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## New North-American Insects

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*New North-American Insects.* By T. D. A. COCKERELL,  
Entomologist of the New Mexico Agricultural Experiment  
Station.

I.—*The second North-American Miscophus (Fam. Larridæ).*

HYPOMISCOPHUS, subgen. nov.

Only one recurrent nervure, that entering the first submarginal cell slightly beyond its middle. Marginal cell rather small; first submarginal extremely large, its area more than twice that of the marginal; second submarginal extremely minute, triangular, shorter than its petiole, and only about half as wide at base as the distance between it and the end of the recurrent nervure. Mandibles with a very deep outer notch, the basal portion of the mandible twice as broad as the portion beyond the notch. Tarsal comb little developed.

Type *M. arenarum*, sp. n.

*Miscophus arenarum*, sp. n.

♀.—Length about 3 millim.

Head, thorax, antennæ, and first four femora black; abdomen, mandibles, and legs (except the first four femora) ferruginous. Tubercles and tegulæ light ferruginous. Occipital region, face, sides of thorax, and hind margins of abdominal segments interrupted in the middle, shining silvery, with minute appressed pubescence. Apical half of abdomen somewhat infuscated. Wings iridescent, nervures piceous; apical margin very broadly smoky. Hind ocelli somewhat further apart than the distance of either from the eye-margin. Metanotum with a distinct median longitudinal raised line. Tibial spurs large and black. Thorax with a very minute rugose sculpture.

*Hab.* Mesilla Park, New Mexico, July 21, 1898, in a sandy place, in the zone of *Pluchea borealis*.

This is very different from *M. americanus*, Fox, and resembles more *M. chrysis*, Kohl, an African species, in its venation. I should be inclined to regard *Hypomiscophus* as a distinct genus but for the fact that the distinctive characters seem practically confined to the wings.

## II.—Two new Coccidæ from Massachusetts.

*Lecanium (Eulecanium) Kingii*, sp. n.

♀ (after producing young).—Length 5, breadth 3, height  $2\frac{1}{2}$  millim.

With an obscure dorsal keel. Shiny, dark chestnut-brown, irregularly wrinkled and pitted. Marginal area punctured, but not plaited. General appearance much like *L. persicæ*.

Skin (after boiling) chitinous, light yellowish brown, with scattered small round gland-spots, which are larger and more numerous near the margin. Marginal spines very few, minute, simple. Anal plates with their outer sides about equal. Antennæ and legs small and pale. Femur rather short, much shorter than tibio-tarsus; tarsus nearly as long as tibia; claw long, curved only at end; digitules all filiform. Antennæ 6-segmented, formula 3 6 2 1 (4 5); 3 very long, (about 93  $\mu$ ), longer than 4, 5, and 6 together, constricted near its end; 2 about as long as broad and much less than half the length of 3; 6 about as long as 4 + 5.

*Hab.* Lawrence, Mass., June 14, 1898, on bark of *Vaccinium corymbosum*, L. (*G. B. King*, no. 32).

This species outwardly resembles *L. persicæ*, but the antennæ are quite different. I have not seen Goethe's *L. vaccinii-macrocarpum*; but that cannot be the present insect, as it is said to be very small and light brown. Goethe describes the eggs, so his specimens cannot have been immature. I wrote to Mr. Goethe concerning *L. vaccinii-macrocarpum*, and he replies from Geisenheim, June 25, 1898, that it can no longer be procured—"Upon the plants in our possession the *Lecanium* has disappeared. I wrote to the Botanic Garden at Karlsruhe, but there this species has quite died out." A couple of sketches kindly sent by Mr. Goethe indicate a different species from *L. Kingii*, apparently with a 7-segmented antenna.

I am glad to name the above species after Mr. King, in recognition of his good work among the Coccidæ of Massachusetts. Just recently he has sent me three other interesting species, which are new to the fauna of that State, viz. :—

*Eriococcus quercus* (Comst.).—On white oak, Andover, Mass., June 28, 1898.

*Eriococcus azaleæ*, Comst.—On *Cratægus coccinea*, Methuen, Mass., June 21, 1898.

*Kermes pubescens*, Bogue.—On white oak (*Quercus alba*), Lawrence, Mass.

*Aspidiotus Fernaldi*, sp. n.

