The Tabanidae of the Mitaraka expedition, with an updated check list of French Guiana (Diptera)

Tiago Kütter Krolow¹, Augusto Loureiro Henriques², Marc Pollet³⁴⁵

¹ Universidade Federal do Tocantins (UFT), Coordenação de Ciências Biológicas, Cx. Postal 136, CEP 77500-000, Porto Nacional, TO, Brazil ² Instituto Nacional de Pesquisas da Amazônia (INPA), Coordenação de Biodiversidade, Cx. Postal 2223, CEP 69080-971, Manaus, AM, Brazil ³ Research Institute for Nature and Forest (INBO), Kliniekstraat 25, B-1070 Brussels, Belgium ⁴ Research Group Terrestrial Ecology (TEREC), Ghent University, K.L.Ledeganckstraat 35, B-9000 Ghent, Belgium ⁵ Entomology Unit, Royal Belgian Institute for Natural Sciences (RBINS), Vautierstraat 29, B-1000 Brussels, Belgium

Corresponding author: Tiago Kütter Krolow (tkkrolow@gmail.com)

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Abstract
This paper documents the horse fly fauna collected in lowland rainforest in the southwesternmost part of French Guiana (Mitaraka). During this “Our Planet Revisited” survey nine tabanid species were recorded from French Guiana for the first time: Chrysops ecuadorensis Lutz, C. incisus Macquart, Catachlorops amazonicus Henriques & Gorayeb, Chlorotabanus flagellatus Krolow & Henriques, Cryptoylus cauri Stone, Phaeotabanus phaeopterus Fairchild, Philipotabanus stigmaticalis (Kröber), Sypommisia captiroptera (Kröber) and Tabanus amapaensis Fairchild. An updated check list of Tabanidae of French Guiana is presented, including 79 species and one unidentified Chrysops.

Keywords
Amazon basin, distribution, horse flies, list of species, Neotropics, new records
Introduction

The horse flies (Diptera, Tabanidae) have a worldwide distribution with almost 4,400 valid species (Pape et al. 2011). The Neotropical region has the highest species richness with approximately 1,205 species (Henriques et al. 2012), about 28% of the global tabanid fauna.

In French Guiana tabanid diversity has only poorly been studied. Except for species described by e.g., Fabricius and Macquart in the 18th and 19th centuries, only few species have been recorded from this part of South America and the Kröber catalogue (1934) only lists 22 species. Subsequent species lists were provided by Floch (1955) and Floch and Fauran (1955). Fairchild (1970) extended the list of French Guiana to 38 species by compiling data from the literature (including original descriptions), Floch’s work, and by examining material from the Muséum National d’Histoire Naturelle (MNHN, Paris, France). In the second part of the same manuscript, through material received from A.S. Balachowsky, Fairchild described two new species and added eight new records, which further increased the number to 48 species. More recently Raymond et al. (1984) recorded another 15 species for the first time from French Guiana. Other significant inventories by Raymond (1986, 1987) investigating the efficiency of sampling methods also added new records and confirmed old ones. In contrast to the compiled number of species from the above-mentioned papers (63 spp.), in the most recent Neotropical catalogue merely 48 species were cited from French Guiana, with 35 restricted to French Guiana, and 13 with a wider Neotropical distribution (Coscarón and Papavero 2009).

In 2015, a biodiversity survey was conducted in the southwesternmost part of French Guiana (Pascal et al. 2015) that produced a substantial number of dipteran samples, including diverse Tabanidae (Pollet et al. 2015). The objective of the present paper is to document on the tabanid fauna encountered during the Mitaraka 2015 survey (French Guiana) and to present an updated check list of Tabanidae of French Guiana.

Methods

In 2015 the “Our Planet Revisited” or “La Planète revisitée” Guyane 2014–2015 expedition, also known as the “Mitaraka 2015 survey”, was conducted in French Guiana (Pollet et al. 2014, Pascal et al. 2015). This was the 5th edition of a large-scale biodiversity survey undertaken by the French Museum of Natural History in Paris and the NGO Pro-Natura international (both in France). Both organizations jointly run the “Our Planet Reviewed” programme which aims to rehabilitate taxonomical work that focuses on the largely neglected components of global biodiversity, i.e., invertebrates (both marine and terrestrial). Basic arthropod taxonomy and species discovery were at the heart of the survey, although forest ecology and biodiversity distribution modelling, nevertheless, were also part of the project. The expedition was conducted in the Mitaraka Mountains, a largely unknown and uninhabited area in the southwestern-
most corner of French Guiana, directly bordering Surinam and Brazil (Fig. 1). It is part of the Tumuc Humac mountain chain, extending east in Amapa region and west in southern Surinam. The area consists primarily of tropical lowland rain forest with scattered inselbergs, isolated hills that stand above the forest plains (Figs 2–5).

From 22 February to 11 March 2015, a team of 32 researchers explored the area, including 12 invertebrate experts. During a second period (11 – 27 March), a second equal-sized team took over and a third smaller team returned to the site from 12 to 20 August 2015. MP was the coordinator of the collected Diptera, and was also the only Diptera worker actively involved in this survey. Invertebrate sampling was carried out near the base camp, on the drop zone (an area near the base camp that had been clear-cut entirely to allow helicopters to land) and, in particular, along four trails of approximately 3.5 km that started from the base camp in four different directions (Fig. 6). During the first period (22 February to 11 March 2015) more than 21 different collecting methods were applied, with a total of 401 traps operational within a perimeter of 1 km². This array consisted primarily of pan traps (n = 280), Charax butterfly traps (n = 50), square Malaise traps (SLAM) (n = 32), Flight Intercept Traps (FIT, n = 13) and Butterfly banana traps (n = 12), but also a light trap (Figs 7–10). In the second and third periods, pan traps were no longer included. A total of 217 invertebrate samples (often pooled yields of different traps of the same type) were examined, including 93 sweepnet samples, and 27 and 62 samples collected by SLAM and coloured pan traps (24 blue, 22 yellow and 16 white traps), respectively. As MP mainly focused on Dolichopodidae during active collecting, sweep net samples only rarely contained tabanids. Relevant metadata on the samples (e.g., exact locality and geographic coordinates, date or time period, collection method, and collector(s)) are provided in Appendix 1.

Non-pan trap samples were sorted to insect orders and families at the SEAG offices (http://insectafgseag.myspecies.info/fr), while pan trap samples were treated similarly at MP’s home lab. Dipteran subsamples (mostly per family) were subsequently disseminated among experts worldwide, in the case of Tabanidae to TKK and ALH. The identification of the tabanid species was conducted by ALH and TKK using taxonomic reviews and identification keys (Barretto 1950, Fairchild and Philip 1960, Fairchild 1976, 1983, 1984, 1985, Gorayeb and Fairchild 1985, Fairchild and Wilkerson 1986, Burger 1996, Henriques and Gorayeb 1999, Henriques 2006, Krolow and Henriques 2010, Turcatel et al. 2010, Krolow et al. 2015), original descriptions, and direct comparison to reliably identified species from the Invertebrates Collection of the Instituto Nacional de Pesquisas da Amazônia, Manaus, Brazil (INPA) and the Entomological Collection of the Universidade Federal do Tocantins, Porto Nacional, Brazil (CEUFT). All collected material was stored in 70% alcohol during the expedition, being dry mounted on pins only about 11 months later in the laboratory. Preservation in alcohol usually affects the recognition of diagnostic features, which often no longer allows identification to species level.

In order to build an updated check list, species distribution records were compiled from the following literature: Fairchild (1976, 1983, 1984), Henriques and Gorayeb (1993), Henriques and Rafael (1993), Fairchild and Burger (1994), Henriques (1997),
Figure 1. Map of French Guiana with indication of the investigated area (Mitaraka).

Coscarón and Papavero (2009), Krolow and Henriques (2010), Turcatel et al. (2010), Krolow et al. (2015), and Henriques (2016). Doubtful country records are indicated by “?”. Next to previously published records, all records from the Mitaraka 2015 survey are included in the check list. Each of these records is represented by the sample code and the number and gender of the collected specimens. Detailed information on the samples is given in Appendix 1. First records for French Guiana are explicitly indicated.
Figures 2–5. Investigated habitat types at Mitaraka 2 Inselberg Sommet-en-Cloche (photo Xavier Desmier) 3 drop zone (photo Marc Pollet) 4 river bed forest (photo Marc Pollet) 5 lowland rain forest of southern French Guiana (photo Marc Pollet).
The specimens collected during the Mitaraka 2015 survey are deposited in the Muséum National d’Histoire Naturelle, Paris, France (MNHN), CEUFT, and INPA, according to an agreement between TKK and MNHN. Another acronym used in this paper is AMNH: American Museum of Natural History, New York, USA.

