

*Hemeroplanis scopulaeapes* Haw. 1 bred from pupa July 1960.

*Erebus odorata* L. This large and spectacular moth, which greatly resembles a bat in flight, was first brought to our attention by one of the staff members of the Park Service advising that it was to be found on the dark walls of the Fort cloisters. Several were taken, but when resting on the dark recesses of the old fort they were very difficult to distinguish on the dusky background of brickwork, even with a flashlight. Since *E. odorata* is known to breed in Florida its presence on Garden Key was not surprising.

*Diaphania indica*, *Pyrausta penitalis* Grt., *Hymenia recurvalis* F. 1 of each, on Garden Key, July 1960.

In conclusion we wish to thank Mr. CHARLES P. KIMBALL, West Barnstable, Massachusetts, and Mr. STANLEY V. FULLER, Cassadega, Florida, for their determination of most of the moths.

(GWR) 3306 Turner Lane, Chevy Chase, Md., U. S. A.

---

## NOTES ON THE OCCURRENCE OF *AGRAULIS VANILLAE* (NYMPHALIDAE) IN THE MIDWEST

by RICHARD D. TURNER

Recently there has been considerable interest concerning the establishment of *Agraulis vanillae* (Linnaeus) in the central valley of California and along the coast to the San Francisco Bay area. The northward movement of this species from the southern part of that state, where it has long been established, has been attributed to the milder climatic conditions which the central sections have been experiencing. There was some doubt as to whether the species would continue to survive because of colder spells during the winter of 1959-1960. A female *A. vanillae* was observed ovipositing on fresh growth of the ornamental Passion Vine during April, 1960; apparently the species has been able to overwinter again in that area.

In view of these recent developments concerning the hardiness of *A. vanillae* it is of interest that for three consecutive winters this species managed to survive in west-central Missouri. Aside from the many really cold spells which occur, with temperatures dipping to zero and below,

if only for a short time, this species is further encumbered by the fact that its food-plant, the hardy Passion Vine, *Passiflora incarnata* Linnaeus, doesn't appear above ground until very late spring, generally toward the later part of May. During the summer the vine grows luxuriantly and covers large areas until mid-autumn when its tender foliage is completely destroyed by the first hard freeze.

During the first week of July 1953 a female *A. vanillae* found these vines. They were draped over large sections of lilac bushes, perhaps the mark of a bad gardener but evidently most acceptable from this butterfly's point of view. She soon deposited many eggs on the fresh growth of unopened leaves. Later in the summer when the adults emerged the vines were visited by many of her kind. Again eggs were laid and thus another generation was assured, provided it could overwinter.

The experiment was a complete success that winter, for during the summer of 1954, when the vines spread to another part of the garden, so did *A. vanillae*. That was the peak year for this isolated colony and at times adults fairly swarmed around the Passion Vines, which were well populated with eggs and larvae. Pupae hung from awnings, rose trellises and lawn chairs. Larvae were in many stages of growth, as the broods overlapped.

Again the colony survived the winter; during the middle of June, 1955, the adults began to appear. Although they became nearly as numerous as during the preceding summer, something apparently upset their balance. The great majority of specimens were males ranging from normal down to quite diminutive sizes with wing-spans scarcely exceeding 1½ inches. The number of female specimens had so greatly declined that only a very few were observed throughout the summer.

The isolated and once thriving colony of these butterflies ended in late June 1956, almost as it had begun, with a single *A. vanillae*. It was a female and she stayed for several days hovering over the Passion Vines. Then I saw her no more. Although she probably met with some unfortunate accident I prefer to think she safely found her way back to the metropolis of her kind where winters are mild and Passion Vines grow the year around. Who there would suspect that this was the sole survivor of an experimental colony that flourished so successfully if briefly in an alien climate!

As to whether the overwintering stage was larva or pupa I was never definitely able to determine. Dr. RICHARD M. FOX, of the Carnegie Museum, with whom I corresponded in reference to the subject, suggested the pupa on general principles, as the semitropically adjusted larva would have scant protection physiologically against the cold of the north.

R. R. 2, Green Ridge, Mo., U. S. A.