

# The identity of *Sciapus contristans* (WIEDEMANN, 1817) (Diptera : Dolichopodidae), and a revision of the species group of its relatives

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## Abstract

A historical review is given of the use of the name *Sciapus contristans* (WIEDEMANN, 1817) and a group of the nearest relatives in western Europe of this species is revised. *Sciapus basilicus* n.sp. is described from western Europe. The following new synonymy is established: *Sciapus maritimus* BECKER, 1918 (= *Psilopus contristans* WIEDEMANN, sensu ZETTERSTEDT, 1855 syn. nov.; = *Sciapus flavomaculatus* RINGDAHL, 1949); *Sciapus zonatulus* (ZETTERSTEDT, 1843) (= *Leptopus contristans* WIEDEMANN, sensu FALLÉN, 1823 syn. nov.; = *Sciopus maritimus* BECKER, sensu COLLIN, 1940 syn. nov.); *Sciapus contristans* (WIEDEMANN, 1817) (= *Psilopus flexus* LOEW, 1869, nec LOEW, 1858 syn. nov.; = *Psilopus vialis* RADDATZ, 1873 syn. nov.; = *Psilopus loewi* BECKER, 1902). A key is provided for all species of *Sciapus* hitherto found in Belgium and the Netherlands. The female terminalia are illustrated.

**Key-words:** Taxonomy, revision *Sciapus*, Diptera Dolichopodidae.

## Résumé

L'historique de l'emploi du nom *Sciapus contristans* (WIEDEMANN, 1817) est revue et les espèces européennes les plus proches à *S. contristans* sont redécrites. La nouvelle espèce, *S. basilicus* est décrite d'Europe d'ouest. Les nouvelles synonymies suivantes ont été établies: *Sciapus maritimus* BECKER, 1918 (= *Psilopus contristans* WIEDEMANN, sensu ZETTERSTEDT, 1855 syn. nov.; = *Sciapus flavomaculatus* RINGDAHL, 1949); *Sciapus zonatulus* (ZETTERSTEDT, 1843) (= *Leptopus contristans* WIEDEMANN, sensu FALLÉN, 1823 syn. nov.; = *Sciopus maritimus* BECKER, sensu COLLIN, 1940 syn. nov.); *Sciapus contristans* (WIEDEMANN, 1817) (= *Psilopus flexus* LOEW, 1869, nec LOEW, 1858 syn. nov.; = *Psilopus vialis* RADDATZ, 1873 syn. nov.; = *Psilopus loewi* BECKER, 1902). Une clef dichotomique est donnée pour les espèces connues actuellement de Belgique et des Pays-bas. Les oviscaptes des femelles sont illustrés.

**Mots-clefs:** Taxonomie, révision *Sciapus*, Diptères Dolichopodidae.

## 1. Introduction

Among the species of the genus *Sciapus* ZELLER, 1842 in Western Europe there exists a small group related to *S. contristans* (WIEDEMANN, 1817) causing serious problems with regard to identification and nomenclature. The main problem is the identity of *Dolichopus contristans* as described by WIEDEMANN. During the last years, we made a thorough study of the Western European *Sciapus* species and we found four species answering to the description of *Dolichopus contristans* WIEDEMANN, 1817 sensu FALLÉN, 1823.

In the next chapter a diagnosis of these four species is provided. In the following chapter a historical review is given of the hitherto described species within this group and all extant names are commented upon. Types of species have been studied so far as possible. Finally a revised nomenclature is proposed and names are selected for these four species. A new species, *S. basilicus*, is described and the extant species, *S. contristans* (WIEDEMANN), *S. zonatulus* (ZETTERSTEDT, 1843) and *S. maritimus* BECKER, 1918 are redescribed. Notes on bionomics of the involved species and on their distribution are given and a key is provided for all species of *Sciapus* hitherto found in Belgium and the Netherlands.

## 2. Distinction of four species

Four species were found among Western European material answering to the description of *Sciapus contristans* (WIEDEMANN, 1817), sensu FALLÉN, 1823.

### *Species I*

- ♂ : Tibia II usually with 3 ad, 3 pd and some ventral bristles (seldom only 2 ad or 2 pd).  
Uppermost postocular cilia white.  
Hind margin of wing irregularly curved.  
First joint of tarsus I with 2 small pv (seldom 1 pv).  
Fifth joint of tarsus I not or only very slightly broadened.  
Length ratio of tibia I and first tarsal joint 4:3 or 4:<3.  
Femur I ventrally with short hairs.  
First joint of tarsus III about as long as second joint.
- ♀ : Metaepimera yellow.  
Uppermost postocular cilia white.

### *Species II*

- ♂ : Tibia II with only 1 ad near base.  
Uppermost postocular cilia black.  
Hind margin of wing slightly irregularly curved.  
First joint of tarsus I with 2, sometimes 1 pv.  
Fifth joint of tarsus I not or only very slightly broadened.

Length ratio of tibia I and first tarsal joint 4:3 or 4:<3.  
Femur I ventrally with short hairs.  
First joint of tarsus III about as long as second joint.  
Telomeres of hypopygium not very broad.

♀ : *Metaepimera* dark.

Uppermost postocular cilia black.  
Metatarsus of front leg ventrally with some of the short hairs somewhat lengthened, giving the impression of small spinules.  
Middle and hind tibiae bearing several short bristles.

### *Species III*

♂ : Tibia II with only 1 ad near base.

Uppermost postocular cilia black.  
Hind margin of wing evenly curved.  
First joint of tarsus I without pv.  
Fifth joint of tarsus I not or very slightly broadened.  
Length ratio of tibia I and first tarsal joint 4:3.5-3.9.  
Femur I ventrally with short hairs.  
First joint of tarsus III about as long as second joint.  
Telomeres of hypopygium very broad and flattened.

♀ : *Metaepimera* dark.

Uppermost postocular cilia black.  
Metatarsus of front leg ventrally with all hairs equally long, without small spinules between them.  
Middle and hind tibiae very poorly bristled, generally only one ad near base developed.

### *Species IV*

♂ : Tibia II with only 1 ad near base.

Uppermost postocular cilia black.  
Hind margin of wing irregularly curved.  
First joint of tarsus I without pv.  
Fifth joint of tarsus I distinctly broadened, black.  
Length ratio of tibia I and first tarsal joint 4:3.6-4.1.  
Femur I ventrally on basal half with a row of rigid setae.  
First joint of tarsus III distinctly longer than second joint.

♀ : *Metaepimera* yellow.

Uppermost postocular cilia black.  
Genitalia with very slender, tapering, rather long dornen.

## 3. Historical review

WIEDEMANN (1817 : 72) described his *Dolichopus contristans* as follows : "19. DOLICHOPUS CONTRISTANS mihi. Aurarius, abdomine aeneo-fasciato, antennis pallidis apice nigris; pedibus pallide stramineis. Longit. lin. 2 1/3 ♂ - 2 2/3 ♀.

