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THE BUPRESTIDAE AND CLERIDAE OF THE NEVADA TEST SITE (COLEOPTERA)¹

William F. Barr²

The collecting phases of the comprehensive ecological investigations conducted under the auspices of Brigham Young University at the Nevada Test Site in southern Nye County, Nevada, as reported by Allred, Beck and Jorgensen (1963a) yielded relatively few specimens of the beetle families Buprestidae and Cleridae. This is somewhat surprising inasmuch as these groups are usually considered to be major components of the Coleopterous fauna occurring in the desert and adjacent mountainous areas of the southwestern United States. However, several of the collections that were made do provide new or otherwise significant distributional or bionomical information for some of the species encountered. Therefore, a preliminary listing of the species of these two families taken at the Test Site along with a presentation of the available collection information seems warranted at this time.

For the exact location of collection sites and areas as listed herein, reference must be made to the papers by Allred, Beck and Jorgensen (1963b) and Knight (1968).

Appreciation is expressed to Drs. D. M. Allred and the late D. E. Beck of Brigham Young University for allowing me the opportunity of studying their material. This material was collected under Contracts AT(11-1)786 and AT(11-1)1326 between the Atomic Energy Commission and Brigham Young University.

Buprestidae

Hippomelas (Gyascutus) near obliterata LeConte

Specific determination of the 14 specimens taken at the Test Site is not possible at this time. Perhaps they represent one of the several species described by Casey (1909) from southwestern Utah which have been relegated to synonymy in the most recent catalogs. Unfortunately, Casey's descriptions are not sufficient in their characterization of important features to allow identification of the Test Site material and I have not had opportunity to make comparisons with his type material.

The Test Site collections were made between July 2 and August 2 in 1960, 1961, and 1962, at 9 and 9.5 miles N of Well 3B in a *Coleogyne* habitat, in the environs of Well 3B in a *Grayia-Lycium*

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community, at 10 miles NW of Mercury and in the environs of Well 5B in a *Larrea-Franseria* community.

Melanophila consputa LeConte

Three large specimens, ranging in length from 12 to 14 mm., were taken in the environs of Mercury on *Larrea divaricata* (DC.), at 10 miles NW of Mercury and at Ground Zero in a can pit-trap in a *Grayia-Lycium* community. Collection dates were July 8, 1960, and July 22, 1962, and 1965.

M. consputa is known to develop only in coniferous trees, consequently the occurrence of specimens in desert areas of the Test Site some distance from a coniferous habitat may seem unusual. However, these specimens probably were attracted to smoke or fumes that were present in the desert areas. Such materials are known to be highly attractive to *M. consputa* and related species.

Melanophila pini-edulis Burke

This uncommon species is known from the intermountain West and adjacent regions, but has not been reported specifically from Nevada. One specimen was collected in Area 18 on June 20, 1965, and was associated with *Pinus monophylla* Torrey and Fremont.

Anthaxia (Haplanthaxia) deleta deleta LeConte

One specimen of this common and wide-ranging subspecies was taken in Area 12 on June 11, 1965, from *Cowania stansburiana* Torrey in a Juniper-Pinyon community.

Chrysobothris cuprascens LeConte

Six specimens were collected at Rainier Mesa on June 15, 1964, from *Pinus monophylla* Torrey and Fremont and *Juniperus osteosperma* (Torrey). They are assigned to *C. cuprascens* rather than to the closely related *C. semisculpta* LeConte on the basis of host plant association and geographic distribution. According to Fisher (1942) these two species are doubtfully distinct.

Chrysobothris arizonica Chamberlin

A single specimen, tentatively assigned to this species, was collected along the Basalt Area road, 12 miles NW of Tippipah Spring in a *Grayia-Lycium* community on July 13, 1964, from *Baileya pleniradiata* Harvey and Gray. The finding of *C. arizonica* on this plant probably constitutes a visitation rather than a host record.

Chrysobothris platti Cazier

This species has not been recorded previously from Nevada. One female was collected in the environs of Tippipah Spring on July

23, 1965, from *Ephedra viridis* Coville which undoubtedly is a host of this beetle.

Acmaeodera lanata Horn

A single specimen of this well-known southwestern species was collected in Area 16 on June 11, 1965, from *Dalea polyadenia* Torrey. The larva of this species is known to bore in the roots and lower stems of *Ephedra* spp.

