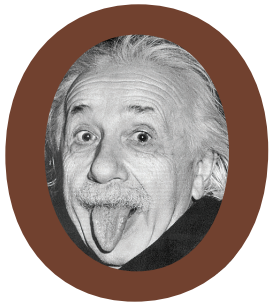


T A X O N O M I S T S



J U S T W A N N A H A V E F U N

The Genius of the Genus *Oeneis*

by Harry Zirlin

In a northern band

that circles the globe, with finger-like projections prodding south along the mountain ranges, lives a group of butterflies in the genus *Oeneis* (pronounced ee-NEE-us, or so I'm told). These butterflies are called "Arctics" here in North America, although misguided Europeans still refer to some species as "Graylings."

These are cold-adapted animals, and even those that live south of the Arctic usually inhabit the alpine zones of mountains. There are exceptions, such as Jutta Arctics, *Oeneis jutta*, which are found at lower elevations in bogs in Maine and elsewhere, but still, Maine isn't exactly Miami. There are eleven species in the genus on NABA's checklist ranging from northern Alaska east to Maine and south (in the west) to central Arizona.

Yes, Virginia, there are arctics in Arizona! I have been fascinated by this group since many years ago when I read accounts by Klots and Scudder about the relict populations of Melissa Arctic, *Oeneis melissa*, that inhabit the upper elevations of Mount Washington and other peaks of the Presidential Range in New Hampshire. I believe I have seen the Mount Washington population on four different occasions and each time I was taken by the thought that these butterflies are descended in a direct line from butterflies that flitted up when woolly mammoths walked by.

You see, global warming has happened many times before, although the current incarnation is the first time that humans have been responsible for it. When a cold-adapted animal is confronted with a warming

environment, there are generally three things that can happen. First, the species might stay where it is, be unable to adapt to the change, and become extinct. Second, the species might stay where it is, be able to adapt to the warmer climate and survive or even thrive under the new conditions. Third, the species may move either northward or up in elevation, where the climate is still suitable for it, assuming that the cold-adapted plants the species depends on are either already there or move along with the species.

When a species moves in response to changing climate, it is called a "range shift" and range shifts of plants and animals, including butterflies, play a large role in current climate change studies. By studying the present distribution of Melissa Arctics, it is rather clear that they once occupied a greater area than they do now and that when the climate warmed at the end of the last Ice Age,

some 10,000 years ago, some populations probably became extinct, while others shifted their range northward or higher in elevation. But if the climate on Mount Washington gets warmer, and the population of Melissa Arctics there cannot adapt to the new climate regime, there is now nowhere for them to go except extinct.

In some sense, this is probably true of most of the butterflies that inhabit cold climates. They followed the retreating glaciers northward or up in elevation. Groups like *Oeneis*, *Erebia* (alpines) *Parnassius* (parnassians), *Colias* (sulphurs) and *Boloria* (lesser fritillaries) were almost certainly more widely distributed well to the south of their present ranges during the last Ice Age.

In addition to the eleven species of *Oeneis* listed on NABA's checklist, there are dozens of named subspecies — I have seen lists that include nine subspecies in North America for



Jutta Arctics which may or may not jut out when seen in their usual spruce bog habitat, seem to have been named the German equivalent of "Judith" by Hübner, their describer. May 27, 2007. Chippewa Co., MI.

Thomas Bentley