

Entomofauna

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**Review of the Australian species of genus
Tachyta Kirby
(Coleoptera, Carabidae, Bembidiinae) ***

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Abstract

A second *Tachyta* species, *Tachyta ovata* sp.n., is described from northern Australia. For the two existing Australian *Tachyta* species a key is presented and their distribution is mapped. New records and a revised distribution map are provided for *Tachyta brunnipennis* (MACLEAY, 1871).

Zusammenfassung

Eine zweite Art der Gattung *Tachyta*, *Tachyta ovata* sp. n., aus Nordaustralien wird beschrieben. Für die beiden australischen *Tachyta*-Arten wird ein Bestimmungsschlüssel vorgelegt. Neue Funde von *Tachyta brunnipennis* (MACLEAY, 1871) sind in einer revidierten Verbreitungskarte dargestellt.

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So far one species of the tree-living Tachyine genus *Tachyta* KIRBY, 1837, was recorded from Australia, that is the well known species *Tachyta brunnipennis* (MACLEAY, 1871) (ERWIN 1975). This species ranges from southeastern Queensland to Cape York Peninsula and it is known also from Darwin, Northern Territory. During a travel through northern and northwestern Australia an additional species has been discovered in northwestern Northern Territory and adjacent Western Australia which is described below. *Tachyta brunnipennis* (MACLEAY, 1871) has been also found in this area, and in some places both species occur together.

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Abbreviations of Collections cited in text

ANIC = Australian National Insect Collection, Canberra;
CBM = Collection M. BAEHR, München;
ZSM = Zoologische Staatssammlung, München.

Measurements

Length of specimens has been measured from tip of labrum to apex of elytra. Some length ratios are measured by use of an ocular micrometer with 40x to 60x magnification.

Characters

Species differentiation is particularly based on the male genitalia. As ERWIN (1975) demonstrated, microsculpture of pronotum and of elytra is also a good differentiating character. In the Australian species body form and shape of pronotum are valuable characters, too.

Classification

In the older literature concerning the Indo-Australian Region (SLOANE 1921, ANDREWES 1925, 1935, DARLINGTON 1962) *Tachyta* was still incorporated in the genus *Tachys*. ERWIN (1975), however, confirmed the generic status of

Tachyta and included the single Australian species "*Bembidion brunnipenne* MACLEAY, 1871," in this genus.

Key to the Australian species of genus *Tachyta*

Rather elongate species, ratio length/width of elytra over 1.4 . Surface of pronotum and of elytra strongly punctate between microsculpture. Surface rough and dull, strongly shagreened. Aedeagus with rather acute tip.
..... *Tachyta brunnipennis* (MACLEAY, 1871)

Wide, convex species, ratio length/width of elytra c. 1.3 - 1.35 . Surface of pronotum and of elytra lightly punctate between microsculpture. Microsculpture less strongly developed, surface less dull. Aedeagus with wide, rounded apex..... *Tachyta ovata* sp.n.

***Tachyta brunnipennis* (MACLEAY, 1871)**

(Fig. 3)

MACLEAY, 1871, p.118 (*Bembidion*).

SLOANE, 1896, p.356, 359 (*Tachys*); 1903, p.577 (*Tachys*);
1921, p.198 (*Tachys*).

CSIKI, 1929, p.173 (*Tachys*).

ERWIN, 1975, p.21 (*Tachyta*).

Holotype: Presumably in ANIC, not seen.

Type locality: Gayndah, southeastern Queensland.

Diagnosis

A rather elongate species (compared with the other Australian species), characterized by very coarse and dense puncturation, strong microsculpture and acute tip of aedeagus.

This species was fully described and figured in ERWIN'S (1975) review of the whole genus *Tachyta*. The figure of dorsal body outline, however, of this species is apparently confused with that of *Tachyta gilloglyi* ERWIN, 1975.

Distribution (Fig. 3)

Differing from the distribution map in ERWIN (1975) *T. brunnipennis* ranges south to at least southeastern Queensland (type locality: Gayndah!), and it occurs also

northwestern Northern Territory and in northernmost Western Australia.

Material examined (2 specimens)

1 ♀, Northern Territory, Victoria River 11 km W. of Timber Creek, under bark, 11.xi.1984, M. & B. BAEHR (CBM); 1 ♂, Western Australia, Ord River near Ivanhoe, under bark, 13.xi.1984, M. & B. BAEHR (CBM).

***Tachyta ovata* sp.n.**

(Fig.1-3)

Holotype. ♂, Northern Territory, Victoria River 11 km W. of Timber Creek, under bark, 11.xi.1984, M. & B. BAEHR (ANIC).

Paratypes. 1 ♂, 1 ♀, same locality, same date, under bark (CBM); 17 (♂♂, ♀♀), Northern Territory, 75 km E. of Timber Creek, under bark and at light, 9.xi.1984, M. & B. BAEHR (ANIC, CBM, ZSM); 1 ♂, 2 ♀♀, Northern Territory, 17 km E. of Willeroo, at light, 8.xi.1984, M. & B. BAEHR (CBM); 1 (presumably ♂), Western Australia, Ord River near Ivanhoe, under bark, 13.xi.1984, M. & B. BAEHR (CBM).

