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Illustrated Beetles of Quail Ridge Reserve

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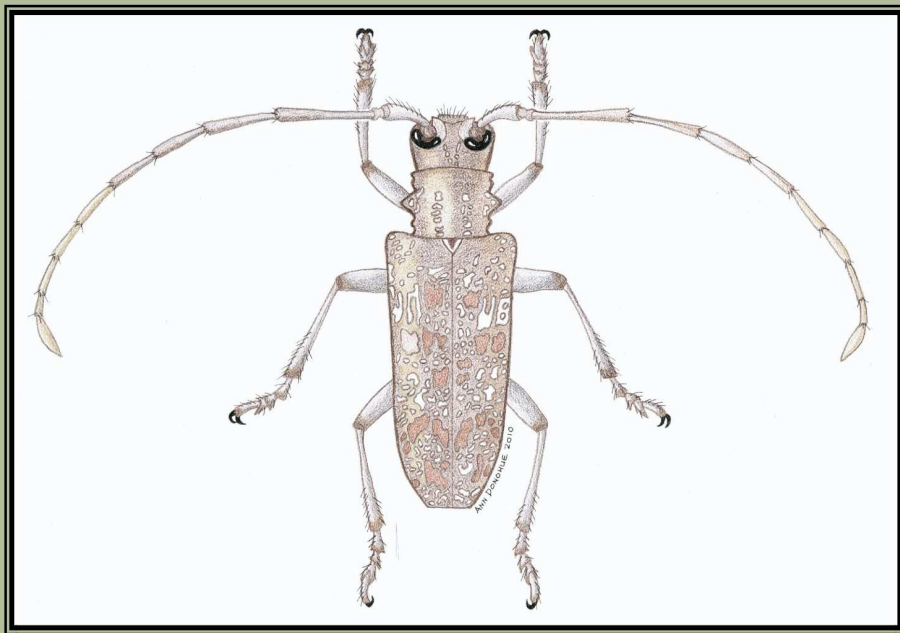


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Illustrated Beetles of Quail Ridge Reserve



Ann Donohue



Illustrated Beetles of Quail Ridge Reserve

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Introduction

The Quail Ridge Reserve is part of the University of California Natural Reserve System and is located in Napa County on a peninsula at the southern end of Lake Berryessa. The Reserve is composed of land owned by the US Bureau of Land Management, US Bureau of Reclamation, Quail Ridge Wilderness Conservation, California Department of Fish and Game and UC Regents. The University NRS continues to expand on the Reserve as private property owners become willing to sell parcels thereby increasing the size of this amazing protected wildlife and ecological study site.

Vegetation on Quail Ridge consists primarily of mixed oak woodland, riparian, native and non-native grasslands and chamise chaparral.

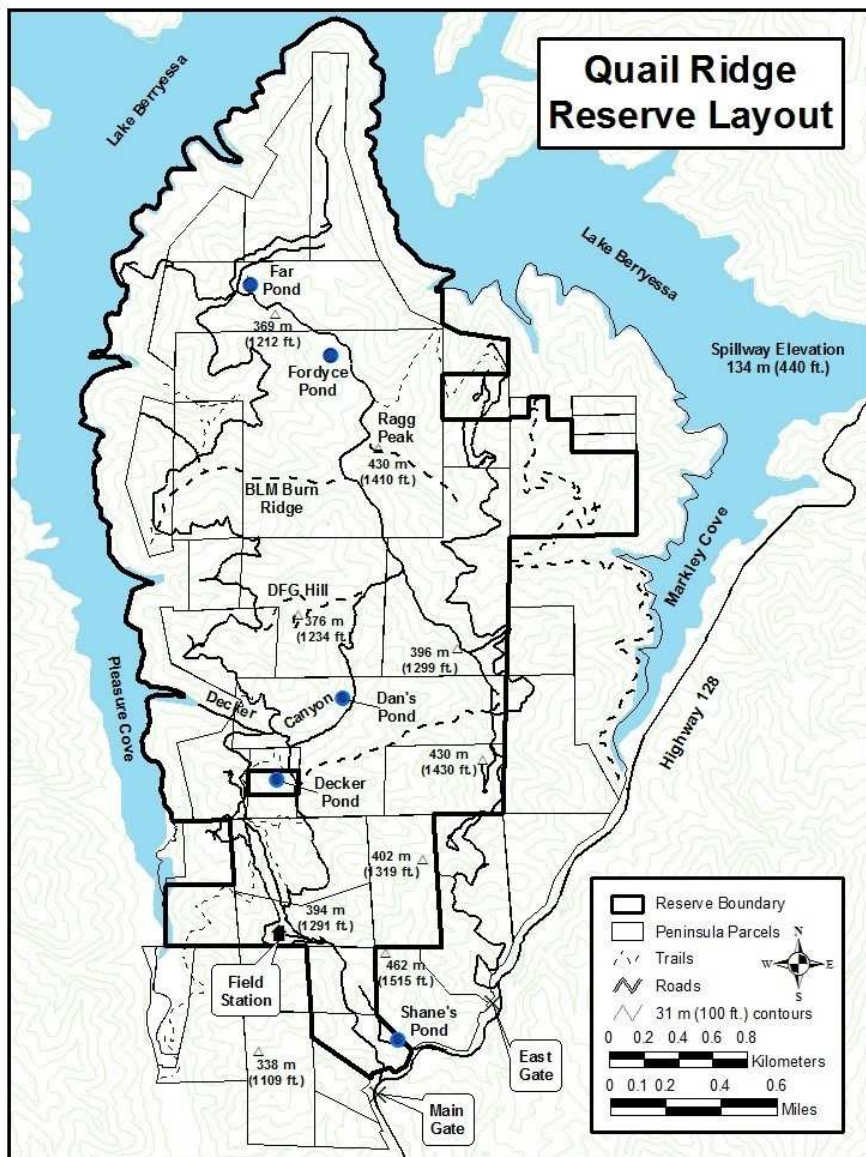
The illustrated beetles and species and family list in this

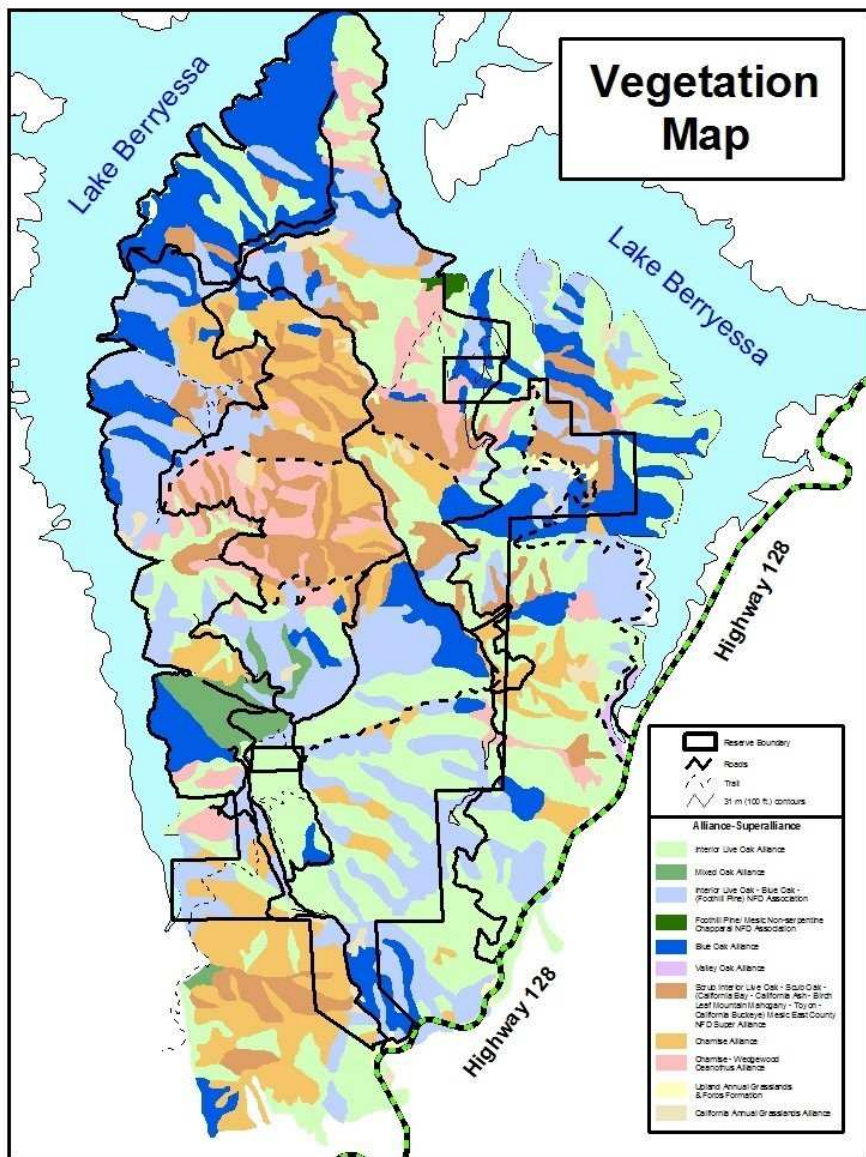
book are the product of a beetle survey conducted on the Reserve. Beetles were collected by black light at the Reserve field station and in Decker Canyon, on flowering vegetation, under logs and other harborage, along road sides during daytime and evening hours. and reared from logs.

This beetle survey was conducted toward the completion of a masters degree project for the University of Nebraska at Lincoln. It is the authors intention to continue expanding on the beetle species list and illustrations in this book as further species identification and illustration take place.

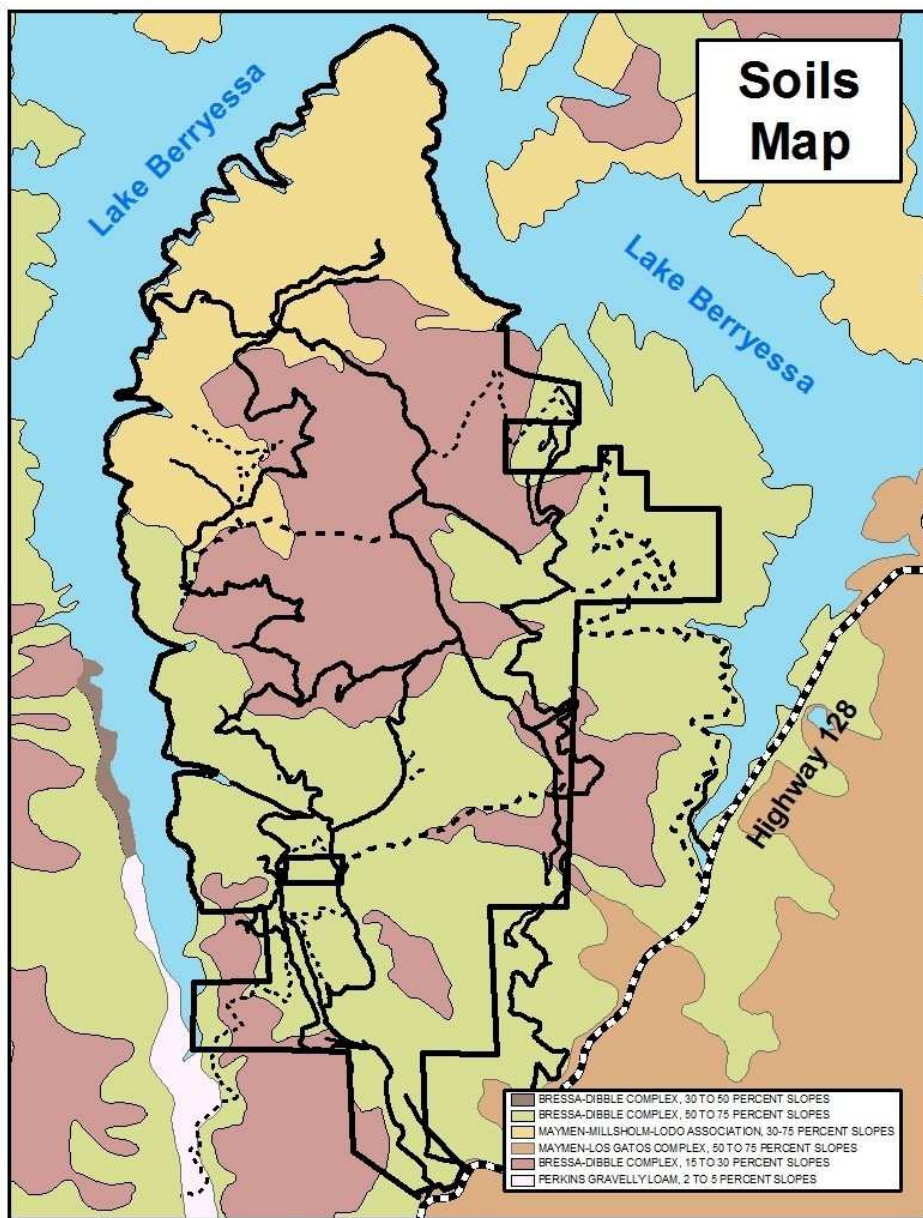
Special thanks to Virginia "Shorty" Boucher and Shane Waddell for permission to use the Reserve for this project and to James Tucker for all the nights of "beetles and beer".

