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AUSTRALIAN CHORDEUMATIDAN MILLIPEDS. II.  
A NEW SPECIES OF REGINATERREUMA MAURIÈS  
FROM TASMANIA (DIPLOPODA, CHORDEUMATIDA,  
METOPIDIOTRICHIDAE)

by William A. Shear and Robert Mesibov

ABSTRACT

*Reginaterreuma tarkinensis*, new species, is described from abundant material collected in numerous localities in western Tasmania. The new species differs from the four previously described species (all from Queensland) in the much larger anterior gonopod coxosternum, larger body size, and more prominent seta-bearing tergal knobs.

This paper is the second in a planned series of three dealing with Australian chordeumatidan millipeds, primarily from Tasmania, based on the extensive collections of the second author. A brief characterization of chordeumatidan millipeds and a history of their study in Australia is given in the first paper in the series (Shear & Mesibov, 1994). The third paper in the series will treat the genera *Australeuma* Golovatch (1986), *Neocambrisoma* Mauriès (1987), and a new endemic Tasmanian genus.

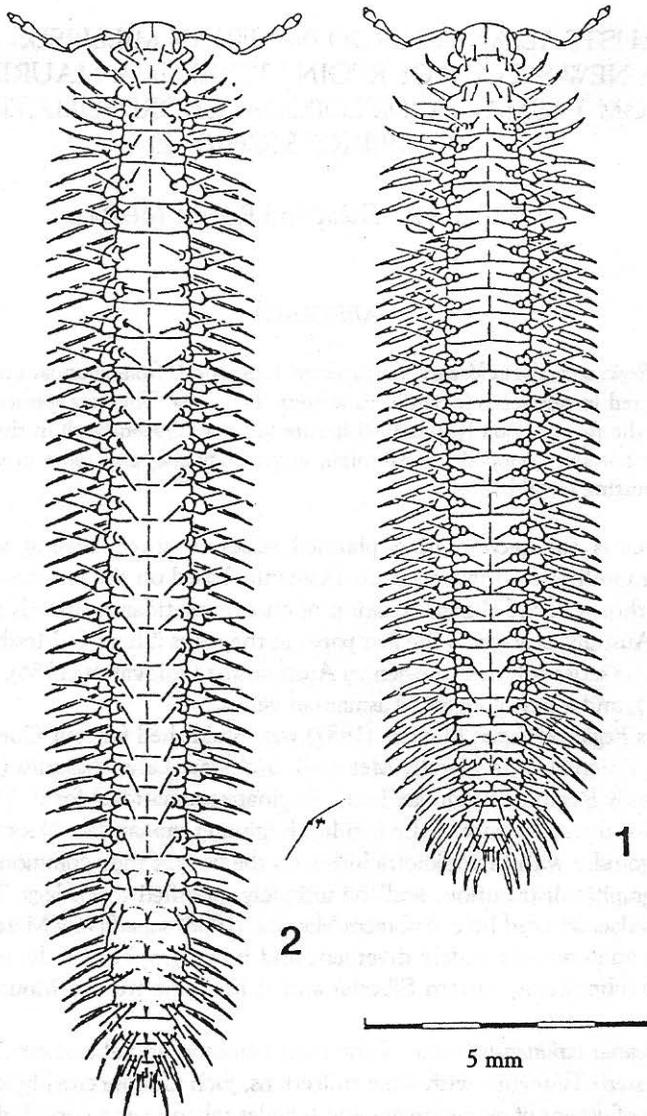
The genus *Reginaterreuma* Mauriès (1987) was established for four Queensland species and originally assigned to the family Metopidiotrichidae. Later, Mauriès (1988) erected a monotypic family Reginaterreumidae (*recte*: Reginaterreumatidae) for it. Shear & Tanabe (1994) argued for the synonymy of the families Reginaterreumatidae, Neocambrisomatidae and Schedotrigonidae with Metopidiotrichidae, on the basis of their common gonopod plan, coherent geographic distribution, and the uniquely modified tenth legs. This concept of Metopidiotrichidae, adopted here, embraces Mauriès' (1988) superfamily Metopidiotrichoidea excluding the anatomically widely divergent and biogeographically discordant elements Megalotyliidae (Himalayas, eastern Siberia) and Adrityliidae (Rocky Mountains of North America).

