

LARVAL FOODPLANTS AND LIFE HISTORY NOTES FOR
EIGHT MOTHS FROM TEXAS AND MEXICO¹

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So far as I can determine, nothing has been published on the life history of the species in the present paper except for *Madoryx oiclus* (Cramer). Apparently this species uses the same larval foodplant in Mexico as it does in Venezuela (Lichy, 1944). Blanchard (1973) recorded and illustrated 3 of these species (*Syntomeida melanthus* (Cramer), *Rhescipha servia* Cramer, and *Scordylia atalanta* Guenée) as rare or possibly new to Texas and the United States. Blanchard (1968) also described and illustrated *Grotella margueritaria* from Texas. Munroe (1972, 1973) described and illustrated *Odontivalvia radialis* from Texas. Guenée (1857) described the family Hedyliidae and placed therein *Venodes napiaria* (Brazil), *Phellinodes satellitiata* (Brazil), and *Hedyle heliconiaria* (French Guiana) which he described *ibidem*. It is believed the latter species is here recorded from Mexico for the first time.

Sphingidae

This report confirms the infrequent occurrence of *Sphinx lugens* Walker within the United States and gives its local larval foodplant, *Forestiera pubescens*. Life history notes, including a possible larval foodplant, *Tabebuia pentaphylla*, are given also for the cocoon spinning Mexican *Madoryx oiclus* (Cramer). An adult ♀, pupa, and 2 cocoons are illustrated.

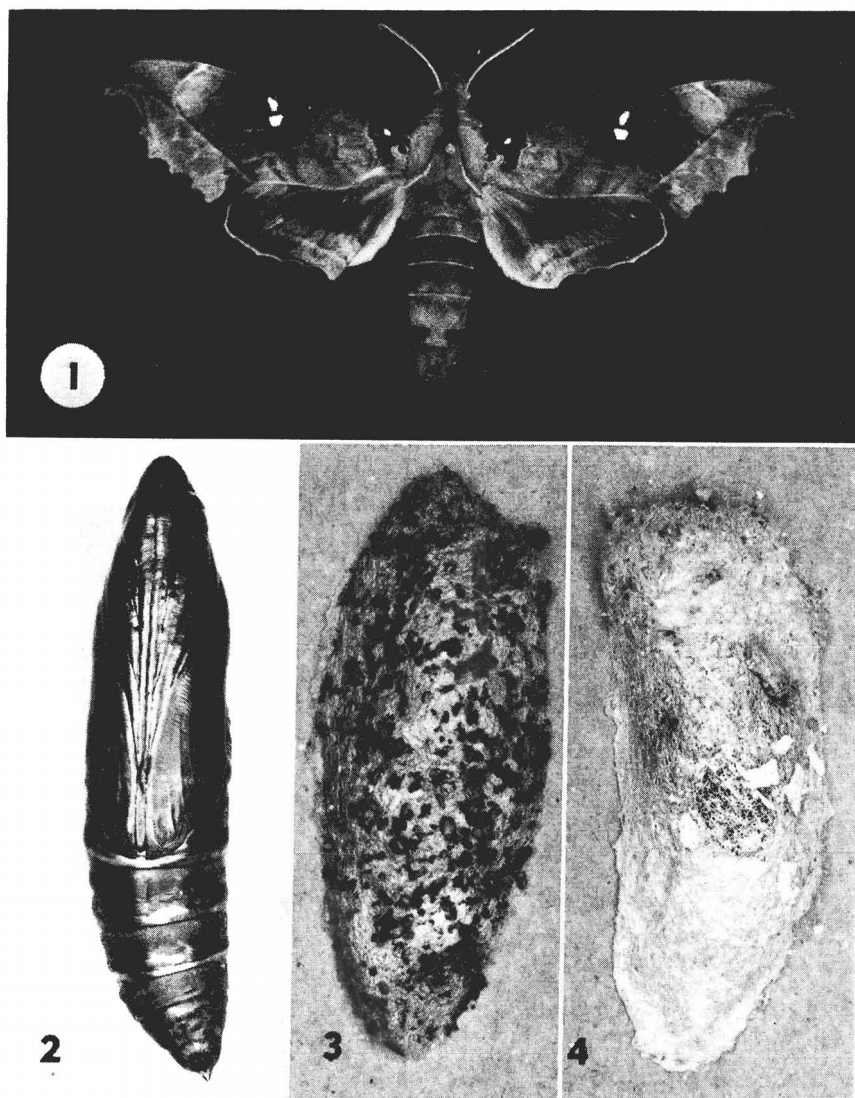
Sphinx lugens Walker 1856. Hodges (1971) indicated that the immature stages of this species were unknown, and that Strecker (1876:115) incorrectly cited *Salvia* as a host when he accepted *eremitoides* as a junior synonym of *lugens*. He states further: "Although I have seen no authentic specimens of *lugens* from the southwestern United States, it is to be expected in southern Arizona and New Mexico or Texas. Some of the earlier literature citations to this species probably refer to other, closely related species."

