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Brues  
1903

# Studies of Texan Bees.\*

PART I.

BY CHARLES THOMAS BRUES.

## EPEOLUS.

This genus is very well represented in the Texan fauna, its numerous and somewhat variable species being quite difficult to separate. The following dichotomy will serve to identify them with tolerable certainty.

- Legs and antennal scape wholly black . . . . . 2
- Legs and scape more or less ferruginous . . . . . 4
- 2. Mesonotum with two short buff lines on anterior middle.

1 *lunatus* Say ♂

- Mesonotum with a wide crossband of light yellow anteriorly . . . . . 3
- 3. Third submarginal cell wider above than distance from base of third submarginal to second recurrent nervure along cubital nervure, last ventral segment of female normal . . . . . 2 *remigatus* Say.

Third submarginal as wide above as distance from second recurrent nervure to base of cell below, last ventral of female prolonged and concave. . . . . 3 *concavus* Cress.

- 4. Lateral teeth of scutellum well developed, last ventral segment of female not longitudinally concave . . . . . 5

Lateral teeth of scutellum in male obsolete, the scutellum simply lobed at the sides, last ventral segment of female recurved and longitudinally concave . . . . . 4 *penicilliferus* sp. nov.

- 5. First abdominal segment with a broad median crossband, second with a narrow apical band, third and following segments black, wings dark . . . . . 5 *bifasciatus* Cress.

Abdomen not so marked . . . . . 6

- 6. Spurs of four posterior tibiae ferruginous, concolorous with the tibiae . 8
- Spurs of four posterior tibiae black . . . . . 7

- 7. Scutellar teeth ferruginous. . . . . 13
- Scutellar teeth black . . . . . 9

- 8. Small, less than 9 mm., abdomen subglobose, black on first abdominal segment much attenuated laterally . . . . . 6 *compactus* Cress.

Larger, about 11 mm., abdomen elongate, the fifth segment of female abdomen without a roughened hairy space, black on first segment a wide squarely truncate transverse band.

7a. *scelestus*, var. *tubercularis* var. nov.

- 9. Fifth abdominal segment of female at the tip not more coarsely sculptured than the remainder of the segment . . . . . 7 *scelestus* Cress.

Fifth abdominal segment of female with the usual rough hairy space.

10.

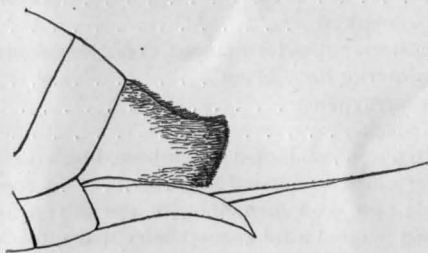
\* Contributions from the Zoological Laboratory of the University of Texas. No. 41.

10. Legs, except coxæ, ferruginous, wings hyaline, darker at tip. . . 11.  
 Femora more or less black, wings pale fuliginous in female, lighter  
 in male. . . . . 8. *mercatus* Fabr.
11. First abdominal segment wholly buff except for a very slender black  
 longitudinal line which is more or less dilated at its middle into  
 a punctiform spot . . . . . 9. *quadrifasciatus* Say.  
 First abdominal segment with a large black space . . . . . 12.
12. Black on first abdominal segment triangular, attenuated laterally.  
 10. *texanus* Cress.  
 A broad transverse black band on first segment, not triangular.  
 11. *occidentalis* Cress.  
 Black on first segment more broadly triangular than *texanus* and legs  
 darker. . . . . 12. *lunatus* Say ♀.
13. Scutellar teeth long incurved, two spots on scutellum, anterior lateral  
 corners of mesonotum and tubercles ferruginous.  
 13. *bardus* Cress.  
 Scutellar teeth triangular when seen from above, remainder of scutel-  
 lum and mesonotum black . . . . . 14. *pusillus* Cress.

*E. nigriceps* Sm. could not be inserted in the table from the description. Its habitat is given by Smith (New Species of Hymenoptera in the British Museum, 1879, p. 103) as Texas and California. It is apparently near to *E. remigatus*.

***Epeolus concavus* Cress. (Fig. 1.)**

In the female of this species the apex of the abdomen presents characters resembling those of *penicilliferus* but quite different from those of any other species we have seen. The



*Epeolus concavus* Cress. Apex of abdomen ♀.

fifth dorsal segment is almost squarely truncate behind. This appearance is partly produced by a dense brush of silvery or golden tipped, dark hairs, all of which terminate together to form a flat surface. The concave ventral plate is also peculiar to these two species.

