Biodiversity Data Journal 7: e36277
doi: 10.3897/BDJ.7.e36277

Taxonomic Paper

Taxonomic revision of the Neotropical genus *Rhabdotylus* Lutz, 1913 (Diptera: Tabanidae)

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Academic editor: Torsten Dikow

Received: 16 May 2019 | Accepted: 28 Jun 2019 | Published: 10 Jul 2019

Citation: Turcatel M (2019) Taxonomic revision of the Neotropical genus *Rhabdotylus* Lutz, 1913 (Diptera: Tabanidae). Biodiversity Data Journal 7: e36277. https://doi.org/10.3897/BDJ.7.e36277

Abstract

Background

Here I revise the Neotropical genus *Rhabdotylus* Lutz, 1913 (Tabaninae: Diachlorini), including redescription of three species that range from Guatemala to Argentina: *Rhabdotylus rubrum* (Thunberg, 1827), *Rhabdotylus venenatum* (Osten Sacken, 1886), and *Rhabdotylus viridiventris* (Macquart, 1838).

New information

Rhabdotylus planiventris (Wiedemann, 1828) is established as a junior synonym of *R. rubrum*, syn. nov. A dichotomous identification key based on external morphological characters is provided.

Keywords

Horse fly, identification key, Tabanidae, *Rhabdotylus*, taxonomy

Introduction

Rhabdotylus Lutz, 1913 (Diptera: Tabanidae: Diachlorini) is a Neotropical genus, and it was described based on *Tabanus planiventris* Wiedemann, 1828. In 1925, Enderlein treated *Rhabdotylus* and *Dicladocera* Lutz, 1913 as synonyms; however, in the same publication, he designated *T. planiventris* as the type species of his new genus *Gymnochela* (Enderlein 1925). Kröber, in 1932, redescribed *T. venenatum* Osten Sacken, 1886 (as *venenatus*, error) and listed *T. viridiventris* Macquart, 1838 to *Gymnochela* (subgenus *Amphichlorops*) (Kröber 1932); in 1934, he treated both *Rhabdotylus* and *Gymnochela* as synonyms of *Amphichlorops* Lutz, 1913 (Kröber 1934). Fairchild, noting the similarities in the head morphology of *Rhabdotylus* and *Stibasoma* Schiner, 1867, proposed *Rhabdotylus* as a subgenus of *Stibasoma* (Fairchild 1942). Carrera and Lane acknowledged that *Rhabdotylus* should be reinstated as a genus, and redescribed *T. viridiventris* as *Rhabdotylus* (Carrera and Lane 1945). In 1967, Philip stated that *T. rubrum* Thunberg, 1827 (as *ruber*, error) “should be listed as a separate species of *Stibasoma*” (Philip 1967: 1236). Later, Trojan revalidated *Rhabdotylus* as a genus, based on the differences in body pilosity and leg structure, and stated that three species were known; however, only *R. planiventris* (as *planiventre*, error) and *R. venenatum* (as *venatum*, error) were named in his examined material list (Trojan 1998). Turcatel et al. revised the genus *Stibasoma* and, following the classification proposed by Trojan, treated *Rhabdotylus* as a separate genus (Turcatel et al. 2010). The most recent catalogue of Neotropical Tabanidae (Coscarón and Papavero 2009) lists four species under *Rhabdotylus* (as a valid subgenus of *Stibasoma*, error): *R. planiventris* (Wiedemann, 1828), *R. rubrum* (Thunberg, 1827), *R. venenatum* (Osten Sacken, 1886), and *R. viridiventris* (Macquart, 1838). Because of this continued discussion, here I revise the genus *Rhabdotylus* and redescribe three *Rhabdotylus* species, and propose one new synonym.

Materials and methods

I examined the type specimens of all species of *Rhabdotylus*, which are deposited in the following institutions: The Natural History Museum, London, UK (BMNH); Museum für Naturkunde, Berlin, Germany (MFNB); Museum National d’Histoire Naturelle, Paris, France (MNHN); Fundação Instituto Oswaldo Cruz, Rio de Janeiro, Brazil (FIOC); and Uppsala University, Museum of Evolution, Zoology Section, Uppsala, Sweden (UUZM).

Terminology follows Cumming and Wood (Cumming and Wood 2017). Pinned specimens were examined under a stereomicroscope and whole habitus photographs were taken at the USNM using a GIGAmacro Magnify2 system, a Canon EOS D5 full-frame DSLR, a Canon MP-E 65 mm f2.8 macro-lens, using a twin-flash for lighting. The software HeliconFocus Pro (version 6.7.1) was used to stack individual RAW format images using Method C (pyramid), to add the scale, and to export the final image in Adobe DNG-format.

Taxon treatments

Rhabdotylus Lutz, 1913

Nomenclature

Rhabdotylus Lutz, 1909: 29 (1911: 34), *nomen nudum* (Lutz 1909, Lutz 1911).

Rhabdotylus Lutz, 1913: 487 (1914: 166) (Lutz 1913, Lutz 1914); Trojan, 1998: 68 (Trojan 1998). Type species: *Tabanus planiventris* Wiedemann, 1828 (Bequaert, 1924: 30) (see Wiedemann 1828, Bequaert 1924) = *Tabanus rubrum* Thunberg, 1827 (Thunberg 1827). References – Fairchild, 1951: 125, 1961a: 244 (Fairchild 1951, Fairchild 1961a).

