SUPPLEMENT TO PSYCHE,—I.

CONTRIBUTIONS FROM THE NEW MEXICO AGRICULTURAL EXPERIMENT STATION.

I. New North American Coccidae

BY T. D. A. COCKERELL.

Tachardia fulgens, n. sp.— ♀ scales usually massed together, more or less surrounding the twig, forming an irregular nodulose bright reddish-orange coating about 4 mm. thick. A single scale is about 5 mm. long and 4 broad, and presents a conspicuous somewhat curved, blunt, shining, dorsal hump ; also a tail-like projection, sometimes directed upwards, and two or three irregular projections on each side. The "hump" and "tail" are sometimes so placed, that when the scale is viewed from the side it presents a ludicrous resemblance to the head of a man with a very long, crooked nose and a short, pointed beard, — or when the "tail" is pointed upwards, it looks like a much-produced chin, and the scale then strongly suggests the features of the historical Mr. Punch!

On boiling in caustic alkali, the insects give a fine deep crimson color.

♀ approximately globular, purple (becoming reddish-brown after being placed in absolute alcohol and mounted in balsam), with the lac-tubes very conspicuously contrasting — these latter quite colorless, with the terminal gland-mass yellow. Rostral loop extremely short. Spine stout. Groups of glands in vicinity of "tail" (which has nothing to do with the external "tail" above) round in outline, with about 12 orifices. "Tail" very broad, its outline about that of the dome of St. Paul's, or narrower in some examples; projecting from it the 10 or 12 bristles of the anogenital ring. (In one I counted 12, in another only 10.) Lac-tubes cylindrical, with stout stalks, gland-groups at end rounded beneath; forming, seen from the side, a broad crescent, not quite a hemisphere.

The young larvae are elongate, dark crimson in color.

This species is in many respects allied to *T. larreae* and *T. cornuta*, but can easily be distinguished from both by external appearance alone.

Hab. Arizona, received from Prof. J. W. Toumey, who gives me the following interesting particulars. He got it from a Mexican, and has seen only the stem of the food-plant, but thinks it is a *Sesbania*. He was told that this lac was used quite extensively by the Mexicans as a medicine for stomach troubles, under the name of "Gomea." It is kept in the drug shops at Tucson, and meets quite a sale. It is also used to some extent in mending pottery, etc. Finally, he adds, the Mexicans make a

marked distinction between this and *T. larreae*, the latter not being considered to have any medicinal qualities.

It is certainly the most beautiful and striking lac I have ever seen.

Tachardia pustulata, n. sp. — ♀ scales more or less massed together, sometimes single, deep crimson, about the color of black-currant jelly, moderately shiny, with small, pellucid pustule-like prominences. A single scale is 3½ mm. long, 3 wide and 2½ high, but there is variability in size, some being larger.

Very young scales, only about 1½ mm. long, are more pellucid, and about the color of guava-jelly, with three irregular blunt rays on each side, and a dorsal tooth-like prominence resembling that of adult *T. cornuta*.

♀ subglobular, colorless when boiled in alkali. Rostral loop very short. "Tail" broad, anal ring with 10 hairs, which are short and straight. Spine thorn-like, broad at base, rapidly narrowing to its almost needle-like terminal half; or sometimes stouter. Lac-tubes conical, broadening at base, truncate as usual at ends, terminal mass brownish, nearly a hemisphere seen from the side. Groups of glands inconspicuous, irregular in outline, with about 12 orifices.

Young larva like that of *T. fulgens*.

Embryonic or newly-hatched larva with 6-jointed antennae; joints 1, 2, 4 and 5 short, 3 and 6 long; 5 swollen, with a whorl of hairs; 6 with 1 long and several short hairs. Legs ordinary, claw very slender. Anal ring with 6 stout bristles.

Hab. *T. pustulata* was found by Prof. Toumey near Phoenix, Arizona, early in the spring of 1894. It occurred on a small perennial composite which was unknown to Prof. Toumey, and being without flowers or fruit, could not be identified. It has linear leaves.

Ceroplastodes acaciae, n. sp.— ♀ scales clustered on twig. Scale strongly convex, snow-white, very like *C. niveus*, but rather smaller, and more nodulose, the dorsum being covered by irregular prominences. It is, however, less nodulose than *C. daleae*. Length of scale about 3 mm.

