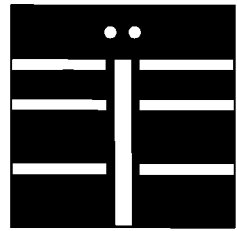


Afrotropical species of *Sciophila* Meigen (Diptera, Mycetophilidae)



JAZ

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The Afrotropical species of *Sciophila* Meigen, 1818 are revised, and a phylogenetic analysis of the Afrotropical species is performed. Three larger species groups are recognized, the *atrigaster* group, the *fenestralis* group and the *intima* group. Representatives of the latter are peculiar in having large, furcated megasetae ventrally on tergite 9. Redescriptions are given for the two previously known Afrotropical species, *S. intima* Lindner, 1958 and *S. atrigaster* Matile, 1979; and 18 new species are described, *S. clava*, *S. digitilenta*, *S. fenestralis*, *S. svengestoeli*, *S. infundibulata*, *S. kakumensis*, *S. kjaerandseni*, *S. koundensis*, *S. longistyla*, *S. matilei*, *S. mazumbaiensis*, *S. palmosa*, *S. papula*, *S. pinniger*, *S. quadrata*, *S. sicilicula*, *S. stellata*, and *S. leptosoma*. Male terminalia are illustrated for all species, and the female terminalia for *S. atrigaster*, *S. fenestralis*, *S. kakumensis*, *S. kjaerandseni*, *S. matilei* and *S. mazumbaiensis*. The new species originate from Cameroon, the Central African Republic, Congo, Côte-d'Ivoire, Gabon, Ghana, Madagascar, Malawi, Nigeria, South Africa, Tanzania and Uganda. Unidentified females are also recorded from Ethiopia and Equatorial Guinea. A key to males of all known Afrotropical species is given. The *intima* group seemingly is endemic to the Afrotropical region, and the revealed phylogeny suggests biogeographical affinity between the fauna in East Africa and Madagascar.

Résumé français au verso.

Key words: Mycetophilidae, *Sciophila*, phylogeny, new species, Afrotropical region, biogeography.

Le genre Sciophila Meigen de la région Afrotropicale (Diptera, Mycetophilidae). — Les espèces afrotropicales de *Sciophila* Meigen, 1818, sont revues, et une analyse phylogénétique de ces espèces est effectuée. Trois grands groupes d'espèces sont reconnus, le groupe *atrigger*, le groupe *fenestralis* et le groupe *intima*. Les représentants mâles de ce dernier sont caractérisés par la présence de grandes mégasomes fourchues sur le tergite 9. Les deux espèces afrotropicales connues jusqu'ici, *S. intima* Lindner, 1958, et *S. trigger* Matile, 1979, sont redécrites. Dix-huit espèces nouvelles sont décrites: *S. clava*, *S. digitenta*, *S. fenestralis*, *S. svengestoeli*, *S. infundibulata*, *S. kakumensis*, *S. kjaerandseni*, *S. koundensis*, *S. longistyla*, *S. matilei*, *S. mazumbaiensis*, *S. palmosa*, *S. papula*, *S. pinniger*, *S. quadrata*, *S. sicilicula*, *S. stellata* et *S. leptosoma*. Les genitalia mâles sont illustrées pour toutes les espèces, ainsi que les genitalia femelles de *S. trigger*, *S. fenestralis*, *S. kakumensis*, *S. kjaerandseni*, *S. matilei* et *S. mazumbaiensis*. Les espèces nouvelles proviennent des pays suivants: Cameroun, République Centrafricaine, Congo, Côte-d'Ivoire, Gabon, Ghana, Madagascar, Malawi, Nigeria, Afrique du Sud, Tanzanie et Uganda. Des femelles non identifiées sont également citées d'Éthiopie et de Guinée Équatoriale. Une clé des mâles de toutes les espèces afrotropicales connues est donnée. Le groupe *intima* semble endémique de la région afrotropicale, et la phylogénie obtenue suggère des affinités biogéographiques entre les faunes de l'Afrique orientale et de Madagascar.

INTRODUCTION

Species in the genus *Sciophila* Meigen, 1818 are recognized in having the following combination of characters: a setose anepisternum, laterotergite and mediotergite; a wing membrane densely clothed by large, decumbent trichia; a very short median fork; branching of the cubital fork close to the wing margin. A small, closed cell is usually present between *Rs* and *R4*, but the two veins of this cell may occasionally fuse.

Altogether 114 species belonging to *Sciophila* are described, of which 48 are Nearctic, 38 Palaearctic (incl. 5 species from Nepal), 8 Holarctic, 2 Afrotropical, 3 Oriental and 17 Neotropical. The number of Neotropical species is, however, uncertain as some of the species may belong to other genera (Papavero 1978). Tonnoir (1929) erected a new subgenus, *Austrosciophila*, to hold a single species from Tasmania, *solitaria* (Tonnoir, 1929); the subgenus was later given the rank of genus by Matile (1989).

The two previously known Afrotropical species, *S. intima* Lindner, 1958 and *S. trigger* Matile, 1979, are described from Tanzania and the Comoro Islands, respectively.

The world fauna of *Sciophila* has not been revised, but species in the Holarctic region, which constitutes the greater part of the genus, about 80 per cent, have been treated by Zaitzev (1982). The Oriental species have been treated by Söli (1995).

MATERIAL

The study is based on material kept in the collection of the Zoological Museum, University of Bergen (ZMBN), Museum national d'Histoire naturelle (MNHN) and Natural History Museum London (NHML); a few additional specimens from the

Canadian National Collection (CNC) and the U.S. National Museum (Smithsonian Institution) (USNM) were also included. One holotype was borrowed from Staatliches Museum für Naturkunde, Stuttgart (STUT).

Most specimens were dry mounted; while the specimens from ZMBN were all stored in alcohol. Most specimens were cleared and slide mounted in Canada balsam.

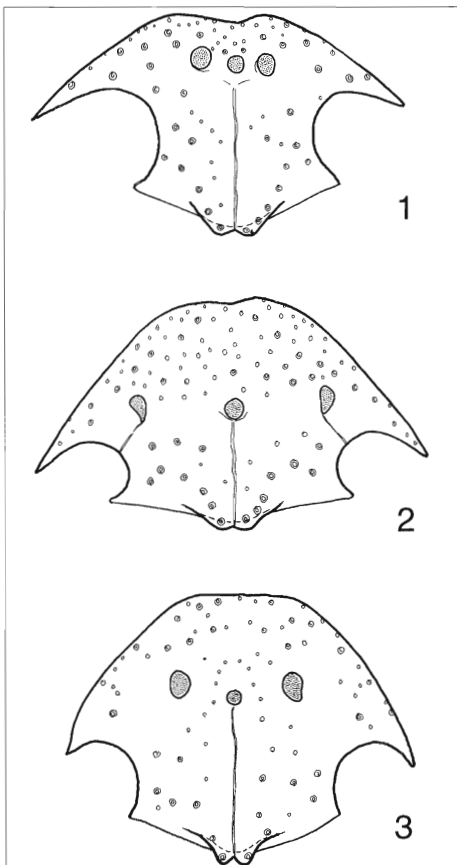
MORPHOLOGY

The general terminology follows Söli (in press), based largely on Vockeroth

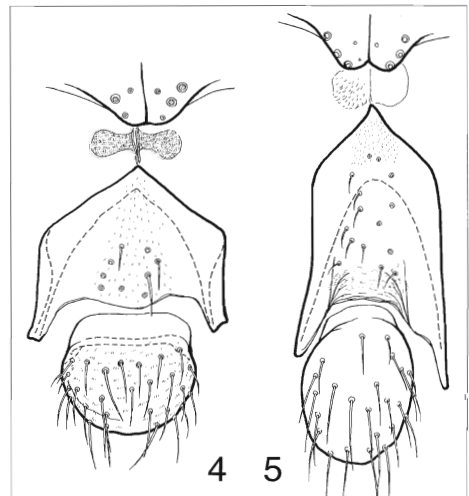
(1981), McAlpine (1981) and Matile (1990). In consequence, what are termed crossvein *Sc-r*, *r-m* and the basal portion of *media* by Vockeroth (1981) are here interpreted as being *Sc2* and crossveins *ta* and *tb*, respectively (see also Chandler 1994).

The position of the lateral ocelli is indicated by two ratios, the distance to the median ocellus (*LM*) and the distance to the eye margin (*LE*), both given in relation to the diameter of the lateral ocellus. Most wing ratios are self explanatory; *CuA*-ratios are given as the length of *CuA1* and *CuA2*, respectively, to the length of *CuA*-petiole. Wing length, length of *Sc1*, crossvein *tb* and *CuA*-petiole all measured from distal median plate (Fig. 9). Two ratios are given for the fore, mid and hind leg each: the length of femur to tibia, and the length of tibia to first tarsomere. The spur lengths are given in relation to the tibial diameter, measured apically.

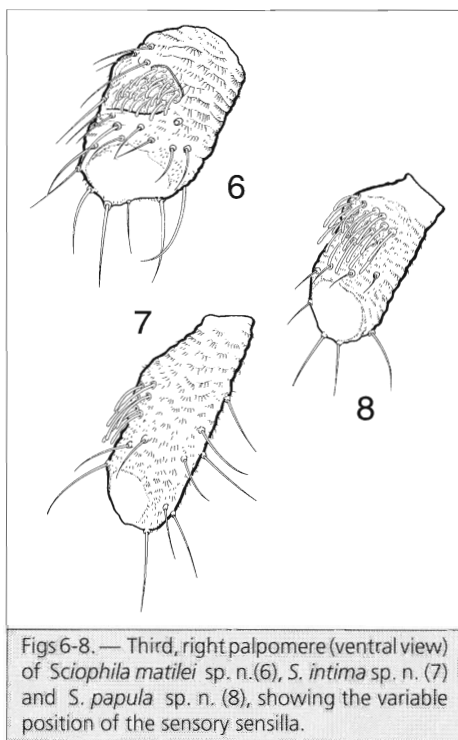
As in most mycetophilids, the male gonostylus is a highly composite structure in *Sciophila*. Though, in its ground plan three lobes can be recognised, a dorsal, a ventral and a median lobe (Fig. 17). Of these, the median lobe always bears some



Figs 1-3. — Heads of *Sciophila kjaerandseni* sp. n. (1), *S. leptosoma* sp. n. (2) and *S. mazum-baiensis* sp. n. (3), showing the variable position of the ocelli.



Figs 4-5. — Face and clypeus in *Sciophila kakumensis* sp. n. (4) and *S. papula* sp. n. (5).



Figs 6-8. — Third, right palpomere (ventral view) of *Sciophila matilei* sp. n. (6), *S. intima* sp. n. (7) and *S. papula* sp. n. (8), showing the variable position of the sensory sensilla.

megasetae, usually with heavily furcated apices; and the lobe may be divided into a main posterior, and a smaller anterior portion (e.g. Fig. 30). The dorsal and

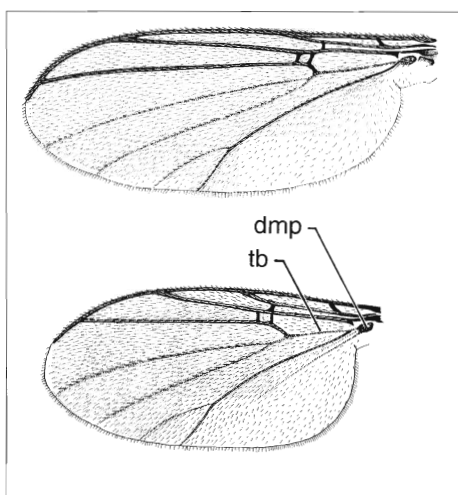


Fig. 9. — Wings of *Sciophila kjaerandseni* sp. n. (top) and *S. leptosoma* sp. n. (bottom). Abbreviations: dmp, distal median plate; tb, basal transversal crossvein.

ventral lobes are frequently laterally fused, forming a ventrolateral lobe; both may, however, be strongly developed, the ventral sometimes with huge pipe-like megasetae.

In females the two gonocoxites 8 are supposed to be partly or entirely fused with posterior portion of the sternite 8, forming two pronounced, setose lobes, separated by a deep median cleft (Söli, in press). Inside, and between these two lobes is the labia, a thin membraneous structure.

SYSTEMATICS

A phylogenetic analysis including all known Afrotropical species was performed. The two presumably closely related genera *Megalopelma* Enderlein, 1911 and *Monoclona* Mik, 1886 were used as out-groups.

Thirty-two characters were used in the analysis. Due to great variability within species, numerous presumably good characters had to be left out, as they could not be scored in discrete groups. This holds in particular for quantitative characters like number of setae and various ratios. Much emphasis had thus to be put on characters dealing with structures in the male terminalia, which constitute 28 of the characters. Characters and character states used in the analysis are listed in Table 1. Of these, 13 are binary and 19 multistate.

The data matrix (Table 2) was built up by using the computer programme MacClade 3.02 (Maddison & Maddison 1992). Missing data and inapplicable characters were both entered as '?' in the matrix.

The maximally parsimonious resolution, MPR, was searched for after exporting the data matrix to the data programme PAUP 3.1 (Swofford 1993),

Table 1. — List of characters used to infer the interspecific relationship.

1.	<i>Length of flagellum in relation to the length of scutum and scutellum together:</i> (0) less than two times as long; (1) longer ($ci = 1.00$; $ri = 1.00$).
2.	<i>Lateral ocellus:</i> (0) separated from eye margin by at least two times its own diameter; (1) closer ($ci = 0.50$; $ri = 0.90$).
3.	<i>Face:</i> (0) broader than long; (1) as broad as, or longer than broad ($ci = 1.00$; $ri = 1.00$).
4.	<i>Apical portion of labrum:</i> (0) narrow, smooth; (1) broad with fringes ($ci = 0.50$; $ri = 0.67$).
5.	<i>Stipes:</i> (0) with more than 5 setae; (1) with 1 to 5 setae; (2) bare ($ci = 0.40$; $ri = 0.67$). Ordered 012.
6.	<i>Third palpomere:</i> (0) sensory sensilla on surface; (1) sensory sensilla collected in a shallow pit ($ci = 1.00$; $ri = 1.00$).
7.	<i>Length of fifth palpomere in relation to length of first palpomere:</i> (0) more than 7.0; (1) 7.0 to 5.0; (2) 5.0 to 4.0; (3) less than 4.0 ($ci = 0.67$ -0.75; $ri = 0.82$ -0.91).
8.	<i>Anepisternum:</i> (0) bare; (1) with some anterior setae; (2) with some posterior setae ($ci = 1.00$; $ri = 1.00$).
9.	<i>Metepisternum:</i> (0) bare; (1) with some anterior setae; (2) with some posterior setae ($ci = 1.00$; $ri = 1.00$).
10.	<i>Position of Sc2:</i> (0) ending after or very close to Rs; (1) ending before Rs ($ci = 0.50$ -1.00; $ri = 0.89$ -1.00).
11.	<i>Wing:</i> (0) more than twice as long as broad; (1) twice as long, or shorter ($ci = 0.50$; $ri = 0.0$).
12.	<i>Anteroapical depressed area of fore tibia:</i> (0) with one row of setae; (1) with one row, and a few setae above this; (2) with two rows ($ci = 0.67$; $ri = 0.91$). Ordered 012.
13.	<i>Basis of hind coxa:</i> (0) with two or more setae; (1) with one seta only ($ci = 1.00$; $ri = 1.00$).
14.	<i>Male sternite 8:</i> (0) short; (1) long, posterior border even; (2) long, posterior border with a shallow median incision. ($ci = 0.67$; $ri = 0.67$).
15.	<i>Strongly furcated megasetae on male tergite 9:</i> (0) absent; (1) present ($ci = 1.00$; $ri = 1.00$).
16.	<i>Megasetae on male tergite 9:</i> (0) missing; (1) with 6 or less fingers; (2) with more than 6 fingers; (3) feather-like ($ci = 1.00$; $ri = 1.00$).
17.	<i>Male tergite 9:</i> (0) elongated, posterior border evenly rounded; (1) broad or subquadrate; (2) broad, but apically narrowed; (3) elongated with median incision; (3) small, usually subquadrate ($ci = 1.00$; $ri = 1.00$).
18.	<i>Posterior border of male tergite 9:</i> (0) even; (1) with a small, setose median point; (2) with a small, bare median point ($ci = 0.50$; $ri = 0.0$).
19.	<i>Male tergite 10:</i> (0) absent; (1) fused with proctiger; (2) distinct, separate ($ci = 1.00$; $ri = 1.00$).
20.	<i>Paramere:</i> (0) minute or reduced; (1) short; (2) long ($ci = 0.67$; $ri = 0.88$).
21.	<i>Paramere:</i> (0) absent; (1) small, straight or hook-like; (2) long, straight; (3) long, curved ($ci = 1.00$; $ri = 1.00$).
22.	<i>Parameral apodeme:</i> (0) loosely connected to gonocoxal apodeme; (1) strongly connected; (2) entirely fused with the gonocoxal apodeme ($ci = 0.67$; $ri = 0.90$). Ordered 012.
23.	<i>Parameral apodemes:</i> (0) entirely separated; (1) meeting or fused medially ($ci = 0.33$; $ri = 0.60$).
24.	<i>Aedeagus:</i> (0) short, wide; (1) long, thick; (2) very small; (3) long, thin ($ci = 0.75$; $ri = 0.92$).
25.	<i>Basis of aedeagus:</i> (0) normal; (1) with two lateral "wings" ($ci = 1.00$; $ri = 1.00$).
26.	<i>Aedeagus:</i> (0) simple; (1) with thin lateral appendages; (2) with strong lateral appendages ($ci = 1.00$; $ri = 1.00$).
27.	<i>Gonostylus:</i> (0) consist of one part only; (1) with 2 more or less distinct lobes; (2) with 3 distinct lobes ($ci = 0.67$ -1.00; $ri = 0.89$ -1.00).
28.	<i>Median lobe of gonostylus:</i> (0) evenly rounded; (1) with a distinct ventromedian lobe bearing two huge megasetae ($ci = 1.00$; $ri = 1.00$).
29.	<i>Median portion of gonostylus:</i> (0) evenly rounded; (1) with a distinct anterior portion; (2) with an anterior protrusion ($ci = 0.50$; $ri = 0.0$).
30.	<i>Ventral portion of gonostylus:</i> (0) fused laterally with dorsal lobe; (1) medially prolonged; (2) rounded; (3) subquadrate ($ci = 0.67$; $ri = 0.75$).
31.	<i>Proctiger:</i> (0) as two rounded lobes; (1) strongly reduced; (2) fused, elongated, evenly tapered; (3) fused, elongated, truncated; (4) as two elongated lobes ($ci = 1.00$; $ri = 1.00$).
32.	<i>Hypoproct:</i> (0) as two small lobes with numerous setae; (1) thin, 2 setae; (2) thin, membranous, with 4 setae; (3) thin, membranous, with 12-14 setae ($ci = 0.75$ -1.00; $ri = 0.91$ -1.00).

Consistency index (ci) and retention index (ri) are given for each characters in the 6 most parsimonious trees. After each multistate character the hypothesized order of states, if any, is specified.

Table 2. — Character matrix.

	00000000	01111111	11122222	22223333
	12345678	90123456	78901234	56789012
<i>digitilenta</i>	01002031	00001112	10012211	00100012
<i>intima</i>	01002021	00001212	10023200	00100012
<i>kakumensis</i>	01002031	00001212	20023211	00100012
<i>leptosoma</i>	01002031	00101112	10023201	00100012
<i>longistyla</i>	01001021	00001112	10023201	00100012
<i>palmosa</i>	01001031	00001111	10022200	00100013
<i>sicilicula</i>	01001031	00101111	10022210	00100013
<i>stellata</i>	01001031	00001212	20023211	00100012
<i>fenestralis</i>	00010101	11020100	00001002	00210100
<i>svengestoeli</i>	01010101	11020100	00001002	00210140
<i>matilei</i>	00010101	11020100	00001002	00210100
<i>pinniger</i>	01001031	00001103	10012210	00100012
<i>clava</i>	01001011	00010100	10012210	00100001
<i>atrigaster</i>	10100011	01010100	30200103	11201121
<i>infundibulata</i>	10100011	01010100	31100103	10201021
<i>kjaerandseni</i>	10100011	01020100	31100103	11200021
<i>koundensis</i>	10100011	01010100	32100103	10201021
<i>mazumbaiensis</i>	10100011	01010100	30100103	10200331
<i>papula</i>	10100011	01010100	32100103	10200021
<i>quadra</i>	10100011	01010100	30100103	10202331
<i>Monoclona</i>	00010030	20010000	00000100	0017?000
<i>Megalopelma</i>	00001000	00010000	00000000	0207?000

run on a Macintosh IISi with 18MB RAM. All characters were treated as unordered. The heuristic search option was used, and the run yielded 6 trees of 78 steps, with an ensemble consistency index of 0.756 and an ensemble retention index of 0.905. Except for 4 characters (7, 10, 27 and 32) the length of each character was constant in the 6 most parsimonious trees.

