Remarks, Corrections, Comments and Additions to Vol. 23 and 25 of the ‘Mariposas del Ecuador’ on the Genus Gonodonta Hübner, 1818 (Noctuoidea, Erebidae, Ophiderinae)

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INTRODUCTION

At the end of April, 2014, the first author had his first opportunity to collect moths in Ecuador, and the series of 25 volumes by Piñas on the Lepidoptera of Ecuador (Emmel, 1998) were used as an initial means for identification. The series presents the first attempt to summarize the Lepidoptera fauna of Ecuador, with a list of numbered taxonomic names linked to images on a corresponding compact disk included with each volume, thus greatly reducing the size and cost of the printed volumes. Inevitably, in a work of this magnitude, the text contains a number of errors in identification and other data. New names proposed in the works should be considered nomina nuda since they lack several elements of formal description sufficient to satisfy the relevant articles of the International Code of Zoological Nomenclature (ICZN: http://iczn.org/iczn/index.jsp). Despite these shortcomings, the work remains an invaluable illustrated guide to the highly diverse Lepidoptera fauna of Ecuador.

The first author has worked for many years on the systematics of the genus Gonodonta Hübner, 1818, and this paper therefore focuses on that genus. In total, there are 25 species in this genus that are listed in Piñas (2005a,b). Eighteen of these species represent the first published records for Ecuador. Unfortunately, many of the names are incorrect or confused. Of the 34 specimens illustrated, only 9 are correctly determined, 20 are listed simply as “Gonodonta sp.” with consecutive numbers, and six are misidentified. After publication of the two relevant volumes (Piñas, 2005a,b), four additional new records for Ecuador and one possible new record (known from only a few specimens) have been found. Thus, a total of 29 Gonodonta species are now reliably recorded from Ecuador. Notably, in the work of Campos (1931), which also served as a base for Piñas (2005a,b), the genus Gonodonta is completely missing.

The purpose of this paper is, therefore, to review and figure the species of Gonodonta known from Ecuador and to correct published errors in the literature.

METHODS

Distribution data published here are derived from records compiled from publications and recorded in a database maintained by the first author and Behounek (unpublished data). Identifications of all taxa were made by the first author on the basis of ongoing systematic research, including attempts
to find and identify all relevant type specimens. The following acronyms and abbreviations are used:

NHM - The Natural History Museum, London, United Kingdom
DZUPF - Departamento de Zoologia, Universidade Federal do Paraná, Curitiba, Brazil
MNHN - Musée National d’Histoire Naturelle, Paris, France
MHNU - Museum für Naturkunde Berlin, Berlin, Germany
NHMW - Naturhistorisches Museum Wien, Vienna, Austria
OUM - Oxford University Museum of Natural History, Oxford, United Kingdom
RMNH - Rijksmuseum van Natuurlijke Historie, Leiden, Netherlands
USNM - National Museum of Natural History, Smithsonian Institution, Washington, DC, USA
ZSM - Zoologische Staatssammlung München, Munich, Germany
PC - Piñas Collection, Quito, Ecuador

RESULTS

The following represents a checklist of Gonodonta from Ecuador, with reference to the relevant Piñas (2005a,b) publications.

Gonodonta pulvereosa Schaus, 1911, Fig. 1.2
= Gonodonta sp. 1, Piñas (2005a, Fig. 52. & Fig. 53)
Distribution: Guatemala, Costa Rica, Venezuela, Ecuador, Brazil, Paraguay.
Represented by 25 specimens in PC. Previously unrecorded from Ecuador.

Gonodonta chorineae (Stoll, 1780), Fig. 3.4
= chorineae Walker, emend?. Type for genus Athysania.
= Gonodonta paraequale, Piñas (2005a, Fig. 54. & Fig. 55)
Distribution: Guatemala, French Guiana, Ecuador, Guyana, Surinam, Bolivia, Brazil.
Represented by 61 specimens in PC. Previously unrecorded from Ecuador.

