

The Tenebrionidae of California: A Time Sensitive Snapshot Assessment

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Academic editor: P. Bouchard | Received 29 October 2013 | Accepted 1 February 2014 | Published 12 June 2014

<http://zoobank.org/D530808E-29A0-444C-B87C-CD01AF10DDF7>

Citation: Aalbu RL, Smith AD (2014) The Tenebrionidae of California: A Time Sensitive Snapshot Assessment. In: Bouchard P, Smith AD (Eds) Proceedings of the Third International Tenebrionoidea Symposium, Arizona, USA, 2013. ZooKeys 415: 9–22. doi: 10.3897/zookeys.415.6523

Abstract

Due to a diversity of habitats and its geologic history, the US state of California hosts a spectacular assemblage of darkling beetle species (Coleoptera: Tenebrionidae). In addition to being part of the California Floristic Province, one of 34 global biodiversity hotspots identified by Conservation International, California also has additional areas which are parts of the Great Basin, Mojave, and Sonoran deserts. California is divided into nine floristic regions. Each region is assessed in terms of faunal composition and endemism. A “snapshot” of our present knowledge of the Tenebrionidae indicates that 447 currently recognized species, representing 108 genera, occur in California of which one hundred and ninety are endemic. California is compared to other nearby regions in diversity and endemism. An analysis of currently valid species vs a more realistic species account based on unpublished records of likely synonyms and known species yet to be described in the scientific literature is presented. The California Floristic Region, rather than other more arid parts of California, has the highest number of total and endemic species. Because of their high diversity and endemism, tenebrionids could potentially provide a valuable tool for monitoring the environment for conservation purposes.

Keywords

California, Floristic Regions, Tenebrionidae, Biodiversity, Hotspots, Conservation

Introduction

The state of California is part of the California Floristic Province, one of 34 global biodiversity hotspots identified by Conservation International¹. Over 50 percent of the world's plant species and 42 percent of all terrestrial vertebrate species are endemic to these 34 biodiversity hotspots, a total area which covers only 2.3 percent of the Earth's land surface. The California Floristic Province includes most of western California and a small section of Baja California and Southwestern Oregon. On Conservation International's California Floristic Province website, although numbers of endemic plants, birds, mammals and amphibians are listed, nothing is mentioned concerning insects². California also includes areas not considered to be part of the California floristic province. These areas contain aspects of the Great Basin, Mojave, and Sonoran deserts.

In 2010 the Essig Museum of Entomology at University of California, Berkeley began CalBug (NSF-DBI: 0956389), a collaborative project among nine California museums with a goal to digitize and geographically reference over one million specimens from target groups and localities³. Tenebrionidae was one of the focus groups in Coleoptera. However, to date, few tenebrionids (2%) have been digitized and georeferenced, all at Santa Barbara Museum of Natural History (SBMNH).

In 2005 Mike Caterino, formerly at SBMNH, solicited the author's help in contributing to a web accessible list of "Beetles of California". This was followed by a visit to the SBMNH in 2007 to provide additional identifications of beetles in the collection. The list, last updated in 2009, is posted on <http://www.sbnature.org/collections/invert/entom/cbphomepage.php> [accessed on December 9, 2013]. An updated list is present here (Fig. 1) that reflects a current "snapshot" of our knowledge of this fauna. It is also available online (<http://insectbiodiversitylab.org/CaliforniaDarklingBeetles.html>). To account for active research and our growing understanding of the California fauna, the list includes a separate column assessing the potential that each species will be synonymized in future works (see below). Both the current valid species list and a list excluding likely synonymous species, but including known undescribed species, are analyzed based on each species' known occurrence in each of California's nine floristic provinces to assess number of tenebrionid species in each province and their endemism.

Materials and methods

Sources of Information other than the SBMNH list above include publications from early workers (LeConte, Horn, Motschulsky, Casey, Blaisdell, and others), modern workers

¹ See http://www.conservation.org/where/priority_areas/hotspots/Pages/hotspots_main.aspx [accessed on December 9, 2013].

² See http://www.conservation.org/WHERE/PRIORITY_AREAS/HOTSPOTS/NORTH_CENTRAL_AMERICA/CALIFORNIA-FLORISTIC-PROVINCE/Pages/default.aspx [accessed on December 9, 2013].

³ See <http://calbug.berkeley.edu/data.html> [accessed on December 9, 2013].

(Doyen, Triplehorn, Somerby, Brown, Smith, and others)⁴, and modern revisions: Parts of the Coniontini (Doyen 1984), Cnodalonini (Doyen 1973), Amphidorini (Aalbu et al. 2012, Triplehorn and Thomas 2011), Edrotini (Pape et al. 2007), Stenosini (Papp 1981) and Asidini (Brown and Doyen 1991, Smith 2013) as well as complete revisions of the Cryptoglossini (Aalbu 2005) and Anepsiini (Doyen 1987). Other major sources of information include the Species Database of the California Academy of Sciences and information from the author's personal collection (the Rolf L. Aalbu Collection – RLAC), as well as visits to all major beetle collections in California and many others outside of the state. Information for potential future species synonymies and undescribed species come from the authors' research, discussions with other tenebrionid workers, and currently unpublished studies by the authors, Ron Somerby, and Charles Triplehorn.

To account for the many groups in which data has been accumulated but no recent revision has been published, the Tenebrionidae records from California were categorized in the following status groups based on their current and future status: 0), Known new but undescribed species; 1), Currently projected valid species and subspecies⁵; 2) Most likely synonyms, but synonymy not determined without further study; and 3), Known but unpublished synonyms. Published synonyms were omitted. The assessment was then divided into two categories: A.) Described Species Count: All species currently valid in the literature including known synonyms (groups 1, 2, and 3 above). B), Realistic Species Count: (groups 0, 1, and 2 above). Endemism was calculated on a strict basis (species endemic to specific regions which include parts of adjacent areas not in California were not considered).

For the purpose of this study, California is divided into nine floristic regions modified from a map by the Jepson Herbarium⁶ (Fig. 1). Four of these are not considered parts of the California Floristic Region. These are: Region 1, The Northern Great Basin Province, including the Warner Mountains and Modoc Plateau; Region 2, The Southern Great Basin Province, including the White and Inyo Mountains and intermountain valleys east of the Sierras Nevada's and White Mountains; Region 3, The Mojave Desert and associated desert mountains; and Region 4, The Sonoran (Colorado) Desert and associated desert mountains.

Regions belonging to the California Floristic Region include: Region 5. The South Coast, including the Transverse and Peninsular Ranges and Channel Islands; Region 6, The Sierra Nevada Mountains; Region 7, The Central Valley; Region 8, The Central Coast, including the San Francisco Bay area and Coast Ranges; and Region 9, The Northern Coast, including the Cascade and Klamath Ranges as well as the Northern Coast Ranges. In these regions we examined species occurrence and regional endemism. Regional endemism was also calculated on a strict basis as described above.

⁴ All publications prior to 2002 are listed in Aalbu et al. 2002. Newer pertinent publications are listed in the reference section below.

⁵ Some of the early described species as Edrotines etc., described by early workers as Casey may potentially be synonyms.

⁶ Geographic subdivisions of California, Jepson Flora Project (eds.) [2013] Jepson eFlora, <http://ucjeps.berkeley.edu/IJM.html> [accessed on December 9, 2013].

Results and discussion

It is important to keep in mind that this study represents a snapshot in time and thus is subject to change as new information becomes available. However, this assessment is also a balance between future synonymies from previous descriptions (Casey and other early workers: *Coniontis*, various genera of edrotines) on one side and new species discoveries, as well as new foreign introductions, on the other. At present, we know of at least eight distinct new species.

A list of all described species is presented in phylogenetic order (Fig. 1). Differences in group numbers and endemics are presented in Table 1. Differences in species count categories (numbers, endemics and percent endemism) are shown in Table 2. It is notable that despite the differences in numbers, both analyses (described vs realistic) indicate a very similar percent endemism. Since this study is intended as a “snapshot” of our current knowledge, species counts and analysis, unless otherwise specified, include only groups 0, 1, and 2 (Realistic Species Count). This tenebrionid inventory of California thus includes 34 tribes, 118 genera and subgenera, 447 species and sub-species (including known new species). Of these, 190 are endemic to California. The present SBMNH web list includes 471 species from California. Of these, 10 are collection data errors. These included *Argoporis alutacea* Casey; *Asidopsis consentanea* Casey; *Asidopsis planata* (Horn); *Cryptoglossa variolosa* Horn; *Eleodes alticola* Blaisdell; *Eleodes subnitens* LeConte; *Neatus tenebrioides* Beauvois; *Platydemia micans* Zimmerman; and *Stenomorphia obovatus* (LeConte) none of which are known to occur in California. Others are known but unpublished synonymies (status group 3).

The fauna is composed of the following subfamilies in descending species number: Pimeliinae (204), Tenebrioninae (168), Alleculinae (33), Diaperinae (23), Stenochiini (11), Lagriinae (7), and Phrenapatinae (1). California is clearly a center of diversity for the family Tenebrionidae, representing 38% of all U.S. species. The most abundant tribes and genera in terms of species numbers are: Amphidorini (73 species), Edrotini (71 species), Coniontini (53 species), Alleculini (33 species), Opatrini (26 species), Asidini (25 species), and Helopini (21 species); and genera such as *Eleodes* (64 species), *Stenomorphia* (19 species), *Coniontis* (38 species), and *Metoponium* and *Helops* each with 21 species. A number of tribes such as Amphidorini, Coniontini, and Nyctopporini, and genera such as *Eleodes*, *Coelocnemis*, *Nyctoporis*, *Asbolus*, *Coniontis*, and *Alaudes* also exhibit their greatest diversity in genera/species in California.

