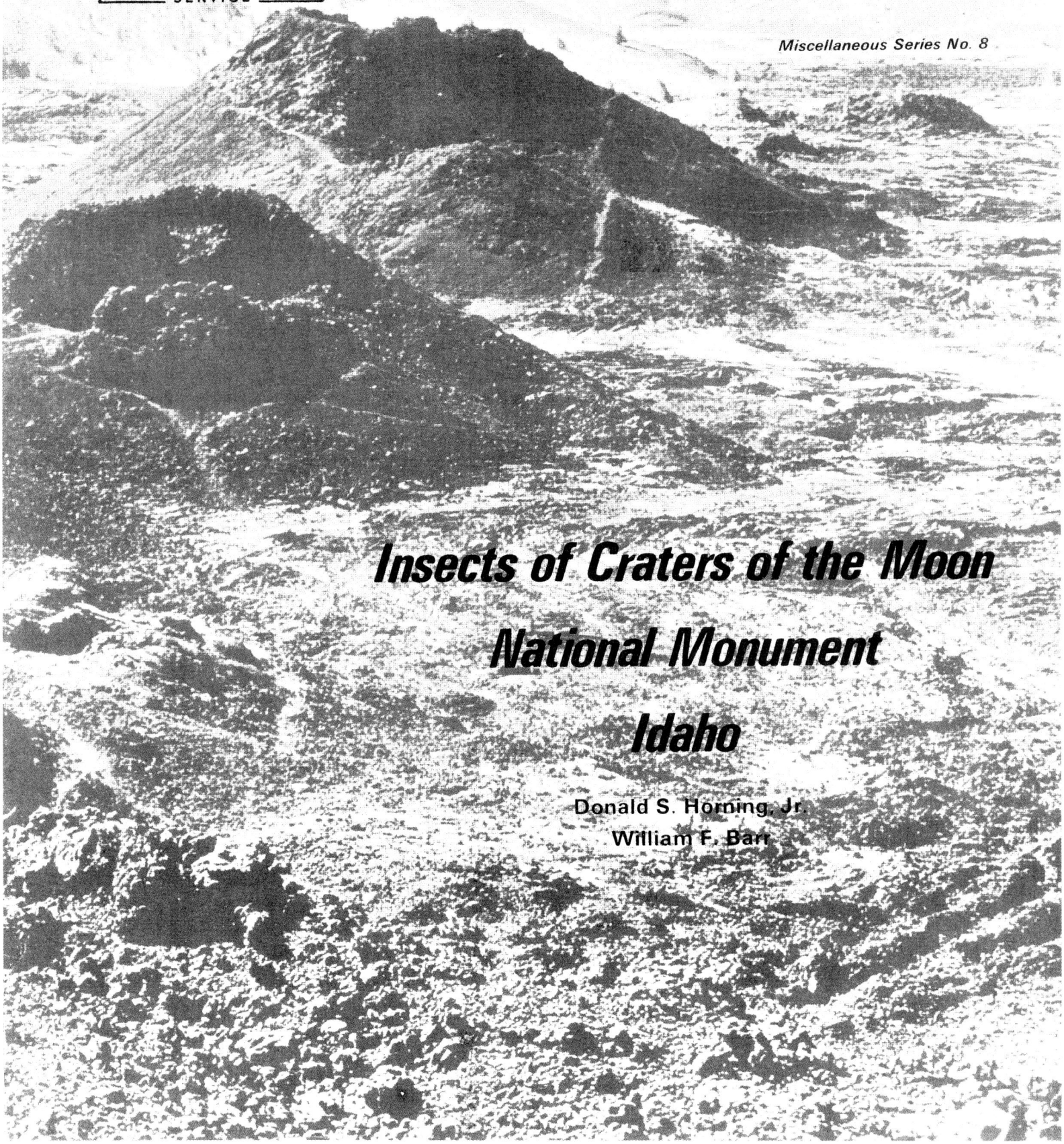
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Insects of Craters of the Moon National Monument Idaho

Donald S. Horning, Jr.
William F. Barr

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ABSTRACT

This study consisted primarily of an inventory of the insect species inhabitating Craters of the Moon National Monument, Idaho. Special attention was given to the associations of insects and plants and the correlation of insects with particular lava and non-lava habitats. The study was conducted during the summers of 1964, 1965 and 1967 with the majority of specimens and field data collected in 1965.

The largest number of insect species was collected from a non-volcanic area. Within lava habitats the number of insect species varied depending on age and type of volcanic material. Old, decomposed cinder cones supported the greatest number of insect species. Decomposed aa and pahoehoe lava flows were less favorable to insect activity than the cinder cones. Undecomposed pahoehoe lava flows and bare cinder areas supported little plant life and the insect populations were markedly low. The least favorable habitat for insects was the undecomposed aa lava flows.

Several plant species growing on lava were found to be particularly attractive to insects. These include *Chamaebatiaria millefolium, Chrysothamnus nauseosus, C. viscidiflorus, Phacelia leucophylla* and *Pinus flexilis*.

During this study, 20 orders, 248 families, 1,144 genera and 2,064 species and subspecies were found in the Craters of the Moon National Monument. More than 30 of the species are new to science or have been named since 1967.

The order Hymenoptera was best represented with 311 genera, 705 species, and 4,333 collected specimens. Diptera ranked next with 286 genera, 521 species, and 1,963 collected specimens. Coleoptera was third with 198 genera, 324 species, and 2,219 collected specimens.

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Horning



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COVER PICTURE . . . Splatter cones in the Craters of the Moon National Monument (courtesy of U.S. National Park Service).

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INSECTS OF CRATERS OF THE MOON NATIONAL MONUMENT IDAHO

Donald S. Horning, Jr.

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INTRODUCTION

Craters of the Moon National Monument, located in portions of Butte and Blaine Counties of southcentral Idaho, contains one of the more recent volcanic areas in the United States, exclusive of Alaska and Hawaii. Located on a fissure known as the Great Rift, the area was subjected to at least three periods of eruption ranging from approximately 1,000,000 to 1,600 years ago. The Monument covers about 83 square miles of the more diverse and the more recent part of a large basaltic lava flow that covered hundreds of square miles of the northeast corner of the Snake River Plains. Because of its unique volcanic landscape, the National Monument was established by Presidential proclamation in 1924.

The geology of the area was investigated extensively by Sterns (1926) and Murtaugh (1961). They determined the general sequence of flow activity and described in detail the different lava formations.

A few studies have been conducted on the flora of this monument. Senior (1940) published a brief, popular account of the area and listed a few of the plants that occur. The major botanical work was conducted by Eggler (1941). He studied the vegetation and primary plant succession on lava and on cinder cones in the monument and adjacent areas. He recognized four distinct vegetation habitats on young lava flows with a ropy or smooth surface: (1) The xeric habitat, where the bare flow surface supports the pioneer plants of lichen; (2) the joint habitat, characterized by plants growing with their stems fully exposed and with their roots penetrating narrow joints in the rock; (3) shallow crevices, with a thin soil deposit, that furnish a habitat for smaller plant species; and (4) deep crevices that have more moisture than the other habitats and which support several mesic herb and shrub species as pioneers.

Eggler's studies showed that soil eventually fills the joints and crevices and is deposited as a mantle over the lava flow surface. He concluded that in successional change deep crevice plants first would be eliminated because of more intense plant competition, then shallow crevice plants, and then finally joint habitat and xeric habitat plants. He believed all these plants are to be replaced by a grass-sage community which may be climax for the area.

No extensive faunistic surveys have been made at the monument. Park personnel have compiled several unpublished checklists of birds, mammals, and reptiles, but these are not generally available to the public. Scattered literature records indicate some insect collecting has previously taken place (Harris and Shull, 1944; Hewitt and Barr, 1967; MacNeil, 1964; Richards, 1963; Stephen, 1957).

The present study constitutes the first comprehensive entomological investigation at the Craters of the Moon National Monument. It was designed primarily to inventory the insects within the boundaries of the Monument and to determine the specific occurrence of insects in lava and other habitats as well as their association with plants. It was conducted during the summers of 1964, 1965 and 1967, with most of the field collections and observations made in 1965.

STUDY AREA

The monument receives only light precipitation and has fairly low winter temperatures and moderately hot summers. The total precipitation in 1964 was 21.2 inches, including 158.3 total inches of snow and in 1965 it was 15.8 inches, including 98.4 total inches of snow. The ten year (1953-63) average is 17.1 inches of total precipitation, which includes 90.3 total inches of snow. Thus the precipitation rate in 1964 was higher, with more snow, than the ten year average. The recorded temperature extremes during the principal study period were -17 degrees F. in December, 1964, and 93 degrees F. in July, 1964. The 1964-1965 mean maximum for July (the hottest month) was 83.2 degrees F., compared with the ten year average of 85.3 degrees F. The 1964-1965 mean minimum for February (the coldest month) was 7.3 degrees F. compared to the ten year average of 6.8 degrees F. for January which is generally the coldest month. The summer days tend to be quite warm and the nights cool and cloudless.

The prevailing wind is southwesterly. It usually commences in mid-morning and reaches maximum velocity

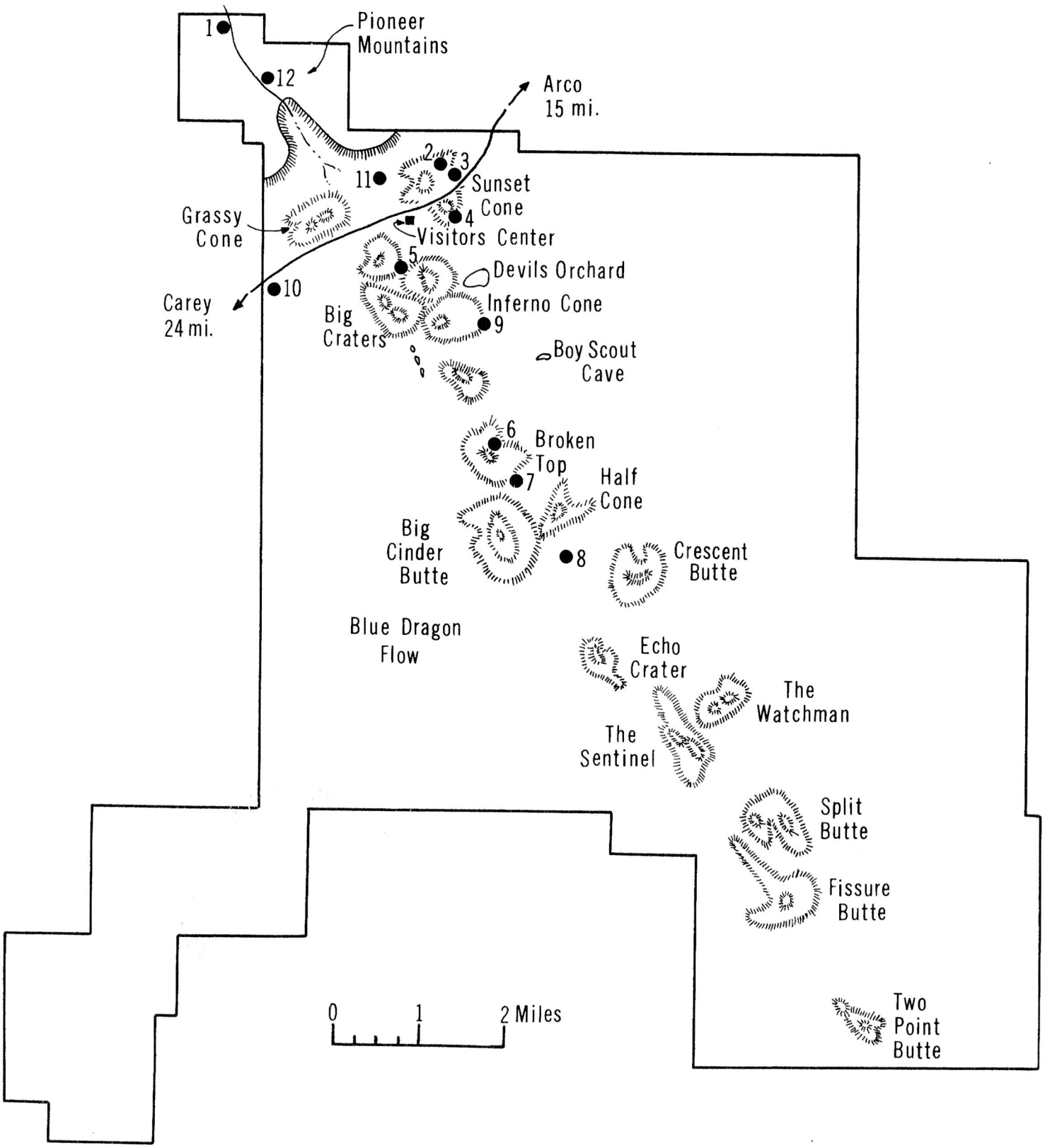


Figure 1. Craters of the Moon National Monument. The numbers designate permanent collection stations.

by early afternoon. By late afternoon, the wind abates and calm conditions usually prevail from sundown until the following morning. Wind velocity was not measured during this study; however, Eggler (1941) estimated it attains 15 to 20 miles per hour and rarely 32 to 38 miles per hour (Beaufort scale) in unprotected areas.

For the purposes of this study, only three basic lava types were considered: (1) Aa lava, a flow with rough, clinkery surface; (2) Pahoehoe lava, a flow with a smooth or ropy surface; and (3) Cinder cones, mounds consisting mostly of loose particles no larger than one-half inch in diameter, which were ejected from a vent. Some cinder cones in the monument rise several hundred feet above the surrounding area.

This entomological study also was conducted in non-lava habitats in Little Cottonwood Creek Canyon in the northern portion of the Monument. This Canyon, in the Pioneer Mountains which are not of volcanic origin, has a small permanent stream as well as several other features including soil characteristics and plant associations that make it markedly different from any of the lava habitats.

Insect collections and biological observations were made in representative ecological habitats in an area of approximately seven square miles, located in the north portion of the monument. These entomological activities were conducted primarily at sites specifically designated as permanent collection stations (Fig. 1) but also at other sites in the area. The topography and floristic composition of these sites are described below.

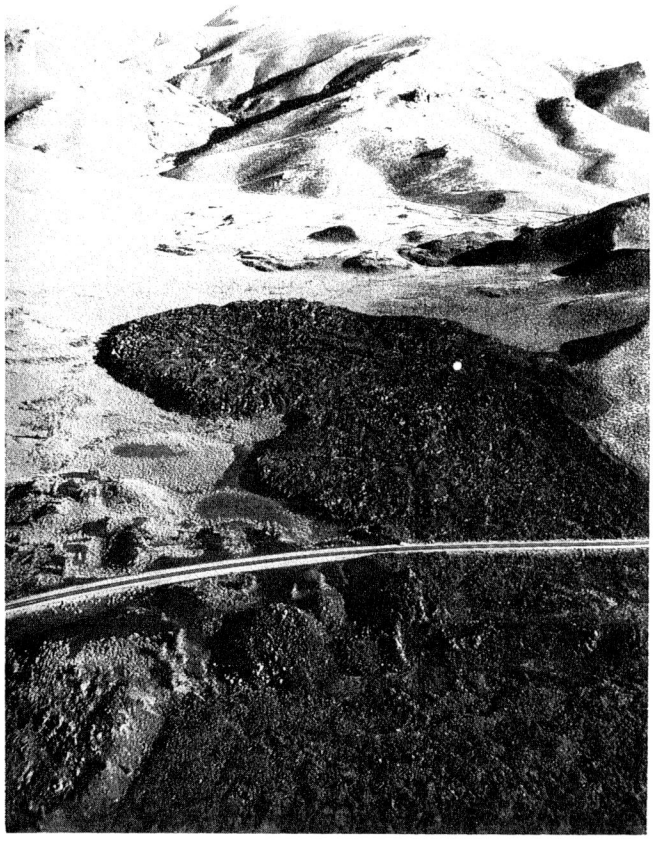


Figure 2. Highway Aa flow. Little Cottonwood Creek in background. (USNPS)

Permanent Collection Sites

Collection station 1 was located on a treeless, south slope near the northern boundary of the monument in the upper reaches of Little Cottonwood Creek Canyon (Figure 2) at an elevation of 7000 feet. The soil is of granitic origin, with no evidence of lava activity, and supports a dense cover of *Heracleum lanatum, Rudbeckia occidentalis, Salix* spp., *Senecio serra, Urtica* lyalli, and several tall unidentified grasses.

Collection station 2 was located at an elevation of 6000 feet on the northeast slope of Sunset Cone, which consists primarily of decomposed cinders with small outcroppings of broken lava. Dominant trees are *Pseudotsuga menziesii* var. *glauca, Pinus flexilis, Populus tremuloides,* and *Salix* spp. The principal shrubs are *Artemisia tridentata, Chamaebatiaria millefolium, Purshia tridentata,* and *Ribes cereum.* Herbs include *Chaenactis douglasii, Eriogonum ovalifolium, E. umbellatum, Lupinus* spp., and *Potentilla* spp. A small, treeless flat at the bottom of the slope dominated by the shrub *Chrysothamnus nauseosus* and the grass, *Elymus condensatus* also has the herbs species found further up the slope. Wind velocities occasionally were high at this station, as evidenced by the small pieces of cinder imbedded in many of the grass stems.

A great difference was noted in insect activity and abundance at this station in 1964 and 1965. In early June, 1965, a small corral was built at the bottom of the slope to keep horses. A continuous stream of running water was piped to the corral and the overflow from the watering trough proved to be highly attractive to many insect species that had not been previously seen or collected. The corral was removed and the piped water was shut off in late 1965.

Collection station 3 was on a treeless, open area on the east slope of Sunset Cone about 100 yards west of the Little Cottonwood Creek access road at an elevation of 5950 feet. It has a combination of aeolian soil and decomposed cinder. The principal shrubs are *A. tridentata, C. nauseosus,* and *P. tridentata.* The principal herbs of insect importance are *Balsomorhiza sagittata, Cymopterus terebinthinus, E. ovalifolium, E. umbellatum, Lithospermum ruderale* and *Phlox* spp. Scattered clumps of *E. condensatus* also are present.

Collection station 4 was established in an open area on the southeast extension of Sunset Cone, approximately 300 yards west of the permanent disposal dump. It was located at the summit of a small south-facing knoll and was subjected to high wind velocities from the southwest. Shrubs usually associated with the older cinder cones are present. The soil and plant composition of this station are much the same as at station 3 except *B. sagittata* is not present and there are dense stands of *E. condensatus* with scattered plants of *Oryzopsis hymenoides.* Water from a constantly dripping faucet located just south of this station was a good attractant for many insects.

Collection station 5 was located on the east side of North Crater cinder cone at an elevation of 5900 feet. It was set in a small island of vegetation dominated by *P. tridentata* and the herbs, *C. douglasii* and *Phacelia leucophylla* (Fig. 3). A bare cinder slope, much the same as described at station 8, surrounds this island of vegetation.

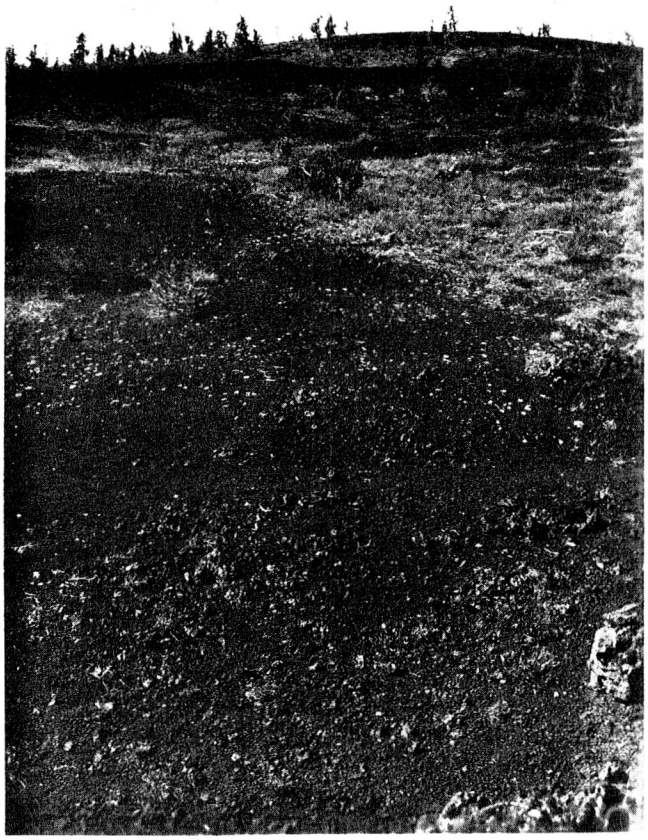


Figure 3. Station 5 located in island of vegetation on right on the east slope of North Crater. (USNPS)

Collection station 6 was on the east slope of Broken Top cinder cone, just west of the fire access road at an elevation of 6000 feet. This slope is covered with *P. flexilis* and has a small stand of *Juniperus scopulorum*. Many dead *P. flexilis* are near the upper limits of the station. The shrubs *C. nauseosus, P. tridentata,* and *Ribes cereum* are abundant. Among the principal herbs are *Crepis accuminatum, C. terebinthinus, Gayophytum nuttalli, Lupinus caudatus* and *P. leucophylla*. A few clumps of *E. condensatus* are present in the more open areas.

Collection station 7 was located on an extensive, bulbous and ropy pahoehoe lava flow, at an elevation of 5800 feet. Three general habitats are present: (1) bare rock surfaces; (2) small crevices and pockets in the lava flows; (3) deep cracks in the lava (Fig. 4). This lava flow is relatively flat and is subjected to the highest wind velocities encountered at any other collection station. Only a few scattered shrubs, principally *C. millefolium, Haplopappus* sp., *Holodiscus discolor* and *Philadelphus lewisii* are present. Herbs include *C. douglasii, Erigeron* spp., *Eriogonum* spp., *P. leucophylla* and *Potentilla* spp.



Figure 4. Ropy pahoehoe lava like that present at station 7. Small herbs can be seen in the cracks on the lava. (USNPS)

Collection station 8 was at the north end of Trench Mortar Flat south of the fire access road at an elevation of 5775 feet. It was located on a large cinder flat partially surrounded by a shrub-herb community (Fig. 5). The area is exposed to high wind velocities from the west. Scattered plants are present, including the herbs *C. douglasii, Eriogonum ovalifolium* var. *depressum, E. umbellatum, Gayophytum ramosissimum, Lewisia rediviva,* and *Mimulus nanus*. Patches of *Bromus tectorum* and *Lupinus* sp. occur on the edges of the bare cinder flat. The shrub, *C. nauseosus,* is invading the site from the surrounding heavily vegetated area.

Collection station 9 was on the east slope of Inferno Cone west of the Loop Drive Road at an elevation of 5850 feet. This cinder cone is old and covered with a dense stand of *Pinus flexilis* and shrubs. The soil consists mainly of decomposed cinder and provides a good base for plant growth. A mixture of shrubs consisting of *A. tridentata, C. millefolium, C. nauseosus, P. tridentata* and *R. cereum,* are present. Herbs of entomological importance include *C. douglasii, L. caudatus,* and *P. leucophylla. Mimulus nanus* grows in the more open areas.

Collection station 10 was on the west boundary of the Monument, approximately 400 yards south of U. S. Highway 93A, at an elevation of 5750 feet. It was located in a mixture of aa and pahoehoe lava (Fig. 6). No trees are present. The shrubs *C. millefolium* and *P. lewisii* predominate, having become established in the deep cracks in the pahoehoe lava



Figure 5. A typical cinder slope. The white plants are *Eriogonum depressum.* (USNPS)

where some soil and moisture are available. Scattered plants of *Allium* sp., *E. umbellatum, Opuntia polyacantha,* and *O. rhodantha* occur in the shallower cracks.

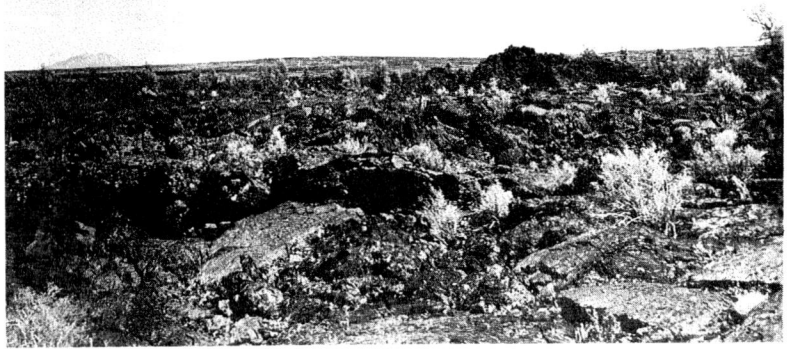
Collection station 11 at an elevation of 5950 feet was on a treeless, exposed, decomposed and more recent aa flows that issued from the northwest side of Sunset Cone (Fig. 7). The soil on the oldest flow consists of loess and decomposing cinders while the more recent flow is made up principally of decomposed aa. Vegetation is noticeably different on the two flows. The decomposed aa flow supports scattered mixed stands of *A. tridentata, P. tridentata, O. polyacantha* and *O. rhodantha* as well as the herb species present on the older flow. In the loess and decomposing cinder area, the shrubs *A. tridentata, C. millefolium, C. nauseosus, Crysothamnus viscidiflorus,* and *P. tridentata* and the herbs *Allium* sp., *Calochortus* sp., *E. ovalifolium, E. umbellatum, Mentzelia laevicaulis, P. leucophylla, Phlox* sp., and *Potentilla* sp. are common.



Figure 7. Aa lava flows northwest of Sunset Cone. Station 11 was located between the road and the irregular light area in the right of the photograph. The Pioneer Mountains are in the background. (USNPS)

Collection station 12 was located on a flat clearing near the entrance to a deserted mine in Little Cottonwood Creek Canyon (Fig. 2) at an elevation of 6300 feet. It has the soil characteristics of station 1. Many plant species are present, but only a few were checked regularly for insects. The principal trees are *Alnus tenuifolia, Populus tremuloides,* and *P. trichocarpa,* with a scattering of *Salix* spp. A few shrubs, such as *A. tridentata* and *C. nauseosus* grow in the more open areas. There is a heavy stand of mixed vegetation along the creek, including *Agastache urticifolia, H. lanatum, Prunus virginiana, Rubus parviflorus, S. serra, U. lyalli,* and *Xanthium strumarium.* Adjacent to the station is a small beaver pond which yielded a number of aquatic insects.

Figure 6. Lava formations typical of station 10. (USNPS)



Other Collection Sites

Big Craters, a large multi-crater composite cinder cone that issued both aa and pahoehoe lava flows. Collections were made periodically on the southwest slope at an elevation of 6000 to 6300 feet. Collecting efforts were concentrated on the dead trees in a stand of *P. flexilis.* The herb understory consisted of *C. douglasii, Eriogonum* spp., *M. nanus,* and *P. leucophylla.*

Devil's Orchard, an easily accessible and unique composite area at an elevation of 5800 feet. It has several kinds of lava formations (Fig. 8) and the majority of the plant species adapted to the lava environment.

Grassy Cone, similar to Sunset Cone in age and vegetation and supporting a shrub-grass-herb community similar to that at station 3, except for the northeast slope which has a dense stand of *P. menziesii* var. *glauca* with a scattering of *P. flexilis*.

Visitor's Center area is located at the main entrance and provides the only built up and landscaped area in the monument. Most collections were made from lawn grass, and clover, *Trifolium repens* and from the shrubs, *Cornus stolonifera* and *Rosa woodsi*. Many insects were captured in the Visitor's Center Building on large south-facing windows. All black light collecting in 1964 was conducted in this area.

General area is a collective designation of convenience in the text for those few collection sites in lava habitats that could not easily be related to a landmark within the general study area.



Figure 8. General features at the edge of an aa flow with cinder in the foreground. This is typical of the Devil's Orchard. (USNPS)

METHODS

Collecting

To assure as complete a representation of the insect species as possible, most standard entomological collecting techniques were employed in this study. These included the use of beating and sweeping nets, pitfall and bait traps, ultraviolet and incandescent lights, and a Berlese funnel. Field and laboratory rearings of immature stages also were made. Two special techniques involving a Malaise trap and strategically located stick traps, were especially successful.

The Malaise trap (Marston, 1965) was utilized during the peak blooming period at each of several stations which lasted for approximately one week. It could not be set up at stations 7 and 10 due to the lack of secure anchorage in the lava.

Stick traps were set out at various collecting stations at the beginning of the summer of 1965 to attract nesting Hymenoptera and their parasitoids and predators. Each trap consisted of a 15-inch long, small-diameter *Sambucus* stem with a hole drilled in one end and another in the side. Approximately 30 traps were used at each station. They were placed vertically in the soil, with the drilled tops exposed. In the late summer the traps were taken to the laboratory where the examination and rearing procedures of Parker and Bohart (1966) were followed.

Representatives of nearly all species collected are deposited in the University of Idaho insect collection.

Listing of the Insect Species

The arrangement and use of ordinal names follow Borror and DeLong (1964) except for the inclusion of the Raphidoidea. The placement of families and genera follow recent catalogs, revisions, checklists, and taxonomic specialists as indicated. The species are listed alphabetically for convenience. The collection data are written in telegraphic style with the locality information given by station number and by specific collection site. The year has been omitted from the collecting dates. Host plant species, listed inclusively, are followed by the method of collection. Additional biological information is included when available. The names of plant species used in the text follow Davis (1952) or Hitchcock *et al.* (1969).

ACKNOWLEDGEMENTS

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Identifications are credited to the following taxonomic specialists:

THYSANURA: W. J. Wall

COLLEMBOLA: R. F. Wilkey

EPHEMEROPTERA: S. L. Jensen

ODONATA: E. R. Logan, Minter J. Westfall, Jr.

ORTHOPTERA: Ashley B. Gurney, George B. Hewitt

ISOPTERA: T. E. Snyder

PLECOPTERA: Stanley G. Jewett, Jr.

PSOCOPTERA: Kathryn M. Sommerman

THYSANOPTERA: Stanley F. Bailey

HEMIPTERA: Peter D. Ashlock, Lygaeidae, Rhopalidae; Narinder Chopra, Rhopalidae (*Arhyssus*); R. C. Froeschner, Hemiptera; Jon L. Herring, Hemiptera; John D. Lattin, Saldidae, Scutelleridae; the late Herbert Ruckes, Pentatomidae; the late R. L. Usinger, Aradidae.

HOMOPTERA: Paul P. Cook, Membracidae; R. C. Froeschner, Homoptera; D. D. Jensen, Psyllidae; J. P. Kramer, Homoptera; the late H. L. McKenzie, Coccidoidea; Frank W. Mead, Fulgoroidea; D. R. Miller, Coccidoidea; L. M. Russell, Aphididae.

RAPHIDIODEA: Oliver S. Flint, Jr.

NEUROPTERA: Phillip A. Adams, Myrmeleontidae; Oliver S. Flint, Jr., Coniopteryidae; Ellis G. MacLeod, Chrysopidae; Waro Nakahara, Hemerobiidae.

COLEOPTERA: D. M. Anderson, Scolytidae; W. F. Barr, Buprestidae, Cleridae; Dennis W. Boddy, Tenebrionidae; John A. Chemsak, Cerambycidae; M. H. Hatch, Coleoptera; H. F. Howden, Scarabaeidae; M. C. Lane, Elateridae; Elbert L. Sleeper, Curculionidae; Richard E. White, Chrysomelidae (*Cryptocephalus*).

STREPSIPTERA: R. M. Bohart

TRICHOPTERA: Stamford D. Smith

LEPIDOPTERA: J. S. Buckett, Heterocera, J. F. Gates Clarke, Microlepidoptera; the late William C. Cook, Noctuidae; D. R. Davis, Microlepidoptera; W. D. Duckworth, Microlepidoptera; W. D. Field, Lepidoptera; L. P. Grey, Nymphalidae (*Speyeria*); R. W. Hodges, Microlepidoptera, Noctuidae; W. H. Lange, Pterophoridae, R. Miller, Noctuidae; Frederic H. Rindge, Geometridae, Pyralidae; Jon H. Shepard, Lepidoptera; F. W. Stehr, Lasiocampidae.

DIPTERA: Charles P. Alexander, Tipulidae; George W. Byers, Tipulidae (*Nephrotoma*); Frank Cole, Therevidae; R. W. Dawson, Syrphidae; H. R. Dodge, Sarcophagidae; Richard H. Foote, Tephritidae; Bert A. Freeman, Conopidae; R. Gagne, Nematocera; Arthur R. Gittins, Tabanidae; Jack C. Hall, Bombyliidae; H. C. Huckett, Anthomyiidae, Muscidae; M. T. James, Bibionidae, Calliphoridae, Stratiomyidae; Robert Lavigne, Asilidae; Norman Marston, Bombyliidae; Lewis T. Nielsen, Culicidae; C. B. Philip, Tabanidae; H. J. Reinhard, Anthomyiidae, Muscidae, Sarcophagidae, Tachinidae; Curtis W. Sabrosky, Chloropidae; Evert I. Schlinger, Acroceridae; George Steyskal, Diptera; A. Stone, Nematocera; J. Wilcox, Asilidae; W. W. Wirth, Ephydridae.

HYMENOPTERA: H. W. Allen, Tiphiidae; R. C. Bechtel, Sapygidae; G. E. Bohart, Apoidea; R. M. Bohart, Chrysididae, Sphecidae, Vespidoidea; Richard Brumley, Epeolini; B. D. Burks, Chalcidoidea; Arthur C. Cole, Formicidea; H. V. Daly, Xylocopidae; G. C. Eickwort, Halictidae; Howard E. Evans, Pompilidae; William E. Ferguson, Mutillidae; Arthur R. Gittins, Psenini; James E. Gillaspy, Bembicini; A. A. Grigarick, Anthidiini; Gerd Heinrich, Ichneumoninae; D. S. Horning, Jr., Chrysididae (*Chrysura*), Apidae (*Bombus* and *Psithyrus*); Karl V. Krombein, Aculeate Hymenoptera; Wallace E. LaBerge, Andrenidae, Anthophoridae, Colletidae; P. M. Marsh, Braconidae; A. S. Menke, Sphecidae (*Ammophila*); H. E. Milliron, Bombini; Frank D. Parker, Astatinae, immature Hymenoptera; Radclyffe B. Roberts, Halictidae (*Agapostemon*); Richard Rust, Megachilidae (*Hoplitis, Osmia*); Herman A. Scullen, Cercerini; David R. Smith, Symphyta; Roy R. Snelling, Colletidae (*Hylaeus*); P. H. Timberlake, Apoidea; L. M. Walkley, Ichneumonidae; Marius S. Wasbauer, Tiphiidae.

ANNOTATED LIST OF INSECTS COLLECTED

Order THYSANURA

Family Lepismatidae

Mesomachilis nearcticus Silvestri

Station 6 and General Area; 14 June to 31 July; on foliage of *Pinus flexilus*, in fly trap, on cinders, in rotten log.

Family Campodeidae

Genus ? species ?

Station 6; 17 September; from plants of *Cymopterus terebinthinus* in Berlese funnel.

Order COLLEMBOLA

Arrangement of this order follows the list of Wray and Knowlton (1956) and was reviewed by R.F. Wilkey.

Family Poduridae

Xenylla humicola Tullberg

Station 6; 17 September; from plants of *Cymopterus terebinthinus* in Berlese funnel. Adults and immatures of this species were abundant on the soil surface near the base of plants of *C. terebinthinus*.

Onychiurus pseudofimetarius Folsom

Station 12; 22 November; in duff in a stand of *Populus tremuloides*.

Family Isotomidae

Isotoma trispinata ? (MacGillivray)

Station 12; 22 November; in duff in stands of *Populus tremuloides* and *P. trichocarpa*.

Family Entomobryidae

Entomobrya sp.

Station 2; 12 September; Berlese duff of *Pseudotsuga menziesii* var. *glauca*.

Family Tomoceridae

Tomocerus (Pogonognathellus) flavescens (Tullberg)

Station 12; 22 November; under rocks in duff in a stand of *Populus tremuloides*.

Family Sminthuridae

Sminthurus sp.

Station 6; 17 September; from plants of *Cymopterus terebinthinus* in Berlese funnel.

Order EPHEMEROPTERA

Arrangement for this order follows the checklist of Edmunds and Allen (1957).

Family Siphlonuridae

Ameletus velox ? Dodds

Station 12; 23 November; nymphs on 5-10 cm rocks in water at edge of stream.

Family Heptageniidae

Cinygma integrum Eaton

Station 12; 23 November; nymphs on 5-10 cm rocks in water at stream edge.

Family Baetidae

Baetis sp.

Station 12; 20 June; sweeping streamside vegetation.

Family Caenidae

Caenis simulans McDunnough

Station 6; 14 August; at black light.

Order ODONATA

Suborder ANISOPTERA

Arrangement of this suborder follows Needham and Westfall (1955).

Family Aeshnidae

Aeshna interrupta interna Walker

Station 2 and Visitor's Center area; 2 July to 28 August; in flight.

Aeshna palmata Hagen

Devil's Orchard; 2 August; in flight.

Family Libellulidae

Sympetrum danae (Sulzer)

Station 6; 1 to 27 August; in flight.

Sympetrum obtrusum (Hagen)

Station 2 and 6; 8 July to 27 August; on branches of *Artemisia tridentata* and *Chrysothamnus viscidiflorus*.

Specimens of this slow flying species were found resting on the tips of dead branches of *Artemisia tridentata* at station 6. The majority of specimens were teneral, thus indicating the presence of nearby water which has yet to be located.

Suborder ZYGOPTERA

The placement of names in this suborder follows Walker (1953).

Family Lestidae

Lestes congener Hagen

Station 2 and 6; 17 July to 27 August; trunk bark of *Pinus flexilis*, Malaise trap, in flight. This species was most abundant at station 6.

Lestes unguiculatus Hagen

Station 6; 30 June to 20 July; on dead branches of *Artemisia tridentata*, in flight. A preference for the adults to rest on dead branches of *A. tridentata* was noted. The head was always oriented upward and the body parallel with a branch.

Family Coenagrionidae

Amphiagrion abbreviatum (Selys)

Station 2; 10 July to 24 August; sweeping *Artemisia tridentata*, shrubs, in flight. Adults were abundant on shrubs surrounding the horse corral. However, nymphs could not be found in the small overflow stream.

Enallagma boreale Selys

Station 2, 6, and 10; 30 June to 2 August; on foliage of *Artemisia tridentata, Chamaebatiaria millefolium, Mentzelia albicaulis* and *Melilotus officinalis*, in flight.

Ischnura cervula Selys

Station 2; 24 August; sweeping shrubs.

Ischnura perparva Selys

Station 2 and 12; 14 July to 12 August; Malaise trap, on soil.

Order ORTHOPTERA

Family arrangement follows the monograph of Rehn and Grant (1961). All genera and species within the families are listed alphabetically.

Suborder CAELIFERA

Family Acrididae

Arphia pseudonietana pseudonietana (Thomas)

General Area; 20 July to 27 August; on cinders.

Steiroxys trilineatus ? (Thomas)

General Area; 10 August; on soil.

Circotettix undulatus (Thomas)

Station 3; 27 August; on cinders.

Cratypedes neglectus (Thomas)

General Area; 12 July to 15 August; on cinders.

Dissosteria carolina (Linnaeus)

Station 12; 3 August to 5 September; on soil.

Melanoplus bivitattus (Say)

Station 4 and General Area; 23 July to 10 August; on cinders.

Melanoplus foedus Scudder

Station 6 and General Area; 27 July to 24 August; on cinders.

Melanoplus occidentalis Thomas

Visitor's Center area; 11 August; dead under rock.

Melanoplus sanguinipes sanguinipes (Fabricius)

Station 6, 12 and General Area; 12 July to 22 November; on foliage of *Chrysothamnus nauseosus*, *C. viscidiflorus*, on limb of dead *Pinus flexilis*, in duff of *Populus tremuloides*, on cinders.

A living female was found under a 10 cm rock near the stream at station 12 on 22 November. Air temperatures to this date probably had not been below 15°F.

Melanoplus packardii Scudder

Station 6; 10 August; sweeping shrub foliage.

Pseudopomala brachyptera Scudder

Station 4; 14 July, sweeping *Elymus condensatus*.

Schistocercus shoshone (Thomas)

Station 7 and General Area; 9 to 10 August; on cinders and pahoehoe lava.

Trimerotropis arenacea Rehn

Station 1, 6, 8 and General Area; 27 July to 13 September; on foliage of *Chrysothamnus nauseosus*, on soil.

Trimerotropis cyaneipennis Brunner

Station 4 and General Area; 13 July to 17 August; sweeping *Chamaebatiaria millefolium*, on cinders.

Trimerotropis fontana Thomas

Station 1, 4 and General Area; 8 August to 5 September; on cinders and soil.

Trimerotropis pallidipennis pallidipennis (Burmeister)

General Area; 20 July to 10 September; on cinders.

Trimerotropis suffusa Scudder

Station 6 and General Area; 17 July to 24 August; on cinders, in tin can trap.

Xanthippus corallipes buckelli Hebard

Station 2, 7 and 11; 13 June to 10 July; on cinders.

Xanthippus corallipes montanus (Thomas)

Station 3; 20 June; on cinders.

Suborder ENSIFERA

Family Tettigonidae

Conocephalus fasciatus (DeGeer)

Station 2 and Visitor's Center area; 9 to 24 August; on foliage of *Trifolium repens*, sweeping shrub foliage.

Idiostatus magnificus ? Hebard

General Area; 19 August; on branches of *Pinus flexilis*.

Family Gryllacrididae

Ceuthophilus caudelli Hubbard

Visitor's Center; 9 August; in dark corner of room.

Family Gryllidae

Oecanthus californicus Saussure

Station 3, 6 and 12; 11 to 27 August; Malaise trap, under rock.

