

On Chloropidae (Diptera: Muscomorpha) from Tunisia

О злаковых мухах Chloropidae (Diptera: Muscomorpha) из Туниса

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КЛЮЧЕВЫЕ СЛОВА: двукрылые, злаковые мухи, Тунис, Сев. Африка

ABSTRACT. A collection of Chloropidae made by R. Danielsson in Tunisia in April of 1994 contains 25 species, from them 3 species are referred only to genus because of insufficient material. In the collection examined, 6 species and 3 genera are recorded for the first time for North Africa, whereas 14 species are new for the fauna of Tunisia. In total, 39 species of Chloropidae are known now in Tunisia. The most abundant species in the examined collection are *Thaumatomyia notata* (Meigen, 1830), *Oscinella frit* (Linnaeus, 1758) and *Tricimba humeralis* (Loew, 1858). Colour variation in spring population of *Thaumatomyia notata* is discussed, and drawing of male genitalia of *Tricimba humeralis* is given.

РЕЗЮМЕ. Коллекция злаковых мух, собранная Р. Даниельсоном в Тунисе в апреле 1994 г. содержит 25 видов, из них 3 определены только до рода вследствие недостатка материала. В изученной коллекции 6 видов и 3 рода впервые найдены в Сев. Африке и 14 видов являются новыми для фауны Туниса. Всего теперь из Туниса известно 39 видов. Наиболее многочисленные виды в коллекции *Thaumatomyia notata* (Meigen, 1830), *Oscinella frit* (Linnaeus, 1758) и *Tricimba humeralis* (Loew, 1858). Обсуждаются вариации в окраске у весенней популяции *Thaumatomyia notata* и дан рисунок гениталий самца *Tricimba humeralis*.

Introduction

Chloropidae from North Africa was firstly studied by Becker [1903] on the material from Egypt. Some years later he investigated a small collection from Algeria and Tunisia [Becker, 1907]. Only 5 species were recorded in this paper from Tunisia. Later Becker [1910, 1916] and Duda [1933] described several new species and new variation from Tunisia, and Dely-Draskovits [1981] recorded one more species. In the Catalogue of Palaearctic Diptera, 16 species were recorded from Tunisia [Nartshuk, 1984]. Recently Deeming [2003] recorded 4 species of *Oscinella* Becker, 1909 from Tunisia.

I have an opportunity to examine a small collection of Chloropidae from Tunisia collected on 7–12.04. 1984 by R. Danielsson (Zoological Museum of the Lund University, Sweden). Tunisia is a small country on area of 163 610 km² lying at the eastern end of Maghreb. It comprises a considerable diversity of habitats from woody mountains to the aridity of the dunal system of the Grand Erg. Three main geographical regions can be distinguished: Tunisian Tell, semiarid steppe and desert. Material was collected in 16 localities situated in Tunisian Tell and steppes of Central Tunisia. Tell is mountainous forest area with Mediterranean climate. Valleys in Tell and eastern part of steppes are intensively cultivated, practically without remnant of original vegetation.

All material is kept in the collection of the Zoological Museum of the Lund University (Sweden).

Annotated list of the species

Subfamily OSCINELLINAE

1. *Aphanotrigonum favillaceum* (Becker, 1903)
N of Sousse 3 km S of Hergla, 07.04 (loc. 1); 17 km SE of Zaghuan, 12.04 (loc.2). Total 4 ♂♂.

Mediterranean species, it was described from Egypt, later was found on Canary Islands and recorded in Cyprus [Nartshuk, 1990]. A new species for Tunisia.

2. *Aphanotrigonum femorellum* Collin, 1946
N of Sousse 3 km S of Hergla, 07.04.1994, 1 ♂.
Widely distributed species known from Europe to Mongolia, was recorded for Tunisia by Dely-Draskovits [1981].

