

6-1-1904

The Bees of Southern California.— V.

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., "The Bees of Southern California.— V." (1904). Ca. Paper 347.
https://digitalcommons.usu.edu/bee_lab_ca/347

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.



4 *FIMBRISTYLIS* Vahl, Enum. 2:85.

Annual or perennial herbs, with culms leafy at base. Spikelets terete, several or many-flowered. Scales all fertile, spirally imbricated, mostly deciduous. Perianth none. Stamens 3. Style 2-3-cleft, often flattened and ciliate, enlarged at base, but wholly deciduous at maturity. Achenes lenticular or 3-angled.

A genus of 150 species, or more, mostly of tropical or sub-tropical climes; sparingly represented in North America. The following is the only species reaching our region.

1. *Fimbristylis thermalis*, Watson, U. S. Geo. Expl. 40th Par. 5:360; Bot. Cal. 2:223.

Perennial by horizontal, jointed, scaly rootstocks; culms few-clustered, flattened, scabridous, 4-6 dm. tall; leaves 2-3 mm. wide, rough-margined, shorter than the culms; involueral leaves 2-4, much shorter than the rays, subulate, with broad pubescent bases; umbel compound, rays 3-8; spikelets 5-15, ovoid, becoming oblong at maturity and 2cm. long; scales pale brown, concave, oblong, 4 mm. long, the midrib excurrent as a stout mucro at the obtuse apex; stamens 3, the filaments flattened and the anthers tipped with a subulate appendage; style ciliate, 2-cleft; achenes ash colored, shining, minutely perpendicularly striate, obovoid to globulose, 1mm. long.

In soil moistened by warm water, Arrowhead and Waterman Hot Springs, 1750 ft. alt., in the foothills of the San Bernardino Mts., near the town of the same name; Parish. It has been collected at hot springs at several places in Kern and Inyo counties, and in Ruby Valley, Nevada. The type was collected in Owens Valley.

Plate VIII Plant: the umbel at the left in flower, that at the right mature, the scales mostly fallen away. a. Scale X6. b. Achene, X12.

The Bees of Southern California. V.

BY T. D. A. COCKERELL.

Xylocopa.

- Fulvous, with fulvous pubescence; very large..... 1
 Black 2
 Dark blue or green 5
 1. Abdomen largely fuscous (Khasia Hills, India)....
 *rufescens*, Smith.
 Abdomen entirely fulvous (So. Calif).....
 *varipuncta*, Patton, male.
 2. Large, over 25 mm. long (So. Calif).....
 *varipuncta*, Patton, female.
 Smaller, less than 20 mm. long..... 3

3. Clypeus yellow (California)..... *orpifex*, Smith, male.
 Clypeus dark
 4. Top of head greenish, face with light hair (Surinam)..
 *barbata*, Fabr., female.
 Top of head black, face with black hair (California)..
 *orpifex*, Smith, female.
 5. Bottle-green (Northern California)..... *californica*, Cresson.
 Dark steel-blue (So. Calif).....
 *californica arizonensis* (Cresson).

Xylocopa varipuncta. Patton.

Collected by Dr. Davidson at Los Angeles; I have taken it the same place. It ranges east to Tempe, Arizona, where it has been taken in numbers by Mr. Irish. It is very interesting to find that an Indian species (*X. rufescens*) is so like the male of *varipuncta* that it is difficult to point to any important distinction. However, in *rufescens* both sexes are fulvous. My material of *rufescens* is from Mr. Sladen. *X. fimbriata*, Fabr., is said to have been taken in the Yosemite Valley, but I have little doubt that the specimens were *varipuncta*. *X. fimbriata* is a neotropical species; the most northern record that can be trusted seems to be Tepic, Mexico. It is easily distinguished from *varipuncta* by the fact that the female has a ridge on the vertex of the head, interrupted in the middle, and laterally elevated into conspicuous tubercles.

Xylocopa orpifex, Smith.

Obtained by Dr. Davidson at Los Angeles, Rock Creek and Tehachapi. It goes north to Oregon, and is one of the most characteristic bees of the Pacific Coast.

Xylocopa californica arizonensis, (Cresson).

Collected by Dr. Davidson at Los Angeles; it goes east to New Mexico, and Dr. L. O. Howard has collected it as far south as San Jose de Guaymas, Mexico. In Northern California it is replaced by the true *californica*. I reduce *arizonensis* to subspecific rank because it seems to have no valid structural characters, and the color is not altogether reliable. Mr. J. A. G. Rehn has very kindly compared Cresson's types of *californica* and *arizonensis*, and finds that both have the tubercle before the anterior ocellus in the female. The color is very different, but Mr. Rehn says that one of Cresson's types of *californica* has the abdomen colored as in *arizonensis*.

