KORNEYEV, V. A. 1989. A review of *Sphenella* and *Paroxyna* series of genera (Diptera, Tephritidae, Tephritinae). *Insects of Mongolia* 11: 359-470. (in Russian).

MERZ, B. 1992. The fruit flies of the Canary Islands (Diptera: Tephritidae). *Entomologica Scandinavica* 23 (2): 215-231.

MERZ, B. 1994. Diptera, Tephritidae. *Insecta Helvetica, Fauna* 10: 1-198.

MERZ, B. & BLASCO-ZUMETA, J. 1995. The fruit flies (Diptera, Tephritidae) of the Monegros region (Zaragoza, Spain), with the record of the host plant of *Rhagoletis zernyi* Hendel, 1927. *Zapateri, Revista aragonensis de entomologia* 5: 127-134.

MERZ, B. & HAENNI, J. P. 2000. 1.1. Morphology an terminology of adult Diptera (other than terminalia) (pp. 21-51). *In:* PAPP, L. & DARVAS, B. (eds). Contributions to a manual of Palaearctic Diptera, Volume 1. *Science Herald, Budapest*, 978 pp.

MUNRO, H. K. 1957. Trypetidae. *Ruwenzori Expedition* 2 (9): 853-1054.

NORRBOM, A. L., CARROLL, L. E. & FREIDBERG, A. 1998. Status of knowledge (pp. 9-47). *In*: THOMPSON, F. C. (ed). Fruit Fly Expert Identification System and Systematic Information Database. *Myia* 9: 1-524.

WHITE, I. M. & MARCQUART, K. 1989. A revision of the genus *Chaetorellia* Hendel (Diptera: Tephritidae) including a new species associated with spotted knapweed, *Centaurea maculosa* Lam. (Asteraceae). *Bulletin of Entomological Research* 89: 453-487.

# Two new Tephritidae (Diptera) from the Western Palaearctic

Bernhard MERZ
Muséum d'histoire naturelle, c.p. 6434, CH-1211 Genève 6, Switzerland.
E-mail: bernhard.merz@mhn.ville-ge.ch

**Two new Tephritidae (Diptera) from the Western Palaearctic region. -** *Chaetostomella baezi* sp. n. from the Canary Islands (El Hierro, La Palma, Teneriffa), which was reared from flowerheads of *Cheirolophus duranii*, *Ch. junonianus* and *Ch. sventeni gracilis*, is an unusual species. Although having an anterior dorsocentral seta, which is a character of *Chaetorellia*, it is placed in *Chaetostomella* because of the shape of the male terminalia and the strong setae along the vibrissal angle. Its generic position is discussed. *Campiglossa freidbergi* sp. n. is described from high altitude in the Sierra Nevada mountains of Southern Spain. It belongs to the *C. difficilis*-group and differs from *C. difficilis* (Hendel) mainly in the wing pattern and details of the terminalia. Its hostplants are not known.

**Key-words:** Diptera - Tephritidae - new species - Spain - Canary Islands.

## INTRODUCTION

Knowledge of the western Palaearctic Tephritidae is rather good (Norrbom *et al.*, 1998), with about 250 species recorded from this area. Nevertheless, new species may still be found, mostly from areas which harbour a rich endemic flora and fauna. In particular, the Mediterranean region is the least studied. It is therefore not surprising, that two quite large, characteristic species have been found recently in Southern Europe and the Canary Islands which are apparently new to science.

The fauna of the Canary Islands has been studied by several authors during the past 100 years. These studies have been summarized by Merz (1992) who listed 34 species from these islands. Shortly after the publication of that paper the author received independently from B. van Aartsen and M. Báez specimens of an as yet undescribed and problematic species. It shows an unusual set of characters which make its correct generic position difficult to determine, and it is described here as *Chaetostomella baezi* sp. n.

The Tephritidae of mainland Spain have never been treated in a comprehensive manner. The most important papers are listed in Merz & Blasco-Zumeta (1995) who estimated that about 80 species are known from Spain. However, knowledge of the fauna of the adjacent countries suggested that further species should be found on the Iberian Peninsula. The species described here was found at high altitude in the Sierra Nevada and it belongs to *Campiglossa*. This genus is almost worldwide in distri-

Manuscript accepted 04.09.2000

bution, with about 200 described species. It was revised for Europe by Merz (1994) and for the Eastern Palaearctic region by Korneyev (1989). Only *C. producta* (Loew) is widespread throughout the entire Mediterranean region, whereas some other species are found sporadically at higher altitudes. None of these species is known to be endemic in this area.

