

A NEW GENUS AND SPECIES OF TYDEIDAE
(ACARI : PROSTIGMATA) FROM NEW ZEALAND

BY

A. V. SPAIN,

Entomology Department, Lincoln College, New Zealand.

No species of the family Tydeidae have previously been described from New Zealand and records of the family in this country are confined to a few scattered literature reports. LAMB (1952) recorded *Tydeus caudatus* (Dugès, 1834) but, beyond stating that the specimen had been determined by H. WOMERSLEY gave no further details. COLLYER (1964) recorded *Tydeus californicus* (Banks) as common on orchard trees and WOOD (1964) recorded the presence of members of the following genera : *Paralorryia* Baker, 1965 ; *Lorryia* Oudemans, 1925 ; *Triophytodeus* Thor, 1932 ; *Tydaeolus* Berlese, 1910 and *Microtydeus* Thor, 1931.

In the following description the nomenclature used is that of BAKER (1965) except for the term "eugenital setae" which is used in accordance with the terminology of GRANDJEAN (1938).

The specimens on which the description below is based were collected from the foliage of a subalpine scrub plant, *Olearia colensoi* Hook. f. This plant forms dense stands in the wetter parts of New Zealand, below 38 degrees South latitude (ALLAN, 1961).

The collections were made as part of a general study of the Arthropoda associated with the above plant, the results of which are partially reported elsewhere (SPAIN, 1968 ; SPAIN and HARRISON, 1968).

Family : Tydeidae Kramer, 1877

Genus : **Australotydaeus** n. gen.

Tydeidae with L_2 in the lateral position and five complete rows of hysterosomal setae arranged as in Fig. 1. All setae including sensilli, long smooth, tapering distally. Striae transverse between hysterosomal dorsal setae and on posterior

part of propodosoma, longitudinal anterior to sensilli. Lobes of striae approximately twice as long as tall.

The leg setal pattern is as follows :

Leg I	(10 — 4 — 3 — 5 — 1 — 2)
Leg II	(6 — 2 — 3 — 3 — 1 — 1)
Leg III	(5 — 2 — 1 — 1 — 1 — 3)
Leg IV	(5 — 2 — 0 — 2 — 0 — 2)

The palpal setal count is (6 — 2 — 2). There are three pairs of ventral setae, six pairs of genital setae, four pairs of paragenital setae and, in the male only, 4 pairs of eugenital setae. The anal setae are inserted anterior to the anal platelets. The cheliceral stylets are strong and extend some distance beyond the capitulum. No distinct suture present between propodosoma and hysterosoma.

Type species : *Australotydaeus kirsteneae* n. sp.

This species keys to *Lasiotydaeus* Berlese in BAKER's (1965) work but differs from the generic description given by this author in the dorsal setal pattern and number of setae on the palps and legs. It also differs from *Lasiotydaeus* in that it has six pairs of genital setae and the anal setae situated in front of the anal platelets.

Australotydaeus has a number of similarities to *Lasiotydaeus*. These include the pattern of the dorsal striations, the uniformly long smooth dorsal setae and an equal number of dorsal setae.

It is considered that the sum of the differences and similarities between *Lasiotydaeus* and *Australotydaeus* warrant the erection of a new genus allied to the former.

***Australotydaeus kirsteneae* n. sp.**

Dorsum : General body shape as in Fig. 1. Propodosoma and hysterosoma not divided by a distinct suture. Idiosoma broadest between legs I and II, tapering anteriorly and posteriorly. Dorsal setae all long, smooth, tapering ; inserted as in Fig. 1. Setae P_1 inserted close together on anterior part of propodosoma ; approximately three times as long as mutual distance of bases. Setae P_2 smaller, inserted postero-laterad of setae P_1 ; slightly less than half mutual distance of bases. Setae P_3 long inserted almost directly posterior to P_2 ; slightly shorter than mutual distance of bases. Sensilli moderate in length, inserted mesad of bases of setae P_3 ; slightly longer than mutual distance of bases. Setae D_1 , moderate in length inserted postero-laterad of sensilli ; slightly shorter than mutual distance of bases. Setae L_1 longer than D_1 , inserted laterad of D_1 ; less than half as long as mutual distance of bases. Setae D_2 moderate in length, inserted postero-mesad of D_1 ; slightly longer than mutual distance of bases. Setae L_2 long, inserted laterad of

