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DESCRIPTIONS OF SOME NEW SPECIES AND SOME NEW RECORDS OF COCCIDAE.—I. DIASPIDINAE.

BY

E. E. GREEN AND F. LAING.

[*Reprinted from the* BULLETIN OF ENTOMOLOGICAL RESEARCH, VOL. XIV, Pt. 2. *October*, 1923.]

THE IMPERIAL BUREAU OF ENTOMOLOGY,
41, QUEEN'S GATE, S.W.7.

LONDON:
PRINTED BY HIS MAJESTY'S STATIONERY OFFICE.

1923.

DESCRIPTIONS OF SOME NEW SPECIES AND SOME NEW RECORDS OF COCCIDAE.—I. DIASPIDINAE.

By E. E. Green and F. Laing.

Dinaspis veitchi, sp. n. (fig. 1).

Puparium of ♀ dark-greyish ochraceous, narrow in front, broadening moderately posteriorly, straight or slightly curved.

Puparium of ♂ white, tricarinate, straight.

Adult ♀ elongate, narrow in front, broadening gradually to its greatest width across the last fused segment; whole body except pygidium and the two or three free abdominal segments highly chitinised. Rudimentary antennae on small tubercles, with a long strongly bent seta and another minute one. Anterior spiracles situated well behind the mouth-parts, with numerous parastigmatic pores, posterior spiracles with a few (3–4), neither very conspicuous. Posterior free abdominal segments with numerous lateral pores and several marginal setae. Pygidium with median lobes slightly divergent, not protruding quite so far as first laterals, fan-shaped, inner margin serrated; first and second lateral lobes well developed, duplex, the second lobule in each not much smaller than the first; a gland-prominence between the median and first, and between the first and second lobes; a spiniform squama exterior to the second pair of lateral lobes, the margin beyond produced into three broad, flat, serrated prominences. Circumgenital pores absent; dorsal pores numerous, irregular. Length, 1·76 mm.; breadth, 0·58 mm.

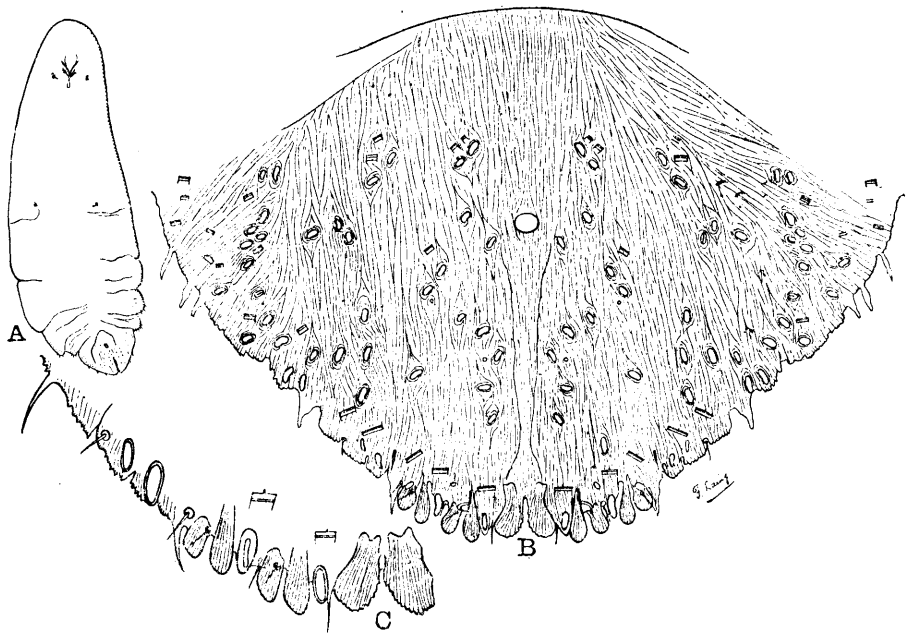

Fig. 1. *Dinaspis veitchi*, sp. n.: A, adult, ♀ ×29; B, pygidium, ×350; C, margin of pygidium, ×490.

