A REVISION OF THE FAMILY SCENOPINIDAE (DIPTERA) FROM EGYPT

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ABSTRACT

Sixteen scenopinid species belonging to two subfamilies and five genera are reviewed from the Egyptian fauna. A new species, *Pseudomphrale miramisho*, is described and one species, *Scenopinus lincinus KELSEY*, is newly recorded from Egypt. A Lectotype and two Paralectotypes are designated for *Pseudomphrale flavoscutellata KRÖBER*. Keys, diagnoses and some drawings are provided.

Keywords: Scenopinidae, Classification, New species, New record, Egypt.

INTRODUCTION

The family Scenopinidae is distributed worldwide and includes more than 400 species. Studies only by Kröber (1937) and Kelsey (1969) were made to classify this family on a worldwide scale. However, other studies treated the local faunas in North America (Hardy, 1944), Australian region (Paramonov, 1955), Afrotropical region (Kelsey, 1973, 1976). Yeates (1992) has used the subfamily rank for Scenopinidae, and divided it into three subfamilies: the Caenotinae (not represented in Egypt), the Proratinae, and the Scenopininae.

Most of the species found in Egypt, like many other scenopinids, have a limited distribution and are only known from the type-locality; thus, they seem to be endemic species. However, there are two cosmopolitan species, *Scenopinus fenestralis* (LINNAEUS) and *S. glabrifrons MEIGEN*, in addition to *S. lucidus BECKER* which is widely distributed and known from Algeria, Canary Islands, Congo, Egypt, Hawaii, Nigeria, Uganda and Christmas Islands.

The present study deals with the classification of the family Scenopinidae from Egypt. Two subfamilies, Proratinae and Scenopininae, including five genera and sixteen species are listed. One species is (*Pseudomphrale miramisho*) is described for the first time, and another species (*Scenopinus lincinus KELSEY*) is recorded for the first time from Egypt.

Modifications to existing keys have been made to identify the Egyptian genera and species and to accommodate the new species. Figures of certain features of some species are given to show the characters used in the keys. The study includes also a Lectotype and two Paralectotype designations for *Pseudomphrale flavoscutellata KRÖBER*. The female of *Caenoneura robusta KRÖBER* is diagnosed for the first time.

This study is based mainly on specimens previously collected by the late great Egyptian dipterist Efflatoun Bey and his assistants and on a few specimens collected by us.

Abbreviations:

**EFC**: Efflatoun’s collection, Entomology Department, Faculty of Science, Cairo University;

**ESC**: Collection of the Entomological Society of Egypt.

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RESULTS

Key to the two scenopinid subfamilies in Egypt
- Wing with vein M\textsubscript{2} absent ................................................. Scenopininae
- Wing with vein M\textsubscript{2} present ................................................. Proratinae

Subfamily: Scenopininae FALLEN, 1817
Type-genus: Scenopinus LATREILLE, 1802.

Key to the genera of subfamily Scenopininae in Egypt
1. Cell r\textsubscript{5} open at the tip of wing (figs. 8-11)........................................................................ Scenopinus LATREILLE
   - Cell r\textsubscript{5} closed at the tip of wing .......................................................... 2
2. Vein R\textsubscript{5} & M\textsubscript{1+2} bending sharply to end in the leading edge of wing (fig. 12) ................
   - Vein R\textsubscript{5} & M\textsubscript{1+2} ending at the tip of wing ........................................... 3
3. Antennae pointed, vein R\textsubscript{4} branching from distal third of cell r\textsubscript{5} (fig. 13)........... Stenomphrale KRÖBER
   Antennae blunt, vein R\textsubscript{4} branching from before the middle of cell r\textsubscript{5} (figs. 1-7)................
   .................................................. Pseudomphrale KRÖBER

Genus: Caenoneura KRÖBER, 1923
Type-species: Caenoneura robusta KRÖBER.

This genus is easily distinguished by the peculiar wing venation which is crowded to the leading edge of the wing. Only two species are known namely C. nigra KELSEY from Spain and C. robusta KRÖBER from Egypt.

