Phlebotomus (Synoblebotomus) groveli Downes, 1971.

Fig. 8.

All collected by I H Davidson and in SAIMR collection unless otherwise specified.

Type material. Holotype ♂, NAMIBIA (Owambo): Odibo, 19.11.1971, termite hill, R G Downes.


**Phlebotomus (Synplebotomus) martini** Parrot, 1976.

Fig. 11.

All collected from termite hills by Dr D M Minter and in his collection unless otherwise specified.


Phlebotomus (Synphlebotomus) celiae Minter, 1962.

Fig 12.


*Phthogotomus* (*Syneblebotomus*) *vansomerenae* Heisch,
Guggisberg & Teesdale, 1956. Fig. 13.


APPENDIX FOUR

THE SPECIES GROUP FALLAX

In females raised setae insertion sockets (Fig. 26a) on the posterior margin of abdominal tergite VI are never present. In males abdominal tergites V & VI are more pigmented and the setation is different to the remaining tergites [Fig. 26c], so differentiating them from males of the "bedfordi" group. Of the males that I examined from the Gambia in the west to the Sudan, Ethiopia, Kenya and Uganda in the east I was not able to differentiate the males of S. antemnala, S. dubia or S. cinsta and was, consequently, cautious about describing the male of the new species. Descriptions of the males of these species, therefore, are not given.

According to the original description of S. fallax, the material examined came from 3 localities a) from Mac-Mahon (Constantine-Algeria), b) from Tamerza which is actually just on the Tunisian side of the border and c) Figuig which is today just on the Moroccan side.
of the border. A footnote declares that the measurements given were taken from 10 examples from Algeria. It would also appear that all specimens examined were males. This then poses two questions; firstly, should the syntypic series comprise all specimens from all three localities or only those from Mac-Mahon; and secondly, of more importance, how were the females that are now known as *fallax* first associated with the males? The species *fallax* was raised as a variety of *P. minutus* on the basis of it having a significantly longer style (of terminalia) than either *P. minutus* or *P. minutus* var. *africanus* (now *S. africanus* which is now placed in a different subgenus). Whether this is a consistent distinguishing feature I cannot say, but I have seen male specimens (from north of the Sahara), which would appear to belong to the "*fallax* group", where the style is obviously longer than the style of the male specimens I have examined of the other species in this group.

I have seen one female of *S. fallax* from Tadjouna (Territoire des Afars et des Issas) that compares with female material labelled as *S. fallax*, from Morocco, Algeria and the Canary Islands. The female specimens I examined from Saudi Arabia and Yemen look different to the North African specimens. I have not seen any male
specimens from south of the Sahara that agree with the
description of S. fallax. It would appear, therefore, that S. fallax as a subsaharan species
may occur, only, on the African coast adjacent to the
Arabian peninsula.

The following is a description of the specimen
examined from Tadjouna given here so as to
discriminate between it and the new species from
Ethiopia with which it could be confused.

*Sergentomyia* (Sergentomyia) *fallax* Parrot, 1921,
Figs 129-132.

*Phlebotomus minutus* var. *fallax* Parrot, 1921:37.


*Phlebotomus* (Sergentomyia) *fallax*, Abonnenc,
1972:201.

FEMALE. Cibarial armature 0.025mm wide with 19 large
equally spaced monomorphic teeth; anterior row of
spiculate denticles absent. Pigment plate small and
globular in shape, 0.02mm wide. Hard palate
unpigmented; lateral flanges as dark as pigment plate.
Pharyngeal pump very broad, armed with a multitude of
closely packed blunt-tipped overlapping spines as well
as some broad based fine-tipped spines.

Mouthpart morphology. Apical margin of hypopharynx strongly undulating. Tapered labral tip appears short; lateral sensilla fine; apical sensilla broader. Mandibles narrow with 5 large teeth, which are ca. 0.002mm deep, per 0.01mm (twice as deep in montana).

Sergentomyia (Sergentomyia) antennata Newstead, 1912, comb. rev., Figs 117-120.

Phlebotomus antennatus Newstead, 1912:365; 1920:305
(description of male).

Phlebotomus signatipennis Newstead, 1920:310.

Phlebotomus minutus var. antennatus Parrot, 1930:189.