Fiji: Rarawai; on stem of an unknown plant (*R.Veitch*).

Near to *Dinaspis flava* (Green), a Ceylonese species, but differing from the latter, apart from the colour of the ♀ puparium, in that the median lobes in *D. flava* are more recessed.

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Pinnaspis pattersoni, sp. n. (fig. 2).

Puparium of ♀ white, exuviae pale yellow, mussel-shaped, very often broadened posteriorly, curved or nearly straight. Length, 1·5–2·5 mm.

Puparium of ♂ not observed.

Adult ♀ narrow in front, widening posteriorly to a little in front of the pygidium, where it reaches its greatest width, about three-sevenths the length. Antennae consisting of a tubercle with two curved setae. Anterior spiracles with a small group of parastigmatic pores. Venter of thorax and basal abdominal segments with small groups of broadly conical thorn-like processes. Pygidium without circumgenital pores; median lobes relatively large and prominent, conspicuously bicuspid, closely fused together; lateral lobes ill-defined, represented by more densely chitinised marginal prominences in the usual positions (the area comprising the median and first lateral lobes often more heavily chitinised than the surrounding area). Squamae spiniform, one immediately exterior to the median lobes, a second and third shortly beyond the prominences that represent the two lateral lobes, and a pair nearer the base of the pygidium. Two conspicuous series of from 7–9 large dorsal pores on each side, on the basal half of the pygidium, and single pores (or short series of 2 or 3) at intervals along the margin. Length, 1·0–1·14 mm.

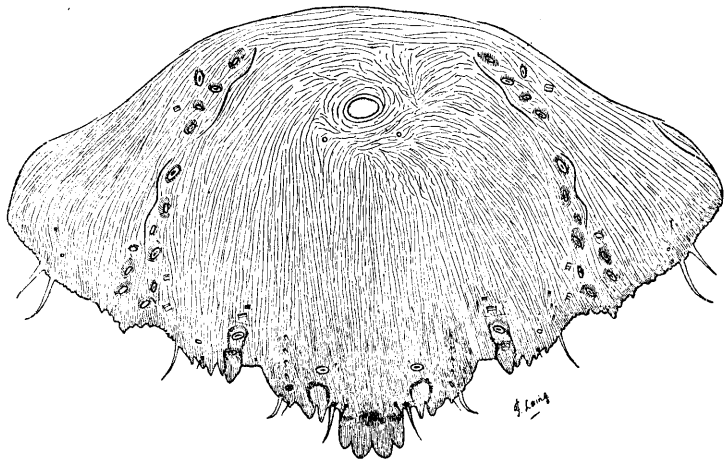

Fig. 2. *Pinnaspis pattersoni*, sp. n., pygidium of ♀, ×205.

GOLD COAST: Aburi; on bark of *Rauwolfia vomitoria* (*W. H. Patterson*).

Near to *Pinnaspis chionaspiformis* (Newst.), from which it may be distinguished by the shape of the pygidial margin and the absence of circumgenital pores. It is the only species of *Pinnaspis* known in which such pores are not present.

Fiorinia (Adiscofiorinia) pygosema, sp. n. (fig. 3).

Puparium of ♀ shining black, linear, more or less parallel-sided, sometimes slightly curved, attenuated both anteriorly and posteriorly. Length, 0·9 mm.; breadth, 0·25 mm.

Adult ♀ about three times as long as broad. Rudimentary antennae composed of two slightly curved setae situated on small tubercles. No interantennal tubercle. No parastigmatic pores. Pygidium with circumgenital pores lacking and the apical

margin produced into six long slender-pointed processes, the median pair about one-third shorter and fused at the base, with a short conical process in the first interval and two in the second interval. Length, 0·62 mm.

TANGANYIKA TERRITORY: on sea-coast south of Dar-es-Salaam, on leaves of an unknown plant of the mangrove type growing at high-water mark (*A. H. Ritchie*).

