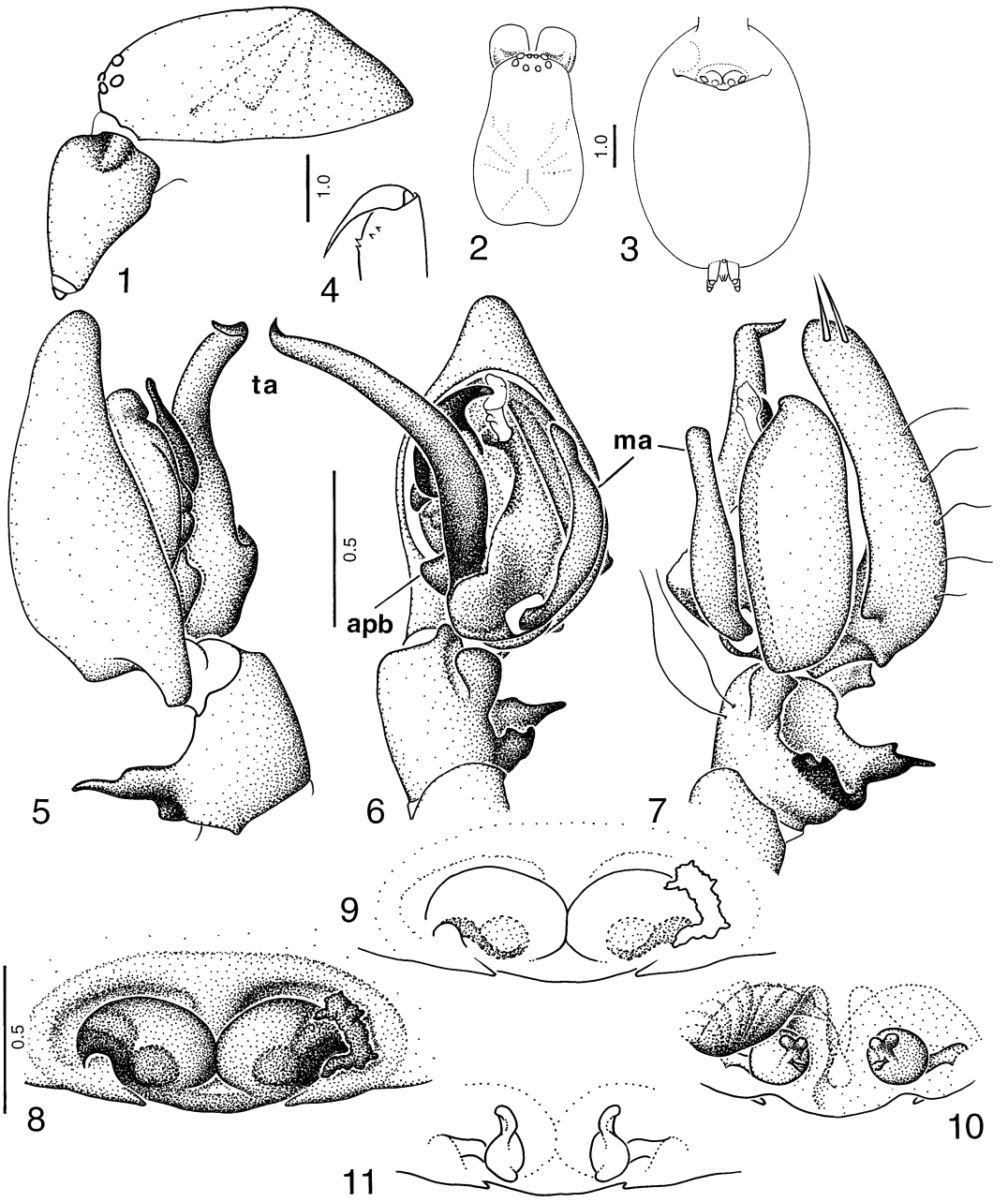
Etymology.—The generic name is a combination of 'Tasma' from Tasmania and Latin 'brochus', a projection, referring to the very prominent tegular apophysis of the male palp. It is considered masculine in gender.

