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A NEW GENUS AND SPECIES OF COCCID FROM LORANTHUS
(HEM.-HOM.).

BY HAROLD MORRISON, U. S. Bureau of Entomology.

From available literature and records, it appears that forty-four species of the family Coccidae have already been recorded from *Loranthus*,¹ and it is therefore of some interest to publish the addition of not only a new species, but a new genus of this family as an inhabitant of this host plant. The species in question was collected by the writer, in company with Mr. G. E. Bodkin, Government Economic Biologist of British Guiana, in the Botanic Gardens at Georgetown, British Guiana, in September, 1918, and Mr. Bodkin kindly furnished the name for the host plant. A considerable quantity of leaves of the host was obtained, but not gone over until some months later, at which time, through the careful work of Miss Sadie Keen, an employee of the U. S. Bureau of Entomology, in picking out and mounting the different species, it was possible to identify the following list of species as occurring on the host material in addition to the new species described below: *Orthezia praelonga* Dougl., *Protospulvinaria pyriformis* (Ckll.), *Coccus acuminatus* (Sign.), *Coccus elongatus* (Sign.), *Coccus mangiferae* (Green), *Coccus viridis* (Green), *Saissetia hemisphaerica* (Targ.), *Saissetia nigra* (Nient.), *Saissetia oleae* (Bern.), *Pseudaonidia articulatus* (Morg.). All of these species were common elsewhere in the garden, and all are well known to infest a wide range of host plants.

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¹ It seems probable that most of the Coccid records from "*Loranthus*" should be considered as records for the family *Loranthaceae*, since for example, while many of the records are for new world species of both plants and insects, according to Engler (*Die Naturlichen Pflanzenfamilien*, etc., Pt. 3, Sec. 1, 1889, pp. 156-198), the genus *Loranthus* is confined to the old world with very a few exceptions.

Macrocepococcus, n. gen.

Pseudococcine forms with at least a posterior pair of dorsal ostioles, adult female with antennae 9-segmented, very elongate, slender, nearly as long as body, terminal segment shortest; legs correspondingly elongate, tarsal claw nearly straight, without denticle; anal ring with six setae and two rows of pores; cerarii typically with two stout spines closely surrounded by a single continuous row of heavily chitinized trilocular pores, these surrounded in turn by a scattered circle of short tubular ducts; some of the anterior cerarii much reduced, with only the tubular ducts remaining; with only multicellular disk pores, both dorsally and ventrally, in addition to the gland types already mentioned; anal lobes small, with short apical hair and without ventral chitinous thickening.

Type of genus.—*Macrocepococcus loranthi*, n. sp.

The characters of this genus are such that it is not possible to place it accurately in the existing schemes of classification for the Pseudococcine coccids, but for the present it can probably be considered as being more closely related to the genus *Pseudococcus* than to any other.

Macrocepococcus loranthi, n. sp.

Adult Female.—Occurring normally on the under sides of the leaves of the host, usually in numbers; maximum length of living specimens about 2 mm., width less than 1 mm., elongate, rather slender, broadest at the base of the abdomen, highest at the same point, moderately convex dorsally, very pale yellowish with a faint greenish tinge; body dorsally with faint traces of white mealy secretion, this most pronounced just inside the body margin and again in a submedian band on each side, thus forming two very vague and indistinct longitudinal stripes; also dorsally with scattered very delicate glassy threads, these most conspicuous along the margins where they frequently project as far beyond the body as do the femora or even farther, and where they are grouped into a series of clusters, each surrounding a single one of the most conspicuous features of the insect, long, slender cylindrical white wax threads, which project forward, laterally and caudally from the margin, normally to the number of ten on each side of the body, and which in mature undisturbed examples may reach a length of one and a half or more times that of the body of the insect, although usually irregularly broken off, so that only rarely are any two the same length; with an additional pair of stout, much shorter wax plates projecting from the anal region; insect in the dried state retaining much the same outline as when living, although becoming much flattened and dull brown in color.

Body of Female.—Maximum length mounted on a slide about 2 mm., maximum width less than 1 mm.; elongate, rather slender, broadest in the region of the anterior abdominal segments; antennae very elongate, slender, linear, 9-segmented, the first and last segments shortest, the first about twice the diameter of any of the others, with a fairly large circular pore at the apex

of the second segment and a long blunt curved spine at the apices of each of the last three segments, the measurements of the segments in microns as follows:

I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.
71.4	107	139.2	159	246	200	168	107	68
71.4	103.5	146.5	168	271.3	214	168	103.5	64.2
75	100	133	168	232	200	171.5	93	68
71.4	107	146.5	154	275	193	171.5	107	71.4
75	107	143	160.6	264	218	168	107	68
71.4	96.4	143	139.2	218	196.3	160.6	100	57
71.4	96.4	143	138.5	228.5	189.2	160.6	96.3	64.2
71.4	96.4	150	168	221.3	185.6	160.6	103.5	68
71.4	93	139.2	143	200	150	135.6	71.4	60.6

legs long and slender, the fore pair a little shorter than the other two, an average length of a middle leg as follows: coxa, 78.5 μ ; trochanter (maximum), 82 μ , femur (maximum), 385 μ ; ibia (maximum), 410 μ ; tarsus (not including claw), 153 μ ; claw, 53 μ ; tarsal digitule, 68 μ ; claw digitule, 43 μ ; claw elongate, slender, straight with a slight curve near the apex, without denticle, all digitules very slender, hair-like, slightly knobbed at apices; all trochanters with the usual dorsal and ventral pairs of oval pores, or four altogether on each; hind coxae without pores, submentum triangular, acute at apex, appearing very obscurely 3-segmented; dorsal ostioles very obscure, only the posterior pair noted; cerarii of an unusual type, consisting normally of a pair of spines (varying from one to three) surrounded by a solid continuous band of heavily chitinized trilocular pores with confluent outer borders forming a continuous chitinized rim around the whole, and the posterior cerarii, at least, with an indistinct chitinized area around each cerarius, the anal lobe cerarii each with a small hair in its rim on the inner side, this not noted on any of the others except the anterior pair each of which bears from one to four such hairs; with an approximately circular group of short tubular ducts, each with a chitinized plate surrounding the opening, around each cerarius; in addition to these clusters of short tubular ducts surrounding the typical cerarii, with other clusters on the anterior body margins in which the cerarius is missing or is represented only by a single spine; assuming these clusters of tubular ducts to stand for more or less developed cerarii, then with normally a total of fourteen pairs, the arrangement of these in ten specimens being tabulated below (the numerals and signs with the following significance: the first numeral giving the number of spines present, connecting symbol indicating the presence or absence of a number of trilocular pores around the spines, the final numeral indicating the number of hairs in the cerarius border, thus 3 + 1 = three conical spines, numerous trilocular pores and one hair in the border of the cerarius; an * indicating the presence of a single trilocular pore; ** indicating the presence of two such pores):

SPECIMEN.	CERARIUS.						
	I.	II.	III.	IV.	V.	VI.	VII.
1 right	3 + 1	1 - 0	1 + 0	0 - 0	?	1 + 0	1 - 0
1 left	3 + 2	1 - 0	1 + 0	1 - 0	1 - 0	1 + 0	1 - 0
2 right	2 + 2	1 - 0	1 + 0	1 - 0	0 - 0	1 + 0	1 - 0
2 left	3 + 3	0 - 0	1 + 0	*1 - 0	1 - 0	1 + 0	*1 - 0
3 right	3 + 1	1 - 0	1 + 0	1 - 0	1 - 0	1 + 0	**1 - 0
3 left	3 + 3	1 - 0	1 + 0	1 - 0	1 - 0	1 + 0	**1 - 0
(a) 4 right	3 + ?	1 - 0	*1 + 0	1 - 0	1 - 0	1 - 0	?
(a) 4 left	3 + 1	1 - 0	*1 + 0	1 - 0	?	1 + 0	1 - 0
5 right	3 + ?	1 - 0	1 + 0	1 - 0	1 - 0	1 + 0	*1 - 0
5 left	3 + 2	1 - 0	1 + 0	1 - 0	1 - 0	1 + 0	1 - 0
6 right	3 + 1	0 - 0	1 + 0	1 - 0	1 - 0	1 + 0	1 - 0
6 left	3 + 3	0 - 0	1 + 0	1 - 0	1 - 0	1 + 0	1 - 0
7 right	3 + 3	0 - 0	1 + 0	1 - 0	1 - 0	1 + 0	1 - 0
7 left	3 + 2	0 - 0	1 + 0	1 - 0	0 - 0	1 + 0	1 - 0
8 right	3 + 2	1 - 0	1 + 0	1 - 0	1 - 0	1 + 0	1 - 0
8 left	3 + 1	1 - 0	1 + 0	1 - 0	1 - 0	1 + 0	1 - 0
(a) 9 right	3 + 2	0 - 0	1 + 0	1 - 0	1 - 0	1 + 0	1 + 0
(a) 9 left	3 + 2	0 - 0	1 + 0	1 - 0	0 - 0	1 + 0	1 - 0
10 right	3 + 2	1 - 0	1 + 0	1 - 0	1 - 0	1 + 0	1 - 0
10 left	3 + 2	1 - 0	1 + 0	1 - 0	1 - 0	1 + 0	*1 - 0

SPECIMEN.	CERARIUS.						
	VIII.	IX.	X.	XI.	XII.	XIII.	XIV.
1 right	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 1
1 left	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 1
2 right	1 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 1
2 left	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 9	2 + 1
3 right	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0
3 left	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 1
(a) 4 right	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + ?
(a) 4 left	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + ?
5 right	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 1
5 left	1 + 0	2 + 0	2 + 0	1 + 0	2 + 0	2 + 0	2 + 1
6 right	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0
6 left	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 1
7 right	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 1
7 left	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 1
8 right	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 1

(a) These specimens adult females still enclosed within the preceding stage, so that all cerarii appear double and the presence or absence of marginal hairs, glands, etc., is difficult to determine with accuracy.