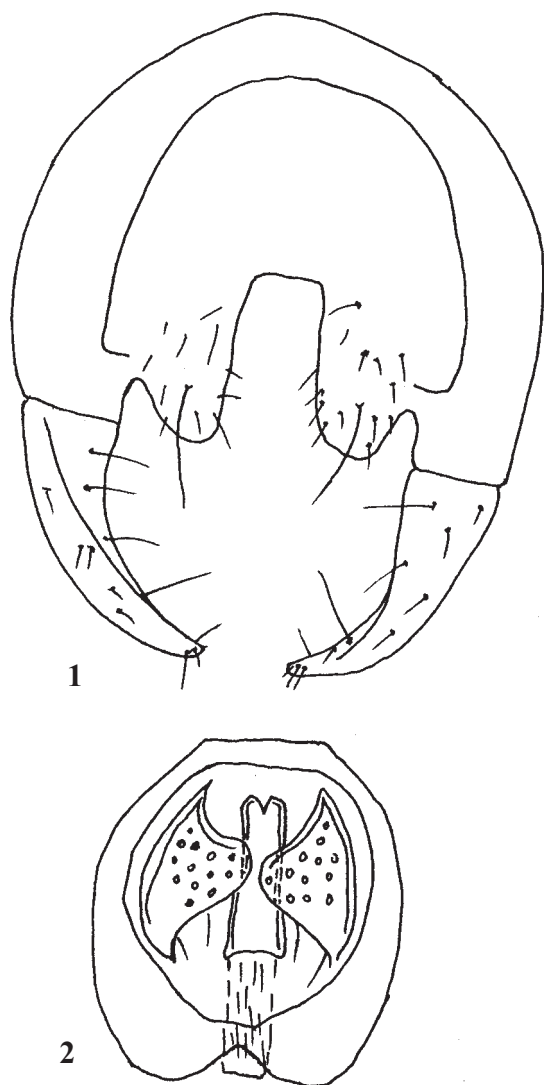
3. *Aphanotrigonum parahastatum* Dely-Draskovits, 1981
12 km E of Tabarka, 09.04 (loc. 11); 25 km S of Kairouan 11.04 (loc. 23). Total 1 ♂, 2 ♀♀.

The species was known from central and southern Europe, Crete and Afghanistan. A new species for Tunisia and North Africa.

4. *Calamoncosis laminiformis* Becker, 1908
25 km S of Kairouan, 11.04 (loc. 23), 1 ♀.
The species was described from Canary Islands and later found in central and southern Europe and Kazakhstan. The species is new for the fauna of Tunisia and North Africa.

5. *Dicraeus tibialis* (Macquart, 1935)
Sbikha, 34 km W of Kairouan, 11.04 (loc. 22); 12 km E of Mateur, 12.04 (loc. 25). Total 1 ♂, 1 ♀.
Holarctic species, but was found also on New Zealand [Ismay, 1991]. The species and the genus are recorded for the first time in Tunisia and North Africa. Larvae are phytophagous, develop in unripe seeds of *Bromopsis* sp. and *Helictotrichon* sp. (Poaceae).
Examined male has two hind notopleural setae on right side in distinguish from one as usual for this species. Other characters as dusted pleura, yellow abdomen and structure of male genitalia correspond to common treating of this species. Unfortunately notopleural setae on left side in male and on both sides in female are not seen.
6. *Elachiptera bimaculata* (Loew, 1845)
5 km SW of Bizerta, 10.04 (loc. 20), 1 ♀.
Euro-mediterranean species, widely distributed in southern Palaearctic from Canary Islands to Israel and southern Russia. Scavenging larvae reared from different rotting plants, often together with other insects.
7. *Elachiptera cornuta* (Fallén, 1820)
10 km SW of Bizerta, 07.04 (loc. 4), 1 ♀.
Common species everywhere in Palaearctic. A new species for the fauna of Tunisia. Larvae are secondary invaders in different plants, often together with other insects.
8. *Elachiptera diastema* Collin, 1946
1 km S of Tabarka, 08.04 (loc. 6); E of Tabarka, 09.04 (loc. 11). Total 2 ♀♀.
European species, recorded for the first time in Tunisia and North Africa. The specimens are well correspond to description but head and thorax setae are not black but yellowish.
9. *Melanochaeta pubescens* (Thalhammer, 1898)
1 km S of Tabarka, 08.04 (loc. 6); 34 km N of Kairouan, 11.04 (loc. 22). Total 13 specimens.
Euro-mediterranean species occurring in Europe to North to southern England, Belgium and Germany and to East to Afghanistan.
The species is very variable in colour, most examined specimens are rather dark, 11 specimens have scutum black heavily grey dusted, only postpronotum and pleura yellow, and only two have partly yellow scutum.
10. *Oscinella frit* (Linnaeus, 1758)
N of Sousse 3 km S of Hergla, 12.04 (loc. 1); 17 km SE of Zaghuan, 12.04 (loc. 2); 10 km SW of Bizerta, 07.04 (loc. 4); 1 km E of Tabarka, 09.04 (loc. 5); 12 km E of Tabarka, 09.04 (loc. 11); 25 km S of Kairouan, 11.04 (loc. 23); W of Tunis 1 km SE of El Bathan, 12.04 (loc. 27). Total 46 specimens.
All specimens are very dark coloured, all tibia are black, only tarsi yellowish. Common species, distributed in the Holarctic, Oriental and Afrotropical Regions. Well-known pest of different cereals and grasses.
11. *Oscinimorpha longirostris* (Loew, 1858)
N of Sousse 3 km S of Hergla, 07.04 (loc. 1), 7 ♂♂.
Euro-mediterranean species spreading northwards to Belgium, the Netherlands and Hungary. Duda described a variation *tunisica* Duda, 1933 from Tunisia, which differs from nominative form only in colour of frons and halteres [Duda, 1932–1933].
Examined specimens belongs to nominative form.

