

A new species of *Brevioleria* (Nymphalidae: Danainae: Ithomiini) from northeastern Brazil

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Abstract. A new clearwing butterfly, *Brevioleria maculele* Freitas sp. nov., is described from the Atlantic Forest in northeastern Brazil. This species is not common and has been collected in only two localities in the coastal forests in the state of Bahia.

Key words: Atlantic Forest; Godyridina; *Hypoleria*; Ithomiini; *Mcclungia*; Solanaceae

INTRODUCTION

Extending for more than 3000 km along the Brazilian coast, the Atlantic Forest domain, including humid forests and associated physiognomies (such as sand forests, dunes, mangroves, high altitude highlands, and other minor physiognomies) is the second largest Neotropical forest (Morellato & Haddad [2001]). After 500 years of European occupation, the Atlantic Forest has mostly been replaced by anthropogenic environments, and now it is restricted to less than 16% of its original cover (Ribeiro *et al.*, 2009). The region also presents a high level of endemism, making the Atlantic Forest one of the global biodiversity hotspots for conservation (Myers *et al.*, 2000).

Despite its broad geographic extent, the Atlantic Forest is far from homogeneous, and it includes subtropical forests with *Araucaria* pine trees (Araucariaceae) in the south, semideciduous forests in the interior, and tropical evergreen forests in the northernmost portion (Oliveira-Filho & Fontes, [2001]). In the coastal region from northern Espírito Santo and south Bahia, the warm and rainy climate all year round has allowed the development of an exuberant, tall forest so similar to rainforest in the Amazon that it received the name of “Hiléia Baiana” (Bahian Hylaea) (Andrade-Lima, 1966; Oliveira-Filho & Fontes, [2001]). This region presents a high level of endemism of plants and animals and also contains several otherwise typically Amazonian taxa, including butterflies (Brown & Freitas, 2000, [2001]; Freitas *et al.*, 2023). The present paper describes a new species of clearwing butterfly (Ithomiini) in the genus *Brevioleria* Lamas, 2004 from the region of the Bahian Hylaea in South Bahia and discusses its systematic position within the subtribe Godyridina (Danainae: Ithomiini).

MATERIALS AND METHODS

Adult Ithomiini specimens from Bahia were studied in three collections in Brazil: **DZUP**: Departamento de Zoologia,

Universidade Federal do Paraná, Curitiba, Paraná; **ZUEC**: Zoological Collection, Museu de Diversidade Biológica da Universidade Estadual de Campinas, Campinas, São Paulo; **ZUEC-AVLF**: André V. L. Freitas collection, Universidade Estadual de Campinas, Campinas, São Paulo. In addition, photographs of Neotropical butterfly type specimens taken by Gerardo Lamas and available in Warren *et al.* (2023) were reviewed and compared with the new taxon described herein. The taxonomy of the subtribe Godyridina follows Chazot *et al.* (2016).

To determine the phylogenetic position of the new species within Godyridina, total genomic DNA was extracted from the legs of 25 individuals, three of which are of the new species described herein, together with other samples of Godyridina species found in the Atlantic Forest (the collection data and GenBank [Benson *et al.*, 2005] accession codes are shown in Table 1). DNA extractions were kept at 20°C in TE buffer. The barcode region, which is the 5' extremity of the mitochondrial gene cytochrome oxidase subunit I (COI, ca. 658 bp), was amplified using PCR reactions with the primers LCO (5'GGTCAACAAATCATAAAGATATTGG) and NANCY (5'CTGGTAAAATTAATAAATAA AACTTC) (Folmer *et al.*, 1994; Caterino & Sperling, 1999).

Geneious 10.2.6 was used to evaluate and align sequences (Kearse *et al.*, 2012). The final matrix included 76 specimens of the subtribe Godyridina, including all the individuals listed above, as well as some representatives of the species sampled in the dataset of Chazot *et al.* (2016) and other sequences from GenBank (Benson *et al.* 2005). Two mitochondrial genes, *cytochrome oxidase I* (COI, 1508 bp), *cytochrome oxidase II* (COII, 678 bp), and the nuclear genes *elongation factor 1-alpha* (EF-1a, 1240 bp) and *Tektin* (tekt, 739 bp), were included (only COI was obtained for the new species here described; the nuclear genes could not be amplified due to technical limitations). Maximum likelihood (ML) analyses were conducted using W-IQ-TREE (Trifinopoulos *et al.*, 2016). ModelFinder was used to determine optimal substitution models for each gene codon

partition (Kalyaanamoorthy *et al.*, 2017). IQ-TREE started tree reconstruction using the best model scheme discovered, and support for nodes was evaluated with 1000 ultrafast bootstrap (UFBoot2) approximations (Hoang *et al.*, 2017).

