

THE GENUS **PHYLLOTELES** LOEW
(Dipt. Sarcophagidae, Miltogramminae)
IN AFRICA AND EUROPE

by F. ZUMPT

(South African Institute for Medical Research Johannesburg)

The genus *Phylloteles* LOEW (1844) is characterized by a broadened, leaf-like arista in the male sex (fig. 1), whereas it is of normal shape in the female. However, the female sex of only two species are known so far, namely *P. pictipennis* LOEW and *P. hessei* (ZUMPT).

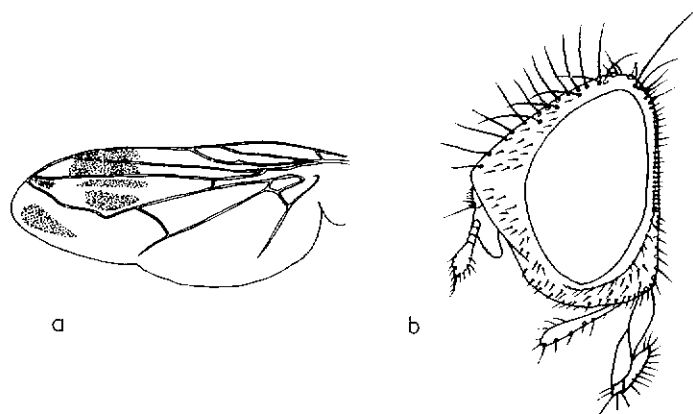


FIG. 1: *Phylloteles pictipennis* LOEW: (a) Wing and (b) head of male.

TOWNSEND (1935) listed two more genera with a leaf-like arista in the male sex: *Medomyia* ROHDENDORF and *Chaetophylloteles* ROHDENDORF, both from Asia. I have not seen the type species of these genera and must leave it to other authors to decide whether they are generically different from *Phylloteles*. This, for instance, is not the case for *Paraphylloteles* ZUMPT (1952), which was founded in order to harbour *P. hessei* (ZUMPT) from the Ethiopian geo-

graphical region. The direction of inclination of the ocellar bristles, which I used — following Townsend — is certainly not a feature of systematic value, and *Paraphylloteles* is herewith suppressed as a synonym of *Phylloteles*.

From Africa and Europe, there are 3 species described so far. I have now 4 new species before me which may be recognized by the following key (males only):

- 1 (2) Frons with 5 pairs of fronto-orbital bristles. Eyes densely beset with long setae. Abdominal tergite III without a pair of demarcated median bristles at the hind margin. Wings hyaline. 5-6 mm. — Rhodesia
1. — **P. rhodesiae** n.sp.
- 2 (1) Frons with 4 or 3 pairs of fronto-orbital bristles 3
- 3 (4) Frons with 4 pairs of fronto-orbital bristles. Eyes bare or only with sparse short setae. Wings spotted. Abdominal tergite III with a pair of median marginal bristles which are slightly erected and thicker than the neighbouring bristles. 5-6 mm. — Palaeartic region
2. — **P. pictipennis** LOEW
- 4 (3) Frons with 3 pairs of fronto-orbital bristles 5
- 5 (6) Wings spotted. Eyes bare. Abdominal tergite III with demarcated median marginal bristles. 4 mm. — Southern Europe
3. — **P. ponti** n.sp.
- 6 (5) Wings wholly hyaline 7
- 7 (12) Eyes with long pale setae 8
- 8 (11) Terminal part of arista beyond the leaf-like part hair-like 9
- 9 (10) Parafacialia silvery-white pollinose and densely beset with long black setae. Abdominal tergite III with a pair of short, half erect, thick bristles at the hind margin. 7 mm. — Nigeria, Uganda
4. — **P. eos** n.sp.
- 10 (9) Parafacialia silvery-white pollinose, but only sparsely beset with setae. Abdominal tergite III without a median

pair of demarcated bristles. 5 mm. — South West Africa
5. — **P. similis** n.sp.

