

Notes about *Cibyra* WALKER, 1856 (second note), with description of two new species from southeastern and southern Brazil (Lepidoptera, Hepialidae)

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Abstract: Three species of *Cibyra* WALKER, 1856 from southeastern and southern Brazil are treated and compared to the similar species *C. meridionalis* C. MIELKE & CASAGRANDE, 2013. *C. monoargenteus* (VIETTE, 1951) is re-described and adults are figured for the first time. *Cibyra tessellata* sp. n. and *Cibyra ochracea* sp. n. are described as new. The first differing by wing ornamentation, the presence of an epiphysis, and the male genitalia. The second differing by the presence of an epiphysis and the phallus shape. Both male holotypes are deposited in Collection Padre Jesus Santiago MOURE at University Federal do Paraná, Curitiba, Brazil.

Key words: morphology, Neotropical, taxonomy, DNA barcoding.

Anmerkungen zu *Cibyra* WALKER, 1856 (zweite Notiz), mit Beschreibung von zwei neuen Arten aus Südost- und Südbrasilien (Lepidoptera, Hepialidae)

Zusammenfassung: Drei Arten von *Cibyra* WALKER, 1856 aus Südost- und Südbrasilien werden behandelt und mit der ähnlichen Art *C. meridionalis* C. MIELKE & CASAGRANDE, 2013 verglichen. *C. monoargenteus* (VIETTE, 1951) wird erstmals im Detail beschrieben, und die Falter werden zum ersten Mal abgebildet. *Cibyra tessellata* sp. n. und *Cibyra ochracea* sp. n. werden als neue Arten beschrieben; die erste unterscheidet sich besonders in der Flügelzeichnung, dem Vorhandensein einer Epiphyse und im männlichen Genital, die zweite im Vorhandensein einer Epiphyse und der Phallusform. Beide männliche Holotypen sind in der Sammlung Padre Jesus Santiago MOURE an der Universität Federal do Paraná, Curitiba, Brasilien, hinterlegt.

Introduction

C. MIELKE & GREHAN (2012) listed 11 species within *Cibyra* WALKER, 1856, and recently *C. meridionalis* C. MIELKE & CASAGRANDE, 2013 was described including the adult external morphology (C. MIELKE & CASAGRANDE 2013), whose terminology is used here.

In the present article, *C. monoargenteus* (VIETTE, 1951) is re-described, and the male and the female moth are figured for the first time. Furthermore, two new species of *Cibyra* are described as new. Only the differences found between each species and *C. meridionalis* are mentioned. All these three species are from southeastern and southern Brazil, and the total of *Cibyra* species is raised to 14.

DNA was extracted for all taxa involved in this study and interpreted as explained in C. MIELKE & CASAGRANDE (2013). To facilitate the comparison with other *Cibyra* species cited by these authors, the distances are mentioned again in the table/tree without listing the vouchers. Specimen and sequence data are stored in the Barcode of

Life Data Systems (BOLD 2013; RATNASINGHAM & HEBERT 2007) in public projects and in the GenBank with their code access cited for each specimen in the list of material examined.

Abbreviations used

| | |
|------|--|
| BMNH | The Natural History Museum (formerly British Museum (Natural History)), London, U.K. |
| CGCM | Collection Carlos G. C. MIELKE, Curitiba, Paraná, Brazil. |
| DZUP | Collection Padre Jesus S. MOURE, Departamento de Zoologia, Universidade Federal do Paraná, Curitiba, Paraná, Brazil. |
| IOC | Collection Instituto Oswaldo CRUZ, Rio de Janeiro, Rio de Janeiro, Brazil. |
| MNHN | Muséum National d'Historie Naturelle, Paris, France. |
| MWM | Museum Witt, München (Munich), Germany. |
| MZSP | Collection Museu de Zoologia, Universidade de São Paulo, São Paulo, São Paulo, Brazil. |
| NHMW | Naturhistorisches Museum, Vienna, Austria. |
| SMFL | Senckenberg-Museum, Frankfurt am Main, Lepidoptera collection, Germany. |
| ZSBS | Zoologische Sammlungen des Bayerischen Staates, München (Munich), Germany. |

Further abbreviations

| | | | |
|----|---------------------------------|----|-----------|
| HT | holotype. | PT | paratype. |
| FW | forewing. | HW | hindwing. |
| BC | specimens with a mtDNA barcode. | | |

Systematic part

Cibyra monoargenteus (VIETTE, 1951)

Figs. 1, 2a, 2b, 3, 4a, 4b, 5, 6, 7, 8, 9, Text-Fig. 1.