*Reginaterreuma tarkinensis* is one of the most common and abundant chordeumatidan millipeds in western Tasmania, with some collections, such as those cited below for Wombat Hill, consisting of dozens of mature males and females taken over a period of a few days. As is the case with the genus *Peterjohnsia*, the Tasmanian species has congeners in Queensland but is significantly larger in size than any of them, and to some degree requires an extension

of the generic concept.

The specimens used in this study have been deposited in the Queen Victoria Museum and Art Gallery, Launceston, Tasmania, Australia (QVM), the Tasmanian Museum (TM), the Australian Museum (AM), the Virginia Museum of Natural History, Martinsville, Virginia, USA (VMNH), The American Museum of Natural History, New York (AMNH), and the United States National Museum of Natural History, Washington, DC (USNM).

We are indebted to Mike Tobias for the whole-body drawings (Figs. 1, 2).



Figs. 1-2. *Reginaterreuma tarkinensis*. Fig. 1. dorsal view of male, drawing courtesy of M. Tobias.  
Fig. 2. Dorsal view of female, drawing courtesy of M. Tobias.

## SYSTEMATIC TREATMENT

Superfamily Heterochodeumatoidea Pocock  
Family Metopidiotrichidae Attems

Genus *Reginaterreuma* Mauriès 1987

*Reginaterreuma* Mauriès 1987, p. 108-109.

Type species: *R. monroei* Mauriès 1987, by original designation.

Diagnosis: The original diagnosis of Mauriès (1987) has to be modified to accommodate the new species described below. Differing from other metopidiotrichids in lacking gonopod flagella and in having the anterior gonopods reduced to a single, fused coxosternal structure. Coxites of the posterior gonopods with or without a basal process.

Distribution: Queensland (4 species) and Tasmania (1 species), Australia.

Key to Species of *Reginaterreuma*

- 1a. Small animals, 10 mm long or less . . . . . 2.
- 1b. Larger animals, 11-17 mm long . . . . . 4.
- 2a. Telopodites of the tenth legs of males with four podomeres; cyphopods with a posterior plate formed from the fused inner valves and lacking an obvious median suture; Mt. Finlay region, NE Queensland . . . . . *monroei* Mauriès.
- 2b. Telopodites of the tenth legs of males with two podomeres, the basal at least five times as long as the distal; female cyphopod posterior plate with an obvious median suture . . . . . 3.
- 3a. Male tenth leg telopodites at least twice as long as the tenth coxosternal processes; posterior plate of cyphopods concealing outer valves in posterior view; Mt. Bartle Frere, NE Queensland . . . . . *daviesae* Mauriès.
- 3b. Male tenth leg telopodites about equal in length to the tenth coxosternal processes; posterior plate of female cyphopods not concealing outer valves in posterior view; Bellenden Ker Range, NE Queensland . . . . . *unicolor* Mauriès.
- 4a. Male tenth leg coxosternal processes densely setose (fig. 7); cyphopods with a pronounced diagonal groove (fig. 8); Tasmania . . . . . *tarkinensis*, new species.
- 4b. Male tenth leg coxosternal processes without setae; cyphopods without a groove; Bellenden Ker Range, NE Queensland . . . . . *major* Mauriès.

***Reginaterreuma tarkinensis*, new species**

(Figs.1-8)

Material: Male holotype (QVM) from Tasmania, Wombat Hill, CQ704066, 690 m elevation, 28.ix.1990, R. Mesibov. Paratypes: Six additional males and 10 females from same locality (QVM, AM, VMNH, USNM).

The following specimens are also designated paratypes: TASMANIA: Unless indicated otherwise, all collections by R. Mesibov, deposited QVM. Wombat Hill, The following map grid references and dates, CQ702064, 680 m elevation, 20.ix.1990, 3 females; 21.ix.1990, 3 males, 5 females; 22.ix.1990, 4 males, 10 females; CQ703065, 670 m elevation, 23.ix.1990, 3 males, 3 females; 24.ix.1990, 5 males, 7 females; 25.ix.1990, 2 females; 26.ix.1990, 2 males, 3 females; 27.ix.1990, 3 males, 2 females; CQ704066, 690 m elevation,