Oecanthus quadripunctatus Beutenmuller

General Area; 13 September; on foliage of *Chrysothamnus nauseosus*.

Order ISOPTERA

Family Rhinotermitidae

Reticulitermes hesperus Banks

Station 12; 25 to 28 June; under rock. A single colony was located under a 40 cm diameter rock, on an east-facing slope in a *Populus tremuloides* habitat.

Order PLECOPTERA

Arrangement for this order follows the checklist of Gaufin (1964).

Family Nemouridae

Nemoura (Zapada) oregonensis Claassen

Station 1; 23 November; nymphs under 10 cm rock in water at edge of stream.

Nemoura (Malenka) sp.

Station 1 and 12; 20 June to 23 November; sweeping streamside vegetation, nymphs under 2-4 cm rocks in water in middle of stream.

Family Perlodidae

Isoperla sp. n.

Station 12; 1 August; sweeping streamside vegetation.

Family Chloroperlidae

Alloperla fidelis Banks

Station 12; 20 June to 15 July; sweeping streamside vegetation.

Family Perlididae

Acroneuria california Banks

Station 12; 17 August; nymphs under 20 cm rock at stream edge.

Order DERMAPTERA

Family Forficulidae

Forficula auricularia Linnaeus

Campground area and Visitor's Center area; 17 July to 31 August; on floor, on soil.

Order PSOCOPTERA

Family Liposcelidae

Liposcelis sp. near *liparus* Broadhead

General Area; 14 April to September; under bark of *Pinus flexilis*. Many adult specimens were reared from under bark of dead *P. flexilis*.

Family Psocidae

Blaste sp.

Station 6; 17 July, in flight.

Psocus conspersus Banks

General Area; summer; taken from *Pinus flexilis* rearings.

Order THYSANOPTERA

Watson's (1923) and Cott's (1956) papers were followed in placing the families and genera of this order in a sequence which was reviewed by Dr. S. F. Bailey.

Family Aeolothripidae

Aeolothrips auricestus Treherne

Station 2; 12 July; on plant foliage.

Aeolothrips fasciatus (Linnaeus)

Visitor's Center area; 13 August; sweeping *Melilotus officinalis*.

Family Thripidae

Hercothrips fasciatus (Pergande)

Station 2; 17 September; Berlese duff of *Pseudotsuga menziesii* var. *glauca*.

Frankliniella minuta (Moulton)

Station 12; 16 August; no host data.

Frankliniella occidentalis Pergande)

Station 2, 4, and 8; 13 August to 17 September; on *Chrysothamnus nauseosus*, *Melilotus officinalis*, *Mentzelia laevicaulis*, *Pseudotsuga menziesii* var. *glauca*, and *Verbascum thapsus*.

Thrips nigropilosus Uzel

Station 2, 17 September; Berlese duff of *Pseudotsuga menziesii* var. *glauca*.

Oxythrips sp.

Station 2; 17 September; Berlese duff of *Pseudotsuga menziesii* var. *glauca*.

Family Phloeothripidae

Leptothrips sp.

Station 2; 17 September; Berlese duff of *Pseudotsuga menziesii* var. *glauca*.

Neoheegeria verbasci (Osborn)

Station 4 and General Area; 13 August; on *Verbascum thapsus*.

Oedaleothrips (Leptogasterthrips) yosemitae (Moulton)

Station 4 and Visitor's Center area; 4 September; entire plants of *Eriogonum umbellatum* in Berlese funnel.

Order HEMIPTERA

Family placement of this order follows Borror and DeLong (1964). Genera have been arranged alphabetically except in the families Lygaeidae and Miridae.

Suborder CRYPTOCERATA

Family Corixidae

Cenocorixa utahensis (Hungerford)

Station 4 and 12; 5 to 28 July; black light, in beaver pond.

Family Notonectidae

Notonecta undulata Say

Station 10 and 12; 22 to 26 July; in beaver pond, in flight.

Suborder GYMNOCERATA

Family Gerridae

Gerris remigis Say

Station 12; 5 August; on surface of beaver pond.

Family Anthocoridae

Anthocoris melanoceros Reuter

Station 6; 29 August; sweeping foliage of *Juniperus scopulorum*.

Elatophilus sp.

General Area; 17 June; sweeping foliage of *Pinus flexilis*.

Lyctocoris campestris (Fabricius)

Visitor's Center; 17 March; on south-facing window.

Orius tristicolor (White)

General Area; 3 July to 29 August; sweeping *Chamaebatiaria millefolium, Chrysothamnus nauseosus, Senecio serra* and *Verbascum thapsus*.

Family Miridae

The placement of genera and species follows the catalog of Carvalho (1957-1960).

Deraeocoris bakeri Knight

Station 2, 4, 10, 11 and General Area; 9 July to 13 September; on *Artemisia tridentata, Chamaebatiaria millefolium, Chrysothamnus nauseosus, Chrysothamnus viscidiflorus* and *Eriogonum spp.*

Deraeocoris hesperus Knight

General Area; 27 August; sweeping mixed shrubs.

Deraeocoris nubilus Knight

General Area; 2 to 25 August; sweeping *Chamaebatiaria millefolium.*

Deraeocoris schwartzii (Uhler)

General Area; 21 July; on foliage of *Artemisia tridentata.*

Chlamydatus associatus Uhler

Station 10 and General Area; 17 June to 26 July; sweeping *Chamaebatiaria millefolium* and *Symphoricarpos orephilus.*

Chlamydatus sp.

General Area; 3 to 12 July; sweeping *Pseudotsuga menziesii* var. *glauca,* white light.

Europiella sp.

Station 11; 13 July; sweeping *Artemisia tridentata.*

Macrotylus infuscatus Van Duzee

Visitor's Center area; 5 July; sweeping *Melilotus officinalis.*

Phyllopidea picta (Uhler)

General Area; 3 to 4 July; on *Pseudotsuga menziesii* var. *glauca* and *Rosa woodsi.*

Plagiognathus sp.

General Area; 20 to 22 June; on flowers of *Balsamorhiza sagittata.*

Psallus sp.

Sunset Cone; 28 June; sweeping foliage of *Pseudotsuga menziesii* var. *glauca.*

Orectoderus sp.

Visitor's Center area; 13 July, sweeping *Melilotus officinalis.*

Dicyphus (Dicyphus) cucurbitaceus (Spinola)

Station 10; 19 July to 30 August; sweeping *Chamaebatiaria millefolium.*

Strongylocoris stygicus (Say)

Station 1; 27 August; sweeping mixed shrubs.

Strongylocoris sp.

Station 2, 11 and 12; 9 July to 14 August; sweeping *Artemisia tridentata.*

Hadronema (Aoplonema) princeps ? Uhler

Station 1, 2, 8 and 11; 5 July to 27 August; on *Artemisia tridentata, Chaenactis douglasii, Chrysothamnus nauseosus,* sweeping streamside vegetation.

Hadronema (Aoplonema) uniformis Knight

Station 3; 11 July; sweeping flowering *Crepis acuminatum.*

Hadronema (Hadronema) militare (Uhler)

Station 6 and General Area; 4 to 14 July; on *Lupinus caudatus, Lupinus spp.* and *Rosa woodsi.*

Hadronema simplex Knight

Visitor's Center area; 4 July; on foliage of *Rosa woodsi.*

Ilnacorella argentata Knight

Station 3; 22 June; sweeping flowering *Balsamorhiza sagittata*.

Labopidea sp.

Station 11; 13 July; on *Artemisia tridentata*.

Lopidea sp.

Station 3; 3 July; on foliage of *Eriogonum umbellatum*.

Orthotylus coagulatus (Uhler)

Station 10; 3 to 26 July; on *Verbascum thapsus*.

Orthotylus sp.

Station 3, 6 and 11; 13 June to 14 July; on *Balsamorhiza sagittata, Lithospermum ruderale,* and *Lupinus sp.*

Pilophorus spp.

General Area; 14 to 25 July; on *Pinus flexilis* and *Pseudotsuga menziesii* var. *glauca*.

Adelphocoris superbus (Uhler)

Station 12; 14 to 16 August; on *Cirsium canescens*.

Dichrooscytus irroratus Van Duzee

Station 6; 29 August; sweeping foliage of *Juniperus scopulorum*.

Dichrooscytus sp.

Station 6; 29 August; sweeping foliage of *Juniperus scopulorum*.

Irbisia pacificus (Uhler)

Station 11; 5 July; sweeping mixed shrubs.

Lygus desertus Knight

Station 3, 4, 10 and General Area; 15 June to 13 September; on *Achillea lanulosa, Balsamorhiza sagittata, Chamaebatiaria millefolium, Chrysothamnus nauseosus, Chrysothamnus viscidiflorus, Helianthus annuus* and *Melilotus officinalis,* black light.

Lygus elisus Van Duzee

Station 1, 6, 12 and General Area; 5 July to 10 August; sweeping *Chamaebatiaria millefolium, Heracleum lanatum* and *Urtica lyalli*.

Lygus hesperus Knight

Station 2, 6, 11 and 12; 15 July to 17 September: on *Achillea lanulosa, Chamaebatiaria millefolium,* Berlese flowers of *Chrysothamnus nauseosus,* on *Elymus condansatus, Helianthus annuus, Lupinus spp., Populus trichocarpa* and *Verbascum thapsus*.

Lygus nigropallidus Knight

Station 6; 14 July; on *Lupinus sp.*

Lygus shulli Knight

Station 6; 14 July to 10 August; on *Lupinus spp.*

Lygus solidaginis (Kelton)

Station 1; 13 June to 27 July; on foliage of *Heracleum lanatum*.

Neoborella sp.

Station 12; 28 July; black light.

Orthops scutellatus Uhler

Station 1 and 12; 23 June to 14 August; on *Alnus tenuifolia, Heracleum lanatum, Osmorhiza occidentalis* and *Ribes cereum*.

Phytocoris sp.

Station 2, 4, 6, 8, 11 and General Area; 5 July to 12 September; on *Chrysothamnus nauseosus,* from plants of *Mentzelia laevicaulis* in Berlese funnel, on *Pseudotsuga menziesii* var. *glauca,* black light, Malaise trap.

Polymerus diffusus (Uhler)

Station 2; 3 to 12 July; sweeping *Penstemon spp.*

Proba sallei (Stal)

Station 1 and General Area; 13 June to 14 August; sweeping *Artemisia tridentata* and *Chrysothamnus nauseosus.*

Leptopterna ferrugata (Fallen)

Station 3; 11 July; sweeping flowering *Chrysothamnus nauseosus.*

Megaloceroea debilis (Uhler)

Station 3, 4, 11 and General Area; 5 to 12 July; in flight, white light.

Stenodema (Stenodema) virens (Linnaeus).

Station 1, 3, 4, 6, 9, 11, 12 and General Area; 18 June to 31 August; on *Achillea lanulosa, Balsamorhiza sagittata, Chamaebatiaria millefolium,* seedheads of *Elymus condensatus,* on *Pinus flexilis,* and sweeping flowering *Osmorhiza occidentalis,* black light, Malaise trap.

Family Phymatidae

Phymata americana coloradensis Melin

Station 4; 9 to 21 August; on *Chamaebatiaria millefolium* and *Chrysothamnus nauseosus.* One specimen on the flowers of *C. nauseosus,* was found feeding on the horn fly, *Haematobia irritans* (Linnaeus)(Muscidae).

Phymata pennsylvanica Handlirsch

General Area; 13 to 22 August; on flowers of *Chamaebatiaria millefolium* and *Chrysothamnus nauseosus.*

Family Reduviidae

Rhynocoris ventralis (Say)

Station 6, 7, 12 and General Area; 22 June to 17 July; on *Balsamorhiza sagittata, Cirsium canescens, Pinus flexilis* and *Rosa woodsi.*

Sinea spinicollis (Champion)

General Area; 28 August; on *Chamaebatiaria millefolium.*

Zelus socius Uhler

This species was recorded by Harris and Shull (1944).

Family Nabidae

Nabis alternatus (Parshley)

Station 1, 2, 3, 4, 6 and General Area; 21 June to 8 August; on *Chamaebatiaria millefolium, Chrysothamnus nauseosus, Elymus condensatus, Eriogonum spp., Eriogonum umbellatum, Melilotus officinalis, Pseudotsuga menziesii* var. *glauca,* and sweeping flowering *Osmorhiza occidentalis.*

Nabis rosipennis (Reuter)

Station 2; 24 August; sweeping mixed shrubs and grasses.

Nabis vanduzeei (Kirkaldy)

Visitor's Center area; 15 July; on flowers of *Achillea lanulosa.*

Family Tingidae

Corythucha distincta Osborn and Drake

Station 12; 14 August; sweeping streamside vegetation.

Corythucha immaculata Osborn and Drake

Station 3; 13 to 22 June; sweeping *Balsamorhiza sagittata.*

Corythucha mollicula Osborn and Drake

Station 12; 23 to 27 June; sweeping *Heracleum lanatum.*

Hesperotingis occidentalis Drake

General Area; 14 August; sweeping *Chrysothamnus nauseosus.*

Family Neididae

Acanthophysa echinata Uhler

The occurrence of this species in the Monument is based on the record of Harris and Shull (1944).

Jalysus wickhami Van Duzee

General Area; 28 July to 30 August; sweeping *Chamaebatiaria millefilium, Chrysothamnus nauseosus,* and *Ribes cereum.*

Neides muticus (Say)

Station 2 and General Area; 26 July to 31 August; sweeping *Chamaebatiaria millefolium* and *Pseudotsuga menziesii* var. *glauca*.

Family Lygaeidae

Genera and species follow the catalog of Slater (1964).

Lygaeus kalmii kalmii Stal

Station 11 and 12; 14 June to 31 August; on *Chaenactis douglasii* and *Chrysothamnus nauseosus*.

Melanocoryphus admirabilis (Uhler)

Station 3; 22 June; sweeping *Balsamorhiza sagittata*.

Melanocoryphus bicrusis (Say)

Station 12 and General Area; 8 August to 12 September; on *Chrysothamnus nauseosus* and *Senecio serra*. A copulating pair were found on flowers of *S. serra* on 8 August.

Nysius angustatus (Uhler)

Visitor's Center area; 5 July; sweeping flowering *Melilotus officinalis*.

Nysius ericae Auctorum

Station 4, 5, 8, 9, 10 and General Area; 14 June to 13 September; on *Achillea lanulosa, Artemisia tridentata, Balsamorhiza sagittata, Chrysothamnus nauseosus, Chrysothamnus viscidiflorus, Cornus stolonifera, Crepis acuminatum, Cymopterus terebinthinus, Elymus condensatus, Helianthus annuus, Lupinus sp., Mimulus nanus, Phacelia leucophylla* and *Verbascum thapsus*, Malaise trap.

Nysius raphanus Howard

Station 1, 5, 10, 11 and General Area; 17 June to 13 September; on *Achillea lanulosa, Balsomorhiza sagittata, Chrysothamnus nauseosus, Phacelia leucophylla, Pinus flexilis*, and *Purshia tridentata*.

Nysius strigosus Uhler

This species was recorded from the Monument by Harris and Shull (1944).

Nysius tenellus Barber

Station 6, 9, 11 and General Area; 23 June to 13 September; on *Achillea lanulosa, Artemisia tridentata, Chrysothamnus nauseosus*, and *Chrysothamnus viscidiflorus*, Malaise trap.

Ortholomus scolopax Say

Station 2, 10 and General Area; 29 July to 1 September; sweeping *Chamaebatiaria millefolium* and *Pseudotsuga menziesii* var. *glauca*.

Kleidocerys franciscanus (Stal)

Station 4, 10 and General Area; 15 June to 30 August; sweeping *Chamaebatiaria millefolium, Elymus condensatus, Pinus flexilis*, and *Prunus virginiana*.

Geocoris pallens pallens Stal

Station 10 and General Area; 1 July to 13 September; on *Achillea lanulosa, Chrysothamnus nauseosus, Melilotus officinalis* and *Phacelia leucophylla*.

Heterogaster behrensii (Uhler)

Station 12; 23 June; sweeping *Heracleum lanatum*.

Malezonotus sodalicius (Uhler)

General Area; 14 April; on bark of *Pinus flexilis*.

Family Coreidae

Chelinidae vittiger Uhler

Sunset Cone; 6 July; on foliage of *Opuntia polyacantha*.

Coriomeris humilis (Uhler)

General Area; 11 August; on flowers of *Chrysothamnus viscidiflorus*.

Leptoglossus clypealis Heidemann

General Area; 27 June to 8 September; on *Cornus stolonifera* and *Pinus flexilis*. Specimens were abundant on the green cones of *P. flexilis* in late July.

Family Rhopalidae

Arhyssus barberi Harris

General Area; 26 June to 12 September; sweeping *Balsamorhiza sagittata, Cornus stolonifera*, on soil.

Arhyssus crassus Harris

Station 3 and 12; 20 to 22 June on *Balsamorhiza sagittata*.

Arhyssus scutatus (Stal)

Station 6 and General Area; 10 August to 10 September; sweeping plant foliage.

Aufeius impressiocollis Stal

This species was recorded from the Monument by Harris and Shull (1944).

Harmostes reflexulus (Say)

Station 6, 12 and General Area; 22 June to 11 August; on *Balsamorhiza sagittata*, *Chrysothamnus nauseosus*, *Chrysothamnus viscidiflorus*, *Cirsium canescens*, *Pinus flexilis* and *Senecio serra*. Two pairs of this species were in copitu on flowers of *Cirsium canescens* on 15 and 16 July.

Liorhyssus hyalinus (Fabricius)

Station 10 and General Area; 26 July to 4 September; sweeping *Helianthus annuus*.

Stictopleurus plutonius (Baker)

General Area; 21 July to 3 September; on *Artemisia tridentata* and *Chrysothamnus nauseosus*.

Family Coriscidae

Alydus calcaratus (Linnaeus)

Station 2 and 12; 14 July to 27 August; sweeping *Populus trichocarpa*, Malaise trap.

Alydus eurinus (Say)

Station 2 and 12; 14 July to 5 September; Malaise trap. One specimen was found inside the body cavity of a decomposed deer mouse on 5 September.

Tollius setosus (Van Duzee)

This species was recorded from the Monument by Harris and Shull (1944).

Family Aradidae

Aradus acutus Say

Station 12; 23 June; on bark of dead *Populus tremuloides*.

Aradus lugubris Fallen

General Area; 9 July; on *Pinus flexilis*.

Aradus vadosus Van Duzee

Station 12; 23 June to 6 July; on bark of dead *Populus tremuloides*.

Family Saldidae

Saldula explanata (Uhler)

Station 12; 18 July; on soil near stream.

Family Cydnidae

Allocoris virilis McAtee and Malloch

This species was recorded from the Monument by Harris and Shull (1944).

Cynoides ciliatus (Uhler)

Station 11; 5 July; sweeping mixed shrubs.

Family Corimelaenidae

Corimelaena extensa Uhler

Station 12; 14 to 17 August; on *Verbascum thapsus*.

Corimelaena virilis McAtee and Malloch

Station 12 and General Area; 13 June to 10 August; sweeping *Verbascum thapsus* and *Wyethia amplexicaulis*.

Family Scutelleridae

Homaemus aeneifrons consors Uhler

Station 6 and General Area; 27 June to 13 September; on flowers of *Achillea lanulosa*, on *Artemisia tridentata*, *Chrysothamnus nauseosus* and *Cornus stolonifera*.

Homaemus bijugis Uhler

Station 12; 28 August; on flowers of *Achillea lanulosa*.

Family Pentatomidae

Aelia americana Dallas

General Area; 5 to 11 July; on flowers of *Crepis acuminatum* and *Lupinus caudatus*.

Apateticus antarius ? Van Duzee

Station 12; 14 August; sweeping streamside vegetation.

Apateticus crocatus Uhler

Station 1, 6 and 11; 24 to 31 August; sweeping *Chrysothamnus nauseosus*, *Juniperus scopulorum* and *Senecio serra*.

Carpocoris remotus Horvath

General Area; 22 June to 21 August; on *Balsamorhiza sagittata* and *Chrysothamnus nauseosus*.

Pitedia liguata (Say)

Station 2, 3, 4, 6, 7, 8 and General Area; 22 June to 6 September; on *Artemisia tridentata*, *Balsamorhiza sagittata*, *Chrysothamnus nauseosus*, *Cirsium canescens*, *Pinus flexilis*, *Pseudotsuga menziesii* var. *glauca* and *Purshia tridentata*.

This species frequented *Balsamorhiza sagittata* plants in June. In August and September, specimens were abundant on cones of *Pinus flexilis* or on the soil surface under dead bushes of *Artemisia tridentata* and *Purshia tridentata*.

Pitedia persimilis (Horvath)

Station 12 and General Area; on *Balsamorhiza sagittata*, on soil.

Pitedia uhleri (Stal)

Station 3, 11, and 12; 20 June to 6 September; on *Balsamorhiza sagittata*, *Chrysothamnus nauseosus*, *Chrysothamnus viscidiflorus* and *Cymopterus terebinthinus*. One specimen was prey of *Stenopogon inquinatus* Loew (Asilidae).

Eurygaster sp.

General Area; 19 August; nymphs on *Eriogonum ovalifolium* var. *depressum*.

Neottiglossa tumidifrons Downes

Harris and Shull (1944) recorded this species from the Monument.

Peribalus abbreviatus Uhler

General Area; 19 June to 1 July; on *Pinus flexilis*.

Peribalus limbolarius (Stal)

General Area; 17 August to 12 September; on *Chrysothamnus nauseosus* and *Verbascum thapsus*.

Perillus sp.

General Area; 12 July; on *Purshia tridentata*. Only the colorful nymph of this species was taken. It was found in large numbers on the branches of *P. tridentata*.

Thyanata pallidovirens pallidovirens Stal

General Area; 20 June to 12 September; on *Balsamorhiza sagittata* and *Chrysothamnus nauseosus*.

Trichopepla grossa Van Duzee

General Area; 26 June; on soil.

Order HOMOPTERA

Family placement of this order follows Borror and DeLong (1964). Genera and species are listed alphabetically.

Suborder AUCHENORRHYNCHA

Family Cicadidae

Okanogana bella Davis

Station 12 and General Area; 19 June to 7 July; on *Alnus tenuifolia*, *Elymus condensatus*, and *Heracleum lanatum*.

Okanogana oregona Davis

Station 12; 24 June; on *Urtica lyalli*.

Family Membracidae

Campylenchia latipes (Say)

Visitor's Center area; 7 July; sweeping *Melilotus officinalis*.

Palonica pyramidata Uhler

Station 12; 14 August; on bark of *Salix sp.*

Publilia modesta Uhler

General Area; 16 June to 22 August; on *Chrysothamnus nauseosus* and *Cirsium canescens*. Adults and nymphs of this species usually were taken singly. However, in one instance an aggregation of nymphs was found on the main stem of a large plant of *C. canescens*.

Stictocephala sp.

General Area; 19 July to 14 August; sweeping *Pinus flexilis* and *Purshia tridentata*.

Tortistilus wickhami Van Duzee

Station 2, 6, 11 and General Area; 7 July to 10 August; sweeping *Chrysothamnus nauseosus*, *Melilotus officinalis*, Malaise trap. This species was occasionally preyed on by *Efferia benedicti* (Bromley).

Family Cicadellidae

Acinopterus sp.

General Area; 28 August; on *Eriogonum spp.*

Balclutha punctata patula Blocker

Station 2 and 9; 21 June to 23 July; Malaise trap.

Ballana polica DeLong

Station 6; 14 July; on flowers of *Lupinus caudatus*.

Ballana venditarius (Ball)

General Area; 7 July; on plant foliage.

Chlorotettix sp.

General Area; 11 August; sweeping foliage of *Chrysothamnus viscidiflorus*.

Circulifer tenellus (Baker)

General Area; 6 July to 1 October; on foliage of *Purshia tridentata* and sweeping mixed shrubs.

Colladonus belli (Uhler)

Station 5; 22 June; on foliage of *Purshia tridentata*.

Colladonus geminatus (Van Duzee)

Station 1, 2, 3, 12, General Area and Visitor's Center area; 22 June to 31 August; on foliage of *Balsamorhiza sagittata*, *Cornus stolonifera*, *Melilotus officinalis*, *Osmorhiza occidentalis* and *Pseudotsuga menziesii* var. *glauca*.

Colladonus montanus (Van Duzee)

Station 2 and 11; 12 to 19 July; on foliate of *Populus tremuloides*, Malaise trap.

Dikraneura carneola (Stal)

Station 2 and 11; 10 to 31 August; on foliage of *Chrysothamnus nauseosus*, *Pseudotsuga menziesii* var. *glauca*, and sweeping mixed species of grasses.

Empoasca alberta ? Ross

Station 2; 13 July; on foliage of *Populus tremuloides*.

Empoasca decora DeLong and Davidson

Station 2 and 11; 9 to 19 July; on foliage of *Artemisia tridentata*, Malaise trap.

Empoasca nigra Gillette and Baker

Station 11; 13 July; on foliage of *Artemisia tridentata*.

Empoasca nigra var. *pulchella* Gillette and Baker

Station 6; 12 July; sweeping mixed species of grasses.

Euscelidius schenki (Kirsch)

Station 2 and 11; 19 to 23 July; Malaise trap.

Exitianus sp.

General Area; 29 July; sweeping *Achillea lanulosa.*

Graminella sp.

General Area; 1 August; sweeping shrubs.

Gyponana hasta DeLong

Station 6 and 11; 19 July to 10 August; Malaise trap.

Idiocerus amoenus Van Duzee

Station 6; 29 August; on foliage of *Juniperus scopulorum.*

Idiocerus apache Ball and Parker

Station 1, 2, 4, 6 and 11; 5 July to 31 August; on foliage of *Cornus stolonifera, Juniperus scopulorum, Populus tremuloides* and *Pseudotsuga menziesii* var. *glauca,* black light, Malaise trap.

Idiocerus nervatus Van Duzee

Station 6, 29 August; on foliage of *Juniperus scopulorum.*

Idiocerus suturalis Fitch

Station 2; 13 to 14 July; sweeping foliage of *Populus tremuloides.*

Laevicephalus sp.

Station 11; 31 August; sweeping grasses.

Macropsis basalis (Van Duzee)

Station 2; 13 July; sweeping foliage of *Populus tremuloides.*

Macropsis bifasciata (Van Duzee)

Station 2, 13 July; sweeping foliage of *Populus tremuloides.*

Macrosteles sp.

General Area; 13 August to 13 September; sweeping *Chrysothamnus nauseosus,* white light.

Mocuellus collinus (Boheman)

Station 11; 31 August; sweeping grasses.

Oncopsis sp.

General Area; 14 August; sweeping shrubs.

Parabolocratus sp.

General Area; 3 to 5 July; sweeping *Lupinus spp.* and *Pseudotsuga menziesii* var. *glauca.*

Paraphlepsius occidentalis (Baker)

Station 12; 11 August; Malaise trap.

Psammotettix sp.

General Area; 11 August; sweeping *Chrysothamnus nauseosus.*

Sorhoanus debilus (Uhler)

General Area; 7 July; on foliage of *Melilotus officinalis.*

Stragania rufoscutellata (Baker)

Station 11; 9 July; on foliage of *Artemisia tridentata.*

Family Cercopidae

Aphrophora sp.

Station 8; 8 July; on *Lupinus caudatus.* Nymphs occasionally were found aggregated in large numbers and feeding on the lower stems of the host plant.

Clastoptera arborina Ball

Station 6; 29 August; sweeping *Juniperus scopulorum.*

Clastoptera brunnea Ball

Station 6 and 11; 26 July to 29 August; sweeping *Artemisia tridentata, Chamaebatiaria millefolium,* and *Juniperus scopulorum.*

Clastoptera delicata Uhler

General Area; 12 September; sweeping *Chrysothamnus nauseosus*.

Neophilaenus lineatus (Linnaeus)

Station 1, 2, and General Area; 4 July to 13 September, sweeping *Artemisia tridentata, Chrysothamnus nauseosus, Chrysothamnus viscidiflorus, Eriogonum spp., Melilotus officinalis* and *Rosa woodsi*.

Family Achilidae

Epiptera sp.

Station 2; 1 September; on foliage of *Pseudotsuga menziesii* var. *glauca*.

Family Delphacidae

Eurysa obesa Beamer

Station 2, 4 and General Area; 18 June to 18 July; on *Elymus condensatus*, Malaise trap, sweeping mixed species of shrubs.

Stobaera sp.

Station 9; 22 June; Malaise trap.

Family Dictyopharidae

Scolops abnormalis Ball

General Area; 25 August; sweeping *Eriogonum spp.*

Scolops pallidus Uhler

General Area; 10 August; on foliage of *Chrysothamnus viscidiflorus*.

Family Cixiidae

Oecleus obtusus Ball

General Area; 28 July to 1 August; sweeping plant foliage.

Suborder STERNORRHYNCHA

Family Psyllidae

Aphalara loca ? Caldwell

General Area; 1 July; sweeping *Pinus flexilis*.

Arytaina pubescens Crawford

General Area; 6 July; on plant foliage.

Psylla coryli Patch

Station 5 and General Area; 22 June to 1 August; sweeping *Purshia tridentata*.

Psylla galeaformis Patch

Station 12; 14 August; sweeping *Alnus tenuifolia*.

Psylla ribesiae (Crawford)

Station 2 and General Area; 1 to 31 August; sweeping *Pseudotsuga menziesii* var. *glauca*.

Family Aphididae

Acyrthosiphon pisum (Harris)

Visitor's Center area; 7 to 13 July; on *Melilotus officinalis*.

Aphis eriogoni Cowen

General Area; 4 September; on *Eriogonum spp.*

Aphis helianthi Monell

General Area; 7 to 25 July; on upper stems of *Helianthus annuus*. This aphid was preyed on by adults of *Coccinella transversguttata richardsoni* Brown and *Hippodamia apicalis* Casey.

Aphis lupini Gillette and Palmer

Station 12; 10 August; on stems of *Lupinus sp.* A mutualistic relationship was observed between this species and *Formica (Formica) rasilis* Wheeler on the upper stems of the host plants. In one instance an adult of *Coccinella prolongata* Casey was found feeding on this aphid.

Dactynotus escalantii (Knowlton)

Station 4, 15 August; on stems of *Chrysothamnus nauseosus*.

Macrosiphum coweni (Hunter)

Station 12; 30 July; on *Artemisia tridentata*. This aphid was tended by the ant *Formica (Formica) fusca* Linnaeus and was preyed on by adults of *Coccinella transversoguttata richardsoni* Brown.

Macrosiphum mentzeliae Wilson

General Area; 25 to 28 August; on foliage of *Melilotus officinalis*.

Family Ortheziidae

Arctorthezia pseudoccidentalis Morrison

Station 12; 6 July; on crown of *Purshia tridentata* and *Symphoricarpos orephilus*.

Family Eriococcidae

Eriococcus texanus King

Station 4; 8 July; on crown of *Cymopterus terebinthinus*.

Family Pseudococcidae

Amonostherium lichtensioides (Cockerell)

General Area; 8 August; on *Artemisia tridentata* leaves.

Anisococcus quercus (Ehrhorn)

Station 4 and General Area; 8 August; on roots of *Purshia tridentata*.

Chorizococcus abortivus McKenzie

Station 6 and General Area; 28 July to 17 September; on roots of *Chrysothamnus nauseosus* and *Cymopterus terebinthinus*.

Chorizococcus aphyllonis (Cockerell)

Station 4 and 6; 4 July to 8 August; on crown of *Eriogonum heracleoides*.

Cryptoripersia salina (Ehrhorn)

Station 4 and 11; 2 July to 8 August; on *Carex sp.* and *Sitanion hystrix* roots.

Heliococcus stachyos (Ehrhorn)

Station 4; 8 August; on *Ribes cereum* roots.

Phenacoccus colemani Ehrhorn

Station 12 and General Area; 6 July to 8 August; on roots of *Purshia tridentata* and *Symphoricarpos orephilus*.

Phenacoccus defectus Ferris

Station 4 and General Area; 24 June to 8 August; on roots of *Penstemon deustus*.

Phenacoccus eschscholtziae McKenzie

Station 4; 8 August; on roots of *Chrysothamnus viscidiflorus*.

Rhizoecus cacticans (Hambleton)

Station 4; 4 July to 8 August; on roots of *Lithospermum ruderale*.

Rhizoecus gracilis McKenzie

Station 4; 8 August; on roots of *Eriogonum heracleoides*.

Spilococcus eriogoni (Ehrhorn)

Station 6; 4 July; on roots of *Eriogonum heracleoides* and *Eriogonum umbellatum*.

Family Diaspididae

Phenacaspis pinifoliae (Fitch)

General Area; 26 August; on needles of *Pinus flexilis*.

Order RAPHIDOIDEA

Family Raphidiidae

Agulla adnixa (Hagen)

Station 1 and 12; 23 June to 2 July; sweeping *Urtica lyalli* and streamside vegetation.

Agulla assimilis ? (Albarda)

General Area; 25 August; sweeping *Chamaebatiaria millefolium*.

Agulla modesta Carpenter

Station 12; 14 August; sweeping streamside vegetation.

Order NEUROPTERA

Family Coniopterygidae

Aleuropteryx sp.

Station 2; 7 July; sweeping *Salix spp.*

Coniopteryx sp.

Station 9 and campground area; 21 to 30 June; in flight, Malaise trap.

Malacomyza sp.

Station 11; 13 July; Malaise trap.

Family Hemerobiidae

Hemerobius neadelphus Gurney

Visitor's Center area; 24 June; on *Cornus stolonifera* foliage.

Hemerobius pacificus Banks

Station 2, 6, 11 and 12; 14 July to 1 September; sweeping *Juniperus scopulorum* and *Pseudotsuga menziesii* var. *glauca*, Malaise trap.

Hererobius stigmaterus Fitch

Station 9; 18 to 22 June; sweeping *Elymus condensatus* and *Pinus flexilis*, Malaise trap.

Kimminsia coloradensis (Banks)

Station 2, 8, 9 and 11; 19 June to 23 July; on *Cornus stolonifera*, black and white lights, Malaise trap.

Sympherobius killingtoni Carpenter

Station 3 and General Area; 22 June to 23 August; on *Pinus flexilis*, Malaise trap.

Micromus montanus (Hagen)

Station 12; 11 August; Malaise trap.

Micromus variolosus (Hagen)

Station 3, 9, 11, 12 and General Area; 21 June to 21 August; on *Pseudotsuga menziesii* var. *glauca*, Malaise trap.

Wesmaelius longifrons (Walker)

General Area; 7 July; on foliage of *Pseudotsuga menziesii* var. *glauca*.

Family Chrysopidae

Chrysopa carnea Stephens

Station 1, 2, 3, and General Area; 22 June to 31 August; on foliage of *Pinus flexilis* and *Pseudotsuga menziesii* var. *glauca*, Malaise trap.

Chrysopa coloradensis Banks

Station 9 and General Area, campground area, Sunset Cone; 17 June to 11 August; on foliage of *Pinus flexilis* and *Pseudotsuga menziesii* var. *glauca*, white light.

Chrysopa downesi Smith

Station 2 and 12; 25 July to 11 August; on *Senecio serra*, Malaise trap.

Chrysopa oculata Say

Station 1 and 12; 2 July to 14 August; on *Artemisia tridentata* and *Senecio serra*, Malaise trap, sweeping streamside vegetation.

Chrysopa perfecta Banks

Station 3; 23 August; Malaise trap.

Eremochrysa fraterna Banks

Station 2, 3, 4, 11, 12 and General Area; 28 June to 23 August; on *Chrysothamnus nauseosus* and *Pseudotsuga menziesii* var. *glauca*, sweeping streamside vegetation, Malaise trap, white light.

Eremochrysa punctinervis MacLachlan

Station 4; 29 June; white light.

Family Myrmeleontidae

Brachynemurus sackeni Hagen

Visitor's Center; 11 July; on window.

Dendroleon speciosum Banks

General Area; 27 July; in flight.

Hesperoleon brunneus Currie

Station 11 and Visitor's Center area; 14 July to 8 August; Malaise trap, white light.

Order COLEOPTERA

The placement of families, genera, and subgenera follows the manual of Arnett (1960-1962).

Suborder ADEPHAGA

Family Carabidae

Carabus (Oreocarabus) taedatus oregonensis LeConte

Station 1 and 12; 23 June to 5 September; on soil.

Elaphrus (Elaphrus) sp.

Station 2, 4, and 12; 14 to 24 July; black light, on soil.

Bembidion (Peryphus) bimaculatum Kirby

Visitor's Center area; 20 July; black light.

Bembidion (Peryphus) immaculosum Hatch

Visitor's Center area; 24 January to 28 July; black light, on window. This species often was found on the inside of large south-facing windows in the Visitor's Center on sunny days in January and March.

Bembidion (Peryphus) nebraskense LeConte

Station 4, 6, 12 and General Area; 5 July to 5 September; on flowers of *Chrysothamnus nauseosus*, black light, on soil.

Bembidion (Peryphus) obscurellum fusicrus Motschoulsky

Station 4 and 12; 5 to 28 July; black light.

Bembidion (Peryphus) rupicola Kirby

Station 1, 12 and Visitor's Center area; 13 June to 19 September; swept from flowers of *Osmorhiza occidentalis*, black light, in lawn grass clippings, under rocks, at stream edge.

Pterostichus (Hypherpes) protractus LeConte

Station 6 and 12; 24 June to 5 September; on soil, under leaves.

Pterostichus (Bothriopterus) oregonus LeConte

Station 12; 19 November; in duff of rotten *Populus tremuloides*, on *Populus trichocarpa* log.

Agonum (Agonum) placidum Say

Visitor's Center area; 12 July; white light.

Amara (Curtonotus) laticollis LeConte

General Area; 12 July; on soil

Amara (Bradytus) apricaria Paykull

Visitor's Center area; 27 June to 14 July; in lawn grass clippings, on soil.

Amara (Celia) amplicollis Mannerheim

General Area; 28 July; under rocks.

Amara (Celia) erratica Sturm

General Area; 6 March to 19 June; under boards, under rocks.

Amara (Celia) farcta LeConte

General Area; 26 June; on limbs of *Pinus flexilis*.

Amara (Celia) quenseli Schönherr

Station 12 and General Area; 22 July to 5 September; on soil.

*Amara (Amara) impunctico*llis Say

General Area; 11 to 19 July; on soil, sweeping plant foliage.

Amara (Amara) sp.

General Area; 14 June to 22 August; on limb of *Pinus flexilis*, on soil.

Harpalus (Harpalus) basilaris Kirby

General Area; 25 June to 11 July; on *Cornus stolonifera*, on soil.

Harpalus (Harpalus) fraternus LeConte

Station 6, 12 and General Area; 13 June to 5 September; on *Pinus flexilis*, white light, on soil, under rocks. This species was most common under rocks at the stream edge in the south proximity of station 12.

Lebia furcata aberration *debiliceps* Casey

Station 6; 10 August; sweeping plant foliage.

Lebia guttula LeConte

Station 4 and General Area; 8 August to 5 September; on foliage of *Chrysothamnus nauseosus*, white light.

Apristus laticollis LeConte

Station 12; 20 June; on soil.

Cymindis brevipennis Zimmerman

Station 10; 14 September; under wet cardboard.

Family Dytiscidae

Laccophilus decipiens LeConte

Station 2 and 12; 8 to 10 August; in stream. Adults were especially abundant in the small overflow of water from the horse corral at station 2.

Hygrotus obscureplagiatus (Fall)

Station 12; 10 August; in beaver pond.

Hydroporus (Heterosternus) planiusculus Fall

Station 12; 10 August; in beaver pond.

Hydroporus (Potamonectes) striatellus LeConte

Station 2 and 12; 22 July to 10 August; in beaver pond, in stream. The species was abundant in the overflow of water at station 2.

Agabus lugens LeConte

Station 1; 24 June; at edge of stream.

Agabus seriatus intersectus Crotch

Station 12; 10 August; in beaver pond.

Agabus tristis Aube

Station 12; 22 July; in beaver pond.

Rhantus binotatus Harris

Station 12 and General Area; 10 August to 10 September; in beaver pond, on soil.

Rhantus hoppingi Wallis

Station 2, 12 and General Area; 28 July to 10 August; in beaver pond, in stream.

Suborder POLYPHAGA

Family Hydrophilidae

Berosus fraternus LeConte

Visitor's Center area; 20 July; black light.

Sphaeridium lunatus Fabricius

Station 10; 10 September; on dead mule deer.

Carpelimus (Carpelimus) diffusus (Casey)

Station 7, 8, 12 and General Area; on *Eriogonum umbellatum*, black light, sweeping streamside vegetation.

Platystethus americanus Erichson

Station 2; 29 July; foliage of *Pseudotsuga menziesii* var. *glauca*.

Pelecomalium puberulum Fauvel

Station 12; 14 June to 7 July; on *Cornus stolonifera* and *Heracleum lanatum*.

Phlaeopterus brevipennis Casey

Station 1; 24 June; under rocks at stream edge.

Deliphrum occidum Casey

Station 4; 22 June; white light.

Stenus sp.

General Area; 19 August; on soil.

Sunius (Hypomedom) peregrina Casey

Visitor's Center area; 24 January; on windows.

Staphylinus maxillosus villosus Gravenhorst

Visitor's Center area; 11 to 15 August; on garbage cans.

Philonthus (Philonthus) concinnus Gravenhorst

Station 4 and General Area; 24 June to 18 July; in fly trap, on dead yellowbelly marmot.

Philonthus (Philonthus) cruentatus Gmelin

Station 12 and General Area; 25 June to 19 November; on dead yellowbelly marmot, in duff of *Populus tremuloides*.

Philonthus (Philonthus) politus Linnaeus

Visitor's Center area; 22 June; swept from foliage of *Cornus stolonifera*.

Philonthus (Philonthus) stace-smithi Hatch

Station 12; 5 September; on soil.