D_2 ; approximately two thirds as long as mutual distance of bases. Setae D_3 moderate in length, inserted postero-laterad of D_2 ; slightly longer than mutual distance of bases. Setae L_3 longest of body, inserted laterad of D_4 ; approximately one third longer than mutual distance of bases. Setae D_4 moderate in length, inserted posterior to D_2 ; nearly twice as long as mutual distance of bases. Setae as long as mutual distance of bases. Setae L_4 moderate in length, inserted posterior to

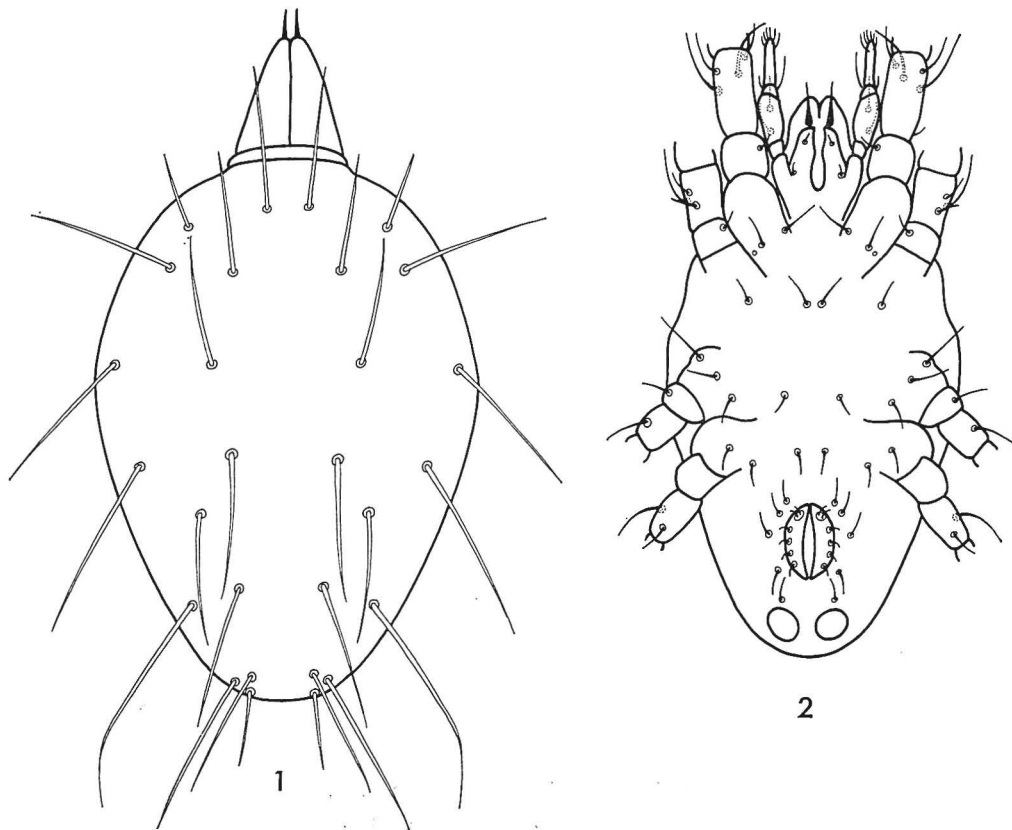


FIG. 1-2 : *Australotydaeus kirsteneae* n. g., n. sp.
1. — Dorsum. 2. — Venter.

D_4 ; approximately one third longer than mutual distance of bases. Setae D_5 moderate in length, inserted mesad of L_4 ; slightly longer than twice mutual distance of bases. Setae L_5 shortest of dorsal setae, inserted posterior to D_5 ; slightly longer than mutual distance of bases. Pattern of dorsal striae similar to that of *Lasiotydaeus krantzi* Baker (BAKER 1965).

