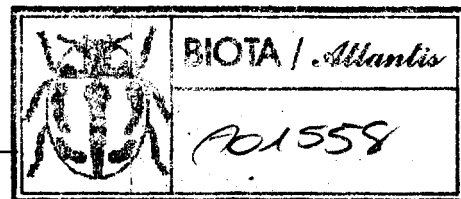


Trioscclidae (Diptera) from Southern Spain and Description of a New *Trioscclis* Species from Northern Europe

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Abstract

Seven species of *Trioscclis* are recorded from Southern Spain. Three of them, *T. psammophila*, *T. lyneborgi*, and *T. mendizabali*, are described as new. A fourth new species, *T. similis*, is described

on material from Finland. A key to the Palearctic species of *Trioscclis* is given. Some taxonomic problems in connection with the present material are discussed.

The Trioscclidae collected by the Danish-Finnish expedition in 1966 to Southern Spain (the provinces of Almería and Granada, see further Hackman (1969) and a collection of this family brought together by Mr. J. R. Vockeroth (Canada Department of Agriculture, Ottawa) in Granada in 1960 contained all together 7 species including three new to science. The Palearctic species of the family have not been revised since Czerny (1927) and for the identification of the present Spanish collections it was necessary to revise a number of species. During the revision of material in the collections of the Museum in Helsinki two further new species were found and as one of these (from Finland) is very closely related to one of the new Spanish species its description is included in this paper. The type material of *Trioscclis frontalis* Fallén was kindly lent for study by Mr. P. I. Persson from the Riksmuseum, Stockholm.

The following abbreviations of collector's names have been used below: L. L. - L. Lyneborg, L. L. et al. - L. Lyneborg, O. Martin and S. Langemark, J. V. - J. R. Vockeroth.

The species in the collections from Southern Spain are the following:

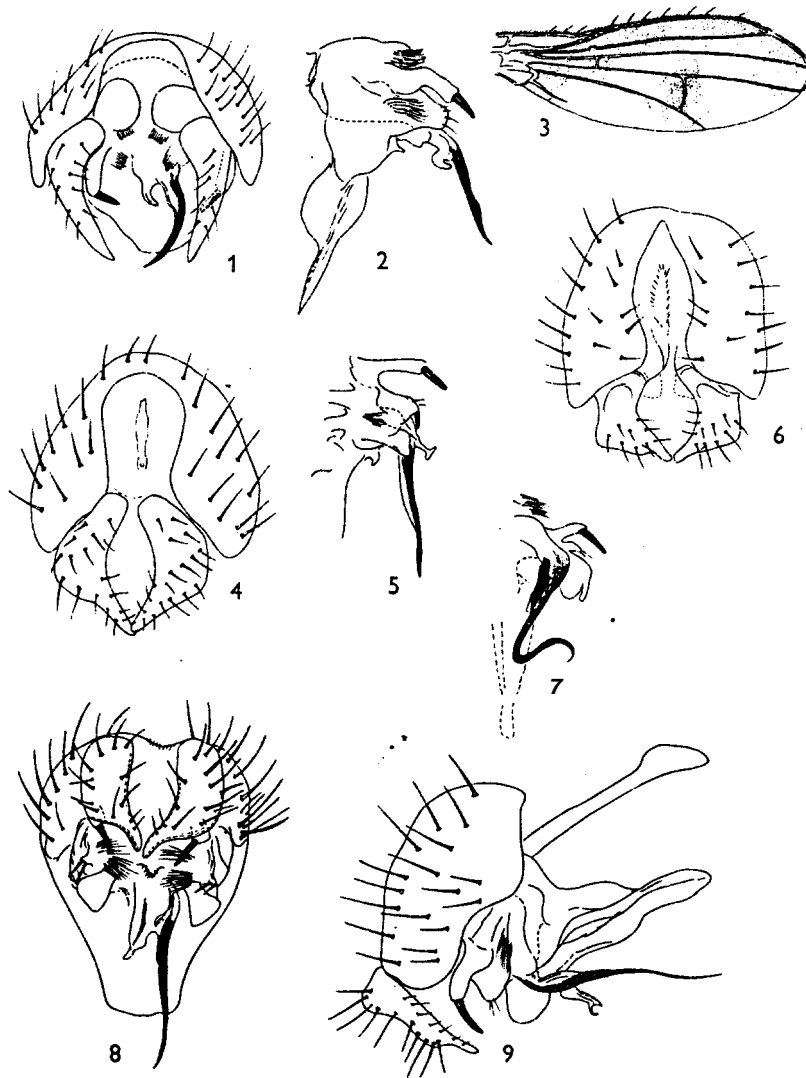
Trioscclis psammophila n.sp.