Philonthus (Philonthus) sp.

Station 2 and General Area, Visitor's Center Area; 24 January to 17 September; on *Chamaebatiaria millefolium*, duff of *Pseudotsuga menziesii* var. *glauca*, on windows.

Philonthus (Gabrius) wawawai Hatch

Station 3, 4 and General Area; 6 March to 21 July; on cinder, on dead yellowbelly marmot.

Heterothops fumigatus LeConte

Station 2; 25 July; on foliage of *Pseudotsuga menziesii* var. *glauca*.

Quedius (Quedius) lanei Hatch

Station 12; 19 November; in duff of *Populus tremuloides*.

Quedius (Microsaurus) limbifer Horn

Station 12; 19 November; in duff of *Populus tremuloides*.

Tachinus angustatus Horn

Station 1, 2, 3, 6, 9, 12 and General Area, Visitor's Center area; 11 June to 17 September; on flowers of *Balsamorhiza sagittata*, from plants of *Cymopterus terebinthinus* in Berlese funnel, Berlese duff of *Pseudotsuga menziesii* var. *glauca*, sweeping flowering *Osmorhiza occidentalis*, under boards. This was the most common representative of the family Staphylinidae in the Monument.

Aleochara (Coprochara) bimaculata Gravenhorst

Station 10; 10 September; on dead mule deer.

Aleochora (Coprochara) recta Casey

Station 4; 18 July; in meat trap.

Family Silphidae

Necrodes ramosa (Say)

Station 1, 5 July; on soil.

Silpha (Thanatophilus) lapponica Herbst

Station 4 and General Area; 24 June to 28 July; in fly trap, on dead yellowbelly marmot, on soil.

Nicrophorus guttulus Motschoulsky

General Area; 12 to 15 July; on soil.

Nicrophorus hecate hecate Bland

Station 4 and General Area; Visitor's Center area; 18 June to 21 August; on dead yellowbelly marmot, in fly trap, on garbage can, on soil.

Nicrophorus investigator investigator Zetterstedt

Station 4 and General Area; 25 June to 28 July; in fly trap, on dead yellowbelly marmot, on soil.

Family Leiodidae

Glacicavicola bathyscioides Westcott

Boy Scout cave; 6 to 18 July; on ice mounds.

Family Ptiliidae

Acratrichis sp. near *vicina* Matthews

Station 2; 17 September; Berlese *Pseudotsuga menziesii* var. *glauca* duff.

Family Histeridae

Saprinus fimbriatus LeConte

Station 4, 10 and General Area; 25 June to 10 September; on dead Great Basin rattlesnake and on dead mule deer.

Saprinus lubricus LeConte

General Area; 25 June to 25 August; on *Chamaebatiaria millefolium,* on dead yellowbelly marmot.

Saprinus lugens Erichson

Station 4 and General Area, Big Craters, Visitor's Center area; 24 June to 14 August; in fly trap, on dead Great Basin rattlesnake, on dead yellowbelly marmot, in garbage cans, on soil.

Saprinus oregonensis J. LeConte

Station 4 and Visitor's Center area; 24 June to 17 July; in lawn grass clippings, on dead yellowbelly marmot.

Gnathoncus nanus Scriba

Station 4, 18 July; in house.

Carcinops quatuordecimstriatus Stephens

Station 4; 14 August; on soil.

Family Lucanidae

Platycerus piceus marginalis Casey

Station 6; 15 June; on dead stem of *Artemisia tridentata.*

Family Scarabaeidae

Aphodius denticulatus Haldeman

Station 4; 14 July; black light.

Aphodius granarius (Say)

Visitor's Center area; 20 June; black light.

Serica anthracina LeConte

Station 11; 5 July; on flowers of *Eriogonum umbellatum.*

Serica curvata LeConte

General Area; 19 July to 4 August; black light on soil.

Serica cuyamaca Saylor

Station 12; 28 July; black light.

Polyphylla decimlineata Say

Visitor's Center area; 18 July to 15 August; on soil.

Cremastocheilus crinitus bifoveatus Van Dyke

Station 11; 20 June to 7 July; in flight, on soil.

Trichiotinus assimilis (Kirby)

Station 1, 11 and 12; 24 June to 8 August; on flowers of *Cirsium canescens*, *Cirsium vulgare*, *Heracleum lanatum*, *Senecio serra*, and *Xanthium strumarium*. Adults of this species were found most often imbedded in the flower heads of *C. canescens* and *C. vulgare* at station 12.

Family Helodidae

Cyphon concinnus LeConte

Station 12; 29 June to 5 July; on *Mertensia campanulata* and *Populus tremuloides*.

Family Heteroceridae

Heterocerus brunneus Melsheimer

Station 4; 5 July; black light.

Heterocerus tristis Mannerheim

Visitor's Center area; 30 June; black light.

Family Buprestidae

Dicerca frosti Nelson

Station 12; 22 June; on branch of *Artemisia tridentata*.

Dicerca tenebrica (Kirby)

Station 12; 20 June to 16 August; on *Populus tremuloides*. The majority of specimens collected on the bark of a large log of *P. tremuloides* that had been felled by beavers in the fall of 1964.

Dicerca tenebrosa (Kirby)

West of Devil's Orchard area; 14 April; in *Pinus flexilis*. Approximately 30 dead adults were found in the wood near the base of a large dead *P. flexilis*.

Poecilonota montana Chamberlin

South of Devil's Orchard; 15 July; on bark of *P. flexilis*.

Buprestis aurulenta Linnaeus

Station 7 and Big Craters area; 13 June to 7 August; on foliage of *P. flexilis*.

Buprestis langi (Mannerheim)

Station 12; 14 August; in flight.

Melanophila acuminata (DeGeer)

West of Devil's Orchard and campground area; 14 April to 5 July; in flight.

Melanophila intrusa Horn

Station 5, 6 and General Area; 22 June to 4 September; on bark of *Pinus flexilis*, reared from branches of *P. flexilis*.

Anthaxia expansa LeConte

Station 6 and General Area; 2 to 21 July; on flowers of *Chrysopsis villosa*.

Anthaxia helferi Cobos

Station 4, 6 and General Area, campground area; 28 June to 4 July; on flowers of *Eriogonum ovalifolium* var. *depressum*, in flight over cinders.

Anthaxia retifer LeConte

Station 2, 6 and General Area; 2 to 14 July; on flowers of *Agoseris retrorsa*, general sweeping of vegetation.

Anthaxia simiola Casey

Station 6, 12 and General Area; 28 June to 19 July; on flowers of *Agoseris retrorsa*, *Chrysopsis villosa*, *Eriogonum ovalifolium* var. *depressum* and *Eriophyllum lanatum*.

Chrysobothris breviloboides Barr

Station 5, 6 and General Area; 22 June to 9 July; on *Pinus flexilis*, Malaise trap.

Chrysobothris femorata (Olivier)

Station 12; 5 to 10 July; on dead *Populus tremuloides*.

Chrysobothris horningi Barr

Station 8; 18 June to 10 July; on *Eriogonum ovalifolium* var. *depressum*, on cinders.

Chrysobothris idahoensis Barr

General Area; 23 June; on *Eriogonum umbellatum*.

Chrysobothris oregona Chamberlin

Station 2, 8 and General Area; 30 June to 16 July; on root crown of *Cymopterus terebinthinus*, on *Eriogonum ovalifolium* var. *depressum*, *Eriogonum ovalifolium*, and *Phacelia leucophylla*.

Chrysophana placida (LeConte)

Station 7 and General Area; 18 to 30 June; on foliage of *Pinus flexilis* and on seed cones of *P. flexilis*.

Acmaeodera idahoensis Barr

Station 12; 20 June to 28 July; on flowers of *Eriophyllum lanatum*.

Agrilus politus Say

Station 2; 1 August; on foliage of *Salix spp*.

Family Elateridae

Ampedus ursinus (Van Dyke)

Station 12 and Grassy Cone; 13 to 17 June; on *Pseudotsuga menziesii* var. *glauca*, under rocks.

Agriotella fusca Lane

General Area; 29 June; on *Phacelia leucophylla*.

Limonius aeger LeConte

East side of Grassy Cone; 17 June; sweeping *Pseudotsuga menziesii* var. *glauca*.

Athous rufiventris Eschscholtz

Station 12; 14 August; sweeping *Alnus tenuifolia*.

Hemicrepidius carbonatus (LeConte)

Station 12; 16 July; on flowers of *Cirsium canescens*.

Ctenicera carbo (LeConte)

Station 12; 24 June; on soil.

Ctenicera castanicolor (Fall)

Station 12; 23 June to 5 July; on *Populus tremuloides*, on soil.

Ctenicera glauca (Germar)

Station 12 and General Area; 22 to 27 June; on flowers of *Cirsium canescens*, on foliage of *Cymopterus terebinthinus* and *Pinus flexilis*, on flowers of *Wyethia amplexicaulis*.

Ctenicera nebraskensis (Bland)

Station 9 and General Area; 22 to 29 June; on *Pinus flexilis* and *Pseudotsuga menziesii* var. *glauca*, Malaise trap.

Ctenicera nigricollis (Bland)

Station 2; 26 June to 25 July; sweeping *Pseudotsuga menziesii* var. *glauca*.

Ctenicera pudica (Brown)

Station 12 and General Area; 10 July to 11 August; Malaise trap, sweeping vegetation.

Dalopius fuscatus Brown

Station 1 and General Area; 22 June to 7 July; on *Elymus condensatus* and *Prunus virginiana*, sweeping flowering *Osmorhiza occidentalis*.

Negastrius pectoralis (Say)

General Area; 6 March to 23 August; on cinders.

Melanotus texanus Candeze

Station 12 and General Area; 11 to 26 June; sweeping mixed grasses (mostly *Elymus condensatus*), black light, on soil.

Cardiophorus tenebrosus LeConte

Station 6, 12 and General Area; 20 June to 23 November; on *Pinus flexilis* and *Purshia tridentata*, on soil, under rocks. Specimens were found under a large rock at station 12 in November.

Family Eucnemidae

Anelastes druryi Kirby

Visitor's Center area; 4 August; black light.

Family Cantharidae

Podabrus falli R. and G. Hopping

Station 2, 7, 11, 12 and General Area; 14 June to 13 July; on flowers of *Chrysothamnus viscidiflorus*, *Phacelia leucophylla*, on *Pinus flexilis*, on soil.

Podabrus piniphilus Dejean

Station 1 and 12; 22 to 23 June; on flowers of *Hercleum lanatum*.

Podabrus pruinosus diversipes Fall

Station 1, 12 and General Area; 20 June to 21 July; on *Alnus tenuifolia*, *Artemisia tridentata*, *Cirsium canescens*, and *Heracleum lanatum*, on soil.

Family Lampyridae

Pyropyga fenestralis Melsheimer

Station 12; 13 August; Malaise trap.

Family Dermestidae

Dermestes frischi Kugelann

Station 4; 24 June to 18 July; in fly trap, on dead yellowbelly marmot.

Dermestes lardarius Linnaeus

Visitor's Center; 24 January; on floor.

Dermestes marmoratus Say

Station 4 and General Area; 24 June to 26 July; in fly trap, on dead yellowbelly marmot.

Dermestes undulatus talpinus Nabbergeun

Station 4 and General Area; 19 June to 18 July; in fly trap, on dead yellowbelly marmot.

Orphilus niger Rossi

General Area; 9 August; on flowers of *Chamaebatiaria millefolium*.

Anthrenus lepidus LeConte

Station 1 and 12; 15 to 18 July; on *Cirsium canescens* and *Heracleum lanatum*.

Anthrenus lepidus aberration *pictus* Casey

Visitor's Center area; 29 June; sweeping vegetation.

Trogoderma simplex Jayne

Station 12; 16 July; on flowers of *Cirsium canescens*.

Megatoma giffardi Blaisdell

South side of Grassy Cone; 17 June; of flowers of *Balsamorhiza sagittata*.

Megatoma variegata Horn

General Area; 14 April to 5 July; on *Pinus flexilis*.

Family Anobiidae

Ptilinus lobatus Casey

Station 12; 6 to 15 July; from borings of *Populus tremuloides*.

Family Ostomidae

Tenebroides occidentalis Fall

Station 6; 24 June to 15 September; under bark of *Pinus flexilis*.

Family Cleridae

Phyllobaenus scaber (LeConte)

General Area; 28 August; on *Eriogonum spp*.

Phyllobaenus subfasciatus (LeConte)

General Area; 15 July.

Phyllobaenus sp.

Station 2; 14 July; sweeping vegetation.

Enoclerus acerbus Wolcott

Station 8; 5 July; Malaise trap.

Enoclerus barri Knull

Station 5 and General Area; 29 June to 1 July; on foliage of *Pinus flexilis*.

Enoclerus lecontei (Wolcott)

Station 6 and General Area; 22 June to 30 July; on flowers of *Calochortus macrocarpus*, on bark of dead *Pinus flexilis*.

Trichodes ornatus Say

Station 7, 11 and General Area; 15 June to 12 August; on flowers of *Achillea lanulosa, Balsamorhiza sagittata, Calochortus macrocarpus, Chamaebatiaria millefolium, Chrysothamnus nauseosus, Eriogonom ovalifolium* var. *depressum, Eriogonum ovalifolium, Eriogonum umbellatum, Phacelia leucophylla, Potentilla glandulosa pseudorupestris, Potentilla sp.*, and *Rosa woodsi*. This species was most common on flowers of the several species of *Eriogonum* occurring in the Monument.

Chariessa pilosa Forster

Station 12; 8 August; on soil.

Necrobia violacea Linnaeus

General Area; 10 September; on soil.

Family Melyridae

Collops bipunctatus Say

General Area; 15 July to 17 August; on flowers of *Achillea lanulosa* and *Verbascum thapsus*.

Anthocomus horni (Fall)

Station 4, 9, 12 and General Area; Sunset Cone; 14 June to 14 July; on *Elymus condensatus, Heracleum lanatum, Pinus flexilis*, and *Urtica lyalli*, Malaise trap, sweeping mixed grasses.

Tanaops ignitus aberration *nunenmacheri* Marshall

General Area; 19 July to 25 August; sweeping *Chamaebatiaria millefolium* and *Chrysothamnus viscidiflorus*.

Tanaops sp.

General Area; 13 July; on flowers of *Phacelia leucophylla*.

Hypebaeus bicolor (LeConte)

General Area; 19 July; on bark of *Pinus flexilis*.

Attalus glabrellus Fall

General Area; 28 August; on flowers of *Eriogonum spp.*

Attalus morulus smithi Hopping

Station 6 and General Area; 14 July to 4 September; on *Chrysothamnus nauseosus, Heracleum lanatum, Phacelia leucophylla, Pinus flexilis, Pseudotsuga menziesii* var. *glauca* and *Ribes cereum*.

Attalus oregonensis Horn

Station 11 and south side of Sunset Cone; 12 to 16 July; on flowers of *Opuntia rhodantha* and *Phacelia leucophylla*.

Eurelymis atra (LeConte)

Station 2, 12 and General Area; 19 June to 14 July; on *Chrysothamnus nauseosus, Eriogonum ovalifolium* var. *depressum, Populus tremuloides*, and *Pseudotsuga menziesii* var. *glauca*.

Dasytes cruralis (LeConte)

General Area; 29 June to 26 July; on foliage of *Phacelia leucophylla* and *Pseudotsuga menziesii* var. *glauca*.

Hoppingiana hudsonica (LeConte)

Station 4 and 12; 25 June to 14 July; on flowers of *Cirsium canescens*, on *Elymus condensatus*.

Hoppingiana nitida Hatch

Station 6; 18 June to 10 August; on flowers of *Eriogonum ovalifolium* var. *depressum*. sweeping foliage of mixed shrubs.

Mecomycter omalinus Horn

General Area; 21 August; on *Chrysothamnus nauseosus*.

Trichochrous condonensis Hatch

Station 2, 3, and 12; 25 June to 13 July; on flowers of *Chaenactis douglasii* and *Cirsium canescens*.

Trichochrous musculus Hatch

Station 2, 11 and General Area; on *Chaenactis douglasii* and *Crepis acuminatum*.

Trichochrous sp.

General Area; 12 July to 21 August; on flowers of *Chrysothamnus nauseosus* and *Opuntia rhodantha*.

Amecocerus quadricollis Hatch

Station 2, 3, 5, 9 and General Area; Grassy Cone; 13 June to 21 July; on flowers of *Balsamorhiza sagittata, Chamaebatiaria millefolium,* on *Elymus condensatus,* sweeping *Melilotus officinalis,* on *Pinus flexilis, Prunus virginiana, Purshia tridentata,* Malaise trap.

Amecocerus suckeri Hatch

General Area; 14 July; on *Lupinus sp.*

Amecocerus trifasciatus Hatch

Station 2 and General Area; 21 June to 18 July; on *Chaenactis douglasii, Melilotus officinalis* and *Pinus flexilis.*

Amecocerus sp.

General Area; 15 June to 21 August; on *Chrysothamnus nauseosus, Cymopterus terebirthinus, Opuntia polyacantha* and *Rudbeckia occidentalis,* sweeping foliage of mixed shrubs.

Family Meloidae

Lytta vulnerata cooperi LeConte

Station 3, 11 and General Area; 27 July to 31 August; feeding on flowers of *Chrysothamnus nauseosus* and *Chrysothamnus viscidiflorus.*

Epicauta normalis Werner

General Area; 5 July; on blossums of *Lupinus caudatus.*

Epicauta puncticollis (Mannerheim)

Station 1, 11, 12 and General Area; 3 June to 21 August; on flowers of *Achillea lanulosa, Agastache urticifolia, Balsamorhiza sagittata, Chrysothamnus nauseosus, Chrysothamnus viscidiflorus, Cirsium canescens, Eriogonum umbellatum, Senecio serra, Wyethia amplexicaulis* and *Xanthium strumarium.*

Linsleya sphaericollis (Say)

Station 4, 11 and 12; 11 July to 17 August; on *Chrysothamnus nauseosus,* Malaise trap.

Nemognatha (Meganemognatha) lurida apicalis LeConte

General Area; 4 September; on flowers of *Heracleum lanatum.*

Nemognatha (Meganemognatha) lutea dichroa LeConte

Station 11, 12 and General Area; 24 June to 11 August; on flowers of *Achillea lanulosa, Chrysothamnus nauseosus,* and *Cirsium canescens.*

Nemognatha (Pauronemognatha) nigripennis LeConte

Station 1 and General Area; 5 July to 25 August; on flowers of *Achillea lanulosa, Chaenactis douglasii,* and *Chamaebatiaria millefolium.*

Family Mordellidae

Mordella atrata Melsheimer

Station 2, 6, 10, 11, 12 and General Area; 23 June to 11 August; on flowers of *Chaenactis douglasii, Chamaebatiaria millefolium, Chrysothamnus nauseosus, Eriogonum ovalifolium, Eriogonum umbellatum, Heracleum lanatum,* on leaf of *Populus tremuloides,* and on flowers of *Potentilla spp.*

Mordellistena asperata (Melsheimer)

General Area; 22 June; on flowers of *Balsamorhiza sagittata.*

Mordellistena sericans Fall

Station 4, 9, 12 and General Area; 18 June to 26 July; on flowers of *Chamaebatiaria millefolium, Heracleum lanatum,* and *Lithospermum ruderale,* Malaise trap.

Mordellistena unicolor LeConte

General Area; 22 June; on flowers of *Balsamorhiza sagittata.*

Mordellistena sp.

General Area; 15 June; on foliage of *Chrysothamnus nauseosus.*

Family Rhipiphoridae

Macrosiagon dimidiatum (Fabricius)

General Area; 2 August; on flowers of *Chrysothamnus viscidiflorus.*

Family Tenebrionidae

Eleodes (Melaneleodes) rileyi Casey

Station 11 and General Area; 27 June to 21 July; on soil and under rocks.

Eleodes (Eleodes) hispilabris connexa Say

General Area; 13 June to 29 August; on lawn grass, on soil.

Eleodes (Eleodes) obscura sulcipennis Mannerheim

General Area; 23 June to 23 July; on soil.

Eleodes (Blapylis) cordata Eschscholtz

Station 11 and 12; 13 to 27 June; on soil and under rocks.

Eleodes (Blapylis) nunenmacheri Blaisdell

Station 12 and General Area; 13 June to 18 July; on soil and under rocks.

Eleodes (Blapylis) tenebrosa Horn

Station 6 and General Area; 20 June to 29 August; on bark of *Pinus flexilis,* on soil.

Eleodes (Metablapylis) nigrina perlonga Blaisdell

General Area; 13 June to 28 August; on soil and under rocks.

Eleodes (Utheleodes) cognata Haldeman

Station 8 and General Area; 21 June to 10 September; on bark of *Pinus flexilis,* on soil, under rotten *Pseudotsuga menziesii* var. *glauca* log.

Coniontis ovalis oblita (Say)

Station 1, 3 and General Area; 13 June to 17 July; on cinders, on soil, and under rocks.

Coniontellus subglaber Casey

Station 11; 16 July; on flowers of *Eriogonum umbellatum.*

Tribolium madens Charpentier

West of Devil's Orchard; 14 April; on dead *Pinus flexilis.*

Coelocnemis californicus Mannerheim

Station 1 and General Area; 18 to 25 June; on soil.

Coelocnemis sp. n. ?

Station 11; 27 June; under rock.

Family Alleculidae

Chromatia pacifica (Hopping)

Station 2; 13 to 25 July; on *Pseudotsuga menziesii* var. *glauca.*

Isomira variabilis Horn

General Area; 1 August; sweeping plant foliage.

Family Melandryidae

Pentaria trifasciata Melsheimer

General Area; 19 July to 29 August; on *Chamaebatiaria millefolium, Chrysothamnus nauseosus, Phacelia leucophylla,* and *Senecio serra.*

Anaspis rufa Say

Station 2, 12 and General Area; 5 July to 9 August; on *Cornus stolonifera, Chamaebatiaria millefolium, Populus tremuloides* and *Senecio serra.*

Nassipa hoppingi Liljeblad

Station 2; 14 July; sweeping plant foliage.

Family Pedilidae

Pedilus vittatus Horn

Station 1 and 12; 3 June to 5 July; on flowers of *Balsamorhiza sagittata* and *Heracleum lanatum.*

Pedilus sp.

Station 12; 23 June; on foliage of *Populus tremuloides.*

Family Anthicidae

Notoxus serratus LeConte

Station 11; 5 to 17 July; sweeping *Artemisia tridentata* and *Purshia tridentata,* Malaise trap.

Lappus nitidulus LeConte

Station 4, 9 and General Area; 17 June to 29 August; on *Chrysothamnus nauseosus* and *Elymus condensatus,* Malaise trap.

Anthicus hastatus Casey

Visitor's Center area; 11 August; white light.

Anthicus praeceps Casey

Visitor's Center area; 11 August; white light.

Family Nitidulidae

Cateretes (Pulion) pennatus sericans LeConte

Station 1; 27 June; on flowers of *Heracleum lanatum.*

Brachypterus pulicarius (Linnaeus)

Station 3; 22 June; on flowers of *Balsamorhiza sagittata.*

Brachypterus troglodytes Murray

Sunset Cone; 6 July; on flowers of *Opuntia polyacantha.*

Carpophilus (Carpophilus) pallipennis (Say)

General Area; 25 June to 12 July; on flowers of *Cirsium canescens* and *Opuntia polyacantha.*

Nitidula ziczac Say

Station 4; 19 July; in fly trap.

Family Cucujidae

Cucujus clavipes puniceus Mannerheim

Station 12; 5 to 13 September; under bark of dead *Alnus tenuifolia.*

Family Cryptophagidae

Cryptophagus sp.

Station 6, 17 September; from plants of *Cymopterus terebinthinus* in Berlese funnel.

Family Endomychidae

Aphorista laeta LeConte

Station 12; 19 September; in duff of *Pseudotsuga menziesii* var. *glauca.*

Family Coccinellidae

Hyperaspis lateralis Mulsant

Station 6 and General Area; 19 July to 3 September; on foliage of *Chamaebatiaria millefolium, Chrysothamnus nauseosus, Pseudotsuga menziesii* var. *glauca,* sweeping shrub foliage.

Hyperaspis lateralis aberration *montanica* Say

Station 1, 2, 3, 4, 6, 11 and General Area; 28 July to 17 September; on foliage of *Artemisia tridentata, Chamaebatiaria millefolium,* and *Chrysothamnus nauseosus,* Berlese flowers of *C. nauseosus,* on *Juniperus scopulorum,* in seed cone of *Pinus flexilis,* on *Pseudotsuga menziesii* var. *glauca,* Malaise trap.

Hyperaspidius vittigera LeConte

Station 11; 5 July; sweeping shrub foliage.

Brachyacantha dentipes (Fabriciu.

Station 12 and General Area; 10 to 17 August; on flowers of *Chrysothamnus nauseosus*.

Brachyacantha ursina uteella Casey

Station 11 and 12; 15 to 18 July; on flowers of *Chrysothamnus nauseosus*, on foliage of *Salix spp.*

Scymnus ardelio Horn

Station 10; 10 September; on dead mule deer.

Scymnus caurinus Horn

Station 2, 11 and General Area; 22 June to 14 August; on *Artemisia tridentata*, *Balsamorhiza sagittata*, and *Pseudotsuga menziesii* var. *glauca*, Malaise trap.

Scymnus lacustris LeConte

Station 12 and General Area; 21 July to 25 August; on *Chrysothamnus nauseosus*, *Cirsium canescens*, *Eriogonum spp.*, and *Eriogonum umbellatum*, Malaise trap.

Scymnus sp.

General Area; 25 July; on foliage of *Pseudotsuga menziesii* var. *glauca*.

Psyllobora vigintimaculata taedata LeConte

Station 12; 14 August; sweeping shrub foliage.

Hippodamia apicalis Casey

Station 6, 11 and General Area; 12 July to 13 September; on *Achillea lanulosa*, *Artemisia tridentata*, *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, and *Chrysothamnus viscidiflorus*, sweeping *Elymus condensatus*, on stems of *Helianthus annuus*, on foliage of *Pseudotsuga menziesii* var. *glauca*, on flowers of *Senecio serra*. Adults were observed feeding on *Aphis helianthi* Monell on the stems of *H. annuus*.

Hippodamia caseyi Johnson

Station 12 and General Area; 22 June to 7 July; on flowers of *Heracleum lanatum*, sweeping *Melilotus officinalis*.

Hippodamia convergens Guerin-Meneville

Station 2, 12 and General Area; 18 June to 14 September; on *Artemisia tridentata*, *Balsamorhiza sagittata*, *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, *Crepis acuminatum*, *Helianthus annuus*, *Melilotus officinalis*, and *Pinus flexilis*.

Hippodamia tredecimpunctata tibialis Say

Station 12 and General Area; 24 June to 11 August; sweeping *Cornus stolonifera*, Malaise trap.

Hippodamia gracialis lecontei Mulsant

Station 10; 26 July; on stems of *Helianthus annuus*.

Hippodamia moesta bowditchi Johnson

Station 2; 24 August; sweeping shrub foliage east of the horse corral.

Hippodamia quinquesignata Kirby

Station 1, 2, 3, 4, 6, 10 and General Area; 15 June to 14 September; on *Achillea lanulosa*, *Artemisia tridentata*, *Balsamorhiza sagittata*, *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, *Chrysothamnus viscidiflorus*, *Cirsium canescens*, *Cornus stolonifera*, *Crepis acuminatum*, sweeping seedheads of *Elymus condensatus*, on *Helianthus annuus*, *Osmorhiza occidentalis*, *Phacelia leucophylla*, *Pinus flexilis*, *Senecio serra*, *Tanacetum vulgare* and *Verbascum thapsus*, Malaise trap.

Hippodamia sinuata disjuncta Timberlake

Station 10, 12 and Visitor's Center; 24 June; sweeping *Cornus stolonifera*, on *Helianthus annuus*, sweeping *Melilotus officinalis*, Malaise trap.

Coccinella difficilis Crotch

Station 4 and General Area; 1 July to 5 September; on *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, *Chrysothamnus viscidiflorus*, *Crepis acuminatum*, *Mentzelia laevicaulis*, *Pseudotsuga menziesii* var. *glauca*, and *Purshia tridentata*.

Coccinella novemnotata degener Casey

Station 1, 3, 11 and General Area; 22 June to 13 September; on *Artemisia tridentata*, *Chrysothamnus nauseosus*, *Chrysothamnus viscidiflorus*, *Crepis acuminatum*, *Cymopterus terebinthinus*, and *Helianthus annuus*.

Coccinella prolongata Casey

Station 1, 3, 12 and General Area; on *Lupinus sp.*, *Mentzelia laevicaulis*, *Pinus flexilis*, Malaise trap. *Aphis lupini* Gillette and Palmer, on the upper stems of *L. sp.*, was found to serve as prey of this species.

Coccinella transversoguttata richardsoni Brown

Station 1, 2, 11 and General Area; 22 June to 14 August; on *Artemisia tridentata*, *Chrysothamnus nauseosus*, *Cirsium canescens*, *Cornus stolonifera*, *Helianthus annuus*, *Pinus flexilis*. Malaise trap.

Adults of this subspecies fed on the aphids, *Macrosiphum coweni* (Hunter) on *A. tridentata* and *Aphis helianthi* Monell on *H. annuus*. One specimen was reared from a pupa attached to the underside of a large leaf of *H. annuus*.

Mulsantina picta minor Casey

Station 2; 23 July; on *Pseudotsuga menziesii* var. *glauca*.

Anatis rathvoni LeConte

Station 7; 18 June; on foliage of *Cymopterus terebinthinus*.

Neomysia horni Crotch

General Area; 1 to 3 July; on *Pinus flexilis*.

Brumus septentrionis Weise

Station 4 and 6; 15 June to 8 August; on foliage of *Artemisia tridentata and Chrysothamnus nauseosus*.

Family Erotylidae

Dacne californica Horn

Grassy Cone; 17 June; in fungus on rotten *Pseudotsuga menziesii* var. *glauca* log.

Triplax cuneata Boyle

Station 12; 14 June; on mushrooms. Several adults were collected as they fed on gills of unidentified mushrooms growing in a damp, shady streamside habitat.

Family Phalacridae

Phalacrus penicillatus Say

General Area; 22 June to 13 September; on *Balsamorhiza sagittata*, *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, and sweeping seedheads of *Elymus condensatus*.

Olibrus rufipes LeConte

General Area; 10 August to 13 September; on flowers of *Chrysothamnus nauseosus*.

Family Lathridiidae

Lathridius minutus (Linnaeus)

Station 2; 4 September; Berlese *Pseudotsuga menziesii* var. *glauca* duff.

Family Colydiidae

Aulonium longum LeConte

West of Devil's Orchard; summer; taken from *Pinus flexilis* rearings.

Family Cerambycidae

Prionus (Prionus) californicus Motschulsky

General Area; 14 August; on *Pinus flexilis* bark.

Tragosoma depsarium (Linnaeus)

General Area; 15 July; on *Pinus flexilis*.

Arhopalus asperatus (LeConte)

General Area; 11 July to 25 August; on *Pinus flexilis*, white light.

Asemum nitidium LeConte

Station 6 and General Area; 24 June to 4 September; on *Pinus flexilis*.

Grammoptera subargentata (Kirby)

Station 12; 23 June to 28 July; on *Geranium nervosum*, on soil.

Grammoptera sp.

General Area; 14 August; on *Chrysothamnus nauseosus*.

Anoplodera canadensis Oliver

General Area; 11 August; on soil.

Anoplodera crassipes LeConte

General Area; 10 August; on soil.

Anoplodera instabilis Haldeman

Station 1 and 12; 23 June to 1 August; on flowers of *Achillea lanulosa, Calochortus macrocarpus,* and *Heracleum lanatum.*

Anoplodera serpentina (Casey)

General Area; 11 August; on flowers of *Chrysothamnus nauseosus.*

Anoplodera tribalteata LeConte

Station 1 and General Area; 20 July to 11 August; on flowers of *Achillea lanulosa, Heracleum lanatum, Senecio serra* and *Verbascum thapsus.*

Cortodera longicornis (Kirby)

General Area; 11 July; on soil.

Cortodera subpilosa LeConte

Station 3; 20 to 25 June; on flowers of *Balsamorhiza sagittata.*

Cortodera spp.

General Area; 17 June to 21 July; on *Artemisia tridentata, Chamaebatiaria millefolium, Cirsium canescens, Eriogonum ovalifolium, Eriogonum umbellatum* and *Prunis virginiana.*

Stenocorus uteanus Casey

Station 1 and 12; 5 to 28 July; on *Achillea lanulosa, Cirsium canescens, Cirsium vulgare, Geranium nervosum, Heracleum lanatum, Lupinus sp., Senecio serra* and *Urtica lyalli.*

Centrodera spurca LeConte

General Area; 12 to 23 July; on soil.

Centrodera sp. n.

Visitor's Center area; 10 to 12 August; white light.

Crossidius ater LeConte

General Area; 6 September; on flowers of *Chrysothamnus nauseosus.*

Crossidius hirtipes allgewahri LeConte

Station 6 and General Area; 3 to 12 September; on flowers of *Chrysothamnus nauseosus.*

Crossidius punctatus LeConte

General Area; 10 August to 12 September; on flowers of *Chrysothamnus nauseosus,* on bark of live *Pinus flexilis.*

Elatotrypes hoferi Fisher

General Area; summer; emerged from limbs of dead *Pinus flexilis.*

Xylotrechus annosus emotus Brown

Station 12; 19 June to 28 July; on trunk of *Populus tremuloides.*

Xylotrechus mormonus (LeConte)

General Area; 11 July; on soil.

Neoclytus muricatulus muricatulus (Kirby)

General Area; summer; reared from dead *Pinus flexilis.*

Monochamus maculosus Haldeman

General Area; 14 June to 5 September; on bark of *Pinus flexilis,* black light. Several specimens were reared from logs out from the main trunk of a *P. flexilis* tree that had been dead for one year.

Neocanthocinus obliquus (LeConte)

General Area; 14 July to 5 September; on *Pinus flexilis*. Several specimens were reared from large limbs of a two-year dead *P. flexilis*.

Saperda calcarata Say

Station 12; 28 July; white light.

Oberea quadricallosa LeConte

Station 2; 13 July; in flight.

Family Chrysomelidae

Zeugophora atra (Fall)

Station 2; 14 July; sweeping vegetation.

Saxinis saucia LeConte

Station 2 and General Area; 1 July to 10 August; sweeping plant foliage.

Pachybrachis caelatus LeConte

Station 11 and General Area; 5 July to 10 August; on *Chrysothamnus nauseosus* flowers.

Pachybrachis melanostictus Suffrain

General Area; 24 July to 14 August; on *Artemisia tridentata* and *Senecio serra*.

Pachybrachis mercurialis Fall

General Area; 11 August; on flowers of *Chrysothamnus nauseosus* and *Chrysothamnus viscidiflorus*.

Pachybrachis vacillatus Fall

Station 4, 6 and General Area; 17 July to 17 August; on flowers of *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, on foliage of *Pinus flexilis*.

Pachybrachis vau Fall

General Area; 5 September; on flowers of *Chrysothamnus nauseosus*.

Pachybrachis sp.

General Area; 11 August; sweeping *Chrysothamnus nauseosus*.

Cryptocephalus confluentus confluentus Say

Station 4, 6, 10 and General Area; 26 July to 5 September; on flowers of *Chrysothamnus nauseosus* and *Chrysothamnus viscidiflorus*.

Cryptocephalus sanguinicollis Suffrain

General Area; 19 July; on flowers of *Phacelia leucophylla*.

Myochrous longulus LeConte

Station 11; 9 July; Malaise trap.

Leptinotarsa decemlineata (Say)

Visitor's Center area; 24 June to 15 July; on *Cornus stolonifera*, sweeping lawn grass, on potato plants, on miscellaneous herbs and shrubs.

Gastrophysa cyanea Melsheimer

Station 1 and Visitor's Center area; 23 June to 12 July; on *Rumex salicifolius* var. *montigenitus*. Larvae preferred to feed on the leaf margins of the host plant and the adults on the entire leaf. Frequently, the leaves were completely defoliated with only the stems and central leaf ribs remaining. No feeding damage to flower parts, seeds or stalks was noted.

Trirhabda canadensis (Kirby)

General Area; 11 August; on flowers of *Senecio serra*.

Trirhabda lewisii Crotch

Station 2, 6, and 9; 12 July to 10 August; on flowers of *Chrysothamnus nauseosus*.

Trirhabda nitidicollis LeConte

General Area; 16 July to 11 August; on *Chrysothamnus nauseosus* and *Pinus flexilis*.

Trirhabda pilosa Blake

Station 2; 24 August; sweeping shrub foliage below the horse pasture.

Cleonus sp. near *basalis* Fall

General Area; 31 July; on soil.

Pissodes similis Hopkins

General Area; 25 July; sweeping *Pseudotsuga menziesii* var. *glauca.*

Smicronyx sp.

Station 11; 31 August; sweeping *Artemisia tridentata.*

Phyllotrox nubifer LeConte

Grassy Cone; 17 June; in flowers of *Senecio serra.*

Apion sp. A

General Area; 24 June; on foliage of *Cymopterus terebinthinus* .

Apion sp. B

General Area; 28 August; on *Eriogonum spp.*

Apion sp. C

General Area; 28 August; on *Eriogonum spp.*

Auletobius (Auletobius) congruus (Walker)

Station 2; 14 June; on flowers of *Potentilla spp.*

Rhynchites bicolor wickhami Cockerell

General Area; 27 June to 3 July; on *Cornus stolonifera* and *Rosa woodsi.* One pair was found in copitu on the flowers of *R. woodsi* on 3 July.

Myrmex lineata lineata (Pascoe)

Station 11; 9 July; sweeping *Chrysothamnus nauseosus.*

Magdalis lecontei Horn subspecies ?

Station 5 and General Area; 13 June to 21 July; sweeping *Melilotus officinalis,* on foliage of *Pinus flexilis.*

Tachypterellus consors Dietz

General Area; 13 June; sweeping foliage of *Prunus virginiana.*

Anthonomus ochreopilosus Dietz

Station 2 and General Area; 31 August to 12 September; sweeping *Chrysothamnus nauseosus,* on foliage of *Pseudotsuga menziesii* var. *glauca.*

Epimechus mimicus Dietz

Station 12; 14 August; sweeping plant foliage.

Rhynchaenus parvicollis LeConte

Station 1; 27 August; sweeping streamside vegetation.

Tychius lineellus LeConte subspecies ?

Station 11; 16 July; Malaise trap.

Tychius tectus LeConte

Station 11; 9 July; sweeping *Artemisia tridentata.*

Gymnaetron tetrum (Fabricius)

Station 12 and General Area; 3 to 17 July; found on *Verbascum thapsus* exclusively.

Cylindrocopturus adspersus (LeConte)

General Area; 15 July; on soil.

Orthoris sp. near *crotchi* LeConte

Station 3; 25 August to 8 September; on *Mentzelia laevicaulis.* The many larval specimens of an unidentified Curculionidae found in the roots, stems, and seed pods of *M. laevicaulis* may well be this species.

Family Scolytidae

Dendroctonus valens LeConte

Station 4 and 5; 22 June to 3 July; on bark of dead *Pinus flexilis,* on soil.

Galerucella luteola Muller

General Area; 24 June; sweeping *Cornus stolonifera*.

Monoxia consputa LeConte

Station 4, 6, and General Area; 18 July to 29 August; sweeping *Chrysothamnus nauseosus*.

Monoxia debilis LeConte

General Area; 11 to 21 August; sweeping *Chrysothamnus nauseosus*.

Monoxia sp.

General Area; 10 July; sweeping mixed shrubs.

Luperodes nigrovirescens Fall

Station 3 and General Area; 20 June to 28 July; on flowers of *Balsamorhiza sagittata, Crepis acuminatum* and *Lupinus caudatus*.

Pseudoluperus longulus LeConte

Station 1, 3, and General Area; 13 June to 5 July; on *Balsamorhiza sagittata, Cirsium canescens, Cymopterus terebinthinus, Heracleum lanatum* and sweeping *Melilotus officinalis*.

Disonycha latifrons Schaeffer

Station 4 and General Area; 12 June to 13 September; on flowers of *Chrysothamnus nauseosus* and *Chrysothamnus viscidiflorus*.

Altica prasina LeConte

Grassy Cone; 17 June; on flowers of *Prunus virginiana*.

Epithrix subcrinata LeConte

Station 2; 25 July; sweeping *Pseudotsuga menziesii* var. *glauca*.

Phyllotreta albionica LeConte

Station 6, 10, 11 and General Area; 7 July to 13 September; on flowers of *Achillea lanulosa*, sweeping *Artemisia tridentata*, on *Chamaebatiaria millefolium, Chrysothamnus nauseosus, Juniperus scopulorum, Salix spp.*, and *Senecio serra*, sweeping mixed meadow grasses.

Glyptina atriventris Horn

Station 1 and General Area; 27 August to 13 September; on *Chrysothamnus nauseosus*.

Dibolia borealis Chevrolat

Station 10; 26 July; on flowers of *Chamaebatiaria millefolium*.

Anisostena californica Van Dyke

General Area; 7 July; sweeping mixed grasses.

Family Bruchidae

Acanthoscelides pauperculus LeConte

General Area; 22 June to 13 September; on *Balsamorhiza sagittata* and *Chrysothamnus nauseosus*.

Family Curculionidae

The arrangement of genera follows Kissinger (1964).

Brachyrhinus ovatus (Linnaeus)

Station 6, 12 and General Area; 24 June to 5 September; sweeping *Chrysothamnus nauseosus*, on soil, and under rocks.

Sitona cylindricollis Fahraeus

General Area; 5 July; sweeping flowering *Melilotus officinalis*.

