

# Revision of the Rhabdophoridae (Orthoptera) of New Zealand—Part VI.

## A New Species Belonging to the Genus *Pachyrhamma* Brunner, 1888

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### Abstract

A fresh key is given to the genus *Pachyrhamma* Brunner. A new species, *Pachyrhamma longicauda* n.sp., is described and illustrated. Attention is drawn to its close relationship with *P. longipes* (Colenso).

### INTRODUCTION

SIX specimens of a new species of Rhabdophoridae belonging to the genus *Pachyrhamma* Brunner are described here. They are part of the insect collection of the Auckland Institute and Museum and unfortunately very little information is available about them, the date and name of collectors not being on the labels. Three labels have Taumarunui written in an unknown handwriting, one label has Ohakune written in the handwriting of Mr. C. E. Clarke, so it is assumed that he collected this specimen; the other two specimens are without labels. This species is very closely related to the tree-dwelling species, *Pachyrhamma longipes* (Colenso) and *P. delli* (Richards), with similar sturdy hind legs, in contrast to the attenuated slender legs of the cave-dwelling species in this genus.

As three further species have recently been added to the genus *Pachyrhamma* Brunner, bringing the total number of species known to eight, a fresh key to the genus is now necessary.

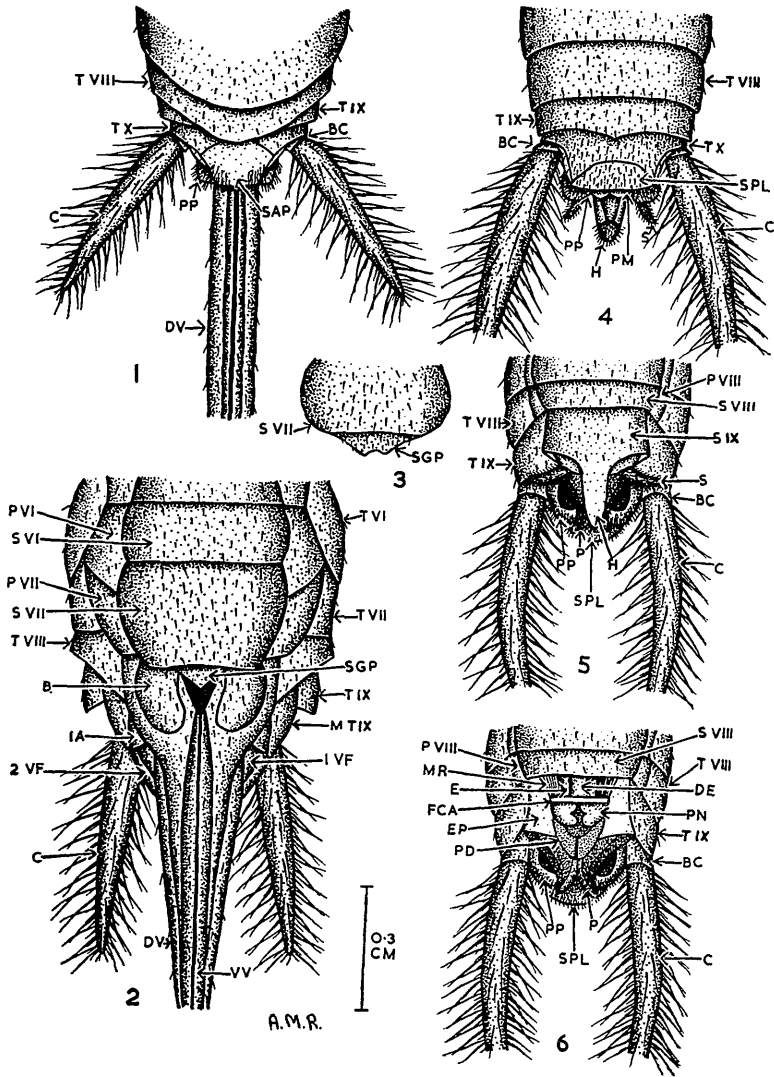
### KEY TO THE SPECIES OF *Pachyrhamma*

1. Antennae in male armed with spines .....		2
Antennae in male without spines .....		4
2. Antennae in male with numerous small, sharp spines .....	<i>P. fascifer</i> (Walker)	
3. Antennae in male with large or small blunt spines .....		3
Antennae in male with 5 or 6 large, blunt spines; posterior femora (male and female) bearing approximately 21 retrolateral and 12 prolateral linear spines beneath .....	<i>P. acanthocera</i> Milligan	
Antennae in male with approximately 9 small, blunt spines; posterior femora (male and female) bearing approximately 3 retrolateral and 8 prolateral linear spines beneath .....	<i>P. fusca</i> Richards	
4. Fore femur without linear spines .....	<i>P. waitomoensis</i> Richards	
Fore femur with linear spines .....		5
5. Posterior tibia with approximately 35 prolateral and 38 retrolateral linear spines above .....	<i>P. uncata</i> Richards	
Posterior tibiae with approximately less than 27 prolateral or retrolateral linear spines above .....		6
6. Hind tarsus without linear spines .....	<i>P. longipes</i> (Colenso)	
Hind tarsus with linear spines .....		7