The strict consensus tree (Fig. 10) shows the ingroup with a basal trichotomy made up of 3 larger clades. In 3 of the 6 most parsimonious trees the two clades above Branch 11 and 12 appear as sistergroups, while in the 3 remaining trees the clade above Branch 11 forms a sistergroup to all remaining species in the ingroup.

The monophyly of these groups is supported by 5 changes in character states along Branch 11 in all six trees, 4 along Branch 12, and 3 along Branch 2 (table 3).

The above mentioned clades forms three easily recognisable species groups: the *atrigaster* group, the *fenestralis* group, and the *clava-intima* group. The *atrigaster* group comprises the seven species *atrigaster*, *infundibulata*, *kjaerandseni*, *koundensis*, *mazumbaiensis*, *papula* and *quadra*, of which all have the flagellum in males more than 2 times as long as scutum and scutellum combined (Char. no. 1) and a face as long as, or longer than broad (Char. no. 3). Species in the *fenestralis* group, *fenestralis*, *matilei* and *svengestoeli*, all have a distinct sensory pit on the third

Table 3. — Reconstructed unambiguous changes along non-terminal branches in the six most parsimonious trees. Branch nos refer to Fig. 10.

Branch no.	Character: states	Branch no.	Character: states
1	8: 0>1 14: 0>1	9	14: 1>2 17: 1>2
2	2: 0>1 20: 0>1 23: 0>1	10	32: 2>3
3	12: 1>0 13: 0>1 31: 0>1	11	6: 0>1 9: 0>1 12: 1>2 21: 0>1 30: 0>1
4	15: 0>1	12	1: 0>1 3: 0>1 19: 0>1 25: 0>1
5	5: 1>2 24: 0>1	13	26: 0>1
6	21: 2>1	14	30: 0>3
7	23: 1>0		
8	7: 3>2		

palpomere (Char. no. 6); a setose metepisternum (Char. no. 9); and small, straight or hook-like paramere (Char. no. 21). The last group, the *clava-intima* group, all have the lateral ocellus close to the eye margin, LE < 2.0 (Char. no. 2). Except for the two species *clava* and *pinniger* all members of this group also have large, furcated megasetae ventrally on tergite 9 (Char. no. 15). This is a unique feature among *Sciophila*, as among mycetophilids in general, and because of this, the species above Branch 4 are supposed to form a well delineated group, the *intima* group, comprising the 8 species *digitilenta*, *intima*, *kakumensis*, *leptosoma*, *longistyla*, *palmosa*, *sicilicula* and *stellata*. Furthermore, the *intima* group seemingly is endemic to the Afrotropical region. Two additional species groups have tentatively been erected to include each of the two species *clava* and *pinniger*.

Support for particular groups in the minimum-length tree was assessed using Bremer support (Källersjö *et al.* 1992). The values are given in Fig. 10.

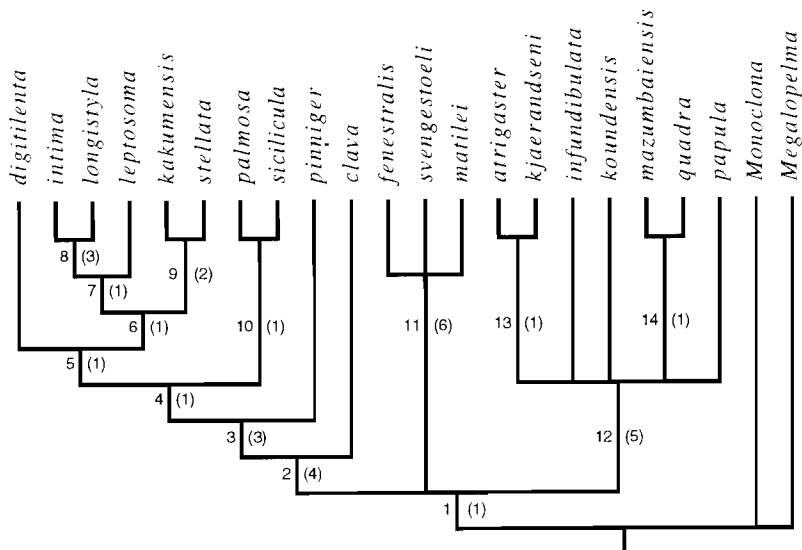


Fig. 10. — Strict consensus tree of the 6 most parsimonious trees (78 steps, $ci = 0.756$, $ri = 0.905$). The number of extra steps needed to break up the monophyly of a group (the decay index of Bremer support) is given for each branch (in brackets).

KEY TO MALES OF AFROTROPICAL SCIOPHILA

- 1 – Sc2 ending before *Rs* (Fig. 9). Ventral surface of tergite 9 bare; wings slender, always much more than twice as long as broad 2
- Sc2 ending beyond, rarely opposite *Rs*, and before *R4* (Fig. 9). Tergite 9 usually with conspicuous branched megasetae ventrally; if not, wings very broad, less than twice as long as broad 11
- 2 – Third palpomere without a sensory pit (Fig. 7). Metepisternum bare. Tergite 9 much shorter than the gonocoxites, posterior border rounded or straight (the *atriganter* group) 3
- Third palpomere with a sensory pit (Fig. 6). Metepisternum setose. Tergite 9 about as long as the gonocoxites, posterior border rounded with a distinct median incision (the *fenestralis* group) 9
- 3 – Tergite 10 as a forked appendage beyond tergite 9, which is distinctly tapered (Fig. 12) ... *atriganter* Matile
Madagascar, Comoro Islands
- Tergite 10 fused with proctiger, not separable from this; tergite 9 subquadrate (Fig. 19) 4
- 4 – Proctiger and cerci as two rounded lobes (Fig. 25). Posterior border of tergite 9 even 5
- Proctiger and cerci elongated, funnel-like (Figs 18, 20). Posterior border of tergite 9 even or with a median point 6
- 5 – Posterior portion of tergite 9 with distinct lateral corners (Fig. 32). Basal portion of the gonocoxal apodeme with a sharp median point (Fig. 33) *quadra* sp. n.
Gabon, Côte-d'Ivoire, Nigeria, Central African Republic
- Posterior portion of tergite 9 evenly rounded (Fig. 25). Basal portion of the gonocoxal apodeme rounded (e.g. Fig. 24) *mazumbaiensis* sp. n.
Tanzania
- 6 – Tergite 9 with a setose median point (Fig. 18) *infundibulata* sp. n.
Tanzania
- Tergite 9 with a bare median point, or median point indistinct 7
- 7 – Tergite 9 with a long and very distinct bare median point (Fig. 31). Median lobe of gonostylus with a slender and curved anterior portion (Fig. 30) ...
..... *papula* sp. n.
Congo, Central African Republic
- Median point of tergite 9 inconspicuous. Median lobe of gonostylus without a slender anterior portion 8
- 8 – A pair of weakly sclerotized parameres present laterally of aedeagus (can be difficult to observe); median lobe of gonostylus with a well separated anterior and posterior portion (Fig. 21). *kjaerandseni* sp. n.
Ghana, Central African Republic
- Without parameres; median lobe of gonostylus with anterior and median portions fused (Fig. 26)
..... *koundensis* sp. n.
Cameroon, Uganda
- 9 – Tergite 9 with numerous setae along the posterior margin (Fig. 36). Parameres very short, not protruding beyond aedeagus (Fig. 34)
..... *fenestralis* sp. n.
South Africa
- Tergite 9 without setae along the posterior margin. Parameres longer, protruding well beyond the apex of aedeagus 10
- 10 – Parameres straight and long; rim on gonocoxal apodeme large (Fig. 40). Wing length 3.4 mm.
..... *svengestoeli* sp. n.
Uganda
- Parameres short, hook-like; rim on gonocoxal apodeme small (Fig. 43). Wing length 2.2–2.4 mm
..... *matilei* sp. n.
Central African Republic
- 11 – Tergite 9 short, about twice as broad as long, ventral surface bare (Fig. 49). Wings very broad, less than twice as long as broad *clava* sp. n.
South Africa, Malawi
- Tergite 9 longer, at most slightly broader than long, ventral surface with several megasetae. Wings slender, more than twice as long as broad 12
- 12 – Tergite 9 with 6 feather-like megasetae attached posteroventrally (Fig. 51)
..... *pimmiger* sp. n.
Tanzania
- Tergite 9 with several furcated megasetae ventrally .. (the *intima* group) 13
- 13 – Ventral surface of tergite 9 with both hair-like setae and furcated megasetae

- (Fig. 66). Aedeagus broad, with two lateral protrusions (Fig. 67)
 *palmosa* sp. n.
 Tanzania
- Ventral surface of tergite 9 with furcated megasetae only. Aedeagus simple, tube-like 14
- 14 – Gonostylus with a large, caudally pointing hook dorsally (Fig. 68). Posterior border of tergite 9 slightly concave (Fig. 69) *sicilicula* sp. n.
 Madagascar
- Gonostylus rather simple, without strong protrusions. Posterior border of tergite 9 straight or rounded .. 15
- 15 – Gonostylus small, claw-like (Fig. 62). Megasetae on tergite 9 slender with very long stems *leptosoma* sp. n.
 Congo
- Gonostylus larger, rounded. Megasetae on tergite 9 stout with short stems 16
- 16 – Parameral apodemes distinctly separated. Parameres distinctly longer than the gonocoxites 17
- Parameral apodemes fused by a small bridge. Parameres as long as, or slightly longer than the gonocoxites 18
- 17 – Gonostylus with several very large, distinctly furcated megasetae (Fig. 55) *intima* Lindner
 Tanzania
- Gonostylus with much slender, and weakly furcated megasetae (Fig. 64) *longistyla* sp. n.
 South Africa
- 18 – Tergite 9 subquadrate (Fig. 54). Parameres straight (Fig. 53)
 *digitilenta* sp. n.
 Tanzania
- Tergite 9 narrowed posteriorly. Parameres curved 19
- 19 – Tergite 9 abruptly narrowed; megasetae epeulette- or star-like, with as much as 15 fingers (Fig. 70)
 *stellata* sp. n.
 Tanzania
- Tergite 9 evenly narrowed; megasetae with at most 9 fingers (Fig. 58)
 *kakumensis* sp. n.
 Ghana

THE SPECIES

The *atrigaster* group

Three ocelli situated close together on top of head, on line or in a very shallow triangular arrangement. Frontal furrow entire, or at most ending slightly in front of median ocellus. Sensilla on third palpomere situated on the lateral surface.

Metepisternum bare. Anteroapical depressed area of fore tibia with one distinct row of setae, and nearly always some setae above these. Male gonocoxites fused for very short distance ventrobasally; gonostylus with ventral and dorsal lobe well separated. Proctiger distinct; hypoproct thin, with two erect, distal setae.

Sciophila atrigaster Matile

Figs 11-16

Sciophila atrigaster Matile, 1979: 269.

Studied material. – Paratype ♂: Grand Comore, La Grille, Guiri, 850-900 m), 16.ix.1973, L. Matile (MNHN); Allotype ♀: as for paratype, except 13.ix.1973.

Remarks. – The species is well described by Matile (1979), but to enable a comparison of measurements and details in the male terminalia an extended description is given together with drawings of the male and female terminalia.

Description

Male (n=1).– Total length 3.75 mm. Flagellum 1.95 mm, or 2.1 times as long as scutum and scutellum together.

Head. Median ocellus about as large as lateral. *LM* 1.4; *LE* 2.3. Frons with 19 setae in front of ocelli. Frontal tubercle broad, slightly bilobate. Stipes with 5-6 setae. Face about 1.3 times as long as broad, with 20 setae. Clypeus ovate, about as long as broad, with 28 setae. Relative lengths of

palpomeres: 1 : 1.1 : 1.5 : 3.3 : 4.1. Lacinia 1.3 times as long as first palpomere.

Thorax. Length of scutum and scutellum together 0.92 mm. Anepisternum with 10 setae situated anterodorsally. Laterotergite with 7-8 setae. Mediotergite with 7-8 lateral and 6 posterior setae.

Wings (partly ruined). Length 3.01 mm. *Sc* 0.34 times as long as wing. *Sc*2 located well in front of *Rs*. *M*-petiole about as long as *ta*. Crossvein *tb* 0.47 times as long as *CuA*-petiole.

Legs. Anteroapical depressed area of fore tibia with one distinct row of setae, and 5-6 setae above these. Ratio femur to tibia: 0.90; 0.89; 0.83. Ratio tibia to tarsus: 0.97; 1.22; 1.58. Spur lengths: 2.5; 2.6, 3.6; 2.3, 3.4.

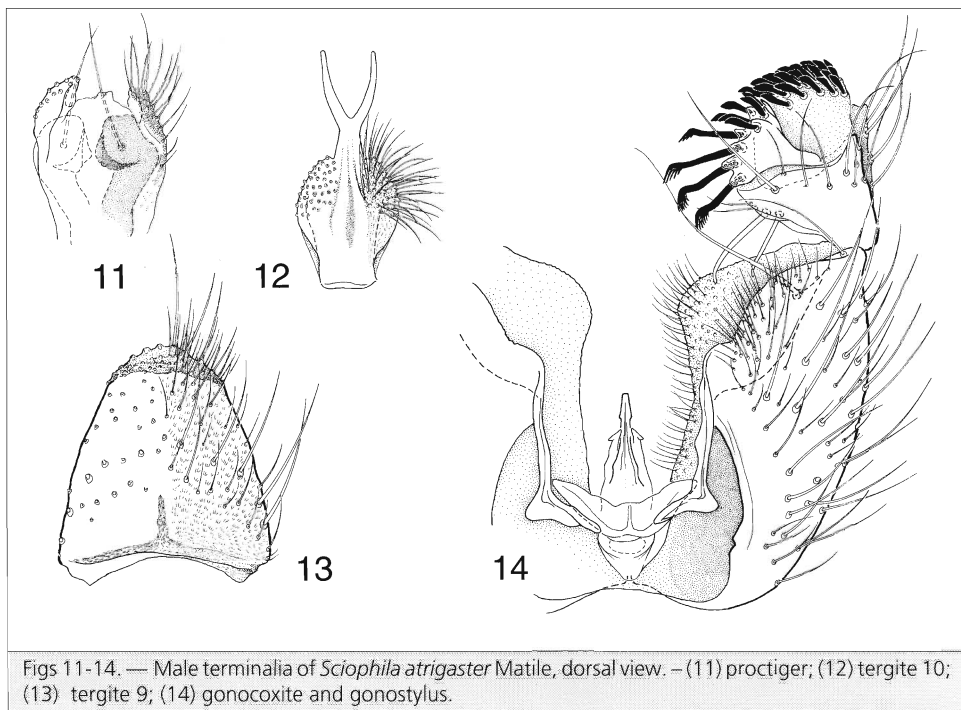
Terminalia (Figs 11-14). Tergite 9 small, evenly tapered. Tergite 10 distinct, with a forked apex. Epiproct with two, setose lobes, hypoproct with 2 long setae.

Gonocoxal apodeme with an angled, slightly flattened apex. Median portion of gonostylus with an upstanding, subtriangular lobe; ventral portion medially prolonged. Aedeagus slender with two distinct lateral appendages.

Female (n=1). - Total length 3.40 mm. Flagellum 1.14 mm, or 1.4 times as long as scutum and scutellum together.

Head. *LM* 2.0; *LE* 2.8. Frons with 16 setae in front of ocelli. Stipes with 5-7 setae. Face about 1.2 times as long as broad, with 17 setae. Clypeus ovate, about as long as broad, with 28 setae. Relative lengths of palpomeres: 1 : 1.1 : 1.5 : 2.9 : 5.5. Lacinia 1.1 times as long as first palpomere.

Thorax. Length of scutum and scutellum together 0.82 mm. Anepisternum with 7 setae situated anterodorsally. Laterotergite with 9 setae. Mediotergite with 5 lateral and 4 posterior setae.



Figs 11-14. — Male terminalia of *Sciophila atrigaster* Matile, dorsal view. — (11) proctiger; (12) tergite 10; (13) tergite 9; (14) gonocoxite and gonostylus.

Wings. Length 2.78 mm. Length to width 2.32. *Sc* 0.33 times as long as wing. *M*-petiole somewhat shorter than *ta*. Crossvein *tb* 0.48 times as long as *CuA*-petiole. *CuA*-ratios: 0.58 and 0.37. Anal vein weak, about 0.64 times as long as *CuA*-petiole.

Legs. Anteroapical depressed area of fore tibia with one row of setae only. Ratio femur to tibia: 0.91; 0.93; 0.85. Ratio tibia to tarsus: 1.02; 1.27; 1.61. Spur lengths: 2.6; 2.8, 4.0; 2.5, 4.1.

Terminalia (Figs 15, 16). Gonocoxites 8 intimately fused with sternite 8, forming two distally tapered lobes, separated by narrow, membranous area. Each gonocoxite with numerous small and some stronger distal setae. Spermathecal ducts joining well before spermathecal eminence. Sternite 10 rounded, distinctly tapered, without setulae. Hypoproct as two elongate lobes above sternite 10, each with several small and large setae. Cercus long, two segmented.

Distribution. – The Comoro Islands and Madagascar (Matile, 1979).

Sciophila infundibulata sp. n.
Figs 17, 18

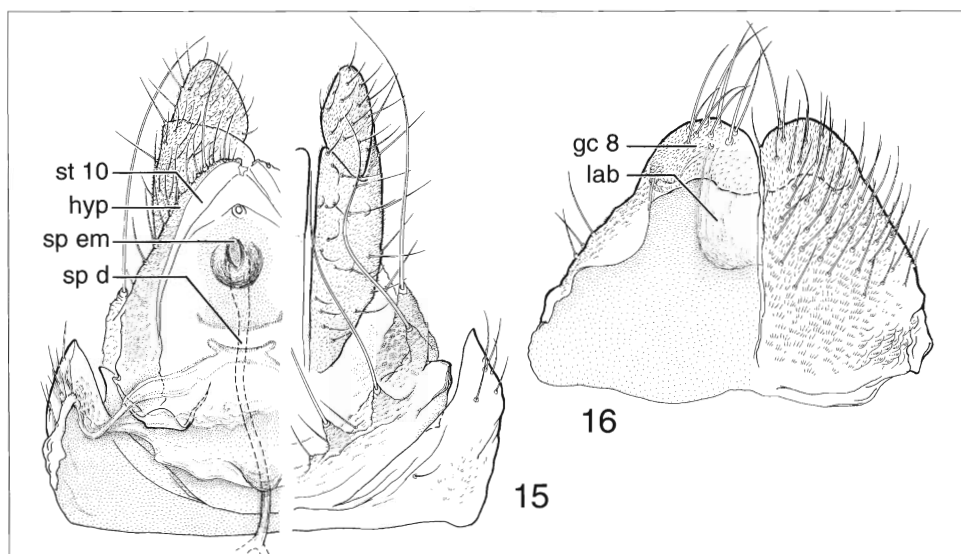
Types. – Holotype ♂: Tanzania, Tanga region, West Usambara Mts., Mazumbai, 27.x.1990, ZMB's Tanz. Exp. '90 (ZMBN No. 231).

Etymology. – From Latin *infundibulatus*, with funnel, referring to the outlining of the male proctiger.

Description

Male (n=1). – Total length about 3.70 mm. Flagellum 1.64 mm, or 1.9 times as long as scutum and scutellum together.

Coloration. Light brown, top of head somewhat darker. Scutum with one median, diffuse brown stripe. Terminalia brown.



Figs 15-16. — Female terminalia of *Sciophila atrigaster* Matile. — (15) tergite 8 and proctiger, left: ventral view, right: dorsal view; (16) sternite and gonocoxite 8, left: dorsal view, right: ventral view. Abbreviations: *gc* 8, gonocoxites 8; *hyp*, hypoproct; *lab*, labia; *sp em*, spermathecal eminence; *st* 10, sternite 10.

