

AN ANNOTATED LIST OF LEPIDOPTERA OBSERVED
OR COLLECTED IN 1959-1960 ON THE DRY TORTUGAS ISLANDS

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While assisting in the banding of Sooty and Noddy Terns breeding on Bush Key in the Dry Tortugas, off the southern tip of Florida, we had opportunity during lay-offs and rest periods and at various lights at old Fort Jefferson, to observe and capture Lepidoptera.

As far as the observations extended, it would appear that the lepidopterous fauna is similar to that of southern Florida and is only weakly represented by true exotics. The seven small islands which make up the Tortugas group are rather sparsely vegetated; the flora is mainly composed of sedges, grasses, Spanish Needles (*Bidens leucantha*), Sea Purslane (*Sesuvium*), the composite *Melanthera deltoides*, Button Mangrove (*Conocarpus erectus*), and Bay Cedar (*Suriana maritima*). On Garden Key, on which Fort Jefferson stands, such plants as Coconut Palm, Date Palm, Avocado, Royal Ponciana, Agave, and Yucca have been introduced. Although isolated from the mainland by 68 miles and from Cuba by about 120 miles, several species appear to be migrants to the islands. Notable among these were *Colias eurytheme*, *Phoebis agarithe*, and *Vanessa virginiensis*. During the Nineteenth Century until 1847, Fort Jefferson was garrisoned by a Federal Army. This occupation might have affected the local insect populations and added introduced species, of which the descendants may still persist.

The following list is necessarily spotty, since we spent only a few days on each of three visits, namely one in late May 1959, and two in late May and early July 1960.

Danaus plexippus L. Several were seen flying over the Gulf of Mexico while we were on board the Park Service and Coast Guard boats, and two appeared on Garden Key in 1960.

Phyciodes phaon Edw. Relatively common on the parade ground at Fort Jefferson where the food-plant *Lippia nodiflora* grew in patches.

Vanessa atalanta L. Two taken on Garden Key.

Vanessa virginiensis Drury. Two collected on Garden Key, July 1960.

Junonia lavinia zonalis Felder. Several taken on Garden Key in early July 1960 were identical with the form *zonalis*, which is common on the mainland in central and southern Florida. It is of interest to state that the typical form *coenia* is rather scarce in spring and early summer at least in the Daytona Beach area, while the form *zonalis* replaces *coenia*,

sometimes in very large numbers, in the fall and early winter. The status of this complex is problematic and certainly worthy of intensive study.

Strymon martialis H.-S. In late May 1959 a small flight in somewhat battered condition was associated with Button Mangroves on Garden Key. In July 1960 two dozen or more were frequenting flowers of *Melanthera* and *Bidens*. This species appears to be endemic, although the Nettle Tree (*Trema floridana*), stated by A. B. KLOTS in his *Field Guide to the Butterflies* as being the larval food-plant, was not found.

Strymon columella Fabr. Occurred in abundance at each visit on Garden, Hospital, and Bush Keys. KLOTS (*op. cit.*) does not give a food-plant. Our individuals were taken on Spanish Needles, *Melanthera* blooms, and Bay Cedar. Careful search for eggs and larvae on Bay Cedars was unproductive, although there appeared to be a close association between insect and plant.

Colias eurytheme Bdv. Two males were taken on Garden Key in July 1960. These captures were surprising, since *eurytheme* is said to be very rare in southern Florida. We have, however, observed considerable flights in central Florida in recent years and noted oviposition on *Sesbania*. The existence of small patches of clover on Garden Key suggests that breeding could occur, but we believe our individuals were migrants.

Phoebis agarithe Bdv. Several seen flying on Garden Key July 1960.

Eurema nicippe Cram. Several including the pale phase, on Garden Key.

Eurema lisa Bdv. & Lec. Several on Garden Key July 1960. The presence of plants of the Senna and Pea families suggests that these two *Eurema* may be indigenous.

Ascia monuste L. In July 1960 a dozen or more were seen and taken on Garden Key and many occurred on Hospital Key. The females were form "phileta". Larvae were seen on Sea Rocket (*Cakile edentula*).

Hylephila phyleas Drury. One female taken on the shore of Garden Key, July 1960.

Panoquina panoquinoides Skin. Several collected about flower heads of *Melanthera*.

Erinnyis obscura Fabr. 1 specimen caught in spider web, Garden Key, July 1960.

Melipotis contorta Gn., *M. januaris* Gn., *M. prolata* Wlk. Common in July 1960 about the Fort buildings, attracted to light.

Casandria filifera Wlk., *Leucania* sp., *Anticarsia repugnalis* Hbn. 1 of each.

Caenurgia chloropha Hbn. 2 on parade ground, May 1959.

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.

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

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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,