Compared to other known nearby geographical regions, California also has a high species per area diversity (1.05 per 1000 square miles) which is higher than the U.S. as a whole⁷ (.12) or even Mexico⁷ (.68), but not Baja California⁷ which has a species diversity of 5.47 (see Table 3). California shares species with the following adjoining areas in descending order: 1. Southwest U.S.: (including Arizona, 101, Nevada, 76; New Mexico, 23; and Utah, 42). 2. Mexico (mainland 32, Baja California, 68) and 3. Northwest U.S. (including Oregon, 56; Washington, 33; and Idaho, 32. A number of

⁷ Numbers probably 5–8 years old.

Table 1. Status Groups and Endemicity. Group 0: Known new but undescribed species; Group 1: currently projected valid species and subspecies; Group 2: most likely synonyms, but synonymy not determined without further study; and Group 3: known but unpublished synonyms.

Status group	Non endemic species	Endemic species	Total
0	2	8	10
1	249	155	404
2	6	27	33
3	22	17	39
	279	207	486

Table 2. California Species, Described vs Realistic. Species counts for the state and % endemicity based on current valid species (A) and a realistic estimation of actual species counts (B).

Category	Status groups	Species	Endemics	Total	% Endemic
A: Described	1, 2 & 3	277	199	476	41.81%
B: Realistic	0, 1, & 2	257	190	447	42.51%

Table 3. Comparison of currently valid species/endemics per area for various regions.

Region	Number of species	Number of endemics	% Endemism	Area (km ²)	Species diversity per 1000 km ²
California*	447**	190	43%	423970	1.05
USA***	1184	?	>60%	9827000	0.12
Mexico***	1340	723	54%	1973000	0.68
Baja California***	404	225	56%	73909	5.47

* Bordered by 3 states and Baja California.

** 34% of all U.S. species.

*** numbers probably 5–8 years old.

species are known only from the type and have undetermined California localities (16). Twenty species are cosmopolitan pests. See Fig. 1 for additional locality information.

The distribution of California tenebrionids can be divided into six patterns: 1), Widespread species, 2), Restricted but not especially hard to collect species (Caves, single canyons (*Eschatomoxys andrewsi* Aalbu & Thomas, *Eleodes* (*Caverneleodes*) *microps* Aalbu et al.), 3), Restricted but very difficult to collect species (*Eleodimorpha*, *Oxygonodera*), 4), Historically abundant but now difficult to collect species (*Eleodes* (*Melaneleodes*) *quadricollis* Eschscholtz), 5) Introduced species composed of standard stored product pests as well as other introductions not associated with stored products (*Opatrioides punctulatus* Brullé and *Gonocephalum* sp.) and 6) species only known from the type material with specific locality unknown. California also has some unusual darkling beetle occurrences and absences compared to the rest of North America. One is the presence of two species from the Asian tribe Laenini, which is otherwise absent on the continent. Another is the absence of the genus *Strongylium*, a species-rich genus found worldwide including in Arizona (2 species) and most of the rest of the United States.

Regional analysis

For the purpose of this study, California was into 9 floristic regions (Fig. 2) to examine species occurrence and regional endemism. Regional endemism was also calculated on a strict basis as mentioned above. A list of all regional endemics is presented as well as total species numbers for the region and percent endemism (Fig. 3). These areas are ranked in Table 4. Adding the above data suggests that over 62% (62.11) of the endemic species in California are regional endemics while 43% (42.60) of all tenebrionids are endemic in terms of being regional endemics or multiple region endemics.

One may note that, somewhat surprisingly, subregions within the California Floristic Region have more regional endemic species (87) as well as California endemic species (124) despite the common association of tenebrionids with desert habitats, where they are always abundant (see Table 5). On this table, “all endemics” in the “unknown...” region refer to species where the type locality is simply listed as “California”. This “snapshot” assessment emphasizes how much remains to be done in this area, especially in revising tribes or genera which have not been looked at since their description, as well as rediscovering species of “unknown” California localities. Additional new species, as well as new introductions, will undoubtedly be discovered as well. It is hoped that this type of assessment can be useful in environment monitoring and conservation studies.

Table 4. Comparison of regional endemics and all endemics for California.

Region	Endemic species	All species	% Endemic	% of all California Endemics
5. South Coast & Islands	42	171	24.56%	35.59%
8. Central Coast & Bay	20	110	18.18%	16.95%
6. Sierra Nevada	16	100	16.00%	13.56%
4. Sonoran Desert	13	113	11.50%	11.02%
3. Mojave Desert	12	112	10.71%	10.17%
8. Central Valley	5	76	6.58%	4.24%
2. South Great Basin	5	55	9.09%	4.24%
9. North Coast	4	73	5.48%	3.39%
1: North Great Basin	1	29	3.45%	0.85%

Table 5. Comparison of species endemism for California Floristic affinities.

Floristic Region	All Endemics	Non Endemic	All Species
Desert Areas	37	94	131
California Floristic Province	124	81	205
Both Areas	16	60	76
Unknown California locality, cosmopolitan or introduction	13	22	35

California Tenebrionidae (January 2014)

Figure 1. Checklist of the California Tenebrionidae species with distributions and likelihood for future synonymy. Distribution numbers refer to California regions (Fig. 2) and the following: **ME** (Mexico) **BC** (Baja California) **NV** (Nevada) **AZ** (Arizona) **ID** (Idaho) **UT** (Utah) **NM** (New Mexico) **OR** (Oregon) **WA** (Washington) **CA** (Canada) **U** (unknown California distribution) **C** (refers to cosmopolitan pest), **ASIA** **SA** (South America), and **OW** (Old World).

California Tenebrionidae (January 2014)