Head. Median ocellus about as large as lateral. *LM* 1.4; *LE* 3.0. Frons with 18 setae in front of ocelli. Frontal tubercle distinctly bilobate. Stipes with 5-6 setae. Face 1.35 times as long as broad, with 15 setae. Clypeus ovate, about 1.2 times as long as broad, with about 39 setae. Relative lengths of palpomeres: 1 : 1.1 : 2.1 : 3.7 : 5.8. Lacinia 1.1 times as long as first palpomere.

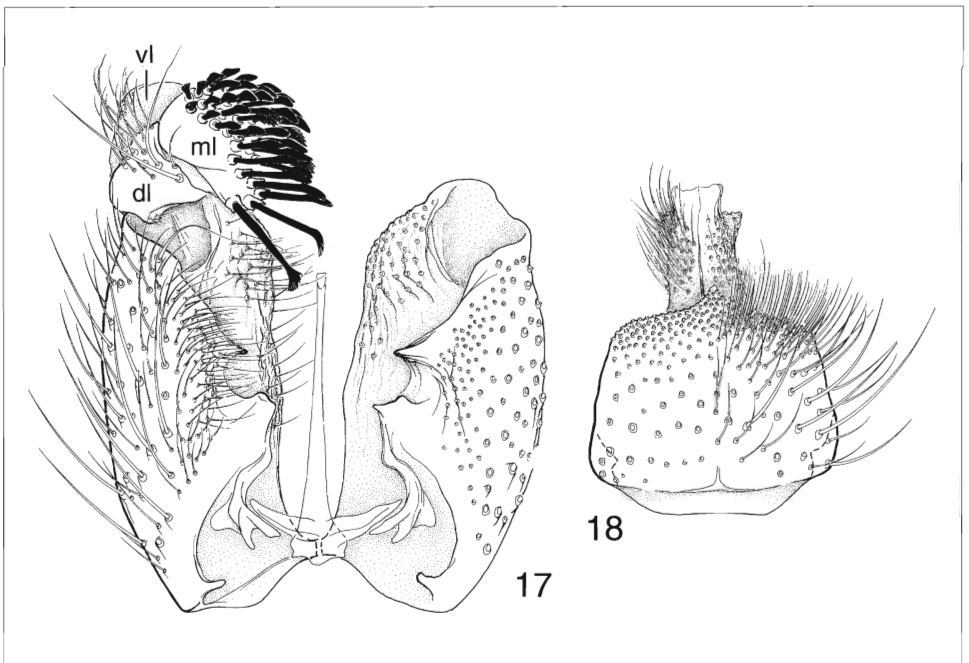
Thorax. Length of scutum and scutellum together 0.84 mm. Anepisternum with 15-20 setae situated antero-dorsally. Laterotergite with 8-9 setae. Mediotergite with 5-6 lateral and about 4 posterior setae.

Wings. Length 2.82 mm. Length to width 2.32. *Sc* 0.44 times as long as wing. *Sc*2 located well in front of *Rs*. *M*-petiole about as long as *ta*. Crossvein *tb* 0.44 times as long as *CuA*-petiole. *CuA*-ratios: 0.48 and 0.33. Anal vein very weak.

Legs. Anteroapical depressed area of fore tibia with one distinct row of setae, and 7 setae above these. Ratio femur to tibia: 0.90; 0.88; 0.84. Ratio tibia to tarsus: 0.95; 1.22; 1.63. Spur lengths: 2.4; 2.7, 4.0; 2.8, 4.1.

Terminalia (Figs 17, 18). Gonocoxite with distinct sharp-angled median protrusion distally of gonocoxal apodeme. Gonocoxal apodeme with flattened, trilobate apex. Median lobe of gonostylus rounded, anterior portion with long-stalked megasetae. Aedeagus very long and thin. Tergite 9 small, subquadrate, with distinct, setose median point. Fused epiproct and cerci elongated, evenly narrowed.

Distribution. — Tanzania; only known from the type locality



Figs 17-18. — Male terminalia of *Sciophila infundibulata* sp. n., dorsal view. -- (17) gonocoxite and gonostylus; (18) tergite 9 and proctiger.
Abbreviations: *dl*, dorsal lobe; *ml*, median lobe; *vl*, ventral lobe.

Sciophila kjaerandseni sp. n.

Figs 1, 9, 19-23

Types. – Holotype ♂: Ghana, Volta region, Agumatsa waterfalls, Wli, 13.-20.xi.1993, J. Kjaerandsen/NUFU-project-ZMBN (ZMBN No. 232). Paratypes: as for holotype, except 5 ♂♂ 1 ♀ 4.-14.xi.1993 (ZMBN), 1 ♀ 13.-20.xi.1993 (ZMBN), 1 ♀ 13.-20.xi.1993 (MNHN); Central African Republic, Dep. de la Lobaye, Forêt gal de Bèbé, 1 ♂ 7.ix.1970, 1 ♂ 15.ix.1970, L. Matile (MNHN).

Etymology. – Named after Jostein Kjaerandsen, who did the field work at Wli Falls, and collected most of the type specimens.

Description

Male (n=5). – Total length 2.88-3.46 mm. Flagellum 1.31-1.52 mm, or 1.8-2.0 times as long as scutum and scutellum together.

Coloration. Light brown; scutum with broad, median brown stripe; mediotergite, distal portion of mid and hind coxae, and terminalia brown.

Head (Fig. 1). Relative size of ocelli variable. *LM* 0.8-1.2 (1.7); *LE* 2.4-4.0. Frons with 19-26 setae in front of ocelli. Frontal tubercle distinctly bilobate. Stipes with 5-9 setae. Face 1.3-1.5 times as long as broad, with 9-20 setae. Clypeus ovate, about 1.1-1.2 times as long as broad, with 22-37 setae. Relative lengths of palpomeres: 1 : 1.1-1.2 : 1.6-1.9 : 2.8-3.8 : 4.9-6.3. Lacinia 1.0-1.4 times as long as first palpomere.

Thorax. Length of scutum and scutellum together 0.66-0.80 mm. Anepisternum with 3-18 setae situated anterodorsally. Laterotergite with 6-13 setae. Mediotergite with 2-6 lateral and 3-8 posterior setae.

Wings (Fig. 9). Length 2.11-2.46 mm. Length to width 2.22-2.53. *Sc* 0.29-0.35 times as long as wing. *Sc*2 located well in front of *Rs*. *M*-petiole 0.5-1.0 times as long as *ta*. Crossvein *tb* 0.43-0.50 times as long as *CuA*-petiole. *CuA*-ratios: 0.39-0.56 and 0.23-0.40. Anal vein weak, about 0.77-0.84 times as long as *CuA*-petiole.

Legs. Anteroapical depressed area of fore tibia with one distinct row of setae, and 5-8 setae above this, tending to form a second row. Ratio femur to tibia: 0.91-0.97; 0.90-0.93; 0.78-0.87. Ratio tibia to tarsus: 0.98-1.09; 1.24-1.37; 1.59-1.84. Spur lengths: 2.1-2.5; 2.2-2.8, 3.0-3.8; 2.1-2.8, 3.7-4.2.

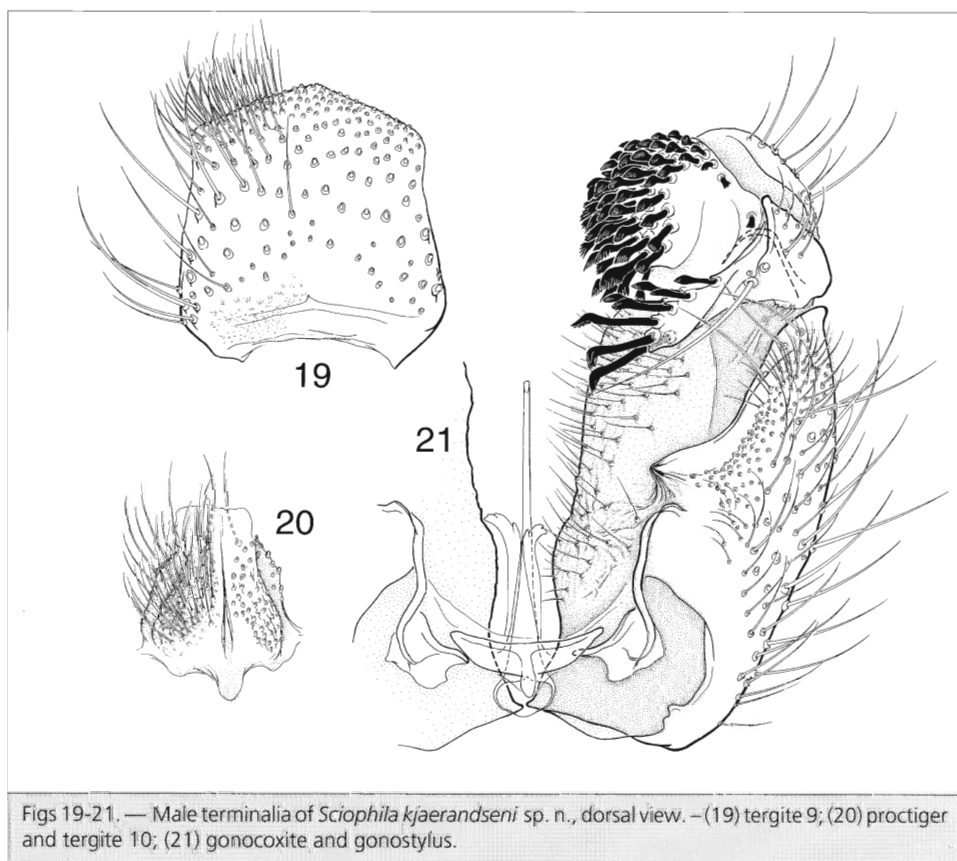
Terminalia (Figs 19-21). Distinct median protrusion distally of gonocoxal apodeme. Gonocoxal apodeme with a large flattened, slightly trilobate apex. Median lobe of gonostylus with a well separated anterior portion. Aedeagus very long and thin, with two long and weakly sclerotized lateral apodemes. Tergite 9 small, subquadrate, with a weak, setose median point. Fused epiproct and cerci elongated, evenly narrowed.

Female (n = 3). – Total length 3.01-3.60 mm. Flagellum 1.04-1.08 mm, or 1.2-1.3 times as long as scutum and scutellum together.

Coloration. As for males.

Head. *LM* 0.7-1.0; *LE* 2.1-3.0. Frons with 15-24 setae in front of ocelli. Stipes with 4-7 setae. Face 1.1-1.4 times as long as broad, with 18-24 setae. Clypeus ovate, about 1.1-1.2 times as long as broad, with 29-40 setae. Relative lengths of palpomeres: 1 : 1.0-1.1 : 1.6-1.7 : 2.9-3.4 : 5.3-6.3.

Thorax. Length of scutum and scutellum together 0.79-0.88 mm. Anepisternum with 16-21 setae situated anterodorsally. Laterotergite with 11-14 setae.



Figs 19-21. — Male terminalia of *Sciophila kjaerandseni* sp. n., dorsal view. — (19) tergite 9; (20) proctiger and tergite 10; (21) gonocoxite and gonostylus.

Mediotergite with 3-5 lateral and 5 posterior setae.

Wings. Length 2.44-2.57 mm. Length to width 2.21-2.32. Sc 0.35-0.38 times as long as wing. *M*-petiole about 0.5 times as long as *ta*. Crossvein *tb* 0.46-0.49 times as long as *CuA*-petiole. *CuA*-ratios: 0.50-0.54 and 0.28-0.33. Anal vein weak, about 0.76-0.84 times as long as *CuA*-petiole.

Legs. Anteroapical depressed area of fore tibia with one row of setae, and 0-2 setae above this. Ratio femur to tibia: 0.91-0.93; 0.87-0.90; 0.83-0.86. Ratio tibia to tarsus: 1.01-1.03; 1.26-1.28; 1.60-1.65. Spur lengths: 2.3-2.5; 2.5-2.7, 3.3-3.9; 2.3-2.5, 3.4-4.0.

Terminalia (Figs 22, 23). Gonocoxites 8 intimately fused with sternite 8, for-

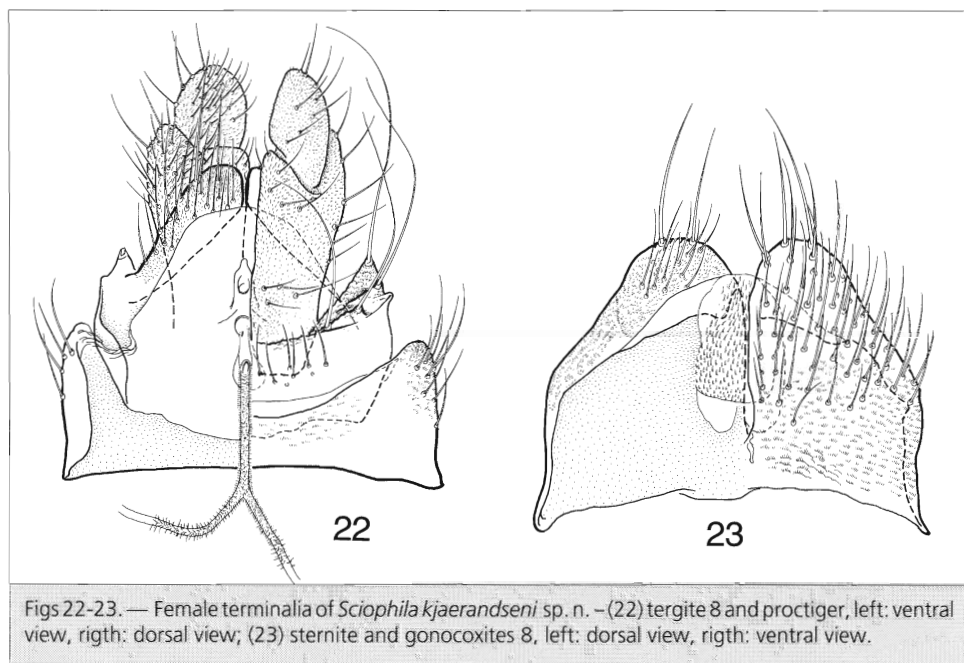
ming two distally narrowed lobes, separated by deep and narrow median cleft. Each gonocoxite with numerous small and some stronger distal setae. Spermathecal ducts joining well before spermathecal eminence. Sternite 10 broad, rounded, without setulae. Hypoproct as two rounded lobes above sternite 10, each with several straight setae. Cercus long, two segmented.

Distribution. - Ghana and the Central African Republic.

Sciophila koundensis sp. n.

Figs 26, 27

Types. — Holotype ♂: Cameroon (East), Kounden, 1200 masl, 12.viii.1967, L. Matile (MNHN). Paratype: Uganda, Ruwenzori range, Namwamba Valley,



Figs 22-23. — Female terminalia of *Sciophila kjaerandseni* sp. n. — (22) tergite 8 and proctiger, left: ventral view, right: dorsal view; (23) sternite and gonocoxites 8, left: dorsal view, right: ventral view.

6.500 ft., 1 ♂ xii.1934-i.1935, B. M. E. Afr. Exp., F. W. Edwards (NHML).

Etymology. — Named after the type locality.

Description

Male (n=2). — Total length 3.30-3.65 mm. Flagellum 1.59 mm (n=1), or 2.0 times as long as scutum and scutellum together.

Coloration. Light brown; meso- and metanotum, ventral half of preepisternum 2, distal portion of mid and hind coxae, and terminalia brown.

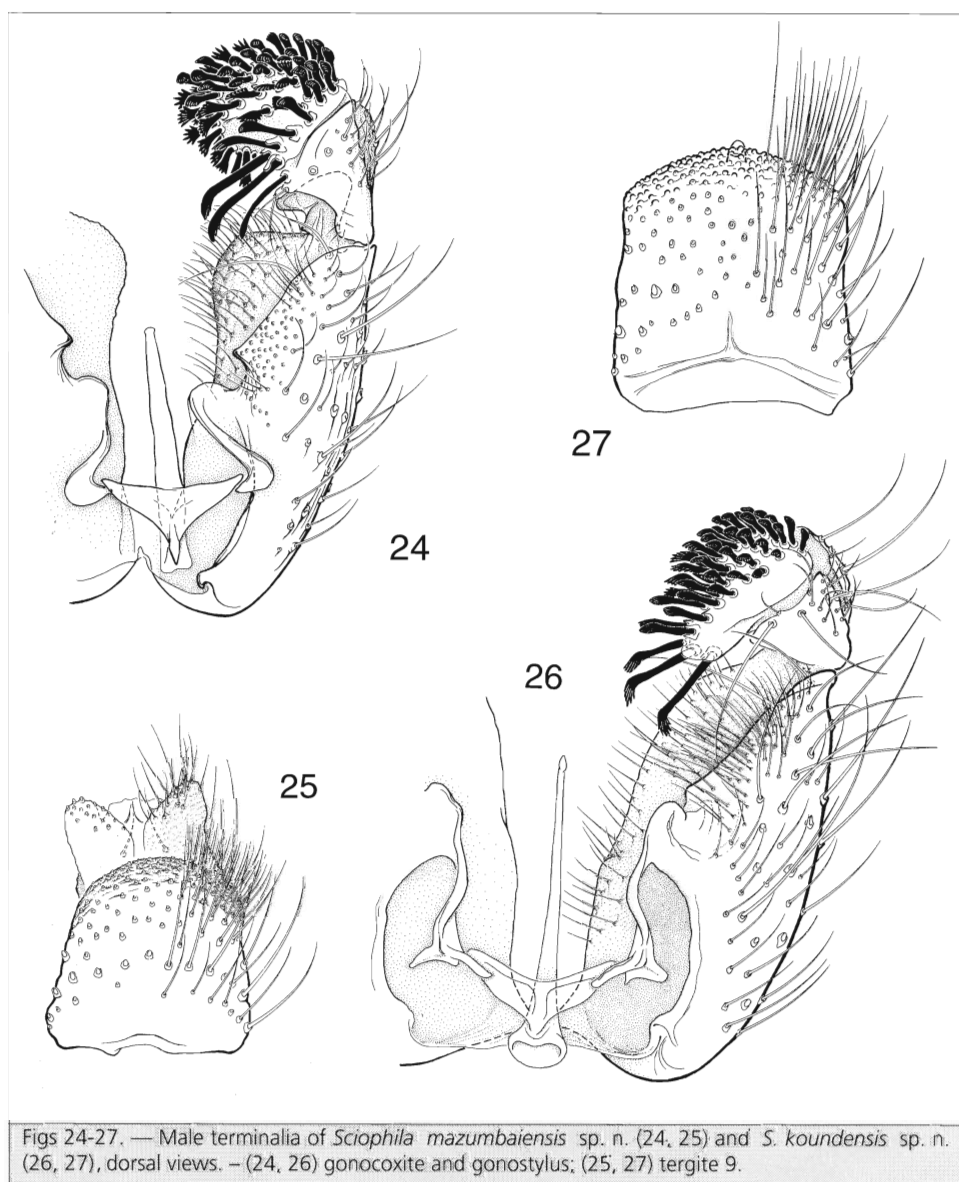
Head. Median ocellus about half as large as laterals. *LM* 0.8; *LE* 2.2-2.5. Frons with 22-26 setae in front of ocelli. Frontal tubercle distinctly bilobate. Stipes with 4-7 setae. Face 1.3-1.4 times as long as broad, with 16-22 setae. Clypeus ovate, 1.5 times as long as broad, with 41-50 setae. Relative lengths of palpomeres: 1 : 1.1-1.3 : 2.1 :

3.4-3.7 : 6.1-6.9. Lacinia 1.1-1.4 times as long as first palpomere.

Thorax. Length of scutum and scutellum together 0.80-0.84 mm. Anepisternum with 15-17 setae situated anterodorsally. Laterotergite with 11-12 setae. Mediotergite with 5 lateral and 4-6 posterior setae.

Wings. Length 2.71-3.01 mm. Length to width 2.42-2.47. *Sc* 0.33-0.35 times as long as wing. *Sc*2 located well in front of *Rs*. *M*-petiole 0.5-1.0 times as long as *ta*. Crossvein *tb* 0.46-0.50 times as long as *CuA*-petiole. *CuA*-ratios: 0.51-0.62 and 0.33-0.44. Anal vein very weak.

Legs. Anteroapical depressed area of fore tibia with one distinct row of setae, and about 5 setae above these. Ratio femur to tibia: 0.92-1.00; 0.80-0.85; 0.88. Ratio tibia to tarsus: 0.86-0.97; 1.15-1.25; 1.56. Spur lengths: 2.5-3.0; 2.6, 3.7; 2.5-2.8, 4.0-4.2.



