STUDIES OF THE COCCOIDEA. 1. NEW SPECIES OF NEOLEONARDIA.

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SUMMARY.

Examination of the Coccoidea occurring in Queensland has revealed several new species. Two of these, Neoleonardia chitinosa and N. aliformis have now been described.

INTRODUCTION.

Many of the Coccoidea are of economic importance in Queensland, and while elucidating the species and recording their hosts it has become evident that a better understanding of the systematics of this superfamily is essential. Examination of the large amount of material available has revealed a number of new species. In preparation for more extensive publications based on work with these insects, two new species in the tribe Aspidiotini are now described.

GENUS NEOLEONARDIA MacGILLIVRAY.

The genus *Neoleonardia* in the tribe Aspidiotini family Diaspididae was established by MacGillivray (1921, p. 392) to accommodate one species, *Aspidiotus extensus* Maskell (1894, p. 41) of Australia. Two other species—*A. alatus* Froggatt (1914, p. 132) and *A. delicatulus* Laing (1929, p. 23)—were later referred to it by Ferris (1938, p. 43). Two new species from Queensland are now added. The total number of species therefore is five and all are limited to Australia.

For the purpose of comparing illustrations of the described species with those of the new species, reference may be made to the articles of Laing (*loc. cit.*) and Ferris (*loc. cit.*).

Neoleonardia chitinosa n.sp.

(Figs. 1–3.)

Hosts and Distribution.—Type material collected from *Eucalyptus crebra* F. Muell., Inglewood, Sept. 1940, by the author. Paratype material is labelled "*Euc. transcontinàlis,* Euston, N.S.W., 25.10.28, W.W.F." This host name is a misspelling of *Eucalyptus transcontinentalis* Maiden.

Habit.—Insect and scale occurring under the epidermis of twigs and branches and giving the appearance of small round surface swellings, averaging 1·5 mm. in diameter. Pellicles are black internally, hard and brittle.

Recognition Characters.—Adult female broadly turbinate with a cephalic constriction, length 1·2 mm. Old specimens as wide as long. Pygidium broad basally. Median lobes completely fused, triangular, margin smooth with a

convexity near base; basal scleroses divided, longer than the lobes. Second lobe small, triangular, with basal sclerosis. Third lobe a mere point but obvious by the basal sclerosis. Paraphyses arising from each of the first and second interlobal spaces, sides subparallel, three times longer than the median basal sclerosis. Plates represented in both the first and second interlobal spaces by two subequal apically curved truncated simple derm processes. Spines as a pair anterior to each of the second and third lobes, with others spaced on the anterior margin of the pygidium. Macroduct openings small, as rows in the second and third duct furrows, approximating 30 and 20 respectively. Perivulvar scleroses in a crescent anterior to the anus. Anus small, nearer to the perivulvar scleroses than to the median lobes. Perivulvar pores absent. Sclerotized thickenings radiate from the apex.

Note.—This species differs from all others in the genus by the presence of three pairs of pygidial lobes.

Fig. 1.

Neoleonardia chitinosa n.sp. Appearance of insect on host plant. (× 7.)

Female nymphs apparently settle in positions where host growth is active. The surface tissue surrounding the nymph enlarges slightly, enabling the insect body to expand beneath the epidermal layer, with the first pellicle as a cover to the opening. In normal material this pellicle is not obvious,

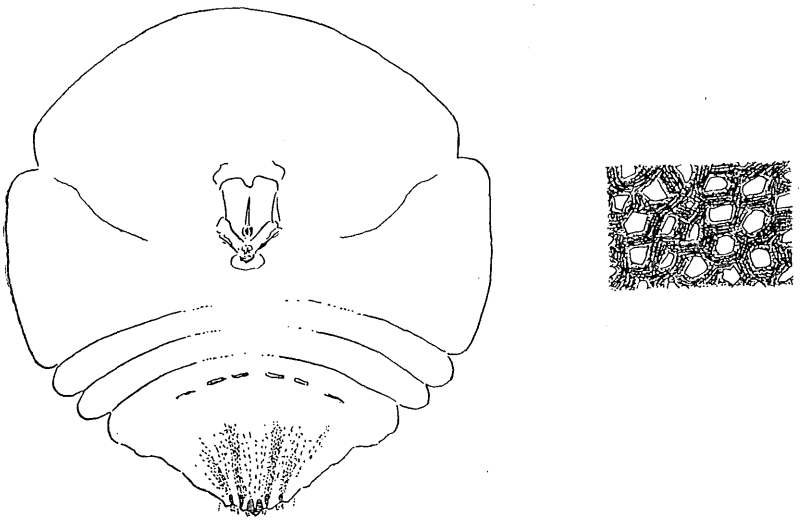

Fig. 2.