Endemic #	Status CA	group	Species	Distribution	Endemic #	Status CA	group	Species	Distribution
105	<input type="checkbox"/>	1	<i>Coniontis callida</i> Casey, 1908	6 9 CA WA OR NV	159	<input type="checkbox"/>	1	<i>Chilometopon brachystomum</i> Doyen, 1982	3 4 NV BC
106	<input checked="" type="checkbox"/>	2	<i>Coniontis catalinae</i> Casey, 1908	5	160	<input type="checkbox"/>	1	<i>Chilometopon heliopaides</i> Horn, 1874	2 3 4 AZ ID NV NM UT BC
107	<input checked="" type="checkbox"/>	2	<i>Coniontis costulata</i> Casey, 1908	8	161	<input checked="" type="checkbox"/>	1	<i>Chilometopon microps</i> MacLachlan & Olson, 1990	3 4
108	<input checked="" type="checkbox"/>	1	<i>Coniontis elliptica</i> Casey, 1884	4 5 6 7	162	<input type="checkbox"/>	1	<i>Chilometopon pallidum</i> Casey, 1890	3 4 AZ NV NM TX ME BC
109	<input checked="" type="checkbox"/>	1	<i>Coniontis elongata</i> Casey, 1890	4 5 6 7 8 9 1	163	<input type="checkbox"/>	1	<i>Cryptadius inflatus</i> LeConte, 1851	5 BC
110	<input checked="" type="checkbox"/>	1	<i>Coniontis eschscholtzi</i> Mannerheim, 1840	U	164	<input type="checkbox"/>	1	<i>Edrotes arens</i> La Rivers, 1947	5 AZ
111	<input type="checkbox"/>	1	<i>Coniontis extricata</i> Casey, 1908	5 8 9 OR	165	<input type="checkbox"/>	1	<i>Edrotes ventricosus</i> LeConte, 1851	3 4 5 AC BC ME ID NV
112	<input checked="" type="checkbox"/>	1	<i>Coniontis farallonica</i> Casey, 1895	8	166	<input checked="" type="checkbox"/>	1	<i>Eurymetopon ochraceum</i> Eschscholtz, 1831	U type only
113	<input checked="" type="checkbox"/>	1	<i>Coniontis genitiva</i> Casey, 1890	9	167	<input type="checkbox"/>	1	<i>Eurymetopon rufipes</i> Eschscholtz, 1831	U type only
114	<input checked="" type="checkbox"/>	1	<i>Coniontis globulina</i> Casey, 1895	5	168	<input checked="" type="checkbox"/>	1	<i>Hylocrinus blaisdelli</i> Casey, 1890	7 6
115	<input checked="" type="checkbox"/>	1	<i>Coniontis hoppingi</i> Blaisdell, 1918	6	169	<input type="checkbox"/>	1	<i>Hylocrinus depressulus</i> Casey, 1907	U
116	<input checked="" type="checkbox"/>	1	<i>Coniontis integer</i> Casey, 1908	5 7	170	<input checked="" type="checkbox"/>	1	<i>Hylocrinus filitarsis</i> Casey, 1907	5 4 8
117	<input checked="" type="checkbox"/>	1	<i>Coniontis lamentabilis</i> Blaisdell, 1924	5 8 7	171	<input type="checkbox"/>	1	<i>Hylocrinus longulus</i> LeConte, 1851	5 6 3 5 8 AZ
118	<input type="checkbox"/>	1	<i>Coniontis lassenica</i> Casey, 1908	9 1 5 NV ID	172	<input type="checkbox"/>	1	<i>Hylocrinus oblongulus</i> Casey, 1907	4 BC
119	<input checked="" type="checkbox"/>	1	<i>Coniontis lata</i> LeConte, 1866	8	173	<input checked="" type="checkbox"/>	1	<i>Hylocrinus piceus</i> Casey, 1890	5
120	<input type="checkbox"/>	1	<i>Coniontis microsticta</i> Casey, 1908	8 ID	174	<input type="checkbox"/>	2	<i>Melanastus aequicollis</i> Casey, 1907	9 NV
121	<input checked="" type="checkbox"/>	2	<i>Coniontis musculus</i> Blaisdell, 1918	8 5 6 7 OR	175	<input type="checkbox"/>	1	<i>Melanastus ater</i> (LeConte), 1851	9 8
122	<input type="checkbox"/>	1	<i>Coniontis nemoralis</i> Eschscholtz, 1840	1 2 5 6 9	176	<input type="checkbox"/>	2	<i>Melanastus crassicornis</i> (Casey), 1907	9 OR
123	<input type="checkbox"/>	1	<i>Coniontis obesa</i> LeConte, 1851	2 NV WA	177	<input checked="" type="checkbox"/>	2	<i>Melanastus exolelus</i> Casey, 1907	5
124	<input type="checkbox"/>	1	<i>Coniontis opaca</i> Horn, 1870	1 2 6 7 9 AZ CA CO ID NV OR WA UT	178	<input checked="" type="checkbox"/>	2	<i>Melanastus lucidulus</i> Casey, 1907	8
125	<input type="checkbox"/>	1	<i>Coniontis ovalis</i> LeConte, 1851	5	179	<input type="checkbox"/>	2	<i>Melanastus moestus</i> Casey, 1907	8 UT
126	<input checked="" type="checkbox"/>	1	<i>Coniontis pallidicornis</i> Casey, 1890	U	180	<input type="checkbox"/>	1	<i>Melanastus obesus</i> (LeConte), 1851	5 8 7 BC
127	<input checked="" type="checkbox"/>	1	<i>Coniontis parallela</i> Casey, 1890	U	181	<input type="checkbox"/>	1	<i>Melanastus obtusus</i> (LeConte), 1866	5 8 7
128	<input type="checkbox"/>	1	<i>Coniontis parviceps</i> Casey, 1890	5 8 7 BC	182	<input checked="" type="checkbox"/>	2	<i>Melanastus otiosus</i> Casey, 1907	8
129	<input checked="" type="checkbox"/>	1	<i>Coniontis pectoralis</i> Casey, 1908	U	183	<input checked="" type="checkbox"/>	2	<i>Melanastus sterilis</i> Casey, 1907	3
130	<input checked="" type="checkbox"/>	1	<i>Coniontis puncticollis</i> LeConte, 1851	5 6 7 8 9	184	<input checked="" type="checkbox"/>	2	<i>Melanastus thoracicus</i> (Casey), 1907	5
131	<input type="checkbox"/>	1	<i>Coniontis remmans</i> Pierce, 1945	5	185	<input checked="" type="checkbox"/>	1	<i>Melanastus vergrandis</i> Casey, 1907	6
