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Amauta hodeei (Oberthür, 1881) and its subspecies (Lepidoptera Castniidae), with comments on the life and times of Brother Apolinar María

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ABSTRACT In 1948, a fired destroyed the La Salle Museum in Bogota, Colombia, which was built with a great effort by the La Salle religious teaching congregation, but with the particular and decisive input of Brother Apolinar María. He became a champion of the study of the natural history of Colombia and through the museum, he established numerous connections with scientists and naturalists worldwide. Some rare Castniidae were among the numerous specimens of the fauna he traded with museums around the world. General information about Brother Apolinar María, the La Salle Museum, and the subspecies of *Amauta hodeei* (Castniidae) are provided here in an attempt to improve and stimulate the interest in such a remarkable naturalist and some rare and almost unknown species of the South American Fauna. One of these ssp. (*A. hodeei kruegeri*) is reported from Ecuador, thus increasing knowledge about its geographical distribution.

KEY WORDS Museo La Salle Bogota; Castniidae; *Amauta hodeei hodeei*; *Amauta hodeei kruegeri*.

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INTRODUCTION

Massive riots followed the assassination of political leader and presidential candidate Jorge Eliécer Gaitán (1903-1948) in Bogotá, Colombia, on April 9, 1948. The 10 hour riot resulted in a fire that left thousands of dead and injured, and much of downtown Bogotá was destroyed by the effects of a widespread fire (Alape, 1994). The Museum of Natural History La Salle was among those buildings that disappeared because of the fire (Figs. 2, 3). It originally contained samples of over 73,000 specimens of several groups, and by 1930, some 37,706 of those specimens were insects (Salazar, 1999). The success of this museum was mainly the product of the efforts of Nicolás Seiller (1867-1949), better known as Brother Apolinar María (Figs. 1, 4) (Vélez & Salazar, 1991; Salazar, 1999; Diaz Meza et al., 2006). The museum and its annex library were consumed by the fire and, as a result, Apolinar María entered a deep state of depression and died in December, 1949 (Salazar, 1999).

Seiller was born in Alsace, France, in 1867. Some time later, he went to Reims, where he eventually joined the religious Brotherhood of La Salle.

As customary in the brotherhood, he changed his name to Apolinar María and was then sent to Colombia, where he arrived in 1904 (Lamas, 1979). Thanks to his interest in the natural sciences, he founded the Natural History Society of La Salle Institute in Bogotá, in 1912 (Lamas, 1979). With the help of other brothers and local amateur naturalists, he also built the museum that would eventually contain the largest collection of Lepidoptera in Colombia (Lamas, 1979; Salazar, 1999). Most importantly, he emphasized the need of knowing and sharing information with scientists around the world, and with this vision, he sent countless Colombian specimens to several institutions and private American and European collections in an effort to trade, but also obtain the appropriate identification of his adopted country's fauna and flora (Lamas, 1979; Rodríguez, 2002; Freile & Córdova, 2008). Together, with colleagues and pupils, he published numerous papers on Lepidoptera, described many new taxa, and made observations on Colombian natural history (Lamas, 1979, 2013).