Results

A total number of 255 tabanids of 24 species was collected during the Mitaraka 2015 survey. The subfamily Tabaninae is clearly the best represented with 19 species, followed by Chrysopsinae with three species, and Pangoniinae with two species. Of the 24 species only one belonging to Chrysops cannot be identified at a specific level. Female specimens were dominant in the samples, accounting for 233 specimens. Nineteen of the 22 males were collected at the light trap. The 6 m long Malaise trap that was installed over a river proved to be most productive, and collected nearly 2/5 of the specimens (see Table 1). Also SLAM traps, light traps, and flight intercept traps yielded at least 10 different species. In sharp contrast to this, neither blue nor yellow or white pan traps produced one single tabanid. In palm forests and forests along rivers, only Bolbodimyia brunneipennis Stone, Dichelacera marginata Macquart and Pityocera cervus (Wiedemann) were encountered. Fifteen different species were encountered on or near the drop zone and 16 species in the Malaise trap over the river. D. marginata seems
Figures 7–10. Collecting techniques applied during Mitaraka survey 7 SLAM (photo Marc Pollet), 8 6m long Malaise trap (MT) (photo Julien Touroult) 9 flight intercept trap (FIT), with Eddy Porier (photo Julien Touroult) 10 light trap (LT), with Eddy Poirier (photo Marc Pollet).
Table 1. Overview of sampling methods that yielded Tabanidae during the Mitaraka 2015 survey.

| Collecting methods* | MT(6m) | LT | SLAM | FIT | SW | PVP | PVB |
|---------------------|--------|----|------|-----|----|-----|-----|
| Total number of examined samples | 5 | 10 | 27 | 8 | 93 | 2 | 1 |
| Tabanidae species (no. males + females) | | | | | | | |
| *Fidena auripes* (Ricardo) | 2 | 3 | | | | | |
| *Pityocera cervus* (Wiedemann) | 4 | 9 | | | | | |
| *Chrysops ecuadorensis* Lutz | | | | | | 1 | |
| *Chrysops incisus* Macquart | | | | | | 1 | |
| *Chrysops* sp. | | | | | | 1 | |
| *Bolbodimyia brunneipennis* Stone | 4 | 1 | 8 | 1 | 1 | | |
| *Catachlorops amazonicus* Henriques & Gorayeb | | | | | | | |
| *Chlorotabanus flagellatus* Krolow & Henriques | 1 | 2 | | | | | |
| *Chlorotabanus inanis* (Fabricius) | 3 | 5 | 1 | | | | |
| *Cryptolytus cauri* Stone | 9 | 15 | 2 | | | | |
| *Diachlorus curvipes* (Fabricius) | 2 | | 5 | | | | |
| *Diachlorus fuscistigma* Lutz | 2 | 1 | 1 | | | | |
| *Dichelacera damicornis* (Fabricius) | 10 | 1 | 1 | | | 1 | |
| *Dichelacera marginata* Macquart | 34 | 1 | 18 | 1 | 3 | | |
| *Leucotabanus albovarius* (Walker) | 1 | 6 | | | | | |
| *Phaeotabanus phaeopterus* Fairchild | 1 | | | | | | |
| *Philipotabanus stigmaticalis* (Kröber) | | 1 | 1 | | | | |
| *Stypommisa captiroptera* (Kröber) | 6 | 1 | 1 | | | | |
| *Stypommisa modica* (Hine) | 1 | | | | | | |
| *Tabanus amapaensis* Fairchild | | | | | | | |
| *Tabanus antarcticus* Linnaeus | 1 | | | | | | |
| *Tabanus discus* Wiedemann | 1 | | | | | | |
| *Tabanus occidentalis* Linnaeus | 22 | 5 | 29 | | | | |
| *Tabanus trivittatus* Fabricius | 2 | 15 | 1 | 1 | | | |
| Number species | 16 | 11 | 14 | 10 | 2 | 2 | 1 |
| Number specimens | 98 | 58 | 48 | 44 | 4 | 2 | 1 |

* MT(6m): 6m long Malaise trap, LT: light trap, SLAM: square Malaise trap, FIT: flight intercept trap, SW: sweep net, PVP: pink polytrap automatic light trap, PVB: blue polytrap automatic light trap.

This investigation revealed ten species recorded for the first time from French Guiana (see check list). After also screening previous records in the literature, an updated check list of 80 species of Tabanidae is presented here.
List of species of Tabanidae from French Guiana

PANGONIINAE
SCIONINI

*Fidena analis* (Fabricius, 1805)

**Records of French Guiana**: see Fairchild and Burger (1994).

**Distribution**: Guyana, French Guiana, Brazil (Amazonas).

*Fidena auripes* (Ricardo, 1900)

Figure 11A

**Records of French Guiana**: see Fairchild (1970). **Examined material**: sample Mitaraka/219 (1 ♀ MNHNP); Mitaraka/224 (1 ♀ CEUFT; 1 ♀ INPA); Mitaraka/229 (1 ♀ CEUFT; 1 ♀ MNHNP).

**Distribution**: Guyana, Suriname, French Guiana, Brazil (Pará).

*Fidena aurulenta* Gorayeb, 1986

**Records of French Guiana**: see Fairchild and Burger (1994).

**Distribution**: French Guiana, Brazil (Pará).

*Fidena mattogrossensis* (Lutz, 1912)

**Records of French Guiana**: see Fairchild (1970), as *Fidena fulgifascies* Barretto, 1957.

**Distribution**: Guyana, Suriname, French Guiana, Brazil (Amazonas, Rondônia, Mato Grosso).

*Fidena pseudoaurimaculata* (Lutz, 1909)

**Records of French Guiana**: see Fairchild (1970) and Henriques (2016).

**Distribution**: Venezuela, Guyana, Suriname, French Guiana, Brazil (Amazonas to Amapá, and Mato Grosso).

*Fidena schildi* (Hine, 1925)

**Records of French Guiana**: see Fairchild (1970) and Henriques and Gorayeb (1993).

**Distribution**: Costa Rica to Colombia, French Guiana, Brazil (Roraima, Amazonas).
Pityocera cervus (Wiedemann, 1828)
Figure 11B

Records of French Guiana: see Fairchild (1970), Henriques & Gorayeb (1993), Henriques (1997) and Krolow et al. (2015). Examined material: sample Mitaraka/150 (1 ♀ MNHN); Mitaraka/186 (1 ♀ MNHN); Mitaraka/189 (3 ♀ MNHN); Mitaraka/199 (2 ♀ CEUFT); Mitaraka/202 (1 ♀ MNHN); Mitaraka/207 (1 ♀ MNHN); Mitaraka/208 (1 ♀ MNHN); Mitaraka/209 (1 ♀ MNHN); Mitaraka/213 (1 ♀ INPA); Mitaraka/229 (2 ♀ CEUFT).

Distribution: Colombia, Venezuela, Guyana, Suriname, Ecuador, French Guiana, Brazil (North), Peru, Bolivia.

CHRYSOPSINAE
CHRYSOPSINI

Chrysops ecuadorensis Lutz, 1909 – new to French Guiana
Figure 11C

Examined material: sample Mitaraka/224 (1 ♀ CEUFT).

Updated Distribution: Ecuador, Peru (Madre de Dios), Guyana, French Guiana, Brazil (Pará).

Chrysops formosus Kröber, 1926

Records of French Guiana: see Fairchild (1970).

Distribution: Trinidad, French Guiana, Brazil (Acre, Rondônia, Amazonas, Roraima, Pará, Amapá, Maranhão, Bahia).

Chrysops incisus Macquart, 1846 – new to French Guiana
Figure 11D

Examined material: sample Mitaraka/227 (1 ♀ INPA).

Updated Distribution: Colombia, Guyana, Suriname, French Guiana, Brazil (Acre, Amazonas, Pará, Amapá, Maranhão), eastern Peru, Bolivia.

Chrysops laetus Fabricius, 1805

Records of French Guiana: see Raymond et al. (1984).

Distribution: Colombia (Vaupés), Suriname, French Guiana, Brazil (Rondônia, Amazonas, Roraima, Pará, Amapá, Paraná, Rio Grande do Sul), ?Paraguay, ?Argentina (Misiones).
*Chrysops tristis* (Fabricius, 1798)

**Records of French Guiana:** see Fabricius (1798) and Fairchild (1970).

**Distribution:** Trinidad, Venezuela, Guyana, Suriname, French Guiana, ?Brazil.

*Chrysops varians* Wiedemann, 1828

**Records of French Guiana:** see Fairchild (1970).

**Distribution:** Panama, Trinidad, Colombia, Venezuela, Guyana, French Guiana, Ecuador, Peru, Brazil (Amapá to Rio Grande do Sul), Argentina (Misiones, Entre Ríos, Chaco), Paraguay.

*Chrysops variegatus* (De Geer, 1776)

**Records of French Guiana:** see Fairchild (1970).

**Distribution:** Southern Mexico to Argentina (Misiones), West Indies.

*Chrysops venezuelensis* Kröber, 1925

**Records of French Guiana:** see Raymond et al. (1984), as subspecies of *Chrysops variegatus*.

**Distribution:** Trinidad, Venezuela, Suriname, French Guiana, Brazil (Pará).

*Chrysops weberi* Bequaert, 1946

**Records of French Guiana:** see Fairchild (1970).

**Distribution:** eastern Colombia, Venezuela, Guyana, French Guiana, Peru, Brazil (Rondônia, Amazonas).

*Chrysops* sp.

Figure 11E

**Examined material:** sample Mitaraka/218 (1♀ CEUFT); Mitaraka/220 (1♀ MNHNHP).

**Comment:** Two specimens of this morphotype were captured, but it was not possible to identify them with safety by the lack of recent taxonomic works of this genus.
RHINOMYZIN

*Betrequia ocellata* Oldroyd, 1970

**Records of French Guiana:** see Raymond et al. (1984).  
**Distribution:** eastern Colombia, French Guiana, Brazil (Amazonas, Pará, Ceará).

**TABANINAE**

**DIACHLORININI**

*Acanthocera gorayebi* Henriques & Rafael, 1992

**Records of French Guiana:** see Henriques and Rafael (1999).  
**Distribution:** Guyana, French Guiana, Peru, Brazil (Acre, Rondônia, Amazonas, Pará, Amapá, western Maranhão, Mato Grosso).

