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The Afrotropical Syrphidae fauna: an assessment

[Die afrotropische Syrphidenfauna: Eine Standortbestimmung]

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Abstract Afrotropical syrphid research has lagged behind that in Europe and North America. Research has largely been taxonomic in content, with few biogeographical, biological or ecological studies. Species identification is frequently uncertain and requires a good reference collection to achieve qualitative results. In addition, many generic keys are in need of revision. Progress in the non-taxonomic aspects of research is hampered by difficulties in identification. It is clear that a large portion of future effort needs to be directed toward improving the level of taxonomic access, although it is also true that there are projects where non-taxonomic progress can be made. This paper attempts to review the historical progress that has been made and analyses the future needs of the taxonomic sector, outlining which genera are most in need of revision.

Key words Hoverflies, Syrphidae, taxonomy, Afrotropical

Zusammenfassung Die Forschung an afrotropischen Syrphiden ist im Vergleich zu der in Europa und Nordamerika wenig entwickelt. Die Forschung war weitgehend auf die Taxonomie beschränkt. Die Bestimmung der Arten ist manchmal unsicher und man benötigt eine gute Vergleichssammlung um befriedigende Ergebnisse zu erhalten. Die Bestimmungsschlüssel vieler Gattungen müssen überarbeitet werden. Fortschritte in den nicht-taxonomischen Forschungsfeldern werden durch Unsicherheiten in der Determination erschwert. Vorliegende Publikation gibt einen Überblick über die Geschichte der Erforschung der afrotropischen Syrphiden und mündet in Hinweisen zu jenen Gattungen, die den höchsten Bedarf an Revision haben.

Stichwörter Schwebfliegen, Syrphidae, Taxonomie, Afrotropis

Introduction

Progress in Afrotropical syrphid research has lagged behind that in Europe and North America. The majority of research papers from the Afrotropical region, deal with taxonomy, often treated from a country, region or institutional basis and sometimes in isolation to other research. The need to consolidate this information has resulted in catalogues and synopses. DIRICKX (1998) provided the most recent review of Afrotropical syrphid research. Prior to that BEZZI (1915) and SMITH & VOCKEROTH (1980) were the only other fundamental synopses of the Afrotropical fauna, the latter being a complete catalogue of species. Both SMITH & VOCKEROTH (1980) and DIRICKX (1998) provide lists of taxa and bibliographic references, which are a substantial aid to further research.

Recently, however, there have been a number of faunal lists and biogeographical comments (e.g. DE MEYER 2001, DE MEYER, DE BRUYN & JANSSENS 1990, DE MEYER *et al.* 1995, 1996 1999, KASSEBEER 2000e, KEISER 1971, WHITTINGTON 1994b, 1998) compiled in an attempt to quantify the numbers of species in particular regions, countries or island groups. There are occasional ecological studies (EKUKOLE & MISARI 1993, SCHMUTTERER 1972a, b & 1974) and trapping results (DE MEYER & MARAGIA 1993 and WHITTINGTON 2000), but these remain isolated and infrequent. Aspects of biology and rearing are rarely mentioned and descriptions of larvae and pupae are infrequent. Examples include: COPELAND, DE MEYER & ROTHERAY (1999),

DE MOOR (1973), KAUFMANN (1973), MAZÁNEK *et al.* (1999), MUSA (1976), STUCKENBERG (1954a, 1956), WHITTINGTON (1994a), WHITTINGTON & ROTHERAY (1997).

Progress in non-taxonomic aspects of research is hampered by difficulties in species identification, caused by partial coverage of the existing keys to species. Thus, it is clear that a large portion of future effort needs to be directed toward improving the ease of taxonomic access, although it is also true that there are many projects where non-taxonomic progress can be made.

In order to facilitate progress, it seemed appropriate to examine firstly what has been achieved and secondly, what can be achieved in the most expedient manner. This paper examines those aspects of Afrotropical syrphid research.

Methods

The syrphid literature was scrutinised and descriptions, revisions and keys of Afrotropical species were accumulated. A list of valid species was then derived from a combination of SMITH & VOCKEROTH (1980), DIRICKX (1998) and THOMPSON & EVENHUIS (1999) and updated to include recent taxonomic acts (see below). Genera were assessed and scored for availability of keys and revisions. For the purposes of averaging the total number of species that can be identified by the keys, monotypic genera were counted as 100 %, even although no key exists (nor is needed, perhaps) for their identification.

The updated list was also used to derive the number of species per author and the number of valid taxa. In assessing numbers of valid species keyed, where a species only occurs in old keys as the junior synonym, these were counted as one with senior synonyms. It was also noticeable that in some instances, species names occur in keys to genera with which they are no longer associated. For example, in CURRAN (1938b):

- the key to *Syrphus* Section I includes species from *Betasyrphus*, *Eupeodes* and *Metasyrphus*
- the key to *Syrphus* Section II includes species from *Allograpta*, *Betasyrphus*, *Episyrphus*, *Exallandra* and *Ischiodon*
- and the key to *Baccha* includes species from *Allobaccha*, *Baccha* & *Pseudodoros*.

In these cases, species were counted in the current taxonomic placement. Individual keys deal with different portions of the Afrotropical fauna, therefore the percentage given for the species keyed, represents the total species per genus covered by a combination of the keys listed. Unplaced species were excluded.

Historical discussion and results

It is interesting to place an historical perspective on the data, if only to illustrate how Afrotropical syrphid taxonomy has progressed over the last 246 years. No strictly Afrotropical Syrphidae were described by LINNAEUS (1758), SCOPOLI (1763), FABRICIUS (1775) nor DE GEER (1776), although there are four cosmopolitan species described by them that do occur in the Afrotropics. The earliest species named from strictly Afrotropical material appears in FABRICIUS (1781), followed by species named by 47 authors listed chronologically in table 1, spanning 243 years. The number of valid species described by these authors, and the ebb-and-flow of the production of species names, is illustrated in figure 1. If the number of species per ten-year period is plotted, then the peaks in the resultant graph (Fig. 2) correspond to the first six authors illustrated in figure 1. These six authors named 59 % (331/565) of known Afrotropical syrphid species, with the highest number of species (97) being described by BEZZI (1908, 1912 & 1915).

The 565 valid species are currently placed in 43 genera, for which no comprehensive key exists. The only published key to world genera of Syrphidae is HULL (1949), but it is now outdated and some of the generic concepts have been considerably altered. It covers 31 genera

Tab. 1: Chronological year dates and authors (total = 47) for descriptions of taxonomically valid Afrotropical Syrphidae species.

1758, LINNAEUS	1862, LOEW	1915, BEZZI	1955, SÉGUY
1763, SCOPOLI	1867, JAENNICKE	1915, SPEISER	1956, VAN DOESBURG
1775, FABRICIUS	1871, GERSTAECKER	1920, BEZZI	1957, VAN DOESBURG
1776, DE GEER	1873, RONDANI	1921, BEZZI	1960, VAN DOESBURG
1781, FABRICIUS	1880, BIGOT	1922, BECKER	1964, VAN DER GOOT
1794, FABRICIUS	1883, BIGOT	1923, BEZZI	1964, HULL
1794, ROSSI	1884, BIGOT	1923, CURRAN	1966, VAN DOESBURG
1805, FABRICIUS	1885, BIGOT	1924, MUNRO	1971, KEISER
1818, WIEDEMANN	1887, KARSCH	1924, SPEISER	1973, VOCKEROTH
1819, WIEDEMANN	1888, KARSCH	1927, CURRAN	1974, THOMPSON
1822, MEIGEN	1891, BIGOT	1929, BRUNETTI	1977, VAN DOESBURG & VAN DOESBURG
1824, WIEDEMANN	1893, AUSTEN	1929, CURRAN	
1830, WIEDEMANN	1898, JOHNSON	1932, MALLOCH	1978, HIPPA
1834, MACQUART	1898, VERRALL	1937, HULL	1981, GHORPADE
1842, MACQUART	1903, BECKER	1938, CURRAN	1985, HIPPA
1845, SAUNDERS	1903, BEZZI	1938, ENDERLEIN	1990, DE MEYER
1849, WALKER	1905, ADAMS	1938, HULL	1990, HIPPA
1850, MACQUART	1907, SIMROTH	1939, CURRAN	1992, WHITTINGTON
1852, WALKER	1908, BEZZI	1941, HULL	1994, WHITTINGTON
1853, LOEW	1909, AUSTEN	1942, SZILÁDY	1995, DIRICKX
1855, MACQUART	1909, BECKER	1944, HULL	1998, KASSEBEER
1857, WALKER	1910, SPEISER	1945, HULL	1998, WHITTINGTON
1858, BIGOT	1912, BEZZI	1949, HULL	1999, KASSEBEER
1858, LOEW	1913, HERVÉ-BAZIN	1951, SÉGUY	2000, KASSEBEER
1859, BIGOT	1913, KERTÉSZ	1953, SÉGUY	2001, KASSEBEER
1860, LOEW	1913, SPEISER	1954, STUCKENBERG	
1860, WALKER	1914, HERVÉ-BAZIN	1955, VAN DOESBURG	

Fig. 1: Ranked numbers of Afrotropcial Syrphidae species per author. List **A** = DIRICKX, ENDERLEIN, RONDANI, SAUNDERS. List **B** = DE MEYER, DE GEER, GERSTAECKER, GHORPADE, JAENNICKE, JOHNSON, KERTÉSZ, LINNAEUS, MALLOCH, MEIGEN, MUNRO, ROSSI, SCOPOLI, SIMROTH, VAN DER GOOT, VAN DOESBURG & VAN DOESBURG, VERRALL. (47 authors; 56♂ valid species).

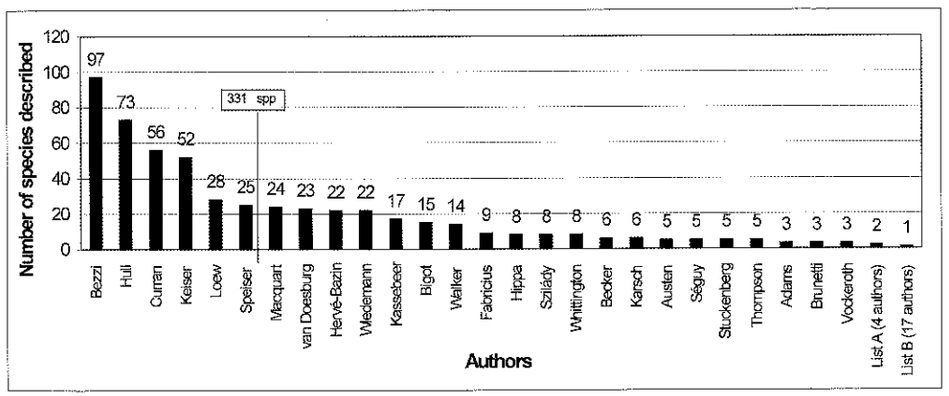
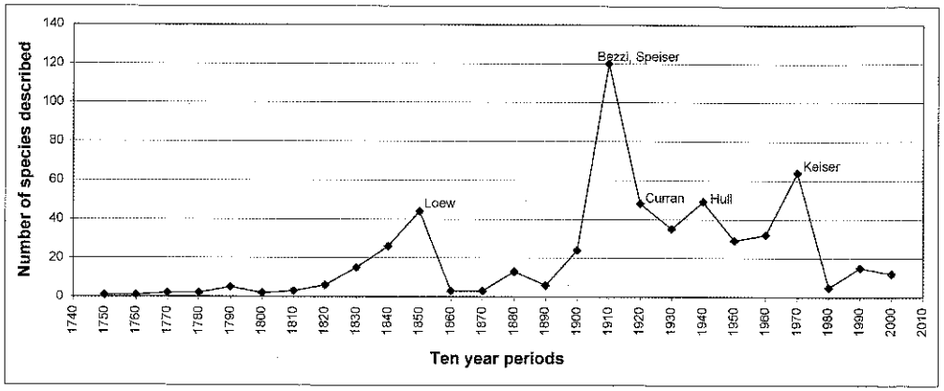


Fig. 2: Historical track of the numbers of valid Afrotropical Syrphidae species named during ten year intervals. (243 years, 565 valid species).



present in the Afrotropical region, plus comments on a number of genera then only accepted at sub-generic level or not accepted at all. Many of these concepts have now been revised, but nevertheless, many genera cannot be identified using this key.

The most useful keys to the Afrotropical genera are CURRAN (1927), VOCKEROTH (1969), VOCKEROTH & THOMPSON (1987) and THOMPSON & ROTHERAY (1998) of which none deal exclusively with all the genera presently recognised from this region. CURRAN (1927) is out-dated and partial in its treatment, keying 27 of the 43 genera. VOCKEROTH (1969) deals only with nine genera of Syrphini. VOCKEROTH & THOMPSON (1987) is a Nearctic key and includes only 24 of the 43 Afrotropical genera, while THOMPSON & ROTHERAY (1998) is a Palaearctic key and includes 33 of the Afrotropical genera. The total coverage using all four keys is 40 genera, although *Afroxanthandrus* KASSEBEER, 2000 is broadly represented as *Xanthandrus* VERRALL, 1901, bringing the total to 41 (i.e. 95 % coverage). Bio-geographically based keys should, however, be used with caution, because they are primarily based on species from those restricted regions and, being artificial systems, use characters relative only to other taxa included in the subset from that region. It therefore, does not necessarily follow that Afrotropical taxa will key correctly in keys designed for other bio-geographical regions.

The genera not included in the keys mentioned above (*Pelloloma* VOCKEROTH, 1973, *Sphegino-baccha* DE MEIJERE, 1908 and *Syrittosyrphus* HULL, 1944) represent only ten species (2 % of the fauna). A great advantage of THOMPSON & ROTHERAY (1998), is the inclusion of a key to larvae, complimented by ROTHERAY & GILBERT (1999). Despite the fact that these two keys cover mainly Palaearctic genera, it is possible to key the larvae of 22 Afrotropical genera from them.