Terminalia (Figs 26, 27). Basal portion of gonocoxal apodeme evenly rounded; distal portion trilobate. Median lobe of gonostylus rounded. Aedeagus very long and thin. Tergite 9 small, subquadrate, with very small and faint, bare median point. Fused epiproct and cerci elongated, evenly narrowed.

Distribution.—Cameroon and Uganda.

***Sciophila mazumbaiensis* sp. n.**
Figs 3, 24, 25, 28, 29

Types.—Holotype ♂: Tanzania, Tanga region, West Usambara Mts., Mazumbai, 27.x.1990, ZMB's Tanz. Exp. '90 (ZMBN No. 230). Paratypes: as for holotype, except 2 ♂ 1 ♀ 7.-12.xi.1990 (ZMBN), 1 ♂ 3 ♀ 21.-26.xi.1990 (ZMBN), 1 ♀ 7.-12.xi.1990 (MNHN), 1 ♂ 30.x.1990 (MNHN).

Etymology. – Named after the type locality.

Description

Male (n = 5). – Total length 3.56-4.11 mm. Flagellum 1.50-1.64 mm, or 2.3-2.4 times as long as scutum and scutellum together.

Coloration. Light brown; head, meso- and metanotum brown.

Head (Fig. 3). Ocelli subequal in size, median sometimes somewhat smaller. *LM* 1.0; *LE* 2.1-2.4. Frons with 21-28 setae in front of ocelli. Frontal tubercle distinctly bilobate. Stipes with 4-7 setae. Face about as broad as long, with 7-17 setae. Clypeus rounded, 0.9-1.3 times as long as broad, with 14-26 setae. Relative lengths of palpomeres: 1 : 1.1-1.2 : 1.6-1.8 : 3.5-4.3 : 6.2-7.0. Lacinia 1.1-1.2 times as long as first palpomere.

Thorax. Length of scutum and scutellum together 0.63-0.77 mm. Anepisternum with 5-13 setae situated anterodorsally. Laterotergite with 3-6 setae. Mediotergite with 3-4 lateral and 4-6 median setae.

Wings. Length 2.36-2.64 mm. Length to width 2.46-2.59. *Sc* 0.34-0.37 times as long as wing. Crossvein *Sc*2 ending before *Rs*. *M*-petiole about as long as *ta*. Crossvein *tb* 0.46-0.50 times as long as *CuA*-petiole. *CuA*-ratios 0.46-0.55 and 0.30-0.35. Anal vein faint, 0.73-0.82 times as long as *CuA*-petiole.

Legs. Anteroapical depressed area of fore tibia with one distinct row of setae, and 4-7 more irregularly dispersed setae above these. Ratio femur to tibia: 0.87-0.91; 0.81-0.83; 0.78-0.81. Ratio tibia to tarsus: 1.00-1.03; 1.20-1.26; 1.52-1.57. Spur lengths: 2.1-2.4; 2.0-2.5, 3.2-3.7; 2.2-2.4, 3.3-3.6.

Terminalia (Figs 24, 25). Basal portion of gonocoxal apodeme evenly rounded, distal portion rounded, hook-like. Median lobe of gonostylus densely clothed by megasetae; anterior portion narrow. Aedeagus long and thin. Tergite 9 small, subquadrate, posterior border evenly rounded. Fused epiproct and cerci as two rounded lobes.

Female (n = 5). – Total length 3.58-3.97 mm. Flagellum 0.96-1.10 mm, or 1.3-1.4 times as long as scutum and scutellum together (n = 2).

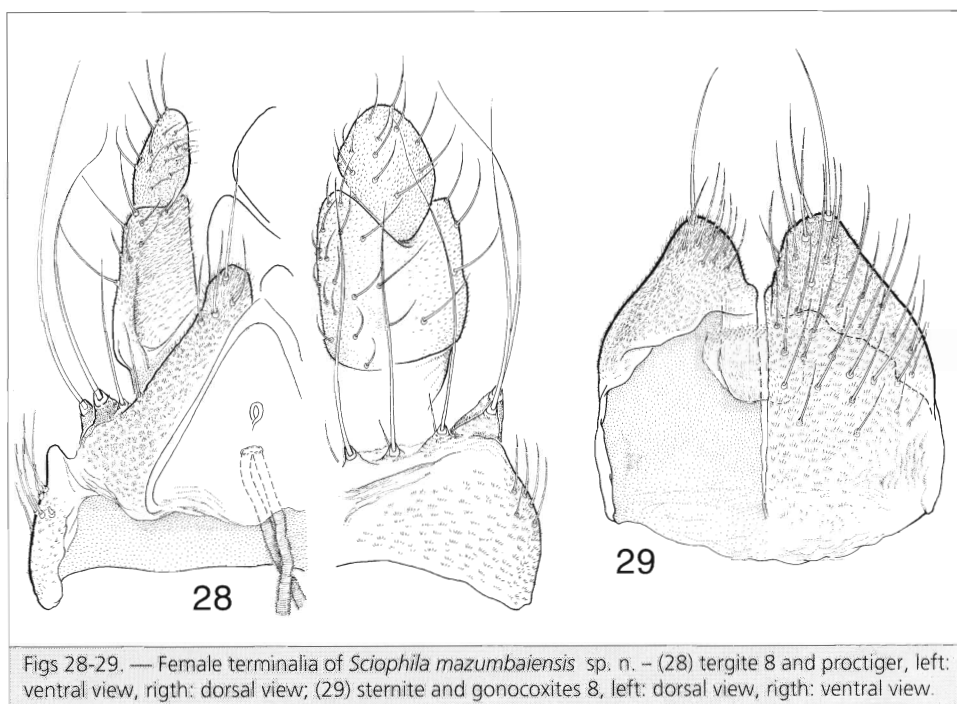
Coloration. Somewhat darker than males; posterior portion of abdominal sternites brown.

Head. *LM* 0.9-1.3; *LE* 1.9-2.5. Frons with 20-24 setae in front of ocelli. Stipes with 3-7 setae. Face 0.9-1.1 times as broad as long, with 11-13 setae. Clypeus 0.9-1.1 times as long as broad, with 15-29 setae. Relative lengths of palpomeres: 1 : 1.0-1.1 : 1.5-1.7 : 3.9-4.4 : 6.1-6.7.

Thorax. Length of scutum and scutellum together 0.73-0.92 mm. Anepisternum with 6-11 setae situated anterodorsally. Laterotergite with 3-9 setae. Mediotergite with 3-4 lateral and 4-5 median setae.

Wings. Length 2.72-3.13 mm. Length to width 2.40-2.56. *Sc* 0.32-0.35 times as long as wing. Crossvein *tb* 0.45-0.49 times as long as *CuA*-petiole. *CuA*-ratios 0.44-0.51 and 0.27-0.31. Anal vein faint, 0.60-0.72 times as long as *CuA*-petiole.

Legs. Anteroapical depressed area of fore tibia with one distinct row of setae, and 0-4 more irregularly dispersed setae above these. Ratio femur to tibia: 0.87-0.91; 0.80-0.83; 0.78-0.80. Ratio tibia to tarsus: 0.98-1.02; 1.21-1.26; 1.56-1.58. Spur lengths: 2.3-2.6; 2.2-2.3, 3.3-3.8; 2.3-2.4, 3.6-3.7.



Figs 28-29. — Female terminalia of *Sciophila mazumbaiensis* sp. n. — (28) tergite 8 and proctiger, left: ventral view, right: dorsal view; (29) sternite and gonocoxites 8, left: dorsal view, right: ventral view.

Terminalia (Figs 28, 29). Gonocoxites 8 intimately fused with sternite 8, forming two distally narrowed lobes, separated by deep and narrow median cleft. Each gonocoxite with numerous small and a few long distal setae. Spermathecal ducts joining just before spermathecal eminence. Sternite 10 triangular, distally rounded, without setulae. Hypoproct as two tapered lobes above sternite 10, each with some straight setae. Cercus long, two segmented.

Distribution. — Tanzania; only known from the type locality.

***Sciophila papula* sp. n.**

Figs 5, 8, 30, 31

Types. — Holotype ♂: Congo, Pool Forêt de Meya Nzouari, 1.xi.1975, L. Matile (MNHN). Paratypes: Central African Republic, La Maboke, 2 ♂♂ 25.viii.1967, L. Matile (MNHN & ZMBN); Central African Republic, Dep. de la Lobaye, Forêt gal de Bébé, 1 ♂ 7.ix.1970, L. Matile (MNHN);

Central African Republic, Dep. de la Lobaye, env. de Bogandou, 1 ♂ 14.ix.1967, L. Matile (MNHN); Central African Republic, Dep. de la Lobaye, Forêt, env. de Kinga, 1 ♂ 28.ix.1967, L. Matile (MNHN); Congo, Plateaux Djambala l'Abime, 1 ♂ 23.x.1975, L. Matile (MNHN).

Etymology. — From Latin, *papula*, pimple, referring to the small median notch on the 9th tergite in males.

Description

Male (n=5). — Total length about 2.76-3.22 mm. Flagellum 1.29-1.36 mm, or 2.0-2.1 times as long as scutum and scutellum together.

Coloration. Light brown to yellowish; scutum with one diffuse median brown stripe.

Head (Figs 5, 8). Median ocellus about as large as laterals. *LM* 1.0; *LE* 2.3-2.5. Frons with 20-27 setae in front of ocelli.

Frontal tubercle distinctly bilobate. Stipes with 6-9 setae. Face 1.5-1.6 times as long as broad, with 15-20 setae. Clypeus ovate, 1.2 times as long as broad, with 20-26 setae. Relative lengths of palpomeres: 1 : 1.1-1.2 : 1.7-1.9 : 3.0-3.5 : 5.3-6.4. Lacinia 1.1-1.4 times as long as first palpomere.

Thorax. Length of scutum and scutellum together 0.62-0.67 mm. Anepisternum with 8-20 setae situated anterodorsally. Laterotergite with 9-13 setae. Mediotergite with 3-5 lateral and 4-6 posterior setae.

Wings. Length 2.08-2.18 mm. Length to width 2.28-2.49. *Sc* 0.34-0.35 times as long as wing. *Sc*2 located well in front of *Rs*. *M*-petiole 0.5-1.0 times as long as *ta*. Crossvein *tb* 0.43-0.48 times as long as *CuA*-petiole. *CuA*-ratios: 0.43-0.54 and 0.28-0.36. Anal vein weak, about 0.8 times as long as *CuA*-petiole.

Legs. Anteroapical depressed area of fore tibia with one distinct row of setae, and 3-6 setae above these. Ratio femur to tibia: 0.90-0.94; 0.89-0.93; 0.83-0.88. Ratio tibia to tarsus: 1.00-1.06; 1.26-1.32; 1.63-1.73. Spur lengths: 2.3-2.7; 2.5-2.9, 3.8-4.1; 2.3-2.7, 4.0-4.2.

Terminalia (Figs 30, 31). Basal portion of gonocoxal apodeme rounded; distal portion weakly trilobate. Median lobe of gonostylus with distinct, slender anterior portion; posterior portion rounded. Aedeagus very long and thin. Tergite 9 small, subquadrate, with a distinct, bare median point. Fused epiproct and cerci elongated, evenly narrowed.

Distribution. – Congo and the Central African Republic.

***Sciophila quadra* sp. n.**

Figs 32, 33

Types. – Holotype ♂: Gabon, Makokou M'Passa, Bale Affl., 200 m, 9.-16.vii.1973,

(Malaise trap), J. Legrand, (MNHN). Paratypes: Nigeria (West), Illaro Forest, 1 ♂ 29.xii.1974, M. A. Cornes (NHML); Côte-d'Ivoire, Rég. de Taï, 1 ♂ 16.i.-1.ii.1985, 1 ♂ 7.-11.ii.1985, G. Couturier & V. van Zeijst (ORSTOM-Paris, Mission UNESCO) (MNHN); Central African Republic, La Maboque, 1 ♂ 4.ix.1970, L. Matile (ZMBN); Gabon, Makokou M'Passa, Bole affl, 200 m, 1 ♂ 9.-26.vii.1973, J. Legrand (Malaise trap) (MNHN).

Etymology. – From latin *quadrus*, square, referring to the outlining of the 9th tergite in males.

Description

Male (n=5). – Total length 2.75-3.28 mm. Flagellum 1.24-1.63 mm, or 2.0-2.3 times as long as scutum and scutellum together.

Coloration. Light brown to yellowish; meso- and metanotum, and terminalia brownish.

Head. Median ocellus 0.5-1.0 times as large as laterals. *LM* 1.0; *LE* 1.7-3.0. Frons with 19-28 setae in front of ocelli. Frontal tubercle distinctly bilobate. Stipes with 5-10 setae; basally fused. Face 1.3-1.6 times as long as broad, with 15-28 setae. Clypeus ovate, 0.7-1.0 times as long as broad, with 22-31 setae. Relative lengths of the palpomeres: 1 : 1.0-1.1 : 1.5-1.7 : 2.6-3.2 : 5.1-6.0. Lacinia 1.3-1.5 times as long as first palpomere.

Thorax. Length of scutum and scutellum together 0.57-0.70 mm. Anepisternum with 7-22 setae situated anterodorsally. Laterotergite with 6-9 setae. Mediotergite with 3-6 lateral and 4-6 posterior setae.

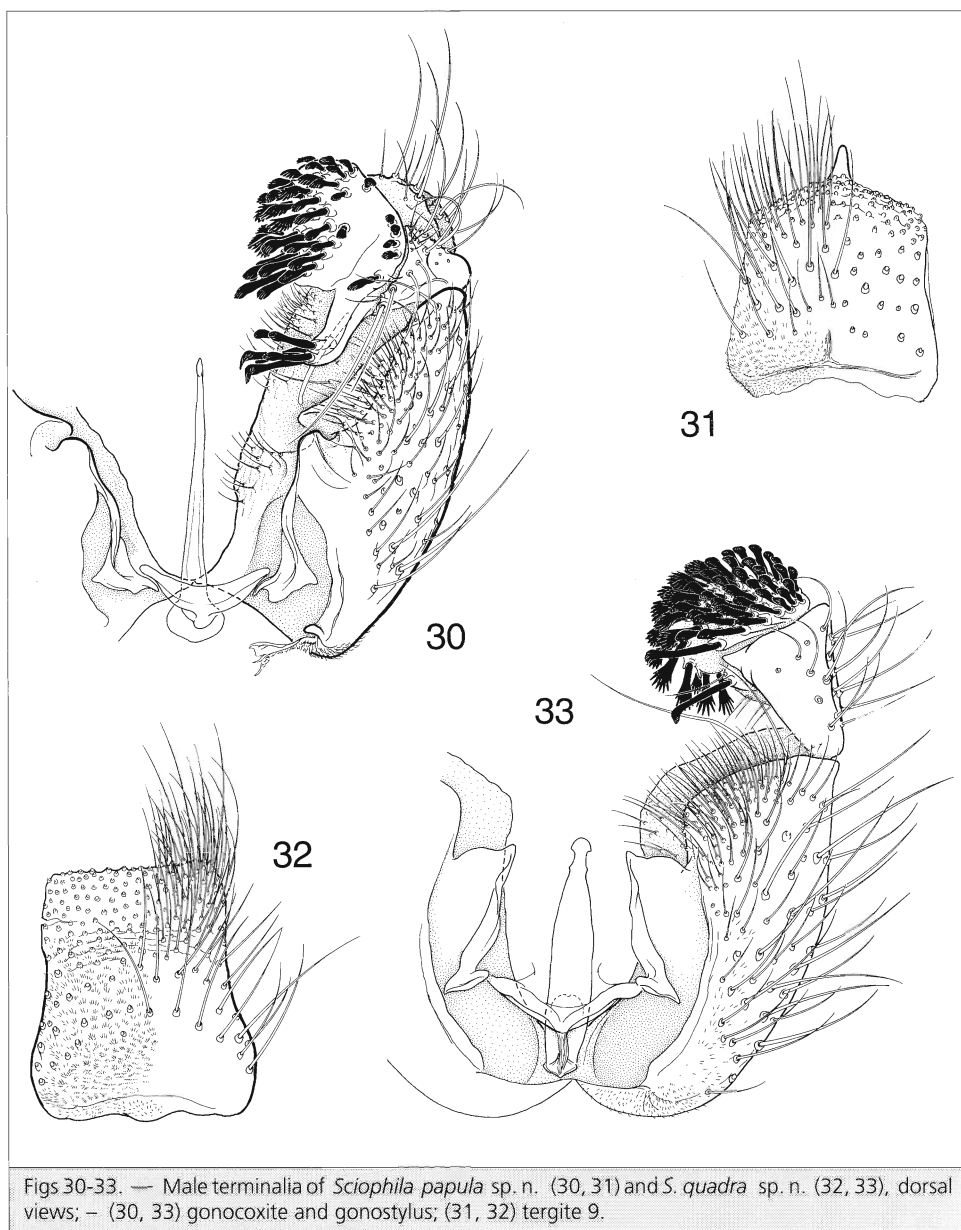
Wings. Length 1.87-2.34 mm. Length to width 2.23-2.38. *Sc* 0.32-0.34 times as long as wing. *Sc*2 located well in front of

Rs. *M*-petiole about as long as *ta*. Crossvein *tb* 0.39-0.46 times as long as *CuA*-petiole. *CuA*-ratios: 0.24-0.35 and 0.15-0.22. Anal vein weak to very weak, 0.61-0.67 times as long as *CuA*-petiole.

Legs. Anteroapical depressed area of fore tibia with one distinct row of setae, and 4-8 more irregularly dispersed setae

above these. Ratio femur to tibia: 0.83-0.91; 0.81-0.88; 0.82-0.86. Ratio tibia to tarsus: 1.00-1.03; 1.14-1.24; 1.44-1.51. Spur lengths: 2.2-2.4; 2.2-2.7, 3.2-3.9; 2.2-2.6, 3.3-3.9.

Terminalia (Figs 32, 33). Basal portion of gonocoxal apodeme with sharp corner; distal portion hook-like, not rounded.



Figs 30-33. — Male terminalia of *Sciophila papula* sp. n. (30, 31) and *S. quadra* sp. n. (32, 33), dorsal views; — (30, 33) gonocoxite and gonostylus; (31, 32) tergite 9.

Median lobe of gonostylus rounded; ventral lobe subquadrate. Aedeagus long and relatively broad. Tergite 9 small, subquadrate, posterior border straight. Fused epiproct and cerci as two rounded lobes.

Distribution. – The Central African Republic, Côte-d'Ivoire, Gabon and Nigeria.

The *fenestralis* group

Three ocelli in shallow triangular arrangement on top of head. Frontal furrow produced along most of distance from frontal tubercle towards median ocellus, ending slightly before median ocellus. Frontal tubercle broad, bilobate. Face at least as high as broad. Labrum with small fringes distally. Third palpomere with distinct sensory pit. Preepisternum 2 bare. Metepisternum setose. Anteroapical depressed area of fore tibia with two distinct rows of setae. Male gonocoxites fused for very short distance ventrobasally. Basal portion of gonocoxal apodeme with flattened rim. Gonostylus with ventral and dorsal lobe well separated; both ventral and median lobe medially prolonged, each with 2 long pipe-like megasetae distally. Male tergite 9 elongated, posterior border with distinct median incision. Fused epiproct and cerci as two rounded lobes; hypoproct as two small lobes with numerous setae.

Sciophila fenestralis sp. n.

Figs 34-39

Types. – Holotype ♂: South Africa, Natal ("Zululand"), Eshowe, 3.09.1935, ("Coll: 613, Caught on window, Lab.", "BM 1936-45") (NHML). Paratypes: South Africa, Natal ("Zululand"), Eshowe, 1 ♂ 2.xi.1935, B. DeMeillon ("Coll: 672, on window pane, Lab.", "Bm 1936-45") (ZMBN); South Africa, Natal, Estcourt, 1 ♂ ix/x.1896, G. A. K. Marshall ("1903-17") (NHML); South Africa, Natal ("Zululand"),

Eshowe, 1 ♀ 12.ix.1935, ("Coll: 625, Caught on window-pane, Lab., BM 1936-45") (NHML); South Africa, Natal ("Zululand"), Eshowe, 1 ♀ 2.ix.1935, ("Caught in laboratory, window, BM 1936-45") (NHML); South Africa, Natal ("Zululand"), Eshowe, 1 ♀ 3.ix.1935, ("Coll: 613, Caught on window, Lab., BM 1936-45") (NHML).