Quail Ridge Reserve Layout





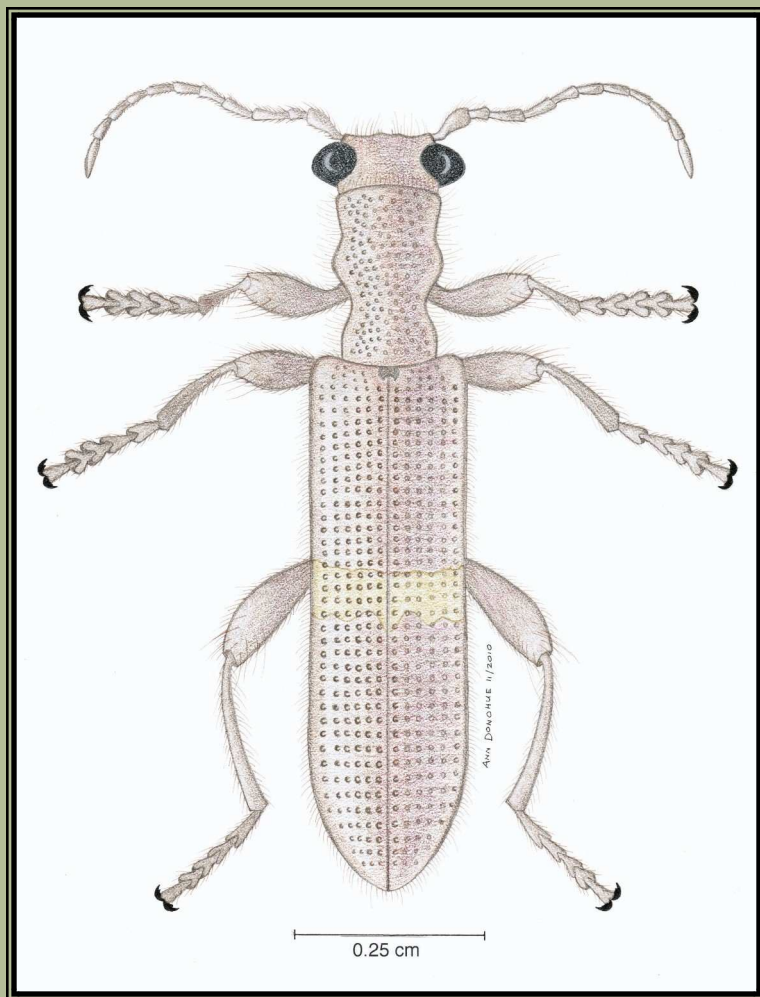
Map Source: <http://nrs.ucdavis.edu/quail.html>



Cymatodera vandykei Cleridae

This medium sized checkered beetle was collected at the field station where it was commonly attracted during evening hours to a blacklight source along with the larger member of this genus, *Cymatodera californica*. There is not much information available about the biology of this species but according to Evans and Hogue (2006), there are 19 members of this genus in California and larvae are predaceous on the immature stages of wood boring beetles. *Cymatodera* larvae burrow into the sawdust packed tunnels created by wood boring beetles in search of prey. This specimen was collected on 8/21/2010 and is illustrated in colored pencil on Strathmore 400 series vellum.

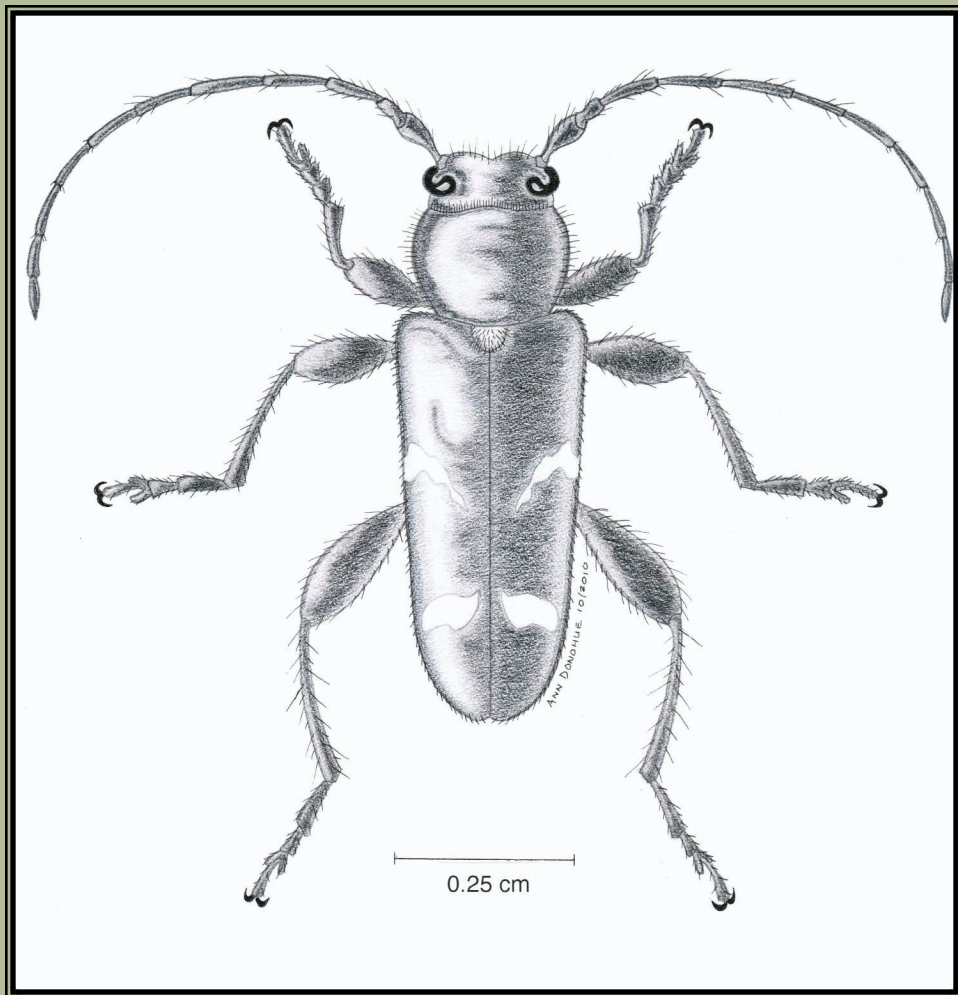






This small handsome longhorn beetle was the only individual collected at the Reserve during the entire length of the survey. It was collected at a black light source although this is not typical for this species (Ian Swift, personal communication). Adults are day flying beetles and do not feed. Larvae of this species feed on several species of dead and dying oak so do not have the potential to be a wood boring beetle pest that might cause damage to living trees. This individual was collected in Decker Canyon on 6/6/2010. Illustrated in colored pencil on Strathmore 400 series vellum.

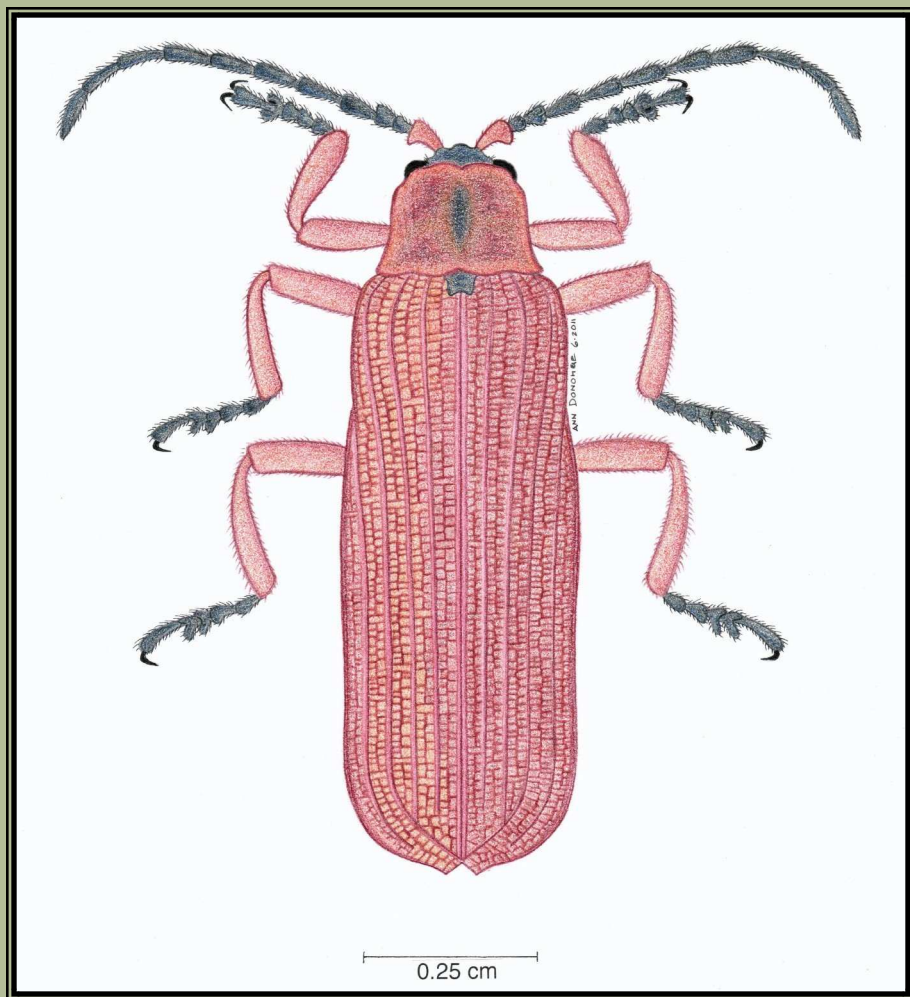




Dictyoptera simplicipes Lycidae

The biology of the six California species in the net-winged beetle family is poorly understood according to Evans and Hogue (2006). The latin name for this species translates as, *Dictyoptera* "net-winged", *simplicipes* "simple-legged". Larvae are found underneath bark or under rotting logs and leaf litter and feed primarily on fungus and molds. Adult beetles can be found on vegetation where they feed on nectar or honeydew and sometimes form large aggregations. The adult beetle is aposematic as is seen by its bright coloration which offers a warning to potential predators. This specimen was collected mid flight by hand during daylight hours on 3/4/2011 in Decker Canyon. Illustrated in colored pencil on Strathmore 400 series vellum.