*The species from other regions are included for comparison.

Anthophora.

There are several species of *Anthophora*, belonging to the sub-genus *Amegilla*, Friese, in which the hind-margins of the

menophas - Apidae - Apidae - Xylocopinae - Xylocopa
 " " " Anthophorinae - Anthophorini - Anthophora
 " " " Apidae - Bombini - Bombus

abominal segments have a chalky-white, ivory-colored or occasionally quite yellow appearance, not at all due to hair. At first, they look very like the species with white or whitish hair-bands, but a close examination shows that the color is in the tegument itself. The males of these species may be distinguished as follows:

- | | |
|---|---------------------------------------|
| Face-marks white or whitish..... | 1 |
| Face-marks yellow | 5 |
| 1. Thorax with black and dull white hair mixed; sides of
clypeus very broadly bordered with black; apex of
abdomen with two short spines, (New Mexico)... | |
| cleomis , Ckll. | |
| Thorax without black hair..... | 2 |
| 2. Hair on thorax pale yellowish..... | 3 |
| Hair on thorax dull white or grey..... | 4 |
| 3. Clypeus with subbasal black spots (Illinois)..... | |
| Walshii , Cresson. | |
| Clypeus with subbasal short black lines (Colorado &c.)
..... | |
| Smithii , Cresson. | |
| 4. Clypeus with subbasal black spots; apex of abdomen
with a concave truncation (New Mexico)..... | |
| marginata , Smith. | |
| 5. Thorax with black hair..... | 6 |
| Thorax without black hair..... | 7 |
| 6. Length 13 mm. (Mexico)..... | tarsata , Dours |
| Smaller (So. Calif) | tarsata subtarsata , n. subsp. |
| 7. Hair of thorax fulvous (California to New Mexico)..
..... | californica , Cresson. |
| Hair of thorax whitish (Los Angeles, Calif)..... | |
| quinquefasciata , Provancher. | |
- There remains one species, **A. texana**, Cresson, of which the male is unknown. The female has the hair of the thorax ochraceous, slightly mixed with black.

***Anthophora tarsata subtarsata*, n. subsp.**
One of each sex taken by Dr. Davidson at Los Angeles. The female is a little less than 12 mm. long, and agrees with the description of **tarsata** except that it is smaller, the hairs on the sides of the ventral segments of the abdomen are white (pale fulvous in **tarsata**), the brush on the end of the first joint of the hind tarsi is ferruginous (black in **tarsata**), and the legs are black (except for the hair) with only the tarsi dark ferruginous. It agrees in size with **A. texana** (from Texas), but differs by the hair on face and cheeks being ochraceous (white in **texana**), the apical part of the mandibles dark reddish (yellowish in **texana**), the hair of vertex and thorax being copiously mixed with black, and the abdominal segments beyond the first having much short

black hair. The male is a little over 11 mm. long, similar to the female but with the labrum, clypeus, supraclypeal band, lateral face-marks, large mark on mandibles, and under side of scape all yellow (reddened by cyanide in the specimen studied). The thoracic pubescence is quite bright fulvous, mixed with black. The apex of the abdomen is broadly rounded, with a deep median notch: not at all spinose. Legs colored as in the female; middle tarsi simple; hind femora greatly swollen; hind tibiae broad and thick, with a strong apical tooth; basal joint of hind tarsi broad, ferruginous, with two teeth, the first one much the longest. There is a small black spot on each side of the clypeus.

I had thought that this might possibly be *A. quinquefasciata*, Provancher, which I have not seen; but Provancher describes the thoracic pubescence as "blanche," and says nothing about any intermixture of black; neither does he mention any spines on the hind tibiae and tarsi.

BOMBUS.

Bombus californicus, Smith.

This handsome species is easily known by its black color, with the hair on the anterior part of the thorax, and a band on the hinder part of the abdomen, yellow. The typical **californicus** has the hair of the head black, but in the variety **columbicus** (Dalla Torre) the hair of the face and the middle of the top of the head is yellow. In the specimens seen by me, the malar space of the female is considerably larger in **californicus** than in **columbicus**, and for this reason I am strongly inclined to restore the latter to the rank of a species. It would be a matter of considerable interest for the naturalist of California to investigate the matter, and see whether the two kinds ever come from the same nest. Dr. Davidson has collected both kinds at Los Angeles, and the true **californicus** also on Catalina Island. A worker of **columbicus** was obtained by him at Bear Valley. The **columbicus** form was also collected by Mr. Ehrhorn at Alum Rock Park, San Jose, Calif., in 1902.

Bombus edwardsii, Cresson.