Caenoneura robusta KRÖBER, 1923
Type-locality: Cairo, Egypt.
Distribution: Egypt.

Kröber (1923) described the male only but female was unknown to him and to Kelsey in his revision (1969). In the present study we identified one female from Egypt for the first time. The male has scaly-hairs on the frons and ocellar triangle, and five white bands on the abdomen. The female is like the male but, in addition to the broad frons is without the white bands on the abdomen. See Fig. 12.
Material examined:
Type: male, Cairo
Other material: 1 male, Abu Rowash, 5.XI.1924 (Efflatoun) [ESC]. 1 male, Salloum, 11.VIII.1926 (Tewfik); 1 female, W. Gedeirat, 20.V.1935 (Tewfik) [EFC].

Genus: Pseudomphrale KRÖBER, 1913
Type-species: Scenopinus clausus LOEW.

This genus is distinguished by the blunt antennae, and by the R\textsubscript{4} vein which branches before the middle of cell r\textsubscript{5}. It is represented in Egypt by two species only, P. flavoscutellata KRÖBER and P. miramisho sp.n.
Key to species of genus *Pseudomphrale* KRÖBER in Egypt

- Abdominal segments 2-6 with white bands on posterior margins, halter knob creamy white
  
  \[flavoscutellata\] KRÖBER

- Abdominal segments without white bands, halter knob chocolate-brown \[miramisho sp.n.\]

**Pseudomphrale flavoscutellata** KRÖBER, 1929


Type-locality: Burg (Mariout), Egypt.

Distribution: Egypt.

Egyptian localities: North Coast: Burg.

Kröber (1937) and Kelsey (1969) put this species in the genus *Stenomphrale*. We checked the type and returned it to genus *Pseudomphrale* on account of the wing venation and the blunt antennae. Kröber (1929) based his description on 3 syntypes (2 males and one female), one of these male syntypes is designated as lectotype and others as paralectotypes in the present study.

Material examined:

- Lectotype: male, Burg, 10.V.1927 (Tewfik);
- Paralectotypes: 1 male & 1 female, same data [New designation].
- Other material: 1 male & 1 female same data [EFC].

**Pseudomphrale miramisho** sp.n.

(figures 1-7)

Description:

Holotype, male: Head black, dark brown on lower frons above antennae; frons very narrow especially the upper part, slightly swollen above antenal bases, with very short scaly hairs especially on upper part; eyes brown, seem to be attached at two angles directly below the lower ocellus [meaning of underlined words not clear; face dark brown; occiput black with some very short white scaly hairs especially along the eye margin; ocellar triangle prominent, ocelli red; antennae brownish-black, scape and pedicel approximately equal, flagellum black with some white dust on the tip, inwardly curved, two times as long as scape and pedicel combined. Thorax black, rugose, covered with very short whitish scaly hairs; supraalar calli and posterior corners of humeral calli brown; subscutellum dark brown; halter chocolate-brown from above, yellowish-brown from below, knob ovate; legs dark brown, with tips of femora, tibiae and tarsal segments brown, with short white hairs, relatively longer on middle and hind femora; fore femora slightly enlarged, almost 3 times as wide as tibia; wings hyaline, with faint yellow veins. Abdomen dark brown, broad, slightly longer than wide, with sparse short fine hairs, more extensive and longer at posterior sides.

Male genitalia: see fig. 5.

Body: 3 mm; wing: 2.5 mm.

Paratype, female: As holotype except: frons entirely black, broad, approximately two times as wide as ocellar triangle; antennae black; wing smoky with brown veins; legs slightly darker than in holotype male.

Female genitalia: see fig. 6.

Type-locality: W. Rishrash, Egypt.

Material examined:

- Holotype: male, W. Rishrash, 12-17.VI.1932 (Tewfik);
- Paratypes: 1 male & 4 females, same data [EFC].
**Genus: Scenopinus LATREILLE, 1802**


Type-species: *Musca fenestralis* L.

Synonyms (see Kelsey, 1969).