132	<input checked="" type="checkbox"/>	1	<i>Coniontis robusta</i> Horn, 1870	5 6 7 8	186	<input type="checkbox"/>	1	<i>Metoponium abnorme</i> LeConte, 1851	4 ME
133	<input checked="" type="checkbox"/>	1	<i>Coniontis sanfordi</i> Blaisdell, 1895	6 8 9	187	<input type="checkbox"/>	1	<i>Metoponium bicolor</i> Horn, 1870	7 3 AZ
134	<input checked="" type="checkbox"/>	1	<i>Coniontis santarosae</i> Blaisdell, 1921	5	188	<input type="checkbox"/>	2	<i>Metoponium concors</i> Casey, 1907	3
135	<input type="checkbox"/>	1	<i>Coniontis setosa</i> Casey, 1890	6 OR WA CA ID UT	189	<input type="checkbox"/>	2	<i>Metoponium convexicollis</i> LeConte, 1851	7 5 3 AZ
136	<input type="checkbox"/>	1	<i>Coniontis subpubescens</i> LeConte, 1851	8 3 5 6 9 OR BC	190	<input checked="" type="checkbox"/>	2	<i>Metoponium cylindricum</i> Casey, 1890	3
137	<input checked="" type="checkbox"/>	1	<i>Coniontis timida</i> Casey, 1908	8	191	<input checked="" type="checkbox"/>	2	<i>Metoponium dubium</i> Casey, 1884	4
138	<input checked="" type="checkbox"/>	1	<i>Coniontis vandykei</i> Blaisdell, 1921	5	192	<input checked="" type="checkbox"/>	2	<i>Metoponium edax</i> Casey, 1907	5
139	<input type="checkbox"/>	1	<i>Coniontis viatica</i> Eschscholtz, 1929	8	193	<input checked="" type="checkbox"/>	2	<i>Metoponium egregium</i> Casey, 1907	4
140	<input type="checkbox"/>	1	<i>Eusattus costatus</i> Horn, 1870	5 BC	194	<input checked="" type="checkbox"/>	2	<i>Metoponium extensum</i> Casey, 1907	U
141	<input type="checkbox"/>	1	<i>Eusattus difficilis</i> LeConte, 1851	3 4 5 7 ME AZ NV	195	<input checked="" type="checkbox"/>	2	<i>Metoponium faustum</i> Casey, 1907	3 4
142	<input type="checkbox"/>	1	<i>Eusattus dilatatus</i> LeConte, 1851	4 3 AZ ME	196	<input type="checkbox"/>	2	<i>Metoponium fuscum</i> Casey, 1890	4 AZ
143	<input type="checkbox"/>	1	<i>Eusattus dubius arizonensis</i> Doyen, 1984	3 4 AZ NV	197	<input checked="" type="checkbox"/>	2	<i>Metoponium gravidum</i> Casey, 1907	3
144	<input type="checkbox"/>	1	<i>Eusattus dubius dubius</i> LeConte, 1851	3 4 2 NV AZ UT	198	<input checked="" type="checkbox"/>	2	<i>Metoponium gulosum</i> Casey, 1907	7
145	<input type="checkbox"/>	1	<i>Eusattus muricatus muricatus</i> LeConte, 1851	1 2 3 4 9 5 AZ NM TX CO UT NV ID OR WA	199	<input type="checkbox"/>	2	<i>Metoponium hebes</i> Casey, 1907	4 AZ
146	<input type="checkbox"/>	1	<i>Eusattus phreatophilus</i> Doyen, 1984	3 2 NV	200	<input type="checkbox"/>	2	<i>Metoponium insulare</i> Casey, 1907	5
147	<input checked="" type="checkbox"/>	1	<i>Eusattus politus</i> Horn, 1883	5	201	<input checked="" type="checkbox"/>	2	<i>Metoponium integer</i> Casey, 1907	4
148	<input type="checkbox"/>	1	<i>Eusattus productus</i> LeConte, 1858	4 ME	202	<input checked="" type="checkbox"/>	2	<i>Metoponium molestum</i> Casey, 1907	4
149	<input type="checkbox"/>	1	<i>Eusattus reticulatus</i> (Say), 1824	4 AZ	203	<input checked="" type="checkbox"/>	2	<i>Metoponium opacipenne</i> Casey, 1907	3 4
150	<input checked="" type="checkbox"/>	1	<i>Eusattus robustus</i> LeConte, 1866	5	204	<input checked="" type="checkbox"/>	2	<i>Metoponium probatum</i> Casey, 1907	5
Pimeliinae Edrotini					205	<input checked="" type="checkbox"/>	2	<i>Metoponium tersum</i> Casey, 1907	5
151	<input checked="" type="checkbox"/>	1	<i>Auchmobius angelicus</i> Blaisdell, 1934	5	206	<input checked="" type="checkbox"/>	2	<i>Metoponium testaceum</i> Casey, 1907	3
152	<input checked="" type="checkbox"/>	1	<i>Auchmobius parvicollis</i> Blaisdell, 1934	8	207	<input type="checkbox"/>	1	<i>Micromes maritimus</i> (Casey), 1891	5 BC
153	<input checked="" type="checkbox"/>	1	<i>Auchmobius picipes</i> Blaisdell, 1934	8	208	<input type="checkbox"/>	1	<i>Micromes ovipennis</i> (Horn), 1870	5 BC
154	<input checked="" type="checkbox"/>	1	<i>Auchmobius sanfordi</i> Blaisdell, 1934	5	209	<input checked="" type="checkbox"/>	0	<i>Oxygonodera</i> n.sp.	2
155	<input checked="" type="checkbox"/>	1	<i>Auchmobius slevini</i> Blaisdell, 1934	8	210	<input checked="" type="checkbox"/>	2	<i>Sibia blairi</i> Blaisdell, 1936	U type only (BMNH)
156	<input checked="" type="checkbox"/>	1	<i>Auchmobius subboreus</i> Blaisdell, 1934	8	211	<input type="checkbox"/>	1	<i>Sibia imperialis</i> Blaisdell, 1936	4 BC
157	<input checked="" type="checkbox"/>	1	<i>Auchmobius sublaevis</i> LeConte, 1851	2	212	<input type="checkbox"/>	1	<i>Sibia puncticollis</i> Horn, 1870	5 BC
158	<input type="checkbox"/>	1	<i>Chilometopon abnorme</i> (Horn), 1870	3 4 AZ NV ME	213	<input type="checkbox"/>	3	<i>Sibia tanneri</i> Blaisdell, 1936	6
					214	<input checked="" type="checkbox"/>	1	<i>Telabius fidelis</i> Casey, 1907	4

Figure 1. Continue.

