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RESEARCH NOTE

New Records of *Amplypterus* Hübner and *Marumba* Moore (Lepidoptera: Sphingidae) from Catanduanes Island, with a Checklist of the Species Known from the Philippines

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New island records in the Philippines for two hawkmoths, *Amplypterus panopus mindanaoensis* and *Marumba amboinicus luzoni*, are presented together with a checklist (including synonyms) of congeners recorded in the country. The species were found in the vicinity of the 69KV NAPOCOR Power Load End Station in Codon, San Andres, Catanduanes, increasing the number of hawkmoth species record from the island to three. To date, Catanduanes still has a very low species count compared to other islands of the Philippine archipelago. Thus, further exploration and studies on hawkmoths should be conducted.

Keywords: *Amplypterus panopus mindanaoensis*, Catanduanes Island, hawkmoths, *Marumba amboinicus luzoni*, new locality records, Sphingidae

Moths of the family Sphingidae – called hawkmoths, sphinx, or hummingbird hawkmoths – comprise over 1,400 species worldwide (Kitching and Cadiou 2000). Sphingidae have a global distribution but the tropical and subtropical areas are the hotspots of their diversity (Hogenes and Treadaway 1993). In the Philippines, the family is represented by 117 species, of which 24 are endemic (Hogenes and Treadaway 1998).

Sphingidae are well-documented in the country, most especially their island distribution. However, studies on their diversity, ecology, and biology are still lacking. Among the islands, Palawan and Luzon had the highest species counts with 73 and 74 species, respectively. Luzon also has the highest endemicity with 71% of all Philippine endemics. In contrast, the fauna of Palawan has the lowest value of 8%, due to its close relationship to Bornean fauna. So far, Catanduanes has only one recorded species, the *Theretra nessus* (Drury, 1773) (Hogenes and Treadaway 1998).

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In this paper, we present new locality records for two hawkmoth species from Catanduanes, an island located in the eastern portion of the Philippine archipelago (Figure 1). It is bounded to the west by the Maqueda channel, to the south by Lagonoy Gulf, and to the north and east by the Philippine Sea. It is characterized by hilly and mountainous terrain with significant landforms and forests (PSA-CPSO 2018). A synonymic checklist of species belonging to the genus *Amplypterus* and *Marumba* known to occur in the Philippines is also provided.

***Amplypterus* Hübner, [1819]**
***Amplypterus panopus mindanaoensis* Inoue, 1996**
Amplypterus panopus mindanaoensis Inoue, 1996, Bull. Nat. Sci. Mus. Tokyo Ser. A 22: 86.

Amplypterus panopus mindanaoensis (Figures 2A and B) was first described from specimens collected from Luzon, Panay, and Mindanao. However, Hogenes and Treadaway (1998) reported that it was widely distributed in the Philippines – including the islands of Cebu, Jolo, Leyte, Mindoro, Negros, Polillio, Romblon, Samar, and

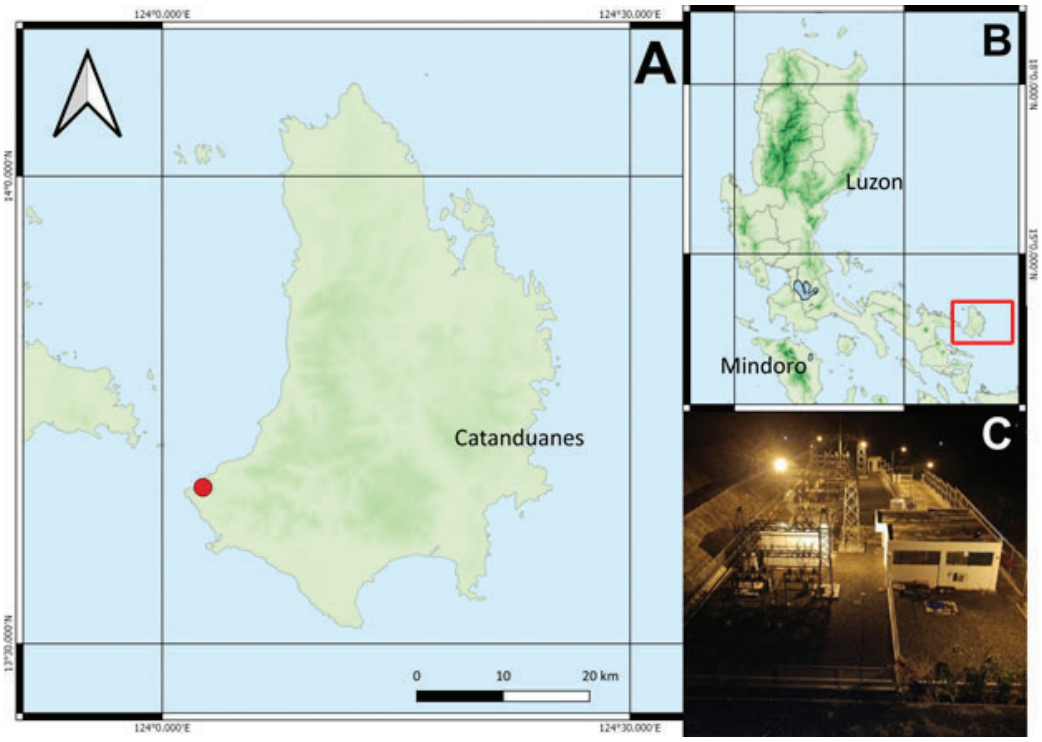

Figure 1. (A–B) Catanduanes is an island located in the eastern portion of the Philippine Archipelago and is part of the Greater Luzon faunal region. Red dot represents the location of (C) 69KV NAPOCOR Power Load End Station in Codon, San Andres. The site is near the national road but is surrounded by a dense forest. It is a disturbed area, especially at night when there is extreme lighting.