Phlebotomus sannori Galliard & Nitzulescu, 1931:33.

Phlebotomus minutus var. occidentalis Theodor, 1933:539.

Phlebotomus minutus var. signatipennis Theodor, 1933:539.

Sergentomyia (Sergentomyia) antennata Theodor, 1948:109; Quate 1964:257.

Sergentomyia (Sergentomyia) antennata ssp.


FEMALE. Cibarial armature 0.023-0.032mm wide with 21-26 fine closely packed monomorphic teeth; one to two rows of spiculate denticles present. Pigment plate oval, 0.018-0.025mm wide, marginally overlapping the posterior margin of the hard palate. Hard palate lightly pigmented with the lateral flanges as dark as the pigment plate. Pharyngeal pump broad and heavily armed with many large teardrop-shaped, blunt to elongate tipped overlapping spines.

Mouthpart morphology. Apical margin of hypopharynx strongly undulating near tip progressing to weakly undulating away from it. Tapered labral tip appears short; lateral and tip sensilla fine. Mandibles narrow with 6-7 small recurved teeth per 0.01mm.

MALE, see paragraph 1 of this Appendix.

MATERIAL EXAMINED. Holotype ♂, GHANA (Gold Coast): Salaga, (Dr Le Fanu) [marked Type ♂] (BMNH).
Holotype ♂ [of signatipennis], GHANA (Gold Coast): Gambaga, in latrine, 1.iv.1918, [marked Type ♂] (BMNH).
Lectotype ♂ [of P. minutus var. occidentalis, here designated], GHANA (Gold Coast): Tamale, 1932,
(Selwyn-Clarke) (labelled co-type) (BMNH). 99 10♀, Parallectotypes (examined); 7♀, 7♂, data as Lectotype, (BMNH); NIGERIA: 2♀ 3♂, Gadau, Oct. 1929 (BMNH).

Other specimens. ETHIOPIA: 1♀, Lake Hertale, 22.11.1972, (R W Ashford) (BMNH). GHANA: 5♀, Nangodi, 10. iv. 1962, (D J Lewis) (BMNH, SAIMR); 5♀, Kavamenga, 13. iv. 1962, (D J Lewis) (BMNH, SAIMR); 1♀, Pwalugu, 21. iv. 1962, (D J Lewis) (BMNH); 3♀, NIGERIA: Katsina, 17-23. iii. 1963, (M W Service) (BMNH, SAIMR); SUDAN: 1♀, Melut, 4. xii. 1951, (BMNH).

COMMENTS. This species appears to be more common in West Africa than in East Africa being replaced by S. cincta in the east. The morphology of the cibarial armature differentiates this species from S. cincta.

*Sergentomyia* (*Sergentomyia*) *bimanggui* sp. nov., Figs 113-116.

MALE. Unknown.

FEMALE. Cibarial armature 0.04mm wide with 22 large evenly-spaced monomorphic teeth; anterior row of spiculate denticles is present. Pigment plate large 0.03mm wide, strongly pigmented. Posterior margin of hard palate very dark, as dark as the lateral flanges. Pharyngeal pump narrow with blunt tipped spines as
Mouthpart morphology. Hypopharynx long and narrow; apical margin smooth. Tapered labral tip short; lateral sensilla fine; apical sensilla broader. Mandibles long and narrow with 10 tiny recurved teeth per 0.01mm.

MATERIAL EXAMINED. Holotype ¥ * REPUBLIQUE POPULAIRE DU CONGO: Forêt Bangou, 100 km NW Brazzaville, forêt ombratophile, P.i.v.1977, (G Vattier-Bernard, No 23336) (MNHN).

COMMENTS. The narrow weakly armed pharyngeal pump together with the smooth apical margin of the hypopharynx separates this species from all others in the group. This species is named for Mr A. Bimangou, technician to Drs G Vattier-Bernard and J Trouillet formerly of the Université Marien Ngouabi, Brazzaville.

Sergentomyia (Sergentomyia) buxtoni (Theodor, 1933), Figs 109-112.

Phlebotomus buxtoni Theodor, 1933:544.
Phlebotomus (Sergentomyia) buxtoni Kirk & Lewis, 1951:467; Abonnenc, 1972:178.

Phlebotomus mathisi Parrot, 1935:259.