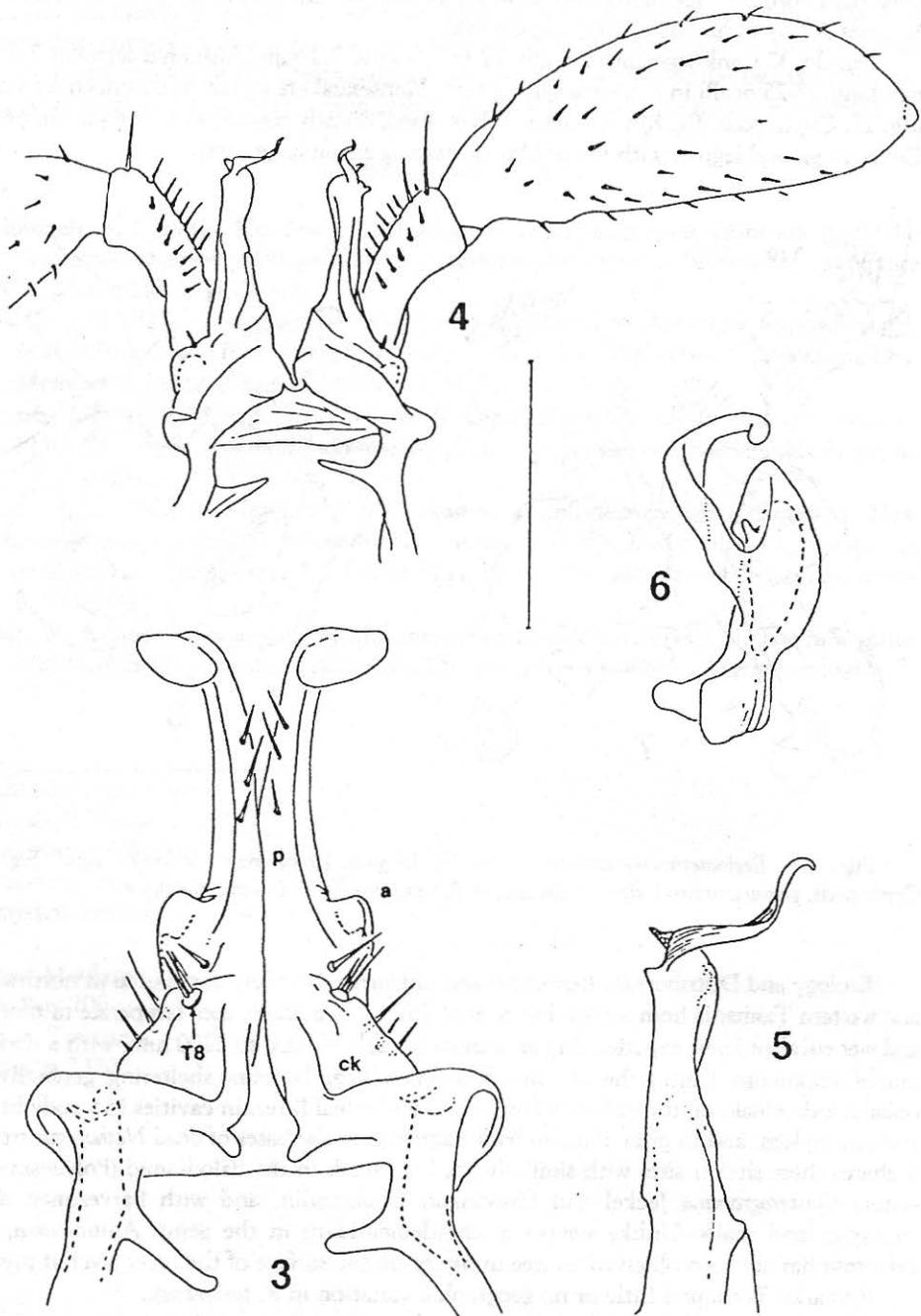
30.ix.1990, 5 males, 4 females; Dark Creek, CQ203410, 150 m elevation, 24.ix.1990, female; 13.i.1991, 3 males, 3 females; CQ204409, 30.viii.1989, female; CQ206408, 160 m elevation, 20.xii.1988, 2 females; Blackwater Rivulet, CQ249405, 140 m elevation, male; Roger River West, Roger River Reserve, 15.ix.1977, male (TM); CQ330483, 210 m elevation, 17.xii.1990, 2 males; Hibbs Lagoon, CN603856, 5 m elevation, 8.i.1987, S. J. Smith, male; Rapid River, CQ404421, 60 m elevation, 4.ii.1991, male; South Arthur State Forest, Julius River near Sumac Spur 1, 2.vi.1976, female (TM); 3.vi.1976, male (TM); 11.vii.1976, 2 females; north of Sumac Road, 22.viii.1976, female; Stephens Rivulet, just S of Arthur River, 4.ii.1976, male (with spermatophores) 2 females (TM); Salmon River Forestry Area west of Trowutta, "Leenson" site, 28.xi.1974, J. L. Madden *et al*, male (TM); 25.iv.1976, male (TM); road to Magnet Valley, E of Luina, 28.viii.1975, female (TM); Magnet Valley, NW of Waratah, 8.i.1977, male (TM); 6 km S of Strahan, berlese of litter from king fern rainforest, 30.iv.1987, N. Platnick *et al*, male, female (AMNH); 5 km S of Renison Bell, 180 m elevation, berlese of rainforest litter, 1.v.1987, N. Platnick *et al*, 2 males (AMNH); Wandle River at Murchison Highway, 27.viii.1975, female (TM); Malompto Road, Christmas Hills, 24.xii.1976, female (TM); Bradshaw Road, Mt. Murchison rainforest site 2, leaf litter, 21.iv.1989, female.