Gymnochela Enderlein, 1925: 388 (Enderlein 1925). Type species: *Tabanus planiventris* Wiedemann, 1828 = *Tabanus rubrum* Thunberg, 1827.

Diagnosis

Includes species with typically medium-sized bodies (13–15mm), greenish or yellow to brown; eyes bare; ocellar tubercle and ocelli indistinct; frontal callus as wide as frons, mid callus connected to frontal callus, both the same color as frons; subcallus bare; short robust antenna, basal flagellomere of antenna with long and curved dorsal spine; palpus shorter than proboscis; labellum totally sclerotized; wings hyaline, sometimes yellowish; legs slender, scarcely haired; abdomen with distal bands on tergites.

Species: *Rhabdotylus rubrum* (Thunberg, 1827), *R. venenatum* (Osten Sacken, 1886), *R. viridiventris* (Macquart, 1838).

Rhabdotylus rubrum (Thunberg, 1827)

Nomenclature

Rhabdotylus rubrum (Thunberg, 1827): 56 (*Tabanus*) (Thunberg 1827); Philip, 1967: 1236 (Philip 1967); Fairchild, 1971: 77 (*Stibasoma*) (Fairchild 1971); Moucha, 1976: 206 (*Stibasoma*) (Moucha 1976); Coscarón & Papavero, 2009: 113 (Coscarón and Papavero 2009).

Rhabdotylus planiventris (Wiedemann, 1828): 139 (*Tabanus*) (Wiedemann 1828), syn. nov.; Walker, 1854: 216 (*Tabanus*) (Walker 1854); Hunter, 1901: 143 (*Tabanus*) (Hunter 1901); Kertész, 1908: 269 (*Tabanus*) (Kertész 1908); Enderlein, 1925: 388 (*Gymnochela*) (Enderlein 1925); Kröber, 1932: 91 (*Gymnochela*) (Kröber 1932), 1934: 271 (*Amphichlorops*) (Kröber 1934); Pechuman, 1942: 55 (*Amphichlorops*) (Pechuman 1942); Carrera & Lane, 1945: 133 (Carrera and Lane 1945); Coscarón, 1967: 114 (Coscarón 1967); Fairchild, 1967a: 95 (Fairchild 1967a), 1971: 77 (*Stibasoma*) (Fairchild 1971), 1975: 262 (*Amphichlorops*) (Fairchild 1975); Moucha, 1976: 206

(*Stibasoma*) (Moucha 1976); Fairchild & Burger, 1994: 114 (*Stibasoma*) (Fairchild and Burger 1994); Turcatel et al., 2007: 276 (*Stibasoma*) (Turcatel et al. 2007), Coscarón & Papavero, 2009: 112 (*Stibasoma*) (Coscarón and Papavero 2009).

Pangonia cornuta Walker, 1837: 337 (Walker 1837); Kertész, 1908: 153 (Kertész 1908); Fairchild, 1956: 14 (Fairchild 1956) (synonym).

Tabanus lativentris Macquart, 1838: 153 (Macquart 1838); Blanchard, 1852: 393 (Blanchard 1852); Walker, 1854: 265 (Walker 1854); Philippi, 1865: 714 (Philippi 1865); Hunter, 1901: 141 (Hunter 1901); Kertész, 1908: 254 (Kertész 1908); Kröber, 1934: 274 (Kröber 1934); Fairchild, 1956: 20 (Fairchild 1956) (synonym).

Materials

Holotypes:

a. scientificName: ***Rhabdotylus rubrum***; originalNameUsage: ***Tabanus rubrum***; family: Tabanidae; genus: ***Rhabdotylus***; specificEpithet: ***rubrum***; scientificNameAuthorship: Thunberg, 1827; locationRemarks: label transliteration: “Uppsala Univ. Zool. Mus. \ Thunbergsaml. nr. 22069 \ *Tabanus* ruber \ Amer. Merid. TYP” “*Rhabdotylus* \ nr. Viridivent- \ -ris M. \ C. B. Philip .66”; individualCount: 1; sex: female; lifeStage: adult; institutionID: Uppsala University, Museum of Evolution, Zoology Section; institutionCode: UUZM; basisOfRecord: PreservedSpecimen

b. scientificName: ***Rhabdotylus rubrum***; originalNameUsage: ***Tabanus planiventris***; family: Tabanidae; genus: ***Rhabdotylus***; specificEpithet: ***rubrum***; scientificNameAuthorship: Wiedemann, 1828; country: Brazil; locationRemarks: label transliteration: “Brasil. V. Olf.” “98” “Type” “*planiventris* Wied.*” “*Amphichlorops* \ *planiventris* \ Wied. \ det. Kröber 1927” “Zool. Mus. Berlin”; individualCount: 1; sex: female; lifeStage: adult; institutionID: Museum für Naturkunde; institutionCode: MFNB; basisOfRecord: PreservedSpecimen