Twenty-two papers include keys to species. The number of species represented in these keys (333) represents 59 % of the total 565 valid taxa. There are 5 monotypic genera and 2 genera for which there is only a single Afrotropical representative species; 17 keys to species cover 66 % or more of the species in the genus; and 6 genera for which only 33 % or fewer of the species can be keyed. Of the 14 genera rated 100 % (including monotypic genera), only one (*Graptomyza* WIEDEMANN, 1820) has more than 10 species. Conversely, there are 16 genera with more than 10 species, of which only one has a key covering all taxa, while 11 have keys covering 66 % or fewer of the species in each genus. The 16 larger genera account for 79 % (445/565) of the fauna, of which only 60 % (268/445) can be keyed. This represents only 47 % of the total fauna.

Discussion

Genera

Superficially, Afrotropical syrphid taxonomy and the ability to identify specimens, appears to be quite good. Ninety-three percent of the genera can be keyed and 24 out of the 43 genera have keys to species, covering 66 % or more of the species in each, or are monotypic and therefore relatively simple to diagnose. In reality however, because the available keys poorly represent the large genera, accurate identification is difficult to achieve without recourse to good reference collections or extensive prior experience. In addition, caution is required when using extra-limital keys (see discussion above).

In order to successfully key Afrotropical specimens to genus all four keys (CURRAN 1927, VOCKEROTH 1969, VOCKEROTH & THOMPSON 1987 and THOMPSON & ROTHERAY 1998) need to be used to achieve this 93 % generic coverage. Experience and a good reference collection reduces the need to use all four keys, but nevertheless it is clear that a key to the Afrotropical genera of Syrphidae is needed.

The status of some Afrotropical genera is, furthermore, still under debate, thereby confusing and delaying the preparation of such keys. For example, DIRICKX 1998 uses the generic names *Hovamicrodon* KEISER, 1971, *Hovaxylota* KEISER, 1971, *Lathyrophthalmus* MIK, 1897 and *Vadonimyia* SÉGUY, 1915, while disregarding *Allobaccha* CURRAN, 1928. On the other hand THOMPSON & EVENHUIS (1999) place the species from these genera in *Microdon* MEIGEN, 1803, *Xylota* MEIGEN, 1803, *Eristalinus* RONDANI, 1845, *Mesembrius* RONDANI, 1857, and *Allobaccha* CURRAN, 1928 respectively, with 14 generic names used in either SMITH & VOCKEROTH (1980) or DIRICKX (1998), being given sub-generic status. For pragmatic reasons I have at times followed THOMPSON & EVENHUIS (1999), with the consequence that the number of genera in this list is down to 43, from the previous 55 listed by SMITH & VOCKEROTH (1980) and 54 listed by DIRICKX (1998), despite the lack of formal generic revisions. Some of the genera [*sensu* SMITH & VOCKEROTH (1980) or DIRICKX (1998)] now placed at sub-generic level, may well raise back to generic level once world revisions are completed, but until such time the derived taxa making up these subgenera are better placed within the "parent" genus.

Species

Using identification keys, it is possible to key to species 59 % of the known fauna. Of the 43 genera, 6 have keys covering all known species, but of these, 5 are genera of fewer than 10 species. The larger genera (i.e. those with more than 10 species) pose more of a problem, because keys for these genera cover only 44 % of the Afrotropical fauna. The larger the genus, the less reliable the identification, because there are greater chances that the key will not work and it is more difficult to resort secondarily to the original descriptions for identification (simply because there are a greater number of choices). Identification is in any case often not assisted by recourse to the original description, because many of these are too brief or too vague for species diagnosis. A further complication is the inclusion in some keys of males only (e.g. HULL's 1964 key to *Eumerus* MEIGEN, 1822).

A simplistic method of setting priorities to resolve the inefficiencies of the present keys, is to rank the genera according to percentage species representation, excluding monotypic genera and those for which there are keys covering all species or for which recent descriptions make up for the inadequacies (Table 2). This table suggests that those genera with a low percentage of species keyed, should receive priority for the production of keys, over those ranked with a high percentage. Experience with identification has shown, however, that identification of species in certain genera is more problematic than in others. The problematic genera (bold in

Table 2) are in need of thorough revision in order to resolve the taxonomic difficulties latent within them.

The difference in the number of species listed for the Afrotropics in the last two catalogues [SMITH & VOCKEROTH 1980 (529 species) and DIRICKX 1998 (534 species)] compared with the present list (565 species), can be attributed to new species and other taxonomic acts carried out since their compilation.

There have been 33 species added since SMITH & VOCKEROTH (1980):

Afroxanthandrus longipilus KASSEBEER, 2000a
Allograpta borbonica KASSEBEER, 2000e
Chasmomma albitarsus KASSEBEER, 2000b
Chasmomma minutum KASSEBEER, 2000b
Episyrphus insularis KASSEBEER, 2000e
Eumerus cilaosiacus KASSEBEER, 2000e
Eupeodes ohmi KASSEBEER, 2000e
Graptomyza amplicavum WHITTINGTON, 1992
Graptomyza clarala WHITTINGTON, 1992
Graptomyza lutea WHITTINGTON, 1992
Graptomyza nigricavum WHITTINGTON, 1992
Graptomyza pallidinotata WHITTINGTON, 1992
Graptomyza spinifera WHITTINGTON, 1994b
Graptomyza summa WHITTINGTON, 1992
Melanostoma subbituberculatum KASSEBEER, 2000g
Milesia prolixa HIPPA, 1990
Paragus apicalis KASSEBEER, 1998
Paragus boysei KASSEBEER, 1999b
Paragus cooksoni WHITTINGTON, 1998
Paragus paulyi KASSEBEER, 2000c
Paragus stuckenbergi DE MEYER, 1998
Paragus manensis KASSEBEER, 1999a
Paragus tonkouiensis KASSEBEER, 1999a
Paragus tsimbazazensis KASSEBEER, 1999b
Paragus zuqualensis KASSEBEER, 2001
Pelloloma freidbergi KASSEBEER, 2000d
Pelloloma winkleri KASSEBEER, 2000d

Tab. 2: Setting priorities for future research of Afrotropcial genera of Syrphidae (Diptera; Aschiza). Genera are ranked by percentage of species currently keyed; entries in bold are genera requiring full taxonomic revision.

Genus	Number of species	Species keyed (in %)
Tropidia	7	0
Baccha	5	20
Chrysogaster	10	30
Eupeodes	3	33
Simoides	6	33
Melanostoma	**19**	**37**
Eristalis	7	42
Paragus	26	46
Ceriana	**34**	**50**
Syrphus	2	50
Eristalinus	**56**	**52**
Eumerus	**77**	**53**
Microdon	**55**	**53**
Syritta	**19**	**53**
Episyrphus	9	56
Allograpta	**13**	**58**
Asarkina	**26**	**58**
Sphaerophoria	5	60
Mesembrius	26	62
Betasyrphus	12	66
Lejops	3	66
Mallota	6	66
Spheginobaccha	6	66
Merodon	9	77
Allobaccha	**22**	**82**
Phytomia	18	83
Rhingia	16	88

Spheginobaccha guttula DIRICKX, 1995
Spheginobaccha ruginosa DIRICKX, 1995
Hovaxylota neavei HIPPA, 1978
Hovaxylota perarmata HIPPA, 1985
Hovaxylota uluguruensis HIPPA, 1978
Hovaxylota vulcana HIPPA, 1978

One of these is not valid; due to an unfortunate taxonomic error and because of the timing of publication, *Paragus stuckenbergi* DE MEYER, 1998 was rendered both a homonym (to *Paragus stuckenbergi* THOMPSON, 1992) and a synonym (to *Paragus apicalis* KASSEBEER, 1998) and is thus excluded from the valid list (below). In addition, two species (*Syritta leucopleura* BIGOT, 1859 & *Episyrphus stuckenbergi* (VAN DOESBURG, 1957) were reinstated by KASSEBEER (2000e).

Four *patria ignota* names are added as potentially Afrotropical (THOMPSON 1988), although two fall to synonymy:

- *Eumerus aquilius* WALKER, 1849
- *Eristalis jucundus* WALKER, 1849 = *Eristalinus quinquelineatus* FABRICIUS, 1781
- *Eristalis secretus* WALKER, 1849 = *Eristalinus taeniops* WIEDEMANN, 1818
- *Mesembrius strenuus* (WALKER, 1857)

and three additional names are listed as Afrotropical by THOMPSON & EVENHUIS (1999):

- *Asarkina salviae* (FABRICIUS, 1794)
- *Eristalinus lugens* (WIEDEMANN, 1830)
- *Eristalis notata* BIGOT, 1885

Seven names have dropped into synonymy since SMITH & VOCKEROTH (1980):

- *Hovaxylota malagasya* KEISER, 1971 = *Hovaxylota planiformis* (HULL, 1940) (HIPPA 1985)
- *Hovaxylota rufipedoides* KEISER, 1971 = *Hovaxylota satyrus* KEISER, 1971 (HIPPA 1985)
- *Ptileuria angustivertex* ENDERLEIN, 1938 = *Allobaccha picta* (WIEDEMANN, 1830) (DIRICKX 1998)
- *Paragus stuckenbergi* DE MEYER, 1998 = *Paragus apicalis* KASSEBEER, 1998 (KASSEBEER 1999a)
- *Allograpta nigra* KEISER, 1971 = *Allograpta rufifacies* KEISER, 1971 (KASSEBEER 2000e)
- *Episyrphus meliscaevoides* GHORPADE, 1981 = *Episyrphus stuckenbergi* (VAN DOESBURG, 1957) (KASSEBEER 2000e)
- *Pseudodoros psyllidivora* SÉGUY, 1953 = *Allobaccha sapphirina* (WIEDEMANN, 1830) (KASSEBEER 2000f)

Furthermore, because generic positions are not yet fully revised, species names from both catalogues and this list are placed under different binominal combinations. As noted above, the number of genera in this list is down to 43, from the previous 55 listed by SMITH & VOCKEROTH (1980) and 54 listed by DIRICKX (1998), despite the lack of formal generic revisions.

Inclusion of Afrotropical species from *Ceratophya* WIEDEMANN, 1830; *Ceratrichomyia* SÉGUY, 1951; *Hovamicrodon* KEISER, 1971; *Megodon* KEISER, 1971; *Pseudomicrodon* HULL, 1937; *Ptilobactrum* BEZZI, 1915 in *Microdon* MEIGEN, 1803 results the following secondary homonymies:

- *Ceratophya stuckenbergi* KEISER, 1971: 258 becomes a junior secondary homonym of *Megodon stuckenbergi* KEISER, 1971: 253.
- *Hovamicrodon fuscipennis* (KEISER, 1971) becomes a junior secondary homonym of *Microdon fuscipennis* (MACQUART, 1834).

In each of these cases, the first listed name requires a *nomen novum* to be designated. Given the unstable position of these generic placements, this is not the most suitable place to publish such acts, therefore it is advisable to leave such action until the genus-group receives proper revision.

VOCKEROTH (1973b) included *Sphaerophoria nasuta* BIGOT, 1884 in *Allograpta* OSTEN SACKEN, 1875, resulting in the following homonym.
Allograpta nasuta BIGOT, 1884 (*Sphaerophoria*) from Mexico is a junior secondary homonym of *Allograpta nasuta* (MACQUART, 1842) from Africa.
No nomenclatorial act is required here for the Afrotropical species, since it represents the senior name.

Despite the inadequacies of identification using existing keys, biogeographic progress has been made over the last ten years. The East African fauna has received adequate attention from DE MEYER *et al.* (1995, 1996, 1999) and DE MEYER (2001). A clear indication of which species are found in the subregion is available as a result. There is however, a large amount of work involved in bringing the whole Afrotropical region up to a comparable standard. A preliminary faunal assessment exists for Zimbabwe (WHITTINGTON 1998) and more complete assessments for Namibia and Zimbabwe are underway at present (WHITTINGTON *in. prep.*).

These are showing that there are a large number of species collected, but not yet recorded from these countries. Previous work in East Africa showed the same pattern and it is expected that the same will be true for West and Central Africa. Many species are more widespread than previously thought.

Catalogue of Afrotropical Syrphidae and a list of associated literature

Afrosyrphus CURRAN, 1927

This species was listed in both SMITH & VOCKEROTH (1980) and DIRICKX (1998).

Included species: *Afrosyrphus varipes* CURRAN, 1927

Keys: Being monotypic, there are no keys to this genus, but the species does appear descriptively in CURRAN (1927 & 1938b).
Revision: No recent revision is available.
Illustrations: The male genitalia of *Afrosyrphus varipes* CURRAN, 1927 were illustrated in VOCKEROTH (1969).

Afroxanthandrus KASSEBEER, 2000

The first of the two species listed here was included in *Xanthandrus* VERRALL, 1901, in SMITH & VOCKEROTH (1980) and DIRICKX (1998); the second species was added by KASSEBEER (2000).

Included species:

Afroxanthandrus congensis (CURRAN, 1938) ◖ ■ *Afroxanthandrus longipilus* KASSEBEER, 2000

Keys: ◖ BEZZI (1915) & ■ CURRAN (1938b). The keys only provide coverage of the (then) single species.
Revision: KASSEBEER (2000a) created a new genus and added the new species and clearly diagnosed between the two species.
Illustrations: KASSEBEER (2000a) included illustrations of the head and the male genitalia.

Allobaccha CURRAN, 1928

All included species were listed in SMITH & VOCKEROTH (1980) under *Allobaccha* CURRAN, 1928 and in DIRICKX (1998) under *Baccha* FABRICIUS, 1805. SMITH & VOCKEROTH (1980) also included *Baccha angustivertex* (ENDERLEIN, 1938), but DIRICKX (1998) synonymised this with *Allobaccha picta* (WIEDEMANN, 1830).