This name is applied to a puzzling form found by Mr. Kirkland on *Gleditschia triacanthos* in Charlesbank Park, Boston. The scale resembles that of *A. Forbesii*, but the exuviae, at least in the specimens seen by me, are dark brown. The female insect is also like *A. Forbesii*, but the median lobes are broad and practically entire, just like those of *A. ostreaeformis*. From *ostreaeformis* it is easily distinguished by the great inequality of the chitinous processes at the first interlobular interval; the inner of these processes is straight, instead of being curved as in *Forbesii*, the inequality being about the same as in *Forbesii*. *A. Fernaldi* also differs from *ostreaeformis* in the close proximity of the second lobe to the first; the second lobe is usually more developed and less notched than in *Forbesii*.

Mr. W. G. Johnson, when describing *Forbesii*, enumerates its food-plants, and adds that it occurs "possibly" on honeylocust. I suppose it probable that he found *A. Fernaldi* on the honeylocust, and was in doubt as to whether it was distinct. It may fairly be said of *A. Fernaldi* that it has about the same relation to *A. Forbesii* that *A. ostreaeformis* has to *A. ancylus*. *A. Fernaldi* has five groups of circumgenital glands, the median group of three, anterior laterals 4 to 9, posterior laterals 2 to 7.

The specimens were sent to me by Mr. R. A. Cooley, of the Massachusetts Agricultural College. The species is named after the well-known entomologist of that institution.

*A. ancylus*, Putn., was found by Mr. Kirkland on the *Gleditschia triacanthos* in Charlesbank Park along with the *A. Fernaldi*. It was also found on the same food-plant by Mr. Cooley at Everett, Mass., here not accompanied by *Fernaldi*.

III.—*The first-described Eremopedes (Fam. Locustidæ).**Eremopedes Scudderi*, sp. n.

♀.—Length of body 19–21 millim., of pronotum 6 millim., of hind femora  $21\frac{1}{2}$  millim., of hind tibiae 23 millim., of ovipositor 19–20 millim., of antennae about 51 millim.

Sepia-brown in effect, but in reality ochreous, closely and finely marbled with blackish; the density of the black marbling somewhat variable, but the lateral margins of the pronotum always broadly pale ochreous. Pronotum truncate in front and behind, the margin narrowly castaneous and

slightly concave; lateral lobes not greatly developed. Ovipositor dark brown, only moderately curved. Hind femora with five to seven very short spines on the inner side; hind tibiae with 28 to 33 spines in the outer row. Spines of anterior tibiae pale ochreous, tipped with black, and having a black longitudinal line on the upperside; there is also sometimes a black patch immediately at the base of each spine. Spines of hind tibiae brown tipped with black, but the ridge from which they spring is whitish.

*Mut. viridis*.—Similar to the type, but entirely bright apple-green.

*Hab.* Mesilla Park, New Mexico, on the campus of the New Mexico Agricultural College. Eight of the brown form and two of the green. They were found in an outhouse, and are doubtless nocturnal in their habits. One specimen was found in the jaws of a *Scolopendra heros* which had killed it.

The genus *Eremopedes* was made known by Scudder in the 'Canadian Entomologist,' July 1894. It was founded on a single female from Arizona in the National Museum at Washington, which was not described. Up to the present no species of the genus has been described or named so far as I can ascertain.

I sent an example of *E. Scudderi*, asking whether it was the same as the Arizona insect, to Mr. Scudder, who replied: "The *Eremopedes* from Arizona is unnamed in the U.S. Nat. Mus. I have no specimen. Your species appears to be a good one."

#### IV.—A new Humble-Bee from the Pribilof Islands.

##### *Bombus Kincaidii*, sp. n.

♀.—Length about 20 millim., anterior wing 15 millim.

Black, with dense black and pale dull ochreous pubescence. Pubescence of head entirely black, except that the labrum presents some short orange-brown hairs and the trisulcate mandibles have a patch of shining ochreous pile in the lowest sulcus at the tip. Facial quadrangle about or hardly as long as broad, groove beneath middle ocellus distinct, front with minute punctures; clypeus rather prominent, with small punctures of different sizes, becoming sparse on the disk; area between eyes and base of mandibles smooth and shining, about as broad as long; flagellum with the third segment a little longer than the second, but shorter than the first. Mesothorax dull from very small extremely dense punctures, except on the posterior portion, where there is a median

smooth area; pleura extremely densely punctured. Pubescence of thoracic dorsum ochreous in front and on scutellum, but the black band between the wings larger than either of the ochreous areas; pubescence on sides of metathorax black, on pleura dirty ochraceous in front, passing through sooty to black behind. Tegulæ black; wings brownish hyaline, with dark brown nervures, along the courses of which the wing is irregularly stained with brown; third submarginal cell narrowed about half to marginal. Legs with brown-black hair, tending to chocolate; on the outer side of the tarsi the pubescence is whitish and appressed, on the inner anterior edge of the basal joints it is shining coppery, very brilliant, and each tarsal joint has a short apical fringe of ferruginous bristles. Abdomen above with the first three segments covered with ochreous hair, the remaining ones with black; pubescence of venter black.