Diagnosis.—Members of the genus resemble *Tasmarubrius* in having two retromarginal and two promarginal cheliceral teeth, and a large fixed tegular apophysis and cymbial apophyses in the male. *Tasmabrochus* differs from *Tasmarubrius* in having lateral teeth on the epigynum and lacking lateral epigynal protuberances. The long fixed tegular apophysis is in a ratio of 1:0.7 to the median apophysis whereas they are about equal (1:0.9) in *Tasmarubrius*. Cymbium with small retrolateral paracymbium and a posterior prolateral extension whereas *Tasmarubrius* has a large paracymbium and lacks prolateral extension. Preening combs on metatarsi III and IV, absent on II; whereas they are present on II, III and IV in *Tasmarubrius*.

Tasmabrochus cranstoni new species
Figs. 1–13, 15–19, Table 1

Types.—Australia: **Tasmania.** Holotype male, dry sclerophyll, Peters Link Rd, NE Tasmania, 41°08′S, 148°07′E, PF, site B2.2, 22–27 May 1993, P. Cranston, J. Trueman (QM S42321). Paratypes: 1 ♀, same locality, date, collectors as holotype, site B1.2 (QM S42322); 2 ♂, as above, site B1.1 (QM S42323); 1 ♂, site B1.2 (QM S42324); 1 ♂, site B2.1 (QM S42325); 1 ♀, site B3.2 (QM S42326); 1 ♀, site B5.1 (QM S42327); 1 ♂, coastal heath, Eddystone Pt. 41°00′S, 148°19′E, PF, site C4.1, 22–27 May 1993, P. Cranston, J. Trueman (QM S42328); 1 ♂, same locality and collectors, site C3.2, 23–28 Aug.1993 (QM S42329); 1 ♂, C4.1, 23–28 Aug.1993 (QM S42330); 1 ♂ C4.2 (QM S42331); ♂, *Leptospermum* wet heath, Anson's Bay Rd, 41°02′S, 148°14′E, site D2.1, 23–28 Aug.1993, P. Cranston, J. Trueman (QM S42332); 2 ♀, in regeneration area, old Chum Dam, 10–15 km NE Pioneer; 41°03′S,148°01′E, 200m, PF, October 1989–April 1990, Forestry Department (TM J3260); 4 ♂, as above (TM J3261); 1 ♂, Freycinet NP, 42°09′S, 148°18′E, eucalypt forest, 27 May 1996, J. Boutin (TM J3265); 1 ♀, Gray, rotting log on dry hillside, 41°38′S, 148°13′E, 13 Aug. 1974, R. Mesibov (TM J3308).