*Acanthocera marginalis* Walker, 1854

**Records of French Guiana:** see Fairchild (1970) and Henriques and Rafael (1993).  
**Distribution:** Colombia, Guyana, Suriname, French Guiana, Trinidad, Ecuador (Napo, Morona Santiago), Peru (Loreto), Brazil (Acre, Roraima, Amazonas, Pará, Amapá, Mato Grosso).

*Bolbodimyia brunneipennis* Stone, 1954

Figure 11F

**Records of French Guiana:** according to Fairchild (1970), the specimen was erroneously identified by Surcouf (1921) as *Bolbodimyia bicolor* (Bigot) from the locality of Maroni. One female from Saint Laurent du Maroni is deposited at the AMNH (Henriques 2016).  
**Examined material:** sample Mitaraka/104 (1 ♀ MNHNHP); Mitaraka/115 (1 ♂ CEUFT); Mitaraka/150 (2 ♀ MNHNHP); Mitaraka/186 (2 ♀ CEUFT); Mitaraka/189 (2 ♀ MNHNHP); Mitaraka/191 (1 ♀ MNHNHP); Mitaraka/199 (1 ♀ MNHNHP); Mitaraka/200 (1 ♀ MNHNHP); Mitaraka/208 (1 ♀ MNHNHP); Mitaraka/211 (1 ♀ MNHNHP); Mitaraka/213 (1 ♀ INPA); Mitaraka/219 (1 ♀ CEUFT).  
**Distribution:** Guyana, French Guiana, Brazil (Roraima, Pará, Amapá).
Catachlorops amazonicus Henriques & Gorayeb 1999 – new to French Guiana
Figure 11G

Examined material: sample Mitaraka/229 (1♀ INPA).
Updated distribution: French Guiana, Brazil (Amapá and Amazonas), Peru.

Catachlorops balachowskyi Fairchild, 1970

Records of French Guiana: see Fairchild (1970).
Distribution: French Guiana.

Catachlorops halteratus Kröber, 1931

Records of French Guiana: see Fairchild (1970).
Distribution: Guyana, Suriname, French Guiana, Peru (Loreto), Brazil (Rondônia, Amazonas, Roraima, Pará, Maranhão, Mato Grosso).

Catachlorops rubiginosus (Summers, 1911)

Records of French Guiana: see Raymond et al. (1984) as Catachlorops rubiginosa.
Distribution: Guyana, French Guiana, Peru, Brazil (Amazonas, Pará, Mato Grosso).

Catachlorops rufescens (Fabricius, 1805)

Records of French Guiana: see Fairchild (1970).
Distribution: Guyana, French Guiana, Brazil (Rondônia, Amazonas, Roraima, Pará, Maranhão, Mato Grosso).

Chlorotabanus flagellatus Krolow & Henriques, 2009 – new to French Guiana
Figure 11H

Examined material: sample Mitaraka/100 (1♀ MNHNP); Mitaraka/102 (1♂ CEUFT); Mitaraka/186 (1♀ CEUFT).
Updated distribution: French Guiana, Brazil (Amazonas, Pará).
**Chlorotabanus inanis** (Fabricius, 1787)

Figure 11I

Records of French Guiana: see Fairchild (1970), Krolow and Henriques (2010) and Henriques (2016). Examined material: sample Mitaraka/008 (1♂ MNHN); Mitaraka/029 (1♂ CEUFT); Mitaraka/100 (1♀ MNHN); Mitaraka/102 (1♀ CEUFT); Mitaraka/115 (1♀ MNHN); Mitaraka/186 (1♀ MNHN); Mitaraka/188 (2♀ MNHN); Mitaraka/229 (1♀ MNHN).

Distribution: Southern Mexico to southern Brazil.

**Chlorotabanus leucochlorus** Fairchild, 1961

Records of French Guiana: see Fairchild (1970) and Krolow and Henriques (2010).

Distribution: Colombia, Venezuela, eastern Peru, Guyana, Suriname, French Guiana, Brazil (Amapá, Amazonas, Pará, Maranhão, Rondônia).

**Chlorotabanus leuconotus** Krolow & Henriques, 2010

Records of French Guiana: see Krolow and Henriques (2010).

Distribution: Colombia, Guyana, French Guiana, Brazil (Roraima, Amazonas, Pará, Maranhão, Rondônia); Peru (Madre de Dios).

**Chlorotabanus mexicanus** (Linnaeus, 1758)

Records of French Guiana: see Fairchild (1970), Krolow and Henriques (2010) and Henriques (2016).

Distribution: Mexico, Belize, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Trinidad and Tobago, Suriname, French Guiana, Brazil (Pará), Ecuador.

**Cryptotylus cauri** Stone, 1944 – new to French Guiana

Figure 11J

Examined material: sample Mitaraka/008 (1♀ MNHN); Mitaraka/086 (1♀ CEUFT); Mitaraka/100 (9♀ MNHN); Mitaraka/102 (1♀ CEUFT); Mitaraka/115 (3♀ CEUFT); Mitaraka/186 (2♀ MNHN); Mitaraka/188 (1♀ MNHN); Mitaraka/189 (4♀ MNHN, 2♀ INPA); Mitaraka/229 (2♀ MNHN).

Updated Distribution: Venezuela, Suriname, French Guiana.
Cryptotylus unicolor (Wiedemann, 1828)

Records of French Guiana: see Fairchild (1970).
 Distribution: Panama to Brazil (as far as Mato Grosso), Paraguay, Argentina (Chaco).

Diachlorus bicinctus (Fabricius, 1805)

Records of French Guiana: see Raymond et al. (1984).
 Distribution: Venezuela, Suriname, French Guiana, Trinidad, Peru, Bolivia, Brazil (Acre, Rondônia, Amazonas, Roraima, Pará, Amapá, Maranhão, Mato Grosso, Paraíba, Bahia).

Diachlorus curvipes (Fabricius, 1805)
Figure 11K

Records of French Guiana: see Fairchild (1970). Examined material: sample Mitaraka/186 (1♀ MNHN); Mitaraka/189 (1♀ CEUFT); Mitaraka/219 (3♀ MNHN); Mitaraka/220 (1♀ MNHN); Mitaraka/224 (1♀ CEUFT).
 Distribution: Costa Rica, Panama to Suriname, French Guiana, eastern Peru, Bolivia and Brazil (Roraima, Pará, Amapá, Rondônia, Maranhão, Paraíba, Mato Grosso, ?Minas Gerais), Trinidad.

Diachlorus fuscistigma Lutz, 1913
Figure 11L

Records of French Guiana: see Raymond et al. (1984). Examined material: sample Mitaraka/186 (1♀ MNHN); Mitaraka/188 (1♀ CEUFT); Mitaraka/218 (1♀ MNHN); Mitaraka/220 (1♀ MNHN).
 Distribution: Colombia, Suriname, French Guiana, Ecuador, Peru (Loreto), Brazil (Acre, Rondônia, Amazonas, Roraima, Pará, Amapá, Bahia), Bolivia.

Diachlorus scutellatus (Macquart, 1838)

Records of French Guiana: see Macquart (1838) and Fairchild (1970).
 Distribution: Trinidad, Venezuela, Guyana, Suriname, French Guiana, Brazil (Amazonas, Pará).
**Dichelacera damicornis** (Fabricius, 1805)

Figure 12A

**Records of French Guiana:** see Fairchild (1970) and Henriques and Gorayeb (1993). **Examined material:** sample Mitaraka/048 (1 ♀ MNHN); Mitaraka/186 (5 ♀ MNHN); Mitaraka/188 (3 ♀ MNHN); Mitaraka/189 (3 ♀ CEUFT); Mitaraka/222 (1 ♀ CEUFT); Mitaraka/229 (1 ♀ MNHN).

**Distribution:** Colombia, Venezuela to Brazil (Amazonas, Pará).

**Dichelacera marginata** Macquart, 1847

Figure 12B

**Records of French Guiana:** see Macquart (1847), Fairchild (1970) and Henriques (2016). **Examined material:** sample Mitaraka/074 (2 ♀ MNHN); Mitaraka/089 (1 ♀ MNHN); Mitaraka/100 (1 ♀ MNHN); Mitaraka/150 (10 ♀ CEUFT); Mitaraka/186 (17 ♀ MNHN); Mitaraka/188 (6 ♀ MNHN); Mitaraka/189 (10 ♀ MNHN, 1 ♀ INPA); Mitaraka/191 (2 ♀ CEUFT); Mitaraka/192 (1 ♀ MNHN); Mitaraka/195 (2 ♀ MNHN); Mitaraka/207 (2 ♀ MNHN); Mitaraka/229 (2 ♀ CEUFT).

**Distribution:** Nicaragua to northern Brazil and eastern Peru.

**Dichelacera t-nigrum** Fabricius, 1805

**Records of French Guiana:** see Raymond et al. (1984).

**Distribution:** Venezuela and Guyana to Brazil (Pará).

**Lepiselaga crassipes** (Fabricius, 1805)

**Records of French Guiana:** see Fairchild (1970).

**Distribution:** Mexico to northern Argentina (Formosa, Chaco, Salta, Tucumán, Santa Fé, Buenos Aires), Cuba, Jamaica, Hispaniola, Puerto Rico.

