

**Article XIII.— DESCRIPTIONS AND RECORDS OF COCCIDÆ.**

By T. D. A. COCKERELL AND ELIZABETH ROBINSON.

The material for the Philippine Islands, now reported on, taken together with the specimens previously received, permits us to indicate briefly the general character of the Coccid fauna of the islands.

(1.) Cultivated plants, at least in the Island of Luzon, are infested by many species, which are, with few exceptions, those common in tropical countries on the same or similar plants.

(2.) This Coccid fauna of widely distributed species has undoubtedly been introduced by man.

(3.) The truly indigenous Coccid fauna, found principally on native plants, consists mainly, perhaps wholly or almost wholly, of precinctive or endemic species, which are nevertheless allied to those of other tropical Asiatic countries.

(4.) The number of endemic genera appears to be very small, and it may be that when the species of the various Malay islands are well known, it will appear that there are no genera peculiar to the Philippines.

(5.) The above statement must in part be considered provisional, as we know little or nothing of the species occurring in remote, uncultivated parts of the islands.

## DIASPINÆ.

**Schizaspis** n. gen. (Diaspinæ.)

Female scale small, circular or almost, flattened, with large exuvix much like those of *Xanthophthalma*, the first and second skins not separable. Male scale elongate but not parallel sided, white with terminal yellow exuvia, not keeled. Adult female with margins deeply incised, lobed between the incisions; no circumgenital glands; anal orifice large, near hind end; lobes and squames well developed. Immature female oval, not lobed at sides.

**Schizaspis lobata** new species.

Female scale about .75 mm. diameter, flat, nearly circular, yellowish brown, the surface beaded with little prominences in concentric rows; exuvix large, sublateral or central, dull golden yellow, broad pyriform.

Adult female yellow when boiled in liquor potassæ, diameter about .5 mm., circular, with seven deep constrictions, the margin between them convex; one constriction or incision is anterior, in the middle line, there is one on each lateral

margin at about the level of the mouth, and there are two pairs posteriorly, not far apart, at the sides of the abdominal region. Pygidial region with two pairs of lobes; median stout, trilobed, having two almost equal notches; second lobes prominent rounded projections, slightly shorter than the median lobes, and some distance from them; between the median lobes, which are widely separated, is a pair of fringed plates or squames, much longer than the lobes; a large and long spine and two broad fringed plates laterad of each median lobe; a short fringed plate and a series of spine-

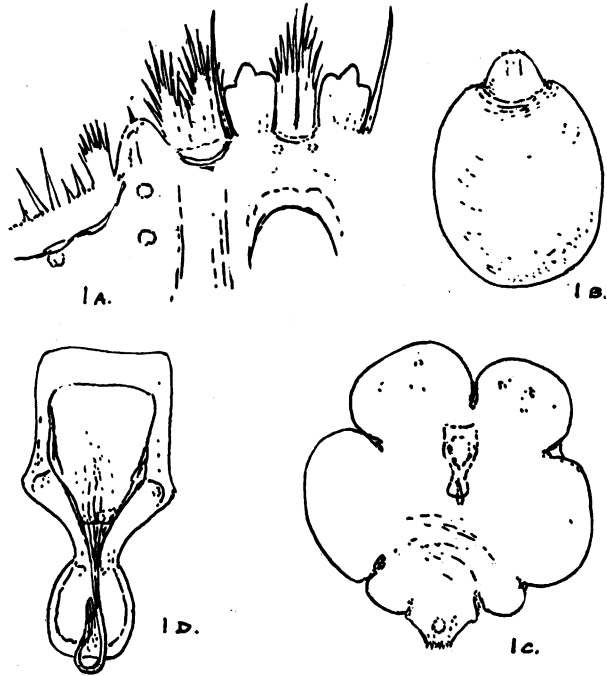


Fig. 1. *Schizaspis lobata*. 1A, caudal structures of adult female full of young; 1B, immature female; 1C, adult female; 1D, mouth parts of adult female.

like structures laterad of the second lobes. Anal orifice large, not far from hind end; genital opening about as far cephalad of anal opening as that is of the bases of median lobes. A few transversely elongated dorsal pores, and near the margin some small circular orifices. Antennæ with a single long bristle.

Male scale nearly 1 mm. long, white, with yellow exuvia; margins convex. Los Baños, Philippine Is., March 20, 1914 (C. F. Baker, 3110). Irregularly scattered in large numbers on under side of leaves of *Ficus nota*.

This could be regarded as an aberrant *Diaspis*, but it is little related to the type of that genus. The lobes, and large anal orifice near the hind end suggest *Hemiberlesia*; the large spine-like structures next to the median lobes, and the character of the dorsal glands of the pygidial area, rather remind one of *Fiorinia*.