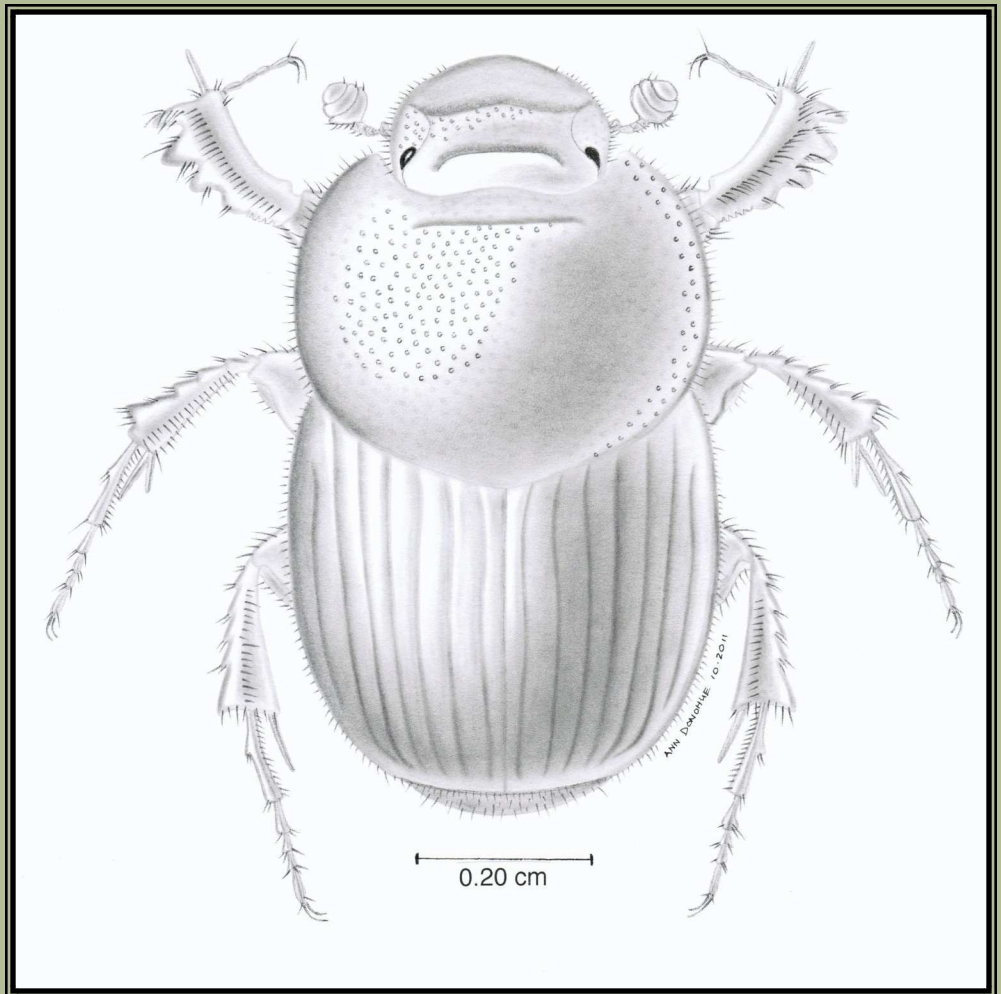






Dung beetles in the genus *Canthon* are commonly known as tumble bugs due to their dung-rolling nature. This little species, *Canthon simplex*, is the only dung-rolling scarab in California. Evans and Hogue (2006) state that the female will carve out a piece of cow or horse dung into a ball, or can make use of Beechy Ground Squirrel or Yellow-bellied Marmot droppings. The female then lays a single egg in the ball of dung and rolls it a short distance and buries it. This individual was collected in Decker Canyon under coyote dung on 7/10/2011 and is illustrated using carbon dust on white Stonehenge vellum.

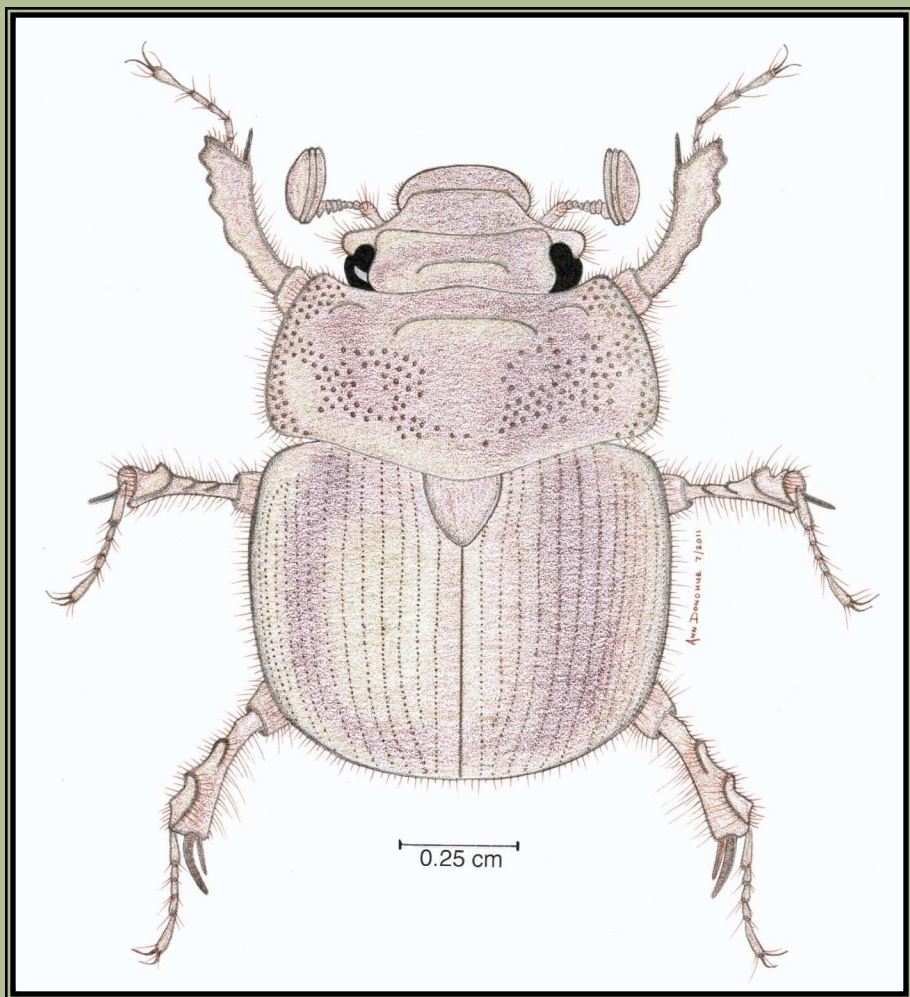






This earth-boring scarab is one of only five California species all of which used to be included as a subfamily in the scarab beetle family. Adults dig an often very deep tunnel in which leaf material is collected and formed into a plug which will serve as a food source for developing larvae. This specimen was attracted in the early evening hours to a black light source at the Reserve field station. Collected on 3/20/2010 and illustrated in colored pencil on Strathmore 400 series vellum.

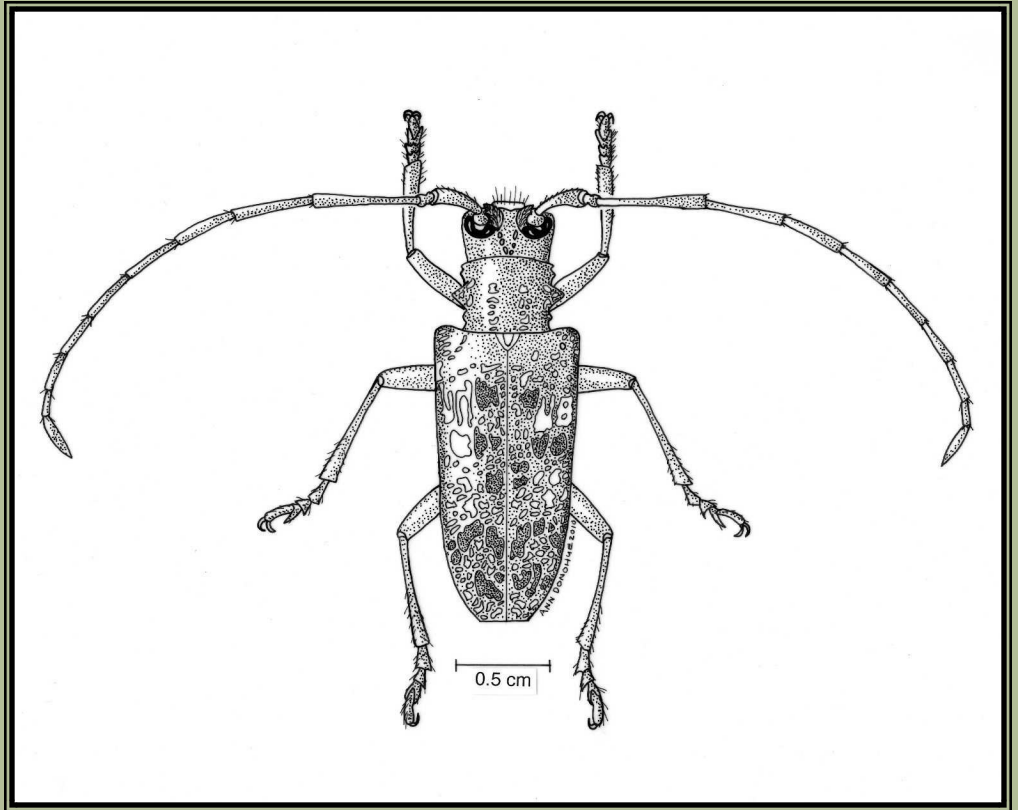




Monochamus clamator Cerambycidae

The Spotted Pine Sawyer is a robust medium sized beetle with very long antennae. Larvae feed on pine, douglas fir and spruce and create extensive tunnels in the heartwood of recently dead or injured trees (Evans and Hogue, 2006). They can cause considerable damage to felled trees before they can be milled for lumber. Adults are very strong nighttime flyers and are attracted, sometimes in great numbers, to light sources. The adults feed on pine needles or gnaw on bark of young twigs. Females chew a pit in the tree surface and lay from one to six eggs, larvae can take from one to two years to complete their life cycle. This individual was collected at a black light source at the field station on 6/25/2009. Illustrated in pen and ink on Borden & Riley Denril Multi Media Vellum.