Etymology.—The specific epithet is a pa-

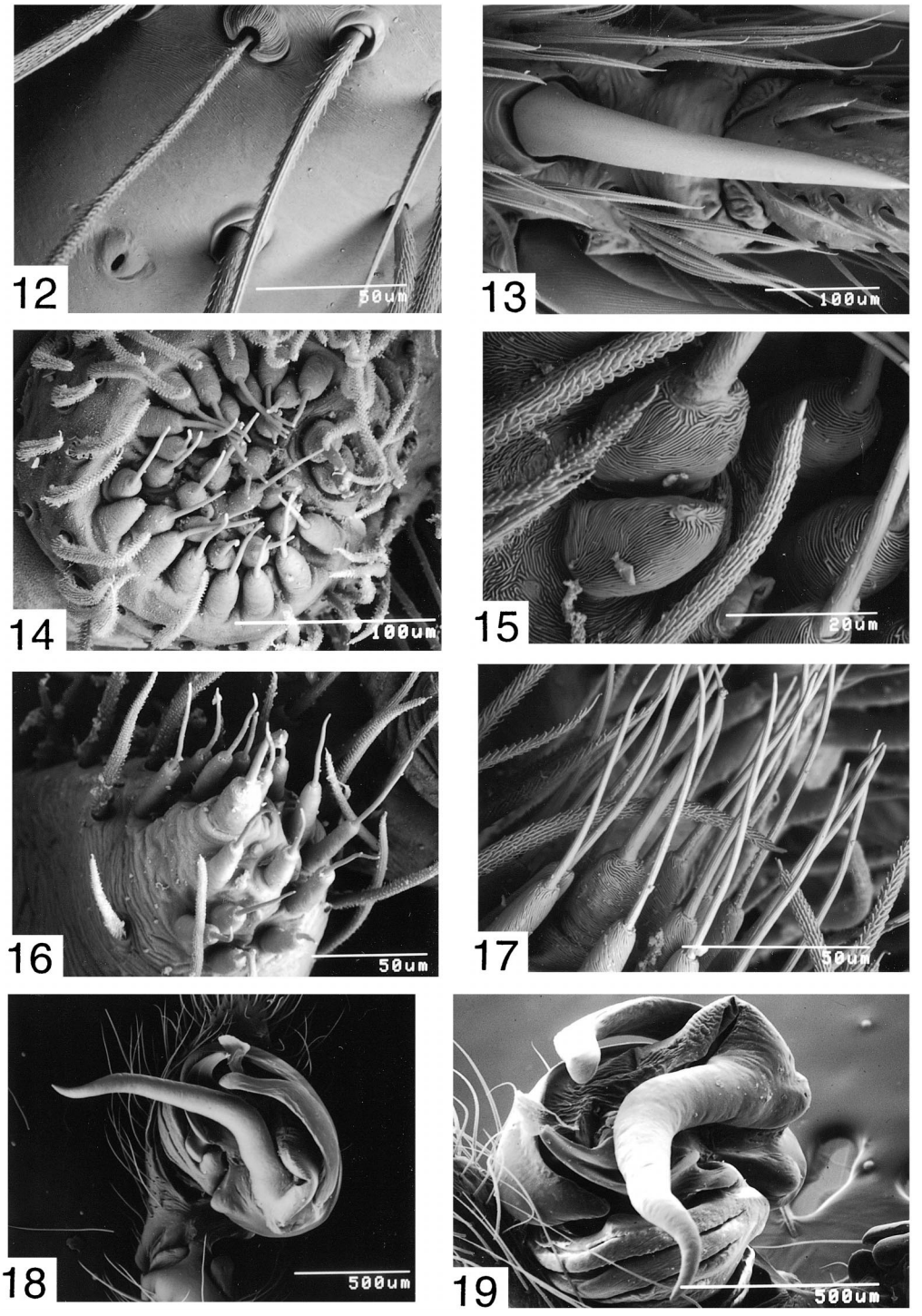


Figures 1–11.—*Tasmabrochus cranstoni* new species. 1, 2. Female carapace. 1, Lateral; 2, Dorsal. 3, Abdomen, ventral. 4, Chelicera, ventral. 5–7, Male palp. 5, Prolaterodorsal. 6, Ventral. 7, Retrolateral. 8–11, Epigynum. 8, Dorsal. 9, Dorsal cleared. 10, Ventral. 11, Posteroventral. *Abbreviations*: apb: angular prolateral bulge; ma, median apophysis; ta, tegular apophysis.

tronym in honor of Dr. Peter Cranston, one of the collectors of the holotype.

Diagnosis.—Males can be recognized by the angular bulge on the prolateral tegulum (Fig. 6) and the blunt prolongation of posterior prolateral cymbium (Fig. 5).

Description.—Male*:* CL 3.8, CW 2.5, AL 3.7, AW 2.1. Pale cardiac patch on abdomen,



Figures 12–19.—12, 13, 15–19, Male *Tasmabrochus cranstoni* new species. 12, Tarsal organ and trichobothrium, leg I; 13, Two preening combs distal to spine, metatarsus III; 15, ALS (l) with one MAP and nubbin; 16, PMS (l) with mAP; 17, PLS (r) with large spigot among aciniforms; 18, Palp, ventral; 19, Palp, prolateral. 14, Female *Tasmarubrius turnerae* new species, ALS (r) with two MAP medially.

Table 1. Leg lengths of male (female) *Tasmabrochus cranstoni* new species.

