# THE LIFE HISTORY OF HULSTINA INCONSPICUA, A CEOMETRID MOTH FROM SOUTHERN CALIFORNIA

## by John Adams Comstock

The inconspicuous little moth, now known as *Hulstina inconspicua* Hulst, was described in 1896 as *Chloroclystis inconspicua*. In 1908, DYAR described *Selidosema æthalodaria* from San Diego, which proved to be a synonym of *inconspicua*. Dr. J. H. McDUNNOUCH, in his "Studies in North American Cleorini, Geometridæ" (1908) illustrated the imago on Plate VII, Fig. 1, and stated that "the species is common in southern California." Apparently no descriptions or illustrations of the early stages have been published.

I reared this species from larvæ taken on Adenostoma in Bouquet Canyon, Los Angeles County, in June of 1937, but made no illustrations. Several gravid females taken in Del Mar at black light June 20, 1962, refused to lay in captivity on the netting or glass of the rearing jar until I placed a sprig of their foodplant in it. They then oviposited only on the plant. I also secured several larvæ by beating Adenostoma fasciculatum H. & A. This made possible the accompanying notes and illustrations.

EGG: Length, 0.70 mm. Greatest width, 0.35 mm. Form, elongateoval, the base flattened and the top acutely rounded. There are from 16 to 18 prominent ridges running from the base to the micropylar area. In the upper part of the egg these coalesce and form an irregular network of hexagonal cells. There is no distinct micropyle. The longitudinal ridges are topped by pearly nodules. Fine transverse lines run from ridge to ridge. The base has a depressed central area where the ridges end in a rosette. The symmetry of this is frequently out of line as is purposely shown in our drawing, Figure B. There is some variation in the form of the egg. A few examples are somewhat elongate and subcylindrical. The eggs are at first yellow, with white ridges, but change to a pinkish or dull red as they mature.

During the time when the *H. inconspicua* eggs were hatching and running into their early instars, there were numerous other species in my laboratory requiring illustration. I was therefore unable to resume records for this species until they were nearly full grown larvæ. It was however noted that in the first instar they were apparently uniform in color, whereas in later stages they showed wide variation in color and markings.



#### Early stages of Hulstina inconspicua.

A. Egg, lateral aspect, enlarged  $\times$  90. B. Basal end of egg. C. Larva, penultimate instar, dorsal aspect, enlarged  $\times$  12. D. Mature larva, dorsal aspect, enlarged  $\times$  18. E. Caudal end of pupa, ventral surface, greatly enlarged to show cremaster.

Reproduced from water color drawing by the author.

LARVA, PENULTIMATE INSTAR: Length, 11 mm. Head width, 0.9 mm. Width of 6th body segment, 1.2 mm. Variation shows gradation from an almost immaculate yellow-green form through various darker green or brown mottled examples to the highly colored yellow and redbrown type shown in Figure C. Our description is of the latter type. Ground color of head and body, translucent greenish yellow. Head tinged with rose around the margin. Ocelli black. Each typical body segment has a wide transverse band of dull rose filling the posterior portion of the segment. Running through this band is a middorsal longitudinal stripe, which fades out on the caudal segments. There are numerous fine wavy black stripes and dashes running longitudinally on the dorsal and lateral surfaces. The venter is light yellow.

The larva is of the typical looper type, with one pair of prolegs only, in addition to the anal pair.

MATURE LARVA: Length, 18 mm. Cylindrical, the head slightly wider than the body, mottled ivory, brown and black. As in the last instar, larvæ are highly variable in color and markings, no two being exactly alike. Our description is of the darker, more contrasting type. The dorsal area is predominantly brown, with numerous black wavy lines running longitudinally in pairs. Most of these lines are interrupted in the caudal edge of each segment where a transverse yellow band occurs. These yellow bands are particularly conspicuous on the 4th to 7th segmental junctures. In the stigmatal area a wide longitudinal lemonyellow band occurs, which is expanded on the 5th to 8th segmental junctures where large black irregular V-shaped spots are present. The legs are mottled brown and black, and the prolegs, including the anal, are yellow, mottled with brown. The spiracles are black-rimmed with yellow-brown centers. The venter is mottled light yellow and brown, with several interrupted wavy lines running longitudinally.