Scythropus elegans (Couper)

General Area and Grassy Cone; 12 to 22 June; on foliage of *Pinus flexilis* and *Pseudotsuga menziesii* var. *glauca*. One pair was found in copitu on the foliage of *P. flexilis* on 17 June.

Acmaegenius granicollis Van Dyke

Station 11; 14 July; in soil. One specimen was dug from a nest of the sphecid wasp *Eucerceris flavocincta* Cresson.

Carphoborus sp.

General Area; 14 April; on dead *Pinus flexilis*. Several specimens were collected from under the loose bark of small twigs of a recently killed *P. flexilis*.

Pityogenes carinulatus (LeConte)

General Area; 14 April; on dead *Pinus flexilis*. Many specimens were collected from under the loose bark of small (5-10 cm diameter) limbs of a recently killed *P. flexilis*.

Orthotomicus latidens (LeConte)

General Area; 14 April to 5 September; reared from dead *P. flexilis*.

Order STREPSIPTERA

Family Stylopidae

Pseudoxenos sp.

Station 12; 13 August; Malaise trap. A male puparium of this species was found in the abdomen of *Ancistrocerus catskill catskill* (Saussure)(Eumenidae).

Order TRICHOPTERA

Family Rhyacophilidae

Rhyacophila oreta Ross

Station 11; 2 July; black light.

Rhyacophila vao Milne

Station 4 and 12; 6 July to 12 August; black light, Malaise trap.

Family Glossosomatidae

Anagapetus debilis Ross

Station 12 and General Area; 14 to 15 July; black light, sweeping streamside vegetation.

Family Hydropsychidae

Parapsyche almota Ross

Station 4; 5 July; black light.

Arctopsyche sp.

Station 11; 2 July; black light.

Hydropsyche occidentalis Banks

Station 4; 5 July; black light.

Family Limnephilidae

Limnephilus externus Hagen

Station 11; 5 July; black light.

Limnephilus frijole Ross

Station 4, 8, and 12; 5 to 28 July; black light; Malaise trap.

Hesperophylax incisus Banks

Station 3 and General Area; 27 June to 12 September; Malaise trap, white light.

Chyranda centralis (Banks)

Station 12; 20 June to 19 August; Malaise trap, sweeping streamside vegetation, white light.

Family Leptoceridae

Triaenodes frontalis Banks

Station 12; 28 July; sweeping streamside vegetation.

Family Lepidostomatidae

Lepidostomata roafi (Milne)

Station 12 and General Area; 20 July to 12 August; black light, Malaise trap.

Order LEPIDOPTERA

Suborder RHOPALOCERA

The synonymic list of dos Passos (1964) was followed in listing the families, genera, and species of this suborder. The arrangement has been checked by Jon H. Shepard, University of California, Berkeley.

Family Hesperiidae

Ochlodes sylvanoides sylvanoides (Boisduval)

Station 12 and General Area; 11 to 23 August; on flowers of *Chrysothamnus nauseosus*, Malaise trap.

Polites draco (Edwards)

Station 12; 20 June; in flight.

Hesperia harpalus harpalus (Edwards)

Station 12 and General Area; 19 June to 22 August; on flowers of *Chrysothamnus nauseosus* and *Chrysothamnus viscidiflorus*, Malaise trap.

Pholisora catullus (Fabricius)

General Area; 3 July; on foliage of *Purshia tridentata*.

Heliopetes ericetorum (Boisduval)

Station 12; 20 June; in flight.

Erynnis icelus ? (Scudder and Burgess)

Station 12; 20 June; in flight.

Family Papilionidae

Parnassius clodius Menetries subspecies ?

Station 1 and 12; 19 June to 10 August; on *Achillea lanulosa*, in flight.

Papilio indra indra Reakirt

Station 12 and General Area; 2 to 5 July; in flight.

Papilio rutulus rutulus Lucas

Station 12; 20 June; in flight.

Papilio multicaudata Kirby

Station 2, 12 and General Area; 14 June to 2 July; on flowers of *Penstemon sp.*, in flight.

Family Pieridae

Pieris beckerii beckerii Edwards

Station 11 and 12; 20 June to 14 August; on flowers of *Senecio serra*, in flight.

Pieris napi (Linnaeus)

Station 12; 20 June; in flight.

Pieris protodice occidentalis Reakirt

General Area; 14 August; on flowers of *Cirsium canescens*.

Pieris rapae (Linnaeus)

Station 12; 19 June; in flight.

Colias (Colias) eurytheme Boisduval subspecies ?

General Area; 14 August to 3 October; on *Chrysothamnus nauseosus* and *Cirsium canescens*.

Colias (Colias) alexandra edwardsii Edwards

Station 12 and General Area; 20 June to 14 August; on flowers of *Cirsium canescens* and *Senecio serra*, in flight.

Anthocaris (Anthocaris) sara Lucas subspecies ?

Station 12 and General Area; 20 June to 6 July; on flowers of *Phacelia leucophylla*, on flower bud of *Senecio serra*, in flight.

Euchloe ausonides ausonides Lucas

Station 12; 20 June; in flight.

Family Lycaenidae

Callipsyche behrii (Edwards) subspecies ?

General Area; 27 July to 2 August; on flowers of *Chamaebatiaria millefolium, Chrysothamnus nauseosus* and *Chrysothamnus viscidiflorus.*

Satyrium fuliginosum fuliginosum (Edwards)

Station 12; 7 July to 10 August; in flight.

Mitoura spinetorum (Hewiston)

Station 6; 5 July; on flowers of *Eriogonum heracleoides.*

Strymon titus titus (Fabricius)

General Area; 14 August; on flowers of *Chrysothamnus nauseosus.*

Strymon californica (Edwards)

Station 11 and 12; 14 July to 14 August; on dead limb of *Artemisia tridentata,* on flowers of *Eriogonum umbellatum* and *Senecio serra.*

Lycaena heteronea heteronea Boisduval

General Area; 2 August; on flowers of *Chrysothamnus viscidiflorus.*

Lycaena rubidus rubidus (Behr)

Station 12 and General Area; 15 July to 14 August; on flowers of *Senecio serra,* in flight.

Lycaena helloides (Boisduval)

General Area; 20 to 27 June; on flowers of *Wyethia amplexicaulis.*

Plebejus (Icaricia) icariodes (Boisduval) subspecies ?

Station 12 and General Area; 15 June to 25 July; in flight.

Plebejus (Icaricia) acmon lutzi dos Passos

Station 2; 13 June; in flight.

Philotes battoides (Behr) subspecies ?

Station 1, 6, 8, 11, 12 and General Area; 15 June to 30 July; on flowers of *Eriogonum heracleoides, Eriogonum ovalifolium, Lupinus caudatus,* on foliage of *Pinus flexilis,* in flight.

Two specimens were observed as prey of *Cyrtopogon inversus* Curran (Asilidae) on 10 and 15 July. Each specimen was punctured on the right side of the notum immediately in front of the tegula.

Scolitantides piasus piasus (Boisduval)

Station 12; 20 June to 5 July; in flight, on moist soil.

Glaucopsyche lygdamus (Doubleday) subspecies ?

Station 12; 20 June; in flight.

Family Nymphalidae

Limenitis (Limenitis) weidemeyerii weidemeyerii Edwards

Station 11 and General Area; 20 June to 22 July; in flight.

Vanessa cardui (Linnaeus)

Station 12; 15 June to 27 July; in flight.

Nymphalis californica (Boisduval)

General Area; 20 July; in flight.

Nymphalis milberti furcillata (Say)

Station 1 and 12; 19 June to 8 August; larvae on *Urtica lyalli,* adults in flight.

Nymphalis antiopa (Linnaeus)

Station 12, Visitor's Center area, and General Area; 20 June to 17 August; larvae on *Salix sp.,* adults on flowers of *Senecio serra* and in flight.

Polygonia zephyrus (Edwards)

Station 12 and General Area; 2 July to 8 August; in flight, on foliage of *Purshia tridentata.*

Phyciodes (Phyciodes) campestris .r) subspecies ?

Station 12; 20 June to 10 July; in flight.

Euphydryas anicia (Doubleday) subspecies ?

Station 2, 3, 11, 12 and General Area; 13 June to 12 September; on flowers of *Balsamorhiza sagittata* and *Chrysothamnus nauseosus*. Adults exhibited a preference for visiting the flowers of *B. sagittata*. Pupae were collected from under rocks, logs, and eaves of buildings.

Speyeria egleis macdunnoughi (Gunder)

Station 12; 5 July; in flight.

Speyeria marmonia eurynome (Edwards)

General Area; 22 August; on flowers of *Chrysothamnus nauseosus*.

Speyeria coronis snyderi (Skinner)

Station 2, 12 and General Area; 19 June; in flight, on flowers of *Crepis acuminatum*, on moist soil.

Speyeria coronis gunderi (J. A. Comstock)

General Area; 25 July; in flight.

Speyeria coronis (Behr) subspecies ?

General Area; 24 June; in flight.

Speyeria zerene near *garretti* (Gunder)

General Area; 24 June; in flight.

Speyeria zerene platina (Skinner)

General Area; 24 June to 28 July; in flight.

Speyeria zerene cynna dos Passos and Grey

General Area; 25 June to 28 August; on flowers of *Chrysothamnus viscidiflorus*, in flight.

Speyeria callippe nevadensis (Edwards)

General Area; 27 June to 22 August; on flowers of *Chrysothamnus nauseosus*, *Chrysothamnus viscidiflorus*, *Eriogonum ovalifolium* and *Senecio serra*, Malaise trap.

Speyeria callippe harmonia dos Passos and Grey

General Area; 29 June to 28 July; in flight.

Family Danaidae

Danaus (Danaus) plexippus (Linnaeus)

General Area; 26 August to 6 September; on dead branches of *Artemisia tridentata*, in flight.

Family Satyridae

Coenonympha sp.

Station 12 and General Area; 19 June to 11 August; on flowers of *Senecio serra*, in flight.

Cercyonis oetus oetus (Boisduval)

Station 4, 11, and General Area; 13 July to 14 August; on flowers of *Chrysothamnus viscidiflorus*.

Erebia epipsodea hopfingeri Ehrlich

Station 12; 20 June to 10 July; in flight.

Suborder HETEROCERA

Families and genera are arranged to follow the checklists of McDunnough (1938 & 1939). The organization of this section was checked by John S. Buckett, California State Department of Agriculture, Sacramento.

Family Sphingidae

Sphinx perelegans vancouverensis Hy. Edwards

Station 11, 12 and General Area; 2 to 28 July; black and white lights.

Smerinthus cerisyi Kirby

General Area; 24 July; at rest on building.

Smerinthus geminatus Say

General Area; 27 June to 8 July; white light.

Pachysphinx modesta Harris

Station 4, 11, 12 and General Area; 22 June to 26 July; black and white lights.

Hemaris diffinis reubens Hy. Edwards

Station 12; 15 July; on *Senecio serra*. One male was captured by the spider *Misumena vatia* (Clerck) (Thomisidae) while visiting the flowers of *S. serra*.

Propserpinus clarkiae Boisduval

General Area; 15 July; in flight.

Celerio lineata Fabricius

Station 6 and General Area; 22 June to 8 August; larvae on *Gayophytum nuttalli*, adults at white light. Larvae were abundant on *G. nuttalli* at station 6. They fed on blossoms and foliage, leaving the central stem intact. Under caged conditions, a larva consumed the equivalent of one plant per day.

Family Saturniidae

Hyalophora gloveri Strecker

General Area; 14 June to 1 July; white light.

Pseudohazis eglanterina nuttalli Strecker

General Area; 20 to 29 August; on flowers of *Chrysothamnus nauseosus*, white light.

Family Arctiidae

Apantesis nevadensis (Grote and Robinson)

Visitor's Center area; 13 September, white light.

Apantesis williamsii Dodge

Station 4 and 11; 2 to 14 July; black light.

Platyprepia guttata Boisduval

General Area; 8 July; in flight.

Family Noctuidae

Acronita americana eldora Smith

Station 4, 12 and General Area; 24 June to 28 July; black light.

Acronita strigulata Smith

Station 4; 14 July; black light.

Euxoa atropulverea Smith

General Area; 28 July; black light.

Euxoa choris Harvey

Station 9, 12 and General Area; 4 July to 8 August; black and white lights.

Euxoa costata idahoensis Grote

Station 4; 5 July; black light.

Euxoa laetificans Smith

Station 4; 8 August; white light.

Euxoa messoria Harris

Station 12 and Visitor's Center area; 11 August to 9 September; white light, Malaise trap.

Euxoa mimallonis gagates Grote

General Area; 13 September; white light.

Euxoa nostra Smith

Station 4; 5 to 17 July; white light.

Euxoa ochrogaster form *insignata* Walker

Station 6; 21 July; black light.

Euxoa olivalis Grote

Station 12; 28 July; black light.

Euxoa plagigera Morrison

Station 4 and Visitor's Center area; 17 to 21 July; white light.

Euxoa pleuriticoides Benjamin

Station 4; 28 July; black light.

Euxoa pluralis Grote

Station 4 and Visitor's Center area; 5 to 21 July; black and white lights.

Euxoa punctigera strofusca Smith

Station 12; 28 July; black light.

Euxoa septentrionalis Walker

Station 4 and 9; 4 July; black light.

Euxoa tessellata Harris

Station 4; 21 July; black light.

Euxoa sp. near *setonia* McDunnough

Station 6; 21 July; black light.

Euxoa spp.

Station 4, 9, 11, 12 and General Area; 1 July to 8 August; black and white lights, on soil.

Chorizagrotis auxiliaris Grote

Station 4, 9, 11 and General Area; 1 July to 13 September; black and white lights.

Copablepharon canariana McDunnough

General Area; 25 July; on foliage of *Artemisia tridentata.*

Protogygia enalaga McDunnough

Station 4 and 11; 2 to 21 July; black light.

Spaelotis havilae Grote

Station 4, 6, 9, 11 and General Area; 21 June to 17 September; Berlese flowers of *Chrysothamnus nauseosus,* black and white lights.

Setagrotis cinereicollis Grote

Station 12; 28 July; black light.

Abagrotis barnesi Benjamin

Station 4; 21 July; black light.

Abagrotis crumbi Franklemont

General Area; 3 August; black light.

Abagrotis duanca Smith

Station 4, 9, and 11; 1 to 15 July; black light, on soil.

Abagrotis nefascia Smith

Station 4, 9, 11 and 12; 1 to 28 July; black light.

Abagrotis vittifrons Grote

Station 4; 21 July; black light.

Rhynchagrotis exsertistigma Morrison

Station 4, 9 and 11; 1 to 21 July; black light, on soil.

Ufeus plicatus hulsti Smith

Visitor's Center area; 5 September; white light.

Scotogramma crotchi Grote

Station 4 and 11; 1 to 2 July; black light.

Trichoclea u-scripta Smith

Station 4, 9, 11 and General Area; 14 June to 21 July; black and white lights. Malaise trap.

Lacinipolia olivacea Morrison

Station 12; 28 July; black light.

Lacinipolia stricta tenisca Smith

Visitor's Center; 8 September; white light.

Lacinipolia spp.

Station 3, 4, 9, 11 and 13; 1 July to 9 September; black and white lights.

Orthodes communis Dyar

General Area; 21 July; black light.

Dargida procincta Grote

General Area; 21 July; black light.

Cucullia montanae Grote

Station 4; 5 to 21 July; black light.

Cucullia sp.

Station 1, 4, and 11; 1 to 4 July, black light.

Oncocnemis chorda Grote

Station 3; 8 August; Malaise trap.

Pseudanarta caeca Dodds

Station 4; 14 July; black light.

Pseudanarta crocea Hy. Edwards

Station 7; 14 August; black light.

Pseudanarta sp.

Station 4, 9, and 11; 1 to 4 July; black light.

Septis lateritia Hubner

General Area; 3 August; black light.

Aseptis characta Grote

Station 6 and 12; 21 to 28 July; black light.

Aseptis paviae Strecker

Station 6 and 12; 21 to 28 July; black light.

Procus tonsa Grote

Station 4 and 9; 4 to 5 July; black light.

Apamea amputatrix Fitch

Station 4; 5 July; black light.

Apamea arctica Boisduval

Station 4; 5 July; black light.

Apamea inordinata columbiae Strand

Station 11; 2 July; black light.

Apamea occidens (Grote)

Station 4, 9, 11, 12 and General Area; 19 June to 28 July; black and white lights, Malaise trap.

Platysenta sp.

Station 9; 4 July; black light.

Draudtia lunata Barnes and McDunnough

General Area; 17 July; white light.

Platyperigea extima Walker

Station 4, 9, 11 and General Area; 2 July to 5 September; black and white lights.

Platyperigea sp. probably *camina* Smith

Station 12; 14 August; sweeping streamside vegetation.

Enargia infumata Grote

Station 12; 28 July; black and white lights.

Zotheca tranquilla form *viridula* Grote

Station 12; 28 July; black light.

Triocnemis saporis Grote

Station 11; 2 July; black light.

Heliothis paradoxa Grote

Station 11; 2 July; black light.

Schinia albafascia Smith

General Area; 25 July; on dead branch of *Artemisia tridentata.*

Schinia separata Grote

General Area; 8 August; white light.

Schinia tobia Smith

Station 4; 1 July; black light.

Autographa californica Speyer

Station 4 and General Area; 21 July to 21 August; black and white lights, Malaise trap.

Catocala arizonae ? Grote

Visitor's Center; 16 August; on south facing window.

Drasteria mirifica hastingsi Hy. Edwards

Station 2; 2 July; black light.

Synedoida howlandi (Grote)

Station 11 and General Area; 18 June to 2 July; black and white lights, in flight.

Synedoida nicholla (Hampson)

Station 4; 5 to 14 July; black light.

Synedoida stretchii (Behr)

Station 4; 1 July; black light.

Synedoida tenjonica (Behr)

General Area; 17 July; black light.

Scoliopteryx libatrix Linnaeus

Visitor's Center; 26 August; on inside wall.

Hypena humuli Harris

General Area; 8 August; in flight.

Camptylochila lubricalis Geyer

Station 4; 14 July; black light.

Family Pericopidae

Gnophaela latipennis discreta Stretch

Station 1, 4 and 12; 21 July to 10 August; larvae on *Mertensia campanulata,* adults on flowers of *Rudbeckia occidentalis* and *Senecio serra.*

Family Notodontidae

Ichthyura apicalis Walker

Station 11; 2 July; black light.

Family Liparidae

Hemerocampa pseudotsugata McDunnough

Station 2; larvae on foliage of *Pseudotsuga menziesii* var. *glauca*. This species was not encountered during the present study. However, larvae have been collected from foliage of *P. m.* var. *glauca* by Lowell Farmer, U.S.F.S., Ogden, Utah. (Memo in Craters of the Moon National Monument files).

Family Lasiocampidae

Malacosoma californica (Packard)

Station 4, 6, 12 and General Area; 20 June to 17 July; larvae on *Prunus virginiana, Purshia tridentata* and *Ribes cereum*, adults attracted to black and white lights.

Family Geometridae

Chlorosea margaretaria (Sperry)

Station 7; 3 July; resting on pollen cone of *Pinus flexilis*.

Chlorosea nevadaria Packard

Station 4, 11 and General Area; 18 to 25 July; black light, Malaise trap.

Nasusina sp.

Station 4; 5 July; in flight.

Eupithecia sp.

General Area; 20 August; white light.

Dysstroma citrata Linnaeus

Station 4; 5 July; black light.

Dysstroma formosa Hulst

Station 4; 5 July; black light.

Marmopteryx marmorata Packard

Station 4 and General Area; 14 June to 11 July; black and white lights, Malaise trap.

Entephria multivaga Hulst

General Area; 8 August; white light.

Drepanulatrix rectifascia Hulst

Station 4; 1 July; black light.

Semiothisa californiaria Packard

Station 4; 1 July; black light.

Semiothisa curvata Grote

Station 4; 1 to 14 July; black light.

Semiothisa neptaria Guenée

Station 4 and 12; 1 to 28 July; black light.

Itame colata Grote

Station 4 and Visitor's Center area; 5 July to 13 September; black and white lights.

Elpiste lorquinaria Guenée

Station 12; 11 August; Malaise trap.

Hesperumia sulphuraria Packard

Station 4, 6, and 12; 21 July to 10 August; on foliage of *Purshia tridentata*, black and white lights.

Glena nigricaria Barnes and McDunnough

Station 4 and 9; 21 June to 21 July; black and white lights, Malaise trap.

Pero grossbecki Pearson

Station 4, 9 and 11; 1 to 4 July; black light.

Pero occidentalis packardi (Cassino d Swett)

Station 4; 1 July; black light.

Plataea trilinearia Packard

Station 11; 2 July; in flight in late evening.

Caripeta aequaliaria Grote

Station 4 and General Area; 22 to 25 July; on cinders.

Neoterpes triangulifera (Packard)

Station 3; 26 June; on foliage of *Balsamorhiza sagittata*.

Sicya macularia Harris

Station 12; 28 July; white light.

Family Pyraustidae

Loxostege sp.

General Area; 30 August; black light.

Gyros muiri (Hy. Edwards)

Station 8; 18 June; on foliage of *Eriogonum ovalifolium* var. *depressum*.

Pyrausta fodinalis Lederer

Station 12; 28 July; black light.

Pyrausta fumoferalis (Hulst)

Station 12 and General Area; 28 July to 17 September; white light, Berlese samples of *Cymopterus terebinthinus*.

Pyrausta mustalinalis (Packard)

Station 4; 14 July; black light.

Pyrausta semirubralis (Packard)

Station 3, 5 and General Area; 13 June to 10 August; on foliage of *Elymus condensatus*, *Pinus flexilis* and *Purshia tridentata*.

Pyrausta unifascialis (Packard)

Station 4 and General Area; 18 to 25 July; black and white lights.

Scoparia sp.

Station 4 and General Area; 5 to 14 July; black light.

Family Chrysaugidae

Acallis gripalis (Hulst)

General Area; 8 August; white light.

Family Crambidae

Crambus bonifatellus (Hulst)

General Area; 25 June; in flight.

Crambus race between *ruricolellus* Zeller and *plumbifimbriellus* Dyar

Visitor's Center area; 9 September; white light.

Crambus trisectus (Walker)

General Area; 25 June; at rest in daytime.

Crambus vulgivagellus (Clemens)

General Area; 5 September; white light.

Family Epipaschiidae

Tetralopha sp.

General Area; 28 July; white light.

Family Phycitidae

Myelopsis sp.

General Area; 20 August to 9 September; black and white lights.

Acrobasis tricolorella Grote

Station 12; 28 July; black light.

Dioryctria zimmermani ? Grote

General Area; summer.

Meroptera sp.

Station 4; 5 July; black light.

Honora sciurella ? Ragnot

Station 4; 21 July; black light.

Rotruda mucidella (Ragnot)

Station 4; 14 July; black light.

Family Orneodidae

Orneodes sp.

General Area; 15 to 29 August; in flight.

Family Pterophoridae

Platyptilia spp.

Station 6, 7, 9 and 12; 2 to 4 July; on flowers of *Cymopterus terebinthinus* and *Penstemon cyaneus*, resting on pahoehoe lava, sweeping streamside vegetation.

Oidaematophorus grisescens Walsingham

General Area; 21 July to 24 August; on foliage of *Purshia tridentata*, in flight.

Family Olethreutidae

Spilonota ocellana Schiffermüller

Station 4 and General Area; 18 June to 5 July; on foliage of *Pinus flexilis*, black light.

Eucosma bolanderana Walsingham

Station 4; 5 July; black light.

Eucosma maculatana (Walsingham)

Station 12; 28 July; white light.

Eucosma ponderosa Powell

Station 4 and 9; 19 June to 5 July; on foliage of *Pinus flexilis*, black light.

Eucosma ridingsana (Robinson)

Visitor's Center area; 20 August; black light.

Family Tortricidae

Sparganothis inconditana (Walsingham)

Station 12; 28 July; black light.

Sparganothis tunicana (Walsingham)

Visitor's Center area; 28 July; black light.

Archips cerasivoranus (Fitch)

Visitor's Center area; emerged 6 August; reared from foliage of *Prunus virginiana*.

Choristoneura sp. possibly *fumiferana* (Clemens)

General Area; 25 July; on foliage of *Pseudotsuga menziesii* var. *glauca*.

Cnephasia sp.

Station 2; 18 July; on foliage of *Pseudotsuga menziesii* var. *glauca*.

Family Cossidae

Prionoxystus robiniae Peck

Station 12; 28 July; black light.

Family Momphidae

Mompha sp.

Station 2 and 3; 19 July; on *Oenothera caespitosa*, Malaise trap. Several specimens were reared from the green seedpods of *O. caespitosa* collected on the south slope of Sunset Cone.

Family Gelechiidae

Aristotelia sp.

Station 11; 17 July; Malaise trap.

Lita sp.

Visitor's Center area; 13 September; white light.

Aroga websteri Clarke

Station 6 and Visitor's Center area; 21 to 28 July; black light.

Chionodes retiniella (Barnes and Busck)

Station 6; 21 July; white light.

Filatima sp.

Visitor's Center area; 30 August; black light.

Chrysopora sp. n.

General Area; 11 August; sweeping *Chrysothamnus viscidiflorus*.

Gnorimoschema sp. A

General Area; 28 July; white light.

Gnorimoschema sp. B

Station 12; 1 August; on foliage of *Heracleum lanatum*.

Family Oecophoridae

Agonopterix pallidella Busck

General Area; 19 July; white light.

Family Ethmiidae

Ethmia albistrigella (Walsingham)

Station 3 and 7; 15 to 26 June; on foliage of *Balsamorhiza sagittata* and *Cymopterus terebinthinus*, emerged from *Sambucus* stick trap.

Ethmia discostrigella (Chambers)

General Area; emerged 17 December from *Sambucus* stick trap.

Ethmia monticola (Walsingham)

Station 3, 12 and Visitor's Center area; 17 to 22 June; sweeping *Chrysothamnus nauseosus* and *Cornus stolonifera*, emerged from *Sambucus* stick trap.

Family Glyphipterygidae

Anthophila sp.

General Area; 5 July; on foliage of *Phacelia leucophylla*.

Choreutis sp.

General Area; 5 July; on soil.

Family Aegeriidae

Ramosia fragariae (Hy. Edwards)

General Area; 30 June to 5 July; on flowers of *Achillea lanulosa*, on pahoehoe lava.

Ramosia sp. probably *bibionipennis* (Boisduval)

Station 7; 3 July; on foliage of *Pinus flexilis*.

Ramosia sp. polygoni Hy. Edwards complex.

Station 12; 13 August; on foliage of *Achillea lanulosa*.

Family Hyponomeutidae

Plutella xylostella Packard

Station 2, 6, and 11; 9 July to 1 September; on foliage of *Populus tremuloides* and *Pseudotsuga menziesii* var. *glauca*, black light, Malaise trap.

Argyresthia sp.

Station 6; 22 June; Malaise trap.

Family Coleophoridae

Coleophora sp.

Visitor's Center area; 23 June; on window.

Family Lyonetiidae

Bucculatrix tridenticola Braun

Station 2, 4, 11 and General Area; 5 July to 1 September; on foliage of *Chrysothamnus nauseosus* and *Pseudotsuga menziesii* var. *glauca*, black light, Malaise trap.

Order DIPTERA

This order is arranged following the catalog of Stone *et al* (1965).

Suborder NEMATOCERA

Family Tipulidae

Nephrotoma ferruginea ferruginea (Fabricius)

Station 11; 19 July; Malaise trap.

Tipula (Bellardina) umbra Alexander

Station 12; 12 August; Malaise trap.

Tipula (Platytipula) spenceriana hardyi Alexander

General Area; 9 September; white light.

Tipula (Oreomyza) fallax Loew

General Area; 15 July; in flight.

Tipula (Oreomyza) sp. near *alcestis* Alexander

General Area; 3 July; in flight.

Tipula (Lunatipula) bisetosa bisetosa Doane

Station 12; 28 July to 12 August; in flight, Malaise trap.

Tipula (Lunatipula) dorsimacula dorsimacula Walker

Station 2; 21 July; Malaise trap.

Tipula (Lunatipula) lamellata Doane

Station 6 and 11; 27 June to 19 July; in flight, Malaise trap.

Tipula (Lunatipula) pellucida Doane

Station 1, 4, 6 and General Area; 20 June to 15 July; on *Prunus virginiana*, black light.

Tipula (Pterelachisus) horningi Alexander

General Area; 30 June to 17 July; in flight.

Tipula sp.

Station 4; 14 July; black light.

Limonia (Geranomyia) canadensis (Westwood)

General Area; 26 August; sweeping *Chrysothamnus nauseosus*.

Limonia (Dicranomyia) citrina (Doane)

Station 2; 22 June; sweeping *Pseudotsuga menziesii* var. *glauca*.

Limonia (Dicranomyia) venusta (Berg)

General Area; 5 July; in flight.

Dactylolabis (Dactylolabis) sp.

Station 1; 14 June; sweeping *Elymus condensatus*.

Erioptera (Symplecta) cana (Walker)

Station 2 and General Area; 14 June to 31 August; sweeping *Pinus flexilis* and *Pseudotsuga menziesii* var. *glauca*, black light.

Ormosia (Rhyphclophus) bifidaria Alexander

General Area; 20 June; in flight.

Family Psychodidae

Pericoma (Pericoma) californica Kincaid

Station 12; 14 June; sweeping *Rubus parviflorus* and *Urtica lyalli* near stream edge.

Family Dixidae

Dixa sp.

Station 2; 25 July; Malaise trap.

Family Culicidae

Aedes (Ochlerotatus) dorsalis (Meigen)

Station 6; 4 September; attracted to man.

Aedes (Ochlerotatus) nigromaculis (Ludlow)

General Area; 10 August; biting man.

Aedes (Ochlerotatus) schizopinax Dyar

General Area; 18 June; on *Pinus flexilis*.

Culiseta (Culiseta) inornata (Williston)

Station 2, 9, 12 and General Area; 17 June to 24 August; attracted to man, black light, Malaise trap.

Culex (Culex) tarsalis Coquillett

Station 2, 12 and General Area; 23 July to 7 September; Malaise trap, white light.

Family Chironomidae

Cricotopus spp.

Station 1, 4 and General Area; 15 June to 14 July; on *Artemisia tridentata* and *Chrysothamnus nauseosus*, sweeping flowering *Osmorhiza occidentalis*, black light.

Diamesa sp.

General Area; 13 to 18 June; on *Pinus flexilis*, white light.

Chironomus (Chironomus) sp.

Station 12; 29 June; in flight.

Family Simulidae

Simulium (Eusimulium) aureum Fries

Station 2 and 11; 14 to 19 July; Malaise trap.

Simulium (Psilozia) vittatum Zetterstedt

Station 4, 11 and General Area; 14 June to 14 July; on *Heracleum lanatum*, *Pinus flexilis*, and *Prunus virginiana*, Malaise trap, white light.

Family Bibionidae

Bibio albipennis albipennis Say

Station 3 and General Area; 13 to 24 June; on foliage of *Balsamorhiza sagittata*, *Chrysothamnus nauseosus*, *cornus stolonifera*, *Cymopterus terebinthinus*, *Elymus condensatus*, *Pinus flexilis*, and *Urtica lyalli*.

Bibio vestitus Walker

Station 1 and 12; 22 to 23 June; sweeping *Osmorhiza occidentalis* and *Prunus virginiana*.

Bibiodes aestivus Melander

General Area; 2 to 7 July; sweeping *Pseudotsuga menziesii* var. *glauca*.

Dilophus proximus McAtee

Station 1; 23 June; sweeping flowering *Osmorhiza occidentalis*.

Family Mycetophilidae

Allodia sp. A

Station 12; 14 June; sweeping *Urtica lyalli*.

Allodia sp. B

Station 9; 17 June; Malaise trap.

Anatella sp.

Grassy Cone; 17 June; sweeping *Prunus virginiana*.

Exechia sp.

Station 2; 23 July; Malaise trap.

Mycetophila sp.

Station 2, 12 and General Area; 23 July to 14 August; Malaise trap.

Boletina sp.

Station 2 and General Area; 21 to 25 July; on *Achillea lanulosa*, Malaise trap.

Mycomya sp.

Station 9; 20 June; Malaise trap.

Megalopelma sp.

Station 9; 17 June; Malaise trap.

Docosina sp.

Station 3 and General Area; 14 June to 20 July; on *Heracleum lanatum*, black light.

Leia joculator Laffoon

Station 1; 23 June; sweeping flowering *Osmorhiza occidentalis*.

Family Siaridae

Bradysia sp.

Station 6, 12 and General Area; 17 June to 13 September; on *Chrysothamnus nauseosus*, Malaise trap.

Family Scatopsidae

Scatopse fuscipes Meigen

Station 12 and General Area; 18 to 26 July; on flowers of *Senecio serra*, in flight.

Family Cecidomyiidae

Lasioptera sp.

General Area; 1 August; sweeping mixed shrubs.

Suborder BRACHYCERA

Family Xylomyidae

Solva pallipes (Loew)

General Area; 18 July; in house.

Family Stratiomyidae

Adoxomyia rustica (Osten Sacken)

General Area; 17 June; on soil.

Euparyphus (Aochletus) cinctus (Os Sacken)

General Area; 30 July; in flight.

Odontomyia (Odontomyiina) virgo (Wiedemann)

General Area; 18 July; on flowers of *Achillea lanulosa*.

Sargus cuprarius (Linnaeus)

Campground area; 28 June; flying near branch tips of *Pinus flexilis*.

Family Tabanidae

Silvius (Silvius) gigantulus (Loew)

Statin 1 and 12; 19 June to 18 July; on flowers of *Heracleum lanatum*, in flight.

Chrysops (Chrysops) mitis Osten Sacken

Grassy Cone; 3 July; in flight.

Chrysops (Chrysops) noctifer pertinax Williston

Station 12 and General Area; 17 June to 18 July; on *Pinus flexilis*, attracted to man, on moist soil.

Hybomitra tetrica (Marten)

Station 8 and 12; 3 to 7 July; Malaise trap.

Hybomitra tetrica var. *hirtula* (Bigot)

General Area; 16 July; in flight.

Family Rhagionidae

Symphoromyia inurbana Aldrich

Station 1, 11 and General Area; 20 June to 9 July; on *Osmorhiza occidentalis* and *Pseudotsuga menziesii* var. *glauca*.

Symphoromyia spp.

Station 1, 2, 12 and General Area; 8 to 21 July; on *Achillea lanulosa*, *Cirsium canescens*, *Heracleum lanatum*, and *Populus tremuloides*.

Chrysopilus sp.

Station 12; 20 June; on soil.

Family Therevidae

Psilocephala aldrichii Coquillett

Station 2 and 3; 16 to 27 July; Malaise trap.

Psilocephala costalis Loew

Station 2, 3, 11 and 12; 11 June to 8 September; on stem of *Mentzelia laevicaulis*, Malaise trap. One specimen was reared from *M. laevicaulis* which was heavily infested with Curculionidae larvae.

Psilocephala limata Coquillett

Station 2; 25 July; Malaise trap.

Psilocephala montivaga Coquillett

Station 2; 25 July; Malaise trap.

Psilocephala sp. n. A

General Area; 18 June; in flight.

Psilocephala sp. n. B

Grassy Cone; 17 June; sweeping flowering *Prunus virginiana*.

Psilocephala sp. n. C

General Area; 21 August to 12 September; on flowers of *Chrysothamnus nauseosus*, in flight.

Metaphragma planiceps (Loew)

Station 1; 23 June; sweeping flowering *Osmorhiza occidentalis*.

Thereva furcata Loew

Station 12 and General Area; 20 July to 13 September; on flowers of *Chrysothamnus viscidiflorus* and *Xanthium strumarium*, black light.

Thereva neomexicana Cole

Station 11, 12 and General Area; 20 June to 20 July; on *Cirsium canescens*, *Senecio serra* and *Xanthium strumarium*. One specimen was found as prey of the spider *Misumena vatia* (Clerck)(Thomisidae) while visiting flowers of *S. serra*.

Thereva pseudoculata Cole

Station 2, 11 and General Area; 24 June to 25 July; on *Artemisia tridentata*, *Chrysothamnus nauseosus* and *Cornus stolonifera*, Malaise trap.

Thereva sp. n. A

General Area; 7 July to 18 July; on flowers of *Cirsium canescens*, in flight.

Thereva sp. n. B

General Area; 3 July to 12 September; on flowers of *Chrysothamnus nauseosus* and *Rosa woodsi*.

Family Scenopinidae

Scenopinus sp.

General Area; 23 June to 19 July; on *Melilotus officinalis* and *Pinus flexilis*, white light.

Family Leptogastridae

Apachekolos confusio Martin

Station 2, 11 and General Area; 7 to 17 July; sweeping *Chrysothamnus nauseosus*, Malaise trap.

Leptogaster fornicata Martin

Station 11; 16 July; Malaise trap.

Leptogaster nitoris Martin

Station 12; 11 to 13 August; Malaise trap.

Family Asilidae

Cophura brevicornis (Williston)

Station 6 and General Area 14 to 21 July; sweeping foliage of *Artemisia tridentata* and *Pinus flexilis*.

Cyrtopogon banksi Wilcox and Martin

Station 11, 12 and General Area; 20 June to 21 July; on flowers of *Heracleum lanatum* and *Senecio serra*.

Cyrtopogon glarealis Melander

Station 2, 12 and General Area, Grassy Cone; 17 June to 25 July; sweeping *Balsamorhiza sagittata*, on flowers of *Cirsium canescens*, on foliage of *Salix spp.*, Malaise trap.

Cyrtopogon inversus Curran

Station 12 and General Area; 21 June to 15 July; in flight. This species was found preying on a winged male of an ant, *Formica sp.* and the butterfly, *Philotus battoides* (Behr) spp. ?.

Cyrtopogon montanus montanus Loew

Station 12; 2 July; in flight.

Cyrtopogon willistoni Curran

Station 1 and 12; 5 to 7 July; on flowers of *Heracleum lanatum*, on foliage of *Salix spp.*, in flight.

Dicolonus simplex Loew

Station 11; 29 June; on foliage of *Artemisia tridentata*, on flowers of *Phacelia leucophylla*.

Dicolonus sparsipilosum Back

General Area; 15 July; in flight.

Holopogon (Holopogon) seniculus Loew

Station 11; 12 July; on pahoehoe lava.

Ospriocerus abdominalis (Say)

General Area; 2 August; in flight.

Stenopogon inquinatus Loew

Station 11; 14 July; on dead branch of *Artemisia tridentata*, in flight, on soil. One specimen was captured with its prey, *Pitedia uhleri* Stal (Pentatomidae). This bug had a small integumental feeding puncture between the disarranged right hemelytron and right hind wing.

Stenopogon martini Bromley

Station 12 and General Area; 19 June to 11 August; sweeping *Prunus virginiana* and *Senecio serra*, Malaise trap.

Stenopogon neglectus Bromley

General Area; 27 August; on soil.

Willistonia bilineata nigrofemorata Wilcox

Station 12; 11 August; Malaise trap.

Laphria fernaldi (Back)

Station 12; 20 June to 14 August; on *Heracleum lanatum*, *Populus tremuloides*, *Prunus virginiana* and *Urtica lyalli*, Malaise trap.

Pogonosoma ridingsi Cresson

Station 6; 4 to 17 July; on foliage of *Pinus flexilis*, in flight.

Asilus albicomus Hine

Station 2 and 12; 10 August; Malaise trap, in flight.

Asilus auriannulatus (Hine)

Station 12; 20 June to 7 July; sweeping *Elymus condensatus* and *Prunus virginiana*.

Asilus sp.

Station 11; 17 to 19 July; Malaise trap.

Efferia benedicti (Bromley)

Station 2 and 11; 9 to 15 July; on rocks. One specimen was captured with a prey, *Tortistilus wickhami* Van Duzee (Membracidae).

Efferia frewingi Wilcox

Station 10; 4 to 8 September; on pahoehoe lava. Specimens had a definite preference for resting on pahoehoe lava. Three individuals were captured with prey, *Ravinia lherminieri* (Robineau-Desvoidy) (Sarcophagidae), *Eupeodes volucris* Osten Sacken (Syrphidae) and an unidentifiable Muscidae. Each of the prey specimens were punctured at the base of the left side of the abdomen and had their heads turned 90° left or right.

Efferia pallidula (Hine)

General Area; 13 July; in flight.

Efferia zonata ? (Hine)

Station 3; 27 July; Malaise trap.

Machimus occidentalis (Hine)

Station 11 and 12; 5 July to 19 August; on *Artemisia tridentata* and *Phacelia leucophylla*, flying low over pahoehoe lava, Malaise trap.

Mallophorina martinorum Cole

Station 4 and General Area; 2 August to 4 September; sweeping foliage of *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, and *Chrysothamnus viscidiflorus*, on rocks.

Negasilus belli Curran

Station 11 and General Area; 9 to 15 July; sweeping plant foliage.

Family Acroceridae

Eulonchus sp. near *sapphirinus* Osten Sacken

Station 1; 18 July; on flowers of *Achillea lanulosa*.

Acrocera melanderi Cole

Station 11; 14 July; sweeping flowers of *Eriogonum umbellatum*.

Family Bombyliidae

Bombylius cinerivus Painter

Station 1, 2 and General Area; 13 to 20 June; on flowers of *Potentilla spp.*, in flight.

Bombylius facialis ? Cresson

General Area; 20 June to 2 August; on flowers of *Chaenactis douglasii* and *Chrysothamnus nauseosus*.

Systoechus oreas Osten Sacken

Station 1 and General Area; 20 June to 10 July; on flowers of *Potentilla spp.*, on soil.

Anastoechus barbatus Osten Sacken

General Area; 10 August to 8 September; on *Chrysothamnus nauseosus* and *Chrysothamnus viscidiflorus*.

Anastoechus sp.

General Area; 6 September; on *Chrysothamnus nauseosus*.