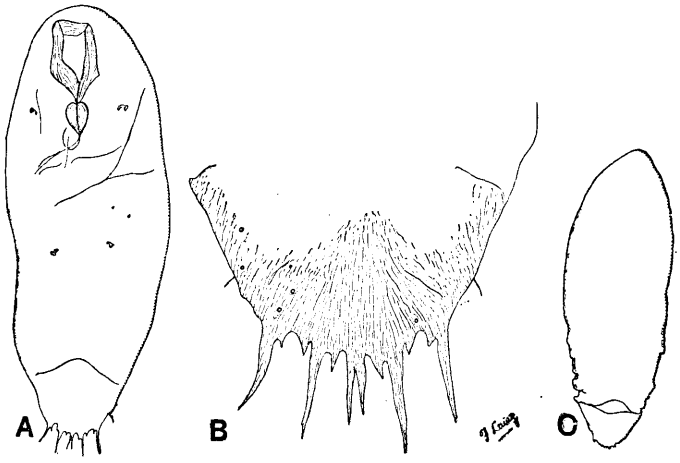

Fig. 3. *Fiorinia pygosema*, sp. n.: A, adult ♀, ×100; B, pygidium of same, ×350; C, puparium of ♀, ×42.

Aspidiotus pangoensis, Doane & Ferris.

FIJI: Macuata Is.; on trunk of coconut palm, 10.v.1921 (*H. W. Simmonds*).

Aspidiotus (Aonidiella) ritchiei, sp. n. (fig. 4).

Adult ♀ of the usual turbinate shape, the whole rather strongly chitinised and rigid; pygidium slightly retracted; margin minutely crenulated, the crenulations becoming wider on the abdominal segments. Pygidium with median lobes low and rounded, the second and third lobes broader than long, rounded, a fourth lobe also

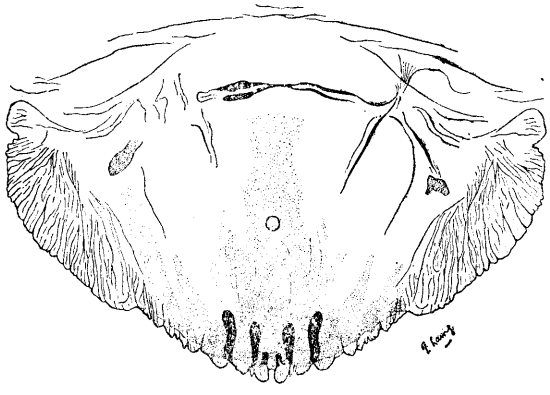

Fig. 4. *Aspidiotus (Aonidiella) ritchiei*, sp. n., pygidium of adult ♀, ×205.

present in the form of a wide 4-serrated projection. Squamae very minute and inconspicuous in the intervals between the lobes. Paraphyses in three pairs, the median pair very short, springing from the inner margin of the median lobes; the second and third pairs longer and stouter, situated immediately beyond the median and first lateral lobes respectively. Circumgenital and dorsal pores absent. A broken series of chitinous bars across the base of the pygidium. Length, 1·2 mm.; breadth, 1·1 mm.

JAMAICA: Kingston; on the bark of *Cassia fistula*, in company with *Aspidiotus herculeanus*, Doane & Hadden (*A. H. Ritchie*).

Aspidiotus (Aonidiella) multiclavata, sp. n. (fig. 5).

Puparium of ♀ subcircular, flattish or very low convex, black, covered with a whitish deposit, except for the subcentral nipple, which, as a rule, is left black. Diameter, 1·6 mm.