## MATERIAL

The specimens studied belong to the following institutions and personal collections:

CBVA: private collection Bob van Aartsen, t'Harde, Netherlands
MHNG: Muséum d'histoire naturelle, Genève, Switzerland
TAU: Tel Aviv University, Israel
ZCUL: Zoological collection, University of La Laguna, Tenerife

The terminology follows Merz & Haenni (2000) for external morphology and Korneyev (1985) for structures of male terminalia.

## SYSTEMATIC PART

### *Chaetostomella baezi* sp. n. Figs 1-11

MATERIAL

Holotype ♂, [Canary Islands:] **La Palma**, Fuencaliente, III.1996, leg. R. Mesa / ex larva *Cheirolophus junonianus* (ZCUL). The specimen is glued laterally on to a card and is in good condition.

Paratypes, Canary Islands: **La Palma**, same data as holotype, 6♂♂, 1♀; Bco [= Barranco] Fagundo, 400m, 9.XII.1994, leg. M. Baéz, 1♀. **El Hierro**, Sabinosa, 14.VIII.1985, leg. M. Baéz, 1♂, 2♀♀; Sabinosa, III.1995, leg. R. Meso, ex larva *Cheirolophus duranii*, 2♂♂; Frontera, 14.VIII.1985, leg. M. Baéz, 1♂. **Tenerife**, El Tablado, IV.1995, leg. R. Meso, ex larva *Cheirolophus sventeni*, 1♂; Buenavista, 2.IV.1968, leg. B. van Aartsen, 1♀. The paratypes are deposited in the following institutions: MHNG, ZCUL and CBVA.

Additional material: **La Palma**, Barranco Fagundo, 400m, 9.XII.1994, leg. M. Baéz, 1 specimen without abdomen (also 1 wing missing); Barranco del Jorao, Tijarafe, 4.IX.1994, leg. R. Mesa Coello, cultivad ex *Cheirolophus sventeni gracilis*, *Chaetorellia* n.sp. ?, det. M. Baéz, 1♂ (without wings). **El Hierro**, Sabinosa, III.1995, leg. R. Meso, ex larva *Cheirolophus duranii*, 1♂ (without wings). **Tenerife**, Guimar, 17.V.1993, leg. M. Baéz, 1♂ (teneral); Barranco del Rio, 21.VII.1996, leg. M. Baéz, 1 without abdomen (also head missing).

Remark: The specimens sent by M. Baéz were badly damaged in the post. Whereas the paratypes show at most some minor damage, all other specimens with heavy damage are excluded from the type series. Nine specimens dropped of their pins and are not listed here because it is impossible to assign them to their locality labels.

ETYMOLOGY

Named in honour of Marcos Baéz, La Laguna, in recognition of his long-term investigations of the Diptera of the Canary Islands.



black spots on the mesonotum, with one large black spot in the triangle of the two supraalar setae and the wing base.

DESCRIPTION

*Head* (Fig. 1). Entirely yellow, only around ocelli with darker spots; in profile about 1.3 times higher than long; gena and vibrissal angle densely covered with long black and shorter whitish setulae, the anteriormost 2-3 black setulae stronger; frontal plate densely covered with dark setulae; frons bare; scape and pedicel with black setulae; chaetotaxy as usual in the genus: 3 dark frontal setae, 2 dark orbital setae, the posterior pair inclinate; 1 dark ocellar seta, 1 dark medial vertical and 1 dark lateral vertical seta, 1 whitish, upright postocellar seta, between them usually with 1-3 small medial postocellar setulae, all postocular setae dark, but just behind them with several rows of whitish occipital setulae.

