

PSYCHE.

A COURAGEOUS BUTTERFLY, OENEIS SEMIDEA.*

BY SAMUEL H. SCUDDER, CAMBRIDGE, MASS.

High up on the wind-swept peaks of the White Mountains of New Hampshire, far above the upper limit of the trees, with no other protection than the lee of the rocks, the crevices between the angular blocks of gray stone which conspicuously mark those barren altitudes, or the clumps of sedge which cover their more level reaches, lives a frail brown butterfly, which is found in no other spot in the world save the very tops of the still higher peaks of the Rocky Mountains in distant Colorado, twelve or fourteen thousand feet above the sea. It has relatives, some so close as sometimes to be mistaken for it, in the far northern latitudes of Labrador, where the conditions of life are similar; but nowhere in New England or the surrounding country can it or anything like it be found, save within two or three miles of Mt. Washington, at an elevation of from five to six thousand feet above the sea.

Semidea, half a goddess, is the name bestowed upon it by our pioneer naturalist, Say, in token of its life among the

clouds. Half-way to the heavens is its abode, and here, amid the winds and storms which rage about the mountains, the little colony flourishes as if it did not know that butterflies are preeminently creatures of the sun and warmth, and had never heard of the tropics which seem so peculiarly their home.

Yet it is but a feeble creature, even for a butterfly; for though its body and legs are covered with a furry clothing, as if to protect it from the cold, its thin, gauze-like wings are even more flimsy, delicate and limp than usual among its tribe, and seem ill-fitted indeed to withstand the furious blasts and sudden gusts that prevail on those breezy uplands.

And, truth to tell, it is but a feeble flutterer; often when one has been startled into flight by my near approach on a tempestuous day, I have seen the wind catch it and sweep it nearly out of sight in a couple of seconds; and once I was able to follow one thus borne along against a background of white cloud, until it was swept far beyond the mountain-side, whence probably it was unable to return, and perished far from home.

* Reprinted, with slight additions, from the *Youth's Companion* of 1895, to accompany the new illustration opposite.



J. HENRY BLAKE, del.

OENEIS SEMIDEA.

Yet this very weakness is probably one cause of the ability of this species to maintain its hold in its peculiar dwelling-place; for the study of the insects of wind-swept regions, like oceanic islands and high mountain summits, shows us that to maintain their life the inhabitants must be either specially strong-winged to withstand the gales, or very weak-winged, or, indeed, often wingless, so as not to attempt to contend against the wind, or even to be quite unable to fly.

So our weak-winged *Semidea* rarely takes flight at all in windy weather, or, if caught by a gust, makes no attempt to cope with it, satisfied if it be allowed speedily to drop into some sheltered spot where it may secure a foothold. It then proceeds forthwith to creep into some cranny; or, if still prevented by the wind, falls over upon its side, feet to the windward, but clinging to the rock or soil, closes its wings, and tucks them together so as to offer the least surface to the dangerous breeze. Our illustration (plate 1) represents one thus clinging to a stone, a bit of lichen-covered rock brought for the artist's use from Mt. Washington; it shows, also, as well as can be shown without color, how the exposed mottled portions of the butterfly's wings harmonize with the freckled surface of the rock,—a case of "protective resemblance."

So it maintains its hold. And certainly not with difficulty, for it is one of our commonest butterflies; and though hundreds, perhaps thousands, are an-

nually captured by enthusiastic collectors, mostly within an area of a single square mile, it continues as abundant as ever, and seems better able than the wide-ranging bison to avoid extinction. During the entire month of July the butterflies swarm over the rocks and sedgy plateaus of the upper summits, directly through which thousands of travellers yearly make their pilgrimage by the cog-railway or the carriage road.

During the latter part of this month hundreds of thousands, perhaps millions, of eggs are laid by the butterflies, from which, in about a fortnight, hatch big-headed, striped mites of caterpillars; these nibble at the sedges a short time, and then, their parents long dead, go into winter quarters, hiding in the neatest crevices they can find.

Probably the whole of the next summer and part of still another is spent in this stage, in which the caterpillar feeds both by night and by day upon the sedges, that so abound upon the mountain-side as often to give the appearance of a pasture ground.

Some, doubtless, mature sooner than others, or we should see the butterfly only in alternate years, whereas it is equally common every year. When not feeding, the caterpillar is hiding between the rocks in just such places as it chooses to pass the winter in, and where also it changes to a chrysalis, lying flat upon its back without further protection than the rocks afford; unless, indeed, it cuddles up against some moss,

and shapes that side into the form and protection of a cell.

The chrysalis state is assumed in June, and lasts two weeks or more, and then again, after two years more

or less of preparation, the butterfly is once more upon the wing — a stranded relic of the great Ice Age, like the alpine sandwort, *Arenaria groenlandica*, whose honeyed sweets it now robs.

VARIATION IN TRIDACTYLUS.

BY A. P. MORSE, WELLESLEY, MASS.

Tridactylus is a genus of small, fossorial crickets, allied in structure and habits to *Gryllotalpa*, the mole-cricket, and differing most noticeably from that genus, among several things, in being smaller in size and possessing remarkable saltatory powers.

Representatives of the genus occur over the greater part, at least, of the United States, and range in size from six to twelve millimeters in length when adult. They frequent the margins of streams and ponds, burrowing in the sandy loam of the banks and shores, and may be secured, when a station is discovered, by sweeping rapidly just above the ground with a net of cheesecloth or other close-meshed material. Owing to their alertness, activity, and leaping mode of progression close observations of their habits are exceedingly difficult to make out-of-doors and but little is known regarding them. Whether confinement would secure satisfactory results remains to be learned, but it is hoped that some one having an opportunity to do so will make the attempt and if possible discover the special func-

tion of the remarkably modified anterior tibiae of the male in certain species and the significance of the variation noted below.

While collecting on Nantucket Island late in the afternoon of July 12, 1900, I found a locality for *Tridactylus* on the shore of a small pond and captured several examples of both sexes. On the following day additional specimens were secured in the same place and about an adjoining pond. On my return home, examination after mounting disclosed an interesting state of affairs.

The 52 specimens taken on the two successive days in this one locality consist of one immature, 18 females, and 33 males. These exhibit no essential difference in color, size or markings leading one to infer the presence of two species, nor do the female examples differ in structural details. A close examination of the males, however, reveals a singular variation in the structure of the anterior tibiae. In about one third of the males the form is the same as that of the female (Fig. 1), — more or less irregularly ovate in outline, terminating



Hindawi

Submit your manuscripts at
<http://www.hindawi.com>