Included species:

Allobaccha bequaerti (CURRAN, 1929) ■
Allobaccha brevis (KARSCH, 1887) ◖ ● ■
Allobaccha chalybea (HULL, 1964)
Allobaccha claripennis (LOEW, 1858) ◖ ● ■
Allobaccha conifrons (BEZZI, 1915) ◖ ■
Allobaccha cuthbertsoni (CURRAN, 1938) ■
Allobaccha dacipennis (SPEISER, 1924)
Allobaccha eclara (CURRAN, 1938) ■
Allobaccha grahami (BEZZI, 1915) ◖ ■
Allobaccha helva (BEZZI, 1915) ◖ ■
Allobaccha ichneumonea (BEZZI, 1915) ◖ ■
Allobaccha inversa (CURRAN, 1929) ■
Allobaccha liberia (CURRAN, 1929) ■
Allobaccha marginata (BEZZI, 1915) ◖ ● ■
Allobaccha neavei (BEZZI, 1915) ◖ ■
Allobaccha nitidithorax (CURRAN, 1929) ■
Allobaccha pedunculata (BIGOT, 1858)
Allobaccha picta (WIEDEMANN, 1830) ◖
Allobaccha praeusta (BEZZI, 1915) ◖ ■
Allobaccha sapphirina (WIEDEMANN, 1830) ■
Allobaccha sinuata (BRUNETTI, 1929)
Allobaccha wainwrighti (CURRAN, 1938) ■

Keys: ◖ BEZZI (1915), ● CURRAN (1927) & ■ CURRAN (1938b). CURRAN (1938b) provided the most complete coverage (77 %) in his treatment of *Baccha* FABRICIUS, 1805. In total, 82 % of species can be keyed if all three keys are used.
Revision: No recent revision is available.
ILLUSTRATIONS: BEZZI (1915) illustrated the wing of *A. picta* (WIEDEMANN, 1830) and the habitus of *A. grahami* (BEZZI, 1915) and *A. helva* (BEZZI, 1915). DIRICKX (1998) provided a distribution map for *A.*

picta (WIEDEMANN, 1830) & *A. sapphirina* (WIEDEMANN, 1830). KASSEBEER (2000f) synonymised *Pseudodoros psyllidivorus* SÉGUY, 1953 with *Allobaccha sapphirina* (WIEDEMANN, 1830).

Allograpta OSTEN SACKEN, 1875

All included species (except for the later added *Allograpta borbonica* KASSEBEER, 2000) were listed in both SMITH & VOCKEROTH (1980) and DIRICKX (1998).

Included species:

Allograpta borbonica KASSEBEER, 2000
Allograpta calopoides (CURRAN, 1938) ■
Allograpta calopus (LOEW, 1858) ◖ ■
Allograpta fuscotibialis (MACQUART, 1842) ■
Allograpta hypoxantha (BEZZI, 1923) ■
Allograpta nasuta (MACQUART, 1842) ◖ ■
Allograpta nummularia (BEZZI, 1920)
Allograpta phaeoptera (BEZZI, 1920)
Allograpta rediviva (BEZZI, 1915) ◖ ■
Allograpta rufifacies (KEISER, 1971)
Allograpta tenella (KEISER, 1971)
Allograpta varipes (CURRAN, 1927) ■

Keys: ◖ BEZZI (1915) & ■ CURRAN (1938b). CURRAN (1938b) provided the most complete coverage (58 %). KASSEBEER (2000e) distinguished *A. borbonica* KASSEBEER, 2000 from *A. rufifacies* (KEISER, 1971) and synonymised *A. nigra* (KEISER, 1971) with *A. rufifacies* (KEISER, 1971).
Revision: No recent revision is available.
Illustrations: SCHMUTTERER (1972a) provided a photograph of larvae of *A. calopus* (LOEW, 1858) & *A. varipes* (CURRAN, 1927). VOCKEROTH (1973b) illustrated the male genitalia of *A. nasuta* (BIGOT, 1884), but this should not be confused with *A. nasuta* (MACQUART, 1842). SCHMUTTERER (1974) provided a photograph of larvae of *A. calopus* (LOEW, 1858), *A. nasuta* (MACQUART, 1842) [as the junior synonym *A. pfeifferi* (BIGOT, 1884)] & *A. varipes* (CURRAN, 1927). DIRICKX (1998) illustrated the habitus and provided a distribution map for *A. nasuta* (MACQUART, 1842). KASSEBEER (2000e) illustrated the abdomen and male genitalia of *A. borbonica* KASSEBEER, 2000.

Asarkina MACQUART, 1842

All included species, except for *A. salviae* FABRICIUS, 1794 (which was included in THOMPSON & EVENHUIS (1999)) were listed in both SMITH & VOCKEROTH (1980) and DIRICKX (1998).

Included species:

Asarkina africana BEZZI, 1908 ◆ □ ◖ ● ■
Asarkina albifacies BEZZI, 1915 ◖ ● ■
Asarkina amoena AUSTEN, 1909 ◖ □ ■
Asarkina angustata BECKER, 1909 □
Asarkina angustofasciata KEISER, 1971
Asarkina clara HULL, 1941
Asarkina eremophila LOEW, 1858 ◆ □ ◖ ■
Asarkina ericetorum (FABRICIUS, 1781) ◆ □ ◖ ● ■
Asarkina fiorii BEZZI, 1903 ◆ ◖ ■
Asarkina fulva HULL, 1941
Asarkina gemmata BEZZI, 1915 ◖ ● ■
Asarkina grapta HULL, 1941
Asarkina hirsuticeps BEZZI, 1915 ■
Asarkina hulleyi (MUNRO, 1924)
Asarkina liberia CURRAN, 1938 ■
Asarkina macropyga KEISER, 1971
Asarkina madecassa KEISER, 1971
Asarkina medjensis CURRAN, 1927 ● ■
Asarkina minor BEZZI, 1915 ◖ ● ■
Asarkina nigrolata HULL, 1941
Asarkina permixta KEISER, 1971
Asarkina punctifrons AUSTEN, 1909 ◖ □ ● ■
Asarkina rostrata (WIEDEMANN, 1824) ◆ □ ◖ ■
Asarkina salviae FABRICIUS, 1794
Asarkina silvicola KEISER, 1971
Asarkina tenebricosa KEISER, 1971

Keys: ◆ BEZZI (1908), □ BEZZI (1912), ◖ BEZZI (1915), ● CURRAN (1927) & ■ CURRAN (1938b). CURRAN (1938b) provided the most complete coverage (50 %). Using all five keys, a total of 58 % of Afrotropical species can be identified. *Asarkina salviae* FABRICIUS, 1794 was included as potentially Afrotropical by THOMPSON & EVENHUIS, 1999.
Revision: No recent revision is available.
Illustrations: AUSTEN (1909) provided habitus illustrations of *A. amoena* AUSTEN, 1909 & *A. punctifrons* AUSTEN, 1909. BEZZI (1915) illustrated the head of *A. hirsuticeps* BEZZI, 1915. MUNRO (1924)

illustrated the head and wing of *A. hulleyi* (MUNRO, 1924). HULL (1949) illustrated the head of *A. rostrata* (WIEDEMANN, 1824). The apex of the wing tip and the male genitalia of *A. hulleyi* (MUNRO, 1924); and the apex of the wing tip, the venterolateral view of the sternopleuron and the male genitalia of *A. rostrata* (WIEDEMANN, 1824) were illustrated in VOCKEROTH (1969). KEISER (1971) illustrated the legs and abdomen of *A. macropyga* KEISER, 1971. MUSA (1976) illustrated the larva, cephalopharyngeal skeleton and puparium of *A. ericetorum* (FABRICIUS, 1781). DIRICKX (1998) provided a distribution map for *A. africana* BEZZI, 1908, *A. eremophila* LOEW, 1858, *A. ericetorum* (FABRICIUS, 1781), *A. gemmata* BEZZI, 1915, *A. minor* BEZZI, 1915 & *A. punctifrons* AUSTEN, 1909.

Baccha FABRICIUS, 1805

All included species were listed in both SMITH & VOCKEROTH (1980) and DIRICKX (1998).

Included species:

Baccha euryptera BEZZI, 1908 ◖ ■
Baccha flavibasis (ENDERLEIN, 1938)
Baccha nigroscutata (ENDERLEIN, 1938)
Baccha serena SZILÁDY, 1942
Baccha velox HULL, 1938

Keys: ◖ BEZZI (1915) & ■ CURRAN (1938b): representing only 20 % of the Afrotropical members of this genus.
Revision: No recent revision is available.
Illustrations: No illustrations are available

Betasyrphus MATSUMURA, 1917

All included species were listed in both SMITH & VOCKEROTH (1980) and DIRICKX (1998). *Betasyrphus congolensis* (HERVÉ-BAZIN, 1914) was listed under "Unplaced Species of Syrphini" in SMITH & VOCKEROTH (1980).

Included species:

Betasyrphus adligatus (WIEDEMANN, 1824) ◖ ■
Betasyrphus cinereomaculatus (HULL, 1937)
Betasyrphus claripennis (LOEW, 1858) ◖ ■
Betasyrphus congolensis (HERVÉ-BAZIN, 1914)
Betasyrphus eutaeniatus (BEZZI, 1915) ◖ ■
Betasyrphus hirticeps (LOEW, 1858) ◖ ■
Betasyrphus inflaticornis (BEZZI, 1915) ◖ ■
Betasyrphus intersectus (WIEDEMANN, 1824) ◖ ■
Betasyrphus luci (CURRAN, 1938) ■
Betasyrphus saundersi (VAN DER GOOT, 1964) ◖ ■
Betasyrphus serarius (WIEDEMANN, 1830)
Betasyrphus stuckenbergi (KEISER, 1971)

Keys: ◖ BEZZI (1915) & ■ CURRAN (1938b). CURRAN (1938b) provided the most complete coverage (66 %) in his treatment of *Syrphus* FABRICIUS, 1775.
Revision: No recent revision is available.
Illustrations: AUSTEN (1909) provided an habitus illustration of *B. adligatus* (WIEDEMANN, 1824). DIRICKX (1998) provided a distribution map for *B. adligatus* (WIEDEMANN, 1824). MAZÁNEK *et al.* (1999) provided illustrations of cephalopharyngeal skeleton of *B. claripennis* (LOEW, 1858); the posterior respiratory processes of *B. claripennis* (LOEW, 1858) and an undescribed species; the puparia of *B. claripennis* (LOEW, 1858), *B. inflaticornis* (BEZZI, 1915), *B. luci* (CURRAN, 1938) & three undescribed species; the posterior apex of the puparium of an undescribed species; and scanning electron micrographs of the respiratory processes of *B. claripennis* (LOEW, 1858), *B. inflaticornis* (BEZZI, 1915), *B. luci* (CURRAN, 1938) & one undescribed species.

Ceriana RAFINESQUE, 1815

All included species were listed in both SMITH & VOCKEROTH (1980) and DIRICKX (1998), under either *Ceriana* RAFINESQUE, 1815, or *Monoceromyia* SHANNON, 1922 or *Sphiximorpha* RONDANI, 1850. This genus really needs a more careful and thorough assessment before the various sub-divisions can be placed at generic or sub-generic levels. It is therefore pragmatic to place all the species in this single genus (*sensu* THOMPSON & EVENHUIS (1999)) until that analysis has been undertaken.

Included species:

Ceriana afra (WIEDEMANN, 1830) ● □
Ceriana africana (HULL, 1944)
Ceriana ammophilina (SPEISER, 1910) □
Ceriana aurata (CURRAN, 1927) ● □
Ceriana bequaerti (CURRAN, 1938) □
Ceriana bezzii (HERVÉ-BAZIN, 1913) ◖ ● □
Ceriana brunnea (HULL, 1944)
Ceriana brunneipennis (LOEW, 1858) ● □
Ceriana caffra (LOEW, 1853)
Ceriana congolensis (BEZZI, 1908) ● □
Ceriana delicatula (HULL, 1941)
Ceriana dentipes (VAN DOESBURG, 1955)
Ceriana dilatipes (BRUNETTI, 1929)
Ceriana divisa (WALKER, 1857)
Ceriana frenata (LOEW, 1853)
Ceriana gambiana (SAUNDERS, 1845) ● □
Ceriana globigaster (HULL, 1944)
Ceriana gloriosa (HULL, 1944)
Ceriana hopei (SAUNDERS, 1845) ● □
Ceriana katoniana (BEZZI, 1921)
Ceriana maculipennis (HERVÉ-BAZIN, 1913) ● ■
Ceriana madecassa (KEISER, 1971)
Ceriana malleus (HULL, 1945)
Ceriana marginalis (BEZZI, 1915) ◖ ● □
Ceriana minuta (HULL, 1944)
Ceriana neavei (BEZZI, 1915) ◖ ● □
Ceriana pulchra (HERVÉ-BAZIN, 1913) ◖ ● □
Ceriana rufifrons (CURRAN, 1927) ● □
Ceriana speiseri (HERVÉ-BAZIN, 1913) ◖ ● □
Ceriana subcastanea (BRUNETTI, 1929)
Ceriana swierstrai (VAN DOESBURG, 1955)
Ceriana ugandana (KERTÉSZ, 1913) ● □
Ceriana unipunctata (VAN DOESBURG, 1956)
Ceriana varipes (CURRAN, 1927) ● □

Keys: ◖ BEZZI (1915), ● CURRAN (1927) & □ CURRAN (1938a). CURRAN (1938a) provided the most complete coverage (50 %).
Revision: No recent revision is available.
ILLUSTRATIONS: KERTÉSZ (1913) illustrated the head and anterior thorax of *C. ugandana* (KERTÉSZ, 1913). BEZZI (1915) illustrated the habitus of *C. neavei* (BEZZI, 1915). HULL (1949) illustrated the head of *C. minuta* (HULL, 1944) and the abdomen of *C. africana* (HULL, 1944) & *C. globigaster* (HULL, 1944). Under *Monoceromyia*, DIRICKX (1998) provided distribution maps for *C. caffra* (LOEW, 1853), *C. pulchra* (HERVÉ-BAZIN, 1913) & *C. ugandana* (KERTÉSZ, 1913). Under *Sphiximorpha* RONDANI, 1850, DIRICKX (1998) provided a distribution map for *C. bezzii* (HERVÉ-BAZIN, 1913).