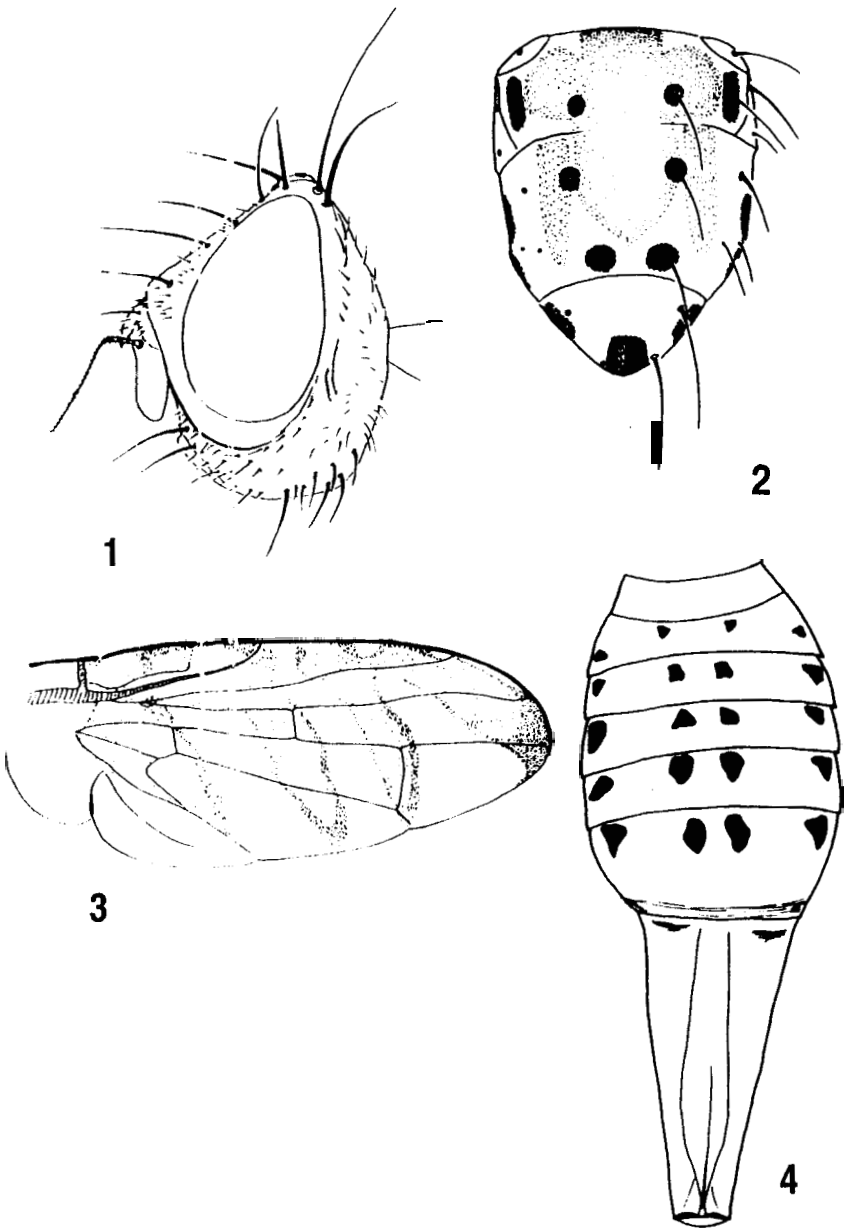
*Thorax* (Fig. 2). Brownish-yellow in ground colour, but mesonotum with lyre-like pattern, which may be somewhat more or less developed as in Fig. 2; katepisternum usually pale reddish, but central spot in a few specimens with blackish upper margin; 6 pairs of dark spots visible on the mesonotum: 3 pairs of small dark spots present at the bases of the prescutellar seta and the anterior and posterior dorsocentral setae; 3 pairs of large dark spots present at the base of the presutural seta, in a triangle formed by the anterior and posterior supraalar seta and the base of the wing, and on the lower postalar callus; scutellum with a large apical and two smaller laterobasal dark spots; anepisternum, anepimeron and katepisternum densely covered with predominantly pale, rough setulae; posterior margin of anepisternum with 1-3 black setae; posterodorsal corner of katepisternum with 1 black seta, anepimeron with 1 dark, central seta; legs yellowish.