Neoleonardia chitinosa n.sp. Left, Outline of adult female. (× 50.)
Right, Enlargement of portion of body surface.

[*Drawing by William Manley.*

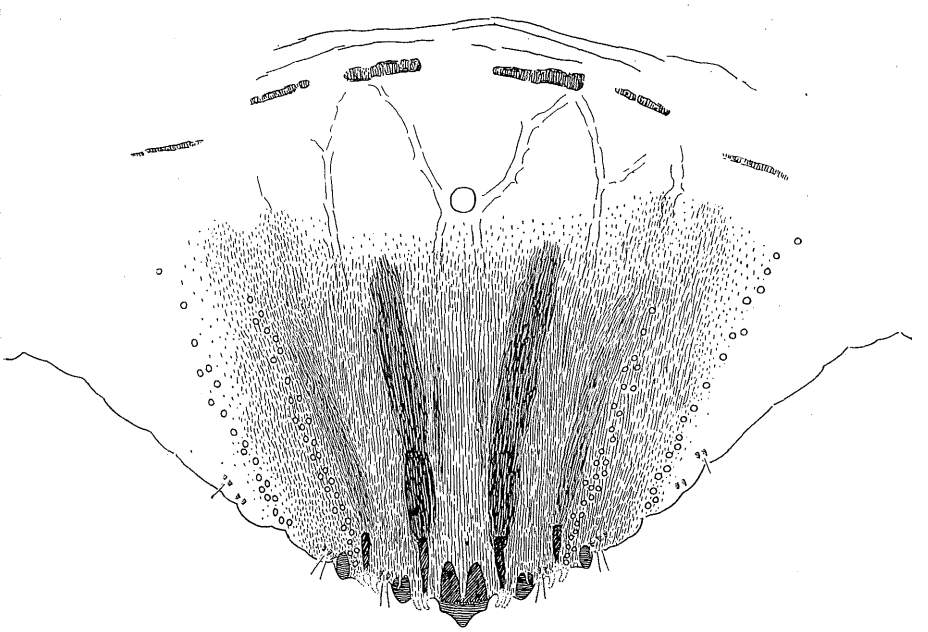

Fig. 3.

Neoleonardia chitinosa n.sp. Enlargement of pygidium. (× 190.)

[*Drawing by William Manley.*

but when weathered off or otherwise removed exposes a small oval black area which is part of the upper surface of the second pellicle. When mature specimens are removed, a depression is left in the epidermis of the host.

Old mature females of this species can be readily recognized when mounted for microscopic examination by a dense reticulate chitinization of the prepygidial part of the body (Fig. 2); hence the specific name.

Type slide Reg. No. T.5278, paratype slide (T.5279) and unmounted material (T.5284) are in the Queensland Museum. Paratype slide and unmounted material are in the C.S.I.R.O. collection, Canberra.

Neoleonardia aliformis n.sp.

(Figs. 4–6.)

Host and Distribution.—Type material collected from *Eucalyptus acmenioides* Schau., Brisbane, 26.1.47, by the author.

Habit.—Insect and scale occurring on the smooth bark of small branches or under the stringy bark of the larger branches and trunk. Pellicles dark, hard and brittle.

Fig. 4.

Neoleonardia aliformis n.sp. Appearance of insect on host plant. (× 7.)

