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A contribution to the Syrphidae (Diptera) fauna of Cameroon, with a preliminary checklist of the family

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ABSTRACT

This paper presents results of a study of the Syrphidae fauna of Cameroon, based largely on an expedition to that country conducted in May 2006. Sixty-three species of Syrphidae were collected during the Expedition, 49 of which are newly recorded for the country, including some undescribed species. A preliminary checklist of the Syrphidae of Cameroon is provided, indicating that the Cameroonian Syrphidae fauna now comprises 96 species in total.

KEY WORDS: Afrotropical, Cameroon, Diptera, Syrphidae, flower flies, checklist, fauna.

RÉSUMÉ

L'article présente les résultats d'une étude de la faune des Syrphidae du Cameroun, qui est basée sur une excursion dans ce pays, menée en Mai 2006. Soixante-trois espèces de Syrphidae ont été collectionnées pendant cette excursion, dont 49 qui sont nouvelles pour la faune du pays, quelques espèces inédites incluses. Une checkliste provisoire de la faune des Syrphidae du Cameroun est donnée avec 96 espèces au total.

MOTS CLÉS: Région afrotropicale, Cameroun, Diptera, syrphides, faune, liste de contrôle.

INTRODUCTION

The flower flies (Syrphidae) fauna of Cameroon has not been the subject of a dedicated study and remains poorly understood as a result. The little that is known is largely based on historical records, as summarised in Dirickx (1998), supplemented by a few additions in the genera *Syrphia* Le Peletier & Serville, 1828 (Lyneborg & Barkemeyer 2005), *Paragus* Latreille, 1804 (Kassebeer 1998, 2000) and some more recent publications (e.g., Ngamo *et al.* 2005).

An entomological expedition to Cameroon was undertaken from 2–26 May 2006, with sampling conducted in the south-western region around Limbe and Kumba (Mount Cameroon area); in the south, in the coastal region around Kribi; in Adamoua Province around Ngaoundéré; and in the North Province, in the vicinity of Poli (Fig. 1; Appendix I) (Ssymank *et al.* 2011). This contribution provides results of the collecting effort.

The article is also dedicated to the late Brian Roy Stuckenberg (1930–2009). Brian's interest in the Diptera began with his Master's thesis, for which he revised Afrotropical species of the syrphid genus *Paragus* (Stuckenberg 1954a, b), describing six new species and one new subspecies. The standard of Brian's work remains an inspiration for future generations of entomologists.

MATERIAL AND METHODS

Field sampling for Syrphidae in Cameroon was conducted from 5–25 May 2006, usually following standardised field protocols of at least half an hour of observation time in smaller habitats of 100 m², sometimes up to 200 m² for regular habitats, and at least 15 min for linear habitats on transects of 10 m, up to a maximum of 100 m. Observation time, weather conditions, habitat type, and as far as possible, the names of flowering plants were recorded. Details of the protocol adopted are outlined in Ssymank (1999).

<http://www.africaninvertebrates.org.za>

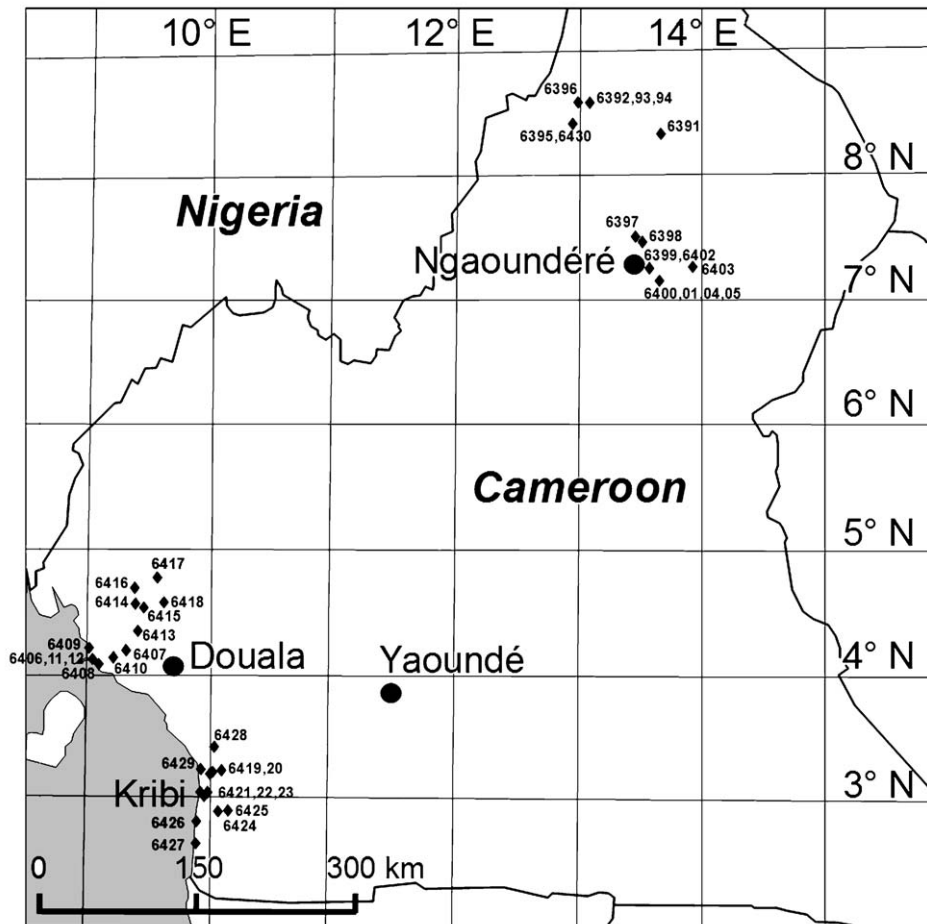


Fig. 1. Localities sampled during the Cameroon Expedition (2–26 May 2006). For detailed information and descriptions of localities see Appendix I.

During some field excursions additional individuals were counted, or activities of some syrphids, especially flower-visiting, recorded without voucher specimens being retained, if their identification was not in doubt, although at least one voucher specimens of each species from each locality is retained in the author's collection. As syrphid densities were often low and individuals widely dispersed, sampling was often conducted at a number of different sampling stations during the same excursion.

Sampling coordinates and dates (Appendix I), were captured with a Garmin 45 GPS device. Geographical coordinates are provided in the World Geodetic System 1984, in degrees, minutes and seconds; the numbers of localities refer to the author's database (available upon request). "CAM" numbers refer to Ssymank *et al.* (2011). Details of plot size, sampling time, sunshine conditions, percentage cloud cover and wind conditions are further provided. If "excursion" is indicated this implies sampling along a track, trail or roadside margin of >500 m in length. Plot sizes are either sampling areas given in square metres, or the length of linear transects in metres. Temperature was not measured

regularly, but it usually exceeded 35 °C on cloudless days at noon, sometimes reaching 41 °C in the shade.