Chasmomma BEZZI, 1915

Three of the five included species were listed in both SMITH & VOCKEROTH (1980) and DIRICKX (1998); KASSEBEER (2000b) added two new species.

Included species:

Chasmomma albitarsus KASSEBEER, 2000 ▣
Chasmomma femoratum BEZZI, 1915 ○ ▣
Chasmomma laterale CURRAN, 1939 ○ ▣
Chasmomma minutum KASSEBEER, 2000 ▣
Chasmomma nigrum CURRAN, 1927 ○ ▣

Keys: ○ CURRAN (1939a) & ▣ KASSEBEER (2000b). KASSEBEER (2000b) provided 100 % coverage of species.
Revision: This genus was fully revised by KASSEBEER (2000b)
Illustrations: BEZZI (1915) illustrated the habitus and hind leg of *C. femoratum* BEZZI, 1915. KASSEBEER (2000b) included illustrations of the heads and male genitalia of *C. nigrum* CURRAN, 1927, *C. albitarsus* KASSEBEER, 2000 and *C. minutum* KASSEBEER, 2000, plus a distribution map of all five species.

Chrysogaster MEIGEN, 1803

All included species were listed in SMITH & VOCKEROTH (1980) and in DIRICKX (1998).

Included species:

Chrysogaster africana HULL, 1944
Chrysogaster apicalis BEZZI, 1920
Chrysogaster laevigata BEZZI, 1915 ◖
Chrysogaster ocularia HERVÉ-BAZIN, 1914
Chrysogaster pilocapita HULL, 1944
Chrysogaster poecilophthalma BEZZI, 1908
Chrysogaster poecilops BEZZI, 1915 ◖
Chrysogaster proserpina HULL, 1944
Chrysogaster quinquestriata SZILÁDY, 1942
Chrysogaster spiloptera BEZZI, 1915 ◖

Keys: ◖ BEZZI (1915); this is the only key to the Afrotropical species of this genus. It covers only 30 % of the fauna.
Revision: No recent revision is available.
Illustrations: BEZZI (1915) illustrated *C.spiloptera* BEZZI, 1915.

Chrysotoxum MEIGEN, 1803

This species is listed in both SMITH & VOCKEROTH (1980) and DIRICKX (1998).

Included species: *Chrysotoxum continuum* BEZZI, 1915

Keys: Being monotypic, there are no keys to this genus, but the species does appear descriptively in CURRAN (1938b).
Revision: No recent revision is available.
Illustrations: No illustrations are available

Episyrphus MATSUMURA, 1917

SMITH & VOCKEROTH (1980) listed five and DIRICKX (1998) listed seven of the eight species, adding *E. balteatus* (DE GEER, 1776) and *E. meliscaevoides* GHORPADE, 1981. KASSEBEER (2000e) added the new species *E. insularis* KASSEBEER, 2000, reinstated *E. stuckenbergi* (VAN DOESBURG, 1957) and synonymised *E. meliscaevoides* GHORPADE, 1981 with it.

Included species:

Episyrphus balteatus (DE GEER, 1776)
Episyrphus circularis (HULL, 1941) ★
Episyrphus flavibasis (KEISER, 1971) ★
Episyrphus insularis KASSEBEER, 2000
Episyrphus nigromarginatus VOCKEROTH, 1973 ★
Episyrphus petilis VOCKEROTH, 1973 ★
Episyrphus stuckenbergi (VAN DOESBURG, 1957)
Episyrphus trisectus (LOEW, 1858) ◖ ■ ★

Keys: ◖ BEZZI (1915), ■ CURRAN (1938b) & ★ VOCKEROTH (1973a). VOCKEROTH (1973a) keys five (63 %) of the eight included species.
Revision: VOCKEROTH (1973a) revised the five Afrotropical species then known, including two new species.
Illustrations: VERRALL (1901) illustrated the abdomen of *E. balteatus* (DE GEER, 1776). VOCKEROTH (1973a) provided illustrations of the abdomen, surstylus and superior lobe of each of the new species he described. Detail of the wing margin and the male genitalia of *E. balteatus* (DE GEER, 1776) were illustrated in VOCKEROTH (1969). GHORPADE (1981) illustrated the head, abdomen and male genitalia of *E. stuckenbergi* (VAN DOESBURG, 1957) (as *E. meliscaevoides* GHORPADE, 1981). ROTHERAY (1993) provided a colour photograph of the final instar larva of *E. balteatus* (DE GEER, 1776). DIRICKX (1998) provided a distribution map for *E. trisectus* (LOEW, 1858). THOMPSON & ROTHERAY (1998) illustrated the habitus of *E. balteatus* (DE GEER, 1776). KASSEBEER, 2000e illustrated the abdomen and male genitalia of *E. insularis* KASSEBEER, 2000.

Eristalinus RONDANI, 1845

All but two species were included in SMITH & VOCKEROTH (1980): *E. decolor* (KARSCH, 1887) was listed as a synonym of *E. melanops* (KARSCH, 1887) and *E. lugens* (WIEDEMANN, 1830) was later included by THOMPSON & EVENHUIS (1999). In addition, SMITH & VOCKEROTH (1980) duplicated *E. cupreus* (Macquart, 1842) as *Senaspis cuprea* (Macquart, 1842). DIRICKX (1998) listed the species in this genus under the names *Eristalis* LATREILLE, 1804, *Eristalodes* MIK, 1897 & *Lathyrophthalmus* MIK, 1897. He listed *E. melanops* (KARSCH, 1887) as a synonym of *E. decolor* (KARSCH, 1887) following KERTÉSZ (1910), but also excluded *E. aequalis* (ADAMS, 1905), *E. lugens* (WIEDEMANN, 1830) and *E. plurivittatus* (MACQUART, 1855). This genus-group really needs a more careful and thorough assessment before the various sub-divisions can be placed at generic or sub-generic levels. It is therefore pragmatic to place all the species in this single genus (*sensu* THOMPSON & EVENHUIS (1999)) until that analysis has been undertaken.

Included species:

Eristalinus abdominalis (HERVÉ-BAZIN, 1914)
Eristalinus aeneus (SCOPOLI, 1763) ● ◈
Eristalinus aequalis (ADAMS, 1905)
Eristalinus amoenus (MACQUART, 1850)
Eristalinus ampyx (SPEISER, 1924)
Eristalinus astrops (HULL, 1941)
Eristalinus barclayi (BEZZI, 1915) ◖ ◈
Eristalinus cacops (HULL, 1964)
Eristalinus caudatus (VAN DOESBURG, 1955)
Eristalinus cressoni (HULL, 1941)
Eristalinus decolor (KARSCH, 1887) ◖ ● ◈
Eristalinus dissimilis (ADAMS, 1905) ◖ ● ◈
Eristalinus dubiosus (CURRAN, 1939) ◈
Eristalinus dulcis (KARSCH, 1887) ◖ ● ◈
Eristalinus eclarus (CURRAN, 1939) ◈
Eristalinus euthorax (HERVÉ-BAZIN, 1914)
Eristalinus euzonus (LOEW, 1858) ◖ ● ◈
Eristalinus exophthalmus (KEISER, 1971)
Eristalinus flaveolus (BIGOT, 1880) ◖ ● ◈
Eristalinus fuscicornis (KARSCH, 1887) ◖ ● ◈
Eristalinus gymnops (BEZZI, 1915) ◖ ● ◈
Eristalinus haplops (WIEDEMANN, 1830) ● ◈
Eristalinus lineifacies (CURRAN, 1939) ◈
Eristalinus longicornis (ADAMS, 1905)
Eristalinus lugens (WIEDEMANN, 1830)
Eristalinus macrops (KARSCH, 1887)
Eristalinus madagascariensis (HERVÉ-BAZIN, 1914) ● ◈
Eristalinus megacephalus (ROSSI, 1794)
Eristalinus mendax (CURRAN, 1927) ● ◈
Eristalinus metallescens (LOEW, 1858)
Eristalinus mirus (CURRAN, 1939) ◈
Eristalinus modestus (WIEDEMANN, 1818) ◖ ● ◈
Eristalinus monozonus (HERVÉ-BAZIN, 1914) ● ◈
Eristalinus myiatropinus (SPEISER, 1910) ◖ ● ◈
Eristalinus nigricans (WIEDEMANN, 1830) ● ◈
Eristalinus nitidiventris (MACQUART, 1842)
Eristalinus pexalis (CURRAN, 1939) ◈
Eristalinus plurivittatus (MACQUART, 1855) ◖ ●
Eristalinus quadrizona (SZILÁDY, 1942)
Eristalinus quinquelineatus (FABRICIUS, 1781) ◖ ● ◈
Eristalinus quinquezona (SZILÁDY, 1942)
Eristalinus sexvittatus (BIGOT, 1859)
Eristalinus seychellarum (BEZZI, 1915) ◖ ● ◈
Eristalinus seyrigi (SÉGUY, 1951)
Eristalinus smaragdinus (MACQUART, 1842)
Eristalinus surcoufi (HERVÉ-BAZIN, 1914) ● ◈
Eristalinus tabanoides (JAENNICKE, 1867) ◖ ● ◈
Eristalinus taeniaticeps (BECKER, 1922)
Eristalinus taeniops (WIEDEMANN, 1818) ◖ ● ◈
Eristalinus trizonatus (BIGOT, 1858) ◖ ● ◈
Eristalinus vicarians (BEZZI, 1915) ◖ ● ◈
Eristalinus virescens (SZILÁDY, 1942)
Eristalinus viridistriatus (SZILÁDY, 1942)
Eristalinus viridulus (MACQUART, 1842)
Eristalinus xanthopus (BEZZI, 1915) ◖ ● ◈

Keys: ◖ BEZZI (1915), ● CURRAN (1927) & ◈ CURRAN (1939b). CURRAN (1939b) provided the most complete coverage (52 %) in his treatment of *Lathyrophthalmus* and *Eristalodes*.
Revision: No recent revision is available.
Illustrations: BEZZI (1915) illustrated the habitus of *P. seychellarum* (BEZZI, 1915). KEISER (1971) illustrated the head of *E. exophthalmus* (KEISER, 1971). DIRICKX (1998) provided a distribution map for *E. dulcis* (KARSCH, 1887), *E. euzonus* (LOEW, 1858), *E. flaveolus* (BIGOT, 1880), *E. megacephalus* (ROSSI, 1794), *E. myiatropinus* (SPEISER, 1910), *E. quinquelineatus* (FABRICIUS, 1781), *E. surcoufi* (HERVÉ-BAZIN, 1914) & *E. taeniops* (WIEDEMANN, 1818).

Eristalis LATREILLE, 1804

All included species, except for *E. notata* BIGOT, 1885 (which was included in THOMPSON & EVENHUIS (1999)) were listed in SMITH & VOCKEROTH (1980) and DIRICKX (1998), with the further exception that DIRICKX (1998) excluded *E. convexifacies* MACQUART, 1850.

Included species:

Eristalis apis CURRAN, 1939 ◈
Eristalis convexifacies MACQUART, 1850
Eristalis notata BIGOT, 1885
Eristalis pallidibasis (BIGOT, 1891)
Eristalis plumipes (BEZZI, 1912) ● ◈
Eristalis tenax (LINNAEUS, 1758) ◖ ◈
Eristalis trichopus (BIGOT, 1891)

Keys: ◖ BEZZI (1915), ● CURRAN (1927) & ◈ CURRAN (1939b). CURRAN (1939b) provided the most complete coverage (42 %) in his treatment of *Eristalis* LATREILLE, 1804.
Revision: No recent revision is available.
Illustrations: VERRALL (1901) illustrated the wing of *E. tenax* (LINNAEUS, 1758). ZUMPT & HAINZ, H.

(1949) and LEHRER (1971) illustrated the abdomen and male genitalia of *E. tenax* (LINNAEUS, 1758), while ETCHEVERRY & SHENEFELT (1960) illustrated the genitalia of both sexes. HARTLEY (1961) illustrated the primary crochets, the prothoracic and posterior spiracles of the third larval instar and the pupal spiracles of *E. tenax* (LINNAEUS, 1758). HARTLEY (1963) illustrated the cephalopharyngeal skeleton of *E. tenax* (LINNAEUS, 1758). ZUMPT (1965) illustrated the habitus, third instar larva, apex of breathing tube and puparium of *E. tenax* (LINNAEUS, 1758). DOLEŽIL (1972) illustrated the primary crochets of *E. tenax* (LINNAEUS, 1758). VOCKEROTH & THOMPSON (1987) illustrated the hind femur, wing and third instar larva of *E. tenax* (LINNAEUS, 1758). ROTHERAY (1993) provided a colour photograph of the final instar larva of *E. tenax* (LINNAEUS, 1758). THOMPSON & ROTHERAY (1998) illustrated the hind femur of *E. tenax* (LINNAEUS, 1758).

Eumerus MEIGEN, 1822

SMITH & VOCKEROTH (1980) and DIRICKX (1998) included *E. braunsi* (VAN DOESBURG, 1956) and *E. cribratus* (BEZZI, 1915) in *Amphoterus* BEZZI, 1915. THOMPSON (1988) added *E. aquilius* WALKER, 1849 as potentially Afrotropical and KASSEBEER (2000e) added a new species (*Eumerus cilaosiacus*). All other species included below were listed in SMITH & VOCKEROTH (1980) and DIRICKX (1998).