The mature larva is pictured on Figure D.

PUPA: Length, 10 mm. Color, wood brown, with the wing cases lighter. In form it is robust. The movable segments of the abdomen are deeply cleft. The spiracles are concolorous with the body. The cephalic end bears from ten to twelve short slightly curved brown setae. The cremaster is a quadrate protrusion ending in a pair of stout cones, with no attached hooklets. Our illustration, Figure E, shows the caudal end of the pupa on its ventral surface.

### DESCRIPTION OF A NEW SPECIES OF CHILO (CRAMBIDAE)

#### by HAHN W. CAPPS

The following description is to provide a name for an undescribed species, reared by Mr. R. A. AGARWAL, and involved in his study of lepidopterous sugarcane pests and related species at Louisiana State University at Baton Rogue, Louisiana.

# CHILO ERIANTHALIS Capps, NEW SPECIES Figures 1 - 3a

Male.- Alar expanse 24 mm. Antenna simple, pubescent. Vestiture of head, collar, thorax, and patagia gray with somewhat reddish tinge, sprinkled with reddishbrown scales. Abdomen pale luteous, lightly sprinkled with dark fuscous. Labial palpus porrect, length about three times that of head; loosely scaled, gray with heavy intermixture of dark fuscous. Frons conical. Ocelli present. Forewing: Upper surface gray with slight reddish tinge, heavily dusted with fuscous; veins and folds accentuated with gray or gray with ochreous tinge, giving the wing a lined appearance; a series of conspicuous blackish metallic patches, the series chevronlike in shape with apex at outer angle of cell. Terminal dots black. Fringe cupreous, somewhat metallic. Under surface paler than above; metallic patches absent; terminal dots black but weaker than above. Hindwing: Uniformly pale gray with brownish tinge; fringe concolorous with wing, non-metallic. Hind tibia normal; two pairs of spurs, length of outer spurs about two-thirds that of inner. Genitalia (fig. 3): Harpe simple, rather broad basally, narrowed apically; uncus short, distal end a sharp point; gnathos simple, median projection a narrow upturned hook; arms of anellus long, slender, extending to or above costa of harpe. Ædeagus (fig. 3a) slender with a very narrow ventral tonguelike projection; the projection weakly sclerotized distally. short and ending well before middle of ædeagus; cornutus moderately long, spinelike.

Female (fig. 1).— Alar expanse 25-28 mm. Similar to male in color and maculation. Genitalia (fig. 2): Length of ductus bursæ about two times the width, moderately sclerotized, constricted near middle; ductus seminalis origin from or near junction of ductus bursæ and bursa copulatrix; bursa copulatrix elongate, lightly sclerotized from junction with ductus bursæ to signum, the sclerotized portion constricted near middle; signum narrow, elongate, weakly sclerotized, slightly scobinate.

TYPE.— Male, in U. S. National Museum, USNM Type No. 66663. Paratypes.— Four females, same locality as type; in U. S. National Museum. Type locality.— Port Blarre, Louisiana. Food plant.— *Erianthus* sp.

Remarks.— *Chilo erianthalis* resembles *C. fernaldalis* Dyar & Heinrich in size and habitus, but *fernaldalis* is paler, more grayish, and the forewing is unlined, lacking a conspicuous grayish accentuation on the veins and folds; dark fuscous patches are absent, or if discernible, obsolescent and non-metallic; a distinct subterminal line is present and the fringe is dull brown with a reddish tinge. The ædeagus of *fernaldalis* has the ventral tonguelike projection well developed, broader and longer than in *erianthalis*, and extending to or slightly beyond middle of ædeagus.