Determinations were done using all available keys, as listed by Whittington (2003), especially Bezzi (1915), Curran (1938*a, b*, 1939*a, b*), Lyneborg and Barkemeyer (2005) for *Syritta* and Stuckenberg (1954*a, b*) for *Paragus*. Original descriptions were consulted and museum material was studied, both to ensure correct identification and to exclude species for which description was inadequate. The studied type material of Syrphidae is kept in the following institutions: Natural History Museum, London, UK (BMNH); Naturhistorisches Museum, Basel, Switzerland (NHMB); Muséum national d'Histoire naturelle, Paris, France (MNHN), Musée Royal de l'Afrique Centrale, Tervuren, Belgium (MRAC).

RESULTS

A preliminary checklist of the flower flies of Cameroon is presented in Appendix II. Most historic records had been summarised in the catalogue by Dirickx (1998) and these, together with additional records in Kassebeer (1998, 2000), Lyneborg and Barkemeyer (2005) and Wakkie (2011), indicated that a total of 47 species was known from Cameroon prior to the onset of this study.

During a 3.5-week period of intensive sampling, over 40 localities were visited, 36 of which yielded Syrphidae (Appendix I). In total, 881 syrphids were collected or observed during that period, representing 63 species altogether (Table 1, Figs 2–7).

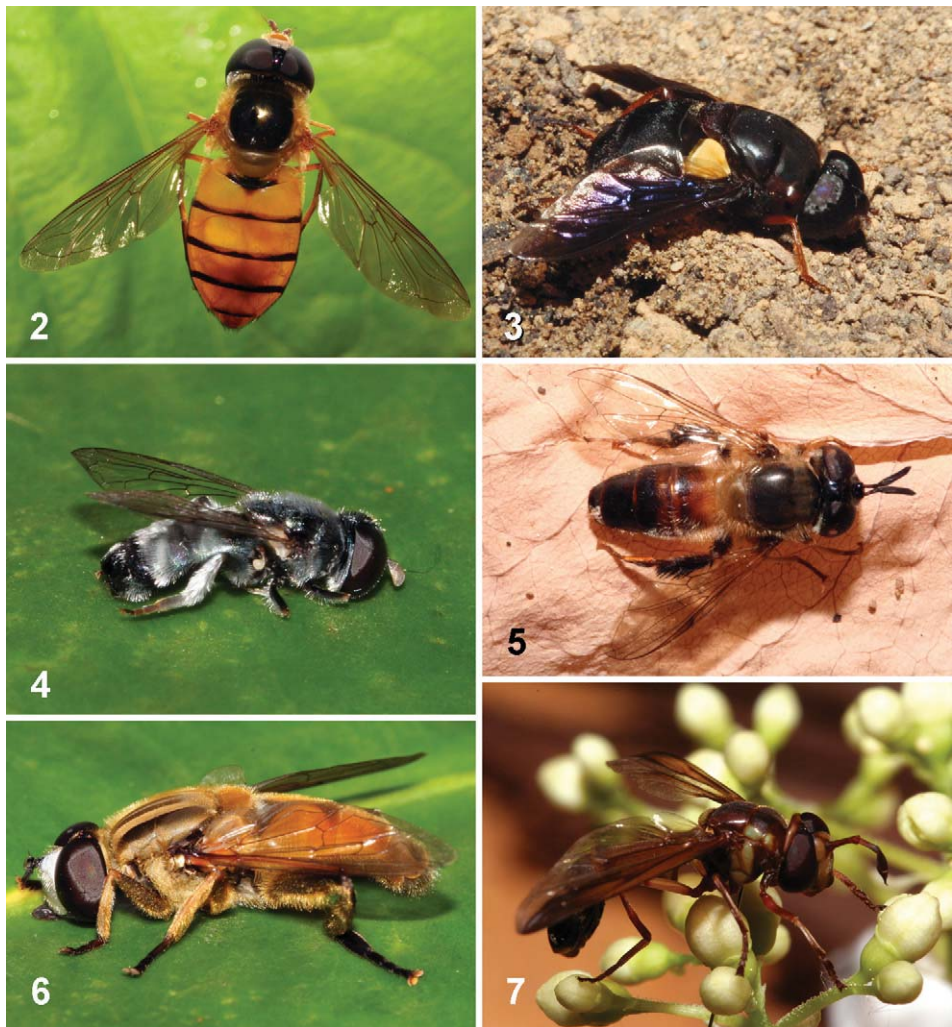
The preliminary checklist includes 96 species, 63 of which were recorded during the 2006 Expedition, 49 being new records to the fauna of Cameroon. This indicates that Cameroon may host more syrphid species than it is currently recorded.

Of 96 listed species, 86 have been assigned to known specific names. Sixteen species (17%) were originally described from Cameroon. Many of these species are still only known from a single male or female type specimen and have not been recorded since their original discovery.

DISCUSSION

The Syrphidae fauna of the Afrotropical Region as a whole remains poorly known, Cameroon being no exception. In the most recent estimation, Kirk-Spriggs and Stuckenberg (2009: 186) concluded that 30% of Syrphidae species occurring in the Afrotropical Region remain undescribed.

Since the publication of Dirickx's (1998) catalogue of the Syrphidae of the Afrotropical Region, a critical assessment of the Afrotropical Syrphidae has been published by Whittington (2003), in which he concluded that for many genera the majority of available keys probably cover only 30–60% of species occurring in the region. He further pointed out that at least nine genera of Syrphidae are in need of complete taxonomic revision. Since Dirickx's (1998) catalogue some genera have been revised, however, at least in part, *viz.* *Graptomyza* Wiedemann, 1820 (Whittington 1992, 1994), *Melanostoma* Schiner, 1860 (Dirickx 2001), *Allobaccha* Curran, 1928 (Dirickx 2010) and *Paragus* Latreille, 1804 (*e.g.*, Kassebeer 1998, 1999*a, b*, 2000, 2001). A full revision of the genus *Syritta* by Lyneborg and Barkemeyer (2005) listed 41 Afrotropical species, and included the description of 26 new species. Only one additional species has been added subsequently, *i.e.*, *Syritta lyneborgi* (Steenis 2010). Thus, species of *Syritta* are readily



Figs 2–7. Habitus photographs of Syrphidae from Cameroon: (2) *Asarkina africana* (♀, Bissiang, Kribi, locality 6419); (3) *Senaspis dibapha* (Kin dongi Camp, Kumba, locality 6415); (4) *Eumerus paulae* (Nkólong, Akom, locality 6424); (5) *Afrosyrphus varipes* (♀, Ranch de Ngaoundaba, Ngaoundéré, locality 6405); (6) *Mesembrius capensis* (♂, waterfall, Lobe River, Kribi, locality 6422); (7) *Ceriana* (*Monoceromyia*) *pulchra* (Ranch de Ngaoundaba, Ngaoundéré, locality 6405). © A. Ssymank.

identifiable thanks to this revision, with one female representing an undescribed species (*Syritta* sp. in Table 1).

