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The true identity of the enigmatic *Acontista cubana* Zayas, 1976 (Mantodea: Acontistidae): a new synonymy in Caribbean mantids

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Almost half a century ago, Zayas (1976) described a small beautiful mantid he named *Acontista cubana*. The type-series was composed of a declaredly small but unspecified number of specimens collected in June 1967 at La Farola, a mountain locality in Guantanamo, easternmost Cuba (Zayas, 1976). It was never recorded again and no additional specimens were listed in published literature, but it remains the single mantid regarded as endemic from Cuba.

As part of her continued work on the Caribbean orthopteroid fauna, the present author set as one of the main objectives to find again *A. cubana* and prepare an updated, fully illustrated redescription to define satisfactorily its taxonomic identity and geographical distribution. As results, 13 new specimens were obtained: seven adult males and six adult females, including a crucial male/female pair from the type-locality (fig. 1a). These specimens match perfectly the original description and illustrations of Zayas (1976: 29, 32; fig. 27) and expanded its distribution to four more localities, enlarging it almost 200 km westward into Santiago de Cuba province. Nevertheless, when making the taxonomical study of the samples, it was also immediately noted that all characters declared and illustrated as diagnostic for *A. cubana* by Zayas (1976), match perfectly the well-known and widespread *Callimantis antillarum* (Saussure, 1859) (Mantidae: Stagmomantinae), see e.g. Lombardo & Perez-Gelabert (2004: figs. 29–36). Very interestingly, *C. antillarum* was mentioned from Cuba once by Saussure (1869) and never listed again from the country except by Rehn (1909), who merely echoed the previous record of Saussure (1869).

Apart from this, *C. antillarum* was described by Saussure (1859) from a single specimen of unspecified sex collected in St. Thomas (U.S. Virgin Islands), east of Puerto Rico. Later it has been confirmed to occur there, but also in Hispaniola, Puerto Rico (including Mona Island) and even recorded from Brazil (Saussure, 1859; Wolcott, 1948; Terra, 1995; Ehrmann, 2002; Lombardo & Perez-Gelabert, 2004; Agudelo Rondón *et al.*, 2007). The latter is most likely not a true or at least native occurrence, but a case of misidentification, mislabeling or accidental introduction instead, i.e., all confirmed data published do indicate that the species is endemic from the Greater Antilles. Nevertheless, such rejection needs evidence to be adopted.