12. *Polyodaspis sulcicollis* (Meigen, 1830)
17 km SE of Zaghuan, 12.04 (loc. 2); 8 km S of Tabarka, 08.04 (loc. 7); 4 km E of Ain Sebaa 23 km E of Tabarka, 09.04 (loc. 12); 25 km SW of Bizerta, 10.04 (loc. 20). Total 3 ♂♂, 3 ♀♀.
Widely distributed Palaearctic species, known from Great Britain to Mongolia, recorded in Israel and Algeria. New to the fauna of Tunisia. Larvae scavengers, the species was reared from *Orobanch*e plants infested by other insects.
The species is rather variable in colour of setae and setulae. Examined specimens have black setae on head and thorax, but frons setulae are white.
13. *Rhodesiella* sp.
8 km NE of Nafza, 10.04 (loc. 16), 1 ♀.
It is probably a new species resembles with *Rh. fedtschenkoi* Nartshuk, 1978 described from Central Asia in having yellow legs including coxae, only the last segment of tarsi is black. The species belongs to the group of *plumiger* Meigen, 1830, which is characterised by short scutellum only with 4 long setae. The genus *Rhodesiella* Adams, 1905 was not earlier recorded in Tunisia and North Africa, but the genus is presented by numerous species in the Afrotropical and Oriental Regions.
14. *Siphunculina ornatifrons* (Loew, 1858)
25 km S of Kairouan, 11.04 (loc. 23); N of Sfax 2 km E of Djebeniana, 11.04 (loc. 24). Total 1 ♂, 2 ♀♀.
A widely distributed species in Mediterranean, known also from the Afrotropical and Oriental Regions and the Pacific Islands. The species was reared from chicken dung in Cameroon [Disney, 1973]. New for Tunisia.
15. *Trachysiphonella carinifacies* Nartshuk, 1964
25 km S of Kairouan, 11.04 (loc. 23), 1 ♀.
The species was described from Kazakhstan and found in Mongolia as well. The species and the genus are recorded for the first time in Tunisia and North Africa.
16. *Trachysiphonella* sp.
17 km SE of Zaghuan, 12.04 (loc. 2), 1 ♀.
The specimens is similar to *T. ruficeps* Macquart, 1835, but left here unnamed because of insufficient material.
17. *Tricimba* (*Nartshukiella*) *humeralis* (Loew, 1858)
Figs. 1–2.
12 km E of Tabarka, 09.04 (loc. 11); Sbikha 34 km N of Kairouan, 11.04 (loc. 22); N of Suisse 3 km S of Hergla, 12.04 (loc. 1); 25 km S of Kairouan 11.04 (loc. 23); 12 km E of Mateur 12.04 (loc. 25); W of Tunis 1 km SE of El Bahar 12.04 (loc. 27); 25 km SW of Bizerta; 10.04 (loc. 20); N of Sfax 2 km E of Djebeniana 11.04 (loc. 24). Total 40 specimens.
The species is widespread in Palaearctic except northern parts, the northernmost record is in southern Sweden, was recorded also in the Afrotropical Region (Sudan).
The drawings of male genitalia in Dely-Draskovits [1983] and Beschovski [1985] differ between each other in form of cerci; both authors didn't draw hypandrium. Both parts of male genitalia of specimen from Tunisia are given of Figs. 1–2.
- Subfamily CHLOROPINAE
18. *Assiania thalhammeri* (Strobl, 1893)
17 km SE of Zaghuan, 12.04 (loc. 2); 4 km E Sebaa 23 km E of Tabarka, 09.04 (loc. 12); 25 km SW of Bizerta, 10.04



Figs 1–2. Male genitalia of *Tricimba (Nartsbukiella) humeralis*: 1 — epandrium, 2 — hypandrium.

Рис. 1–2. Гениталии самца *Tricimba (Nartsbukiella) humeralis*: 1 — эпандрий, 2 — гипандрий.

(loc. 20); 25 km S of Kairouan, 11.04 (loc. 23); W of Tunis 1 km SE of Bathan, 12.04 (loc. 27). Total 8 specimens.