Species identification remains problematic in some genera, with some species, e.g., *Paragus borbonicus* Macquart, possibly representing complexes of sibling species. Specimens that could not be reliably determined are indicated as ‘cf.’ or ‘aff.’.

Records of the genus *Paragus* comprise about 44% of the total number of Syrphidae sampled during the Cameroon Expedition 2006. Preparation of the male terminalia is essential for determination, and numerous historical museum specimens awaiting detailed study. Many African species are still only known from a single type specimen

or type locality. This is partly due to rapidly depleting primary habitats, such as forest and natural wetlands, or to poor sampling in the Afrotropical Region in general. Identification of *Paragus* certainly poses one of the greatest challenges, due to the large number of species described by Kassebeer (1998, 1999*a, b*, 2000, 2001) and to the fact that type specimens are currently unavailable for study. Another problem is the morphological variability, which is especially apparent in the “*longiventris*-group” of the subgenus *Pandasyopthalmus* (e.g., Vujic *et al.* 2008). The revision and keys provided by Stuckenberg (1954*a, b*) therefore remain the only comprehensive works on the genus. Some species of *Paragus* can be easily separated, *i.e.*, in the subgenera *Serratorparagus* Vujic & Radenkovic, 2008 and *Afroparagus* Vujic & Radenkovic, 2008, but only a few species of the remaining subgenus, *Pandasyopthalmus* Stuckenberg, 1954, e.g., *P. minutus* Hull and *P. dolichocerus* Bezzi, have distinct and easily discernable morphological characters. Cameroonian material of *P. aff. minutus* differs slightly as compared to the BMNH material in having the bases of the femora darker, and these specimens may represent a closely related new species. There is a degree of the intra-specific variation in the terminalia of material assigned to *P. longiventris*, still they are entirely different in some specimens and best fit the descriptions and illustrations of *P. boyesi* Kassebeer, 1999, known only from Madagascar. As the types of the latter could not be studied and a longer series is unavailable, the specimens on hand may equally represent a yet undescribed closely related new species from the Afrotropical mainland.

While males of *Asarkina angustata* Becker could be reliably identified, some females could not and are labelled as *A. cf. angustata*. One female is labelled *Allobaccha aff. brevis* (Karsch), as its characters differ slightly and no sufficient material is available to assess variability. A single specimen, labelled *Ceriana (Monoceromyia) aff. neavei* (Bezzi), has been compared to the type material, but found to be slightly different, indicating that it may represent a closely-related new species, which description is premature because of insufficient material available.

The genus *Eristalinus* Rondani, 1845 is in desperate need of revision and no key enabling reliable determinations is currently available. Both *E. cf. vicarians* (Bezzi) and *E. cf. xanthopus* (Bezzi) are only represented by a single female specimen each, and cannot be identified with certainty.

L. Lyneborg’s unpublished revision of *Eumerus* Meigen, 1822, the largest Afrotropical genus, includes descriptions of many new species, but his key does also facilitate identification of the described species. *Eumerus cf. serratus* Bezzi and *E. cf. capensis* (Curran) (Appendix II) are only represented by females and their true identity remains uncertain.

Melanostoma cf. infuscatum Becker is represented by a single female in poor condition and its determination is not unequivocal.

Dedicated studies of the Syrphidae fauna have not been conducted in countries around Cameroon, and no reliable checklists have been published. Wakkie (2011), however, records three species from in the Central African Republic, three species in Chad, five species in the Democratic Republic of the Congo, 17 species in Gabon, and 82 species in Nigeria. The source and voucher material of the Cameroonian species reported exclusively by Wakkie (2011) (see Appendix II) could not be traced and the identity of the four species remains unconfirmed. No species are listed for Equatorial Guinea

by Wakkie (2011), although several are listed by Dirickx (1998). Nigeria is the best studied neighbouring country and is comparable to Cameroon in terms of the habitat diversity; although 43 species recorded from Nigeria are unknown from Cameroon, but most of these may occur there. Typical examples will include widespread West African species of *Eristalinus*, *Eumerus*, *Microdon* Meigen, 1803, *Mesembrius* Rondani, 1857, *Rhingia* Scopoli, 1763, *Phytomia* Guérin-Méneville, 1834 and *Syrirta*, as well as species described from localities close to Cameroon, e.g., *Milesia prolixa* Hippa, 1990. Montane *Chasmodon* species may also occur in Cameroon. Based on figures for surrounding countries, it can be estimated that at least 130 species occur in Cameroon.

The majority of previous ('historical') records from Cameroon could not be confirmed during this survey due to several factors: (1) many such records were based on single specimens, and if a species is very rare then the total recorded number of Syrphidae may be too low to allow for its re-collection; (2) the present survey did not specifically target 'historical' localities and local endemics are expected to be excluded from the record; (3) it was impossible to undertake a survey at higher elevations in Cameroon's mountainous regions at this time; (4) some Syrphidae species may be seasonally abundant and were not active during the period of sampling; (5) Cameroon had been subjected to land use change and rapidly diminishing primary forests cover (e.g., Mbatu 2011), which in turn reduced the diversity of flower flies. Thus, it has been impossible to assess the conservation status of the Syrphidae in Cameroon in its entirety.

Syrphids are important pollinators of both wild plants and cultivated crops, still very few studies have been conducted in the Afrotropical Region, aside from the *African Pollinators Initiative*, the *Biota Africa* project and its successor. A major proportion of syrphid species are aphidophagous at larval stage and, therefore, are of great importance in biological control of plant pests. The genera *Allobaccha*, *Allograpta* Osten Sacken, 1875, *Asarkina* Macquart, 1842, *Betasyrphus* Matsumura in Matsumura & Adachi, 1917, *Episyrphus* Matsumura in Matsumura & Adachi, 1917, *Melanostoma*, *Paragus* and *Syrirta* appear to be the main players in this field.

F.Ch. Thompson (pers. comm.) is currently preparing a catalogue and bibliography of Afrotropical flower flies, and the forthcoming *Manual of Afrotropical Diptera* (<http://afrotropicalmanual.net>) will include a generic key to Syrphidae of the region. This will largely improve the situation and encourage more entomologists to work on this family. However, many genera still require urgent revisionary work before reliable keys for species will become available.

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TABLE 1

Syrphidae (Diptera) recorded during the Cameroon Expedition (2–26 May 2006). Notes: * – only observed in the field, no voucher specimen retained; ** – *Asarkina angustata* 1♂ and several ♀ cf. *angustata*; *** – *Allobaccha* sp. includes 2♀, possibly of two species that could not be associated with ♂; † = *Syrpitta* sp. n. (1♀).