- 11 (8) Terminal part of broadened arista not continued into a hair-like appendage. Parafacialia with pale setae. Abdominal tergite III with a pair of median marginal bristles as in *P. eos* 5-6 mm. — South Africa, Ethiopia

6. — **P. hessei** (ZUMPT) comb. nov.

- 12 (7) Eyes bare or only sparsely beset with short setae. Parafacialia with pale setae. Abdominal tergite III without a pair of demarcated median marginal bristles. 6-7 mm. South Africa

7. — **P. degener** (ZUMPT) comb. nov.

DESCRIPTIONS OF SPECIES

1. — **Phylloteles rhodesiae** n.sp.

Male — Eyes densely beset with long pale setae; innerfacets slightly larger than the outer ones. Frons at its narrowest point (at vertex) measuring about $1/3$ of eye-length, gradually widened towards the lunula. Parafrontalia and -facialia black, densely silvery-grey pollinose and black setulose; frontal stripe black, at the tip of the ocellar-triangle about as broad as one parafrontalium, slightly widened towards the lunula. The frons is densely beset with strong bristles. Both vertical bristles are present, but *ev* is only about half as long as *iv*. Close to the frontal stripe, 6 pairs of reclinate bristles are present in the upper part of the head, and 8 pairs of cruciate ones in the lower part; furthermore 5 pairs of proclinate fronto-orbitals are developed. First antennal segment small and yellow-brown, following segments blackish, the third about twice as long as the second, arista with 2 short basal segments, the third leaflike and covered with a dense yellow pilosity. Vibrissa well-developed, with a few short bristles above it on the facial ridge, peristomal bristles not separable from the buccal hairs. Height of bucca about $1/3$ of eye-length, a grey pollinosity covers the black underground. Hairs black like those on the post-bucca. Palpi black-brown, curved and with several long ventral bristles.

Thorax black, with a grey pollinosity, a pattern is quite indistinct. Acrostichals apparently 2+3, but the post-sutural ones are damaged by the pin, *dc* = 2+3, *ia* = 1+2, *pb* = 1 (outer wanting), *b* = 2, *prs* = 1, *n* = 2, *sa* = 2, *sc* = 3+1, *st* = 2:1, *pp* and *pst* present. Pro- and poststigma brown. Wings hyaline, basicosta and veins yellow, *R*₂ open, *m* with an obtuse angle, costal

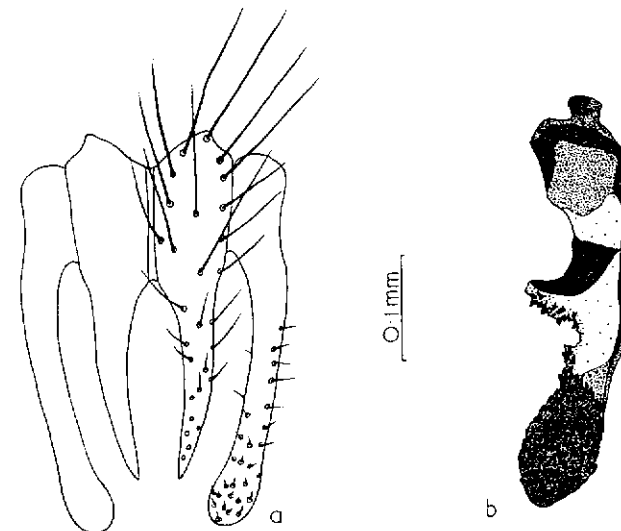


FIG. 2. : *Phylloteles rhodesiae* n.sp. : (a) Cerci with paralobi, (b) phallosome laterally (olotype from Rhodesia, Victoria Falls).

spine small. Thoracic squama broad and whitish, halter yellow. Legs black; fore-tibia with a submedian *pd* bristle; mid-tibia with 2 *pd*, a submedian *ad* and a ventral bristle; hind-tibia with a dense row of *ad*, 2 *pd* and a submedian *av*.