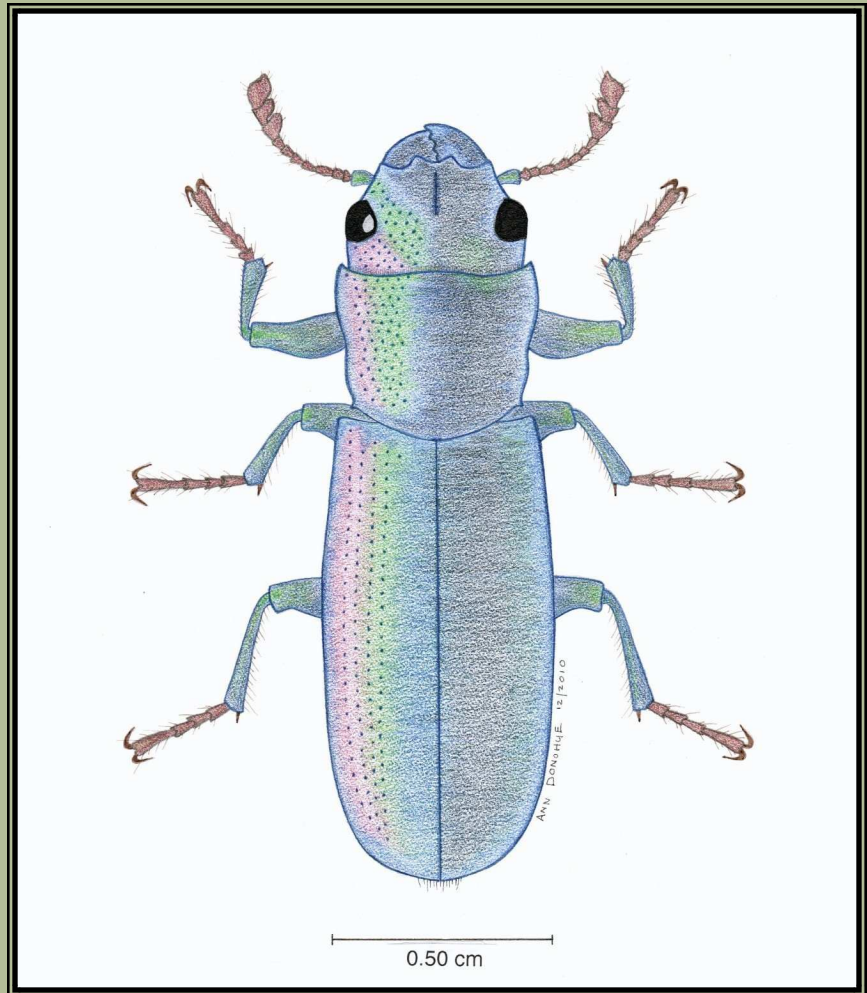




Temnoscheila chlorodia Trogossitidae

The Green Bark Beetle is a bluish green and sometimes purple metallic beetle. Both adults and larvae are predators of wood boring beetles and have been studied for their potential to control Scolytid bark beetles which can cause extensive damage in western coniferous forests. Larvae will enter galleries of bark beetles and are predaceous on all stages. It's use as a biological control agent has not been successful but this beetle remains an important natural enemy of bark beetles. This individual emerged from cut wood at the field station on 08/21/2010 that was also infested with Scolytid beetles. Illustrated in colored pencil on Strathmore 400 series vellum.

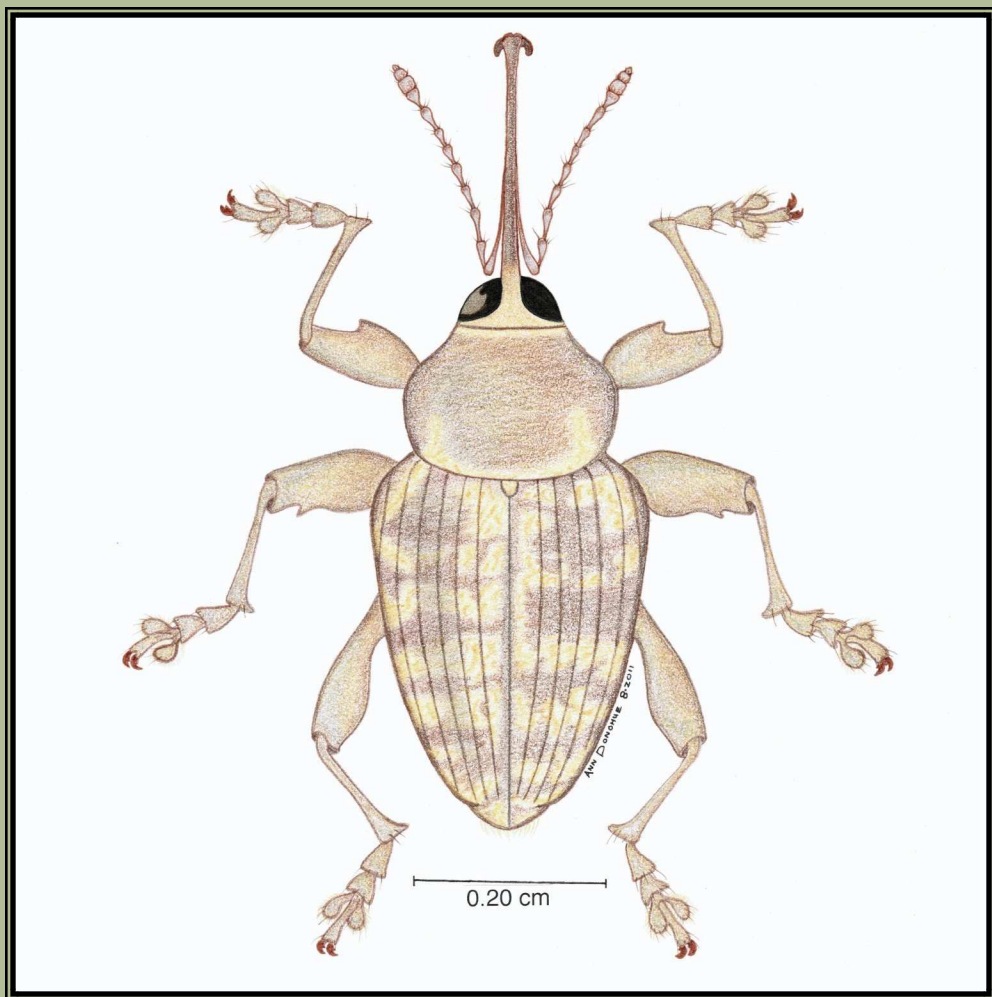






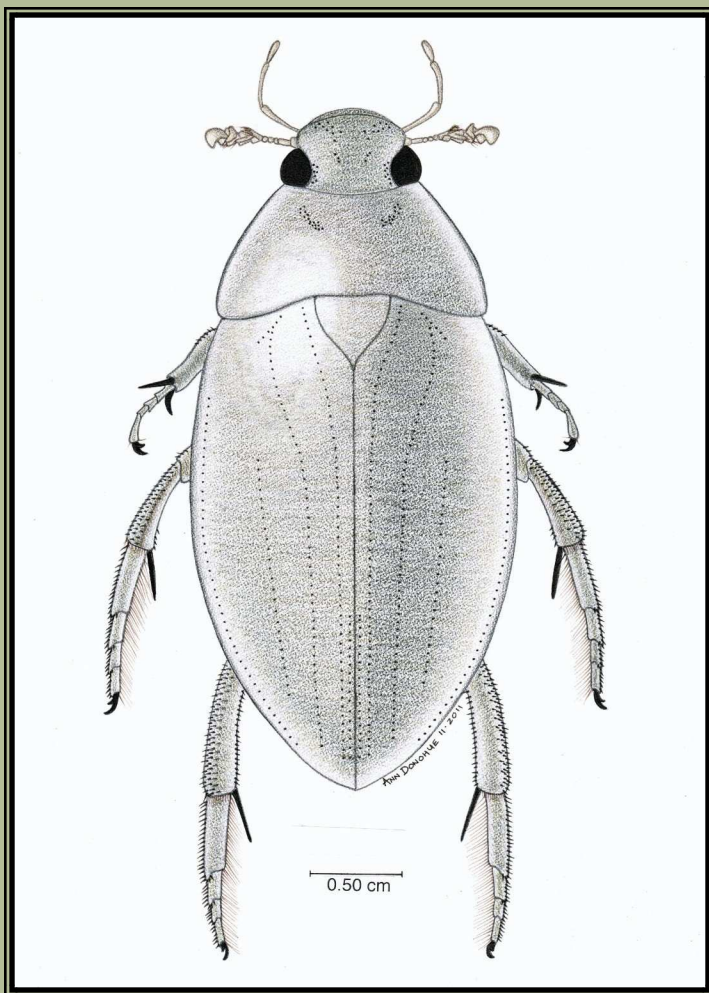
The California Acorn Weevil, or Filbert Weevil, is considered a pest in the Pacific Northwest due to it's potential for causing damage to hazelnuts. It's usual food plant is a variety of oaks. Larvae feeding on the acorns can leave trees susceptible to a secondary bacterial infection by *Erwinia quercina* that may cause a condition known as drippy oak which does not appear to affect tree health. It is thought by some that under high infestation levels (up to 75%) in some trees, acorn germination may be reduced to a level that results in a reduction of oak tree habitat. This specimen was collected on 7/10/2011 in Decker Canyon at a black light source. Illustrated in colored pencil on Stonehenge 400 series vellum.





The Giant Black Water Beetle is the largest species in the water scavenger beetle family (Evans and Hogue, 2006) and is widely distributed throughout North America. These beetles have the ability to secure an air bubble which they dive with, an adaptation that allows them to remain submerged for longer periods before resurfacing for air. Eggs are laid in a protective case which can be either attached to aquatic vegetation or set a float. Larvae of this species and others in this family are predaceous. Adults are commonly attracted to light. This individual was collected at a black light source in Decker Canyon on 7/10/2011. Illustrated in colored pencil on Strathmore 400 series vellum.

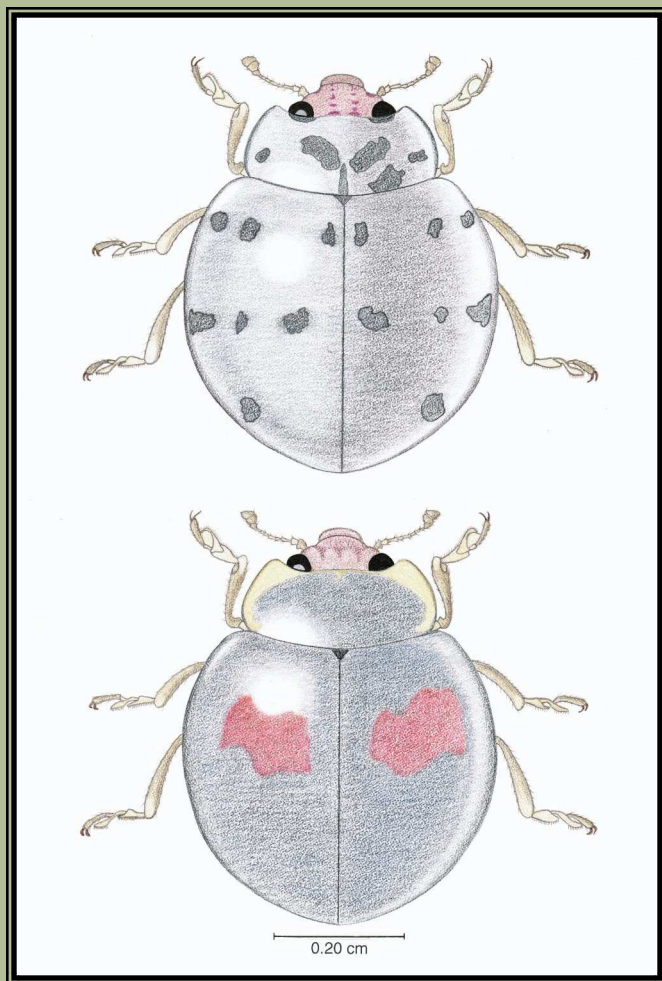






These two lady beetles are actually two forms of the same species, the Ashy Gray Lady Beetle. Both of these forms have been collected on the Reserve. The more common light gray form was collected by black light at the field station on 6/26/2008. The less common black and red form, which might be confused with the Twice Stabbed Lady Beetles in the genus *Chilocorus*, was collected also at a black light source but in Decker Canyon on 6/25/2011. This beetle feeds on psyllids and aphids. Illustrated in colored pencil on Stonehenge 400 series vellum.

