

A NEW *COPAXA* FROM GUATEMALA (LEPIDOPTERA: SATURNIIDAE: SATURNIINAE)

KIRBY L. WOLFE¹ AND CLAUDE LEMAIRE²

3090 Cordrey Drive, Escondido, California, 92029, USA¹

La Croix des Baux, F-84220 Gordes, France²

ABSTRACT.— *Copaxa evelynae* n. sp. is described from the province of Zacapa in southeastern Guatemala. It is closely related to *Copaxa cydippe* (Druce), and like *C. cydippe*, is a montane species associated with cloud forest containing pines. Male and female genitalia are figured, individual variation and the habitat are illustrated in color, known distribution is indicated, and specific characters are discussed and compared with those of *C. cydippe*.

RESUMEN.— Se describe *Copaxa evelynae* sp. nov. de la provincia de Zacapa en el sureste de Guatemala. Muestra estrecho parentesco con *Copaxa cydippe* (Druce), e igual a *C. cydippe* es una especie montañesa asociada con el bosque neblinoso que contenga pinos. Se figuran los genitales de macho y hembra, se ilustran a colores algunas variaciones individuales y el habitat, se indica su distribución conocida y se discuten y comparan sus caracteres específicos en comparación con los de *C. cydippe*.

KEY WORDS: Argentina, *Copaxa evelynae* n. sp., distribution, habitat destruction, Honduras, Lauraceae, Mesoamerica, Mexico, taxonomy.

The genus *Copaxa* is restricted to the New World. There are about 34 species, mostly montane, generally inhabiting wet forests at middle altitudes from Mexico to Argentina. Many have one or more conspicuous translucent discal spots, and there is often marked sexual dimorphism. Although most species apparently feed upon Lauraceae, several species utilize hostplants of other families, and *Copaxa cydippe* (Druce) feeds on pine (Wolfe, 1988, 1993). A previously undescribed taxon closely related to *C. cydippe* has recently come to our attention. A series of seven specimens from the only known place of its occurrence form the basis for the following description.

Copaxa evelynae Wolfe and Lemaire, new sp.

DIAGNOSIS.— This new species is closely allied to *Copaxa cydippe* (wingspan 73mm, Fig. 5), from which it differs by its much larger size, largely yellow upper wing surface in most males seen, and the epsilon- or V-shaped discal spot on forewings and hindwings of both sexes.

DESCRIPTION.— Wingspan: ♂ 90-95mm, ♀ 103mm.

MALE (Fig. 3, 5).— *Head*: Orange brown, palpi gray. Antennae dull yellow, quadripectinate. *Thorax*: Orange brown with a broad blue gray collar. Legs light blue gray, inside of tibia with long reddish hairs; epiphysis present, about two thirds as long as foretibia; tibial spurs number 0-2-2. *Abdomen*: Reddish brown dorsally, blue gray ventrally. *Forewing*: length 48-50mm; falcate, apex narrow and very produced; above rusty brown, in most specimens examined extensively suffused with orange yellow, especially on the margin of the tornus, slightly less so from the basal area outward to the proximal edge of the submarginal line; distinct antemedial and wavy postmedial lines dark reddish brown,

the submarginal line darker or even black, outwardly narrowly bordered blue gray then with wide dark reddish brown band minutely speckled blue gray and yellow and scalloped on the outer margin. Underside brown, finely speckled blue gray in lighter areas; basal two thirds and borders darker; single translucent discal spot is epsilon- or V-shaped, with apex oriented toward apex of wing. *Hindwing*: Above ground color as in forewing, but entirely suffused with orange yellow in most specimens except on base of costal area; nearly straight antemedial and wavy postmedial lines are dark reddish brown bordered narrowly blue gray; submarginal line represented by a series of dark reddish triangular spots; translucent discal spot V-shaped, but shallower than in forewing.

Male genitalia (Fig. 1): Structures similar to those of *C. cydippe* (Lemaire, 1978) but much larger, stronger; harpes and two spines on the juxta are longer and sclerotized; uncus bifid, produced; aedeagus similar to *C. cydippe* but larger and straighter except for a strong upward bend near the base.

FEMALE (Fig. 4).— Antennae bipectinate, yellow. Epiphysis two fifths as long as the tibia. Same general markings as in male but more segregated and contrasting areas of color: Basal area of fore- and hindwings, margin of forewing tornus and band between wavy postmedian and submarginal lines of hindwings yellow; distal third of wing apices mainly rusty brown, submarginal band lilac, broad and distinct on the forewing, less distinct on the hindwing; discal spots as in male.