**Leucotabanus albovarius** (Walker, 1854)

Figure 12C

**Records of French Guiana:** see Raymond et al. (1984). **Examined material:** sample Mitaraka/008 (1 ♀, 1 ♂ MNHN); Mitaraka/100 (1 ♀, 1 ♂ MNHN); Mitaraka/102 (1 ♀, 1 ♂ CEUFT); Mitaraka/189 (1 ♀ CEUFT).

**Distribution:** Guyana, Suriname, French Guiana, Ecuador (Napo, Orellana), Peru, Bolivia, Brazil (Acre, Rondônia, Amazonas, Roraima, Pará, Amapá).
*Leucotabanus exaestuans* (Linnaeus, 1758)

**Records of French Guiana:** see Fairchild (1970).

**Distribution:** Mexico to Bolivia (Chapare) and Argentina (Salta, Chaco, Misiones), Trinidad.

*Leucotabanus janinae* Fairchild, 1970

**Records of French Guiana:** see Fairchild (1970).

**Distribution:** Colombia, Suriname, French Guiana, Brazil (Amazonas, Pará, Amapá).

*Phaeotabanus cajennensis* (Fabricius, 1787)

**Records of French Guiana:** see Fabricius (1787), Fairchild (1970).

**Distribution:** Trinidad to Colombia and French Guiana, Brazil (as far as São Paulo, Paraná) and Bolivia.

*Phaeotabanus fervens* (Linnaeus, 1758)

**Records of French Guiana:** see Fairchild (1970).

**Distribution:** Trinidad and Venezuela to Argentina (Chaco).

*Phaeotabanus nigriflavus* (Kröber, 1930)

**Records of French Guiana:** see Kröber (1930) and Fairchild (1970).

**Distribution:** Colombia, Venezuela, Guyana, Suriname, French Guiana, Trinidad, Ecuador, Peru, Brazil (Roraima, Amapá, Amazonas, Pará, Acre, Rondônia).

*Phaeotabanus phaeopterus* Fairchild, 1964 – new to French Guiana

**Figure 12D**

**Examined material:** sample Mitaraka/188 (1 ♀ CEUFT).

**Updated distribution:** Panama (Darien), eastern Colombia, eastern Ecuador (Pichincha), French Guiana, Brazil (Roraima, Amazonas, Pará, Mato Grosso), eastern Peru.
**Philipotabanus stigmaticalis** (Kröber, 1931) – new to French Guiana

*Figure 12E*

**Examined material:** sample Mitaraka/002 (1♀ MNHN); Mitaraka/191 (1♀ CEUFT).

**Updated distribution:** Guyana, French Guiana, Brazil (Acre, Amazonas, Roraima, Pará, Amapá).

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**Stibasoma festivum** (Wiedemann, 1828)

**Records of French Guiana:** see Fairchild (1970) and Turcatel et al. (2010).

**Distribution:** French Guiana, Brazil (Acre, Amazonas, Pará, ?Mato Grosso), Argentina (Formosa).

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**Stypommisa captiroptera** (Kröber, 1930) – new to French Guiana

*Figure 12F*

**Examined material:** sample Mitaraka/100 (1♀, 1♂ INPA); Mitaraka/102 (3♂ CEUFT); Mitaraka/115 (1♂ MNHN); Mitaraka/219 (1♀ CEUFT); Mitaraka/229 (1♂ INPA).

**Updated distribution:** Mexico to French Guiana, Brazil (Rondônia, Amazonas, Roraima, Pará), ?Paraguay.

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**Stypommisa glandicolor** (Lutz, 1912)

**Records of French Guiana:** see Fairchild (1970) and Henriques (2016).

**Distribution:** Costa Rica, Colombia, Suriname, French Guiana, Peru, Bolivia, Brazil (Acre, Rondônia, Amazonas, Pará, Amapá, Mato Grosso).

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**Stypommisa modica** (Hine, 1920)

*Figure 12G*

**Records of French Guiana:** see Henriques and Gorayeb (1993).  
**Examined material:** sample Mitaraka/188 (1♀ CEUFT).

**Distribution:** Guyana, French Guiana, Peru, Bolivia, Brazil (Acre, Rondônia, Amazonas, Pará).

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**Stypommisa tantula** (Hine, 1920)

**Records of French Guiana:** see Raymond et al. (1984).
**Distribution:** Guyana, French Guiana.

**Remarks:** this species was not recognized as *Stypommissa* by Fairchild and Wilkerson (1986), and neither transferred to another genus. For unclear reasons, it was omitted in the Fairchild and Burger catalog (1994), but listed as *Stypommissa* by Coscarón and Papavero (2009).

**TABANINI**

*Phorcotabanus cinereus* (Wiedemann, 1821)

**Records of French Guiana:** see Fairchild (1970), as *Stenotabanus (Phorcotabanus) cinereus*.

**Distribution:** Colombia (Meta), Ecuador, Peru, French Guiana, Brazil (Amapá, Amazonas, Pará, Acre, Ceará), Bolivia, Argentina (Chaco, Salta).

*Poeciloderas quadripunctatus* (Fabricius, 1805)

**Records of French Guiana:** see Raymond et al. (1984).

**Distribution:** Mexico to Argentina (Salta, Tucumán, Catamarca, Misiones, Entre Ríos, Buenos Aires).

*Tabanus amapaensis* Fairchild, 1961 – new to French Guiana

**Figure 12H**

**Examined material:** sample Mitaraka/229 (1 ♀ CEUFT).

**Updated Distribution:** Suriname, French Guiana, Brazil (Amazonas, Pará, Amapá).

*Tabanus angustifrons* Macquart, 1848

**Records of French Guiana:** see Macquart (1848), Fairchild (1984) and Raymond (1986).

**Distribution:** Colombia, Venezuela, French Guiana, Peru, Brazil (Rondônia, Amazonas, Roraima, Pará, Amapá, Mato Grosso).

*Tabanus antarcticus* Linnaeus, 1758

**Figure 12I**

**Records of French Guiana:** see Fairchild (1970). **Examined material:** sample Mitaraka/186 (1 ♀ CEUFT).

**Distribution:** Trinidad, Venezuela, Suriname to Peru and Brazil (Amazon basin, Bahia).
*Tabanus callosus* Macquart, 1848

**Records of French Guiana:** see Fairchild (1970).

**Distribution:** Colombia (Vaupés, Amazonas), Peru (Madre de Dios, Putumayo), Guyana, French Guiana, Brazil (Rondônia, Amazonas, Roraima, Pará, Amapá, ?Bahia).

*Tabanus casteetus* Fairchild, 1984

**Records of French Guiana:** see Fairchild (1984), as *Tabanus testaceus* Macquart.

**Distribution:** Venezuela, French Guiana, Ecuador, Brazil (Amazonas).

*Tabanus crassicornis* Wiedemann, 1821

**Records of French Guiana:** see Fairchild (1984).

**Distribution:** Colombia, Venezuela, Suriname, French Guiana, Brazil (Acre, Rondônia, Amazonas, Roraima, Pará, Amapá, Mato Grosso).

*Tabanus discifer* Walker, 1850

**Records of French Guiana:** see Raymond (1986).

**Distribution:** Venezuela, Trinidad, Suriname, French Guiana, Brazil (Pará, Amazonas), Ecuador, Peru (Loreto), Bolivia.

*Tabanus discus* Wiedemann, 1828

Figure 12J

**Records of French Guiana:** see Fairchild (1970). **Examined material:** sample Mita-raka/186 (1 ♀ CEUFT).

**Distribution:** Trinidad, ?Venezuela, Guyana, Suriname, French Guiana, Ecuador (Napo), Brazil (Acre, Rondônia, Amazonas, Roraima, Pará, Amapá, Mato Grosso).

*Tabanus fortis* Fairchild, 1961

**Records of French Guiana:** see Fairchild (1970, 1984).

**Distribution:** Guyana, Suriname, French Guiana, Peru, Brazil (Amazonas, Pará, Amapá).
Tabanus fumomarginatus Hine, 1920

Records of French Guiana: see Fairchild (1970).
Distribution: Suriname, French Guiana, Peru, Brazil (Amapá, Amazonas).

Tabanus guyanensis Macquart, 1846

Records of French Guiana: see Macquart (1846) and Fairchild (1970, 1984).
Distribution: Colombia, French Guiana, eastern Ecuador, eastern Peru, Brazil (Amapá, Amazonas, Pará, Rondônia, Mato Grosso), eastern Bolivia.

Tabanus importunus Wiedemann, 1828

Records of French Guiana: see Fairchild (1970).
Distribution: Panama, Guyana, French Guiana, Trinidad, Peru, Bolivia, to Brazil (Rio Grande do Sul), Paraguay.

Tabanus kwatta Fairchild, 1983

Records of French Guiana: see Fairchild (1983).
Distribution: Venezuela, Suriname, French Guiana, Brazil (Pará).

Tabanus nebulosus De Geer, 1776

Records of French Guiana: see Fairchild (1970).
Distribution: Belize, Trinidad, Barbados to Brazil (until Mato Grosso do Sul), Argentina (Tucumán, Formosa, Corrientes, Santa Fé, Chaco).