Gonodonta incurvus (Sepp, [1840]), Fig. 5.6
Surinaamsche Vinders 2: 291, Taf. 89 (Phalaena); T.: Surinam; type lost.
= teretimacula Guénée, 1852, Hist. nat. Ins. (Lép.) 6 (Noct. 2) 367; LT: Cayenne; MNHN, design. Viette (1951).
= soror Stahl, 1883 [not Cramer, 1780], Fauna Puerto Rico, Cat. Zool.: 194. It is not clear why Stahl placed soror as a synonym of incurvus. Stahl's attribution of the name soror to Guénée may have been in error for Cramer, or he may have intended to indicate that his specimens belonged to the name soror in the sense used by Guénée. The type(s) of soror Cramer are unknown.
= elaborans Dyar, 1914, Proc. USNM 47: 425; T.: Dominican Republic; USNM.
= Gonodonta fulvidens, Piñas (2005a, Fig. 56. & Fig. 57)
Distribution: Southern USA (Florida), Mexico, Guatemala, Honduras, Costa Rica, Dominican Republic, Grenada, St. Vincent, St. Lucia, Puerto Rico, Jamaica, Cuba, Surinam, French Guiana, Guyana, Venezuela, Ecuador, Peru, Bolivia, Brazil, Paraguay.
Represented by 67 specimens in PC. One of the most frequently recorded species in Ecuador in the PC, although previously unrecorded from Ecuador.

Gonodonta amiantha Hampson, 1924, Fig. 7,8
= Gonodonta sp. 2, Piñas (2005a, Fig. 58. & Fig. 59)
Distribution: Peru, French Guiana, Ecuador, Guyana, Brazil.
Represented by only 3 specimens in PC. Previously unrecorded from Ecuador.

Gonodonta nitidimacula Guénée, 1852, Fig. 9
= Gonodonta sp. 3, Piñas (2005a, Fig. 60)
Distribution: Mexico, Belize, Guatemala, Venezuela, Ecuador, Brazil, Caribbean, Antilles, Virgin Islands, Puerto Rico, Haiti, Dominican Republic, Cuba, Jamaica, St.Thomas.
Represented by only 2 specimens in PC. Previously unrecorded from Ecuador.

Gonodonta latimacula Guénée, 1852, Fig. 10
= Gonodonta sp. 4, Piñas (2005a, Fig. 61)
Distribution: Colombia, Mexico, Guatemala, Honduras, Costa Rica, Panama, Ecuador, Brazil, French Guiana, Guyana, Venezuela, Trinidad, Peru.
Represented by 5 specimens in PC. Previously unrecorded from Ecuador.

Gonodonta maria Guénée, 1852, Fig. 11
= Gonodonta sp. 5, Piñas (2005a, Fig. 62)
Distribution: Costa Rica, Mexico, Peru, Venezuela, Ecuador, Surinam, French Guiana, Guyana, Brazil, Paraguay, Puerto Rico, Cuba.
Represented by 7 specimens in PC. Previously unrecorded from Ecuador.

**Gonodonta fulvanga**la Geyer, 1832, Fig. 12
= **Gonodonta** sp. 6, Piñas (2005a, Fig. 63)
**Distribution**: Mexico, Panama, Trinidad and Tobago, Venezuela, French Guiana, Guyana, Ecuador, Peru, Colombia, Brazil, Argentina, Uruguay.

Represented by only 2 specimens in PC.

**Gonodonta correcta** Walker, 1857
Piñas (2005a, Fig. 64, correctly identified)
**Distribution**: Mexico, Guatemala, Costa Rica, Ecuador, Colombia, Venezuela, Bolivia.

Represented by 16 specimens in PC.

**Gonodonta pygro** (Cramer, 1777)
Uitl. Kapellen 2: 65, 150, Taf. 139: D (Phalaena); T.: Surinam; missing.
= serix Guenée, 1852, in: Boisduval & Guenée, Hist. nat. Ins. (Lep.) 6 (Noct. 2): 370; ST: Colombia; OUM.
= pygro (Schreibfehler)
Piñas (2005a, Fig. 65 & Fig. 66, correctly identified)
**Distribution**: USA, Mexico, Belize, Guatemala, Honduras, Costa Rica, Nicaragua, Panama, Venezuela, Colombia, Guyana, French Guiana, Ecuador, Peru, Bolivia, Brazil, Argentina, Paraguay, Chile.