Other materials:

a. scientificName: ***Rhabdotylus rubrum***; family: Tabanidae; genus: ***Rhabdotylus***; specificEpithet: ***rubrum***; country: Brazil; countryCode: BR; stateProvince: Santa Catarina; municipality: Joinville; locationRemarks: label transliteration: "Sta. Catarina \ Joinville \ L. Trav. Fş" "*Rhabdotylus* \ *planiventris* (Wied.) \ Barretto det. 1948"; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: UNSMENT01518377; recordedBy: Lauro Travassos Filho; institutionID: U. S. National Entomological Collection; institutionCode: USNM; basisOfRecord: PreservedSpecimen

b. scientificName: ***Rhabdotylus rubrum***; family: Tabanidae; genus: ***Rhabdotylus***; specificEpithet: ***rubrum***; country: Brazil; countryCode: BR; stateProvince: Rio de Janeiro; municipality: Tinguá; locationRemarks: label transliteration: "Tinguá \ R. Janeiro \ Brasil" "Dezembro \ 1950" "RCShannon Collection" "Serviço Febre \ Amarela \ M. E. S., Bras."; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMENT01518378; recordedBy: Raymond Corbett Shannon; institutionID: U. S. National Entomological Collection; institutionCode: USNM; basisOfRecord: PreservedSpecimen

c. scientificName: ***Rhabdotylus rubrum***; family: Tabanidae; genus: ***Rhabdotylus***; specificEpithet: ***rubrum***; country: Brazil; countryCode: BR; locationRemarks: label transliteration: "C. Brazil \ Dec. 1935 \ F. Schade" "ALMelander \ Collection" "St. (*Rhabdotylus*) \ *planiventris* Wied. \ det. Fairchild 1963"; individualCount: 1; sex: female;

lifeStage: adult; catalogNumber: USNMENT01518379; recordedBy: F. Schade; institutionID: U. S. National Entomological Collection; institutionCode: USNM; basisOfRecord: PreservedSpecimen

d. scientificName: *Rhabdotylus rubrum*; family: Tabanidae; genus: *Rhabdotylus*; specificEpithet: *rubrum*; country: Brazil; countryCode: BR; stateProvince: Rio de Janeiro; municipality: Itatiaia; locationRemarks: label transliteration: "Alt. 200M. \ Itatiaia \ R. Janeiro" "Fevereiro \ 1941" "RCShannon Collection"; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMENT01518380; recordedBy: Raymond Corbett Shannon; institutionID: U. S. National Entomological Collection; institutionCode: USNM; basisOfRecord: PreservedSpecimen

e. scientificName: *Rhabdotylus rubrum*; family: Tabanidae; genus: *Rhabdotylus*; specificEpithet: *rubrum*; country: Brazil; countryCode: BR; stateProvince: Rio de Janeiro; municipality: Mangaratiba; locationRemarks: label transliteration: "Mangaratiba \ R d Janeiro X \ Brazil XI'38" "Yel Fev Serv \ MES Brazil \ RCShannon"; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMENT01518381; recordedBy: Raymond Corbett Shannon; institutionID: U. S. National Entomological Collection; institutionCode: USNM; basisOfRecord: PreservedSpecimen

Description

Female (holotype). *Head.* Frons narrow, light brown, with sparse black hairs and silver pollinosity along the margins of the eyes. Frontal Index: 4.10. Divergence Index: 0.92. Subcallus light brown, with dense white pollinosity. Scape and pedicel light brown, with black and some white hairs mixed and white pollinosity. Flagellum orange (missing on holotype). Clypeus light brown, with dense white pollinosity and sparse white hairs. Gena and postgena light brown, with dense white pollinosity and dense white hairs. Palpus yellow to light brown, with sparse white pollinosity and mixed white and black hairs.

Thorax. Scutum and scutellum light brown with sparse white to yellow and black hairs mixed. Postpronotal lobe light brown with white pollinosity, white and black hairs mixed. Notopleuron light brown with white pollinosity, white to yellow and black hairs. Proepisternum and proepimerum light brown with white pollinosity and white hairs. Anepisternum light brown with white pollinosity, white to yellow and black hairs mixed. Katepisternum light brown with white pollinosity and white to yellow hairs. Anepimeron light brown with white pollinosity, with white to yellow hairs. Katepimeron and katatergite light brown with white pollinosity and white hairs.

Coxa light brown with white pollinosity with white hairs, and some black hairs distally. Femur 1 light brown with black hairs. Femur 2 light brown with black hairs and a tuft of white hairs proximally on posterodorsal side. Femur 3 light brown with black and white hairs mixed. Tibiae 1 and 2 yellow to light brown with white hairs proximally, and brown with black hairs distally. Tibia 3 brown with black hairs. Tarsus brown with black hairs. Wing hyaline. Pterostigma yellow. Venation light brown. Halter yellow, with white apex.

Abdomen. Abdomen predominantly light brown with sparse black hairs and white hairs laterally. Tergite 1 with a faintly lighter band distally and white hairs in the middle of the

distal margin. Tergites 2–4 with a faintly lighter band distally. Sternites 1–3 yellow to light brown with a narrow white band distally and white hairs. Remaining sternites light brown with a narrow white band distally, with black hairs proximally and laterally and white hairs distally.

Measurements: Body length: 15mm. Wing length: 12.5mm.

Figs 1, 2, 3

Figure 1.