Tabanus occidentalis Linnaeus, 1758

Figure 12K

Records of French Guiana: in Fairchild (1970), as Tabanus dorsiger var. dorsovittatus Macquart. Examined material: sample Mitara/100 (2♀, 2♂ CEUFT); Mitara/115 (1♀ MNHN); Mitara/186 (8♀ MNHN); Mitara/188 (8♀ CEUFT); Mitara/189 (5♀, 1♂ MNHN); Mitara/197 (1♀ MNHN); Mitara/198 (2♀ MNHN); Mitara/219 (13♀ MNHN); Mitara/220 (12♀ MNHN); Mitara/224 (1♂ MNHN).
Distribution: Mexico to Argentina (Entre Ríos, Buenos Aires), Trinidad.
_Tabanus olivaceiventris_ Macquart, 1847

**Records of French Guiana:** see Bigot (1892), as _Tabanus pulverulentus_, and Fairchild (1970, 1984).

**Distribution:** Panama to Brazil (Pará, Amapá), Trinidad.

.Tabanus pellucidus_ Fabricius, 1805

**Records of French Guiana:** see Fairchild (1970, 1984).

**Distribution:** Colombia, Venezuela, Guyana, Suriname, French Guiana, Ecuador (Napo, Orellana, Pastaza), e. Peru, Brazil (Roraima, Amazonas, Pará, Amapá).

_Tabanus piceiventris_ Rondani, 1848

**Records of French Guiana:** see Fairchild (1970).

**Distribution:** Trinidad, Colombia, Venezuela, Guyana, Suriname, French Guiana, Ecuador (Napo, Orellana), Peru, Brazil (Acre, Rondônia, Amazonas, Roraima, Pará, Amapá, Maranhão, Tocantins), Bolivia.

_Tabanus pungens_ Wiedemann, 1828

**Records of French Guiana:** Raymond et al. (1984) and Raymond (1986).

**Distribution:** U.S.A. (Texas), Neotropics (except West Indies and Chile), Trinidad.

_Tabanus rubripes_ Macquart, 1838

**Records of French Guiana:** see Fairchild (1970).

**Distribution:** Panama to Paraguay.

_Tabanus tristichus_ Fairchild, 1976

**Records of French Guiana:** see Raymond (1986).

**Distribution:** Suriname, French Guiana, Brazil (Amapá, Pará).
**Tabanus trivittatus** Fabricius, 1805

Figure 12L

**Records of French Guiana**: see Fairchild (1970). **Examined material**: sample Mitaraka/002 (1♀ MNHNP); Mitaraka/186 (1♂ MNHNP); Mitaraka/100 (2♀, 1♂ CEUFT); Mitaraka/102 (1♂ MNHNP); Mitaraka/115 (7♀, 2♂ MNHNP); Mitaraka/169 (1♀ MNHNP); Mitaraka/189 (2♀ MNHNP); Mitaraka/197 (1♀ MNHNP); Mitaraka/222 (1♂ MNHNP).

**Distribution**: ?Costa Rica, ?Panama, Colombia, Guyana, Suriname, French Guiana, Brazil (Rondônia, Amazonas, Roraima, Pará, Amapá, Maranhão, Tocantins).

**Tabanus vittiger** ssp. *guatemalanus* Hine, 1906

**Records of French Guiana**: see Fairchild (1970), as *Tabanus subsimilis guatemalanus* Hine.

**Distribution**: U.S.A. (Florida), Bahamas, West Indies (Cuba, Cayman Islands, Jamaica, Puerto Rico), southeastern Mexico to Suriname, French Guiana and northern Brazil.

**Tabanus wilkersoni** Fairchild, 1983

**Records of French Guiana**: see Raymond (1986) and Henriques and Gorayeb (1993).

**Distribution**: e. Colombia, French Guiana, eastern Peru, Brazil (Amapá, Amazonas, Pará, Mato Grosso do Sul).

**Record excluded from French Guiana**

*Tabanus unipunctatus* (Bigot 1892) was cited from French Guiana by Fairchild (1970). However, in the Fairchild and Burger catalog (1994) the species distribution was corrected to: Mexico to western Colombia. Probably the 1970 Fairchild record refers to *T. fumomarginatus*.

**Discussion**

French Guiana is part of the Guiana shield in northern Amazonia, bordering with Suriname in the west and Brazil (Amapá State) in the east, between the Maroni and Oiapoque rivers (Guitez et al. 2013). The Amazon rainforest covers more than 90% of this French department, while savannas and mangroves are present only along the coast (Guitez et al. 2014).
Figure 11. A Fidena auripes (Ricardo) B Pityocera cervus (Wiedemann) C Chrysops ecuadorensis Lutz D Chrysops incisus Macquart E Chrysops sp. F Bolbodimyia brunneipennis Stone G Catachlorops amazonicus Henriques & Gorayeb H Chlorotabanus flagellatus Krolow & Henriques I Chlorotabanus inanis (Fabricius) J Cryptoylus cauri Stone K Diachlorus curvipes (Fabricius) L Diachlorus fuscistigma Lutz. Photos by Augusto Henriques.
Figure 12. A Dichelacera damicornis (Fabricius) B Dichelacera marginata Macquart C Leucotabanus albovarius (Walker) D Phaeotabanus phaeopterus Fairchild E Philipotabanus stigmaticalis (Kröber) F Stypommisa captiroptera (Kröber) G Stypommisa modica (Hine) H Tabanus amapaensis Fairchild I Tabanus antarcticus Linnaeus J Tabanus discus Wiedemann K Tabanus occidentalis Linnaeus L Tabanus trivittatus Fabricius. Photos by Augusto Henriques.
In their check list of insects of French Guiana, Brûlé and Touroult (2014) registered about 15,100 valid species names allocated in 20 orders and 322 families. According to the authors, Diptera is one of the poorest studied groups, with only 577 known species, including 6 endemic species, 50 species described from French Guiana, and 2 dubious records.

A high insect endemism in French Guiana is not very likely, because the country does not have strong geographical barriers with its neighbouring countries, Suriname and Brazil (Amapá) (Brûlé and Touroult 2014), and the same habitat types (or life zones) are present in each of these regions. This seems to be suggested by the observation that Suriname and Amapá share 49 and 42 species of Tabanidae (excluding the species with a large distribution) with French Guiana, respectively (Coscarón and Papavero 2009).

As expected, most species (76 sp.) observed in French Guiana belongs to the Amazonian tabanid fauna. Of its 80 species, 32 species have a large distribution in the Amazon basin, 30 species are shared by French Guiana with Suriname and/or Amapá state, and another 13 species with Guyana and/or Pará state. Three species have an even more extensive distribution range beyond French Guiana. Only one species might be endemic and another could not be identified, possibly a new species of *Chrysops*.

Currently, *Catachlorops balachowskyi* Fairchild seems endemic to French Guiana, while two other species, *Stypommisa tantula* (Hine) and *Fidena aurulenta* Gorayeb, are shared only with Guyana and Pará (Brazil), respectively.

The distribution records of Coscarón and Papavero (2009) were analysed, and it is estimated that approximately an additional 43 species have a high probability of occurring in French Guiana (Table 2). All estimated species have records from Suriname (11 spp.), Amapá (10 spp.), or both regions (2 spp.), or have a wide distribution in the Amazon region (20 spp.).

With respect to the collecting methods, although interception traps (including Malaise traps and SLAM) are a passive method and without attractive power, they are among the most effective methods for capturing female tabanids, because the females are strong and frequent flyers, travelling great distances daily looking for a blood meal. The six meters Malaise trap is extremely effective for Tabanidae, and on some occasions several hundreds of specimens have been collected during one day (Gressitt and Gressitt 1962). According to Brown (2005), the Malaise trap method is especially effective to collect Neotropical Diptera, and Tabanidae seems to be one of 22 most abundant families in Malaise trap samples.

While the females are satisfactorily collected by interception traps, the males are rarely found in these traps, mainly because they are nectarivores, and thus do not need to travel far in search of warm-blooded hosts. As a result, male tabanids are also poorly represented in collections and even often unknown. Their rarity in interception traps might also be related to the effect of flowering periods, their preference to fly in higher tree strata or by their flight in restricted areas waiting for females to mate (Krolow et al. 2010). In contrast, males are commonly attracted to light, and the use of luminous attractant for collecting horse flies usually attracts much more males than females,
Table 2. List of Tabanidae known from neighbouring regions and expected to occur in French Guiana.