Included species:

Eumerus albifacies KEISER, 1971
Eumerus aquilius WALKER, 1849
Eumerus argenteus WALKER, 1852 ◘ ✚
Eumerus argyropsis BEZZI, 1908 ◘ ✚
Eumerus armipes BEZZI, 1915 ◖ ◘ ✚
Eumerus assimilis VAN DOESBURG, 1955
Eumerus astropilops HULL, 1964 ✚
Eumerus atrovarius SPEISER, 1913
Eumerus aurifrons (WIEDEMANN, 1824)
Eumerus axinecerus SPEISER, 1910 ◖ ◘ ✚
Eumerus bequaerti HERVÉ-BAZIN, 1913 ◘
Eumerus bidentatus KEISER, 1971
Eumerus braunsi (VAN DOESBURG, 1956)
Eumerus breijeri VAN DOESBURG, 1955
Eumerus brincki HULL, 1964 ✚
Eumerus capensis (CURRAN, 1938) ◘
Eumerus cilaosiacus KASSEBEER, 2000
Eumerus compactus VAN DOESBURG, 1966
Eumerus connexus HULL, 1964 ✚
Eumerus cribratus (BEZZI, 1915)
Eumerus discimanus KEISER, 1971
Eumerus dolichocerus SPEISER, 1915 ◘
Eumerus erythrocerus LOEW, 1858 ◖ ◘
Eumerus feae BEZZI, 1912 ◖ ● ✚
Eumerus flavimarginatus HULL, 1964 ✚
Eumerus fumipennis HULL, 1964 ✚
Eumerus griseus HULL, 1964 ✚
Eumerus hypopygialis VAN DOESBURG, 1966
Eumerus imitatus VAN DOESBURG, 1955
Eumerus integer BEZZI, 1921 ◘
Eumerus jacobi HERVÉ-BAZIN, 1913 ● ◘ ✚
Eumerus keizeri HULL, 1964
Eumerus lugens WIEDEMANN, 1830 ◘ ✚
Eumerus lunatus (FABRICIUS, 1794) ◘
Eumerus macropygus KEISER, 1971
Eumerus maculipennis BEZZI, 1915 ◖ ◘ ✚
Eumerus malagasius KEISER, 1971
Eumerus metatarsalis VAN DOESBURG, 1955
Eumerus mucidus BEZZI, 1921
Eumerus niger VAN DOESBURG, 1955
Eumerus nigroapicalis KEISER, 1971
Eumerus nigrocoeruleus HULL, 1964 ✚
Eumerus nodosus HULL, 1964 ✚
Eumerus obliquus (FABRICIUS, 1805) ◖ ● ◘ ✚
Eumerus obscurus HULL, 1964
Eumerus obtusiceps HULL, 1937
Eumerus ochreatus HULL, 1964✚
Eumerus parasiticus (SÉGUY, 1955)
Eumerus paulae HERVÉ-BAZIN, 1913 ◖ ● ◘ ✚
Eumerus pipizoides SPEISER, 1915 ◘
Eumerus platycheiroides KEISER, 1971
Eumerus pumilio HULL, 1964 ✚
Eumerus quadrimaculatus MACQUART, 1855 ◖ ◘
Eumerus rubidus HULL, 1964
Eumerus rubiginosus HERVÉ-BAZIN, 1913 ◘ ✚
Eumerus rudebecki HULL, 1964
Eumerus rufipes HERVÉ-BAZIN, 1913 ◘
Eumerus sakarahaensis KEISER, 1971
Eumerus scaber BEZZI, 1915 ◖ ● ◘
Eumerus serratus BEZZI, 1915 ◖ ◘ ✚
Eumerus sexfasciatus (JOHNSON, 1898) ✚
Eumerus signatus KEISER, 1971
Eumerus speiseri HULL, 1964 ✚
Eumerus spinifer VAN DOESBURG, 1955
Eumerus subcaeruleus KEISER, 1971
Eumerus sudanus (CURRAN, 1938)
Eumerus tessellatus HULL, 1964 ✚
Eumerus toamasinaensis KEISER, 1971
Eumerus triangularis HERVÉ-BAZIN, 1913 ◖ ◘ ✚
Eumerus tridentatus KEISER, 1971
Eumerus tumidipes VAN DOESBURG, 1966
Eumerus unicolor LOEW, 1858 ◖ ◘

Eumerus vansoni VAN DOESBURG, 1955
Eumerus varipennis (CURRAN, 1938) ◘ ✚
Eumerus vestitus BEZZI, 1912 ◖ ◘
Eumerus villeneuvei HERVÉ-BAZIN, 1913 ◘
Eumerus wainwrighti (CURRAN, 1938) ◘

Keys: ◖ BEZZI (1915), ● CURRAN (1927), ◘ CURRAN (1938a) & ✚ HULL (1964). CURRAN (1938a), in his key to *Citabaena* [WALKER] and HULL (1964) each provided the most complete coverage (35 %). The overlap between these two keys is however, only 13 species (16 % of the total). Using all four keys a total of 53 % of the Afrotropical species can be keyed.

Revision: No recent revision is available.

Illustrations: BEZZI (1915) illustrated the hind leg of *E. armipes* BEZZI, 1915 and the habitus of *E. cribratus* (BEZZI, 1915). HULL (1964) illustrated the wing of wing of *E. astropilops* Hull, 1964, *E. brincki* Hull, 1964, *E. fumipennis* Hull, 1964, *E. keizeri* HULL, 1964 *E. rudebecki* Hull, 1964, *E. rubidus* Hull, 1964, *E. speiseri* Hull, 1964 and *E. tessellatus* HULL, 1964. KEISER (1971) illustrated the hind legs of *E. sakarahaensis* KEISER, 1971, *E. signatus* KEISER, 1971 *E. tridentatus* KEISER, 1971 and *E. varipennis* (CURRAN, 1938) [as the synonymised species *E. semifuscus* KEISER, 1971]. KEISER (1971) also illustrated the abdomen of *E. subcaeruleus* KEISER, 1971. DE MOOR (1973) illustrated the third instar larva, puparium, posterior respiratory process and male genitalia of *E. obliquus* (FABRICIUS, 1805). PEDERSEN (1976) illustrated the head, hind tarsus and abdomen of *E. aurifrons* (WIEDEMANN, 1824). THOMPSON (1988) illustrated the head, antenna, hind leg and male genitalia of *E. aquilius* WALKER, 1849. DIRICKX (1998) provided a distribution map for *E. feae* BEZZI, 1912, *E. maculipennis* BEZZI, 1915, *E. obliquus* (FABRICIUS, 1805), *E. paulae* HERVÉ-BAZIN, 1913, *E. triangularis* HERVÉ-BAZIN, 1913 & *E. varipennis* (CURRAN, 1938). KASSEBEER, 2000e illustrated the hind leg and wing of *E. cilaosiacus* KASSEBEER, 2000.

Eupeodes OSTEN SACKEN, 1877

With the exception of *E. ohmi* which was added by KASSEBEER (2000e), all included species were listed in SMITH & VOCKEROTH (1980) under *Metasyrphus* MATSAMURA, 1917 and in DIRICKX (1998) under *Eupeodes*.

Included species:

Eupeodes corollae (FABRICIUS, 1794)
Eupeodes nuba (WIEDEMANN, 1830)
Eupeodes ohmi KASSEBEER, 2000

Keys: CURRAN (1938b) included *E. corollae* (FABRICIUS, 1794) as *Syrphus cognatus* Loew, 1858 in the key to *Syrphus* Section II.

Revision: No recent revision is available.

Illustrations: The venterolateral view of the sternopleuron and the male genitalia of *E. corollae* (FABRICIUS, 1794) were illustrated in VOCKEROTH (1969). DUŠEK & LÁSKA (1976) illustrated part of the wing and the abdomen of *E. corollae* (FABRICIUS, 1794). DIRICKX (1998) provided a distribution map for *E. corollae* (FABRICIUS, 1794). KASSEBEER, 2000e illustrated the abdomen and male genitalia of *E. ohmi* KASSEBEER, 2000.

Exallandra VOCKEROTH, 1969

This species is listed in both SMITH & VOCKEROTH (1980) and DIRICKX (1998).

Included species: *Exallandra cinctifacies* (SPEISER, 1910)

Keys: being monotypic, there are no keys to this genus, but the species does appear descriptively in CURRAN (1927 & 1938b).

Revision: No recent revision is available.

Illustrations: The male genitalia of *E. cinctifacies* (SPEISER, 1910) were illustrated in VOCKEROTH (1969) and DIRICKX (1998) provided a distribution map.

Graptomyza WIEDEMANN, 1820

SMITH & VOCKEROTH (1980) listed 13 species and DIRICKX (1998) listed all the species included here. WHITTINGTON (1992) added six new species and in 1994b added another. DIRICKX (1998) included *G. varia* (WALKER, 1849) under both *Graptomyza* and *Microdon* MEIGEN, 1803.

Included species:

Graptomyza amplicavum WHITTINGTON, 1992 ☒
Graptomyza aurea BEZZI, 1915 ◖ ● ◘ ☒
Graptomyza breviscutum CURRAN, 1929 ◘ ☒
Graptomyza clarala WHITTINGTON, 1992 ☒
Graptomyza hova KEISER, 1971 ☒
Graptomyza lutea WHITTINGTON, 1992 ☒
Graptomyza nigra BEZZI, 1915 ◖ ● ◘ ☒
Graptomyza nigricavum WHITTINGTON, 1992 ☒
Graptomyza pallidinotata WHITTINGTON, 1992 ☒
Graptomyza perforata VAN DOESBURG, 1960 ☒
Graptomyza quadrifaria SZILÁDY, 1942 ☒
Graptomyza robusticornis VAN DOESBURG, 1957 ☒
Graptomyza signata (WALKER, 1860) □ ● ◘ ☒
Graptomyza spinifera WHITTINGTON, 1994 ☒
Graptomyza suavissima KARSCH, 1888 □ ● ◘ ☒
Graptomyza summa WHITTINGTON, 1992 ☒
Graptomyza triangulifera (BIGOT, 1883) □ ◖ ● ◘ ☒
Graptomyza varia (WALKER, 1849) ☒
Graptomyza xanthopoda BEZZI, 1915 ◖ ● ◘ ☒

Keys: □ BEZZI (1912), ◖ BEZZI (1915), ● CURRAN (1927), ◘ CURRAN (1938a) & ☒ WHITTINGTON (1992 1994b). All species can be keyed using WHITTINGTON (1992 1994b).
Revision: WHITTINGTON (1992) revised the genus. WHITTINGTON (1993) designated the lectotype for the genus.
Illustrations: KARSCH (1888) provided an habitus of *G. suavissima* KARSCH, 1888. BEZZI (1915) illustrated the habitus of *G. aurea* BEZZI, 1915. WHITTINGTON (1992) included illustrations of the heads, legs, wings, scutellum, abdomen, male genitalia and distribution maps for all species, supplemented later by a habitus of *spinifera* WHITTINGTON, 1994 and further maps in WHITTINGTON (1994b). WHITTINGTON (1994a) illustrated the puparia, cephalopharyngeal skeletons and posterior spiracles of *G. signata* (WALKER, 1860) and *G. triangulifera* (BIGOT, 1883). DIRICKX (1998) provided a distribution map for *G. signata* (WALKER, 1860) *G. suavissima* KARSCH, 1888 and *G. triangulifera* (BIGOT, 1883).

Hovaxylota KEISER, 1971

Species listed here were previously included in SMITH & VOCKEROTH (1980) under the genera *Xylota* MEIGEN, 1822 and *Hovaxylota* KEISER, 1971 and in DIRICKX (1998) under the genus *Hovaxylota* KEISER, 1971. HIPPA (1978 1985a, c) added five species. THOMPSON & EVENHUIS (1999) include these species in *Xylota*, but the last taxonomic treatments of the genus (HIPPA 1978 1985b) indicated full generic status was appropriate. Until further analysis indicates otherwise, I have chosen to retain the species in *Hovaxylota* KEISER, 1971.

Included species:

Hovaxylota hancocki (CURRAN, 1927) ▲
Hovaxylota heinrichi HIPPA, 1985
Hovaxylota mimica (HULL, 1941) ▲
Hovaxylota neavei HIPPA, 1978 ▲
Hovaxylota perarmata HIPPA, 1985 ▲
Hovaxylota planiformis (HULL, 1941) ▲
Hovaxylota satyrus KEISER, 1971 ▲
Hovaxylota setosa KEISER, 1971 ▲
Hovaxylota uluguruensis HIPPA, 1978 ▲
Hovaxylota vulcana HIPPA, 1978 ▲

Keys: ▲ HIPPA (1985a) provided 90 % coverage.
Revision: HIPPA (1978) placed *Hovaxylota* in context with other World Xylotini. HIPPA (1985a) is the most recent revision of Afrotropical *Hovaxylota*, in which he synonymised *H. malagasya* KEISER, 1971 with *Hovaxylota planiformis* (HULL, 1941) and *H. rufipedoides* KEISER, 1971 with *Hovaxylota satyrus* KEISER, 1971.
Illustrations: HIPPA (1978 1985a) illustrated the frontal view of the heads and the male genitalia, plus various legs.

Ischiodon SACK, 1913

Both species were listed in SMITH & VOCKEROTH (1980), but DIRICKX (1998) excluded *I. feae* (BEZZI, 1912).

Included species:

Ischiodon aegyptius (WIEDEMANN, 1830) ◖
Ischiodon feae (BEZZI, 1912) ■

Keys: ◖ BEZZI (1915) & ■ CURRAN (1938b) in the key to *Syrphus* Section II.
Revision: No recent revision is available.

Illustrations: SCHMUTTERER (1972a & 1974) provided a photograph of larvae of *I. aegyptius* (WIEDEMANN, 1830). VOCKEROTH (1969) illustrated the male genitalia of *I. aegyptius* (WIEDEMANN, 1830). DIRICKX (1998) provided a distribution map. WHITTINGTON (2000) illustrated the habitus of *I. aegyptius* (WIEDEMANN, 1830).

Lejops RONDANI, 1857

All three species were listed in both SMITH & VOCKEROTH (1980) and DIRICKX (1998), but in the genera *Helophilus* MEIGEN, 1822 and *Anasimyia* SCHINER, 1864 respectively.

Included species:

Lejops katonae BEZZI, 1921 ○
Lejops nasutus CURRAN, 1929 ○
Lejops rhinosus HULL, 1944

Keys: ○ CURRAN (1939a) provides 66 % coverage.
Revision: No recent revision is available.
Illustrations: No illustrations are available.