***Brevioleria maculele* Freitas sp. nov.**

Figs. 1, 2, 4

Diagnosis. Based on wing shape and size, *Brevioleria maculele* sp. nov. is most similar to *Brevioleria plisthenes* (d'Almeida, 1958), but lacks the white postdiscal patch extending from the costa to space M_3 - CuA_1 on the forewing. The wing pattern is similar to that of small individuals of *Hypoleria alema oreas* Weymer, 1899, but can be distinguished by the presence of light gray apical marginal dashes on the ventral wings. In the male genitalia, the valvae of *B. maculele* sp. nov. possess three short distal projections, similar to those of *Brevioleria seba emyra* (Haensch, 1905) (valvae of *B. plisthenes* and *Brevioleria arzalia* (Hewitson, 1876) possess only two projections); however, the two projections at the tip of the valvae are blunt in *B. maculele* sp. nov. (these are more pointed in *B. seba emyra*).

Description.

Male (Figs. 1A, B). Antennae entirely black, 13 mm in length, with 44 antennomeres; club with 13 antennomeres, not conspicuously developed. Thorax black with a thin white dorsal line; patagium black. Abdomen black dorsally, white ventrally. Forewing length 22 mm; hindwing length 17 mm (n=1). General wing pattern translucent with borders and veins black; forewing with a short white postdiscal patch; hindwing translucent with dark veins and borders. Ventral wing margins orangish brown, bordered with thin dark brown lines; light gray marginal dashes in apical region of both wings; a single long beige 'hair pencil' on dorsal costal margin, extending from humeral vein to end of discal cell. Discal cell closed. Male genitalia (Fig. 2): saccus and aedeagus very long; aedeagus straight and thin, with an expansion at end; tegumen short, uncus short and pointed, slightly curved ventrally, very thin in dorsal view; valvae symmetrical, subtriangular with three short projections, first lateral, pointed and curved inwards, second and third rounded, of similar size at tip of valvae.

Female (Figs. 1C, D). Very similar to male, with dark brown borders slightly broader. Antennal length 13 mm (n=4), with 45-46 antennomeres; club with 13 antennomeres. Forewing length 22-24 mm (n=4); hindwing length 15-16 mm (n=4).

Type material. Holotype male (Fig. 1A), deposited in ZUEC. Labels on the holotype (4 labels separated by transverse bars): / HOLOTYPE / Brazil Bahia Camacan RPPN Serra Bonita 17 a 19/08/2009 Eduardo de O. Emery / Holotypus *Brevioleria maculele* Freitas det. 2023 / ZUEC LEP 13744 /.

Allotype female (Fig. 1B), deposited in ZUEC. Labels on the allotype (4 labels separated by transverse bars): / ALLOTYPUS / Brazil Bahia Camacan RPPN Serra Bonita 17 a 19/08/2009 Eduardo de O. Emery leg. / Allotypus *Brevioleria maculele* Freitas det. 2023 / ZUEC LEP 13745 /.

Paratypes (all from Bahia, Brazil). **Camacan.** Reserva Particular do Patrimônio Natural Serra Bonita, 01.III.2015, 600 m 1 female, 200 m 2 females, J. Benetti-Longhini and A. Brower leg. DNA Voucher BLU 772, BLU 775, BLU 777 (ZUEC LEP 13746, ZUEC LEP 13747, ZUEC LEP 13748); **Ihêus.** Fazenda do Alemão, 15°0'1.77"S, 39°8'12.79"W, VI.2000, 120m, 1 female (in bait trap), G. M. Accacio leg. (ZUEC LEP 13749).

Etymology. The species is named after the 'maculelê', a folk Afro-Brazilian dance from the state of Bahia, northeastern Brazil. It is treated as a feminine noun in apposition.

Systematic Position and Taxonomy. The molecular phylogenetic analysis (Fig. 4) recovered all former *Hypoleria* Godman & Salvin, 1879 and *Mcclungia* R. Fox, 1940 (*sensu* Meilke & Brown 1979) in a clade with moderate support, divided into three main subclades: 1) the '*Hypoleria* clade', including *Hypoleria alema* (Hewitson, [1857]), *Hypoleria lavinia* (Hewitson, [1855]), and *Hypoleria xenophis* Haensch, 1909; 2) the '*Mcclungia* clade', including *Mcclungia cymo* (Hübner, [1806]), *Hypoleria adasa* (Hewitson, [1855]), *Brevioleria coenina* (Hewitson, 1869), *Hypoleria ocalea* (Doubleday, 1847), *Hypoleria aureliana* (Bates, 1862), *Hypoleria sarepta* (Hewitson, [1852]) and an undescribed species; and 3) the '*Brevioleria* clade', including *Brevioleria seba* (Hewitson,