Euro-mediterranean species, the northernmost localities in Europe are Austria and Hungary. A new species for the fauna of Tunisia.

The examined specimens are very dark coloured, thorax and abdomen practically black, strongly shining.

19. *Camarota curvipennis* (Latreille, 1805)

17 km SE of Zaghuan, 07.04 (loc. 2), 2 ♀♀.

Euro-mediterranean species, the most northern locality in Europe is southern Sweden. New to the fauna of Tunisia. Larvae are phytophagous, develop in shoots of some grasses and cereals, sometimes reaching pest status.

20. *Lagaroceras* sp.

1 km S of Tabarka, 08.04 (loc. 6); 12 km E of Tabarka, 09.04 (loc. 11). Total 2 ♀♀.

Examined specimens clearly differ from *L. megalops* Becker, 1903 described from Egypt by the structure of first flagellomere. They have no setulae on anepistern, the second sector of costal vein is 3 times longer than the third sector. There is no male in the material and therefore I postpone the description of a new species.

21. *Lasiosina herpini* (Guérin-Méneville, 1843)

1 km S of Tabarka, 08.04 (loc. 6), 1 ♂.

The species is widespread in Europe and temperate parts of Asia to the Far East of Russia and on Near East from Israel to Afghanistan. It is recorded for the first time in Tunisia and North Africa. Larvae are secondary invaders of some grasses and cereals, attacked by *Chlorops pumilionis* (Bjerkander, 1778).

22. *Metopostigma tenuiseta* (Loew, 1860)

25 km S of Kairouan, 11.04 (loc. 23), 1 ♂.

The species is widespread in the Afrotropical Region and was recorded for Egypt and Israel as well. New to the fauna of Tunisia.

23. *Pseudopachychaeta pachycera* Strobl, 1902

17 km SE of Zaghuan, 12.04 (loc. 2), 1 ♀.

The species was known from southern Europe and North Africa (Morocco). New to the fauna of Tunisia.

24. *Thaumatomyia notata* (Meigen, 1830)

Figs. 3–8.

N of Sousse 3 km S of Hergla, 12.04 (loc. 1); 17 km SE of Zaghuan, 07.04 (loc. 2); 1 km E of Tabarka, 09.04 (loc. 5); 8 km S of Tabarka, 08.04 (loc. 7); 12 km E of Tabarka, 09.04 (loc. 11); 25 km SW of Bizerta, 10.04 (loc. 20); Sbihka 34 km N of Kairouan, 11.04 (loc. 22); 25 km S of Kairouan, 11.04 (loc. 23); 12 km S of Mateur, 12.04 (loc. 25); W of Tunis 1 km SE of El Bathan, 12.04 (loc. 27); 1 km NE of Tindia near Bizerta, 12.04 (loc. 28). Total 99 specimens.

The species widespread in the Palearctic Region and recorded from the Oriental and Afrotropical Regions as well. Larvae are carnivorous, live in rhizome of plants and feed on root aphids.

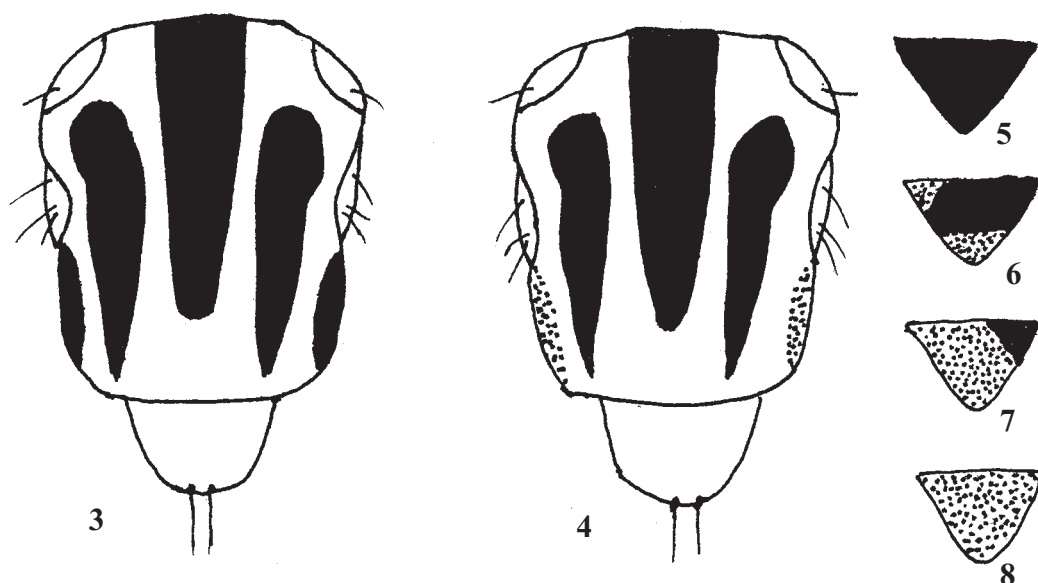
25. *Thaumatomyia sulcifrons* (Becker, 1907)

N of Sousse, 3 km S of Hergla, 12.04 (loc. 1), 1 ♀.

