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## A new species of *Peritropis* Uhler, the first record of Cylapinae (Hemiptera: Miridae) from New Zealand

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**Abstract** The subfamily Cylapinae is recorded from New Zealand for the first time. The new species *Peritropis aotearoae* is described and illustrated. Taxonomic characters of Cylapinae and *Peritropis* Uhler are presented and the zoogeography of the genus is discussed.

**Keywords** Hemiptera; Miridae; Cylapinae; Fulviini; *Peritropis*; new species; first record; New Zealand; taxonomic characters; zoogeography

### INTRODUCTION

Five subfamilies of Miridae—Orthotylinae, Phylinae, Bryocorinae, Deraeocorinae, and Mirinae—are represented in New Zealand (Carvalho 1957; Schuh 1995). The greatest number of species occur in the subfamily Mirinae, to which approximately 74% of the mirid species in New Zealand belong (Eyles 1975; Eyles & Carvalho 1991, 1995). This is followed by the Deraeocorinae (16%, Eyles & Carvalho 1988), Orthotylinae (4.6%, Eyles 1996), Phylinae (4.6%), and Bryocorinae (1.15%). The percentages of Orthotylinae and Phylinae are expected to increase when systematic revisions are completed.

The present paper describes and figures a new species of *Peritropis* Uhler, 1891, the first record of

Cylapinae from New Zealand. Main characters of the subfamily Cylapinae, and of *Peritropis*, are outlined and the zoogeography of the genus is discussed. A brief account of the Coromandel Peninsula, where the insects were collected, is presented.

### TAXONOMY

#### Subfamily Cylapinae

The subfamily Cylapinae can be distinguished by the long and slender claws usually with a subapical tooth, absence of fleshy parempodia (sometimes replaced by straight hairs), absence of pulvilli, and presence (usually) of long slender antennae. In some genera the 4th antennal segment is divided, giving the appearance of a 5th segment, and several genera have bisegmented tarsi (Schmitz 1978). Most Cylapinae live under bark, on rotten logs in association with fungi (Wheeler & Wheeler 1994). Their feeding habits are not clear; some authors treat them as predatory insects (Schmitz & Štys 1973; Kelton 1985) and some (Schuh 1976; Wheeler & Wheeler 1994; Stonedahl & Kovac 1995; Kerzhner pers. comm.) as mycetophagous. Eggs of some genera are not inserted into plant tissues as in most Miridae but are placed in crevices in the bark of trees (Schmitz & Štys 1973).

Traditionally the subfamily was divided into three tribes, Cylapini, Fulviini, and Bothriomirini (Carvalho 1957), and *Peritropis* Uhler, 1891 was placed in the Fulviini. According to Schmitz & Štys (1973) Fulviini or Fulviinae seemed to be a monophyletic, well-differentiated group with the head horizontal and conic, parempodia and pulvilli absent, coxae conic, forecoxae and forefemora usually enlarged, and antennae short. Schuh (1976) also regarded the subfamily as a monophyletic group. Although this has since been modified, the current view is that there are no unique tribal characters, and that the Cylapini and Fulviini are almost certainly not monophyletic (Schuh 1995; Schuh & Slater 1995).



Fig. 1 *Peritropis aotearoae* n. sp., dorsal habitus of adult male holotype.

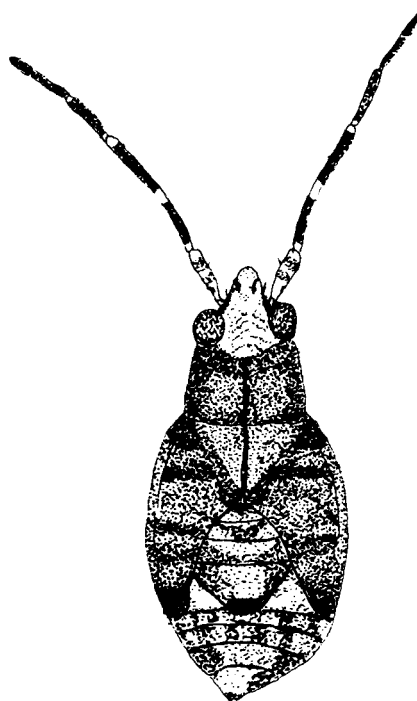


Fig. 2 *Peritropis aotearoae* n. sp., dorsal habitus of 5th-instar nymph.