Mallota MEIGEN, 1822

All six species were listed in both SMITH & VOCKEROTH (1980) and DIRICKX (1998).

Included species:

Mallota aenigma BEZZI, 1912 ◖
Mallota aperta (BEZZI, 1912) □ ● ◈
Mallota dasyops (WIEDEMANN, 1819) ◖ ● ◈
Mallota extrema (LOEW, 1858) ◖ ◈
Mallota hirsuta HULL, 1941
Mallota meromacrimima HULL, 1941

Keys: □ BEZZI (1912), ◖ BEZZI (1915), ● CURRAN (1927), ◈ CURRAN (1939b); it is only possible to key four of the six species (66 %) and the species are scattered in keys to *Mallota* MEIGEN, 1822, *Senaspis* MACQUART, 1850 and *Eristalis* LATREILLE, 1804 in CURRAN (1939b).
Revision: No recent revision is available.
Illustrations: DIRICKX (1998) provided a distribution map for *M. dasyops* (WIEDEMANN, 1819)

Melanostoma SCHINER, 1860

All included species (except for the later added *Melanostoma subbituberculatum* KASSEBEER, 2000) were listed in both SMITH & VOCKEROTH (1980) and DIRICKX (1998).

Included species:

Melanostoma aenoscutum HULL, 1964
Melanostoma alticola SPEISER, 1910
Melanostoma annulipes (MACQUART, 1842) ◖ ■
Melanostoma babyssola SPEISER, 1924
Melanostoma bituberculatum (LOEW, 1858) ◖ ■
Melanostoma diffusum HULL, 1941
Melanostoma flavipleurum HULL, 1964
Melanostoma floripeta SPEISER, 1910 ◖ ■
Melanostoma gymnocera BIGOT, 1891 ■
Melanostoma infuscatum BECKER, 1909 ◖
Melanostoma pyrophaenoides SPEISER, 1910 ■
Melanostoma satyriphilum HULL, 1941
Melanostoma scalare (FABRICIUS, 1794) ◖ ■
Melanostoma simplex VAN DOESBURG, 1955
Melanostoma subbituberculatum KASSEBEER, 2000
Melanostoma sulphuripes HULL, 1964
Melanostoma sylvarum HULL, 1941
Melanostoma trochanteratum HULL, 1964
Melanostoma violaceum HULL, 1964

Keys: ◖ BEZZI (1915) & ■ CURRAN (1938b). CURRAN (1938b) provided the most complete coverage (32 %); this can be increased to 37 % if both keys are used.
Revision: No recent revision is available.
Illustrations: HULL (1964) illustrated the abdomen of *M. aenoscutum* HULL, 1964, *M. sulphuripes* HULL, 1964, *M. trochanteratum* HULL, 1964 & *M. violaceum* HULL, 1964 and the wings of *M. sulphuripes* HULL, 1964, *M. trochanteratum* HULL, 1964 & *M. violaceum* HULL, 1964. DIRICKX (1998) provided a distribution map for *M. annulipes* (MACQUART, 1842), *M. bituberculatum* (LOEW, 1858), *M. gymnocera* BIGOT, 1891 & *M. infuscatum* BECKER, 1909. KASSEBEER (2000g) provided illustrations of the male and

the female abdomen, inner and outer postgonite of *M. bituberculatum* (LOEW, 1858) and *M. subbituberculatum* KASSEBEER, 2000 and the surstylus of *M. subbituberculatum* KASSEBEER, 2000.

Merodon MEIGEN, 1803

All included species were listed in both SMITH & VOCKEROTH (1980) and DIRICKX (1998).

Included species:

Merodon apimimus HULL, 1944
Merodon bombiformis HULL, 1944
Merodon cuthbertsoni CURRAN, 1939 ○
Merodon edentulus MACQUART, 1855 ○
Merodon melanocerus BEZZI, 1915 ◖ ○
Merodon multifasciatus CURRAN, 1939 ○
Merodon nasicus (BEZZI, 1915) ◖ ○
Merodon planifacies BEZZI, 1915 ◖ ○
Merodon stevensoni CURRAN, 1939 ○

Keys: ◖ BEZZI (1915) & ○ CURRAN (1939a). CURRAN (1939a) covers 77 % of the species in this genus.
Revision: No recent revision is available.
Illustrations: STUCKENBERG (1956) illustrated the third instar larva, cephalopharyngeal skeleton and puparium of *M. bombiformis* HULL, 1944.

Meromacroides CURRAN, 1927

This species was listed in both SMITH & VOCKEROTH (1980) and DIRICKX (1998).

Included species: *Meromacroides meromacriformis* (BEZZI, 1915)
Keys: being monotypic, there are no keys to this genus.
Revision: No recent revision is available.
Illustrations: There are no illustrations available.

Mesembrius RONDANI, 1857

Mesembrius contracta HIPPA, 1985 was added post SMITH & VOCKEROTH (1980) and *M. strenuus* (WALKER, 1857) was included by THOMPSON 1988 after both SMITH & VOCKEROTH (1980) and DIRICKX (1998). DIRICKX (1998) included *M. contracta* (HIPPA, 1985), *M. discophora* (SÉGUY, 1951), *M. excavatus* HULL, 1941 & *M. tortuosa* (HIPPA, 1985) in *Vadonimyia* SÉGUY, 1951, following HIPPA (1985b). *Vadonimyia* and *Mesembrius* together are clearly monophyletic HIPPA (1985b), but it remains subjective as to whether *Vadonimyia* should receive generic or sub-generic status. I follow THOMPSON & EVENHUIS (1999) in giving it sub-generic status until the completion of a World revision of this possibly paraphyletic (HIPPA 1985b) genus.

Included species:

Mesembrius africanus (VERRALL, 1898) ◖
Mesembrius caffer (LOEW, 1858)
Mesembrius capensis (MACQUART, 1842) ◖ ● ○
Mesembrius chapini CURRAN, 1939 ○
Mesembrius contracta (HIPPA, 1985)
Mesembrius ctenifer HULL, 1941
Mesembrius cyanipennis (BEZZI, 1915) ◖ ● ○
Mesembrius discophora (SÉGUY, 1951)
Mesembrius excavatus HULL, 1941
Mesembrius ingratus (LOEW, 1858) ◖ ● ○
Mesembrius lagopus (LOEW, 1860) ◖ ● ○
Mesembrius maculifer HULL, 1941
Mesembrius madagascariensis KEISER, 1971
Mesembrius minor (BEZZI, 1915) ◖ ● ○
Mesembrius morio (BEZZI, 1915) ◖ ● ○
Mesembrius nigriceps CURRAN, 1927 ● ○
Mesembrius perforatus (SPEISER, 1913) ○
Mesembrius platytarsis CURRAN, 1929 ○
Mesembrius regulus (HULL, 1937)
Mesembrius rex CURRAN, 1927 ● ○
Mesembrius senegalensis (MACQUART, 1842) ● ○
Mesembrius simplicipes CURRAN, 1929 ○
Mesembrius strenuus (WALKER, 1857)
Mesembrius strigilatus (BEZZI, 1912) ◖ ● ○
Mesembrius tarsatus (BIGOT, 1883) ○
Mesembrius tortuosa (HIPPA, 1985)

Keys: ◖ BEZZI (1915), ● CURRAN (1927) & ○ CURRAN (1939a). CURRAN (1939a) provided the most complete coverage (58 %). In total, 62 % of species can be keyed if all three keys are used.
Revision: No recent revision is available.

ILLUSTRATIONS: SZILÁDY (1942) illustrated the hind leg of *M. caffer* (LOEW, 1858) & *M. ingratus* (LOEW, 1858). KEISER (1971) illustrated the legs and abdomen of *M. ctenifer* HULL, 1941, *M. madagascariensis* KEISER, 1971, *M. platytarsis* CURRAN, 1929 & *M. simplicipes* CURRAN, 1929. HIPPA (1985b) illustrated the hind legs, abdomen and male genitalia of *M. discophora* (SÉGUY, 1951), *M. excavatus* HULL, 1941 and *M. tortuosa* (HIPPA, 1985); the abdomen of *M. contracta* (HIPPA, 1985) and the male genitalia of *M. simplicipes* CURRAN, 1929. DIRICKX (1998) provided a distribution map for *M. capensis* (MACQUART, 1842), *M. lagopus* (LOEW, 1860), *M. minor* (BEZZI, 1915), *M. senegalensis* (MACQUART, 1842) & *M. strigilatus* (BEZZI, 1912).

Microdon MEIGEN, 1803

Included here are all the Afrotropical sub-divisions of *Microdon* MEIGEN, 1803, following THOMPSON & EVENHUIS 1999, which include *Ceratophya* WIEDEMANN, 1830, *Ceratrichomyia* SÉGUY, 1951, *Hovamicrodon* KEISER, 1971, *Megodon* KEISER, 1971, *Pseudomicrodon* HULL, 1937, *Ptilobactrum* BEZZI, 1915 and of course *Microdon s.s.* At the present time and until further revisionary work is carried out, this is the most pragmatic way to treat this fragmented genus-group. All species included here were listed in SMITH & VOCKEROTH (1980) and DIRICKX (1998), excepting *Microdon comoroensis* DE MEYER, 1990 which was published after the former. DIRICKX (1998) duplicated the name *Microdon varia* WALKER, 1849, here and in *Graptomyza* WIEDEMANN, 1820, where it is correctly placed.

Included species:

Microdon acantholepidis SPEISER, 1913 □
Microdon aethiopicus RONDANI, 1873 ◖ □
Microdon ampefyanus KEISER, 1971
Microdon apis SPEISER, 1913 □
Microdon appendiculatus CURRAN, 1929 □
Microdon aureomagnificus HULL, 1944
Microdon behara (SÉGUY, 1951)
Microdon bequaerti CURRAN, 1929 □
Microdon brevicornis LOEW, 1858 ◖ □
Microdon caeruleomaculatus KEISER, 1971
Microdon captum SPEISER, 1913 □
Microdon clatratus KEISER, 1971
Microdon comoroensis DE MEYER et al. 1990
Microdon cremastogastri SPEISER, 1913 □
Microdon elisabethae (KEISER, 1971)
Microdon erythrocephalus BEZZI, 1915 ◖ □
Microdon erythros BEZZI, 1908 ◖ □
Microdon fenestrellatus KEISER, 1971
Microdon flavifacies (KEISER, 1971)
Microdon fuscipennis (KEISER, 1971)
Microdon hova HERVÉ-BAZIN, 1913 □
Microdon illucens BEZZI, 1915 ◖ □
Microdon inappendiculatus CURRAN, 1929 □
Microdon inermis LOEW, 1858 ◖ □
Microdon johannae VAN DOESBURG, 1957
Microdon kavitahaius KEISER, 1971
Microdon liberiensis CURRAN, 1929 □
Microdon luctiferus HULL, 1941 □
Microdon luteiventris BEZZI, 1915 ◖
Microdon madecassa (KEISER, 1971)
Microdon malagasicus KEISER, 1971
Microdon microtuberculatus HULL, 1964
Microdon modesticolor HULL, 1944
Microdon mydas BEZZI, 1915 ◖ □
Microdon mynthes SÉGUY, 1953
Microdon neavei (BEZZI, 1915) ◖
Microdon nigrocyaneus HULL, 1964
Microdon nubecula (KEISER, 1971)
Microdon obesus HERVÉ-BAZIN, 1913 ◖ □
Microdon pallidus BEZZI, 1915 ◖ □
Microdon planitarsus KEISER, 1971
Microdon punctulatus WIEDEMANN, 1824 ◖
Microdon ranavalonae KEISER, 1971
Microdon rugosus BEZZI, 1915 ◖ □
Microdon schultzei (SIMROTH, 1907)
Microdon silvester (KEISER, 1971)
Microdon stuckenbergi (KEISER, 1971: 253) (*Megodon*)
Microdon stuckenbergi (KEISER, 1971: 258) (*Ceratophya*)
Microdon sudanus CURRAN, 1923 □
Microdon tarsalis HERVÉ-BAZIN, 1913 □
Microdon tenuifrons CURRAN, 1929 □
Microdon testaceus WALKER, 1857 ◖ □
Microdon tsara KEISER, 1971
Microdon villosus BEZZI, 1915 □
Microdon vulpicolor HULL, 1941
Microdon wainwrighti CURRAN, 1938 □

Keys: ◖ BEZZI (1915) & □ CURRAN (1938a). CURRAN (1938a) provided the most complete coverage (47 %) and by using both keys, coverage of 53 % can be achieved.
Revision: No recent revision is available.

Illustrations: BEZZI (1915) illustrated the head of *M. neavei* (BEZZI, 1915) and *M. villosus* BEZZI, 1915, the antenna of *M. neavei* (BEZZI, 1915), the abdomen of *M. illucens* BEZZI, 1915 and the habitus of *M. erythrocephalus* BEZZI, 1915, *M. mydas* BEZZI, 1915, *M. neavei* (BEZZI, 1915) and *M. rugosus* BEZZI, 1915. METCALF (1921) illustrated the male genitalia of *M. fuscipennis* but this is the species described from North America (MACQUART, 1834) rather than that described from Madagascar (KEISER, 1971). CURRAN (1923) illustrated the head of *M. sudanus* CURRAN, 1923 and *M. tarsalis* HERVÉ-BAZIN, 1913. HULL (1964) illustrated the wing of *M. nigrocyaneus* HULL, 1964. DE MEYER et al. (1990) illustrated the male genitalia of *M. comoroensis* DE MEYER et al. 1990. DIRICKX (1998) provided a distribution map for *M. brevicornis* LOEW, 1858, *M. erythros* BEZZI, 1908, *M. inermis* LOEW, 1858, *M. luteiventris* BEZZI, 1915 & *M. rugosus* BEZZI, 1915. HULL (1949) illustrated the antenna of *M. neavei* (BEZZI, 1915).