Etymology. – From Latin, *fenestra*, window, referring to the collecting site for the type specimens.

Description

Male (n=3). – Total length 2.97-4.17 mm. Flagellum 1.12-1.50 mm, or 1.3 times as long as scutum and scutellum together.

Coloration. Yellowish brown; top of head brown, scutum with one diffuse median brown stripe, terminalia brown.

Head. Median ocellus 0.7-1.0 times as large as lateral. *LM* 0.9-1.3; *LE* 2.1-2.6. Frons with 26-39 setae in front of ocelli. Stipes with 6-10 setae. Face 0.9-1.1 times as long as broad, with 23-56 setae. Clypeus ovate, 0.9-1.1 times as long as broad, with 34-47 setae. Relative lengths of palpomeres: 1: 1.0-1.3: 1.3-1.7: 2.7-3.2: 7.1-10.3. Lacinia 1.1-1.3 times as long as first palpomere.

Thorax. Length of scutum and scutellum together 0.87-1.12 mm. Anepisternum with 8-22 setae situated anterodorsally. Laterotergite with 13-23 setae. Mediotergite with about 4-7 lateral and 3-9 posterior setae. Metepisternum with 9-18 small setae anteriorly.

Wings. Length 2.97-3.32 mm. Length to width 2.21-2.27. *Sc* 0.41-0.45 times as long as wing. *Sc2* located well in front of *Rs*. *M*-petiole about as long as *ta*. Crossvein *tb* 0.52-0.54 times as long as *CuA*-petiole. *CuA*-ratios: 0.59 and 0.39. Anal vein distinct, about 0.87-0.89 times as long as *CuA*-petiole.

Legs. Subapical row of setae in anteroapical depressed area of fore tibia sometimes incomplete. Ratio femur to tibia: 0.93-0.97; 0.88-0.90; 0.84-0.90. Ratio tibia to tarsus: 1.06-1.09; 1.44-1.53; 1.69-1.71. Spur lengths: 2.5; 2.6-2.8, 3.4-3.7; 2.4-2.5, 3.3.

Terminalia (Figs 34-36). Basal rim of gonocoxal apodeme large and rounded. Aedeagus broad and short. Two pairs of parameres, lateral pair divided, median pair small, curved outwards. Tergite 9 with posterior border setose.

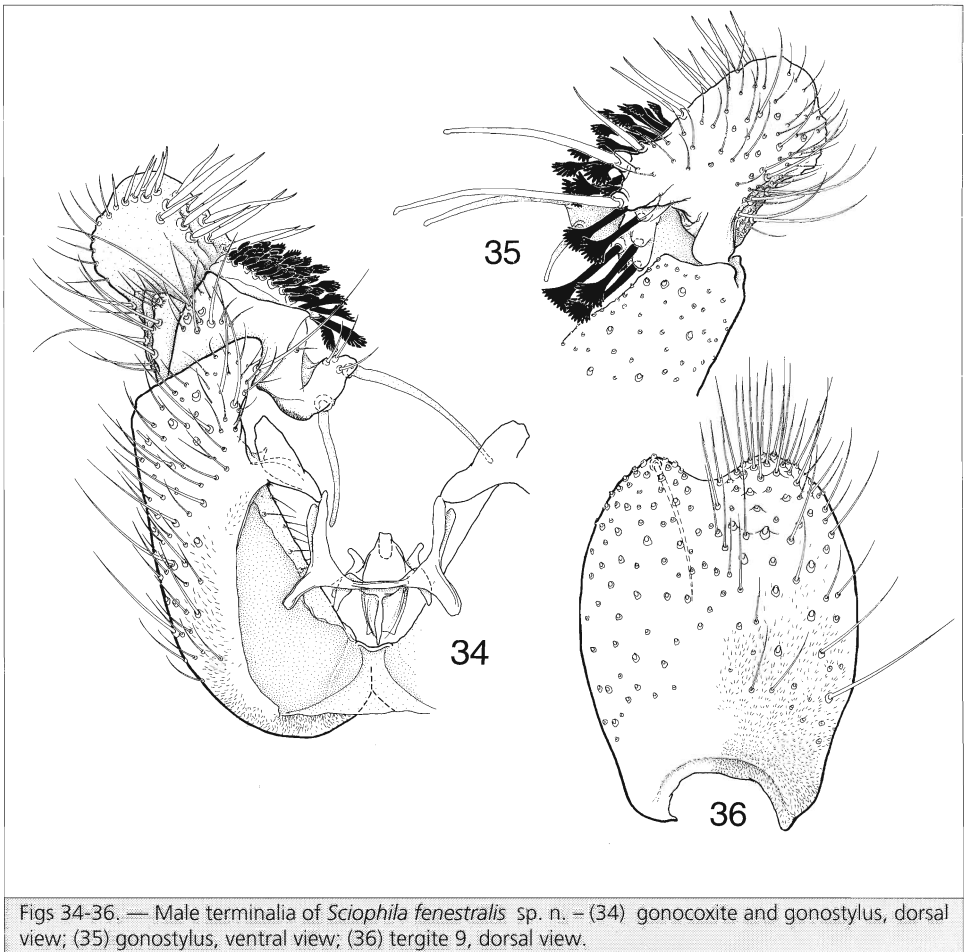
Female (n=3). - Total length about 4.94-5.85 mm. Flagellum 1.38-1.64 mm,

or 1.1-1.2 times as long as scutum and scutellum together.

Coloration. As for males.

Head. *LM* 1.1-1.2; *LE* 2.1-2.5. Frons with 28-46 setae in front of ocelli. Stipes with 7-11 setae. Face 0.9 times as long as broad, with 24-28 setae. Clypeus ovate, 0.9-1.0 times as long as broad, with 45-67 setae. Relative lengths of palpomeres: 1 : 1.1-1.2 : 1.4-1.5 : 2.9 : 8.3-10.7. Lacinia 1.3-1.4 times as long as first palpomere.

Thorax. Length of scutum and scutellum together 1.19-1.52 mm. Anepisternum with 27-43 setae situated



Figs 34-36. — Male terminalia of *Sciophila fenestralis* sp. n. = (34) gonocoxite and gonostylus, dorsal view; (35) gonostylus, ventral view; (36) tergite 9, dorsal view.

anterodorsally. Laterotergite with 23-28 setae. Mediotergite with about 6-11 lateral and about 10-15 posterior setae. Metepisternum with 10-18 small setae anteriorly.

Wings. Length 3.67-4.38 mm. Length to width 2.28-2.39. Sc 0.42-0.46 times as long as wing. $Sc2$ located above Rs . M -petiole about as long as ta . Crossvein tb 0.57-0.58 times as long as CuA -petiole. CuA -ratios: 0.76-0.81 and 0.51-0.59. Anal vein distinct, about 0.96-1.00 times as long as CuA -petiole.

Legs. Ratio femur to tibia: 0.95-0.98; 0.90-0.93; 0.83-0.84. Ratio tibia to tarsus: 1.08-1.11; 1.47-1.54; 1.83-1.89. Spur lengths: 2.3-2.5; 2.7-2.9, 3.4-3.6; 2.6-2.7, 3.4-3.8.

Terminalia (Figs 37-39). Gonocoxites 8 intimately fused with sternite 8, forming

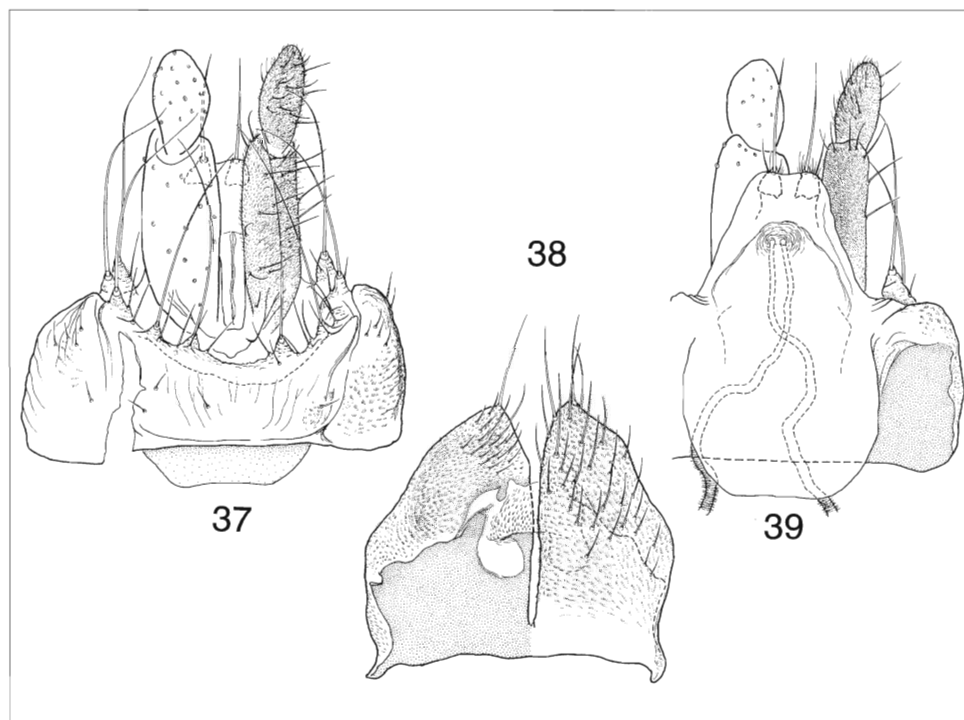
two broad, distally tapered lobes, separated by deep and narrow median cleft. Each gonocoxite with several small and a few stronger distal setae. Spermathecal ducts separate to spermathecal eminence. Sternite 10 large, tapered, posterior border straight, without setulae. Hypoproct as two, small, distinct lobes above sternite 10, each with one very long erect seta. Cercus long, two segmented.

Distribution. – South Africa.

***Sciophila svengstoeli* sp. n.**

Figs 40-42

Types. – Holotype σ : Uganda, Ruwenzori Range, Mobuku Valley, 7,300 ft., xii.1934-i.1935, B. M. E. Afr. Exp. (F. W. Edwards), ("BM 1935-203") (NHML). Paratypes: 1 σ , as for holotype (ZMBN).



Figs 37-39. — Female terminalia of *Sciophila fenestralis* sp. n. — (37) tergite 8 and proctiger, dorsal view; (38) sternite and gonocoxites 8, left: dorsal view, right: ventral view; (39) tergite 8 and proctiger, ventral view.

Etymology. — Named after my friend Andreas Corneliussen Svengestøl.

Description

Male (n=2). — Total length 4.31-4.63 mm. Flagellum 1.47 mm, or 1.4 times as long as scutum and scutellum together.

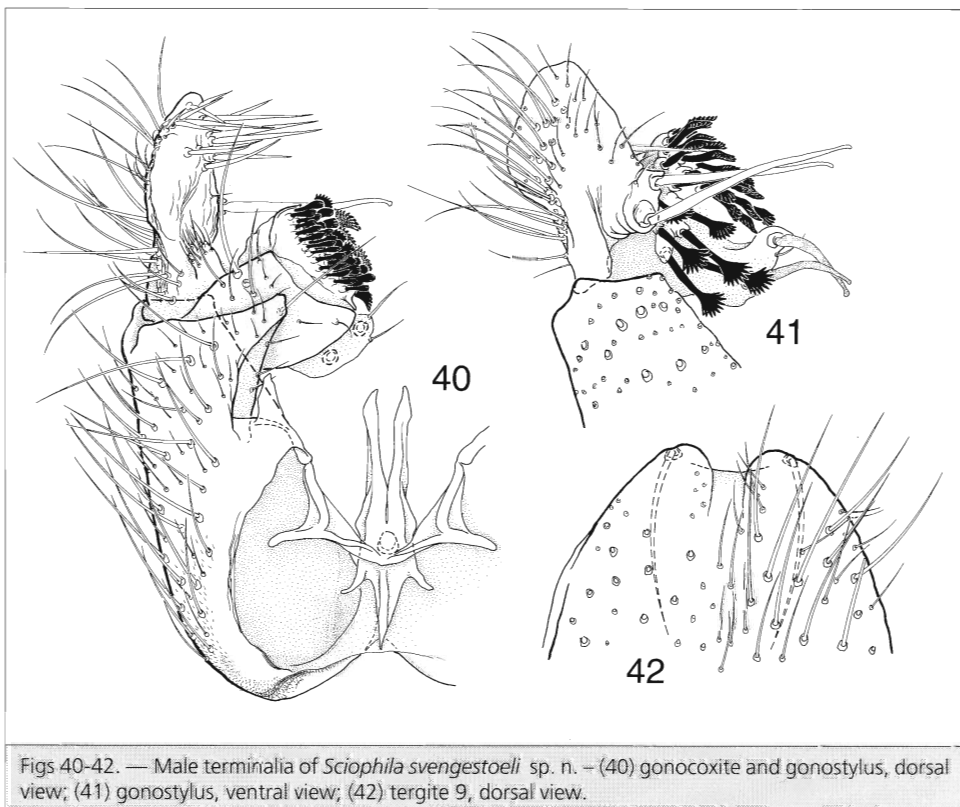
Coloration. Light yellowish brown; top of head brown, scutum with one diffuse median brown stripe, terminalia brown.

Head. Median ocellus about 0.8 times as large as lateral. *LM* 1.0; *LE* 1.2-1.4. Frons with 30-36 setae in front of ocelli. Stipes with 8-11 setae. Face 0.9 times as long as broad, with 23-28 setae. Clypeus ovate, 1.1 times as long as broad, with 50-68 setae. Relative lengths of palpomeres: 1 : 1.3 : 1.6-1.7 : 3.6 : 12.6. Lacinia 1.2-1.6 times as long as first palpomere.

Thorax. Length of scutum and scutellum together 1.08-1.17 mm. Anepisternum with 18 setae situated anterodorsally. Laterotergite with 16-21 setae. Mediotergite with 6-7 lateral and about 6-8 posterior setae. Metepisternum with 15 small setae anteriorly.

Wings. Length 3.36-3.42 mm. Length to width 2.25-2.39. *Sc* 0.41-0.45 times as long as wing. *Sc2* located well in front of *Rs*. *M*-petiole about as long as *ta*. Crossvein *tb* 0.54-0.55 times as long as *CuA*-petiole. *CuA*-ratios: 0.68-0.72 and 0.44-0.49. Anal vein distinct, 0.90-0.92 times as long as *CuA*-petiole.

Legs. Ratio femur to tibia: 0.96; 0.88-0.89; 0.80-0.81. Ratio tibia to tarsus: 1.03-1.04; 1.41-1.45; 1.84-1.93. Spur lengths: 2.5-2.7; 2.9-3.0, 3.8; 2.6, 3.7-3.9.



Figs 40-42. — Male terminalia of *Sciophila svengestoei* sp. n. — (40) gonocoxite and gonostylus, dorsal view; (41) gonostylus, ventral view; (42) tergite 9, dorsal view.

Terminalia (Figs 40-42). Basal rim of the gonocoxal apodeme large and tapered. Gonostylus with median prolongation of ventral lobe heavily sclerotized. Aedeagus very short. Two pairs of parameres, lateral pair simple, median pair longated, straight. Posterior portion of tergite 9 with few median setae only.

Distribution. – Uganda; only known from the type locality.

***Sciophila matilei* sp. n.**

Figs 6, 43-48

Types. – Holotype ♂: Central African Republic, La Maboque, hatched 28.ix.1970, L. Matile ('LM46') (MNHN). Paratypes: as for holotype, 3 ♂♂ 2 ♀♀; as for holotype, except hatched 1 ♀ 23.ix., 3 ♀♀ 25.ix., 1 ♀ 1.x., 1 ♀ 5.x., 1 ♀ ix./x. (All MNHN, except 1 ♂ 1 ♀ ZMBN).

Etymology. – Named after Dr. L. Matile, Paris, who collected and reared the above listed specimens.

Description

Male (n=3). – Total length about 3.30-3.66 mm. Flagellum 1.03-1.10 mm, or 1.2-1.3 times as long as scutum and scutellum together.

Coloration. Yellowish brown; top of head brown, scutum with one diffuse median brown stripe, terminalia brown.

Head (Fig. 6). Median ocellus 0.5-0.6 times as large as lateral. *LM* 1.1-1.3; *LE* 2.1-2.2. Frons with 28-29 setae in front of ocelli. Stipes with 5-7 setae. Face 0.8-0.9 times as long as broad, with 15-20 setae. Clypeus ovate, 0.7-0.9 times as long as broad, with 23-29 setae. Relative lengths of palpomeres: 1 : 1.1-1.2 : 1.4-1.5 : 2.1-2.6 : 7.4-8.4. Lacinia 1.2 times as long as first palpomere.

Thorax. Length of scutum and scutellum together 0.80-0.85 mm. Anepisternum with 11-16 setae situated antero-dorsally. Laterotergite with 10-12 setae. Mediotergite with 4-7 lateral and 4 posterior setae. Metepisternum with 6-9 small setae.

Wings. Length 2.20-2.39 mm. Length to width 2.17-2.20. *Sc* 0.40-0.44 times as long as wing. *Sc*2 ending before *Rs*. *M*-petiole about as long as *ta*. Crossvein *tb* 0.49-0.53 times as long as *CuA*-petiole. *CuA*-ratios: 0.45-0.67 and 0.33-0.50. Anal vein distinct, 0.78-0.92 times as long as *CuA*-petiole.

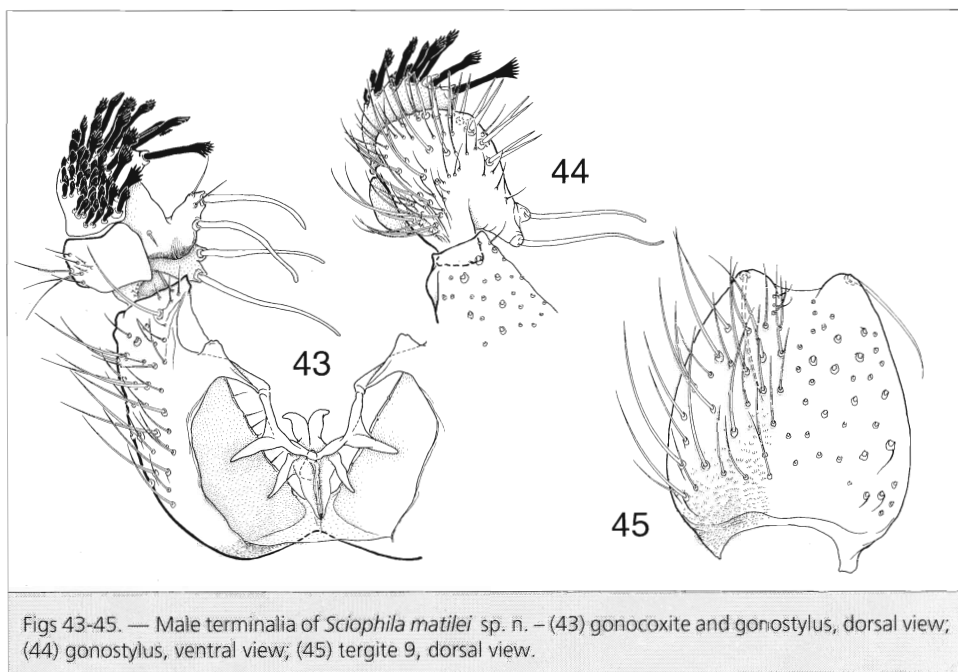
Legs. Anteroapical depressed area of fore tibia with two distinct rows of setae, subapical shorter than apical. Ratio femur to tibia: 0.91-0.92; 0.87-0.92; 0.87-0.90. Ratio tibia to tarsus: 1.05-1.06; 1.38-1.50; 1.70-1.79. Spur lengths: 2.1-2.3; 2.4-2.7, 3.4; 2.3-2.4, 3.0-3.5.

Terminalia (Figs 43-45). Basal rim of gonocoxal apodeme small and rounded. Aedeagus very short. Two pairs of parameres, lateral pair simple, median pair small, curving outwards. Posterior portion of tergite 9 with few median setae only.

Female (n=2). – Total length 3.39-3.79 mm. Flagellum 0.91-1.03 mm, or 1.2-1.1 times as long as scutum and scutellum together.

Coloration. As for males.