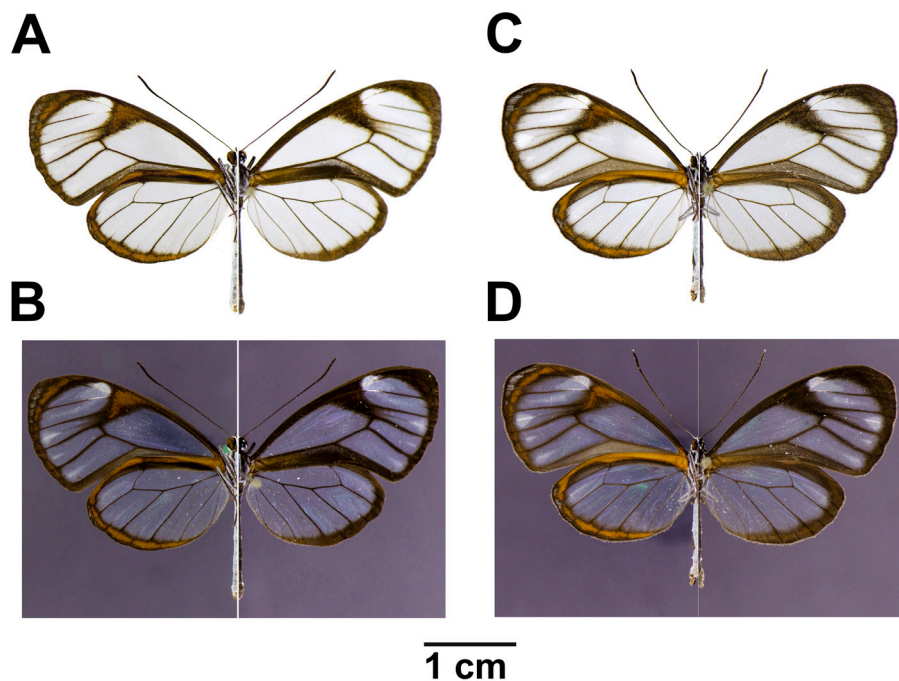


Fig. 1. *Brevioleria maculele* sp. nov. A, B. Holotype male, C, D. allotype female. Left = ventral; Right = dorsal.

1872), *Brevioleria arzalia*, *Brevioleria plisthenes*, *Brevioleria maculele* **sp. nov.** and the genus *Pachacutia* Willmott & Lamas, 2007. The here-described *Brevioleria maculele* **sp. nov.** forms a well-supported clade that is sister to *B. aelia* + *B. arzalia* + *B. plisthenes*, validating its assignment at the species level (Fig. 4). However, the absence of some taxa similar to *B. maculele* **sp. nov.**, such as *Brevioleria aelia jamariensis* (R. F. d’Almeida, 1951), could influence the present decision. The taxonomy of the ‘*Brevioleria* clade’ needs to be clarified based on morphological and molecular evidence, to corroborate the species and subspecies-level classification of *Brevioleria*.

Distribution. The species is known from only two localities in south Bahia, in the municipalities of Camacan and Ilhéus.

Natural history. *Brevioleria maculele* **sp. nov.** has been recorded from the warm rainforests of South Bahia, at elevations from 100 to 800 m in well-preserved forests (Fig. 3A, B). The species is not abundant and easily goes unnoticed among several sympatric transparent co-mimics, in particular *Pseudoscada acilla acilla* (Hewitson, 1867), *P. florula genetyllis* (R.F. d’Almeida, 1922), and *Hypoleria adasa* (Hewitson, [1855]) (Fig. 3G), which are similar in size and wing pattern. In Camacan, up to 11 ‘blue clearwing’ putative co-mimics can

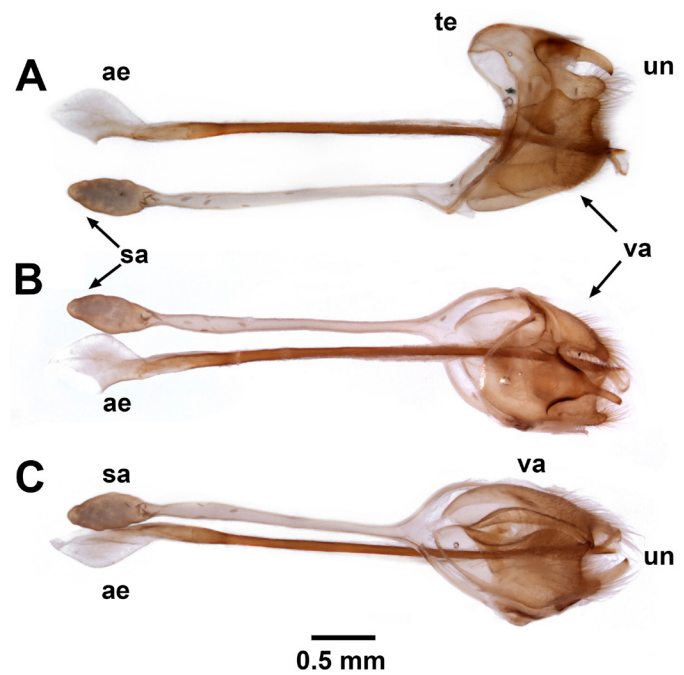


Fig. 2. Male genitalia of *Brevioleria maculele* **sp. nov.** **A.** lateral view; **B.** dorsal view; **C.** ventral view. ae, aedeagus; sa, saccus; te, tegumen; un, uncus; va, valva.