Rhabdotylus rubrum (Thunberg, 1827), holotype ♀

a: dorsal view doi
b: lateral view doi
c: frontal view doi
d: labels doi

Distribution

Brazil (Rio de Janeiro, São Paulo, Paraná, Santa Catarina), Argentina.

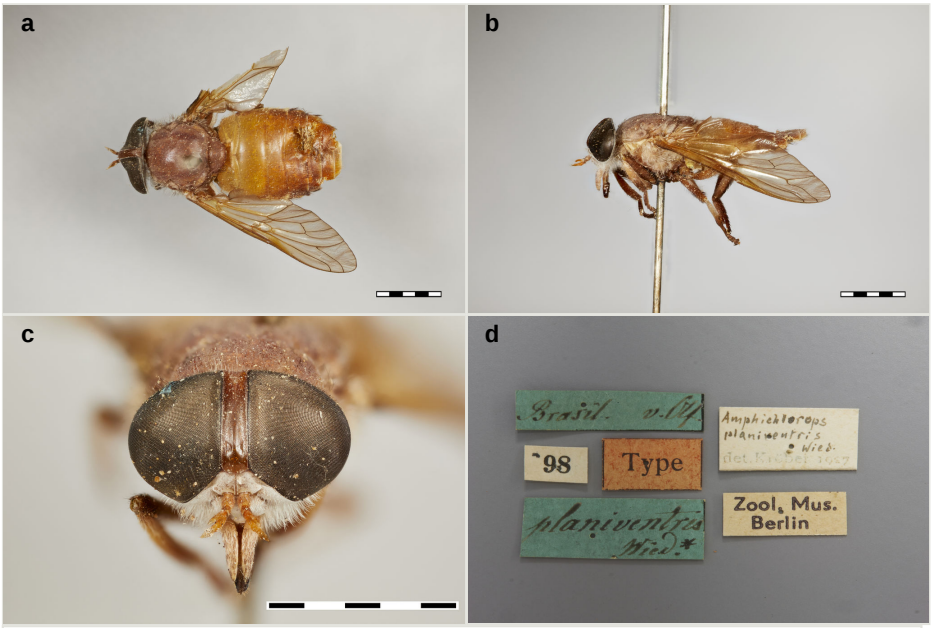

Figure 2.

Rhabdotylus rubrum, holotype ♀ of *Tabanus planiventris* Wiedemann, 1828

a: dorsal view doi
b: lateral view doi
c: frontal view doi
d: labels doi

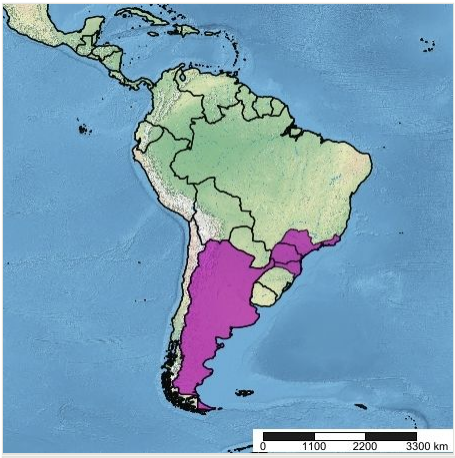

Figure 3. doi

Known geographic range of *Rhabdotylus rubrum* (Thunberg, 1827)

Rhabdotylus venenatum (Osten Sacken, 1886)

Nomenclature

Rhabdotylus venenatum (Osten Sacken, 1886): 54 (*Tabanus*) (Osten Sacken 1886); Aldrich, 1905: 209 (*Tabanus*) (Aldrich 1905); Kertész, 1908: 292 (*Tabanus*) (Kertész 1908); Kröber, 1932: 92 (*Gymnochela*) (Kröber 1932), 1934: 271 (*Ampichlorops*) (Kröber 1934); Pechuman, 1942: 55 (*Amphichlorops*) (Pechuman 1942); Stone, 1944: 130 (Stone 1944); Fairchild, 1956: 31 (Stone 1944); Philip, 1960: 87 (Philip 1960); Fairchild, 1961b: 28 (*Stibasoma*) (Fairchild 1961b), 1971: 77 (*Stibasoma*) (Fairchild 1971), 1986: 80-81 (Fairchild 1986); Hogue & Fairchild, 1974: 20 (*Stibasoma*) (Hogue and Fairchild 1974); Fairchild, 1975: 262 (*Amphichlorops*) (Fairchild 1975); Moucha, 1976: 206 (*Stibasoma*) (as *venatum*, error) (Moucha 1976); Wilkerson, 1979: 312 (*Stibasoma*) (Wilkerson 1979); Fairchild & León, 1986: 114 (Fairchild and León 1986); Chainey, 1990: 317 (*Stibasoma*) (Chainey 1990); Fairchild & Burger, 1994: 114 (*Stibasoma*) (Fairchild and Burger 1994); Coscarón & Papavero, 2009: 113 (*Stibasoma*) (Coscarón and Papavero 2009).