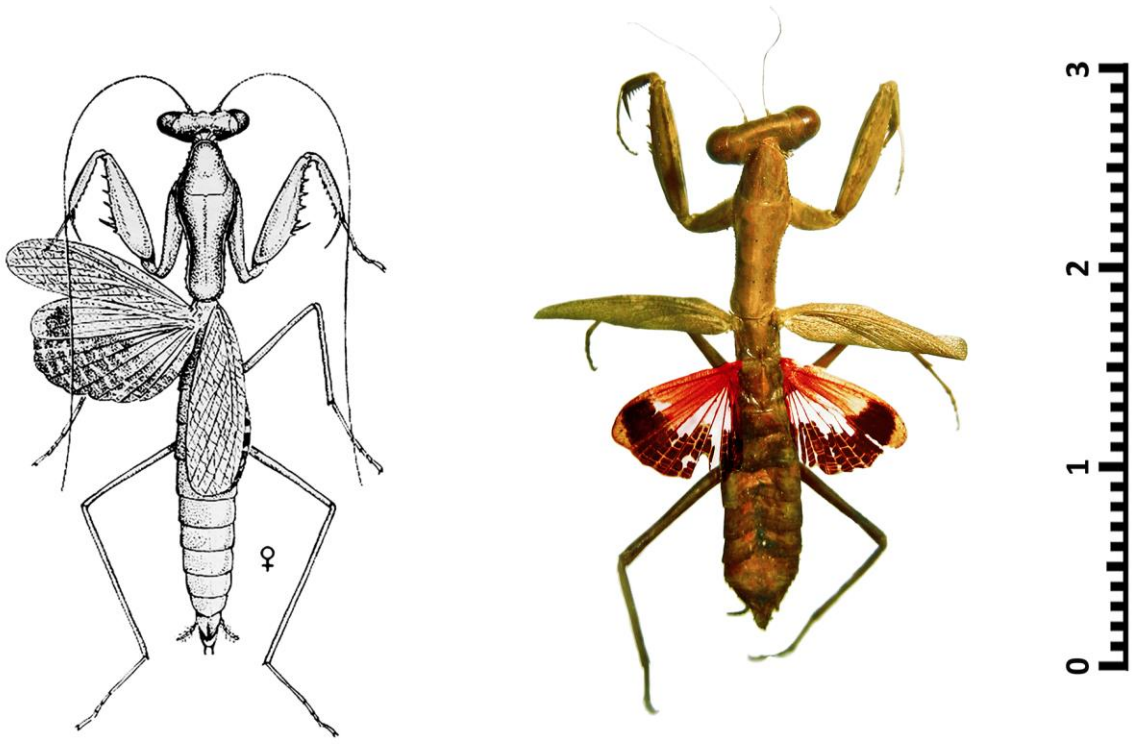

Figure 1. Adults of *Callimantis antillarum* from Cuba, preserved dry-pinned, full-body views to show chromatic variation: **a)** from left to right: two males from Playa Verraco, male and female from Alto de La Farola (topotypes of *Acontista cubana*), and female from Imías, all five specimens from IES collection; **b)** close-ups of female syntype (left, copied from the original description) and female from Playa Verraco, from SY collection. Scale bars in centimeters with millimeter subdivisions, not applicable to the syntype because neither scale bar nor actual size were explicitly given for this specimen by Zayas (1976).

Figure 2. Adults of *Callimantis antillarum* from Cuba photographed alive in nature, full-body views to show chromatic variation: males from Playa Verraco (**a, b, d**) and female from Sigua (**c**).

The direct comparison of the newly obtained Cuban specimens (all well preserved and with reliable collecting data) to specimens of *C. antillarum* from Dominican Republic (see details below) and high-resolution, full-color photos of the same species from all over Hispaniola and Puerto Rico (including fine-scale drawings of pronotum and external genitalia), left no doubt that the two taxa are conspecific. There is not the slightest morphological difference between the Cuban and Hispaniolan specimens, supported also by the photographs. Thus, the following synonymy is herein established: *Callimantis antillarum* (Saussure, 1859) = *Acontista cubana* Zayas, 1976, **new synonym**.

The complete data of the examined Cuban samples is given below. Voucher repositories were abbreviated as follows: Centro Oriental de Ecosistemas y Biodiversidad, Santiago de Cuba (BIOECO), Instituto de Ecología y Sistemática, Havana, Cuba (IES), and author's personal collection (SY):

- CUBA: Santiago de Cuba Province: Santiago de Cuba Municipality: Baconao: Playa Verraco (19°53'34"N - 75°34'32"W, 10 m a.s.l.); 18/April/2017; at night, on bushes; S. Yong, R. Teruel, E. Fonseca, J. L. Reyes; three adult males (SY, in ethanol 80%). Same locality; 29/June/1978; no further data; G. Garcés; one adult male and one adult female (IES, dry pinned). Same locality; 6/July/1979; molted on 15/September/1979; G. Garcés; one adult female (SY, dry pinned). Same locality; 13/July/1979; molted on 12/August/1979; G. Garcés; one adult male (BIOECO, dry pinned). Same locality; 16/September/1979; no further data; G. Garcés; one adult female (BIOECO, dry pinned). Sigua: Jardín de Cactus (19°53'35"N - 75°31'05"W, 45 m a.s.l.); 4/July/2017; at night, on grass and bush; S. Yong, R. Teruel, J. L. Reyes; one adult male and one adult female (SY, in ethanol 80%). Guantánamo Province: Imías Municipality: Imías (20°04'00"N - 74°38'04"W, 50 m a.s.l.); August/1975; L. B. Zayas; one adult female (IES, dry pinned). Alto de La Farola (20°09'45"N - 74°29'00"W, 540 m a.s.l.); June/1967; P. Alayo; one adult male and one adult female (IES, dry pinned, topotypes of *Acontista cubana*).

