

New Zealand records of *Carpoglyphus lactis* (Acari: Carpoglyphidae)

Author: Zhang, Zhi-Qiang

Source: Systematic and Applied Acarology, 17(2) : 239-240

Published By: Systematic and Applied Acarology Society

URL: <https://doi.org/10.11158/saa.17.2.11>

The BioOne Digital Library (<https://bioone.org/>) provides worldwide distribution for more than 580 journals and eBooks from BioOne's community of over 150 nonprofit societies, research institutions, and university presses in the biological, ecological, and environmental sciences. The BioOne Digital Library encompasses the flagship aggregation BioOne Complete (<https://bioone.org/subscribe>), the BioOne Complete Archive (<https://bioone.org/archive>), and the BioOne eBooks program offerings ESA eBook Collection (<https://bioone.org/esa-ebooks>) and CSIRO Publishing BioSelect Collection (<https://bioone.org/csiro-ebooks>).

Your use of this PDF, the BioOne Digital Library, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Digital Library content is strictly limited to personal, educational, and non-commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne is an innovative nonprofit that sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

Correspondence

New Zealand records of *Carpoglyphus lactis* (Acari: Carpoglyphidae)

ZHI-QIANG ZHANG

Landcare Research, Private Bag 92-170, Auckland 1072, New Zealand

E-mail: zhangz@landcareresearch.co.nz

The Carpoglyphidae is a small family of two genera and six species (Schatz *et al.* 2011) and five of the species are in the genus *Carpoglyphus* (Clark *et al.* 2010). The dried fruit mite, *Carpoglyphus lactis* L., has received renewed interest in recent years due to its role as an alternative food for predatory mites in the Phytoseiidae that are used in biological control (Baxter *et al.* 2011). In New Zealand, there has been interest by the biocontrol industry to import this species into New Zealand for mass-rearing of predatory mites. However, there has been some confusion about the presence of this species in New Zealand. In this short note, I clarify its nomenclatural status and also its New Zealand records.

Nomenclatural status. This species was credited to Linnaeus, 1758 by many authors (e.g. Hughes 1976; Fain & Rack 1987; Hubbard & Fashing 1996; Fan *et al.* 2010), and also to Linnaeus 1767 by others (Halliday 1998; Sirvid *et al.* 2011). A check of the original texts of Linnaeus (1758, 1767) confirms that it is the latter (see Fig. 1 below).

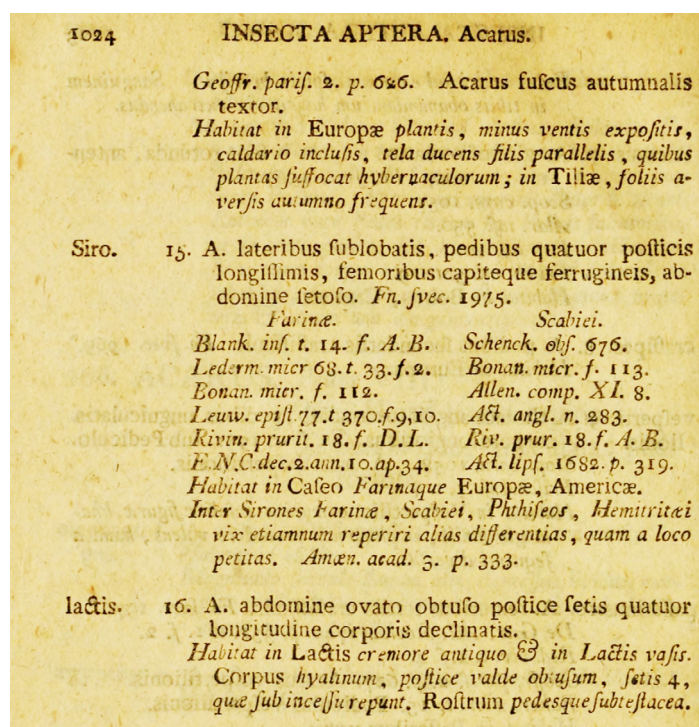


FIGURE 1. Page 1024 of Linnaeus 1767 where *Acarus lactis* was described after *Acarus siro* (see full open-access book <http://biodiversitylibrary.org/bibliography/37256>).

New Zealand records. The first record of *Carpoglyphus* is for an unnamed species (Findlay 1921). Spain and Luxton's (1971) mite catalogue of the New Zealand subregion missed this early record, but included an unidentified species of this genus from Macquarie Island (Watson 1967). Nomenclatural reference book (Ramsay 1980) and text book (Waller 1984) list *C. lactis* from New Zealand, although these records are neither referenced to primary literature, nor linked to voucher specimens. Fan and Zhang (2007: 62 & 66) gave the first verified

report of *C. lactis* in mainland New Zealand based on specimens collected in 1962 by R. Wilson from bee frames in Christchurch and by an unnamed collector in 1955 from *Rattus rattus* in Wellington (specimens preserved in New Zealand Arthropod Collection). Bingham (2007) reported two specimens of *C. lactis* from 22 New Zealand honey bees sent to MAF (now succeeded by Ministry for Primary Industries) Biosecurity New Zealand's Investigation and Diagnostic Centre (IDC) in Wallaceville. He noted that this species was among those "regularly found in samples from MAFBNZ's apiculture surveillance programme". Clark (2010) also studied *C. lactis* from samples collected by IDC (Christchurch) from the apiculture surveillance programme. The author also recently examined specimens collected from New Zealand honey bees during the apiculture surveillance programme (specimens preserved in IDC Auckland). These multiple records based on specimens collected from 1950s to the present in different areas indicate that this species is established in New Zealand.