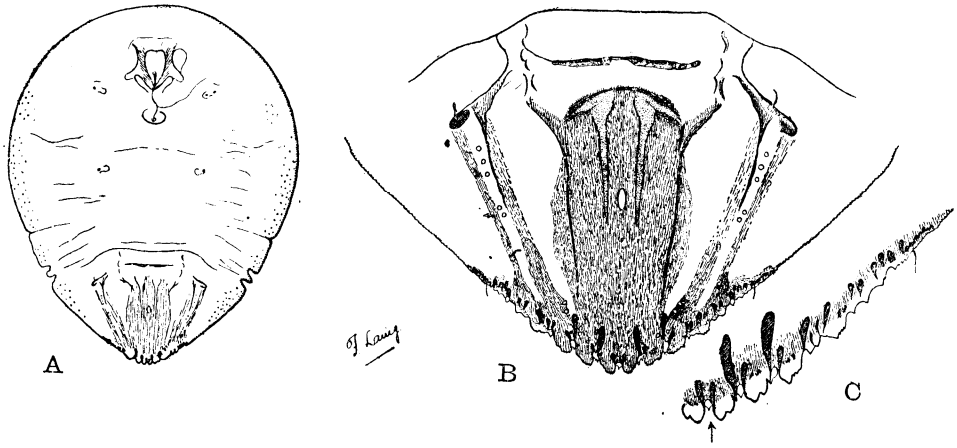

Fig. 5. *Aspidiotus* (*Aonidiella*) *multiclavata*, sp. n.: A, adult, ♀ ×42; B, pygidium of same, ×205; C, margin of pygidium, ×290.

Adult ♀ ellipsoidal, attenuated posteriorly, the pygidium demarcated by a lateral notch. Antennae consisting of a tubercle with a moderately long, curved seta. Spiracles with inner opening flared, with no parastigmatic pores. Pygidium with four pairs of lobes, the median pair slightly smaller than the others; all of approximately the same form, with a prominent rounded or subacute cusp placed near the inner side, the outer side sinuous or obscurely serrate. Margin immediately beyond the outer lobe with three or more sharply pointed prominences. Two similar prominences between the third and fourth lateral lobes, and a smaller point in each interval between the other lobes. A pair of conspicuous stout paraphyses in each interval between the lobes; those in the interval between the median lobes relatively short and of approximately equal size; those in the next two intervals of unequal size, the inner one of each pair fully twice as large as the outer one; four or more relatively small paraphyses on the jagged area of the margin beyond the outer lobe. Some very minute and inconspicuous squamae in the intervals between the lobes, and the usual marginal setae minute and inconspicuous, except for one shortly beyond the jagged area of the margin. No circumgenital pores. Dorsal pores few. Anal orifice approximately central, relatively small, narrowly ovoid. Length, 0·94 mm.; breadth, 0·78 mm.

JAMAICA: Hill Gardens; on redwood tree (*Erythroxylon areolatum*) (*C. C. Gowdey*).

Pseudaonidia iota, Green & Laing.

Through the kindness of Mr. Harold Morrison, U.S. Bureau of Entomology, we have been enabled to see a photograph of the pygidium of *P. clavigera,* Ckll., taken from the type material. There is no doubt but that *P. iota* is a synonym of Cockerell's species. We were misled by the original description of *clavigera,* in which Cockerell states quite positively that there are no circumgenital pores present, and Brain in his re-description of that species (Bull. Ent. Res., ix, p. 207) repeats the mistake. Examination of material of *P. clavigera* from S. Africa shows the presence of circumgenital pores clearly.

Pseudaonidia subtesserata, sp. n. (fig. 6).

Puparium of ♀ brownish grey, subcircular to ovate, low convex; exuviae concealed, eccentric. Length, 2–2·5 mm.; breadth, 1·5–2 mm.

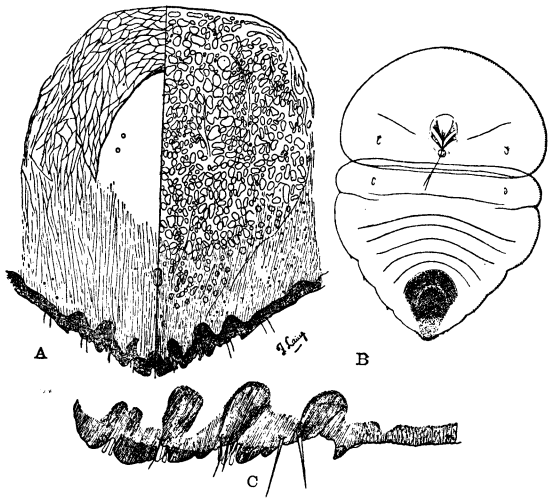

Fig. 6. *Pseudaonidia subtesserata,* sp. n.: A, pygidium of ♀, ×135; B, adult ♀, ×28; C, margin of ♀, ×325.