	I	II	III	IV
Femur	2.8 (3.0)	2.5 (2.5)	2.2 (2.2)	2.8 (3.0)
Patella and tibia	3.8 (3.8)	3.0 (3.3)	2.6 (2.8)	3.8 (3.8)
Metatarsus	2.6 (2.1)	2.2 (2.0)	2.4 (2.3)	3.4 (2.9)
Tarsus	1.6 (1.2)	1.2 (1.0)	1.0 (1.0)	1.3 (1.1)
Total	10.8 (10.1)	8.9 (8.8)	8.2 (8.3)	11.3 (10.8)

venter mottled. Ratio of AME: ALE: PME: PLE is 5:9:7:9. Labium about as wide as long; sternum longer than wide. Legs 4123 (Table 1). Notation of spines. Femora: I, D110, P002; II, D110, P001; III D110, P001, R001; IV, D110, P001, R001. Tibiae: I, P111, V222; II, P111, V122; III D010, P111, V212, R201; IV, D010, P111, V212, R111. Metatarsi: I, P012, V221, R001; II P112, V221, R012; III, D111, P212, V221, R211; IV, D110, P212, V221, R212. Preening combs (Fig. 13) on metatarsi III (two with 4 tines each), IV (two with 4 tines). Palp (Figs. 5–7, 18,19) small membraneous conductor; broad spatulate median apophysis, slightly bowed; very long tegular apophysis extending well beyond tegulum; heavily sclerotised blunt embolus. Angular prolateral bulge on tegulum. Blunt projection on posterior prolateral cymbium. Tibial apophysis deeply excavated with sharp dorsoretrolateral spur. Spinnerets (Figs. 15–17) ALS with one major ampullate gland spigot and a nubbin; about 15 piriform spigots. PMS with one large minor ampullate spigot and about 15 small aciniform spigots. PLS with one large spigot and more than 20 aciniforms. Males varied in length between 6.6–7.8.

Female*:* CL 4.3, CW 2.9, AL 6.5, AW 4.5. Ratio of AME: ALE: PME: PLE is 6:9:8:10. Labium about as wide as long; sternum longer than wide, 1:09. Legs 4123 (Table 1). Notation of spines. Femora: I, D110, P001; II. D110, P001, III D110, P001, R001; IV, D110, P001, R001. Tibiae: I, V222; II V122; III, D010, P111, V212, R101; IV, D001, P111, V212, R111. Metatarsi: I, P001, V221, R001; II, P012, V221, R011; III, D100, P112, V221, R112; IV, D110, P112, V221, R112. Preening combs on metatarsi III and IV as in male. Epigynum (Figs. 8–11) small, about a tenth the length of venter (Fig. 3); irregular shaped plugs in some gonopores. Small colulus with 4 setae. Spinnerets: ALS with two major ampullate gland spigots, the anterior larger than posterior, about 25 piriforms. PMS with one large minor ampullate spigot.

Females varied in length between 7.5–10.8.