Specimens examined, in total 86 ♂♂, 26 ♀♀. All Brazil. — Paraná: 1 ♂, Quatro Barras, Banhado, 800 m, 28. xi. 1970, V. O. BECKER leg. (CGCM 15.309). 5 ♂♂, 1 ♀, Curitiba, 920 m, 17.–28. xii. 1974, 8.–16. i. 1975, 4. ii. 1975, V. O. BECKER leg. (CGCM 15.177, 15.483, 15.598, 15.866, 15.886, 15.930). 2 ♂♂, Tijucas do Sul, Vossorooca, 28. i. 1987, 30. xii. 1987, C. MIELKE leg. (CGCM 6.483, 7.688). 1 ♂, 1 ♀, Guaratuba, Pontal do Itararé, 1200 m, 8. ii. 2001, C. MIELKE leg. (CGCM 22.956, 23.956). — Santa Catarina: 13 ♂♂, 6 ♀♀, São Bento do Sul, Rio Vermelho, 700 m, 8. i. 1997, 26. i. 1999, 2. iii. 2000, 25. xii. 2000, 16. i. 2001, 8. ii. 2001, 16. xii. 2001, 6. i. 2002, 25. i. 2003, 4. iii. 2004, 19. i. 2006, 8. xi. 2009, 20. xii. 2009, 10.–11. i. 2010, O. RANK leg. (CGCM 4.019, 4.439, 4.543, 4.755, 5.198, 5.882 [BC-JX215689], 6.144, 6.222, 6.697, 6.886, 7.397, 7.415, 7.586, 22.540 [BC-JX215693], 23.551, 24.141, 24.317 [BC-JX215682], 24.381 [BC-JX215692], 24.669). 12 ♂♂, 5 ♀♀, São Bento do Sul, Rio Vermelho, 800 m, 21. xii. 1996, 30. xii. 1997, 2. ii. 1998, 30. i. 2000, 10. ii. 2000, 25. xii. 2000, 24. i. 2001, 10.–18. ii. 2001, 7. i. 2002, 8.–24. ii. 2002, 6. ii. 2006, I. RANK leg. (CGCM 4.455, 4.465 [BC-JX215686], 4.496, 4.645, 4.727, 4.769, 5.450, 5.702, 6.159, 6.490, 6.640, 6.732, 7.015, 7.133, 7.748, 7.838, 19.946 [BC-JX215681]). 1 ♂, São Bento do Sul, Rio Vermelho, 800 m, 21. i. 1995, MIELKE & RANK leg. (CGCM 7.098). 5 ♂♂, São Bento do Sul, Rio Vermelho, 800 m,

3. III. 1991, 4. XII. 1993, 26. XII. 1993, x. 1994, RANK leg. (CGCM 6.070, 6.503, 6.627, 6.843, 7.994). 20 ♂♂, 9 ♀♀, São Bento do Sul, Rio Natal, 550 m, 26. XII. 1995, 13. I. 1996, 3. III. 1996, 5. XI. 1996, 2. XII. 1996, 1. 1997, 29. x. 1997, 19. I. 1998, 21. XII. 1998, 6.–10. XII. 1999, 7.–14. I. 2000, 18.–29. XII. 2000, 15. XI. 2001, 3. XII. 2001, 20. I. 2004, 15. XI. 2004, II. 2005, A. RANK leg. (CGCM 2.395, 4.067, 4.255, 4.476, 4.564, 4.640 [BC-JX215687], 4.739, 4.910, 5.021, 5.214, 5.234, 5.543, 5.862, 5.925, 6.061, 6.156, 6.118, 6.318, 6.332, 6.372, 6.553, 7.003 [BC-JX215691], 7.025, 7.214, 7.375, 7.563, 13.838 [BC-JX215690], 17.911 [BC-JX215685], 17.975). 1 ♀, São Bento do Sul, Rio Natal, 200–500 m, 23. I. 1993, MIELKE leg. (CGCM 7.932). 1 ♂, 1 ♀, São Bento do Sul, Rio Natal, 550 m, 5. XII. 1997, I. RANK leg. (CGCM 4.551, 4.937). 1 ♀, São Bento do Sul, Rio Natal, 700 m, 3. I. 1995, O. RANK leg. (CGCM 18.246 [BC-JX215688]). 3 ♂♂, 1 ♀, São Bento do Sul, Rio Natal, 200–500 m, 1. 1993, 28. XI. 1994, 14. I. 1995, RANK leg. (CGCM 5.827, 5.958, 6.435, 7.337). 10 ♂♂, Urubici, Serra do Panelão, 1250 m, 30. XII. 1997, 12.–14. I. 1998, 14.–16. II. 1999, 26.–31. XII. 2008, C. MIELKE leg. (CGCM 568, 705, 712, 793, 5.019, 9.797, 23.367, 23.575, 23.636, 23.880). 12 ♂♂, Urubici, Morro da Igreja, 1250 m, 27.–29. XII. 1997, 21.–24. XII. 1998, 18.–22. XII. 2000, MIERS & C. MIELKE (CGCM 514, 725, 850, 904, 1.476, 1.155, 1.556, 6.005, 6.325, 6.741, 7.450 [BC-JX215683], 7.979 [BC-JX215684]).