**Aspidiotus coryphæ** n. sp.

Female scale nearly 2 mm. diameter, circular, flat, dull white or pale ochreous; exuviae sublateral, first skin exposed.

Adult female about a mm. long, pyriform, pale yellow; pygidial area with three pairs of lobes; median lobes large and prominent, almost contiguous, rounded apically, with a single notch on the outer side; cephalad of each median lobe is a

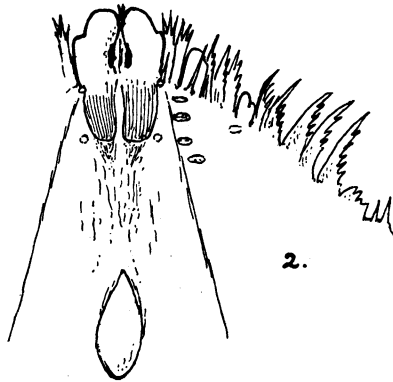


Fig. 2. *Aspidiotus coryphæ*. Caudal structures of adult female.

conspicuous thickening, about the length of the lobe; second and third lobes small and transparent, notched like the median lobes; a small fringed squame between the median lobes; two fringed squames or plates between first and second lobes, three between second and third, and six beyond third, most of the last long and pointed, fringed only on one side; the usual small spines at bases of lobes; anal orifice pyriform, distinctly pointed posteriorly; circumgenital glands in four groups, anterior laterals 7 to 9, posterior laterals 6 to 8.

Los Baños, Philippine Is., Jan. 15, 1915 (Baker, 3291). On leaf-bases of *Corypha elata* Roxb. (*Palmae*).

Very close to *A. putearius* Green, but easily distinguished by the possession of circumgenital glands and the more closely approximated median lobes. The habitat is also quite different; the insect does not make pits.

**Lepidosaphes ixoræ** n. sp.

Female scale white, varying to pale purplish brown with the margin white; elongate but rather broad, moderately convex, often somewhat curved, the surface with ridges (as in *Phenacaspis varicosa*) diverging from a centre near the exuviae; exuviae orange, about a mm. long. Length of scale about 3.5 mm.

Male scale nearly 2 mm. long, rather broad, similar in texture to the female.

Adult female tinged with yellow, long-oval, length about 2450  $\mu$  when extended; abdominal segments prominent laterally, bearing spines; pygidial area broad;

median lobes broad, sloping to a blunt point, the edges minutely dentate; second lobes consisting of two shorter rounded lobules, the first resembling the median lobes, more or less notched on each side, the second simple; third pair of lobes short and rounded, broad at base; two spines and two long spine-like plates in the wide interval between the median lobes; two spine-like plates lateral of median lobes, and three

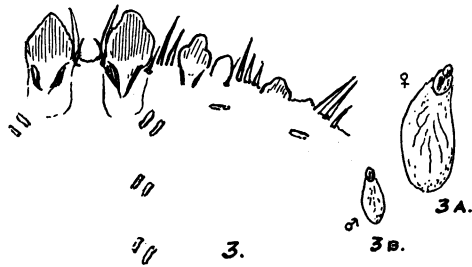


Fig. 3. *Lepidosaphes izoræ*. 3, caudal structures; 3A, female scale; 3B, male scale.

lateral of second and of third lobes; basal margins of lobes thickened, and the whole pygidial margin dense; prominent dorsal glands, but no circumgenital glands; anal orifice small, transversely oval or nearly circular, over twice as far from hind end as first lobes are from third.

Larva in female 400  $\mu$  long; eyes blue after boiling in liquor potassæ.

Los Baños, Philippine Is., Jan. 5, 1915 (C. F. Baker, 3264). On stems of *Ixora coccinea*. The very large larvæ are evidently produced viviparously.

In Leonardi's arrangement, this will fall in *Coccomytilus*, nearest to *C. albus* (Ckll.), from which it differs by the much greater size, more prominent lobes, and the character of the scale.

The following species of Diaspinæ have lately been collected in the Philippine Is. by Professor C. F. Baker. (L. B. = Los Baños.)

*Parlatoria zizyphus* (Lucas). On *Citrus decumana*; L. B., Jan. 5, 1915 (3272).

*P. pergandii* Comstock. In the material boiled up from 3289, L. B., on *Celtis philippinensis*, we found a mature female with the characters of *P. pergandii*, but the scale was overlooked and lost, and no other *Parlatoria* scales can be found on the material. The caudolateral grouped glands were 5, cephalolaterals 6; rudimentary, pointed, fourth lobe very distinct.