Heterostylum (Heterostylum) robustum (Osten Sacken)

Station 4; 9 July; in flight.

Lordotus gibbus striatus Painter

Sunset Cone; 12 September; on flowers of *Chrysothamnus nauseosus*.

Conophorus fallax (Greene)

General Area; 20 June; on soil.

Conophorus fenestratus (Osten Sacken)

Station 12; 15 June to 5 July; on *Elymus condensatus*, in flight.

Conophorus obesulus (Loew)

Station 12; 19 June; in flight.

Pantabarbes capito Osten Sacken

Station 1 and 11; 20 June to 14 July; in flight.

Mythicomyia spp.

Station 7 and General Area; 2 August; sweeping *Chamaebatiaria millefolium*.

Phthiria sp.

General Area; 11 August; on *Chrysothamnus viscidiflorus*.

Oligodranes sp.

General Area; 29 August; on *Chrysothamnus nauseosus*.

Geron sp. A

General Area; 11 August; on *Aster canascens*, *Chamaebatiaria millefolium*, and *Chrysothamnus nauseosus*.

Geron sp. B

General Area; 11 to 17 August; on *Aster canascens* and *Chrysothamnus nauseosus*.

Geron sp. C

General Area; 16 to 30 August; on *Chrysothamnus nauseosus* and *Rudbeckia occidentalis*.

Toxophora virgata Osten Sacken

Station 6 and General Area; 16 July to 25 August; on *Achillea lanulosa*, *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus* and *Eriogonum umbellatum*.

Thevenemyia muricata (Osten Sacken)

Station 4, 7 and General Area; 3 to 8 July; on flowers of *Eriogonum umbellatum* and *Phacelia leucophylla*.

Thevenemyia sp.

Station 1, 7 and General Area; 3 July to 15 August; on flowers of *Achillea lanulosa* and *Cirsium canescens*

Aphoebantus mormon ? Melander

Station 11; 31 August; in flight.

Aphoebantus sp.

Station 1, 2 and General Area; 20 June to 14 July; in flight.

Anthrax albofasciatus cascadensis Marston

Station 9 and 12; 20 June to 14 July; in flight.

Anthrax argentatus (Cole)

Station 7, 8 and 11; 3 to 16 July; in flight.

Anthrax irroratus Say

Station 1, 2, 8, 9, 10, 11, 12 and General Area; 20 June to 13 August; on flowers of *Heracleum lanatum, Phacelia leucophylla,* Malaise trap, in stick traps.

Immature larvae of this species were discovered in cells of a colletid bee and a megachilid bee in stick traps. One larva was associated with *Hylaeus sp.* at station 10 and another larvae was found feeding on a larva of *Hoplitis (Alcidamea) producta producta* (Cresson) at station 9.

Anthrax plesius Curran

Station 11 and 12; 16 July to 13 August; on flowers of *Heracleum lanatum,* Malaise trap.

Villa (Villa) agrippina (Osten Sacken)

General Area; 10 August; on flowers of *Chrysothamnus nauseosus.*

Villa (Villa) alternata alternata (Say)

General Area; 13 July to 6 September; on flowers of *Achillea lanulosa* and *Chrysothamnus nauseosus.*

Villa (Villa) lateralis lateralis (Say)

Station 4, 6, 9, 12 and General Area; 12 June to 6 September; on flowers of *Achillea lanulosa, Chrysothamnus nauseosus, Cymopterus terebinthinus, Eriogonum umbellatum, Heracleum lanatum,* and *Phacelia leucophylla,* black light, Malaise trap.

Villa (Hemipenthes) catulina (Coquillett)

Station 11, 12 and General Area; 16 July to 11 August; on flowers of *Achillea lanulosa,* Malaise trap.

Villa (Hemipenthes) eumenes Osten Sacken

General Area; 27 June to 15 July; in flight.

Villa (Hemipenthes) morio (Linnaeus)

Station 1, 2, 3, 6, 8, 11, 12 and General Area; 13 June to 13 August; on *Artemisia tridentata, Chrysothamnus nauseosus, Eriogonum ovalifolium* and *Lupinus sp.,* Malaise trap.

Villa (Thyridanthrax) fenestratoides (Coquillett)

Station 12; 20 June; on soil.

Villa (Thyridanthrax) nugator (Coquillett)

General Area; 13 July to 6 September; on *Chrysothamnus nauseosus.*

Villa (Chrysanthrax) nebulosa ? (Coquillett)

Station 12; 13 August; Malaise trap.

Villa sp. A

Station 2, 9 and General Area; 13 June to 25 July; on flowers of *Eriogonum ovalifolium* and *Phacelia leucophylla,* Malaise trap.

Villa sp. B

General Area; 20 July; on flowers of *Cirsium canescens.*

Villa sp. C

General Area; 10 July; in flight.

Villa sp. D

Station 6, 9, and General Area; 22 June to 4 September; Malaise trap.

Lepidanthrax sp.

Station 2, 6, and 11; 14 to 17 July; sweeping *Artemisia tridentata.*

Poecilanthrax tegminipennis (Say)

General Area; 21 August; in flight.

Poecilanthrax willistonii (Coquillett)

Station 2 and General Area; 23 August to 11 September; Malaise trap, in flight.

Exoprosopa caliptera (Say)

Station 1, 2, 3 and 12; 20 June to 23 July; hovering over cinders, Malaise trap.

Exoprosopa dorcadion Osten Sacken

Station 12; 11 August; Malaise trap.

Exoprosopa eremita Osten Sacken

Station 2 and General Area; 10 to 25 July; Malaise trap.

Family Empididae

Empis sp.

Station 1; 25 June; on flowering *Osmorhiza occidentalis*.

Rhamphomyia spp.

Station 1 and General Area; 14 June to 14 August; on *Heracleum lanatum, Osmorhiza occidentalis* and *Urtica lyalli*, sweeping mixed shrubs.

Drapetis sp.

General Area; 18 July; on *Achillea lanulosa*.

Platypalpus sp.

Station 12; 13 August; Malaise trap.

Family Dolichopodidae

Dolichopus aeratus Van Duzee

Station 12; 11 to 13 August; Malaise trap.

Dolichopus crenatus (Osten Sacken)

Station 12; 14 August; sweeping streamside vegetation.

Dolichopus obcordatus Aldrich

Station 2, 11 and General Area; 1 July to 1 August; sweeping *Pinus flexilis*, Malaise trap.

Dolichopus plumipes (Scopoli)

Station 12; 1 August; sweeping streamside vegetation.

Pelastoneurus vagans Loew

Station 2 and General Area; 30 July to 24 August; in flight, sweeping mixed vegetation.

Hydrophorus sodalis Wheeler

Station 2; 12 July to 24 August; sweeping mixed vegetation.

Scellus filifer Loew

Station 9 and General Area; 17 to 22 June; on *Pinus flexilis*, Malaise trap.

Medetera sp.

General Area; 30 July to 1 August; sweeping *Chamaebatiaria millefolium*.

Thrypticus sp.

Station 2; 23 July; Malaise trap.

Neurigona sp.

Station 12; 13 August; Malaise trap.

Chrysotus spp.

Station 2, 3 and 12; 14 July to 23 August; on *Chrysothamnus nauseosus*, Malaise trap.

Campsicnemus degener Wheeler

Station 2; 24 August; sweeping vegetation.

Suborder CYCLORRHAPHA

Family Lonchopteridae

Lonchoptera furcata (Fallen)

General Area; 6 July; on plant foliage.

Family Phoridae

Phora stictica Meigen

Station 12; 23 June; on *Heracleum lanatum*.

Megaselia spp.

Station 1 and 2; 23 June to 31 August; on *Osmorhiza occidentalis* and *Pseudotsuga menziesii* var. *glauca*.

Family Pipunculidae

Pipunculus (Pipunculus) spp.

General Area; 28 June to 13 September; sweeping mixed grasses and shrubs.

Family Syrphidae

Syrphus bigelowi Curran

Station 12; 10 August; on flowers of *Verbascum thapsus*.

Syrphus currani Fluke

General Area and Grassy Cone; 13 to 17 June; sweeping *Balsamorhiza sangittata*, *Pinus flexilis*, and *Pseudotsuga menziesii* var. *glauca*.

Syrphus jonesi Fluke

Station 12; 6 July; sweeping *Urtica lyalli*.

Syrphus opinator Osten Sacken

Station 3 and General Area; 13 to 27 June; sweeping *Balsamorhiza sangittata*, *Pinus flexilis*, and *Populus trichocarpa*.

Syrphus ribesii (Linnaeus)

Station 1, 3, and 12; 18 July to 23 August; on flowers of *Heracleum lanatum*, Malaise trap.

Metasyrphus aberrantis (Curran)

Station 6; 26 June; on foliage of *Pinus flexilis*. One specimen was reared from a pupa found attached to the ventral surface of a *P. flexilis* needle.

Metasyrphus astutus Fluke

Grassy Cone; 17 June; in flight. A large series of this species was collected in a shaded, densely forested habitat. The specimens were attracted to a white net held motionless in the air.

Metasyrphus lapponicus (Zetterstedt)

General Area; 25 June to 1 July; sweeping plant foliage.

Metasyrphus latifasciatus (Macquart)

Station 12; 15 July to 5 September; on *Cirsium canescens*, in flight.

Metasyrphus lebanoensis (Fluke)

Station 12 and General Area; 3 July to 13 August; on flowers of *Phacelia leucophylla*, Malaise trap.

Metasyrphus snowi (Wehr)

Station 12; 5 July; on soil.

Metasyrphus venablesi (Curran)

Station 12; 11 August; Malaise trap.

Eupeodes volucris Osten Sacken

Station 2, 3, 8, 9, 10, 11, 12 and General Area; 13 June to 4 September; on *Balsamorhiza sagittata*, *Chrysothamnus nauseosus*, *Eriogonum ovalifolium* var. *depressum*, *Eriogonum ovalifolium*, *Eriogonum umbellatum*, *Lithospermum ruderale*, *Phacelia leucophylla* and *Potentilla spp.*, Malaise trap.

A single instance of predation of this species by the robberfly *Efferia frewingi* Wilcox was noted at station 10 on 4 September.

Scaeva pyrastri (Linnaeus)

Station 3, 4, 6, 12 and General Area; 17 June to 24 August; on *Chrysothamnus nauseosus*, *Cirsium canescens*, sweeping *Symphoricarpos orephilus*, Malaise trap.

Specimens visiting the flowers of *C. nauseosus* at station 4 were preyed upon by the ambush bug, *Phymata americana coloradensis* Melin.

Dasysyrphus amalopis (Osten Sacken)

Station 12 and General Area; 20 June to 11 August; sweeping *Cornus stolonifera* and *Prunus virginiana*, Malaise trap.

Dasysyrphus creper (Snow)

General Area; 13 September; in flight.

Allograpta obliqua (Say)

Station 2; 24 August; in flight.

Sphaerophoria robusta Curran

Station 3, 4, 6, 12 and General Area; 11 August to 12 September; on flowers of *Aster canascens* and *Chrysothamnus nauseosus*, Malaise trap, in flight. One specimen was captured by the spider *Misumena vatia* (Clerck)(Thomisidae) while visiting flowers of *C. nauseosus*.

Mesograpta marginata (Say)

Station 3, 4, 11 and General Area; 9 July to 24 August; on *Chrysothamnus nauseosus*, Malaise trap.

Baccha (Ocyptamus) lemur Osten Sacken

Station 2, 4, 6, 10, 11, 12 and General Area; 4 July to 30 August; on *Artemisia tridentata*, *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, *Heracleum lanatum*, *Pinus flexilis*, *Salix spp.*, and *Senecio serra*, on flower of *Mimulus nanus*, Malaise trap.

Melanostoma spp.

Station 1, 2, 9, 11 and General Area; 17 June to 13 August; sweeping *Balsamorhiza sagittata* and *Eriogonum ovalifolium*, Malaise trap.

Carposcalis rostrata ? (Bigot)

General Area; 22 June; sweeping *Pinus flexilis*.

Carposcalis stegna (Say)

Station 12; 30 June; on soil.

Paragus (Paragus) bicolor (Fabricius)

Station 2, 9, 11 and General Area; on *Achillea lanulosa* and *Heracleum lanatum*, Malaise trap.

Paragus (Pandasyopthalmus) tibialis (Fallen)

Station 2, 4, 8, 11 and General Area; 22 June to 14 July; on *Eriogonum ovalifolium* and *Pinus flexilis*.

Pipiza femoralis Loew

Station 12; 11 August; Malaise trap.

Pipiza spp.

Station 2, 12 and General Area; 20 June to 13 August; Malaise trap, on soil.

Chrysotoxum (Primochrysotoxum) chinook Shannon

Station 11 and 12; 17 July to 11 August; Malaise trap.

Chrysotoxum (Primochrysotoxum) coloradense Greene

Station 3 and 9; 19 June to 23 August; Malaise trap.

Chrysotoxum (Primochrysotoxum) integre Williston

Station 2, 3, and 12; 23 July to 24 August; on flowers of *Chrysothamnus viscidiflorus*, Malaise trap. One specimen was captured by the spider *Misumena vatia* (Clerck)(Thomisidae) while visiting flowers of *C. viscidiflorus*.

Cheilosia spp.

Station 1 and 12; 23 June to 1 August; on flowers of *Heracleum lanatum*, sweeping flowering *Osmorhiza occidentalis*.

Ferdinandea croesus (Osten Sacken)

Station 2, 11, 12 and General Area; 20 June to 19 August; Malaise trap.

Eumerus strigatus (Fallen)

General Area; 11 to 20 August; on flowers of *Taraxacum officinale*, Malaise trap.

Volucella (Volucella) bomylans var. *rufomaculata* Jones

Station 3; 22 June; sweeping *Symphoricarpos orephilus*.

Volucella (Volucella) satura Osten Sacken

General Area; 12 to 28 July; on *Senecio serra*, in flight.

Volucella (Copestylum) caudata (Curran)

General Area; 21 August; in flight.

Sericomyia chalcopyga Loew

Station 1; 27 August; in flight.

Arctophila flagrans Osten Sacken

Station 1 and 12; 11 to 27 August; Malaise trap.

Xylota (Xylota) flavitibia Bigot

Station 12; 5 July to 27 August; sweeping *Populus trichocarpa*, on flowers of *Heracleum lanatum*, on soil.

Xylota (Xylota) lovetti Curran

Station 12; 11 August; Malaise trap.

Xylota (Xylota) micrura (Curran)

Station 2; 3 July; on flowers of *Potentilla spp*.

Xylota (Xylota) subfasciata Loew

Station 12; 11 August; Malaise trap.

Xylota (Xylotomima) pigra (Fabricius)

Station 9 and 12; 21 June to 13 August; Malaise trap.

Syritta pipiens (Linnaeus)

General Area; 12 July to 13 September; on flowers of *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, *Chrysothamnus viscidiflorus*, and *Senecio serra*, Malaise trap.

Helophilus (Helophilus) latifrons Loew

Station 3 and 6; 23 to 24 August; on flowers of *Chrysothamnus nauseosus*, Malaise trap.

Asemosyrphus polygrammus (Loew)

General Area; 1 August to 6 September; on flowers of *Chrysothamnus nauseosus*.

Eristalis (Eristalis) arbustorum (Linnaeus)

Station 1, 3, 4, 6, 12 and General Area; 13 June to 5 September; on flowers of *Balsamorhiza sagittata*, *Chrysothamnus nauseosus*, *Cirsium canescens*, *Eriogonum ovalifolium* var. *depressum*, *Eriogonum ovalifolium*, *Eriogonum umbellatum*, *Pinus flexilis*, *Prunus virginiana* and *Zygydenus paniculatus*, Malaise trap.

This species was most abundant in June and preferred flowers of several species of *Eriogonum*.

Eristalis (Eristalis) tenax (Linnaeus)

General Area; 15 July; in flight.

Family Conopidae

Physoconops (Physoconops) fronto (Williston)

General Area; 29 July to 8 August; on flowers of *Chamaebatiaria millefolium*, *Chrysothamnus viscidiflorus* and *Trifolium repens*.

Physocephala burgessi (Williston)

General Area; 18 July to 1 August; on flowers of *Achillea lanulosa*, on *Salix spp*. One specimen was captured by the spider *Misumena vatia* (Clerck)(Thomisidae) while visiting flowers of *A. lanulosa*.

Physocephala texana (Williston)

Station 4 and 11; 15 July to 8 August; on flowers of *Chrysothamnus nauseosus* and *Eriogonum umbellatum*.

Zodion americanus Weidemann

Station 11, 12 and General Area; 18 July to 14 August; on flowers of *Chrysothamnus nauseosus* and *Senecio serra*, Malaise trap.

Zodion cinereiventre Van Duzee

General Area; 18 July; on flowers of *Achillea lanulosa*.

Zodion fulvifrons Say

Station 4, 9 and 12; 21 June to 17 August; on flowers of *Chrysothamnus nauseosus*, *Chrysothamnus viscidiflorus*, and *Cirsium canescens*, Malaise trap.

Zodion intermedium Banks

General Area; 18 July; on flowers of *Achillea lanulosa*.

Thecophora luteipes (Camras)

General AREa; 28 July to 22 August; on flowers of *Senecio serra*, black light.

Thecophora modesta (Williston)

Station 11, 12 and General Area; 27 June to 17 August; on flowers of *Chrysothamnus nauseosus*, *Eriogonum ovalifolium*, *Mimulus nanus* and *Wyethia amplexicaulis*.

Thecophora nigripes (Camras)

Station 2, 6, and General Area; 12 to 28 July; on flowers of *Achellia lanulosa* and *Crepis acuminatum*, Malaise trap.

Thecophora occidensis (Walker)

Station 1; 27 August; sweeping streamside vegetation.

Thecophora propinqua (Adams)

Station 4, 10, 11 and General Area; 12 July to 8 August; on flowers of *Achillea lanulosa*, *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus* and *Chrysothamnus viscidiflorus*, black light, Malaise trap.

Dalmannia picta Williston

Station 1; 5 July; sweeping flowers of *Heracleum lanatum*.

Family Psilidae

Psila (Chamaepsila) dimidiata Loew

Station 1, 2, 3, 9, 12 and General Area; 14 June to 28 July; on *Balsamorhiza sagittata*, *Cornus stolonifera*, *Heracleum lanatum*, *Osmorhiza occidentalis*, *Pseudotsuga menziesii* var. *glauca*, *Symphoricarpos orephilus*, *Urtica lyalli* and *Zygydenus paniculatus*, Malaise trap.

Psila (Chamaepisila) microcera Melander

Station 3 and General Area; 22 June; on *Balsamorhiza sagittata* and *Pinus flexilis*.

Psila (Chamaepisila) rosae (Fabricius)

Station 12; 23 to 27 June; on *Heracleum lanatum*.

Family Otitidae

Ceroxys latiusculus (Loew)

Station 12 and General Area; 13 August to 11 September; in flight, Malaise trap.

Tritoxa pollinosa Cole

Station 2; 23 July; Malaise trap.

Family Tephritidae

Eutreta jonesi Curran

General Area; 30 July; in flight.

Eutreta spp.

The many collected specimens of this genus are being studied by Richard H. Foote, U. S. Department of Agriculture, Washington, D. C.

Paracantha genalis Malloch

Station 1, 6, and 12; 28 June to 10 August; on flowers of *Cirsium canescens* and *Cirsium vulgare*.

Paracantha gentilis Hering

General Area; 28 July to 8 August; on *Chamaebatiaria millefolium*, sweeping plant foliage.

Oxyna palpalis (Coquillett)

Station 11; 8 July; sweeping plant foliage.

Euaresta tapetis (Coquillett)

General Area; 11 July; on flowering *Crepis acuminatum*.

Paroxyna spp.

The collected material belonging to this genus are under study by Richard H. Foote, U. S. Department of Agriculture, Washington, D. C.

Trupanea bisetosa (Coquillett)

Station 1, 6, 11, 12 and General Area; 14 June to 6 September; on *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, *Chrysothamnus viscidiflorus*, *Cirsium canescens*, *Osmorhiza occidentalis*, *Pinus flexilis*, *Senecio serra*, and *Wyethia amplexicaulis*, Malaise trap.

Trupanea jonesi Curran

Station 2, 3, 9 and 11; 5 July to 17 September; sweeping *Artemisia tridentata*, *Chrysothamnus nauseosus*, *Chrysothamnus viscidiflorus*, *Elymus condensatus*, *Melilotus officinalis* and *Purshia tridentata*, Malaise trap.

Trupanea nigricornis (Coquillett)

Station 11 and General Area; 7 July to 17 September; on *Chrysothamnus nauseosus* and *Chrysothamnus viscidiflorus*, sweeping *Melilotus officinalis*, on flowers of *Phacelia leucophylla*, Malaise trap.

Tephritis araneosa (Coquillett)

Station 2, 11 and General Area; 19 June to 14 August; on flowers of *Achillea lanulosa*, on *Chrysothamnus nauseosus*, *Chrysothamnus viscidiflorus*, and *Helanthus annuus*, sweeping *Pinus flexilis* and *Pseudotsuga menziesii* var. *glauca*, Malaise trap.

Tephritis stigmatica (Coquillett)

General Area; 19 July; sweeping flowering *Chamaebatiaria millefolium*.

Neotephritis finalis (Loew)

Station 2 and General Area; 22 June to 12 September; on flowers of *Achillea lanulosa* and *Balsamorhiza sagittata*, on *Chrysothamnus nauseosus*, *Chrysothamnus viscidiflorus* and *Cirsium canescens*, sweeping *Pinus flexilis*, Malaise trap.

Euarestoides acutangulus (Thomson)

Station 1 and General Area; 23 June to 9 August; sweeping *Chamaebatiaria millefolium* and flowering *Osmorhiza occidentalis*.

Aciurina ferruginea (Doane)

Station 3, 6, and General Area; 14 July to 17 September, sweeping *Chrysothamnus nauseosus*, *Chrysothamnus viscidiflorus* and *Pinus flexilis*, Malaise trap.

Aciurina maculata (Cole)

Station 4 and 12; 12 to 20 June; on foliage of *Chrysothamnus nauseosus*.

Valentibulla munda (Coquillett)

Station 11; 11 July; Malaise trap.

Stenopa vulnerata (Loew)

General Area; 15 July; in flight.

Orellia occidentalis (Snow)

Station 1, 11, 12 and General Area; 23 June to 11 August; on flowers of *Cirsium canescens*, Malaise trap. Adults were reared from the flower heads of *C. canescens*.

Rhagoletis basiola (Osten Sacken)

Station 1, 2, 3, 7, 11 and General Area; 3 July to 1 September; on *Eriogonum umbellatum*, Malaise trap.

Family Sepsidae

Saltella sphondylli (Schrank)

General Area; 18 to 28 July; on flowers of *Achillea lanulosa* and *Senecio serra*.

Sepsis biflexuosa Strobl

Visitor's Center; 24 June; sweeping *Cornus stolonifera*.

Sepsis neocynipsea Melander and Spuler

Station 1, 2, 6, 10, 11 and General Area; 17 June to 24 August; on *Achillea lanulosa, Chamaebatiaria millefolium, Cornus stolonifera, Elymus condensatus, Osmorhiza occidentalis, Pinus flexilis* and *Prunus virginiana*, Malaise trap.

Sepsis punctum (Fabricius)

General Area; 1 July; on *Pinus flexilis*.

Family Sciomyzidae

Pherbellia vitalis (Cresson)

Station 2 and General Area; 24 August to 13 September; on *Chrysothamnus nauseosus*, sweeping shrub foliage.

Tetanocera plebeja Loew

Station 12; 13 to 18 August; Malaise trap, sweeping streamside vegetation.

Tetanocera plumosa Loew

Station 12; 1 to 14 August; sweeping streamside vegetation.

Tetanocera vicina Macquart

Station 12; 14 August; sweeping streamside vegetation.

Family Lauxaniidae

Camptoprosopella borealis Shewell

Station 2, 12 and General Area; 13 July to 14 August; on *Achillea lanulosa*, sweeping streamside vegetation.

Family Chamaemyiidae

Chamaemyia juncorum (Fallen)

Station 4 and 11; 18 June to 31 August; sweeping *Elymus condensatus* and mixed grasses.

Pseudodinia nitens (Melander and Spuler)

Station 9 and General Area; 7 to 28 July; sweeping flowers of *Achillea lanulosa*, sweeping *Elymus condensatus*.

Pseudodinia varipes Coquillett

General Area; 27 August; sweeping plant foliage.

Leucopis (Leucopis) spp.

Station 1, 12 and General Area, Grassy Cone; 17 June to 29 August; sweeping *Chamaebatiaria millefolium, Chrysothamnus nauseosus, Pinus flexilis, Populus tremuloides, Populus trichocarpa* and *Prunus virginiana*.

Family Pallopteridae

Palloptera jucunda Loew

Station 1, 12 and General Area; 22 June to 24 August; on *Cornus stolonifera, Osmorhiza occidentalis*, and *Pseudotsuga menziesii* var. *glauca*, Malaise trap.

Family Sphaeroceridae

Leptocera (Leptocera) fontinalis (Fallen)

General Area; 27 August; sweeping seedheads of *Elymus condensatus*.

Leptocera (Rachispoda) cryptica Sabrosky

General Area; 27 August; sweeping seedheads of *Elymus condensatus*.

Leptocera (Rachispoda) limosa (Fallen)

Station 2; 14 July; on *Chrysothamnus nauseosus*.

Leptocera (Rachispoda) michigana Sabrosky

Station 2 and General Area; 5 to 12 July; on *Phacelia leucophylla*, sweeping plant foliage.

Family Milichiidae

Madiza glabra Fallen

Station 2, 10 and General Area; 26 July to 30 August; sweeping *Chamaebatiaria millefolium* and *Chrysothamnus viscidiflorus*.

Leptometopa latipes (Meigen)

General Area; 30 August; sweeping *Chrysothamnus nauseosus*.

Family Ephydridae

Mosillus bidentatus (Cresson)

General Area; 5 to 6 September; sweeping *Chrysothamnus nauseosus*.

Psilopa compta (Meigen)

Station 2; 24 August; sweeping vegetation.

Hydrellia griseola (Fallen)

Station 1, 2, 11, 12 and General Area; 22 June to 28 July; sweeping *Balsamorhiza sagittata*, *Chrysothamnus viscidiflorus*, *Cornus stolonifera*, *Osmorhiza occidentalis*, and streamside vegetation, black light, Malaise trap.

Philygria debilis Loew

Station 1 and General Area, Grassy Cone; 17 June to 13 September; on *Chrysothamnus nauseosus*, *Osmorhiza occidentalis*, *Pseudotsuga menziesii* var. *glauca* and *Symphoricarpos orephilus*.

Parydra (Parydra) incommoda Cresson

Station 2; 12 July; sweeping shrubs.

Parydra (Parydra) nitida Cresson

Station 2 and 12; 22 June to 24 August; sweeping flowering *Prunus virginiana* and vegetation.

Pelina truncatula Loew

Station 1 and 2; 24 to 27 August; sweeping vegetation.

Ochthera mantis (DeGeer)

Station 2; 13 July to 24 August; on *Chrysothamnus nauseosus*, sweeping vegetation.

Ephydra macellaria Egger

Station 12; 11 August; Malaise trap.

Paracoenia bisetosa (Coquillett)

Station 2 and 11; 19 July to 24 August; Malaise trap, sweeping vegetation.

Family Chloropidae

Oscinella nitidissima (Meigen)

General Area; 29 August; on *Chamaebatiaria millefolium*.

Dicraeus sp.

General Area; 7 July; sweeping mixed shrubs.

Conioscinella finalis ? (Becker)

Station 12; 27 August; on *Populus trichocarpa*.

Conioscinella melancholica (Becker)

General Area; 22 June to 7 July; sweeping *Balsamorhiza sagittata*, *Pseudotsuga menziesii* var. *glauca* and *Salix spp.*

Conioscinella sp. A

General Area; 18 July to 2 August; sweeping *Achillea lanulosa* and *Chamaebatiaria millefolium*.

Conioscinella sp. B

Station 6; 21 July; sweeping foliage of *Juniperus scopulorum*.

Olcella spp.

Station 2 and General Area; 13 July to 14 August; sweeping *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, *Populus tremuloides* and *Senecio serra*.

Goniopsita oophaga Sabrosky

General Area; 28 June to 14 July; sweeping mixed shrubs.

Goniopsita sp.

General Area; 7 July to 12 September; sweeping *Chrysothamnus nauseosus*, *Pinus flexilis*, and *Pseudotsuga menziesii* var. *glauca*.

Thaumatomyia annulata (Walker)

Station 12 and Visitor's Center area; 24 June to 27 August; sweeping flowering *Cornus stolonifera* and on *Populus trichocarpa*.

Thaumatomyia appropinqua (Adams)

Station 6, 10 and General Area; 30 June to 11 August; on flowers of *Chamaebatiaria millefolium* and *Penstemon deustus*.

Thaumatomyia glabra (Meigen)

Station 2 and General; 15 June to 11 September; on *Chrysothamnus nauseosus*, *Cornus stolonifera*, *Elymus condensatus* and *Pseudotsuga menziesii* var. *glauca*.

Thaumatomyia pullipes (Coquillett)

Station 12; 27 August; on *Populus trichocarpa*.

Thaumatomyia trifasciata (Zetterstedt)

Station 12; 13 August; Malaise trap.

Thaumatomyia spp.

Station 2, 9, and 12; 18 June to 29 August; on *Populus trichocarpa*, Malaise trap, sweeping vegetation.

Chlorops rubicundus Adams

Station 12; 31 August; sweeping grasses.

Chlorops sabulonus Becker

Station 12; 21 August; on *Populus trichocarpa*.

Chlorops sahlbergii Loew

Station 12; 11 to 27 August; on *Populus trichocarpa*, Malaise trap.

Lasiosina similis (Malloch)

Station 11; 31 August; sweeping grasses.

Meromyza pratorum Meigen

Station 2, 4, 10, 11, 12 and General Area; 22 June to 13 September; sweeping *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, *Pinus flexilis*, *Pseudotsuga menziesii* var. *glauca*, and *Salix spp.*, Malaise trap.

Meromyza saltatrix (Linnaeus)

Station 2, 11, 12 and General Area; 28 July to 31 August; sweeping *Chrysothamnus nauseosus*, *Populus trichocarpa*, and grasses.

Meromyza spp.

General Area; 3 July to 13 September; sweeping *Chrysothamnus nauseosus* and *Rosa woodsi*.

Family Agromyzidae

Agromyza spp.

Station 9 and Visitor's Center area; 19 June to 5 July; on flowers of *Melilotus officinalis*, Malaise trap.

Melanagromyzia spp.

Station 1, 9, and 12; 17 June to 13 August; sweeping flowering *Osmorhiza occidentalis*, Malaise trap.

Pytobia (Calycomyza) jucunda (Wulp)

General Area; 6 July; sweeping vegetation.

Pytobia spp.

Station 2, 6 and 11; 24 June to 31 August; on *Elymus condensatus* and *Penstemon deustus*, Malaise trap, sweeping mixed grasses.

Cerodontha (Cerodontha) dorsalis ( )

General Area; 28 July; black light.

Liriomyza sp.

Station 11; 31 August; sweeping mixed vegetation.

Phytomyza sp.

Station 9 and 11; 18 June to 6 July; Malaise trap.

Family Heleomyzidae

Suillia barberi (Darlington)

Station 2; 23 July; Malaise trap.

Suillia nemorum (Meigen)

Station 12; 14 August; sweeping streamside vegetation.

Pseudoleria robusta Garrett

Visitor's Center area; 22 June; on *Cornus stolonifera.*

Acantholeria armipes (Loew)

Station 12; 11 August; Malaise trap.

Family Trixoscelididae

Trixoscelis frontalis (Fallen)

General Area; 22 July; on flowers of *Achillea lanulosa.*

Family Anthomyiidae

Scatophaga stercoraria (Linnaeus)

Station 1, 2, 4, 6, 9, 12 and General Area; 13 June to 8 September; sweeping *Cornus stolonifera, Heracleum lanatum, Osmorhiza occidentalis, Pinus flexilis, Prunus virginiana* and *Salix spp.*, black light, Malaise trap.

Hylemya (Hylemya) variata (Fallen)

General Area; 15 June to 13 August; sweeping *Chrysothamnus nauseosus.*

Hylemya (Delia) aemene (Walker)

Station 12; 1 to 12 August; sweeping streamside vegetation.

Hylemya (Delia) brassicae (Bouche)

Visitor's Center area; 24 June; sweeping flowering *Cornus stolonifera.*

Hylemya (Delia) ceralis (Huckett)

General Area; 18 to 22 June; sweeping *Cornus stolonifera* and *Pinus flexilis.*

Hylemya (Delia) deviata Huckett

Station 1; 11 August; on flowers of *Heracleum lanatum.*

Hylemya (Delia) femorata Huckett

Station 12; 1 to 14 August; sweeping *Alnus tenuifolia.*

Hylemya (Delia) garretti Huckett

Station 9 and General Area, Grassy Cone; 17 June to 1 July; sweeping *Balsamorhiza sagittata, Cornus stolonifera* and *Pinus flexilis,* Malaise trap.

Hylemya (Delia) ineptifrons Huckett

Station 1 and 12; 11 to 27 August; on flowers of *Heracleum lanatum,* Malaise trap.

Hylemya (Delia) lamellicauda Huckett

Station 12 and Visitor's Center area; 24 June to 11 August; on flowers of *Cornus stolonifera,* Malaise trap.

Hylemya (Delia) montana Malloch

Station 3, 12 and General Area; 7 July to 8 September; sweeping *Chrysothamnus nauseosus* and seed-heads of *Elymus condensatus,* Malaise trap.

Hylemya (Delia) neomexicana Mal.

Station 3, 4, 8, 9, 11 and General Area; 16 June to 13 August; sweeping *Balsamorhiza sagittata, Chrysothamnus nauseosus, Cornus stolonifera, Penstemon sp., Pinus flexilis* and *Prunus virginiana*, white light, Malaise trap.

Hylemya (Delia) pilitarsis Stein

Station 11 and 12; 16 July to 11 August; on flowers of *Heracleum lanatum*, Malaise trap.

Hylemya (Delia) platura (Meigen)

Station 2, 9, 11, 12 and General Area; 18 June to 27 August; on flowers of *Senecio serra*, Malaise trap.

Hylemya (Delia) setiventris setiventris Stein

Station 11; 12 July to 14 August; sweeping *Artemisia tridentata*, Malaise trap.

Hylemya (Delia) sp.

Station 12; 14 August; sweeping streamside vegetation.

Hylemya (Botanophila) robusta Stein

Station 1; 5 July; on flowers of *Heracleum lanatum* and *Phacelia leucophylla*.

Hylemya (Pegohylemyia) betarum (Linter)

Visitor's Center area; 16 June; black light.

Hylemya (Paregle) cinerella (Fallen)

General Area; 24 June to 13 September; on *Achillea lanulosa, Chamaebatiaria millefolium, Chrysothamnus nauseosus, Chrysothamnus viscidiflorus* and *Cornus stolonifera*.

Alliopsis parviceps Huckett

Station 12; 22 June; on *Populus tremuloides*.

Pegomya (Pegomya) hyoscyami betae (Curtis)

Station 3 and General Area; 24 June to 24 August; sweeping flowering *Cornus stolonifera*, Malaise trap.

Pegomya (Pegomya) lividiventris Huckett

Station 12; 13 August; Malaise trap.

Pegomya (Nupedia) acutipennis Malloch

Station 6; 17 September; Berlese plants of *Cymopterus terebinthinus*.

Pegomya (Nupedia) anabnormis Huckett

Station 12; 28 July; black light.

Hydrophoria divisa (Meigen)

Station 4 and General Area; 24 June to 17 August; on flowers of *Cornus stolonifera* and *Chrysothamnus nauseosus*. Two specimens were observed as prey of *Phymata americana coloradensis* Melin (Phymatidae) on the flowers of *C. nauseosus*.

Hydrophoria wierzejskii (Mik)

Station 2; 24 August; sweeping *Ribes cereum*.

Leucophora albiseta (von Roser)

Station 12; 27 August; sweeping foliage of *Populus tremuloides*.

Family Muscidae

Schoenomyza dorsalis Loew

Station 12 and General Area; 28 July to 30 August; sweeping *Chrysothamnus nauseosus*.

Schoenomyza litorella (Fallen)

Sunset Cone; 13 August; sweeping mixed shrubs.

Coenosia (Limosia) anthracina Malloch

Station 12; 1 August; on flowers of *Heracleum lanatum*.

Coenosia (Limosia) cilicauda Malloch

General Area; 6 July; in flight.

Coenosia (Limosia) sexnotata Meigen

Station 1; 1 August; sweeping streamside vegetation.

Lispe cotidiana Snyder

Station 3; 23 August; Malaise trap.

Lispe nasoni Stein

Station 12; 13 August; Malaise trap.

Lispe neoliginosa Snyder

Station 12; 13 August; Malaise trap.

Lispe patellata Aldrich

Station 2; 12 to 13 July; sweeping *Ribes cereum*, sweeping mixed grasses.

Lispe tentaculata (DeGeer)

Station 12; 27 August; sweeping *Populus trichocarpa*.

Spilogona magnipunctata (Malloch)

Station 1, 2, 4, 11, 12 and General Area; 5 July to 27 August; sweeping flowers of *Heracleum lanatum*, black light, Malaise trap.

Spilogona sororcula (Zetterstedt)

Station 1; 1 August; sweeping flowers of *Heracleum lanatum*.

Helina bohemani (Ringdahl)

Station 2 and 11; 27 June to 23 July; on flowers of *Eriogonum ovalifolium*, Malaise trap.

Helina cinerella (Wulp)

Station 2 and 11; 12 to 13 July; Malaise trap.

Helina duplicata (Meigen)

General Area; 20 June to 1 August; on flowers of *Achillea lanulosa*, *Chrysothamnus nauseosus* and *Senecio serra*, black and white lights.

Helina multiseriata Malloch

Station 2, 11 and 12; 16 July to 19 August; Malaise trap.

Helina orbitaseta (Stein)

General Area; 12 July; in flight.

Helina troene (Walker)

Station 2, 3, 4, 9, 11, 12 and General Area; 17 June to 13 September; sweeping *Cornus stolonifera*, *Pseudotsuga menziesii* var. *glauca*, and *Symphoricarpos orephilus*, black and white lights, Malaise trap.

Helina sp.

Station 9; 19 June; Malaise trap.

Quadrularia laetifica (Robineau-Desvoidy)

Station 2, 9, 11, 12 and General Area; 17 June to 14 August; sweeping *Alnus tenuifolia*, *Artemisia tridentata*, and *Pseudotsuga menziesii* var. *glauca*, black light, Malaise trap.

Myospila meditabunda (Fabricius)

Station 9, 12 and General Area; 17 June to 4 September; on *Helianthus annuus*, Malaise trap.

Fannia manicata (Meigen)

Station 12 and General Area; 14 to 27 August; sweeping *Populus trichocarpa*, in flight.

Pogonomyia minor Malloch

Station 1, 2, 3, 12 and Visitor's Center area; 13 to 30 June; on *Balsamorhiza sagittata*, *Cornus stolonifera*, *Eriogonum ovalifolium*, *Heracleum lanatum*, *Potentilla spp.* and *Zygydenus paniculatus*.

Pogonomyia similis Malloch

Station 12; 27 June; on *Wyethia amplexicaulis*.

Lasiops (Lasiops) septentrionalis ? (Stein)

Station 1, 12 and General Area; 23 June to 11 August; sweeping flowering *Cornus stolonifera*, on *Heracleum lanatum*.

Phaonia (Phaonia) caerulescens (.n)

Station 12; 27 June; on foliage of *Heracleum lanatum*.

Phaonia (Phaonia) pallidosa Huckett

Station 12; 14 August; sweeping streamside vegetation.

Phaonia (Phaonia) texensis flavofemorata Malloch

Station 2 and General Area; 1 to 25 July; Malaise trap, on soil.

Phaonia (Phaonia) sp.

The collected specimens of this species are under study by H. C. Huckett, Riverhead, New York.

Muscina assimilis (Fallen)

Station 2 and Visitor's Center area; 24 June to 23 July; sweeping *Cornus stolonifera*, Malaise trap.

Muscina stabulans (Fallen)

Station 4, 12 and General Area; 23 June to 27 August; sweeping *Cornus stolonifera* and *Populus trichocarpa*, in carrion, in fly trap.

Pararicia pabulorum (Fallen)

Station 9, 19 June; Malaise trap.

Graphomya maculata (Scopoli)

Station 1 and Visitor's Center area; 20 to 24 June; sweeping *Cornus stolonifera*, in flight.

Orthellia caesarion (Meigen)

Station 2, 3, 12 and General Area: 24 June to 12 September; on flowers of *Chrysothamnus nauseosus*, *Cornus stolonifera* and *Eriogonum umbellatum*, Malaise trap.

Haematobia irritans (Linnaeus)

Station 4; 17 August; prey of *Phymata americana coloradensis* Melin (Phymatidae) on flowers of *Chrysothamnus nauseosus*.

Musca autumnalis DeGeer

Station 12; 27 August; sweeping *Populus trichocarpa*.

Family Calliphoridae

Phormia regina (Meigen)

Station 2, 3, 4, 8, 11, 12 and General Area; 13 June to 17 September; on *Cornus stolonifera*, *Eriogonum ovalifolium*, *Heracleum lanatum* and *Populus trichocarpa*, Malaise trap, meat trap, reared from dead mule deer.

Protophormia terraenovae (Robineau-Desvoidy)

Station 1, 2, 7, 9, and General Area; 7 March to 5 July; on *Cornus stolonifera*, *Penstemon deustus* and *Pinus flexilis*, Malaise trap, on soil, reared from dead yellowbelly marmot.