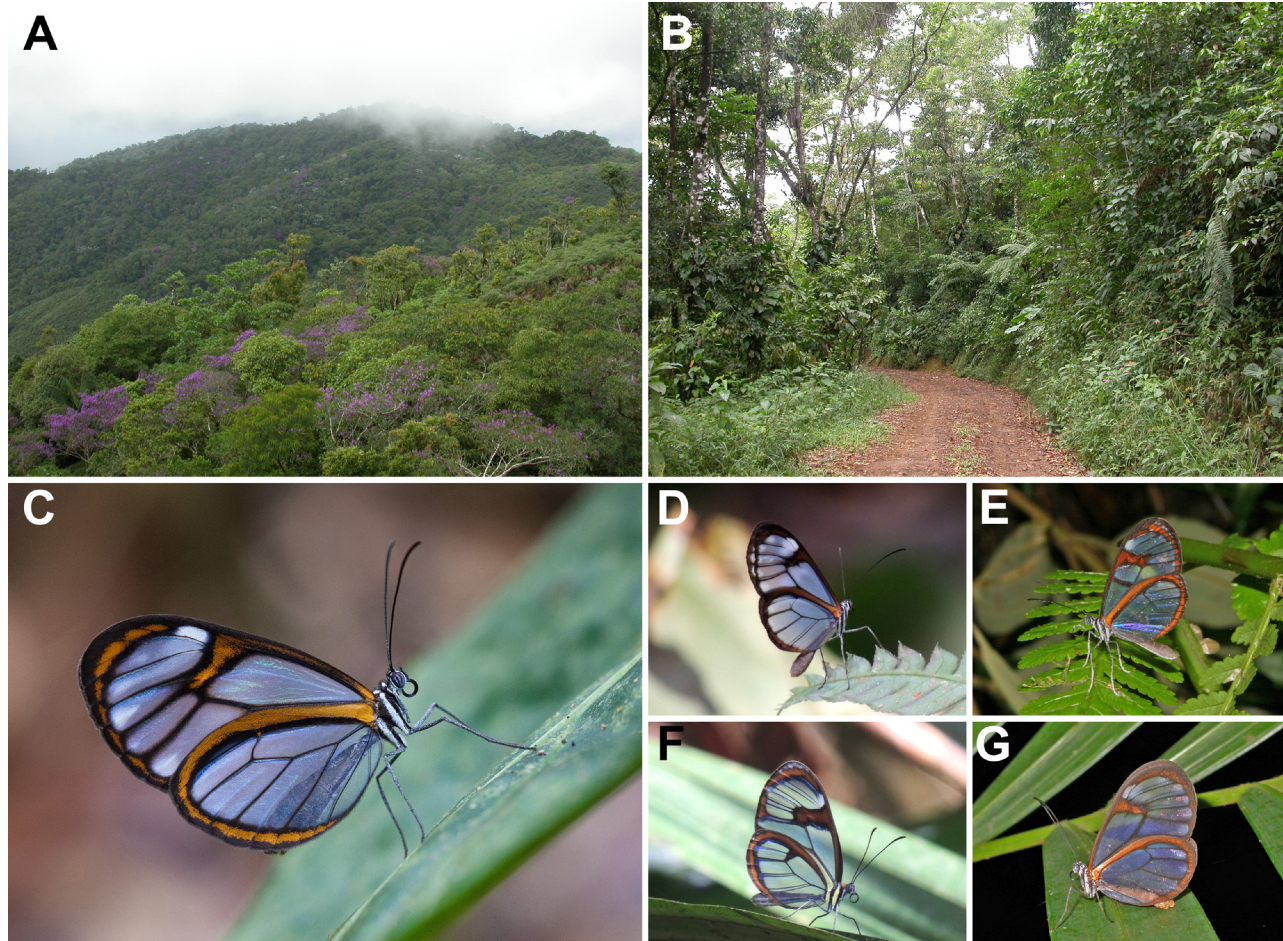


Fig. 3. Habitat of *Brevioleria maculele* **sp. nov.** and its co-mimics at the type locality in Camacan, Bahia, NE Brazil. **A.** General view of the vegetation; **B.** Close view of a dirt road inside the forest; **C.** *Hypoleria alema oreas* (female); **D.** *Hypoleria alema oreas* (male); **E.** *Oleria aquata* (Weymer, 1875) (male); **F.** *Ithomia lichyi* d’Almeida, 1939 (female); **G.** *Hypoleria adasa* (Hewitson, [1855]) (female).