♂.—Length about 15 millim.

Differs from the female in having the light hair somewhat yellower; a patch of yellow hair on the face below the antennæ; some yellow hair among the black on middle of vertex; band between the wings not black, but ill-defined, marked by the duller, more sooty, tint of the hair; third abdominal segment with some black hair mixed with the yellow; following segments with long whitish hairs, reddish at base, intermixed with the black. Venter with yellowish hair. Legs with more of the coppery or ferruginous hair. Second segment of flagellum barely shorter than first and much shorter than third.

♀.—Like the female, but much smaller. Length about 15 millim.

*Hab.* Pribilof Islands, Bering Sea; 4 ♀, 2 ♂, 1 ♀ (*Trevor Kincaid*). The specimens were all collected on St. Paul, Aug. 1 and 25, 1897. Several (3 ♀, 1 ♂) were at flowers of *Lathyrus*, Aug. 1. This *Lathyrus* was, I presume, *L. maritimus*, Bigel., the only species of the genus recorded by Dr. Merriam from the Pribilof Islands.

This *Bombus* was the only bee to be found on the islands, notwithstanding that there is a tolerably extensive series of bright-flowered plants, as enumerated by Dr. Merriam in Proc. Biol. Soc. Wash., July 1892.

So many northern *Bombi* have been described that it requires some courage to add another name to the list. The present species is, I believe, endemic in the Pribilof Islands, for I cannot find anything described from the mainland or any of the other islands which agrees with it; and Mr. Kincaid brought me a series of *Bombi* from Sitka and Unalaska, none

of which agree with *B. Kincaidii*. It is not identical either with any of the rather numerous species which Radoszkowski recorded in 1877 from Siberia. Using Schmiedeknecht's table of European *Bombi*, the female runs to *B. hyperboreus*, but differs from that in the paler pubescence, and especially in having the first three abdominal segments always with light hair instead of the first two only. The male differs from that of *hyperboreus* in the proportions of the flagellar joints, as described, and in the absence of the long black hairs on the posterior tarsi. *B. hyperboreus* inhabits the arctic regions of Europe and Siberia, also Greenland; it is, I think, the nearest ally of *Kincaidii* at present known.

V.—Some new Gall-gnats (Cecidomyiidae).

*Diplosis atriplicicola*, sp. n.

*Gall*.—A small circular pustule-like swelling in the leaf of *Atriplex canescens*, about  $2\frac{1}{2}$  millim. diam.

*Pupa shell* light brown, uniform in colour.

*Imago* about  $1\frac{1}{2}$  millim. long, black, the abdomen densely covered with coarse white hairs. Legs pallid, faintly yellowish, clothed (especially the femora) with white hair. Wings white.

♂.—Antennæ 2 + 12-jointed; first joint elongate, obconical, second a depressed sphere, remaining joints stout and cylindrical (sausage-shaped), very shortly petiolate; irregularly and rather densely clothed with simple depressed hairs, these hairs much shorter than the joints and not distributed in separable whorls; third joint longest, the others about equal.

Eyes united, covering most of head, vertex projecting, apparently conical. Scutellum with some long slender hairs. Genitalia reddish brown. Wings with scattered simple hairs; first (subcostal) longitudinal vein arising from the cross-vein some distance from the base of the wing, the cross-vein thence slanting a little backwards in both its upper and lower portions, but not very oblique; no other cross-vein is apparent; costal margin uniformly and densely bristly until the end of the second longitudinal vein just before the tip of the wing, after which the wing-margin is without hairs; third longitudinal vein weak. Legs long; first tarsal joint extremely short; claw-joint of hind tarsus scarcely more than half the length of the one before it.

*Hab.* Mesilla Park, New Mexico, on the campus of the Agricultural College, end of July, 1898.

This is not a true *Diplosis*; it seems to differ from all



genera at present recognized in North America. It is possible that it may be referable to one of the numerous genera lately proposed for European species allied to *Diplosis*.

*Lasioptera Willistoni*, sp. n.

*Gall*.—An elongate cylindrical swelling of a twig of *Atriplex canescens*, about 35 millim. long and  $3\frac{1}{2}$  to 4 broad.

*Larva*.—Colour pale orange.