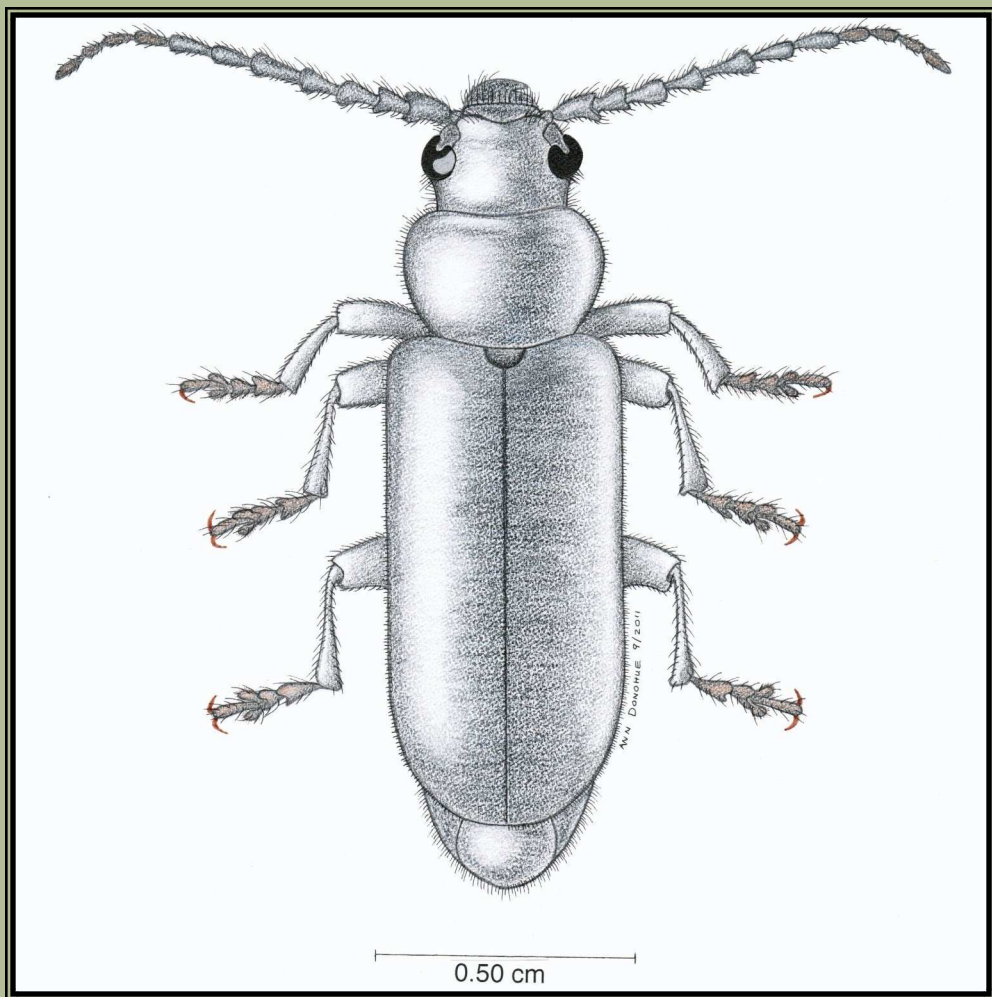






This is a fairly common beetle during the summer months on the Reserve. According to Evans and Hogue (2006) it is found throughout the Coast, Transverse and Peninsular Ranges as well as the Sierra Nevada. Larvae of this species bore into sapwood and heartwood of pines and require one to two years to fully develop. This specimen was collected in Decker Canyon on 6/25/2011 at a black light source. Illustrated in colored pencil on Stonehenge 400 series vellum.

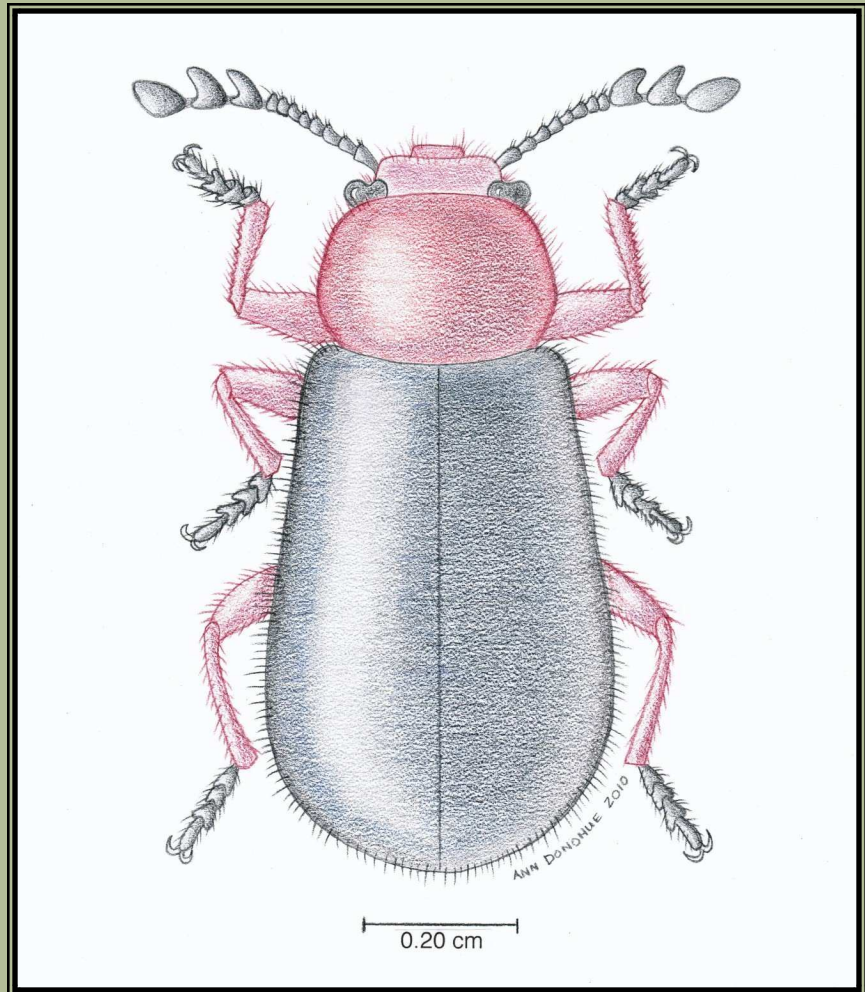






This beautiful checkered beetle was only observed once on the Reserve during the entire length of the survey. Both larvae and adults are predaceous. Larvae of this species are reportedly predaceous on *Neoclytus* larvae, a genus of longhorn beetle (bugguide). This specimen was collected mid-flight by sweep net in front of the field station during daylight hours on 4/17/2010. Illustrated in colored pencil on Strathmore 400 series vellum.

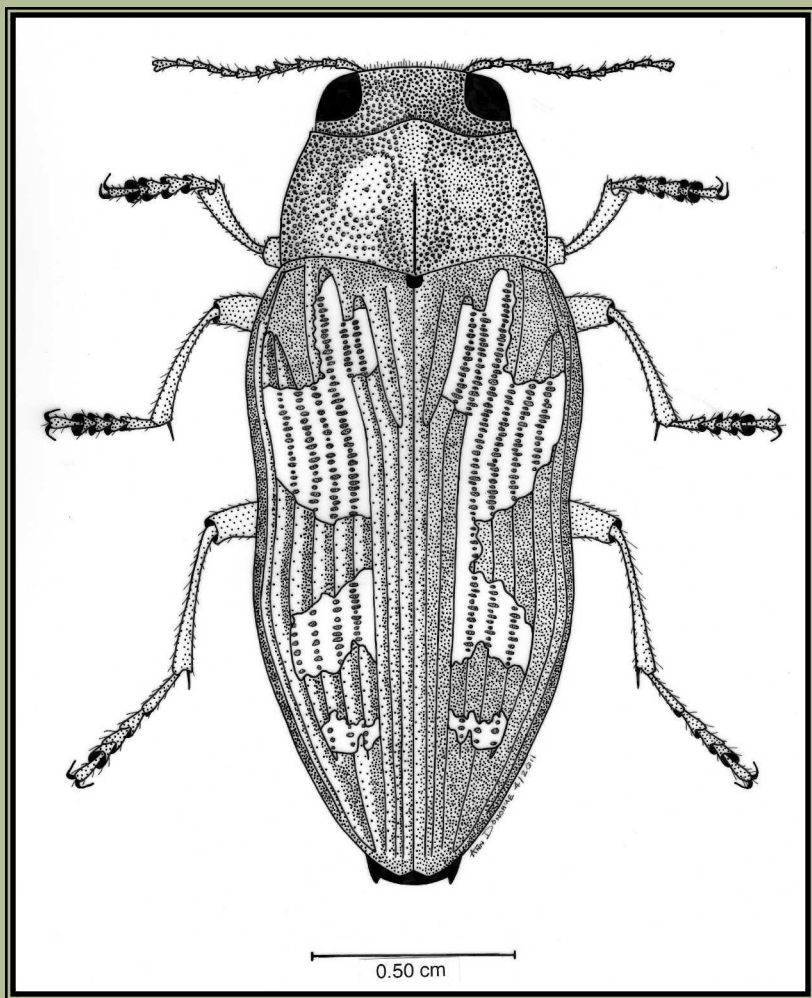




Buprestis laeviventris Buprestidae

As the name implies, this metallic wood-boring beetle feeds on wood. The larvae of this species are found boring primarily into species of pine. Females lay their eggs on the trunk, branches or bark of trees already weakened by injury, fire or damage by other tree attacking insects. These beetles can be considered a pest of recently felled trees by the forest service and logging industry due to extensive tunnels produced by larvae in tree heartwood. This specimen was collected during daylight hours at the Reserve field station on 7/31/2010. Illustrated in pen and ink on Borden and Riley Denril Multi Media Vellum.