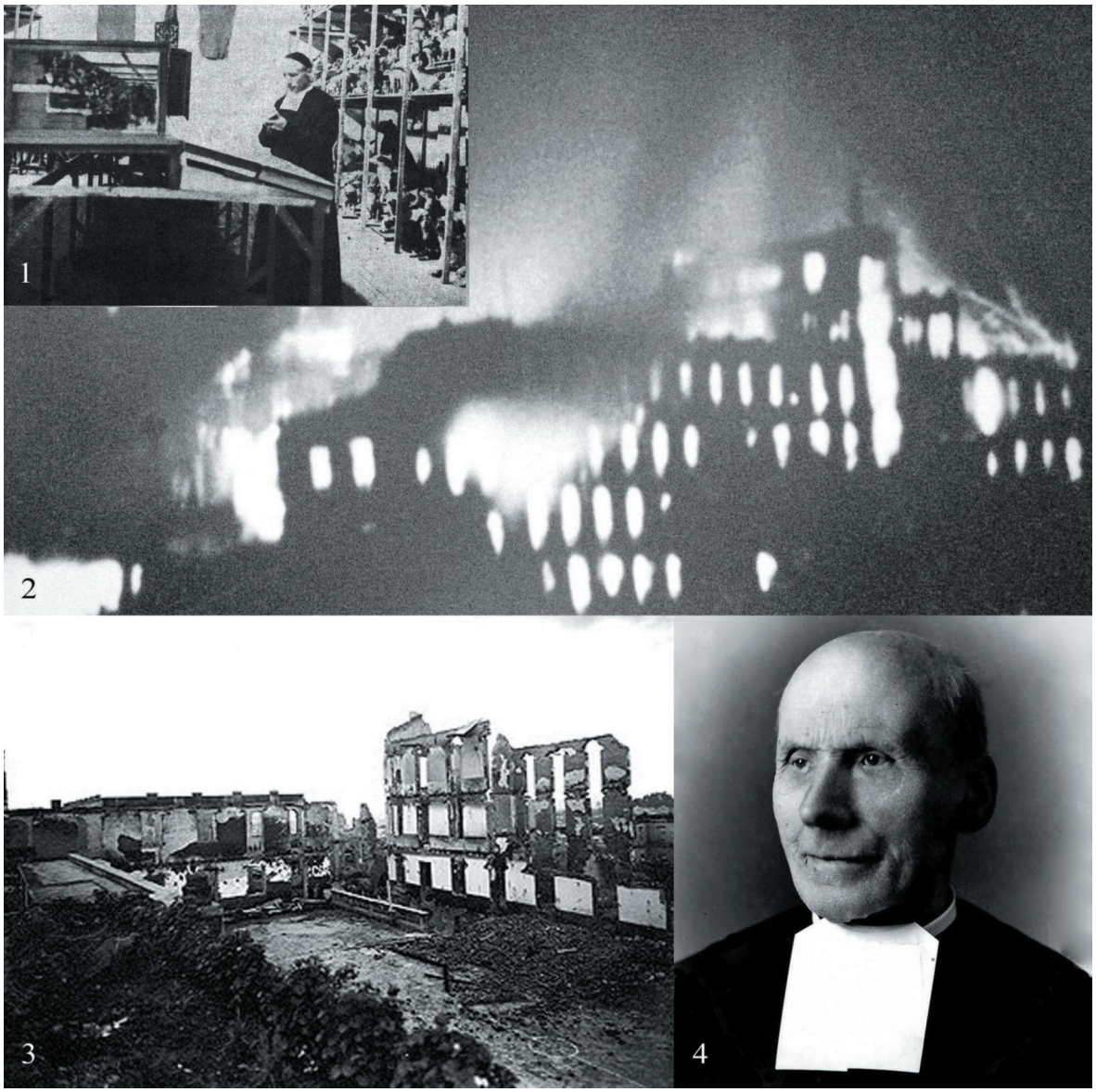

Figure1. Brother Apolinar María examining specimens inside the Natural History Museum, La Salle, Bogotá (Picture borrowed from Díaz Meza et al. 2006). Figure 2. La Salle Museum being devoured by the flames, 1948. Figure 3. La Salle Museum after the flames were controlled, 1948. Figure 4. Nicollas Seiller, best known as Brother Apolinar María (1867-1949).

Through the Museum he established communications with scientists and naturalists around the world, including renowned entomologists such as Charles Oberthür (1845-1924), Paul Dognin (1856-1931), Eugène Louis Bouvier (1856-1944), Harrison Gray Dyar jr. (1866-1929), Anton H. Fassl (1876-1922), William Schaus (1858-1942), Johannes Karl Röber (1861-1942), Arnold Schültze (1875-1948), and Romualdo Ferreira D'Almeida (1891-1969) (Lamas 1979; Salazar, 1999; Vélez & Salazar, 1991; Julián Salazar, pers. comm.).

Apolinar María is considered one of the most relevant and recognized Colombian naturalists and the precursor of the studies of Lepidoptera in the country (Salazar 1999; Rodríguez, 2002). Aside from the collecting he and other brothers from his congregation did while travelling to different Colombian locations, he hired people to collect fauna and flora specimens, mainly from Muzo, Boyacá, along the forests that border Río Magdalena and other effluents, like Río Carare, as well as Villavicencio, Meta (Apolinar María, 1915; Julián Salazar, pers. comm., 2012).