This genus is the largest among the Egyptian scenopinids. It is distinguished by the head which is higher than long, by the undepressed body, and by the broad abdomen. *Scenopinus* is a cosmopolitan genus represented in all geographic regions. Authors usually subdivide it into four infrageneric groups, each with rather distinct continental distribution: *Fenestralis, Albicinctus, Brevicornis*, and *Velutinus*. All these groups except the last are represented in Egypt.

**Key to groups and species of the genus Scenopinus LATREILLE in Egypt**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>R₄ branching from cell r₅ at or before the middle of the cell; antennae generally long and slender</td>
<td>3 (fenestralis group)</td>
</tr>
<tr>
<td></td>
<td>R₄ branching from cell r₅ at or beyond the middle of the cell</td>
<td>2</td>
</tr>
<tr>
<td>2.</td>
<td>Antennae only twice as long as wide</td>
<td>6 (albicinctus group)</td>
</tr>
<tr>
<td></td>
<td>Antennae pear-shaped</td>
<td>7 (brevicornis group)</td>
</tr>
<tr>
<td>3.</td>
<td>Wing hyaline</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Wing brownish; halter knob light tan</td>
<td><em>S. efflatounii</em> KELSEY</td>
</tr>
<tr>
<td>4.</td>
<td>Frons shining, halter knob white</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Frons rugose, halter knob variable, white to brown</td>
<td><em>S. fenestralis</em> (L.)</td>
</tr>
<tr>
<td>5.</td>
<td>Vein R₄ branching well before middle of cell r₅</td>
<td><em>S. glabrifrons</em> MEIGEN</td>
</tr>
<tr>
<td></td>
<td>Vein R₄ branching near middle of cell r₅</td>
<td><em>S. sainai</em> KELSEY</td>
</tr>
<tr>
<td>6.</td>
<td>Antennae with basal segment orange or red-brown; halter knob white</td>
<td><em>S. curtipilosus</em> KELSEY</td>
</tr>
<tr>
<td></td>
<td>Antennae with basal segment red-brown; halter knob tan</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Wing milky-white</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Wing hyaline or smoky-brown</td>
<td>9</td>
</tr>
<tr>
<td>8.</td>
<td>Cell r₅ open at tip</td>
<td>male <em>S. nitidulus</em> LOEW</td>
</tr>
<tr>
<td></td>
<td>Cell r₅ (especially in male) constricted at tip</td>
<td><em>S. brevicornis</em> LOEW</td>
</tr>
<tr>
<td>9.</td>
<td>Wing hyaline</td>
<td>male <em>S. fraternus</em> (KRÖBER)</td>
</tr>
<tr>
<td></td>
<td>Wing smoky-brown</td>
<td>10</td>
</tr>
<tr>
<td>10.</td>
<td>Halter knob white; antenna black or brown</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Halter knob tan; antenna blackish brown</td>
<td><em>S. lincinus</em> KELSEY</td>
</tr>
<tr>
<td>11.</td>
<td>Halter knob long; tip of antenna pointed; vein R₄ branching well beyond middle of cell r₅</td>
<td>female <em>S. nitidulus</em> LOEW</td>
</tr>
<tr>
<td></td>
<td>Halter knob rounded; tip of antenna rounded; vein R₄ branching from near middle of cell r₅</td>
<td>female <em>S. fraternus</em> (KRÖBER)</td>
</tr>
</tbody>
</table>

**Scenopinus curtipilosus KELSEY, 1969**


Type-locality: El-Elisah, Egypt.

Distribution: Egypt.

Scape of antenna red-brown, short; pedicel segment orange-brown, twice as long as scape; flagellum red-brown, three times as long as scape and pedicel combined, narrow and tapering. See fig. 8.

Material examined:

1 male, Kom Osheem, 15.IV.2000 (El-Hawagry) [EFC].
**Scenopinus efflatouni** KELSEY, 1969


Type-locality: Abu-Rowash, Egypt.

Distribution: Egypt.