On 8 August 71 in my lab garden at San Antonio, Texas I found 1 larva feeding on the foliage of a small (60 cm), cutover plant of *Forestiera pubescens* Nutt., OLEACEAE. This larva continued to eat until 12 August when it entered soil which had been provided, and in which it pupated unobserved; a ♀ emerged 28 August 71. This remains the only example found, although I have examined the foodplant frequently for immatures since then. Other species of *Forestiera*, including *F. pubescens*, are found in Mexico, and perhaps may be acceptable to *S. lugens* throughout its range.

Madoryx oiclus (Cramer) [1780]. Hodges (1971) in treating the genus *Madoryx*, stated: "The one known larva [imagine not given] is peculiar for a sphingid inas-

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Figs. 1-4. *Madoryx oiclus*: 1, ♀, dorsal view (expanse 93 mm); 2, pupa, ventral view (length 57 mm); 3, cocoon spun on tree trunk (length 85 mm); 4, cocoon spun on whitewashed wall.

much as it resembles that of a species of *Catocala* in the Noctuidae. . . . The pupa is dark and glossy, banded with pale orange at the base of some abdominal segments, and the base of the tongue projects forward somewhat." Lichy (1944) reported *Tecoma pentaphylla* (= *Tabebuia pentaphylla* (L.) Hemsl.), BIGNONIACEAE, as the larval foodplant in Venezuela.

On 15 November 74 at Los Arcos Courts, Ciudad Mante, Tamaulipas, Mexico, I found 1 spun-up larva; it had selected a spot, ca. 60 cm above ground, on the white-washed outside wall of the court where we stayed. This larva pupated 16 November and a ♀ emerged 16 December 74 (Fig. 1). Also, on the same wall about 2 m away from the first, another cocoon was found near the eve, but this one had emerged. A third cocoon, containing a live pupa (Fig. 2) was found 5 December 74 about 10 m from the first 2 and about 2 m above ground on a tree trunk, *Tabebuia pentaphylla*. This tree is planted extensively in Mexico as an ornamental and known locally as "Palo de rosa." Still later, Mrs. Kendall found a fourth empty cocoon spun on the side of a concrete stepping block near the ground. In each instance, the cocoons were found on or within 2 m of *T. pentaphylla*, undoubtedly its larval foodplant.

Most interesting was the larva's ability to camouflage its cocoon to match the background on which it was spun. Note the darkened color and bits of tree bark in the silk of the cocoon spun on the tree (Fig. 3); compare this cocoon with Fig. 4, the one spun on the outside wall, and note its lighter color and bits of whitewash in the silk. The darkened areas of the latter are caused by the empty pupal case inside. I had overlooked 3 of these cocoons several times earlier because the sunlight had not struck them at the proper angle.

Ctenuchidae

Syntomeida melanthus (Cramer) 1779. Near Ciudad Mante, Tamaulipas, Mexico single larvae were collected crawling on the ground as if in search of food on 11 January 74, 26 January 74, and 12 February 74. These larvae proved to be parasitized by dipterons; both host and parasites were preserved. Again on 21 November 74, Mrs. Kendall found a cluster (ca. 40) of first instar larvae feeding on the foliage of *Ipomoea populina* HOUSE, CONVULVACEAE. This plant was fairly well defoliated, and later searching proved other plants to be in the same state of dormancy. Because of the scarcity of food most larvae died of malnutrition. Seven larvae spun cocoons between 21 December 74 and 4 January 75, but only 3 pupated; adults emerged 16 January 75 (♀), 17 January (♂), and 18 January (♀).

In general appearance the larva of this species resembles that of an *Halisidota*. The last instar larva is clothed with short gray pile; there is a lateral row of black tufts; 3 mid-dorsal segments have paired white tufts lightly overlaid with gray hairs; the first 2 and last segment have paired long black hair pencils; head black. Larval hairs form the basis of the cocoon which is generally formed on the long axis of a twig.