Female genitalia (Fig. 2): Do not differ obviously from those of *C. cydippe*, except for larger size.

IMMATURE STAGES.— Unknown.

TYPES.— *Holotype* ♂: GUATEMALA, Zacapa, 3km SE of La Unión, elev. 1500m, 4 Aug 1992, Peter Hubbell; *Allotype* ♀: *Ibid.*, 5 Jul 1992.

1. Field Associate, San Diego Natural History Museum, San Diego, California

2. Correspondant du Muséum national d'Histoire naturelle, Paris

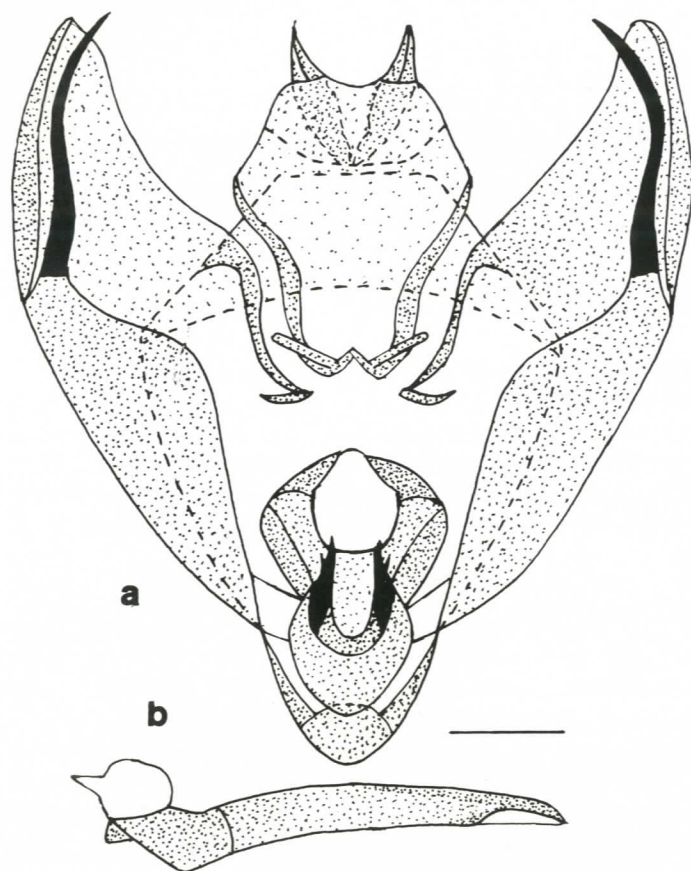


Fig. 1. *Copaxa evelynae* n. sp., ♂ genitalia: a) Ventral view, aedeagus removed; b) Lateral view of aedeagus.

Paratypes: 1 ♂ (same as holotype), 5 Jul 1992; 1 ♂, *Ibid.*, 6 Jul 1992; 1 ♂, *Ibid.*, 4 Aug 1992; 1 ♂, *Ibid.*, 6 Aug, 1992; 1 ♂, *Ibid.*, 4km SE of La Unión, elev. 1420m, 11 Jun 1992.

The holotype and allotype from the collection of the junior author will be deposited in the Muséum national d'Histoire naturelle, Paris, and paratype males from the senior author and from Peter Hubbell will be deposited in the National Museum of Natural History in Washington and the Universidad del Valle in Guatemala City.

ETYMOLOGY.— This species is named in honor of Evelyn Anderson Hubbell, wife of Peter Hubbell, for her support and contributions to the study of the Saturniidae.

DISTRIBUTION.— This new species is known from only one locality at about 1500m elevation in humid cloud forest of broadleaved trees and widely scattered pines in Zacapa Province of southern Guatemala near La Unión (Figs. 6, 7, 8), about 20km from the Honduran border. It likely occurs on similar nearby mountaintops in Guatemala and adjacent Honduras, but lack of roads and difficulty of access deter adequate collecting.

FLIGHT PERIOD.— The type series was collected from 11 June to 6 August 1992 using mercury vapor lights. Collecting by the senior author at the type locality for one night on 17 June 1993 using mercury vapor lights and virgin females of *Copaxa cydippe* yielded no specimens.