*Wing* (Fig. 3). Pattern as usual in the genus; discal and preapical crossbands always separated; preapical and apical crossbands usually connected, although sometimes only for a short distance; lower extension of posterior cubital cell reaching posteriorly beyond cell bm; halteres yellowish; fringes of upper calypter darkened.

*Abdomen* (Fig. 4). Ground colour brownish-yellow; tergites 2-5 (in ♂) and 2-6 (in ♀) each with 2 pairs of small dark spots; setulae usually entirely dark, only on first tergite mainly pale; last tergite of male slightly shining, other tergites mat.

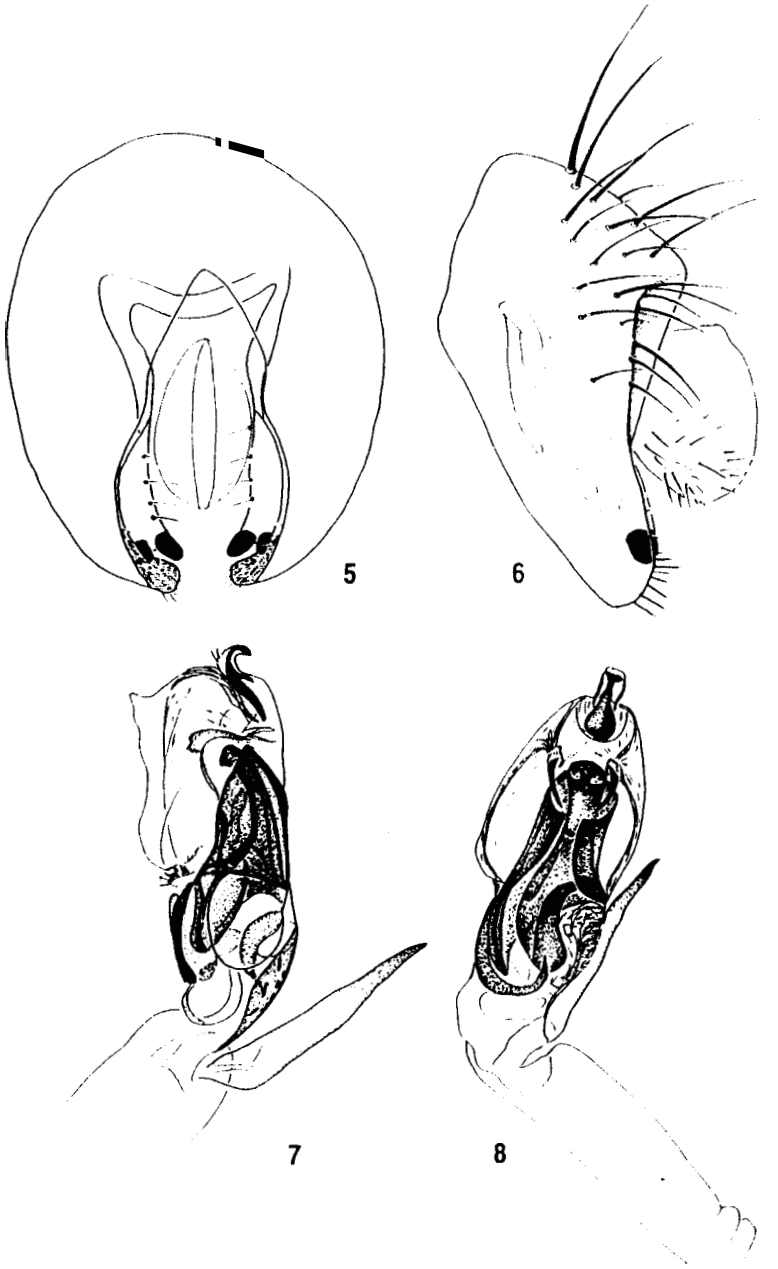
*Male terminalia* (Figs 5-8). Epandrium, hypandrium and associated structures as usual in the genus; distiphallus without spines or setulae; general structure of glans as in other *Chaetostomella*; ejaculatory ductus evenly curved; at base of glans with an ill-defined serrate sclerite; ligula at least half as long as maximum length of glans, slightly brownish towards tip.