♀ not staining liquid when boiled; derm reddish-brown. Antennae 8-jointed, 2 broader than long, 3 longer than broad, and decidedly longer than 2 or 4. 4 longer than broad, somewhat longer than 2. 5 subequal with 4. 6 shorter, 7 shorter still, 8 longer than 7. Rostral loop very short. Legs ordinary, trochanter with a moderate bristle. Tarsus not so *very* much shorter than tibia, though distinctly so. Digitules ordinary not very long. Anal ring with very numerous hairs; anal plates pale brownish.

♂ scales elongate, white, nodulose, with a marginal fringe of small nodules. Length about 2 mm. or slightly more.

Young larvae naked, reddish-brown, granular, distinctly segmented, not particularly elongated.

Hab. On *Acacia constricta*, June, 1893, between the University of Arizona and Tucson, collected by Prof. J. W. Toumey. Prof. Toumey states that he has seen the scale several times since on this species of *Acacia*, but never on other plants. The food-plant of the Mexican *C. niveus*, to judge from the twigs the type-specimens are on, is also an *Acacia*, but a different species.

This is only the third species of the genus discovered.

Toumeyella, n. subg. of *Lecanium*.— ♀ scale convex, embracing twig, moderately hard; dorsum shiny, with numerous broad, white, waxy rings on which are sometimes small black spots. Adult ♀ with the legs apparently absent; the antennae very short, rudimentary, 6-jointed. Embryonic larva with a pair of extremely long bristles on each side, each representing the larger stigmatal spine. Type *L. mirabile* n. sp. This will doubtless be considered a distinct genus hereafter, but it is preferred to leave it as a subgenus of *Lecanium* until the whole Lecaniine group can be generically revised.

Lecanium mirabile, n. sp.— ♀ scale about 8 mm. long, 7 broad, and 5 high. Nearly circular in outline seen from above, hard, yet soft or elastic enough when alive to crush without breaking in pieces; very dark brown, with conspicuous irregular rings of snow-white waxy secretion, about 1 mm. diameter. In some specimens the rings are dotted with black. In a general way it may be said that the rings are arranged in six longitudinal bands; their centres are more or less depressed. The insect has quite a strong, musky odor. Removed from the twig, the insect leaves a small amount of white powder.

♀ apparently without legs. Antennae very short, cylindrical, hardly at all tapering, 6-jointed; 3 longest, 4 shorter than 2, 5 shorter than 4, 6 very short, button-like, emitting numerous straight hairs. There is a false joint in the middle of 5, and an obscure one in 3.

Derm orange-brown, microscopically tessellate, the tesserae not gland-spotted. Portions of the derm exhibit numerous glands, appearing as round rings situated on oval discs.

The insects, when boiled in caustic alkali, give a very strong, dark, madder color. The young larvae in soda are pale crimson.

Young larva oval; when alive it has the dorsum pale, purplish-grey, with a dark band down each side, and the margin very pale.

The embryonic or newly-hatched larva is very peculiar. The egg-membrane fits closely to the larva on one side, while on the other it is widely expanded, being apparently held in this position by a pair of very large and long straight bristles projecting from the side of the larva. When the larva is free one can see that these bristles also exist on the side which was adjacent to the egg-membrane, they are, in fact, the largest stigmatal bristles very greatly developed. The legs of these larvae have the digitules well developed. The anal ring seems to present numerous hairs, but in a free larva there were clearly seen to be but six. The rostral filaments are coiled like a watch-spring. The caudal filaments in a free larva are seen to be quite long, each arising from a tuft of small bristles.

Hab. This extraordinary insect was sent by Prof. Toumey, whose attention was first called to it by Prof. R. H. Forbes, Chemist of the Arizona Exper. Station. It occurs on mesquite (*Prosopis juliflora* var. *glandulosa*) near the University of Arizona, Tuscon.

Lecanium quadrifasciatum, n. sp. — ♀ scales crowded in a thick cluster 7 or 8 cm. long, overlapping. Scale about 7 mm. long, 5 broad, and 3½ high. When alive moderately soft, shiny, of a livid pinkish color, with four longitudinal bands of grey spots, the spots being slightly depressed. There is mottling of the same character below the fourth band. The bands are about equally distant from one another, and the dorsal bands may be closer together than to the lateral. Margin immaculate, and more pinkish than the rest of the scale. The scales have quite a musky odor, as in *L. mirabile*.