Type locality. 11 km W. of Timber Creek, Northern Territory.

Diagnosis

Easily recognized by very wide elytra and wide pronotum with less dense puncturation of surface than in *T. brunnipennis*, and by rather rounded tip of aedeagus.

Description

Measurements. Length 2.15 - 2.45 mm, width 0.95 - 1 mm. Ratio width/length of pronotum 1.62 - 1.7, ratio length/width of elytra 1.3 - 1.35 .

Colour. Chestnut brown, mouthparts, antennae, and legs slightly lighter.

Head. Rather wide, convex, about as wide as pronotum between anterior angles. Frons between eyes with slightly transverse microsculpture and with fine punctures. Antennae short, barely attaining base of pronotum, median segments about as wide as long.

Pronotum. Wide and rather convex, about 1.65 x as wide

as long, base slightly wider than apex. Sides in front of posterior angles slightly sinuate. Posterior angles acute, about 90°. Lateral channel deep. Prebasal transversal impression conspicuous, medially slightly interrupted. Lateral carinae rather short, straight. Microsculpture faint, about isodiametric to slightly elongate, punctures fine, barely visible.

Elytra. Very wide and convex, less than 1.35 x as long as wide. Sides slightly sinuate behind shoulders, then evenly rounded, largest behind middle. 1st - 5th striae basally rather coarsely punctate. Elytral setae within 4th interval, outside of 3rd stria. Anterior seta very near to base, slightly in front of 3rd lateral seta. Microsculpture fairly conspicuous, consisting of rather irregular, slightly transverse meshes. Puncturation on intervals fine, sparse.

Aedeagus (Fig.2). Short and stout, apex rounded. Internal sac arcuate, much like in *T. brunnipennis*, with very light pigmentation. Parameres 3-setose, in both parameres 3rd seta slightly removed from apex.

Distribution (Fig.3)

Northwestern part of Northern Territory, adjacent northernmost Western Australia.

Material examined (24 specimens)

Only type series.

Habits

Apparently also a bark-living beetle, as specimens from different localities were observed under bark of living and dead River Eucalypts (*Eucalyptus camaldulensis*). Several specimens also captured at light in open tropical Savannah Woodland. So far only collected in November.

Discussion

The new species *T. ovata* belongs certainly to the same species group, the *umbrosa*-group of ERWIN (1975), as *T. brunnipennis*, although it is remarkable because of its wide, convex body. Shape of pronotum and structure of

inner sac of δ aedeagus is rather similar to *T. brunnipennis*, but surface of body is far less strongly microsculptured and punctured.

The genus *Tachyta* is certainly not an old faunal element in Australia, but apparently a rather recent invader from the Oriental Region, where it is far more diverse. However, the discovery of a second species in Australia is partly opposite to ERWIN's (1975) opinion of a very low diversity of the Australian *Tachyta* fauna. Distribution of the species - *T. brunnipennis* in whole northern Australia, *T. ovata*, so far known, only in northwestern Australia - points to either a double immigration of *Tachyta* species into Australia, or to a differentiation of a western species from an original stock which immigrated from New Guinea to North Queensland. Since both species occur sympatrically in the Northern Territory and in northwestern Australia, and actually on the same log, an independent invasion of *T. ovata* or of its ancestor seems more reasonable.

Both Australian species live under bark, in northern Australia in rather open woodland, but especially on River Gums (*Eucalyptus camaldulensis*) near the course of rivers and creeks, but they fly also readily to light. This habit is thus far only recorded from some African species (ERWIN 1975).

The discovery of *T. ovata* sp.n. is once more evidence of the unexpected diversity of Carabid beetles in the open Woodland areas of Northern Territory and northwestern Australia, already stressed in previous papers on different Carabid groups of this region (BAEHR 1985a, b; 1986 in press).

Figures (p.311-312)

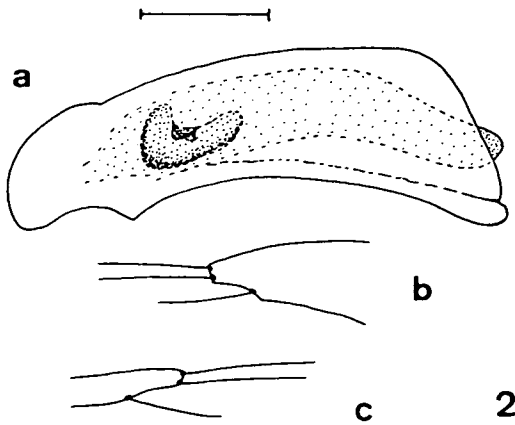
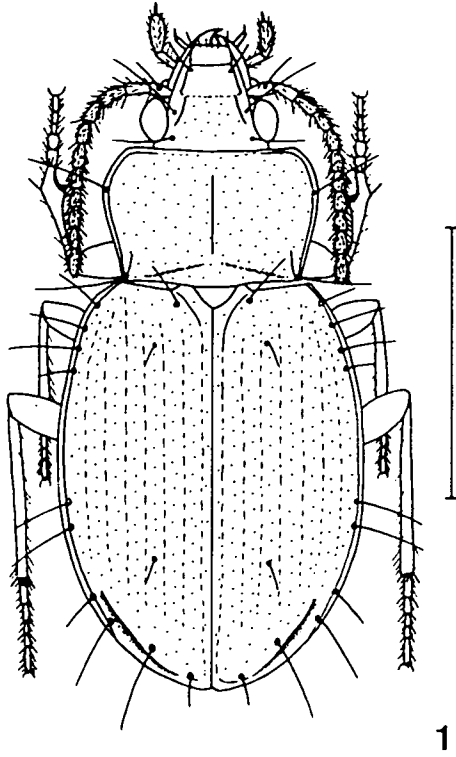
Fig.1: *Tachyta ovata* sp.n., holotype (ANIC). Scale: 1 mm.