Abdomen longer than broad, blackish in ground colour, with a grey pollinosity, which forms a pattern varying with the incidence of light. No median pair of bristles at the hind margin of tergite III, but hind margins of following tergites with a row of bristles. Hypopygium (fig. 2) with pointed cerci and club-shaped paralobi, phallosome slender.

Length : 6 mm.

Female : Not known.

Locality : Rhodesia, Victoria Falls, 1 ♂ leg. F. Zumpt, IV.1969 (in collection of the South African Institute for Medical Research, Johannesburg).

2. — *Phylloteles pictipennis* LOEW

Phylloteles pictipennis LOEW, Stett. ent. Z. 5, 1844, p. 168 pl. II figs. 26-29; SÉGUY, Encycl. ent. A 21, 1941, p. 321 figs 421-422 (further references); VENTURI, Frustula ent. 2, 1960, p. 106 fig. 62.

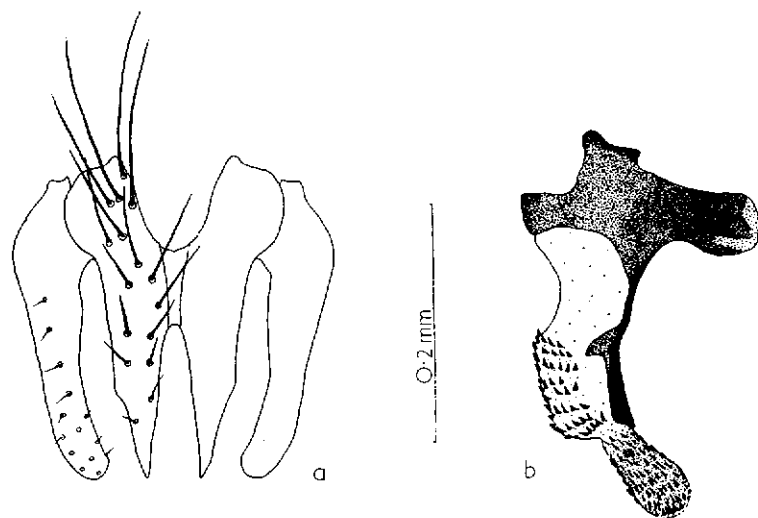


FIG. 3 : *Phylloteles pictipennis* LOEW : (a) Cerci with paralobi, (b) phallosome laterally (specimen from Italy, Firenze).

This is the type species of *Phylloteles* and has been adequately described by Séguy. He mentioned that there are 4 fronto-orbital bristles present, but in one of the 3 males before me, there are 4 *fo* present on the left side, but only 3 on the right side. Furthermore, 2 female specimens which I received from the British Museum (Natural History), identified as *P. pictipennis*, show only 3 *fo* symmetrically arranged on both sides.

From one male collected at Firenze, Italy, and identified by Venturi, the hypopygium has been dissected (fig. 3). Dr. F. Venturi kindly presented it to the South African Institute for Medical

Research, Johannesburg. The other two males have been lent by the British Museum and were collected at Kranevo, Bulgaria. The one female mentioned above belongs to this series. The second female, identified by Villeneuve, came from Seto, Japan, and is preserved in the British Museum.

This material is not adequate to discuss the potential range of variation in the male and female sexes, and the problem must be left to other authors.

3. — *Phylloteles ponti* n.sp.

Male — Eyes bare, inner facets larger than the outer ones. Frons at its narrowest point (at the tip of the ocellar triangle) measuring about 1/2 of eye-length, slightly widened towards the lunula. Parafrontalia and -facialia covered with a dense silvery-grey pollinosity; frontal stripe black to red-brown, but also sparsely greyish pollinose, at the tip of the ocellar triangle about twice as broad as one parafrontalium, subparallel. Chaetotaxy clearly distinguished, *iv* and *ev* of almost equal length, *oc* divaricate and accompanied by several bristly hairs; there are 10 pairs of *pal* in the holotype, 8 and 9 bristles in the paratype; furthermore a reclinate pair of *f* and 3 pairs of proclinate *fo* are developed. Setulosity on the parafrontalia and -facialia sparse and pale. Basal segments of antennae yellow, the third to the greatest part black-brown and about twice as long as the second, arista with 2 short basal segments, the third leaf-like and covered with a dense white pilosity. Vibrissa not distinguished, buccal and peristomal hairs thin and pale, irregularly placed. Height of bucca about 1/4 of eye-length, pollinosity as on the parafacialia. Palpi yellow, with black bristles.

