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A CATALOGUE OF THE BEES OF CALIFORNIA.

BY T. D. A. COCKERELL, EAST LAS VEGAS, N. MEX.

In the Report of the Agricultural experiment station of the University of California for 1898–1901, recently published, Mr. Carroll Fowler gives an account of the long-tongued bees of California. This is a very useful paper, so far as it goes, and Mr. Fowler has been able to make important additions to our knowledge of California bees. Unfortunately, however, the paper was prepared in 1899, and has not been brought up to date; consequently it omits numerous species recorded since that year, and is not altogether modern in the matter of generic nomenclature. It also omits several species published before 1899, and in a good many cases the names of species are incorrectly spelled. In some cases, I am inclined to doubt the identification of the species, but unless I have actual knowledge to the contrary, I must for the present treat all published records as correct.

The list here presented includes also the short-tongued bees of California, for completeness’ sake. It need hardly be said, that we know comparatively little about California bees; it is quite certain that any student who takes up this group in California will find very numerous new species. The list now offered is intended to be of service to such a student or students, as it is hoped that the publication of Mr. Fowler’s paper will have created an interest in the bees.

Colletes Latr.
- americana Cr., La Jolla.
- californica Prov.

Prosopis Fabr. (cf. Entom., 1898, p. 218.)
- polifoli Ckll., Mt. Lowe.
- coquillettii Ckll., Los Angeles Co.
- bakeri Ckll.
- ruidosensis Ckll., var.
- suffusa Ckll., var.
- tridentula Ckll.
- mesillae Ckll., Los Angeles Co.
- varifrons Cr.

Halictus Latr.
- californicus (Prov.).
- farinosus Sm.
- gracilis Rob.
- tegularis Rob. (belongs to Chloralictu Rob.).
- armaticeps Cr.

Sphecodes Latr.
- mandibularis Cr., San Pedro.

Agapostemon Sm.
- femoratus Crawf.
- californicus Crawf., San Pedro, etc.
- texanus Cr., San Pedro.

Andrena Fabr.
- knuthiana Ckll., Berkeley.
- nigra Prov.
- nigripes Prov.
- phenax Ckll., only two submarginal cells.
- foxii Ckll., only two submarginal cells.
- chalybaea (Cr.), only two submarginal cells.
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_Diandrena_ is a new subgenus or genus for the blue species of California with only two submarginal cells; type _chalybea_, described as a _Panurgus_. Here also belongs _A. foxii_, and, I think, _A. phenax._

**Parandrena Rob.**

_regularis_ (Cr.).
_concinnula_ Ckll., So. Cal.
_enocki_ Ckll., So. Cal.

**Hesperapis Ckll.**

eumorpha (Ckll.), near Los Angeles (Davidson).

**Halictoides Nyl.**

_saundersi_ Ckll.
_mulleri_ Ckll.
_virgatus_ Ckll.
_davidsoni_ Ckll., San Gabriel Mts.

**Micrandrena Ashm.**

_pacifica_ Ashm. (a smallish black species with a large reddish stigma; detailed description not published yet).

**Nomia Latr.**

Two undescribed species from California are in the National museum, bearing MS. names by Ashmead. One is near _bakeri_; the other near _foxii_ but larger, though not nearly so large as _nortoni._


_edwardsii_ (Cr.).
_scutellaris_ (Fowler).
_visaliensis_ (Fowler).
_anthidius_ (Fowler).
_zonalis_ (Cr.).
_cincta_ (Cr.).

**Calliopsis Sm.**

californicus Cr.
_obscurellus_ Cr.

**Panurginus Nyl.**

cressoniellus Ckll.
_albitarsis_ (Cr.).


_atriceps_ (Cr.).

**Perdita Sm.**

claypolei Ckll., Mt. Lowe.
_rhois_ Ckll., San Diego.
_rhois reducta_ Ckll., San Diego.
_californica_ (Cr.).
_interrupta_ Cr.
_trisignata_ Ckll.