Noctuidae

Grotella margueritaria Blanchard 1968. While on a joint field trip with André and May Elise Blanchard, Mrs. Kendall and I were fortunate in discovering 2 larval foodplants for this recently described species. On 17 September 71, ca. 3 km N of Study Butte, Brewster Co., Texas, we collected a few larvae resting on the stems of *Anulocaulis leisolenus* (Torr.) Standley, NYCTAGINACEAE. These larvae were lost because it was not realized at the time that they eat blossom buds, not foliage. At the type locality in Big Bend National Park, 12 more larvae were collected 21 September 71, feeding on the blossom buds of *Anulocaulis eriosolenus* Standley. One parasitized larva produced a dipteran 8 October 71. Seven other larvae burrowed in dirt on 21 and 22 September 71 where they pupated in earthen chambers. Later, when the dirt was screened, 2 pupae were exposed, and they later became parasitized; adult parasites were found 20 August 72. Other pupae, in their sealed earthen chambers, produced adults: 19 October 71 (♂), 22 October (♂), 24 October (♂), 29 October (♀), 24 August 73 (♀), and 6 September 73 (♂). Two larvae and 1 deformed pupa were preserved. It was interesting that 2 remained in pupal diapause for al-

most 2 years. This would indicate that the species is well adapted to Chihuahuan Desert conditions.

Because there is some question as to the proper systematic placement of *Grotella*, a completely illustrated and described life history for *G. margueritaria* will be published as soon as it can be reared from eggs of a known female.

Resciphia servia Cramer 1782. On 13 November 71 at Santa Ana National Wildlife Refuge, Hidalgo Co., Texas, I collected 1 pupa in a leaf nest on *Rivina humilis* L.; a ♂ emerged later the same day. After finding this pupa I had thought *R. humilis* might be the larval foodplant. On 18 June 72, however, I found a larva at my lab in San Antonio, Bexar Co. feeding on the foliage of *Diospyros texana* Scheele, EBENACEAE. A few days later a second larva was collected feeding on the same plant. The first larva spun a cocoon in the leaves of the foodplant 1 July, and a ♂ emerged 15 July 72. The second larva was preserved after passing through 7 instars and at the time it started spinning its cocoon. It is interesting to note that the larva of this species is catocala-like, both in appearance and habits; when not feeding it rests flat along the foodplant branches.

Adults have been taken at my lab doorlight: 25 October 71 (♀), 17 November 71 (♀), 13 June 72 (1♂, 1♀), 1 July 72 (♂), 2 July 72 (2♂), 8 July 72 (♂), 10 July 72 (♂), 7 August 72 (♂), 7 August 73 (♀), 30 October 73 (♂) and 1 July 75 (♀). Based on these dates at least 2 broods are indicated.