♂ (Figs. 2a, 2b, 3, 5). FW length: 11–17 mm; wingspan: 22–33 mm. Clypeus anteriorly and mesally projected and less differentiated from the frons. Antenna with ca. 27 segments. Epiphysis absent. M_2 – M_3 stalked near the base. Precoxal sutures II and III entire. Parcoxal suture III distinct. Dorsal ground colour light brown to orange-brown; postdiscal band contrasting, light gray generally well defined distally; stigma usually horizontal, proximal stripe larger. Sternum VIII V-shaped.

♀ (Figs. 4a, 4b, 8). FW length: 18–29 mm; wingspan 37–54 mm. Antenna with ca. 26 segments. Wings follow the pattern of the male, but FW dorsal ground colour gray-brownish to orange-brown and HW light orange-brown.

♂ genitalia (Figs. 6, 7). Saccus without differentiation on its posterior edge. Tegumen vertical, slightly curved. Tergal lobes flattened, crab-claw shaped (Fig. 6). Fultura inferior bilobed dorsally. Phallus everted with rounded distal bladder with two tapered processes postero-dorsal, one on each side, a third one mid-ventrally, finger-like (Fig. 7).

♀ genitalia (Fig. 9). Lamella antevaginalis mesally slight sclerotized, almost membranous; lateroposterior dorsal edge well sclerotized, produced to a sharp process; the later well separated from each other. Ductus and corpus bursae tube-like, with ca. 3 mm and ca. 4–5 mm, respectively.

Remarks. VIETTE (1951) seems to describe *C. monoargenteus* based on the holotype and only figured the ♂ genitalia in drawing, so that the male and the female moths are figured here for the first time.

Ethology and geographical distribution. Flight period follows the same pattern as described for *C. meridionalis*, occurring during the summer and flying at dusk. *C. monoargenteus* seems to be confined to the eastern part of the states of Paraná and Santa Catarina (Fig. 1) at altitudes between 700 and 1400 m, where Mixed Ombrophilous

Forest is predominant, and it is sympatric with *C. meridionalis* in several places.

Diagnosis. *C. monoargenteus* is recognized by the combination of the following characters. ♂: contrast of the postdiscal band on the FW, horizontal stigma; ♀: ground colour, absence of epiphysis, and the shape of the lamella antevaginalis in the ♀ genitalia.

Cibyra tessellata sp. n.

Figs. 1, 10a, 10b, 11, 12, 13, Text-Fig. 1.

Holotype ♂ with the following labels: /Holotypus, *Cibyra tessellata* C. MIELKE det. 2012/ Brasil, Paraná, Guaratuba, Serra do Itararé, 1000 m, 27. III. 2006. C. MIELKE leg./ DZ 15.594 / BC-CGCM [BC-JX215592]/ 20.945 Col. C. MIELKE/. – Figs. 10a, 10b.

Paratypes, in total 3 ♂♂ with the same data as the holotype (CGCM 13.099, 20.897 [BC-JX215595], 20.929 [BC-JX215587]).

Etymology. It is named in concordance to its general dorsal appearance of the FW: the mosaic-like pattern (TESSELLATUS, -A, -UM [Latin] = mosaic).

♂ (Figs. 10a, 10b, 11). FW length: 16–19 mm; wingspan: 30–38 mm. Antenna ca. 25 segments. FW ground color brownish-ochre to orange-brown; bands are not clearly distinguished, mosaic appearance; baso-central band always interrupted; stigma small, oblique or horizontal. Epiphysis present.

♂ genitalia (Figs. 12, 13). Same structure as in the previous species. The posterior edge of the saccus sometimes with a central and small indentation (Fig. 12). Phallus everted similar to *C. monoargenteus*, but slightly more pronounced posteriorly (Fig. 13).

♀ unknown.

Ethology and geographical distribution. All specimens of *C. tessellata* sp. n. are known from one collecting night attracted to UV lights at dusk. It seems to be confined to the eastern part of Paraná state (Fig. 1), and it is sympatric to *C. monoargenteus*.