Milesia LATREILLE, 1804

In SMITH & VOCKEROTH (1980) *Milesia afra* VAN DOESBURG, 1955 was listed under *Milesia* LATREILLE, 1804 and three species were listed under *Pogonosyrphus* MALLOCH, 1932. *Milesia prolixa* HIPPA, 1990 was added later and DIRICKX (1998) included all five species in *Milesia* LATREILLE, 1804 following synonymy of *Pogonosyrphus* with *Milesia* by HIPPA 1990. THOMPSON & EVENHUIS (1999) retained *Pogonosyrphus* at full generic status, but for the present HIPPA 1990's generic placement seems appropriate until further analysis indicates otherwise.

Included species:

Milesia afra VAN DOESBURG, 1955 ✶
Milesia arnoldi (MALLOCH, 1932) ✶
Milesia bequaerti (VAN DOESBURG, 1955) ✶
Milesia overlaeti (VAN DOESBURG, 1955) ✶
Milesia prolixa HIPPA, 1990 ✶

Keys: ✶ HIPPA, 1990; 100 % coverage.
Revision: HIPPA (1990) revised *Milesia* LATREILLE, 1804 on a worldwide basis and synonymised *Pogonosyrphus* MALLOCH, 1932 with it.
Illustrations: HIPPA (1990) provided illustrations of the wings, abdomen and male genitalia of all five species; head and hind legs of *M. afra* VAN DOESBURG, 1955 and *M. prolixa* HIPPA, 1990; female genitalia of *M. afra* and *M. arnoldi* (MALLOCH, 1932); and a distribution map.

Myolepta NEWMAN, 1838

All included species were listed in both SMITH & VOCKEROTH (1980) and DIRICKX (1998).

Included species:

Myolepta africana THOMPSON, 1974 ◈
Myolepta similis THOMPSON, 1974 ◈
Myolepta triangularis THOMPSON, 1974 ◈

Keys: All three species are keyed in ◈ THOMPSON, 1974b.
Revision: THOMPSON (1974b) revised the Afrotropical species of this genus.
Illustrations: THOMPSON (1974b) illustrated the head, antenna, scutellum and hind femur of *M. africana* THOMPSON, 1974 and the antenna and scutellum *M. triangularis* THOMPSON, 1974.

Ornidia LE PELETIER & SERVILLE, 1828

Included in both SMITH & VOCKEROTH (1980) and DIRICKX (1998).

Included species: *Ornidia obesa* (FABRICIUS, 1775)
Keys: A single species of this otherwise Neotropical genus exists in the Afrotropical region and is likely to be an introduction via the human activities. All species in *Ornidia* are keyed by THOMPSON (1991).
Revision: THOMPSON (1991) revised *Ornidia* LE PELETIER & SERVILLE, 1828 on a worldwide basis. WHITTINGTON & ROTHERAY (1997) described the third larval instar.
Illustrations: VOCKEROTH & THOMPSON (1987) illustrated the head of *O. obesa* (FABRICIUS, 1775). THOMPSON (1991) illustrated the head, notopleuron and male genitalia of *O. obesa* (FABRICIUS, 1775). The

Afrotropical distribution was illustrated and discussed by WHITTINGTON & ROTHERAY (1997) and the third larval instar was illustrated.

Paragus LATREILLE, 1804

SMITH & VOCKEROTH (1980) included 17 species and DIRICKX (1998) included 18 (*Paragus compeditus* WIEDEMANN, 1830 being added). KASSEBEER added 7 species, DE MEYER and WHITTINGTON added one each, but *Paragus stuckenbergi* DE MEYER, 1998 is both a homonym and a synonym and is thus invalid (see discussion below).

Included species:

Paragus apicalis KASSEBEER, 1998
Paragus auritus STUCKENBERG, 1954 ✶
Paragus azureus HULL, 1949 ✶
Paragus basilewskyi VAN DOESBURG, 1955
Paragus borbonicus MACQUART, 1842 ◖ ■
Paragus boyesi KASSEBEER, 1999
Paragus capricorni STUCKENBERG, 1954 ✶
Paragus chalybeatus HULL, 1964
Paragus compeditus WIEDEMANN, 1830
Paragus cooksoni WHITTINGTON, 1998
Paragus dolichocerus BEZZI, 1915 ◖ ■ ▣
Paragus gracilis STUCKENBERG, 1954 ▣
Paragus haemorrhous MEIGEN, 1822 ■ ▣
Paragus longiventris LOEW, 1858 ◖ ■ ▣
Paragus manensis KASSEBEER, 1999
Paragus marshalli Bezzi, 1915 ◖ ■ ▣
Paragus minutus HULL, 1938 ▣
Paragus naso STUCKENBERG, 1954 ▣
Paragus nasutus BEZZI, 1920
Paragus nigrocoeruleus HULL, 1949
Paragus paulyi KASSEBEER, 2000
Paragus punctatus HULL, 1949 ▣
Paragus pusillus STUCKENBERG, 1954 ▣
Paragus tonkouiensis KASSEBEER, 1999
Paragus tsimbazazensis KASSEBEER, 1999
Paragus zuqualensis KASSEBEER, 2001

Keys: ◖ BEZZI (1915), ■ CURRAN (1938b), ▣ STUCKENBERG (1954b) & ✶ STUCKENBERG (1954c). STUCKENBERG (1954b & c) provided the most complete coverage (46 %).
Revision: STUCKENBERG (1954b & c) are the most recent revisions available.
Illustrations: BEZZI (1915) illustrated the abdomen of *P. longiventris* LOEW, 1858 & *P. marshalli* Bezzi, 1915 and the antenna of *P. dolichocerus* BEZZI, 1915. HULL (1938) illustrated the head of *P. minutus* HULL, 1938. STUCKENBERG (1954b) illustrated the abdomen and male genitalia of *P. borbonicus* MACQUART, 1842, *P. dolichocerus* BEZZI, 1915, *P. gracilis* STUCKENBERG, 1954, *P. haemorrhous* MEIGEN, 1822 [as *P. tibialis* (FALLÉN, 1817)], *P. longiventris* LOEW, 1858, *P. marshalli* BEZZI 1915, & *P. minutus* HULL, 1938 and the genitalia only of *P. azureus* HULL, 1949 [as *P. bicolor* (FABRICIUS, 1794)], *P. naso* STUCKENBERG, 1954 & *P. punctatus* HULL, 1949. STUCKENBERG (1954c) illustrated the abdomen and male genitalia of *P. auritus* STUCKENBERG, 1954, *P. azureus* HULL, 1949, *P. capricorni* STUCKENBERG, 1954, & *P. pusillus* STUCKENBERG, 1954. VOCKEROTH (1986) provided illustrations of the abdomen, male genitalia and North American distribution map for *P. haemorrhous* MEIGEN, 1822. VOCKEROTH & THOMPSON (1987) and THOMPSON & ROTHERAY (1998) illustrated the abdomen OF *P. haemorrhous* MEIGEN, 1822. ROTHERAY (1993) provided a colour photograph of the final instar larva of *P. haemorrhous* MEIGEN, 1822. DIRICKX (1998) provided a distribution map for *P. azureus* HULL, 1949, *P. borbonicus* MACQUART, 1842, *P. capricorni* STUCKENBERG, 1954, *P. haemorrhous* MEIGEN, 1822, *P. longiventris* LOEW, 1858 & *P. marshalli* Bezzi, 1915. DE MEYER (1998; as *P.* stuckenbergi DE MEYER, 1998) and KASSEBEER (1998) illustrated the wing, hind tibia and basitarsus and male genitalia of *P. apicalis* KASSEBEER, 1998 and KASSEBEER (1998) provided a distribution map. WHITTINGTON (1998) illustrated the head abdomen and male genitalia of *P. cooksoni* WHITTINGTON, 1998 and the head profile of *P. minutus* HULL, 1938. KASSEBEER (1999a) provided a photograph of *P. longiventris* LOEW, 1858 and illustrations of the male genitalia of *P. manensis* KASSEBEER, 1999 and *P. tonkouiensis* KASSEBEER, 1999. KASSEBEER (1999b) provided distribution maps and illustrations of the male genitalia of *P. boyesi* KASSEBEER, 1999 and *P. tsimbazazensis* KASSEBEER, 1999 and a distribution map for *P. borbonicus* MACQUART, 1842, *P. capricorni* STUCKENBERG, 1954 and *P. compeditus* WIEDEMANN, 1830. KASSEBEER (2000c) illustrated the male genitalia of *P. paulyi* KASSEBEER, 2000. KASSEBEER (2001) illustrated the male genitalia of *P. zuqualensis* KASSEBEER, 2001

Pelloloma VOCKEROTH, 1973

Only *Pelloloma nigrifacies* VOCKEROTH, 1973 was included in SMITH & VOCKEROTH (1980) and DIRICKX (1998). Two species were added by KASSEBEER (2000d).

Included species:

Pelloloma freidbergi KASSEBEER, 2000 ⬟
Pelloloma nigrifacies VOCKEROTH, 1973 ⬟
Pelloloma winkleri KASSEBEER, 2000 ⬟

Keys: ⬟ KASSEBEER (2000d) provided 100 % coverage of species.
Revision: KASSEBEER (2000d) recently revised this genus.
ILLUSTRATIONS: VOCKEROTH (1973a) illustrated the male head, abdomen and genitalia and the female abdomen. KASSEBEER (2000d) illustrated the male abdomen and hypopygium of *P. winkleri* KASSEBEER, 2000 and the male abdomen of *P. freidbergi* KASSEBEER, 2000.

Phytomia GUÉRIN-MÉNEVILLE, 1834

All included species were listed in both SMITH & VOCKEROTH (1980) and DIRICKX (1998).

Included species:

Phytomia aurigera BEZZI, 1915 ◖ ● ◈
Phytomia bezzii CURRAN, 1927 ● ◈
Phytomia bullata (LOEW, 1858) ◖ ● ◈
Phytomia bulligera (AUSTEN, 1909) ◖ ● ◈
Phytomia ephippium (BEZZI, 1912) ◖ ● ◈
Phytomia erratica (BEZZI, 1912) ◖ ● ◈
Phytomia fronto (LOEW, 1858) ◖ ● ◈
Phytomia fucoides BEZZI, 1915 ◖ ● ◈
Phytomia fusca HULL, 1941
Phytomia incisa (WIEDEMANN, 1830) ◖ ● ◈
Phytomia kroeberi (BEZZI, 1912) ◖ ● ◈
Phytomia natalensis (MACQUART, 1850) ◖ ● ◈
Phytomia neavei BEZZI, 1915 ◖ ● ◈
Phytomia noctilio (SPEISER, 1924)
Phytomia poensis (BEZZI, 1912)
Phytomia pubipennis BEZZI, 1915 ◖ ● ◈
Phytomia serena CURRAN, 1927 ◈
Phytomia varians CURRAN, 1927 ◈

Keys: ◖ BEZZI (1915), ● CURRAN (1927), ◈ CURRAN (1939b); it is possible to key 83 % of the species using CURRAN (1939b) in his treatments of *Dolichomerus* MACQUART, 1850 & *Phytomia* GUÉRIN-MÉNEVILLE, 1834.
Revision: No recent revision is available.
ILLUSTRATIONS: AUSTEN (1909) provided an habitus illustration of *P. bulligera* (AUSTEN, 1909). BEZZI (1915) illustrated the habitus of *P. aurigera* BEZZI, 1915 and the wing of *kroeberi* (BEZZI, 1912). DIRICKX (1998) provided a distribution map for *P. bulligera* (AUSTEN, 1909), *P. erratica* (BEZZI, 1912), *P. fronto* (LOEW, 1858), *P. incisa* (WIEDEMANN, 1830), *P. natalensis* (MACQUART, 1850) & *P. pubipennis* BEZZI, 1915.

Pseudodoros BECKER, 1903

Included in both SMITH & VOCKEROTH (1980) and DIRICKX (1998).

Included species: *Pseudodoros nigricollis* BECKER, 1903
Keys: in BEZZI (1915) as *Baccha extranea* BEZZI, 1915 (syn. SMITH & VOCKEROTH (1980)), in CURRAN (1939b) & KASSEBEER (2000f).
Revision: KASSEBEER (2000f) redescribed and diagnosed the species and synonymised *Pseudodoros psyllidivorus* SÉGUY, 1953 with *Allobaccha sapphirina* (WIEDEMANN, 1830).
ILLUSTRATIONS: KASSEBEER (2000f) included an illustration of the abdomen and a distribution map.

Rhingia SCOPOLI, 1763

All species included here were listed in both SMITH & VOCKEROTH (1980) and DIRICKX (1998).

Included species:

Rhingia caerulescens LOEW, 1858 ◉ ◖ ○
Rhingia cnephaeoptera SPEISER, 1915
Rhingia coerulea BEZZI, 1912 ○
Rhingia congensis CURRAN, 1939 ○
Rhingia cuthbertsoni CURRAN, 1939 ○
Rhingia cyanoprora SPEISER, 1910 ◉ ○

Rhingia fuscipes BEZZI, 1915 ◖ ○
Rhingia lutea BEZZI, 1915 ◖ ○
Rhingia mecyana SPEISER, 1910 ◉ ○
Rhingia orthoneurina SPEISER, 1910 ◉
Rhingia pellucens BEZZI, 1915 ◖ ○
Rhingia pulcherrima BEZZI, 1908 ◉ ○
Rhingia pycnosoma BEZZI, 1915 ◖ ○
Rhingia saskana SZILÁDY, 1942
Rhingia semicaerulea AUSTEN, 1893 ◉ ◖ ○
Rhingia trivittata CURRAN, 1929 ○

Keys: ◉ SPEISER (1910), ◖ BEZZI (1915), & ○ CURRAN (1939a). CURRAN (1939a) provided the most complete coverage (81 %), but in total, 88 % of species can be keyed if all three keys are used.
Revision: No recent revision is available.
ILLUSTRATIONS: BEZZI (1915) illustrated the habitus of *R. pellucens* BEZZI, 1915. DIRICKX (1998) provided a distribution map for *R. caerulescens* LOEW, 1858 & *R. semicaerulea* AUSTEN, 1893.