Geometridae

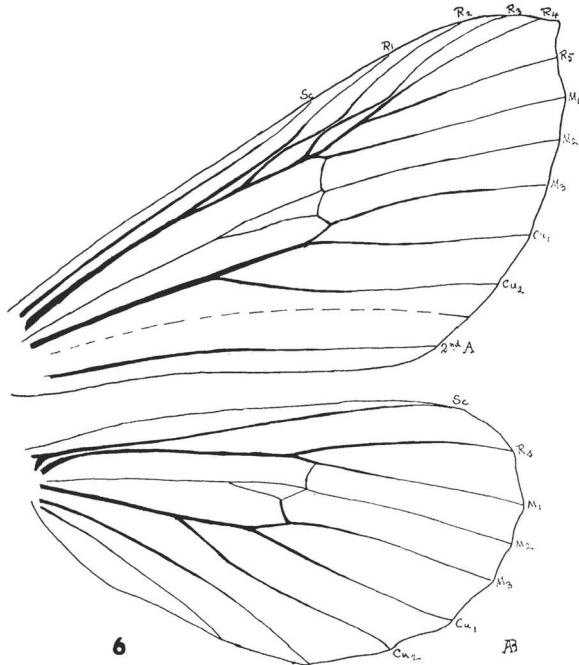
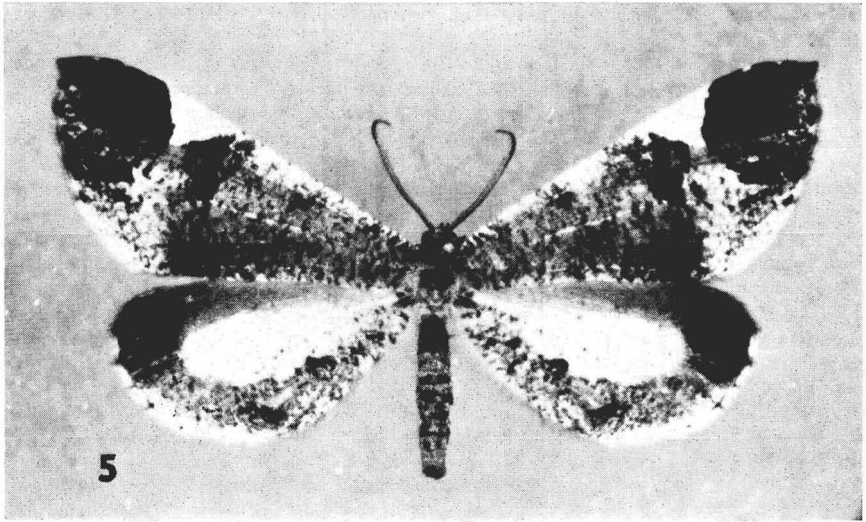
Scordylia atalanta Guenée 1857. On 28 January 75 near Ciudad Mante, Tamaulipas, Mexico, about midafternoon I observed a ♀ ovipositing on the foliage of *Serjania racemosa* Schumacher, SAPINDACEAE. In the field lab this ♀ deposited 14 more eggs the same day, but it became quiescent at sunset. On the following day, 38 more eggs were deposited during daylight hours; that evening, the ♀ was killed and papered. Several eggs were preserved, and the remaining ones started hatching 1 February 75, ca. 2030 hrs. The young larvae were offered foliage of *Urvillea ulmacea* H.B.K., SAPINDACEAE which they readily ate. On 14 February the larvae were offered swelling blossom and leaf buds of *Ungnadia speciosa* Endl., also SAPINDACEAE, which they ate and on which they matured. Fifteen larvae pupated between 21 and 28 February 75; adults emerged (7♂, 5♀) from 3–11 March 75. Twelve eggs, 12 larvae and 3 pupae were preserved.

At the same time the gravid ♀ was collected, 2 larvae were found on a bit of the larval foodplant, *S. racemosa*, gathered at the site and placed with the captive female. These 2 larvae pupated 14 February 75, and 2 ♀ emerged 26 and 27 February 75.

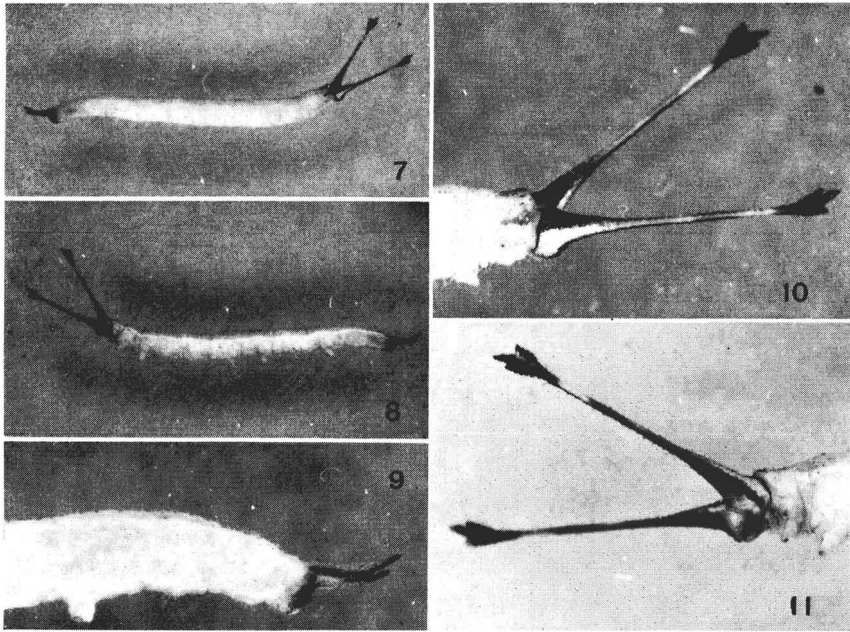
Hedylidae

Hedyle heliconiaria Guenée 1857. Recently I had the good fortune to rear this most interesting species (Figs. 5, 6). Although a few of the diurnal adults were collected earlier, I never associated them with the larvae (Figs. 7–11) collected later. In fact, I thought the larvae might represent a satyr species, but when the first larva pupated I was sure it was a pierid. The first adult emerged as a complete surprise. The pupa (Figs. 12–15) is secured by girdle and cremaster, not unlike a pierid. Several egg shells, presumably of this species, were found deposited singly on top of leaves. Larvae rest on top of the leaves, oriented along the mid-vein, their color and configuration providing excellent camouflage, at least to the human eye. Larval feeding consists of eating, at random, a series of small holes in the leaf on which it rests.