Die Hauptfarbe ist ein mit wenig grün gemengtes metallisches gelb; zwischen zwei deutlichen Punctreihen der Borstenwurzeln am Rückenschilde etwas mehr röthlich, an den Brustseiten sehr lichtschiefergrau, an den Rändern der Hinterleibsringe erzbraun. Untergesicht silberweiss, Stirn

bei ♂ ebenso, bei ♀ speisgelb. Der erste Hinterleibsring des ♂ durch eine Längsfurche gleichsam in zwei Wülste getheilt. Flügel ungefärbt glasartig; der dritte Schwungnerv gegen die Flügelspitze hin unter einem fast rechten Winkel plötzlich abweichend, und dann bogig gegen den ersten hinlaufend, mit dem er sich an der Spitze fast vereinigt. Schwingkolben gelblichweiß. Beine blass-strohgelb mit schwärzlichen Fusswurzeln. Obere Fläche des Körpers schwärzlich; untere weißlich behaart. In Holstein, im Julius auf Beitsbohnen und Johannisbeerstauden."

Since this description much confusion has arisen about the identity of this species. Two points especially contributed to this confusion : firstly the fact that WIEDEMANN says nothing about the shape or the bristling of the legs, secondly his description of the colour as metallic yellow, mixed with a little green.

FALLÉN (1823 : 24) was the first author after WIEDEMANN to mention the species (as *Leptopus contristans*). His description is very concised : 5. *L. contristans* pallide virescens, incisuris fuscis, pedibus in utroque sexu simplicibus, tarsis obscuris.

*Dolichopus contristans* WIEDEM. Zool. Arch. I.1.72.19. Mas & Fem. Habitat in Scania, praecedente (i.e. *Leptopus wiedemanni* FALLÉN) paullo minor & similiter coloratus. Incisurae tamen in utroque sexu saepius fuscae, & pedes pallidi, spinulosi. Nervi alarum ut in praecedente directi. Ob tarsos anticos maris simplices species a praecedente distincta ?"

FALLÉN clearly lays stress on the simple front tarsi of the male to distinguish *contristans* from his *wiedemanni*, a species with bilobed fourth joint of front tarsus. The questionmark put after his last sentence seems to prove that he knew only WIEDEMANN'S description, and that he had no specimens received from WIEDEMANN. Nevertheless most subsequent authors have followed FALLÉN in their identification of the species.

MEIGEN (1824 : 37) describes as *Psilopus contristans* WIED. quite another species. The ♂ of this species has abdomen reddish yellow with a greenish shine ("rothgelb mit grünlichem Glanze") and its front tarsus is described as follows : "das vierte Glied an der Spitze kohlschwarz, nach außen mit einem Lappen; fünftes Glied ebenfalls schwarz". The ♀ is "mehr graugrün". About the distribution of the species MEIGEN says : "Hier sehr selten; auch von Prof. WIEDEMANN mitgetheilt."

Evidently MEIGEN was lead by WIEDEMANN'S description of the colour (metallic yellow). Perhaps the specimen or specimens he received from WIEDEMANN (as he states) belonged to the female sex. In any case it is not clear which species is meant by MEIGEN. In BEZZI (1903 : 289) (following LOEW, 1857 : 2) MEIGEN'S *contristans* is mentioned as a synonym of *Psilopus albifrons* MEIGEN, 1830, a species that by its yellow abdomen and by the shape of its front tarsi seems to agree with MEIGEN'S description. PARENT (1925 : 43) however found in MEIGEN'S collection at Paris under the name *contristans* a male and a female

of *Sciapus wiedemanni* (FALLÉN, 1823), a species with a greyish-green abdomen. Certainly MEIGEN possessed more specimens; it is strange however that MEIGEN on the one side seems to allude to *albifrons*, as he calls *contristans* "sehr selten", on the other side afterwards describes his *albifrons* as a new species (MEIGEN, 1830 : 360) without reference to the description of *contristans*.

MACQUART (1827 : 27) refers to MEIGEN. He also describes a species with a bilobed fourth joint of front tarsus, but the abdomen is feebly shining metallic green ("abdomen d'un vert métallique peu luisant"). Doubtless this is the same as *wiedemanni* FALLÉN. He found the species in France, but afterwards (1834 : 449) he seems to be uncertain about the identity of this species, because then he has his doubts about the occurrence of it in France ("De France ? et d'Allemagne").

ZETTERSTEDT follows FALLÉN in describing (1843 : 627; 1849 : 3106; 1855 : 4643; 1859 : 5071) a species with simple front tarsi and a greenish grey colouring ("color corporis cano-grisescens, opacus"). He has seen FALLÉN's specimens ("*Leptopus* FALL. Dolich. 24.3 secundum specimina pleraque in collectione"). Certainly ZETTERSTEDT's material included also specimens of *Sciapus maritimus* BECKER, 1918, because he states (1855 : 4643) that the postocular cilia are all white.

LOEW (1857 : 5) states that *contristans* is too common to need copious notes. The male has simple front tarsi and so his *contristans* is the same as FALLÉN's. The same conception we find in SCHINER (1862 : 181), VERRALL (1904 : 169-170) and LUNDBECK (1912 : 35).

BECKER (1918 : 179) presents a new problem. His *contristans* is certainly that of FALLÉN, but his figure of the hypopygium shows abruptly bent "horns of organ X", a feature not found in specimens currently known as *contristans* (sensu FALLÉN). PARENT (1938 : 684) also failed to find specimens answering to BECKER's figure and proposes even a new name for such species : *Sciopus cornuflexus* PARENT, 1938. PARENT's *contristans* is described as bearing a row of pale stiff ventral setae on femur I, whereas SCHINER (1842), LUNDBECK (1912) and BECKER (1918) make mention only of short hairs ventrally on femur I. D'ASSIS FONSECA (1978 : 83) even distinguishes *contristans* from *maritimus* BECKER by the long erect yellow ventral bristles on femur I! COLLIN (1940 : 261-262) believes that PARENT's *contristans* is the same as *maritimus* BECKER, but this seems impossible, because this species does not have erect setae ventrally on femur I.

So we have the following interpretations of WIEDEMANN's *contristans* :

1) A species with simple front tarsi (FALLÉN, 1823; ZETTERSTEDT, 1843, 1849, 1859; LOEW, 1857). No rigid ventral setae on femur I (SCHINER, 1842; LUNDBECK, 1912).

2) A species with simple front tarsi and without rigid ventral setae on femur I of ♂. Hypopygium with abruptly bent "horns of organ X" (BECKER, 1918) (*Sciopus cornuflexus* PARENT, 1938).

3) A species with simple front tarsi, bearing rigid ventral setae on femur I of ♂. Hypopygium with straight or nearly straight "horns of organ X" (PARENT, 1938; D'ASSIS FONSECA, 1978).

4) A species with upper postocular cilia all pale, with simple front tarsi (ZETTERSTEDT, 1855) (= *S. maritimus* BECKER, 1918). Cf. COLLIN, 1940.

5) A species with bilobed fourth joint of front tarsus and yellow abdomen (?MEIGEN, 1824; ZELLER, 1842) (= *S. albifrons* MEIGEN, 1830).

6) A species with bilobed fourth joint of front tarsus and greenish abdomen (?MEIGEN, 1824; MACQUART, 1827, 1834) (= *S. wiedemanni* FALLÉN, 1823).

