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## ***Tasmanorites perkini* sp. n. – a new Trechinae from Tasmania (Coleoptera: Carabidae: Trechinae)**

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### Abstract

*Tasmanorites perkini* sp. n. is described from the Hartz Mountains National Park, Tasmania and compared with its closest related species.

Key words: Coleoptera, Carabidae, Trechinae, Trechini, *Tasmanorites*, taxonomy, new species, Australia, Tasmania, Hartz Mountain National Park.

### Zusammenfassung

*Tasmanorites perkini* sp. n. wird aus der alpinen Zone des Hartz Mountains National Park, Tasmanien beschrieben und mit den verwandten Arten verglichen.

### Introduction

Tasmania is well-known to be remarkably rich in endemic ground beetles. Especially the Trechinae are well represented with about 40 species (MOORE, 1972, 1983). Most of these species are restrictirely distributed and inhabit wet forest areas. Some species of *Tasmanorites* JEANNEL are specialized in habitats above tree line. These are *T. pullus pullus* MOORE, 1972, *T. pullus minor* MOORE, 1972, *T. tasmaniae* (BLACKBURN, 1901) and *T. nitens* (PUTZEYS, 1874). These species are very similar in habitus and coloration, of small size (around 3 mm) and are found in humid areas (> 1000 m a.s.l.) above treeline. The male aedeagus is very useful for determination of these species (MOORE, 1972).

The author collected in Tasmania for three weeks focusing on Trechinae: the result was a total of 674 specimens representing 30 species. One species is new to science and will be described here. This new species is another typical representative of the group described above and is an important addition to the knowledge of Tasmanian Trechini.

### **Key to species of *T. tasmaniae* group (MOORE, 1972):**

**Note:** This group is characterized by uniform black color; pronotum with rounded basal angles (exception: *T. nitens* with weakly pronounced basal angles – this species was therefore excluded by MOORE, 1972 from this species group), both lateral setae present; 3 dorsal pores in 3<sup>rd</sup> interval of elytra present; aedeagus very variable throughout this ‘group’; inner sack scaled.

This species group is highly artificial and certainly not monophyletic.

- 1 Larger, > 3.5 mm; in humid or wet leaf litter in forests of higher altitudes ..... 2
- Smaller, 3.0 to 3.3 mm ..... 3
- 2 Aedeagus unique within *Tasmanorites*, very large, hocked twice on upper side, apex blunt (Fig. 3) ..... *T. intermedius* MOORE, 1972
- Aedeagus smaller, parallel, elongated and more slender, apex pointed and slightly upturned (Fig. 2) ..... *T. blackburni* (SLOANE, 1920)
- 3 Aedeagus short, thick; apex blunt. Habitus in average broader, sides more rounded. (Aedeagus not figured here, because no male material is available. See MOORE, 1972 and JEANNEL, 1923).. *T. tasmaniae* (BLACKBURN, 1901)
- Aedeagus short or elongated, but apex not blunt ..... 4
- 4 Aedeagus very short and small, in lateral view highest in the middle and suddenly contracted to the weakly pointed apex (Figs. 5 & 6) ..... 5
- Aedeagus larger, slender, parallel, apex pointed (Figs. 7, 8 & 9) ..... 6
- 5 Hind angles of pronotum slightly pronounced. So far only reported from Mt. Wellington near Hobart. (Fig 6) ..... *T. nitens* (PUTZEYS, 1874)
- Hind angles more or less rounded. So far only reported from Mt. Field around Lake Dove, (Fig. 5) ..... *T. glaebarum* MOORE, 1972
- 6 Aedeagus relatively shorter, apex only very slightly upturned. Two subspecies are described, but more material would be necessary to clarify their status:
  - a. Mt. Field (Fig. 8) ..... *T. pullus pullus* MOORE, 1972
  - b. Northern-central mountains, Cradle Mts. (Fig. 9) *T. pullus minor* MOORE, 1972
  - Aedeagus very elongated, apex clearly upturned. Hartz Mts. (Fig. 7) ..... *T. perkini* sp. n.

The examination of hundreds of specimens showed a high variability of coloration, size, shape of pronotum and elytral striation – the most important characters in the key provided by MOORE (1972). The aedeagi were found to provide constant characters and therefore clear identification of species. MOORE (1972, 1983) and JEANNEL (1923) figured the aedeagi of 12 taxons (a total of 19 taxons are described).

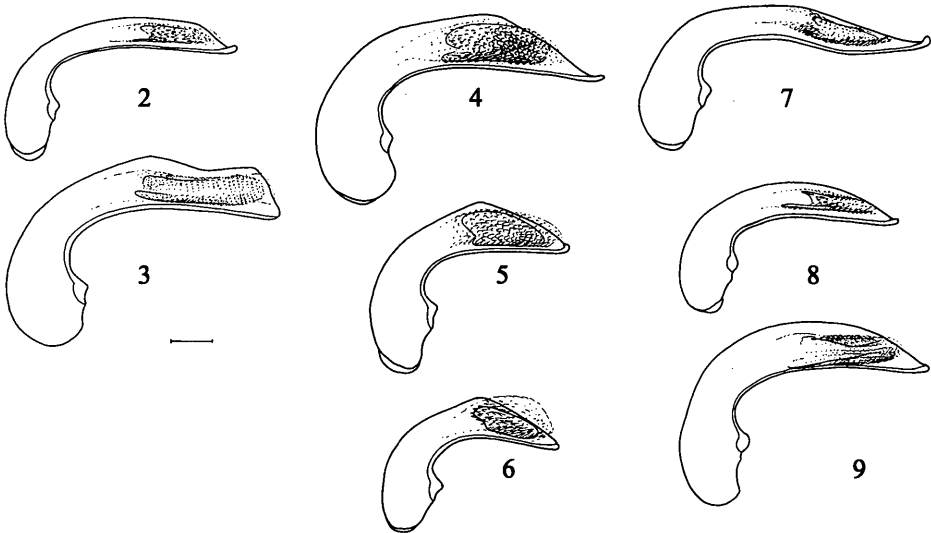
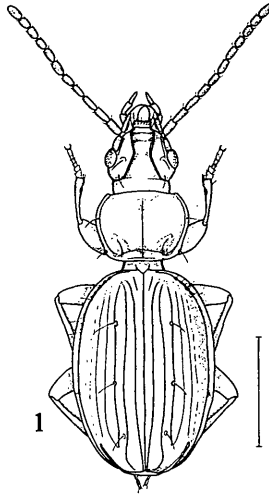
***Tasmanorites perkini* sp. n. (Figs. 1, 7)**