Materials

Lectotype:

a. scientificName: *Rhabdotylus venenatum*; originalNameUsage: *Tabanus* venenatus; family: Tabanidae; genus: *Rhabdotylus*; specificEpithet: *venenatum*; scientificNameAuthorship: Osten Sacken, 1886; country: Panama; countryCode: PA; stateProvince: Chiriqui; locationRemarks: label transliteration: “LECTO- \ TYPE” “Co- \ type” “*Tabanus* \ venenatus \ O. S.” “V. de Chiriqui, \ 2-2000 ft. \ Champion.” “Central America. \ Pres. By \ F. D. Godman, \ O. Salvin. \ 1904–85” “LECTOTYPE \ *Stibasoma* \ venenata \ Osten Sacken \ det. \ C. B. Philip 53” “BMNH(E) # \ 253483”; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: NHMUK012805335; recordedBy: F. . Godman, O. Salvin; institutionID: The Natural History Museum, London; institutionCode: BNHM; basisOfRecord: PreservedSpecimen

Paralectotype:

a. scientificName: *Rhabdotylus venenatum*; originalNameUsage: *Tabanus* venenatus; family: Tabanidae; genus: *Rhabdotylus*; specificEpithet: *venenatum*; scientificNameAuthorship: Osten Sacken, 1886; country: Guatemala; countryCode: GT; locality: Sinanjá; locationRemarks: label transliteration: “PARA- \ LECTO- \ TYPE” “Co- \ type” “*Tabanus* \ venenatus \ O. S.” “Sinanja, \ Vera Paz. \ Champion.” “Central America. \ Pres. By \ F. D. Godman, \ O. Salvin. 1904–85.” “BMNH(E) # \ 253484”; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: NHMUK012805336; recordedBy: F. . Godman, O. Salvin; institutionID: The Natural History Museum, London; institutionCode: BNHM; basisOfRecord: PreservedSpecimen

Other materials:

a. scientificName: *Rhabdotylus venenatum*; family: Tabanidae; genus: *Rhabdotylus*; specificEpithet: *venenatum*; country: Ecuador; countryCode: EC; stateProvince: Cotopaxi; locality: Latacunga; locationRemarks: label transliteration: "ECUADOR Cotopaxi \ Latacunga, 117 Km W \ 1 July 1975 3000'\ Andrea Langley \ Jeffrey Cohen" "Ecuador - Peace Corps \ Smithsonian Institution \ Aquatic Insect Survey" "*Stibasoma* \ (*Rhabdotylus*) \ venenata O. S. \ Det. 1976 \ G. B. Fairchild"; individualCount: 1; sex:

female; lifeStage: adult; catalogNumber: USNMENT01518382; recordedBy: Andrea Langley, Jeffrey Cohen; institutionID: U. S. National Entomological Collection; institutionCode: USNM; basisOfRecord: PreservedSpecimen

b. scientificName: *Rhabdotylus venenatum*; family: Tabanidae; genus: *Rhabdotylus*; specificEpithet: *venenatum*; country: Costa Rica; countryCode: CR; locality: La Suiza; locationRemarks: label transliteration: "I 01" "Costa Rica \ La Suiza '23 \ Pab. Schild" "ALMelander \ Collection \ 1961" "St. (*Rhabdotylus*) \ venenata O. S. \ det. Fairchild 1963"; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMENT01518383; recordedBy: Pab. Schild, A. L. Melander; institutionID: U. S. National Entomological Collection; institutionCode: USNM; basisOfRecord: PreservedSpecimen

c. scientificName: *Rhabdotylus venenatum*; family: Tabanidae; genus: *Rhabdotylus*; specificEpithet: *venenatum*; country: Venezuela; countryCode: VE; stateProvince: Miranda; locality: San Carlos; locationRemarks: label transliteration: "San Carlos \ Estado Miranda \ Venez. 17.VIII.42 \ 1460 mts \ R. J. Anduze" "*Stibasoma* \ (*Rhabdotylus*) \ venenatus O.S. \ det. Fairchild 1955"; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMENT01518384; recordedBy: R. J. Anduze; institutionID: U. S. National Entomological Collection; institutionCode: USNM; basisOfRecord: PreservedSpecimen

Description

Female (holotype). *Head.* Frons narrow, light brown, with sparse black hairs and silver pollinosity along the margins of the eyes. Frontal Index: 3.65. Divergence Index: 1. Subcallus yellow, with dense yellow pollinosity. Scape and pedicel yellow to light brown, with black hairs and some yellow hairs mixed and some yellow pollinosity. Flagellum orange with short white hairs, apical flagellomeres missing. Clypeus yellow with dense yellow pollinosity and yellow hairs. Gena and postgena yellow with dense yellow pollinosity and yellow hairs. Palpus yellow with yellow hairs.

Thorax. Scutum light brown with sparse black hairs, scutellum yellow to green with sparse black hairs and white pollinosity. Postpronotal lobe and notopleuron yellow to light brown, with white pollinosity and black hairs. Proepisternum and proepimerum yellow with white pollinosity and yellow hairs. Anepisternum, katepisternum, anepimeron, katepimeron, and katatergite yellow with white pollinosity and yellow hairs. Coxa yellow, with white pollinosity and yellow hairs. Femur yellow with yellow hairs and slightly darker with black hairs distally. Tibiae 1 and 2 yellow with white hairs in proximal half, distal half brown with dark brown to black hairs. Tibia 3 brown with dark brown to black hairs. Tarsus brown with dark brown to black hairs. Pterostigma yellow. Venation brown. Halter yellow, with white apex.