Assuming that WIEDEMANN certainly would have mentioned a bilobed fourth joint of tarsus I, if present, we can leave the interpretations of MEIGEN and MACQUART out of consideration, in spite of the fact that MEIGEN states that he had specimens received from WIEDEMANN in his collection. Following FALLÉN we suppose that WIEDEMANN's species has simple front tarsi in ♂.

For this species the following names come into consideration :

*Dolichopus contristans* WIEDEMANN, 1817.

See the discussion below.

*Psilopus regalis* MEIGEN, 1824 : 35-36.

Considered as a synonym of *contristans* WIEDEMANN (sensu FALLÉN) by ZETTERSTEDT (1843 : 627). Described after a female specimen received from MEGERLE VON MÜHLFELD, originating from Austria. The type specimen seems to be lost. A ♂ in the collection of VON WINTHEM in the Vienna Museum (with two labels : 1. *regalis*, Coll. WINTHEM; 2. *regalis*) proved to belong to our "species III". PARENT (1925) does not mention *regalis* as extant in MEIGEN's collection at Paris.

*Psilopus zonatulus* ZETTERSTEDT, 1843 : 628.

A probable synonym of *contristans* WIEDEMANN, according to LUNDBECK (1912 : 36). Described after two females from Lund in Sweden.

We have studied both specimens and they proved to belong to our "species II".

*Psilopus flexus* LOEW, 1869 : 55.

Preoccupied by LOEW, 1858. Renamed by BECKER (1902 : 62) as *Psilopus loewi*. Considered as a synonym of *contristans* WIEDEMANN by STROBL (1910 : 87) and BECKER (1918 : 150, 179). Described after a ♂ specimen from Augsburg (Germany) by LOEW. Judging from the description it is the same as our "species IV" (see note under *Psilopus vialis* RADDATZ).

*Psilopus vialis* RADDATZ, 1873 : 331-333.

Described after two males and one female from Mecklenburg (Germany). Doubtless this is the same as our

“species IV”. According to COLLIN (1940 : 261), who *Psilopus loewi* BECKER considers as a valid species and not as a synonym of *contristans* WIEDEMANN, *loewi* differs from *vialis* RADDATZ in having basal joints of front tarsi shorter than the tibia. This however proves to be a very unreliable character; we have seen one specimen that on one side had the tibia slightly longer, on the other side slightly shorter than basal joint of front tarsi ! So we consider *Psilopus loewi* BECKER (= *Psilopus flexus* LOEW) as a synonym of *Psilopus vialis* RADDATZ.

*Psilopus loewi* BECKER, 1902 : 62.

See the notes under *Psilopus flexus* LOEW and *Psilopus vialis* RADDATZ. The name is considered as “überflüssig” by STROBL (1910).

*Sciopus maritimus* BECKER, 1918 : 186.

According to COLLIN (1940 : 261-262) the same as *Sciopus contristans* (WIEDEMANN) sensu PARENT, 1938; wrongly as stated above. It is a valid species and agrees with our “species I”. Dr. O. NEGROBOV kindly forwarded us a drawing of the hypopygium of the ♂, taken from a type specimen; this drawing agrees fully with the hypopygium of our “species I”. BECKER described the species from the island of Sylt (German North Sea), South France and Poland. We have seen specimens of this species from Belgium and the Netherlands, always from near sea, so that the name is well chosen.

*Sciopus cornuflexus* PARENT, 1938 : 684.

See the notes above. No specimens of this “species” have been ever found again.

*Sciapus flavomaculatus* RINGDAHL, 1949 : 162.

Described after two males from the island of Fårön north of Gotland (Sweden). We have seen the type specimens; they belong to our “species I”.

#### 4. Revision of the *contristans* species group

Now, what is “*contristans*”? There is a long tradition, going back to FALLÉN, giving the name to a species with simple front legs and a greyish green colour, without rigid setae beneath its front femur. PARENT made a mistake in stating that such setae were present in *contristans*. We have seen specimens in his collection (in Paris), labeled as *contristans*, but bearing a later label with the name *vialis* RADD.; these specimens belong clearly to our “species IV”. D’ASSIS FONSECA seems to make a similar mistake. This “traditional” *contristans* answers to both “species II” and “species III”.

WIEDEMANN described his species after both males and females, but, as far as we can trace, only one female specimen is left of the type series in the Vienna Museum. It bears three labels :

1. *contristans* coll. WIEDEM.;
2. D. *contristans* m. Kiel;
3. (a dark red label) Type.

This specimen — to be considered as a lectotype — is in

good condition and proved (to our surprise) to be a female of our “species IV”, the same species as described by LOEW in 1869 as *flexus* and by RADDATZ in 1873 as *vialis*. This species has simple front legs (fifth joint of tarsus slightly broadened, a character easily overlooked) and is covered by a thick brownish grey dusting, with yellowish side spots on tergites 2 and 3 (sometimes also on 4) of male abdomen. Femur I of ♂ bears a row of rigid ventral setae. The ♀ of “species IV” looks very like the ♀♀ of related species (*wiedemanni* FALLÉN, *lobipes* MEIGEN, *contristans* WIEDEMANN sensu FALLÉN, *maritimus* BECKER). It is nearly impossible to distinguish between the ♀♀ within this group by means of the extant determination tables of BECKER (1918), PARENT (1938), NEGROBOV & STACKELBERG (1969), D’ASSIS FONSECA (1978) and RALD (1978). It appeared that good characters are provided by the shape of the oviscapts. Wing venation, relative length of tibia and tarsal joints of front leg, and colour features are rather variable and should be used with caution.

For our “species II and III” (both hitherto hiding under the name *Sciapus contristans* (WIEDEMANN) (sensu FALLÉN) two names are available : *Psilopus regalis* MEIGEN, 1824, and *Psilopus zonatulus* ZETTERSTEDT, 1843. As stated above, the last-named species is the same as our “species II”, whereas it is not clear whether species was meant by MEIGEN (the ♂ specimen in VON WINTHEM’s collection cannot be a type, because MEIGEN described his *regalis* from a ♀ specimen !). Since ZETTERSTEDT *regalis* MEIGEN has been considered to be synonymous with *contristans* WIEDEMANN sensu FALLÉN. As “species II” is much commoner than “species III”, it seems very probable that the ♀ after which MEIGEN described his species, belonged to this species. Because *regalis* MEIGEN remains doubtful, until perhaps the type specimen is found, we prefer to name our “species II” *zonatulus* ZETTERSTEDT. So three out of our four species are named :

“Species I” : *Sciapus maritimus* BECKER, 1918 (*Sciopus*).

Synonyms : *contristans* WIEDEMANN, sensu ZETTERSTEDT, 1855 (*Psilopus*) (syn. nov.).

*flavomaculatus* RINGDAHL, 1949 (*Sciapus*) (syn. nov.).

“Species II” : *Sciapus zonatulus* (ZETTERSTEDT, 1843) (*Psilopus*).

Synonyms : *contristans* WIEDEMANN, sensu FALLÉN, 1823 (*Leptopus*) (syn. nov.).