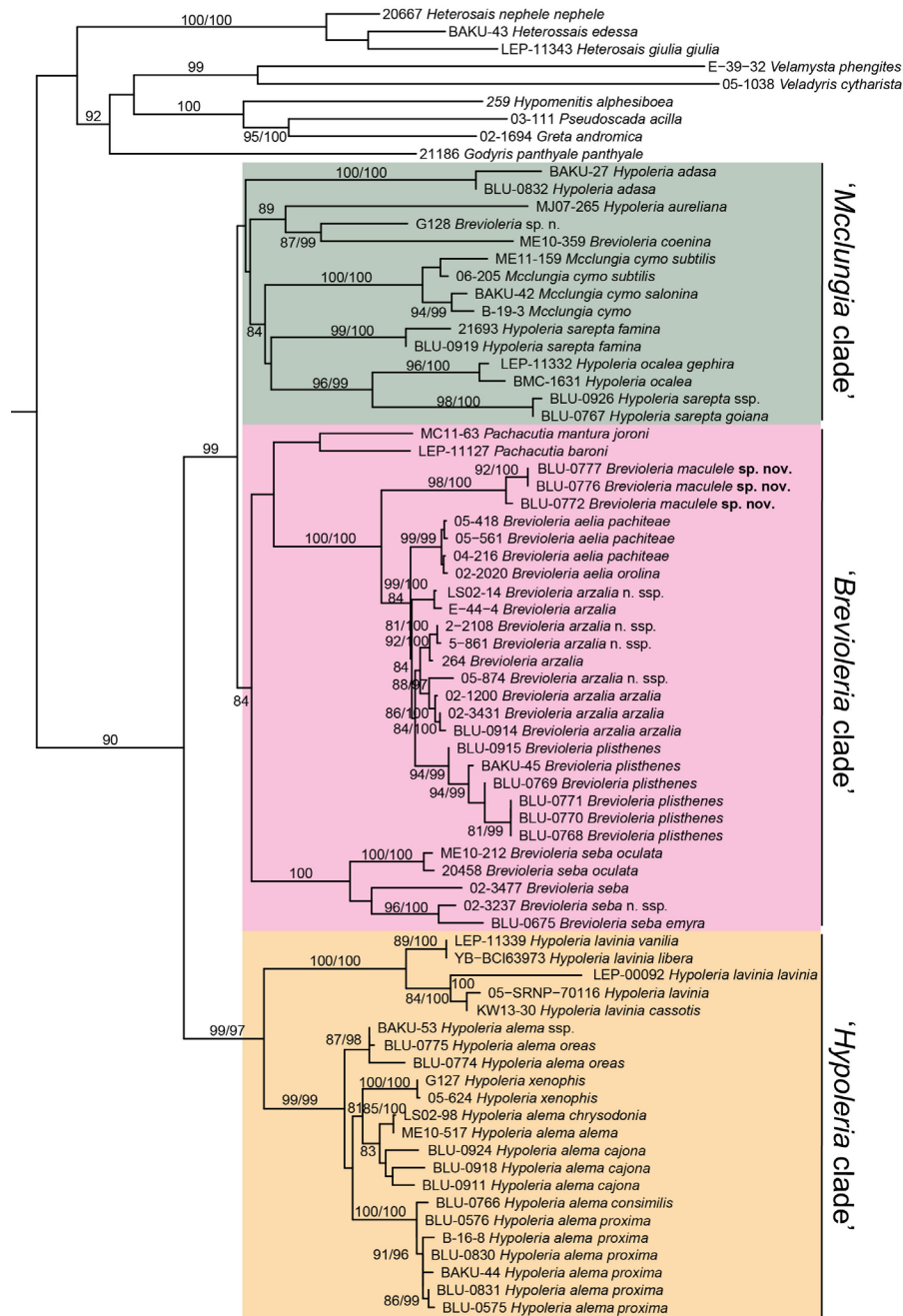


Fig. 4. Phylogenetic relationships of subtribe Godyrina based on four genes and obtained by a maximum likelihood analysis. Three clades are highlighted with shaded rectangles: 1) the 'Mcclungia clade' in green; 2) the 'Brevioleria clade' in pink; and 3) the 'Hypoleria clade' in orange. Numbers on branches refer to bootstrap supports when SH-aLRT \geq 80% and UFboot2 \geq 95%.

fly together (see examples in Fig. 3C-G). Adults were mainly observed in the forest interior during the day, flying in clearings and open trails in the early morning. Host plants and early stages are unknown, but based on the known natural history of closely related species of *Brevioleria*, the host plants are almost certainly Solanaceae in the tribe Cestreeae.

DISCUSSION

Based on the present results, the phylogeny recovered all taxa formerly assigned to *Hypoleria* (*sensu* Meilke & Brown 1979) forming a clade, a result similar to that obtained by Chazot *et al.* (2016). The main difference was the position of *B.*

coenina; in the present study, this species was recovered as sister to *H. aureliana* in the 'Mcclungia clade', while it was recovered as sister to *Brevioleria seba* as part of the 'Brevioleria clade' in Chazot *et al.* (2016). The position of *Pachacutia*, making the genus *Brevioleria* paraphyletic, is also similar to that obtained by Chazot *et al.* (2016). The positions of these two taxa should be studied to clarify the limits of the genus *Brevioleria* and its monophyly. Concerning the position of *Brevioleria maculele* **sp. nov.**, the phylogenetic analysis recovered three sequenced individuals in a well-supported, isolated clade, within the 'Brevioleria clade', validating the current description of the present taxon at the species level (but see comments above concerning *B. aelia jamariensis*). *Brevioleria* is complex and

clearly requires a thorough taxonomic revision (Chazot *et al.* 2016: Appendix 1), and the decision to describe this new taxon at the species level is currently the best-supported option.