The male greatly resembles *remigatus* but differs in having the sixth segment black, without a pale apical band.

**Epeolus penicilliferus** sp. nov.—*Female*. Length 15 mm.—Large and stout; black. Face, clypeus, vertex and posterior margin of head above covered with light ochraceous pubescence, lightest below on the clypeus. Broad posterior margin of prothorax; posterior margin of mesothorax, extending forward along the sides nearly to tegulæ; two very distinct oval bands on anterior middle; large spot on pleura covering tubercles; middle of anterior border of scutellum; posterior margin; post-scutellum and two oval spots on metathorax, covered by dense appressed light buff pubescence. Four posterior coxæ with a silvery spot externally. Abdomen broad, oval. First segment with its basal half, except basal black spot, and rather wide posterior and wide lateral margins, light buff. The central black band nearly four times as long as wide, its edges parallel, the ends obliquely truncate. Second, third and fourth segments with broad posterior bands growing lighter posteriorly. The one on the second confluent with a large nearly quadrate lateral spot of same color. Band on third segment slightly swollen laterally. Abdomen elsewhere, except apical segment, deep velvety black.

Labrum, mandibles except tips and clypeus ferruginous, the latter with large lateral foveæ, punctures fine interspersed with very coarse ones. Antennæ with first three joints and base of fourth ferruginous. Vertex closely, coarsely punctured. Mesothorax coarsely and somewhat irregularly punctured. Tubercles, tegulæ, coxæ and legs ferruginous. Spurs of four posterior tibiæ deep black. Legs somewhat silvery pubescent. Scutellum lobed behind, lateral teeth small, blunt, almost obsolete. A bunch of white hairs at base of hind wings. Apical dorsal segment of abdomen dark fuscous with very coarse punctures medially, from which arise a dense brush of stiff fuscous hairs which is truncate, causing the segment to appear obliquely truncate at an angle of 45°, tips of hairs silvery. Venter more or less ferruginous posteriorly, cinereous bands on second to fourth segments. Ventral plate longitudinally concave and recurved at tip. Wings light fuscous, nervures piceous.

*Male*. Length 13-16 mm.—Much more slender than female. Face densely silvery. Underside, especially of thorax silvery. Spots on coxæ larger. Legs more silvery and pleura completely covered with buff pubescence. Scutellar teeth obsolete. Abdomen with bands on fifth and sixth segments, all the bands narrower than in the female. Pygidium piceous. Venter with a fringe of recurved white to brownish hairs on fourth and fifth segments, also a slight silvery one on the third. Wings nearly hyaline, not darker apically.

Numerous specimens ♂ ♀ Austin (Brues) and Fedor (Birkmann).

This is a very distinct species. The female resembles *con-*

*cavus* Cress. in the sexual characters and is evidently related to that species. The ventral plates are nearly identical, the dorsal brush is obliquely instead of squarely truncate. The ornamentation, wings and legs are however entirely different and the males are totally unlike.

***Epeolus bardus* Cress.**

We have not seen any specimens of this species from Texas, although the type was from that State. Some specimens which we collected at Meredosia, Ill., agree perfectly with Cresson's description.

***Epeolus scelestus*, var. *tubercularis*, nov.**

One specimen from Austin differs from the typical *scelestus* in having ferruginous tubercles and tibial spurs, and in having the second, third and fourth ventral segments cinereous on the posterior margin. The pygidium is silvery at tip and the short lines on the mesonotum are almost confluent. As we have only one specimen, it is not possible to decide if this form be worthy of specific rank.

***Epeolus pusillus* Cress.**

This species is fairly common in the locality of Austin, especially upon the arid slopes of the hills. It ranges from Massachusetts to Texas, and is a very constant and sharply defined species, as specimens from Austin are exactly similar to ones collected at Woods Hole, Mass.

**CÆLIOXYS ♀ ♀.**

Femora and tibiae red. . . . . 2.  
Femora and tibiae black, tarsi ferruginous, apical dorsal plate of ♀ suddenly constricted at middle and angled at the sides.

**1. *rufitarsis* Sm.**

2. Basal segment of abdomen ferruginous, dorsal abdominal segments sparsely punctured on middle, venter ferruginous.

**2. *menthae* Ckll.**

Abdomen black above . . . . . 3.

3. Clypeus emarginate. . . . . 3. *Sayi* Robt.  
Clypeus not emarginate . . . . . 4.

4. Four posterior tarsi wholly black, with yellow hairs, coxæ red, length about 13 mm. . . . . 4. *texana* Cress.

Tarsi ferruginous, often darker at tips. . . . . 5.

