NOTES ON COCCIDÆ, WITH DESCRIPTIONS OF NEW SPECIES.

BY J. D. TINSLEY, NEW MEXICO EXPERIMENT STATION, MESILLA PARK, N. M.

ERIOCOCCUS TINSLEYI, Ckll.

Adult ♂. Length, 1.3 mm.; expanse of wings, 2.5 mm.; colour, head and abdomen purplish-gray; mesothorax light ochreous, some specimens show a white longitudinal streak on the abdomen. Legs and antennæ concolorous with body. Antennæ 10-jointed. Joint 2 is bottle shaped, proximal end smallest, 70 μ long, practically identical with second joint of *Phenacoccus solenopsis*, Tins., except that *E. Tinsleyi* has a number of stout blunt spines interspersed with the bristles; joint 3 cylindrical, considerably longer than any of the others (130 μ long), only differing from *P. solenopsis* in having the stout blunt spines; joint 4 often shorter than 5, but sometimes longer, 76–85 μ; joint 5, 81–87 μ long; joint 6 usually next, longer than 2, 68–78 μ long; joint 7 shorter than 2, 68 μ long; joint 10 usually next, 65 μ; next 8, 56 μ; shortest 9, 50 μ. Joint 10 is flask shaped, tapering distally. All the segments bear the stout blunt spines, interspersed with rather stout bristles. Formula 3, 5, 4, 6, 2, 7, 10, 8, 9.

Legs rather slender; femur tapering proximally, 180 μ long, with some medium sized bristles; tibia quite slender, tapering very slightly proximally, 250 μ long, quite bristly, with the stout blunt spines interspersed; tarsus bristly and with the stout blunt spines, 90 μ long, bearing a pair of short stout digitules which are very slightly dilated at the end; claw rather slender, 20 μ long.

The usual pair of long slender white caudal filaments. Male sac creamy white, about 2 mm. long and .75 mm. wide, elliptical, inclining to cylindrical.

Hab.—On roots and portions of stems lying on the ground, of Atriplex canescens. A. and M. College campus, Mesilla Park, N. M.; Aug. 4, 1898; coll. J. D. Tinsley.

ERIOCOCCUS TINSLEYI, Ckll.

♀. Having recently studied this species somewhat in detail, I wish to add the following facts to Prof. Cockerell's description in CANADIAN ENTOMOLOGIST., Vol. XXX., No. 9, p. 247. The antennæ

(Fig. 20) in this species are quite variable both in regard to the relative length and actual size of the segments. I have observed the following formulæ: 4 3 7 2 5 6 / 3 4 2 7 6 5. / 4 3 2 7 6 5 While in many cases the tarsus is longer than the tibia (Ckll., *loc. cit.*), yet they are often subequal. The full-grown young females appear much more spiny than the old females.

Some time since I received specimens on *Malvastrum coccineum*, collected by Mr. E. Bethel, at Denver, Colo., which I at the time thought to be a distinct species, and from those specimens prepared the accompanying figure. I now consider them to be this species.

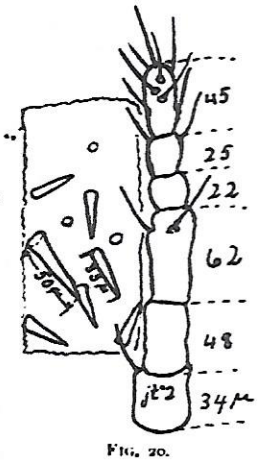

FIG. 20.

Prof. Cockerell has, in Aug., 1898, collected specimens on the leaves of *Atriplex canescens*, growing on the campus of the A. and M. College of N. M., which I also refer to this species.

The Colorado specimens are fairly constant in their antennal formulæ of 4 3 2 7 5 6.

The specimens on the leaves of Atriplex are quite variable in their formulæ; *e.g.*: 3 4 7 2 5 6 / (3 4) 7 2 5 6 / 3 (4 7) 2 5 6 / 3 4 (7 2) 5 6 Their legs and antennæ are stouter than in the type form, and they have more hairs between the bases of the antennæ and legs.

DACTYLOPIUS KINGII, Ckll., var. *Neo-Mexicana*, n. var.

During the past summer I collected this insect on the roots of *Gutierrezia sarothræ* in the Organ Mts., N. M., at an altitude of about 5,000 feet. They were, in all cases, attended by ants.