Diagnosis. *C. tessellata* sp. n., in spite of its similarity in the ♂ genitalia to *C. monoargenteus*, can be easily distinguished from the latter by the presence of an epiphysis in *C. tessellata*. Also, the baso-central band interrupted on the FW seems to be unique within the genus.

Cibyra ochracea sp. n.

Figs. 1, 14a, 14b, 15, 16a, 16b, 17, 18, 19, Text-Fig. 1.

Holotype ♂ with the following labels: /Holotypus, *Cibyra ochracea* C. MIELKE det. 2012/ Brasil, Santa Catarina, Rio Vermelho, 800 m, 15. II. 2004 (5), O. RANK leg./ DZ 15.601/. – Figs. 14a, 14b.

Paratypes, in total 217 ♂♂, 28 ♀♀. All Brazil. – São Paulo: 1 ♂, Salesópolis, Est. Biol. Boracéia, 15. IV. 1942, D'ALMEIDA leg. (DZ 15.811). 1 ♂, Salesópolis, Est. Biol. Boracéia, 11. III. 1948, L. TRAVASSOS F., BRAZ, BOHERMAN & RABELLO leg. (MZSP 14.393). 1 ♂, 1 ♀, Salesópolis, Est. Biol. Boracéia, 9. IV. 1948, 27. XII. 1967, L. TRAVASSOS, L. TRAVASSOS F. & RABELLO leg. (MZSP 14.391, 14.397). 1 ♂, Salesópolis, Est. Biol. Boracéia, 27.–30. I. 1949, L. TRAVASSOS F., RABELLO & BARRETO leg. (MZSP 14.394). 1 ♀, Salesópolis, Est. Biol. Boracéia, 13.–