?*regalis* MEIGEN, 1824 (*Psilopus*).

?*cornuflexus* PARENT, 1938 (*Sciopus*).

*maritimus* BECKER, sensu COLLIN, 1940 (*Sciopus*) (syn. nov.).

“Species IV” : *Sciapus contristans* (WIEDEMANN, 1817) (*Dolichopus*).

Synonyms : *flexus* LOEW, 1869 (*Psilopus*) (nec LOEW, 1858) (syn. nov.).

*vialis* RADDATZ, 1873 (*Psilopus*) (syn. nov.).

*loewi* BECKER, 1902 (*Psilopus*) (nom. nov. for *flexus* LOEW, 1869, nec 1858).

Our “species III” appears not to have been distinguished. It is described below as *Sciapus basilicus* n.sp. (“basilikos” is the Greek for Latin “regalis”).

## 5. Descriptions of species

Note. A. The "formula" used in describing the head of a species gives the ratio of four parameters :

1. Total width of head (always given as 10).
2. Width of the frons at level of upper ocelli.
3. Width of face at level of insertion of antennae.
4. Smallest width of face below antennae.

B. If ratios are given, they represent proportional length, but in describing the legs the numbers represent real units (millimetres), measured on one particular specimen.

### *Sciapus maritimus* BECKER, 1918

Figs. 1-3, 19-20

#### Diagnosis

A species with yellow metaepimera and white uppermost postocular cilia. Tibia II of ♂ with several ad and pd bristles. Hind margin of ♂ wing irregularly curved. Seems to be chiefly a coastal species.

♂.

Body length 4-4.9 mm; wing length 3.8-4.1 mm.

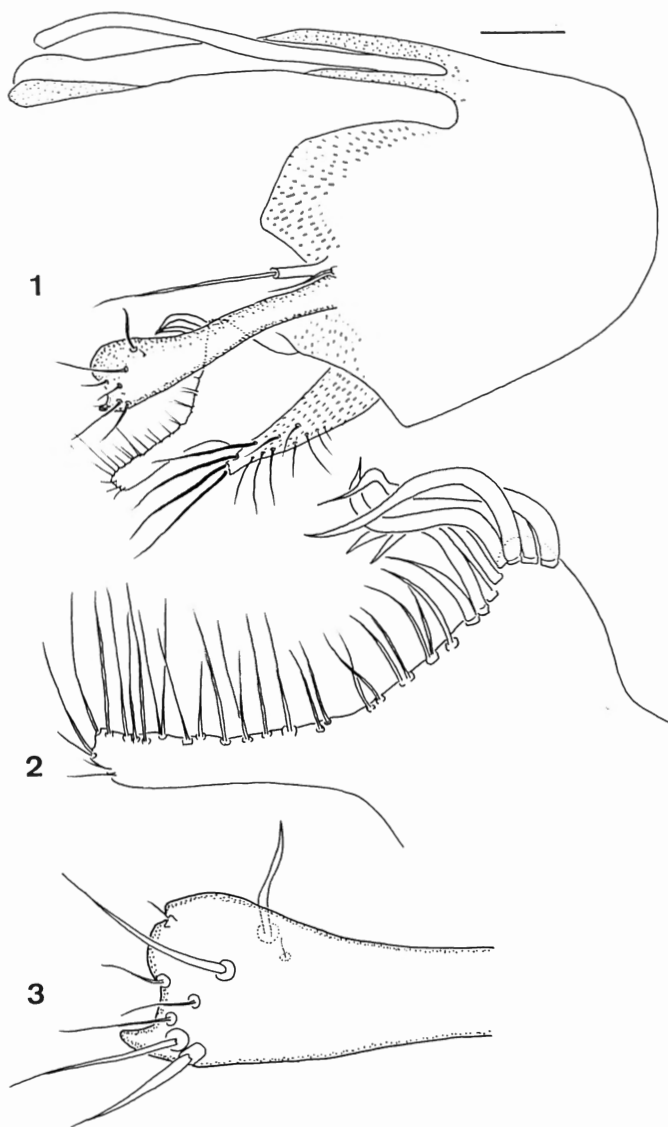
**Head.** Formula 10:5:3.5:2.5. Frons and face with dark metallic green ground colour, completely covered by a greyish white or white dusting. Palpi small, yellow, with pale hairs and one small black bristle. Rostrum brownish yellow. Occiput dark metallic green, heavily dusted greyish white. 2 ocellars, 2 smaller verticals, 2 postverticals, about as strong as verticals, no postocellars. Upper postoculars uniseriate, white, only one (uppermost) postocular slightly longer, black; lateral and lower postoculars white, becoming longer and pluriseriate beneath.

**Antennae:** first two joints yellow, third joint brown. Second joint with short black marginals, longest at ventral side. Third joint rounded, a little deeper than long, shortly pubescent. Arista dark, practically bare, about three times as long as antenna; basal arista joint very short.

**Thorax** and scutellum dark metallic green, covered by a thick greyish white dusting; metaepimera yellow, but usually largely darkened at middle, leaving only top and bottom yellow. acr biseriate, well developed. 5-6 dc (if there are 6 dc, the first one is short and weak). 2-3 short white propleural bristles of unequal length. Scutellum with 2 large marginals, each flanked by a very short hairlike bristle.

**Legs** and coxae yellow. All tarsi darkened from tip of first joint onwards.

**Front leg:** Coxa with pale hairs; exteriorly a row of very short pale bristles (only the three uppermost of them somewhat longer); at apex some short pale hairlike bristles. Femur I ventrally with short pale hairs, longer near base; one hair, at base, about as long as diameter of femur. Anteroventrally and posteroventrally on apical half a row of very short black hairlike bristles. Tibia I with 2-3 pd and 1-2 ad, all very weak and short, black. Tarsus I: first joint ventrally with 3 rather conspicuous longer bristles;



Figs. 1-3. *Sciapus maritimus* male: 1 hypopygium; 2 X-organ; 3 tip of telomere. Scale 0.1 mm.

second and third joints ventrally with short erect hairs. Length ratio of tibia I and tarsus I: 1.2 : 0.85 : 0.4 : 0.37 : 0.25 : 0.175.

**Middle leg:** Coxa bearing pale hairs. Femur II posteroventrally near tip with a few very short black bristles. Tibia II with 2-3 ad, well developed, and 2-3 short pd; anteroventrally and ventrally some short bristles; an apical circling of short bristles. Tarsus II: first three joints ventrally with some short spinules. Length ratio of tibia II and tarsus II: 1.5 : 1 : 0.45 : 0.35 : 0.2 : 0.15.

**Hind leg:** Coxa with a pale exterior bristle. Femur III posteriorly on basal half with short pale hairs, longest toward base; an anterior preapical bristle. Tibia III: 3 ad, a row of postero-dorsal hairs and bristles of unequal length; some short av and pv bristles; 3-4 short apical bristles. Tarsus III: first joint at base somewhat thickened, with a short ventral bristle; first and second joints with short ventral spinules, longest on first joint. Length ratio

of tibia III and tarsus III : 1.95 : 0.65 : 0.65 : 0.4 : 0.25 : 0.15.