Type material: 18 spec.: Australia, Tasmania, Hartz Mts. NP, Hartz Pass, 1100m, Jan. 07. 2000, leg. Donabauer. Male holotype and 1 female paratype in the Australian National Insect Collection, CSIRO, Canberra; 13 male and 3 female paratypes in coll. Donabauer.

Description: This species is undoubtedly a member of the ‘*T. tasmaniae* group’ (MOORE, 1972) and closest related to *T. pullus* MOORE, 1972. The large, elongated aedeagus with upturned apex provides a good character to distinguish *T. perkini* from all other species of this group.

Size: 3 mm; black, not maculated, legs and antenna dark rufo-testaceus. Head rather depressed, broad; eyes large, moderately prominent; mandibles short but pointed. Prono-

Fig. 1: Habitus of *Tasmanorites perkini* sp. n.; male holotype, scale bar = 1 mm.



Figs. 2–9: Aedeagi: Fig. 2: *T. blackburni* (SLOANE, 1920); Fig. 3: *T. intermedius* MOORE, 1972; Fig. 4: *T. brevinotatus* (SLOANE, 1920); Fig. 5: *T. glaebarum* MOORE, 1972; Fig. 6: *T. nitens* PUTZEYS, 1874; Fig. 7: *T. perkini* sp. n.; Fig. 8: *T. pullus pullus* MOORE, 1972; Fig. 9: *T. pullus minor* MOORE, 1972; scale bar = 0.1 mm.

tum wider than head, front and hind angles scarcely apparent, widely rounded; sides rounded, both lateral setae present, basal fovae moderately deep. Elytra oval, depressed, humeri obsolete, striae impunctate, only the inner impressed; 3<sup>rd</sup> interval with 3 pores, the basal and middle pores set against 3<sup>rd</sup> stria, the apical set in the interval. Aedeagus (Fig. 7) large, very elongated, apex upturned, sharp and pointed; inner sack scaled; median lobe of inner sack simple, tubular, the lower part in dorsal view with stronger and more elongated scales.

Type locality: Hartz Mountain NP, above Hartz Pass on the track to Hartz Peak. This species was collected in an 'alpine' habitat above tree line. All specimens were found in a rather small, very wet and eroded area with many stones and very reduced vegetation. No other species of Carabidae were found in this area!

This new species is dedicated to my sister, Sandra and my brother-in-law, Roger Perkin.

#### **Additional material of the *T. tasmaniae* group examined:**

*T. pullus pullus* MOORE, 1972: 19 spec. - Australia, Tasmania, Mt. Field, 11. Jan. 2000, leg. Donabauer. In wet areas above tree line with very few plants under small stones.

*T. pullus minor* MOORE, 1972: 1 spec. - Australia, Tasmania, Cradle Mts., 17. Jan. 2000, leg. Donabauer. In a meadow above tree line.

*T. glaebarum* MOORE, 1972: 3 spec. - Australia, Tasmania, Mt. Field, 11. Jan. 2000, leg. Donabauer. In snow gum litter together with *T. intermedius* and *T. madidus*.

*T. tasmaniae* (BLACKBURN, 1901): 3 spec. - Australia, Tasmania, Cradle Mts., 17. Jan. 2000, leg. Donabauer. In a meadow above tree line.

*T. nitens* (PUTZEYS, 1874): 20 spec. - Australia, Tasmania, Mt. Wellington, >1000 m, 06. Jan. 2000. Hygrophilous, strictly above tree line.

*T. blackburni* (SLOANE, 1920): 53 spec. - Australia, Tasmania, Cradle Mts., Waldheim, 17. Jan. 2000. Common in extremely wet litter, in shadowed places in the dense forest around Waldheim together with *T. riparius* MOORE, 1972; *T. brevinotatus* (SLOANE, 1920); and *T. austrinus* (SLOANE, 1920).

*T. intermedius* MOORE, 1972: 74 spec. - Australia, Tasmania, Mt. Field, 11. Jan. 2000, leg. Donabauer. In snow gum litter.

*T. brevinotatus* (SLOANE, 1920): 10 spec. - Australia, Tasmania, Cradle Mts., Waldheim, 17. Jan. 2000. Aedeagus is figured for the first time (Fig. 4). This species is similar to *T. intermedius* and *T. blackburni* due to size, shape of pronotum, and distribution, but elytrae with small humeral and subapical maculae and aedeagus slender, parallel, with upturned apex.

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