Derivation of name: The species name is after "the Tarkine," a local name for the largely forested area between the Arthur and Pieman Rivers in northwest Tasmania, where this species is particularly abundant.

Diagnosis: Differing in size from the four Queensland species, males more than 14 mm long (up to 17 mm for well-extended specimens), females more than 16 mm long [8-11 mm for the Queensland spp.]; anterior gonopod coxosternum large, equalling coxites of posterior gonopods in length [smaller than coxites of posterior gonopods]; posterior gonopod coxites without a basal branch [with a basal branch]; male tenth leg sternocoxal processes densely setose [lacking setae].

Male: 32 trunk segments. Length, 15 mm, width, 1.9 mm, antennal segment three 0.65 mm long. Ocelli 20-23, in rounded, subtriangular patch. Head without peculiarities. Small promentum present in gnathochilarium. Trunk segments with segmental setae on 3 raised, distinct knobs on each side, mesal knob smallest, lateral knob largest, extending well beyond lateral margin of segment, giving impression of paranota; mesal knobs about one seta length from middorsal sulcus; setae in approximately a straight line, long (*ca.* 0.8 mm), acute, gently curved, typically extending caudad and mesad (figs. 1, 2). Cuticle smooth, with dull matt finish. Color dark brown, middorsal suture a darker line, oblique tan spots extend from anterior margin of prozonite to ventral base of lateral setal knob, lateral setal knob white, white area enveloping base of middle setal knob. Legs yellowish tan, each podomere with dorsal, anterior and posterior longitudinal brown stripes. Impression is of a spiny animal (figs. 1, 2), dark brown with prominent white lateral knobs on each metazonite.

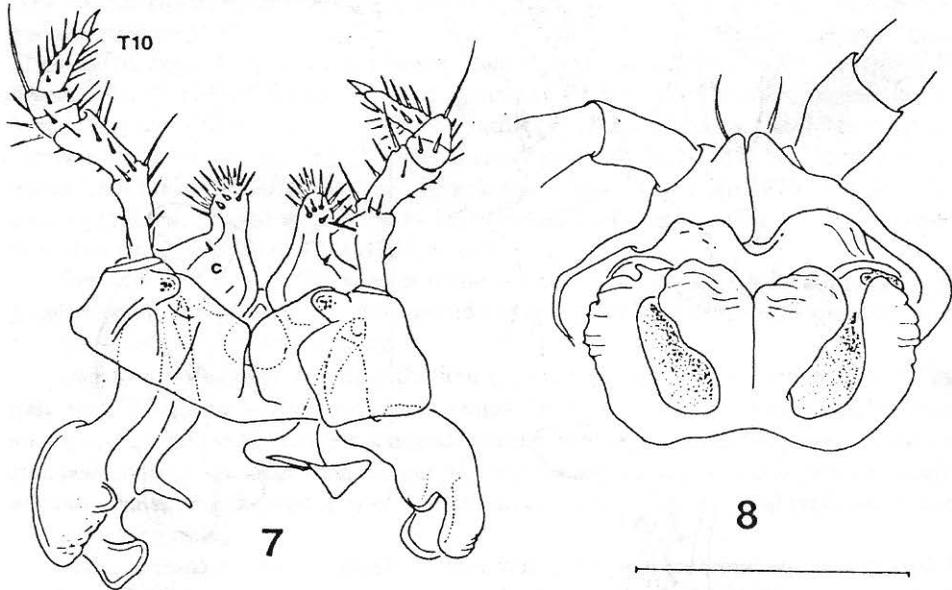
Legpairs 3-7 longer, more robust than other legs. Anterior gonopods (fig. 3) consisting of large, mesally fused coxosterna extended on each side of midline into long, anteriorly curved processes (*b*) with sharply decurved, flattened tips. Anteriorly at base of processes is prominent angular shoulder (*a*) which in anterior view conceals a smaller posterior shoulder; single large seta below shoulder. Coxal elements (*cx*) with scattered setae; telopodite (*T8*) reduced to small, setose button. Posterior gonopods (fig. 4) with much reduced sternum, coxae joined by lightly sclerotized membrane, coxites simple, erect, with apical sigmoid processes sharply bent anteriorly (fig. 5). Telopodites 2-segmented, prefemur cylindrical, distal article about four times as long as broad, swollen; small button-like terminus sometimes present. Tenth legs (fig. 7) with large coxosternal processes (*c*) clearly separate at bases, blunt, densely setose. Telopodites (*T10*) reduced, 5-segmented, setose, tarsus with