| No | Species | Present occurrence |
|----|---------|-------------------|
| 1  | *Esenbeckia osornoi* Fairchild, 1942 | Suriname, Amapá |
| 2  | *Fidena loricornis* Kröber, 1931 | Amapá |
| 3  | *Fidena nigripennis* (Guérin-Méneville, 1832) | Suriname |
| 4  | *Chrysops calogaster* Schiner, 1868 | Amapá |
| 5  | *Chrysops guttipennis* Kröber, 1929 | Suriname |
| 6  | *Chrysops leucopusius* Wiedemann, 1828 | Amazon |
| 7  | *Acanthocera bequaerti* Fairchild & Aitken, 1960 | Suriname |
| 8  | *Acanthocera fairchildi* Henriques & Rafael, 1992 | Amazon |
| 9  | *Acanthocera polistiformis* Fairchild, 1961 | Amapá |
| 10 | *Catachlorops difficilis* (Kröber), 1931 | Amazon |
| 11 | *Catachlorops fimipennis* Kröber, 1931 | Amazon |
| 12 | *Catachlorops testaceus* (Macquart, 1846) | Guyana, Amapá |
| 13 | *Diachlorus nuneztovari* Fairchild & Ortiz, 1955 | Amazon |
| 14 | *Diachlorus pechumanai aitkeni* Fairchild, 1972 | Surinam |
| 15 | *Diachlorus podagricus* (Fabricius), 1805 | Amazon |
| 16 | *Diachlorus syrus* Fairchild, 1972 | Suriname |
| 17 | *Dichelacera bifacies* Walker, 1848 | Amapá |
| 18 | *Dichelacera cervicornis* (Fabricius), 1805 | Suriname, Amapá |
| 19 | *Dichelacera varia* (Wiedemann, 1828) | Amapá |
| 20 | *Eutabanus pictus* Kröber, 1930 | Amapá |
| 21 | *Leucotabanus pauclus* Fairchild, 1951 | Amazon |
| 22 | *Phaenotabanus innotescens* (Walker, 1854) | Suriname |
| 23 | *Phaenotabanus prasiniventris* (Kröber, 1929) | Amapá |
| 24 | *Philipotabanus pictus* Gorayeb & Rafael, 1984 | Amazon |
| 25 | *Selasoma tibiale* (Fabricius, 1805) | Amazon |
| 26 | *Stenotabanus cretatus* Fairchild, 1961 | Amapá |
| 27 | *Stenotabanus geijskesi* Fairchild, 1953 | Suriname |
| 28 | *Stibasoma curtani* Philip, 1943 | Amazon |
| 29 | *Stibasoma flaviventris* (Macquart, 1848) | Amazon |
| 30 | *Stibasoma fulvohirtum* (Wiedemann, 1828) | Amazon |
| 31 | *Stypommisa prunicolor* (Lutz, 1912) | Amazon |
| 32 | *Stypommisa venosa* (Bigot, 1892) | Amazon |
| 33 | *Tabanus amazonensis* (Barretto, 1949) | Amazon |
| 34 | *Tabanus cicur* Fairchild, 1942 | Amazon |
| 35 | *Tabanus claripennis* (Bigot, 1892) | Neotropical |
| 36 | *Tabanus curtus* Hine, 1920 | Suriname |
| 37 | *Tabanus glaucus* Wiedemann, 1819 | Amazon |
| 38 | *Tabanus macquarti* Schiner, 1868 | Suriname |
| 39 | *Tabanus sannio* Fairchild, 1956 | Amazon |
| 40 | *Tabanus secundus* Walker, 1848 | Suriname |
| 41 | *Tabanus sorbillans* Wiedemann, 1828 | Amazon |
| 42 | *Tabanus unimacula* Kröber, 1934 | Suriname |
| 43 | *Tabanus xuthopogon* Fairchild, 1984 | Amapá |
usually of species with crepuscular habits (Frost 1951, Anthony 1960, Philip 1982, Fairchild 1986, Henriques and Rafael 1999).

Taking into account the large number of interception trap types employed during the Mitaraka (with only one operational light trap), female specimens were dominant in the samples as expected, accounting for 233 specimens, mostly collected by interception trap types, such as the 6m long Malaise trap (n = 98), SLAMs (n = 48), and flight intercept traps (n = 44). On the other hand, 19 of the 22 males were collected at the light trap, although, curiously, the trap collected more females than males (39 females vs 19 males) (see Table 1).

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References

Anthony DW (1960) Tabanidae attracted to an ultraviolet light trap. The Florida Entomologist 43: 77–80. https://doi.org/10.2307/3492383
Barretto MP (1950) Estudos sobre tabânidas brasileiros. – XIII. O gênero Phaeotabanus Lutz e descrição de dois novos gêneros (Diptera, Tabanidae). Anais da Faculdade de Medicina da Universidade de São Paulo 25: 89–100.
Bigot JMF (1892) Descriptions de diptères nouveaux. Tabanidi. Mémoires de la Société zoologique de France 5: 602–692.
Brown BV (2005) Malaise trap catches and the crisis in neotropical dipterology. American Entomologist 513: 180–183. https://doi.org/10.1093/ae/51.3.180
Brûlé S, T’ouroult J (2014) Insects of French Guiana: a baseline for diversity and taxonomic effort. ZooKeys 434: 111–130. doi: 10.3897/zookeys.434.7582
Burger JF (1996) Description of the male and variation in Bolbodimyia galindoi Fairchild (Diptera: Tabanidae), and a revised key to species of Bolbodimyia. Proceedings of the Entomological Society of Washington 98: 390–395. https://doi.org/10.3897/zookeys.434.7582

Coscarón S, Papavero N (2009) Catalogue of Neotropical Diptera. Tabanidae. Neotropical Diptera 16: 1–199.

Fabricius JC (1787) Mantissa insectorum sistens species nuper detectas. Hafniae [= Copenhagen]. 2, 382 pp.

Fabricius JC. (1798) Supplementum entomologiae systematicae. Hafniae [= Copenhagen], 572 pp.

Fairchild GB (1970) Tabanidae (Dipt.) récoltés en Guyane Française par la mission du Muséum National d’Histoire Naturelle. Annales de la Société Entomologique de France 6 (4): 839–847.

Fairchild GB (1976) Notes on Neotropical Tabanidae (Dipt.). – XVI. The Tabanus trivittatus complex. Studia Entomologica, São Paulo 19(1–4): 237–261.

Fairchild GB (1983) Notes on Neotropical Tabanidae (Diptera). XIX. The Tabanus lineola complex. Miscellaneous Publications of the Entomological Society of America 57: 1–50.

Fairchild GB (1984) Notes on Neotropical Tabanidae (Dipt.). XX. The larger species of Tabanus of eastern South America. Contributions of the American Entomological Institute 21(3): 1–50.

Fairchild GB (1985) Notes on Neotropical Tabanidae (Dipt.) XVIII. The genus Leucotabanus Lutz. Myia 3: 299–331.

Fairchild GB (1986) The Tabanidae of Panama. Contributions of the American Entomological Institute 22: 1–139.

Fairchild GB, Burger JF (1994) A catalog of the Tabanidae (Diptera) of the Americas south of the United States. Memoirs of the American Entomological Institute 55: 1–249.

Fairchild GB, Philip CB (1960) A revision of the Neotropical genus Dichelacera subgenus Dichelacera Macquart (Diptera, Tabanidae). Studia entomologica, São Paulo 3(1–4): 1–86.

Fairchild GB, Wilkerson RC (1986) A review of the Neotropical genus Stypommisa (Dipt.: Tabanidae). Contributions of the American Entomological Institute 22(5): 1–61.

Floch H (1955) Rapport sur le fonctionnement technique de l’Inst. Past. de la Guyane Française pour 1954,xxx, 320 pp.

Floch H, Fauran P (1955) Les Tabanides de la Guyane Française I. Considérations générales. Archives: de l’Institut Pasteur de la Guyane française 16(384): 1–8.

Frost SW (1951) Tabanidae attracted to light. Journal Series of the Pennsylvania Agricultural Experiment Station 1714: 124–125.

Gorayeb IS, Fairchild GB (1985) Tabanidae (Dipt.) da Amazônia. VI. Descrição de uma espécie e chave para o gênero Cryptotylus Lutz. Publicações Avulsas do Museu Paraense Emílio Goeldi 40: 101–111.

Gressitt JL, Gressitt MK (1962) An Improved Malaise Trap. Pacific Insects 4(1): 87–90.

Guitet S, Cornu JF, Brunaux O, Betbeder J, Carozza JM, Richard-Hansen C (2013) Landform and landscape mapping, French Guiana (South America). Journal of Maps 9(3): 325–335. https://doi.org/10.1080/17445647.2013.785371
Guitet S, Pélissier R, Brunaux O, Jaouen G, Sabatier D (2014) Geomorphological landscape features explain floristic patterns in French Guiana rainforest. Biodiversity and Conservation. https://doi.org/10.1007/s10531-014-0854-8

Henriques AL (1997) A coleção de Tabanidae (Insecta: Diptera) do Instituto Nacional de Pesquisas da Amazônia (INPA), Manaus, Amazonas, Brasil. Boletim do Museu Paraense Emílio Goeldi, série Zoologia 11(1): 57–99. [1995]

Henriques AL (2006) O gênero *Philipotabanus* Fairchild (Insecta: Tabanidae) na Amazônia, com chave para as fêmeas das espécies e descrição de *P. obidensis* sp. nov. Acta amazonica, Manaus 36(4): 549–556. https://doi.org/10.1590/s0044-59672006000400017

Henriques AL (2016) Tabanidae (Diptera) of the American Museum of Natural History Collection, Zootaxa 4137(2): 151–186. https://doi.org/10.11646/zootaxa.4137.2.1

Henriques AL, Gorayeb IS (1993) A coleção de Tabanidae (Insecta: Diptera) do Museu Paraense Emílio Goeldi (MEP), Belém, Pará, Brasil. Goeldiana Zoologia 20: 1–23.

Henriques AL, Gorayeb IS (1999) Tabanidae (Diptera) da Amazônia. XIII. Descrição de *Catachlorops* (*Psarochlorops*) *amazonicus* e *C. (Amphichlorops)* *mellosus* sp. n. Boletim do Museu paraense Emílio Goeldi, Zoologia, Belém 13(1): 11–19 ("1997").

Henriques AL, Rafael JA (1993) Revisão do gênero neotropical *Acanthocera* Macquart (Diptera, Tabanidae). Acta amazonica, Manaus 23(4): 403–440.

Henriques AL, Rafael JA (1999) Tabanidae (Diptera) from Parque Nacional do Jaú, Amazonas, Brazil, with description of two new species of *Diachlorus* Osten Sacken. Memoirs on Entomology International 14: 194–222.