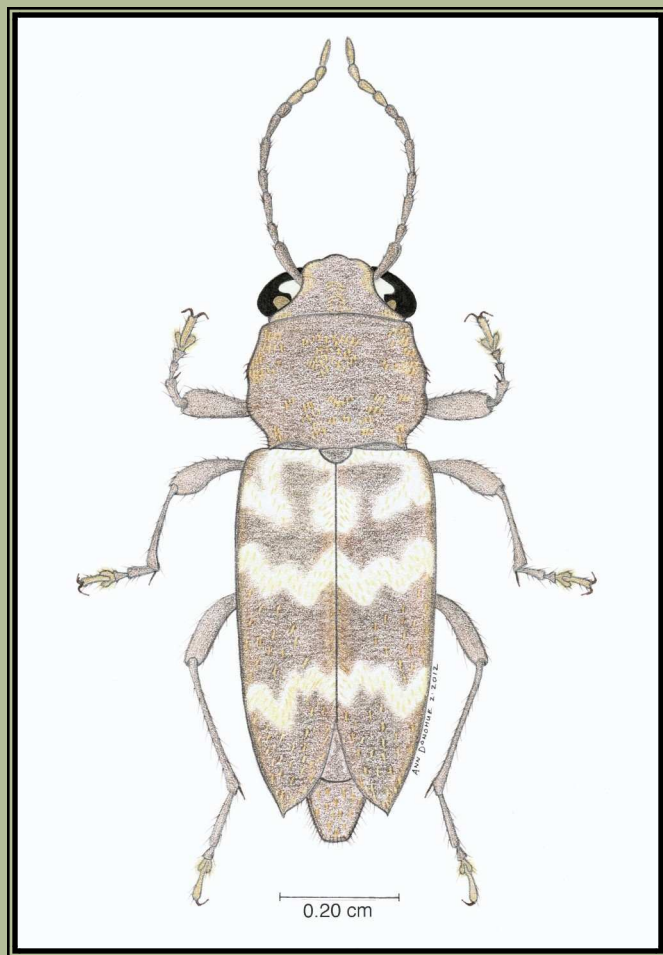






Larvae of the Nautical Borer, also known as the Oak Cordwood Borer, feed on dead and dying walnut, madrone, oak and a few other species of deciduous trees (Evans and Hogue, 2006). The habit of feeding on dead wood makes this beetle an occasional occurrence inside of homes when adults emerge from firewood. Larvae do not infest structural timber. This specimen was collected in Decker Canyon at a black light source on 9/3/2011. Illustrated in colored pencil on Strathmore 400 series vellum.

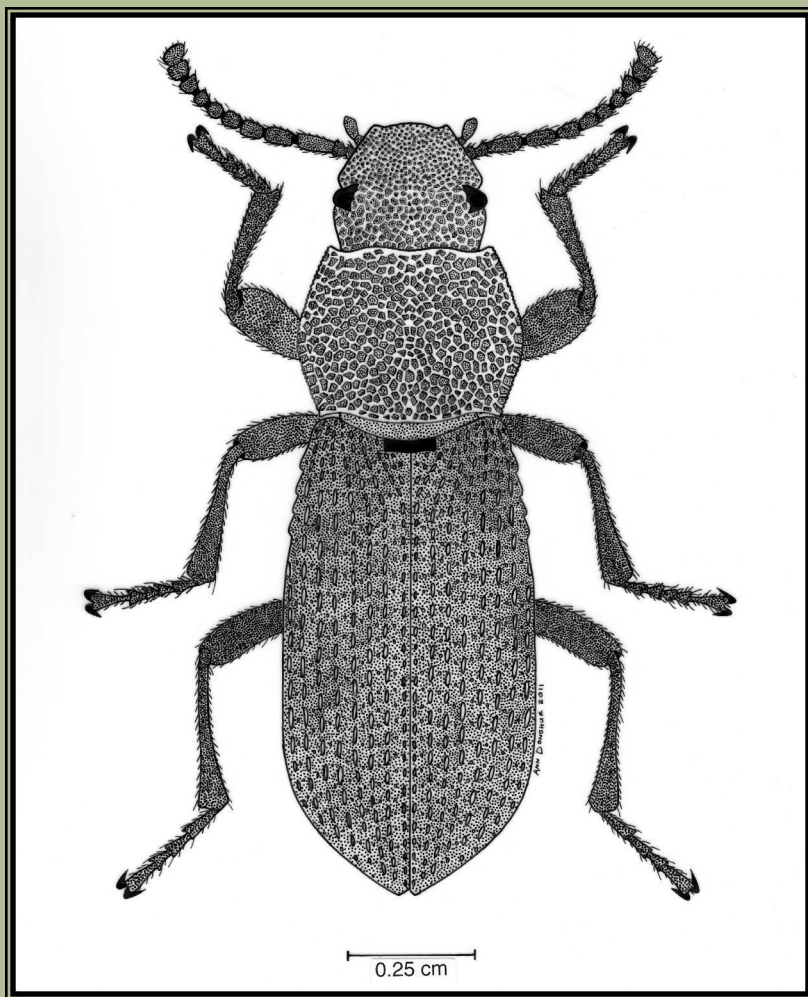






This is one of only four species in the genus *Nyctoporis* occurring in California (Evans and Hogue, 2006) The scientific name for the darkling beetle family comes from the latin tenebrio meaning “one who loves darkness”. This species is nocturnal as are most of the Tenebrionidae and occurs in the foothills, mountains and valleys throughout the state. The elytra are fused and have a coarsely textured surface with rows of raised bumps. This specimen was collected inside the field station on 5/14/2010, followed by two other specimens shortly afterwards. Most likely entering from underneath through cracks in the floor as are the numerous *Triatoma* specimens found in the building as well. Illustrated in pen and ink on Borden and Riley Denril Multi Media Vellum.

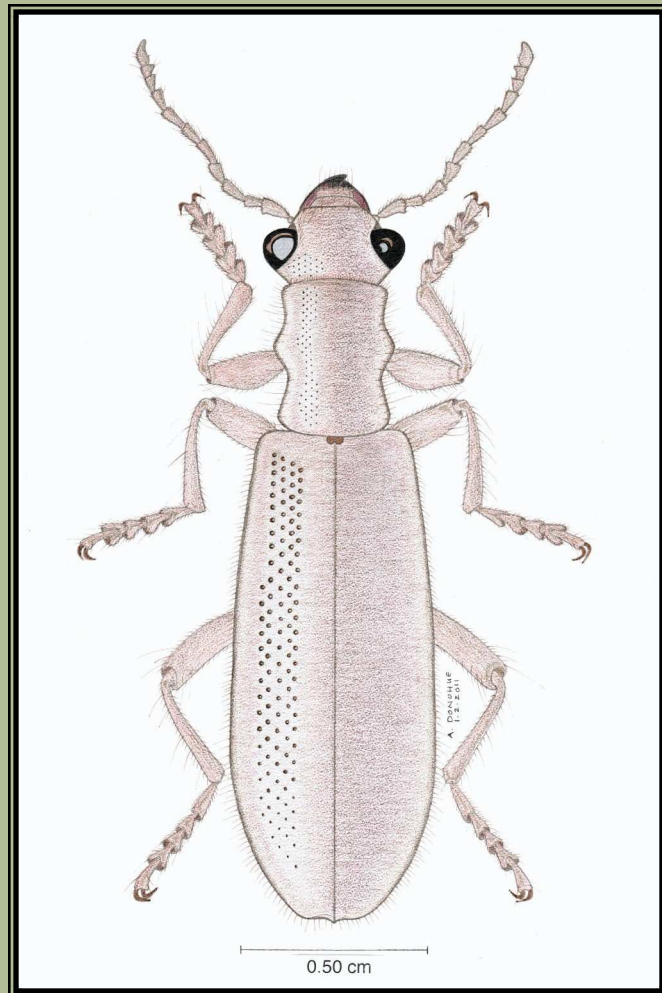




Cymatodera californica Cleridae

There are seventy one species of checkered beetle in California and this species is the largest. Larvae are predaceous on the immature stages of wood-boring beetles and dig through frass packed tunnels in search of prey. This species is very common on the Reserve and is attracted to black light sources in large numbers during summer months. This specimen was collected at a black light source at the field station on 9/05/2010. Illustrated in colored pencil on Strathmore 400 series vellum.

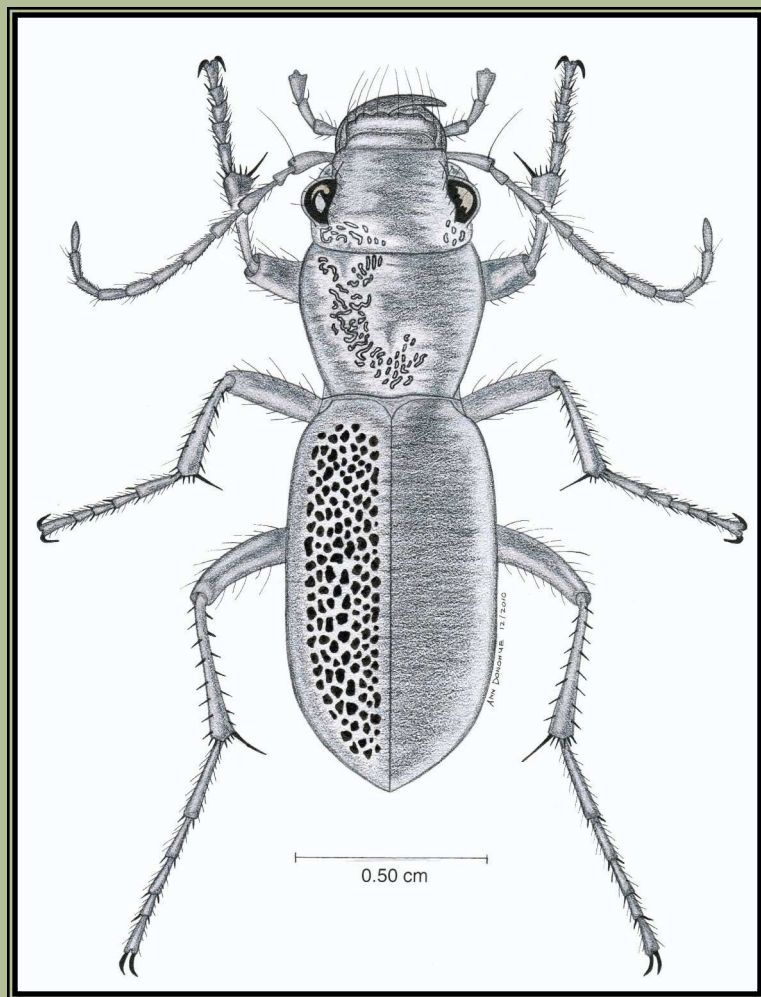






The California Night Stalking Tiger Beetle is a fierce predator with powerful mandibles that can be found during evening hours searching for prey. This is a fast moving flightless species of ground beetle as the elytra are fused. It is active during winter and spring months. This specimen was collected on the road stalking prey in Decker Canyon on 6/06/2010 Illustrated in colored pencil on Strathmore 400 series vellum.