*Female terminalia* (Figs 4, 9-11). Oviscape orange, but at base usually with a pair of small, dark lateral spots; all setulae dark; length about equal to that of the [illegible] spermatheca rather narrow, cylindrical, densely




FIGS 1-4

*Chaetostomella baezi* sp. n.: 1, head, lateral view; 2, mesontoum and scutellum, dorsal view; 3, wing; 4, abdomen of ♀, dorsal view.




FIGS 5-8

*Chaetostomella baezi* sp. n, male: 5, external terminalia, caudal view; 6, external terminalia, lateral view; 7, glans, lateral view; 8, glans, ventral view.

BIOLOGY

Some specimens were reared from *Cheirolophus duranii*, *Ch. junonianus* and *Ch. sventenii gracilis*. This genus belongs to the tribe Carduceae within the Asteraceae. Although not stated on the labels, it may be assumed that the larvae live in the flowerheads.

DISCUSSION

With the well developed presutural dorsocentral seta and the presence of 12 dark spots on the mesonotum this species exhibits the diagnostic characters of *Chaetorellia*. However, the body is more robust than in *Chaetorellia*, the male terminalia are almost identical with other species of *Chaetostomella* (Korneyev, 1985; Freidberg & Kugler, 1989, pers. obs.), the vibrissal angle bears some strong, dark setulae and the lyre-pattern on the mesonotum is very similar to the known species of *Chaetostomella*, so that its placement in the latter genus seems justified. The discovery of this new species with some characters intermediate between *Chaetorellia* and *Chaetostomella* raises the question about the status of the two genera. According to V.A. Korneyev (pers. comm.) also few or most specimens of other species of *Chaetostomella* (*Ch. rossica* Hendel) and *Terellia* (*T. blanda* Richter) may have a presutural dorsocentral seta. Therefore, the number of dorsocentral setae does not seem of generic value and the synonymy of *Chaetostomella* and *Chaetorellia* should probably be proposed. However, this action is premature without the study of the terminalia of all species, which is outside the scope of this paper. The main external differences between the two genera may be summarized as follows:

1 Vibrissal angle with some well developed dark setae; if presutural dorsocentral seta present, then mesonotum with dark spot laterad of supraalar setae; in general larger, more robust species . *Chaetostomella* Hendel

\- Vibrissal angle setulose, but without outstanding dark setae; presutural dorsocentral seta always present and inserted on a black spot; never with dark spot laterad of supraalar setae; more slender species . . . . . *Chaetorellia* Hendel

***Campiglossa freidbergi*** sp. n. **Figs 12-17**

MATERIAL

Holotype ♂, Spain: Sierra Nevada Veleta, 2500m, 4.X.1985, A. Freidberg (TAU).

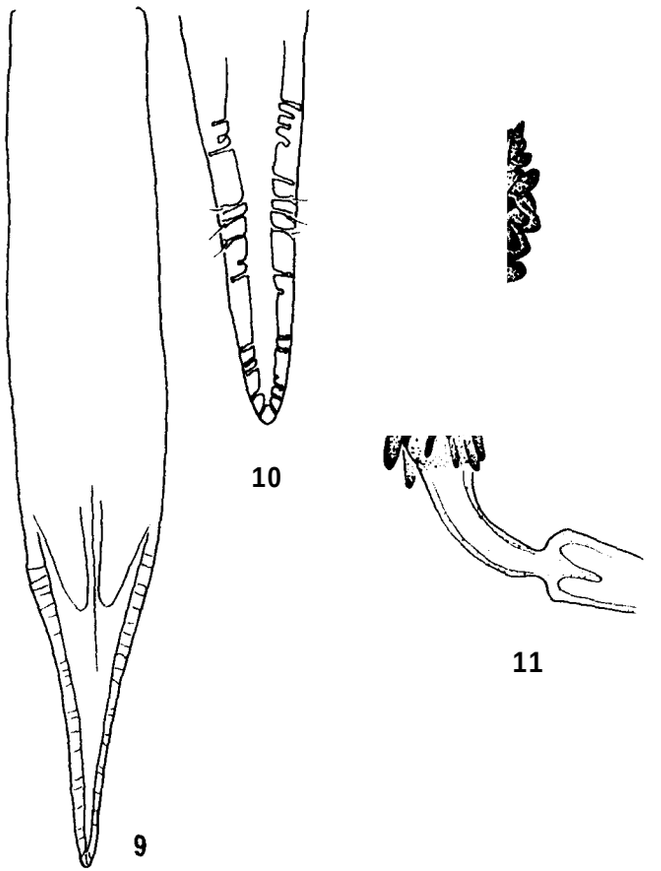
Paratypes: same data as holotype, 6♂♂, 3♀♀. The paratypes are deposited in MHNG and TAU.