Represented by 100 specimens in PC. Except for G. sinaldus, this is the most common **Gonodonta** species in Ecuador.

**Gonodonta mexicana** Schaus, 1901, Fig. 13
Ann. Mag. nat. Hist. (7) 8: 90; T.: Mexico, Jalapa, USNM.
Piñas (2005a, Fig. 67, correctly identified)
= **Gonodonta** holoserica, Piñas (2005a, Fig. 69)
**Distribution**: Mexico, Costa Rica, Ecuador, Bolivia, Venezuela, Brazil.

Represented by 34 specimens in PC. Previously unrecorded from Ecuador.

**Gonodonta biarmata biarmata** Guenée, 1852, Fig. 14
in Boisduval & Guenée; Hist. nat. Ins. (Lep.), 6 (Noct. 2): 373; LT.: Brazil, Nouvelle-Friburg, NHM.
= **Gonodonta** sp. 7, Piñas (2005a, Fig. 68)
**Distribution**: Mexico, Guatemala, Costa Rica, Peru, Colombia, Bolivia, Venezuela, Argentina, Uruguay, Brazil.

Represented by only a single specimen in PC. Previously unrecorded from Ecuador.

**Gonodonta holoserica** Guenée, 1852, Fig. 15
Hist. nat. Ins. (Lép.), 6 (Noct. 2): 371; LT.: Colombia, NHM.
= **Gonodonta** sp. 8, Piñas (2005a, Fig. 70)
**Distribution**: Guatemala, Costa Rica, Panama, Colombia, Venezuela, Bolivia, Brazil, Peru.

Represented by 5 specimens in PC. Previously unrecorded from Ecuador.

**Gonodonta distincta** Todd, 1959, Fig. 16
= **Gonodonta** sp. 9, Piñas (2005a, Fig. 71)
**Distribution**: Mexico, Guatemala, Costa Rica.

Represented by only 2 specimens in PC. Previously unrecorded from Ecuador.

**Gonodonta sicheas** (Cramer, 1777), Fig. 17
Uitl. Kapellen 2: 86, Taf. 150: E (Phalaena); T.: Surinam, RMNH?.
= hesione (Drury, 1782), Ill. Nat. Hist. 3: 29, Taf. 22 (Phalaena, Noctua); (T.: NHMW)
= **Gonodonta** biarmata, Piñas (2005a, Fig. 72)
Piñas (2005a, Fig. 73, correctly identified)
**Distribution**: Southern USA: Florida; Mexico, Guatemala, Honduras, Costa Rica, Panama, Trinidad, Puerto Rico, Jamaica, Cuba, Ecuador, Surinam, Guyana, Venezuela, Peru, Bolivia, Argentina, Paraguay, Brazil.

Represented by 29 specimens in PC.

**Gonodonta lincus** (Cramer, 1775), Fig. 18
Uitl. Kapellen 1: 79, 153, Taf. 50: H (Phalaena, Noctua); T.: Surinam, RMNH.
= **Gonodonta** sp. 10, Piñas (2005a, Fig. 74)
**Distribution**: Mexico, Costa Rica, Colombia, Peru, Ecuador, Bolivia, Brazil, Guyana, Venezuela.

Represented by 3 specimens in PC. Previously unrecorded from Ecuador.

**Gonodonta magnifica** Thöny, 2001, Fig. 19
= **Gonodonta** sp. 11, Piñas (2005a, Fig. 75)
**Distribution**: Peru, Ecuador.

This species was formerly known only from the type locality, but is represented by 16 specimens in PC from the following locations:
Ecuador, Imbabura [=Imbabura], Via Lita, 1200m, 21 Mar. 98, 1 specimen leg. G. Onore.
Ecuador, Chimborazo, Pichincha, 3000 m, coll. Thöny.
Ecuador, Tungurahua [should be Cotopaxi] Otonga, 2000m, 23 Feb. 08, 1 specimen, all leg. F. Piñas; Ecuador, Chimborazo, Huig[ra]. R. Angas, 1500m, 1 Jan. 98, 1 specimen leg. G. Onore.