Thorax black, with a grey pollinosity. A dark pattern consisting of longitudinal stripes is indicated, but indistinct and changing with the incidence of light. Of the postsutural acrostichal bristles, the posterior two pairs are distinct, as well as the presutural last pair; *dc* = 2+3, (clearly recognizable), *ia* = 1+2, *pb* = 1 (outer wanting), *b* = 2, *prs* = 1, *n* = 2, *sa* = 2, *sc* = 3+1, *st* = 1:1, *pp* and *pst* present. Wings with venation and brown pattern as in *P. pictipennis* (fig. 1). Legs dark-brown, densely grey pollinose; fore-tibia with a submedian *pd* bristle; mid-tibia with 2 *pd*, a submedian *ad* and a ventral bristle; hind-tibia with a dense row of *ad*, 2 *pd* and a submedian *av*.

Abdomen longer than broad, dark brown to black in ground colour, with a white pollinosity which leaves free three glossy triangular spots on tergites III and IV. Tergite III with a pair of distinct median marginal bristles. Hypopygium (fig. 4) similar to that of *P. pictipennis*, but nevertheless clearly distinguished from it.

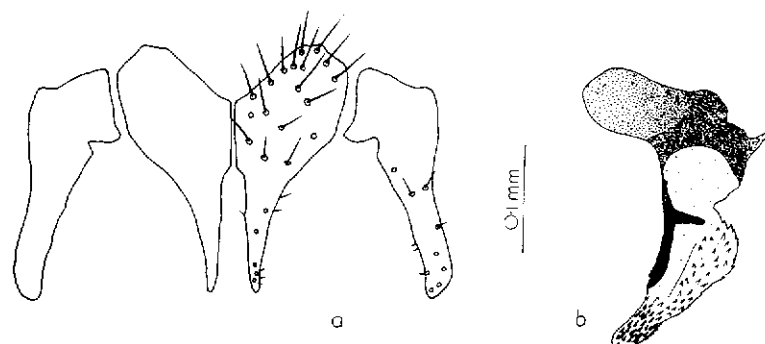


FIG. 4: *Phylloteles ponti* n.sp.: (a) Cerci with paralobi, (b) phallosome laterally (holotype from Macedonia, Prespa Geul).

Length: 4.5 mm.

Female: Not known.

Locality: Macedonia, Prespa Geul, Otesevo, 2 ♂♂ leg. R.L. Coe, 20.-27.IV.1958. (Holo- and paratype in the collection of the British Museum [Natural History]).

This species is named in honor of Mr. A.C. PONT, British Museum, who kindly sent me these and other specimens for study.

4. — *Phylloteles eos* n.sp.

Male — Eyes densely beset with long pale setae, inner facets slightly larger than the outer ones. Frons subparallel, at the vertex measuring about half of eye-length. Parafrontalia and -facialia with a silvery-white pollinosity and densely beset with long blackish setae; frontal stripe black, parallel, at the tip of the ocellar triangle $2\frac{1}{2}$ -3 times as broad as one parafrontalium. Inner and outer