Figs. 1-3

Description. - ♂. Body length about 2 mm, wing length 2 mm. In general appearance sim-

ilar to *T. obscurella* Fallén but differing from this species in the male genitalia and some other characters. Frontal colour and chaetotaxy as in *obscurella*. Eyes oval, longest diameter almost horizontal. Genae broad as in *obscurella* (slightly more than half of the vertical diameter of the eye) and entirely white. Antennae as in *obscurella*. Thoracic chaetotaxy as in *obscurella*. Mesonotum greyish yellow, laterally pale grey. Scutellum brown, basal border pale grey. Pleura pale grey. Mesopleuron above with a much paler brown shade than in *obscurella*. Wings with pattern of dark confluent spots (fig. 3) more contrasting than in *obscurella* but not sharply outlined as in *laeta* Czerny. Halteres white. Legs greyish yellow, femora I and III with a grey dorsal shade in the apical third. Last joint of tarsi darkened (mainly by an optical effect caused by the pilosity). Abdomen above shiny black, the tergites without any lateral grey pollinosity. Male genitalia as in figs. 1-2. - ♀. Very similar to the male in size, colour and structure. Of the abdominal tergites only five are visible, the last segments being retracted (dried specimens). The dark shades on the femora are more contrasting than in the male.

Holotype: ♂, Spain; Almería: El Albufera near Adra, 14 April 1966 (W. H.), preserved in the collection of the Zoological Museum of the Helsinki University.



Figs. 1-3. *Trixoscelis psammophila* n.sp., fig. 1 male genitalia, caudal view, fig. 2 phallic organ and hypandrium, fig. 3 wing. Figs. 4-5. *T. obscurella* Fall. (Finland), fig. 4 epandrium and surstyli, caudal view, fig. 5 phallic organ. Figs. 6-7. *T. laeta* Becker (Morocco), fig. 6 epandrium and surstyli, fig. 7 phallic organ. Figs. 8-9. *T. approximata* Loew (Spain), male genitalia in caudal and lateral view.

Paratypes. - Almeria: Cabo de Gata, 1 ♀, 24 March 1966 (W.H.), 1 ♂ 1 ♀, 31 March 1966 (L. L.); El Albufera E of Adra, 5 ♂ 4 ♀, 29 March 1966 (L. L.), 4 ♂ 3 ♀, 14 April 1966 (W. H.). - Granada: Torrenueva E of Motril, 2 ♂ 1 ♀, 14 April 1966 (Martin & Langemark).

Remarks. - A characteristic species under

Sarothamnus tussocks on open sand in El Albufera.

Trixoscelis approximata (Loew, 1865) (Figs. 8-9)

Material. - Almeria: Cabo de Gata, 1 ♂, 26 March 1966 (L. L.). - Granada: Torrenue-

va E of Motril, 4 ♂ 2 ♀, 1 ♂ 1 ♀, 14 April; 1 ♂ 1 ♀, 18 April 1966 (L. L. et al.); Lanjaron, 600 m, 1 ♂, 26

1966 (J. Granada, 700 m, 4

Distribution. - Southern Africa and USSR: "Dauria Taken in Spain in Guadara Sierra Morena (H. Lindberg from Southern Spain by (1909).

Trixoscelis sanctiferdinandi (Figs. 10-11)

Material. - Almeria: P March; 1 ♂ 3 ♀, 9 March W.H.); Cabo de Gata, 1 ♂ 31 March 1966 (L. L.); Rio 1966 (W. H.).

Distribution. - Spain (1 Fernando near Cadiz).

Remarks. - The original name is *Geomyza S. Ferdinandi* Czerny & Strobl, 1909).

Trixoscelis frontalis (Fallén, (Figs. 16-17, 30, 35)

(? *canescens* Loew, 1865)

Material. - Almeria: P 9 March 1966 (L. L.); Rioj 1 ♂, 11 March; 2 ♀, 20 March and W. H.); Alhama del A 1 ♀, 21 March 1966 (L. L.) renueva E of Motril, 1 ♂ 12 April; 1 ♀, 14 April; 1 (L. L. et al.); Granada, 7c 14 July 1960 (J. V.).

Distribution. - Obviously in Europe but because of related species many records are uncertain. I have seen Sweden (Fallén's types), Finland (vorossisk, leg. A. Luther), and da Foz, leg. H. Lindberg) and Lindberg). *T. canescens* of from Yugoslavia belongs here

Remarks. - The male c

va E of Motril, 4 ♂ 2 ♀, 12 April; 2 ♂ 1 ♀, 14 April; 1 ♂ 1 ♀, 17 April 1966 (L. L. et al.); Rio Guadalfeo, Orgiva, 300 m, 1 ♀, 18 April 1966 (L. L. et al.); Rio Lanjaron near Lanjaron, 600 m, 1 ♂, 26 April 1966 (L. L. et al.); Granada, 700 m, 4 ♂ 3 ♀, 14 July 1960 (J. V.).

Distribution. - Southern Europe, North Africa and USSR: "Dauria" (leg. Sahlberg). Taken in Spain in Guadarama (R. Frey) and Sierra Morena (H. Lindberg) and reported from Southern Spain by Czerny & Strobl (1909).

