

1-1-1904

Some Parasitic Bees

T. D. A. Cockerell

Follow this and additional works at: https://digitalcommons.usu.edu/bee_lab_ca



Part of the [Entomology Commons](#)

Recommended Citation

Cockerell, T. D. A., "Some Parasitic Bees" (1904). *Ca*. Paper 344.
https://digitalcommons.usu.edu/bee_lab_ca/344

This Article is brought to you for free and open access by the Bee Lab at DigitalCommons@USU. It has been accepted for inclusion in Ca by an authorized administrator of DigitalCommons@USU. For more information, please contact digitalcommons@usu.edu.



Some Parasitic Bees. By T. D. A. COCKERELL.

Cælioxys ribis, var. *Kincaidi*, n. var.

♀.—Length 11–13 millim., the difference in size partly dependent on the extension or retraction of the apical part of the abdomen.

Similar in all structural characters to *C. ribis*, but the pubescence of the head and thorax is ochreous, the basal part of the third abdominal segment is more sparsely punctured, and the apical dorsal plate has the apex beyond the slight lateral constriction a little more produced. There are distinct and conspicuous transverse grooves across the middle of the second and third abdominal segments, but not on the fourth or fifth. Tibial spurs black.

Hab. Olympia, Washington State, June 9 to 24, 1895, June 26, 1896, five females (*T. Kincaid*).

This is the first *Cælioxys* recorded from the north-west. It is quite different from *ribis* in appearance, but structurally it is almost the same, having the same sculpture on the penultimate ventral segment, &c. A male collected by Mr. Kincaid at Olympia, June 18, 1895, is presumed to belong to *C. ribis Kincaidi*, though the pubescence (especially on the face) is white. This male almost exactly agrees with

C. sodalis, Cresson, though the lateral teeth of the scutellum, while obtuse, are not short; the apical margins of the wings are only slightly dusky. The tibial spurs are black, and the fifth abdominal segment has no lateral teeth, though there are minute nodules. The lateral teeth of the sixth segment are long. The upper apical teeth are flattened and rounded. The spines on the anterior coxæ are large and blunt. It is to be remarked that while *C. ribis* was described from a locality in the upper austral zone, it is also an inhabitant of the boreal, and probably goes far north of New Mexico. On June 29, 1902, my wife took females of *C. ribis* and *C. Porterae* at flowers of *Frasera* at Beulah, New Mexico, in the Canadian zone.

The exact relationship of *C. sodalis* to *ribis* and *Kincaidi* will not be determined until the male of the first-mentioned is discovered. The localities given for *sodalis* are New York and Colorado; New York, being first mentioned, may be considered the type locality. I rather expect that *ribis* and *sodalis* will prove to be one species.

EPEOLUS, Latr. (sens. lat.).

Females.

- | | | |
|--|----|--------------------------------------|
| Fifth ventral segment of abdomen strongly concave in lateral view; fifth dorsal segment truncate; size large.. | 1. | |
| Fifth ventral segment not so | 2. | |
| 1. Legs black..... | | <i>Triepeolus concavus</i> (Cress.). |
| Legs ferruginous | | <i>Triepeolus penicilliferus</i> |
| 2. Fifth dorsal segment with only a differentiated apical lunule; small species. (<i>Epeolus</i>) | 3. | [Brues]. |
| Fifth dorsal segment with a large differentiated area; large species. (<i>Triepeolus</i>) | 6. | |
| 3. Front with a tubercle on each side; scutellum red | | <i>bifasciatus</i> , Cress. |
| Front simple; scutellum black or faintly reddish | 4. | |
| 4. First abdominal segment hairy all over; antennæ red, suffused with blackish; tibial spurs clear red..... | | <i>crucis</i> , Ckll. |
| First abdominal segment with a black hairless area; antennæ black, with little, if any, red | 5. | |
| 5. Hind tibial spurs black; two submarginal cells; antennæ entirely black; lower half of pleura hairless | | <i>Phileremus americanus</i> , |
| Hind tibial spurs clear red; three submarginal cells; second and third | | [Cresson]. |