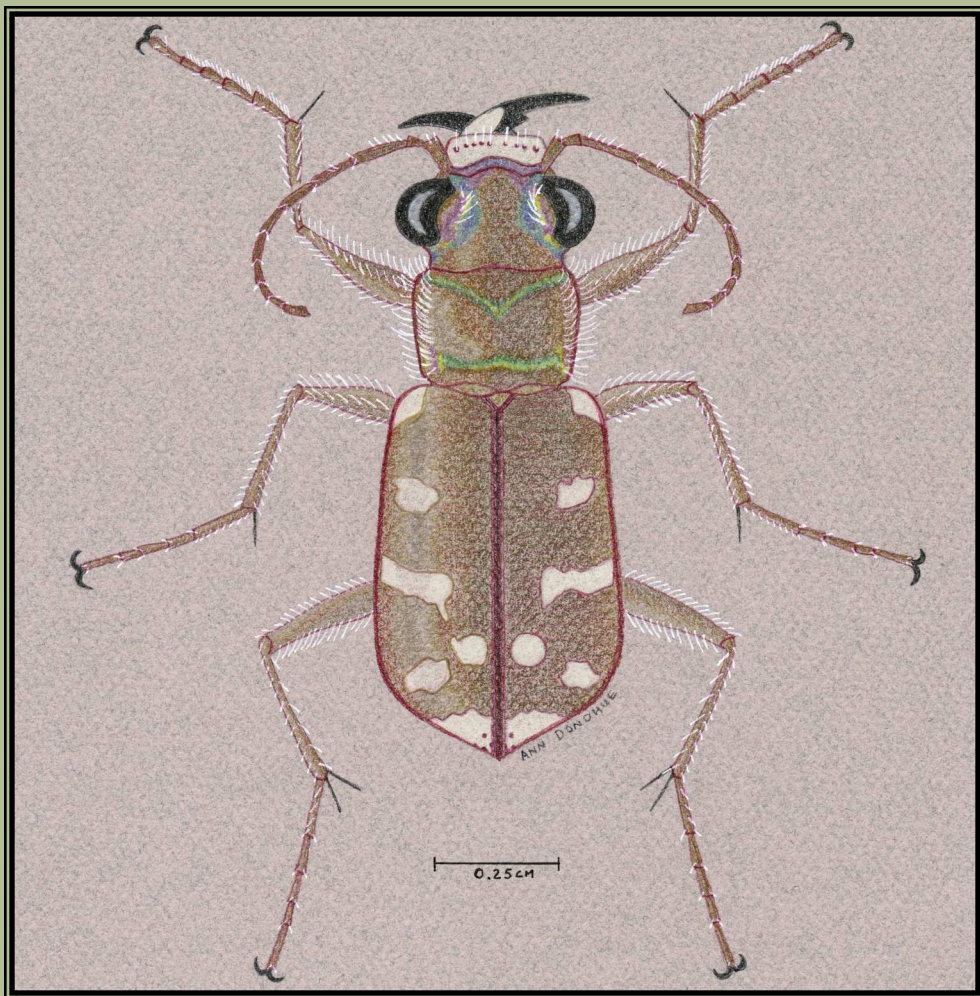






The Western Tiger Beetle is a very common species found throughout much of California and the west. Its habitat is lake or creek margins and it can also be found on sandy coastal beaches as well as along high mountain streams. Unlike the tiger beetles in the genus *Omus*, this group is diurnal and has the ability to fly, which it does readily. Larvae are predaceous and occur in vertical tunnels where they wait for prey with mandibles ready at the tunnel entrance. When prey are captured, they are dragged down into the tunnel to be consumed. This specimen was collected on the Lake Berryessa shore near Decker Canyon on 5/15/2010. Illustrated in colored pencil on Canson Mi Teintes colored vellum.



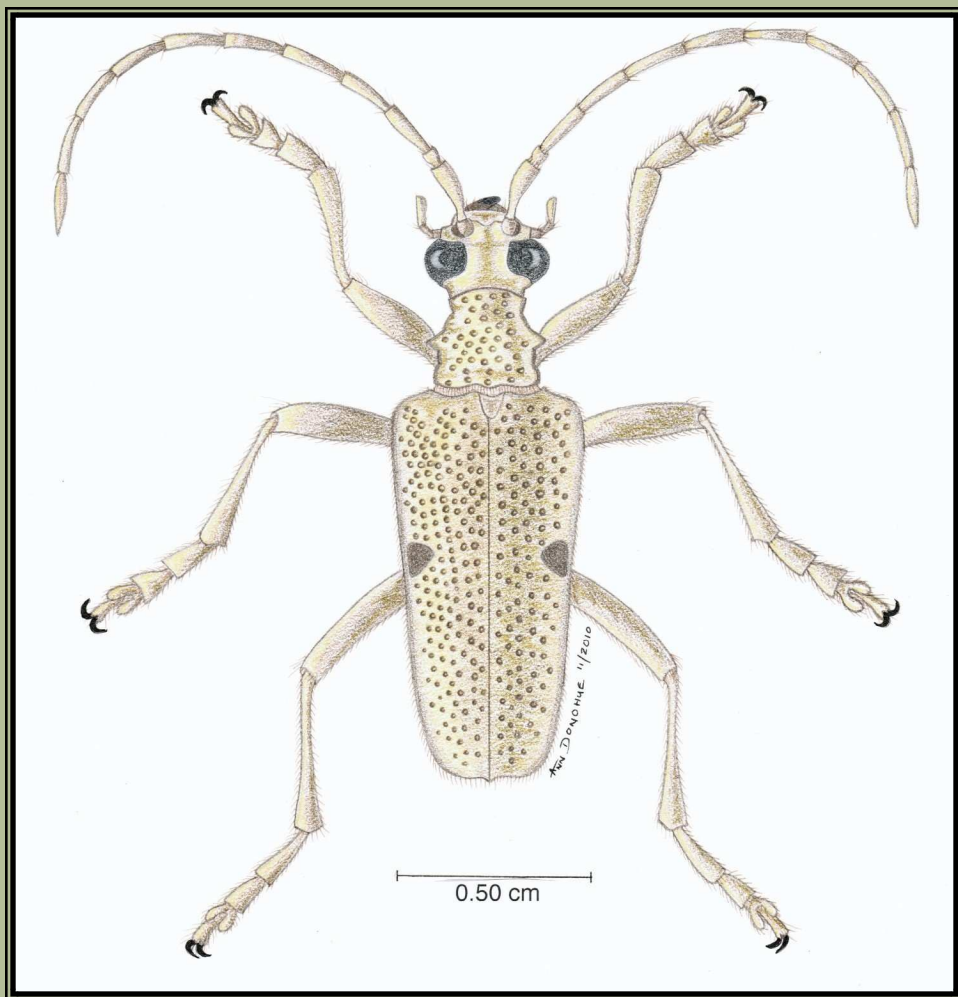




The Yellow Douglas-fir Borer is in the flower longhorn beetle subfamily Lepturinae.

Larvae of this species feed on Douglas-fir, oak and madrone. They live freely in the soil where they feed on dead roots and stumps and take two or more years to complete their life cycle (Furniss and Carolin, 1992) The Yellow Douglas-fir borer is found in montane habitats in California such as the Sierra Nevada, Transverse and Peninsular ranges (Evans and Hogue, 2006). This specimen was collected at a black light source at the field station where it was found in great numbers on 7/04/2008. Illustrated in colored pencil on Strathmore 400 series vellum.

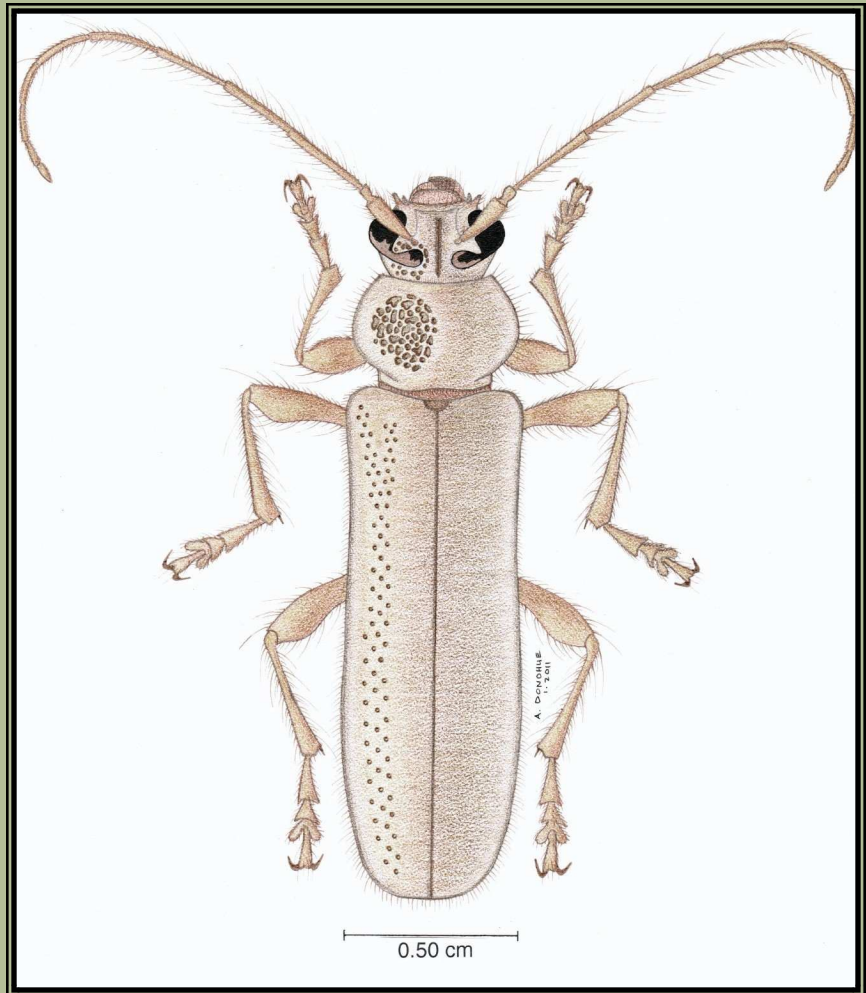






The genus *Paranoplium* is composed of a single species which is divided into two subspecies that only occur in California (Evans and Hogue, 2006). Evans and Hogue refer to the subspecies as being of dubious validity so the jury must still be out on that one. Larvae feed on oak and other hardwoods. This species was fairly common at Quail Ridge and was readily attracted to black light. This specimen was collected in Decker Canyon on 9/05/2010. Illustrated in colored pencil on Stonehenge 400 series vellum.

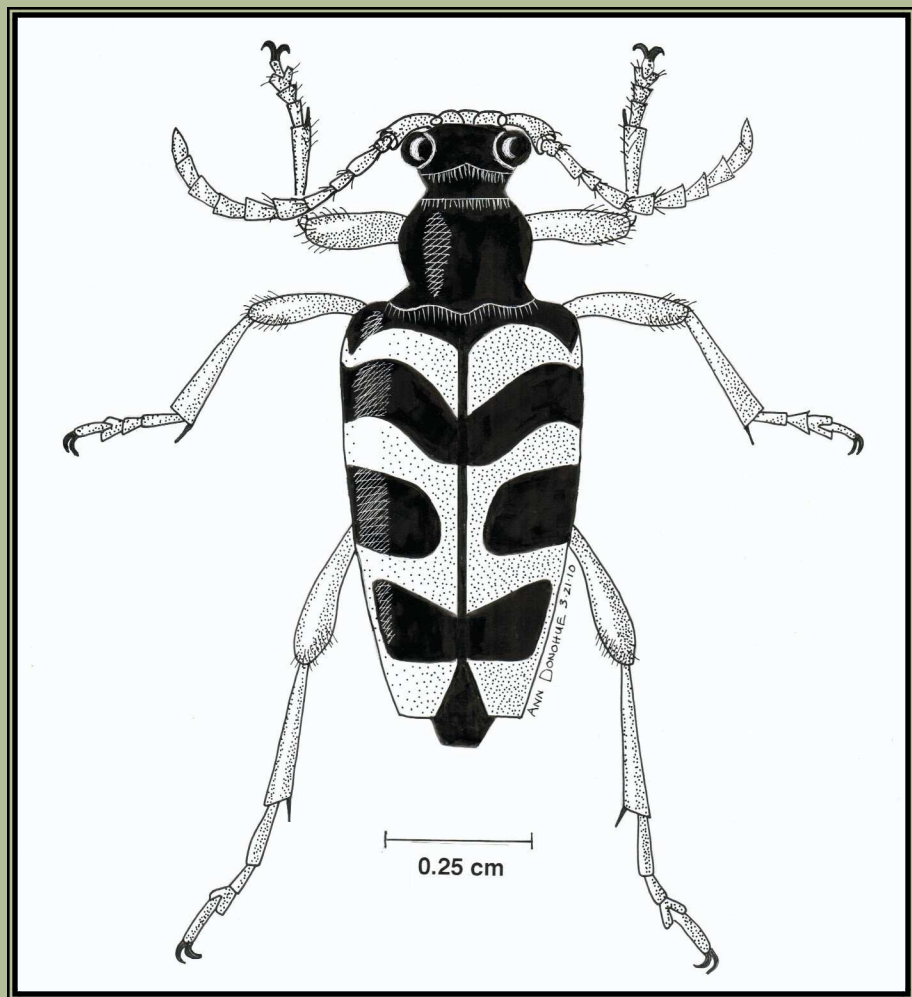






There are three species in the flower longhorn beetle genus *Strophiona*, all western in occurrence within the United States. Larval host plants are oak and the evergreen Giant Chinkapin. Adults feed on flowers of hemlock, buckthorn, wild buckwheat and *Prunus* sp. Only a single individual was observed on Quail Ridge during the course of the survey. It was collected on flowering vegetation on the western slope of the Reserve on 5/24/2009. The beetle itself is bright yellow and black and is illustrated here in pen and ink on white scratchboard.