7. Suranal plate in male and female without median spine .....	<i>P. longicauda</i> n.sp.	
Suranal plate with a small, blunt, median spine in female; and a large, blunt, median spine in male .....	<i>P. delli</i> (Richards)	

### Genus PACHYRHAMMA Brunner, 1888

#### *Pachyrhamma longicauda* n.sp. Text-fig. 1, figs. 1-6.

COLOUR. Basic colour light brown, with pronotum, mesonotum, metanotum and abdominal terga irregularly mottled with mid-brown and ochreous; femora and tibiae banded



TEXT-FIG. 1.—*Pachyrhamma longicauda* n.sp. Fig. 1—Female genitalia, dorsal view. Fig. 2—Female genitalia, ventral view. Fig. 3—Female genitalia, ventral view showing variation in shape of subgenital plate. Fig. 4—Male genitalia, dorsal view. Fig. 5—Male genitalia, ventral view, subgenital plate in place. Fig. 6—Male genitalia, ventral view, subgenital plate removed to expose structures beneath.

with light brown and ochreous, light brown at their junction; tibiae and tarsi ochreous at their junction; tarsi ochreous; antennae ochreous; ovipositor light reddish-brown.

**Body.** Length up to 24.5 mm. Dorsal surface of body sparsely clothed with setae; ventral surface sparsely clothed with setae. Ovipositor 0.8 as long as body. Antennae broken. Maxillary palps with third and fourth segments subequal in length. Pronotum margined anteriorly and laterally; mesonotum margined laterally. Bodies of male and female subequal.

**ANTENNAE.** As in generic description. Third segment narrower than pedicel, on dorsal aspect 1.4 as long as pedicel in male and 1.6 as long as pedicel in female; on ventral aspect 1.1 as long as pedicel in male and 1.3 as long as pedicel in female. Sexual dimorphism well developed, male possessing longer, stouter antennae than female; no spines present on flagellum of male or female.

**LEGS.** Long and slender. Fore and middle legs subequal in length, with hind leg twice length of fore and middle legs. Sexual dimorphism poorly developed, fore and middle legs of female being subequal in length with those of male; hind legs of female 0.85 as long as those of male. Femora, tibiae and two proximal segments of hind tarsi armed with variable number of linear spines (Table I). No spines occur on fore or middle tarsi. Apical spines constant in number, as in generic description. First segment of hind tarsus 0.8 length of other three together. Ratio of length of legs to length of body—Fore leg: male, 1.36:1; female, 1.26:1. Middle leg: male, 1.30:1; female, 1.28:1. Hind leg: male, 2.72:1; female, 2.49:1.

TABLE I.—VARIABILITY IN NUMBER OF LINEAR SPINES ON THE LEGS OF SIX SPECIMENS OF *PACHYRHAMMA LONGICAUDA* N. SP.