- antennal joints largely red; lower half of pleura covered with hair *beulahensis*, Ckll.
6. Legs black 7.
Legs red 8.
7. Larger; black area on first segment narrow, *i. e.* not much produced laterally *nevadensis*, Cress.
Smaller; black area on first segment very broad *donatus*, Smith.
8. Scutellar teeth long and sharply pointed, at least partly red; dark area on disk of first segment very small.. 9.
Scutellar teeth shorter, entirely black. 10.
9. Larger; mesothorax mainly red *pimarum*, Ckll.
Smaller; mesothorax black *mesilla*, Ckll.
10. Area on first segment a broad transverse band 11.
Area on first segment small, not produced laterally; size large *texanus*, Cress.
11. Tegulae clear light red; mesothorax with an anterior patch, not two distinct stripes *occidentalis*, Cress.
Tegulae dark reddish to dark fuscous; mesothorax with two distinct stripes. 12.
12. Larger; labrum entirely black *helianthi*, Rob., var.
Smaller; labrum with two red spots.. *helianthi*, Rob.

Males.

- Abdomen with eight club-shaped light marks *verbesinae*, Ckll.
Abdomen not so marked 1.
1. Markings of abdomen orange, white on sixth segment *nautilanus*, Ckll.
Markings of abdomen white or pale cream-colour 2.
2. Mark on first abdominal segment semilunar 3.
Mark on first abdominal segment a transverse band 4.
3. Legs black *concolor*, Rob.
Legs red *lunatus*, Say.
4. Bands on second to fourth segments interrupted in middle line; size small; femora black *olympiellus*, Ckll.
Bands on third and fourth segments, at least, entire; hind femora, at least, red 5.
5. Lower part of pleura bare 6.
Lower part of pleura covered with hair. 7.
6. Larger; tegulae clear red *occidentalis*, Cress.
Smaller; tegulae darkened *helianthi*, var. *arizonensis*, [Ckll.]
7. Anterior femora red; abdominal markings white *isocomæ*, Ckll.
Anterior femora black; abdominal markings cream-colour; antennae black *Cressoni*, var. *fraseræ*, Ckll.

Triepeolus nautlanus, sp. n.

♂.—Length $9\frac{3}{4}$ –11 millim.

Agreeing with *T. lunatus* and *T. concolor* except as follows:—Light markings of thoracic dorsum, and particularly of dorsal segments of abdomen, light orange; sixth dorsal segment with the pubescence entirely silvery white, in strong contrast with the orange of the other segments; the extreme sides of the second to fifth segments are touched with silvery white, which is most conspicuous on the fifth; the bands on the second and third ventral segments are silvery white, the erect curved hairs on the fourth and fifth being fuscous; the pubescence of the face is entirely silvery (not golden at the sides as in *T. flavofasciatus*); the lower part of the pleura is hairy, with an ill-defined bare central area; mandibles with a dull red spot in middle of outer side; antennæ black, first joint of flagellum red beneath; tibiæ and tarsi red, spurs on middle and hind tibiæ black; femora black, reddened at apex, and the middle femora sometimes red beneath; the tibiæ vary to black, but the tarsi in such specimens remain red.

Hab. Vicinity of San Rafael, Rio Nautla, State of Vera Cruz, Mexico (*C. H. T. Townsend*). The dates are March 13 and April 7; it occurs at flowers of plant no. 1 of Townsend's collection, which is a species of Compositæ.

The insect is a tropical representative of *T. lunatus*, apparently constant in its bright colours. It is possible that *T. nautlanus* may prove to be the male of the species described by Cresson from the female as *Epeolus totonacus*.

Triepeolus nevadensis (Cresson).

Albuquerque, New Mexico, Sept. 15.

Recorded erroneously in Bull. Denison Lab. as *Epeolus remigatus* (p. 73) and *E. robustus* (p. 61). It is easily known from *robustus* by the prominence between the antennæ. *E. robustus* was described from New Mexico, but I have not met with it.

Triepeolus pimarum and *T. mesillæ*, spp. nn.