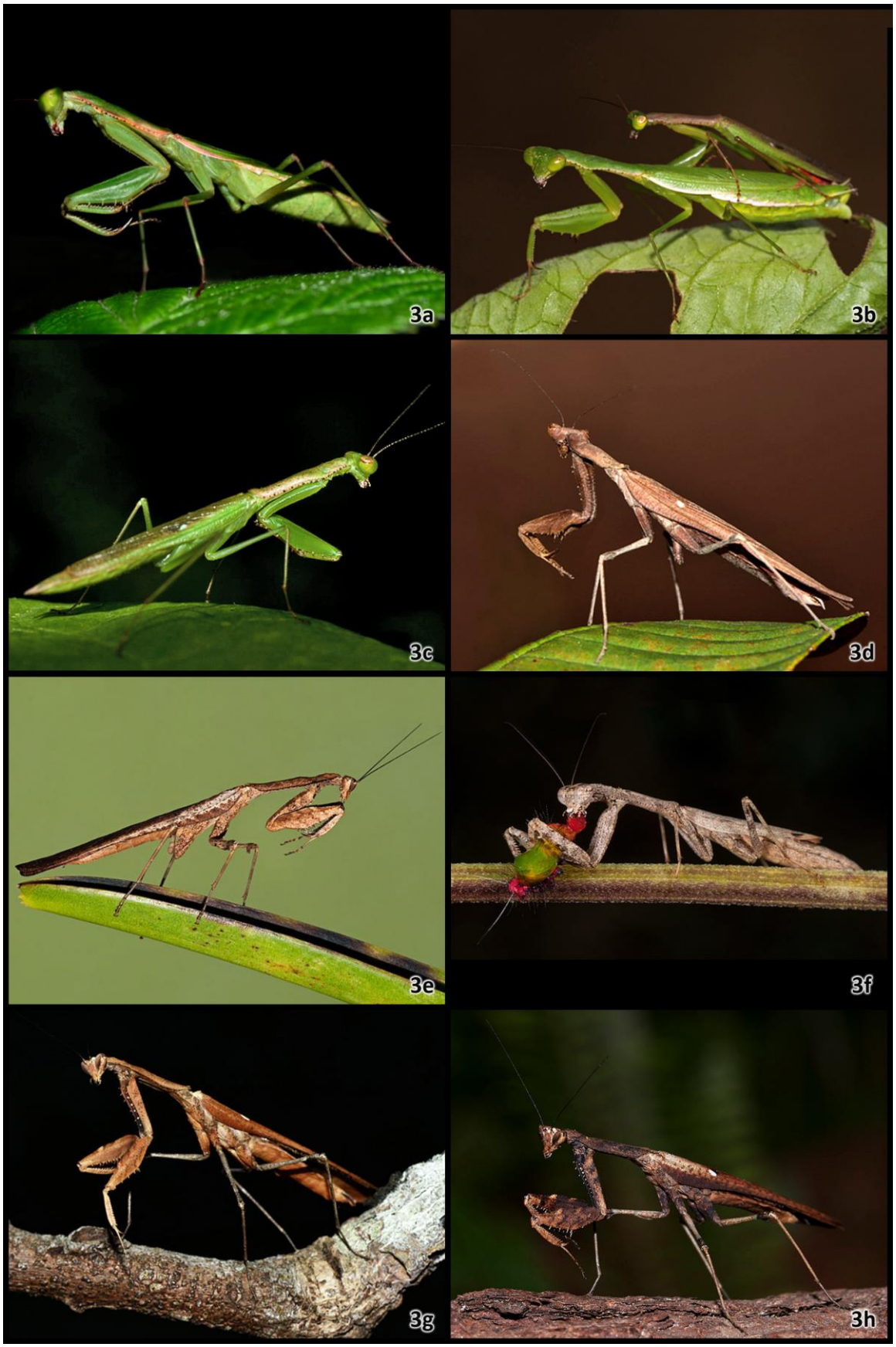

Fig. 3. Adults of *Callimantis antillarum* from Hispaniola (Dominican Republic) photographed alive in nature, full-body views to show chromatic variation: males (**d, e, g, h**), females (**a, c, f**) and mating pair (**b**). Photos courtesy Carlos de Soto Molinari.