*Wing* hyaline, slightly tinged brownish; veins yellow to brown. Costa straight, not thickened. Hind margin of wing irregularly curved, bulging out near apex of m3 + 4. Anterior branch of fork (m1) makes an angle of a little more than 90° with stem (m1 + 2); posterior branch (m2) rather short, fading away far before reaching wing margin. Tp straight, a little shorter than adjacent part of stem of fork, a little longer than apical part of m3 + 4. Anal vein only a fold. Halteres yellow. Squamae yellow with a narrow black border and white cilia.

*Abdomen* metallic green; a basal triangle on each tergite coppery brown; a faint greyish dust, especially on sides of tergites. Sternites yellowish brown with short pale hairs. First tergite with on each side two long black marginals; marginals on other tergites short. Hairs on first tergite, most of second tergite, and on sides of further tergites pale; hairs on middle of second tergite and on most of following tergites black. *Hypopygium* (Figs. 1-3) brownish black with yellow appendages. Cerci small, fused together, yellow, with short pale hairs and long black apical bristles; organ X simple.

♀.

Body length 3.4-3.6 mm; wing length 3.4-4 mm.

*Head*. Formula 10:5:4:2.75. Frons and face covered with whitish grey dusting, slightly lighter coloured on face. Palpi yellow with pale hairs and 1 long and 1 short black bristle.

*Thorax*. Metaepimera usually entirely yellow, often with a thin greyish white dusting on middle, but always much lighter coloured than pleurae.

*Legs*. Coxae yellow; coxa II usually with a slight whitish grey dusting.

Front leg : Coxa with an exterior row of yellow bristles, longest near base and near apex of coxa. Femur I ventrally with a row of 4-5 strong yellow spinelike bristles. Tibia I with 2 ad and 2 pd, all rather small. First joint of tarsus I ventrally without real spinules, but a few of the ordinary hairlets somewhat longer and stronger; second and third joints ventrally without erect hairs. Length ratio of tibia I and tarsus I : 1.1 : 0.7 : 0.3 : 0.25 : 0.175 : 0.15.

Middle leg : Tibia II with 2 (seldom 3 or 4) ad, 2 (seldom 3) pd, 1-2 av and 1-2 pv (the av and pv bristles very short). Length ratio of tibia II and tarsus II : 1.4 : 0.85 : 0.4 : 0.3 : 0.2 : 0.15.

Hind leg : Coxa III usually with 2 yellow exterior bristles. Femur III posteriorly on basal half without longer hairs. Length ratio of tibia III and tarsus III : 1.8 : 0.55 : 0.55 : 0.35 : 0.225 : 0.175.

*Wing* as in ♂, but hind margin less bulging out.

*Abdomen* heavily dusted whitish grey, with shifting dark patches on basal half of tergites; sternites yellow. Tergites with pale hairs and black bristles; only few black hairs present on third and following tergites. Oviscapt (Figs 19-20) with rather short, blunt, at tip slightly enlarged dornen; hemitergites shallow, with two median bristles on margin.

#### *Material examined*

- BELGIUM. Oost-Vlaanderen : Sint-Jan-in-Eremo, 1 ♂ 11.VI.1952, M. BEQUAERT [KBIN]. West-Vlaanderen : Blankenberge, 2 ♂♂ 3 ♀♀ 15.VI.1920, A. KOLLER [KBIN], 1 ♂ 16.VI.1958, M. BEQUAERT [KBIN]; Knokke, 1 ♂ 18.VI.1939, M. BEQUAERT [KBIN]; Knokke-Cadzand, 2 ♂♂ 10.VII.1986, Ch. VERBEKE [KBIN]; Nieuwpoort, 3 ♂♂ 1 ♀ 4.VII.1984, Ch. VERBEKE [coll. VERBEKE]; Snellegem, 1 ♀ 12.VII.1983, Ch. VERBEKE [KBIN]; Zeebrugge, 1 ♂ 10.VII.1949, M. BEQUAERT [KBIN], 3 ♂♂ 3.VII.1955, M. BEQUAERT [KBIN].
- NETHERLANDS. Noord-Holland : Vogelenzang, 1 ♂ 2 ♀♀ 5.VIII.1980, B. VAN AARTSEN [coll. MEUFFELS]. Zeeland : Zuid-Sloe, schorren, 1 ♀ 29.VII.1975, 2 ♂♂ 30.VII.1975, 1 ♂ 1.VIII.1975, B. VAN AARTSEN [coll. MEUFFELS]. Zuid-Holland : Katwijk, strand, 1 ♂ VII, F.M. VAN DER WULP [ITZ].
- SWEDEN. Fårön, 2 ♂♂ 4.VII.1936, O. RINGDAHL syntypes of *Sciapus flavomaculatus* RINGDAHL [Zool. Mus. Lund].

#### *Sciapus zonatulus* (ZETTERSTEDT, 1843)

Figs. 4-6, 21-22.

#### *Diagnosis*

A species with dark metaepimera and dark upper post-ocular cilia. Tibia II of ♂ with only 1 ad bristle. Hind margin of ♂ wing irregularly curved. Telomeres of hypopygium not very broad.

♂.

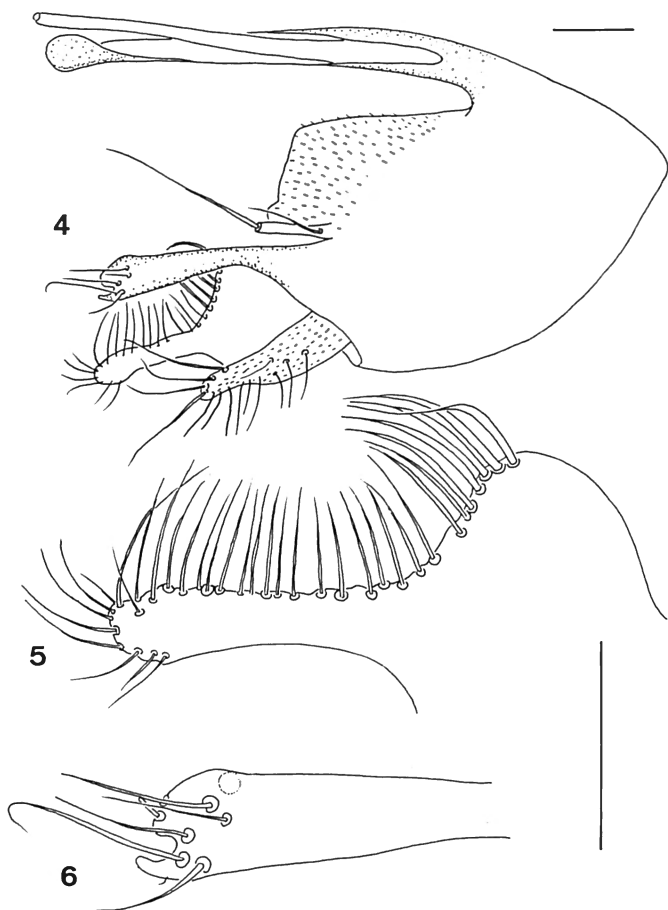
Body length 3.9-4.5 mm; wing length 3.4-3.8 mm.