**Nomada Fabr.**

citrina Cr.
_interruptella_ Fowler.
_obliquella_ Fowler.
_obscurella_ Fowler.
_rivalis_ Cr.
_suavis_ Cr.

rubrica Prov. (Fowler makes this a var. of _bisignata_, but Robertson has shown that _bisignata_ cannot be certainly recognized).

crotchii Cr.
_edwardsii_ Cr.
_melliventris_ Cr.
_opposita_ Cr.
_vinnula_ Cr.
_civilis_ Cr.
_flavipes_ Prov.
_erythraea_ Dalla Torre (rubra Prov.).
_fragilis_ Cr.
_vincta_ Say.
_lepida_ Cr.

_bisignata_ “Say,” Fowler.
_formula_ Viereck, San Pedro.

**Neopasites Ashm.**

_fulviventris_ (Cr.).

**Epeolus Latr.**

_compactus_ Cr.
_nigriceps_ Sm.
occidentalis Cr.
superbus Prov.
californicus Cr.
faceatus Prov.

**Triepolus Rob.**
concavus (Cr.).

**Melecta Latr.**
californica Cr.

**Zacoscia Ashm.**
maculata (Cr.), San Pedro.

**Bombomelecta Patt.**
edwardsii (Cr.).
separata (Cr.).
thoracica (Cr.).

**Stelis Panz.**
laticincta Cr.
sexmaculata Ashm.

**Osmia Panz.**
californica Cr.
cobaltina Cr.
maura Cr.
quadrieps Cr.
exigua Cr.
atriventre Cr.
dubia Cr.
purpurea Cr.
lignaria Say.
nigrifrons Cr.
brevis Cr.
albiventeris Cr.
rustica “Cr.” Fowler (Robertson says that *rustica* is identical with *albiventeris*).

**Monumetha Cr.** (genus hardly distinct from *Osmia*).
imperfecta Prov..

**Heriades Spin.**
odontura Ckll., near Los Angeles.
glaucum Fowler.

**Alabincinctum Prov., probably an Ashmeadiella.**
semirubra Ckll., not a true *Heriades*.

**Ashmeadiella Ckll.**
californica (Ashm.), described under *Callicodoma*.

**Alcidamea Ckll.**
ululalis Ckll., Mojave Desert.
simplex (Cr.) (*producta* Cr.).

**Andronicus Ckll.**
hesperius Ckll., sp. nov. ♂. About 12 mm. long, black, closely punctured; wings smoky; flagellum brown beneath; tarsi with short reddish hair. Clypeus with the anterior border thickened and faintly concave; scape stout; flagellum like that of *Alcidamea*, but not hooked at the tip; first ventral segment of abdomen produced into a backwardly directed spine at the middle of its posterior margin; seventh dorsal segment subtruncate with rounded edges.
Rock Creek, Mojave Desert.

**Cheiostoma Latr.**
californicum Cr.
australis Ckll., near Los Angeles.

**Anthidium Fabr.**
atriventre Cr.
emarginatum Say.
maculosum Cr.
tricuspidum Prov.
collectum Huard (*compactum* Prov.).
californicum Cr.
edwardsii Cr.
pallivent Cr.
illustr Cr.
macinifrons (Sm.), Fowler.

**Dianthidium Ckll.**
consimile (Ashm.).
ehrhorni (Ckll.), Mojave Desert.

**Megachile Latr.**
ocidentalis leucotricha Ckll., near Los Angeles.
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fidelis Cr.
fidelis concinnula Ckll.
davidsoni Ckll., near Los Angeles.
angelarum Ckll.
vidua Sm. (frigida Sm.).
latimanus Say.
pugnata Say.
montivaga Cr.
brevis Say.
exilis Cr. (studioa Ckll.).
frugalis Cr., San Gabriel Mts., Rock Creek,
Mojave Desert (Davidson), near Los Angeles (Davidson).
manifesta Cr., var. Banning, Riverside Co.
pruina Sm., Catalina Island and near Los Angeles (Davidson).