The females of these two species agree in the following characters:—Light markings of thorax and abdomen cream-colour; first abdominal segment with only a very small median black mark; second to fourth segments with broad even bands, that on second with no anterior lateral processes; labrum, greater part of mandibles (at least), and first three

joints of antennæ and base of fourth red; considerable white hair about base of antennæ (not so in *T. bardus*), but clypeus and adjacent sides of face hairless; clypeus and face extremely closely but very distinctly punctured; pleura very strongly punctured; tubercles red; hind border of prothorax densely pubescent; mesothorax extremely densely punctured, not hairy, but having a sort of mealy appearance; two short anterior stripes of pubescence (slender and very weak in *mesillæ*); scutellum not or hardly at all bilobed, its lateral teeth very long and pointed; only the margins of pleura hairy; tegulæ apricot-colour; legs red, some blackish suffused markings on middle and hind femora; hind tibial spurs dark; hair on inner side of basal joint of hind tarsi orange; abdomen extremely closely punctured; fifth segment without a band, convex, with fine silvery pubescence, and with a quadrate minutely roughened red area; apical plate red, punctured, sharply truncate; ventral surface of abdomen not banded, but pruinose, with minute white pubescence. They differ as follows:—

T. pimarum.

Larger, length about $12\frac{1}{2}$ millim.
Clypeus red.

Mesothorax red, with a broad median black band.

Scutellum and pleura (except an oblique black band) red.

Teeth of scutellum curved at ends.

Apical plate of abdomen not or hardly keeled.

Punctures at sides of second and third ventral segments of abdomen not conspicuously different.

Wings quite dark, nervures piceous.

Three submarginal cells.

T. mesillæ.

Smaller, length 11 millim.

Clypeus black, with anterior margin red.

Mesothorax entirely black.

Scutellum black, the ends of the teeth red; pleura black, with a faint reddish spot.

Teeth of scutellum straight.

Apical plate of abdomen keeled.

Punctures at sides of second and third ventral segments very different, those of second being much larger and less dense.

Wings not so dark, nervures fuscous.

Nervure between second and third submarginal cells usually incomplete.

T. pimarum was found by myself at Alhambra, Salt River Valley, Arizona, in the autumn of 1899, at flowers of *Verbesina encelioides*. Of *T. mesillæ* I collected a number of specimens at Mesilla, New Mexico, Sept. 24. For a long time I have had the latter species labelled with doubt *T. bardus*, Cresson, but I believe it to be distinct, though closely allied. According to Mr. Brues the scutellar teeth of *bardus* are incurved.

Triepeolus donatus (Smith).

A female in the National Museum, from San Bernardino County, California, October (*Coquillett*), is referred here, as it agrees in every particular with the descriptions of *donatus* by Smith and Cresson, except that the pubescence of the abdomen is identical in colour with that of *T. concolor*. It is to be remarked that *T. superbus* (Provancher) has nearly the same characters; but its pubescence is pale yellow and the markings of the abdomen appear to be different.

Triepeolus isocomæ, sp. n.

The male was taken at Albuquerque, New Mexico, Sept. 16, at flowers of *Isocoma Wrightii*, and was recorded in Bull. Denison Lab. xi. p. 73, as *Epeolus occidentalis*. It is certainly a distinct species, differing from *occidentalis* as follows:—

T. isocomæ ♂.

Smaller, about 9 millim. long; abdomen less tapering.

Markings pale cinereous.

Labrum with a little apical pit full of white pubescence, its sides projecting and subdentiform.

Labrum all black.

Stripes on mesothorax hardly separated, *i. e.* the area between them pubescent.

Scutellum strongly bilobed.

Lower part of pleura covered with hair.

Wings shorter, hyaline; venation more ferruginous, marginal cell more obtuse.

Hair on inner side of basal joint of hind tarsi black.

Second abdominal segment with large pyriform lateral hair-patches, pointed antero-mesad.

T. occidentalis ♂ (from Colorado).

Larger, about 11 millim. long; abdomen more tapering.

Markings cream-colour.

Labrum with two minute apical projections, but no pit.

Labrum with a red spot on each side.

Stripes on mesothorax well separated.

Scutellum feebly bilobed.

Lower part of pleura nude, except on anterior margin.

Wings longer, brownish; venation more fuscous, marginal cell more acute.

Hair on inner side of basal joint of hind tarsi orange-ferruginous.

Second abdominal segment with rather small lateral patches anterior to the band.

The mandibles of *T. isocomæ* are perfectly simple, red in the middle; the antennæ are black, the flagellar joints with obscure reddish spots; the hind coxæ are mainly red; all the trochanters, femora, tibiæ, and tarsi are red; the scutellar teeth are short and black; the hind tibial spurs are black. Eyes (at least when dry) light green.