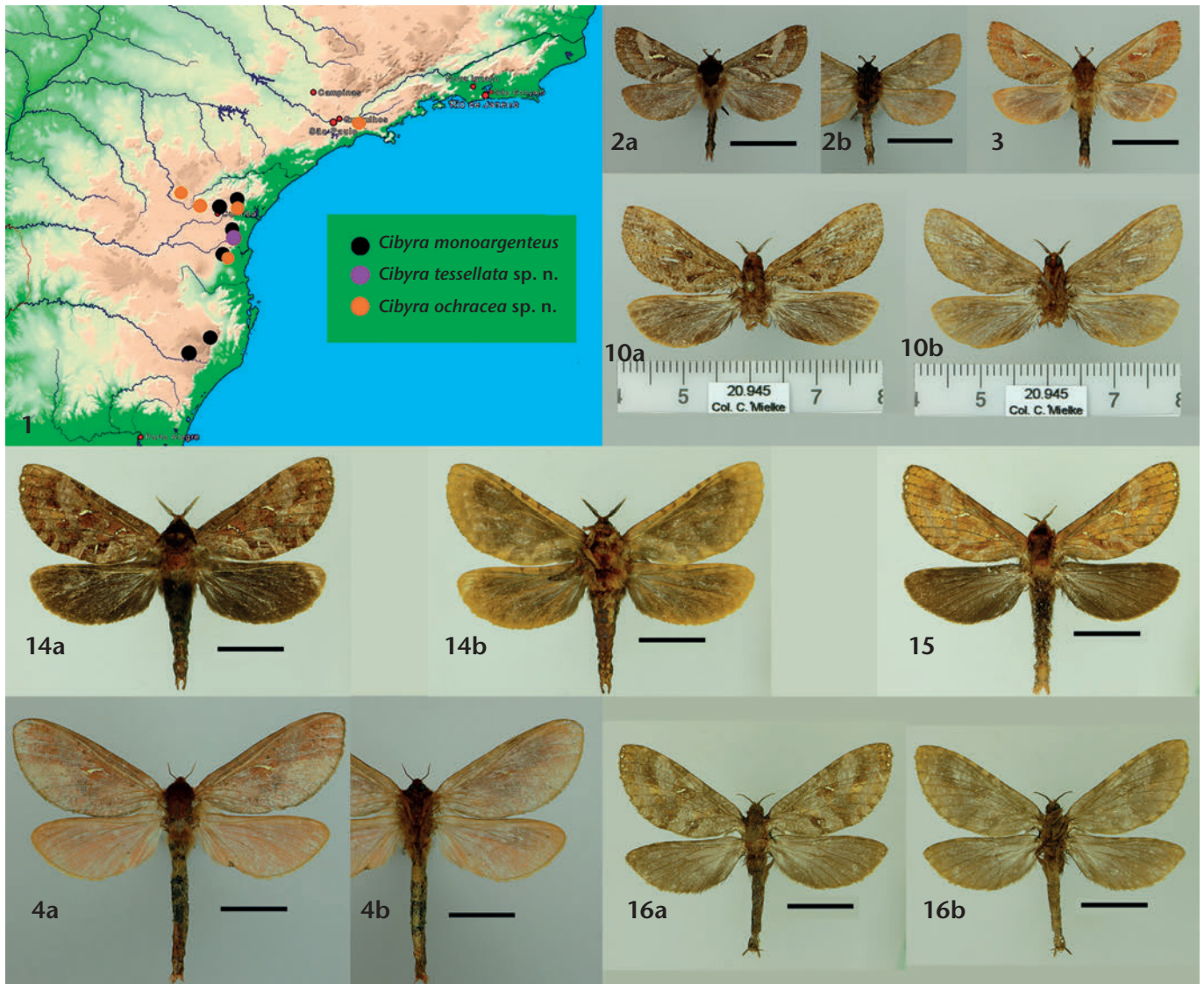
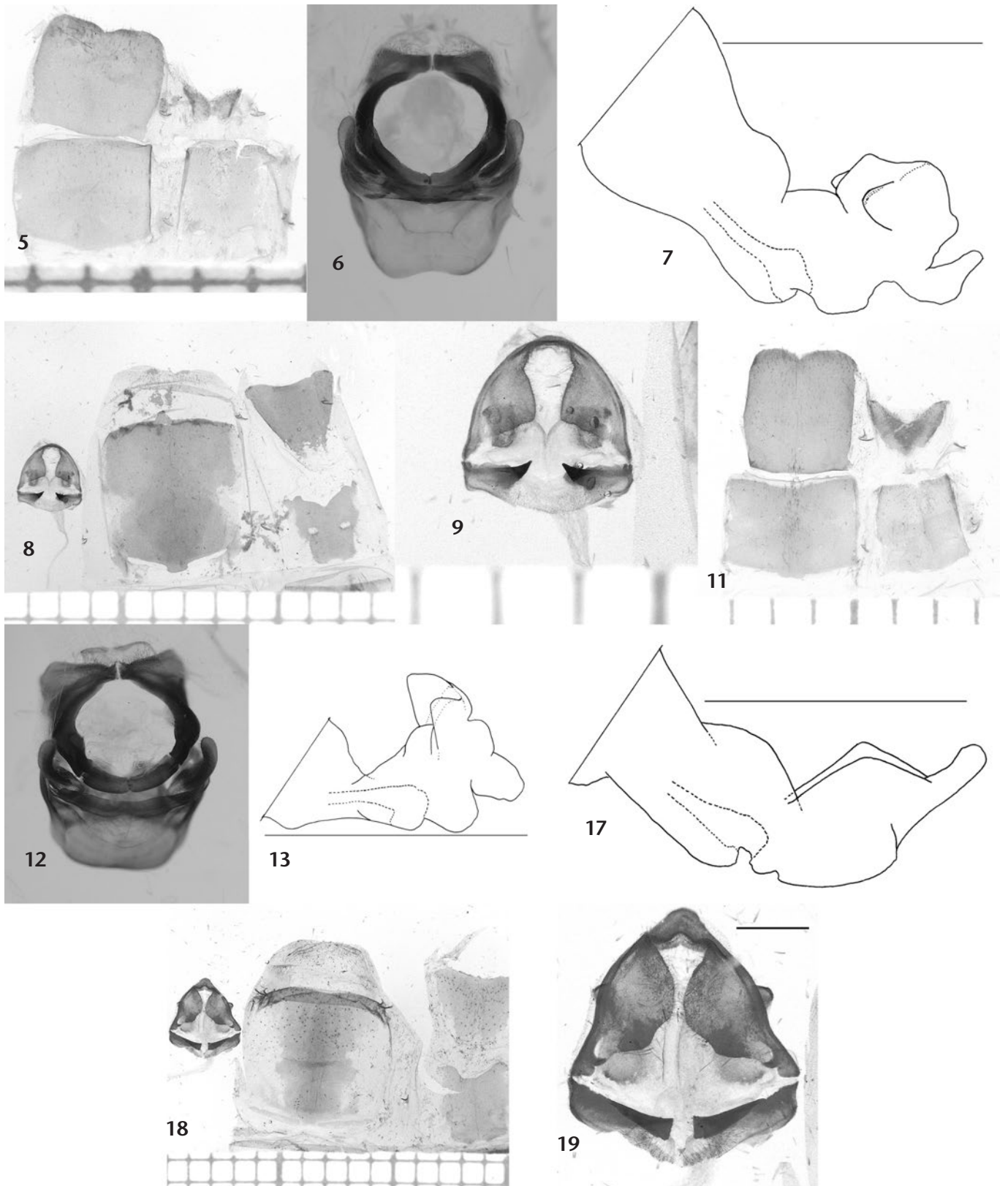