Trixoscelis sanctiferdinandi (Czerny, 1909)
(Figs. 10-11)

Material. - Almería: Pechina, 4 ♀, 5 March; 1 ♂ 3 ♀, 9 March 1966 (L. L. and W. H.); Cabo de Gata, 1 ♂, 24 March; 2 ♀, 31 March 1966 (L. L.); Rioja, 1 ♀, 12 April 1966 (W. H.).

Distribution. - Spain (type locality San Fernando near Cadiz).

Remarks. - The original spelling of the name is *Geomyza S. Ferdinandii* (Czerny & Stiebl, 1909).

Trixoscelis frontaiis (Fallén, 1823)
(Figs. 16-17, 30, 35)

(? *canescens* Loew, 1865)

Material. - Almería: Pechina, 1 ♂ 1 ♀, 9 March 1966 (L. L.); Rioja, 1 ♂, 7 March; 1 ♂, 11 March; 2 ♀, 20 March 1966 (L. L. and W. H.); Alhama del Almería, 5 km W, 1 ♀, 21 March 1966 (L. L.). - Granada: Torrenueva E of Motril, 1 ♂, 10 April; 1 ♀, 12 April; 1 ♀, 14 April; 1 ♂, 17 April 1966 (L. L. et al.); Granada, 700 m, 2 ♂ 1 ♀, 14 July 1960 (J. V.).

Distribution. - Obviously widely distributed in Europe but because of confusion with related species many records in the literature are uncertain. I have seen specimens from Sweden (Fallén's types), Finland, USSR (Novorossisk, leg. A. Luther), Portugal (Figueira da Foz, leg. H. Lindberg) and Corse (leg. H. Lindberg). *T. canescens* of Bequaert (1960) from Yugoslavia belongs here.

Remarks. - The male of *T. frontalis* is

separated from those of other related species by the following characters: Fore tibia dark except at the base, fore basitarsus yellow, third basitarsus dark and moderately swollen (figs. 30, 35). Further there are the characters of the male genitalia (figs. 16-17). I have not seen the type of *canescens* Loew, but it is a female, and I have not been able to separate females of *frontalis* Fall. and *similis* n.sp. (probably *frontalis* Collin nec Fallén). It seems more likely that *canescens* is a synonym to the wide spread *frontalis*.

Collin (1943) separates two close species from England under the names *T. canescens* and *frontalis*. The former has darkened front tibia in the male and is obviously *frontalis* Fall. The later species with yellow front tibia in the male is probably *similis*. The presence or absence of brownish stripes on the mesonotum is at least in Finnish specimens not a reliable character for separation of these close species.

Trixoscelis lyneborgi n.sp.
(Figs. 18-19, 29, 34)

Description. - Very similar to *T. similis* n.sp. described below. - ♂. Body length 2.5 mm, wing length 2.3-2.7 mm. Orbitae and ocellar triangle pale grey, remaining median parts of frons yellow. Frontal chaetotaxy and general shape of head as in *frontaiis*. Genae narrow as in *frontalis*. Antennae as in *frontalis* but at least in the 5 males in the present material the third joint yellow only with a very faint trace of a dark spot on external surface. Mesonotum pale grey, entirely pollinose and at most with very faint trace of a brownish stripe pattern (of the type occurring in the female). In the colour of the fore leg (fig. 29) distinctly differing from *frontalis*: Coxa yellow, femur dark grey, tibia entirely greyish yellow, tarsus yellow, last joint slightly darkened. Third femur dark, tibia yellow, basitarsus very slightly swollen (fig. 34) and slightly darkened. Third tarsus yellow with apically darkened ultimate joint. Wings clear, not shaded along the costa. Cross-veins r_1 and m in usual position (as in *frontalis*). Abdominal tergites dull greyish pollinose, seen from above broadly brownish with pale grey lateral borders. Male genitalia distinctly different