He published some of his findings, including the descriptions of several new species, in various journals and newsletters (Lamas, 1979; 2013). In Lepidoptera, he mainly published about butterflies, however he also wrote several papers or notes with information about moths (Salazar, 1999; Lamas, 2013). Among those works, he wrote about some Castniidae found in Colombia (Apolinar María, 1915, 1945). Brother Apolinar María recognized and made brief comments about ten species and several subspecies in the Castniidae collected in Colombia and deposited at Bogota's La Salle Museum (Apolinar María, 1915, 1945; Salazar, 1999).

Among the over 31 taxa belonging to 21 species of Castniidae found in Colombia (Hernández-Baz et al., 2012), some belong to the genus *Amauta* Houlbert, 1918. According to Lamas (1995) it contains four species: *A. ambatensis* (Houlbert, 1918), *A. cacica* (Herrich-Schäffer, [1854]), *A. hodeei* (Oberthür, 1881), and *A. papilionaris* (Walker, [1865]). They are all species of medium to large dimensions, with triangular forewings, commonly dark brown to black, with some white/cream and orange markings in both wings and they are sexually dimorphic (Miller, 1986). The genus is distributed from Guatemala, through Central America and down to South America, where specimens have been found in Colombia, Peru, Ecuador, Bolivia and Brazil (Miller, 1986, 1995; Lamas, 1995). Unfortunately, the known information on the several species in the genus is still fragmentary and scarce, and data found in several insect Museums is far from adequate (Miller, 1986; Miller & Sourakov, 2009).

Even though we have been able to study Castniidae specimens from many museums worldwide, we could locate only few of *Amauta hodeei*. Among the known specimens of both subspecies (*A. hodeei hodeei* and *A. hodeei kruegeri*), including those mentioned in the literature, a few were collected by Brother Apolinar María (or his group of collectors). Both subspecies are known to occur in Colombia; however, a specimen of *A. hodeei kruegeri* collected in Ecuador is reported herein, thus expanding its known distribution.

Specimens examined are in the following collections: AMNH =American Museum of Natural History, New York, USA; MGCLB = McGuire Center for Lepidoptera & Biodiversity, (Allyn Museum Collection), Gainesville, Florida, USA; MHN-UC = Natural History Museum, University of Caldas, Manizales, Colombia; MHNP = Natural History Museum, Paris, France; NMNH-SI = National Museum of Natural History, Smithsonian Institution, Washington D.C., USA; GPC = G. Penati Collection, Milan, Italy; RVC = Roberto Vinciguerra Collection, Palermo, Italy.

COMMENTS ON THE TWO KNOWN SSP. OF *AMAUTA HODEEI* (OBERTHÜR, 1881)

Amauta hodeei hodeei (Oberthür, 1881)

This subspecies was originally described (as *Castnia hodeei*) by Oberthür (1881) from material collected in the Colombian region along Santa Rosa and the Carare river. Years later, Schaus (1896) described *Castnia corrupta* from Colombia, while Oberthür (1925) illustrates a species he names *C. apollinaris* [nomem nudum (Lamas, 1995)] based on a male specimen collected in Colombia, and compares and discusses similarities and differences with the species *C. corrupta*. That same year, Knop (1925) describes *C. amazona* from Bogotá, Colombia. Those species have been established as synonyms of *hodeei hodeei* (Lamas, 1995).

Unfortunately, this is a rare taxon and almost nothing is known about its biology and ecology. In fact, very few specimens are known from insect collections worldwide. Joicey & Talbot (1925) mentioned that they received three specimens (two males and a female) sent by Brother Apolinar María which were originally collected in Muzo and Villavicencio. González & Salazar (2003) also reported a male and a female from Guamoco and Cauca Valley (Caucaval).

Examined material (with notes). COLOMBIA: 1 male, 1 female, Bogotá, 1931, Coll. Fre. Apolinaire Marie (MHNP) [even though the labels (Fig. 10) clearly state that this material was collected in Bogotá, they were most certainly collected in the Muzo region where Brother Apolinar María had peasants hired to collect specimens. Since the La Salle Museum was located in Bogotá, most Institutions that received material from Apolinar María, commonly assumed that "Bogotá" was the collec-