Boiled in soda, the adult ♀ gives a strong madder color. Derm colorless, with small round gland-spots. Anal ring with six well-developed hairs. Anal plates together forming nearly a square. Antennae rudimentary, cylindrical, obscurely 6-jointed, tip with several short straight hairs. Legs rudimentary, looking something like small stout antennae, tibia and tarsus each nearly as broad as long, femur about 1½ times as long as broad. All four digitules present though small. Mouth-parts well developed.

Hab. On twig of *Robinia neomexicana*, Soledad Cañon, Organ Mts., New Mexico; found by J. E. Owen, a student in the preparatory department of the N. M. Agric. College.

This is another extraordinary species, and should probably fall under *Toumeyella*, in which case the diagnosis of that group

would have to be altered a little. Nothing certain can be said, however, until the embryonic larva of *quadrifasciatum* has been seen. It is to be observed that *L. robiniarum* Douglas, found at Las Cruces, N. M., on *Robinia pseudacacia*, has nothing whatever to do with *quadrifasciatum*, being a *Eulecanium*. It has doubtless been introduced into New Mexico from the Eastern States, though not hitherto recognized there by entomologists.

Diaspis toumeyi, n. sp. — ♀ scales circular or nearly so, moderately convex, about 2 mm. diameter, white tinged with yellowish or brown, exuviae sublateral, first skin exposed, pale straw; second skin, exposed by rubbing, orange. Removed from the twig, the scale leaves a white mark.

♂ scale as usual in genus, white, obscurely unicarinate, with the very pale yellowish exuviae at one end.

♀ (boiled in soda) very pale brownish (when dry, not boiled, dark brown). Rows of transversely oval pores, as usual in genus. Anal orifice small, subcircular, not very far from hind end. 5 groups of ventral glands, median round, caudolateral oval, cephalolateral long-oval. Caudolateral with 25 orifices, caphaloteral 36, median 24. Median lobes extremely large, separated by a wide interval in which is a pair of small spines, strongly divergent, pale brown, rounded, finely crenate. Remaining lobes practically obsolete. Following first lobe on margin is a low obscurely quadrifid structure representing the second lobe, then a pair of short broad cone like plates, then a slight prominence, then a conical plate, then a spine, then a conical plate, then a short interval, then two small conical plates, then an almost obsolete plate, then a pyramidal small blunt brownish projection apparently representing a lobe, then two small plates, then a spine, then three large conical plates separated by rather wide intervals.

Hab. Prof. Toumey, sending specimens, writes on April 29, 1895: "While at Maricopa a few days ago, I drove to the mountains some 10 miles south, and on the way found an interesting shrub which grows here to the size of a tree; I refer to *Holacantha emoryi*, which has not before been reported north of Mexico. In many places this plant was entirely covered" by *Diaspis toumeyi*. The species is allied to *D. cacti* in some respects, but very distinct.

II. New North American Bees.

BY T. D. A. COCKERELL.

Andrena salicinella, n. sp. — ♀ about 8 mm. long, black, with thin white pubescence, abdomen with hair-bands.

Head somewhat broader than long, vertex sub-depressed; clypeus prominent, shining, strongly and rather closely punctate, its disc almost bare. Vertex minutely roughened, more or less aciculated. A very distinct but short broad band of appressed snow-white pubescence before each anterior orbit. Flagellum slightly tinged with brown towards end. Thorax rather small; mesothorax with large, sparse, distinct punctures. Scutellum with similar punctures. Metathorax finely roughened, enclosed area sculptured like the part beyond, enclosure bounded by a very obscure rim. Pleura with long white hairs, not dense. Tegulae testaceous, moderately shining. Wings distinctly yellowish, nervures and stigma honey-yellow. Legs with pale hairs; femora and tibiae piceous-black, all tarsi clear ferruginous.

Abdomen shining, its surface minutely tessellate, impunctate. Apical margins of segments narrowly testaceous, segments 2 to 5 with apical bands of dirty-white hairs,