Acmaeodera purshiae Fisher

Five specimens of this attractive species were collected. Three were taken in the environs of Tippipah Spring on June 14, 1965, from *Fallugia paradoxa* (D. Don), one was found 10 miles NW of Mercury on June 20, 1965, on *Purshia glandulosa* Curran and one was taken in the Mid Valley Area on July 28, 1962, and was associated with *P. tridentata* (Pursh). This species has been recorded previously from several areas of California and Oregon and from the Reno area of Nevada. Its only known host plant is *P. tridentata*.

Acmaeodera diffusa Barr, n. sp.

(Fig. 1)

Acmaeodera variegata, auctorum

MALE.—Medium-sized, moderately robust, black; pronotum blackish-bronze with a small yellow spot at sides immediately behind middle; each elytron with four transverse irregular straw-colored spots extending from lateral margin to near suture, first spot in front of basal fourth, second spot in front of middle and anteriorly oblique on disk, third spot in front of apical fourth and anteriorly oblique on disk, fourth spot in front of apex, small and oblique; upper surface moderately clothed with rather long erect and suberect brown hairs; ventral surface and legs moderately clothed with suberect whitish hairs.

HEAD densely punctured, punctures small and deep; vertex without a median carina; front convex except upper portion obliquely flattened; clypeus with front margin broadly, subtriangularly emarginate; antenna shining, extending to about hind margin of prosternum, serrate from fifth segment, outer segments slightly wider than long.

PRONOTUM slightly less than twice as wide as long, irregularly convex with a shallow transverse depression behind front margin, a small transverse median depression in front of base, a very faintly indicated median longitudinal depression in front of middle and a broad shallow depression surrounding the conspicuous subbasal pits; sides arcuate, widest at about basal third; lateral margins very slightly reflexed, visible from above on anterior half; front margin very broadly and feebly triangularly lobed at middle; surface more

coarsely and densely punctured than on head, becoming sub-reticulate towards sides.

ELYTRA subequal in width to pronotum; disk irregularly depressed and flattened except for slightly elevated area near sides at basal fourth and for the narrowly elevated suture on apical three-fourths; sides nearly vertical, when viewed from above, feebly narrowing at basal fourth, slightly expanded at middle, and gradually evenly narrowing to conjointly rounded apices; front angles rectangular when viewed from the side; lateral margins broadly bisinuate when viewed from the side, most deeply emarginate at basal fourth, coarsely serrate on apical half; surface deeply punctured, slightly roughened at extreme base, striae punctures about subequal to those on thorax becoming smaller apically, interstriae spaces flattened with inconspicuous tiny punctures, third interstriae space feebly elevated, ninth interstriae space elevated at extreme base.

VENTRAL SURFACE. —Thorax coarsely, densely punctured; front margin of prosternum retracted, subtruncate, very slightly reflexed on either side of middle. Abdomen rather finely densely punctured except for first sternite which is more coarsely punctured at middle and along front margin; last sternite short and broad, feebly convex at middle and without a subapical plate or elevation, margins narrowly reflexed, lateral margin straight, oblique, hind margin very broadly rounded.

LENGTH.—8.4 mm.; width, 2.9 mm.

Holotype, male (California Academy of Sciences) from Highland Range, above Mendha, Lincoln County, Nevada, July 9, 1965 (W. F. Barr). Two hundred and twenty-three paratypes from type locality July 9, 1965 (W. F. Barr and R. L. Westcott), and June 25, 1966 (E. J. Allen, W. F. Barr, D. S. Horning, Jr., R. L. Westcott and R. L. Penrose), most specimens collected from the flowers of *Opuntia* sp. and *Sphaeralcea* sp., others on the flowers of *Chaenactis* sp., *Garrea* sp. and *Calochortus* sp. One paratype from Nevada Test Site, Mercury, Nevada, June 11, 1965, on *Viguiera multiflora* (Nutt.) Blake. Ten paratypes from Pine Valley, Washington County, Utah, June 2, 1960 (Verity and Raven), and from the same locality. 31 paratypes, June 12 and 14, 1961 (D. W. Davis and B. Haws), one paratype June 25, 1948, and one paratype June 27, 1933 (J. T. Howell). Paratypes in the collections of the American Museum of Natural History, California Academy of Sciences, Los Angeles County Museum, U. S. National Museum, Brigham Young University, University of Idaho, Utah State University; W. F. Barr, F. M. Beer, D. S. Horning, Jr., J. N. Knoll, G. H. Nelson, R. L. Penrose, D. S. Verity, and R. L. Westcott.