These findings show that G. magnifica is relatively common in Ecuador and that it occurs from 250-2000 m. Previously unrecorded from Ecuador.
**Gonodonta clothilda** (Stoll, 1791), Fig. 20
in: Cramer, Uitl. Kapellen (Anh.): 153, Taf. 34: 4 (Phalaena, Noctua); T.: Surinam, RMNH.
= maria Gundlach, 1881, Contr. Ent. Cubana, Lepid. 1: 335, preocc. (Guenée 1852); LT.: Brazil, Rio Janeiro, design. Todd (1959), NHM
= Gonodonta sp. 11, Piñas (2005a, Fig. 76)
**Distribution**: Mexico, Costa Rica, Panama, Peru, Ecuador, Bolivia, Venezuela, Surinam, French Guiana, British Guyana, Brazil, Paraguay, Argentina, Trinidad and Tobago, Puerto Rico, Jamaica, Cuba.
Represented by 9 specimens in PC. Previously unrecorded from Ecuador.

**Gonodonta axoria** (Cramer, 1780)
= soror; Wolcott, 1924, Puerto Rico, Dept. Agr. Jour. 7: 176, not Cramer, 1777
= alexandra Thöny, 1999, Facetta 18 (2) : 28, Taf. 6: 7, 8; HT.: ♂: Brazil, Rondônia, Cacaulândia, Rancho Grande, 350 m, DZUFP.
= uxor auct. Piñas (2005a, Fig. 77, correctly identified)
**Distribution**: Mexico, Guatemala, Costa Rica, Panama, Peru, Argentina, Guyana, Surinam, Venezuela, Puerto Rico, Jamaica, Dominican Republic, Cuba, Brazil.
Represented by 14 specimens in PC. Previously unrecorded from Ecuador.

**Gonodonta bidens miranda** Raymundo, 1908
O Entomologista Brasileira 1 (5): 79, 80; LT.: Brazil, Rio de Janeiro, Quinta da Boa Vista; Type material in Instituto Oswaldo Cruz, Rio de Janeiro, Brazil.
Piñas (2005a, Fig. 78, correctly identified)
**Distribution**: Ecuador, Peru, Colombia, Venezuela, Bolivia, French Guiana, Brazil, Paraguay, Argentina. Represented by 14 specimens in PC.

**Gonodonta sinaldus** Guenée, 1852, Fig. 21,22 (dark form), 23 in Boisduval & Guenée; Hist. nat. Ins. (Lép.), 6 (Noct. 2): 371; LT.: ♂: Colombia, design. Todd (1982), NHM.
= Gonodonta sp. 12, Piñas (2005a, Fig. 79)
= Gonodonta sp. 13, Piñas (2005a, Fig. 82)
Piñas (2005a, Fig. 80, 81, correctly identified)
**Distribution**: Southern USA, Mexico, Belize, Guatemala, Honduras, Costa Rica, Panama, Peru, Ecuador, Colombia, Bolivia, Venezuela, Französisch Guyana, Brazil, Trinidad, Tobago.
Represented by 121 specimens in PC, among these 13 of the dark form with dark hindwings. This appears to be the commonest species in the genus in Ecuador.

**Gonodonta clothilda** (Hampson, 1926), Fig. 24
= Gonodonta sp. 14, Piñas (2005a, Fig. 83)
**Distribution**: Costa Rica, Panama, Venezuela, Guyana, Bolivia, Brazil.
Represented by 11 specimens in PC. Previously unrecorded from Ecuador.

**Gonodonta primulina** Druce, 1887, Fig. 25
Biol. centr. Am. Lep. Het. 1: 60, Taf. 25, Fig. 3; LT.: Guatemala, Verapaz, design. Fletcher, NHM.
= Gonodonta sp. 15, Piñas (2005a, Fig. 84)
**Distribution**: Mexico, Guatemala, Costa Rica, Colombia, Ecuador, Bolivia, Venezuela, Brazil, Peru.
Represented by 9 specimens in PC.

In Piñas (2005b), a further species of Gonodonta is mistakenly listed under Agaristinae.

**Gonodonta obesa** (Walker, [1865] 1864), Fig. 26
= Aucula sp. 5, Piñas (2005b, Fig. 241)
**Distribution**: Brazil, Ecuador.
Represented by only 1 specimen in PC. Previously unrecorded from Ecuador.