Figs. 3-6. *Reginaterreuma tarkinensis*. Fig. 3. Anterior gonopods, anterior view. Fig. 4. Posterior gonopods, anterior view. Fig. 5. Tip of coxite of left posterior gonopod, lateral view. Fig. 6. Spermatophore. Scale line = 0.6 mm for figs. 3, 5, 6; 0.3 mm for fig. 4.

prominent claw. Large coxal glands extending dorsally into body cavity, with lateral sclerotized portions. Spermatophore as in fig. 6, differing strongly from those illustrated by Mauriès (1987) in having a long, angular arm.

Female: 32 trunk segments. Length, 17 mm, width, 2.1 mm. Antennal segment 3 0.60 mm long, 23-25 ocelli in oval-triangular patch. Nonsexual characters as described for male (fig. 2). Cyphopods (fig. 8) with inner valves fused, distally rugose, with oblique channel. Coxae of second legpair with ventral knobs bearing single large setae.



Figs. 7-8. *Reginaterreuma tarkinensis*. Fig. 7. Legpair 10 of male, posterior view. Fig. 8. Cyphopods, posteroventral view. Scale line = 0.3 mm for fig. 7; 0.6 mm for fig. 8.

**Ecology and Distribution:** *Reginaterreuma tarkinensis* is widely distributed in northwest and western Tasmania from sea level to at least 750 m. It inhabits cool temperate rainforest and wet eucalypt forest experiencing an annual rainfall of 1000 to 2200 mm, with a winter rainfall maximum. During the daytime, *R. tarkinensis* can be found sheltering, generally as isolated individuals, on the surface of the ground under leaf litter, in cavities in woody litter and rotting logs, and in piles of fallen bark fragments at the bases of dead *Nothofagus* trees. It shares these shelter sites with similarly sized millipeds in the dalodesmid (Polydesmida) genera *Gasterogramma* Jeekel and *Lissodesmus* Chamberlin, and with harvestmen and charopid land snails. Unlike sympatric chordeumatidans in the genus *Australeuma*, *R. tarkinensis* has not been observed on tree trunks or on the surface of the litter layer at night.

**Remarks:** We found little or no geographic variation in *R. tarkinensis*.

Of the previously described Queensland species, the anterior gonopods of the Tasmanian form are closest to those of *R. monroei*, in which a telopodite remnant (plesiomorphic character) also occurs. According to Mauriès' illustrations (1987; fig. 23, p. 119) of *R. major*, the anterior gonopods *in situ* are embraced laterally by the basal processes of the posterior gonopod coxites. These processes are missing in *R. tarkinensis*, but the

posterior gonopods are inclined anteriorly so that the sharply curved tip of each coxite lies on either side lateral to, along and just under the anteriorly bent, spatulate tip of the anterior gonopod coxosternal processes. As with *Peterjohnsia titan* Shear & Mesibov (1994), we were tempted to consider a new genus for *R. tarkinensis* because of its larger size and numerous gonopod differences from the Queensland species. However, we found that by extending the generic concept of *Reginaterreuma* somewhat, our new species could be accommodated.

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