

# INSECTS OF CRATERS OF THE MOON NATIONAL MONUMENT IDAHO

Donald S. Horning, Jr.

William F. Barr

## 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 Egger (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.

Egger'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 Park personnel have compiled several unpublished checklists of birds, mammals, and reptiles, but these are not generally available to the public.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

Family Milichiidae

*Madisa glabra* Fallen

Station 2, 10 and General Area; 26 July to 30 August; sweeping *Chamaebatiaria millefolium* and *Chrysothamnus viscidiflorus*.

*Leptomtopa latipes* (Meigen)

General Area; 30 August; sweeping *Chrysothamnus nauseosus*.

Family Ephydriidae

*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 oreophilus*.

*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*.

*Oleella* spp.

Station 2 and General Area; 13 July to 14 August; sweeping *Chamaebatiaria millefolium*, *Chrysothamnus nauseosus*, *Populus tremuloides* and *Senecio serra*.