Head. Median ocellus 0.3-0.8 times as large as lateral. *LM* 1.1-1.2; *LE* 2.6-2.7. Frons with 33-34 setae in front of ocelli. Stipes with 5-6 setae. Face 0.7-0.8 times as long as broad, with 21-24 setae. Clypeus ovate, 0.8 times as long as broad, with 31-40 setae. Relative lengths of palpomeres: 1 : 1.1-1.2 : 1.4 : 2.4 : 8.1-9.0.



Figs 43-45. — Male terminalia of *Sciophila matilei* sp. n. — (43) gonocoxite and gonostylus, dorsal view; (44) gonostylus, ventral view; (45) tergite 9, dorsal view.

Thorax. Length of scutum and scutellum together 0.82-0.94 mm. Anepisternum with 10-11 setae situated anterodorsally. Laterotergite with 11-14 setae. Mediotergite with 6-7 lateral and about 6-7 posterior setae. Metepisternum with 10-14 small setae.

Wings. Length 2.48-2.76 mm. Length to width 2.19-2.21. *Sc* 0.39 times as long as wing. *Sc2* ending before *Rs*. *M*-petiole about as long as, or slightly shorter than *ta*. Crossvein *tb* 0.51-0.54 times as long as *CuA*-petiole. *CuA*-ratios: 0.59-0.65 and 0.43-0.48. Anal vein distinct, 0.87-0.89 times as long as *CuA*-petiole.

Legs. Subapical row of setae in anteroapical depressed area of fore tibia sometimes incomplete. Ratio femur to tibia: 0.92; 0.87-0.91; 0.84-0.86. Ratio tibia to tarsus: 1.03-1.04; 1.43-1.48; 1.74-1.87. Spur lengths: 2.4; 2.5-2.8, 3.2-3.5; 2.2-2.4, 3.2-3.5.

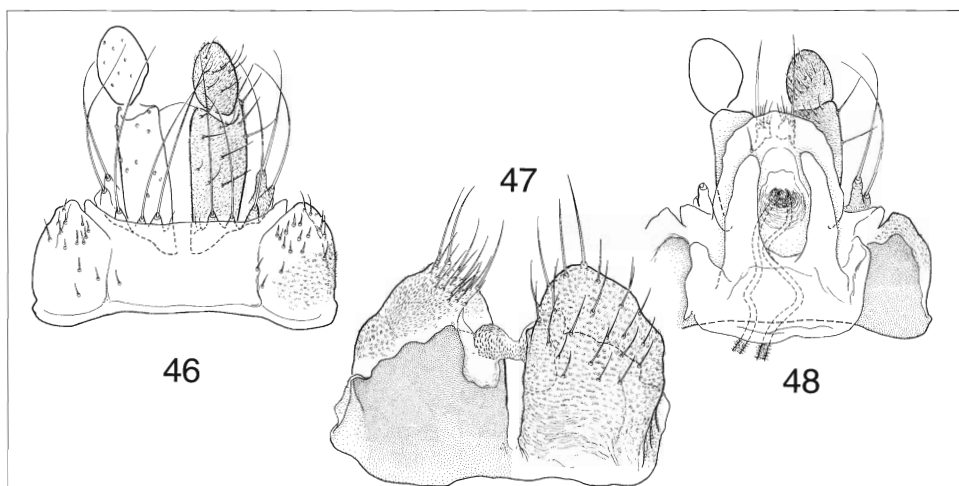
Terminalia (Figs 46-48). Gonocoxites 8 intimately fused with sternite 8, forming

two broad, rounded lobes, separated by deep median cleft. Each gonocoxite with some small and a few stronger distal setae. Spermathecal ducts separate to spermathecal eminence. Sternite 10 large, rounded, without setulae. Hypoproct as two, small, distinct lobes above sternite 10, each with one very long erect seta. Cercus long, two segmented.

Distribution. — Central African Republic; only known from the type locality.

The *clava* group

Three ocelli in shallow triangular arrangement, widely separated. Frontal furrow entire. Frontal tubercle broad, bilobate. Sensilla on third palpomere distributed on lateral surface. Preepisternum 2 bare. Metepisternum setose. Anteroapical depressed area of fore tibia with one distinct row of setae, and some setae above this, sometimes arranged in row. Male gonocoxites broadly fused ventrobasally. Gonostylus with ventral and



Figs 46-48. — Female terminalia of *Sciophila matilei* sp. n. — (46) tergite 8 and proctiger, dorsal view; (47) sternite and gonocoxites 8, left: dorsal view, right: ventral view; (48) tergite 8 and proctiger, ventral view.

dorsal lobe fused, forming a ventolateral lobe. Tergite 9 nearly twice as broad as long, with normal setae only. Fused epiproct and cerci as two rounded, setose lobes; hypoproct as two small, setose lobes, each with some erect setae.

Sciophila clava sp. n.

Figs 49, 50

Types. — Holotype ♂: Malawi, Mont Soche (1300 m, rainforest), 7.viii.1974, H. Feijen (MNHN). Paratype: 1 ♂, as for holotype (ZMBN); South Africa, Natal, 15 km WSW Est Court Cathedral, Peak For. Sta., 1700 m, 1 ♂ 21-31.xii.1979, S. & J. Peck (CNC).

Etymology. — From Latin, *clava*, a club, referring to the outlining of male gonostylus.

Description

Male (n=3). — Total length about 3.60-3.91 mm. Flagellum 1.68-1.75 mm, or 1.7-2.0 times as long as scutum and scutellum together.

Coloration. Light brown; head, metanotum, and terminalia brown.

Scutum with 3 broad, diffuse brown stripes; coxa yellowish, distalmost parts brown.

Head. Median ocellus about half as large as laterals. *LM* 1.7-2.0; *LE* 1.4-1.7. Frons with 25-30 setae in front of ocelli. Stipes with 7-11 setae. Face 0.9-1.0 times as long as broad, with 24-30 setae. Clypeus ovate, 0.9 times as long as broad, with 32-37 setae. Relative lengths of the palpomeres: 1 : 1.1-1.3 : 1.5-1.9 : 2.9-3.3 : 6.5-6.9. Lacinia 1.0-1.2 times as long as first palpomere.

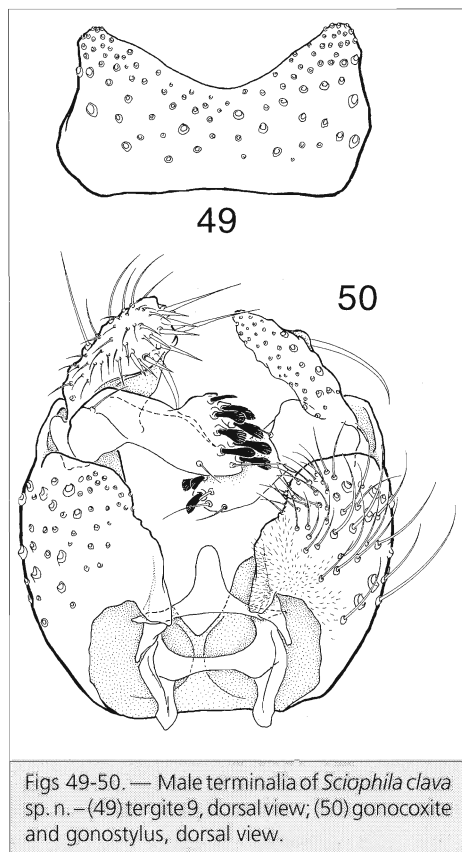
Thorax. Length of scutum and scutellum together 0.89-0.98 mm. Anepisternum with 11-16 setae situated anterodorsally. Laterotergite with 8-11 setae. Mediotergite with 9-14 lateral and about 10-15 posterior setae.

Wings. Length 3.00-3.16 mm. Length to width 2.17-2.51. *Sc* 0.36-0.42 times as long as wing. *Sc*2 located between *Rs* and *R*4, sometimes very close to *Rs*. *M*-petiole somewhat shorter than *ta*. Crossvein *tb* 0.56 times as long as *CuA*-petiole. *CuA*-ratios: 0.68-0.75 and 0.42-0.46. Anal vein well developed, 0.94-0.95 times as long as *CuA*-petiole.

Legs. Ratio femur to tibia: 0.89-0.91; 0.89; 0.80-0.82. Ratio tibia to tarsus: 1.00-1.07; 1.35; 1.72-1.81. Spur lengths: 2.2; 2.6, 3.0-3.2; 2.4, 3.2-3.4.

Terminalia (Figs 49, 50). Gonostylus with median lobe medially prolonged, with several furcated megasetae distally; ventrolateral lobe elongated. Gonocoxal apodemes small. Aedeagus small, rounded. Parameres small, not protruding beyond basiphallus; distinct transverse bridge produced between two parameres.

Distribution. – South Africa and Malawi.



Figs 49-50. — Male terminalia of *Sciophila clava* sp. n. — (49) tergite 9, dorsal view; (50) gonocoxite and gonostylus, dorsal view.

The *pinniger* group

Three ocelli in linear arrangement, well separated. Frontal furrow reduced,

median portion remains. Frontal tubercle broad, bilobate. Sensilla on third palpomere distributed on lateral surface. Preepisternum 2 bare. Metepisternum setose. Anteroapical depressed area of fore tibia with one distinct row of setae only. Male gonocoxites broadly fused ventrobasally. Gonostylus with ventral and dorsal lobe fused, forming a ventolateral lobe. Tergite 9 subquadrate, posterior border with feather-like megasetae. Proctiger greatly reduced; hypoproct membranous, with 4 erect setae.

Sciophila pinniger sp. n.

Figs 51, 52

Types. – Holotype ♂: Tanzania, Tanga region, West Usambara Mts., Mazumbai, 31.x.-1.xi.1990, ZMB's Tanz. Exp. '90 (ZMBN No. 228). Paratypes: as for holotype, except 1 ♂ 23.xi.1990 (ZMBN), 1 ♂ 20-26.xi.1990 (ZMBN), 1 ♂ 26.-29.xi.1990 (ZMBN), 2 ♂ 26.xi.-4.xii. 1990 (ZMBN), 1 ♂ xi.1990 (ZMBN), 1 ♂ 20-26.xi.1990 (MNHN).

Etymology. – From Latin, *pinniger*, bearing feathers, referring to the ventral, feather-like megasetae on male tergite 9.

Description

Male (n=5). – Total length about 2.30-2.93 mm. Flagellum 0.89-1.12 mm, or 1.5-1.7 times as long as scutum and scutellum together.

Coloration. Dark brown; pleural parts of thorax brown, coxa light brown.

Head. Median ocellus slightly smaller than laterals. *LM* 1.3-1.9; *LE* 0.9-1.1. Frons with 16-27 setae in front of ocelli. Stipes with 1-4 setae. Face 0.8 times as long as broad, with 18-23 setae. Clypeus ovate, 0.7 times as long as broad, with 30-35 setae. Relative lengths of palpomeres: 0.9-1.1 : 1.3-1.5 : 1.8-2.1 : 2.9-3.1. Lacinia 0.9-1.2 times as long as first palpomere.

Thorax. Length of scutum and scutellum together 0.55-0.73 mm. Anepisternum with 15-29 setae situated anterodorsally. Laterotergite with 4-11 setae. Mediotergite with 2-3 lateral and a few median setae.

Wings. Length 1.95-2.25 mm. Length to width 2.10-2.21. *Sc* 0.36-0.39 times as long as wing. *Sc*2 located between *Rs* and *R*4. *M*-petiole about as long as *ta*. Crossvein *tb* 0.40-0.42 times as long as *CuA*-petiole. *CuA*-ratios 0.39-0.45 and 0.24-0.30. Anal vein well developed, 0.62-0.73 times as long as *CuA*-petiole.

Legs. Ratio femur to tibia: 0.91-0.97; 0.93-0.97; 0.86-0.90. Ratio tibia to tarsus: 1.17-1.22; 1.36-1.41; 1.65-1.78. Spur lengths: 2.2-2.7; 1.8-2.3, 3.8-4.0; 1.8-2.1, 3.2-3.7.

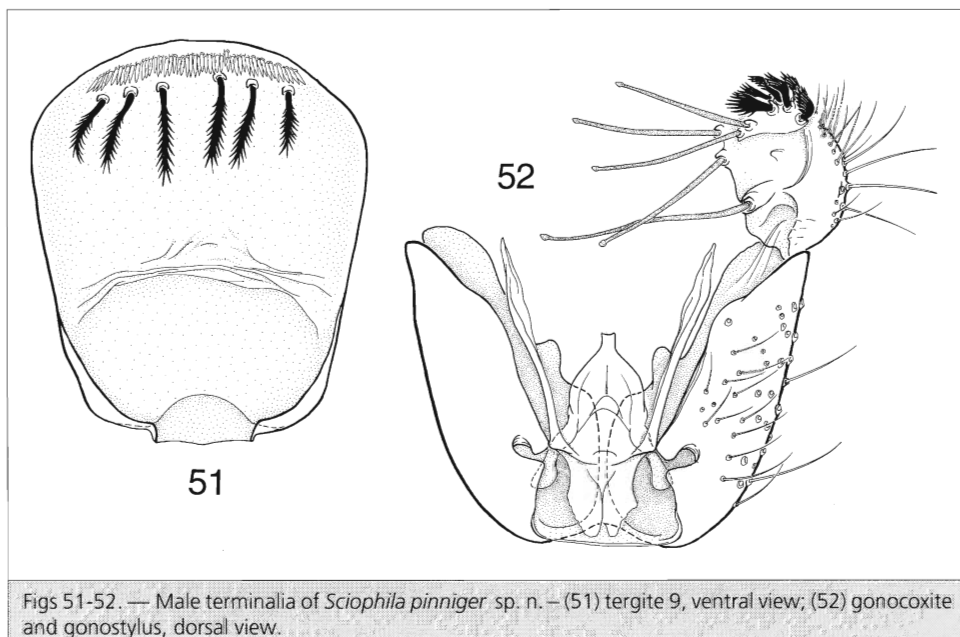
Terminalia (Figs 51, 52). Gonocoxite with a small protrusion produced midway along medioventral border. Gonostylus with very small median lobe with few furcated megasetae; ventrolateral lobe broad, rounded. Gonocoxal apodeme

small. Aedeagus broad with notched apex; aedeagal apodeme rounded. Parameres long, straight; parameral apodemes fused basally. Tergite 9 broadest distally, about 1.2 times as long as broad; 6 feather-like megasetae and dense row of slightly lanceolate setae, all pointing ventrally. Proctiger with 4 setae.

Distribution. – Tanzania; only known from the type locality.

The *intima* group

Three ocelli in linear or shallow triangular arrangement, widely separated. Frontal suture entire or reduced. Frontal tubercle broad, bilobate. Labrum with small fringes distally. Sensilla on third palpomere distributed on lateral surface. Preepisternum 2 bare. Metepisternum bare. Anteroapical depressed area of fore tibia with one distinct row of setae only. Male gonocoxites usually broadly fused ventrobasally. Gonostylus with ventral and dorsal lobe fused, forming a ventolateral lobe. Ventral surface of male tergite 9 with



Figs 51-52. — Male terminalia of *Sciophila pinniger* sp. n. – (51) tergite 9, ventral view; (52) gonocoxite and gonostylus, dorsal view.

numerous furcated megasetae. Proctiger strongly reduced; hypoproct membranous with at least 4 erect setae.

***Sciophila digitilenta* sp. n.**

Figs 53, 54

Types. – Holotype ♂: Tanzania, Tanga region, West Usambara Mts., Mazumbai, 26.xi-4.xii.1990, ZMB's Tanz. Exp. '90 (ZMBN No. 229). Paratypes: 1 ♂, as for holotype, except 2.-6.xi.1990 (ZMBN).

Etymology. – From Latin, *digitus*, fingers, and *-lentus*, full of, referring to the ventral, palm-like megasetae on male tergite 9.

Description

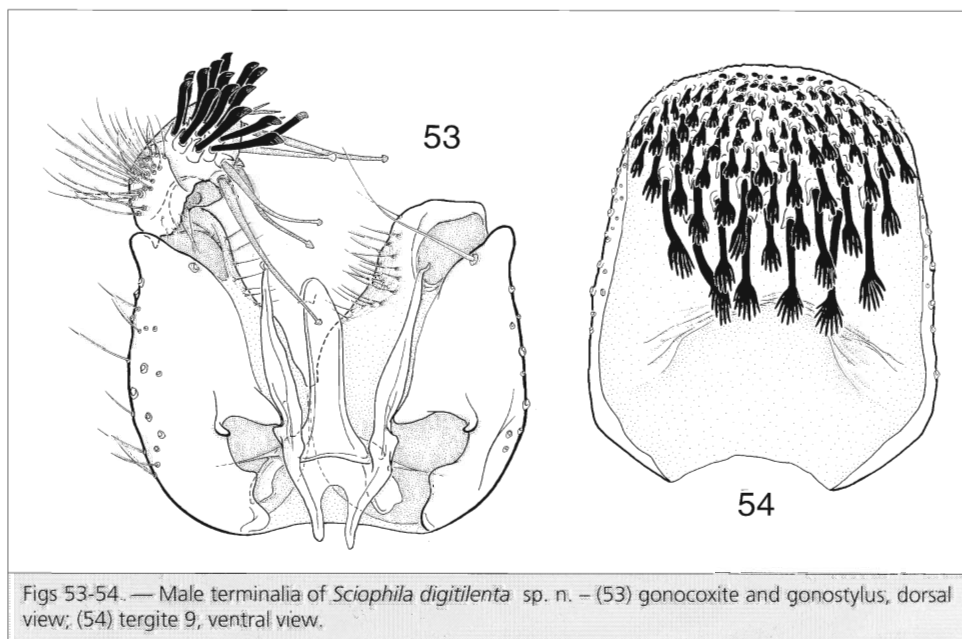
Male (n=2). – Total length 3.17-3.28 mm. Flagellum 1.43-1.47 mm, or 1.6-1.8 times as long as scutum and scutellum together.

Coloration. Brown; legs and pleural parts of thorax light brown to yellowish.

Head. Median ocellus equal to, or slightly smaller than laterals. *LM* 1.6-1.9; *LE* 1.2-1.4. Frons with 17-20 setae in front of ocelli. Frontal suture complete. Frontal tubercle broad, shallowly bilobate. Stipes without setae. Face 0.8 times as long as broad, with 17-19 setae. Clypeus rounded, 0.8-0.9 times as long as broad, with 35-40 setae. Relative lengths of palpomeres: 1.1 : 1.3 : 1.9-2.1 : 3.1-3.2. Lacinia 1.1-1.2 times as long as first palpomere.

Thorax. Length of scutum and scutellum together 0.83-0.87 mm. Anepisternum with 27-30 setae situated antero-dorsally. Laterotergite with 8-13 setae. Mediotergite with 2-3 lateral and 3-5 median setae.

Wings. Length 2.32-2.36 mm. Length to width 2.11-2.13. *Sc* 0.41 times as long as wing. *Sc2* located between *Rs* and *R4*. *M*-petiole as long as *ta*. Crossvein *tb* 0.42-0.46 times as long as *CuA* petiole. *CuA*-ratios 0.44-0.48 and 0.26-0.32. Anal vein well developed, 0.79-0.84 times as long as *CuA*-petiole.



Figs 53-54. — Male terminalia of *Sciophila digitilenta* sp. n. — (53) gonocoxite and gonostylus, dorsal view; (54) tergite 9, ventral view.

Legs. Ratio femur to tibia: 0.93-0.94; 0.94-0.95; 0.91-0.92. Ratio tibia to tarsus: 1.25-1.27; 1.38-1.45; 1.66-1.70. Spur lengths: 2.0; 1.9, 3.3-3.6; 1.8, 3.4-3.7.

Terminalia (Figs 53, 54). Gonostylus with median and ventrolateral lobes strongly fused; median lobe with few, very long megasetae, apically flattened. Paramere long, evenly tapered; parameres well separated. Aedeagus elongated, apically rounded. Tergite 9 subquadrate, 1.2 times as long as broad. Posterior third of ventral surface with numerous megasetae, except for smaller apicals, most of them furcated, at most with 9 fingers. Proctiger with 4 setae.

Distribution. – Tanzania; only known from the type locality.

Sciophila intima Lindner

Figs 7, 55, 56

Sciophila intima Lindner, 1958: 4.

Studied material. – Holotype: ♂ Tanzania, Msingi, 1.-19.v.1952, D. O. Afr. Exp. (STUT).