### Genus *Peritropis* Uhler, 1891

*Peritropis* Uhler, 1891: 121 (type species *Peritropis saldaeformis* Uhler, by monotypy)

*Peritropis* is the second most speciose genus within Cylapinae. It can be recognised by the oval subelliptical impunctate body, trapezoidal pronotum, narrow head which is conical in front of the eyes, and short legs with characteristic two-segmented tarsi in which there is a distinct line dividing the 2nd segment. Because of this pseudo-joint they have been called pseudo-bisegmented (Schmitz & Štys 1973), although more correctly they should be called pseudo-trisegmented.

In the following descriptions measurements are in millimetres.

#### *Peritropis aotearoae* n. sp. (Fig. 1–8)

MALE: Body elongate-oval (Fig. 1); length 2.8; width

at middle of elytra 1.1. Colour brownish, with pale patches and small pale spots. Head, pronotum, mesoscutum, scutellum, and hemelytra (excluding membrane) covered with short, silvery, scale-like adpressed setae.

Head elongate, pale, with fine brown pattern and with two dark spots contiguous with inner margin of eyes: length (dorsal and lateral view) 0.5, width 0.57, width of vertex 0.26, width of eye 0.15. Vertex with a slight but distinct median depression. Eyes relatively large, elongated. Antennae inserted on small tubercles, a little removed from margin of eye; 1st segment dark, pale at base, with apex pale or slightly reddish; 2nd segment dark brown with pale rings at base, middle, and apex; 3rd segment very short, brown; 4th segment brown, divided in middle. Antennae covered with short, adpressed setae; 1st segment with some stout erect setae. Length of antennal segments 0.38–0.40: 0.88–0.90: 0.30–0.31: 0.36. Rostrum long, reaching genital segment.

Pronotum trapezoidal, dark brown, a little paler medially; width at anterior end 0.52, at posterior end 0.9; lateral margins 0.4. Calli area raised, with a

median longitudinal sulcus. Mesoscutum elevated, brown; scutellum brown with pale apex.

Hemelytra brown, with a pale area and small pale spots. Embolium, external part of corium, and base of cuneus more or less tinged with red. Length of cuneus 0.26–0.28. Membrane dark grey with pale spots; venation grey, not standing out.

Legs with forecoxae and forefemora enlarged; coxae and trochanters white; femora white at base (Fig. 3), with middle part dark brown, and apex pale with brown spots; apex of femur and base of tibia slightly reddish. Mesofemora (Fig. 3) and metafemora with long, stout, distinctly visible trichobothria. Tibiae pale with dark brown rings, and brown and reddish patches at base (Fig. 3), sparingly covered with short setae; tarsi pale, bisegmented, with a distinct subapical tooth (Fig. 5).

Genital segment covered with long pale setae. Parameres slender (Fig. 6, 7), sparingly covered with setae. Aedeagus as in Fig. 8.

**NYMPH** (fifth instar) (Fig. 2): General colour pattern similar to adults. Length 2.3, width 1.0, head width 0.54, head length 0.45 (from above). Antennae removed from anterior margin of eyes; eyes contiguous with anterior margin of pronotum. Vertex distinctly depressed. Length of antennal segments 0.28: 0.72: 0.33: 0.39.

Posterior margin of pronotum narrower than in adults; pronotum and scutellum with a deep, longitudinal sulcus. Pronotal width at anterior 0.55, at posterior 0.75; length of each lateral margin 0.36. Dorsal abdominal gland conspicuously visible. Wing pads reaching 5th abdominal tergum. Body covered with silver scale-like setae. Tarsi 2-segmented, with a well-developed subapical tooth (Fig. 4).

**FEMALE:** Unknown.

**TYPE DATA:** **Holotype** male (2.8 × 1.1 mm), Coromandel, Maunapaki, 12 Nov 1989, E. Heiss.

**Paratypes:** 3 males and 1 nymph, same data as holotype. Holotype and 1 male paratype in New Zealand Arthropod Collection, Auckland, donated by Dipl. ing. E. Heiss, Innsbruck, Austria; 1 paratype in Tiroler Landesmuseum, Innsbruck, Austria; 2 paratypes in the senior author's collection, finally in Zoological Institute, Polish Academy of Sciences, Warsaw, Poland.