Abdomen. Abdomen predominantly yellow to green with sparse black hairs, and white hairs laterally on tergites 1–5. Tergites 1–3 yellow to green with a lighter band distally and sparse black hairs. Remaining tergites slightly darker and with more black hairs distally. Sternites yellow with a thin lighter band distally, and white to yellow hairs.

Measurements: Body length: 16mm. Wing length: 15mm.

Figs 4, 5, 6

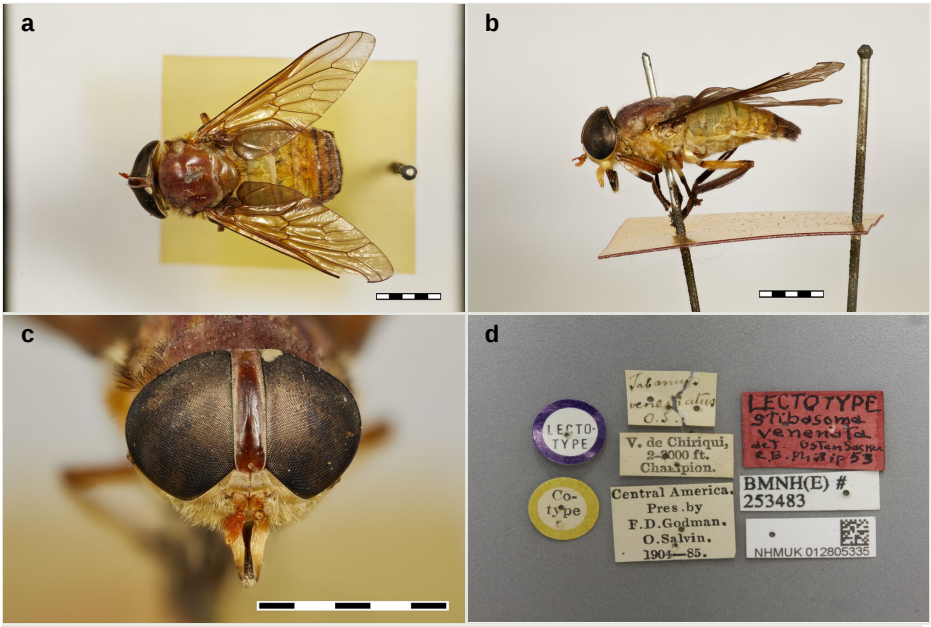

Figure 4.

Rhabdotylus venenatum (Osten Sacken, 1886), lectotype ♀

a: dorsal view doi
b: lateral view doi
c: frontal view doi
d: labels doi

Distribution

Guatemala, Costa Rica, Panama, Colombia, Venezuela, Ecuador, Peru.

Rhabdotylus viridiventris (Macquart, 1838)

Nomenclature

Rhabdotylus viridiventris (Macquart, 1838): 141 (*Tabanus*) (Macquart 1838); Walker, 1854: 214 (*Tabanus*) (Walker 1854); Hunter, 1901: 144 (*Tabanus*) (Hunter 1901); Kertész, 1908: 292 (*Tabanus*) (Kertész 1908); Kröber, 1932: 93 (*Gymnochela*) (Kröber 1932), 1934: 271 (*Amphichlorops*) (Kröber 1934); Carrera & Lane, 1945: 133 (Carrera and Lane 1945); Fairchild, 1956: 31 (Fairchild 1956); 1971: 77 (*Stibasoma*) (Fairchild 1971); Moucha, 1976: 206 (*Stibasoma*) (Moucha 1976); Fairchild & Burger, 1994: 114 (Fairchild and Burger 1994); Turcatel et al., 2007: 276 (Turcatel et al. 2007); Coscarón & Papavero, 2009: 113 (Coscarón and Papavero 2009).

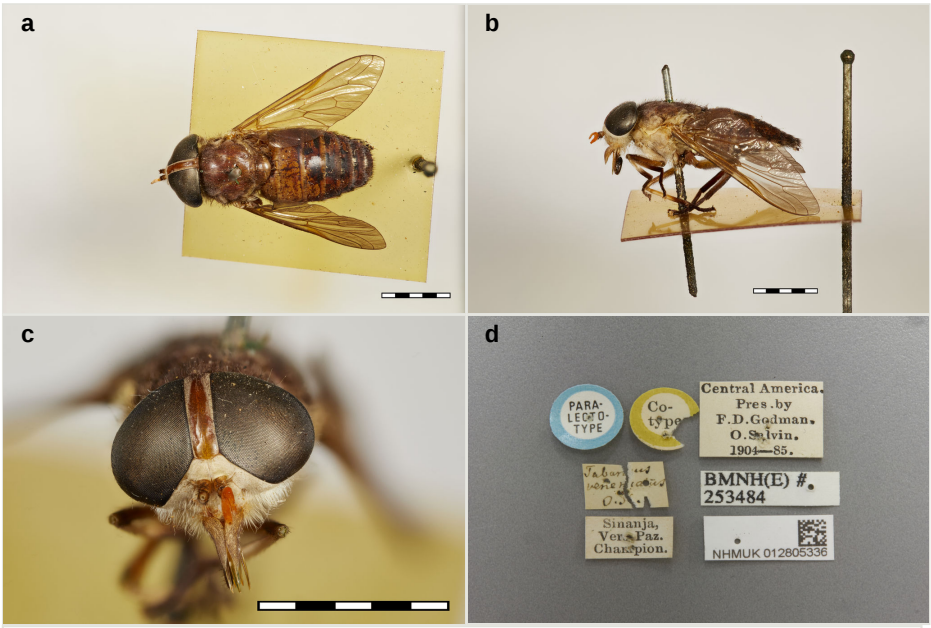

Figure 5.