Fig. 1 (map): Geographical distribution of *Cibyra monoargenteus*, *Cibyra tessellata* sp. n., and *Cibyra ochracea* sp. n. in SE- and S-Brazil. — Other Figs.: Specimens of *Cibyra*. **Figs. 2–4:** *Cibyra monoargenteus*. ♂ dorsal (2a), ventral (2b); ♂ dorsal (3); ♀ dorsal (4a), ventral (4b). — **Fig. 10:** *Cibyra tessellata* sp. n. HT ♂ dorsal (10a), ventral (10b). — **Figs. 14–16:** *Cibyra ochracea* sp. n. HT ♂ dorsal (14a), ventral (14b); PT ♂ dorsal (15); PT ♀ dorsal (16a), ventral (16b). — Scale bars 1 cm, Scales in cm with subdivision in mm. Specimens approximately natural size.

17. iii. 1950, L. TRAVASSOS F., RABELLO & CAMARGO leg. (MZSP 14.396). 1 ♂, Salesópolis, Est. Biol. Boracéia, 11.–15. ii. 1956, TRAVASSOS & PEARSON leg. (IOC 4.731). 2 ♂♂, Salesópolis, Est. Biol. Boracéia, 8.–14. ii. 1959, TRAVASSOS, KLOSS & PEARSON leg. (IOC 4.742, 4.743). 2 ♂♂, Salesópolis, Est. Biol. Boracéia, 7. xii. 1958, 24. i. 1968, L. TRAVASSOS & L. TRAVASSOS F. leg. (MZSP 14.392, 14.395). 1 ♂, Cubatão, 700 m, 6. ii. 1940, L. TRAVASSOS, L. TRAVASSOS F. & LANE leg. (IOC 1.809). — **Paraná:** 1 ♂, Antonina, 1000 m, 21. i. 1970, V. O. BECKER leg. (CGCM 15.583). 1 ♂, Morretes, Morro do Meio, 1000 m, 8. i. 1970, V. O. BECKER leg. (CGCM 14.361). 2 ♂♂, Balsa Nova, São Luis do Purunã, 8.–15. ii. 1991, C. MIELKE leg. (CGCM 6.649, 7.910). 1 ♂, Ponta Grossa, Vila Velha, 26. i. 2005, C. MIELKE leg. (CGCM 22.652 [BC-GU661543]). 1 ♂, Tijucas do Sul, Vossoroca, 10. i. 1988, C. MIELKE leg. (CGCM 5.668). — **Santa Catarina** (all São Bento do Sul): 1 ♂, Rio Vermelho, 500 m, 30. xi. 1986, MIELKE leg. (CGCM 6.298). 4 ♂♂, Rio Vermelho, 800 m, 29. xii. 1991, 22. ii. 1992, 3. iv. 1993, 19. ii. 1994, MIELKE & RANK leg. (CGCM 6.212, 6.419, 7.379, 8.480). 67 ♂♂, 11 ♀♀, Rio Vermelho, 800 m, 25. i. 1988, 10.–18. ii. 1992, 27. i. 1991, 16. ii. 1993, 3.–5. ii. 1994, i. 1996, 20. ii. 1996, i. 1997, 26. ii. 1997, 21. xii. 1997, 6. ii. 1998, 26.–30. i. 1999, 9.–18. ii. 1999, 3. ii. 1999, i. 2000, 7.–25. ii. 2000, 15.–30. i. 2001, 7.–8. ii. 2001, 8.–20. i. 2002, 5.–17. ii. 2002, 5.–12. iii. 2002, 1. viii. 2002(?), 23.–26. ii. 2003, 1.–ii. 2004, 30. iii. 2004, ii. 2005, 29. i. 2006, I.