Henriques AL, Krolow TK, Rafael JA (2010) Corrections and additions to Catalogue of Neotropical Diptera (Tabanidae) of Coscarón & Papavero (2009). Revista Brasileira de Entomologia 56: 277–280. https://doi.org/10.1590/S0085-56262012005000042

Kröber O (1930) Die Tabanidenuntergattung *Phaeotabanus* Lutz. Zoologischer Anzeiger 86: 273–300.

Kröber O (1934) Catalogo dos Tabanidae da America do Sul e Central, incluindo o Mexico e as Antilhas. Revista de Entomologia, Rio de Janeiro 4(2–3): 222–276, 291–333.

Krolow TK, Henriques AL (2010) Taxonomic revision of the New World genus *Chlorotabanus* Lutz, 1913 (Diptera: Tabanidae). Zootaxa 2656: 1–40.

Krolow TK, Henriques AL, Rafael JA (2010) Tabanidae (Diptera) no dossel da floresta amazônica atraídos por luz e descrição de machos de três espécies *Acta Amazonica* 40(3): 605–612. https://doi.org/10.1590/S0044-59672010000300022

Krolow TK, Henriques AL, Gorayeb IS, Limeira-de-Oliveira F, Buestán J (2015) Taxonomic revision of the Neotropical genus *Pityocera* Giglio-Tos, 1896 (Diptera: Tabanidae: Scioniini). Zootaxa 3904 (3): 301–333. https://doi.org/10.11646/zootaxa.3904.3.1

Macquart J (1838) Diptères exotiques nouveaux ou peu connus. Mémoires de la Société Royale des Sciences, de l’Agriculture et des Arts 2: 9–225 (Also sep. publ., as Vol. 1(l): 5-221, Paris, 1838).

Macquart J (1846) Diptères exotiques nouveaux ou peu connus. [Ier.] Supplément. Mémoires de la Société Royale des Sciences, de l’Agriculture et des Arts (1845) 1844: 133–364. (Also sep. Publ. as Supplément [I], pp. 5–238, Paris, 1846).
Macquart J (1847) Diptères exotiques nouveaux ou peu connus. 2e. supplément. Mémoires de la Société Royale des Sciences, de l’Agriculture et des Arts 1846: 21–120. (Also sep. publ. as Supplément II: 5–104, Paris, 1847).

Macquart J (1848) Diptères exotiques nouveaux ou peu connus. Suite de 2me. supplément [i.e., 3e. supplément]. Mémoires de la Société Royale des Sciences, de l’Agriculture et des Arts 1847 (2): 161–237. (Also sep. publ., as Supplément III: 1–77, Paris, 1848).

Pape T, Blagoderov V, Mostovski MB (2011) Order Diptera Linnaeus, 1758. In: Zhang Z-Q (Ed.) Animal biodiversity: An outline of higher-level classification and survey of taxonomic richness. Zootaxa 3148: 222–229. https://doi.org/10.11646/zootaxa.3703.1.6

Pascal O, Touroult J, Bouchet P (2015) Expédition “La Planète Revisitée” Guyane 2014–2015. Synthèse des premiers résultats. Muséum nationale d’Histoire naturelle; Pro-Natura International, 280 pp.

Philip CB (1982) Tabanidae (Diptera) attracted to artificial lights in California. Pan-Pacific Entomologist 58: 365–366.

Pollet M, Pascal O, Touroult J (2014) Flies from French Guiana: a unique opportunity. Fly Times 53: 3–6.

Pollet M, Touroult J, Pascal O (2015) Preliminary results of the Mitaraka expedition (French Guiana). Fly Times 55: 3–10.

Raymond HL (1986) Répartition des principales espèces de taons (Diptera, Tabanidae) de la zone côtière de Guyane Française. Cahiers ORSTOM, Entomologie Médicale et Parasitologie 24(3): 219–224.

Raymond HL (1987) Prémier inventaire quantitatif de Tabanidae (Diptera) du nord de la Guyane Française. The Revue d’élevage et médecine vétérinaire des pays tropicaux 40(1): 71–75.

Raymond HL, Frenay D, Rousseau F (1984) Etat d’avancement des recherches sur les Taons (Tabanidae, Diptera) de la région côtière de Guyane française. In: Prairies guyanaises et élevage bovin, Cayenne, INRAPub (Les Colloques de l’INRA) 24: 313–330.

Surcouf JMR (1921) Fam. Tabanidae. In: Wytsman P (Ed.) Genera Insectorum. 175, 1–182.

Türçatel M, Carvalho CJB de, Rafael JA (2010) A taxonomic revision of Stibasoma Schiner, 1867 (Diptera: Tabanidae). Zootaxa 2368: 1–39.

Wilkerson RC, Fairchild GB (1982) Five new species of Diachlorus (Diptera: Tabanidae) from South America, with a revised key to species and new locality records. The Proceedings of the Entomological Society of Washington 84(3): 636–650.
## Appendix 1

