

# The Macrolepidopteran Fauna of Mount Everett, Massachusetts

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January 11, 2000

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Two Massachusetts state-listed species *Catocala herodias gerhardi* (Threatened) and *Aphareta dentata* (Special Concern) were common in the summit community. Both moths are rare in inland barrens and represent significant occurrences. Populations of three additional barrens moths, with very restricted inland distributions, were discovered: *Euxoa perpolita*, *Sideridis maryx*, and *Xylotype capax*. Eight northern species approach their southern limit in New England atop Mount Everett: *Acrionicta fragilis*, *Diarsia jucunda*, *Diarsia rubifera*, *Eueretagrotis attentus*, *Eurois astricta*, *Hesperumia sulphuraria*, *Perizoma basiliata*, and *Ufeus satyricus*.

Hilltops, especially those that are topographically prominent, serve as rendezvous sites for courtship and mating behaviors of rare invertebrates. The potential importance of Mount Everett in this context is briefly discussed. The report closes with recommendations for future survey efforts.<sup>1</sup>

Although only two of the recovered species are currently listed by the State of Massachusetts...the assemblage taken as a whole is significant and worthy of protection.<sup>2</sup>

### Massachusetts State -Listed Taxa

*Catocala herodias gerhardi*...(Gerhard's Underwing): Gerhard's Underwing was the most common underwing in the trap collections. Prior to its discovery on Mount Everett, this State Threatened species...was thought to be restricted to expansive coastal scrub oak barrens in Massachusetts. Global Rank: G3TS.

The moth is very rare in inland barrens and bald communities...As the larvae of Gerhard's Underwing are scrub oak specialists, this moth's inland distribution is quite restricted in the Northeast, including only those balds with appreciable stands of the host.<sup>3</sup>

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<sup>1</sup> David L. Wagner, *The Macrolepidopteran Fauna of Mount Everett, Massachusetts* (Boston, MA: The Nature Conservancy, 2000), p. 1.

<sup>2</sup> Wagner, p. 2.

<sup>3</sup> Wagner, p. 3.

*Apharetra dentata*...(Blueberry Sallow): This Special Concern species...was very common about the summit...The larvae are specialists on blueberry (*Vaccinium*)...Its distribution appears to be tied to low blueberry heaths where it feeds on either *Vaccinium angustifolium* or *V. pallidum*...<sup>4</sup>

### Other Uncommon to Rare Species

*Euxoa perpolita*...(Polished Dart):...This species of dry grasslands occurs locally over much of Cape Cod and Long Island, but is uncommon to rare inland...McCabe and Weber (1999) regarded it to be among the five most significant captures from the Mount Everett summit community, and suggested that the Polished Dart might be a “good candidate for measuring management or environmental impacts.”<sup>5</sup>

*Sideridis maryx*...(Maroonwing):...The Maroonwing is found across southern Canada, occurring southward to Cape Cod and the New Jersey Pine Barrens. In lower New England it is principally a Coastal Plain species that becomes increasingly scarce in inland towns.<sup>6</sup>

*Xylotype capax*...(Broad Sallow):...The Broad Sallow is a denizen of open, dry, oak woodlands and especially scrub oak barrens. Though common on the Cape and Long Island it is uncommon to rare inland in the Northeast. Native hosts are unknown...In New Jersey the Broad Sallow is associated with a variety of acid soil communities, including scrub oak barrens, dry woodlands, and forested swamps...

McCabe and Weber (1999) describe its distribution as “very spotty in the North.” They also point out that the species has disappeared from many low-lying inland sand barrens in the Northeast.<sup>7</sup>

### Northern Species

Several species occurred on Mount Everett that are rare to absent southward. Their importance, especially if the Mount Everett populations represent disjunct populations, may warrant further attention.

*Acrionicta fragilis*...(Fragile Dagger Moth): This moth may reach its southern limit in New England on Mount Everett. Although to be expected in the Berkshires, there are no records for Connecticut (less than two miles away).<sup>8</sup>

*Diarsia jucunda*...(Smaller Pinkish Dart): A northern moth that ranges southward in the Appalachians to North Carolina. In New England it reaches its southern limit in Litchfield County, Connecticut.<sup>9</sup>

*Diarsia rubifera*...(no common name)...Rings et al. (1992) reported the host as blueberry. It is common in heathlands to the north, but it is quite rare at the latitude of Connecticut.<sup>10</sup>

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<sup>4</sup> Wagner, p. 3.

<sup>5</sup> Wagner, p. 4.

<sup>6</sup> Wagner, p. 4.

<sup>7</sup> Wagner, pp. 4–5.

<sup>8</sup> Wagner, p. 5.

<sup>9</sup> Wagner, p. 5.

<sup>10</sup> Wagner, p. 5.