*Imago* (♀).—Length  $2\frac{2}{3}$  millim. Black, ornamented with white. Antennæ rather stout, cylindrical, not so long as the width of the thorax; head hardly visible from above, concealed by the gibbous thorax; sides of thorax white, mid-dorsal area whitish; abdomen with seven pairs of white spots, those of the first pair close together; tip of abdomen orange. Wings with the costa black, except for a white spot; fringe black. Legs hoary.

*Hab*. Mesilla, New Mexico; also common on the campus of the Agricultural College, Mesilla Park, N.M.

The imago described emerged May 2, 1897; there appears to be a second brood, emerging in August. Great numbers of parasites, determined by Mr. Ashmead as *Polygnotus atriplicis*, Ashm., have been raised from the galls (collected at Mesilla Park) by Miss Ivah Mead and the present writer. When I first bred this species I was unable to identify it with anything described, so I sent a drawing of it to Dr. Williston, who informed me that it was a new *Lasioptera* without doubt. Since then I have found two closely allied species, described below. *L. Willistoni* is the fourth Cecidomyiid found on *Atriplex canescens*; the other three being *Diplosis atriplicicola*, sp. n., *Asphondylia atriplicis* (Twins), and *A. neomexicana* (Ckll.).

*Lasioptera ephedræ*, sp. n.

*Gall*.—A fusiform swelling on twigs of *Ephedra trifurca*, about 12 millim. long and 5 broad, with a depression on one side subbasally, where the wall is thinner and through which the insect emerges.

*Larva* orange.

*Imago*.—Repeated attempts to breed the fly from these galls have been unsuccessful; but on May 18, 1897, I found what is doubtless the gall-producer hovering over an *Ephedra* on which were many galls.

♀.—Length about 2 millim. Differs from *L. Willistoni* by having the margins of the abdominal segments more or less fringed with white scales, but no well-defined spots.

Apical structures of abdomen brownish rather than orange. Costa blackish, with white hairs intermixed, but no distinct white spot. Wing-margin white.

*Hab.* Mesilla Park, N.M., abundant; also at Paraje, N.M.

Prof. C. H. T. Townsend described the gall in Entom. News, Sept. 1893, pp. 242-243.

*Lasioptera tertia*, sp. n.

*Gall.*—A potato-shaped smooth swelling on the twigs of some asteroid composite. The galls are of various shapes, sometimes subglobular,  $11 \times 9$  millim., or elongated, 17 millim. long, constricted in the middle; they are always quite broad and more or less irregular.

*Imago.*—Similar to the two described above. The abdomen has distinct white bands, more or less interrupted in the middle line. Costa black, with a distinct but small white spot, margin of wing black. Legs more or less pallid, grey or brown.

*Hab.* Paraje, New Mexico; galls collected in April 1898.

The following table separates the above three species of *Lasioptera*:—

Abdomen distinctly spotted; orange at tip; wing-margin black .....	<i>Willistoni.</i>
Abdomen more or less banded; not orange at tip.	
Wing-margin black .....	<i>tertia.</i>
Wing-margin white .....	<i>ephedrae.</i>

VI.—*A Case-bearing Tineid on Portulaca.*

*Coleophora portulacæ*, sp. n.

Head and thorax above heavily clothed with pale ochreous (nearly putty-coloured) scales. Primaries with the same general tint, with some admixture of blackish scales on the apical half, but no distinct markings; fringe of the same general colour. Secondaries silvery grey, with a very long mouse-coloured fringe. Abdomen above silvery grey, cream-coloured at the apex. Thorax and abdomen beneath, also the legs, satiny white.

Penultimate joint of palpi tufted at the apex. Antennæ simple, heavily scaled, but not tufted at base; conspicuously annulate with grey and white, the grey rings equal to the white; 35-jointed, first rather longer than the next three together, second and third very short, broader than long; two last joints with bulging sides, not narrow-cylindrical like the ones before them.

Case 6 millim. long, about 1 broad, cylindrical, cream-colour, roughened much like a silkworm cocoon; some grains of sand attached behind the mouth; hind end briefly tricarinate.

*Hab.* Mesilla Park, New Mexico, abundant on *Portulaca* on the campus of the Agricultural College; moths emerging Aug. 5 to 7, 1898.

Allied apparently to *C. unicolorella*, Chamb.; but that is smaller and does not have annulate antennæ. *C. pulchricornis*, Walsm., is named from the similarly annulate antennæ, but it has a whitish costal streak, and while the moth is no larger, the case is more than twice as long.

## VII.—The Cecidomyiid of the Mesquite.

### *Asphondylia prosopidis*, sp. n.

*Gall.*—Consists of the aborted fruits of *Prosopis juliflora*, var. *glandulosa*. They hang on the stalk something like grapes, and are subglobose, with a pointed apical projection, which represents the end of the pod. Globose portion about 8 millim. long and 7 broad, pointed portion about as long or shorter. Colour green, becoming yellowish and tinged with red.