Adult ♀ of the typical form of the genus, with a deep constriction behind the cephalothoracic area (at the junction between the pro- and meso-thorax). The whole insect strongly chitinised and rigid. Anterior spiracles with a small group of parastigmatic pores. Pygidium with a large tessellated area on dorsum, the areoles small and of irregular size and shape; with three pairs of broad lobes, the median pair with the tip rounded and thence shallowly, outwardly oblique and slightly sinuate; the second and third pairs more or less deeply incised at a point beyond the middle; with a short but broad paraphysis exterior to each lobe; the margin immediately exterior to the third paraphysis produced into a strong chitinous tooth; with small ligulate squamae in the intervals between the lobes; with paired setae in the usual positions, those beyond the outer lobe considerably longer and stouter; margin between and for some distance beyond the lobes deeply and densely incrassate. No circumgenital pores. Dorsal pores rather numerous on the submarginal area, but minute and inconspicuous. Length, 1·5–1·75 mm.; greatest breadth (across mesothoracic area), 1–1·5 mm.

JAMAICA: Hill Crest; on gungo (Congo) peas (*C. C. Gowdey*).

Near *P. tesserata,* d'Emm., from which it may be distinguished by the shorter and broader paraphyses.

Aspidiotus (Targionia) prionota, sp. n. (fig. 7).

Puparium of ♀ low convex, subcircular, brownish black to black around the margins, which are hard and thick, with the centre pale yellowish grey, of a thin papery consistency.

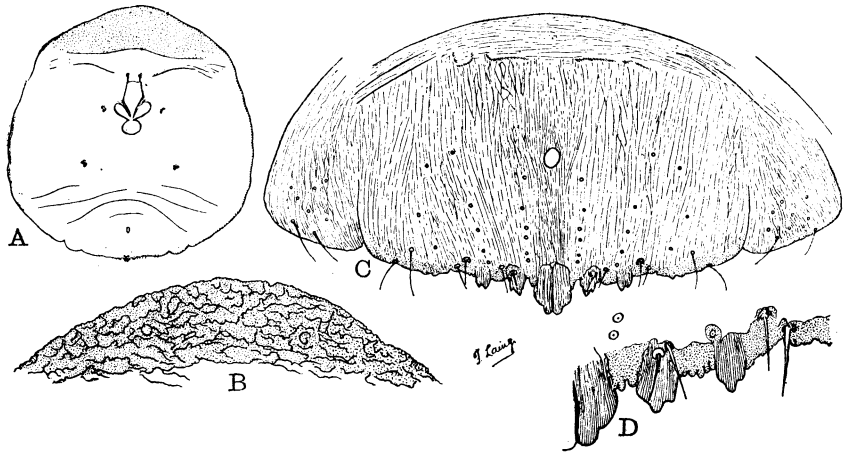

Fig. 7. *Aspidiotus (Targionia) prionota,* sp. n.: A, adult ♀, ×42; B, front of head, ×205; C, pygidium of ♀, ×205; D, margin of pygidium, ×490.

Adult ♀ subcircular, narrowed anteriorly. Cephalic region strongly chitinised, irregularly and markedly rugose. Pygidium wide but shallow, median lobes closely apposed but distinct, strongly notched on outer margin, prominent, their length a little greater than the combined breadth; two pairs of lateral lobes each strongly notched on outer margin, almost bidentate, the second pair rather smaller than the first. No squamae, a strong seta between the first and second pairs of lobes, two immediately exterior to the second pair, and several on the lateral margin. No circumgenital pores; a few minute circular dorsal pores; dorsal surface finely striated or reticulated. Length, 0·86 mm.; breadth, 0·8 mm.