T. segregatus (*Epeolus occidentalis*, var. *segregatus*) appears

to be also a distinct species, allied by the punctuation of the pleura to *T. pectoralis* (Rob.).

Tripeolus helianthi (Rob.).

I have confused this with *T. Cressoni*, which it very closely resembles. I have a female from Illinois, sent by Robertson years ago as *Epeolus mercatus*. Another female was collected by Mr. C. E. Mead, Sept. 19, 1898, at the Experiment Station near Aztec, New Mexico, at flowers of *Verbesina encelioides*. A specimen from near San Ignacio, N. M., formerly recorded as *Cressoni*, is nearly 13 millim. long, but appears to be the same species.

Tripeolus helianthi, var. *arizonensis*, var. nov.

♂.—Small, length about 8 millim.

Wings clearer, marginal cell considerably shorter and more rounded at end; labrum red; pubescent margin of first abdominal segment not broken anteriorly or posteriorly; fringe on fourth and fifth ventral segments fuscous.

Hab. Phoenix, Arizona, at flowers of *Helianthus annuus*, October 9 (*Cockerell*).

Perhaps a distinct species. The legs are coloured as in *helianthi*, the anterior legs being very dark.

Tripeolus Cressoni (Rob.), var. *fraseræ*, var. nov.

♂.—Variable in size, from about 8 to nearly 11 millim.

Antennæ and labrum entirely black; mandibles black with a red spot; hind femora red, middle femora with a black mark above; tegulæ reddish to piceous; nervures black except towards base of wing, where they become reddish; hair-stripes on mesothorax broad, flame-like, connected with a broad hairy anterior border.

Known from *helianthi* by the entirely hairy pleura, and from *occidentalis* by the black anterior femora &c.

Hab. Beulah, New Mexico, about 8000 ft., June 29, at flowers of *Fraseria* (*W. P. Cockerell*), July 12 (*W. P. Ckll.*), July 12 (*T. D. A. Ckll.*); Las Vegas, N. M., at flowers of *Sphæralcea Fendleri lobata*, July 24 (*W. Porter*). I think the insect recorded from Beulah by Mr. Viereck as *E. occidentalis* must have belonged to the present form.

Epeolus crucis, sp. n.

♀.—Length about $7\frac{1}{2}$ millim.

This is the species, found at Las Cruces by Professor C. H. T.

Townsend, which has passed as *E. compactus*, Cresson, in New Mexico, having been so identified by Mr. Fox. It may have been included by Cresson among his specimens of *compactus*; but it surely is not the species described under that name. From the description (Tr. Am. Ent. Soc. vii. p. 89) it differs thus:—Not especially compact, the abdomen at least twice as long as broad; pleura with the upper part densely white-hairy, the lower densely and coarsely rugoso-punctate, nearly free from pubescence; pale (hair) markings white, not buff; abdomen strongly pruinose all over with fine pubescence, so that the usual black markings, while indicated, are more or less obscured, the black surface being nowhere exposed; the apical white bands on the first four segments are broad and entire, and are somewhat emphasized by the fact that the apical margins of the segments, beneath the pubescence, are white; the transverse dark band (grey because pubescent) on the first segment is much produced and quite attenuated laterally. Labrum, mandibles, and first three joints of antennæ ferruginous, the flagellum brownish grey with a sort of silvery sheen above, ferruginous beneath; anterior middle of mesothorax with a white hair-patch, no separate stripes; scutellum faintly bilobed, black with two reddish spots, lateral teeth red, quite sharply pointed, not extending so far as scutellum; tegulæ bright orange-ferruginous. Wings rather short, faintly dusky, with an apical cloud; stigma and nervures of basal half of wing ferruginous, nervures of apical half dark fuscous; marginal cell rounded at end, appendiculate. Legs ferruginous, the femora strongly infuscated, spurs light ferruginous; silvery area on last dorsal segment of abdomen inconspicuous.

Epeolus beulahensis, sp. n.

♀.—Length 7 millim.