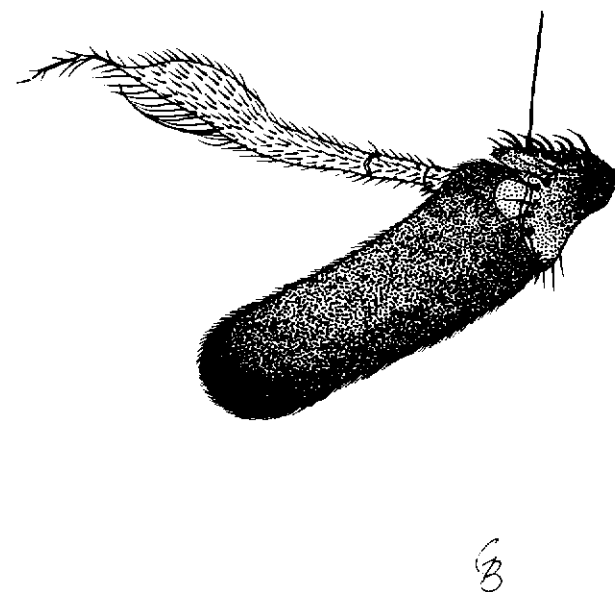


FIG. 5: *Phylloteles eos* n.sp.: Male antenna.

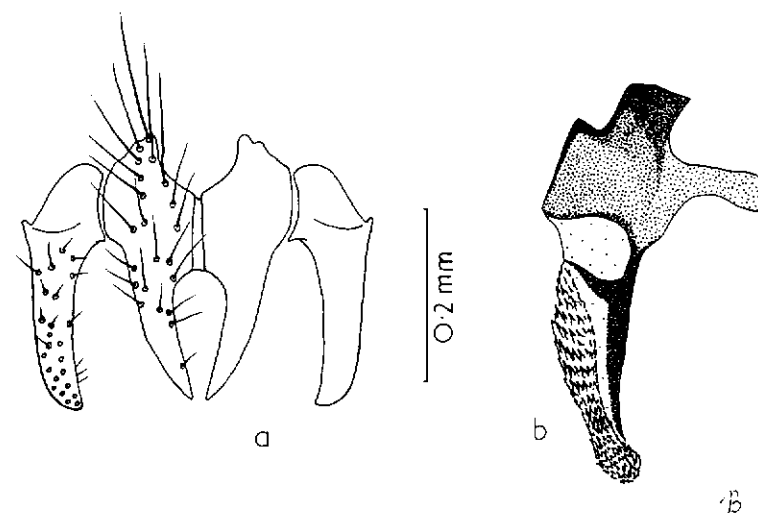


FIG. 6: *Phylloteles eos* n.sp.: (a) Cerci with paralobi, (b) phallosome laterally (holotype from Ikoyi, Nigeria).

vertical bristles of almost equal length, *oc* divaricate and accompanied by several bristly hairs, there are 12 pairs of *pa* in the holotype and 11 pairs in the paratype, the last four reclinate, the others cruciate, the pair of frontal bristles are well developed as well as 3 pairs of proclinate *fo*. Third antennal segment black and 3 times as long as the second, arista with 2 short basal segments, the third leaf-like with its basal part black too, whereas the broadened terminal part is yellow and bears a dense cetulosity (fig. 5). Vibrissa and peristomal bristles present; bucca black with a grey pollinosity and black hairs, its height measures about 1/5 of eye-length.

Thorax black, with a grey pollinosity which leaves free three broad, but ill-defined, longitudinal stripes. Only the prescutellar pair of *ac* is well-developed, $dc = 2+3$, $ia = 0+2$, $pb = 1$ (outer one wanting), $b = 2$, $prs = 1$, $n = 2$, $sa = 2$, $sc = 3+1$, $st = 1:1$, *pp* and *pst* present. Wing completely hyaline, veins yellow-brown, *m* with a rectangular angle, *R*₅ open, base of $4+5$ dorsally with 2 setae, costal spine indistinct. Legs black, with a grey pollinosity; fore-tibia with a submedian *pd* bristle; mid-tibia with 2 *pd*, a submedian *ad* and a ventral bristle; hind-tibia with a dense row of *ad*, 2 *pd* and a submedian *av*.