Protocalliphora n. sp. A

Station 2 and 8; 29 June to 23 July.

Protocalliphora n. sp. B

Station 2 and 12, Visitor's Center and General Area; 16 July to 23 August; on window, on *Chrysothamnus nauseosus*.

Protocalliphora sp.

Station 2 and 11; 13 to 25 July.

Phaenicia sericata (Meigen)

Station 4 and General Area; 22 June to 17 July; on flowers of *Achillea lanulosa* and *Cornus stolonifera*, meat trap.

Eucalliphora lilaea (Walker)

Station 2, 3, 4, 9, 11, 12 and General Area; 18 June to 23 August; on *Cornus stolonifera*, *Heracleum lanatum*, *Potentilla spp.* and *Rosa woodsi*, Malaise trap, fly trap, reared from dead yellowbelly marmot.

Calliphora coloradensis Hough

Station 4 and General Area; 27 June to 18 July; fly trap.

Calliphora livida Hall

Station 4, 12 and General Area; 24 June to 17 July; on flowers of *Cornus stolonifera* and *Phacelia leucophylla*, meat trap.

Calliphora vomitoria (Linnaeus)

Station 12 and Visitor's Center area; 18 June to 1 August; sweeping flowers of *Heracleum lanatum*, in flight.

Cynomyopsis cadaverina (Robineau-Desvoidy)

General Area; 22 June to 14 August; sweeping flowers of *Cornus stolonifera*, in flight.

Pollenia rudis (Fabricius)

Station 8; 28 June; Malaise trap.

Family Sarcophagidae

Amobia (Amobia) aurifrons (Townsend)

Station 1 and General Area; 1 July to 11 August; on flowers of *Heracleum lanatum*, sweeping *Pinus flexilis*.

Eumachronychia rohweri Allen

Station 2 and 9; 13 to 22 June; on flowers of *Potentilla spp.*, Malaise trap.

Gymnoprosopa inflaticornis Allen

Station 9; 18 July; Malaise trap.

Hilarella hilarella (Zetterstedt)

Station 2, 9, 11 and 12; 19 June to 11 August; Malaise trap.

Metopia (Metopia) argyrocephala (Meigen)

Station 2 and 12; 23 July to 13 August; Malaise trap.

Senotainia flavicornis (Townsend)

General Area; 2 August; on flowers of *Chrysothamnus nauseosus*.

Senotainia trilineata (Wulp)

Visitor's Center area; 28 July; on flowers of *Achillea lanulosa*.

Senotainia vigilans Allen

Station 2, 11 and 12; 14 July to 13 August; on flowers of *Chrysothamnus viscidiflorus*, Malaise trap.

Sphenometopa tergata (Coquillett)

Station 2 and 12; 18 July to 13 August; Malaise trap, fly trap.

Taxigramma heteroneura (Meigen)

Station 11 and 12; 16 July to 1 August; on flowers of *Heracleum lanatum*, Malaise trap.

Wohlfahrtia vigil (Walker)

Station 2, 4, and General Area; 30 June to 18 September; on flowers of *Achillea lanulosa* and *Eriogonum ovalifolium*, fly trap.

Blaesoxipha (Acridiophaga) aculeata (Aldrich)

Station 2, 9, and 12; 17 June to 19 August; sweeping *Prunus virginiana*, Malaise trap.

Blaesoxipha (Blaesoxipha) atlanis (Aldrich)

General Area; 27 August; sweeping *Chrysothamnus nauseosus*.

Blaesoxipha (Blaesoxipha) hunteri (Hough)

General Area; 7 July to 27 August; on *Heracleum lanatum*, *Pinus flexilis* and *Populus trichocarpa*, Malaise trap.

Blaesoxipha (Blaesoxipha) opifera (Coquillett)

Station 3, 4, 12 and General Area; 28 June to 30 August; on flowers of *Achillea lanulosa*, *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, *Chrysothamnus viscidiflorus*, *Eriogonum ovalifolium*, *Helianthus annuus*, *Heracleum lanatum* and *Senecio serra*, black light, Malaise trap.

Blaesoxipha (Kellymyia) kellyi (Aldrich)

Station 4 and Visitor's Center area; on flowers of *Cornus stolonifera*, Malaise trap.

Ravinia (Ravinia) lherminieri (Robineau-Desvoidy)

Station 1, 2, 3, 4, 8, 11, 12 and General Area; 13 June to 12 September; on *Balsamorhiza sagittata*, *Chrysothamnus nauseosus*, *Cornus stolonifera*, *Eriogonum ovalifolium*, *Eriogonum umbellatum* and *Phacelia leucophylla*, black light.

One pair was found in copitu on a pahoehoe rock on 15 July at station 11. One specimen was observed as prey of *Efferia frewingi* Wilcox (Asilidae) on 4 September.

Ravinia (Ravinia) planifrons (Aldrich)

Station 2, 9, and 12; 18 June to 30 August; on *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, and *Heracleum lanatum*, black light, Malaise trap.

Ravinia (Ravinia) querula (Walker)

Station 2, 3, 4, 8, 9, 10, 11, 12, and General Area; 18 June to 8 September; on *Chrysothamnus nauseosus*, *Eriogonum umbellatum*, *Heracleum lanatum*, *Pinus flexilis* and *Senecio serra*, Malaise trap, pahoehoe lava.

Sarcophaga bullata Parker

Station 4, 7 and General Area; 11 June to 8 September; black light, on soil, pahoehoe lava.

Sarcophaga cooleyi Parker

General Area; 30 June to 13 September; on *Chrysothamnus nauseosus*, in flight.

Family Tachinidae

Gymnosoma filiola Loew

General Area; 26 June to 11 August; on flowers of *Balsamorhiza sagittata*, *Cornus stolonifera*, *Eriogonum ovalifolium*, *Heracleum lanatum* and *Senecio serra*.

Gymnosoma fuliginosum Robineau-Desvoidy

General Area; 28 July to 1 August; on flowers of *Achillea lanulosa* and *Heracleum lanatum*.

Xanthomelanodes arcuatus (Say)

Station 11; 17 July; Malaise trap.

Xanthomelanodes californicus Townsend

General Area; 25 August; sweeping *Chamaebatiaria millefolium*.

Hyalomya aldrichii Townsend

Station 2, 11 and General Area; 30 June to 31 August; on flowers of *Achillea lanulosa*, sweeping *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, *Chrysothamnus viscidiflorus* and *Elymus condensatus*, on flowers of *Eriogonum ovalifolium*.

Cylindromyia (Cylindromyia) californica (Bigot)

General Area; 7 July to 11 August; on *Achillea lanulosa* and *Chrysothamnus viscidiflorus*.

Cylindromyia (Cylindromyia) decora Aldrich

General Area; 15 July to 2 August; on *Achillea lanulosa* and *Chrysothamnus viscidiflorus*, Malaise trap.

Cylindromyia (Cylindromyia) fumipennis (Bigot)

General Area; 19 June to 27 August; on *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, *Chrysothamnus viscidiflorus*, *Heracleum lanatum*, *Salix spp.* and *Senecio serra*.

Cylindromyia (Neocyptera) compressa Aldrich

General Area; 18 July to 11 August; on *Achillea lanulosa*, *Heracleum lanatum*, and *Senecio serra*.

Cylindromyia (Neocyptera) doriades (Walker)

General Area; 7 July; sweeping shrub foliage.

Leucostoma gravipes Wulp

Station 11 and General Area; 13 to 18 July; on flowers of *Achillea lanulosa*, Malaise trap.

Leucostoma perrarum Reinhard

General Area; 5 July; on flowers of *Achillea lanulosa*.

Leucostoma simplex (Fallen)

Station 2, 11 and General Area; 5 July to 11 August; on flowers of *Achillea lanulosa*, *Chamaebatiaria millefolium* and *Chrysothamnus viscidiflorus*, Malaise trap.

Microchaetina valida (Townsend)

General Area; 21 August to 12 September; on *Chrysothamnus nauseosus*.

Reinhardiana petiolata (Townsend)

Station 3, 4, and General Area; 8 to 26 August; on *Chrysothamnus nauseosus*, Malaise trap. One specimen was observed as prey of the spider *Misumena vatia* (Clerck)(Thomisidae) on the flowers of *C. nauseosus*.

Steveniopsis rubidiapex (Reinhard)

General Area; 25 August; on *Eriogonum spp.*

Arctophyto gillettei (Townsend)

Station 1 and General Area; 27 June to 5 July; on *Eriogonum ovalifolium*.

Dinera grisescens (Fallen)

Station 11, 12 and General Area; 7 July to 14 August; sweeping *Chrysothamnus nauseosus*, *Melilotus officinalis*, and *Senecio serra*, Malaise trap.

Mochlosoma illocale Reinhard

General Area; 12 September; sweeping flowering *Chrysothamnus nauseosus*.

Ptilodexa sp.

Station 1, 2 and 11; 27 June to 25 July; Malaise trap.

Nowickia (Echinomyodes) evanida (Reinhard)

Station 12; 19 August; Malaise trap.

Nowickia (Echinomyodes) latigena (Tothill)

Station 11 and General Area; 11 July to 6 September; on flowers of *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus* and *Eriogonum ovalifolium*, Malaise trap.

Nowickia (Echinomyodes) lutzi (Curran)

Station 3, 11 and General Area; 12 July to 8 September; Malaise trap.

Nowickia (Echinomyodes) piceifrons (Townsend)

General Area; 26 August to 6 September; on flowers of *Chrysothamnus nauseosus*.

Nowickia (Rhachogaster) algens ? (Weidemann)

General Area; 24 August; sweeping plant foliage.

Nowickia (Rhachogaster) latianulum (Tothill)

Station 11 and General Area; 3 July to 11 September; on flowers of *Penstemon deustus*, Malaise trap.

Nowickia (Rhachogaster) nitida (Wulp)

Station 6, 8, 9, 11 and General Area; 18 June to 12 September; on flowers of *Chrysothamnus nauseosus*, *Eriogonum ovalifolium* and *Senecio serra*, Malaise trap.

Peleteria (Oxydosphyria) iterans (Walker)

Station 9 and 12; 19 June to 27 August; Malaise trap.

Peleteria (Sphyromyia) anaxias (Walker)

Station 12; 19 August; Malaise trap.

Peleteria (Sphyromyia) bryanti Curran

General Area; 11 to 27 August; on flowers of *Aster canascens*, *Chrysothamnus nauseosus* and *Senecio serra*.

Peleteria (Sphyromyia) malleola (Bigot)

Station 2, 3, 8, 9, 11, 12 and General Area; 18 June to 12 September; on flowers of *Chrysothamnus nauseosus*, *Chrysothamnus viscidiflorus* and *Eriogonum ovalifolium*, Malaise trap.

Peleteria sp.

General Area; 11 August to 12 September; on *Aster canascens*, *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus* and *Senecio serra*.

Epalpus signifer (Walker)

General Area; 1 July; sweeping plant foliage.

Deopalpus contiguus (Reinhard)

Station 2, 3, 7, 9 and 12; 18 June to 23 August; on *Eriogonum ovalifolium*, Malaise trap.

Bonnetia comta (Fallen)

Station 2 and 12; 13 August; in flight, Malaise trap.

Mericia alberta Curran

Station 12; 13 August; Malaise trap.

Melanophrys flavipennis Williston

Station 11; 27 June; on flowers of *Eriogonum ovalifolium*.

Aphria ocypterata Townsend

Station 12; 11 to 13 August; on flowers of *Senecio serra*, Malaise trap.

Chaetophlepsis eudryae (Smith)

Station 3 and General Area; 11 August to 11 September; sweeping *Salix spp.*, Malaise trap.

Chaetophlepsis rindgei Reinhard

Station 3, 9 and General Area; 27 June to 24 August; Malaise trap.

Chaetophlepsis sp.

Station 3; 27 August; Malaise trap.

Anthrycia cinerea (Coquillett)

Station 2, 6, 8, 9, 11, 12 and General Area; 21 June to 13 August; Malaise trap.

Catalinovoria cauta Townsend

General Area; 22 June to 7 July; sweeping *Balsamorhiza sagittata*.

Voria ruralis Fallen

Station 2, 6, 11 and 12; 16 July to 19 August; on *Eriogonum umbellatum*, Malaise trap.

Spathidexia reinhardi Arnaud

Station 2, 3, 11 and 12; 16 July to 23 August; Malaise trap.

Eulasiona (Paramuscopteryx) genalis (Townsend)

Station 1; 1 August; sweeping flowers of *Heracleum lanatum*.

Lasionalia cinerea Curran

Station 12; 1 August; on flowers of *Achillea lanulosa*.

Muscopteryx nitida Reinhard

Station 2; 23 July; Malaise trap.

Paradidyma apicalis Reinhard

Station 12; 13 August; Malaise trap.

Paradidyma singularis (Townsend)

Station 11, 12 and General Area; 19 July to 12 September; on *Chrysothamnus nauseosus* and *Eriogonum spp.*, Malaise trap.

Periscepsia helymus (Walker)

Station 2, 6, 7 and 9; 18 June to 21 July; sweeping *Juniperus scopulorum*, *Populus tremuloides*, and *Salix spp.*, Malaise trap.

Periscepsia laevigata (Wulp)

Station 9; 18 June; Malaise trap.

Acemya tibialis Coquillett

Station 2, 11, 12 and General Area; 14 June to 13 August; sweeping *Pinus flexilis*, Malaise trap.

Blondelia polita ? (Townsend)

Station 2, 3, 9, 12 and General Area; 19 June to 24 August; sweeping *Cornus stolonifera*, Malaise trap.

Eribella polita (Coquillett)

Station 2; 1 August; sweeping *Salix spp.*

Velocia barbata (Coquillett)

Station 2; 13 July; on *Populus tremuloides.*

Euphorocera claripennis (Macquart)

Station 11 and 12; 9 July to 11 August; sweeping flowers of *Heracleum lanatum,* Malaise trap.

Exorista mella (Walker)

Station 2, 11 and 12; 20 June to 11 August; Malaise trap.

Tachinomyia variata Curran

Station 3; 13 June; on soil.

Clausicella neomexicana ? (Townsend)

Station 3 and 12; 13 to 27 August; Malaise trap.

Clausicella setigera (Coquillett)

General Area; 28 June to 30 August; sweeping *Chamaebatiaria millefolium, Chrysothamnus nauseosus, Chryosthamnus viscidiflorus, Eriogonum ovalifolium, Phacelia leucophylla* and *Salix spp.*

Schizotachina convecta ? (Walker)

Station 3 and 9; 19 to 22 June; sweeping *Balsamorhiza sagittata,* Malaise trap.

Clastoneuriopsis alberta (Curran)

General Area; 3 to 15 July; sweeping *Achillea lanulosa* and *Pseudotsuga menziesii* var. *glauca.*

Clastoneuriopsis deceptor (Curran)

Station 2 and 8, Grassy Cone, Sunset Cone; 13 to 28 June; sweeping *Potentilla spp., Prunus virginiana* and *Symphoricarpos orephilus.*

Onychogonia magna Brooks

Station 2, 3, 11 and General Area; 28 June to 18 July; on *Eriogonum ovalifolium* and *Senecio serra.*

Spallanzania hebes (Fallen)

Station 3, 6 and General Area; 1 July to 25 August; on *Chamaebatiaria millefolium* and *Eriogonum umbellatum.*

Chaetogaedia desertorum (Townsend)

General Area; 11 September; in flight.

Leschenaultia americana (Brauer and Bergenstamm)

Station 2; 28 June to 25 July; on foliage of *Pinus flexilis,* Malaise trap.

Drino bakeri (Coquillett)

General Area; 13 June; on soil.

Drino sp.

General Area; 10 July; in flight.

Mystacella sp.

Station 3 and 12; 13 to 24 August; Malaise trap.

Siphosturmia maltana Reinhard

Station 2, 4 and 11; 14 to 25 July; in carrion, Malaise trap.

Siphosturmia melitaeae (Coquillett)

General Area; 25 August; sweeping *Chamaebatiaria millefolium.*

Nemorilla pyste (Walker)

Station 2; 1 August; sweeping *Ribes cereum.*

Hubneria estigmenensis (Sellers)

Station 2; 23 July; Malaise trap.

Aplomya theclarum (Scudder)

Station 1, 2, 8 and 11; 9 July to 13 August; Malaise trap.

Ceromasia aurifrons Townsend

Station 1; 27 June to 11 August; sweeping flowers of *Heracleum lanatum.*

Frontiniella parancilla Townsend

General Area; 30 August; sweeping *Chrysothamnus nauseosus.*

Lespesia archippivora (Riley)

Station 4, 8 and 11; 12 to 19 July; in fly trap; Malaise trap.

Lespesia ciliata (Macquart)

Station 12; 27 August; sweeping *Populus trichocarpa.*

Lespesia flavifrons Beneway

Station 11; 14 July; Malaise trap.

Lydella radicis (Townsend)

General Area; 24 June; on leaves of *Cymopterus terebinthinus.*

Madremyia saundersii (Williston)

General Area; 7 July; sweeping shrub foliage.

Patelloa sp.

Station 2; 23 to 25 July; Malaise trap.

Pilatea sp.

Station 2; 3 to 23 July; Malaise trap.

Family Cuterebridae

Cuterebra approximata Walker

General Area; 15 July; in flight.

Cuterebra tenebrosa Coquillett

General Area; 10 August; in house.

Family Oestridae

Hypoderma lineatum (Villers)

Station 2; 29 June; in flight.

Order HYMENOPTERA

The catalog of Muesebeck *et al* (1951) and the supplements of Krombein (1958, 1968) were used for placement of families and genera.

Suborder SYMPHYTA

Family Argidae

Arge clavicornis (Fabricius)

Station 3 and 12; 17 June to 10 July; swept from flowers of *Balsamorhiza sagittata* and *Heracleum lanatum.*

Family Cimbicidae

Zaraea americana Cresson

Grassy Cone; 17 June; on foliage of *Pseudotsuga menziesii* var. *glauca.*

Family Diprionidae

Neodiprion abietis group

Station 2 and Grassy Cone; 11 June to 20 July; on foliage of *Pinus flexilis, Pseudotsuga menziesii* var. *glauca* and *Salix spp.*

Heavy infestations of larvae were observed on *P. flexilis* and *P. m.* var. *glauca* on Grassy and Sunset Cones. Larvae also were seen on *P. flexilis* in the Devil's Orchard and Big Craters areas. In areas where larvae were present in large numbers and where both species of host trees were present, the preferred host was *P. flexilis.* The peak of larval feeding activity was in the last week of June. Cocoons were found under rocks and logs and in duff under trees and shrubs on the northeast side of Sunset Cone in September.

Family Tenthredinidae

Hemichroa (Hemichroa) crocea (Fourcroy)

Station 12; 28 July; black light.

Pristiphora sp.

Station 2; 25 July; Malaise trap.

Nematus (Pteronidea) oligospilus ? Foerster

Station 2; 24 July; Malaise trap.

Nematus (Pteronidea) sp.

Station 12; 11 August; Malaise trap.

Phyllocolpa sp.

Station 1; 5 July; on foliage of *Rosa woodsi*.

Aphilodyctium fidum (Cresson)

East slope of Sunset Cone; 28 June; on stem of *Symphoricarpos orephilus*.

Monophadnoides geniculatus (Hartig)

Station 1; 14 June; on flowers of *Balsamorhiza sagittata*.

Rhogagaster addenda (Cresson)

Station 7 and Devil's Orchard; 14 June to 2 July; swept from foliage of *Pseudotsuga menziesii* var. *glauca*, flying low over pahoehoe lava.

Tenthredo maxima (Norton)

Station 1 and 12; 23 June to 7 July; on flowers of *Heracleum lanatum*.

On 7 July, an adult female was found resting on the flowers of *H. lanatum* with a male *Tenthredo xantha* Norton grasped between her front legs. She tore off the fore and hind wings on one side and then chewed off one antenna, two legs and the head. She then began feeding on the thorax of the captured specimen. After two minutes of feeding she dropped the specimen and flew away.

Tenthredo obscuripennis Cresson

Station 1; 5 July; on flowers of *Heracleum lanatum*.

Tenthredo opima (Cresson)

Station 1; 18 July; on flowers of *Heracleum lanatum*.

Tenthredo xantha Norton

Station 12; Grassy Cone, and Visitor's Center area; 14 June to 14 July; on *Amelanchier alnifolia*, *Cornus stolonifera*, flowers of *Geranium nervosum*, *Heracleum lanatum*, *Osmorhiza occidentalis*, *Prunus virginiana*, *Rosa woodsi*, and *Urtica lyalli*.

Family Orussidae

Orussus occidentalis Cresson

Station 7; 3 July; flying low over pahoehoe lava.

Family Cephidae

Cephus (Cephus) cinctus Norton

Station 4 and 12; 18 June to 5 July; sweeping *Elymus condensatus*, on flowers of *Heracleum lanatum*, sweeping streamside vegetation.

Suborder APOCRITA

Family Braconidae

Ephedrus sp. near *californicus* Baker

General Area; 1 August; sweeping plant foliage.

Aphidius sp. A

Visitor's Center area; 5 July; sweeping *Melilotus officinalis*.

Aphidius sp. B

General Area; 19 July; on foliage of *Chamaebatiaria millefolium*.

Meteorus hyphantriae Riley

General Area; 1 July to 12 September; sweeping foliage of *Chrysothamnus nauseosus* and *Pinus flexilis*.

Meteorus leviventris (Wesmael)

General Area; 23 June to 28 July; Malaise trap, white light.

Meteorus sp. possibly *hypophloei* Cushman

General Area; 14 June; on foliage of *Pinus flexilis*.

Meteorus sp.

Station 3; 23 August; Malaise trap.

Macrocentrus ancylivorus Rohwer

Station 11; 19 July; Malaise trap.

Macrocentrus marginator (Nees)

Station 2; 25 July; Malaise trap.

Macrocentrus pulchripennis Muesebeck

Station 4; 14 July; black light.

Helcon pedalis Cresson

Station 12; 28 July; on ground.

Orgilus spp.

Station 2, 3, 4, and General Area; 18 June to 12 September; sweeping *Chrysothamnus nauseosus* and *Elymus condensatus*.

Microtypus sp.

General Area; 20 July; black light.

Earinus zeirapherae Walley

General Area: 22 June; on foliage of *Pinus flexilis*.

Agathis atripes Cresson

General Area; 6 September; on flowers of *Chrysothamnus nauseosus*.

Agathis brevicornis (Muesebeck)

General Area; 15 July; in flight.

Agathis californicus (Muesebeck)

Station 12; 14 August; sweeping vegetation.

Agathis gibbosa (Say)

Station 4; 14 July; sweeping *Elymus condensatus*.

Agathis nigripes Cresson

General Area; 30 June; on *Penstemon deustus*.

Agathis sp. n.

General Area; 27 August to 13 September; sweeping *Chrysothamnus nauseosus* and *Chrysothamnus viscidiflorus*.

Agathis spp.

General Area; 17 June to 5 September; sweeping *Chrysothamnus nauseosus, Chrysothamnus viscidiflorus* and *Pseudotsuga menziesii* var. *glauca*.

Apanteles aristoteliae Viereck

General Area; 19 July to 30 August; sweeping *Chamaebatiaria millefolium, Chrysothamnus nauseosus* and *Phacelia leucophylla*.

Apanteles bedelliae Viereck

General Area; 23 June to 9 August; on *Chamaebatiaria millefolium, Osmorhiza occidentalis* and *Salix spp.*

Apanteles monticola Ashmead

Station 2 and 11; 12 to 25 July; on dead branch of *Artemisia tridentata*, Malaise trap.

Aparteles neomexicanus Muesebeck

General Area; 29 July; on flowers of *Achillea lanulosa*.

Apanteles yakutatensis Ashmead

Station 2; 24 August; sweeping mixed grasses.

Apanteles sp. near *limenitidis* (Riley)

General Area; 9 August; sweeping *Chamaebatiaria millefolium*.

Apanteles sp. A

General Area; 3 to 13 September; sweeping *Chrysothamnus nauseosus*.

Apanteles sp. B

General Area; 11 August to 12 September; sweeping *Chrysothamnus nauseosus* and *Chrysothamnus viscidiflorus*.

Apanteles sp. C

General Area; 19 July; sweeping *Chamaebatiaria millefolium* and *Phacelia leucophylla*.

Apanteles sp. D

Station 4, 10 and General Area; 26 July to 12 September; sweeping *Chamaebatiaria millefolium* and *Chrysothamnus nauseosus*.

Apanteles sp. E

Station 12; 23 June; sweeping flowering *Osmorhiza occidentalis*.

Microgaster comptanae Viereck

Station 3 and General Area; 13 to 24 June; sweeping *Balsamorhiza sagittata* and *Cornus stolonifera*.

Microgaster sp.

Station 3; 22 June; sweeping flowering *Balsamorhiza sagittata*.

Microplitis sp.

General Area; 14 July; sweeping *Phacelia leucophylla*.

Ascogaster sp.

Station 11; 19 July; Malaise trap.

Chelonus (Chelonus) muesebecki McComb

Station 12 and General Area; 3 July to 1 August; sweeping flowers of *Heracleum lanatum*, in flight.

Chelonus (Chelonus) sp.

Station 11; 19 July; Malaise trap.

Chelonus (Microchelonus) sp.

Station 9; 21 June; Malaise trap.

Brachystropha ? sp.

General Area; 22 June; sweeping *Balsamorhiza sagittata*.

Dacnusa sp.

Station 9; 17 June; Malaise trap.

Opius sp.

General Area; 1 August; sweeping mixed shrubs.

Iphiaulax sp.

Station 12; 27 August; sweeping *Populus trichocarpa*.

Atanycolimorpha sp.

General Area; August; reared from dead *Pinus flexilis*.

Cyanopterus sp.

General Area; 22 June; sweeping *Pinus flexilis*.

Atanycolus sp. near *charus* (Riley)

General Area; 22 June to 18 August; swept from *Pinus flexilis*, reared from dead *P. flexilis*.

Bracon curtus (Provancher)

General Area; 3 August; on flowers of *Mentzelia laevicaulis*.

Bracon erucarum (Cushman)

General Area; 24 June to 18 July; on *Cornus stolonifera*, *Cymopterus terebinthinus* and *Senecio serra*.

Bracon gelechiae Ashmead

General Area; 22 June; sweeping *Balsamorhiza sagittata*.

Bracon hyslopi (Viereck)

General Area; 13 September; sweeping *Chrysothamnus nauseosus*.

Bracon lissogaster Muesebeck

Station 6; 10 August; sweeping mixed shrubs.

Bracon nitidulus Dalle Torre

Station 6; 14 July; on *Lupinus sp.*

Bracon nuperus Cresson

Station 1; 27 August; sweeping plant foliage.

Bracon pygmaeus Provancher

Sunset Cone; 25 June; sweeping plant foliage.

Bracon rhyacioniae (Muesebeck)

General Area; 15 June; on *Pinus flexilis*.

Bracon tychii (Muesebeck)

Station 4 and 12; 12 June to 11 August; sweeping *Chrysothamnus nauseosus*, Malaise trap.

Bracon sp. near *hyslopi* (Viereck)

General Area; 9 August; on *Chamaebatiaria millefolium*.

Bracon sp. near *pygmaeus* Provancher

General Area; 2 July; sweeping *Pseudotsuga menziesii* var. *glauca*.

Bracon sp. A

General Area; 15 June; on foliage of *Pinus flexilis*.

Bracon sp. B

Station 6; 10 August; sweeping shrub foliage.

Bracon sp. C

Station 9; 17 June; on foliage of *Pinus flexilis*.

Bracon sp. D

Station 11; 31 August; sweeping mixed grasses.

Rogas stigmator (Say)

General Area; 6 July; in flight.

Rogas sp. A

Station 4; 8 August; on *Chrysothamnus nauseosus*.

Rogas sp. B

Station 3 and 11; 22 June to 19 July; sweeping *Balsamorhiza sagittata*, Malaise trap.

Rogas sp. C

Station 12; 28 July; black light.

Tetrasphaeropyx spp.

Station 6 and 9; 24 June to 10 August; Malaise trap, sweeping mixed shrubs.

Hormius sp.

Station 2, 11 and General Area; 19 July to 13 September; sweeping *Artemisia tridentata* and *Pinus flexilis*, Malaise trap.

Noserus sp.

General Area; 9 August; sweeping *Chamaebatiaria millefolium*.

Ecphylus sp.

General Area; June to September; reared from dead *Pinus flexilis*.

Family Ichneumonidae

Scambus (Atelcophadnus) pterophori (Ashmead)

General Area; 24 June; sweeping flowering *Cornus stolonifera*.

Scambus (Endromopoda) productus ? Walley

Station 12; 14 to 15 August; sweeping streamside vegetation, Malaise trap.

Scambus (Scambus) brevicornis ? (Gravenhorst)

Station 12; 11 to 19 August; Malaise trap.

Scambus (Scambus) dioryctriae ? Walley

General Area; 29 August; sweeping foliage of *Pinus flexilis*.

Pimpla irritator (Fabricius)

General Area; 31 July; in flight.

Pimpla pedalis Cresson

Station 6; 26 July; on foliage of *Pinus flexilis*. An adult was reared from a cocoon of the tent caterpillar *Malacosoma californica* (Packard) attached to needles of *P. flexilis*.

Pimpla sanguinipes erythropus Viereck

Station 2, 12 and General Area; 25 July to 12 September; sweeping flowering *Chrysothamnus nauseosus*, Malaise trap.

Perithous mediator neomexicanus (Viereck)

Station 12; 11 August; Malaise trap.

Zatypota percontatoria ? (Muller)

General Area; 26 August; sweeping *Chrysothamnus nauseosus*.

Itoplectis viduata (Gravenhorst)

Station 1, 2 and 12; 21 June to 13 August; in flight, Malaise trap.

Theronia atalantae fulvescens (Cresson)

Station 12; 14 August; sweeping mixed shrubs.

Netelia sp. A

Visitor's Center area; 30 June to 8 September; in flight, on soil.

Netelia sp. B

Station 9 and 12; 21 June to 13 August; Malaise trap.

Netelia sp. C

Station 12; 13 August; Malaise trap.

Polyblastus (Polyblastus) pedalis (Cresson)

Station 12; 27 August; sweeping foliage of *Populus trichocarpa*.

Polyblastus (Polyblastus) strobilator (Thunberg)

Station 12; 13 August; Malaise trap.

Erromenus (Erromenus) dimidiatus (Cresson)

Station 1; 23 June; sweeping flowering *Osmorhiza occidentalis*.

Erromenus (Erromenus) glabrosus ? Davis

Station 1; 23 June; sweeping flowering *Osmorhiza occidentalis*.

Exenterus tsugae Cushman

Station 2 and General Area; 28 June to 25 July; sweeping *Pinus flexilis*, *Pseudotsuga menziesii* var. *glacua*, and *Symphoricarpos orephilus*, Malaise trap.

Smicroplectrus sp. n.

Station 2; 7 July; sweeping *Pseudotsuga menziesii* var. *glauca*.

Exyston (Exyston) sp. n. ?

General Area; 28 June; on *Penstemon sp.*

Mastrus sp.

Station 2 and 12; 23 July to 13 August; Malaise trap.

Otacustes sp.

General Area; 1 July; on *Pinus flexilis*.

Gelis tenellus ? (Say)

Station 2; 31 August; sweeping foliage of *Pseudotsuga menziesii* var. *glauca*.

Gelis sp.

Station 9, 11 and General Area; 21 June to 12 September; sweeping *Chrysothamnus nauseosus*, Malaise trap.

Chirotica sheppardi (Walley)

Station 2; 25 July; Malaise trap.

Endasys sp. A

Station 12; 11 August; sweeping flowers of *Heracleum lanatum*.

Endasys sp. B

Station 12; 11 August; sweeping flowers of *Heracleum lanatum*.

Endasys sp. C

Station 2 and 12; 13 July to 27 August; sweeping *Populus trichocarpa*, Malaise trap.

Phygadeuon sp. A

General Area; 22 June; sweeping *Balsamorhiza sagittata*.

Phygadeuon sp. B

Station 2 and 12; 9 July to 14 August; on flowers of *Xanthium strumarium*, Malaise trap.

Phygadeuon ? sp. A

Station 2, 11 and General Area; 24 June to 12 September; on *Chrysothamnus nauseosus* and *Cornus stolonifera*, Malaise trap.

Phygadeuon ? sp. B

Station 12; 27 August; sweeping streamside vegetation.

Stilpnus sp.

General Area; 1 July; in flight.

Cryptus albitarsis argentifrons Cameron

Station 2, 11 and 12; 11 July to 11 August; Malaise trap.

Cryptus genatus (Pratt)

Station 2 and General Area; 23 June to 25 July; sweeping *Cornus stolonifera*, Malaise trap.

Cryptus laborator altonii Dalla Torre

Station 1; 23 June; sweeping flowering *Osmorhiza occidentalis*.

Cryptus persimilis Cresson

Station 2, 9 and 11; 21 June to 16 July; Malaise trap.

Cryptus relativus relativus Cresson

Station 12; 19 June to 5 September; on soil.

Cryptus relativus nitschei Dalla Tc

Station 9, 12 and General Area; 15 June to 5 September; sweeping *Pinus flexilis*, Malaise trap.

Cryptus symmetricus symmetricus Pratt

General Area; 3 July; in flight.

Cryptus sp. (*laborator* group probably *altonii* Dalla Torre)

Station 4 and 11; 18 June to 14 July; sweeping *Elymus condensatus*, Malaise trap.

Cryptus sp. A

General Area; 24 June; on *Cornus stolonifera*.

Cryptus sp. B

General Area; 12 September; on *Chrysothamnus nauseosus*, on soil.

Cryptus sp. C

Station 12; 22 August; on *Senecio serra*.

Compsocryptus apicalis ? Townes

Visitor's Center area; 9 August; on flowers of *Trifolium repens*.

Compsocryptus calipterus ? (Say)

Station 12; 23 June; on foliage of *Heracleum lanatum*.

Compsocryptus resolutus subfasciatus Townes

Station 1; 1 August; sweeping flowers of *Heracleum lanatum*.

Compsocryptus sp. near *Crotchii* (Cresson)

Station 12; 18 July; sweeping streamside vegetation.

Mesostenus albinotatus promptus ? Cresson

Station 12; 13 August; Malaise trap.

Mesostenus gracilis Cresson

Station 11 and General Area; 19 July to 12 September; sweeping *Chrysothamnus nauseosus*, Malaise trap.

Trychosis sp.

General Area; 11 July; in flight.

Gambrus canadensis exareolatus ? (Viereck)

Station 12; 11 to 13 August; Malaise trap.

Gambrus sp.

Station 1 and 12; 1 to 13 August; sweeping flowers of *Heracleum lanatum*, Malaise trap.

Aritranis sp.

Station 12; 13 August; Malaise trap.

Agrothereutes sp.

Station 12; 13 August; Malaise trap.

Ischnus sp. near *rhomboidalis* (Walsh)

Station 12; 13 August; Malaise trap.

Pseudischnus oregonensis oregonensis (Cushman)

Station 2; 25 July; Malaise trap.

Acroricnus stylator niger Mitchell

Station 12; 23 June to 1 August; sweeping *Heracleum lanatum*.

Messatoporus rufiventris Cushman

Station 12; 19 August; Malaise trap.

Phaeogenes arogae Gittins and Henry

Station 1, 2, 4, 6, 9, 11, 12 and General Area; 14 June to 12 September; sweeping foliage of *Achillea lanulosa*, *Artemisia tridentata*, *Chrysothamnus nauseosus*, *Pinus flexilis*, *Populus trichocarpa*, *Pseudotsuga menziesii* var. *glauca*, *Ribes cereum* and *Senecio serra*, sweeping streamside vegetation, Malaise trap.

Phaeogenes sp. A

Station 1, 2, 3, 11 and 12; 9 July to 27 August; sweeping streamside vegetation, Malaise trap.

Phaeogenes sp. B

Station 3 and 12; 11 to 23 August; Malaise trap.

Diadromus ? sp.

Station 3; 24 July; on *Lithospermum ruderale*. Two adults were reared from pupae of unidentified Lepidoptera found on the foliage of *L. ruderale*.

Rexidermus sp.

Station 12; 11 to 14 August; Malaise trap, sweeping streamside vegetation.

Centeterus sp. near *euryptychiae* (Ashmead)

General Area; 12 September; on *Chrysothamnus nauseosus*.

Dicaelotus sp. A

General Area; 12 September; on *Chrysothamnus nauseosus*.

Dicaelotus sp. B

Station 2 and General Area; 13 July to 3 September; on *Chrysothamnus nauseosus*, sweeping plant foliage.

Dicaelotus sp. C

Station 11 and 12; 13 to 31 August; sweeping mixed grasses, Malaise trap.

Stenodontus ? sp.

Station 3; 24 August; Malaise trap.

Platylabus sp.

Station 11 and General Area; 22 June to 13 July; sweeping *Pinus flexilis*, Malaise trap.

Anisobas coloradensis (Cresson)

Station 2 and Visitor's Center area; 24 June to 25 July; sweeping *Cornus stolonifera*, Malaise trap.

Melanichneumon (Vulgichneumon) subcyaneus cordatus (Cresson)

Station 12; 11 August; Malaise trap.

Melanichneumon (subgenus *Barichneumon ?) sp.*

Station 2; 25 July; Malaise trap.

Melanichneumon (s.l) spp. complex

Station 2, 3, 4, 11 and 12; 12 July to 23 August; Malaise trap.

Melanichneumon ? sp.

Station 11; 16 July; Malaise trap.

Stenobarichneumon sp. near *saundersii* (Cresson)

Station 3 and 12; 11 to 23 August; Malaise trap.

Cratichneumon sp.

General Area; 24 August; in flight.

Cratichneumon ? sp.

General Area; 24 June; sweeping *Cornus stolonifera*.

Eupalamus melacneme Heinrich

General Area; 8 August; on soil.

Patrocloides montanus occidentalis Heinrich

Station 12; 9 July to 1 August; Malaise trap.

Stenichneumon pallidipennis (Viereck)

Station 12; 13 August; Malaise trap.

Exephanes sp. A

Station 2, 3 and 11; 11 to 25 July; Malaise trap.

Exephanes sp. B

Staiton 11; 19 July; Malaise trap.

Ectopimorpha ? sp.

Station 2 and 11; 16 to 25 July; Malaise trap.

Pseudamblyteles ormenus (Cresson)

Station 8, 9, 12, General Area and Visitor's Center area; 19 June to 13 August; sweeping *Cornus stolonifera, Heracleum lanatum, Populus tremuloides* and flowering *Osmorhiza occidentalis*, Malaise trap.

Pseudamblyteles sp. A

General Area; 25 July; on *Pseudotsuga menziesii* var. *glauca.*

Pseudamblyteles sp. B

Station 12; 5 July; on *Chrysothamnus nauseosus.*

Pseudamblyteles sp. C

General Area; 29 June; sweeping plant foliage.

Pseudamblyteles sp. D

General Area; 18 June; on *Senecio serra.*

Spilichneumon superbus (Provancher)

Station 12; 5 to 18 July; on *Heracleum lanatum.*

Tricholabus sp. n. ? near *foxleei* Heinrich

Station 11; 17 to 19 July; Malaise trap.

Thyrateles lugubrator (Gravenhorst)

Station 12; 18 July; sweeping streamside vegetation.

Thyrateles mormonus (Cresson)

Station 12; 18 July; sweeping plant foliage.

Thyrateles sp. near *lugubrator* (Gravenhorst)

Station 2; 13 to 23 July; sweeping mixed shrubs, Malaise trap.

Thyrateles ? sp.

Station 12; 13 August; Malaise trap.

Ichneumon sp. near *vinulentus* Cresson

Station 1; 1 August; sweeping flower heads of *Heracleum lanatum.*

Ichneumon sp. n. ?

Visitor's Center area; 24 June; sweeping *Cornus stolonifera.*

Ichneumon spp. complex

Station 2, 6, 11, 12 and General Area; 14 June to 19 August; on *Heracleum lanatum* and *Penstemon sp.*, Malaise trap.

Ichneumon ? spp.

Station 12 and General Area; 11 July to 5 September; on *Heracleum lanatum,* on soil.

Coelichneumon histricus (Cresson)

Station 1; 11 August; sweeping flowers of *Heracleum lanatum.*

Coelichneumon sp. near *semilaevis* (Cresson)

Station 1; 1 August; sweeping flowers of *Heracleum lanatum.*

Coelichneumon (s.l.) sp.

Station 12; 13 to 19 August; Malaise trap.

Coelichneumon ? sp. n. ?

Station 12; 11 August; Malaise trap.

Protichneumon effigies Heinrich

Station 12; 18 June to 27 August; sweeping *Populus trichocarpa.*

Catadelphops buccatus (Cresson)

Station 11; 5 to 9 July; sweeping *Chrysothamnus nauseosus.*

Glypta sp. n. A

Station 4; 18 July; sweeping *Elymus condensatus.*

Glypta sp. n. B

Station 3; 27 August; Malaise trap.

Glypta sp.

General Area; 25 August; sweeping *Chamaebatiaria millefolium.*

Lampronota coloradensis Cresson

Station 11; 16 July; Malaise trap.

Lissonota (Lissonota) montana (Cresson)

Station 1, 2, 12 and General Area; 23 July to 13 August; sweeping *Heracleum lanatum,* Malaise trap.

Lissonota sp.

Station 1; 5 July; sweeping *Heracleum lanatum.*

Pimplopterus sp. A

Station 12; 13 August; Malaise trap.

Pimplopterus sp. B

Station 9 and 11; 19 June to 19 July; Malaise trap.

Pimplopterus ? sp.

General Area; 13 September; on *Chrysothamnus nauseosus* and *Chrysothamnus viscidiflorus.*

Exetastes rufipes ? Cresson

Station 2, 11 and General Area; 24 June to 17 July; sweeping *Chrysothamnus nauseosus* and *Cornus stolonifera.*

Exetastes sp.