Venter : Chaetotaxy and general shape as shown in Fig. 2. All setae fine, smooth, tapering; shorter than dorsal setae. Three pairs of ventral setae.

Four pairs of paragenital setae. Six pairs of genital setae with the two most anterior inserted on the same pinaculum, or clear area around the base; smallest of ventral setae. Eugenital setae (4 pairs) present only in the male (GRANDJEAN, 1938). Anal setae, one pair inserted anterior of anal platelets.

Palpi : Distal segment long. Chaetotaxy as in Fig. 3 a. Setal formula (6 — 2 — 2). Tarsal solenidion (ω) is small, directed distally at a small angle to the tarsus.

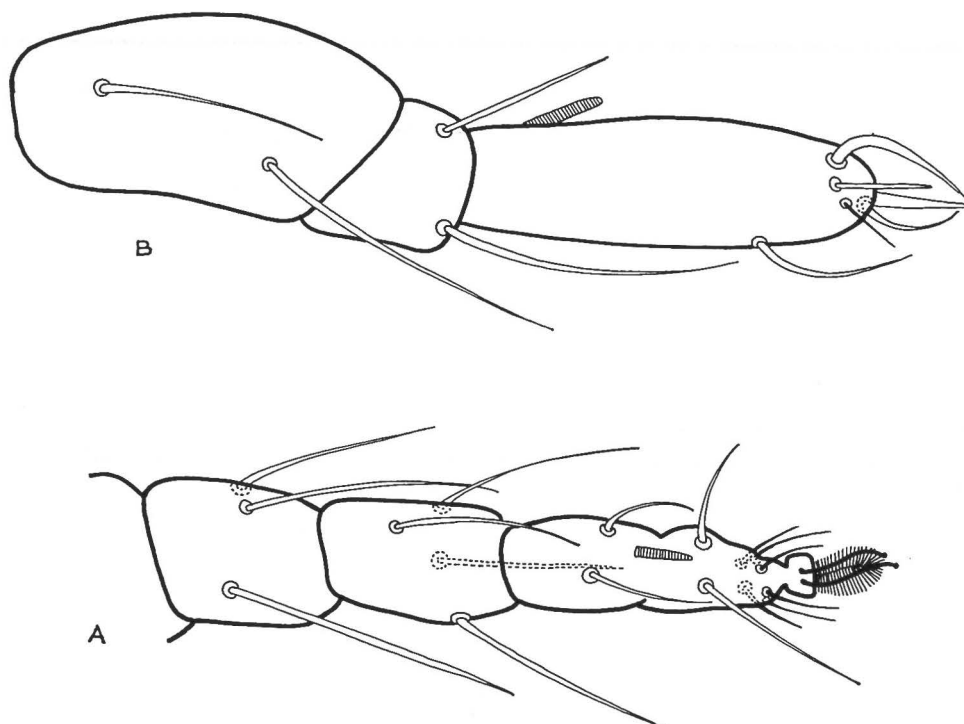


FIG. 3 : *Australotydaeus kirsteneae* n. g., n. sp.
A. — Leg I. B. — Palp.

Legs : All tarsi bidactyl, claws slender. Pulvillus large, pad-like; as long as claws. Setal formula is given in the diagnosis of the genus.

The tarsal solenidion (ω) is present on legs I and II. On leg I it is a short rod approximately one sixth as long as tarsi plus claws and inclined at an angle of approximately 45° to the tarsal surface.

Capitulum : Conspicuous, projecting well forward of idiosoma. Cheliceral stylets broad basally, narrowing distally; projecting beyond capitulum in dorsal aspect. Two pairs of small adoral setae present.