FEMALE. Cibarial armature 0.04-0.05mm wide 13-15 teeth, those median shorter and narrower than those lateral which are very wide at the base and slanted toward the centre of the cibarium; antero-lateral spiculate denticles may be present. Pigment plate large, heavily pigmented, almost as wide as long, the anterior margin just overlapping the posterior margin of the hard palate. Hard palate uniformly lightly pigmented with slightly raised transverse ridges; lateral margins as dark as the pigment plate. Pharyngeal pump narrow with a number of teardrop-shaped overlapping spines as well as a few broad based pointed spines.

Mouthpart morphology. Apical margin of hypopharynx strongly undulating. Labral tip appears long; lateral sensilla fine; apical sensilla broader. Mandibles with 8-10 very small recurved teeth per 0.01 mm.

MATERIAL EXAMINED. Lectotype ♂ [here designated].
GHANA (Gold Coast): Tamale, 1932.
(Selwyn-Clarke) (BMNH, No.2501). Paralectotypes 2♂ (Nos 2556/7) [misidentification = Sergentomyia schwetzi]
sensu lato), GHANA (Gold Coast): 1♀, data as lectotype; 1♀, Accra, 1932, (Selwyn-Clarke) (BMNH).

Other specimens. GAMBIA: 1♀, Keneba area, 25.vi.1959, 2,9,10.vii.1959, (G H Murphy) (BMNH); 1♂, Tambanaa, 23.iii.1959, (G H Murphy) (SAIMR); NIGERIA: 3♀, 10♂, Kankiya, 27.iii.1956, 11.viii.1956, 30.1.1957, 6,10,11.ii.1957, (B McMillan) (BMNH, SAIMR).


COMMENTS. This species may be differentiated from S. distincta and all other species assigned to the "fallax group" on cibarial and pharyngeal armature morphology, in having longer antennal segment (3 & 4) and labral lengths as well as on the number of mandibular teeth. It has the same mandibular tooth morphology as S. schoutedeni and S. pastriciana but differs from them on cibarial and pharyngeal armature morphology.

Sergentomyia (Sergentomyia) cincta (Parrot & Martin, 1944), Figs 121-124.

Phlebotomus (Prophlebotomus) cinctus Parrot & Martin. 1944:56.

Phlebotomus (Sergentomyia) antennatus var. cinctus; Kirk & Lewis, 1951:456.

**Sergentomyia** *(Sergentomyia)* cincta. Abonnenc,

**FEMALE.** Cibarial armature 0.03-0.04mm wide with 15-25 large monomorphic teeth; postero-lateral spicate denticles present. Pigment plate a dark oval-shape, 0.022-0.03mm wide, overlapping the posterior margin of the hard palate. Hard palate lightly pigmented; lateral flanges as dark as the pigment plate. Pharyngeal pump broad (not as broad as *dubia* or *fallax*) and armed with many blunt-tipped overlapping spines.

Mouthpart morphology. Apical margin of hypopharynx weakly to strongly undulating at tip. Tapered labral tip appears short; lateral sensilla fine; apical sensilla broader. Mandibles long and narrow with 6-9 small recurved teeth per 0.01mm.

**MALE.** see paragraph 1 of this Appendix.

**MATERIAL EXAMINED.** Lectotype ♀ (here designated), Djibouti, viii.1942, (BMNH). Paralectotypes ♀♀ (unexamined and whereabouts unknown).

Other material, KENYA: ♀, Marigat, 2.xii.1957, 14.xii.1958, 20.xii.1958, (D H Minter) (BMNH); ♀, W Pokot, Kacheliba, 3.iii.1982, (L Rogo)

COMMENTS. This species is separable from S. antennata on cibarial armature morphology. See also S. antennata.

Sergentomyia (Sergentomyia) dubia (Parrot, Mornet & Cadenat), 1945a, Figs 125-126.

Phlebotomus (Prophlebotomus) dubius Parrot, Mornet & Cadenat, 1945a:236.

Phlebotomus minutus var. antennatus, Theodor, 1933:539; Parrot, Mornet & Cadenat, 1945a:236 [mention].

Phlebotomus (Sergentomyia) var. dubius, Kirk & Lewis, 1951:457.

Phlebotomus (Sergentomyia) dubius, Abonnenc, 1972:105.
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