*Pupa-shell* red-brown. Imago emerged Aug. 13, 1898.

*Imago.*—♂. Length about  $3\frac{1}{2}$  millim. Face extremely narrow, hardly broader than the femur; eyes black; antennæ dark brown, 2+12-jointed; joints cylindrical, very shortly petiolate, with numerous very short hairs not longer than the width of a joint, not arranged in regular whorls; first joint more than twice as long as second, these two together not so long as third. Last joint of palpi long. Occiput with a collar of large bristles. Thorax above leaden grey, nearly naked; scutellum rounded, prominent, bristly; prothorax at sides and a part beneath wing light scarlet; halteres with a large white knob, stem and base of knob brown; legs pale greyish brown. Wings hairy, dull hyaline, iridescent, nervures and costa blackish; second vein terminating just at tip of wing, third weak, its upper branch almost obliterated; a fold between second and third veins; cross-vein absent. The wings extend beyond the tip of the abdomen about the length of the last abdominal segment. Abdomen grey, last segment scarlet.

*Hab.* Mesilla Park, New Mexico.

Some years ago I found some of the galls at Las Cruces, but was not then able to rear the flies. *A. prosopidis* differs

from *A. neomexicana* in the dark (instead of pallid) second nervure and the impressed lines of the thorax being feebly or not pubescent. The life-history is quite different.

VIII.—Two new *Species* of *Kermes* (Fam. Coccidæ) from the Eastern States.

*Kermes nivalis*, King and Ckll., sp. n.

♀.—Rather *Lecanium*-like, with a broad base of attachment, outline much like that of a convex *Lecanium*, the sides depressed, not bulging. Length  $4\frac{1}{2}$ , breadth  $4\frac{1}{2}$ , height about 3 millim. Dark sepia-brown, irregularly marbled with blackish and pale ochreous, the latter colour inclined to be arranged in transverse bands, and beset with numerous minute dark dots. All of the scale except the middle of the back is powdered with snow-white secretion, which becomes very abundant at the sides. Microscopical characters ordinary; skin fairly closely beset with small round glands, and showing some larger glands at irregular intervals, on brown patches. Mouth-parts ordinary. Antennæ distinct, but rudimentary, obscurely 6-jointed, last joint bristly.

*Larva* (newly hatched).—Pale yellow, rather more elongate than usual, lateral spines very small and short. Antennæ 6-jointed, 3 at least as long as 4+5. Formula 3 6 (1 2 4 5).

*Hab.* Lawrence, Mass., on *Quercus alba* (G. B. King, no. 48). The larvæ hatch about the beginning of August.

This pretty species differs from all those described from North America by its shape, and especially the snow-like meal on its sides. It agrees in some respects with the European *K. Bauhini*. I have not seen this latter species, but there are specimens in the U.S. Nat. Museum, and Dr. L. O. Howard has kindly compared them with *K. nivalis*, and finds them "very different."

*Kermes Kingii*, sp. n.

♀.—Very convex, but the sides hardly bulging; length 5, breadth  $4\frac{1}{2}$ , height about  $3\frac{1}{2}$  millim. Colour light ochreous, of quite a bright tint, marbled with a slightly darker redder tint; the marbling is absent in the mid-dorsal line, leaving a more or less distinct longitudinal pallid band; segmentation vaguely indicated by transverse rows of small black spots; entire surface very closely beset with minute dark dots. The scale is evenly rounded dorsally, without any prominences or depressions. Microscopical characters as usual in the genus,

except that the skin is unusually thickly beset with the small round glands, which are very distinct. Mouth-parts and antennæ ordinary. Caudal tubercles represented by brown chitinous bristly patches.

*Larva* (according to King) yellow, of a different colour from that of *K. galliformis*.

*Hab.* Lawrence, Mass., July 28, 1898, on red oak, not common (*G. B. King*, no. 44). Also from Delaware, sent by Prof. C. P. Gillette (no. 557).

Easily known from the common *K. galliformis*, Riley, to which it is most allied, by the smaller size, more regularly globose form, lively colour, and the very distinct and numerous dark points. I received two specimens years ago from Prof. Gillette, and at that time regarded them as a form of *galliformis*; but Mr. King now draws my attention to the fact that the species is distinct, and on making a detailed study of it I am surprised that I ever thought otherwise.

Mesilla Park, New Mexico, U.S.A.,  
Aug. 15, 1898.