The following species were recorded by the second author after the publication of ‘Mariposas del Ecuador’:

**Gonodonta syrina** Guenée, 1852, Fig. 27
**Distribution**: Belize, Guatemala, Honduras, Panama, Venezuela, French Guiana, Guyana, Peru, Bolivia, Ecuador, Brazil.
Represented by only 1 specimen in PC. Previously unrecorded from Ecuador.

**Gonodonta parens** Guenée, 1852, Fig. 28.
in: Boisduval & Guenée; Hist. nat. Ins. (Lép.), 6 (Noct. 2): 366; T.: Guadeloupe, NHM.
**Distribution**: Guadeloupe, Mexico, Panama, Venezuela, Ecuador, Brazil, Peru.
Represented by 2 specimens in PC. Previously unrecorded from Ecuador.

**Gonodonta milla** Thöny, 1999, Fig. 30.
facetta,18 (2): 29, Taf. 6: 14; HT.: ♂: Brazil, Rondônia, Cacaulândia, Rancho Grande, DZUFP.
**Distribution**: Peru, French Guiana, Ecuador, Brazil.
Represented by 5 specimens in PC. Previously unrecorded from Ecuador.
Fig. 1: *G. pulverea*, Piñas (2005a, Fig. 52).

Fig. 2: *G. pulverea*, Piñas (2005a, Fig. 53).

Fig. 3: *G. chorinea*, Piñas (2005a, Fig. 54).

Fig. 4: *G. chorinea*, Piñas (2005a, Fig. 55).

Fig. 5: *G. incurva*, Piñas (2005a, Fig. 56).

Fig. 6: *G. incurva*, Piñas (2005a, Fig. 57).

Fig. 7: *G. amiantha*, Piñas (2005a, Fig. 58).

Fig. 8: *G. amiantha*, Piñas (2005a, Fig. 59).

Fig. 9: *G. nitidimacula*, Piñas (2005a, Fig. 60).

Fig. 10: *G. latimacula*, Piñas (2005a, Fig. 61).

Fig. 11: *G. maria*, Piñas (2005a, Fig. 62).

Fig. 12: *G. fulvangula*, Piñas (2005a, Fig. 63).

Fig. 13: *G. mexicana*, Piñas (2005a, Fig. 69).

Fig. 14: *G. biarmata biarmata*, Piñas (2005a, Fig. 68).

Fig. 15: *G. holoserica*, Piñas (2005a, Fig. 70).
Fig. 16: G. distincta, Piñas (2005a, Fig. 71).

Fig. 17: G. siccheus, Piñas (2005a, Fig. 72).

Fig. 18: G. lincus, Piñas (2005a, Fig. 74).

Fig. 19: G. magnifica, Piñas (2005a, Fig. 75).

Fig. 20: G. clothilda, Piñas (2005a, Fig. 76).

Fig. 21 and 23: G. sinaldus, Piñas (2005a, Fig. 79).
G. sinaldus, Piñas (2005a, Fig. 82).

Fig. 22: G. sinaldus, Piñas (2005a, Fig. 80).

Fig. 24: G. indendata, Piñas (2005a, Fig. 83).

Fig. 25: G. primulina, Piñas (2005a, Fig. 84).

Fig. 26: G. obesa, Piñas (2005b, Fig. 241).

Fig. 27: G. syrna, PC.

Fig. 28: G. parens, PC.

Fig. 29: G. chorinea/sp.n, PC.

Fig. 30: G. milla, PC.

Fig. 31: G. fulvidens, PC.
Gonodonta nr. chorinea (Stoll, 1780) ?, Fig. 29.
Ecuador, Manabi, Chone, 250m, 14 Aug. 2007, leg. Piñas
In reviewing the PC, 6 specimens of this species have been found that appear to be relatively brighter in the ground color, slightly smaller, and with the markings better defined than in other Ecuadorian specimens. These specimens may constitute an undescribed species, but more material is needed.

Gonodonta fulvidens Felder & Rogenhofer, 1872, Fig. 31
Distribution: French Guiana, Guyana, Venezuela, Colombia, Ecuador, Brazil.
Represented by only 2 specimens in PC. Previously unrecorded from Ecuador.

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