Recognition Characters.—Adult female ovate, 1·2 mm. long, 0·9 mm. wide; with a small cephalic constriction. Old specimens subcircular. Pygidium very broad basally. Median lobes completely fused and apically

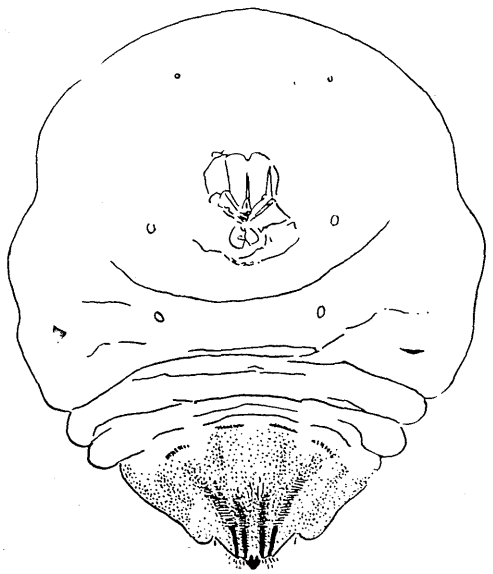

Fig. 5.

Neoleonardia aliformis n.sp. Outline of adult female. (× 50.)

[*Drawing by William Manley.*

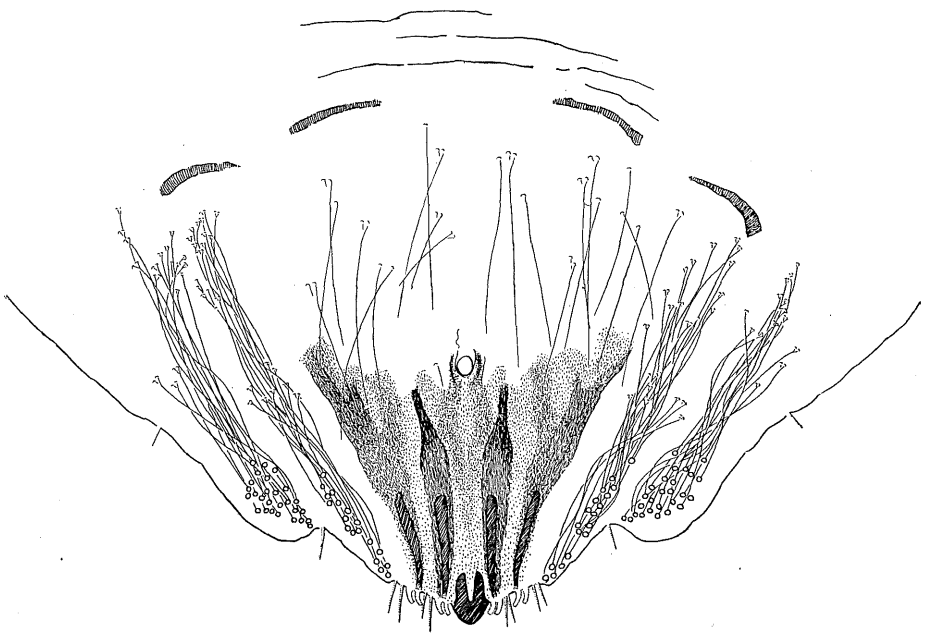

Fig. 6.

Neoleonardia aliformis n.sp. Enlargement of pygidium. (× 160.)

[*Drawing by William Manley.*

rounded. Basal scleroses divided, twice the lobe length. Other lobes absent. A large pitted alar expansion on the anterior pygidial margin with irregularly placed pores. A single paraphysis arising from each of the first and second interlobal spaces, four times the length of the media basal sclerosis. Plates represented in the first and second interlobal spaces by two subequal apically curved truncated simple derm processes. A pair of spines anterior to each pair of plates and another pair in the angle made by the alar expansion. Macroduct openings small, as rows in the second and third duct furrows, approximating 20 and 25 respectively. Anus small, centrally placed between median lobes and perivulvar scleroses or slightly nearer the lobes. Perivulvar scleroses in a crescent. Perivulvar pores absent. Sclerotic thickenings radiate from the apex.

Notes.—This species resembles *delicatulus* (as illustrated by Laing, 1929) in having the large pitted alar pygidial expansion, but differs in that the pores on this area are irregularly placed, the postalar and prealar spur-like processes are absent, the large pygidial median pear-shaped chitinous area is not conspicuous and the first plate is represented by a curved pair of processes.

Type slide Reg. No. T.5280 and paratype slides Reg. Nos. T.5281, T.5282, T.5283 in the Queensland Museum.

REFERENCES.

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