*Eueretagrotis attentus*...(Attentive Dart): This moth ranges west to the Pacific in Canada; in the East it occurs south to Virginia (in mountains).<sup>11</sup>

*Eurois astricta*...(no common name):...It is a northern species found across Canada from Alaska to Nova Scotia. In New England it appears to reach its southern limit in Berkshire County, Massachusetts, and Litchfield County, Connecticut...Published hosts include alder, birch, blueberry, cherry, maple, spirea, strawberry, viburnum, and willow...<sup>12</sup>

*Hesperumia sulphuraria*...(Sulphur Moth):... Although very local and rare throughout much of lower New England, it is evidently more common to the north, west, and south (in mountains). Many trees and shrubs are reported as hosts: alder, birch, blueberry, cherry, cinquefoil, currant, dogwood, hemlock, huckleberry, larch, New Jersey tea, rose, serviceberry, snowberry, and willow...<sup>13</sup>

*Perizoma basiliata*...(Square-patched Carpet): This species has not yet been recorded from Connecticut. It is common on Mount Greylock and in spruce fir areas across northern New England. The host is not known...<sup>14</sup>

*Ufeus satyricus*...(no common name):...Rings et al. (1992) described the habitat as “oak openings.” The only recorded host is quaking aspen (*Populus tremuloides*), but other members of the genus eat a range of Salicaceae (i.e., *Populus* and *Salix*)...Likely, it is common northward in the Berkshires, and of general occurrence at the latitude of central Vermont and Maine.<sup>15</sup>

## Other

*Enargia mephisto*...(no common name): This moth is rare in lower New England, but is expected to be locally common in the Berkshires and Taconics. Rings et al. (1992) report the host as unknown. Likely it is a *Populus*-specialist, as are New England's other two *Enargia*.<sup>16</sup>

*Archips fervidana*...(Oak Webworm Moth): This microlepidopteran occurs in dry oak woodlands to the north (Vermont) and west (central New York). In lower New England it appears to be closely associated with oak woodlands and scrub oak-pitch pine barrens.<sup>17</sup>

## Discussion

The bald communities of the Taconic Highlands, though small in area, are home to disjunct populations of several barrens species: e.g., *Apharetra dentata*, *Catocala herodias gerhardi*, *Euxoa perpolita*, and *Xylotype capax* (all Noctuidae). Two of these are protected species in Massachusetts. Given their isolation, I would not be surprised to learn that one or more of these populations will be proven to be genomically distinct from the coastal populations of the barren communities of Cape Cod and Long Island.

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<sup>11</sup> Wagner, p. 5.

<sup>12</sup> Wagner, pp. 5-6.

<sup>13</sup> Wagner, p. 6.

<sup>14</sup> Wagner, p. 6.

<sup>15</sup> Wagner, p. 6.

<sup>16</sup> Wagner, p. 6.

<sup>17</sup> Wagner, p. 6.

The summit moth fauna represents a curious and perhaps unique mixture of southern and northern elements. Southern taxa such as *Catocala herodias gerhardi* are able to eke out their existence presumably because of the warm, xeric microclimate in the bald areas on the southwestern facing slopes. Simultaneously, the mountain's macroclimate supports a number of northern taxa that approach their southern limit in New England on the mountain: e.g., *Hesperumia sulphuraria* and *Perizoma basiliata* (both Geometridae), and *Acronicta fragilis*, *Diarsia rubifera*, *Eurois astricta*, and *Ufeus satyricus* (all Noctuidae).

Surprisingly, none of the Lepidoptera that we deem to be rare is a pitch pine feeder. Two plants stand out as being especially important for the maintenance of the summit fauna. Scrub oak is the sole host for *Catocala herodias gerhardi* in the Northeast. A second underwing, *Catocala similis*, is also entirely dependent on the scrub oak that grows near the top of the mountain. The low-growing blueberries are the principal host of *Apharera dentata*, and may also be important for a number of other species, e.g., *Diarsia rubifera*, *Hesperumia sulphuraria*, and *Xylotype capax*.

### **The Importance of Hilltops**

By virtue of the fact that Mount Everett is the tallest peak, as well as the most defined summit in the region, it may have special significance as a mating station for many insects. The highest point on the horizon--being the most reliable topographic feature in virtually any habitat--is used by many insects as a rendezvous site for courtship and mating...Scott noted (1968) that many rare butterflies, which otherwise might have difficulty locating one another, use summits of hills and mountains to initiate mating behaviors. Invertebrates known to hilltop include butterflies (especially papilionids, pierids, nymphalids, lycaenids, and hesperiids), Hymenoptera (e.g., pompilids), and flies (e.g., syrphids, tabanids, cuterebridae, gastrophilids, oestrids, sarcophagids, and tachinids)...<sup>18</sup>

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<sup>18</sup> Wagner, p. 7.