Many additional specimens have been examined which have not been designated as paratypes. Distributional information from these specimens is as follows: ARIZONA: Betatakin Cyn.; Navajo National Monument; Grand Canyon; Jacob Lake; Kayenta, Navajo County; Navajo Mt., Navajo County; Prescott; and near Williams. COLO-

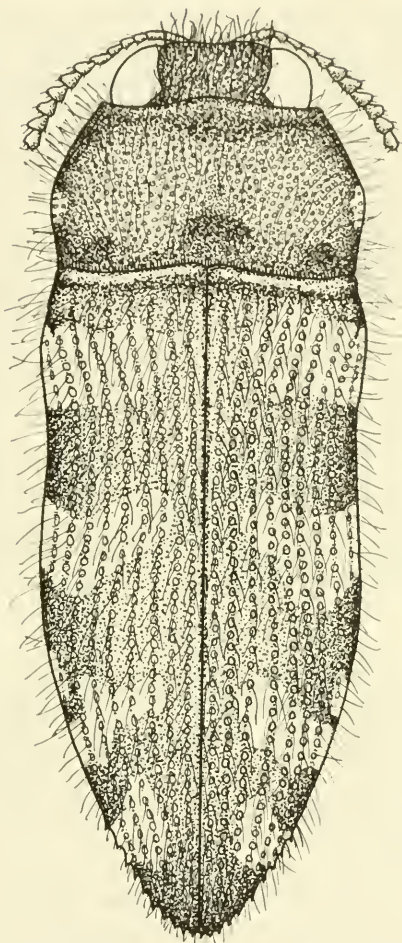


Fig. 1. *Acmaeodera diffusa*, new species, dorsal view of holotype.

RADO: Durango; Glenwood Springs; Meeker; and Mesa Verde.
UTAH: American Fork Canyon; Aspen Grove, Timpanogos; Beaver Canyon; Beaver Cr., Kamas; Bryce Canyon; Cainville; City Cr. Canyon; Dugway; Emigration Canyon, Salt Lake County; Escalante; Farmington, Davis County; Fort Douglas; Fruita; Glendale. Hanks-ville; Indianola; Jordan River; Lehi; Little Cottonwood Canyon, Wasatch Mountains; Mount Dell Cr., Salt Lake City; Mt. Nebo. Juab County; Mt. Timpanogos; North Fork of Provo Canyon; Oak Creek Canyon; Ogden; Park City; Parley's Canyon; The Pass, Table Cliff Mountain, Garfield County; Payson Canyon, Utah County; Provo; Provo Canyon; Red Butte; Rock Canyon, Provo; St. George;

Salt Lake; Salt Lake City; Spanish Fork; Stockton; Vivian Park; Wasatch Mountains; Zion Lodge; Zion National Park.

A. diffusa is a well-known species that has a wide distribution range in the western United States. It is especially abundant in the Intermountain Regions. In most of the literature and in most collections it is referred to as *A. variegata* LeConte, but that name must be utilized for another distantly related species that occurs in New Mexico and Arizona.

This species may be separated from other known species by the lack of a subapical plate or elevation on the shortened and broadly rounded last abdominal sternite, by the irregularly flattened elytral disk and by the coarsely and densely, nearly cribrately punctured pronotum which usually is of a dark bronzy color. The yellowish elytral markings, consisting of three pairs of fasciae and a pair of subapical spots, although distinctive, are variable. These markings usually are irregular and interrupted at the suture, but may be broken, reduced or greatly expanded. The pronotal spots also are of a variable nature. They exhibit considerable difference in size, may be present on one side of the pronotum or may be entirely absent. In the case of the type series these spots are present on approximately 70 percent of the specimens.

Acmaeodera sp.

Four specimens belonging to the *retifer* species complex were taken in an *Artemisia* community 4.4 miles S of Tippihah Spring and at Tippihah Spring on June 13, 1964. They were found on *Argemone corymnosa* (Greene) and *Eriogonum fasciculatum* Benth.

The *retifer* complex is in need of a thorough taxonomic study before names can be assigned to its many populations that occur in the Pacific Coast and intermountain states.

Acmaeodera immaculata Horn

One specimen of this widespread Great Basin and Mohave Desert inhabitant was collected 4.4 miles S of Tippihah Spring in an *Artemisia* community. It was found on *Baileya pleniradiata* Harvey and Gray. In southern Idaho *A. immaculata* is known to develop only in the roots of *Eurotia lanata* (Pursh), but adults are frequently encountered on the flowers of a variety of plants including the Compositae.