VARIATION.— Very little difference in size was observed in the male specimens, and color varied from entirely reddish brown of

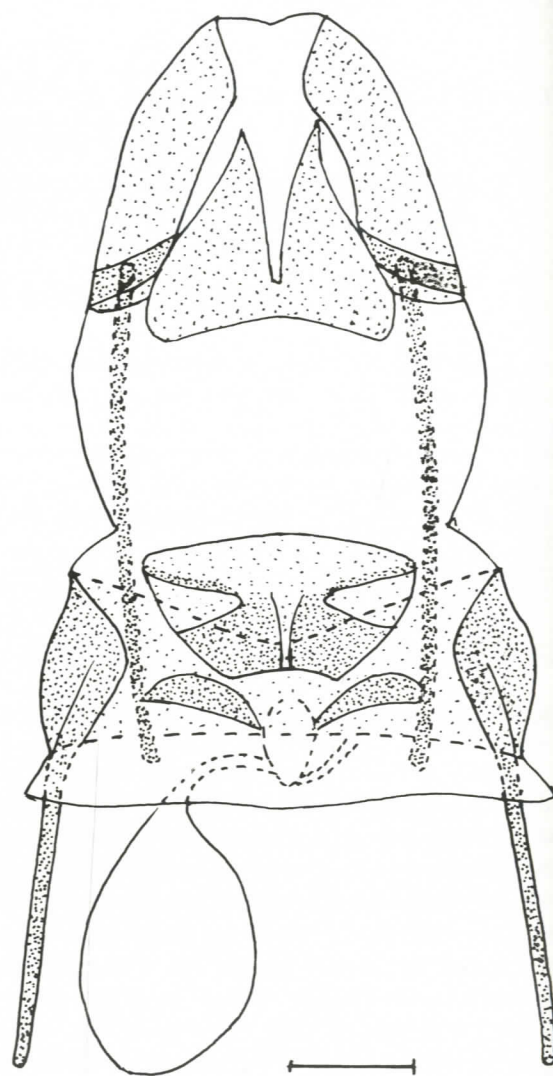


Fig. 2. *Copaxa evelynae* n. sp., ♀ genitalia, ventral view.

the ground color (one male, Fig. 5) to more or less bright suffusion with orange yellow.

REMARKS.— The type locality of *C. evelynae* is close to the median altitudinal range of *Copaxa cydippe*, which occurs mainly from 950m to 2200m. The lateral range of *C. cydippe* extends almost 1500km in pine and oak forest from Michoacan in Western Mexico to Baja Verapaz, Guatemala, where typical specimens are known from near Purulhá, about 100km from the La Unión site in Zacapa. Suitable contiguous habitat where *C. cydippe* probably occurs exists within 50km of La Unión. However, a deep long valley and extensive areas of lower elevation separate the habitats of *C. cydippe* and *C. evelynae*.

Remaining habitat for *C. evelynae* has been reduced to remote mountaintops but, though threatened, is somewhat protected. Although much forest in southern Guatemala has been destroyed for farming or pastures, recent educational and governmental efforts have encouraged citizens to leave uncut the remaining humid forests on higher slopes and ridges for vital watershed necessary to supply hillside villages such as La Unión.