California Tenebrionidae (January 2014)

Endemic #	Status CA	Status group	Species	Distribution	Endemic #	Status CA	Status group	Species	Distribution
215	<input type="checkbox"/>		1 <i>Telabis incisa</i> Casey, 1907	4 NV	Diaperinae Diaperini				
216	<input checked="" type="checkbox"/>		1 <i>Telabis opacella</i> Casey, 1907	5	257	<input type="checkbox"/>		1 <i>Alphitophagus bifasciatus</i> (Say), 1824	C
217	<input type="checkbox"/>		1 <i>Telabis punctulata</i> LeConte, 1866	3 AZ	258	<input type="checkbox"/>		1 <i>Cynaues angustus</i> (LeConte), 1851	5 AZ UT ME
218	<input type="checkbox"/>		1 <i>Telabis serrata</i> (LeConte), 1866	3 BC ME AZ UT NV	259	<input type="checkbox"/>		1 <i>Cynaues depressus</i> Horn, 1870	5 AZ BC
219	<input type="checkbox"/>		1 <i>Telabis sodalis</i> Horn, 1870	3 4 AZ	260	<input checked="" type="checkbox"/>		1 <i>Diaperis californica</i> Blaisdell, 1929	6
220	<input type="checkbox"/>		1 <i>Triorophus laevis</i> LeConte, 1851	3 4 AZ NV ME UT BC	261	<input checked="" type="checkbox"/>		1 <i>Pentaphyllus californicus</i> Horn, 1870	6
221	<input type="checkbox"/>		1 <i>Triorophus rugiceps</i> LeConte, 1851	2 3 7 8 6 5 NV	262	<input type="checkbox"/>		1 <i>Platydesma americanum</i> Laporte & Brulle, 1831	6 AZ ID CA NM TX UT WA +
222	<input type="checkbox"/>		1 <i>Triphalopsis californicus</i> Doyen, 1982	4 BC	263	<input checked="" type="checkbox"/>		1 <i>Platydesma neglectum</i> Triplehorn, 1965	16 5 2
Pimeliinae Epitragini					264	<input type="checkbox"/>		1 <i>Platydesma oregonense</i> LeConte, 1857	5 6 7 9 CA OR WA
223	<input type="checkbox"/>		1 <i>Bothriotes plumbeus tenebrius</i> Casey, 1907	5 AZ	265	<input type="checkbox"/>		1 <i>Sitophagus hololeptoides</i> Laporte, 1840	C
224	<input type="checkbox"/>		1 <i>Metoploba pruinosa pruinosa</i> (Horn), 1870	3 4 AZ NV ME BC	Diaperinae Crypticini				
225	<input type="checkbox"/>		1 <i>Polemioites submetallicus</i> (LeConte), 1854	4 AZ ME	266	<input type="checkbox"/>		1 <i>Gondwanocryptus platensis</i> (Fairmaire), 1883	C 5 SA
Pimeliinae Anepsini					Diaperinae Myrmecichxenini				
226	<input type="checkbox"/>		1 <i>Anchomma costatum</i> LeConte, 1858	3 5 6 7 NV	267	<input type="checkbox"/>		1 <i>Myrmecichxena lathridioides</i> Crotch, 1873	6 8 TX +
227	<input type="checkbox"/>		1 <i>Anepsius delicatulus</i> LeConte, 1851	8 5 7 2 3 4 BC AZ UT NV	Diaperinae Hypophloeini				
228	<input checked="" type="checkbox"/>		1 <i>Batuloides obesus</i> Doyen, 1987	3 4	268	<input type="checkbox"/>		1 <i>Corticus halchi</i> Boddy, 1957	9 OR
229	<input type="checkbox"/>		1 <i>Batuloides rotundicollis</i> (LeConte), 1851	3 4 BC AZ	269	<input type="checkbox"/>		1 <i>Corticus opaculus</i> (LeConte), 1878	8 5 AZ
230	<input type="checkbox"/>		1 <i>Batuloides spatulatus</i> Doyen, 1987	3 4 BC AZ	270	<input type="checkbox"/>		1 <i>Corticus praetermissus</i> (Fall), 1926	12 4 5 6 7 8 9 AZ BC NM UT NV ID OR WA CA +
231	<input type="checkbox"/>		1 <i>Batuloides wasbaueri</i> Doyen, 1987	4 BC	271	<input type="checkbox"/>		1 <i>Corticus strublei</i> Blaisdell, 1934	3 6 9 WA ID UT AZ NV +
232	<input type="checkbox"/>		1 <i>Batulomorpha comatus</i> Doyen, 1987	3 BC	272	<input type="checkbox"/>		1 <i>Corticus substriatus</i> (LeConte), 1852	12 3 5 6 7 8 9 ME AZ NM UT NV ID WA OR CA +
233	<input checked="" type="checkbox"/>		1 <i>Batulomorpha imperialis</i> Doyen, 1987	4	273	<input type="checkbox"/>		1 <i>Corticus tenuis</i> (LeConte), 1878	6 OR WA CA AZ ID +
234	<input type="checkbox"/>		1 <i>Batululus setosus</i> LeConte, 1851	3 4 BC AZ	Tenebrioninae Bolitophagini				
Pimeliinae Vaconini					274	<input type="checkbox"/>		1 <i>Eleates explanatus</i> Casey, 1890	6 7 9 OR WA CA ID
235	<input type="checkbox"/>		1 <i>Alaephus gracilis</i> Fall, 1905	8 5 3 AZ	275	<input type="checkbox"/>		1 <i>Eleates occidentalis</i> Casey, 1886	6 8 WA
236	<input checked="" type="checkbox"/>		1 <i>Alaephus longicornis</i> Casey, 1924	5	276	<input type="checkbox"/>		1 <i>Megeleates sequoiarum</i> Casey, 1895	9 6 7 5 3 BC OR
237	<input type="checkbox"/>		1 <i>Alaephus macilentus</i> Casey, 1891	3 ME NM AZ	Tenebrioninae Opatrini				
238	<input checked="" type="checkbox"/>		1 <i>Alaephus maderensis</i> Casey, 1924	5	277	<input type="checkbox"/>		1 <i>Blapstinus brevicollis</i> LeConte, 1851	2 3 4 5 6 7 8 AZ
239	<input type="checkbox"/>		1 <i>Alaephus pallidus</i> Horn, 1870	7 6 2 UT	278	<input type="checkbox"/>		1 <i>Blapstinus castaneus</i> Casey, 1890	5 AZ
240	<input type="checkbox"/>		1 <i>Alaephus puberulus</i> Fall, 1907	5 UT	279	<input type="checkbox"/>		3 <i>Blapstinus coronadensis</i> Blaisdell, 1892	5
241	<input type="checkbox"/>		1 <i>Eupsophulus castaneus</i> Horn, 1870	3 4 ME BC AZ	280	<input type="checkbox"/>		1 <i>Blapstinus dilatatus</i> LeConte, 1851	2 3 4 5 6 7 8 AZ NV UT
Pimeliinae Cnemodini					281	<input type="checkbox"/>		1 <i>Blapstinus discolor</i> Horn, 1870	9 8 7 6 5 4 3 2 1 NV OF ID UT WA CA
242	<input type="checkbox"/>		1 <i>Cnemodinus testaceus</i> Horn, 1870	3 4 AZ	282	<input type="checkbox"/>		1 <i>Blapstinus histricus</i> Casey, 1890	4 5 7 8 AZ NV
Lagriinae Lagriini					283	<input checked="" type="checkbox"/>		1 <i>Blapstinus lecontei</i> Mulsant & Rey, 1859	5
243	<input checked="" type="checkbox"/>		1 <i>Statira dumalis</i> Parsons, 1973	4	284	<input type="checkbox"/>		1 <i>Blapstinus pimalis</i> Casey, 1885	5 8 AZ NM TX CO UT NV
244	<input type="checkbox"/>		1 <i>Statira latitator</i> Parsons, 1973	4 BC	285	<input type="checkbox"/>		1 <i>Blapstinus pulverulentus</i> Mannerheim, 1843	9 OR WA
245	<input type="checkbox"/>		1 <i>Statira pluripunctata</i> Horn, 1888	4 AZ NM TX ME	286	<input type="checkbox"/>		1 <i>Blapstinus substriatus</i> Champion, 1885	1 9 6 AR NV NM TX CO UT WY ID OR WA MT CA
Lagriinae Goniaderini					287	<input type="checkbox"/>		1 <i>Blapstinus sulcatus</i> LeConte, 1851	2 3 4 5 6 7 8 AZ NV
246	<input checked="" type="checkbox"/>		0 <i>Eschatoporis</i> n. sp. Aalbu m.s.	9	288	<input type="checkbox"/>		1 <i>Blapstinus vandykei</i> Blaisdell, 1942	2 3 4 5 AZ
247	<input checked="" type="checkbox"/>		1 <i>Eschatoporis nunenmacheri</i> Blaisdell, 1906	8	289	<input type="checkbox"/>		1 <i>Cheirodes californica</i> (Horn), 1870	2 3 4 7 AZ NV
Lagriinae Laenini					290	<input type="checkbox"/>		1 <i>Conibiosoma elongatum</i> Horn, 1870	3 5 7 4
248	<input checked="" type="checkbox"/>		1 <i>Eschatomoxys andrewsi</i> Aalbu & Thomas, 2007	4	291	<input type="checkbox"/>		0 <i>Conibius</i> n. sp.	7 OR
249	<input type="checkbox"/>		1 <i>Eschatomoxys wagneri</i> Blaisdell, 1935	3 4 AZ UT	292	<input type="checkbox"/>		1 <i>Conibius seriatus</i> LeConte, 1851	3 4 5 7 8 BC
Phrenapatinae Penetini					293	<input type="checkbox"/>		1 <i>Gonocephalum</i> sp.	5 OW
250	<input type="checkbox"/>		1 <i>Clamoris americana</i> (Horn), 1874	9 4 OR	294	<input type="checkbox"/>		1 <i>Mecysmus angustus</i> (LeConte), 1851	3 4 5 8 BC
Diaperinae Phaleriini					295	<input type="checkbox"/>		1 <i>Mecysmus tenuis</i> Casey, 1890	5 BC
251	<input type="checkbox"/>		1 <i>Phaleria debilis</i> LeConte, 1866	4 ME	296	<input type="checkbox"/>		1 <i>Nocibiotus crassipes</i> (Casey), 1890	4 BC
252	<input type="checkbox"/>		1 <i>Phaleria rotundata</i> LeConte, 1851	5 8 BC	297	<input type="checkbox"/>		1 <i>Nocibiotus granulatus</i> (LeConte), 1851	3 4 AZ
253	<input type="checkbox"/>		1 <i>Phaleromela globosa</i> (LeConte), 1857	8 9 CA OR WA					
254	<input type="checkbox"/>		1 <i>Phaleromela humeralis</i> (Laporte), 1840	3 ASIA					
255	<input type="checkbox"/>		1 <i>Phaleromela prohumeralis</i> Triplehorn, 1961	U OR					
256	<input type="checkbox"/>		1 <i>Phaleromela variegata</i> Triplehorn, 1961	9 4 CA OR WA					

