

DESCRIPTION OF PLATE.

The photos for the plate were taken by Mr. Dwight Brainerd, Montreal.

Figs. 1 and 2 are a natural pair of *H. rutila*.

Fig. 3 is a pupa of *H. nitela*.

Fig. 4 is a gall of same, showing the opening made by the larva.

Fig. 5, *H. Stramentosa*.

All enlarged.

CONTRIBUTIONS TO COCCIDOLOGY.—II.

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During the past summer I have had the opportunity, through the kindness of Dr. Howard, of working over the unnamed material of the genera *Dactylopius*, *Ripersia*, and *Phenacoccus*, belonging to the collection of the Division of Entomology, U. S., D. A. I wish to record here the identity of *D. vastator*, Mask., with *D. filamentosus*, Ckll., and two species which I believe to be new. I hope in a subsequent paper to give further notes on some of the other species found, and also to record the new host plants found for a number of species.

Dactylopius filamentosus, Ckll., syn. *Dactylopius vastator*, Maskell.—I have before me a considerable quantity of material, specimens as follows: Type material of *D. filamentosus*, Ckll.; material from Island of Mauritius on Citrus sent by De Charmoy; and the following from U. S. D. A., Div. Ent.: 7232 on *Hibiscus*, Richmond, Natal; 7706 on Orange, Cape Town, Africa (Coll., Lounsbury); 5820 on Tamarind and Citrus, Honolulu, Sandwich Is. (Coll. Koebele). After carefully examining and comparing individuals from each lot of material, I can find no characteristic differences, and must therefore conclude that they are all one species. Since Cockerell described *filamentosus* in 1893 (The Entomologist, Vol. XXVI., p. 268, Sept., 1893), and Maskell described *vastator* in Trans. N. Z. Inst., 1894, p. 65, *D. vastator*, Mask., will have to stand as a synonym of *D. filamentosus*, Ckll.

The No. 5820 material is of considerable interest, it being topo-type, and is that referred to by Maskell, *loc. cit.* The most prominent characters of this species are: the habit of aggregating into masses; the abundant white or yellowish secretions; and when boiled in potash staining the liquid a dark purple to blue-green and themselves turning blue-green; they are very hard to clear; the antennæ are of 7 segments:

segment 1, 37-45 μ long; segment 2, 37-39 μ long; segment 3, 28-40 μ long; segment 4, 28-34 μ long; segment 5, 22-31 μ long; segment 6, 22-34 μ long; segment 7, 73-84 μ long; legs, femur about 140 μ long; tibia, about 100 μ long; tarsus, about 70 μ long; derm bearing peculiar spear-shaped spines. This species does not resemble *D. Townsendi*, Ckll., as supposed by Maskell. It resembles *albizziae*, Mask., and *hymenoclea*, Ckll., in producing the blue-green pigment in potash, but is distinct from them in the secretion and anatomical characters.

Dactylopius Texensis, n. sp.

Specimens have been in alcohol since Dec., 1895. Adult ♀; length about 3 m.m.; nearly as wide as long; shape rather sub-globular; colour light brown. I know nothing at present of the secretion. Epidermis bearing scattered, medium-sized hairs and numerous small glands; margins of body with areas of glands and stout conical spines. Antennæ of eight segments: segment 1 rather large, 53-59 μ long; segment 2 rather wide, tapering slightly toward the proximal end, length 48-51 μ ; segment 3 about three-fourths the width of 2, cylindrical, 52-62 μ long (the length of this segment may be either less than, equal to or greater than that of 1, they are often nearly sub-equal); segment 4 quite short, 20-28 μ long; segment 5, 28-37 μ long; segment 6, 25-31 μ long; segment 7, 31-39 μ long; segment 8 usually about 84 μ long. Among observed formulæ are: 8312 (57) (46), 83127564, 81327 (56) 4. The segments bear one or more whorls of medium-sized hairs.

Legs rather short and stout; femur about 182 μ long by 82 μ wide, bearing numerous medium-sized hairs; tibia, 132 μ long by 35 μ wide, bearing several rows of small hairs; tarsus 65 μ long; tarsal digitules long, slender, knobbed hairs; claw stout, 31 μ long; digitules of claw long, slender, knobbed. Mentum elongate. Anal lobes not conspicuous, bearing the usual long spine, and areas of cones, hairs and spinnerets. Since the specimens are alcoholic, we know nothing of the ovisac. Eggs unknown. Male unknown.

Hab.—On *Acacia Farnesiana*, Willd.; San Diego, Texas, Dec., 1895. U. S. D. A., Div. Ent., No. 6961.

Remarks.—This species resembles *D. Ryani* in antennal formula, but differs in having the antennæ smaller and the legs shorter and stouter. Resembles *D. dasyliirii* in the general form of the antennæ, but differs in having segments 3 and 1 of antennæ usually longer than 2, and differs very much in the shape of the body.