Black with yellowish-white markings due to pubescence; face, including clypeus, covered with silvery-white appressed hair; mandibles and labrum dark ferruginous; eyes strongly converging below; eyes (dry) grey; antennæ long, brown-black; end of scape and the two following joints ferruginous beneath; tubercles and tegulæ ferruginous; scutellum entirely black, faintly bilobed, the lateral teeth very short; thorax, including pleura, covered with pubescence, except disk and anterior margin (except two broad short stripes) of mesothorax, anterior half of scutellum, metathoracic enclosure, and a spot on each side of metathorax, which are bare and consequently black; legs clear red, including the spurs; anterior femora except knees, and anterior tibiæ except ends,

black; middle femora with a black stripe above. Wings quite clear, except the broad apical margin, which is faintly dusky; nervures and stigma piceous; marginal cell obliquely subtruncate, minutely appendiculate; second submarginal cell nearly as broad above as third. Abdomen thick-fusiform, the black areas very distinct, that on first segment a broad transverse band, obliquely truncate laterally; hair-bands on first and second segments narrowly interrupted medially; second with large lateral oval spots touching the band; light areas on fifth segment just meeting on disk; pygidial plate ferruginous, broadly triangular, but subtruncate at tip; second ventral segment white with a large black (nude) patch on each side; third and fourth with white hair-bands.

Hab. Beulah, New Mexico, prox. 8000 ft., July 11 (*Cockerell*).

Allied to *E. autumnalis*, Rob., but differs by the clear wings, small spines of scutellum, &c.

Epeolus olympiellus, sp. n.

♂.—Length about $7\frac{1}{2}$ millim.

Stout, with an oval abdomen, black with the usual yellowish-white markings; labrum entirely black, with two prominent apical projections; middle part of mandibles bright ferruginous; lower part of face, down to middle of clypeus, covered with silvery hair; clypeus densely rugoso-punctate; scape black; tubercles ferruginous; tegulæ dark ferruginous, minutely and densely punctulate. Wings nearly clear, apical margin broadly dusky, nervures and stigma piceous; marginal cell obliquely subtruncate, minutely appendiculate; second transverso-cubital nervure with its upper half wanting; if it were complete, the second submarginal cell would be fully twice as broad above as the third. Femora black, the knees red; tibiæ with the greater part black; tarsi ferruginous; spurs light ferruginous; lower part of pleura thinly pubescent, densely rugoso-punctate; mesothorax with the usual two stripes widely separated, and without erect pubescence; scutellum subbilobate, wholly black, the lateral teeth short, but very distinct. Abdomen with the black areas well-defined; apical bands on segments 1 to 4 interrupted in the middle, the approximating portions of the bands on 2 to 4 club-shaped; black area on first segment a very broad band, obliquely truncate laterally, and not produced much more than halfway to the lateral margins; band on second segment broadened at the sides, but no oval patch; apical plate broadly rounded, black; ventral surface with two broad white hair-bands.

Hab. Olympia, Washington State, July 2, 1896 (*Trevor Kincaid*).

Allied to *E. interruptus*, Rob., but basal joints of antennæ not red, legs with much more black, postscutellum without a tooth, &c.

Phileremus americanus, Cresson.

Hab. Beulah, N. M., at flowers of *Apocynum androsæmifolium*, July 8 (*W. P. Cockerell*).

New to New Mexico. Cresson's description is not sufficiently detailed, but I think my identification is certainly correct. This species and *P. mesillæ*, Ckll., are to all intents and purposes *Epeolus* with two submarginal cells. I am convinced that these insects stand nearer to *Epeolus* as restricted by Robertson than that genus does to *Triepeolus*.

The black band on the first abdominal segment is much less produced laterally in *P. americanus* than in *P. mesillæ*. The tringes of erect hairs on the fourth and fifth ventral segments of *P. mesillæ* are white. While *P. americanus* flies in summer in the Canadian zone, *P. mesillæ* is a spring insect of the Middle Sonoran; a male before me was collected at Mesilla Park, N. M., May 7, at flowers of *Dithyrea Wislizenii*. It has the face densely covered with white hair.

The female of *P. mesillæ* has not been described; but I have a specimen (Ckll. 2810) collected at flowers of *Sophia* at Mesilla Park. The abdomen is longer than in the male, and the hind margins of the first four segments are broadly orange, with a coppery lustre, and practically hairless, though perhaps denuded. More than the apical half of the fifth segment is orange, and the very distinct white lunule is bordered behind by brown. The pygidial plate is truncate. The knees, tibiæ, and tarsi are all ferruginous. The flagellum is ferruginous, darker above. The disk of the mesothorax is dark brown, and the two light stripes are very distinct; in the male there are two very large light patches on the anterior part of the mesothorax.