Rhabdotylus venenatum (Osten Sacken, 1886), paralectotype ♀

a: dorsal view doi
b: lateral view doi
c: frontal view doi
d: labels doi

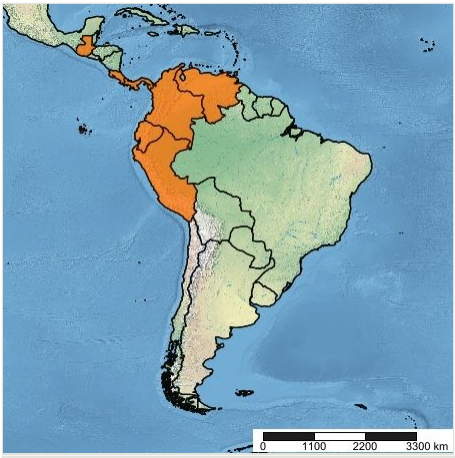

Figure 6. doi

Known geographic range of *Rhabdotylus venenatum* (Osten Sacken, 1886).

Dicladocera sulphurea Kröber, 1931: 408 (Kröber 1931). Kröber, 1934: 269 (Kröber 1934), 1940: 83 (Kröber 1940); Pechuman, 1942: 55 (Pechuman 1942); Fairchild, 1967b: 344 (Fairchild 1967b) (synonym).

Materials

Holotype:

a. scientificName: *Rhabdotylus viridiventris*; originalNameUsage: *Tabanus viridiventris*; family: Tabanidae; genus: *Rhabdotylus*; specificEpithet: *viridiventris*; scientificNameAuthorship: Macquart, 1838; country: Brazil; countryCode: BR; stateProvince: Rio de Janeiro; municipality: Rio de Janeiro; locationRemarks: label transliteration: “*Tabanus* \ *viridiventris*” “Rio-janei. \ St. hilaire” “IOC” “HOLOTYPE” “MNHN, Paris \ ED7586”; individualCount: 1; sex: female; lifeStage: adult; institutionID: Museum National d'Histoire Naturelle; institutionCode: MNHN; basisOfRecord: PreservedSpecimen

Other materials:

a. scientificName: *Rhabdotylus viridiventris*; family: Tabanidae; genus: *Rhabdotylus*; specificEpithet: *viridiventris*; country: Ecuador; countryCode: EC; municipality: Quito; locationRemarks: label transliteration: "Équateur \ Quito" "Muséum Paris" "Équateur \ R. Benoist 1930" "*Stibasoma* (*Rhabdotylus*) \ *viridiventris* Macq. \ Det. Fairchild 1965"; individualCount: 1; sex: female; lifeStage: adult; recordedBy: R. Benoist; institutionID: Museum National d'Histoire Naturelle; institutionCode: MNHN; basisOfRecord: PreservedSpecimen

b. scientificName: *Rhabdotylus viridiventris*; family: Tabanidae; genus: *Rhabdotylus*; specificEpithet: *viridiventris*; country: Brazil; countryCode: BR; locationRemarks: label transliteration: "R. Bandeirante \ 7.7.37" "*Rhabdotylus* (Lutz) \ *viridiventris* \ Macquart \ Leg. B. Lutz \ (nymphas)" "N. T636" "Inst. O. Cruz" "Coleção A. Lutz"; individualCount: 1; sex: female; lifeStage: adult; institutionID: Fundação Instituto Oswaldo Cruz; institutionCode: FIOC; basisOfRecord: PreservedSpecimen

Description

Female (holotype). *Head.* Frons narrow, light brown, with sparse black hairs and silver pollinosity along the margins of the eyes. Frontal Index: 4.56. Divergence Index: 1. Subcallus light brown with dense white pollinosity. Scape and pedicel yellow to light brown with black hairs. Flagellum orange. Clypeus light brown with dense white pollinosity and white hairs. Gena and postgena light brown with dense white pollinosity and white hairs. Palpus yellow with black hairs.

Thorax. Scutum light brown with sparse white pollinosity and sparse black hairs, and a tuft of white and black hairs on the supra-alar area; scutellum light brown to yellow with sparse white pollinosity and a few white and black hairs. Postpronotal lobe and notopleuron light brown, with white pollinosity and sparse black hairs. Proepisternum and proepimerum light brown, with white pollinosity and white hairs. Anepisternum light brown with white pollinosity and white hairs anteriorly and a tuft of black hairs posterodorsally, near the wing. Katepisternum, anepimeron, katepimeron, and katatergite light brown with white pollinosity and white hairs. Coxa 1 yellow with white pollinosity and white hairs on proximal two-thirds, and light brown with white pollinosity

and some white hairs on distal third. Coxae 2 and 3 yellow to light brown, with white pollinosity and white and some black hairs mixed. Femur yellow to light brown with black hairs. Tibiae 1 and 2 light brown to yellow with white hairs proximally, and light brown with black hairs distally. Tibia 3 light brown with black hair. Tarsus light brown with black hairs. Pterostigma yellow. Venation brown. Halter yellow with white apex.