5. Apex of apical dorsal plate of ♀ acute or obtusely pointed. . . . 6.

- Apex of apical segment rounded, the plate much constricted at the middle. . . . . 5. *8-dentata* Say.
6. Apical ventral plate of ♀ obtusely pointed at tip . . . 6. *insita* Cress.
- Apical ventral plate rounded at tip, with an appendage at apex, sides sub-parallel. . . . . 7. *scitula* Cress.

***Cœlixys menthæ* Ckil.**

A male collected by us at Galveston, Tex., upon the flowers of *Monarda* sp. (?) agrees perfectly with Cockerell's original description. This is a case of a typical New Mexican species extending into the coast region of Texas.

***Cœlixys Sayi* Robt.**

This species is widely distributed, occurring from Chicago, Ill., to New Mexico.

***Cœlixys edita* Cress.**

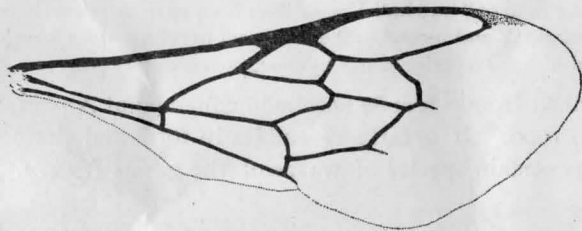
We have seen no female specimens of this species, and hence could not include it in the table.

***Melanostelis*.**

The species described below seems to belong to *melanostelis* Ashmead, although the characters of the apex of the abdomen are very different from those of the male. It is related to *Stelis* (?) *nitida* and *S.* (?) *monticola* of Cresson.

**MELANOSTELIS.** (Fig. 2.)

***Melanostelis nyssonoides* sp. nov.** *Female.* Length 7 mm.—Shining black; densely, coarsely punctured. Marked with light yellow as follows: narrow anterior orbits from near base of mandibles to above antennæ;



Forewing of *Melanostelis nyssonoides* sp. nov.

spot above eyes near posterior margin of head; two small lateral spots on anterior edge of mesothorax; four widely separated elongate spots, forming an interrupted sub-apical band on first segment of abdomen, the lateral ones largest; similar spots on second segment, but more elongate

on middle and smaller laterally; four similarly placed subquadrate spots on third segment; fourth segment with two small lateral subapical spots. Tibial spurs and spot on posterior tibiae externally at base also yellow. Face rather densely clothed with moderately long white pubescence, which becomes sparse above antennae and is nearly absent on vertex. Cheeks and head behind eyes clothed like face. Mesothorax sparsely white hairy, pleura densely so, under side of thorax densely, legs sparsely. Abdomen with apical bands of stiff white hairs directed backwards and dilated into spots laterally on first five segments, more prominent on basal segments. Ventral segments except last with apical bands of stiff white hairs. Mandibles tridentate, the anterior tooth long acute, others not very distinct; black, banded with ferruginous near tip. Clypeus truncate, the hairs on its margin light golden. Antennae black at base, slightly piceous at tip. Head very coarsely punctured, confluent so in front of ocelli. Mesonotum and scutella somewhat less coarsely punctured than head. Scutellum not armed. Tegulae black, rather finely punctured; meso-pleura very coarsely punctured, metapleura more finely. Posterior face of metathorax brilliantly polished, with a few scattered white hairs and large punctures laterally. Base of first abdominal segment also polished, concave and with scattered punctures. Abdomen elongate, widest at second segment and strongly narrowed posteriorly almost pointed; densely punctured like thorax, the punctures larger apically. Each segment having a very narrow posterior, smooth, depressed ferruginous border; which is partly concealed by the hair bands which extend over it. Apical segment with oblique sides and subtruncate apex. Ventral surface of abdomen coarsely punctured at base, finely at apex. Last ventral broadly rounded and emarginate. Legs black, coarsely punctured, tarsi piceous. Middle tibiae with one spur and bispinose outwardly at tip. Wings nearly hyaline, nervures black. Marginal cell as long as first discoidal, rounded at tip, where it is not contiguous with costal margin; bearing a very weak appendage at tip. Second submarginal cell one-half longer than first, narrowed nearly one-half toward marginal, and receiving the recurrent nervures at its basal fourth and apical fifth. Posterior wings hyaline, nervures piceous.

Described from a female specimen collected at Austin, Tex., May 18, 1900. It greatly resembles in form and character of markings certain species of wasps of the genus *Nysson*.