Locality No.	6391	6392	6393	6394	6396	6397	6398	6399	6400	6401	6402	6404	6405	6406	6407	6408	6409	6410	6411	6412	6413	6414	6415	6416	6417	6418	6419	6420	6421	6422	6423	6424	6426	6427	6428	6429	Sum	You	Loc
<i>Afrosyrphus varipes</i> Curran, 1927	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	1	
<i>Allograpta</i> sp. *	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1		
<i>Allograpta nasuta</i> (Macquart, 1842)	-	-	-	-	22	-	-	-	-	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	30	20	4		
<i>Asarkina</i> sp. *	-	-	-	-	-	-	-	-	-	-	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	1	1		
<i>Asarkina africana</i> Bezzi, 1908	-	-	-	-	-	-	-	10	-	-	6	1	-	-	-	-	-	-	-	-	-	-	8	-	8	-	2	-	4	39	1	-	-	-	20	-	91	42	9
<i>Asarkina angustata</i> Becker, 1909 **	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	5	5	3	
<i>Asarkina albifacies</i> Bezzi, 1915	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	3	2	
<i>Asarkina ericetorum</i> (Fabricius, 1781)	-	-	-	-	-	-	-	-	-	-	4	-	-	1	-	-	6	-	1	-	-	-	-	-	-	-	4	-	3	-	-	-	-	-	-	19	19	6	
<i>Asarkina geminata</i> Bezzi, 1915	-	-	-	-	-	-	-	-	1	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	6	2		
<i>Asarkina minor</i> Bezzi, 1915	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1		
<i>Allobaccha brevis</i> (Karsch, 1887)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	8	1		
<i>Allobaccha chalybea</i> (Hull, 1964)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	1	
<i>Allobaccha</i> sp. ***	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2		
<i>Allobaccha eclara</i> (Curran, 1938)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	2	
<i>Allobaccha</i> aff. <i>picta</i> (Wiedemann, 1830)	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2		
<i>Allobaccha sapphirina</i> (Wiedemann, 1830)	1	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	2		
<i>Betasyrphus adligatus</i> (Wiedemann, 1824)	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1		

TABLE 1 (continued)

Locality No.	6391	6392	6393	6394	6396	6397	6398	6399	6400	6401	6402	6404	6405	6406	6407	6408	6409	6410	6411	6412	6413	6414	6415	6416	6417	6418	6419	6420	6421	6422	6423	6424	6426	6427	6428	6429	Sum	Vol	Loc	
<i>Ceriana congolensis</i> (Bezzi, 1908)	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1		
<i>Ceriana</i> aff. <i>neavei</i> (Bezzi, 1915)	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	
<i>Ceriana pulchra</i> (Hervé-Bazin, 1913)	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	
<i>Eristalinus cacops</i> (Hull, 1964)	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	1	1	
<i>Eristalinus euzonus</i> var. <i>andersoni</i> (Bezzi, 1915)	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	
<i>Eristalinus flaveolus</i> (Bigot, 1880)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1		
<i>Eristalinus mendax</i> (Curran, 1927)	-	2	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	4	4	
<i>Eristalinus quinqueflineatus</i> (Fabricius, 1781)	-	3	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	2	2	
<i>Eristalinus sarcoffi</i> (Hervé-Bazin, 1914)	-	1	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	9	4	4		
<i>Eristalinus</i> cf. <i>vicarians</i> (Bezzi, 1915)	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	1	1		
<i>Eristalinus</i> cf. <i>xanthopus</i> (Bezzi, 1915)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	4	1	1		
<i>Episyrphus trisectus</i> (Loew, 1858)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	12	12	2	2	
<i>Eumerus</i> cf. <i>serratus</i> Bezzi, 1915	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	
<i>Eumerus</i> cf. <i>capensis</i> (Curran, 1938)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	1	1	1	
<i>Eumerus aurifrons</i> (Wiedemann, 1824)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	3	-	-	-	-	-	5	4	2	2	
<i>Eumerus bequaerti</i> Hervé-Bazin, 1913	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1
<i>Eumerus</i> <i>jeae</i> Bezzi, 1912	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	13	-	-	-	-	-	-	-	-	-	-	-	-	21	5	3	3	

TABLE 1 (continued)

Locality No.	6391	6392	6393	6394	6396	6397	6398	6399	6400	6401	6402	6404	6405	6406	6407	6408	6409	6410	6411	6412	6413	6414	6415	6416	6417	6418	6419	6420	6421	6422	6423	6424	6426	6427	6428	6429	Sum	Vou	Loc	
<i>Eumerus maculipennis</i> Bezzi, 1915	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	
<i>Eumerus obliquus</i> (Fabricius, 1805)	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	2	5	-	-	11	-	-	-	-	1	-	-	-	-	-	22	22	5	
<i>Eumerus aff. obliquus</i> (Fabricius, 1805)	-	-	4	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	1	7	1	-	13	-	-	-	-	1	-	-	-	-	-	-	36	29	8
<i>Eumerus paulae</i> Herve-Bazm, 1913	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	2	1	-	-	1	-	-	-	4	1	2	-	-	-	-	-	18	18	9
<i>Eumerus vestitus</i> Bezzi, 1915	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	1	
<i>Graptomyza triangulifera</i> (Bigot, 1883)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	
<i>Ischiodon aegyptius</i> (Wiedemann, 1830)	-	-	-	-	5	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	9	9	5	
<i>Mesembrinus capensis</i> (Macquart, 1842)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1	-	-	-	-	-	4	4	2	
<i>Mesembrinus minor</i> (Bezzi, 1915)	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2	1	-	-	-	-	6	6	5		
<i>Mesembrinus strigilatus</i> (Bezzi, 1912)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2		
<i>Melanostoma annulipes</i> (Macquart, 1842)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	2	
<i>Melanostoma cf. infusca-</i> <i>tum</i> Becker, 1909	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	
<i>Ornidia obesa</i> (Fabricius, 1775)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	7	7	2	
<i>Paragus borbonicus</i> Macquart, 1842	-	-	-	-	-	1	-	-	6	1	-	1	12	3	15	1	2	5	4	3	3	18	32	35	4	26	4	6	-	21	2	11	1	1	3	11	3	234	147	27
<i>Paragus cf. boyesi</i> Kassebeer, 1999	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2	-	-	-	-	-	4	4	3		
<i>Paragus capricorni</i> Stuckenberg, 1954	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	6	6	2		
<i>Paragus dolichoeris</i> Bezzi, 1915	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	2		

TABLE 1 (continued)