General Area; 12 September; on *Chamaebatiaria millefolium.*

Rhorus (Cyphanza) pilosus (Davis)

Station 1; 23 June; sweeping flowers of *Osmorhiza occidentalis.*

Himerta sp. n. ? near *rubiginosa* (Cresson)

Station 11; 11 July; Malaise trap.

Lamachus angularius (Davis)

Station 2; 28 June; on foliage of *Pseudotsuga menziesii* var. *glauca.*

Syndipnus sp. n. ?

Station 12; 28 July; black light.

Diplazon laetatorius (Fabricius)

Station 2, 3, 12 and General Area; 13 to 24 August; Malaise trap.

Sussaba sp. n. ? near *elongatus* (Provancher)

Station 2; 24 August; sweeping plant foliage.

Homotropus nigritarsus fuscitarsus (Provancher)

General Area; 10 August; on foliage of *Chamaebatiaria millefolium.*

Chorinaeus sp.

Grassy Cone; 17 June; on foliage of *Prunus virginiana.*

Triclistus sp.

General Area; 24 to 26 June; sweeping *Cornus stolonifera* and *Prunus virginiana.*

Hypsicera sp.

Station 2; 1 August; sweeping *Salix spp.*

Exochus sp.

Station 3; 23 August; Malaise trap.

Cymodusa sp.

Station 11; 19 July; Malaise trap.

Cymodusopsis aristoteliae ? Viereck

General Area; 19 August; on *Chamaebatiaria millefolium.*

Campoplex sp.

General Area; 7 July; sweeping miscellaneous plant foliage.

Campoplex spp. complex

Station 2, 9, and 12; 14 June to 19 August; sweeping *Heracleum lanatum* and *Pinus flexilis*, Malaise trap.

Campoplex ? spp. complex

Station 2, 11, 12 and General Area; 12 July to 12 September; on *Chrysothamnus nauseosus*, Malaise trap.

Campoletis sp.

General Area; 24 June to 6 September; sweeping *Balsamorhiza sagittata* and *Chrysothamnus nauseosus.*

Campoletis spp. complex

Station 2, 3, 6, 11 and 12; 24 June to 23 August; on *Elymus condensatus*, Malaise trap.

Campoletis ? spp. complex

Station 2, 9, 11 and 12; 19 June to 13 August; Malaise trap.

Dusona lapponica kukakensis ? (Ashmead)

General Area; 7 July; sweeping plant foliage.

Dusona nigritibialis (Viereck)

General Area; 7 July; sweeping foliage of *Pseudotsuga menziesii* var. *glauca.*

Dusona sp. A

Station 3 and 11; 14 July to 25 August; Malaise trap.

Dusona sp. B

Station 2; 23 July; Malaise trap.

Dusona sp. C

Station 1; 23 June; sweeping flowering of *Osmorhiza occidentalis.*

Diadegma spp.

General Area; 7 July to 13 September; sweeping *Chrysothamnus nauseosus, Chrysothamnus viscidiflorus* and *Pinus flexilis.*

Diadegma ? spp.

Station 11, 12 and General Area; 19 July to 12 September; sweeping *Chrysothamnus nauseosus*, Malaise trap.

Hyposoter sp.

Station 12; 13 August; Malaise trap.

Hyposter ? sp.

Station 11; 19 July; Malaise trap.

Olesicampe sp. n.

Station 2; 25 July; Malaise trap.

Benjaminia sp. n.

Station 1; 1 to 11 August; sweeping *Heracleum lanatum, Urtica lanatum* and *Verbascum thapsus.*

Benjaminia sp.

Station 12; 18 July; sweeping *Heracleum lanatum.*

Dimorpha prima (Cushman)

Station 3 and General Area; 27 August to 13 September; sweeping *Chrysothamnus nauseosus* and *Chrysothamnus viscidiflorus,* Malaise trap.

Pristomerus sp. n. ?

Visitor's Center; 18 June; on south-facing window.

Cremastus sp.

General Area; 29 August; on *Chrysothamnus nauseosus.*

Temelucha sp.

General Area; 24 June; sweeping *Cornus stolonifera.*

Barycnemis sp.

General Area; 12 September; on *Chrysothamnus nauseosus.*

Anomalon reticulatum ? (Cresson)

Station 11; 19 July; Malaise trap.

Anomalon sp. n. A

General Area; 12 September; sweeping *Chrysothamnus nauseosus.*

Anomalon sp. n. B

General Area; 7 July; sweeping foliage of *Salix spp.*

Trichomma maceratum (Cresson)

Station 1 and General Area; 14 to 19 June; on *Penstemon deustus* and *Pinus flexilis.*

Aphanistes sp.

Station 12; 18 July; sweeping streamside vegetation.

Barylypa ? sp.

Station 4; 14 July; sweeping *Elymus condensatus.*

Erigorgus sp.

Station 12; 18 July; sweeping streamside vegetation.

Ophion sp. A

Station 4, 12 and General Area; 12 June to 14 August; on *Chamaebatiaria millefolium,* black and white lights.

Ophion sp. B

Station 12; 28 July; black light.

Genophion costalis (Cresson)

General Area; 24 June; sweeping *Cornus stolonifera.*

Chilophion abnormalis (Felt)

Station 1 and 11; 5 to 16 July; on *Heracleum lanatum,* Malaise trap.

Enicospilus sp.

Station 4 and 11; 12 to 16 July; white light, Malaise trap.

Mesochrous sp. A

Station 9 and General Area; 19 June to 12 September; on *Pinus flexilis,* Malaise trap, white light.

Mesochrous sp. B

Station 2; 25 July; Malaise trap.

Trichionotus sp.

General Area; 6 July; on *Eriogonum ovalifolium.*

Family Eulophidae

Sympiesis stigmatipennis Girault

General Area; 29 August; on *Chrysothamnus nauseosus*.

Tetrastichus spp.

Station 2 and General Area; 22 June to 13 September; on *Artemisia tridentata, Balsamorhiza sagittata, Chamaebatiaria millefolium*, sweeping seedheads of *Elymus condensatus*, on *Pseudotsuga menziesii* var. *glauca*.

Euderus sp.

General Area; 9 August; on *Chamaebatiaria millefolium*.

Chrysocharis sp.

General Area; 28 July to 1 August; sweeping plant foliage.

Family Encyrtidae

Copidosoma bakeri (Howard)

General Area; 7 July; sweeping plant foliage.

Bothriothorax sp.

Station 1; 7 July; sweeping plant foliage.

Microterys titiani Girault

Station 2; 31 August; sweeping *Pseudotsuga menziesii* var. *glauca*.

Family Eupelmidae

Eupelmus sp.

Staiton 4; 18 June; sweeping *Elymus condensatus*.

Family Perilampidae

Perilampus chrysopae Crawford

Station 6; 10 August; sweeping mixed shrubs.

Perilampus fulvicornis fulvicornis Ashmead

General Area; 22 June to 3 July; on flowers of *Achillea lanulosa* and *Balsamorhiza sagittata*.

Perilampus hyalinus Say

Station 1, 12 and General Area; 18 July to 27 August; on *Chenopodium murale, Heracleum lanatum, Populus trichocarpa* and *Senecio serra*, Malaise trap.

Family Torymidae

Torymus aeneoscapus (Huber)

General Area; 13 September; sweeping *Chrysothamnus nauseosus*.

Torymus citripes (Huber)

Station 11 and General Area; 19 July to 12 September; sweeping *Chrysothamnus nauseosus*, Malaise trap.

Torymus spp.

General Area; 22 June to 13 September; on *Artemisia tridentata, Chamaebatiaria millefolium, Chrysothamnus nauseosus, Philadelphus lewisii* and *Pseudotsuga menziesii* var. *glauca*.

Monodontomerus bakeri Gahan

Station 9; 19 June; Malaise trap.

Monodontomerus dentipes (Dalmon)

General Area; 28 July; sweeping plant foliage.

Monodontomerus montivagus Ashmead

Station 2 and General Area; 23 June to 12 September; sweeping *Chrysothamnus nauseosus, Pinus flexilis* and *Pseudotsuga menziesii* var. *glauca*.

Monodontomerus sp.

Station 2; 28 June; on *Pseudotsuga menziesii* var. *glauca*.

Pseudotorymus lazulellus (Ashmeac

General Area; 2 August; on *Chamaebatiaria millefolium* and *Chrysothamnus viscidiflorus*.

Family Pteromalidae

Asaphes sp.

General Area; 3 to 13 September; on flowers of *Chrysothamnus nauseosus*.

Lamprotatus sp.

Station 2; 14 July; sweeping mixed shrubs.

Pachyneuron sp.

Station 2; 31 August; sweeping *Pseudotsuga menziesii* var. *glauca*.

Halticoptera spp.

Station 2, 3 and General Area; 16 June to 27 August; on *Balsamorhiza sagittata*, *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, *Philadelphus lewisii* and *Pseudotsuga menziesii* var. *glauca*, black light.

Heteroschema prima Gahan

General Area; 22 June; on *Pinus flexilis*.

Heteroschema sp.

Station 2; 13 July; sweeping *Populus tremuloides*.

Tridymus sp.

Station 3 and General Area; 5 to 18 July; sweeping *Senecio serra*, in flight.

Rhopalicus pulchripennis (Crawford)

General Area; 13 June; on foliage of *Pinus flexilis*.

Amblymerus bruchophagi (Gahan)

General Area; 11 August; on *Chrysothamnus nauseosus*.

Amblymerus verdifer (Norton)

Station 1, 4, 6 and General Area; 1 August to 13 September; sweeping *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, *Chrysothamnus viscidiflorus*, and seedheads of *Elymus condensatus*.

Platyterma spp.

Station 1, 2, 4 and 9; 18 June to 14 July; sweeping seedheads of *Elymus condensatus*, on flowers of *Osmorhiza occidentalis*, Malaise trap.

Eupteromalus sp.

General Area; 25 August; on *Chamaebatiaria millefolium*.

Catolaccus aeneoviridis (Girault)

General Area; 9 August; sweeping flowering *Chamaebatiaria millefolium*.

Catolaccus victoria Burks

General Area; 2 August; sweeping *Chrysothamnus viscidiflorus*.

Zatropis sp.

Station 2, 6 and General Area; 17 June to 12 September; sweeping *Chrysothamnus nauseosus*, *Juniperus scopulorum*, *Prunus virginiana* and *Pseudotsuga menziesii* var. *glauca*.

Caenacis sp.

General Area; 5 July to 13 September; sweeping *Chrysothamnus nauseosus*, on flowers of *Lupinus caudatus*.

Habrocytus coloradensis (Ashmead)

General Area; 25 August; on *Chamaebatiaria millefolium*.

Habrocytus medicaginis Gahan

Station 10 and General Area; 12 to 26 July; on *Achillea lanulosa* and *Chamaebatiaria millefolium*.

Habrocytus piercei Crawford

General Area; 30 August; on *Chrysothamnus nauseosus*.

Habrocytus spp.

Station 2, 3, 10, 11, 12 and General Area; 22 June to 13 September; sweeping *Artemisia tridentata, Balsamorhiza sagittata, Chamaebatiaria millefolium, Chrysothamnus nauseosus, Philadelphus lewisii, Populus trichocarpa* and *Pseudotsuga menziesii* var. *glauca.*

Hypopteromalus sp.

Station 3; 5 July; sweeping mixed shrubs.

Colotrechnus sp.

General Area; 22 June; sweeping *Balsamorhiza sagittata.*

Family Eurytomidae

Harmolita elymophaga Phillips and Emery

Station 4; 18 June; sweeping *Elymus condensatus.*

Harmolita sp.

Station 4; 18 June; sweeping *Lithospermum ruderale.*

Eurytoma juniperina Marcovitch

Station 6; 29 August; sweeping foliage of *Juniperus scopulorum.*

Eurytoma vernonia Bugbee

General Area; 22 June to 27 August; sweeping *Balsamorhiza sagittata* and *Melilotus officinalis.*

Eurytoma sp.

General Area; 29 August; sweeping *Chrysothamnus nauseosus.*

Bruchophagus sp.

Station 2; 3 July; on *Potentilla spp.*

Family Chalcididae

Phasgonophora sulcata Westwood

General Area; September; reared from dead *Pinus flexilis.*

Trigonura pini Burks

General Area; 27 August; sweeping seedheads of *Elymus condensatus.*

Brachymeria compsilurae (Crawford)

Station 2 and General Area; 13 July to 1 August; sweeping *Salix spp.*, Malaise trap.

Prachymeria tegularis (Cresson)

General Area; 3 September; on *Chrysothamnus nauseosus.*

Spilochalcis albifrons (Walsh)

General Area; 9 August; on *Chamaebatiaria millefolium.*

Spilochalcis leptis Burks

Station 1, 2, 6 and 12; 14 July to 5 September; sweeping *Chrysothamnus nauseosus, Juniperus scopulorum, Populus trichocarpa* and *Pseudotsuga menziesii* var. *glauca.*

Invreia sp.

Visitor's Center area; 5 July; sweeping *Melilotus officinalis.*

Family Leucospidae

Leucospis affinis affinis Say

Station 2; 1 August; sweeping *Salix spp.*

Family Figitidae

Paraspicera sp.

Station 3; 24 July; on *Lithospermum ruderale.*

Aegilips sp.

Station 2; 25 July; Malaise trap.

Omalaspis nigra (Hartig)

Station 11; 17 to 19 July; Malaise trap.

Family Cynipidae

Kleidotoma sp.

General Area; 18 July; on *Senecio serra.*

Charips sp.

General Area; 18 July; on *Senecio serra.*

Aspicera sp.

General Area; 22 June; on *Balsamorhiza sagittata.*

Family Aulacidae

Pristaulacus sp. n. ? or *rufitarsis* (Cresson)

General Area; 22 June; on *Pinus flexilis.*

Family Gasteruptiidae

Gasteruption sp. A

General Area; 5 September; sweeping *Chrysothamnus nauseosus.*

Gasteruption sp. B

General Area; 10 July; sweeping plant foliage.

Rhydinofoenus occidentalis (Cresson)

Station 11; 15 July; in flight.

Family Proctotrupidae

Proctotrupes sp.

Station 12 and General Area; 12 July to 13 August; black and white lights, Malaise trap.

Family Diapriidae

Diapria sp.

Station 2; 13 July; sweeping *Populus tremuloides.*

Belyta sp.

General Area; 2 July to 12 September; sweeping *Chrysothamnus nauseosus* and *Pseudotsuga menziesii* var. *glauca.*

Family Scelionidae

Sparasion pilosum Ashmead

General Area; 10 July to 1 August; in grass.

Sparasion sp.

Station 11; 17 July; Malaise trap.

Family Chrysididae

Omalus glomeratus (Buysson)

Visitor's Center area; 30 June; flying low over branch tips of *Pinus flexilis.*

Holopyga hora Aaron

Station 12; 1 August; on flowers of *Heracleum lanatum.*

Holopyga ventralis (Say)

Station 12; 1 to 29 August; on flowers of *Chrysothamnus nauseosus* and *Heracleum lanatum.*

Hedychridium spp.

Station 1 and 12; 5 July to 13 August; on flowers of *Achillea lanulosa* and *Heracleum lanatum,* Malaise trap, on soil.

Hedychrum nigropilosum Mocsary

Station 11; 16 to 17 July; on flowers of *Eriogonum umbellatum,* Malaise trap.

Hedychrum violaceum (Brulle)

Station 12; 11 August; on flowers of *Heracleum lanatum.*

Chrysura densa (Cresson)

Station 4, 6, 7, 12 and General Area; 11 June to 14 August; sweeping *Eriogonum heracleoides*, *Eriogonum umbellatum* and *Phacelia leucophylla*.

Chrysura kyrae Krombein

Station 9 and General Area; 19 to 28 June; on flowers of *Phacelia leucophylla*, on foliage of *Pinus flexilis*.

Chrysura pacifica (Say)

Station 7 and General Area; 19 to 28 June; on *Cymopterus terebinthinus*, *Pensetmon sp.* and *Pinus flexilis*.

Chrysura smaragdicolor (Walker)

General Area; 15 July; on *Chaenaetis douglasii*.

Chrysura sonorensis (Cameron)

Station 6; reared from *Osmia (Nothosmia) kincaiidi* Cockerell nesting in stick traps.

Chrysura sp. n.

General Area; 15 July; in flight.

Trichrysis doriae (Gribodo)

Station 12; 11 August; Malaise trap.

Chrysis coerulans Fabricius

Station 2, 6, 7, 11, 12 and General Area; 28 June to 16 August; on *Chamaebatiaria millefolium* and *Cirsium canescens*, on flowers of *Cymopterus terebinthinus* and *Eriogonum heracleoides*, on foliage of *Prunus virginiana*, flying low over pahoehoe lava, Malaise trap.

Chrysis coloradensis R. Bohart

Station 6, 7 and 11; 29 June to 5 July; on flowers of *Cymopterus terebinthinus* and *Eriogonum heracleoides*, resting on pahoehoe lava.

Chrysis derivata Buysson

Station 6, 7, and 12; 4 July to 11 August; on flowers of *Cymopterus terebinthinus*, flying near branch tips of *Pinus flexilis*, Malaise trap.

Chrysis dorsalis Aaron

Station 2; 25 July; Malaise trap.

Chrysis parkeri Moore

Station 6; 28 June to 4 July; flying around branch tips of *Pinus flexilis*, on foliage of *P. flexilis*.

Chrysis pattoni Aaron

Station 12; 13 August; Malaise trap.

Chrysis praestans Buysson

Station 11; 7 to 14 July; flying low over pahoehoe lava.

Chrysis rivalis R. Bohart

Station 12; 20 June to 6 July; on soil.

Chrysis serrata Taylor

General Area; 29 June; on flowers of *Phlox longifolia*.

Chrysis snowi Viereck

Station 6, 11 and 12; 29 June to 18 July; on foliage of *Prunus virginiana*, at rest on pahoehoe lava, sweeping streamside vegetation.

Chrysis sp. n.

Station 12; 19 June to 6 July; on soil.

Cleptes provancheri Aaron

Station 2, 23 July; Malaise trap.

Cleptes purpuratus Cresson

Station 2; 1 August; on foliage of *Salix spp.*

Family Bethylidae

Perisierola cellularis (Say)

Station 2 and General Area; 19 July to 4 August; sweeping *Chamaebatiaria millefolium* and *Philadelphus lewisii*.

Family Tiphiidae

Tiphia nevadana Cameron

Station 11; 16 July; Malaise trap.

Tiphia sp.

Station 11; 17 to 19 July; Malaise trap.

Paratiphia sp.

General Area; 11 August to 5 September; sweeping *Chrysothamnus nauseosus, Chrysothamnus viscidiflorus* and *Heracleum lanatum*.

Brachycistis crassa Bradley

General Area; 28 July; white light.

Brachycistis glabrella (Cresson)

Station 12; 20 June; black light.

Brachycistis semiatra Malloch

General Area; 28 July; white light.

Family Sierolomorphidae

Sierolomorpha nigrescens Evans

General Area; 15 June; sweeping *Chrysothamnus nauseosus*.

Family Mutillidae

Sphaeropthalma (Photopsis) ferruginea (Blake)

General Area; 14 July; black light.

Sphaeropthalma (Photopsioides) contracta (Blake)

Station 12; 5 July; sweeping streamside vegetation.

Sphaeropthalma (Micromutilla) difficulis (Baker)

General Area; 14 July; black light.

Odontophotopsis pudica (Melander)

Station 2 and 12; 11 July to 13 August; on *Eriogonum ovalifolium*, Malaise trap.

Dasymutilla californica (Radoszkowski)

Station 11; 19 to 21 July; Malaise trap.

Dasymutilla californica var. *clio* (Blake)

General Area; 8 August; on soil.

Dasymutilla fulvohirta (Cresson)

Station 12 and General Area; 11 to 27 August; Malaise trap, on soil.

Family Sapygidae

Sapyga aculeata Cresson

Station 4, 5, 8, 12 and General Area; 3 to 18 July; on *Achillea lanulosa* and *Phacelia leucophylla*. Specimens were reared from nests of *Hoplitis (Chlorosmia) fulgida fulgida* (Cresson) in stick traps at stations 4 and 8.

Sapyga coloradensis Cresson

Station 12; 18 July; sweeping plant foliage.

Sapyga montana Cresson

Station 12; 20 June; on soil.

Sapyga pumila Cresson

Station 6, 8 and 9; specimens were recovered from stick trap nests of *Hoplitis (Alcidamea) producta interior* Michener and *Osmia sp.*

Family Formicidae

Myrmica (Myrmica) lobicornis fracticornis Emery

General Area; 22 June to 22 August; on foliage of *Balsamorhiza sagittata*, on branches of *Pinus flexilis*, on foliage of *Cymopterus terebinthinus*.

Myrmica (Myrmica) sp.

Station 1 and 12; 27 August to 5 September; on soil, sweeping streamside vegetation.

Pogonomyrmex (Pogonomyrmex) owyheei Cole

Station 11; 31 August; on foliage of *Chrysothamnus viscidiflorus*.

Aphaenogaster (Attomyrma) subterranea valida Wheeler

Station 4 and Visitor's Center area; 17 July to 28 August; near garbage cans, in fly trap.

Solenopsis (Diplorhoptrum) molesta validuscula Emery

Station 4; 23 August; nest in roots of *Eriogonum umbellatum*.

Leptothorax (Myrafant) nevadensis eldoradensis Wheeler

Station 4 and General Area; 22 June to 13 August; on *Artemisia tridentata, Balsamorhiza sagittata, Pinus flexilis*, sweeping shrub foliage.

Leptothorax (Myrafant) rugatulus rugatulus Emery

Station 6 and General Area; 5 July to 30 August; on *Purshia tridentata*, in soil. One nest containing approximately 75 specimens was found in the roots of a dead *P. tridentata* plant imbedded in cinders at station 6.

Camponotus (Camponotus) herculeanus modoc Wheeler

Station 2, 3, 11 and 12; 20 June to 1 September; on *Balsamorhiza sagittata, Elymus condensatus, Populus tremuloides, Populus trichocarpa, Pseudotsuga menziesii* var. *glauca* and *Senecio serra*.

One nest of approximately 1,000 specimens was found in a rotting *P. m.* var. *glauca* log, 40 cm diameter, in a densely shaded habitat with a northern exposure.

Camponotus (Camponotus) laevigatus F. Smith

Station 6 and General Area, Visitor's Center area; 21 June to 11 August; on *Chrysothamnus nauseosus* and *Pinus flexilis*.

One nest of approximately 50 specimens was found in a one-year dead *P. flexilis* log, 30 cm diameter, on a bare, east-facing cinder slope.

Camponotus (Tanaemyrmex) vicinus Mayr

Station 12 and General Area; 23 June to 11 August; on *Phacelia leucophylla* and *Populus tremuloides*, Malaise trap.

Lasius (Lasius) niger (Linnaeus)

Station 6, 9 and General Area; 22 June to 17 September; on *Artemisia tridentata, Chrysothamnus nauseosus, Juniperus scopulorum, Pinus flexilis*, Berlese roots of *Cymopterus terebinthinus*, fly trap, under rocks.

Approximately 200 specimens were collected at a fly trap baited with rotten meat. This species was consistantly found in shaded, boreal habitats.

Formica (Proformica) lasioides Emery

Station 6, 11, 12 and General Area; 29 June to 29 August; on *Chrysothamnus nauseosus*, seedheads of *Elymus condensatus*, on *Heracleum lanatum, Melilotus officinalis*, and *Verbascum thapsus*, Malaise trap.

Formica (Formica) fusca Linnaeus

Station 3, 8, 10, 12 and General Area; 17 June to 17 September; on *Artemisia tridentata, Chamaebatiaria millefolium*, Berlese flowers of *Chrysothamnus nauseosus*, on *Cornus stolonifera, Cirsium canescens, Mentzelia laevicaulis, Phacelia leucophylla* and *Ribes cereum*, on dead mule deer, Malaise trap.

One nest was located in cinders under a clump of dead *A. tridentata*. Several specimens were observed attending individuals of *Microsiphum coweni* (Hunter)(Aphididae) on *A. tridentata* stems.

Formica (Formica) haemorrhoidalis Emery

General Area; 22 June to 14 August; on *Artemisia tridentata*.

Formica (Formica) hewitti Wheeler

Station 11; 9 July; small nest under 10 cm rock.

Formica (Formica) integroides c. adensis Wheeler

Station 10 and Grassy Cone; 26 June to 29 August; on *Chamaebatiaria millefolium* and *Chrysothamnus viscidiflorus*, on soil.

A large exposed nest was found on the south slope of Grassy Cone. The nest consisted of a mound of small twigs and was situated in a cleared area approximately 2 meters in diameter.

Formica (Formica) integroides planipilis Creighton

General Area; 17 June to 12 September; on *Balsamorhiza sagittata* and *Pinus flexilis*. One large nest was found in a 30 cm diameter rotting *P. flexilis* log in a heavily shaded, moist habitat.

Formica (Formica) manni Wheeler

Station 2, 3, 4, 8, 10 and General Area; 20 June to 4 September; on *Balsamorhiza sagittata, Chamaebatiaria, Chrysothamnus nauseosus, Chrysothamnus viscidiflorus, Crepis acuminatum, Cymopterus terebinthinus*, Berlese plants of *Eriogonum umbellatum*, on *Heracleum lanatum, Holodiscus discolor, Lupinus caudatus, Mentzelia laevicaulis, Melilotus officinalis, Penstemon spp., Phacelia leucophylla, Philadelphus lewisii, Purshia tridentata*, and *Senecio serra*, in cinder.

A nest was located on the margin of a shrubby area, approximately 5 cm under the surface of bare cinder soil. It contained approcimately 35 pupae and adults.

Formica (Formica) neorufibarbis neorufibarbis Emery

Station 11, 12 and General Area, Visitor's Center area; 7 March to 20 August; on *Alnus tenuifolia, Chamaebatiaria millefolium, Cornus stolonifera, Helianthus annuus, Lupinus caudatus* and *Rosa woodsi*, Malaise trap.

Formica (Formica) rasilis Wheeler

Station 2, 12 and General Area; 22 June to 10 August; on *Lupinus sp.* and *Pinus flexilis*, on soil. This specimen was found tending *Aphis lupini* Gillette and Palmer on the upper stems of *L. sp.*

Formica (Formica) rufa group

Station 7; 19 August; on *Chrysothamnus nauseosus*. Seven minor workers were collected on the upper stems of *C. nauseosus*.

Formica (Formica) subpolita camponoticeps Wheeler

Station 3, 4 and General Area; 17 August to 10 September; on *Chrysothamnus nauseosus*, Malaise trap, on dead mule deer.

Formica (Formica) spp.

Station 2, 3, 4, 12 and General Area; 22 June to 10 August; on *Balsamorhiza sagittata, Cornus stolonifera, Eriogonum ovalifolium* and *Helianthus annuus*.

A winged male was prey of a specimen of *Cyrotopogon inversus* Curran (Asilidae). Two specimens were captured in copitu (10 August) while resting on a dead *Populus tremuloides* log.

Formica (Formica) whymperi alpina Wheeler

Station 6; 30 August; under *Purshia tridentata*. One small nest containing approximately 35 specimens was located in cinders under a dead *P. tridentata* shrub.

Polyergus rufescens breviceps Emery

Station 3; 25 August; Malaise trap.

Superfamily Vespoidea

Families have been divided according to the classification proposed by Richards (1962).

Family Masaridae

Pseudomasaris edwardsii (Cresson)

Station 1, 2, 4, 6, 10, 11, 12 and General Area; 28 June to 12 August; sweeping seedheads of *Elymus condensatus*, on flowers of *Eriogonum ovalifolium* and *Phacelia leucophylla*, Malaise trap, in flight, on soil.

Pseudomasaris vespoides (Cresson)

Station 11, 12 and General Area; 3 to 28 July; on flowers of *Penstemon sp.* and *Phacelia leucophylla*.

Pseudomasaris zonalis (Cresson)

Station 6, 7, 10, 11, 12 and General Area; 21 June to 17 July; on flowers of *Eriogonum ovalifolium, Lupinus caudatus* and *Phacelia leucophylla*, sweeping *Pinus flexilis* and *Purshia tridentata*, in flight.

Family Eumenidae

Eumenes crucifera crucifera Provancher

Station 12; 1 to 22 August; on flowers of *Heracleum lanatum* and *Senecio serra*.

Eumenes iturbide pedalis Fox

Station 1; 11 August; sweeping *Heracleum lanatum*.

Eumenes verticalis coloradensis Cresson

Station 2, 12 and General Area; 28 June to 22 August; sweeping *Chamaebatiaria millefolium* and *Senecio serra*, Malaise trap.

Euodynerus auranus (Cameron)

Station 11 and General Area; 18 July to 9 August; on flowers of *Chamaebatiaria millefolium* and *Eriogonum umbellatum*.

Euodynerus discogaster (Bequaert)

Station 11 and 12; 20 June to 5 July; on *Eriogonum ovalifolium*, sweeping meadow grasses.

Euodynerus exoglyphus albovittatus (R. Bohart)

Station 10 and General Area; 5 to 8 July; in flight.

Euodynerus foraminatus foraminatus (Saussure)

Station 1 and 12; 19 June to 13 August; Malaise trap.

Euodynerus leucomelas (Saussure)

Station 7, 8, 11 and General Area; 11 June to 14 July; on flowers of *Eriogonum ovalifolium*, *Eriogonum umbellatum*, *Lupinus sp.* and *Penstemon deustus*.

Euodynerus tempiferus eldoradensis (Rohwer)

General Area; 19 June; sweeping *Cornus stolonifera*.

Ancistrocerus adiabatus (Saussure)

Station 6; 24 August; sweeping *Chrysothamnus nauseosus*.

Ancistrocerus antilope antilope (Panzer)

General Area; 27 June; sweeping *Cornus stolonifera*.

Ancistrocerus catskill albophaleratus (Saussure)

Station 2, 7, 11, 12 and General Area; 20 June to 27 August; on *Achillea lanulosa*, *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, *Chrysothamnus viscidiflorus*, *Cirsium canescens*, *Eriogonum ovalifolium*, *Heracleum lanatum*, *Rosa woodsi*, *Salix spp.*, *Senecio serra* and *Xanthium strumarium*.

Ancistrocerus catskill catskill (Saussure)

Station 1, 2, 4, 9, 12 and General Area; 19 June to 14 September; on *Chrysothamnus nauseosus*, *Cirsium canescens*, *Cornus stolonifera*, *Eriogonum ovalifolium*, *Heracleum lanatum*, *Pinus flexilis*, *Populus trichocarpa*, *Rosa woodsi* and *Senecio serra*.

A copulating pair was taken in flight on 14 July at station 2. One male was collected with a male puparium of a strepsipteran, *Pseudoxenos sp.* in its abdomen.

Ancistrocerus lineativentris lineativentris Cameron

Station 2, 4, 6, 12 and General Area; 8 to 24 August; sweeping *Chrysothamnus nauseosus* and *Heracleum lanatum*, Malaise trap.

Ancistrocerus spilogaster Cameron

Station 12 and General Area; 30 June to 14 August; on *Senecio serra* and *Xanthium strumarium*, in flight.

Symmorphus cristatus cristatus (Saussure)

Station 12; 1 to 11 August; on flowers of *Heracleum lanatum*.

Stenodynerus blandoides R. Bohart

Station 12 and General Area; 28 July; on *Penstemon sp.*, in stick trap.

Stenodynerus cochisensis (Viereck)

Station 2; 25 July; Malaise trap.

Stenodynerus kennicottianus kennicottianus (Saussure)

Station 12; 13 August; Malaise trap.

Parancistrocerus acarigaster R. Bohart

General Area; 18 June; on foliage of *Pinus flexilis*.

Parancistrocerus vagus vagus (S sure)

Station 12; 11 August; sweeping *Heracleum lanatum* flowers.

Parancistrocerus sp.

Station 7, 11 and General Area; 27 June to 11 September; sweeping *Chamaebatiaria millefolium*, on flowers of *Eriogonum ovalifolium* and *Eriogonum umbellatum*, Malaise trap.

Maricopodynerus rudiceps R. Bohart

Station 4, 7, 8, 11 and General Area; 8 July to 21 August; sweeping *Chrysothamnus nauseosus* and *Eriogonum umbellatum*.

Pterocheilus (Megapterocheilus) decorus leucotaenius Rohwer

General Area; 12 July; in flight.

Family Vespidae

Vespula (Vespula) atropilosa (Sladen)

General Area; 8 August; on soil.

Vespula (Vespula) pensylvanica (Saussure)

Station 12 and General Area; 19 June to 27 August; sweeping *Populus trichocarpa*, Malaise trap.

Vespula (Dolicovespula) arenaria (Fabricius)

Station 2, 12 and General Area; 23 June to 27 August; sweeping *Populus tremuloides*, Malaise trap.

Vespula (Dolichovespula) arctica Rohwer

Station 12; 27 August; sweeping *Populus trichocarpa*.

Vespula (Dolichovespula) maculata (Linnaeus)

Station 12; 30 June to 27 August; sweeping *Populus trichocarpa*, in flight.

Polistes fuscatus aurifer Saussure

Station 4, 7, 12 and General Area; 11 June to 4 September; on *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, *Cymopterus terebinthinus*, *Eriogonum spp.*, *Pinus flexilis*, *Rosa woodsi* and *Trifolium repens*, Malaise trap, flying low over pahoehoe lava, under *P. flexilis* bark.

Family Pompilidae

Chirodamus pyrrhomelas (Walker)

Station 12 and General Area; 18 July to 27 August; sweeping *Populus trichocarpa* and *Rosa woodsi*.

Priocnemis (Myrmecosalius) notha occidentis Banks

Station 12; 13 August; Malaise trap.

Auplopus architectus metallicus Banks

Station 12; 11 to 13 August; Malaise trap.

Ageniella (Ageniella) blaisdelli (Fox)

Station 12; 13 August; Malaise trap.

Ageniella (Ageniella) euphorbiae (Viereck)

Station 3 and 11; 16 July to 24 August; Malaise trap.

Ceropales maculata stretchii Fox

Station 11; 15 July; on meadow grasses.

Aporus (Aporus) luxus luxus (Banks)

General Area; 13 August; Malaise trap.

Evagetes padrinus padrinus (Viereck)

General Area; 19 August to 4 September; on rocks.

Evagetes subangulatus (Banks)

Station 1, 12 and General Area; 5 July to 11 August; sweeping *Heracleum lanatum*, Malaise trap.

Episyron biguttatus californicus Banks

Station 1, 2, and 12; 27 June to 18 August; on flowers of *Cirsium canescens*, and *Heracleum lanatum*, Malaise trap.

Episyron oregon Evans

Station 2 and 9; 22 June to 25 July; Malaise trap.

Episyron quinquenotatus hurdi Evans

General Area; 5 July to 13 August; on flowers of *Achillea lanulosa* and *Heracleum lanatum*, Malaise trap.

Tachypompilus unicolor unicolor (Banks)

Station 12 and General Area; 1 to 5 August; sweeping *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, and *Heracleum lanatum*, on ground.

Anoplius (Arachnophroctonus) relativus (Fox)

Visitor's Center area; 29 July; on flowers of *Trifolium repens*.

Anoplius (Pompilinus) insolens (Banks)

Station 11; 16 July; Malaise trap.

Anoplius (Pompilinus) tenebrosus (Cresson)

Station 2, 11 and 12; 27 June to 13 August; on *Eriogonum ovalifolium*, Malaise trap.

Anoplius (Anoplius) dreisbachi Evans

Station 3; 24 August; Malaise trap.

Pompilus (Ammoxphex) angularis (Banks)

Station 9; 23 June; Malaise trap.

Pompilus (Ammosphex) imbecillus imbecillus (Banks)

Station 2; 25 July; Malaise trap.

Pompilus (Arachnospila) arctus (Cresson)

Station 2, 8, 11, 12 and General Area; 20 June to 28 August; Malaise trap, on soil. One male was prey of the spider *Misumena vatia* (Clerck)(Thomisidae) on flowers of *Senecio serra*.

Pompilus (Arachnospila) scelestus Cresson

Station 2, 11 and 12; 5 July to 11 August; on *Heracleum lanatum*, Malaise trap.

Aporinellus completus Banks

Station 12; 11 August; Malaise trap.

Aporinellus fasciatus (Smith)

Station 2; 25 July; Malaise trap.

Family Sphecidae

Astata bechteli Parker

Station 8 and 11; 16 July; Malaise trap.

Astata leuthstromi Ashmead

Station 6 and 12; 18 July to 24 August; on *Chrysothamnus nauseosus*, on soil.

Astata nubecula Cresson

Station 1 and 12; 18 July to 8 August; sweeping *Heracleum lanatum*.

Astata occidentalis Cresson

Station 12; 11 August; Malaise trap.

Dryudella aspera (Fox)

Station 12 and General Area; 18 July to 11 September; on *Achillea lanulosa* and *Chrysothamnus nauseosus*, Malaise trap.

Dryudella caerulea (Cresson)

Station 11 and 12; 15 to 18 July; on *Eriogonum umbellatum*, sweeping streamside vegetation.

Dryudella montana (Cresson)

Station 12; 18 July; sweeping streamside vegetation.

Solierella sp.

Station 1 and 12; 1 to 11 August; Malaise trap, on soil.

Tachytes (Tachytes) fulviventris fulviventris Cresson

General Area; 2 August; sweeping *Chrysothamnus viscidiflorus.*

Tachytes (Tachytes) nevadensis R. Bohart

Station 4, 12 and General Area; 1 to 25 August; on flowers of *Chamaebatiaria millefolium, Chrysothamnus nauseosus, Chrysothamnus viscidiflorus, Heracleum lanatum* and *Trifolium repens,* on soil.

Tachytes (Tachytes) sayi Banks

General Area; 25 August; on *Chamaebatiaria millefolium.*

Tachytes (Tachytes) spatulatus Fox

Station 1 and 12; 1 to 22 August; on flowers of *Heracleum lanatum* and *Senecio serra.*

Larropsis capax (Fox)

Station 12 and General Area; 13 August to 8 September; Malaise trap, on pahoehoe lava.

Tachysphex aequalis Fox

Station 12; 11 August; Malaise trap.

Tachysphex aethiops Cresson

Station 4 and 12; 9 July to 1 August; in flight.

Tachysphex montanus (Cresson)

Station 3 and 12; 11 to 23 August; Malaise trap.

Tachysphex tarsatus (Say)

Station 2, 3, 11 and 12; 16 July to 27 August; Malaise trap.

Tachysphex terminatus (Smith)

Station 2, 9 and 12; 22 June to 13 August; Malaise trap.

Tachysphex sp.

Station 1; 1 August; on flowers of *Heracleum lanatum.*

Trypoxylon (Trypoxylon) pennsylvanicum Saussure

Station 1; 1 August; on soil.

Trypoxylon (Trypoxylon) sculleni Sandhouse

General Area; 7 July; sweeping plant foliage.

Trypoxylon sp.

Station 7; summer; in stick trap.

Mimesa gregaria (Fox)

General Area; 25 August; on *Chamaebatiaria millefolium.*

Mimesa sp.

Station 12; 13 August; Malaise trap.

Mimumesa mixta (Fox)

Station 2; 23 to 26 July; Malaise trap.

Xylocelia sp.

Station 12; 27 August; sweeping *Populus trichocarpa.*

Passaloecus cuspidatus Smith

Station 11; 12 July; Malaise trap.

Spilomena sp.

Station 10; 9 August; sweeping *Chamaebatiaria millefolium.*

Sceliphron caementarium Drury

Station 2, 4 and 12; 21 July to 27 August; sweeping *Populus trichocarpa,* on soil.

Sphex ichneumoneus (Linnaeus)

Station 12 and General Area; 2 to 14 August; on flowers of *Chrysothamnus viscidiflorus*, *Senecio serra* and *Xanthium strumarium*.

Fernaldina lucae (Saussure)

Station 6; 16 July; on flowers of *Eriogonum umbellatum*.

Palmodes hesperus R. Bohart and Menke

Station 2, 3, 12 and General Area; 1 July to 13 August; on *Senecio serra*, Malaise trap.

Prionyx atratus (Lepeletier)

General Area; 26 July to 23 August; on flowers of *Achillea lanulosa*, *Chrysothamnus nauseosus* and *Trifolium repens*.

Prionyx canadensis (Provancher)

Station 2, 3, 4, 12 and General Area; 28 June to 24 August; on flowers of *Achillea lanulosa*, *Chrysothamnus nauseosus*, *Chrysothamnus viscidiflorus*, *Senecio serra* and *Trifolium repens*, black light, Malaise trap.

Podalonia communis (Cresson)

Station 6, 12 and General Area; 20 June to 24 August; on *Chrysothamnus nauseosus*, and *Trifolium repens*, Malaise trap.

Podalonia luctuosa (Smith)

Station 6, 11, 12 and General Area; 20 June to 25 August; on *Achillea lanulosa*, *Chamaebatiaria millefolium*, *Eriogonum ovalifolium*, *Senecio serra* and *Trifolium repens*, Malaise trap.

Podalonia mexicana (Saussure)

Station 12 and General Area; 29 July to 25 August; on flowers of *Chamaebatiaria millefolium*, *Senecio serra* and *Trifolium repens*.

Podalonia occidentalis Murray

Station 3, 7, 11, 12 and General Area; 11 June to 21 August; on *Achillea lanulosa*, *Aster canascens*, *Chrysothamnus nauseosus*, *Eriogonum ovalifolium*, *Pinus flexilis*, *Prunus virginiana* and *Trifolium repens*, Malaise trap.

Podalonia sericea Murray

Station 2 and 12; 5 July to 11 August; on *Phacelia leucophylla*, Malaise trap.