*Head*. Formula 10:4.5:3.5:2.5. Frons and face completely covered by a silvery greyish white dusting. Palpi small, yellow, with pale hairs and one small black bristle. Rostrum brown. Occiput completely covered by a whitish grey dusting. 2 moderately long ocellars, 2 slightly shorter verticals, 2-4 tiny postocellars, 2 postverticals, in row with postocular cilia. Uppermost 6-7 postoculars uniseriate, black, lateral cilia uniseriate, white, lower cilia pluriseriate, longer, white.

*Antennae* short. First joint yellow, second joint yellow, somewhat brownish darkened dorsally and apically, third joint dark brown. Second joint with short black marginal bristles, including 2-3 longer ventrals. Third joint rounded, about as long as deep, very shortly pubescent. Arista about three times as long as antenna, black, practically bare; basal arista joint shorter than third antennal joint.

*Thorax* and scutellum metallic green, completely covered by a greyish dusting, somewhat brownish tinged on dorsum; a rather vague narrow pale streak between the rows of acr. Metaepimera grey. acr biseriate, well developed; 6 dc, the first one rather short. 2-3 pale propleural bristles. Scutellum with 2 marginal bristles, each flanked by a small bristle.





Figs. 4-6. *S. zonatulus* male : 4 hypopygium; 5 X-organ; 6 tip of telomere.

*Legs* and coxae yellow, but coxa II darkened on basal two thirds; coxa III exteriorly with a dark spot. All tarsi darkened from tip of first joints onwards, but tarsi may be dark all over and even tip of tibia III may be darkened. Front leg : Coxa I with pale hairs; exteriorly a vertical row of pale hairs, some of which are bristlelike; at tip a few short, pale hairlike bristles. Femur I ventrally without bristles or setae, bearing only very short white hairs; posteriorly near tip a few short black bristlelike hairs. Tibia I with rows of very short semi-erect bristly hairlets, longest on posterior side; 1 longer posterior bristlet near base. Tarsus I : first joint ventrally with 2-4 spinules, as long as or longer than diameter of tarsal joint; fifth joint slightly flattened. Length ratio of tibia I and tarsus I : 1.1 : 0.75 : 0.35 : 0.275 : 0.2 : 0.15. Average length ratio of tibia I and metatarsus I : 1.4 : 1 [1.28-1.5 : 1 ; measured on 8 specimens].

*Middle leg* : Coxa II with pale hairs. Tibia II with a rather strong ad near base; at tip a few very short bristles. Length ratio of tibia II and tarsus II : 1.4 : 0.9 : 0.45 : 0.35 : 0.2 : 0.15.

*Hind leg* : Coxa III with 2-3 long pale bristlelike hairs exteriorly, besides some short pale hairs. Femur III posteriorly near base bearing some longer pale hairs; 1 anterior preapical bristle. Tibia III : except for a few short apicals no real bristles present; some of the hairs however, espe-

cially on dorsal side, may be somewhat longer and even bristlelike. Tarsus III : first joint slightly thickened at base, bearing there 1-2 short ventral spinules. Length ratio of tibia III and tarsus III : 1.8 : 0.6 : 0.6 : 0.35 : 0.225 : 0.15. *Wing* hyaline, veins dark brown. Costa straight, hardly thickened from tip of r1 onwards. Hind margin of wing irregularly curved, slightly bulging out at tip of m3 + 4. Anterior branch of fork (m1) usually making an angle of a little more than 90° with stem (m1 + 2), but angle may be more blunt. Posterior branch (m2) usually distinct, often more vague, seldom obliterate, never reaching wing margin. Tp ± straight, usually distinctly longer than adjacent part of stem of fork (m1 + 2), seldom about equally long; as long as or longer than apical part of m3 + 4. Anal vein short, represented by a fold. Halteres yellow. Squamae pale yellow with a narrow black border and pale cilia.

*Abdomen* with metallic green ground colour, completely covered by a brownish grey dusting; at base of second and following tergites a triangular bronzy brown spot. Sternites yellowish brown with pale hairs. First tergite with white hairs (longest at sides) and with at each side 2-3 long black marginals. White hairs are found on sides of 2nd to 4th tergites; for the rest tergites with black hairs and short black marginal bristles.

*Hypopygium* (Figs. 4-6) black with white hairs; cerci brownish yellow, fused together; organ X present, yellow; telomeres not very broad.

♀.

Body length 3.0-4.4 mm; wing length 3.0-4.5 mm.

*Head*. Formula : 10:5:3.5:2.75. Frons and face covered by a dense greyish white, often somewhat yellowish tinged dusting. Palpi yellow to brownish yellow, with white hairs and 2 thin black bristles.

*Thorax* coloured as in ♂.

*Legs* and coxae coloured as in ♂.

*Front leg* : coxa anteriorly set with pale hairs; exteriorly a row of rather strong yellow spinelike bristles, longest towards base of coxa; interiorly a row of shorter yellow bristles; at tip 3 strong yellow bristles. Femur I ventrally on basal half or more with a row of 4-6 (usually 5) long rigid yellow spines. Tibia I with 1-2 ad and 2-3 pd, all short. First joint of tarsus ventrally without real spinules, but some of the hairs are slightly lengthened, giving the impression of spinules. Length ratio of tibia and tarsus I : 1.05 : 0.75 : 0.3 : 0.225 : 0.15 : 0.1.

*Middle leg* : tibia usually with 2 ad and 2 pd and some tiny ventral bristlets. Length ratio of tibia and tarsus II : 1.9 : 0.55 : 0.6 : 0.35 : 0.2 : 0.15.

*Hind leg* : femur without longer pale hairs near base. Tibia III usually with 2, sometimes 3 small ad, and a varying number of very small pd. First joint of tarsus not thickened at base. Length ratio of tibia and tarsus III : 1.9 : 0.55 : 0.6 : 0.35 : 0.2 : 0.15.

*Wing*. Hind margin of wing not or only slightly bulging out near tip of m3 + 4.

*Abdomen* metallic green, with greyish white dusting, with shifting dark brown spots or bands on basal half of tergites.

White hairs are present on first tergite and sides of second and (less often) third tergite.

*Oviscapt* (Figs. 21-22) with shallow hemitergites, bearing each 1 lateral and 1 distal bristle. Dornen (seen from above) rather slender, slightly enlarged towards tips, blunt. Cerci rather long.

[Note: The oviscapt figured by Buchmann, 1961 on Taf.13, Abb.99 as of *Sciapus Wiedemanni* FALL., is in reality of *S. zonatulus*.]

#### Material examined

SWEDEN. Skåne : Lund, 2 ♀♀ [Zool.Mus.Lund] (syntypes).