Dactylopius Farnesianæ, Targ., found on *Acacia Farnesiana* at Vicenza, Italy, seems to be quite a different insect. I also have before me a *Dactylopius*, in alcohol, on sugar cane from Mauritius, U. S. D. A., Div. Ent., No. 6596, sent the Dept. by Miss Ormerod; these specimens I take to be the ones mentioned by Maskell in Trans. N. Z. Inst., 1896, p. 321; see also Insect Life, Vol. VII., p. 430. This *Dactylopius* differs in no material points from the *Texensis*. The general appearance of the alcoholic specimens is the same, the measurements of the segments of the antennæ come within the limits given for *Texensis*; the femur is same length as in the above; tibia is a little longer, one being $160\ \mu$; tarsus is also a little longer, $90\ \mu$; claw is more slender. I do not consider these differences sufficient for separating them, but it may be that when complete specimens of each are obtained there may be differences in colour, ovisac, etc., which may separate them. It seems strange that a species should be found in such widely-separated localities, and especially upon such different host plants.

Ripersia serrata, n. sp.

Adult ♀. Length, including fringe, about 2 mm.; width nearly 2 mm. Shape broadly elliptical. Colour of dried specimens blackish. There are three rows of beaded secretion on the dorsum: two lateral and a median, with the dark body showing up more or less between them, the median is most prominent. On the margin of the body is a fringe of projections; these consist of pairs of rods which become somewhat shortened and dentate toward the anterior extremity, while those of the posterior extremity of the body are longer and more distinctly rodlike; their length is usually less than half the width of the body. The general appearance of this insect, with its secretion, suggests that of *Dactylopius pseudonipæ*, and species of *Orthezia*.

Margin of epidermis bearing areas of several stout conical spines and numerous glands; numerous small glands scattered over the epidermis, and also a few scattered hairs.

Antennæ rather slender, of six segments, the relative lengths rather variable; first segment $20-25\ \mu$ long, second $22-28\ \mu$, third $28-34\ \mu$, fourth $17-20\ \mu$, fifth $20-25\ \mu$, sixth $48-56\ \mu$. Some observed formulæ are: 632514, 632154, 63(125)4, 63(25)14, 63(12)54. The segments bear whorls of medium-sized hairs.

Legs rather slender for a *Ripersia*; femur $85-100\ \mu$ long by $35\ \mu$ wide; tibia about $70\ \mu$ long; tarsus about $47\ \mu$ long; claw rather stout;

tarsal digitules rather stout, knobbed; digitules of claw longer than the claw and knobbed. Hairs on legs rather small and scanty.

Anal lobes rather prominent, bearing a large seta $75\ \mu$ long, and a number of quite stout conical spines and spinnerets. Anal ring normal. Female ovisac unknown.

Eggs and larvæ unknown. Male unknown; male sac white, elongate, about 2 mm. long and 75 μ wide.

Habitat.—On a creeping vine. Collected by H. Caracciolo, Port of Spain, Trinidad, W. I.; Jan. 27, 1894.

Rem.—This is No. 6160 of the U. S. D. A. collection. The most marked characteristic of this species is the peculiar arrangement of the secretion described above. It seems to resemble *R. filicicola*, Newst.

A NEW SPECIES OF SINEA.

BY A. N. CAUDELL, DEPT. OF AGRICULTURE, WASHINGTON, D. C.

Sinea complexa, n. sp.—Length, ♂, 8 to 9.5 mm., ♀, 9.5 to 11 m.m; width, ♂, 3 mm., ♀, 3.5 to 4.5 mm. General colour ranging from a very dark brown to pale cinnamon. Head armed with three pairs of anteocular spines, the posterior pair the longest, with smaller ones interspersed. Behind the eyes, with several sharp spines, one near each ocellus being almost as long as those of the posterior anteocular pair. Neck spinose. Antennæ somewhat pallid, with a slight rufous cast at the distal ends of the segments.

The anterior femora are much swollen and armed with the usual long, sharp, dorsal spine, and with ten spines beneath arranged in two longitudinal rows. The last two spines of the inner row are much larger and longer than the others, and the terminal one is out of alignment, so that it is rather on the dorso-lateral surface. (*Sanguisuga* and some other species also show this arrangement of spines on the anterior femora, but in these cases there is no striking enlargement of the spines, and hence it is not so noticeable. The nymphs of *diadema*, and probably other species as well, have dorso-lateral spines on the anterior femora.) This spine is almost as long as the dorsal one and, when the femora is viewed from the front, is quite prominent. In this view the second spine also is somewhat prominent. The anterior tibiæ have the usual double row of three strong spines below. They are pale towards the tip, with the apex black. The dorsal and two enlarged ventral spines of the anterior