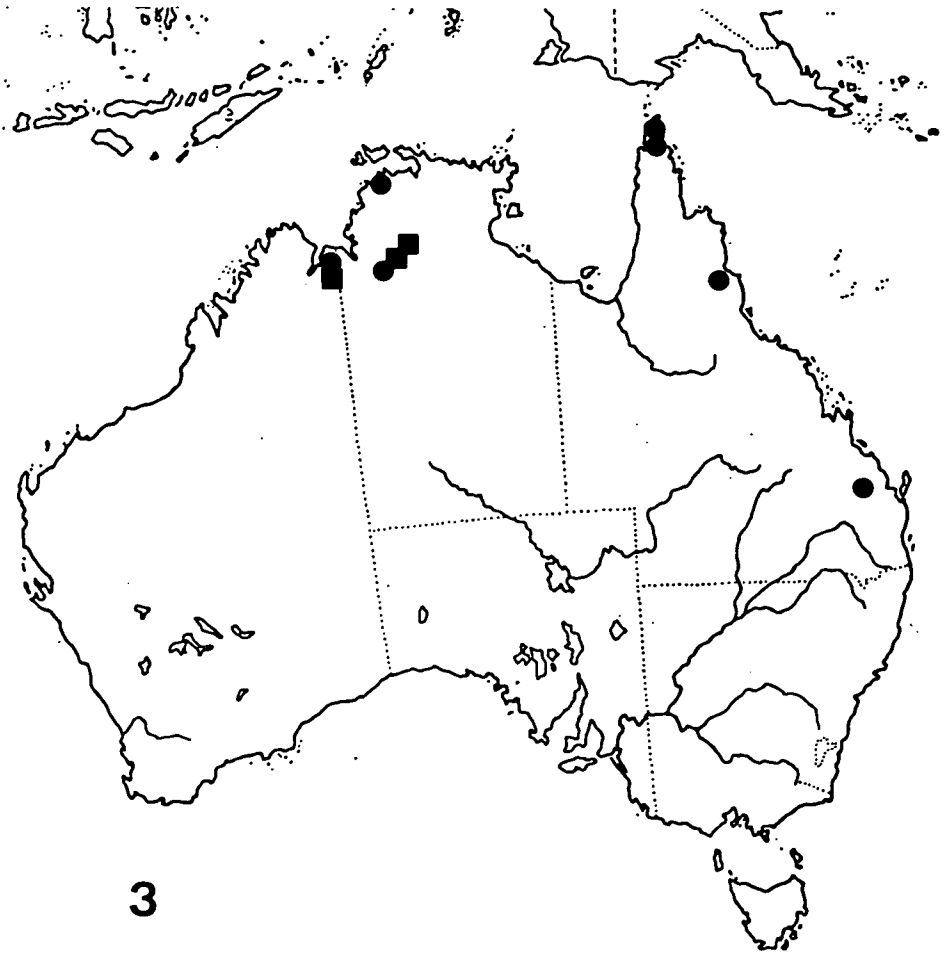
Fig.2: *Tachyta ovata* sp.n. a) δ aedeagus; b) right paramere; c) left paramere. Scale: 0.1 mm.

Fig.3: Distribution of genus *Tachyta* in Australia.

■ *Tachyta brunnipennis* (MACLEAY, 1871);

● *Tachyta ovata* sp.n.





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Vane-Wright, Richard I. & Phillip R. Ackery (Hsg.): The Biology of Butterflies.

456 Seiten, 4 Farbtafeln, zahlreiche Strichzeichnungen. ISBN 0.12.713750.5. Format 21x30,5 cm. Erschienen Februar 1984. Zu beziehen: The Royal Entomological Society of London, 41 Queen's Gate, London SW7 5HU, England.

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Introduction: R.I.VANE-WRIGHT, P.R.ACKERY, and P.J.DE-VRIES. **Systematics:** Systematic and Faunistic Studies on Butterflies, P.R.ACKERY. **Populations and Communities:** The Structure and Dynamics of Butterfly Populations, P.R.EHR-LICH. **The Biology of Butterfly Communities,** L.E.GILBERT.

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