Locality No.	6391	6392	6393	6394	6396	6397	6398	6399	6400	6401	6402	6404	6405	6406	6407	6408	6409	6410	6411	6412	6413	6414	6415	6416	6417	6418	6419	6420	6421	6422	6423	6424	6426	6427	6428	6429	Sum	Vol	Loc	
<i>Paragus longivenis</i> Loew, 1858	-	-	-	-	-	2	-	-	-	-	-	16	7	5	-	-	-	10	3	2	1	8	20	12	2	10	1	1	-	4	3	1	-	1	-	-	109	62	19	
<i>Paragus</i> aff. <i>minutus</i> Hull, 1938	-	-	-	-	-	-	-	-	-	-	-	5	2	-	-	-	-	2	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12	5	
<i>Senaspis dentipes</i> (Macquart, 1842)	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	10	4	
<i>Senaspis dibaphus</i> (Walker, 1849)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	9	2	
<i>Syritta</i> sp. †	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1		
<i>Syritta ansteni</i> Bezzi, 1915	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	1		
<i>Syritta bulbis</i> Walker, 1849	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	2		
<i>Syritta congoensis</i> Lyneborg & Barkemeyer, 2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2		
<i>Syritta leucopleura</i> Bigot, 1859	-	1	4	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	4	3		
<i>Syritta leona</i> Lyneborg & Barkemeyer, 2005	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	6	6	5		
<i>Syritta longiseta</i> Lyneborg & Barkemeyer, 2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	1		
<i>Syritta minuta</i> Lyneborg & Barkemeyer, 2005	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1		
<i>Syritta similis</i> Lyneborg & Barkemeyer, 2005	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1		
Sum	1	1	19	2	4	41	3	1	17	2	3	75	68	28	25	1	3	40	12	11	18	38	122	61	6	66	11	7	8	105	17	16	1	11	33	4	881	570		
Count	1	1	8	2	3	5	3	1	3	2	2	11	18	5	6	1	2	9	7	7	8	8	9	9	2	9	4	2	3	19	12	5	1	5	4	2	64			
Number of species, corrected	1	1	8	2	3	5	2	1	3	2	2	10	17	5	6	1	2	9	7	7	8	7	8	9	2	8	4	2	3	19	12	5	1	5	4	2	63			

Appendix I. Collecting localities (stations) from the Cameroon Expedition (2–26 May 2006). Abbreviations: Dép. – Department; Prov. – Province.

- No. 6391 (CAM01): Guidjiba, N Mbe, close to Bénoué N.P., almost dry temporary river (Mayo Sala) with adjacent bush savanna, grazed by Zebu-cattle; Prov. Nord; Dép. Mayo-Rey; 08°20'58"N 13°41'29"E; 348–360 m a.s.l.; 5.v.2006 (excursion *ca* 12:30, full sun, 0% clouds, wind 0).
- No. 6392: Gombo Village, SW Poli, Vallée des Rôniers, small seeping source at the village, bush savanna, Zebu-grazed, just at the beginning of leaf emergence; Prov. Nord, Dép. Faro; 08°30'32"N 13°07'16"E; 505 m a.s.l.; 6.v.2006 (10 m², 09:30–11.00, full sun, 0% clouds, wind 0).
- No. 6393 (CAM04): Gombo Village, SW Poli, Vallée des Rôniers, source of the river Mayo Zapsuré, eutrophic limnocrene with in addition 2–3 remnant water-filled holes in the otherwise dry riverbed; Prov. Nord, Dép. Faro; 08°29'57"N 13°06'52"E; 455 m a.s.l.; 6.v.2006 (10 m², 11:45–12:00, diffuse light, partly shaded, 0% clouds, wind 0), again visited on 7.v.2006 (No. 6393a, 10 m², 16:00–17:00, diffuse light, 30% clouds, wind 0–1).
- No. 6394: Gombo Village, SW Poli, Vallée des Rôniers, small remnant water filled holes in the otherwise dry riverbed of the Mayo Zapsuré, small remnant of alluvial forest, single flowers of *Scadoxus multiflorus*; Prov. Nord, Dép. Faro; 08°29'50"N 13°06'29"E; 450 m a.s.l.; 6.v.2006 (10 m², 12:00–12:15, full sun, 0% clouds, wind 0–1).
- No. 6396 (CAM09): Ouro-Bai village, Mayo Bai west of Poli (on the way to Campo des Hippopotames), sandy riverbed with drinking places for donkeys and Zebus, grazed and therefore riverside partly dominated by grasses; Prov. Nord, Dép. Faro; 08°29'18"N 13°02'14"E; 340 m a.s.l.; 7.v.2006 (100 m², 11:00–11:30, diffuse light, clouds 0%, wind 0).
- No. 6397 (CAM12): Lake "Lac de Bini", northwest of Ngaoundéré, eutrophic shallow lake with a few single bushes along its shore, Zebu-droppings and decaying fruit on the banks; Prov. Adamaoua, Dép. Vina; 07°25'38"N 13°29'45"E; 1085 m a.s.l.; 9.v.2006 (100 m, 10:30–12:00, full sun, 60% clouds, wind 0).
- No. 6398 (CAM13): University Lake of Ngaoundéré, Campus of the University of Ngaoundéré, on the banks of the lake with sedge beds, adjacent a cornfield with scattered banana plants; Prov. Adamaoua, Dép. Vina; 07°25'22"N 13°32'39"E; 1080 m a.s.l.; 9.v.2006 (100 m, 12:30–13:30, partly shady, 70% clouds, wind 0–2).
- No. 6399 (CAM14): Waterfall of the Mayo Vina (Chutes de la Vina), between Wakwa and Dibi, SW of Ngaoundéré, not far from the bridge of the street, steep river bank with bushes, adjacent abandoned crops; Prov. Adamaoua, Dép. Vina; 07°12'36"N 13°35'10"E; 1060 m a.s.l.; 9.v.2006 (excursion 15:30–16:00, partly in the shade).
- No. 6400 (CAM17): Ranch de Ngaoundaba, south of Dibi, SE of Ngaoundéré, crater-lake with abundant bush and herb vegetation in the small swamp (*Impatiens* spp., *Tradescantia* spp. etc.); Prov. Adamaoua, Dép. Vina; 07°07'57"N 13°41'40"E; 1155 m a.s.l.; 10.v.2006 (100 m², 10:00–10:30, full sun, 0% clouds, wind 0–1).
- No. 6401: Ranch de Ngaoundaba, south of Dibi, SE of Ngaoundéré, trail along the banks round the crater lake, excursion around the lake; Prov. Adamaoua, Dép. Vina; 07°07'57"N 13°41'40"E; 1155 m a.s.l.; 12.v.2006 (excursion 14:00–16:00, partly shady, 60% clouds, wind 0–2).
- No. 6402: Lake "Lac de Tizon", SE of Ngaoundéré, hut on the rim of the crater, about 2 m deep hole dug in the ground for waste, mainly filled with decaying mango fruit on the bottom, several flies hovering in the shade; Prov. Adamaoua, Dép. Vina; 07°15'17"N 13°34'35"E; 1200 m a.s.l.; 10.v.2006 (1 m², 13:00–13:15, full sun, 10% clouds, wind 0–2).
- No. 6404: Ranch de Ngaoundaba, S of Dibi, SE of Ngaoundéré, grassland around the huts of the ranch, and trail round the crater lake; Prov. Adamaoua, Dép. Vina; 07°08'01"N 13°41'45"E; 1195 m a.s.l.; 11.v.2006 (excursion 09:00–10:30, mostly shade, 95% clouds, wind 1–3).
- No. 6405: Ranch de Ngaoundaba, S of Dibi, SE of Ngaoundéré, Chemin des Crêtes, trail along the crater rim/hill top of the rim, single flowering tree (*Phyllanthus discoideus*, Euphorbiaceae) on a hill top; Prov. Adamaoua, Dép. Vina; 07°07'46"N 13°41'44"E; 1265 m a.s.l.; 11.v.2006 (10 m², 17:15–17:30, last evening sun, slight mist, wind 1–2), revisited on 12.v.2006 (10 m², 10:00–12:00, full sun, 60% clouds, wind 1–4).
- No. 6406 (CAM25): Bakingili, 5 km NW of Limbe, Seme New Beach Hotel, garden of the hotel on ornamental plants; Prov. Sud-Ouest, Dép. Fako; 04°03'23"N 09°03'09"E; 5–10 m a.s.l.; 13.v.2006 (10 m², 10:00–10:30, diffuse light, 100% clouds, wind 0–1) revisited on 14.v. (10 m², 08:00–08:50, shady, 100% clouds, wind 0–1), 15.v. (single observation, *ca.* 09:00) and 16.v.2006 (100 m, 09:15–09:45, shady, 100% clouds, wind 0–1).
- No. 6407 (CAM23): Liongo-Muea (between Buea and Kumba), banana plantation, humid ruderal vegetation along a small river over volcanic lava; Prov. Sud-Ouest, Dép. Fako; 04°11'43"N 09°19'31"E; 470–475 m a.s.l.; 14.v.2006 (100 m², 13:00–14:00, shady, clouds 100%, wind 0–1).