Figure 1. Continue.

California Tenebrionidae (January 2014)

Endemic #	Status CA	Status group	Species	Distribution	Endemic #	Status CA	Status group	Species	Distribution
298	<input type="checkbox"/>	1	Notibius latipennis Casey, 1890	4 AZ BC	349	<input checked="" type="checkbox"/>	1	Eleodes (Litheleodes) corvinus Blaisdell 1921	1
299	<input type="checkbox"/>	1	Notibius puberulus LeConte, 1851	3 4 AZ	350	<input type="checkbox"/>	1	Eleodes (Litheleodes) granulatus LeConte 1857	9 OR
300	<input type="checkbox"/>	1	Notibius punctatilis LeConte, 1851	7 5 3 NV	351	<input type="checkbox"/>	1	Eleodes (Litheleodes) letcheri Blaisdell 1909	1 2 NV ID
301	<input type="checkbox"/>	1	Opatriodes punctulatus Brullé, 1832	7 OW	352	<input checked="" type="checkbox"/>	1	Eleodes (Litheleodes) papillosus Blaisdell 1917	9
302	<input type="checkbox"/>	1	Tonibius sulcatus LeConte, 1851	3 5 BC	353	<input type="checkbox"/>	1	Eleodes (Litheleodes) vandykei Blaisdell 1909	1 9 OR WA NV AR
303	<input type="checkbox"/>	1	Trichoton sordidum (LeConte), 1851	4 AZ BC ME NM	354	<input type="checkbox"/>	1	Eleodes (Melaneleodes) carbonarius (Say) 1823	3 4 5 ME AR UT NV BC TX NM ID
304	<input type="checkbox"/>	1	Ulus crassus LeConte, 1851	8 5 7 BC ME ZA NM T					
Tenebrioninae Amphidorini					355	<input type="checkbox"/>	1	Eleodes (Melaneleodes) humeralis LeConte 1857	9 CA WA OR NV CO U
305	<input checked="" type="checkbox"/>	1	Eleodes (Blapyllis) aristatus Somerby 1977	2	356	<input checked="" type="checkbox"/>	1	Eleodes (Melaneleodes) quadricollis Eschscholtz 1833	8
306	<input checked="" type="checkbox"/>	1	Eleodes (Blapyllis) bishopensis Somerby & Doyen 1976	5	357	<input type="checkbox"/>	1	Eleodes (Melaneleodes) rileyi Casey 1891	2 NV AZ UT NM ID OR
307	<input type="checkbox"/>	1	Eleodes (Blapyllis) blanchardi Blaisdell 1909	5 6 AZ	358	<input checked="" type="checkbox"/>	1	Eleodes (Metablapyllis) aalbu Triplehorn 2007	2
308	<input type="checkbox"/>	1	Eleodes (Blapyllis) brunneipes Casey 1890	6 9 AZ NM CO UT NV OR WA ID WY	359	<input type="checkbox"/>	1	Eleodes (Metablapyllis) californicus Blaisdell 1929	3 5 AZ
					360	<input type="checkbox"/>	1	Eleodes (Metablapyllis) dissimilis Blaisdell 1909	3 ME NV AZ
309	<input type="checkbox"/>	1	Eleodes (Blapyllis) caseyi Blaisdell 1909	2 5 NV	361	<input type="checkbox"/>	0	Eleodes (Metablapyllis) n.sp.	5
310	<input checked="" type="checkbox"/>	1	Eleodes (Blapyllis) clavicornis Eschscholtz 1833	5 8	362	<input type="checkbox"/>	1	Eleodes (Metablapyllis) nigrinus LeConte 1858	1 2 CA AZ CO ID MT NV NM OR UT WA WY
311	<input type="checkbox"/>	1	Eleodes (Blapyllis) consobrinus LeConte 1851	5 6 8					
312	<input checked="" type="checkbox"/>	1	Eleodes (Blapyllis) cooperi Somerby & Doyen 1976	6	363	<input type="checkbox"/>	1	Eleodes (Pseudeleodes) granosus LeConte 1866	2 3 4 NV ID
313	<input type="checkbox"/>	1	Eleodes (Blapyllis) cordatus Eschscholtz 1863	9 6 8 5 OR	364	<input type="checkbox"/>	1	Eleodes (Pseudeleodes) inyoensis Tanner 1961	2 NV
314	<input checked="" type="checkbox"/>	1	Eleodes (Blapyllis) fuchsi Blaisdell 1909	5 8	365	<input checked="" type="checkbox"/>	1	Eleodes (Steneleodes) gigantea Mannerheim 1843	6 7 8 9
315	<input type="checkbox"/>	1	Eleodes (Blapyllis) hoppingi Blaisdell 1909	6 2 NV AR	366	<input type="checkbox"/>	1	Eleodes (Tricheleodes) hirsutus LeConte 1861	2 3 NV
316	<input checked="" type="checkbox"/>	1	Eleodes (Blapyllis) hornii Blaisdell 1909	6 2 1	367	<input type="checkbox"/>	1	Eleodes (Tricheleodes) obsesus Doyen 1985	9 1 OR
317	<input checked="" type="checkbox"/>	1	Eleodes (Blapyllis) incultus LeConte 1861	5	368	<input type="checkbox"/>	1	Eleodes (Tricheleodes) pilosus Horn, 1870	1 2 3 9 NV UT
318	<input checked="" type="checkbox"/>	1	Eleodes (Blapyllis) kaweanus Blaisdell 1933	6	369	<input checked="" type="checkbox"/>	1	Eleodimorpha bolcan Blaisdell, 1909	5
319	<input checked="" type="checkbox"/>	1	Eleodes (Blapyllis) larversi Somerby & Doyen 1976	6	370	<input type="checkbox"/>	1	Embaphion depressum LeConte, 1858	4 3 AZ
320	<input checked="" type="checkbox"/>	1	Eleodes (Blapyllis) littoralis Eschscholtz 1831	5 6 7 8	371	<input type="checkbox"/>	1	Embaphion elongatum Horn, 1870	2 NV
321	<input type="checkbox"/>	1	Eleodes (Blapyllis) neotomae Blaisdell 1909	5 5 BC	372	<input type="checkbox"/>	0	Lariversius n.sp.	3 NV
322	<input type="checkbox"/>	1	Eleodes (Blapyllis) nigropilosa (LeConte) 1851	5 8 BC	373	<input type="checkbox"/>	1	Lariversius tibialis Blaisdell, 1947	2 NV
323	<input checked="" type="checkbox"/>	1	Eleodes (Blapyllis) panamintensis Somerby 1977	3	374	<input type="checkbox"/>	1	Neobaphion elongatum Blaisdell, 1933	2 NV
324	<input type="checkbox"/>	1	Eleodes (Blapyllis) parvicollis Eschscholtz 1829	6	375	<input type="checkbox"/>	1	Trogloclerus costatus LeConte, 1879	3 2 NV
325	<input type="checkbox"/>	1	Eleodes (Blapyllis) pimeloides Mannerheim 1843	1 3 5 8 CA AZ CO ID OR UT WA WY	376	<input type="checkbox"/>	1	Trogloclerus costatus mayhewi Papp, 1961	3 NV
					377	<input checked="" type="checkbox"/>	2	Trogloclerus costatus pappi Kulzer, 1960	3
326	<input type="checkbox"/>	1	Eleodes (Blapyllis) propinquus Blaisdell 1918	1 OR	Tenebrioninae Cerenopini				
327	<input checked="" type="checkbox"/>	1	Eleodes (Blapyllis) scabripennis LeConte 1859	5 6	378	<input type="checkbox"/>	1	Cerenopus concolor LeConte, 1851	3 4 ME AZ
328	<input type="checkbox"/>	1	Eleodes (Blapyllis) scabriventris Blaisdell 1933	6 7 8	Tenebrioninae Eulabini				
329	<input type="checkbox"/>	1	Eleodes (Blapyllis) scabrosus Eschscholtz 1833	8 9 OR WA	379	<input checked="" type="checkbox"/>	1	Apsena barbarae Blaisdell, 1932	5
330	<input checked="" type="checkbox"/>	1	Eleodes (Blapyllis) schlingerii Somerby & Doyen 1976	6	380	<input checked="" type="checkbox"/>	1	Apsena crassicornis (Casey), 1890	5
331	<input checked="" type="checkbox"/>	1	Eleodes (Blapyllis) spilmani Somerby & Doyen 1976	9	381	<input checked="" type="checkbox"/>	1	Apsena grossa (LeConte), 1866	5
332	<input checked="" type="checkbox"/>	1	Eleodes (Blapyllis) sublestitus Blaisdell 1939	5	382	<input checked="" type="checkbox"/>	1	Apsena laticornis (Casey), 1891	5
333	<input type="checkbox"/>	1	Eleodes (Blapyllis) tenebrosus (Horn) 1870	1 2 6 NV UT OR ID	383	<input checked="" type="checkbox"/>	1	Apsena leachi Blaisdell, 1932	6
334	<input type="checkbox"/>	1	Eleodes (Blapyllis) versatilis Blaisdell 1921	9 OR	384	<input type="checkbox"/>	1	Apsena pubescens (LeConte), 1851	5 BC
335	<input type="checkbox"/>	1	Eleodes (Blapyllis) volcanensis Somerby 1977	9 OR	385	<input checked="" type="checkbox"/>	1	Apsena rufipes rufipes (Eschscholtz), 1829	5 6 7 8
336	<input checked="" type="checkbox"/>	1	Eleodes (Caverneleodes) microps Aalbu et al., 2012	2	386	<input checked="" type="checkbox"/>	1	Apsena rufipes simplex Blaisdell, 1932	8
337	<input type="checkbox"/>	1	Eleodes (Cralidus) osculans (LeConte) 1851	5 8 BC	387	<input type="checkbox"/>	1	Argoporis apicalis californica Berry, 1851	4 AZ ME
338	<input checked="" type="checkbox"/>	1	Eleodes (Discozenia) marginatus Eschscholtz 1833	6 5 8	388	<input type="checkbox"/>	1	Argoporis bicolor (LeConte), 1851	3 4 AZ
339	<input type="checkbox"/>	1	Eleodes (Discozenia) scabriculum LeConte 1858	6 7 OR NV	389	<input type="checkbox"/>	1	Epantius obscurus LeConte, 1851	5 8 9 BC
340	<input type="checkbox"/>	1	Eleodes (Eleodes) acuticaudus LeConte 1851	8 5 BC	390	<input checked="" type="checkbox"/>	1	Eulabis bicarinata Eschscholtz, 1829	8 9 6 7
341	<input type="checkbox"/>	1	Eleodes (Eleodes) armatus LeConte 1851	7 8 2 3 4 5 AZ NV BC ME BC	Tenebrioninae Ulomini				
342	<input type="checkbox"/>	1	Eleodes (Eleodes) dentipes Eschscholtz 1833	9 8 7 6 1 5 OR	391	<input type="checkbox"/>	1	Uloma longula LeConte, 1861	5 9 6 7 OR
343	<input type="checkbox"/>	1	Eleodes (Eleodes) gracilis LeConte 1858	5 3 8 2 4 NV AZ NM T UT CO	Tenebrioninae Helopini				
344	<input type="checkbox"/>	1	Eleodes (Eleodes) grandicollis Mannerheim 1843	8 5 4 BC	392	<input checked="" type="checkbox"/>	1	Helops angustus LeConte, 1859	5
345	<input type="checkbox"/>	1	Eleodes (Eleodes) hispidabris Say 1824	9 8 7 AR CA NM TX U WA OR NV CO ID +	393	<input type="checkbox"/>	1	Helops attenuatus (LeConte), 1851	3 4 NV AZ
346	<input type="checkbox"/>	1	Eleodes (Eleodes) moestus Blaisdell 1921	5 BC	394	<input checked="" type="checkbox"/>	1	Helops bachei LeConte, 1861	5
347	<input type="checkbox"/>	1	Eleodes (Eleodes) obscurus Say 1824	1 2 AZ ME CO ID NV OR TX UT WA +	395	<input type="checkbox"/>	1	Helops blaisdelli Casey, 1891	5 BC
348	<input type="checkbox"/>	1	Eleodes (Eleodes) subcylindricus Casey 1890	2 3 4 NV	396	<input checked="" type="checkbox"/>	1	Helops californicus Mannerheim, 1843	9 8 6 7
					397	<input type="checkbox"/>	1	Helops confuens (Casey), 1924	5 BC
					398	<input checked="" type="checkbox"/>	1	Helops discipula Casey, 1891	3 4 5