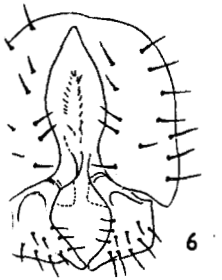
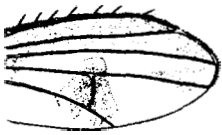
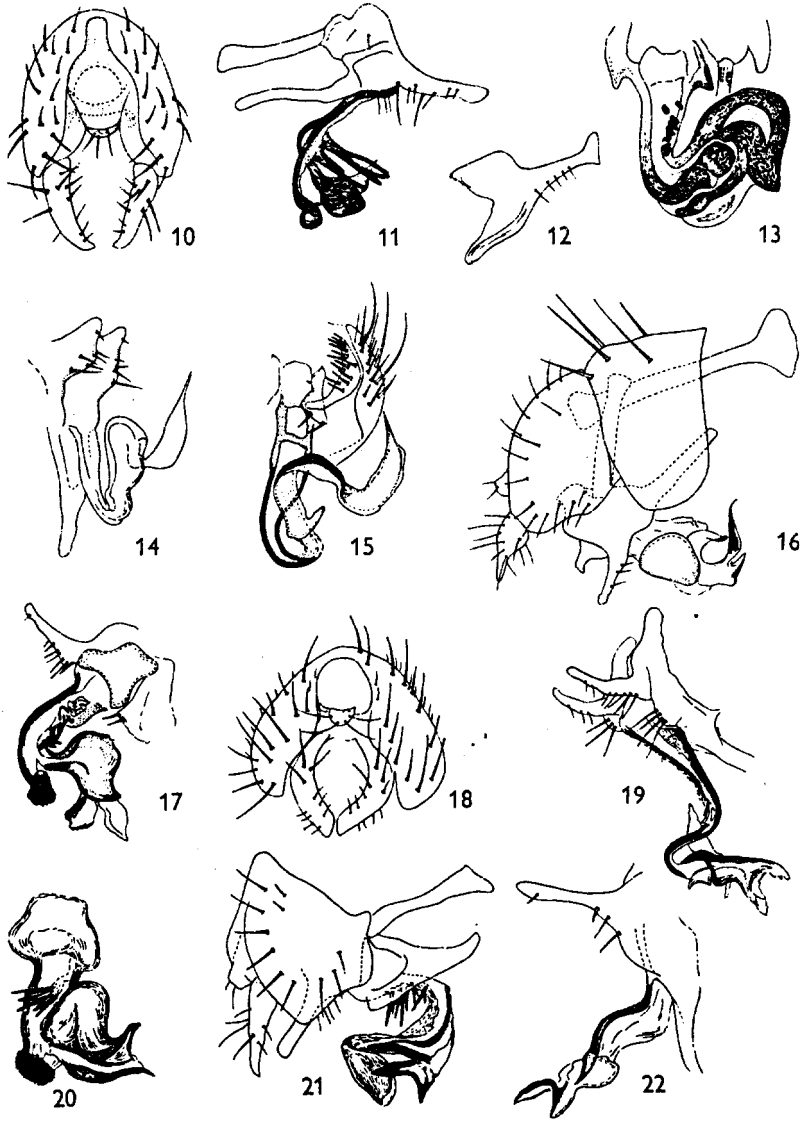


Fig. 2. *T. frontalis*, caudal view, fig. 2
Fig. 4. *T. frontalis* Fall. (Finland), fig. 4
Figs. 6-7. *T. laeta* Becker
Figs. 8-9. *T. approximata*

...socks on open sand in El

...roximata (Loew, 1865)

Almería: Cabo de Gata, 1 ♂,
; (L. L.). - Granada: Torrenue-



Figs. 10-11. *Trixoscelis sanctiferdinandi* Czerny, fig. 10 epandrium and surstyli, 'caudal view, fig. 11, phallic organ in profile. Figs. 12-13. *T. proxima* Séguy (Canary Is.), fig. 12 gonite, fig. 13 penis, ventro-caudal view. Figs. 14-15. *T. baliogastra* Czerny (Morocco), fig. 14 gonites and penis, fig. 15 penis, ventro-caudal view. Figs. 16-17 *T. frontalis* Fall. (Finland), fig. 16, male hypopygium in profile, fig. 17, penis in ventro-caudal view. Figs. 18-19. *T. lyneborgi* n.sp. (Spain), fig. 18 epandrium and surstyli, caudal view, fig. 19 gonites and penis. Figs. 20-21. *T. similis* n.sp., fig. 20, penis in ventro-caudal view, fig. 21, male genitalia in profile. Fig. 22. *T. sexlineata* Frey, gonite and penis.

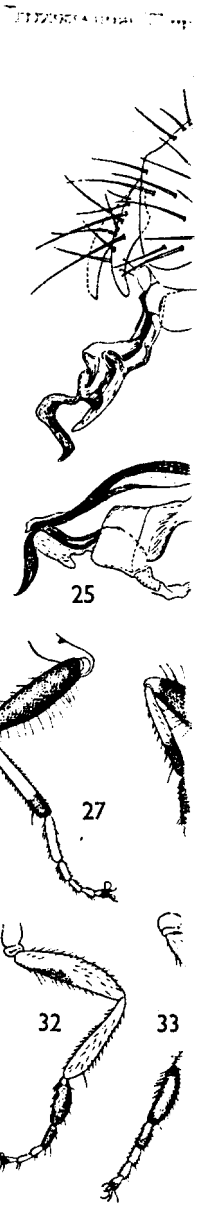


Fig. 23. *Trixoscelis mendizabali* Loew, phallic organ, pro' pedestris, fig. 24 *T. mendizabali*, penis, caudal v' pedestris, fig. 25 *T. mendizabali*, penis, caudal v' pedestris, fig. 26 *T. mendizabali*, penis, caudal v' pedestris, fig. 27 *T. mendizabali*, penis, caudal v' pedestris, fig. 28 *T. mendizabali*, penis, caudal v' pedestris, fig. 29 *T. mendizabali*, penis, caudal v' pedestris, fig. 30 *T. mendizabali*, penis, caudal v' pedestris, fig. 31 *T. mendizabali*, penis, caudal v' pedestris, fig. 32 *T. mendizabali*, penis, caudal v' pedestris, fig. 33 *T. mendizabali*, penis, caudal v' pedestris.