Description

Male (n=1). – Total length 2.69 mm. Flagellum approximately 1.05 mm, or 1.3 times as long as scutum and scutellum together (3 flagellomeres lost).

Coloration. Light brown; legs and pleural parts of thorax yellowish; abdominal sternites with posterior half brown.

Head (Fig. 7). Median ocellus about as large as lateral. *LM* 1.9; *LE* 1.9. Frons with 34 setae in front of ocelli. Frontal suture weak, only produced for short distance between frontal tubercle and median ocellus. Stipes without setae. Face 0.9 times as long as broad, with 19 setae. Clypeus ovate, 0.6 times as long as broad, with 28

setae. Relative lengths of palpomeres: 1 : 1.0 : 1.3 : 2.3 : 4.3. Lacinia 1.1 times as long as first palpomere.

Thorax. Length of scutum and scutellum together 0.82 mm. Anepisternum with 33 setae situated anterodorsally. Laterotergite with 10-11 setae. Mediotergite with 4 lateral and 6 posterior setae.

Wings. Length 2.25 mm. Length to width 2.13. *Sc* 0.41 times as long as wing. *Sc2* located between *Rs* and *R4*. *M*-petiole about as long as *ta*. Crossvein *tb* 0.46 times as long as *CuA*-petiole. *CuA*-ratios: 0.53 and 0.36. Anal vein about 0.81 times as long as *CuA*-petiole.

Legs. Ratio femur to tibia: 0.94; 0.93; 0.87. Ratio tibia to tarsus: 1.16; 1.41; 1.73. Spur lengths: 2.5; 2.0, 3.8; 1.9, 3.8.

Terminalia (Figs 55, 56). Gonostylus with median and ventrolateral lobes fused; median lobe with several short and broadly furcated megasetae. Paramere very long, curved and evenly tapered. Parameral apodemes well separated. Aedeagus broad. Tergite 9 subquadrate, as long as broad. Posterior third of ventral surface with numerous furcated megasetae, at most with 10 fingers. Proctiger with 4 setae.

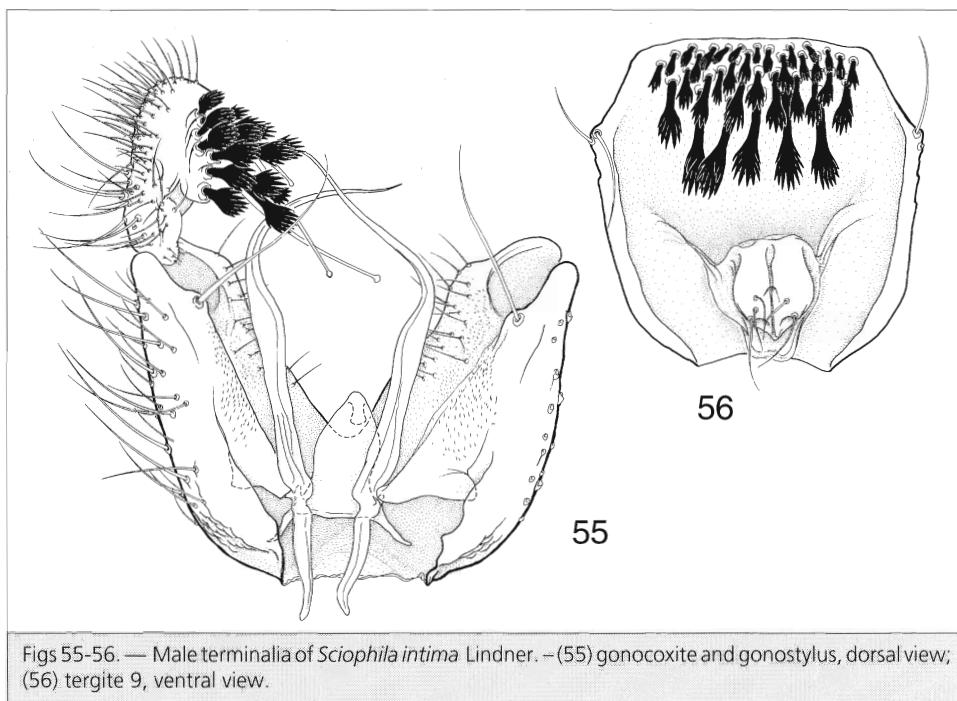
Distribution. – Tanzania; only known from the type locality.

Remarks. – In his description of this species, Lindner (1958) states that, judged from its general appearance the species could well be Palaearctic. This must be based on a superficial examination of the specimens, as the most peculiar outline of the male tergite 9 distinguish it well from all known Holarctic species.

Sciophila kakumensis sp. n.

Figs 4, 57-61.

Types. – Holotype ♂: Ghana, Central region, Kakum, Entwikrom, 8.-15.xi.1994,



Figs 55-56. — Male terminalia of *Sciophila intima* Lindner. — (55) gonocoxite and gonostylus, dorsal view; (56) tergite 9, ventral view.

NUFU-project-ZMBN (ZMBN No. 233). Paratypes: 2 ♂♂ 3 ♀♀, as for holotype, except 1 ♂ 1 ♀ (MNHN); Ghana, Volta region, Agumatsa waterfalls, Wli, 2 ♂♂ 4.-13.iii.1993 (ZMBN), 1 ♀ 11.-20.xi.1993, NUFU-project-ZMBN (ZMBN); Ghana, Eastern region, Boti waterfalls, 2 ♀♀ 28.x.-4.xi.1994, NUFU-project-ZMBN (ZMBN).

Etymology. — Named after the type locality.

Description

Male ($n = 5$). — Total length 1.99-2.55 mm. Flagellum 0.94-1.12 mm, or 1.5-1.6 times as long as scutum and scutellum together.

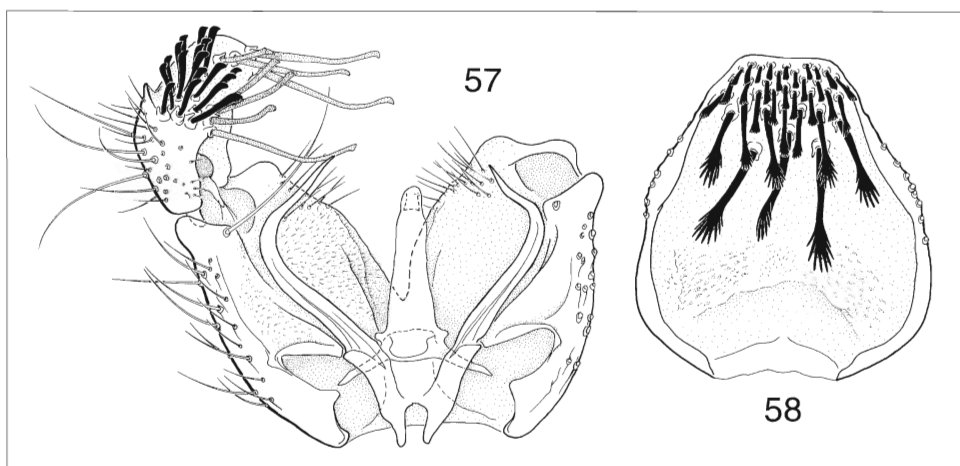
Coloration. Dark brown; legs and pleural parts of thorax light brown; terminalia brown.

Head (Fig. 4). Ocelli subequal in size, or median ocellus somewhat smaller. *LM*

1.7-2.0; *LE* 1.6-2.1. Frons with 21-29 setae in front of ocelli. Frontal suture complete. Stipes without setae. Face 0.8 times as long as broad, with 9-14 setae. Clypeus rounded, 0.7-0.8 times as long as broad, with 17-32 setae. Relative lengths of palpomeres: 1.0-1.2 : 1.1-1.3 : 1.8-2.0 : 2.7-3.2. Lacinia 1.0-1.2 times as long as first palpomere.

Thorax. Length of scutum and scutellum together 0.63-0.80 mm. Anepisternum with 14-24 setae situated anterodorsally. Laterotergite with 4-10 setae. Mediotergite with 2-3 lateral and 1-4 median setae.

Wings. Length 1.64-1.94 mm. Length to width 2.06-2.14. *Sc* 0.37-0.41 times as long as wing. Crossvein *Sc*2 ending between *Rs* and *R*4. *M*-petiole about as long as *ta*. Crossvein *tb* 0.42-0.45 times as long as *CuA*-petiole. *CuA*-ratios 0.40-0.49 and 0.26-0.34. Anal vein distinct, 0.67-0.75 times as long as *CuA*-petiole.



Figs 57-58. — Male terminalia of *Sciophila kakumensis* sp. n. — (57) gonocoxite and gonostylus, dorsal view; (58) tergite 9, ventral view.

Legs. Ratio femur to tibia: 0.88-0.93; 0.91-0.95; 0.88-0.92. Ratio tibia to tarsus: 1.19-1.26; 1.41-1.51; 1.62-1.85. Spur lengths: 2.0-2.2; 1.7-2.0, 3.5-3.7; 1.6-1.7, 3.4-3.5.

Terminalia (Figs 57, 58). Gonostylus with median and ventrolateral lobes strongly fused; median lobe with several long and very weakly furcated megasetae. Paramere long and curved. Parameral apodemes medially fused by small bridge. Aedeagus long. Tergite 9 large, evenly narrowed distally, 1.1 times as long as broad. Posterior third of ventral surface with numerous long, furcated megasetae, at most with 9 fingers. Proctiger with 4 setae.

Female (n=5). - Total length 2.27-2.96 mm. Flagellum 1.03-1.15 mm, or 1.5-1.7 times as long as scutum and scutellum together.

Coloration. As for males.

Head. *LM* 1.8-2.8; *LE* 1.9-2.3. Frons with 17-26 setae in front of ocelli. Frontal suture complete, or only median portion remains. Face about 0.7-0.8 times as long as broad, with 6-11 setae. Clypeus

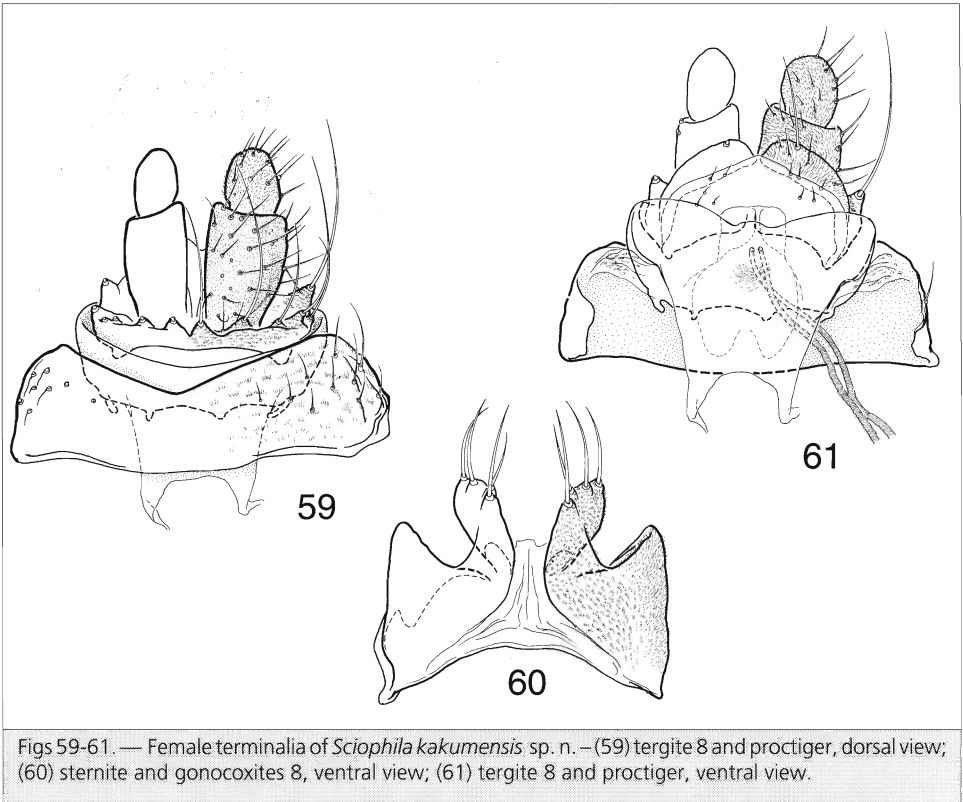
rounded, 0.7-0.8 times as long as broad, with 15-31 setae. Relative lengths of palpomeres: 1.0 : 1.3 : 1.6-1.9 : 2.5-3.0. Lacinia 1.1-1.3 times as long as first palpomere.

Thorax. Length of scutum and scutellum together 0.62-0.78 mm. Anepisternum with 9-28 setae situated anterodorsally. Laterotergite with 4-7 setae. Mediotergite with 1-2 lateral and 1-7 median setae.

Wings. Length 1.68-2.13 mm. Length to width 2.22-2.67. *Sc* 0.37-0.41 times as long as wing. Crossvein *tb* 0.41-0.45 times as long as *CuA*-petiole. *CuA*-ratios 0.38-0.51 and 0.22-0.34. Anal vein distinct, 0.62-0.81 times as long as *CuA*-petiole.

Legs. Ratio femur to tibia: 0.88-0.94; 0.92-0.97; 0.88-0.89. Ratio tibia to tarsus: 1.13-1.27; 1.35-1.43; 1.66-1.72. Spur lengths: 1.9-2.1; 1.6-1.8, 3.1-3.4; 1.7-1.9, 3.2-3.5.

Terminalia (Figs 59-61). Gonocoxites 8 fused with, but distinctly separable from sternite 8, forming two ovate lobes, separated by a thin membranous zone. Each gonocoxite with 4 curved distal setae.



Figs 59-61. — Female terminalia of *Sciophila kakumensis* sp. n. — (59) tergite 8 and proctiger, dorsal view; (60) sternite and gonocoxites 8, ventral view; (61) tergite 8 and proctiger, ventral view.

Spermathecal ducts separate to spermathecal eminence. Sternite 10 broad, subtriangular, with some ventral setulae. Hypoproct as two broad lobes above sternite 10, each with some smaller and one larger erect setae. Cercus rather short, two segmented.

Distribution. — Ghana.

***Sciophila leptosoma* sp. n.**
Figs 2, 9, 62, 63.

Types. — Holotype ♂: Rep. Pop. Congo, Pool Forêt de Meyya Nzouari, 3.xi.1975, L. Matile (MNHN).

Etymology. — From Greek, *leptos*, thin, and *somas*, body; referring to the slender “arm-like” megasetae on male tergite 9.

Description

Male (n=1). — Total length 3.64 mm. Flagellum 1.36 mm, or 1.8 times as long as scutum and scutellum together.

Coloration. Head, meso and metanotum brown; legs, pleural parts of thorax and abdomen light brown.

Head (Fig. 2). Median ocellus about as large as lateral. *LM* 2.5; *LE* 1.6. Frons with 22 setae in front of ocelli. Frontal suture complete. Stipes without setae. Face as long as broad, with 24 setae. Clypeus ovate, 0.5 times as long as broad, with 22 setae. Relative lengths of palpomeres: 1 : 0.7 : 1.0 : 2.1 : 3.4. Lacinia 0.7 times as long as first palpomere.

Thorax. Length of scutum and scutellum together 0.75 mm. Anepisternum

with 16 setae situated anterodorsally. Laterotergite with 10-11 setae. Mediotergite with 2 lateral and about 3 posterior setae.

Wings (Fig. 9). Length 1.80 mm. Length to width 1.93. *Sc* 0.39 times as long as wing. *Sc*2 located above *Rs*. *M*-petiole about as long as *ta*. Crossvein *tb* 0.44 times as long as *CuA*-petiole. *CuA*-ratios: 0.43 and 0.31. Anal vein weak, 0.62 times as long as *CuA*-petiole.

Legs. Ratio femur to tibia: 0.90; 1.00; 0.90. Ratio tibia to tarsus: 1.26; 1.38; 1.78. Spur lengths: 2.0; 1.7, 3.4; 1.6, 3.2.

Terminalia (Figs 62, 63). Gonostylus with median and ventrolateral lobes intimately fused, distally prolonged, and pointed; median lobe with several pipe-like, weakly furcated megasetae. Paramere long and curved. Parameral apodemes entirely separated. Aedeagus broad and long. Tergite 9 rounded, 0.8 times as long as broad. Posterior third of ventral surface with numerous, very long, furcated megasetae, at most with 8 fingers. Proctiger with 6-8 setae.

Distribution. – Congo; only known from the type locality.

Sciophila longistyla sp. n.

Figs 64, 65

Types. – Holotype ♂: South Africa, Natal, Mtubatuba, 24-25.iii.1968, Paul J. Spangler (USNM).

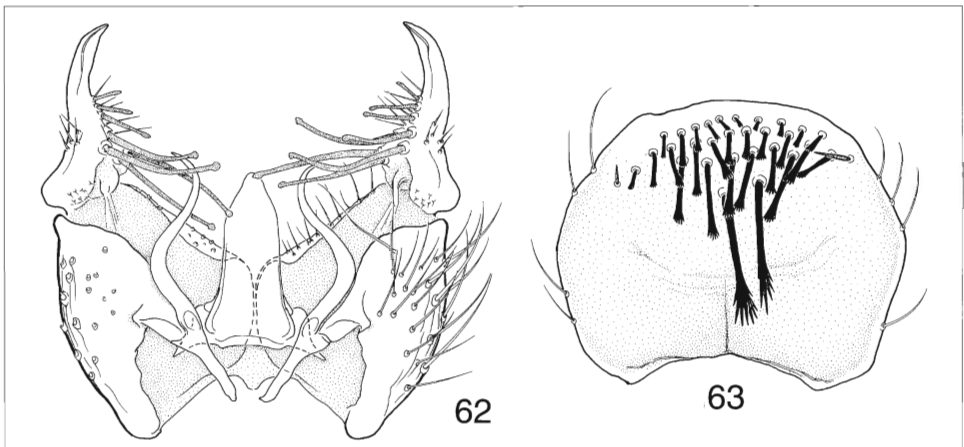
Etymology. – From Latin, *longus*, long and *stylos*, a pillar; referring to the very long parameres.

Description

Male (n=1). – Total length 2.62 mm. Flagellum 1.11 mm, or 1.5 times as long as scutum and scutellum together.

Coloration. Light brown to yellowish, scutum with three brown median stripes; terminalia brown.

Head. Median ocellus slightly smaller than laterals. *LM* 1.5; *LE* 1.3. Frons with 33 setae in front of ocelli. Frontal suture ending slightly before median ocellus. Frontal tubercle weakly bilobate. Stipes with 2 setae. Face about as long as broad, with 19 setae. Clypeus ovate, 0.6 times as long as broad, with 29 setae. Relative lengths of palpomeres: 1 : 0.9 : 1.3 : 2.5 : 4.1. Lacinia 1.1 times as long as first palpomere.



Figs 62-63. — Male terminalia of *Sciophila leptosoma* sp. n. – (62) gonocoxite and gonostylus, dorsal view; (63) tergite 9, ventral view.

Thorax. Length of scutum and scutellum together 0.75 mm. Anepisternum with 22-26 setae situated anterodorsally. Preepisternum 2 bare. Laterotergite with 6-7 setae. Mediotergite with 3-4 lateral and about 8 posterior setae.

Wings. Length 1.94 mm. Length to width 2.18. *Sc* 0.39 times as long as wing. *Sc*2 located between *Rs* and *R*4. *M*-petiole about as long as *ta*. Crossvein *tb* 0.44 times as long as *CuA*-petiole. *CuA*-ratios: 0.47 and 0.31. Anal vein rather weak, 0.78 times as long as *CuA*-petiole.

Legs. Ratio femur to tibia: 0.92; -; 0.89. Ratio tibia to tarsus: 1.22; -; 1.80. Spur lengths: 2.1; -, -, 2.2, 4.1.

Terminalia (Figs 64, 65). Gonostylus with large median lobe, bearing several short and rather weakly furcated megasetae. Paramere very long and curved. Parameral apodemes well separated. Aedeagus long and broad. Tergite 9 ovate, 1.2 times as long as broad. Posterior third of ventral surface with numerous furcated megasetae, at most with 10-12 fingers. Proctiger with 4 setae.

Distribution. - South Africa; only known from the type locality.

***Sciophila palmosa* sp. n.**

Figs 66, 67

Types. - Holotype ♂: Tanzania, Tanga region, West Usambara Mts., Mazumbai, 31.x.-1.xi.1990, ZMB's Tanz. Exp. '90. (ZMBN No. 226). Paratype: as for holotype, 1 ♂ xi.1990 (ZMBN).