Abdomen. Abdomen predominantly light brown. Tergites 1–3 light brown with black hairs, with a faintly lighter band distally and some yellow to white hairs. Remaining tergites light brown with black hairs. Sternites 1–3 yellow to light brown with a lighter band distally and yellow to white hairs. Remaining sternites light brown with black hairs.

Measurements: Body length: 13.5mm. Wing length: 12mm.

Figs 7, 8

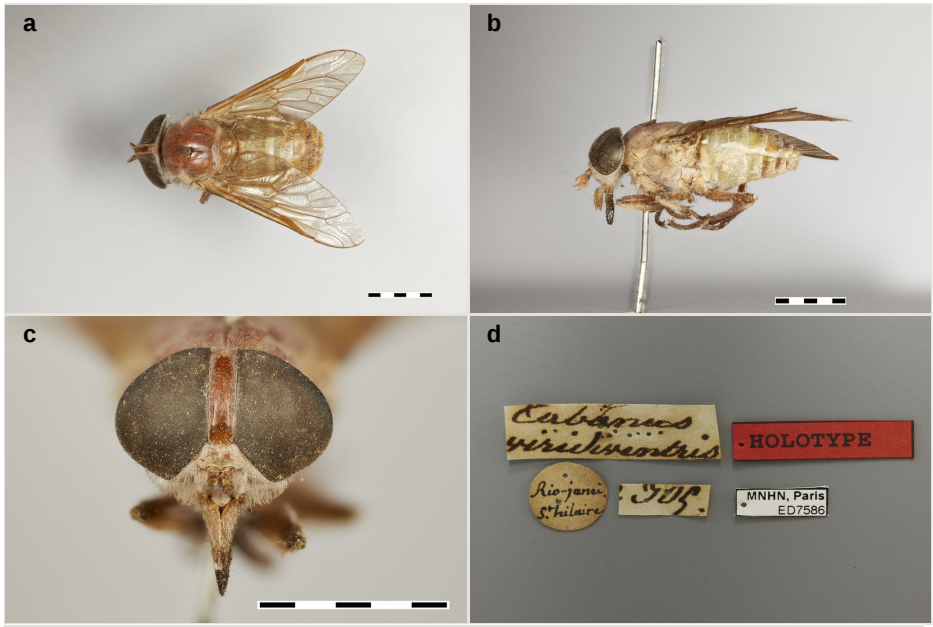

Figure 7.

Rhabdotylus viridiventris (Macquart, 1838), holotype ♀

a: dorsal view doi
b: lateral view doi
c: frontal view doi
d: labels doi

Distribution

Venezuela; Ecuador; Brazil (Minas Gerais, Rio de Janeiro, São Paulo, Paraná, Santa Catarina).

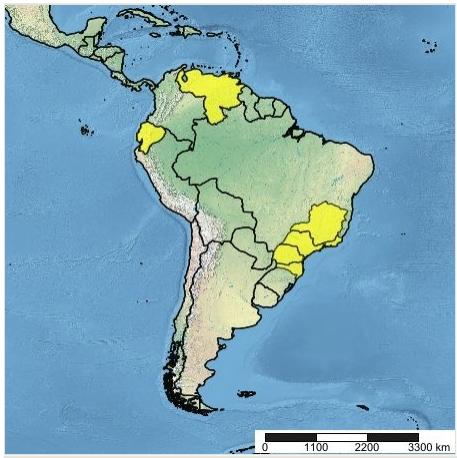

Figure 8. doi

Known geographic range of *Rhabdotylus viridiventris* (Macquart, 1838).

Identification keys

Key to females of *Rhabdotylus*		
1	Anepisternum with a tuft of black hairs	***Rhabdotylus viridiventris***
–	Anepisternum without a tuft of black hairs	2
2	Scutellum and abdomen greenish; palpus yellow with yellow hairs (only a few black hairs distally)	***Rhabdotylus venenatum***
–	Scutellum and abdomen light brown to yellow; palpus yellow with black and white hairs mixed	***Rhabdotylus rubrum***

Discussion

Rhabdotylus planiventris (Fig. 2) is here established as a junior synonym of *R. rubrum*, and this species may present some color variation on the abdomen. *Rhabdotylus rubrum* and *R. venenatum* display differences in color and have distinct geographic distributions, and the apparent absence of intermediate forms suggests that these are indeed separate species. New collecting efforts are needed to increase the representation of this genus in entomological collections and to provide fresh samples for phylogenetic studies, which are necessary to infer the placement of *Rhabdotylus* in relation to *Stibasoma* and other Diachlorini genera.

Acknowledgements

I am very grateful to the curators and institutions who kindly provided the material used in this study: Christophe Daugeron (MNHN), Eliana Buenaventura and Sandra Heize (MFNB), Erica McAlister (BMNH), and Hans Mejlon (UUZM); my special thanks are extended to Torsten Dikow for his valuable advice and assistance; and to Chris Thompson, Éric Guilbert, and Thomas Pape, for all their help locating and transporting specimens.

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