TANGANYIKA TERRITORY: Ngerengere; on the bark of an undetermined forest tree (*A. H. Ritchie*).

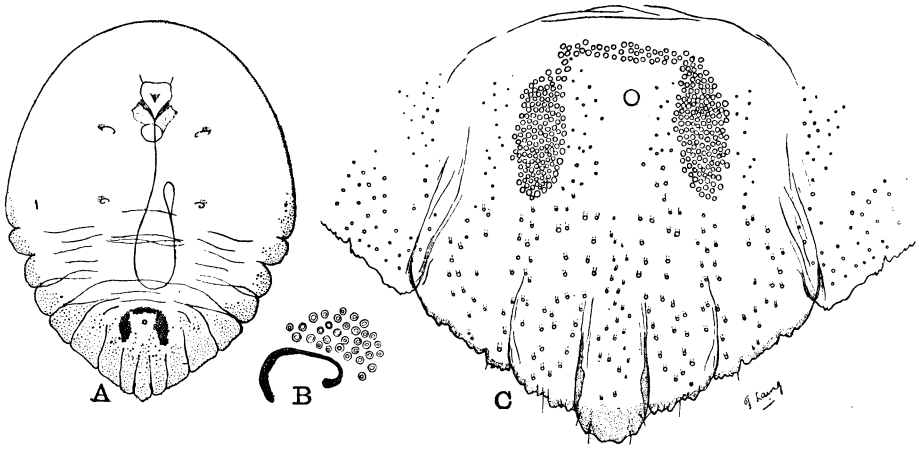

Fig. 8. *Odonaspis saccharicaulis,* Zehnt.: A, adult ♀, ×42; B, anterior spiracle, ×205; C, pygidium of ♀, ×205.

Odonaspis saccharicaulis, Zehnt. (fig. 8).

This species was reduced by Cockerell to a variety of his *O. secreta.* If we are correct in our determination of material on sugar-cane from San Thomé (*F. W. Urich*), *saccharicaulis* differs from *secreta,* apart from the lateral groups of circumgenital pores being united at their base by a double to treble row of pores, in that the anterior and posterior groups of parastigmatic pores are much larger in *saccharicaulis,* the anterior having over 30, and the posterior about 20; the median lobe is broader in proportion than that found in *secreta,* and is more truncate at the apex and often slightly indented.

Aonidia truncata, sp. n. (fig. 9).

Puparium of ♀ circular or subcircular, highly convex; shining black; larval exuviae fulvous, central; fresh examples bearing several long, curling, glassy filaments; the nymphal exuviae weakly chitinised, occupying the whole space of the puparium, but concealed beneath the dense black secretionary covering. Ventral scale thin, adhering to the leaf. Diameter averaging 0·5 mm.