Even though the Atlantic Forest is one of the best studied domains in Brazil (Carneiro *et al.*, 2008; Shirai *et al.*, 2019), several new butterfly taxa have been recently described from this region. For the tribe Ithomiini, however, the recently described taxa were at the subspecies level, and all of them are well-known and have just been waiting to receive a name (Freitas, 2020; Freitas *et al.*, 2021). In the present case, this is a new species that was never previously collected; the few known individuals come from relatively recent sampling in south Bahia. In fact, no additional specimens were located in museum collections that includes material from the region. Possibly, this absence is related to the fact that *B. maculele* **sp. nov.** is not locally abundant and is easily mistaken for other sympatric and much more common clearwings, as previously mentioned.

Although *B. maculele* **sp. nov.** is known from only two localities, this species is likely to occur in several other areas with similar forests in South Bahia, including some well-preserved reserves such as the Serra das Lontras National Park and the Una Biological Reserve. Also, it would be important to search for additional localities north and south of the known distribution, to understand the real limits of distribution of the species. Finding additional localities for *B. maculele* **sp. nov.** is important not only to better understand its conservation status, but also because these new localities are additional opportunities for the conservation of this species.

Note added in proof: When reviewing butterfly specimens recently collected in South Bahia by Geanne Carla Novais Pereira, the first author identified 31 more specimens of *B. maculele* **sp. nov.** in six new localities in the municipalities of Belmonte, Mascote, and Una (70-170 m). These new findings support the predictions of this paper and provide valuable information about the geographical distribution of this species.

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Table 1. Godryidina specimens studied, with voucher code, sampling locality, and GenBank accession numbers for the four genes sequenced.