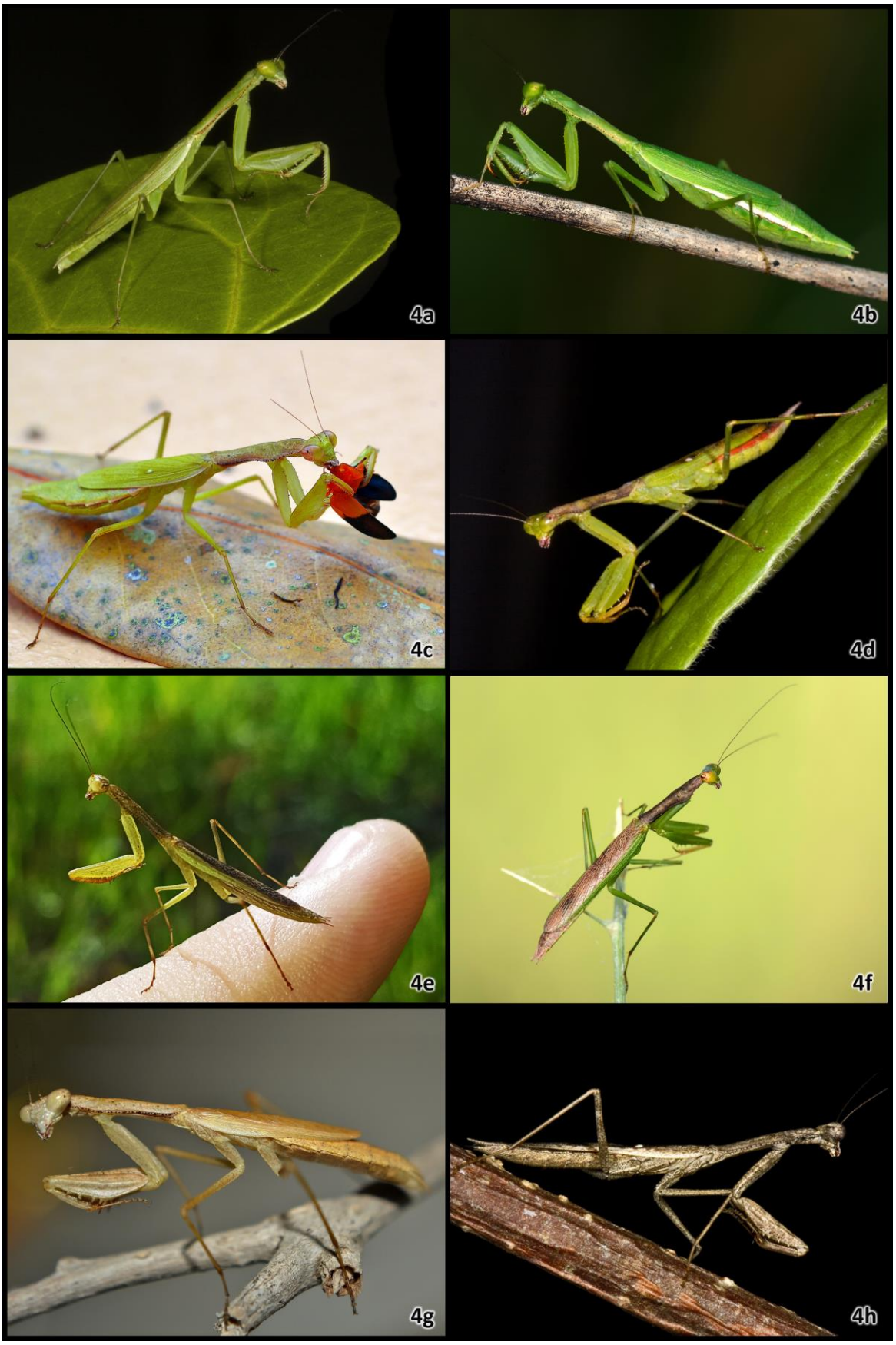

Figure 4. Adults of *Callimantis antillarum* from Puerto Rico photographed alive in nature, full-body views to show chromatic variation: males (**e, f, h**) and females (**a, b, c, d, g**). Photos courtesy Fr. Alejandro Sánchez (a, d, h), Benny Díaz (b, f), Guillermo Plaza (c, g) and Johann D. Crespo (e).

- DOMINICAN REPUBLIC: Barahona Province: Santa Cruz de Barahona Municipality: Juan Esteban: La Vuelta de Gabino (18°08'34"N - 71°03'53"W, 30 m a.s.l.); 14/September/2016; R. Teruel, J. Nigl, F. Schramm; one adult male, two adult females (SY, in ethanol 80%).

The material listed above represents the first precise locality records of *C. antillarum* from Cuba, as its single mention by Saussure (1869) only vaguely read "Cuba". It is noteworthy to mention here that it took almost 150 years to confirm that old record, but mainly because Zayas (1976) failed to recognize it and just described it as a "new" species in a wrong genus.

The present study revealed that Cuban specimens of *C. antillarum* are as highly variable morphologically as those from other Caribbean territories examined herein (figs. 3–4), and this concurs with the observations of Lombardo & Perez-Gelabert (2004) on Hispaniolan samples. Adults belonging to different size-classes and color patterns (essentially all possible chromatic combinations from plain green to brown with blackish spots, including green/brown bicolor), can be mistaken as distinct species if a large sample is not available. The expression of adult sexual dimorphism follows the same rule as in other studied species of the order, i.e., female is larger, more robust and shorter-winged than male (figs. 1–2).