Egyptian localities: Lower Nile Valley: Abu Rowash & Cairo.

Scape and pedicel orange-brown; flagellum red-brown, three times as long as the first two combined. Abdomen red-brown, middle segments with membranous posterior margins.

Material examined:

- Holotype: female, Abu Rowash, 5.IX.1924 (Efflatoun), without head.
- Paratype: female, Cairo, 4.VII.1918 (Efflatoun), abdomen and wings are separated from thorax.

**Scenopinus fenestralis** (LINNAEUS, 1758)


Type-locality: Europe.

Synonyms (see Kelsey, 1969).

Distribution: worldwide.

Egyptian localities: Unknown.

This species is characterized by the rugose frons in both sexes; antennae long, slender and dark brown; legs yellow-brown.

Material examined:

- 1 male, handled by Efflatoun (no further data).

**Scenopinus fraternus** (KRÖBER, 1923)


Type-locality: Fayoum (Siala), Egypt.

Distribution: Egypt.


The male of this species is similar to that of *S. nitidulus* especially in the details of the head, wing and external genitalia. However, the difference in the size of the ejaculatory pump is evident. The wings of male and female show few differences; see figures 10,11.

Material examined:

- Holotype: male, Siala, 4.IV.1923 (Efflatoun); Allotype: female, 25.VI.1922 (Efflatoun).
- Paratype: female, Ezbet Nakhl, 18.IV.1922 (Efflatoun; EFC]. Other material: 2 females, W. Moueleh, 15.VI.1924 (SH.M.); 1 female: W. Assiut, 10.IV.1935 (Sh.M.) [EFC].

**Scenopinus glabrifrons** MEIGEN, 1824


Type-locality: Europe.

Synonyms (see Kelsey, 1969):

Distribution: Worldwide.

Egyptian localities: Lower Nile Valley: Gizerah, Cairo.

This large species is similar to *S. fenestralis* but it is easily separated by the shining frontal area of both male and female. Antennae elongate orange-brown at the base and darker at the tip.

Material examined:
1 female, Gezeirah, 6.V.1921 (Efflatoun) [EFC]. 3 females, Cairo, 5.IV.1924 (Efflatoun); 1 female, Cairo, 3.VI.1924 (Efflatoun); 1 female, 21.IV.1921 (Efflatoun) [ESC].

**Scenopinus lincinus KELSEY, 1969**

[New record for Egypt]


Type-locality: Ambobitautely, Madagascar.

Distribution: Egypt and Madagascar.

Egyptian localities: Sinai

The present species is closely related to *S. fraternus* and *S. nitidulus*, but it is easily distinguished by the knob of halter which is tan colored, and by the median dimple on frons. See fig. 14.

Material examined:

Female, W. El-Sheikh (Sinai) 21-24.IV.1939 (Efflatoun) [EFC].

**Scenopinus lucidus BECKER, 1902**


Type-locality: Mariout, Egypt.

Distribution: Algeria, Canary Islands, Christmas Islands, Congo, Egypt, Hawaii, Nigeria and Uganda.

Egyptian localities: Lower Nile Valley: Meadi (Cairo); North Coast: Mariout.

The species is easily distinguished by the long aedeagal parameres of the male.

Material examined:

1 male, Meadi, 24.IV.1917 (Efflatoun) [ESC].

**Scenopinus nitidulus LOEW, 1873**


Type-locality: Balfrush, Iran.

Distribution: Crete, Egypt, Iran and Palestine.


This species is characterized by the black pointed or spindle form antennae, and by the halter knob which is white and long. See fig. 9.

Material examined:

1 male, Ezbet Nakhl, 20.IV.1924 (Efflatoun); 2 males, Burg, 20.V.1927 (Tewfik); 1 male Helwan, 3.III.1934 (Farag) [EFC]. 3 males, Ezbet Nakhl, 24.IV.1924 (Efflatoun), 2 males, 8.V.1922 (Efflatoun); 1 male, Koubba, 6.IX.1922 (Efflatoun); 1 male, Barrage, 5.V.1924 (Efflatoun) [ESC].