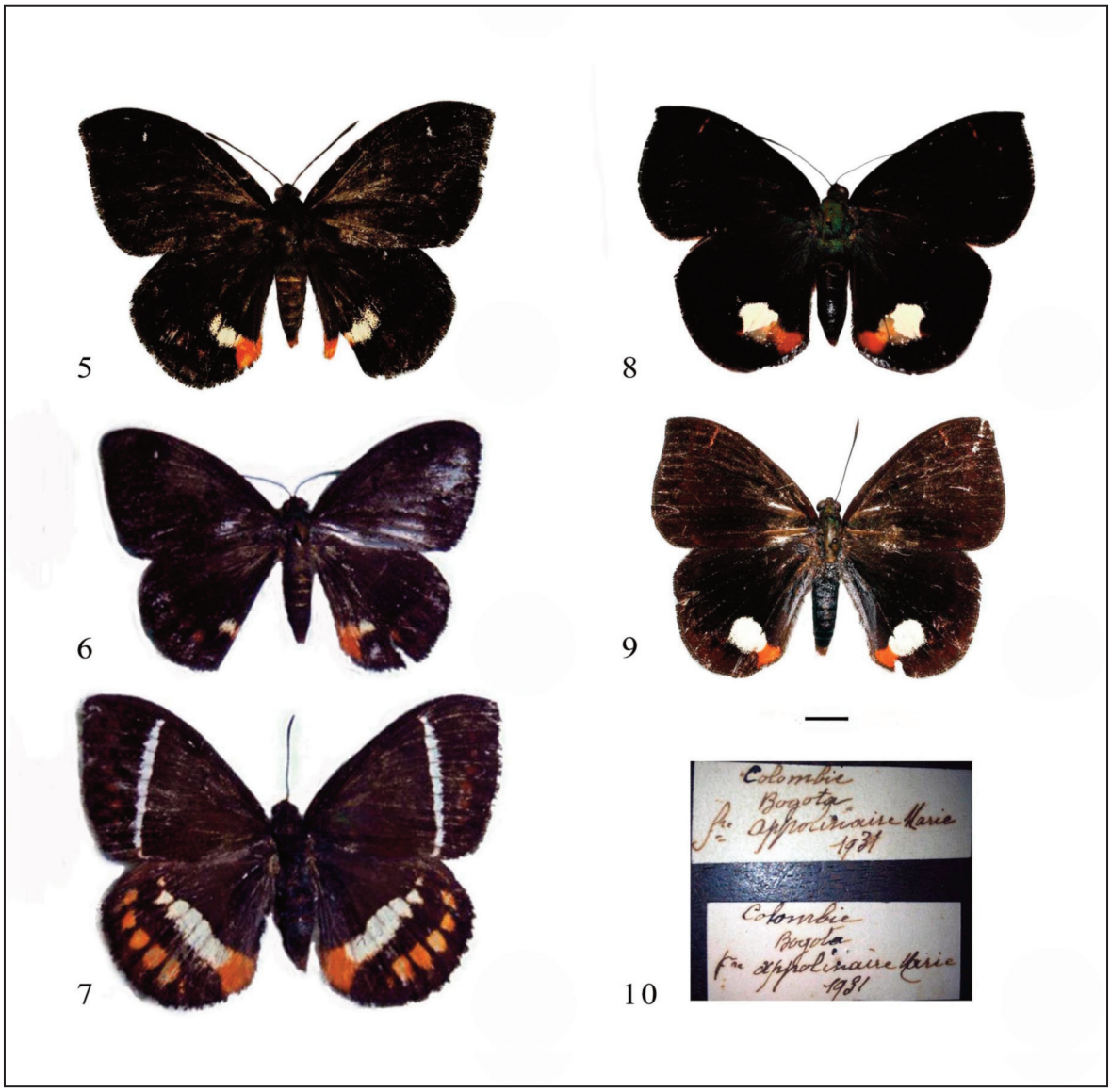

Figure 5. *Amauta hodeei hodeei*, male, Bogotá, Colombia (MHNP). Figure 6, Idem, male, Guamoco Colombia (AMNH). Figure 7. Idem, female, Cauca Valley, Colombia (AMNH). Figure 8. *A. hodeei kruegeri*, Esmeraldas, Ecuador (RVC). Figure 9. Idem, Río Calima, Colombia (MGCLB). Figure 10. Labels of two *A. hodeei hodeei* specimens collected or sent by Brother Apolinar María (MHNP). Scale (for figures 5-9): 10 mm.