Adult ♀. Length, 2 mm.; width about 1 mm. Shape, ellipsoidal, rather plump. Colour yellowish. Nearly naked; no lateral or caudal filaments; dorsum sparsely mealy. The antennæ are 8-jointed, and with the formula of *Kingii*, 81235764, the fourth joint, while shortest, is relatively longer than it usually is in *Kingii*. Hairs on the segments about the same as in *Kingii*, perhaps a little smaller. The whole antenna is a little smaller than is usual in *Kingii*. Legs are rather smaller than in *Kingii*; femur 130 μ long; tibia, 140 μ long; tarsus, 75 μ long;

claw, 25 μ long. Hairs and digitules nearly as in *Kingii*. The most marked difference is in the ovisac. *Kingii* secretes a loose, fluffy, shapeless ovisac, while this var. secretes a compact, elliptical ovisac, very little larger than the female, in which the female lies partially embedded. The ovisac resembles that of an *eriococcus* very much.

PHENACOCCUS SOLENOPSIS, Tinsley.

Adult ♂. Length, 1 mm.

Colour white, head tinged with gray, eyes red, mesothorax yellowish, legs light yellowish brown. Antennæ 10-jointed; joint 1 short and stout, 35 μ; joint 2 bottle shaped, proximal end smallest, 70 μ long; joint 3 is considerably longer than any of the others, being 120 μ long; joint 5 next, being 90 μ; 6 next, 85 μ; the remaining joints are variable in relative length. Formulæ of the antennæ of one individual: 3 4 5 (6 9) 10 7 2 8 1
3 4 5 (6 8) (7 9) 10 2 1

All the segments are quite bristly. Legs rather slender. Femur 250 μ long, bearing a few bristles; tibia 265 μ long, bearing numerous stout bristles; tarsus 95 μ long, bearing numerous stout bristles; claw 31 μ long, rather slender. Tarsal digitules long and slender; claw without digitules. The usual caudal filaments.

Hab.—On roots of *Atriplex canescens*; Aug. 4, 1898; coll. J. D. Tinsley.

DACTYLOPIUS AZALEÆ, n. sp.

Adult ♀. About 3 mm. long, about 2 mm. wide.

Flattened ellipsoidal, rather pointed at the ends. Colour of dried specimen, purplish-gray secretion, white, granular, practically hiding the true colour of the body. Lateral filaments very short on the thorax, increasing in length toward the anal extremity. Caudal filaments not conspicuously longer than those of posterior segments of the abdomen. The lateral and caudal filaments are just easily seen with the naked eye. Epidermis with numerous spinnerets. Dorsum with scattered, rather large, hairs. Ventrally the hairs are quite large and rather numerous, especially on the posterior segments. Largest hairs on posterior segments are 60 μ long. Sides with rows of spinneret spine areas.

Antennæ colour reddish, 8-jointed; medium size, all the joints have quite long hairs. The joints are rather variable in their relative lengths;

1 and 2 are often subequal, although in many cases 2 is appreciably longer, and 3 may be longer than 1; 5 is most usually longer than 7; 4 and 6 are shortest, sometimes one and sometimes the other. Two of the most common formulæ are 8(12)35746 and 82315764. (See figure 21.) Legs reddish, medium size. Femur, 215 μ long, 85 μ wide, with long, rather slender hairs.

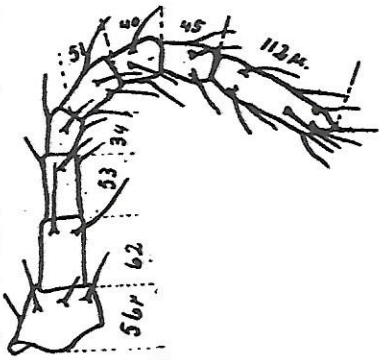

FIG. 21.

Tibia 215 μ long, with long, rather slender hairs; tarsus 112 μ long; claw 33 μ long; digitules of tarsus 40 μ long, knobbed; digitules of claw long, slender, knobbed.

Anal lobes bearing one large long hair (250 μ long), and one smaller hair. The usual group of spinnerets and spines. The spines quite stout.

Anal ring with the usual 6 hairs, which are quite large (140 μ long).

Boiled in potash the insects turn a very dark bluish green, almost black; if they are now treated with acid they turn red. The colouring matter contained in this insect has been found in but few other Coccids; most Coccids turning a red, of some shade, when treated with potash.

Ovisac loose and fluffy, white, not covering the female, but containing the eggs, which are purplish.

Hab.—On Azalea in Japanese nursery, San José, Cal. Collected by Mr. Edward M. Ehrhorn; Sept., 1898.

Remarks.—This species is very closely allied to D. pandani, Ckll., especially in the characters of the antennæ, anal lobes and ring, and the hairs on the epidermis. It differs, however, in colour, secretion on margin, and colour in potash. Being found in a Japanese nursery, it is almost impossible to say from whence it came, but it may possibly be Japanese.