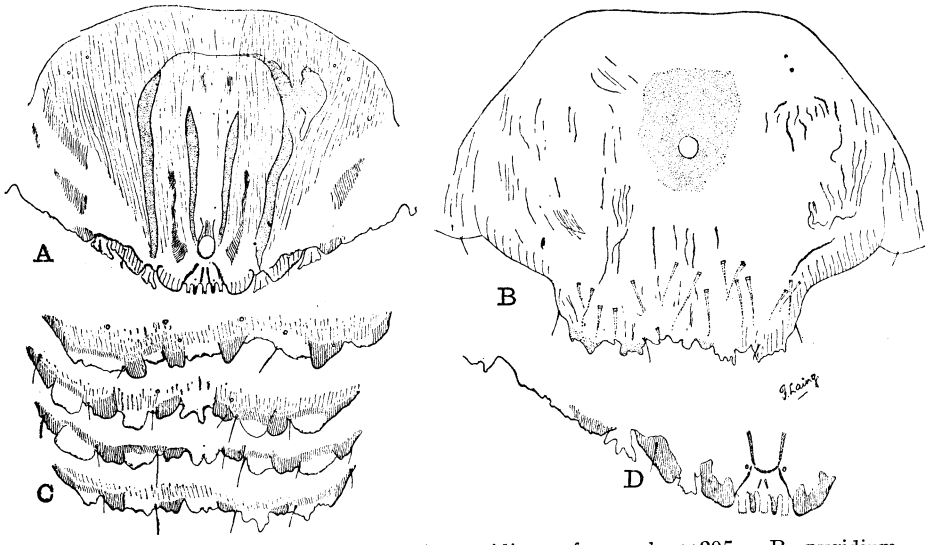

Fig. 9. *Aonidia truncata,* sp. n.: A, pygidium of nymph, ×205; B, pygidium of adult ♀, ×205; C, variations of pygidial margins of adult ♀, ×350; D, pygidial margin of nymph.

Adult ♀ subcircular, the pygidium recessed in the dried insect, but slightly projecting after preparation, the posterior margin squarely truncate. Mouth-parts large and densely chitinised. Rudimentary antennae with one stout curved seta on the outer side, and a smaller more slender seta on the inner side. Spiracles without parastigmatic pores. Pygidium with a more or less pronounced, broad median recess; two pairs of moderately broad but short lobes, rather weakly chitinised, their free margins variously indented; the median pair separated by more than their own breadth, situate within the median recess, with two small prominences between them; the lateral pair projecting beyond the median lobes; the margin immediately exterior to each lobe produced into an irregularly quadrate, variously indented, prominence. There is a stout seta immediately exterior to each of the median lobes; a second smaller seta outside the lateral lobes, and a third

pair on the lateral margins of the pygidium, which are slightly incrassated. Anal orifice approximately central, surrounded by a more heavily chitinised circumscribed area. Dorsal pores minute, few and inconspicuous. Length and breadth approximately equal: 0·5 mm.

Pygidial margin of nymph with a pair of minute, slender, cylindrical median lobes, and two (or possibly three) pairs of broad, irregularly quadrate, lateral lobes, the second pair considerably the broadest. A ligulate, fimbriate squama in the interval between the median lobes; a similar squama between the median and first lateral lobe; a much larger, irregularly dentate, squama between the first and second laterals; and a still larger one, of the same form, between the second and rudimentary third laterals. Anal orifice at a distance from the margin scarcely greater than its longer diameter. A slender paraphysis unites the inner edge of each of the first lateral lobes with the posterior margin of the anal orifice and thence extends far inwards. Length, 0·48 mm.; breadth, 0·44 mm.

QUEENSLAND: Magnetic Island; on leaves of an unknown plant (*G. F. Hill*).

The female puparium is peculiar, in that the nymphal exuviae are not exposed, as in most species, but are concealed beneath a dense secretionary covering.

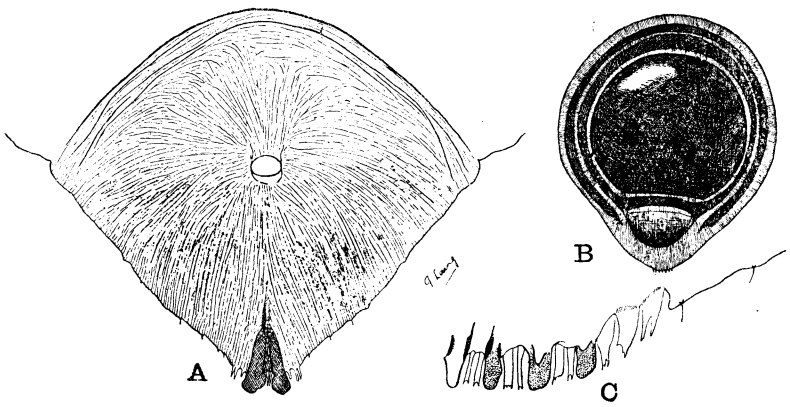

Fig. 10. *Gymnaspis bilobis*, sp. n.: A, pygidium of adult ♀, ×205; B, nymph, ×50; C, nymphal fringe, ×490.

Gymnaspis bilobis, sp. n. (fig. 10).