**DIAGNOSIS:** *P. aotearoae* in general appearance is similar to *Peritropis annulicornis* Poppius, 1909 and *P. punctatus* Carvalho & Lorenzato, 1978 (both New Guinea), but differs from them by darker pronotum, darker general colour pattern, shape of parameres,

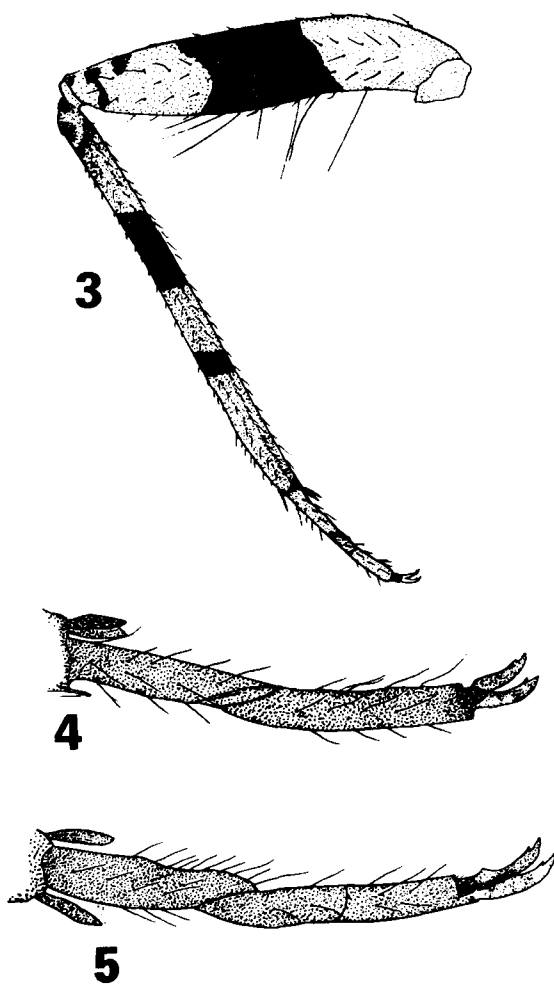


Fig. 3–5 *Peritropis aotearoae* n. sp.: 3, middle leg of adult male paratype; 4, tarsus of nymph; 5, tarsus of adult male paratype.

length of antennal segments, and divided 4th antennal segment.

**ETYMOLOGY:** Aotearoa—Maori name of New Zealand.

**REMARKS:** Two attempts made by A. C. E. in February and March 1996 to collect more specimens from the type locality were unsuccessful.

### COROMANDEL PENINSULA

The following comments are mostly from New Zealand Forest Service (1979). The Coromandel Peninsula lies between latitude 36°29' and 37°10'S, with a warm temperature climate at low altitude.