**Scenopinus sainai KELSEY, 1969**


Type-locality: W. El-Lega, South Sinai, Egypt.

Distribution: Egypt.

Antennae elongate with subequal black-brown scape and red-brown pedicel, flagellum red-brown, slender, about four times as long as scape and pedicel combined. Abdomen red-brown with broad white membranous borders on segments 4-6.

Material examined:
6 females, W. El-Lega, 6.IX.1941 (Efflatoun); 3 males, same data [EFC].

*Scenopinus brevicornis* LOEW, 1873

Type-locality: Warsaminor, Turkistan.
Distribution: Egypt and Turkistan.
Egyptian localities: Eastern Desert: Ismailia; Lower Nile Valley: Ezbet Nakhl; North Coast: Dekhela, Mariout, Marg and Nuzha.

In addition to the milky wings and the r₅ cell of male which is constricted at tip, this species is characterized by the white halter knob and by the black antennae.

Material examined:
Cotype (determined by Kröber, 1923): male, Ezbet Nakhl, 18.V.1922 (Efflatoun); 1 female, Nouzha, 5.VII.1921 (Efflatoun) [ESC].

**Genus: Stenomphrale KRÖBER, 1937**

Type-species: *Pseudomphrale teutankhameni* KRÖBER.

This genus is distinguished by the pointed antennae and by the R₄ vein which branches from distal third of cell r₅. *Stenomphrale* flies are small, black and shining. This genus is monotypic (*S. teutankhameni* KRÖBER). It was described from Egypt and is not recorded elsewhere.

*Stenomphrale teutankhameni* (KRÖBER, 1923)

Type-locality: Mariout, Egypt.
Distribution: Egypt.
Egyptian localities: North Coast: Burg, Mariout.
Material examined:
Type: male, Mariout, 16.III.1922 (Efflatoun); Paratypes: 1 male, same data as type; 1 female, Mariout, 5.IV.1921. Other material: 5 males, same data; 2 males, Mariout, 15.III.1922 (Efflatoun) [ESC], 10 males, 5 females, Burg, 16.III.1935 (Efflatoun) [EFC].

**Subfamily: Proratinae THEODOR, 1983**

Type-genus: *Prorates* MELANDER, 1906.

This subfamily is represented in Egypt by only one genus, *Alloxytropus* BEZZI, containing two species, *A. anomalus* BEZZI and *A. bezzii* PARAMONOV.

**Genus: Alloxytropus BEZZI, 1925**

Type-species: *Alloxytropus anomalus* BEZZI.

This genus was described for a single species, *A. anomalus*, from Egypt. Paramonov (1929) subsequently described another species, *A. bezzii*, also from Egypt.

*Alloxytropus anomalus* BEZZI, 1925

Type-locality: Kena and Wadi Hoff (Egypt).
Egyptian localities: Eastern Desert: W. Rishrash, W. Hoff; Lower Nile Valley: Meaadi (Cairo); Upper Nile Valley: Kena.

All specimens of *A. anomalus*, including the types, are destroyed in ESC except one male specimen collected from W. Rishrash on 12-17 June 1932.

This species is very small, slender and almost bare. It is easily recognizable by its entirely yellow body and legs, and the very pale yellow almost indistinguishable wing venation (fig.15).

*Alloxytropus bezzii* PARAMONOV, 1929


Type-locality: Wadi Girfan (Egypt).

Only five specimens, including the types, were captured by Efflatoun Bey from Wadi Girfan on 22 April 1927. Unfortunately, all these specimens have been destroyed in ESC. Efflatoun (1945) differentiated this species from *A. anomalus* by its shining black head, thorax and abdomen. He noted also that *A. bezzii* has the legs of male are black with the knees and basal half of metatarsi are brownish yellow.

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REFERENCES


Figures 1-7: *Pseudomphrale miramisho* sp. n.- 1, male head; 2, female head; 3, male abdomen; 4, female abdomen; 5, male genitalia; 6, bursa structure of female; 7, male wing.