Tasmabrochus montanus new species
Figs. 20–24, 28, 29

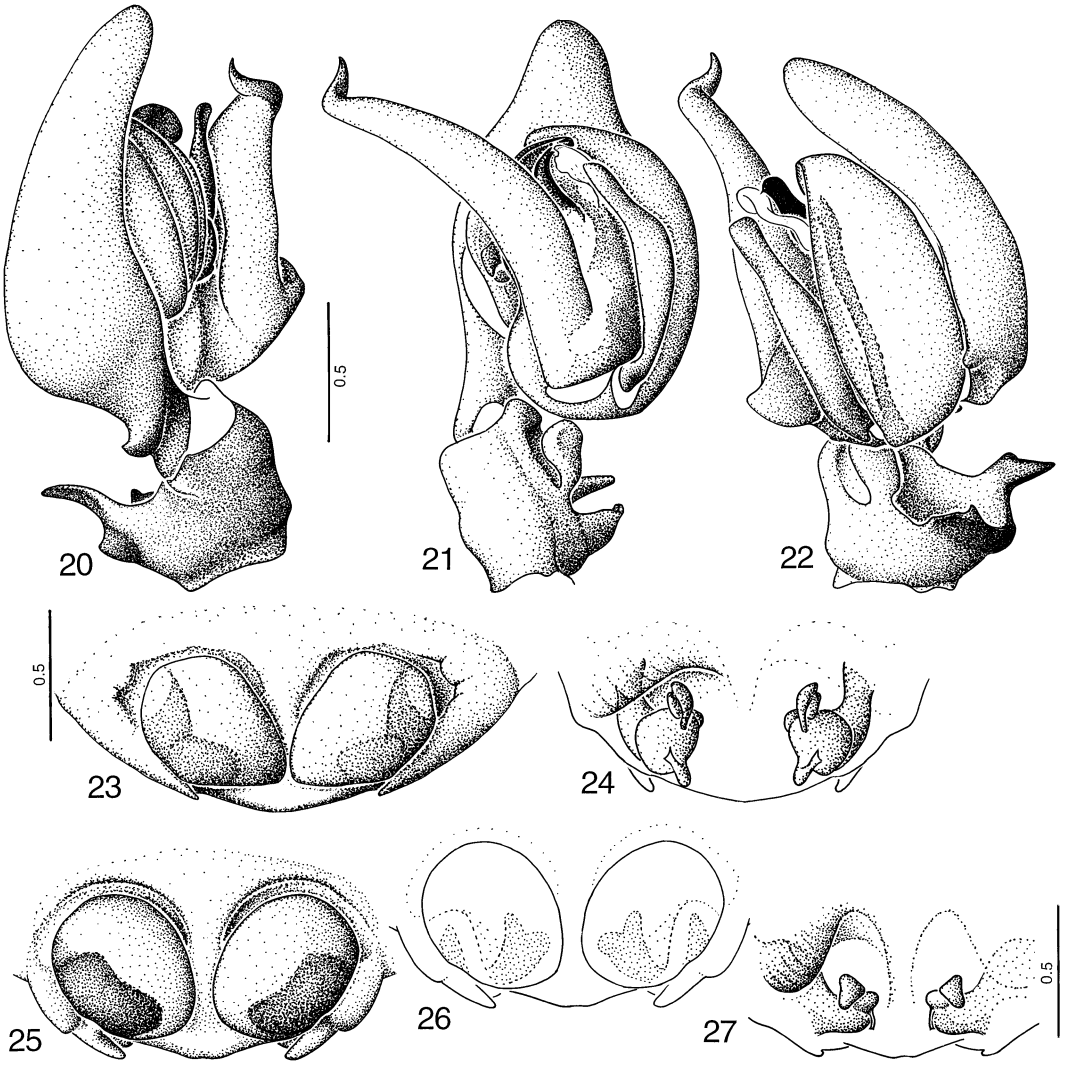
Types.—Australia: Tasmania. Holotype male, Maggs Mt, NW Tasmania, 41°45′S, 146°12′E, PF, 13 June–19 September 1979, R.H. Green (QVM 25951). Paratypes: 1 ♀, same data as holotype (QVM 25952); 45 ♂, same data as holotype (QVM 25953); 34 ♀, same data as holotype (QVM 25954); 2 ♀, 1 ♂, same locality and collector, 12 May 1980 (QVM 25955); 4 ♂, 4 ♀ (QVM:13:7074)

Etymology.—The specific epithet is from Latin 'montanus', mountain, for the type locality, Maggs Mountain.

Diagnosis.—Females very similar to *T. cranstoni*. Males can be recognised by the smooth rounded prolateral tegulum (Fig. 21) and the sharp point on the posterior prolateral cymbium.

Description.—Male*:* CL 4.0, AL 3.8. Coloration and pattern are similar to *T. cranstoni*. Ratio of AME: ALE: PME: PLE is 7:10:8:9. Legs 4123. I 12.3; II 10.2; III 9.7; IV 12.9. Notation of spines and preening combs similar to *T. cranstoni*. Male palp (Figs. 20–22) without angular prolateral bulge on tegulum (Fig. 21). Sharp point on posterior prolateral cymbium (Fig. 20). Males varied in length between 6.4–7.9.

Female*:* CL 4.6, AL 6.6. Legs: I 11.9; II 9.3; III 9.1; IV 12.5. Coloration, eyes, notation of spines similar to *T. cranstoni*. Epigynum (Figs 23–24, 28) about one tenth length of venter. PMS (Fig. 29) with a large minor ampullate spigot, two cylindrical spigots (one ectal, one posterior) and about sixteen smaller aciniform spigots. Females varied in length between 8.8–11.2.