*Fiorinia fioriniæ* (Targ.). L. B., on leaves of *Celtis philippinensis*, Jan. 15, 1915 (3289). "When crowded soon overlaid by a stratum of *Septobasidium minusculum* Syd." (Baker.)

*Pinnaapis siphonodontis* C. & R. L. B., on *Celtis philippinensis*, Nov., 1914 (3292).

*Pseudaomidia curculiginis* Green. L. B., on leaf bases of *Corypha elata*, Jan. 15, 1915 (3290).

*Chrysomphalus pedroniformis* C. & R. Prov. Bataan, on "Kapok"; received from Bureau of Agriculture (3675).

*C. aonidum* (L.) On a small climbing Aroid, summit of Mt. Makiling, Prov. Laguna, Nov., 1914 (3307); L. B., on *Citrus nobilis*, Jan. 15, 1915 (3300); on *Caryota*, L. B., Jan. 15, 1915 (3295).

*Aspidiotus rapax* Comst. On oranges received in the Manila market from Southern California, Jan. 1, 1915 (3298).

*A. cydoniæ* var. *greenii* (Ckll.). L. B., on *Chrysanthemum*, Aug. 30, 1914 (3109); L. B., on fruits of *Achras sapota*, Jan. 1, 1915, "abundant here, and injurious; fruits commonly completely covered," (3261).

*A. translucens* (Ckll.). L. B., on *Musa sapientum*, Jan. 5, 1915 (3275); L. B., on *Tamarindus indicus*, Jan. 5, 1915 (3281).

#### LECANIINÆ.

#### *Platylecanium* n. gen.

Female flat, broad oval, without waxy covering; antennæ small or rudimentary; legs absent; ventral surface in abdominal region with groups of pores arranged in a semicircle, in the centre of which is the anal aperture; marginal bristles small and simple. Type, *Platylecanium cribrigerum* (*Neolecanium cribrigerum*, C. & R., Bull. Amer. Mus. Nat. Hist., XXXIV, p. 110).

When *P. cribrigerum* was described as a *Neolecanium*, it was remarked that it probably deserved to rank as a distinct genus. Mr. E. E. Green has lately described a strictly congeneric species, *Platylecanium pseudexpansum* (*Lecanium pseudexpansum* Green, Bull. Entom. Research, V, 1914, p. 233) from Australia, and this seems to justify the separation of the genus. We are indebted to Mr. Green for cotypes of his species, which averages larger, and has better developed antennæ.

The following Lecaniinæ have been received from Prof. Baker, who collected them in the Philippines. (L. B. = Los Baños.)

*Pulvinaria thespesiæ* Green. L. B., on *Codiaeum variegatum*, Aug., 1914 (3108).

*P. psidii* Maskell. L. B., on *Psidium guajava*, Jan. 15, 1915 (3302); L. B., on *Antidesma bunius*, Aug., 1914 (3105); L. B., on *Eugenia jambos*, Jan. 15, 1915 (3296).

*Saissetia nigra* (Nietner). L. B., on *Withamia origanifolia*, "cultivated here from seed," Jan. 15, 1915 (3303).

*S. hemispherica* (Targ.). L. B., on *Anona muricata*, or "Guanabana," "confined to edges and tips of under surfaces of leaves," Jan. 1, 1915 (3260).

*Paralecanium luzonicum* Ckll. Mt. Makiling, on *Tetrastigma*, Feb. 15, 1915 (3676).

*Coccus elongatus* (Signoret). L. B., on *Anona squamosa*, Feb. 1, 1915 (3674).

*Coccus viridis* (Green). L. B., on *Citrus nobilis*, Jan. 15, 1915 (3301); L. B., on *Citrus decumanus* (3279); L. B., on *Antidesma bunius* (3276); L. B., on *Gardenia florida*, Jan. 30, 1915 (3628).

#### DACTYLOPHINÆ.

##### ***Pseudococcus virgatus* (Cockerell).**

Los Baños, Philippine Is., Jan., 1915, collected by Prof. Baker on *Graptophyllum* (3265), *Codiaeum variegatum* (3267), *Cæsalpinia pulcherrima* (3266), *Spondias*, "often covering whole plant" (3262), and *Xanthosma sagittifolium*, "occurring in extensive masses, principally on petioles" (3268).

##### ***Asterolecanium pustulans* (Cockerell).**

On *Bauhinia*, Bahia, Brazil (Tavares, 299).

#### MONOPHLEBINÆ.

##### ***Icerya seychellarum* (Westwood).**

Los Baños, Philippine Is., on *Citrus decumana*, Jan. 30, 1915 (Baker, 3629).