- No. 6408 (CAM24): Idenau near Limbe, small brook with wild Guinea Yam (*Dioscorea* sp.) and adjacent corn and manioc fields on a small hill; Prov. Sud-Ouest, Dép. Fako; 04°02'23"N 09°05'40"E; 60 m a.s.l.; 14.v.2006 (excursion 17:30–17:45, diffuse light, 100% clouds, wind 0–1).
- No. 6409 (CAM26): Idenau near Limbe, SE of Debundscha; tall herb vegetation along the banks of a small river passing through oil palm plantations with abundant epiphytic ferns; Prov. Sud-Ouest, Dép. Fako; 04°10'39"N 09°00'01"E; 8 m a.s.l.; 15.v.2006 (100 m², 10:30–11:00, rain, 100% clouds, wind 0–2).
- No. 6410 (CAM27): Mt Cameroon, NW of Buea, mountain rainforest of the lower mountain zone with interspersed small cultures of Guinea Yam, manioc, corn and bananas; Prov. Sud-Ouest, Dép. Fako; 04°07'50"N 09°12'47"E; 990–1070 m a.s.l.; 15.v.2006 (excursion 13:00–15:00, drizzle, 100% clouds, wind 0–1).
- No. 6411: Bakingili, 5 km NW of Limbe, harvested cornfield above the Seme New Beach Hotel on the border of the rainforest; Prov. Sud-Ouest, Dép. Fako; 04°03'45"N 09°03'17"E; 70 m a.s.l.; 16.v.2006 (100 m², 11:30–12:00, shady, 100% clouds, wind 0).
- No. 6412: Bakingili, 5 km NW of Limbe, roadside margins on the road close to the Seme New Beach Hotel and hotel surroundings; Prov. Sud-Ouest, Dép. Fako; 04°03'23"N 09°03'09"E; 5–15 m a.s.l.; 16.v.2006 (excursion 09:30–12:00, diffuse light, 100% clouds, wind 0–1).
- No. 6413 (CAM29): Malende Mukuya (S of Kumba), cocoa-plantation with a small brook, a few white flowers of lianas; Prov. Sud-Ouest, Dép. Fako; 04°21'25"N 09°25'58"E; 30–55 m a.s.l.; 17.v.2006 (10 m², shady, 90% clouds, wind 0, very sticky).
- No. 6414 (CAM30): On the way from Balangi to Ediki, SW of Kumba, river bank of a fast-flowing stream, remnants of secondary semi-natural rainforest, adjacent corn and melon crops; Prov. Sud-Ouest, Dép. Meme; 04°30'32"N 09°27'40"E; 35–50 m a.s.l.; 17.v.2006 (100 m, 14:00–14:30, partly shady, 60% clouds, wind 0).
- No. 6415 (CAM31): Kindongi Camp, Ediki, SW of Kumba, secondary rainforest with closed canopy, small clearing with a wooden hut and melon culture; Prov. Sud-Ouest, Dép. Meme; 04°32'25"N 09°25'17"E; 120–137 m a.s.l.; 18.v.2006 (100 m², 10:30–12:00, partly shady, 10% clouds, wind 0–2).
- No. 6416 (CAM32): Lake Barombi Mbo, NW of Kumba, shores of the crater lake, steep crater sides with rainforest; Prov. Sud-Ouest, Dép. Meme; 04°39'05"N 09°24'34"E; 303–340 m a.s.l.; 18.v.2006 (excursion 14:00–15:00, partly shady, 80% clouds, wind 0).
- No. 6417: River Mongo, margin of a cornfield close to the road bridge (road Kumba to Doula); Prov. Sud-Ouest; 04°44'05"N 09°34'08"E; 140 m a.s.l.; 19.v.2006 (excursion 08:15–08:45, full sun, 20% clouds, wind 0–2).
- No. 6418 (CAM33): Mbanga, humid gravel surface with sparse vegetation of Cyperaceae and *Cassia mimosifolia* (extra-floral nectar glands), street margin of the road from Kumba to Douala; Prov. Littoral, Dép. Mungo; 04°33'53"N 09°38'04"E; 100 m a.s.l.; 19.v.2006 (100 m², 10:45–11:45, full sun, 40% clouds, wind 0–1).
- No. 6419 (CAM34): Bissiang (NE of Kribi), forest margins along the track; Prov. Sud, Dép. Océan; 02°58'59"N 09°58'43"E; 30 m a.s.l.; 21.v.2006 (100 m, 12:00–13:00, mostly shady, 90% clouds, wind 0–1).
- No. 6420 (CAM35): Bissiang (NE of Kribi), secondary rainforest with a small swamp; Prov. Sud, Dép. Océan; 03°00'21"N 10°02'58"E; 30 m a.s.l.; 21.v.2006 (100 m, 14:30–15:00, mostly shady, 90% clouds, wind 0).
- No. 6421 (CAM37): River Lobe, SW of Kribi, vicinity of the water falls of the river mouth, roadside margin and riparian vegetation; Prov. Sud, Dép. Océan; 02°52'35"N 09°54'02"E; 20 m a.s.l.; 22.v.2006, collection twice in the morning and late afternoon of the same day (excursion 10:30–11:00, shady, 100% clouds, wind 0 and 100 m², 15:00–16:00, shady, 100% clouds, wind 0).
- No. 6422 (CAM36): Waterfalls of the Lobe River (Chutes de la Lobé), SW of Kribi, fallows and cultures with manioc and peanuts – close to remnant of secondary rainforest along the river; Prov. Sud, Dép. Océan; 02°53'05"N 09°53'55"E; 10 m a.s.l.; 22.v.2006 (100 m², 11:00–12:45, shady, 95% clouds, wind 0) revisited on 24.05.2006 (16:00–16:45, shady, 90% clouds, wind 0).
- No. 6423 (CAM36): Close to the waterfalls of the Lobe River (Chutes de la Lobé), SW of Kribi, cultures with Manioc and peanut, riparian zone and adjacent secondary rainforest; Prov. Sud, Dép. Océan; 02°52'57"N 09°53'57"E; 16 m a.s.l.; 22.v.2006 (100 m², 13:30–14:00, full sun, 3% clouds, wind 0–1).
- No. 6424 (CAM39): Nkó Long, Akom II (District de Niète), SE of Kribi, clear cuttings in the secondary rainforest with melon cultures, small river partly with riparian chinese bamboo thickets; Prov. Sud, Dép. Océan; 02°51'13"N 10°02'03"E; 20–36 m a.s.l.; 23.v.2006 (100 m², 10:15–11:30, full sun, 0% clouds, wind 0).