Abdomen longer than broad, dark brown to black in ground colour, ventrally to a large extent yellow. Pollinosity yellow. Dorsal side of tergites I+II black, following segments with black spots, the shape of which varies greatly with the incidence of light. Hind margin of tergite III with a median pair of half erect thick bristles. Hypopygium see figure 6.

Length: 6-7 mm.

Female: Not known.

Locality: Nigeria, Ikoyi (holotype, British Museum). Uganda, Ankole, V.1960, 1 ♂, leg. F. Zumpt (paratype, in collection of the South African Institute for Medical Research, Johannesburg).

5. -- ***Phylloteles similis*** n.sp.

Male — Eyes sparsely beset with pale setae, inner facets strikingly larger than the outer ones. Frons subparallel, at vertex measuring about one third of eye-length. Parafrontalia and -facialia

with a silvery-white pollinosity, but only sparsely setulose; frontal stripe black, at the tip of the ocellar triangle about as broad as one parafrontalium. Inner and outer vertical bristles of almost equal length, *oc* divaricate and accompanied by several hairs. The only specimen before me shows 9 pairs of *pa*, the last four are reclinate, the others cruciate; the pair of frontal bristles as well as 3 pairs of proclinate *fo* are well-developed. Antennae black with

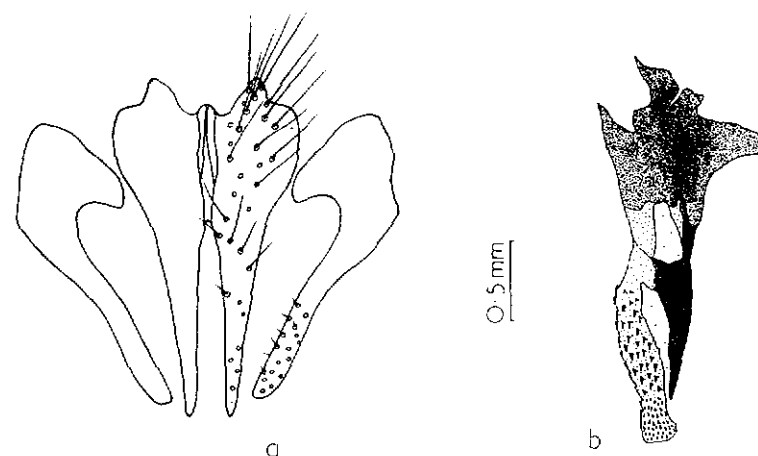


FIG. 7: *Phylloteles similis* n.sp.: (a) Cerci with paralobi, (b) phallosome laterally (holotype from South West Africa, Okahandja).

the exception of the yellow basal segment, third segment about twice as long as the second, arista as in *P.eos*.

Thorax black, with a grey pollinosity which leaves free three broad, but quite ill-defined, longitudinal stripes. There are 2 pairs of well-developed prescutellar *ac*, in the presutural area, 5 irregularly arranged *ac* are present; $dc = 2+3$, $ia = 0+2$, $pb = 1$ (outer one wanting), $b = 2$, $prs = 1$, $n = 2$, $sa = 3$, $sc = 3+1$, $st = 2+1$, *pp* and *pst* present. Wings and legs as in *P.eos*.

Abdomen longer than broad, dorsally black, ventrally partly yellow-brown. Pollinosity grey. Dorsal side with large, but ill-defined, triangular spots. Hind margins of tergites with rows of bristles, but tergite III without a pair of demarcated median bristles. Hypopygium (fig. 7) with more slender cerci and paralobi than in *P.eos*.

Length : 5.5 mm.

Female : Not known.

Locality : South West Africa, Okahandja, II.1972, 1 ♂, leg. F. Zumpt (in collection of the South African Institute for Medical Research, Johannesburg).