ting locality]; 1 male?, Muzo, Boyacá, [the occidental sector with influence of the middle area of the Magdalena River], Coll. Apolinar Maria [reported in Apolinar María (1945). This specimen was surely lost in the Museum's fire]; 1 male, Campo Santo, Bogota, 1922, Coll. L. Pfeiffer (NMNH-SI) [this is the type specimen of *Castnia corrupta* described by Schaus (1896) and now considered a synonym of *A. hodeei hodeei* (Lamas, 1995)]; 1 female, Colombia, Boyacá, Coll. ? (NMNH-SI); 1 male, Guamoco, Coll. F. Johnson (AMNH); 1 female, Caucaval [Cauca Valley], Coll. F. Johnson (AMNH); 1 male, Santa Rosa-Carare, Coll. Oberthür [mentioned in Oberthür (1881) and Houlbert (1918)].

Amauta hodeei kruegeri (Niepelt, 1927)

Only males are known of this rare subspecies, and they differ from the nominate subspecies because of its darker, blackish, background color, and also because of the very distinctive white and orange markings in the hind wings (Figs. 5-9). Niepelt (1927) described it (as *Castnia krügeri*) based on a male collected in "West Colombia." We have been able to examine four specimens, all males, from four different collections. The forewings are devoid of any markings except for a small light amber band in the sub-apical region. They are larger than the sub-apical creamy spot observed in males of the nominate subspecies (Figs. 5, 6, 8, 9). A large, creamy-white spot can be observed in the tormal region of the hind wing. The spot turns orange at the edge of the wing. Such markings are clearly noticeable, better defined, and larger in the four studied specimens than in the similar (but smaller and faddier) markings found in males of the nominate species (Figs. 5, 6, 8, 9).

EXAMINED MATERIAL. COLOMBIA: 1 male, Rio Dagua, W. Colombia, ex coll. H. Gerstner (GPC); 1 male, Río Calima, VII, [19]84, Allyn Museum Acc. 1991-13, Allyn Museum Photo No. 850827-15/16, Slide No. M-7132, male append. Jacqueline Y. Miller (MGCLB); 1 male, Valle, Queremal - Km 55, 9-IV-85, Leg. J.A Salazar (MHN-UC). ECUADOR: 2 males, Esmeraldas, (RVC).

All specimens known to us (and listed above) of *A. hodeei hodeei* were collected east of the Western Cordillera while those of *A. hodeei kruegeri* were collected on the western slope of the Western Cordillera in Colombia, and closer to the coast and west

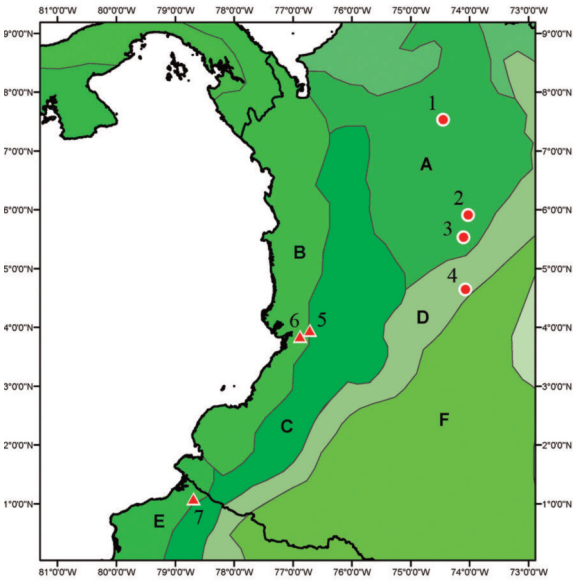

Figure 11. Map showing localities and ecological regions where specimens of *Amauta hodeei* ssp. have been collected in Colombia and Ecuador. *A. hodeei hodeei*: A1: Magdalena, Guamocó; A2: Magdalena, Santa Rosa and Carare; A3: Magdalena, Muzo; D4: Páramo, Bogotá; *A. hodeei kruegeri*: B6: Chocó, Río Dagua; C5: Cauca, Río Calima; E7: East Ecuador, Durango; F: Napo.

of the Ecuadorian Western Cordillera (Fig. 11). The Western Cordillera of Colombia continues along the Western Cordillera of Ecuador and they seem to be a geographic barrier that clearly separates the populations of both subspecies. The populations of both ssp. appear to be highly dispersed along their geographic range, but the low number of specimens known and the lack of knowledge about their biology and ecology prevent us from providing any information about their conservation status.

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