In Cuba, *C. antillarum* is so far known only from the southern part of Santiago de Cuba and Guantánamo Provinces. Specimens examined herein were collected in four localities only (see below), but according to the field notes of a collaborator (R. Teruel, personal communication), a few specimens were collected on 24/May/1992 in another locality about 30 km westward: La Socapa, west point of Santiago de Cuba Bay, in homonymous Municipality and Province. All five localities are depicted here in figure 5.

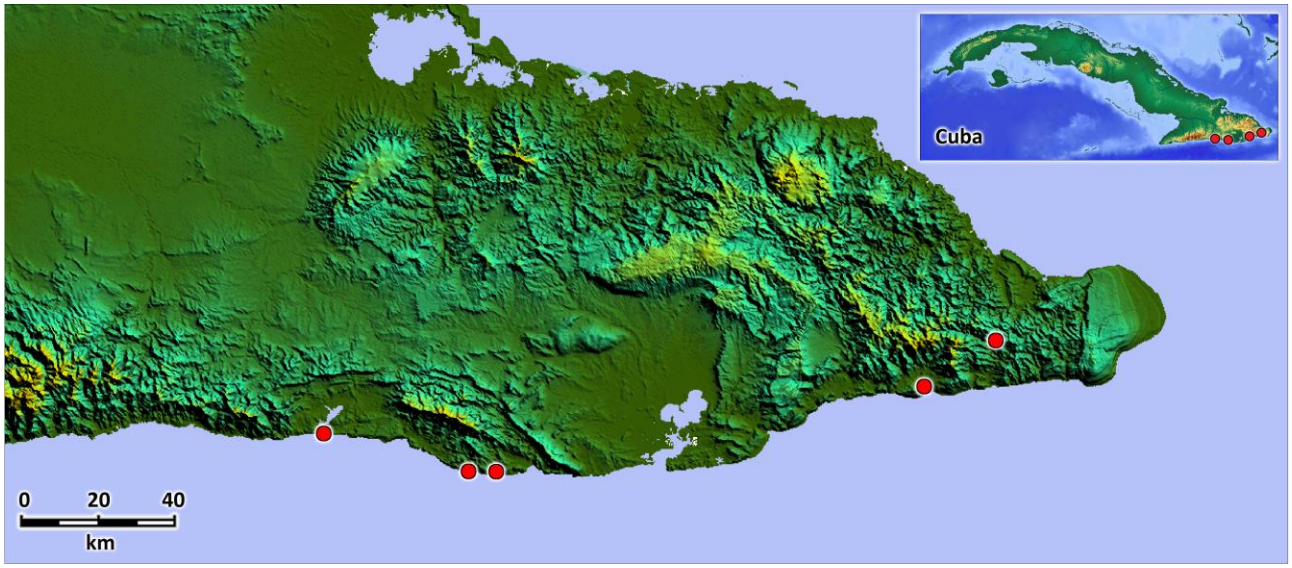

Figure 5. Precise records of *Callimantis antillarum* in Cuba, detail and overview (inset on upper right corner).

This species has been reported to be ecologically plastic, being a successful colonizer of very different habitats in other Antillean islands (Lombardo & Perez-Gelabert, 2004; Svenson & Rodrigues, 2017). This holds true for the Cuban populations: here it occurs in coastal microphylous semicaducifolious forest on limestone karstic terrain (La Socapa), in desert scrub on limestone karstic terrain (Playa Verraco, Sigua and Imías), and in humid montane mixed rainforest/pine forest on volcanic terrain (La Farola). Moreover, *C. antillarum* also occupies in Cuba a moderately wide altitude range, from the seashore (Playa Verraco and Sigua) to more than 500 m above sea level.

All specimens personally collected by the present author and her collaborators were obtained during nocturnal searches with standard white-LED headlamps, always around midnight. All of them were spotted while sit-and-wait hunting on low bushes (less than 1.5 m above the ground) and grass, mostly in open areas but sometimes also under tree cover.

No data have been published on the captive breeding of *C. antillarum*. Cuban individuals have been repeatedly and readily raised to adulthood, when captured in late immature instars: **1)** the male from Sigua molted to maturity two days after collected, after being fed a single small moth; **2)** a few specimens of both sexes from La Socapa molted once or twice to maturity, after being fed small moths and house cockroaches (R. Teruel, personal communication); **3)** a male and female pair from Playa Verraco molted to maturity once each, about one month after collected (G. Garcés, label data of specimens examined herein, food source not specified).

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