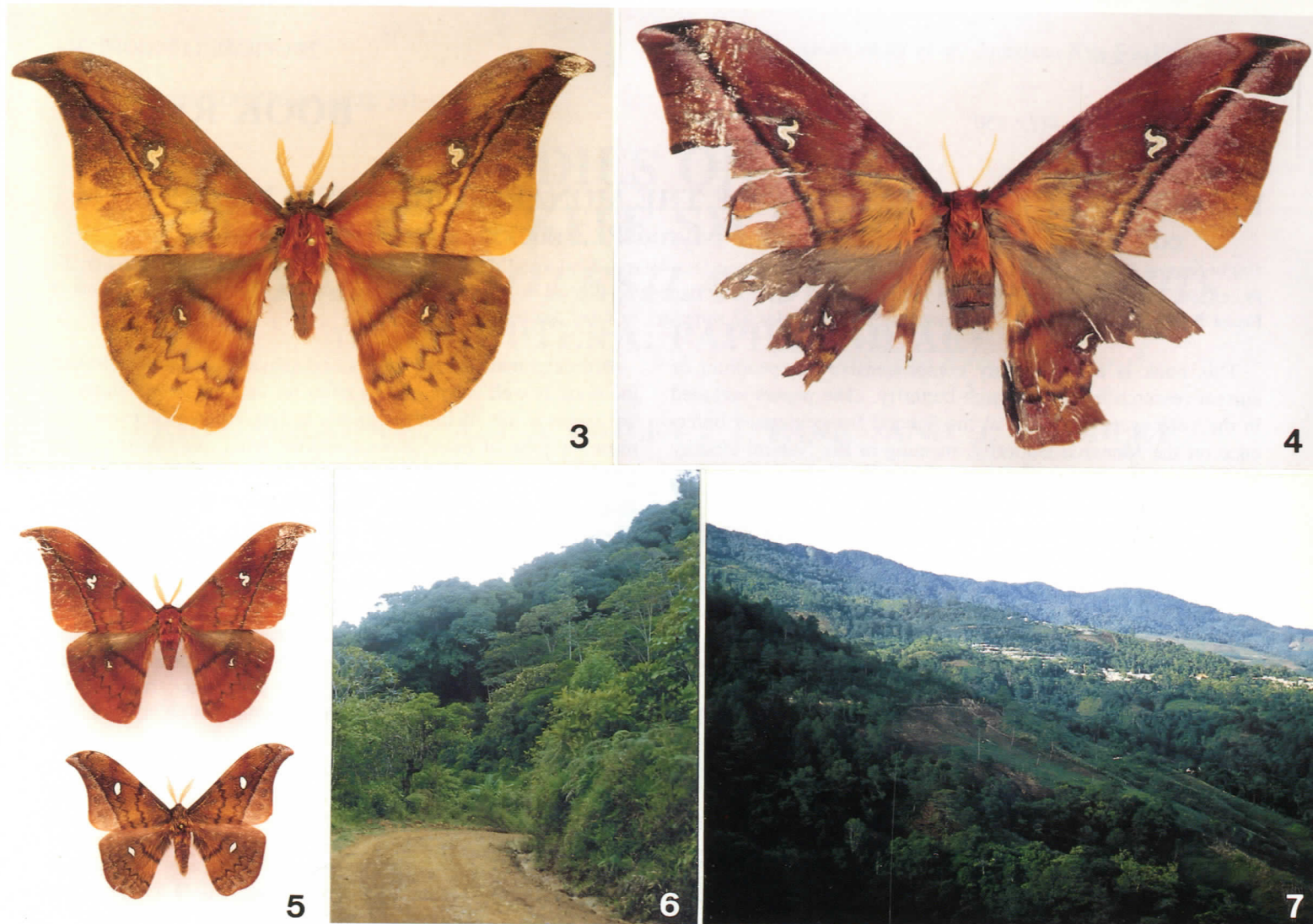


Fig. 3-7. *Copaxa evelynae* n. sp.: 3. Holotype ♂ (wingspread 90mm); 4. Allotype ♀ (wingspread 103mm); 5. Brown morph ♂ compared with typical *C. cydippe* ♂ (wingspread 73mm) from Mexico, Oaxaca, elev. 1385m; 6. Type locality near summit of mountains, elev. 1500m, 3.2km SE of La Unión, Zacapa, Guatemala; 7. Town of La Unión, elev. 950m, showing type locality on forested summit.

ACKNOWLEDGMENTS

We thank Peter Hubbell for bringing this previously undescribed species to our attention and providing the type specimens.

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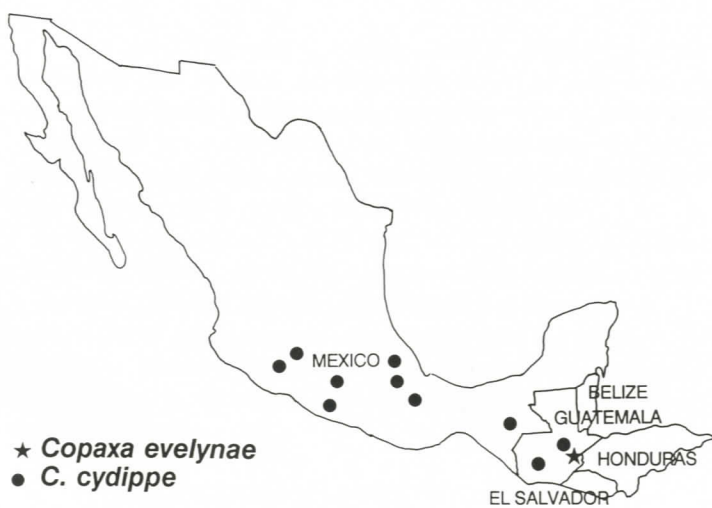


Fig. 8. Distribution map of *Copaxa evelynae* and *C. cydippe*.