

# The Slug Mite *Riccardoella limacum* (Acari: Ereynetidae) in New Zealand

G. M. BARKER

Soil & Field Research Organisation, Ruakura Agricultural Research Centre,  
MAF, Hamilton

AND

G. W. RAMSAY

Entomology Division, DSIR, Auckland

## Summary

*Riccardoella limacum* (Schrank), the slug mite, is recorded from New Zealand for the first time. It has been found on 9 species of terrestrial molluscs, one of which, *Athoracophorus bitentaculatus*, is a new host record.

The slug mite *Riccardoella limacum* (Schrank) has not previously been recorded in New Zealand. It is a cosmopolitan species well known in Europe and North America which lives on the body surface and within the mantle cavity of a variety of terrestrial molluscs. When present, small white mites can be seen moving rapidly over their host. They are often present in considerable numbers with no apparent harm to the host mollusc. Baker (1970a, b; 1973) has studied its life-history, feeding habits, and internal anatomy in Britain and shown that the mite is a true parasite which feeds on the blood of its host. Previously it had been contended that the slug mite was a commensal or mucous feeder (e.g., Turk & Phillips 1946; Baker & Wharton 1952; Hughes 1959; Evans, Sheals & Macfarlane 1961; Krantz 1970). The life cycle of *R. limacum* is as for other ereynetids with a larval and three nymphal stages followed by the adult (Baker 1970a).

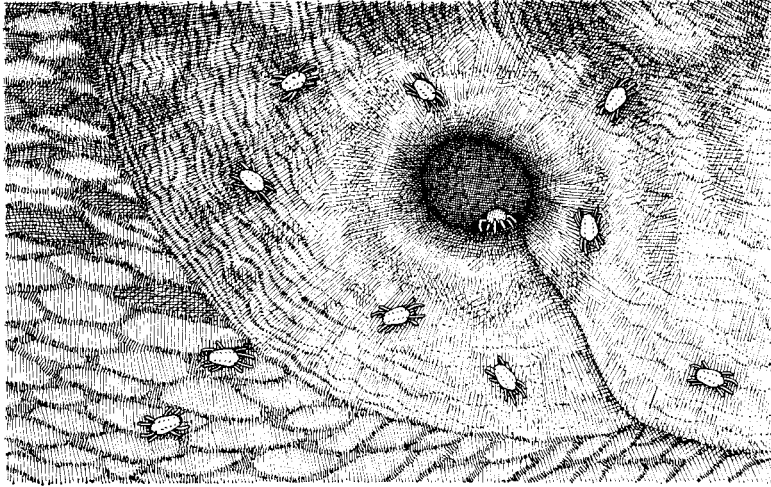


Fig. 1 A heavy infestation of the slug-mite, *Riccardoella limacum* (Schrank), around the pulmonary aperture of a tawny garden slug, *Limax flavus* L., at Glen Eden, Auckland.

The slug mite was first noticed by Réaumur in 1710 and over the years three species were named. Turk & Phillips (1946) synonymised these under the name *Riccardoella limacum* (Schrank, 1776). These authors listed 31 species of molluscs on which *R. limacum* was found, and mentioned that in Britain its preferred hosts were the slugs *Arion ater* (L.), *Milax gagates* (Drap.), *Milax sowerbyi* (Fér.), *Agriolimax agrestis* [= *Deroceras reticulatum* (Müll.)], and especially *Limax maximus* L. The snails *Helix pomatia* L. and *H. aspersa* Müll. are also commonly exploited. There are numerous references in the literature to mites on these and other molluscs. In a Northumberland (England) garden, White (1959) found approximately 30% of *Arion ater*, 12% of *Arion hortensis* Fér., and 40% of *Milax budapestensis* (Hazay) infested with the mite.

In Australasia *R. limacum* has previously been noted from Tasmania (Musson 1891) and Australia (Rainbow 1906) on the slugs *Limax maximus* and *L. flavus* L. In New Zealand it remained unnoticed until 1972 when it was observed in Nelson (N. A. Martin, pers. comm.). The slug mite has since been found to occur at several localities in Hamilton and at Te Atatu and Glen Eden in Auckland. Close examination of living potential hosts from many and varied localities has failed to add further locality records for *R. limacum*.

So far in New Zealand the slug mite has occurred on the snails *Helix aspersa* and *Oxychilus cellarius* (Müll.) and on the slugs *Limax maximus*, *L. flavus* (see fig. 1), *Milax budapestensis*, *M. gagates*, *Deroceras caruanae* (Poll.), *D. reticulatum*, and *Athoracophorus bitentaculatus* (Q. & G.). The slug *A. bitentaculatus* is endemic to New Zealand and thus constitutes a new host record for *R. limacum*.

Voucher specimens have been deposited in the N.Z. Arthropod Collection held at Entomology Division, DSIR, Auckland.

#### REFERENCES

- BAKER, E. W.; WHARTON, G. W. 1952: *An Introduction to Acarology*. The Macmillan Company, New York.
- BAKER, R. A. 1970a: Studies on the life history of *Riccardoella limacum* (Schrank) (Acari-Trombidiformes). *Journal of Natural History* 4 (4): 511-9.

- 1970b: The food of *Riccardoella limacum* (Schrank) — Acari — Trombidiformes and its relationship with pulmonate molluscs. *Journal of Natural History* 4 (4): 521-30.
- 1973: Notes on the internal anatomy, the feed requirements and development in the family Ereyneidae (Trombidiformes). *Acarologia* 15 (1): 43-52.
- EVANS, G. O.; SHEALS, J. G.; MACFARLANE, D. 1961: *The Terrestrial Acari of the British Isles*. Volume 1. British Museum, London.
- HUGHES, T. E. 1959: *Mites or the Acari*. University of London Athlone Press, London.
- KRANTZ, G. W. 1970: *A Manual of Acarology*. O.S.U. Book Stores, Corvallis, Oregon.
- MUSSON, C. T. 1891: On the naturalised forms of land and fresh-water Mollusca in Australia. *Proceedings of the Linnean Society of New South Wales (2nd series)* 5: 883-96.
- RAINBOW, W. J. 1906: Synopsis of Australian Acarina. *Records of the Australian Museum* 6: 145-93.
- RÉAUMUR, R. A. F. DE 1710: Insecte des Limacons. *Memoires de Académie, Paris* 8: 305.
- TURK, F. A.; PHILLIPS, S. M. 1946: A monograph of the slug mite *Riccardoella limacum* (Schrank). *Proceedings of the Zoological Society of London* 115: 448-72.
- WHITE, A. R. 1959: Infestations of the slug mite (*Riccardoella limacum* (Schrank)) on various species of slugs. *Entomologist's Monthly Magazine* 95 (1136): 14.
-