The holotype is double mounted with a minutien pin on a polyporus strip and is in excellent condition.

ETYMOLOGY

Named in honour of Amnon Freidberg, the leading specialist on Tephritidae, [illegible] and an excellent colleague.






FIGS 9-11

*Chaetostomella baezi* sp. n., female: 9, aculeus, ventral view; 10, tip of aculeus, ventral view; 11, spermatheca.

DIAGNOSIS

**Medium sized species of *Campiglossa*, wing length 3.5-4 mm. It is characterized by the mixed black and whitish postocular setae, the black posterior notopleural seta and in particular by its wing pattern, which shows some quite isolated, much reduced black areas and very large, often fused spots over the entire surface.**

DESCRIPTION

*Head* (Fig. 12). General colour yellow, with occiput dark and sometimes with a dark band between the two vertical setae: in profile slightly higher than long; frons with indistinct longitudinal vitta; antennae at base separated from each other by half [illegible] of scape; labellae 1.7-2 times as long as length of 1st flagello-

1 white orbital setae; 1 dark ocellar seta; 1 whitish lateral vertical and 1 dark medial vertical seta; 1 pale postocellar seta, 1 pale paravertical seta; postocular setae mixed dark and pale.

*Thorax*. General colour black with thick greyish microtrichosity; mesonotum with 5 indistinct darker longitudinal stripes; postpronotal lobe slightly yellowish; setulae on pleura whitish, rough; chaetotaxy as usual in the genus, posterior notopleural seta, anepisternal seta and katepisternal seta black; anepimeral seta whitish; apical scutellar setae inserted on slightly paler ground, about half as long as basal scutellar setae; coxa, trochanter and femur of all legs mostly black, parts of distal half of femur, tibia and tarsus yellow, sometimes hind tibia with dark ring at middle.

*Wing* (Fig. 13). Dark areas rather narrow, hyaline parts of wing large, most spots below vein R4+5 are fused; r2+3 always with a large hyaline spot anterior to R-M; cell cu1 and anal lobe with only a very indistinct pattern of isolated bars.

*Abdomen*. Of the same greyish microtrichosity as thorax; the paired medial dark spots on tergites 2-5 well developed; all setulae pale.

*Male terminalia* (Fig. 14). Epandrium with a small caudal plate (as in Merz, 1994, Fig. 13y); distal end of distiphallus with two clusters each of 10-15 small setulae; glans elongate, rostrum rather long, distinctly, but weakly sclerotized along entire length; vesica narrow.

*Female terminalia* (Figs 15-17). Oviscape black, about as long as preceding 2-3 tergites of preabdomen; aculeus evenly narrowed towards tip, but at apex with a distinct step; length of aculeus 1.0 mm (one specimen dissected); spermathecae ovoid, entirely covered by small papillae.