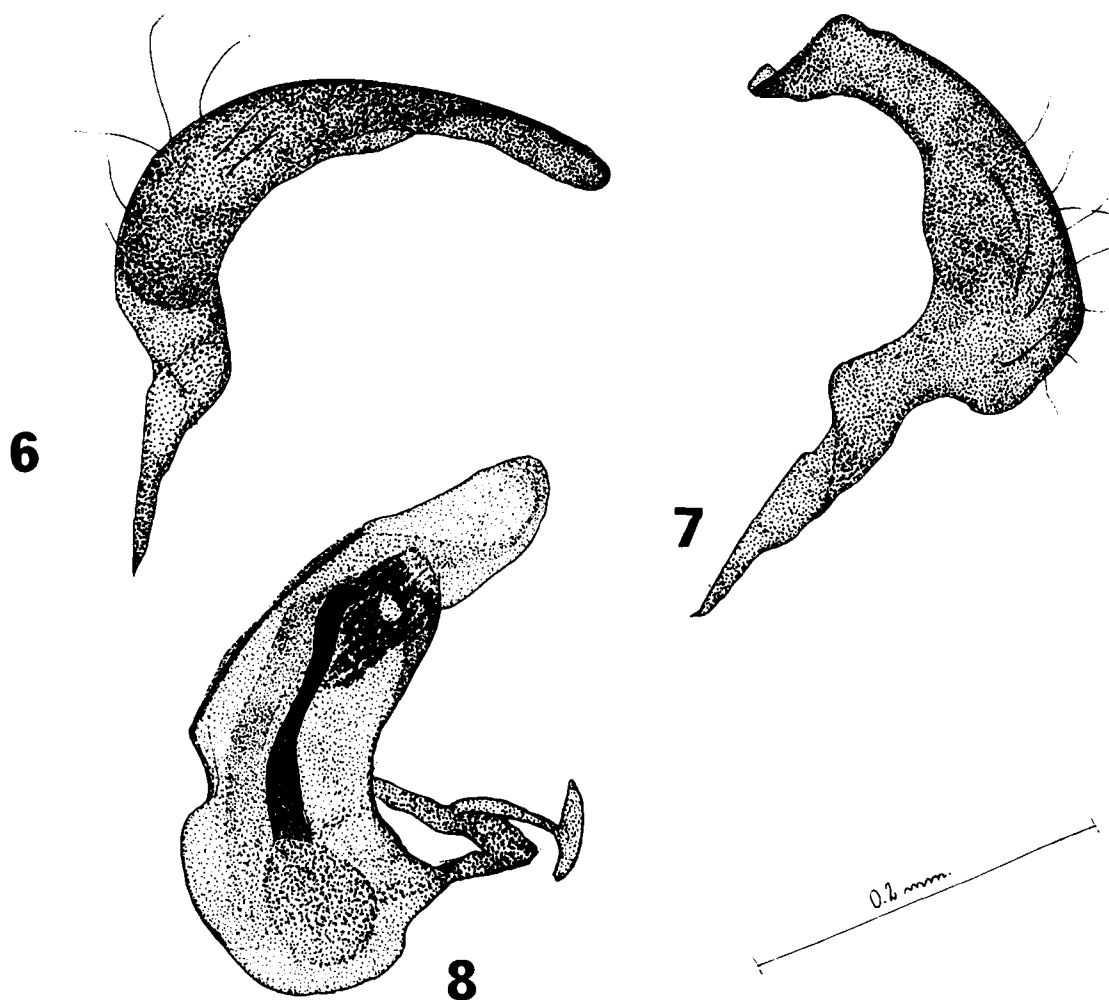


Fig. 6–8 *Peritropis aotearoae* n. sp., genitalia of paratype: 6, right paramere; 7, left paramere; 8, aedeagus.

Maumaupaki, 819 m a.s.l., is part of the main Coromandel Range in the middle of the peninsula, and has misty weather much of the time. Most abundant of the forest types, on both sides of the axial ranges, is a mixed association of *Agathis australis* Salisb. (Araucariaceae), the podocarps *Dacrydium cupressinum* Lamb., *Podocarpus spicatus* R. Br. ex Mirbel, *P. ferrugineus* G. Benn. ex Don, and *Phyllocladus trichomanoides* Don, and the broad-leaved trees *Metrosideros umbellata* Cav. (Myrtaceae), *Beilschmiedia tawa* (A. Cunn.) Kirk (Lauraceae), *Knightia excelsa* R. Br. (Proteaceae), and *Dysoxylum spectabile* (Forst. f.) Hook. f. (Meliaceae). Plant genera commonly found on or near open tops include *Hebe* Comm. ex Juss.

(Scrophulariaceae), *Dracophyllum* Labill. (Epacridaceae), *Coprosma* J. R. et G. Forst. (Rubiaceae), *Olearia* Moench and *Celmisia* Cass. (both Asteraceae), *Phormium* J. R. et G. Forst. (Phormiaceae), and some grasses (Poaceae). Despite the Coromandel flora's outward similarity to other areas, notably Northland, it has a character of its own. Bordered by the sea on both sides, the peninsula has the characteristics of a partly isolated island vegetation such as is found on Great Barrier Island and Little Barrier Island. A combination of partial isolation, "mild oceanic climate", and mountainous country seems to have accounted for the presence of several plants which are elsewhere absent, rare, or scattered.

indicates that these insects inhabit primarily tropical or warm temperate zones, although *P. husseyi* Knight occurs in Alaska and the U.S.A. and *P. advena* Kerzhner in far eastern Russia (Maritime Territory). The New Zealand species is the most southern known.

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