On 6 February 74 at Rancho Pico de Oro, near the Rio Sabinis, Tamaulipas, Mexico, Mrs. Kendall and I collected 13 larvae feeding on the foliage of *Buettneria aculata*



Figs. 5-6. *Hedyle heliconiaria*: 5, ♀, ex larva 11 March 1974, Ranch Pico de Oro, Tamps., Mexico (expanse 32 mm); 6, wing venation, same specimen.

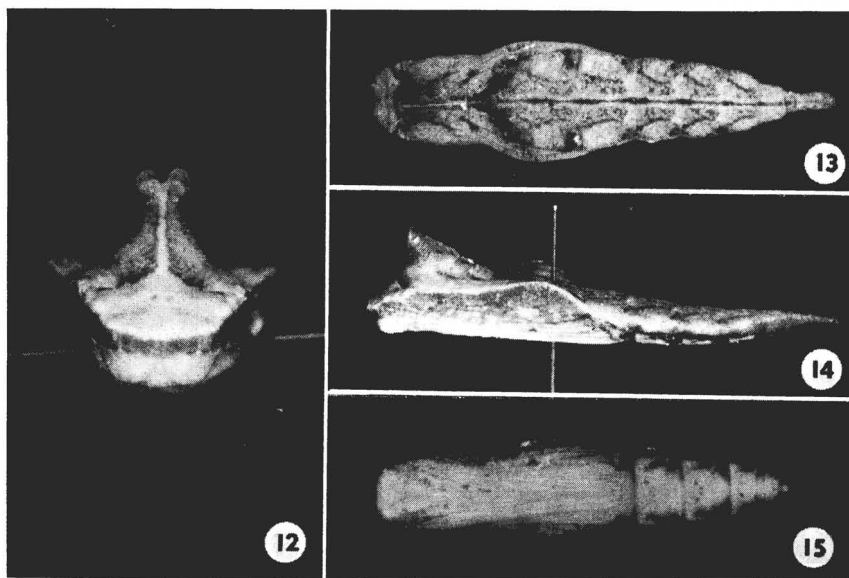


Figs. 7-11. *Hedyle heliconiaria*: 7, last instar larva, dorsolateral view; 8, ventrolateral view; 9, anal end and process; 10, larval head, laterodorsal view; 11, larval head, lateroventral view.

Jacq., STERCULIACEAE. Six of these larvae pupated between 9 and 20 February 74; adults emerged 19 February (δ), 25 February (\varnothing), 2 March (δ), and 11 March 1974 (\varnothing). Seven larvae and 2 pupae, most of which were parasitized, were preserved. Again on 10 November 74, near Ciudad Mante, Tamaulipas, about 12 more (1st and 3rd instar) larvae were collected on *B. aculiata*; 2 of these were preserved the same day. On 17 November it was discovered that all remaining larvae except 2 had been eaten by 3 predatory fly larvae, predators on the foliage which had gone unnoticed at the time of collecting. The 2 remaining larvae pupated 26 November 74; 1 was preserved and the other proved to be parasitized.

Pyralidae

Odontivalvia radialis (Munroe) 1972. On 15 September 71 at Dagger Flat, Big Bend National Park, Brewster Co., Texas, while collecting *Thessalia chinatiensis* (Tinkham) (Nymphalidae) larvae on *Leucophyllum minus* Gray, SCROPHULARIACEAE, I found 3 micro larvae in silken tunnels covered with frass and attached to the branches of this plant. These 3 larvae were taken to the lab in San Antonio where little activity was observed in the rearing container (glass jar with screened lid). The small amount of foodplant brought to the lab soon dried, and because no activity was observed it was not until 8 June 73 that I decided to clean the jar. At this time (some 21 mos. later) I found 1 larva had pupated, 1 was dead, and the third was still in diapause. The pupa and diapausing larva were placed on a moist sponge. The following day a δ emerged. On 15 June 73 the larva had not pupated,



Figs. 12-15. *Hedyle heliconiaria*: 12, pupa, frontal view; 13, dorsal view; 14, lateral view; 15, ventral view.

but upon my returning from a field trip 6 July, it had; another ♂ emerged 7 July 73. This is another species well adapted to Chihuahuan Desert conditions.

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