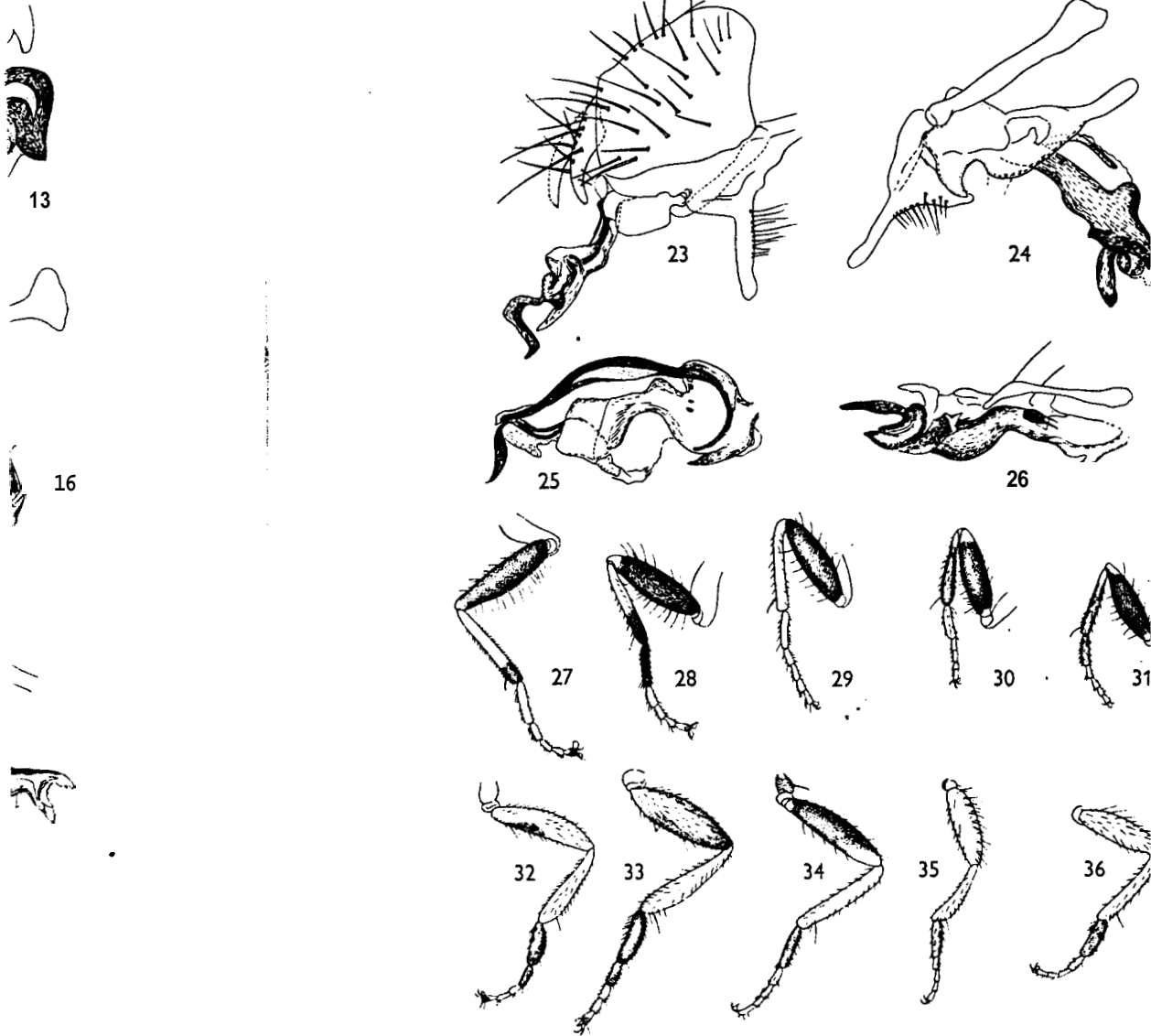


Fig. 23. *Trioxselis mendizabali* n.sp. (Spain), male genitalia, profile. Fig. 24. *T. pedestris* Loew, phallic organ, profile. Fig. 25. *T. mendizabali*, penis caudal view. Fig. 26. *T. pedestris*, penis, caudal view. Figs. 27-31. First leg in *Trioxselis* species, fig. 27 *T. pedestris*, fig. 28 *T. mendizabali*, fig. 29 *T. lyneborgi*, fig. 30 *T. frontalis*, fig. 31 *T. proxima*. Figs. 32-36. Third leg of male in *Trioxselis* species, fig. 32 *T. pedestris*, fig. 33 *T. mendizabali*, fig. 34 *T. lyneborgi*, fig. 35 *T. frontalis*, fig. 36 *T. proxima*.