BELGIUM. Antwerpen : Hoboken, 1 ♀ 15.VII.1956, L. MARNEF [KBIN]; Hoogstraten, 1 ♀ 28.VI.1918, G. SEVERIN [KBIN]; Merksplas, 1 ♂ 29.VI.1926, G. SEVERIN [KBIN]; Postel, 1 ♂ 28.IV.1922; 1 ♀ 18.V. 1922; 1 ♂ 9-11.VII. 1922; 1 ♂ 20.VII.1922; 1 ♂ 22.VIII.1922; 1 ♀ 20.V.1926; 1 ♀ 30.VI.1926; 7 ♂♂ 10 ♀♀ 1.VIII.1926, G. SEVERIN; 1 ♂ 10.VI.1956; 1 ♂ 9.VI.1958; 4 ♂♂, 3 ♀♀ 10.VI.1958 [KBIN; coll. MEUFFELS]; Raevens, 1 ♀ 1.VII.1926, G. SEVERIN [KBIN]; Turnhout, 1 ♂ 13.V.1914, A. BOONE [KBIN]; Brabant : Uccle-Calvoet, 1 ♀ 29.V.1918, A. TONNOIR [KBIN]; Liège : Hockai, 3 ♀♀ 24.VI.1929, A. BALL [KBIN]; Limburg : Diepenbeek, 1 ♂ 1 ♀ 13.VI.1912, M. GOETGHEBUER [KBIN]; Sutendaal, 1 ♂ 2.VI.1922, M. GOETGHEBUER [KBIN]; West-Vlaanderen : Snellegem, 1 ♂ 23.VI.1981; 1 ♀ 26.VI.1981; 1 ♀ 17.VII.1981; 1 ♀ 25.VI.1983; 1 ♂ 8.VII.1983; 1 ♀ 10.VII.1983; 1 ♂ 12. VII.1983; 1 ♂ 25.VII.1983; 1 ♀ 7.VIII.1983; 1 ♀ 18.VIII.1983; 1 ♂ 1 ♀ 31.VIII.1983; 1 ♀ 3.IX.1983; 1 ♂ 5.VIII.1984, Ch. VERBEKE [coll. Ch. VERBEKE; KBIN]; Zeebrugge, Fonteintjes, 1 ♀ 2.VIII.1982, Ch. VERBEKE [KBIN].

ENGLAND. Lyndhurst, 1 ♂ 7.VI.1952, C.H. ANDREWS [Brit.Mus.]; Morden Bog, 1 ♂ 1 ♀ 7.VI.1960, C.H. ANDREWS [Brit.Mus.].

NETHERLANDS. Drente : Dwingelo, 1 ♀ 25-30.VI.1949, J.H.H. v. NES [ITZ]; Gelderland : Assel, 1 ♂ 7.VI.1980; 3 ♀♀ 8.VI.1980, B.VAN AARTSEN [coll. MEUFFELS]; Doetinchem, 2 ♂♂ 7.VI.1917, J.C.H. DE MEIJERE [ITZ]; 't Harde, 1 ♂ 11.VIII.1984; 1 ♀ 12.VIII.1984, B.VAN AARTSEN [coll. MEUFFELS]; Nunspeet, 3 ♂♂ 1 ♀ 10.VI.1976; 1 ♂ 26.VI.1976; 1 ♂ 2 ♀♀ 4.VII.1976; 2 ♀♀ 3.VII.1977; 1 ♂ 7.VII.1977, B.VAN AARTSEN [coll. MEUFFELS]; Noord-Brabant : Bergen-op-Zoom, 1 ♀ 13.VI.1920; 1 ♂ 17.VI.1929, J.C.H. DE MEIJERE [ITZ]; Noord-Holland : Bussum, 1 ♀ 4.VI.1921, J.C.H. DE MEIJERE [ITZ]; Hilversum, 3 ♂♂ V.1901; 2 ♂♂ VI.1902, J.C.H. DE MEIJERE [ITZ]; Overveen, 1 ♂ 30.VIII.1974, B.VAN AARTSEN [coll. MEUFFELS]; Twiske polder, 1 ♀, 22.VIII.1976, B. BRUGGE [coll. MEUFFELS]; Overijssel : Enschede, 1 ♀ 13.VI.1976; 1 ♀ 25.VI.1977, J.H.C. VELTEROP [coll. VELTEROP]; Utrecht : Amersfoort, Henschoten, 1 ♂ 17.VI.1961, Br. THEOWALD [ITZ]; Zeeland : Valke-

nisse, 2 ♀♀ 15.VII.1977, B.VAN AARTSEN [coll. MEUFFELS].

SPAIN. Avila, 3 km s Ramacastañas, Río Tietar, 1 ♂ 13-21.V.1976, P. OOSTERBROEK & E. BOERSMA [coll. MEUFFELS]; Avila, Poyales del Hoyo, Sierra de Gredos, 600 m, 1 ♀ 15.V-2.VI.1976, P. OOSTERBROEK & E. BOERSMA [coll. MEUFFELS].

SWEDEN. Skåne : Hälsingborg, HBG., 1 ♂ 15.VI.1926, O. RINGDAHL [Zool. Mus. Lund]; S : Bl., Brömsebro, 1 km s Bröms, 1 ♀ 24.VII.1985, R. DANIELSSON (DAYS) [Zool. Mus. Lund].

#### *Sciapus basilicus* n.sp.

Figs. 7-10, 23-24

#### Diagnosis

A species with grey metaepimera, much resembling *S. zonatulus* (ZETTERSTEDT) and *S. maritimus* BECKER. Its black upper postocular cilia, basally darkened coxae II and presence of only one bristle on shaft of middle tibiae it has in common with *zonatulus* and separate it from *maritimus*. From *zonatulus* it differs by the regularly curved hind margin of wing and by having only one ventral spinule on first joint of front tarsus. From both species it can be separated by the shape of ♂ and ♀ genitalia.