Lithurgopsis Fox.
apicalis (Cr.), var. opuntiae Ckll., J, Palm Springs, Colorado Desert (Davidson).

Ceratina Latr.
dupla Say.
tejonensis Cr.
acantha Prov.
arizonensis Ckll., Mt. Lowe.

Melissodes Latr.
actuosa Cr.
californica Cr.
personatella Ckll., La Jolla.
lupina Cr.
nigrifrons Cr.
stretchii Cr.
olivacea Cr. ("Appears to be related to the genus Ancyloscelis in neuration and length of tongue; however, the \(J\) has the clypeus yellow; the abdomen in both sexes is covered with a dense appressed pubescence like the male of Eulechnia grisella, and egg-shaped; the claws are blunt and cleft in both sexes."—H. L. Viereck, litt. 1901).
menuacha Cr.
tepida Cr.
obliqua Say.
montana Cr., San Pedro, La Jolla.

Diadasia Patt.
bituberculata (Cr.), described under Melissodes. Mr. Viereck tells me it is a Diadasia.
nerea Fowler.
cinerea Fowler.
enavata Cr.
albostellata Prov.
fricula Prov. (Fowler says this is enavata).
rinconis opuntiae Ckll., San Pedro.
fricula Ckll., So. Cal.
australis Cr., San Bernardino.

Xenoglossa Sm.
strenua (Cr.), var. cucurbitatum Ckll.
patricia angustior Ckll., Los Angeles.

Peponapis Rob.
angelica Ckll. (pruinae Fowler, not Say).

Synhalonia Patt.
edwardsii (Cr.).
californica Fowler.
albicans Prov.
albopilosa Fowler.
frater (Cr.) (speciosa Cr.).
acerba Cr.
nevadensis (Cr.) (intrudens Cr.).

Emphoropsis Ashm.
depressus (Fowler).
miserabilis (Cr.).
floridanus (Sm.).
There is also an undescribed species which Ashmead made the type of Meliturgopsis.

Anthophora Latr.
edwardsii Cr.
pacifica Cr.
urbana Cr.
californica Cr.
crotchii Cr.
catalinae Ckll., Catalina Is.
exigua Cr.
maculifrons Cr.
quinquefasciata Prov.
flavocincta Huard (nigrocincta Prov.).
Lycia cognataria Guenee. The egg has been noticed by A. P. W. Cramer and there are several good descriptions of the mature larva extant, besides a poor figure, published by Lintner. The larval stages have not been before noticed. I am indebted to Mr. H. H. Lyman of Montreal for the eggs, which hatched before arrival. The larvae fed readily on maple, but are, apparently, rather general feeders.

**Egg.** Elliptical, roundedly and distinctly flattened above and below, ends rounded and much alike, no distinct flattening of micropylar end nor marked depression of the other end. Reticulations distinct, in longitudinal rows, forming waved ridges, the cross striae being a little weaker than the longitudinal lines. Reticulations confused at the ends, and less strongly marked. Size .6 X .4 X .3 mm. “Color bright green. Laid loose in large numbers” (Lyman).

**Stage I.** Head rounded, bilobed, full, blackish over the lobes, dull sordid on clypeus and mouth; sutures of clypeus deep, well marked; width about .3 mm. Body normal, moderately robust, whitish, becoming sordid green from the food; a dull purple, broad, subdorsal band, obscurely joined intersegmentally on the abdomen and completely so on joints 10-13, separate on thorax; a broad, diffuse, dull purplish ventral band, later resolving into a series of medioventral patches. Thoracic feet black, abdominal ones dark outwardly. Tubercles black, small, normal; setae inconspicuous. Cervical shield colored like the body, undifferentiated, but anal plate and anal leg shields triangular, broadly blackish edged.