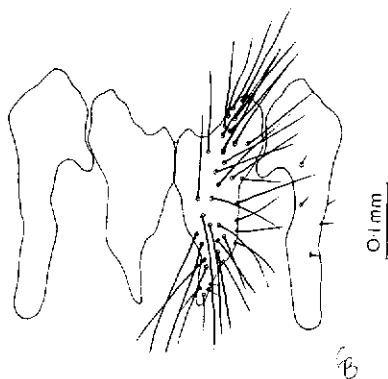


FIG. 8 : *Phylloteles hessei* (ZUMPT) : Cerci with paralobi (holotype from the Cape Province, Spitzkop).

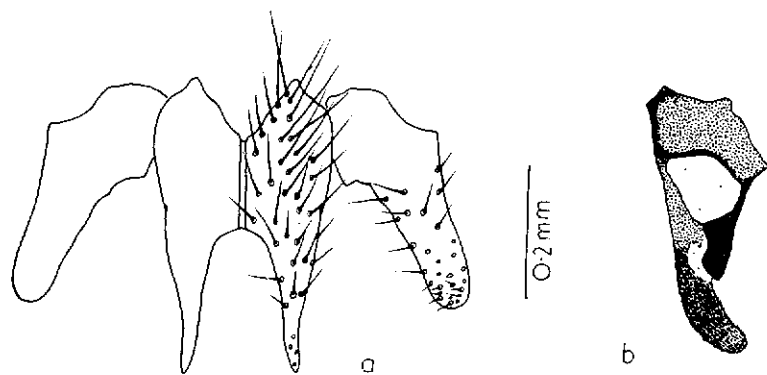


FIG. 9 : *Phylloteles degener* (ZUMPT) : (a) Cerci with paralobi, (b) phallosome laterally (holotype from Rhodesia, Victoria).

6. — *Phylloteles hessei* (ZUMPT)

Paraphylloteles hessei ZUMPT, Proc. R. ent. Soc. Lond. (B) 21, 1952, p. 7 fig. 2 ; Explor. Parc nat. Albert Miss. G.F. de Witte

98, 1961, p. 60 figs. 22 & 23 ; J. ent. Soc. Sth Afr. 25, 1962, p. 246 fig. 6 (♀).

This species, of which the female sex is also known, has been fully described by ZUMPT (1952). It is known from the Cape Province and from Eritrea, where Dr. D.J. GREATHEAD reared it from egg-pools of *Schistocerca*. Hypopygium see figure 8.

7. — *Phylloteles degener* (ZUMPT)

Paraphylloteles degener ZUMPT, Explor. Parc nat. Albert Miss. G.F. de Witte 98, 1961, p. 60 fig. 24.

So far only the holotype is known, collected by A. CUTHBERTSON at Victoria, Rhodesia. Hypopygium see figure 9.

ACKNOWLEDGMENTS

I want to thank Mr. A.C. PONT (British Museum) for sending a great deal of the material on which this study is based. Furthermore, thanks are due to the Director of the South African Institute for Medical Research, who provided the necessary working facilities, and to the S.A. Medical Research Council for subsidizing the research work in the Department of Entomology.

Last, but not least, I am greatly indebted to Mrs. E. NESBITT, née BAURISTHENE, for making the drawings, to Mrs. J. SEGERMAN for reading the manuscript, and to Mr. M. ULRICH for his photographic work.

REFERENCES

- LOEW H., 1844. — Beschreibung einiger neuen Gattungen der europäischen Dipterenfauna. — *Stett. ent. Ztg.* 5 : 114-130.
 TOWNSEND C.H.T., 1935. — Manual of Myiology. Part II. — C. Townsend & Filhos, Sao Paulo, 289 pp.
 ZUMPT F., 1952. — Remarks on the classification of the Ethiopian Sarcophaginae with descriptions of new genera and species. — *Proc. R. ent. Soc. Lond. (B)* 21 : 1-18.
 ZUMPT F., 1961. — Calliphoridae (Diptera Cyclorrhapha). Part III : Miltogramminae. — *Explor. Parc nat. Albert, Miss. G.F. de Witte* 98 : 1-137.