Size : The mean body measurements of 10 specimens were : length 318μ , breadth 195μ . The lengths, in microns, of the dorsal setae of 5 specimens are as follows :

Seta	Setal height		Mutual distance of bases	
	Mean	Range	Mean	Range
P ₁	62	54 — 64	18	14 — 24
P ₂	55	52 — 62	84	71 — 95
P ₃	93	92 — 94	105	98 — 115
S	64	58 — 67	41	29 — 50
D ₁	63	58 — 70	65	53 — 76
D ₂	69	62 — 77	44	38 — 52
D ₃	64	60 — 69	72	62 — 83
D ₄	72	67 — 75	35	31 — 39
D ₅	69	65 — 74	23	21 — 28
L ₁	79	73 — 83	154	135 — 183
L ₂	94	87 — 101	126	110 — 146
L ₃	107	92 — 142	88	81 — 98
L ₄	80	73 — 83	52	46 — 58
L ₅	38	35 — 42	27	22 — 31

Colour : In life, this species is a light translucent yellow.

Type Specimens :

Holotype — Magister Ridge, South Island, New Zealand. (171°7.7'E. 42°57.7'S). 25.ix.1966. ♂ (A. V. SPAIN). Collected from the foliage of *Olearia colensoi* Hook. f.

Paratypes — Magister Ridge, South Island, New Zealand. 25.ix.1966. 9 specimens (A. V. SPAIN). Collected from the foliage of *Olearia colensoi* Hook. f.

The holotype and six paratypes are to be lodged in the collection of Entomology Division, D.S.I.R., Nelson, New Zealand. Three paratypes are to be lodged in the collection of the British Museum (Natural History).

The species is named for my daughter, KIRSTEN.

Ecology : Nothing is known of the trophic relationships of this species. However, the lower leaf surfaces of *Olearia colensoi* possess a deep, diffuse tomentum which, by providing a micro-environment that is moister than ambient, helps to make them a favourable habitat for mites (SPAIN and HARRISON, 1968).

ACKNOWLEDGMENTS.

I should like to thank the Director General, New Zealand Forest Service, for making funds available to enable the costs of this study to be met.

ABSTRACT.

A new genus and species of tydeid mite, *Australotydaeus kirsteneae* n. g., n. sp., is described from the South Island of New Zealand. The specimens on which the description is based were collected from the foliage of an indigenous, subalpine scrub plant *Olearia colensoi* Hook. f.

RÉSUMÉ.

Un nouveau genre et une nouvelle espèce de tydéide, *Australotydaeus kirsteneae* n. g. n. sp., de l'Ile du Sud, en Nouvelle-Zélande sont décrits. Les exemplaires qui ont servi à la description ont été trouvés sur une plante subalpine indigène, *Olearia colensoi* Hook. f.

REFERENCES

- ALLAN (H. H.), 1961. — Flora of New Zealand, Vol. 1. — R. E. Owen, Wellington, New Zealand. 1085 p.
- BAKER (G. W.), 1965. — A review of the genera of the family Tydeidae (Acarina). — *Advances in Acarology*, 2 : 85-133.
- COLLYER (E.), 1964. — Phytophagous mites and their predators in New Zealand orchards. — *N. Z. J. Agric. Res.*, 7 : 551-568.
- GRANDJEAN (F.), 1938. — Observations sur les Tydeidae (1^{re} série). — *Bull. Mus. nat. Hist. nat., Paris*, 2^e sér., 10 (4) : 377-384.
- LAMB (K. P.), 1952. — A Preliminary list of New Zealand Acarina. — *Trans. Proc. R. Soc. N. Z.*, 79 (3/4) : 370-375.
- SPAIN (A. V.), 1968 a. — A new genus of arboreal Mycobatidae from New Zealand (Acari : Cryptostigmata). — *Acarologia*, 10 (3) : 516-521.
- , 1968 b. — A new genus and two new species of arboreal Oppiidae (Acari : Cryptostigmata). — *Pacif. Insects* (in press).
- SPAIN (A. V.) and HARRISON (R. A.), 1968. — Some aspects of the ecology of arboreal Cryptostigmata, with special reference to the species associated with *Olearia colensoi* Hook. f. — *N. Z. Jl. Sci.* (in press).
- WOOD (T. G.), 1964. — New records of terrestrial Prostigmata from New Zealand. — *N. Z. Ent.*, 3 (3) : 39-40.
-