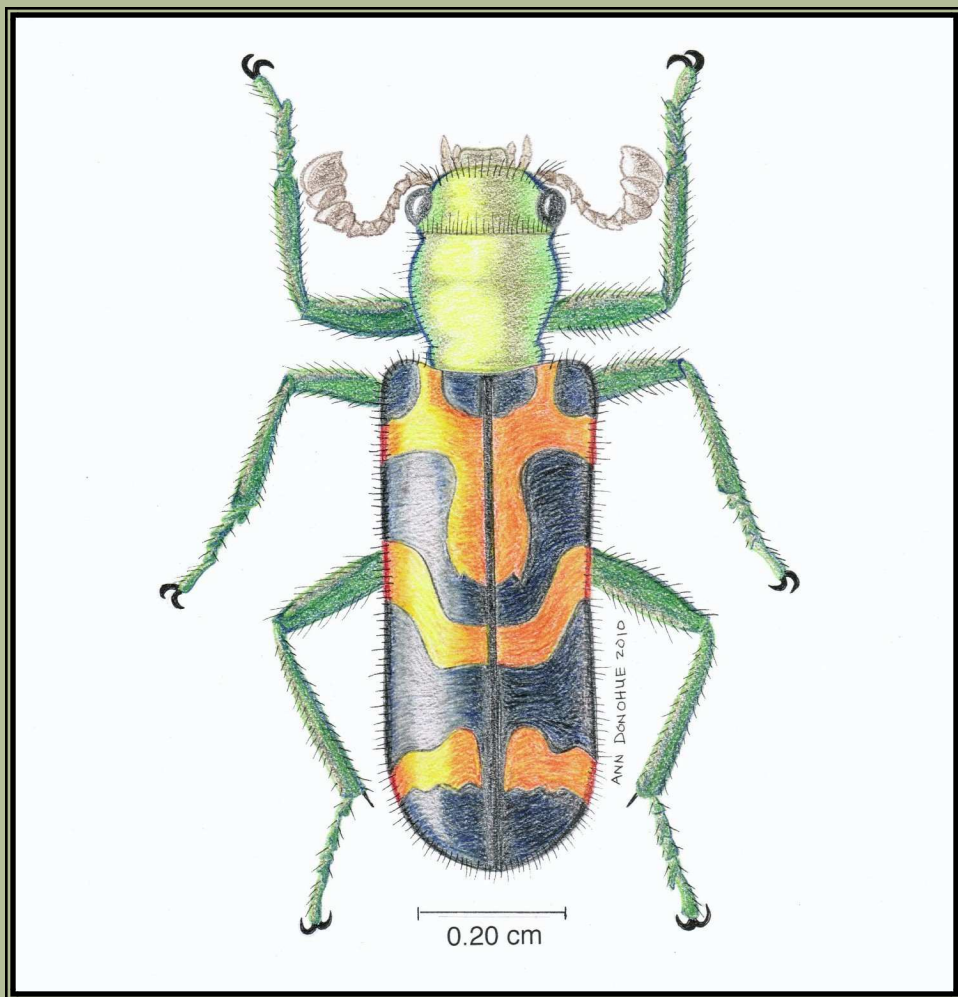






The Ornate Checkered Beetle is widespread throughout Western North America and can be seen commonly on flowering vegetation on the western slope of the Reserve during summer months. Adults feed on pollen but will also prey on smaller insects. The larvae are predaceous and develop in nests of leaf cutter bees and vespid wasps (Evans and Hogue, 2006) where they feed on developing brood and can take years to complete their life cycle. In areas where leaf cutter bees are important crop pollinators, these beetles can be considered a pest. Females lay eggs on flowers where larvae attach themselves to flower visiting bees and are carried inadvertently back to the nest. Collected on 5/24/09, illustrated in colored pencil on Strathmore 400 series vellum.

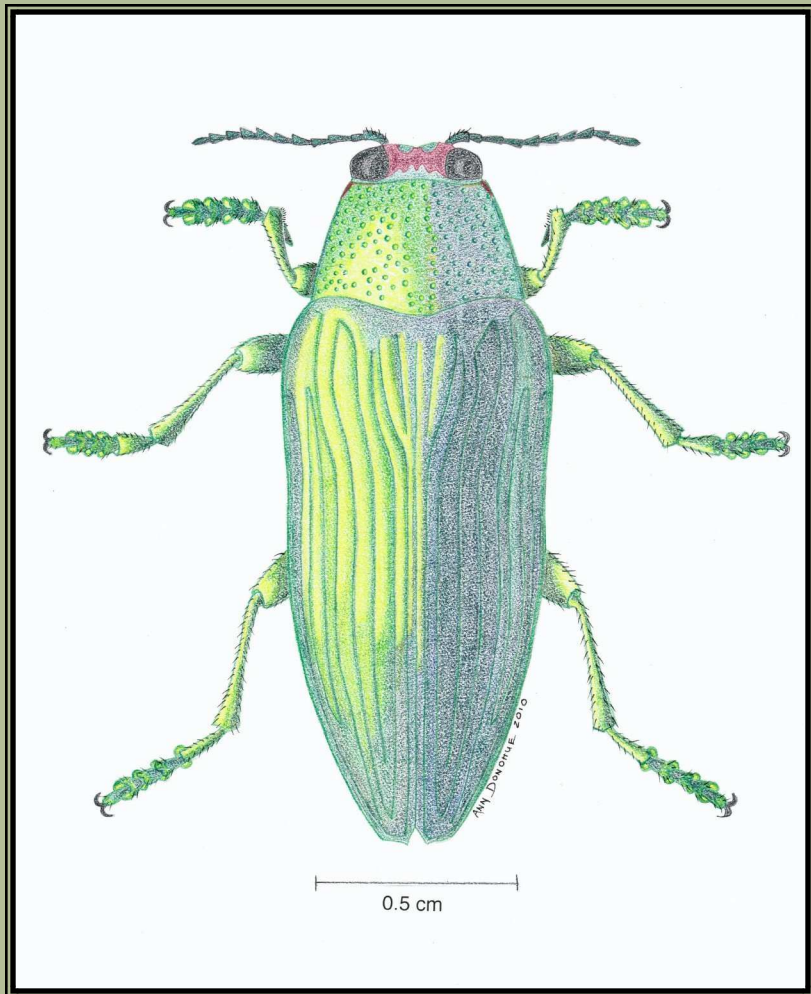






This rather large metallic wood boring beetle was collected by sweep net during daylight hours at the Reserve field station on 7/10/2010. Not much is known about the biology of this species but the larval host plants are Giant fir, Ponderosa pine and Douglas fir. Illustrated in colored pencil on Strathmore 400 series vellum.





Quail Ridge Beetle Family and Species List

Bostrichidae

Bostrichid Beetle

Bruchidae

Seed Beetles

Buprestidae

Buprestis laeviventris

Buprestis lyrata

Metalic Wood Boring Beetles

Cantharidae

Cultellunguis americana

Podobrus pruinosus

Soldier Beetles

Carabidae

Chlaenius tricolor

Cicindela oregona

Omus californicus

Scaphinotus sp.

Ground Beetles

Cerambycidae

Brothylus gemmulatus

Callimoxys sanguinicollis

Centrodera spurca

Monochamus clamator

Necydalis cavipennis

Poliaenus obscurus

Prionus californicus

Phymatodes obliquus

Strophiona tigrina

Longhorn Beetles

Quail Ridge Beetle Family and Species List

Cerambycidae

Styloxus fulleri californicus

Synaphaeta guexi

Paranoplium gracile

Xylotrechus nauticus

Cleridae

Chariessa elegans

Cymatodera californica

Cymatodera vandykei

Phyllobaenus scaber

Trichodes ornatus

Coccinellidae

Adalia bipunctata

Coccinella septempunctata

Hippodamia convergens

Olla v-nigrum

Chrysomelidae

Cryptocephalus sanguinicollis

Diabrotica undecimpunctata

Saxinis saucia

Cucujidae

Cupedidae

Prolixocupes lobiceps

Longhorn Beetles

Checkered Beetles

Lady Beetles

Leaf Beetles

Flat Bark Beetles

Reticulated Beetles

Quail Ridge Beetle Family and Species List

Curculionidae

Curculio occidentis

Dytiscidae

Dascillidae

Dascillus plumbeus

Dermestidae

Elateridae

Geotrupidae

Bolbelasmus hornii

Bolboceras obesus

Gyrinidae

Gyrinus plicifer

Heteroceridae

Lanternarius sp.

Hydrophilidae

Hydrophilus triangularis

Lampyridae

Microphotus angustus

Pterotus obscuripennis

Snout Beetles

Predaceous Diving Beetles

Soft-bodied Plant Beetles

Skin Beetles

Click Beetles

Earth-boring Scarab Beetles

Whirligig Beetles

Varigated Mud-loving Beetles

Sacvenger Water Beetles

Fireflies

Quail Ridge Beetle Family and Species List

Lathridiidae

Lycidae

Dictyoptera simplicipes

Melyridae

Malachius horni

Malachius mixtus

Mordellidae

Phengodidae

Zarhipis integripennis

Scarabidae

Canthon simplex

Polyphylla decemlineata

Silphidae

Nicrophorus nigrita

Silvanidae

Uleiota truncatus

Staphylinidae

Ocypus olens

Brown Scavenger Beetle

Net-winged Beetles

Soft-winged Flower Beetles

Tumbling Flower Beetles

Glowworms

Scarab Beetles

Carrion Beetles

Silvanid Flat Bark Beetles

Rove Beetles

Quail Ridge Beetle Family and Species List

Tenebrionidae

Nyctoporis carinata

Trogossitidae

Temnoscheila chlorodia

Trogidae

Trox sp.

Zopheridae

Phellopsis obcordata

Darkling Beetles

Bark-gnawing Beetles

Hide Beetles

Zopherid Beetles

References

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Papp, Charles. 1984. Introduction to North American Beetles. Entomography Publications.

Internet Resources

<http://bugguide.net>

<http://nrs.ucdavis.edu/quail.html>