Acknowledgements. I thank Rosa Henderson (Landcare Research) and Xiaoyue Hong (Nanjing Agricultural University, China) for reviews and comments, and Disna Gunawardana and Olwyn Green of IDC (Auckland) for assistance with the loan of IDC specimens.

References

- Baxter, I., Midthassel, A., Stepmann, W., Fryer, R., Garcia, F.P., Lewis, J., Walker, P. & Hulshof, J. (2011) Field results of a sachet release system using the predator *Amblyseius swirskii* (Athias-Henriot) (Acari: Phytoseiidae) and the factitious prey, *Suidasia medanensis* Oudemans (Acari: Astigmata). *International Organisation for Biological Control West Palaearctic Regional Section Bulletin*, 68, 1–4.
- Bingham, P. (2007) Tracheal mites ruled out. *Surveillance*, 34(4), 19.
- Clark, J.M. (2010) A new species of *Carpoglyphus* (Astigmatina: Carpglyphidae) from the bark of black beech (*Nothofagus*) honeydew in New Zealand. *International Journal of Acarology*, 36, 453–459.
- Fain, A. & Rack, G. (1987) Notes on the mites living in the flowers of *Espeletia* spp. (Asteraceae) in Columbia. I *Carpoglyphus sturmi* sp. n. (Acari: Carpglyphidae). *Entomologische Mitteilungen aus dem Zoologischen Staatsinstitut und Zoologischen Museum Hamburg*, 9(130), 9–19.
- Fan, Q.-H. & Zhang, Z.-Q. (2007) *Tyrophagus* (Acari: Astigmata: Acaridae). *Fauna of New Zealand*, 56, 1–291.
- Fan, Q.-H., Chen, Y. & Wang, Z.-Q. (2010) Acaridia (Acari: Astigmatina) of China: A review of research progress. *Zoosymposia*, 4, 225–259.
- Findlay, W.F. (1921) Cheese mite itch and conjunctivitis. A 'minor horror' of the great war. *The New Zealand Journal of Health and Hospitals*, 4(3), 57–60.
- Halliday, R.B. (1998) *Mites of Australia: A Checklist and Bibliography*. CSIRO Publishing, Melbourne, 317 pp.
- Hubard, C.N. & Fashing, N.J. (1996) *Carpoglyphus nidicolous* – a new species of Carpglyphidae (Acarina: Astigmata) inhabiting the nests of swallows. *International Journal of Acarology*, 22(3), 215–220.
- Hughes, A. M. (1976) *The Mites of Stored Food and Houses*. 2nd edition, London. Ministry of Agriculture, Fisheries and Food, Technical Bulletin 9, iv, 400 pp.
- Linnaeus, C. (1758) *Systema naturae per regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis. Tomus I. Editio decima, reformata*. Holmiae, 824 pp.
- Linnaeus, C. (1767) *Systema naturae, per regna tria naturae: secundum classes, ordines, genera, species cum characteribus, differentiis, synonymis, locis. Tom. I. Editio decima tertia, ad Editionem duodecimam reformatam Holmiae Pars II*. Vindobonae, 1327 pp.
- Ramsay, G.W. (1980) Common and Scientific Names of New Zealand Mites. *New Zealand Department of Scientific & Industrial Research Information Series*, 139, 1–32.
- Schatz, H., Behan-Pelletier, V.M., O'Connor, B.M. & Norton, R.A. (2011) Suborder Oribatida van der Hammen, 1968. In: Zhang, Z.-Q. (Ed.), *Animal Biodiversity: an Outline of Higher-level Classification and Survey of Taxonomic Richness*. *Zootaxa*, 3148, 141–148.
- Sirvid, P.J., Zhang, Z.-Q., Harvey, M.S., Rhode, B.E., Cook, D.R., Bartsch, I. & Staples, D.A. (2011) SIX Phylum ARTHROPODA CHELICERATA horseshoe crabs, arachnids, sea spiders. In Gordon, D.P. (Ed.), *New Zealand Inventory of Biodiversity. Volume 2. Kingdom Animalia. Chaetognatha, Ecdysozoa, ichnofossils*. Canterbury University Press, Christchurch, New Zealand, pp. 50–89.
- Spain, A.V. & Luxton, M. (1971) Catalog and bibliography of the Acari of the New Zealand subregion. *Pacific Insects Monograph*, 25, 179–226.
- Waller, J.B. (1984) Stored products' pests. In: Scott, R.R. (Ed.) *New Zealand Pest and Beneficial Insects*. Lincoln University College of Agriculture, Canterbury, pp 169–183.
- Watson, K.C. (1967) The terrestrial Arthropoda of Macquarie Island. *ANARE Scientific Reports*, series B(1) Zoology, 99, 1–90.

Accepted by X.-Y. Hong: 15 Jun. 2012; published 25 Jun. 2012