A widely distributed species in southern Palearctic from Canary Islands to China, including southern Europe. Larvae are carnivorous, living in rhizome of plants and feed on root aphids.

Discussion

The collection contains 252 specimens, 25 species from 19 genera are presented. Among them, 6 species and 3 genera (*Rhodesiella*, *Dicraeus* Loew, 1973, *Trachysiphonella* Enderlein, 1936) are recorded for the first time in North Africa, and 14 species are new for the fauna of Tunisia. Most of recorded species, namely 17, belong to the subfamily Oscinellinae and only 8 to the subfamily Chloropinae. Such correlation of the number of species of subfamilies is characteristic to subtropical and tropical fauna of Chloropidae, whereas in boreal and temperate zones of Holarctic both families are usually



Figs. 3-8. Colour variation of scutum and spot on katepistern of *Thaumatomyia notata*: 3, 4 — scutum, 5-8 — spot on katepistern. Stippled parts are red coloured.

Рис.3-8. Вариации в окраске скутума и пятна на катэпистерне у *Thaumatomyia notata*: 3, 4 — скутум, 5-8 — пятно на катэпистерне. Красные части пунктированы.

presented by nearly equal number of species. This is due to the fact that genera *Chlorops* Meigen, 1803 and *Meromyza* Meigen, 1830, both Chloropinae, are usually presented each by very numerous number of species in boreal and temperate zone of the Holarctic, but no species of these genera are presented in the examined collection.

Thaumatomyia notata collected in 11 localities is the most abundant species in the collection (99 specimens). It has given a chance to study colour variations in spring population of this widespread and very variable in colour species. It is worthy to note than all Chloropids which are characterised by colour variation are presented in examined collection by very dark coloured specimens. All examined specimens of *Th. notata* are dark coloured as well. No specimens coloured as var. *pretiosa* Duda, 1933 with red thorax stripes described from Tunisia are found. Only 7 specimens (7.1%) have part of thorax stripes brownish or red. The most specimens have 3 main thorax stripes black, only short and narrow stripes situated behind wing base are brownish or red. 44 specimens (44.4%) have all pleural spots black. 10 specimens (10.1%) have spot on anepistern and on anepimer black, spot on katepistern predominantly black. 26 specimens (26.2%) have spots on anepistern black, spot on anepimer yellow and spot on katepistern predominantly yellow. 12 specimen (12.1%) have spot on anepistern black, and spots on katepistern and anepimer yellow. Such colour of pleural spots are found in all 7 specimens with partly red thorax stripes. Different colour of scutum and spot on katepistern are given on fig. 2. It seems such dark colour of examined specimens is explained by low temperatures during development of spring generation. This species is hibernated as adults in

temperate zone but I suppose that the first spring generation appears in April in Tunisia.

Oscinella frit, also widespread species, is the second abundant species in the collection (46 specimens) and *Tricimba humeralis* is the third one (40 specimens).

The zoogeographical definition of each species is based on the Catalogue of Palaearctic Diptera [Nartshuk, 1984] with later improvements. Tunisian territory is split between the Mediterranean and the Eremian biogeographical subregions. Material examined was collected in the Mediterranean subregions. The present study is a occasion for better characterisation of Chloropidae fauna of the Mediterranean. The bulk of the Chloropidae fauna consists of euro-mediterranean species: *Elachiptera bimaculata*, *Calamoncosis laminiformis*, *Oscinimorpha longirostris*, *Melanochaeta pubescens*, *Camarota curvipennis*, *Assuania thalhammeri*, *Pseudopachychaeta pachycera*. *Aphanotrigunum favillaceum* is Mediterranean species. Some species are widely distributed in Palaearctic and most of them common ubiquitous species: *Elachiptera cornuta*, *Polyodaspis sulcicollis*, *Lasiosina herpini*, *Dicraeus tibialis* is Holarctic species, found recently in New Zealand. Ranges of some species include also the Afrotropical or/and Oriental Regions: *Siphunculina ornatifrons*, *Thaumatomyia notata*, *Oscinella frit*, *Tricimba humeralis*. The presence of true Afrotropical species is limited only *Metopostigma tenuiseta*.

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