- No. 6426: Close to "Rocher du Loup", road from Kribi to Campo, small brook *ca.* 50 m from the coastline; Prov. Sud, Dép. Océan; 02°46'41"N 09°52'59"E; 30 m a.s.l.; 24.v.2006 (100 m², 11:00–11:50, full sun, 0% clouds, wind 0–1).
- No. 6427 (CAM41): Close to "Rocher du Loup", N of Ebodje, SW of Kribi on the road to Campo, another small brook and roadside margin in a primary rainforest stand; Prov. Sud, Dép. Océan; 02°35'25"N 09°50'55"E; 45 m a.s.l.; 24.v.2006 (100 m², 12:00–13:30, full sun, 0% clouds, wind 0–1).
- No. 6428 (CAM43): On the way from Kribi to Edea, Lokoundje River, SW of Fifinda, riparian tall herbs and bush vegetation at the bridge; Prov. Sud, Dép. Océan; 03°10'41"N 10°01'40"E; 6 m a.s.l.; 25.v.2006 (100 m, 10:00–11:00, mostly shady, 90% clouds, wind 0–1).
- No. 6429 (CAM44): Elabi, NE of Kribi, cornfield along the forest margin, with a small swamp; Prov. Sud, Dép. Océan; 02°59'39"N 09°56'15"E; 18–20 m a.s.l.; 25.v.2006 (100 m², 11:30–12:30, full sun, 60% clouds, wind 0).

Appendix II. Preliminary checklist of the Syrphidae of Cameroon. Abbreviations: Ssy – Ssymank pers. obs. (see also Table 1); Hist – historical records, catalogue citations and other recently published sources; Cam – complete list of recorded species from Cameroon; TL – type locality.

Genus and species	Ssy	Hist	Cam	Source	Remarks
<i>Afrosyrphus varipes</i> Curran, 1927	+		+		
<i>Allobaccha bequaerti</i> (Curran, 1929)		+	+	Dirickx (1998)	Only ♂ type specimen known: Cameroon.
<i>Allobaccha brevis</i> (Karsch, 1887)	+		+		
<i>Allobaccha chalybea</i> (Hull, 1964)	+		+		
<i>Allobaccha eclara</i> (Curran, 1938)	+		+		
<i>Allobaccha flavibasis</i> (Enderlein, 1938)		+	+	Dirickx (1998)	Only ♀ type specimen known: coastal region of Cameroon.
<i>Allobaccha picta</i> (Wiedemann, 1830)	+		+		Different morphs.
<i>Allobaccha sapphirina</i> (Wiedemann, 1830)	+		+		
<i>Allobaccha</i> sp.	sp.		sp.		See Table 1.
<i>Allobaccha velox</i> Hull, 1938		+	+	Dirickx (1998)	Only ♂ type specimen known: S Cameroon.
<i>Allograpta nasuta</i> (Macquart, 1842)	+		+		
<i>Allograpta</i> sp.	sp.		sp.		See Table 1.
<i>Asarkina africana</i> Bezzi, 1908	+		+		
<i>Asarkina albifacies</i> Bezzi, 1915	+		+		
<i>Asarkina angustata</i> Becker, 1909	+		+		
<i>Asarkina ericetorum</i> (Fabricius, 1781)	+		+		
<i>Asarkina gemmata</i> Bezzi, 1915	+		+		
<i>Asarkina liberia</i> Curran, 1938		+	+	Dirickx (1998)	
<i>Asarkina minor</i> Bezzi, 1915	+		+		
<i>Asarkina punctifrons</i> Austen, 1909		+	+	Dirickx (1998)	
<i>Asarkina</i> sp.	sp.		sp.		See Table 1.
<i>Betasyrphus adligatus</i> (Wiedemann, 1824)	+		+		
<i>Ceriana</i> aff. <i>neavei</i> (Bezzi, 1915)	+		+		
<i>Ceriana congolensis</i> (Bezzi, 1908)	+		+		
<i>Ceriana delicatula</i> (Hull, 1941)		+	+	Dirickx (1998)	Only ♀ type specimen known: Cameroon, NE of Yaoundé.
<i>Ceriana pulchra</i> (Hervé-Bazin, 1913)	+		+		

Appendix II (continued). Preliminary checklist of the Syrphidae of Cameroon. Abbreviations: Ssy – Ssy-mank pers. obs. (see also Table 1); Hist – historical records, catalogue citations and other recently published sources; Cam – complete list of recorded species from Cameroon; TL – type locality.

Genus and species	Ssy	Hist	Cam	Source	Remarks
<i>Episyrphus trisectus</i> (Loew, 1858)	+		+		
<i>Eristalinus cacops</i> (Hull, 1964)	+		+		
<i>Eristalinus dulcis</i> (Karsch, 1887)		+	+	Wakkie (2011)	
<i>Eristalinus euzonus</i> var. <i>andersoni</i> (Bezzi, 1915)	+		+		
<i>Eristalinus flaveolus</i> (Bigot, 1880)	+	+	+	Dirickx (1998)	
<i>Eristalinus mendax</i> (Curran, 1927)	+	+	+	Wakkie (2011)	
<i>Eristalinus quinquelineatus</i> (Fabricius, 1781)	+		+		
<i>Eristalinus surcoufi</i> (Hervé-Bazin, 1914)	+	+	+	Dirickx (1998)	
<i>Eristalinus vicarians</i> (Bezzi, 1915)	cf.		cf.		
<i>Eristalinus xanthopus</i> (Bezzi, 1915)	cf.		cf.		
<i>Eumerus aurifrons</i> (Wiedemann, 1824)	+		+		
<i>Eumerus bequaerti</i> Hervé-Bazin, 1913	+		+		
<i>Eumerus capensis</i> (Curran, 1938)	cf.		cf.		
<i>Eumerus dolichocerus</i> Speiser, 1915		+	+	Dirickx (1998)	TL: N Cameroon, Garua.
<i>Eumerus feae</i> Bezzi, 1912	+	+	+	Dirickx (1998)	TL: Equatorial Guinea, Bioko Island.
<i>Eumerus maculipennis</i> Bezzi, 1915	+		+		
<i>Eumerus obliquus</i> (Fabricius, 1805)	+		+		
<i>Eumerus paulae</i> Hervé-Bazin, 1913	+	+	+	Dirickx (1998)	
<i>Eumerus pipizoides</i> Speiser, 1915		+	+	Dirickx (1998)	TL: SW Cameroon.
<i>Eumerus serratus</i> Bezzi, 1915	cf.		cf.		
<i>Eumerus vestitus</i> Bezzi, 1915	+		+		
<i>Graptomyza aurea</i> Bezzi, 1915		+	+	Dirickx (1998)	
<i>Graptomyza spinifera</i> Whittington, 1992		+	+	Dirickx (1998)	
<i>Graptomyza triangulifera</i> (Bigot, 1883)	+	+	+	Dirickx (1998)	
<i>Hovaxylota hancocki</i> (Curran, 1927)		+	+	Dirickx (1998)	
<i>Ischiodon aegyptius</i> (Wiedemann, 1830)	+		+		
<i>Mallota aperta</i> Bezzi, 1912		+	+	Wakkie (2011)	