RANK leg. (CGCM 1.640, 1.699, 2.330, 4.023, 4.090, 4.125, 4.181, 4.186 [BC-JX215619], 4.268, 4.280, 4.291, 4.397, 4.410, 4.475, 4.480, 4.512, 4.614, 4.617, 4.690, 4.768 [BC-JX215586], 4.880, 4.904, 4.991, 5.140, 5.168, 5.254, 5.319, 5.347, 5.427, 5.439, 5.507, 5.539, 5.551, 5.573 [BC-JX215666], 5.626, 5.642 [BC-JX215665], 5.665 [BC-JX215596], 5.752, 6.004, 6.009, 6.014, 6.046, 6.109, 6.125, 6.134, 6.151, 6.154, 6.164, 6.225, 6.379, 6.384 [BC-JX215597], 6.471, 6.634, 6.682, 6.919, 6.975, 6.996, 7.000, 7.066, 7.183, 7.216 [BC-JX215635], 7.257, 7.496, 7.524, 7.588, 7.988, 13.692, 13.758, 13.832, 13.896, 13.966, 13.970, 14.437, 14.511, 14.966, 15.079, 19.482, 23.168). 53 ♂♂, 5 ♀♀, Rio Vermelho, 700–800 m, 8. i. 1997, 25. xii. 2000, 20. i. 2001, 20. xii. 2001, 22. ii. 2003, 7.–12. ii. 2004, iii. 2004, 28. i. 2005, 15. i. 2006, 13. ii. 2006, 21. xi. 2007, 22. xii. 2007, 28. ii. 2008, 2. xii. 2008, 20.–28. i. 2009, ii. 2009, 8.–19. iii. 2009, 23. xii. 2009, 5. i. 2010, 11. ii. 2010, 10.–31. i. 2011, 16. i. 2012, 20. iii. 2012, O. RANK leg. (CGCM 4.746, 4.903, 6.022, 6.621, 6.755 [BC-JX215667], 6.790, 7.549, 22.798, 23.242, 23.321, 23.322, 23.372, 23.406, 23.424, 23.664, 23.808, 23.885, 23.917, 24.828, 24.830, 24.848, 24.860, 24.877, 24.878, 24.941, 25.007, 25.008, 25.053, 25.054, 25.087, 25.102, 25.136, 25.166, 25.230, 25.343, 25.372, 25.389, 25.390, 25.437, 25.453, 25.454, 25.469, 25.501, 25.548, 25.953, 26.933, 27.004: 2 ♂♂ BMNH; 2 ♂♂ MNHN; 2 ♂♂ MWM; 2 ♂♂ NHMW; 1 ♂ SMFL; 2 ♂♂ ZSBS). 60 ♂♂, 8 ♀♀, Rio Natal, 700 m, 18. xii. 1995, 10. i. 1996, 20.–21. ii.



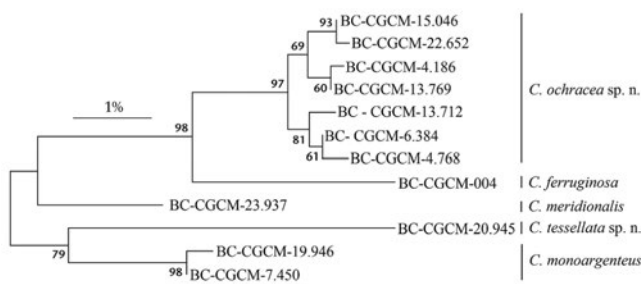
Figs. 5–9: *Cibyra monoargenteus*. ♂ 8th abdominal segment (5); ♂ genitalia: ventral view (6), phallus (everted) lateral view (7); ♀ 8th abdominal segment (8); ♀ genitalia: ventral view (9). — **Figs. 11–13:** *Cibyra tessellata* sp. n. HT ♂ 8th abdominal segment (11); HT ♂ genitalia: ventral view (12), phallus (everted) lateral view (13). — **Figs. 17–19:** *Cibyra ochracea* sp. n. HT ♂ genitalia: phallus (everted) lateral view (17); PT ♀ 8th abdominal segment (18); PT ♀ genitalia: ventral view (19). — Scales: 1 mm.

1996, 2. XII. 1996, 10.–28. I. 1997, 3.–18. II. 1997, 15. XII. 1997, 21. I. 1998, 27. II. 1998, 28. XI. 1998, 7.–24. I. 2000, II. 2000, 16. III. 2000, 3. XI. 2000, 21. IX. 2001(?), 26. XI. 2001, 7. XII. 2001, I.–II.–III. 2004, XI. 2004, I.–II. 2005, A. RANK leg. (CGCM 1.902 [BC-JX215625], 2.270, 4.120, 4.262, 4.413, 4.426, 4.742, 4.787, 4.813, 4.819, 4.920, 4.938, 4.960, 5.051, 5.064, 5.125, 5.141, 5.155, 5.165, 5.201, 5.235, 5.313, 5.396, 5.448, 5.536,