Agrilus pubifrons Fisher

This species, previously known from southern Idaho and eastern Oregon, is recorded from Nevada for the first time. Four specimens were taken at the Test Site in Area 12 and in Area 18 on June 11, July 27 and August 7, 1965, on *Chrysothamnus viscidiflorus* (Hook.), *C. parryi* (A. Gray) and *Grayia spinosa* (Hook.). *C. viscidiflorus* is its only known host plant.

Agrilus felix Horn

One specimen, tentatively identified as this species by J. N. Knull, was collected at 4.5 miles SE of Well 5B on June 11, 1964, from *Sphaeralcea ambigua*.

Cleridae

Cymatodera uniformis Schaeffer

Collections of this species were made at Yucca Flat in a *Grayia-Lycium* community, at Rainier Mesa in a Juniper-Pinyon community and in Area 12 in a Juniper-Pinyon community. The five specimens collected on August 13 and 14, 1964, were attracted to incandescent and black light.

C. uniformis has been recorded previously from southern Arizona and southern California where it has been reared from *Juniperus* spp.

Cymatodera latefascia Schaffer

This distinctive species has not been known from Nevada. Two specimens were collected at Rainier Mesa on August 9, 1964, in an *Artemisia* community and in Area 18 on July 25, 1965. In both collections the specimens were attracted to incandescent light traps.

Cymatodera oblita Horn

Four specimens were found at Rainier Mesa in a Juniper-Pinyon community and in the Area 12 residence area. They were attracted to black light and incandescent light on August 8 and 11, 1964.

Cymatodera fuchsii Schaeffer

This was the most commonly encountered clerid species of the Test Site collections. Forty-seven specimens were collected at the following locations: 10 miles NW of Mercury; 9.3 miles W of Mercury; environs of Mercury; Area 5 in a *Grayia-Lycium* community; Well 5B; W of Frenchman Playa, in *Larrea* and *Lycium* communities; Yucca Flats, 5.5 miles NW of Well 3B, in a *Grayia-Lycium* community; and Jackass Flats, W of Cane Springs. Dates of the collections ranged from July 15 to August 24. The specimens, which were taken in can pit-traps, at blacklight and at incandescent light, are remarkably uniform in the coloration of the elytra. All have the elytral fascia moderately distinct. The great majority are of a pale reddish-brown color, with few specimens showing a darker coloration, but none exhibit the usual tan color of specimens from other localities.

Phyllobaenus quadrimaculatus (Van Dyke)

A single female specimen was found at Cane Springs on June 13, 1965, on *Stanleya pinnata* (Pursh). This specimen appears to fit the

original description of *P. quadrimaculatus* except that the dark portions of the elytra lack a greenish luster and the elytral markings are more extensive. In addition the legs of the Cane Springs specimens are yellowish except for the darkened apices of the mesofemora and the predominately darkened metafemora.

Phyllobaenus pygmaeus (Wolcott)

One specimen, tentatively assigned to this species, was collected W of Cane Springs on June 18, 1965, from *Artemisia* sp. Positive identification of many of the described species of North American *Phyllobaenus* is not possible because of the poor taxonomic state of the genus.

Phyllobaenus subfasciatus (LeConte)

A specimen collected W of Cane Springs on June 20, 1965, from *Atriplex canescens* (Pursh) falls within the currently recognized concept of this widespread and very variable species.

Trichodes ornatus Say

This well-known species was not commonly found at the Test Site. Only 13 specimens were taken, but two variants are represented in the series. Twelve of the specimens have reddish elytra with the black fasciae showing varying degrees of reduction, especially on the basal half. This variation is characteristic of populations occurring in the Great Basin and immediately adjacent areas. The other specimen represents one of the Sonoran Desert variations which has the elytra predominately yellow in color with narrow black fasciae.

Collections were made at Tippipah Spring, Area 17, Mercury, Yucca Flat and Mid-Valley on May 18, 1960, June 12-17, 1965, and July 21, 1962. The specimens were found probably on the flowers of *Sphaeralcea* sp., *Tetradymia glabrata* Gray, *Chrysothamnus* sp. and *Malacothrix glabrata* Gray.

Serriger reichei Spinola

This uncommon species was collected at Yucca Flat in a *Grayia-Lycium* community, at Cane Springs, W of Cane Springs and at Area 9. Seven specimens were taken between June 10 and 18, 1965, from *Sphaeralcea* sp., *Tetradymia glabrata* Gray, *Lepidium fremontii* S. Wats. and *Salazaria mexicana* Torrey. These collections constitute a new state record for Nevada. Previously, *S. reichei* has been known in the literature only from single localities in southeastern California and southwestern Idaho.

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