### Table 1A. See Legend of Table 1 for explanation of abbreviations for collecting methods.

| Sample id | Sample cd | Label |
|-----------|-----------|-------|
| 13882     | MITARAKA/002 | (FR-GU) Guyane Française, Mitaraka, MIT-DZ, 02°14’01.8”N, 54°27’01.0”W, 306 m, drop zone, 23.ii.2015, LT, leg. Julien Touroult (FR-GU/Mitaraka/2015) - sample code: MITARAKA/002 (sorted by Marc Pollet, 2015) |
| 13888     | MITARAKA/008 | (FR-GU) Guyane Française, Mitaraka, MIT-DZ, 02°14’01.8”N, 54°27’01.0”W, 306 m, drop zone, 25.ii.2015, LT, leg. Marc Pollet (FR-GU/Mitaraka/2015) - sample code: MITARAKA/008 (sorted by Marc Pollet, 2015) |
| 13909     | MITARAKA/029 | (FR-GU) Guyane Française, Mitaraka, MIT-DZ, 02°14’01.8”N, 54°27’01.0”W, 306 m, drop zone, 28.ii.2015, LT, leg. Marc Pollet (FR-GU/Mitaraka/2015) - sample code: MITARAKA/029 (sorted by Marc Pollet, 2015) |
| 13928     | MITARAKA/048 | (FR-GU) Guyane Française, Mitaraka, MIT-DZ, 02°14’01.8”N, 54°27’01.0”W, 306 m, drop zone, 2.iii.2015, LT, leg. Marc Pollet (FR-GU/Mitaraka/2015) - sample code: MITARAKA/048 (sorted by Marc Pollet, 2015) |
| 13954     | MITARAKA/074 | (FR-GU) Guyane Française, Mitaraka, MIT-A-RBF1, 02°14’11.4”N, 54°27’07.0”W, 306 m, on vegetation along muddy trail and in swamp, 6.iii.2015, SW, leg. Marc Pollet (FR-GU/Mitaraka/2015) - sample code: MITARAKA/074 (sorted by Marc Pollet, 2015) |
| 13966     | MITARAKA/086 | (FR-GU) Guyane Française, Mitaraka, MIT-DZ, 02°14’01.8”N, 54°27’01.0”W, 306 m, drop zone, 7.iii.2015, LT, leg. Marc Pollet (FR-GU/Mitaraka/2015) - sample code: MITARAKA/086 (sorted by Marc Pollet, 2015) |
| 13969     | MITARAKA/089 | (FR-GU) Guyane Française, Mitaraka, MIT-C-RBF2, 02°14’03.4”N, 54°26’53.0”W, 299 m, on leaf litter, muddy spots and vegetation along muddy trail, 8.iii.2015, SW, leg. Marc Pollet (FR-GU/Mitaraka/2015) - sample code: MITARAKA/089 (sorted by Marc Pollet, 2015) |
| 13980     | MITARAKA/100 | (FR-GU) Guyane Française, Mitaraka, MIT-DZ, 02°14’01.8”N, 54°27’01.0”W, 306 m, drop zone, 9.iii.2015, LT, leg. Marc Pollet (FR-GU/Mitaraka/2015) - sample code: MITARAKA/100 (sorted by Marc Pollet, 2015) |
| 13982     | MITARAKA/102 | (FR-GU) Guyane Française, Mitaraka, MIT-DZ, 02°14’01.8”N, 54°27’01.0”W, 306 m, drop zone, 9.iii.2015, LT, leg. Marc Pollet (FR-GU/Mitaraka/2015) - sample code: MITARAKA/102 (sorted by Marc Pollet, 2015) |
| 13984     | MITARAKA/104 | (FR-GU) Guyane Française, Mitaraka, MIT-C-RBF2, 02°14’03.4”N, 54°26’53.0”W, 299 m, on vegetation along muddy trail and in swamp, 10.iii.2015, SW, leg. Marc Pollet (FR-GU/Mitaraka/2015) - sample code: MITARAKA/104 (sorted by Marc Pollet, 2015) |
| 13995     | MITARAKA/115 | (FR-GU) Guyane Française, Mitaraka, MIT-DZ, 02°14’01.8”N, 54°27’01.0”W, 306 m, drop zone, 24.ii.2015-10.iii.2015, LT, leg. Julien Touroult (FR-GU/Mitaraka/2015) - sample code: MITARAKA/115 (sorted by Marc Pollet, 2015) |
| 14030     | MITARAKA/150 | (FR-GU) Guyane Française, Mitaraka, MIT-A-RBF1, 02°14’12.5”N, 54°27’08.1”W, 287 m, tropical wet forest (bas fond), 27.ii.2015-10.iii.2015, SLAM, leg. Marc Pollet (FR-GU/Mitaraka/2015) - sample code: MITARAKA/150 (sorted by Marc Pollet, 2015) |
| 14049     | MITARAKA/169 | (FR-GU) Guyane Française, Mitaraka, MIT-DZ1, 02°14’01.4”N, 54°27’00.2”W, 304 m, tropical moist forest (plateau-slope), 1.iii.2015-8.iii.2015, SLAM, leg. Marc Pollet (FR-GU/Mitaraka/2015) - sample code: MITARAKA/169 (sorted by Marc Pollet, 2015) |
| 14064     | MITARAKA/186 | (FR-GU) Guyane Française, Mitaraka, nr MIT-A-RBF1, river, 1.iii.2015-7.iii.2015, MT(6m), leg. Julien Touroult & Eddy Poirier (FR-GU/Mitaraka/2015) - sample code: MITARAKA/186 (sorted by Marc Pollet, 2015) |
| 14065     | MITARAKA/188 | (FR-GU) Guyane Française, Mitaraka, nr MIT-A-RBF1, river, 1.iii.2015, MT(6m), leg. Julien Touroult & Eddy Poirier (FR-GU/Mitaraka/2015) - sample code: MITARAKA/188 (sorted by Marc Pollet, 2015) |
| Sample id | Sample cd | Label |
|-----------|-----------|-------|
| 14066     | MITARAKA/189 | (FR-GU) Guyane Française, Mitaraka, nr MIT-A-RBF1, river, 25.iii.2015, MT(6m), leg. Julien Tournoult & Eddy Poirier (FR-GU/Mitaraka/2015) - sample code: MITARAKA/189 (sorted by Marc Pollet, 2015) |
| 14068     | MITARAKA/191 | (FR-GU) Guyane Française, Mitaraka, different sites nr base camp and along trails, tropical most forest (different sites), 14.iii.2015, SLAM, leg. Julien Tournoult & Eddy Poirier (FR-GU/Mitaraka/2015) - sample code: MITARAKA/191 (sorted by Marc Pollet, 2015) |
| 14069     | MITARAKA/192 | (FR-GU) Guyane Française, Mitaraka, different sites nr base camp and along trails, tropical most forest (different sites), 10.iii.2015-14.iii.2015, FIT, leg. Julien Tournoult & Eddy Poirier (FR-GU/Mitaraka/2015) - sample code: MITARAKA/192 (sorted by Marc Pollet, 2015) |
| 14072     | MITARAKA/195 | (FR-GU) Guyane Française, Mitaraka, different sites nr base camp and along trails, tropical most forest (different sites), 1.iii.2015-6.iii.2015, SLAM, leg. Julien Tournoult & Eddy Poirier (FR-GU/Mitaraka/2015) - sample code: MITARAKA/195 (sorted by Marc Pollet, 2015) |
| 14074     | MITARAKA/197 | (FR-GU) Guyane Française, Mitaraka, different sites nr base camp and along trails, tropical most forest (different sites), 20.iii.2015-25.iii.2015, FIT, leg. Julien Tournoult & Eddy Poirier (FR-GU/Mitaraka/2015) - sample code: MITARAKA/197 (sorted by Marc Pollet, 2015) |
| 14075     | MITARAKA/198 | (FR-GU) Guyane Française, Mitaraka, MIT-DZ, 02°14'01.8"N, 54°27'01.0"W, 306 m, tropical most forest (different sites) nr DZ, 6.iii.2015-10.iii.2015, FIT, leg. Julien Tournoult & Eddy Poirier (FR-GU/Mitaraka/2015) - sample code: MITARAKA/198 (sorted by Marc Pollet, 2015) |
| 14076     | MITARAKA/199 | (FR-GU) Guyane Française, Mitaraka, MIT-A-RBF2, 02°14'12.5"N, 54°27'08.1"W, 287 m, tropical wet forest (bas fond), 14.iii.2015-20.iii.2015, SLAM, leg. Julien Tournoult & Eddy Poirier (FR-GU/Mitaraka/2015) - sample code: MITARAKA/199 (sorted by Marc Pollet, 2015) |
| 14077     | MITARAKA/200 | (FR-GU) Guyane Française, Mitaraka, MIT-C-RBF2, 02°14'03.4"N, 54°26'53.0"W, 299 m, tropical wet forest (bas fond), 14.iii.2015-20.iii.2015, SLAM, leg. Julien Tournoult & Eddy Poirier (FR-GU/Mitaraka/2015) - sample code: MITARAKA/200 (sorted by Marc Pollet, 2015) |
| 14079     | MITARAKA/202 | (FR-GU) Guyane Française, Mitaraka, MIT-A-RBF2, 02°14'12.5"N, 54°27'08.1"W, 287 m, tropical wet forest (bas fond), 10.iii.2015-14.iii.2015, SLAM, leg. Julien Tournoult & Eddy Poirier (FR-GU/Mitaraka/2015) - sample code: MITARAKA/202 (sorted by Marc Pollet, 2015) |
| 14084     | MITARAKA/207 | (FR-GU) Guyane Française, Mitaraka, MIT-A-RBF2, 02°14'12.5"N, 54°27'08.1"W, 287 m, tropical wet forest (bas fond), 20.iii.2015-25.iii.2015, SLAM, leg. Julien Tournoult & Eddy Poirier (FR-GU/Mitaraka/2015) - sample code: MITARAKA/207 (sorted by Marc Pollet, 2015) |
| 14085     | MITARAKA/208 | (FR-GU) Guyane Française, Mitaraka, MIT-C-RBF2, 02°14'03.4"N, 54°26'53.0"W, 299 m, tropical wet forest (bas fond), 20.iii.2015-25.iii.2015, SLAM, leg. Julien Tournoult & Eddy Poirier (FR-GU/Mitaraka/2015) - sample code: MITARAKA/208 (sorted by Marc Pollet, 2015) |
| 14088     | MITARAKA/211 | (FR-GU) Guyane Française, Mitaraka, MIT-C-RBF2, 02°14'03.4"N, 54°26'53.0"W, 299 m, tropical wet forest (bas fond), 20.iii.2015-25.iii.2015, SLAM, leg. Julien Tournoult & Eddy Poirier (FR-GU/Mitaraka/2015) - sample code: MITARAKA/211 (sorted by Marc Pollet, 2015) |
| 14090     | MITARAKA/213 | (FR-GU) Guyane Française, Mitaraka, MIT-C-RBF2, 02°14'03.4"N, 54°26'53.0"W, 299 m, tropical wet forest (bas fond), 10.iii.2015-14.iii.2015, SLAM, leg. Julien Tournoult & Eddy Poirier (FR-GU/Mitaraka/2015) - sample code: MITARAKA/213 (sorted by Marc Pollet, 2015) |
| Sample id | Sample cd | Label |
|-----------|-----------|-------|
| 14094     | MITARAKA/218 | (FR-GU) Guyane Française, Mitaraka, MIT-DZ, 02°14'01.8"N, 54°27'01.0"W, 306 m, tropical moist forest (plateau-slope - cleared), 1.iii.2015, SLAM, leg. Julien Touroult & Eddy Poirier (FR-GU/Mitaraka/2015) - sample code: MITARAKA/218 (sorted by Marc Pollet, 2015) |
| 14095     | MITARAKA/219 | (FR-GU) Guyane Française, Mitaraka, MIT-DZ, 02°14'01.8"N, 54°27'01.0"W, 306 m, tropical moist forest (plateau-slope - cleared), 1.iii.2015, FIT, leg. Julien Touroult & Eddy Poirier (FR-GU/Mitaraka/2015) - sample code: MITARAKA/219 (sorted by Marc Pollet, 2015) |
| 14096     | MITARAKA/220 | (FR-GU) Guyane Française, Mitaraka, MIT-DZ, 02°14'01.8"N, 54°27'01.0"W, 306 m, tropical moist forest (plateau-slope - cleared), 6.iii.2015, FIT, leg. Julien Touroult & Eddy Poirier (FR-GU/Mitaraka/2015) - sample code: MITARAKA/220 (sorted by Marc Pollet, 2015) |
| 14098     | MITARAKA/222 | (FR-GU) Guyane Française, Mitaraka, different sites nr base camp and along trails, tropical moist forest (different sites), 10.iii.2015, PVP, leg. Julien Touroult & Eddy Poirier (FR-GU/Mitaraka/2015) - sample code: MITARAKA/222 (sorted by Marc Pollet, 2015) |
| 14100     | MITARAKA/224 | (FR-GU) Guyane Française, Mitaraka, different sites nr base camp and along trails, tropical moist forest (different sites ‘sous bois’), 7.iii.2015, FIT, leg. Julien Touroult & Eddy Poirier (FR-GU/Mitaraka/2015) - sample code: MITARAKA/224 (sorted by Marc Pollet, 2015) |
| 14103     | MITARAKA/227 | (FR-GU) Guyane Française, Mitaraka, different sites nr base camp and along trails, tropical moist forest (different sites), 3.iii.2015, PVB, leg. Julien Touroult & Eddy Poirier (FR-GU/Mitaraka/2015) - sample code: MITARAKA/227 (sorted by Marc Pollet, 2015) |
| 14304     | MITARAKA/229 | (FR-GU) Guyane Française, Mitaraka, different sites nr base camp and along trails, open / partially opened areas around base camp and drop zone, and in savane roche 2, 12.viii.2015-20.viii.2015, SLAM, leg. Pierre-Henri Dalens (FR-GU/Mitaraka/2015) - sample code: MITARAKA/229 (sorted by Marc Pollet, 2015) |