Genus	Species	subspecies	Voucher	COI	COII	EF1a	Tektin	Locality
<i>Brevioleria</i>	<i>aelia</i>	<i>orolina</i>	02-2020	HM051677	HM051678			Peru: San Martín, Km 103.1 Tarapoto-Yurimaguas
<i>Brevioleria</i>	<i>aelia</i>	<i>pachiteae</i>	05-418	KX362076		KX361995	KX362191	Peru: Loreto, Cerro de Mira Culo, PNCAZ
<i>Brevioleria</i>	<i>aelia</i>	<i>pachiteae</i>	05-561	EU069024	EU069024	EU069117	HM052045	Peru: San Martín, Quebrada Huacanqui
<i>Brevioleria</i>	<i>aelia</i>	<i>pachiteae</i>	4-216	HM051684	HM051684		HM052040	Peru: Ucayali, IVITA,
<i>Brevioleria</i>	<i>arziala</i>	<i>loronia</i>	264	KX362077		KX361948	KX362137	Ecuador: Azuay, Comunidad Shuar Mirador, 70 km E of Macas (Macas to Puyo road)
<i>Brevioleria</i>	<i>arziala</i>	<i>arziala</i>	02_3431	KX362083		KX362001	KX362228	Peru: Cuzco, de Pilcopata a Santa Rosa de Huacaria
<i>Brevioleria</i>	<i>arziala</i>	ssp.	05-874	KX362039		KX361963	KX362138	Peru: San Martín, Caño Negro, Río Biabo, PNCAZ
<i>Brevioleria</i>	<i>arziala</i>	<i>arziala</i>	2-1200	HM051790	HM051790		HM052135	Peru: San Martín, Km 22 Tarapoto - Yurimaguas
<i>Brevioleria</i>	<i>arziala</i>	ssp.	2-2108	HM051788	HM051788		HM052132	Peru: San Martín, Km 7.2 Pongo-Barranquita
<i>Brevioleria</i>	<i>arziala</i>	ssp.	5-861	HM051789	HM051789		HM052133	Peru: San Martín, Laguna del Mundo Perdido
<i>Brevioleria</i>	<i>arziala</i>	<i>arziala</i>	BLU-0914	PP729880				Brazil: Acre, Marechal Thaumaturgo, Reserva Extrativista do Alto Juruá, Lago Ceará
<i>Brevioleria</i>	<i>arziala</i>	<i>loronia</i>	E-44-4	DQ157477	DQ157477	DQ177924		Ecuador: Sucumbios, El Recodo
<i>Brevioleria</i>	<i>arziala</i>	<i>loronia</i>	ME-2007 LS02-14	EU068977	EU068977	EU069119		Ecuador: Sucumbios, Garza Cocha
<i>Brevioleria</i>	<i>coenina</i>		ME10-359	JX573755		JX573684		Ecuador: Napo, Cocodrilo
<i>Brevioleria</i>	<i>maculele</i>		BLU-0772	PP729871				Brazil: Bahia, Camacan, RPPN Serra Bonita
<i>Brevioleria</i>	<i>maculele</i>		BLU-0776	PP729874				Brazil: Bahia, Camacan, RPPN Serra Bonita
<i>Brevioleria</i>	<i>maculele</i>		BLU-0777	PP729875				Brazil: Bahia, Camacan, RPPN Serra Bonita
<i>Brevioleria</i>	nsp1		G128	KX362023				Peru: Cuzco, Quebrada Quitacalzon
<i>Brevioleria</i>	<i>plisthenes</i>		BAKU-45	EU068771	KX362028	KX361945	KX362132	Brazil: São Paulo, Monte Alegre do Sul
<i>Brevioleria</i>	<i>plisthenes</i>		BLU-0768	PP729867				Brazil: Distrito Federal, Brasília, APA Gama Cabeça de Veado
<i>Brevioleria</i>	<i>plisthenes</i>		BLU-0769	PP729868				Brazil: Distrito Federal, Brasília, APA Gama Cabeça de Veado
<i>Brevioleria</i>	<i>plisthenes</i>		BLU-0770	PP729869				Brazil: Distrito Federal, Brasília, APA Gama Cabeça de Veado
<i>Brevioleria</i>	<i>plisthenes</i>		BLU-0771	PP729870				Brazil: Distrito Federal, Brasília, APA Gama Cabeça de Veado
<i>Brevioleria</i>	<i>plisthenes</i>		BLU-0915	PP729881				Brazil: Minas Gerais, Bueno Brandão, Cachoeira Ponte Alta
<i>Brevioleria</i>	<i>seba</i>	<i>oculata</i>	20458	EU069025	EU069025	EU069120	KX362142	Ecuador: Orellana, Rio Añangu
<i>Brevioleria</i>	<i>seba</i>	ssp. n1	02_3237	KX362057		KX361996	KX362194	Peru: Cuzco, Palma Real (otro lado del río)
<i>Brevioleria</i>	<i>seba</i>		02_3477	KX362065		KX362005	KX362193	Peru: Cuzco, Pilcopata
<i>Brevioleria</i>	<i>seba</i>	<i>emyra</i>	BLU-0675	PP729864				Brazil: Mato Grosso do Sul, Bonito, Taiguara
<i>Brevioleria</i>	<i>seba</i>	<i>oculata</i>	ME10-212	KX362087	KX362087		KX362202	Ecuador: Napo, Mariposa
<i>Brevioleria</i>	<i>seba</i>	<i>panthysale</i>	21186	JX573765	JX573765	JX573694	KX362248	Ecuador: Zamora-Chinchipe, San Francisco
<i>Godrys</i>	<i>andromica</i>		02-1694	KX362098	KX362098	KX361969	KX362144	Peru: San Martín, Río Nieva
<i>Greta</i>	<i>edessa</i>		BAKU-43	KX362031	KX362031	KX361946	KX362133	Brazil: São Paulo, Monte Alegre do Sul
<i>Heterosais</i>	<i>giulia</i>		LEP-11343	KX362129			KX362211	Colombia: Antioquia
<i>Heterosais</i>	<i>nephele</i>	<i>nephele</i>	20667	EU069043	EU069043	EU069148	KX362212	Ecuador: Orellana, Rio Añangu
<i>Hypoleria</i>	<i>adasa</i>		BAKU-27	KX362075			KX362217	Brazil: São Paulo, Boracéia
<i>Hypoleria</i>	<i>adasa</i>		BLU-0832	PP729878				Brazil: São Paulo, São Francisco Xavier
<i>Hypoleria</i>	<i>alema</i>	<i>proxima</i>	B-16-8	DQ157504	DQ157504	DQ177949	KX362134	Brazil: São Paulo, Jundiá, Serra do Japi
<i>Hypoleria</i>	<i>alema</i>	<i>proxima</i>	BAKU-44	KX362047		KX361953	KX362134	Brazil: São Paulo, Monte Alegre do Sul
<i>Hypoleria</i>	<i>alema</i>	ssp.	BAKU-53	KX362060			KX362213	Brazil: Alagoas, Ibatiguara, Mata de Coimbra Usina Serra Grande
<i>Hypoleria</i>	<i>alema</i>	<i>proxima</i>	BLU-0575	PP729862				Brazil: São Paulo, Jundiá, Serra do Japi
<i>Hypoleria</i>	<i>alema</i>	<i>proxima</i>	BLU-0576	PP729863				Brazil: São Paulo, Jundiá, Serra do Japi
<i>Hypoleria</i>	<i>alema</i>	<i>consimilis</i>	BLU-0766	PP729865				Brazil: Distrito Federal, Brasília, APA Gama Cabeça de Veado
<i>Hypoleria</i>	<i>alema</i>	<i>oreas</i>	BLU-0774	PP729872				Brazil: Bahia, Camacan, RPPN Serra Bonita
<i>Hypoleria</i>	<i>alema</i>	<i>oreas</i>	BLU-0775	PP729873				Brazil: Bahia, Camacan, RPPN Serra Bonita
<i>Hypoleria</i>	<i>alema</i>	<i>proxima</i>	BLU-0830	PP729876				Brazil: Minas Gerais, Ibirité, PE Serra do Rola Moça
<i>Hypoleria</i>	<i>alema</i>	<i>proxima</i>	BLU-0831	PP729877				Brazil: São Paulo, São Francisco Xavier
<i>Hypoleria</i>	<i>alema</i>	<i>cajona</i>	BLU-0911	PP729879				Brazil: Acre, Marechal Thaumaturgo, Reserva Extrativista do Alto Juruá, Pedra Pintada

Table 1, continued. Godyridina specimens studied, with voucher code, sampling locality, and GenBank accession numbers for the four genes sequenced.