Appendix II (*continued*). Preliminary checklist of the Syrphidae of Cameroon. Abbreviations: Ssy – Ssymank pers. obs. (see also Table 1); Hist – historical records, catalogue citations and other recently published sources; Cam – complete list of recorded species from Cameroon; TL – type locality.

Genus and species	Ssy	Hist	Cam	Source	Remarks
<i>Melanostoma annulipes</i> (Macquart, 1842)	+		+		
<i>Melanostoma babyssola</i> Speiser, 1924		+	+	Dirickx (1998)	TL: Cameroon, Mt Cameroon.
<i>Melanostoma infuscatum</i> Becker, 1909	cf.		cf.		
<i>Melanostoma subbituberculatum</i> Kassebeer, 2000		+	+	Wakkie (2011)	
<i>Mesembrius capensis</i> (Macquart, 1842)	+		+		
<i>Mesembrius minor</i> (Bezzi, 1915)	+		+		
<i>Mesembrius regulus</i> (Hull, 1937)		+	+	Dirickx (1998)	TL: Cameroon.
<i>Mesembrius strigilatus</i> (Bezzi, 1912)	+		+		
<i>Microdon apis</i> Speiser, 1913		+	+	Dirickx (1998)	TL: Cameroon, Mt Cameroon.
<i>Microdon erythros</i> Bezzi, 1908		+	+	Dirickx (1998)	
<i>Microdon liberiensis</i> Curran, 1929		+	+	Dirickx (1998)	Paratype: Cameroon.
<i>Ornidia obesa</i> (Fabricius, 1775)	+		+		
<i>Paragus apicalis</i> Kassebeer, 1998		+	+	Kassebeer (1998)	
<i>Paragus borbonicus</i> Macquart, 1842	+	+	+	Dirickx (1998)	
<i>Paragus boyesi</i> Kassebeer, 1999	cf.		cf.		
<i>Paragus capricorni</i> Stuckenberg, 1954	+		+		
<i>Paragus dolichocerus</i> Bezzi, 1915	+		+		
<i>Paragus longiventris</i> Loew, 1858	+		+		Different morphs.
<i>Paragus minutus</i> Hull, 1938	+	+	+	Dirickx (1998)	TL: Cameroon, Lolodorf, SW of Yaoundé.
<i>Paragus paulyi</i> Kassebeer, 2000		+	+	Kassebeer (2000)	TL: Cameroon, Jakiri Mt Okou.
<i>Rhingia cnephaoptera</i> Speiser, 1915		+	+	Dirickx (1998)	TL: Cameroon, Douala.
<i>Rhingia cyanoprora</i> Speiser, 1910		+	+	Dirickx (1998)	
<i>Rhingia mecyana</i> Speiser, 1910		+	+	Dirickx (1998)	
<i>Rhingia pulcherrima</i> Bezzi, 1908		+	+	Dirickx (1998)	
<i>Senaspis dentipes</i> (Macquart, 1842)	+	+	+	Dirickx (1998)	

Appendix II (continued). Preliminary checklist of the Syrphidae of Cameroon. Abbreviations: Ssy – Ssy-mank pers. obs. (see also Table 1); Hist – historical records, catalogue citations and other recently published sources; Cam – complete list of recorded species from Cameroon; TL – type locality.

Genus and species	Ssy	Hist	Cam	Source	Remarks
<i>Senaspis dibaphus</i> (Walker, 1849)	+	+	+	Dirickx (1998)	
<i>Senaspis melanthysana</i> (Speiser, 1913)		+	+	Dirickx (1998)	TL: Cameroon, Mt Cameroon.
<i>Simoides crassipes</i> (Fabricius, 1805)		+	+	Dirickx (1998)	
<i>Syritta austeni</i> Bezzi, 1915	+	+	+	Lyneborg & Barkemeyer (2005)	
<i>Syritta breva</i> Lyneborg & Barkemeyer, 2005		+	+	Lyneborg & Barkemeyer (2005)	TL: Cameroon, Yaoundé.
<i>Syritta bulbus</i> Walker, 1849	+	+	+	Dirickx (1998); Lyneborg & Barkemeyer (2005)	
<i>Syritta congoensis</i> Lyneborg & Barkemeyer, 2005	+		+		
<i>Syritta flaviventris</i> Macquart, 1842		+	+	Lyneborg & Barkemeyer (2005)	
<i>Syritta hirta</i> Curran, 1939		+	+	Lyneborg & Barkemeyer (2005)	
<i>Syritta leona</i> Lyneborg & Barkemeyer, 2005	+	+	+	Lyneborg & Barkemeyer (2005)	
<i>Syritta leucopleura</i> Bigot, 1859	+		+		
<i>Syritta longiseta</i> Lyneborg & Barkemeyer, 2005	+	+	+	Lyneborg & Barkemeyer (2005)	
<i>Syritta minuta</i> Lyneborg & Barkemeyer, 2005	+		+		
<i>Syritta similis</i> Lyneborg & Barkemeyer, 2005	+		+		
<i>Syritta</i> sp.	sp.		sp.		1♀ none of known species in Lyneborg & Barkemeyer (2005).
<i>Syritta tomentosa</i> Lyneborg & Barkemeyer, 2005		+	+	Lyneborg & Barkemeyer (2005)	TL: Cameroon, Douala.
<i>Syritta unicolor</i> Lyneborg & Barkemeyer, 2005		+	+	Lyneborg & Barkemeyer (2005)	
<i>Tropidia longa</i> (Walker, 1849)		+	+	Dirickx (1998)	
Total number of species	63	47	96		
Number of new records for Cameroon			49		
Species assigned to names	53		86		