Figures 20–27.—20–24, *Tasmabrochus montanus* new species. 20–22, Male palp. 20, Prolateral. 21, Ventral. 22, Retrolateral. 23, 24, Epigynum. 23, Ventral. 24, Dorsal. 25–27, *Tasmabrochus turnerae* new species, epigynum. 25. Ventral. 26, Ventral cleared. 27, dorsal.

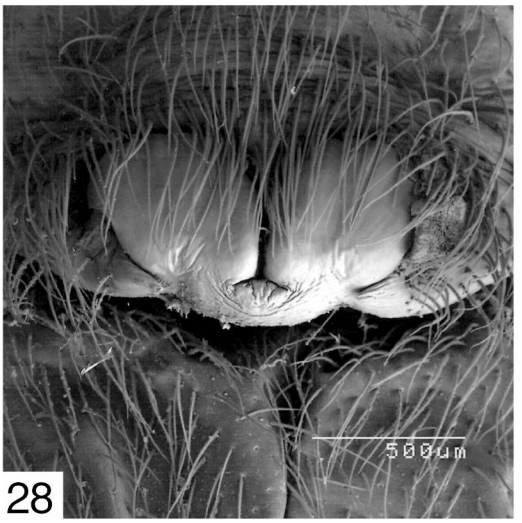
Tasmabrochus turnerae new species
Figs. 14, 25–27

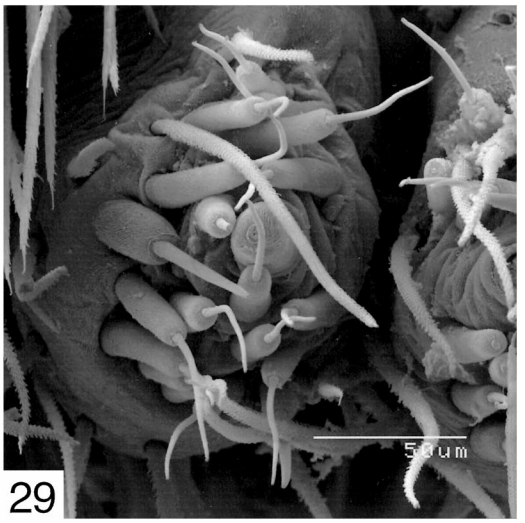
Types.—Australia: Tasmania. Holotype female, under rock at helipad, lower summit of Mt Maria, Maria I, SE Tasmania, 42°37′S, 148°06′E, 680 m, 6 March 1990, E. Turner (TM J2944). Paratypes: 3 ♀, same data as holotype (TM J3266).

Etymology.—The specific epithet is a patronym in honor of Elizabeth Turner, Curator of Zoology at the Tasmanian Museum and collector of these specimens.

Diagnosis.—Females may be recognised by the speckled brown abdomen with dark brown cardiac area. Epigynum about a sixth the length of venter compared with a tenth in other species; smaller storage area of spermatheca than in other species.

Description.—Female*:* CL 5.0, CW 3.3 AL 5.4, AW 3.2. Carapace dark reddish brown; abdomen with dark brown cardiac stripe and indistinct paired pale patches; pale venter with dark brown mottling. Ratio of eyes AME: ALE: PME: PLE is 8:11:9:11. Labium slightly longer than wide; sternum longer than wide 1:





Figures 28, 29.—*Tasmabrochus montanus* new species. 28, Epigynum, ventral; 29, PMS (shaft of large minor ampullate spigot is broken off).

0.8. Legs 4123. I 13.1; II 11.5, III 10.8; IV 14.5. Notation of spines. Femora: I, D110, P002; II, D110, P001; III, D110, P001, R001; IV, D110, P001, R001. Tibiae: V222; II, V112; III, D010, P111, V212, R111; IV,D001, P111, V212, R111. Metatarsi: I, P001, V221, R001; II P012, V221, R001; III, D110, P212, V221, R212; IV, D110, P212, V221, R212. Preening combs on metatarsi III (two with 6 & 5 tines each), IV (two with 6 & 5 tines). Epigynum (Figs. 25–27) about a sixth the length of the venter; small storage area in spermathecae. Spinnerets: ALS with two major ampullate spigots and about 25 piriform spigots (Fig.14). PMS and PLS with one large spigot and smaller spigots. Colulus with about 10 setae. Females varied in size between 9.5–11.0.

Male*:* Unknown.

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