Genus	Species	subspecies	Voucher	COI	COII	EF1a	Tektin	Locality
<i>Hypoleria</i>	<i>alema</i>	<i>cajona</i>	BLU-0918	PP729882				Brazil: Acre, Marechal Thaumaturgo, Reserva Extrativista do Alto Juruá, Foz do Tejo
<i>Hypoleria</i>	<i>alema</i>	<i>cajona</i>	BLU-0924	PP729884				Brazil: Acre, Marechal Thaumaturgo, Reserva Extrativista do Alto Juruá, Foz do Tejo
<i>Hypoleria</i>	<i>alema</i>	<i>chrysodonia</i>	LS02-98	EU068985		EU069152	KX362200	Ecuador: Sucumbios, Garza Cocha
<i>Hypoleria</i>	<i>alema</i>	<i>alema</i>	ME10-517	JX573785				Ecuador: Napo, Hollin
<i>Hypoleria</i>	<i>aureliana</i>		MI07-265	KF268431			KX362189	Peru: San Martín, Shapaja-Chazuta km 5
<i>Hypoleria</i>	<i>lavinia</i>		05-SRNP-70116	ON436819				Costa Rica: Área de Conservación Guanacaste
<i>Hypoleria</i>	<i>lavinia</i>	<i>cassotis</i>	KW13-30	KX362049				Panamá: Panamá
<i>Hypoleria</i>	<i>lavinia</i>	<i>lavinia</i>	LEP-00092	KX362120				Ecuador: Manabí, S Santa Lucía, km 20 Jipijapa-Guayaquil rd., Cerro Prieto
<i>Hypoleria</i>	<i>lavinia</i>	<i>vanilia</i>	LEP-11339	KX362069				Colombia: Antioquia
<i>Hypoleria</i>	<i>lavinia</i>	<i>libera</i>	YB-BCI63973	KP849011				Panamá: Panamá, Barro Colorado Is, Armour I
<i>Hypoleria</i>	<i>ocalea</i>		BMC-1631	KX362070				Colombia: Antioquia, Gómez Plata, Porce
<i>Hypoleria</i>	<i>ocalea</i>	<i>gephira</i>	LEP-11332	KX362124				Colombia: Antioquia
<i>Hypoleria</i>	<i>sarepta</i>	<i>famina</i>	21693	KX362021				Ecuador: Sucumbios, Pañacocha
<i>Hypoleria</i>	<i>sarepta</i>	<i>goiana</i>	BLU-0767	PP729866		EU069245		Brazil: Distrito Federal, Brasília, APA Gama Cabeça de Veado
<i>Hypoleria</i>	<i>sarepta</i>	<i>famina</i>	BLU-0919	PP729883				Brazil: Acre, Marechal Thaumaturgo, Reserva Extrativista do Alto Juruá, Foz do Tejo
<i>Hypoleria</i>	<i>sarepta</i>	ssp.	BLU-0926	PP729885				Brazil: Mato Grosso, Colniza, Parque Nacional Igarapés do Juruema
<i>Hypoleria</i>	<i>xenophis</i>		05-624	KX362050		KX361952		Peru: San Martín, Robashea, Puesto de Control 11, PNCAZ
<i>Hypoleria</i>	<i>xenophis</i>		G127	KX362061				Peru: San Martín, Yacusisa
<i>Hypomenitis</i>	<i>alphesiboea</i>		259	KX362125				
<i>Meclungia</i>	<i>cymo</i>	<i>subtilis</i>	06-205	KX362063	KX362125	KX361973	KX362223	Peru: San Martín, Achinamiza, Bajo Río Huallaga
<i>Meclungia</i>	<i>cymo</i>	<i>salonina</i>	B-19-3	DQ157512	DQ157512	DQ177958		Brazil: São Paulo, Campinas
<i>Meclungia</i>	<i>cymo</i>	<i>salonina</i>	BAKU-42	KX362035	KX362035	KX361947		Brazil: São Paulo, Monte Alegre do Sul
<i>Meclungia</i>	<i>cymo</i>	<i>subtilis</i>	ME11-159	JX573792		JX573720		Ecuador: Zamora-Chinchipe, Quebrada Chorillos
<i>Mechanitis</i>	<i>polymnia</i>	<i>casabranca</i>	BLU-0001	PP729861				Brazil: São Paulo, Campinas
<i>Pachacutia</i>	<i>baroni</i>		LEP-11127	KX362089				Ecuador: Morona-Santiago, km 19 Macas-Nueve de Octubre rd. Río Abanico
<i>Pachacutia</i>	<i>manura</i>	<i>joroni</i>	MC11-63	KX362127				Peru: San Martín, Sauce, Limoncocha
<i>Pseudoscada</i>	<i>acilla</i>	ssp.	03-111	KX362094		KX362003		Brazil: Bahia, Camacan, RPPN Serra Bonita
<i>Teladyris</i>	<i>cytharista</i>		05-1038	KX362081		KX361991		Peru: San Martín, Venceremos + 4 km (Segundo Baden)
<i>Telamysta</i>	<i>phengites</i>		E-39-32	DQ157548	DQ157548	DQ177994	KX362222	Ecuador: Sucumbios, La Bonita