Two taken by Dr. Davidson at Los Angeles. Differs from *B. californicus* in having the hair of the scutellum and base of abdomen yellow. As regards the banding of the abdomen, *B. edwardsii* is to *B. prunellae*, as *B. ternarius* is to *B. justus*.

Bombus sonorus, Say.

San Pedro, common (Cockerell). Visits flowers of **Datura meteloides** early in the morning. A species with the pubes-

cence mainly yellow, but black between the wings and on the pleura.

Psithyrus californicus, (Cresson.)

Taken by Dr. Davidson at Los Angeles and Switzers. This is known only in the male, and in all probability it will prove to be a male **Bombus**, like the structurally similar "**P.**" **elatus**.

Flora of San Clemente Island. II.

BY BLANCHE TRASK.

There is but one man who knows San Clemente Island. This is John Robearts, and he has lived on the island over twenty years. I have named the most remarkable and picturesque of all the gorges on the north coast "Robearts' Gorge," in commemoration of his heroic explorations for the love of nature in its sternest forms. This gorge can be plainly viewed from a ship at sea, its pinnacles uplifted for a thousand feet. It lies a half hour's row westward from Mosquito Harbor and can easily be recognized.

Generally, there is that wind from the west; at times it brings a wild storm of sand, when the very air is thick and you have to watch your guy ropes from early morn to night, and 'tis well if even then the breath abates—yet gentle days intervene when the placidity is dream-like.

An interesting phenomenon may be constantly observed from the heights. Great banks of cloud seem continually to be drawn to the highest elevation on the north crest, and when about one mile off shore evidently there is encountered an opposing force, for turmoil ensues and dissolution follows, with the result that although the larger part of the cloud-rack continues its old course and reaches the height, yet another portion is lost. It hesitates, is carried far out to sea and eventually rounds the extreme west end and drifts along the dunes of the "Sou'-west Harbor."

"—Puts forth an arm and loiters,
slowly drawn—"

Once observed—twice—thrice! You begin to think it is more than an accidental occurrence. It gratified me afterward to find it was made note of by the U. S. Coast and Geodetic Survey. Johnny says it has been going on ever since he can remember.

In the deep gorges under these beclouded headlands and on the bold steepes is the growth remarkable as would be expected.

Small stunted groves of *Lyonothamnus floribundus* var.

asplenifolius are occasionally met on the south coast heights, but it is on the north coast that it ever follows—who can say why—ledges of exposed rocks as trails and under these beclouded crests it marches in long defiles like a conquering army, one to two feet in diameter; ten to twenty-five feet high; strong, heavy trunks, and never an entire leaf; it should stand as a species by itself; the same tree which thrives in similar exposures on Santa Cruz and Santa Rosa Islands, while on Catalina, the trees have a different aspect: entire leaves, and assume tall tapering figures.

Under these same heights in San Clemente, too, the oaks are seen in companies; *Quercus tomentella* and *Q. chrysolepis*, low and defiant often, with gray dead tops and outspread limbs; gnarled trunks one to two feet in diameter; you can skirt the coast-line in a skiff and look up and count the companies of the oaks and *Lyonothamnus* trees by defiles as you pass rowing; count them to the very summits.

The descent from the heights to the sea in these regions is perilous in the extreme. Clovers are four to six feet high, *Trifolium tridentatum* being the most common growth, is so dense under the feet that neither trail nor rocks can be discerned and you have to feel your way with hands and feet over jagged rocks, while the strong clovers trap you at every step like vines.

Trifolium Palmeri is common, nearer the sea than *T. gracilentum* or *T. tridentatum*.

Besides all these hindrances, there is yet to be mentioned the chains which guard San Clemente Island, whose links are caves innumerable. It is a relief to the eye to come across a stretch which has not its gaping rents; the gorge is everywhere present and the rock-strewn terrace and the leaping arroyo; but the light of the caves is the *Convolvulus macrostegius*.

There is one open mouth on the "nor'-west" coast where the *Dendromecon* flashes—never in truer glory or more profusion of bloom. It was also seen towards the East End at the heads of some of the precipitous dips, seven years ago, though of course not so large as in this protected mouth.

Antirrhinum speciosum is as common in every break as are the boulders which take their places as sand on the beaches; happy under all circumstances; enkindling the darkest gulches where the o'er-toppling walls are shutting out the sky.

Cereus Emoryi traverses the entire south coast, swinging from many a gaping cave, while *Opuntia prolifera* increases in numbers as you near the East End, until it fairly besets the trail, making it a serious undertaking for foot of man or beast. *Opuntia Engelmanni* var. *littoralis* is not frequent, but seems to bloom profusely and to bear well in an occasional spot.