styli, caudal
(Is.), fig. 12
(Morocio),
frontalis Fall.
caudal view.
caudal view,
ventro-caudal
and penis.

from those of the related species *similis* and *frontalis* (figs. 18-19). - ♀. Very similar to the females of *frontalis* and *similis*. Body length 2.7-2.9 mm, wing length 2.7-3.0 mm. The wing is slightly yellowish without shade along costa. Costa yellow seen from above (in *frontalis* dark). First tibia greyish yellow, rarely somewhat darkened. First femur and tarsus dark as in the related species. Second and third legs yellow, only third femur darkened. First to sixth abdominal tergite greyish pollinose, above brownish.

Holotype: ♂, Spain; Almería: Pechina, 9 March 1966 (L. L.), preserved in the Zoological Museum of the University, Copenhagen.

Paratypes. - Almería: Pechina, 1 ♂, 5 March 1969 (W. H.), 1 ♂ 1 ♀, data as the holotype; Rioja, 2 ♂ 2 ♀, 7 March; 1 ♂ 2 ♀, 9 March; 1 ♂ 11 March; 2 ♀, 12 March 1966 (L. L.). ^{Canary Is.}; Fuerteventura: Betencuria, 1 ♂, 11 March 1949 (H. Lindberg); Chilegua, 1 ♀, 4-14 March 1949 (H. Lindberg); Tenerife: Puerto de la Cruz, 1 ♀, 2-4 February 1949 (H. Lindberg).

Three female specimens from Madeira: Deserta Grande (1959, leg. H. Lindberg) are very similar to *T. lyneborgi* but may possibly belong to the Madeiran species *sexlineata* Frey.

Trixoscelis pedestris (Loew, 1865)

(Figs. 24, 27, 32)

Material. - Almería: Pechina, 10 ♂ 3 ♀, 5 March; 6 ♂, 9 March 1966 (L. L. and W. H.); Alcazaba, 2 ♂, 18 April; 1 ♀, 24 April 1966 (W. H.). Rioja, 4 ♂ 4 ♀, 7 March; 2 ♀, 9-11 March 1966 (L. L. and W. H.); 1 ♀, 12 April 1966 (W. H.); Alhama del Almería 5 km W, 2 ♂ 2 ♀, 17 March; 1 ♀, 21 March 1966 (L. L. and W. H.); Cabo de Gata, 3 ♂, 24 March 1966 (L. L.). - Granada: Torrenueva, 3 ♂ 1 ♀, 10 April 1966 (L. L. et al.).

Distribution. - Southern Europe, Asia Minor, Canary Islands, North Africa. *T. pedestris* is reported from Southern Spain by Czerny & Strobl (1909).

Remarks. - The females of this species are extremely difficult to separate from those of the following species and there are uncertain cases in the above material. The males of

pedestris can be recognized among others by the colour characters of the fore leg (see fig. 27 and the key given later in this paper).

Trixoscelis mendizabali n.sp.

(Figs. 23, 25, 28, 33)

This new species, closely related to *T. pedestris*, is named to the honour of Dr. Manuel Mendizabal, director of the Instituto de Aclimatación in Almería.

Description. - ♂. Body length about 3 mm, wing length 2.7-2.9 mm. Colour and chaetotaxy of the head as in *pedestris*. Width of genae about 1/4 of the vertical diameter of the eye. Antennae yellow. Mesonotum dull pale grey with indistinct brownish longitudinal stripes inside the dorsocentral row and along the intra-alar row. This pattern is usually very faint or absent in *pedestris*. Wings yellowish as in *pedesrris*: The posterior cross-vein (tp) is in *mendizabali* longer than the last portion of M₃₊₄. Femur I dark grey, tibia I dark in the apical third, basitarsus I darkened (fig. 28). Third leg (fig. 33) rather similar to that of *pedestris* (fig. 32). The ultimate tarsal joint (legs I-III) not so distinctly blackish at apex as in *pedesrris*. Male genitalia (figs. 23, 25) distinctly different from those of *pedestris* (fig. 24). - ♀. Very difficult to separate from *pedesrris*. Body length 3-3.3 mm, wing length 3.3-3.5 mm. Third antennal joint with a large dark spot on the external surface (usually also in *pedesrris*). Mesonotum grey with comparatively distinct brownish stripe pattern. Posterior cross-vein slightly longer than the last portion of M₃₊₄ [probably a reliable character for separating females of *mendizabali* from those of *pedesrris*]. At least the apical third of fore tibia blackish, first femur and tarsus black as in the related species. Third femur somewhat darkened at apex, remaining parts of the leg yellow. Abdomen as in *pedestris*.

Holotype. ♂, Spain; Almería: Pechina, 5 March 1966 (W. H.), in the collection of the Zoological Museum of the Helsinki University.