Sibuyan. A single individual of this subspecies, identified as a female, was observed and documented in the vicinity of the 69KV NAPOCOR Power Load End Station in Codon, San Andres, Catanduanes Island (Figure 1C) on 30 Jul 2020 at around 09:05 AM. As reported by Pittaway and Kitching (2019), this species allows itself to be handled during the daytime but at night it is an active flier. It was identified as the species and subspecies, *A. panopus mindanaoensis*, on the basis of a head and thorax predominantly colored black, forewings with broader outer shading of the postmedial band, a black base, a subterminal black band that is much more roughly indented at vein R2, and a terminal dark area inwardly bordered by a black fascia that is much more sharply angled inward at vein M2 (Inoue 1996; Hogenes and Treadaway 1998; Suelo *et al.* 2020). This is the second species of Sphingidae to be recorded in Catanduanes Island.

***Marumba* Moore, 1882**
***Marumba amboinicus luzoni* Clark, 1935**
Marumba amboinicus luzoni Clark, 1935, Proc. New Engl. Zool. Club 15: 21.

Marumba amboinicus luzoni (Figure 2C) is known to be distributed on the islands of Babuyan, Bohol, Calayan, Cebu, Dinagat, Jolo, Leyte, Luzon, Marinduque, Mindoro, Mindanao, Negros, Panay, Samar, Sibuyan, and Siquijor (Hogenes and Treadaway 1998; Brechlin and Nässig 2001). A single individual of this subspecies, identified as a male, was observed and documented in the same area as the previous species on 16 Aug 2020. However, unlike *A. panopus mindanaoensis*, it was found during the night at around 12:52 AM. The specimen was identified as the species and subspecies, *M. amboinicus luzoni*, by having a projection on the end of vein M2 that does not project as far as those on either side, thus making the edge of the wing appear indented. In addition, the projection on the end of vein R5 is slightly stronger giving the effect of a slightly more falcate and curved-over apex to the wing (I.J. Kitching, pers. comm.). The discovery of this species increased the number of hawkmoths recorded in Catanduanes to three.

The island of Catanduanes was one of the more under-surveyed areas of the Philippines during Treadaway's exploration, and further inventory studies of its Sphingidae should be conducted to determine the full extent of its fauna. Documenting new hawkmoth localities is essential for biogeography studies and assessments and conservation projects in the country.

Figure 2. (A–B) *Amplypterus panopus mindanaoensis* and (C) *Marumba amboinicus luzoni*.

Species of *Amplypterus* and *Marumba* Known from the Philippines

A checklist of species of the genus *Amplypterus* and *Marumba* that are known to occur in the Philippines, together with their updated island distributions, is presented below. New island records are enclosed in square brackets, and an equals symbol (=) is used to indicate junior synonyms. These names are indented under the senior name. Authors of published papers in which the data on Philippine distribution was taken are also cited.

Genus *Amplypterus* Hübner, [1819]

= *Calymnia* Walker, 1856: 77, 123.

= *Compsogene* Rothschild & Jordan, 1903: 173, 188.

***1. Amplypterus panopus panopus* (Cramer, 1779)**

= *Sphinx panopus* Cramer, 1779: 50.

= *Calymnia pavonica* Moore, 1877: 596.

= *Amplypterus panopus hainanensis* Eitschberger, 2006: 16.

Philippine distribution: Bongao, Palawan; Hogenes and Treadaway (1998).

***2. Amplypterus panopus mindanaoensis* Inoue, 1996**

Philippine distribution: [Catanduanes], Cebu, Jolo, Leyte, Luzon, Mindoro, Mindanao, Negros, Panay, Polillio, Romblon, Samar, Sibuyan; Hogenes and Treadaway (1998).

Genus *Marumba* Moore, 1882

= *Burrowsia* Tutt, 1902: 386.

= *Kayaeia* Tutt, 1902: 386.

= *Sichia* Tutt, 1902: 386.

***1. Marumba amboinicus luzoni* Clark, 1935**

Philippine distribution: [Catanduanes], Babuyan, Bohol, Calayan, Cebu, Dinagat, Jolo, Leyte, Luzon, Marinduque, Mindoro, Mindanao, Negros, Panay, Samar, Sibuyan, Siquijor; Hogenes and Treadaway (1998); Brechlin and Nässig (2001).

***2. Marumba tigrina* Gehlen, 1936**

Philippine distribution: Palawan; Hogenes and Treadaway (1998).

***3. Marumba dyras* (Walker, 1856)**

= *Marumba dyras handeliioides* Mell, 1937: 5.

= *Triptogon javanica* Butler, 1875: 254

= (for a full list of synonyms, see Sphingidae Taxonomic Inventory available at http://sphingidae.myspecies.info/taxonomy/term/1847)

Philippine distribution: Cebu, Leyte, Luzon, Mindanao, Negros, Palawan, Samar; Hogenes and Treadaway (1998).

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