		Arith. Mean		Std. Dev.		Range	
		L.	R.	L.	R.	L.	R.
Fore Femur Inf.	Pro.	2.8	2.6	1.0	0.5	2-4	2-3
	Retro.	0	0	0	0	0	0
Fore Tibia Inf.	Pro.	2.8	3	0.4	0	2-3	3
	Retro.	3	3	0	0	3	3
Fore Tarsus	Pro.	0	0	0	0	0	0
	Retro.	0	0	0	0	0	0
Mid. Femur Inf.	Pro.	0.3	0.4	0.8	0.5	0-2	0-1
	Retro.	1.5	1.4	0.8	0.5	0-2	1-2
Mid. Tibia Sup.	Pro.	2.8	2.8	0.8	0.4	2-4	2-3
	Retro.	3.0	2.8	0.6	0.4	2-4	2-3
Mid. Tibia Inf.	Pro.	3	3	0	0	0	0
	Retro.	3	3	0	0	0	0
Mid Tarsus.	Pro.	0	0	0	0	0	0
	Retro.	0	0	0	0	0	0
Hind Femur Inf.	Pro.	7.5	7.5	0.6	0.8	7-8	6-8
	Retro.	3.8	3.7	3.1	1.8	2-10	2-7
Hind Tibia Sup.	Pro.	16.7	18.4	3.6	4.3	12-20	11-22
	Retro.	21.0	22.6	4.3	3.6	15-26	17-26
Hind Tarsus 1 Sup.	Pro.	2.2	2.2	0.4	0.4	2-3	2-3
	Retro.	2.3	2.4	0.8	0.9	2-4	2-4
Hind Tarsus 2 Sup.	Pro.	0.7	0.8	0.5	0.4	0-1	0-1
	Retro.	0.7	0.8	0.5	0.4	0-1	0-1

**GENITALIA.** *Female:* Suranal plate, Fig. 1 (SAP), concave laterally, distal margin truncate; disto-laterally the plate bears two groups of setae. Subgenital plate, Fig. 2 (SGP), straight laterally, tapering to a point distally; or Fig. 3, emarginate distally; plate sparsely clothed with setae. *Male:* Suranal plate, Fig. 4 (SPL), concave laterally, truncate distally; whole plate thickly coated with short setae. Subgenital plate (hypandrium), Fig. 5 (H), triangulate, 1.1 longer than wide, sides spreading slightly proximally, changing to concave medianly, attenuated distally with rounded apex. Apical protuberance on ventral surface

thickly clothed with short setae. On dorsal surface more proximal portion of plate sparsely clothed with setae, more distal portion glabrous. Two styli, Fig. 5 (S), thickly clothed with short setae, length of styli being 0.33 length of sternite IX. Subgenital plate covers genitalia. Parameres, Figs. 5, 6 (P), attenuated, broad at base, prolateral margin thickly clothed with long setae, rest of paramere more sparsely clothed with short setae. Pseudosternite, Fig. 6 (PD), as long as broad, tapering to a rounded apex distally. Penis, Fig. 6 (PN), two-lobed, each lobe as broad as long. Paraprocts, Figs. 4, 5, 6 (PP), 0.7 as wide as long.

LOCALITY. Taumarunui (type locality), coll. and date unknown; Ohakune, coll. C. E. Clarke, date unknown.

TYPES. Holotype male, allotype female, two paratype males and two paratype females in Auckland Institute and Museum Collection.

This species is very closely related to *Pachyrhamma longipes* (Colenso), but differs from it in:

1. Presence of linear spines on hind tarsi.
2. Sexual dimorphism in length of legs not as well developed as in *P. longipes*.
3. Fewer linear spines on hind femora.
4. Greater number of linear spines on hind tibiae.

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#### INDEX TO TEXT-FIGURE

B—basivalvula.	PD—pseudosternite.
BC—basal segment of cercus.	PM—perianal membrane.
C—cercus.	PN—penis.
DE—ductus ejaculatorius.	PP—paraproct.
DV—dorsal valve.	S—stylus.
E—endapophysis.	S VII, S VIII, S IX—sternite VII, VIII, IX.
EP—endoparamere.	SAP—supra-anal plate, female.
FCA—feebly chitinised arch connecting rami	SGP—subgenital plate, female.
H—subgenital plate, male.	SPL—supra-anal plate, male.
IA—intersegmental apodeme.	T VII, T VIII, T IX, T X—tergite VII, VIII, IX, X.
MR—muscle attached to ramus.	1 VF—first valvifer.
MT IX—membrane of tergite IX.	2 VF—second valvifer.
P—paramere (ectoparamere).	VV—ventral valve.
P VII, P VIII, P IX—pleurite VII, VIII, IX.	

#### INDEX TO TABLE

Arith. mean—Arithmetic mean.	Sup.—Superior.
Inf.—Inferior.	Mid.—Middle.
Prol.—Prolateral.	L.—Left leg.
Retro.—Retrolateral.	R.—Right leg.
Std. Dev.—Standard Deviation.	