Puparium of ♀ consisting of the incrassated nymphal exuviae alone. It is of a broadly ovoid form, bluntly pointed behind; the median area strongly and roundly convex, the marginal area flattened. Viewed by transmitted light, the marginal area is seen to be zoned by alternately darker (thicker) and paler (thinner) concentric bands, and there is a sharply defined, obtusely triangular, area in the centre of the pygidium. Pygidial margin with three pairs of narrow, prominent lobes; with two ligulate squamae in each interval between the lobes, and three broader squamae immediately beyond the outermost lobe; all the squamae irregularly fimbriate or excised at their distal extremities. Length, 0·5–0·7 mm.

Adult ♀ turbinate, anteriorly almost as broad as long, tapering posteriorly to a point. Antenna composed of a small tubercle with a long curved seta. Pygidium with a single pair of prominent median lobes; their inner extremities narrowed and produced far within the margin; their free extremities irregularly notched; a pair

of slender squamae between the lobes and two or three spiniform squamae immediately exterior to the lobes. Length slightly more and breadth slightly less than 0·5 mm.

TANGANYIKA TERRITORY: on sea-coast south of Dar-es-Salaam; on a plant of the mangrove type growing at high-water mark (*A. H. Ritchie*).

Lepidosaphes (Coccomytilus) lantanae, sp. n. (fig. 11).

Puparium of ♀ dirty white to pale yellowish brown, exuviae bright reddish brown, typically mussel-shaped or contracted and broadened posteriorly.

Puparium of ♂ white, more or less parallel-sided, exuviae fulvous.

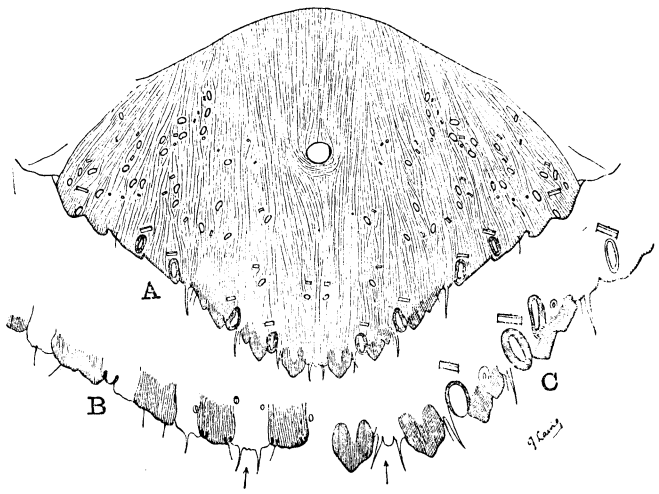

Fig. 11. *Lepidosaphes* (*Coccomytilus*) *lantanae*, sp. n.: A, pygidium of adult ♀, ×205; B, abnormal form of pygidial margin, ×350; C, normal form of same, ×350.

Adult ♀ elongate, slightly narrowed anteriorly, widest across the base of the abdomen. Rudimentary antennae with 5–6 setae, three of which are longer and stouter than the remainder. Anterior spiracles with a small group of usually four parastigmatic pores. Pygidium without circumgenital pores; median lobes prominent, slightly divergent, almost as broad as long, separated by a space approximately equal to their breadth, inconspicuously shouldered on each side; first lateral lobes duplex, the two lobules in close apposition, the outer lobule about half the size of the inner one, each with a pointed apex and with the free margin either entire or very inconspicuously notched; second lateral lobes broad and shallow, conspicuously bicuspid. The space between the median lobes with two spiniform squamae and a small median prominence; a single spiniform squama immediately exterior to each lobe; no squamae on the basal area of the margin. Marginal pores large and conspicuous, in the usual positions; dorsal pores smaller, numerous. Length, 1·25–2 mm.; breadth (across base of abdomen), 0·5–0·8 mm.

In some examples the pygidial lobes appear to be blunted and sunk within the margin. This effect is partly due to uneven pressure during preparation, causing one surface to slide over the other.

ARGENTINA: Posadas; on *Lantana* sp. (Verbenaceae), ex coll. T. D. A. Cockerell (Coll. No. 2521).