Paratypes. - Almería: Pechina, 2 ♀, same data as the holotype; 2 ♀, 9 March 1966 (L. L.); Rioja, 1 ♀, 11 March; 4 ♂, 25 March 1966 (L. L.). - Morocco: Ait Melloul near Oued Sous, 1 ♂ 3 ♀, 27 February-2 March 1961 (H. Lindberg).

Key to the Palearctic
There are several authors and therefore a compilation based on Bequaert 196

1. Mesonotum blackish *yugoslavensis* Bec
- Mesonotum pale ochreous yellow
2. Wings with pattern of posterior cross-vein
- Wings clear or a brownish brown
3. Mesonotum with stripes
- Mesonotum with stripes *bilineata*
4. Mesonotum with stripes *bilineata*
- Mesonotum with median stripe and with a short dark spot on each side along
5. Wings dark brown with only three clear spots beyond the midline
- Wings not as above
6. Clear areas of the wings sharply by the spots. Mesonotum
- Clear areas of the wings almost clear on the cross-veins
7. Wings broadly clear extensively along to great extent dark brown
- Wings narrow and with a black spot
8. Abdominal tergites dark. Male genitalia
- Abdominal tergites

Key to the Palearctic species of *Trioxsclis*.

There are several species not seen by the author and therefore the key below is partly a compilation based on literature (Czerny 1927, Bequaert 1960).

ed among others by the fore leg (see fig. 4 in this paper).

sp.

ly related to *T. pedestris*. Colour and chaetometry of Dr. Manuel de Instituto de Acli-

length about 3 mm. Colour and chaetometry of *T. pedestris*. Width of vertical diameter of w. Mesonotum dull brownish longitudinal central row and along pattern is usually very vis. Wings yellowish anterior cross-vein (tp) than the last portion grey, tibia 1 dark iridescent I darkened (fig. 4) rather similar to that of *T. pedestris*. The ultimate tarsal segment distinctly blackish at the genitalia (figs. 23, 24) from those of *T. pedestris*. Third antennal joint dark on the external surface (fig. 5). Mesonotum grey with a narrow brownish stripe; anterior cross-vein slightly longer than the last portion of M_{3+4} (probably a separating females of *T. pedestris*). At the fore tibia blackish, as in the related species somewhat darkened at the leg yellow. Ab-

Almería: Pechina, 5 March; the collectinn of the Helsinki University. Pechina, 2 ♀, same date, 9 March 1966 (L. M. Ch; 4 ♂, 25 March 1966); Ait Melloul near Agadir, 7 February-2 March

1. Mesonotum black, slightly greyish pruinose .. *yugoslavensis* Bequaert (not seen, Macedonia)
 - Mesonotum pale grey, pale brownish or ochreous yellow 2
2. Wings with pattern of dark spots or at least posterior cross-vein bordered with brown .. 3
 - Wings clear or at most shadowed along costa. Posterior cross-vein never bordered with brown 9
3. Mesonotum with one more dark longitudinal stripes 4
 - Mesonotum without stripe pattern 5
4. Mesonotum reddish grey with two blackish stripes .. *bilineata* Macquart (not seen, France)
 - Mesonotum pale grey with a dark brown median stripe broadening on the scutellum and with a short stripe in the presutural area each side along the intra-alars *puncticornis* Becker (North Africa and Canary Is.)
5. Wings dark brown by confluent spots and with only three larger clear areas: one long clear spot reaching from the base of the wing beyond the middle and situated like the two other (subapical) clear spots between R_{4+5} and M_{1+4} *marginella* Fallén (Europe)
 - Wings not as above 6
6. Clear areas of the wing separated more or less sharply by the brown pattern as four large spots. Mesonotum ochreous *laeta* Becker (North Africa)
 - Clear areas of the wing confluent, brown cloud pattern not sharply outlined, or wings almost clear only with brown border along the cross-veins 7
7. Wings broadly clouded at the cross-veins and extensively along costa. Abdominal tergites to great extent or entirely shiny black or dark brown 8
 - Wings narrower clouded at the cross-veins and with a brownish shade along costa. Abdominal tergites dull above. Male genitalia as in figs. 8-9 *approximata* Loew
8. Abdominal tergites shiny black. Scutellum dark. Male genitalia as in figs. 1-2 *psammophila* n.sp.
 - Abdominal tergites 1-5 shiny brown with

