

RE-DESCRIPTION OF *Newsteadia myersi* GREEN (HOMOPTERA : COCCOIDEA : ORTHEZIIDAE)

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Summary

Newsteadia myersi Green is redescribed; this is the only representative of the family Ortheziidae known from New Zealand.

INTRODUCTION

Newsteadia myersi was described by Green (1929) from specimens collected from leaf mould at Ohakune. This was the first record of a species in this genus from the Southern Hemisphere and is the only record of the family Ortheziidae from New Zealand. In a review of the family, Morrison (1952) noted that the existing description of *N. myersi* was inadequate for satisfactory placement of the species in a key to the genus *Newsteadia* and that no reports of rediscovery of the species had appeared.

Three specimens of *N. myersi* were recovered from Berlese funnel extractions of forest litter from Waewaepa Ranges during 1957 and a further three specimens from similar extractions of nikau litter from Clevedon in 1958. The following description is based on these specimens made available by courtesy of Dr R. A. Cumber, of the Entomology Division, D.S.I.R.

Newsteadia myersi GREEN (Fig. 1)

SYNONYMY: none.

HABIT: Adult females and immature stages in forest and nikau litter. According to Green (1929) the adult female superficially resembles *N. floccosa* De Geer but the waxen dorsal lamellae are shorter, more compact and dense.

RECOGNITION CHARACTERS: Overall length of adult female exclusive of appendages, on slide, about 1.12 mm, width about 0.86 mm. Body shape oval, somewhat rotund, segmentation not conspicuous. Eyes rounded, not heavily sclerotised, stalk short, situated near base of antennae. Derm of both dorsum and venter membranous with very fine spicules on dorsum in clear areas between spine bands or clusters, also fine spicules on mid-ventral portion of abdominal segments. Spines rather bulbous at base then tapering abruptly and more or less parallel-sided to bluntly rounded apex, spines on dorsum about 19 μ long, those on anterior portions of ovisac band about 28 μ long. On dorsum, ten marginal spine clusters, groups two to five separated by clear areas, groups six to nine coalesced but scolloped on inner

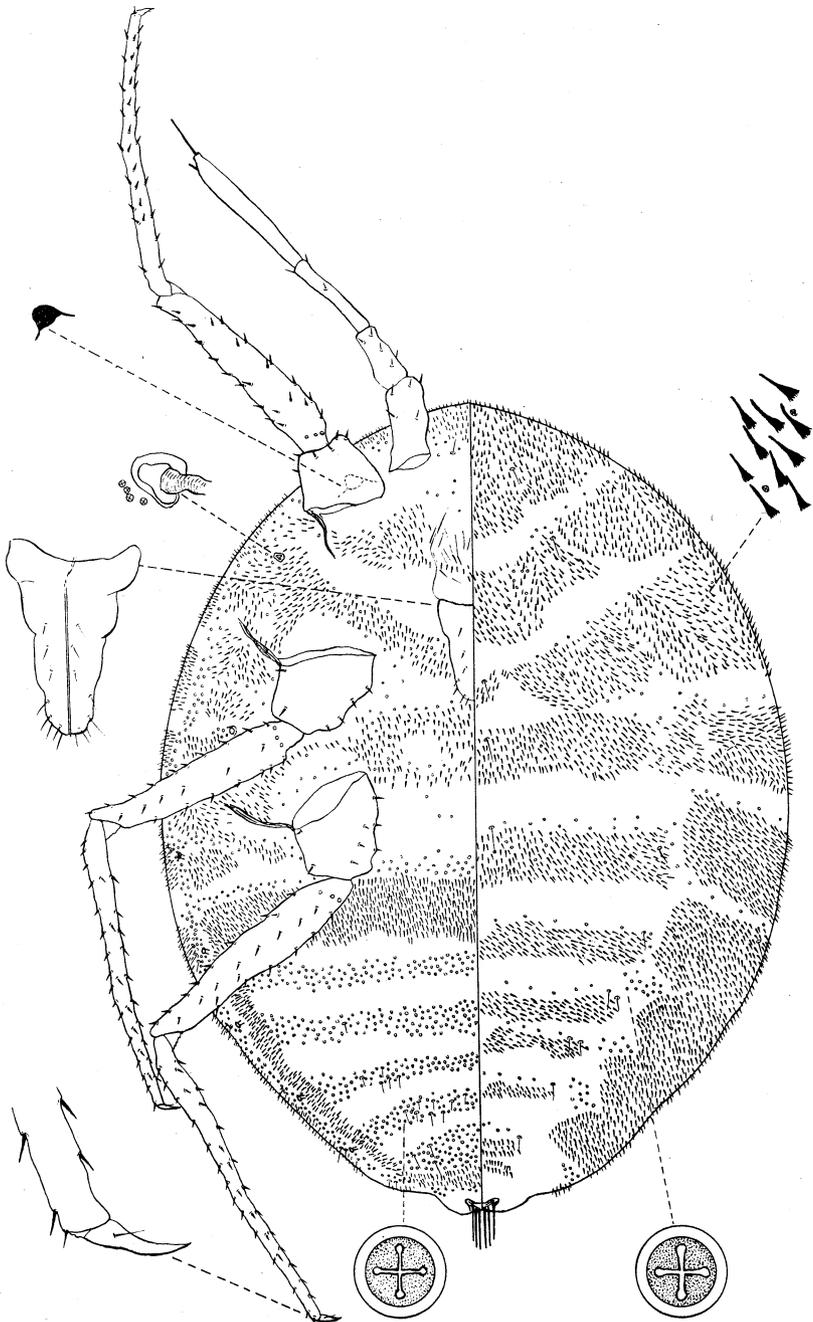


FIG. 1.—Adult female of *Newsteadia myersi* Green, dorsal and ventral view.