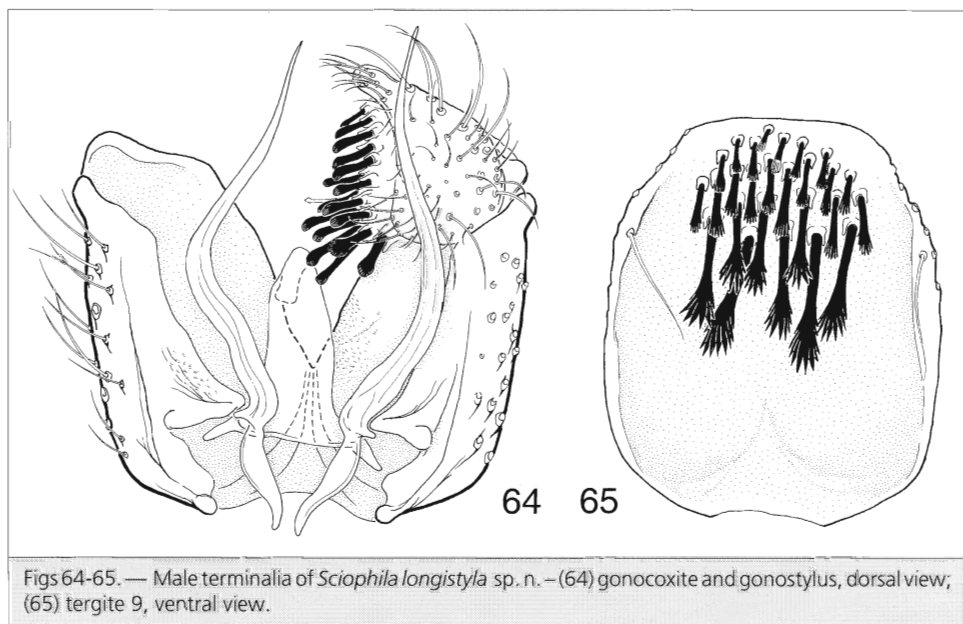
Etymology. - From Latin, *palmosus*, full of palms, referring to the ventral, lobate megasetae on male tergite 9.

Description

Male (n=2). - Total length 3.00-3.39 mm. Flagellum 1.38-1.39 mm, or 1.6 times as long as scutum and scutellum together.

Coloration. Dark brown; legs and abdomen light brown.

Head. Median ocellus slightly smaller than laterals. *LM* 2.4-2.7; *LE* 1.0. Weak suture, entire or broken, present between lateral ocellus and eye margin. Frons with



Figs 64-65. — Male terminalia of *Sciophila longistyla* sp. n. — (64) gonocoxite and gonostylus, dorsal view; (65) tergite 9, ventral view.

22-32 setae in front of ocelli. Frontal suture entire or broken, in both cases distinct above frontal tubercle and immediately below median ocellus. Stipes with 1-3 setae. Face 0.8-1.2 times as broad as long, with 16-18 setae. Clypeus rounded, 0.9-1.3 times as broad as long. Relative lengths of palpomeres: 1 : 0.9-1.0 : 1.0-1.2 : 1.4-1.8 : 2.6. Lacinia 0.9 times as long as first palpomere.

Thorax. Length of scutum and scutellum together 0.84-0.87 mm. Anepisternum with 8-15 setae situated anterodorsally. Laterotergite with 4-9 setae. Mediotergite with 1-2 lateral and 1-4 median setae.

Wings. Length 2.29-2.39 mm. Length to width 2.09-2.27. *Sc* 0.42-0.46 times as long as wing. *Sc*2 located between *Rs* and *R*4. *M*-petiole as long as *ta*. Crossvein *tb* 0.46-0.47 times as long as *CuA*-petiole. *CuA*-ratios: 0.48-0.53 and 0.32-0.37. Anal vein rather weak, 0.71-0.76 times as long as *CuA*-petiole.

Legs. Ratio femur to tibia: 0.88-0.92; 0.95-0.96; 0.89-0.91. Ratio tibia to tarsus: 1.13-1.16; 1.39-1.42; 1.69-1.74. Spur

lengths: 1.9-2.0; 2.0-2.2, 3.1-3.8; 1.9-2.0, 3.4-3.9.

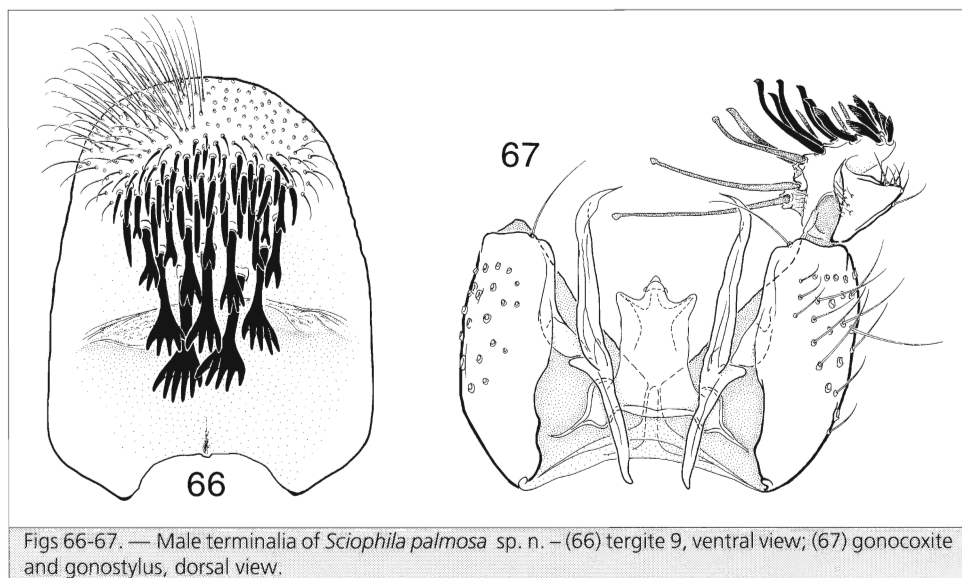
Terminalia (Figs 66, 67). Gonostylus with pronounced, triangular dorsal lobe; ventral lobe reduced or fused with median. Median lobe of gonostylus large, with some very long and curved furcated megasetae. Paramere long, straight and sharply pointed. Parameral apodemes widely separated. Aedeagus very broad, with two apicolateral protrusions. Tergite 9 ovate, 1.3 times as long as broad; posterior half of ventral surface with numerous megasetae, most of them furcated, at most with 6 fingers. Proctiger with 10-12 setae.

Distribution. – Tanzania; only known from the type locality.

Sciophila sicilicula sp. n.

Figs 68, 69

Types. – Holotype ♂: Madagascar ('limité forêt/cultures'), 3.iii.1988, M. Donskoff (Malaise trap) (MNHN). Paratype: Madagascar, Amabarofotsy, Lac Alaotra ('bord riviére'), 1 ♂ 2.ii.1988, M. Donskoff (Malaise trap) (ZMBN).



Figs 66-67. — Male terminalia of *Sciophila palmosa* sp. n. – (66) tergite 9, ventral view; (67) gonocoxite and gonostylus, dorsal view.

Etymology. – From Latin, *sicilicula* (dim.), a small sickle, referring to the outlining of the gonostylus.

Description

Male (n=2). – Total length 2.28–3.14 mm. Flagellum 1.22–1.26 mm, or 1.4 times as long as scutum and scutellum together.

Coloration. Head, scutum and abdomen brown; legs and pleural parts of thorax light brown to yellowish.

Head. Median ocellus 1.0–0.8 times as large as lateral. *LM* 1.0–1.2; *LE* 1.8. Frons with 31–33 setae in front of ocelli. Frontal suture produced along entire length from frontal tubercle towards median ocellus; median portion absent in one specimen. Stipes with (0) 4–5 setae. Face 0.9 times as long as broad, with 37–40 setae. Clypeus ovate, 0.8–0.9 times as long as broad, with 43 setae. Relative lengths of palpomeres: 1 : 0.9–1.0 : 1.3–1.4 : 1.9–2.1 : 3.3. Lacinia 1.1–1.2 times as long as first palpomere.

Thorax. Length of scutum and scutellum together 0.85–0.91 mm. Anepisternum with 26–34 setae situated anterodorsally. Laterotergite with 10–12

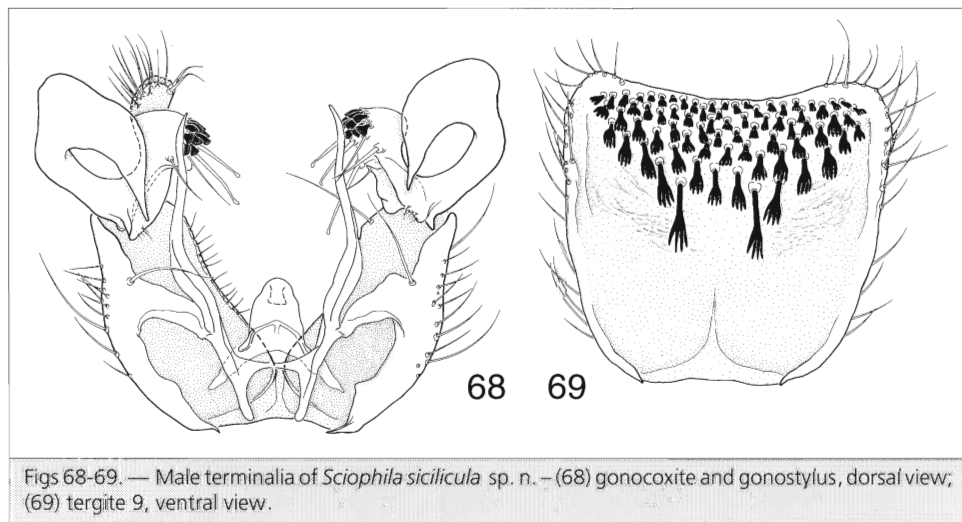
setae. Mediotergite with 2–3 lateral and 6–7 posterior setae.

Wings. Length 2.11–2.13 mm. Length to width 1.98–2.05. *Sc* 0.41–0.43 times as long as wing. *Sc*2 located between *Rs* and *R*4. *M*-petiole about 0.5 times as long as *ta*. Crossvein *tb* 0.45–0.47 times as long as *CuA*-petiole. *CuA*-ratios: 0.49–0.50 and 0.35–0.36. Anal vein distinct, 0.80–0.84 times as long as *CuA*-petiole.

Legs. Ratio femur to tibia: 0.91; – ; 0.92–0.93. Ratio tibia to tarsus: 1.19; – ; 1.66–1.70. Spur lengths: 2.2; – , – ; 1.9, 3.6–3.9.

Terminalia (Figs 68, 69). Ventrolateral lobe of gonostylus with large, hook-like protrusion dorsally; ventral portion setose, club-like. Median lobe of gonostylus with rather few, very short megasetae. Paramere very long, more or less straight. Parameral apodemes fused by transverse bridge. Aedeagus broad. Tergite 9 subquadrate, broadest distally, 1.1 times as long as broad; posterior third of ventral surface with numerous furcated megasetae, at most with 4 fingers. Proctiger with 12–14 setae.

Distribution. – Madagascar.



Figs 68–69. — Male terminalia of *Sciophila sicilicula* sp. n. – (68) gonocoxite and gonostylus, dorsal view; (69) tergite 9, ventral view.

***Sciophila stellata* sp. n.**

Figs 70, 71

Types. – Holotype ♂: Tanzania, Tanga region, West Usambara Mts., Mazumbai, 26.-29.xi.1990, ZMB's Tanz. Exp. '90. (ZMBN No. 227). Paratype: as for holotype, except 1 ♂ 29.xi.-3.xii.1990 (ZMBN).

Etymology. – From Latin *stellatus*, starred, referring to the star-like megasetae ventrally on male tergite 9.

Description

Male (n=2). – Total length about 3.16-3.51 mm. Flagellum 1.47-1.57 mm, or 1.6-1.7 times as long as scutum and scutellum together.

Coloration. Light brown to yellowish; scutum with 3 broad, diffuse brown stripes, mediotergite brownish.

Head. Median ocellus subequal to laterals. *LM* 1.5; *LE* 1.5-1.7. Frons with 20-29 setae in front of ocelli. Frontal suture complete, but weak. Stipes with 3-4 setae. Face 0.8 times as broad as long, with 20-22

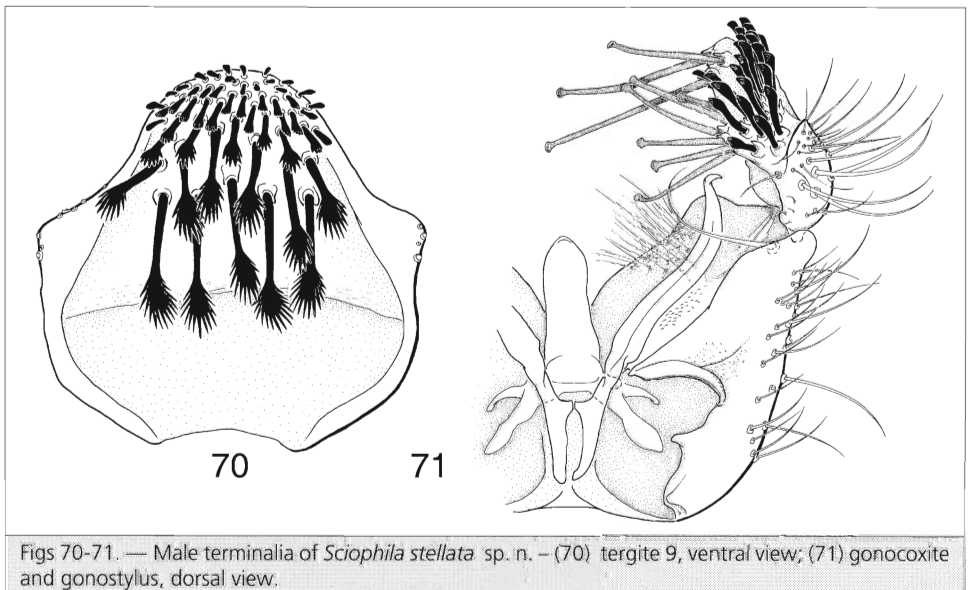
setae. Clypeus ovate, 0.7 times as broad as long. Relative lengths of palpomeres: 1.0-1.2 : 1.2-1.4 : 2.0-2.1 : 3.3-3.4. Lacinia 1.2-1.5 times as long as first palpomere.

Thorax. Length of scutum and scutellum together 0.91-0.94 mm. Anepisternum with 33-36 setae situated anterodorsally, most of them small. Laterotergite with 9-11 setae. Mediotergite with 2-4 lateral and 6-7 median setae.

Wings. Length 2.48-2.57 mm. Length to width 2.18-2.20. *Sc* 0.41-0.42 times as long as wing. *Sc2* located between *Rs* and *R4*. *M*-petiole 0.5 to 1.0 times as long as *ta*. Crossvein *tb* 0.42-0.45 times as long as *CuA*-petiole. *CuA*-ratios 0.45-0.46 and 0.29-0.30. Anal vein well developed, 0.73-0.77 times as long as *CuA*-petiole.

Legs. Basis of hind coxa with 1 seta. Ratio femur to tibia: 0.93-0.95; 0.93-0.95; 0.88-0.90. Ratio tibia to tarsus: 1.20-1.26; 1.42-1.48; 1.74-1.78. Spur lengths: 2.0-2.1; 1.7-1.8, 3.4-3.6; 1.6-1.9, 3.4-3.7.

Terminalia (Figs 70, 71). Gonostylus with ventrolateral and median lobes fused;



Figs 70-71. — Male terminalia of *Sciophila stellata* sp. n. — (70) tergite 9, ventral view; (71) gonocoxite and gonostylus, dorsal view.

median lobe with several long and weakly furcated megasetae. Paramere long, curved. Parameral apodemes fused along a short transverse bridge. Aedeagus broad and long. Tergite 9 about as long as broad, posterior border forming a median bulge; posterior third of ventral surface with numerous star-like megasetae, at most with 14–15 fingers. Proctiger with 4 setae.

Distribution. – Tanzania; only known from the type locality.

Unidentified females

Among the studies specimens were a number of females which could not be identified. As females are known only for a minor fraction of the Afrotropical species, it is premature to describe new species on females only. Though, records of unidentified females are listed below as they yield information on the Afrotropical distribution of the genus.

Cameroon, Plateau de Kounden, ♀ 12.08.1967, L. Matile (MNHN); Forêt de Bafut, Ngumba (1500 masl), Chemin de Lac, ♀ 12.10.1970, L. Matile (MNHN); Fumbot, ♀ 15.10.1970, L. Matile (MNHN); Nkolbisson, ♀ 22.10.1970, L. Matile (MNHN). Congo: Pool Forêt de Meya, Nzouari, ♀ 1.11.1975, L. Matile (MNHN). Equatorial Guinea: Monts Nimba (1200 masl) 4♀♀ 27.04.–7.05.1993 (Malaise trap) (MNHN). Ethiopia: Gamo-Gofa, env. Arba-Minch, ♀ 26.09.1973, F. Rodhain (MNHN). Gabon: Makokou M'Passa, Bale affl. 200m, ♀ 5.–11.06., ♀ 11.–18.06., 2♀♀ 9.–16.07.1979, J. Legrand (Malaise trap) (MNHN). Malawi: Mont Soche (1200 masl) 2♀♀ 7.08.1974, H. Feijen (MNHN). Nigeria: Western State, Ile-Ife, ♀ 05.1973, J. T. Medler (MNHN). South Africa: Natal, 15 km WSW Est Court Cathedral, ♀ 21.–31.12.1979 S. & J. Peck (CNC).

BIOGEOGRAPHY

Fungus gnats (Sciarioidea) are common in tropical evergreen forests; being highly dependent on moist habitats, dry areas are supposed to represent effective barriers for their dispersal. These features combined, should make them well suited for biogeographical studies in the tropics. Nevertheless, very few such studies have been published (e.g. Matile, 1990).

The highly scattered and rather arbitrarily records of Afrotropical *Sciophila* do not allow for any thorough analysis of the biogeography of the genus. It is, however, tempting to make some suggestions regarding the biogeography of the *intima* group, as it appears endemic to the Afrotropical region. Moreover, the performed phylogenetic analysis produced a fully resolved inter-specific relationship for the group.

The revealed cladograms (Fig. 10) fit well with the present knowledge of the biogeographical history of Africa. Only two vicariance events are needed to explain the present distribution of the species within the *intima* group. As many as 5 of the 8 species in the group, are known from Southeast Africa only. This area thus, probably was the area of origin for the ancestor of the group. If so, the break up of Madagascar from Continental Africa, more than 120 millions yrs ago (Griffiths, 1993) may explain the sistergroup-relationship between *sicilicula* (Madagascar) and *palmosa* (Tanzania). Desiccation and the break-up of a continuous forests area between West/Central and East Africa (20–30 millions yrs ago), might well have resulted in the fragmentation of a once continuous distribution area for the ancestors of *leptosoma* (Congo), *intima* (Tanzania) and *longistyla* (South Africa); similarly for the ancestor of the two species *kakumensis* (Ghana) and *stellata* (Tanzania).

The fauna of the Eastern Arc Mountains in Tanzania is generally regarded to constitute a very old fauna. In his study of the linyphiid species (Araneae) Scharff (1993) found that 47% of the species in these mountains belong to endemic Afrotropical genera, thus indicating the isolated evolution of the fauna. In fact, the high proportion of species in the *intima* group in this area, 4 of the 8 species, agrees well with this interpretation.

As previously mentioned, *pinniger* and at least one of the species included in each of the *atrigaster* and *fenestralis* species groups certainly have close relatives in the Holarctic and/or Oriental fauna, probably also in the Neotropics. The origin of these groups is likely to have predated the break up of Gondwana, which is compatible with their more basal position in the revealed cladogram.

All three species groups have representatives in West, East and Southern Africa. Most species are only known from one or two localities, but judged from the present material, at least some species seem to be more widely distributed. This applies to *koundensis*, *quadra* and *kjaerandseni*. Of these, *quadra* is most likely distributed from Côte-d'Ivoire to the Central African Republic.

Judged from the material collected in evergreen forests in Ghana and Tanzania, both comprising more than a thousand specimens of Mycetophilidae, representatives of *Sciophila* appear to be distinctly more rare in Ghana than in Tanzania, both in number of species and specimens.

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