Figure 1. Continue.

California Tenebrionidae (January 2014)

Endemic	Status				Endemic	Status			
#	CA	group	Species	Distribution	#	CA	group	Species	Distribution
399	<input type="checkbox"/>	1	<i>Helops edwardsi</i> Horn, 1870	3 5 OR	449	<input checked="" type="checkbox"/>	1	<i>Hymenorus inquilinus</i> Casey, 1891	6
400	<input checked="" type="checkbox"/>	1	<i>Helops fresnoensis</i> Blaisdell, 1931	7	450	<input checked="" type="checkbox"/>	1	<i>Hymenorus irritus</i> Fall, 1931	5 8
401	<input type="checkbox"/>	1	<i>Helops laetus</i> LeConte, 1857	8 WA	451	<input checked="" type="checkbox"/>	1	<i>Hymenorus jacobinus</i> Fall, 1931	U
402	<input checked="" type="checkbox"/>	1	<i>Helops obtusangula</i> Blaisdell, 1921	5 8	452	<input checked="" type="checkbox"/>	1	<i>Hymenorus montivagus</i> Fall, 1931	U
403	<input checked="" type="checkbox"/>	1	<i>Helops opacus</i> LeConte, 1859	19 6 5 7	453	<input checked="" type="checkbox"/>	1	<i>Hymenorus parvus</i> Fall, 1931	3
404	<input checked="" type="checkbox"/>	1	<i>Helops punctipennis</i> LeConte, 1866	6	454	<input type="checkbox"/>	1	<i>Hymenorus protibialis</i> Fall, 1931	3 4 AZ
405	<input type="checkbox"/>	1	<i>Helops rufipes</i> (LeConte), 1851	5 BC	455	<input type="checkbox"/>	1	<i>Hymenorus punctatissimus</i> LeConte, 1866	3 4 NM TX UT AZ
406	<input checked="" type="checkbox"/>	1	<i>Helops rugicollis</i> LeConte, 1866	5	456	<input checked="" type="checkbox"/>	1	<i>Hymenorus punctulatus</i> (LeConte), 1859	6
407	<input checked="" type="checkbox"/>	1	<i>Helops rugulosus</i> LeConte, 1866	5 7 9 6	457	<input checked="" type="checkbox"/>	1	<i>Hymenorus rufohumeralis</i> Campbell, 1982	8
408	<input checked="" type="checkbox"/>	1	<i>Helops simulator</i> Blaisdell, 1921	6	458	<input type="checkbox"/>	1	<i>Hymenorus sinuatus</i> Fall, 1931	9 OR
409	<input type="checkbox"/>	1	<i>Helops spretus</i> Horn, 1880	2 NV	459	<input type="checkbox"/>	1	<i>Hymenorus thoracicus</i> Fall, 1931	4 AZ
410	<input checked="" type="checkbox"/>	1	<i>Helops stenotrichoides</i> Blaisdell, 1895	6 8	460	<input checked="" type="checkbox"/>	1	<i>Hymenorus ulmoides</i> Fall, 1931	U
411	<input checked="" type="checkbox"/>	1	<i>Helops strigicollis</i> Horn, 1885	3 4	461	<input type="checkbox"/>	1	<i>Hymenorus uniseriatus</i> Casey, 1891	U
412	<input type="checkbox"/>	1	<i>Helops tumescens</i> LeConte, 1866	3 4 AZ	462	<input type="checkbox"/>	1	<i>Isomira comstocki</i> Papp, 1956	7 6 9 8 5 1 CA ME ID OR UT WA
Tenebrioninae Triboliumi					463	<input checked="" type="checkbox"/>	1	<i>Isomira damnata</i> Marshall, 1970	6 7
413	<input type="checkbox"/>	1	<i>Gnathocerus cornutus</i> (Fabricius) 1801	C	464	<input checked="" type="checkbox"/>	1	<i>Isomira luscitosa</i> Casey, 1891	5 8 6
414	<input type="checkbox"/>	1	<i>Gnathocerus maxillosus</i> (Fabricius) 1801	C	465	<input type="checkbox"/>	1	<i>Isomira monticola</i> Casey, 1891	U
415	<input type="checkbox"/>	1	<i>Latheticus oryzae</i> Chittenden, 1880	C	466	<input checked="" type="checkbox"/>	1	<i>Isomira variabilis</i> (Horn), 1875	8 9 6 5
416	<input type="checkbox"/>	1	<i>Latheticus prosopis</i> Chittenden, 1904	C	467	<input checked="" type="checkbox"/>	1	<i>Mycetochara marshalli</i> Campbell, 1978	7
417	<input type="checkbox"/>	1	<i>Lyphia tetraphylla</i> (Fairmaire, 1856)	C	468	<input type="checkbox"/>	1	<i>Mycetochara procera</i> Casey, 1891	9 6 CA AZ ID OR WA
418	<input type="checkbox"/>	1	<i>Mycetogus angustus</i> Horn, 1870	4 AZ	469	<input type="checkbox"/>	1	<i>Mycetochara pubipennis</i> (LeConte), 1878	5
419	<input type="checkbox"/>	1	<i>Mycetogus piceus</i> Horn, 1870	4 BC	470	<input checked="" type="checkbox"/>	1	<i>Pseudocistela opaca</i> LeConte, 1859	9 8 6 5 3
420	<input type="checkbox"/>	1	<i>Palorus ratzeburgii</i> (Wissmann), 1848	C	471	<input type="checkbox"/>	1	<i>Pseudocistela pacifica</i> Hopping, 1933	9 CA OR WA
421	<input type="checkbox"/>	1	<i>Palorus subdepressus</i> Wollaston, 1864	C	472	<input type="checkbox"/>	1	<i>Pseudocistela pinguis</i> LeConte, 1866	5 WA CA OR
422	<input type="checkbox"/>	1	<i>Tharsus seditiosus</i> LeConte, 1866	C	473	<input type="checkbox"/>	1	<i>Stenochidius cyanescens</i> LeConte, 1859	9 8 6 OR ID
423	<input type="checkbox"/>	1	<i>Tribolium audax</i> Uyttenboogsart, 1933	C	474	<input checked="" type="checkbox"/>	1	<i>Stenochidius gracilis</i> LeConte, 1851	6 5 8
424	<input type="checkbox"/>	1	<i>Tribolium brevicorne</i> (LeConte), 1859	C	475	<input checked="" type="checkbox"/>	1	<i>Stenochidius robustus</i> Schaeffer, 1911	8 9 7 6
425	<input type="checkbox"/>	1	<i>Tribolium castaneum</i> Herbst, 1797	C	Stenochiinae Cnodalonini				
426	<input type="checkbox"/>	1	<i>Tribolium confusum</i> Jacquelin du Val, 1868	C	476	<input type="checkbox"/>	1	<i>Alobates pennsylvanicus</i> (DeGeer), 1775	5 BC
427	<input type="checkbox"/>	1	<i>Tribolium destructor</i> Uyttenboogsart, 1933	C	477	<input checked="" type="checkbox"/>	1	<i>Cibdelis bachei</i> LeConte, 1861	9 8 7 6
428	<input type="checkbox"/>	1	<i>Tribolium madens</i> (Charpentier), 1825	C	478	<input checked="" type="checkbox"/>	1	<i>Cibdelis blaschkei</i> Mannerheim, 1843	8
Tenebrioninae Apocryphini					479	<input type="checkbox"/>	1	<i>Coelocnemis californica</i> Mannerheim, 1843	5 8 9 6 CA ME ID NV OR UT
429	<input checked="" type="checkbox"/>	1	<i>Apocrypha anthicoides</i> Eschscholtz, 1831	9 8 5 7 6	480	<input checked="" type="checkbox"/>	1	<i>Coelocnemis lucia</i> Doyen, 1973	8
430	<input type="checkbox"/>	1	<i>Apocrypha clivnoides</i> Horn, 1870	2 NV	481	<input type="checkbox"/>	1	<i>Coelocnemis magna</i> LeConte, 1851	5 8 9 6 2 AZ NM
431	<input checked="" type="checkbox"/>	1	<i>Apocrypha setosa</i> Doyen & Kityama, 1980	8	482	<input type="checkbox"/>	1	<i>Coelocnemis punctata</i> LeConte, 1855	12 3 NV UT AZ
Tenebrioninae Alphitobiini					483	<input type="checkbox"/>	1	<i>Coelocnemis rugulosa</i> Doyen, 1973	1 OR
432	<input type="checkbox"/>	1	<i>Alphitobius diaperinus</i> (Panzer), 1797	C	484	<input type="checkbox"/>	1	<i>Coelocnemis sulcata</i> Casey, 1895	2 3 NV AZ UT
433	<input type="checkbox"/>	1	<i>Alphitobius laevigatus</i> Fabricius, 1781	C	485	<input type="checkbox"/>	1	<i>Iphthiminus laevis</i> (Casey), 1890	5 6 9 3 1 OR
434	<input type="checkbox"/>	1	<i>Metacisa marginalis</i> Horn, 1870	5 6 8 1 7 9 BC	486	<input type="checkbox"/>	1	<i>Iphthiminus serratus</i> Mannerheim, 1843	19 6 5 AZ WY WA UT OR NM MT ID CO
435	<input type="checkbox"/>	1	<i>Bius estriatus</i> LeConte, 1851	7 8 2 NV BC					
436	<input checked="" type="checkbox"/>	0	<i>Neatus</i> n.sp.	6 8					
437	<input type="checkbox"/>	1	<i>Tenebrio molitor</i> Linnaeus, 1758	C					
438	<input type="checkbox"/>	1	<i>Tenebrio obscurus</i> Fabricius, 1792	C					
Tenebrioninae Centronopini									
439	<input type="checkbox"/>	1	<i>Scotobaenus parallelus</i> LeConte, 1859	9 6 OR					
440	<input checked="" type="checkbox"/>	1	<i>Scotobaenus punctatus</i> (Blaisdell), 1933	6					
441	<input checked="" type="checkbox"/>	1	<i>Scotobaenus simplex</i> (Blaisdell), 1937	6					
442	<input checked="" type="checkbox"/>	1	<i>Scotobaenus wagneri</i> (Blaisdell), 1933	6					
Alleculinae Alleculini									
443	<input type="checkbox"/>	1	<i>Hymenorus apacheanus</i> Casey, 1891	3 4 AZ					
444	<input checked="" type="checkbox"/>	1	<i>Hymenorus discrepans</i> Casey, 1891	5					
445	<input type="checkbox"/>	1	<i>Hymenorus exiguus</i> Casey, 1891	4 AZ					
446	<input checked="" type="checkbox"/>	1	<i>Hymenorus fuscus</i> Casey, 1891	5 6					
447	<input checked="" type="checkbox"/>	1	<i>Hymenorus fuscicornis</i> Casey, 1891	5					
448	<input checked="" type="checkbox"/>	1	<i>Hymenorus infuscatus</i> Casey, 1891	5					

Figure 1. Continue.