margin, the last marginal abdominal cluster very small. Ten mid-dorsal spine bands, these meeting at the mid-line except for bands seven and eight which have very small clear areas at mid-line. On ventral margins, groups of two or three slender setae set in the spine clusters opposite each of the five abdominal spiracles. On the venter, anterior section of ovisac band thickly beset with spines, these longer than spines on dorsum, lateral sections of ovisac band relatively well developed forming a continuous series of spines around remainder of abdomen. On mid-ventral area enclosed by ovisac band, a small number of slender setae. Thoracic spiracles lightly sclerotised, of usual type, accompanied by small numbers of quadrilocular pores. Abdominal spiracles on lateral margins of first five abdominal segments, these spiracles simple, a number of quadrilocular pores in vicinity of each spiracle but pores not definitely associated with spiracles. Anal ring about 61μ in diameter, with a double row of simple pores and six setae, these setae about 55μ in length tapering uniformly to a bluntly rounded apex. No tubular ducts observed but the fimbriate extensions at base of body spines probably represent microtubular ducts which are apparently responsible for production of waxen lamellae overlying spine bands and clusters in life. Body pores quadrilocular, the rim more noticeably sclerotised on inner margin, these pores frequent in clear spaces between spine bands and clusters both on dorsum and venter, pores present in smaller numbers throughout spine bands and clusters, also numerous on mid-ventral area enclosed by ovisac band. Antennae slender, normally four-segmented, length of segments of an average antenna in microns: I, 141; II, 119; III, 170; IV, 271, apical seta about 85μ tapering uniformly to bluntly rounded apex, a similar but much smaller seta on upper fifth of terminal segment, remaining setae on antennae small, tapering and apically acute. A prominent sensory pore on upper third of second antennal segment. Beak about 169μ long and 116μ wide with a number of slender setae particularly towards tip. Legs long and slender with about usual numbers of setae, these small, tapering and apically acute. On posterior legs, coxa short and stout, approximately as broad as long; trochanter-femur about 466μ in length; tibia-tarsus about 600μ in length, fused with no indication of junction; claw stout, digitules slender, less than half length of claw.

SPECIMENS EXAMINED: Two adult females and one immature stage, ex forest litter, Waewaepa Range, 29/3/57, R. A. Cumber (one of these adult females has been designated plesiotype); three adult females, ex nikau litter, Clevedon, 9/7/58, R. A. Cumber. All specimens in collection of Entomology Division, D.S.I.R., Palmerston North.

NOTES: Green (1929) noted a variation in the number of antennal segments in the four adult females available to him, the number of segments ranging from four to six. Green presumed that six was the normal number. Five adult females were available at the time of this redescription; all of these had four-segmented antennae although one specimen has an incomplete division across the third antennal segment giving the appearance of a five-segmented form. It is probable that four segments is the normal antennal number for this species. The more usual number of antennal segments in the genus *Newsteadia* is six or seven although one species *N. tristani* (Silvestri) has only three segments in the antenna.

Mamet (1943) expressed doubt as to the position of *N. myersi* as a member of the genus *Newsteadia* as Green (1929) had failed to observe abdominal spiracles and had noted the presence of an incomplete crease across the second antennal segment. This redescription establishes the presence of five sets of abdominal spiracles. The crease observed by Green on the second antennal segment does not appear to be a significant factor. *N. myersi* is an undoubted member of the genus *Newsteadia*.

The genus *Newsteadia* as at present known contains eleven species and exhibits a rather unusual distribution pattern. The types species, *N. floccosa* De Geer, occurs throughout Europe and the British Isles; two species, *N. americana* Morrison and *N. minima* Morrison, are recorded from the continental United States; one, *N. tristani* (Silvestri), from Costa Rica and Mexico; one, *N. wacri* Strickland, from Gold Coast, Africa; two, *N. mauritania* Mamet and *N. montana* Mamet, from Mauritius; one, *N. guadalcanalia* Morrison, from Guadalcanal, Solomon Islands; one, *N. zimmermani* Morrison, from Viti Levu, Fiji; one, *N. samoana* Morrison, from Upolu, Samoa, and *N. myersi* from North Island, New Zealand. Such a distribution pattern would suggest that a number of other species of *Newsteadia* still await discovery.

The feeding habits of most of the species in the genus are obscure, most specimens have been taken from leaf litter in indigenous forest. Morrison (1925) stated that species of *Newsteadia* may feed on fungal hyphae or on the more or less exposed roots of higher plants.

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