8 left	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 1
(a) 9 right	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 1
(a) 9 left	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 1
10 right	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 1
10 left	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 0	2 + 1

anal lobes not at all produced, without chitinization other than that surrounding the cerarius, ventrally with one small hair about 71μ long and mesad and cephalad of this with another still smaller, about 36μ long; ventral body margins of the other abdominal segments with a similar arrangement, but the hairs much less differentiated in size; anal ring circular or broad oval, stout, with 6 setae, the longest about 107μ , placed on a ridge-like thickening of the center of each half of the ring, with an inner and outer row of pores, and with the posterior chitinized portion of the intestine showing in the center of the ring; in addition to the ducts surrounding the cerarii, dorsally and ventrally with fairly numerous scattered circular disk-shaped gland ducts, submarginally with some of the short tubular type, smaller than those surrounding the cerarii, and in the thoracic, and to some extent in the abdominal regions with a few scattered trilocular pores similar to those found in the cerarii; with an occasional long, very slender hair on the body both dorsally and ventrally; with a medium-sized, irregularly circular to oval cicatrix placed medially a little behind the posterior legs on the ventral surface of the abdomen.

Young Larva.—No specimens definitely recognizable as first stage larvae have been examined. Embryonic larvae are present in the bodies of some of the mounted adults, but it has not been possible to make out details of structure satisfactorily from them.

Male Larva.—About 1 mm. or a little less long, elongate, rather slender, sides of abdomen nearly parallel, but tapering and rounded posteriorly, broadest at the meso- and metathoracic segments, which distinctly bulge outward on each side, the body anterior to this tapering to a rounded point at the head; very pale, slightly greenish yellow, with a tinge of reddish or brownish on the anterior half; antennae and legs whitish, the former about three-fifths the length of the body; body, at least dorsally, with a slight coating of very delicate more or less matted glassy secretion threads. (Notes from living specimen.)

Male Pupa.—Broader and somewhat smaller than larva, bright pinkish in color.

Adult Male.—About 0.82 mm. long, wing about 0.84 mm. long; antennae 10-segmented, the measurements as follows: I, about 43μ ; II, 46μ ; III, 57μ ; IV, 75μ ; V, 75μ , VI, 96μ ; VII, 107μ ; VIII, 96μ ; IX, 84μ ; X, 46μ ; with some hairs on the segments, but with numerous stout peg-like spines, with bluntly rounded tips; with four hemispherical ocelli; legs long and slender, claw and digitules as in the female, the other segments with fairly numerous short

hairs and stout peg-like spines; abdominal structure not determinable from the single specimen at hand.

This species has been described mostly from ten specimens mounted on slides. The color and other notes relating to the external appearance of the different stages have been made from living specimens in the field. The material was collected by the writer on *Loranthus* sp., a parasitic plant related to mistletoe, growing in this case on soursop (*Anona muricata*) in the experimental orchard of the Department of Science and Agriculture Botanic Gardens, Georgetown, British Guiana, in September, 1918.

The types are in the United States National Collection of Coccidae.

It may be of some interest to note that only this single colony of the species was observed, although a number of parasitic plants were examined in various parts of the gardens.

EXPLANATION OF PLATE.

- Fig. 1. Antenna of adult female, X68.
 Fig. 2. Multilocular disk gland openings found on both dorsum and venter of body, X512.
 Fig. 3. Middle leg of adult female, X80.
 Fig. 4. Trilocular pores found on body, the larger to the right from a cerarius, the smaller from the dorsum of the body, X512.
 Fig. 5. Wing of the male, X46.
 Fig. 6. Antenna of male, X92.
 Fig. 7. Leg of male, X92.
 Fig. 8. Short tubular ducts of body, those to the right from the group surrounding each cerarius, that to the left from the dorsum of the body, X512.
 Fig. 9. Outline of body of adult female, showing size and relation of appendages, anal ring, number and position of cerarii, spiracles and ventral median cicatrix, X40.
 Fig. 10. Antepenultimate cerarius, showing number and arrangement of the spines, trilocular pores and short tubular ducts and the character and extent of the chitinization, X512.
 Fig. 11. Anterior apex of body of adult female, showing position and arrangement of cerarii, hairs and glands, dorsum to the right, venter to the left, X132.
 Fig. 12. Posterior apex of abdomen of adult female, showing position and arrangement of cerarii, pores and glands, hairs and anal ring, dorsum to the right, venter to the left, X132.