Senaspis MACQUART, 1850

All species included here were listed in SMITH & VOCKEROTH (1980), DIRICKX (1998) excluded *Senaspis cuprea* (MACQUART, 1842). SMITH & VOCKEROTH (1980) also duplicated the name *cuprea* (MACQUART, 1842) in *Eristalis* LATREILLE, 1804.

Included species:

Senaspis apophysata (BEZZI, 1915) ◖ ● ◈
Senaspis cuprea (MACQUART, 1842) □
Senaspis dentipes (MACQUART, 1842) □ ◖ ● ◈
Senaspis dibaphus (WALKER, 1849) □ ◖ ● ◈
Senaspis elliottii AUSTEN, 1909 □ ◖ ● ◈
Senaspis flaviceps MACQUART, 1850 □
Senaspis griseifacies (BEZZI, 1908) □
Senaspis haemorrhoa (GERSTAECKER, 1871) □ ◖ ● ◈
Senaspis livida (BEZZI, 1912) □
Senaspis melanthysana (SPEISER, 1913) ◈
Senaspis nigrita (BIGOT, 1859) □ ● ◈
Senaspis pennata (HERVÉ-BAZIN, 1914)
Senaspis umbrifera (WALKER, 1849) □
Senaspis xanthorrhoea (BEZZI, 1912) □ ◖ ● ◈

Keys: □ BEZZI (1912), ◖ BEZZI (1915), ● CURRAN (1927) & ◈ CURRAN (1939b). BEZZI (1912) provided the most complete coverage (79 %) in his treatment of *Protylocera* BEZZI, 1912. In total, 93 % coverage is attainable using all the keys listed here.
Revision: No recent revision is available.
Illustrations: AUSTEN (1909) provided habitus illustrations of *S. dentipes* (MACQUART, 1842) [as the junior synonym *S. aesacus* (WALKER, 1849)] & *S. elliottii* AUSTEN, 1909. BEZZI (1915) illustrated the hind leg of *S. apophysata* (BEZZI, 1915). DIRICKX (1998) provided a distribution map for *S. dentipes* (MACQUART, 1842), *S. dibaphus* (WALKER, 1849), *S. elliottii* AUSTEN, 1909 & *S. haemorrhoa* (GERSTAECKER, 1871). COPELAND et al. (1999) illustrated the puparium, respiratory processes and cephalopharyngeal skeleton of *S. haemorrhoa* (GERSTAECKER, 1871).

Simoides LOEW, 1858

All species included here were listed in both SMITH & VOCKEROTH (1980) and DIRICKX (1998). *Simoides crassipes* (FABRICIUS, 1805) was listed as a synonym of *S. pachymera* (Wiedemann, 1819) in SMITH & VOCKEROTH (1980), whereas *S. crassipes* (FABRICIUS, 1805) is actually the senior name, as correctly stated by DIRICKX (1998).

Included species:

Simoides crassipes (FABRICIUS, 1805) ◖ ◈
Simoides descendens (BECKER, 1909)
Simoides expletus (LOEW, 1858)
Simoides flavipila HULL, 1964
Simoides notatus (BIGOT, 1885)
Simoides villipes (LOEW, 1858) ◖ ● ◈

Keys: ◖ BEZZI (1915), ● CURRAN (1927) & ◈ CURRAN (1939b). BEZZI (1915) and CURRAN (1939b) provided the most complete coverage (33 %).
Revision: No recent revision is available.
ILLUSTRATIONS: HULL (1949) illustrated the head of *Simoides crassipes* (FABRICIUS, 1805). DIRICKX (1998) provided a distribution map for *S. crassipes* (FABRICIUS, 1805).

Sphaerophoria LE PELETIER & SERVILLE, 1828

Three of the species included here were listed in both SMITH & VOCKEROTH (1980) and DIRICKX (1998). *S. beattiei* (VAN DOESBURG & VAN DOESBURG, 1977) listed in *Loveridgeana* VAN DOESBURG & VAN DOESBURG, 1977. *S. bifasciata* MACQUART, 1850 was included in unplaced species in SMITH & VOCKEROTH (1980) and excluded in DIRICKX (1998).

Included species:

Sphaerophoria beattiei (VAN DOESBURG & VAN DOESBURG, 1977)
Sphaerophoria bifasciata MACQUART, 1850
Sphaerophoria quadrituberculata BEZZI, 1915 ★
Sphaerophoria retrocurva HULL, 1944 ★
Sphaerophoria rueppellii (WIEDEMANN, 1830) ★

Keys: ★ VOCKEROTH (1973a); 60 % coverage.
Revision: No recent revision is available.
ILLUSTRATIONS: BEZZI (1915) illustrated the abdomen of *S. quadrituberculata* BEZZI, 1915 in lateral view. STUCKENBERG (1954a) illustrated the third instar larva and puparium of *S. quadrituberculata* BEZZI, 1915. VOCKEROTH (1973a) illustrated the male genitalia of *S. quadrituberculata* BEZZI, 1915 & *S. retrocurva* HULL, 1944

Spheginobaccha DE MEIJERE, 1908

Four of the six species included here were listed in SMITH & VOCKEROTH (1980). DIRICKX (1995) added *Spheginobaccha guttula* & *S. ruginosa*.

Included species:

Spheginobaccha dexioides HULL, 1944 ✳
Spheginobaccha dubia THOMPSON, 1974 ✳
Spheginobaccha guttula DIRICKX, 1995
Spheginobaccha perialla THOMPSON, 1974 ✳
Spheginobaccha rotundiceps (LOEW, 1858) ✳
Spheginobaccha ruginosa DIRICKX, 1995

Keys: ✳ THOMPSON (1974a); 66 % coverage.
Revision: THOMPSON (1974a) provided the most recent revision.
ILLUSTRATIONS: THOMPSON (1974a) illustrated the head of *S. perialla* THOMPSON, 1974; the antennae of *S. dexioides* HULL, 1944 & *S. dubia* THOMPSON, 1974; wings of and the male genitalia of *S. dexioides* HULL, 1944, *S. dubia* THOMPSON, 1974, *S. perialla* THOMPSON, 1974 & *S. rotundiceps* (LOEW, 1858). DIRICKX (1995) illustrated the head and wing of *S. guttula* DIRICKX, 1995 & *S. ruginosa* DIRICKX, 1995.

Syritta LE PELETIER & SERVILLE, 1828

All species included here were listed in SMITH & VOCKEROTH (1980) with *S. leucopleura* BIGOT, 1859 listed as a synonym of *S. nigrifemorata* MACQUART, 1842. This species was excluded in DIRICKX (1998), but reinstated by KASSEBEER (2000e). DIRICKX (1998) also excluded *S. bulbulus* SPEISER (listed under the name *Syritta bulbus* WALKER, 1849), 1913 & *S. indica* (WIEDEMANN, 1824).

Included species:

Syritta abyssinica RONDANI, 1873 ○
Syritta austeni BEZZI, 1915 ◖ ○
Syritta bulbulus SPEISER, 1913
Syritta bulbus WALKER, 1849 ◖ ○
Syritta decora WALKER, 1849
Syritta dilatata KEISER, 1971
Syritta fasciata (WIEDEMANN, 1830) ◖ ○
Syritta flaviventris MACQUART, 1842 ◖ ○
Syritta hirta CURRAN, 1939 ○
Syritta indica (WIEDEMANN, 1824)
Syritta lanipes BEZZI, 1921
Syritta latitarsata MACQUART, 1842 ○
Syritta leucopleura BIGOT, 1859
Syritta nigrifemorata MACQUART, 1842 ○
Syritta sejuncta (WALKER, 1849)
Syritta stigmatica LOEW, 1858 ◖ ○
Syritta subtilis BECKER, 1903
Syritta tanalaorum KEISER, 1971
Syritta vitripennis BIGOT, 1885

Keys: ◖ BEZZI (1915) & ○ CURRAN (1939a). CURRAN (1939a) provided 53 % coverage of species.
Revision: No recent revision is available.
ILLUSTRATIONS: DIRICKX (1998) provided a distribution map for *S. bulbus* WALKER, 1849, *S. fasciata* (WIEDEMANN, 1830), *S. flaviventris* MACQUART, 1842 & *S. stigmatica* LOEW, 1858.

Syrittosyrphus HULL, 1944

This species is listed in both SMITH & VOCKEROTH (1980) and DIRICKX (1998).

Included species: *Syrittosyrphus opacea* HULL, 1944
Keys: being monotypic, there are no keys to this genus.
Revision: No recent revision is available.
Illustrations: HULL (1949) illustrated *S. opacea* HULL, 1944. HIPPA (1990) illustrated the head, metathoracic spiracle, hind leg and male genitalia of *S. opacea* HULL, 1944.

Syrphus FABRICIUS, 1775

Both species listed here were included under Unplaced species of Syrphini in SMITH & VOCKEROTH (1980) and excluded from DIRICKX (1998).

Included species:

Syrphus notogramma (BEZZI, 1908)
Syrphus schultzianus BEZZI, 1908

Keys: there are no keys to the Afrotropical members of this genus, but *S. schultzianus* BEZZI, 1908 does appear in CURRAN (1938b).
Revision: No recent revision is available.
ILLUSTRATIONS: No illustrations are available.

Tropidia MEIGEN, 1822

All included species were listed in SMITH & VOCKEROTH (1980) and in DIRICKX (1998), with *T. androyensis* (KEISER, 1971), *T. madagascariensis* (KEISER, 1971) & *T. pandani* (KEISER, 1971) included in *Calcaretropidia* KEISER, 1971.
Included species:

Tropidia androyensis (KEISER, 1971)
Tropidia flavipicta (BIGOT, 1859)
Tropidia incerta KEISER, 1971
Tropidia longa (WALKER, 1849)
Tropidia madagascariensis (KEISER, 1971)
Tropidia namorana KEISER, 1971
Tropidia pandani (KEISER, 1971)

Keys: there are no keys to the Afrotropical members of this genus.
Revision: No recent revision is available.
ILLUSTRATIONS: No illustrations are available.

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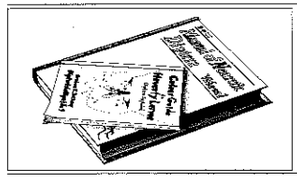
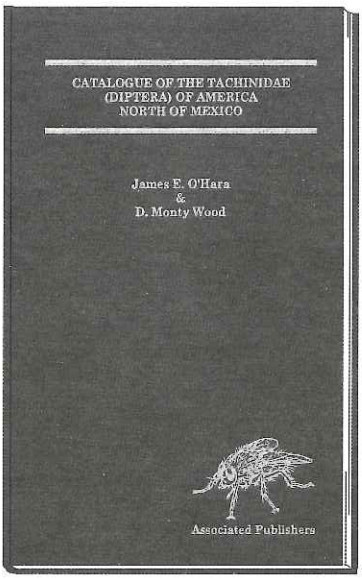


Neue Bücher - New Books

O'HARA, J. E. & WOOD, D. M. (2004): **Catalogue of the Tachinidae (Diptera) of America north of Mexico.** Memoirs on Entomology, International. Volume 18. Associated Publishers, Gainesville, Florida. iv + 410 pp. ISBN 1-56665-078-X. US$ 75.00.

Tachinidae comprise some of the most important insect biological control organisms on the planet, yet there is much to learn about their taxonomy, phylogenetics, and biologies. Agriculture specialists worldwide spend vast millions of dollars yearly in campaigns to control crop pests with various methods including using insect parasites. Thus, accurate knowledge of such organisms is essential to allow for cost-effective measures to be taken when biological control methods are employed.

A catalogue of Tachinidae is a first step to obtaining information about actual and potential tachinid parasites that may affect or are affecting other arthropod organisms in a particular area in question. For the Americas north of Mexico, Jim O'HARA and Monty WOOD have spent the last few years compiling such a catalogue, updating the last catalogue of tachinids that was published almost 40 years previous.



The fruits of their labor is found in the recently published 410-page catalogue of 1,345 species of Tachinidae of America north of Mexico. These species are recognized in 303 genera, 46 tribes, and 4 subfamilies. Significant changes in the classification made since the 1965 catalogue are followed, which more accurately reflect phylogenetic relationships. The cut-off date for entries was 1 September 2003.

The format of the catalogue has the primary information of scientific name, author, date, and page (to assist the reader in locating the associated literature reference to the original description). Distributional data follows the taxon name for each species. Below each taxon name is the synonymical history giving the original generic combination for that taxon. In this section, each species-group name, in addition to the author-date information, also has the type locality data and type depository given. Each genus-group name has type species information including method of typification. For the species entries, much work was obviously conducted by the authors to give detailed information concerning any distribution records that have come to the authors' attention since the publication of the 1965 catalogue. Each of these instances includes the country/province/state as well as the museum in which specimens from these new records are housed to allow for verification of their identification.

Below the synonymical history of each genus-group name and species-group name is a section giving the literature pertaining to that taxon with a brief annotation indicating the topic of that paper. This section will prove immensely valuable for any researcher needing to find the essential literature references pertaining to that organism.

The references section is accurately done and is presented in an easy-to-read format. Virtually all the literature citations were checked to ensure accuracy of citation of the author, date, and page in the catalogue proper.

The catalogue is exemplary of the detail and accuracy that typifies the work of these two specialists. Poring through the catalogue I could not find any readily apparent errors. If I were to make any comment, I suppose it would be the fact that when the authors discuss the geographical circumscription of their catalogue, they move from the rather lengthy "America north of Mexico" to the not necessarily synonymous "North America". Although "North America" can be defined as including Mexico, especially with regard to certain recent trade agreements, I suppose the authors were taking the liberty of using a shorter euphonious phrase to mean the same thing as their title.

The authors are commended for the painstaking efforts they took to ensure a highly accurate and useful reference source. I strongly recommend this book for every dipterist who has an interest in these flies and for those who want to have handy a very useful reference to the tachinid biocontrol literature for "North America."

Neal L. Evenhuis (Honolulu)