5.783, 5.855, 5.918, 6.078, 6.173, 6.358, 6.604, 6.757, 6.942, 7.522, 13.607, 13.608, 13.612, 13.615 [BC-JX215598], 13.629, 13.641, 13.645, 13.657, 13.673, 13.680, 13.689, 13.688, 13.705, 13.712 [BC-JX215663], 13.736, 13.752, 13.769 [BC-JX215600], 13.791, 13.801, 13.823 [BC-JX215669], 13.903, 14.800, 15.046 [BC-JX215608], 17.895 [BC-JX215594], 17.957 [BC-JX215664], 18.069, 18.277, 18.307, 22.508 [BC-JX215593], 26.610; 2 ♂♂

Table 1: The minimum Kimura-2-parameter model method (in %) between DNA barcodes of the three here studied species of *Cibyra* and the species studied earlier (*C. MIELKE & CASAGRANDE* 2013); the maximum intraspecific variation is given in the diagonal (number of records within brackets).

| % | <i>C. meridionalis</i> | <i>C. ferruginosa</i> | <i>C. monoargenteus</i> | <i>C. tessellata</i> sp. n. | <i>C. ochracea</i> sp. n. |
|-----------------------------|------------------------|-----------------------|-------------------------|-----------------------------|---------------------------|
| <i>C. meridionalis</i> | 2,2 (36) | – | | | |
| <i>C. ferruginosa</i> | 5,6 | N/A (1) | – | | |
| <i>C. monoargenteus</i> | 3,9 | 4,4 | 0,5 (13) | – | |
| <i>C. tessellata</i> sp. n. | 6,6 | 6,9 | 6,0 | 0,0 (3) | – |
| <i>C. ochracea</i> sp. n. | 4,7 | 5,0 | 6,6 | 6,9 | 1,5 (19) |



Text-Fig. 1: Unrooted bestscore ML tree for *Cibyra meridionalis*, *C. ferruginosa*, *C. monoargenteus*, *C. tessellata* sp. n., and *C. ochracea* sp. n.; bootstrap values are given at each node, and terminals are identified by their sample-ID code referring to the records in the Barcode of Life Data-systems (BOLD 2013).

DZUP; 1 ♂ SMFL). 9 ♂♂, Rio Natal, 700 m, 8. XII. 1991, 30. I. 1995, XII. 1996, XI. 1997, 29. I. 2000, 10. III. 2003, 27. II. 2005, I. RANK leg. (CGCM 4.007, 5.346, 6.003, 6.301, 7.593, 7.660, 8.035, 8.220, 18.827). 3 ♂♂, 2 ♀♀, Rio Natal, 700 m, 4. I. 2005, II. 2005, O. RANK leg. (CGCM 17.703 [BC-JX215591], 17.719, 18.134, 18.197, 18.327). 4 ♂♂, Rio Natal, 200 m, 25.–27. II. 2004, III. 2004, L. RANK leg. (CGCM 16.024, 16.156, 16.381, 16.503).

Etymology. It is named in accordance to its general dorsal appearance of the male FW.

♂ (Figs. 14a, 14b, 15). FW length: 12–23 mm; wingspan: 23–49 mm. Antennae with ca. 30 segments. Epiphysis present.

♂ genitalia (Fig. 17). Phallus everted enlarged distally forming a conical upwards process.

♀ (Figs. 16a, 16b, 18). FW length: 20–37 mm; wingspan 42–74 mm. Epiphysis present. Tergum VIII very slightly sclerotized, with or without an anterior and narrow sclerotized band. Sternum VIII triangular-shaped.

♀ genitalia (Fig. 19). Lamella antevaginalis deeply invaginated mesally, forming an acute angle dorsally with its inner wall; two processes emerging from this inner margin, minute, same shape as the former. Corpus bursae ca. 8–9 mm.

Ethology and geographical distribution. *C. ochracea* sp. n. flight period follows the same pattern as all the previous species, occurring from NE São Paulo to NE Santa Catarina with few records from central-east Paraná (Fig. 1). Sympatric to *C. meridionalis* and *C. monoargenteus* in Paraná and in Santa Catarina states.

Diagnosis. It seems that *C. ochracea* sp. n. and *C. ferruginosa* WALKER, 1856 are closely related since their obvious similarity, not only by size, the wing ornamentation and habitus, but mainly by the male and female genitalia. It has not been found any constant difference, except the phallus shape when everted and the female sternum VIII.

DNA analysis

The mitochondrial COI gene as well indicates that the taxa treated in the present publication are clearly separated as shown in the tree (Text-Fig. 2). The minimum Kimura-2-parameter model (%) see Table 1.

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