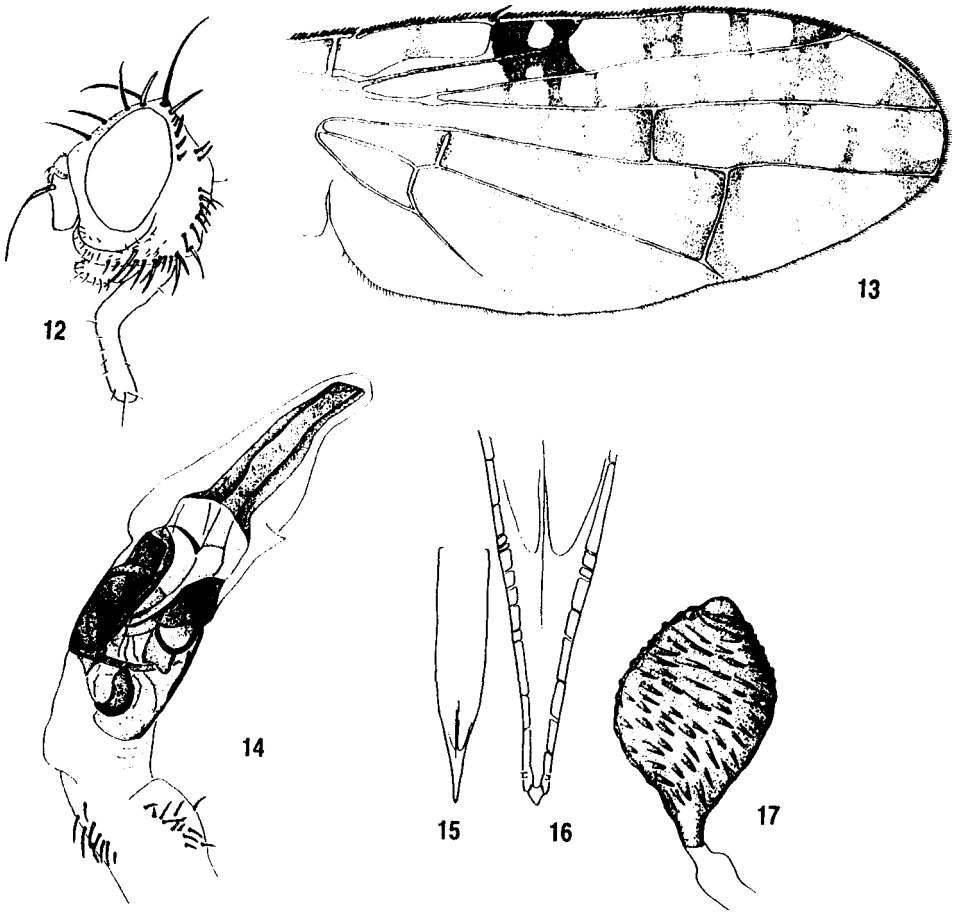
## Biology

No hostplants are known for this species.

## Discussion

Together with *C. difficilis* (Hendel), this species forms the *C. difficilis*-group of Merz (1994). Both species share the same chaetotaxy and the same type of male terminalia with a cylindrical acrophallus, a narrow vesica, and an elongated rostrum. However, both species differ clearly in the wing pattern and in details of the male terminalia: The preapical lappet of the vesica of *C. difficilis* is absent in *C. freidbergi*. Further, the internal structure of the acrophallus shows some slight differences (see Fig. 15a in Merz, 1994). Another species which may be confused with *C. freidbergi* is *C. cain* (Hering) from Ethiopia and Kenya, which has a very similar wing pattern and head shape. However, the two species differ clearly in the structure of the terminalia in both sexes: The epandrium bears long projections in *C. cain*, as in *C. argentata* (Munro) (see Fig. 79 in Munro, 1957), which are entirely absent in *C. freidbergi*. The rostrum in the glans of *C. cain* is much narrower and bears an apical sclerotized semicircle, which is somewhat similar to *C. anomalina* (Bezzi), as illustrated in Fig. 114 in Munro (1957). The females differ in the tip of the aculeus, which is truncated at the tip and without any step in *C. cain*.






Figs 12-17

*Campiglossa freidbergi* sp. n: 12, head, lateral view; 13, wing; 14, ♂ glans, ventral view; 15, ♀ aculeus, ventral view; 16, ♀ tip of aculeus, ventral view; 17, ♀ spermatheca.

## ACKNOWLEDGEMENTS

My sincerest thanks are offered to B. van Aartsen (t'Harde) M. Baéz (La Laguna) and A. Freidberg (Tel-Aviv) for making these flies available for study. Further, I thank V. Korneyev (Kiev) and A. C. Pont (Goring-on-Thames) for checking a first draft of this manuscript.

## REFERENCES

Freidberg, A. & Kugler, J. 1989. Diptera: Tephritidae. *Fauna Palaestina - Insecta IV*: 212 pp. & 8 plates.

Korneyev, V. A. 1985. Fruit flies of the Tribe Terellini Hendel, 1927 (Diptera, Tephritidae) of the fauna of the USSR. *Entomologiseskoe Obozrenie* 49 (4): 626-644. (in Russian;