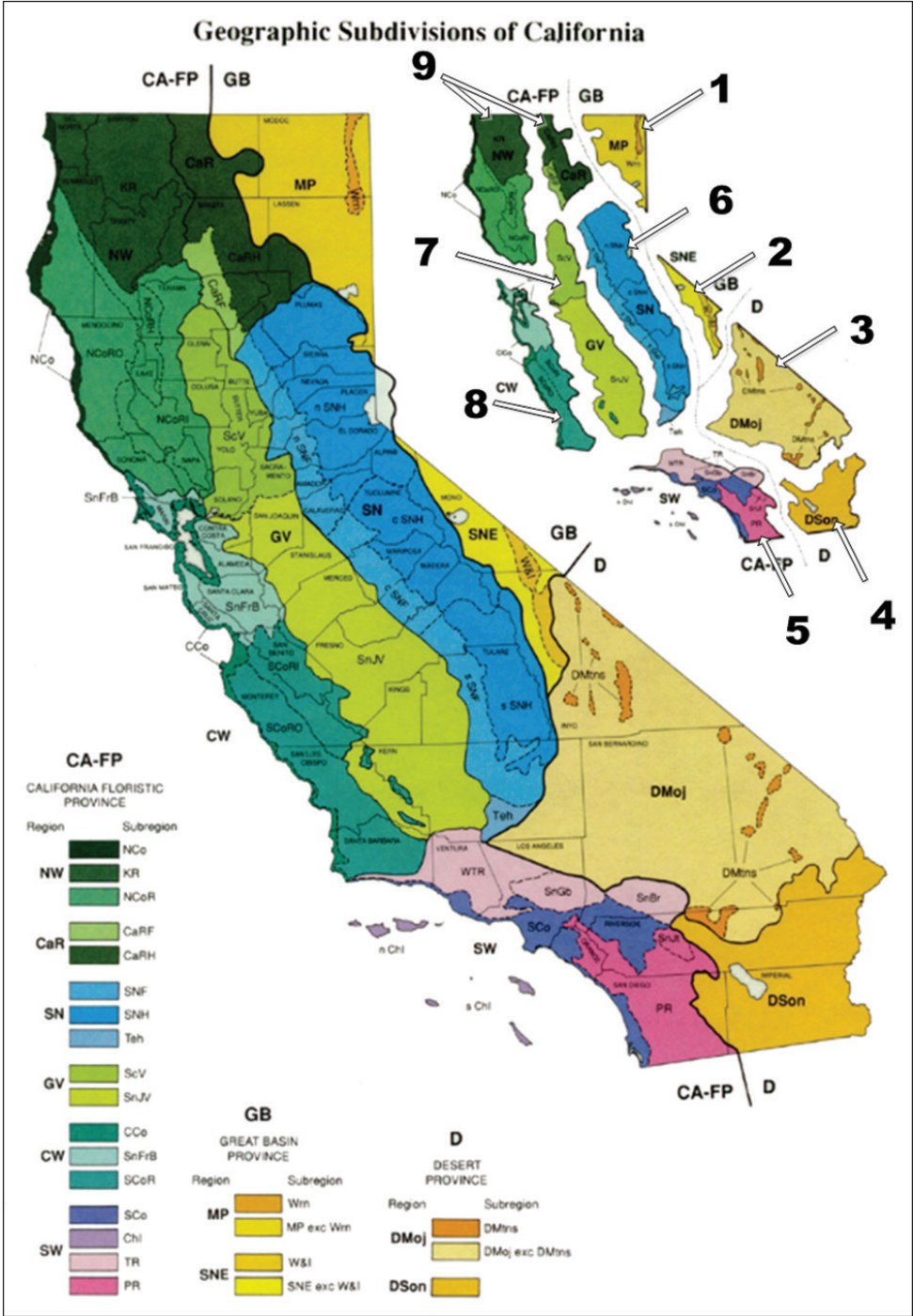


Figure 2. Geographic subdivisions of California from <http://ucjeps.berkeley.edu/cguide.html#Map> with Unit Boundaries with regions 1–9 outlined.

Regional Endemic California Tenebrionidae (January 2014)

REGION	Species present, Percent endemic	REGION	Species present, Percent endemic	REGION	Species present, Percent endemic
1: The Northern Great Basin Province	29: 3.45%	14 Coniontis catalinae Casey, 1908		4 Auchmobius parvicollis Blaisdell, 1934	
including the Warner Mountains and Modoc Plateau		15 Coniontis globulina Casey, 1895		5 Auchmobius picipes Blaisdell, 1934	
1 Eleodes (Litheleodes) corvinus Blaisdell 1921		16 Coniontis pallidicornis Casey, 1890		6 Auchmobius slevini Blaisdell, 1934	
2: The Southern Great Basin Province	55: 9.09%	17 Coniontis remnans Pierce, 1945		7 Auchmobius subboreus Blaisdell, 1934	
including the White and Inyo Mountains and intermountain valleys east of the Sierras Nevada's and White Mountains		18 Coniontis santarosae Blaisdell, 1921		8 Cibdelis blaschkei Mannerheim, 1843	
1 Auchmobius sublaevis LeConte, 1851		19 Coniontis vandykei Blaisdell, 1921		9 Coelocnemis lucia Doyen, 1973	
2 Eleodes (Blapyllis) aristatus Somerby 1977		20 Eleodes (Blapyllis) bishopensis Somerby & Doyen 1976		10 Coniontis costulata Casey, 1908	
3 Eleodes (Caverneleodes) microps Aalbu et al., 2012		21 Eleodes (Blapyllis) incultus LeConte 1861		11 Coniontis farallonica Casey, 1895	
4 Eleodes (Metablapyllis) aalbu Triplehorn 2007		22 Eleodes (Blapyllis) substititus Blaisdell 1939		12 Coniontis hoppingi Blaisdell, 1918	
5 Oxygonodera n.sp.		23 Eleodes (Metablapyllis) n.sp.		13 Coniontis lata LeConte, 1866	
3: The Mojave Desert	112: 10.71%	24 Eleodimorpha bolcan Blaisdell, 1909		14 Coniontis timida Casey, 1908	
and associated desert mountains		25 Eusattus politus Horn, 1883		15 Coniontis viatica Eschscholtz, 1929	
1 Araeoschizus lariversi Papp, 1981		26 Eusattus robustus LeConte, 1866		16 Eleodes (Melaneleodes) quadricollis Eschscholtz 1833	
2 Eleodes (Blapyllis) panamintensis Somerby 1977		27 Helops angustus LeConte, 1859		17 Eschatoporis nunenmacheri Blaisdell, 1906	
3 Hymenorus parvus Fall, 1931		28 Helops bachei LeConte, 1861		18 Hymenorus rufotumeralis Campbell, 1982	
4 Melanastus sterilis Casey, 1907		29 Helops rugicollis LeConte, 1866		19 Melanastus lucidulus Casey, 1907	
5 Metoponium concors Casey, 1907		30 Hylorinus piceus Casey, 1890		20 Melanastus otiosus Casey, 1907	
6 Metoponium cylindricum Casey, 1909		31 Hymenorus discrepans Casey, 1891		9: The Northern Coast	73: 5.48%
7 Metoponium gravidum Casey, 1907		32 Hymenorus fuscicornis Casey, 1891		including the Cascade and Klamath Ranges as well as the Northern Coast Ranges	
8 Metoponium testaceum Casey, 1907		33 Hymenorus infuscatus Casey, 1891		1 Coniontis genitiva Casey, 1890	
9 Philolithus jaegeri (Papp), 1961		34 Melanastus exoletus Casey, 1907		2 Eleodes (Blapyllis) spilmani Somerby & Doyen 1976	
10 Philolithus opimus Casey, 1912		35 Melanastus thoracicus (Casey), 1907		3 Eleodes (Litheleodes) papillosus Blaisdell 1917	
11 Trogloderus costatus pappi Kulzer, 1960		36 Metoponium edax Casey, 1907		4 Eschatoporis n.sp. Aalbu m.s.	
12 Typhleusechus chemehuevi Aalbu & Andrews, 1985		37 Metoponium insulare Casey, 1907			
4: The Sonoran (Colorado) Desert	113: 11.50%	38 Metoponium probatum Casey, 1907			
and associated desert mountains		39 Metoponium tersum Casey, 1907			
1 Araeoschizus andrewsi Papp, 1981		40 Myetochara pubipennis (LeConte), 1878			
2 Araeoschizus hardyi Papp, 1981		41 Stenomorpha (Trichiasida) luctata (Horn), 1870			
3 Araeoschizus hystrix Papp, 1981		42 Telabis opacella Casey, 1907			
4 Batulimorpha imperialis Doyen, 1987		6: The Sierra Nevada Mountains	100: 16.00%		
5 Eschatomoxys andrewsi Aalbu & Thomas, 2007		1 Apsena leachi Blaisdell, 1932			
6 Lepidocnemeplatia n.sp.		2 Diaperis californica Blaisdell, 1929			
7 Metoponium dubium Casey, 1884		3 Eleodes (Blapyllis) cooperi Somerby & Doyen 1976			
8 Metoponium egregium Casey, 1907		4 Eleodes (Blapyllis) kaweanus Blaisdell 1933			
9 Metoponium integer Casey, 1907		5 Eleodes (Blapyllis) lariversi Somerby & Doyen 1976			
10 Metoponium molestum Casey, 1907		6 Eleodes (Blapyllis) parvicollis Eschscholtz 1829			
11 Statira dumalis Parsons, 1973		7 Eleodes (Blapyllis) schlingerii Somerby & Doyen 1976			
12 Stenomorpha (Trichiasida) hirsuta (LeConte), 1851		8 Helops punctipennis LeConte, 1866			
13 Telabis fidelis Casey, 1907		9 Helops simulator Blaisdell, 1921			
5: The South Coast	170: 24.12%	10 Hymenorus inquilinus Casey, 1891			
including the Transverse and Peninsular Ranges and Channel Islands		11 Hymenorus punctulatus (LeConte), 1859			
1 Alaephus longicornis Casey, 1924		12 Melanastus vergrandis Casey, 1907			
2 Alaephus maderensis Casey, 1924		13 Pentaphyllus californicus Horn, 1870			
3 Alaudes alternata Fall, 1928		14 Scotobaenus punctatus (Blaisdell), 1933			
4 Apsena barbarae Blaisdell, 1932		15 Scotobaenus simplex (Blaisdell), 1937			
5 Apsena crassicornis (Casey), 1890		16 Scotobaenus wagneri (Blaisdell), 1933			
6 Apsena grossa (LeConte), 1866		7: The Central Valley	76: 6.58%		
7 Apsena laticornis (Casey), 1891		1 Coelus gracilis Blaisdell, 1939			
8 Araeoschizus doyenii Papp, 1981		2 Helops fresnoensis Blaisdell, 1931			
9 Araeoschizus exiguus Casey, 1907		3 Metoponium gulosum Casey, 1907			
10 Auchmobius angelicus Blaisdell, 1934		4 Myetochara marshalli Campbell, 1978			
11 Auchmobius sanfordi Blaisdell, 1934		5 Stenomorpha (Stenomorpha) mckittricki (Pierce), 1944			
12 Blapstinus lecontei Mulsant & Rey, 1859		8: The Central Coast	110: 18.18%		
13 Coelus pacificus Fall, 1897		including the San Francisco Bay area and Coast Ranges			
		1 Apocrypha setosa Doyen & Kitayama, 1980			
		2 Apsena rufipes simplex Blaisdell, 1932			
		3 Araeoschizus sulciollis disjunctus Papp, 1981			

Figure 3. Regional Endemic California Tenebrionidae.

Acknowledgements

We would like to thank the Jepson Herbarium at UC Berkeley for use of their map, Mike Caterino for encouraging interest in California beetles and regional endemism within the state, Drs. Ronald Somerby and Charles Triplehorn for sharing their ongoing research, and the NSF ARTS program (DEB-1258154) for support of this study.

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