- pollinose lateral borders. The sixth tergite with a pale grey pollinose median spot. Scutellum unicolorous, pale. Male genitalia as in figs. 4-5 *obscura* Fallén (Europe)
- 9. Abdomen above shiny blackish brown 10
 - Abdomen not shiny above, dull grey with or without brownish pattern 11
- 10. Mesonotum ochreous without longitudinal stripes *gentilis* Frey (Canary Is.)
 - Mesonotum pale grey with more or less distinct brown stripes along the dorsocentrals (inside of the rows) and along the intra-alars. Male genitalia as in figs. 10-11 *sanctiferdinandi* Czerny
- 11. Wing veins brown 12
 - Veins pale yellowish, at most costa brownish
- 12. Abdominal tergites grey with large spots. Male genitalia as in figs. 14-15 lateral spots of male genitalia and North Africa) *baliogaster* Czerny (Spain above)
 - Abdominal tergites not as above. Male genitalia as in figs. 13-14 *proxima* Séguin (Azores, C. of Mexico between the cross-Canary Is.)
- 13. Portion of M_{1+2} longer than the cross-veins short, not double as the last portion of M_{3+4} 14
 - Portion of M_{1+2} between the cross-veins at least double as long as the last portion of M_{3+4} 15
- 14. Genae broad, about half of the vertical diameter of the eye. Third antennal joint dark *oedipus* Becker (not seen, Tibet)
 - Genae narrow. Third antennal joint yellow, at most with a brown spot at the base of arista undescribed sp. from Iran.
- 15. Males 16
 - Females 22
- 16. First tibia almost entirely dark grey. Costal cell slightly shadowed. Costa dark seen from above (optical effect). Male genitalia as in figs. 16-17 *frontalis* Fallén
 - First tibia dusky yellow, at most dark in the apical third. Costa usually yellow seen from above 17
- 17. First tibia entirely dusky yellow 18
 - Apical third or fourth of first tibia dark .., 20
- 18. Third basitarsus and the following joint brown. Male genitalia as in fig. 22 *sexlineata* Frey (Madeira)
 - Third basitarsus at most very slightly darker than third tibia. The second tarsal joint of third leg not darker than the following joints 19

19. Male genitalia as in figs. 18-19 *lyneborgi* n.sp.
 - Male genitalia as in figs. 20-21 .. *similis* n.sp.
20. Basitarsus of first leg dusky yellow. End joints of all tarsi blackish in the apical half. Genitalia as in figs. 24-26 *pedestris* Loew
 - Basitarsus of first leg dark 21
21. First tarsus entirely dark *coei* Bequaert (not seen, Yugoslavia)
 - Second and following joints of first tarsus dusky yellow, only basitarsus and the apical half of the end joint darkened. Male genitalia as in figs. 23, 25 *mendizabali* n.sp.
22. Costa dark seen from above. Costal cell slightly shaded. First leg except of coxa entirely blackish grey *frontulis* Fallén and *similis* n.sp.
 - Costa not dark and costal cell not shaded. First tibia entirely dusky yellow or dark in the apical half 23
23. First tibia entirely dusky yellow *lyneborgi* n.sp.
 - First tibia dark in the apical half 24
24. Posterior cross-vein slightly longer than the last portion of M_{3+4} *mendizabali* n.sp.
 - Posterior cross-vein shorter than the last portion of M_{3+4} 25
25. End joints of second and third tarsi blackish in the apical half *pedestris* Loew
 - End joints of tarsi not as above *coci* Bequaert

head as in *fronrulis* and the above mentioned related species. Mesonotum pale grey with faint brownish stripe pattern (of same type as in *frontalis*), sometimes the stripes are absent. Wing veins yellow, costa in some specimens dark seen from above. End portion of M_{3+4} longer than the posterior cross-vein. First tibia entirely dusky yellow brown seen from above. Second and third legs (except coxae) yellow. Abdominal tergites grey or sometimes medially brownish. Male genitalia (figs. 20-21) distinctly different from those of *lyneborgi* and *sexlineata*. - ♀. The females associated with the males described above are so similar to those of *frontalis* that I have not been able to find any certain character for separation.

Holotype: ♂, Finland; Ob: Hailuoto (R. Frey).

Paratypes from Finland; Al: Jomala, 1 ♂ (R. Frey); Sund, 1 ♂ (R. Frey); Finstrom, 2 ♂ (R. Frey); N: Masaby, 8 ♂, 21 July 1956 (W. H.); Om: Nykarleby, 1 ♂ (R. Frey).

The females probably belonging to this species are taken in N: Masaby, 1 ♀ (W. H.), Om: Jakobstad, 1 ♀ (R. Frey) and Ob: Hailuoto, 4 ♀ (R. Frey). *T. frontalis* is (based on the captures of males) not known from the provinces Om and Ob and all certain records are from Southern Finland.

The rather dubious species *puberula* Zetterstedt included by Czerny (1927) in *Trixoscelis* has been omitted from the key. *T. sabulicola* Frey (1958) described from Fuerteventura (Canary Is.) is most probably *puncticornis* Becker. A species from the Canary Is. has been interpreted here as *proxima* Séguy described from the Azores but I have not seen the type material. The new species *similis* mentioned repeatedly in this paper is described below:

Trixoscelis similis n.sp.
(Figs. 20-21)

♂. Very similar to *lyneborgi* n.sp. and *sexlineata* Frey. Body length 2.0-2.3 mm, wing length 2.2-2.3 mm. Colour and chaetotaxy of

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