Ammophila azteca Cameron

Station 2, 11, 12 and General Area; 15 July to 11 August; on *Artemisia tridentata*, *Chrysothamnus viscidiflorus*, *Eriogonum spp.*, and *Eriogonum umbellatum*, Malaise trap.

Ammophila dysmica Menke

Station 2 and 11; 28 June to 23 July; on *Eriogonum ovalifolium*, Malaise trap.

Ammophila extremitata ? Cresson

Station 2 and General Area; 13 July to 10 August; on *Chrysothamnus viscidiflorus*, Malaise trap.

Ammophila juncea Cresson

Station 4 and General Area; 10 to 17 August; on flowers of *Chrysothamnus nauseosus* and *Chrysothamnus viscidiflorus*.

Ammophila kennedyi (Murray)

Station 12; 21 June to 13 August; on *Aster canascens* and *Senecio serra*, Malaise trap.

Ammophila macra Cresson

Station 1, 2, 11, 12 and General Area; 14 July to 5 September; on *Chrysothamnus nauseosus*, *Eriogonum umbellatum*, *Heracleum lanatum*, *Senecio serra* and *Xanthium strumarium*, Malaise trap.

Ammophila mediata Cresson

Station 3 and 12; 14 July to 19 August; Malaise trap, on cinders. An 18 mm. female was observed dragging a 22 mm paralyzed Noctuidae larva between her legs over the cinder surface at station 2.

Ammophila parkeri Menke

Station 12; 20 June; on soil.

Ammophila procera Dahlbom

Station 12 and General Area; 5 July to 13 August; on flowers of *Senecio serra* and *Trifolium repens*, Malaise trap.

Ammophila stangei Menke

Station 4 and 11; 3 to 5 July; on flowers of *Eriogonum umbellatum* and *Mimulus nanus*.

Ammophila strenua Cresson

Station 2 and 12; 23 July to 13 August; Malaise trap.

Zanysson texanus (Cresson)

General Area; 2 August; on flowers of *Chrysothamnus viscidiflorus*.

Dienoplus pictifrons Fox

Station 9; 23 June; Malaise trap.

Arigorytes smohalla Pate

Station 11; 14 July; in flight.

Lestiphorus piceus (Handlirsch)

Station 2, 3, and 11; 17 July to 25 August; Malaise trap.

Psammaecius (Hoplisoides) gulielmi (Viereck)

Station 12; 1 August; sweeping flowers of *Heracleum lanatum*.

Gorytes (Gorytes) albosignatus Fox

Station 2, 9, 11, 12 and General Area; 17 July to 11 August; sweeping flowers of *Cornus stolonifera* and *Heracleum lanatum*, Malaise trap.

Gorytes (Gorytes) angustus (Provancher)

Station 11 and 12; 11 July to 1 August; on flowers of *Heracleum lanatum*, Malaise trap.

Gorytes (Gorytes) provancheri Handlirsch

Station 11 and 12; 9 July to 27 August; sweeping *Populus trichocarpa*, Malaise trap.

Gorytes (Gorytes) simillimus Smith

Station 12; 13 August; Malaise trap.

Stizoides unicinctus (Say)

General Area; 1 to 11 August; on flowers of *Heracleum lanatum* and *Trifolium repens*.

Steniolla obliqua (Cresson)

Station 2, 6, 12 and General Area; 15 July to 27 August; on *Chaenaetis douglasii*, *Chrysothamnus nauseosus* and *Pinus flexilis*, Malaise trap.

Stictiella emarginata (Cresson)

Station 11 and 12; 12 July to 11 August; on *Chaenactis douglasii*, Malaise trap.

Stictiella megacera Parker

General Area; 25 August; on *Chamaebatiaria millefolium*.

Bembix amoena Handlirsch

Station 2, 4, 8, 12 and General Area; 16 July to 21 August; on *Chrysothamnus nauseosus* and *Trifolium repens*, Malaise trap.

Bembix spinolae Lepeletier

General Area; 29 July to 21 August; on flowers of *Chrysothamnus nauseosus* and *Trifolium repens*, on soil.

Philanthus anna Dunning

General Area; 15 July; on *Eriogonum spp.*

Philanthus crabronifromis F. Smith

General Area; 12 July to 22 August; on flowers of *Achillea lanulosa*, *Senecio serra* and *Xanthium strumarium*.

Philanthus politus pacificus Cresso

Station 11 and General Area; 18 June to 9 July; on flowers of *Eriogonum ovalifolium* var. *depressum* and *Eriogonum ovalifolium*.

Philanthus politus group

General Area; 28 June to 15 July; on flowers of *Eriogonum spp.* and *Eriogonum ovalifolium*.

Aphilanthops (Aphilanthops) subfrigidus Dunning

Station 11, 12 and General Area; 9 July to 13 August; on *Eriogonum spp.*, Malaise trap.

Cerceris californica californica Cresson

General Area; 28 July to 25 August; on *Chamaebatiaria millefolium*.

Cerceris convergens Viereck and Cockerell

General Area; 2 to 8 August; sweeping *Chamaebatiaria millefolium* and *Chrysothamnus nauseosus*.

Cerceris nigrescens nigrescens F. Smith

Station 12 and General Area; 13 July to 11 August; on *Achillea lanulosa* and *Senecio serra*.

Eucerceris flavocincta Cresson

Station 11; 14 to 15 July; on *Eriogonum spp.*, on soil. One female was observed entering her nest in the soil carrying an adult of the weevil *Acmaegenius granicollis* Van Dyke. She carried the weevil between her prothoracic and mesothoracic legs.

Crabro (Crabro) latipes Smith

Station 2, 9, 12 and General Area; 19 June to 11 September; on *Cornus stolonifera, Pinus flexilis,* and *Rosa woodsi,* Malaise trap.

Crossocerus spp.

Station 2, 12 and General Area; 27 June to 1 September; on *Chrysothamnus nauseosus, Cornus stolonifera, Pinus flexilis* and *Populus tremuloides*.

Stictoptila confertus (Fox)

Station 12 and General Area; 20 June to 13 August; Malaise trap, on soil.

Ectemnius (Protothyreopus) dilectus dilectus (Cresson)

Station 7, 12 and General Area; 18 June to 14 August; on *Heracleum lanatum, Potentilla spp., Salix spp.*, and *Senecio serra*.

Ectemnius (Hypocrabro) arcuatus (Say)

General Area; 18 July; on *Achillea lanulosa*.

Ectemnius (Hypocrabro) spiniferus (Fox)

Station 12 and General Area; 1 August to 6 September; on *Chamaebatiaria millefolium, Chrysothamnus nauseosus, Helianthus annuus,* and *Heracleum lanatum,* Malaise trap.

Ectemnius (Hypocrabro) trifasciatus (Say)

Station 1 and 11; 5 July; sweeping *Heracleum lanatum*.

Ectemnius (Ectemnius) atriceps (Cresson)

Station 11; 5 July; sweeping plant foliage.

Ectemnius (Ectemnius) dives (Lepeletier and Brulle)

Station 11; 5 July; sweeping plant foliage.

Lestica (Solenius) interrupta interrupta (Lepeletier and Brulle)

Station 11 and 12; 5 July to 1 August; sweeping *Heracleum lanatum*.

Belomicrus forbesii forbesii (Robertson)

General Area; 5 July; sweeping flowering *Melilotus officinalis*.

Oxybelus argenteopilosum Cameron

Station 11 and General Area; 7 July to 25 August; on *Chamaebatiaria millefolium* and *Senecio serra,* Malaise trap.

Oxybelus emarginatus Say

Station 2, 9, 11 and General Area; 22 June to 10 August; on flowers of *Achillea lanulosa, Chrysothamnus viscidiflorus* and *Eriogonum spp.*, Malaise trap.

Oxybelus quadrinotatus Say

Station 12 and General Area; 4 to 11 August; on flowers of *Heracleum lanatum*, black light.

Oxybelus similis Cresson

General Area; 28 June; on flowers of *Eriogonum ovalifolium*.

Family Colletidae

Colletes consors pascoensis Cockerell

Station 1, 4, 11, 12 and General Area; 19 June to 14 July; on flowers of *Eriogonum umbellatum* and *Phacelia leucophylla*, in flight, on soil.

Colletes fulgidus fulgidus Swenk

Station 1, 2, 4, 11, 12 and General Area; 29 June to 6 September; sweeping *Chamaebatiaria millefolium* and *Chrysothamnus nauseosus*, on flowers of *Eriogonum ovalifolium* and *Heracleum lanatum*, sweeping *Senecio serra*, Malaise trap.

Colletes kincaidii Cockerell

Station 10, 12 and General Area; 26 July to 25 August; on *Chamaebatiaria millefolium*, on soil.

Colletes lutzi interior Timberlake

Station 6 and 7; 2 to 6 July; on flowers of *Lupinus caudatus* and *Penstemon cyaneus*, flying low over pahoehoe lava.

Colletes phaceliae Cockerell

General Area; 29 June to 13 September; sweeping *Chrysothamnus nauseosus*.

Hylaeus (Hylaeus) ellipticus (Kirby)

Station 12; 20 June; on soil.

Hylaeus (Hylaeus) rudbeckiae (Cockerell and Casad)

Station 2, 8, 11 and General Area; 7 July to 6 September; on *Artemisia tridentata*, *Chrysothamnus nauseosus*, *Eriogonum umbellatum*, *Heracleum lanatum* and *Senecio serra*.

Hylaeus (Hylaeus) verticalis (Cresson)

General Area; 3 July; on *Phacelia leucophylla*.

Hylaeus (Paraprosopis) coloradensis (Cockerell)

Station 12; 1 to 14 August; on flowers of *Heracleum lanatum* and *Senecio serra*.

Hylaeus (Paraprosopis) wootoni (Cockerell)

General Area; 15 July; on *Eriogonum spp*.

Hylaeus (Paraprosopis) lunicraterius Snelling

Station 2, 4, 6, 11 and General Area; 3 July to 5 September; on *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, *Eriogonum ovalifolium*, *Phacelia leucophylla*, *Populus tremuloides* and *Senecio serra*.

One male was found stylopized by an unidentified strepsipteran. Specimens were observed as prey of *Phymata pennsylvanica* Handlirsch (Phymatidae) on flowers of *C. nauseosus*.

Hylaeus (Prosopis) rugulosus episcopalis (Cockerell)

Station 11 and General Area; 5 July to 25 August; on flowers of *Chamaebatiaria millefolium* and *Eriogonum umbellatum*, Malaise trap.

Hylaeus sp.

Station 2, 4, and 10; summer; in stick traps. A specimen of *Anthrax irroratus* Say (Bombyliidae) was found in a nest of this bee.

Family Andrenidae

Andrena (Andrena) edwiniae Cockerell

Station 12; 5 July; in flight.

Andrena (Cnemidandrena) colletina Cockerell

General Area; 17 August to 5 September; on flowers of *Chrysothamnus nauseosus*.

Andrena (Cnemidandrena) surda Cockerell

General Area; 11 August to 6 September; on flowers of *Chrysothamnus nauseosus* and *Senecio serra*.

Andrena (Cryptandrena) transnigra Viereck

Station 12 and General Area; 20 June to 18 July; on *Penstemon spp.*, *Prunus virginiana* and *Senecio serra*. One female was prey of the spider *Misumena vatia* (Clerck)(Thomisidae) on flowers of *S. serra*.

Andrena (Elandrena) chapmanae Viereck

Station 7, 8 and General Area; 18 to 29 June; on flowers of *Eriogonum ovalifolium* var. *depressum* and *Phacelia leucophylla*.

Andrena (Gymnandrena) carliniformis Viereck

Station 11; 29 June; on flowers of *Phacelia leucophylla*.

Andrena (Opandrena) cressoni Robertson

General Area; 15 July; on *Eriogonum spp.*

Andrena (Plastandrena) prunorum Cockerell

General Area; 28 June to 25 August; on *Chamaebatiaria millefolium*, *Eriogonum spp.*, and *Eriogonum ovalifolium*, in flight.

Andrena (Thysandrena) knuthiana Cockerell

General Area; 15 July; on *Eriogonum spp.*

Andrena (Thysandrena) w-scripta Viereck

General Area; 24 June; sweeping *Cornus stolonifera*.

Andrena (Trachandrena) cleodora (Viereck)

General Area; 28 June; sweeping plant foliage.

Andrena (Trachandrena) sp.

General Area; 7 July; in flight.

Perdita aemula Timberlake

General Area; 11 August to 12 September; on *Chrysothamnus nauseosus*.

Perdita wyomingensis segona Timberlake

General Area; 15 July; on *Eriogonum spp.*

Nomadopsis scutellaris scutellaris (Fowler)

Station 2; 26 July; Malaise trap.

Family Halictidae

Halictus (Halictus) farinosus Smith

General Area; 25 August; on *Chamaebatiaria millefolium*.

Halictus (Halictus) rubicundus (Christ)

Station 3, 11, 12 and General Area; 26 June to 22 August; on *Balsamorhiza sagittata*, *Eriogonum umbellatum* and *Senecio serra*.

Halictus (Seladonia) tripartitus Cockerell

Station 1, 11 and 12; 20 June to 27 August; on *Chamaebatiaria millefolium*, *Chrysothamnus viscidiflorus*, *Cirsium canescens*, *Eriogonum spp.*, *Rudbeckia occidentalis*, *Senecio serra* and *Xanthium strumarium*, Malaise trap.

Lasioglossum (Lasioglossum) sisymbrii (Cockerell)

Station 4, 11, 12 and General Area; 27 June to 12 September; on flowers of *Chrysothamnus nauseosus*, *Eriogonum ovalifolium*, *Heracleum lanatum*, *Senecio serra* and *Xanthium strumarium*.

Lasioglossum (Lasioglossum) trizonatum (Cresson)

General Area; 3 July to 1 September; on flowers of *Chrysothamnus nauseosus*, *Cirsium canescens* and *Mentzelia laevicaulis*.

Lasioglossum (Evylaeus) cooleyi (Crawford)

Station 12 and General Area; 2 to 25 August; on flowers of *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, *Chrysothamnus viscidiflorus*, *Senecio serra* and *Xanthium strumarium*.

Lasioglossum (Evylaeus) ruficorne (Crawford)

Station 2, 13 and General Area; 18 July to 30 August; on *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, *Chrysothamnus viscidiflorus*, *Heracleum lanatum* and *Senecio serra*, Malaise trap.

Lasioglossum (Evylaeus) sp.

Station 12 and General Area; 11 to 14 August; on *Aster canascens, Chrysothamnus viscidiflorus,* and *Senecio serra,* Malaise trap.

Dialictus actinosus (Sandhouse)

General Area; 24 June to 12 September; on *Chamaebatiaria millefolium, Chrysothamnus nauseosus* and *Cornus stolonifera.*

Dialictus albohirtus (Crawford)

General Area; 15 July to 12 September; on *Chrysothamnus nauseosus* and *Eriogonum spp.*

Dialictus incompletus (Crawford)

General Area; 12 September; on flowers of *Chrysothamnus nauseosus.*

Dialictus pruinosus (Robertson)

General Area; 2 August; on flowers of *Chrysothamnus viscidiflorus.*

Dialictus ruidosenis (Cockerell)

Station 3, General Area; 11 July to 25 August; on flowers of *Aster canescens, Chrysothamnus viscidiflorus, Crepis acuminata* and *Senecio serra,* Malaise trap.

Dialictus sp. 5

General Area; 11 July; in flight.

Dialictus sp. 6

General Area; 1 August; sweeping miscellaneous vegetation.

Dialictus sp. 7

General Area; 14 to 16 August; on flowers of *Senecio serra.*

Dialictus sp. 8

General Area; 7 July; sweeping miscellaneous vegetation.

Dialictus sp. 9

General Area; 21 August; on flowers of *Chrysothamnus nauseosus.*

Dialictus sp. 10

General Area; 4 August; at black light.

Dialictus sp. 11

Station 2 and 12; 23 July to 13 August; Malaise trap.

Dialictus sp. 12

General Area; 12 to 24 August; on flowers of *Aster canescens, Cirsium sp.,* and *Senecio serra,* sweeping miscellaneous vegetation.

Sphecodes arvensiformis Cockerell

Station 1 and 12; 1 to 22 August; on flowers of *Heracleum lanatum* and *Senecio serra.*

Sphecodes sp. 1

General Area; 14 to 22 August; on flowers of *Senecio serra.*

Sphecodes sp. 2

General Area; 11 August; on flowers of *Heracleum lanatum.*

Sphecodes sp. 3

Station 12; 27 August; on *Populus trichocarpa.*

Agapostemon cockerelli Crawford

Station 11 and General Area; 27 June to 12 September; on flowers of *Chrysothamnus nauseosus* and *Potentilla spp.*

Agapostemon texanus texanus Cresson

Station 3, 11, 12 and General Area; 13 June to 12 September; on flowers of *Balsamorhiza sagittata, Chamaebatiaria millefolium, Chrysothamnus nauseosus, Cirsium canescens, Cornus stolonifera, Opuntia rhodantha, Phacelia leucophylla, Potentilla spp.,* and *Wyethia amplexicaulis,* Malaise trap.

Dufourea (Halictoides) trochantera Bohart

Station 2, 10, 12 and General Area; 13 June to 8 July; on flowers of *Cirsium canescens* and *Phacelia leucophylla*.

Dufourea (Halictoides) versatilis versatilis (Bridwell)

Station 2; 14 July; sweeping mixed shrubs.

Family Megachilidae

Lithurge (Lithurgopsis) apicaulis apicaulis (Cresson)

General Area; 12 July; on flowers of *Phacelia leucophylla*.

Anthidium (Anthidium) emarginatum (Say)

Station 1, 6, 7, 11, 12 and General Area; 18 June to 18 July; on flowers of *Eriogonum ovalifolium*, *Eriogonum umbellatum*, *Heracleum lanatum* and *Phacelia leucophylla*, Malaise trap.

Anthidium (Anthidium) placitum placitum Cresson

Station 2, 7, and 11; 8 to 16 July; on flowers of *Eriogonum umbellatum*.

Anthidium (Anthidium) tenuiflorae tenuiflorae Cockerell

Station 2, 4, 6, 7, 8, 9, and 11; 19 June to 24 August; on *Eriogonum umbellatum* and *Lupinus sp.*, Malaise trap, on pahoehoe lava.

Anthidium (Anthidium) utahense Swenk

Station 11; 15 July; in flight.

Callanthidium formosum (Cresson)

Station 11; 12 to 17 July; on flowers of *Lupinus caudatus* and *Phacelia leucophylla*, Malaise trap.

Dianthidium subparvum subparvum Swenk

Station 4; 17 August; on flowers of *Chrysothamnus nauseosus*.

Dianthidium ulkei perterritum Cockerell

Station 6; 24 July; on *Chrysothamnus nauseosus*.

Dianthidium ulkei ulkei (Cresson)

Station 4; 17 August; on flowers of *Chrysothamnus nauseosus*.

Anthidiellum notatum robertsoni (Cockerell)

Station 6 and General Area; 25 August to 4 September; on *Aster canescens*, *Chamaebatiaria millefolium* and *Chrysothamnus nauseosus*.

Stelis (Pavostelis) montana Cresson

Station 2, 4, and 11; 14 July to 17 August; on *Artemisia tridentata*, *Chamaebatiaria millefolium* and *Chrysothamnus nauseosus*.

Stelis (Chelynia) subcaerulea (Cresson)

Station 1; 1 August; on soil.

Stelis (Chelynia) subemarginata (Cresson)

Station 11; 5 to 9 July; on *Eriogonum umbellatum*.

Stelis spp.

Unidentified immature specimens belonging to this genus were found in stick trap nests of the following Megachilid bees: *Hoplitis (Chlorosmia) fulgida fulgida* (Cresson) at station 3, 9 and 10; *Hoplitis (Cyrtosmia) hypocrita* (Cockerell) at station 3, 4 and 5; *Hoplitis (Alcidamea) producta interior* Michener at station 1, 6 and 9; *Osmia (Nothosmia) kincaidii* Cockerell at station 3 and 10.

Dioxys aurifuscus (Titus)

Station 7 and General Area; 3 to 13 July; on soil.

Dioxys pomonae pomonae Cockerell

General Area; 3 July; on flowers of *Phacelia leucophylla*.

Chelostoma phaceliae Michener

Station 2 and General Area; 7 July to 25 August; on flowers of *Chamaebatiaria millefolium*, in flight.

Ashmeadiella (Ashmeadiella) bucconis denticulata (Cresson)

General Area; 21 August; on flowers of *Chrysothamnus nauseosus*.

Ashmeadiella (Ashmeadiella) cali ica californica (Ashmead)

General Area; 28 June to 12 September; on flowers of *Chrysothamnus nauseosus* and *Penstemon sp.*

Ashmeadiella (Arogochila) timberlakei timberlakei Michener

General Area; 28 July; on flowers of *Achillea lanulosa.*

Ashmeadiella sp. n.

General Area; 28 June to 3 July; on flowers of *Penstemon deustus, Penstemon sp., Phacelia leucophylla* and *Rosa woodsi.*

Hoplitis (Alcidamea) producta interior Michener

Station 2, 6, 9 and 10; summer; in stick traps. Several immature specimens of parasitoides were found in nests of this subspecies. These were *Stelis sp.* (Megachilidae) at station 2, 6, 9 and 10 and *Sapyga pumila* Cresson (Sapygidae) and *Anthrax irroratus* Say (Bombyliidae) at station 9.

Hoplitis (Alcidamea) sambuci Titus

Station 1, 2, 3, 6, 11 and General Area; 12 July; in flight, in stick traps. Immature specimens of parasitoides collected from nests of *H. sambuci* were *Stelis sp.* (Megachilidae) at station 2 and an unidentified species of Meloidae at station 1, 2 and 6.

Hoplitis (Cyrtosmia) hypocrita (Cockerell)

Station 2, 3, 4, 5, 8, 11, 12 and General Area; 25 June to 14 July; on flowers of *Cirsium canescens* and *Phacelia leucophylla,* Malaise trap, in stick traps, reared from hollow stems of *Salsola kali* var. *tenuifolia.*

Immature specimens of the following parasitoids were recovered from nests of *H. hypocrita: Stelis sp.* (Megachilidae) at station 3, 4 and 5, *Sapyga aculeata* Cresson (Sapygidae) at station 4, 5 and 8, an unidentified Ichneumonidae at station 2, and an unidentified Meloidae at station 2, 3, 4, 5 and 8.

Hoplitis (Monumetha) albifrons argentifrons (Cresson)

Station 1, 2, 6, 9, 11 and General Area; 12 June to 17 July; on flowers of *Eriogonum umbellatum,* on *Pinus flexilis,* in flight, Malaise trap, on ground.

This subspecies was recorded from stick traps at the Craters of the Moon National Monument as *H. albifrons maura* (Cresson) by Parker and Bohart (1968).

Hoplitis (Chlorosmia) fulgida fulgida Cresson

Station 1, 2, 4, 6, 7, 8, 9, 10, 12 and General Area; 19 June to 25 July; on flowers of *Cymopterus terebinthinus, Penstemon cyaneus* and *Phacelia leucophylla,* Malaise trap, in stick traps.

Larvae of several species of parasitoids were recovered from nests of this subspecies in stick traps. *Stelis sp.* (Megachilidae) was found at station 4 and 8, *Sapyga aculeata* Cresson (Sapygidae) at station 4, and an unidentified Meloidae at station 2 and 9. Stick traps at station 1, 6, 7 and 12 were free from parasitoids.

The record of *H. viridimicans* (Cockerell) from traps at Craters of the Moon National Monument by Parker and Bohart (1968) should be referred to *H. fulgida fulgida.*

Hoplitis (Chlorosmia) louisae (Cockerell)

Station 2, 6, 7, 8, 11 and General Area; 18 June to 17 July; sweeping *Artemisia tridentata,* on flowers of *Eriogonum umbellatum* and *Phacelia leucophylla,* Malaise trap, flying low over pahoehoe lava.

Anthocopa (Atoposmia) triodonta triodonta (Cockerell)

General Area; 29 June to 3 July; on flowers of *Penstemon deustus* and *Phacelia leucophylla.*

Anthocopa (Hexosmia) copelandica copelandica (Cockerell)

General Area; 29 June to 3 July; on flowers of *Penstemon deustus* and *Phacelia leucophylla.*

Osmia (Osmia) lignaria propinqua Cresson

Station 12 and General Area; 11 June to 5 July; on *Phacelia leucophylla.*

Osmia (Chalcosmia) coloradensis Cresson

Station 12 and General Area; 3 July to 13 August; on *Phacelia leucophylla,* in flight, Malaise trap.

Osmia (Cephalosmia) californica Cresson

Station 12 and General Area; 28 June to 5 July; on flowers of *Castilleja sp.* and *Penstemon deustus,* on soil, sweeping streamside vegetation.

Osmia (Cephalosmia) marginipennis Cresson

Station 2, 6, 8, 10, 11, 12 and General Area; 19 June to 16 July; on flowers of *Balsamorhiza sagittata, Chaenactis douglasii, Crepis acuminatum, Eriogonum umbellatum, Lupinus caudatus* and *Phacelia leucophylla,* in flight.

Osmia (Cephalosmia) montana montana sson

Station 9, 12 and General Area; 19 June to 15 July; on flowers of *Chaenactis douglasii, Cirsium canescens, Eriogonum ovalifolium, Phacelia leucophylla* and *Potentilla spp.*, Malaise trap, sweeping mixed species of shrubs.

Osmia (Acanthosmioides) nigrifrons nigrifrons Cresson

Station 12 and General Area; 20 June to 5 July; on *Lewisa rediviva* and *Populus tremuloides*, in flight, on soil.

Ten individuals were observed jointly excavating a sloping tunnel in moist soil approximately 5 cm from the edge of Little Cottonwood Creek. Regularly, small pieces of gravel and mud were picked up and transported a considerable distance from the excavation. In every instance the bees flew out of sight with these materials. Disturbance of the bees prevented them from completing the tunnel.

Osmia (Acanthosmioides) sp.

Station 6, 12 and General Area; 20 June to 16 July; on *Eriogonum umbellatum*, on soil.

Osmia (Nothosmia) kincaidii Cockerell

Station 2, 9, and 11; summer; in stick traps. Immature parasitoids taken from nests of this species included specimens of *Stelis sp.* (Megachilidae) at station 9 and 11, *Chrysura sonorensis* (Cameron) (Chrysididae) at station 2, and several unidentified Chalcidoidea at station 2.

Osmia (Chenosmia) indeprensa (Sandhouse)

Station 7, 11 and General Area; 18 June to 6 July; on flowers of *Eriogonum ovalifolium, Penstemon deustus, Penstemon spp.* and *Phacelia leucophylla.*

Osmia (Chenosmia) sp. A

Station 7, 8, 11, 12 and General Area; 18 June to 9 July; on flowers of *Balsamorhiza sagittata, Chaenactis douglasii, Cirsium canescens, Eriogonum ovalifolium* var. *depressum, Eriogonum umbellatum, Penstemon deustus* and *Phacelia leucophylla.*

Osmia (Chenosmia) sp. B

Station 2, 6, 8, 9, 11, 12 and General Area; 19 June to 13 August; on *Chamaebatiaria millefolium, Cirsium canescens, Lupinus sp., Phacelia leucophylla, Salix spp.* and *Trifolium repens*, Malaise trap.

Osmia (Chenosmia) sp. C

Station 3, 11, 12 and General Area; 13 June to 11 August; on *Cirsium canescens, Melilotus officinalis,* and *Rosa woodsi*, Malaise trap.

Osmia (Chenosmia) sp. D

Station 2, 8 and General Area; 28 June to 23 July; on *Lupinus sp.* and *Phacelia leucophylla*, Malaise trap.

Osmia (Chenosmia) spp.

Station 7, 12 and General Area; 18 June to 3 July; on flowers of *Penstemon deustus*, on soil.

Osmia (Monilosmia) atrocyanea atrocyanea Cockerell

Station 7 and 8; 3 to 8 July; on flowers of *Lupinus caudatus* and *Penstemon deustus.*

Osmia (Monilosmia) brevis brevis Cresson

Station 7, 8, 10, 11 and General Area; 30 June to 8 July; on flowers of *Lupinus sp., Penstemon cyaneus* and *Phacelia leucophylla.*

Osmia (Monilosmia) sp. A

Station 12 and General Area; 3 July to 13 August; on *Melilotus officinalis, Penstemon deustus* and *Phacelia leucophylla*, Malaise trap.

Osmia (Monilosmia) sp. B

General Area; 23 June to 3 July; on flowers of *Phacelia leucophylla*, on foliage of *Heracleum lanatum.*

Megachile (Litomegachile) onobrychidis Cockerell

Station 7; 3 July; flying low over pahoehoe lava.

Megachile (Litomegachile) texana cleomis Cockerell

General Area; 29 July; in flight.

Megachile (Megichile) inermis Provancher

Station 12; 11 August to 5 September; on flowers of *Cirsium vulgare.*

Megachile (Delomegachile) gemulc esson

Station 7; 18 June; on flowers of *Potentilla spp.*

Megachile (Xeromegachile) manifesta Cresson

General Area; 12 September; on flowers of *Chrysothamnus nauseosus.*

Megachile (Xeromegachile) nevadensis Cresson

General Area; 22 August to 12 September; on flowers of *Chrysothamnus nauseosus* and *Senecio serra.*

Megachile (Xeromegachile) wheeleri Mitchell

Station 12; 16 August; on flowers of *Rudbeckia occidentalis.*

Megachile (Argyropile) parallela parallela Smith

General Area; 2 August; on flowers of *Chrysothamnus nauseosus.*

Megachile (Xanthosarus) perihirta Cockerell

Station 1, 2, 4, 6, 7, 11, and 12; 3 July to 1 September; on flowers of *Chrysothamnus nauseosus, Eriogonum umbellatum* and *Lupinus sp.,* Malaise trap.

Megachile (Sayapis) mellitarsis Cresson

Station 6; 2 July; on flowers of *Lupinus caudatus.*

Megachile (Sayapis) pugnata pugnata Say

Station 6, 7 and General Area; 3 to 18 July; on flowers of *Achillea lanulosa, Cirsium canescens, Eriogonum umbellatum* and *Phacelia leucophylla.*

Coelioxys sp.

General Area; 20 June to 18 July; on flowers of *Balsamorhiza sagittata* and *Senecio serra.*

Family Anthophoridae

Nomada sp. A

General Area; 27 June; sweeping flowering *Cornus stolonifera.*

Nomada sp. B

General Area; 15 July; on *Eriogonum spp.*

Epeolus (Epeolus) compactus Cresson

General Area; 25 August; on *Chamaebatiaria millefolium.*

Epeolus (Epeolus) mimimus (Robertson)

Station 2, 7, 8, 10 and General Area; 30 June to 15 July; on flowers of *Eriogonum umbellatum,* in flight, on soil.

Triepeolus sp.

General Area; 18 July; on flowers of *Achillea lanulosa.*

Diadasia australis australis (Cresson)

General Area; 12 July; on flowers of *Opuntia rhodantha* and *Phacelia leucophylla.*

Diadasia enavata (Cresson)

Station 10, 11 and General Area; 16 July to 14 September; on flowers of *Heracleum lanatum.*

Melissodes agilis Cresson

General Area; 2 August to 8 September; on flowers of *Chrysothamnus nauseosus* and *Heracleum lanatum.*

Tetralonia sp.

Grassy Cone; 17 June; on flowers of *Balsamorhiza sagittata.*

Anthophora (Anthophora) affabilis Cresson

General Area; 12 July; on flowers of *Phacelia leucophylla.*

Anthophora (Anthophora) bomboides neomexicana Cockerell

Station 11; 8 July; in flight.

Anthophora (Anthophora) urbana urb Cresson

Station 9, 11, 12 and General Area; 2 June to 6 September; on flowers of *Chrysothamnus nauseosus*, *Cirsium canescens*, *Lupinus caudatus*, *Opuntia rhodantha* and *Senecio serra*. Malaise trap.

Anthophora (Anthophora) ursina simillima Cresson

Station 6, 7 and 11; 29 June to 4 July; on flowers of *Eriogonum ovalifolium* and *Lupinus caudatus*, flying low over pahoehoe lava.

Anthophora (Clisodon) furcatus terminalis Cresson

Station 12; 11 August; Malaise trap.

Anthophora (Micranthophora) arthuri Cockerell

Station 4; 4 July; flying low over damp cinders.

Anthophora (Micranthophora) flexipes Cresson

Station 4 and General Area; 3 July to 17 August; on flowers of *Chrysothamnus nauseosus* and *Phacelia leucophylla*.

Melecta (Melecta) pacifica Cresson

Station 12; 20 June; on soil.

Family Xylocopidae

Ceratina acantha Provancher

Station 1; 18 July; sweeping streamside vegetation.

Ceratina nanula nanula Cockerell

General Area; 6 September; on flowers of *Chrysothamnus nauseosus*.

Ceratina neomexicana Cockerell

Station 1 and 12; 18 July to 11 August; Malaise trap, sweeping streamside vegetation.

Ceratina pacifica H. S. Smith

Station 1; 1 August; on soil.

Family Apidae

Bombus (Bombias) nevadensis nevadensis Cresson

Station 2, 3, 6, 11, 12 and General Area; 13 June to 24 August; on foliage of *Artemisia tridentata*, on flowers of *Cirsium canescens*, *Crepis acuminatum* and *Delphinium andersoni*, in flight.

Bombus (Separatobombus) morrisoni Cresson

Station 11 and General Area; 25 June to 23 September; in flight.

Bombus (Cullumanobombus) rufocinctus Cresson

Station 2, 3, 6, 11, 12 and General Area; 24 June to 3 August; on flowers of *Achillea lanulosa*, *Chrysothamnus nauseosus*, *Chrysothamnus viscidiflorus*, *Cirsium canescens*, *Eriogonum umbellatum*, *Heracleum lanatum*, *Mentzelia laevicaulas*, *Melilotus officinalis*, *Penstemon sp.*, *Senecio serra* and *Trifolium repens*, in flight, Malaise trap.

Bombus (Subterraneobombus) appositus Cresson

Station 12 and Visitor's Center area; 30 June to 19 August; on *Chrysothamnus nauseosus*, in flight, Malaise trap.

Bombus (Fervidobombus) californicus F. Smith

Station 1 and 12; 27 June to 14 September; on flowers of *Cirsium canescens* and *Cirsium vulgare*, Malaise trap.

Bombus (Fervidobombus) fervidus (Fabricius)

Station 2, 4, 6, 8, 11, 12 and General Area; 25 June to 24 August; on flowers of *Chrysothamnus nauseosus*, *Cirsium canescens*, *Eriogonum umbellatum* and *Trifolium repens*, in flight.

Bombus (Bombus) occidentalis occidentalis Greene

Station 1; 15 to 18 July; on *Eriogonum spp.* and *Heracleum lanatum*.

Bombus (Pyrobombus) bifarius nearcticus Handlirsch

Station 12 and General Area; 18 July to 5 September; on flowers of *Cirsium vulgare* and *Senecio serra*, Malaise trap.

One worker became prey of the spider *Misumena vatia* (Clerck)(Thomisidae) while visiting the flowers of *S. serra*.

Bombus (Pyrobombus) centralis Cr on

Station 2, 4, 6, 11, 12 and General Area; 22 June to 13 August; on branch of *Artemisia tridentata*, on flowers of *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, *Cirsium canescens*, *Eriogonum spp.*, *Eriogonum umbellatum*, *Lupinus sp.*, *Phacelia leucophylla* and *Senecio serra*, Malaise trap.

Bombus (Pyrobombus) huntii Greene

Station 2, 3, 4, 6, 7, 8, 10, 11, 12 and General Area; 13 June to 12 September; on flowers of *Balsamorhiza sagittata*, *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, *Chrysothamnus viscidiflorus*, *Cirsium canescens*, *Crepis acuminatum*, *Eriogonum umbellatum*, *Heracleum lanatum*, *Lupinus sp.*, *Melilotus officinalis*, *Penstemon deustus* and *Trifolium repens*, flying low over damp cinders, Malaise trap.

Psithyrus (Laboriopsithyrus) insularis (F. Smith)

Station 12; 27 June to 21 July; on *Cirsium canescens* and *Senecio serra*.

Apis mellifera Linnaeus

Station 4 and General Area; 30 June to 6 September; on flowers of *Chrysothamnus nauseosus* and *Chrysothamnus viscidiflorus*.

A small but vigorous honeybee colony was found in a hollow section of a partly dead *Pinus flexilis* tree in 1964 near Devil's Orchard. The colony was noticeably weaker in the summer of 1965 and by July, 1966 it had died out.

DISCUSSION

Insect Habitats

The largest and most varied insect populations occurred in Little Cottonwood Creek Canyon outside the lava and cinder habitats. This undoubtedly was due to the diversity of terrestrial habitats and the large number of plant species found in this area. Additionally, many insect species were associated with the small permanent stream in the canyon.

Lava and cinder habitats differed with regard to variety and abundance of insects. Older cinder cones, such as Grassy and Sunset Cones, were found to support the greatest number of species, probably due to the presence of a climax vegetation that has nearly as many plant species as the non-lava areas. Of all the lava collection sites, station 2 on the northeast slope of Sunset Cone had the greatest habitat diversity and largest number of insect species. The combination of an abundance of plant species and the continual overflow of water from the temporary horse corral accounted for the large number of insect species. During the period of water overflow, aquatic Coleoptera and Hemiptera were especially numerous as were species of non-aquatic Hymenoptera, Lepidoptera and Diptera.

The younger cinder cone habitats ranked second in numbers of insect species. Station 9, with a dense stand of vegetation on the east slope of Inferno Cone, supported smaller and less varied insect populations than station 6, with an open stand and a few more species of plants on the east slope of Broken Top. The insect fauna at station 9, however, was more diverse than that of open areas on non-cinder lava sites. An unusual feature of station 6 was the presence of insects normally associated with aquatic environments, including large numbers of newly emerged damselflies and dragonflies. Water must be nearby this station although none has been reported. Several exposed lava waterholes are known within the Monument and it is probable others are present.

Open cinder habitats as typified by station 8, on Trench Mortar Flat, had markedly fewer insect species than the other cinder habitats. This must be a reflection of the relatively few plant species present and the lack of suitable niches for ground dwelling insects.

Insect activity on the old, decomposed aa and pahoehoe flows, where the vegetation may be varied and abundant, such as at station 11, was nearly as great as that on the cinder cones. However, the young pahoehoe flows, as present at station 7 where plants are not as plentiful and where fewer ecological niches are available were less favorable to insects.

The least productive lava formation for insects was found to be bare aa lava such as at the Highway Aa Flow where plants are few in number and grow only where wind-blown soil has accumulated.

Important Plant Species

Several plant species, growing on the lava and cinder landscape, were particularly attractive to insects. The shrubs, *Chrysothamnus nauseosus* and *C. viscidiflorus* had the greatest associations of insect species. Several species of root boring Cerambycidae and root inhabiting scale insects, as well as leaf feeding Chrysomelidae and stem and foliage gall forming Tephritidae were in evidence. However, most species of insects found with these plants were flower visitors, particularly Hesperiidae, Noctuidae and many representatives of families of Diptera and Hymenoptera. Flowers of the shrub *Chamaebatiaria millefolium,* also attracted many insects, particularly small Hymenoptera. However, there was no evidence of insects living on or in the roots or stems of this plant.

Of the herbs, *Phacelia leucophylla* was the most attractive particularly to flower visiting species of Hymenoptera. The tree *Pinus flexilis* provided many habitats for insects. The foliage was attractive to a variety of species of many groups. In addition, many species of Coleoptera and their parasitoids and predators were reared from the wood and bark of dead or dying trees.

Number of Insects

During this study, 20 orders, 248 families, 1,144 genera, and 2,064 species of insects were found in the Monument (Table 1). More than 30 of the species are new to science or recently have been described from our material. Three orders were particularly abundant in number of species and specimens and those groups with parasitoid and predaceous habits were most commonly encountered.

Hymenoptera ranked first with 43 families, 311 genera, 705 species and 4333 collected specimens. The families best represented include Ichneumonidae with 177 species, Sphecidae with 90 species and Braconidae with 73 species.

Diptera was next in number with 50 families, 286 genera, 521 species, and 1963 collected specimens. Of the species, 85 belong to the Tachinidae, 51 to the Syrphidae and 46 to the Bombyliidae.

Coleoptera was third in number with 44 families, 198 genera, 324 species, and 2219 collected specimens. The phytophagous groups are dominant with 30 species of Chrysomelidae and 29 species of Cerambycidae. The predaceous Coccinellidae are represented by 25 species.

Many new Idaho state records are given in this report. Several new United States records also are included, especially in the family Ichneumonidae. However a listing of species involved with these new distributional records has not been possible. It is hoped that they eventually will be made known by specialists in future publications.

Table 1. Relative size of insect orders by number of families, genera, species, and specimens collected at Craters of the Moon National Monument, Idaho, 1964-1967.

ORDERS	FAMILIES	GENERA	SPECIES	SPECIMENS
THYSANURA	2	2	2	5
COLLEMBOLA	5	6	6	66
EPHEMEROPTERA	4	4	4	21
ODONATA	4	6	10	40
ORTHOPTERA	4	14	23	143
ISOPTERA	1	1	1	28
PLECOPTERA	4	4	5	11
DERMAPTERA	1	1	1	2
PSOCOPTERA	2	3	3	38
THYSANOPTERA	3	8	10	18
HEMIPTERA	20	79	115	529
HOMOPTERA	14	56	79	624
RAPHIDOIDEA	1	1	3	8
NEUROPTERA	4	13	21	64
COLEOPTERA	44	198	324	2219
STREPSIPTERA	1	1	1	1
TRICHOPTERA	6	10	12	62
LEPIDOPTERA	35	140	218	1026
DIPTERA	50	286	521	1963
HYMENOPTERA	43	311	705	4333
TOTAL	248	1144	2064	11201

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