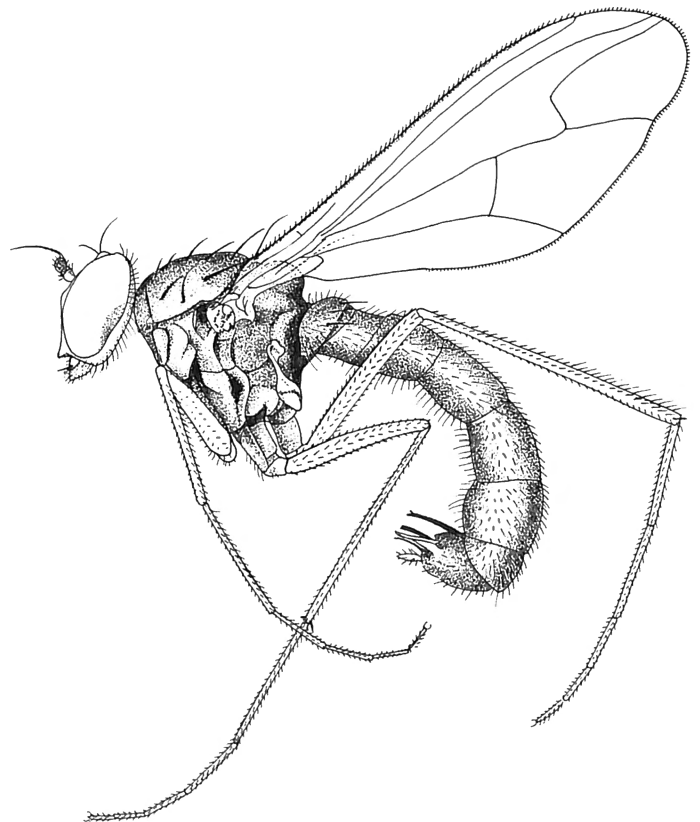
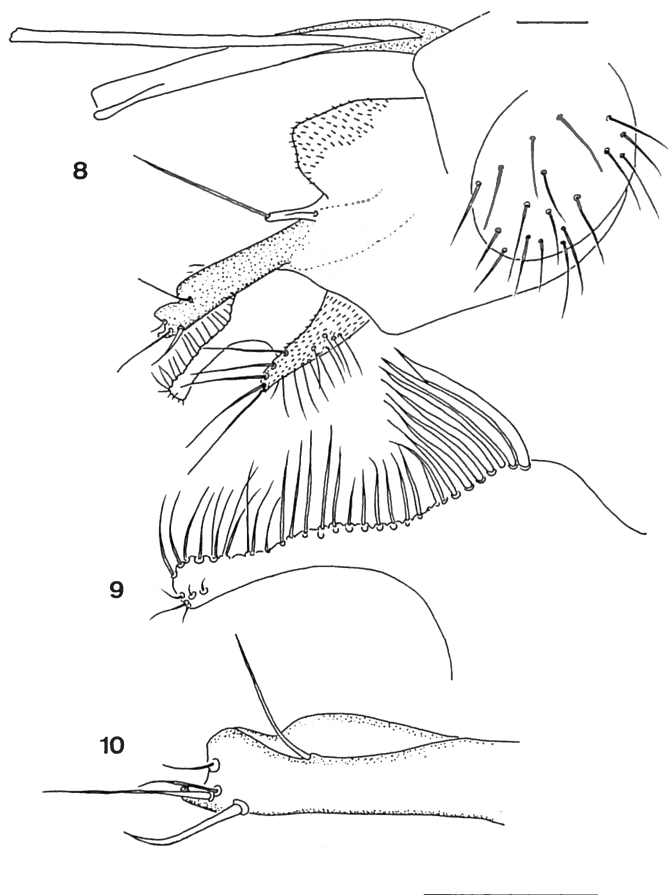


Fig. 7. *Sciapus basilicus* sp.n. habitus.





Figs. 8-10. *Sciapus basilicus* sp.n. male: 8 hypopygium; 9 X-organ; 10 tip of telomere.

♂.

Body length 4.2-4.8 mm; wing length 3.5-4.1 mm.

**Head.** Formula 10:5:3.5:2.25. Frons and face completely dusted silvery white, frons rather more yellowish. Palpi small, yellow, with white hairs and 1 very small black bristle. Rostrum yellow. Occiput whitish grey, with white hairs on lower part. 2 moderately long ocellars, 2 only a little shorter verticals, 2 or 4 small postocellars, 2 postverticals (in row with the postocular cilia). Uppermost 7-10 postocular cilia black, uniseriate, lateral ones white, lower cilia longest, hairlike, pluriseriate, white.

**Antennae** short, first joint yellow, second joint very short, yellow with darkened apical margin, third joint dark brown; second joint with short black marginal bristles, 2-3 of which, on ventral side, rather long but shorter than third antennal joint. Third joint rounded triangular, about as long as deep, with very short pubescence. Arista black, practically bare, about three times as long as antenna; basal arisal joint a little shorter than third antennal joint.

**Thorax** and scutellum with metallic green ground colour, completely hidden by a greyish brown dusting; pleurae more greyish. Mesonotum with a rather vague paler longitudinal stripe between the rows of acr. No spots on dorsum. Metaepimera grey. acr biseriate, well developed. 6 dc, growing longer towards the rear. Humeri with a large and a small bristle. 2 white hairs on propleura. Scutellum with 2 large marginals, flanked each by a small bristlet.

**Legs** and coxae yellow. Coxae II darkened near base. All tarsi progressively darkened from tip of first joints onwards.

**Front leg:** Coxa with pale hairs; a vertical row of about 10 short pale bristles and some weak and rather short yellowish bristles at apex. Femur I ventrally without bristles or setae, bearing only short hairs; posteriorly near tip some longer bristly hairs. Tibia I posteriorly near base with a few bristly hairs. Tarsus I: first joint ventrally with only one short and weak spinule at base; fifth joint slightly flattened and broadened. Length ratio of tibia I and tarsus I: 1.1 : 0.95 : 0.45 : 0.35 : 0.25 : 0.15. Average length ratio of tibia I and metatarsus I 1.2 : 1 [1.15-1.35 : 1 ; measured on 15 specimens].

**Middle leg:** Coxa anteriorly and at apex with white hairs. Trochanter ventrally with a small black spot. Tibia II with a rather strong black ad near base; usually some of the hairs on shaft of tibia somewhat longer, but never bristle-like; at tip a circler of short black bristles. Length ratio of tibia II and tarsus II: 1.5 : 1 : 0.45 : 0.35 : 0.2 : 0.125.

**Hind leg:** Coxa exteriorly with 2-3 rather long, pale, bristly hairs besides some shorter pale hairs. Femur III with a short black anterior preapical bristle. Tibia III with some of the dorsal hairs somewhat longer; a weak black ad often present near base. Base of first tarsal joint somewhat thickened, bearing a short ventral bristlet. Length ratio of tibia III and tarsus III: 1.85 : 0.65 : 0.65 : 0.4 : 0.2 : 0.125. **Wing** hyaline, very slightly tinged brownish yellow. Hind margin of wing regularly curved. Costa straight, hardly thickened from tip of r1 onwards. Anterior branch of fork (m1) making an angle of a little more than 90° with stem (m1 + 2); posterior branch (m2) distinct but fading away before reaching wing margin. Tp about as long as adjacent part of stem of fork (m1 + 2), often a little shorter, and also about as long as apical part of m3 + 4. Anal vein only indicated by a fold. Halteres yellow. Squamae yellow with yellow cilia.

**Abdomen** greyish brown with a greenish gloss. Second tergite and following tergites with a shifting triangular blackish brown spot at base. Sternites brownish. First tergite with pale hairs and black marginal bristles (the white hairs are longest at sides). White hairs are present also on sides of second and third tergites, less so on sides of fourth tergite; for the rest tergites bear black hairs and weak black marginal bristles.

**Hypopygium** (Figs. 7-10) blackish with short pale and dark hairs; cerci fused together, brown; organ X present, yellow; telomeres very broad and flattened.

♀.

Wing length 4 mm.

**Head.** Formula 10:4.5:3.5:2.5. Frons and face completely dusted greyish, with a brownish hue. Palpi with white hairs and two short black bristles.

**Legs.** Coxa II dark to a greater extent than with the ♂. Coxa I: uppermost bristles of vertical row stronger than in ♂, spinelike.

Femur I ventrally with 5 strong pale spinelike bristles. No longer hairs posteriorly near apex of femur I or near base

of tibia I. Tibia II with a strong black ad near base. Coxa III with 2 pale bristle-like hairs exteriorly; femur III with a short anterior preapical bristle. Base of first joint of tarsus III not thickened.

*Wing* as with the ♂.

*Abdomen*. White hairs on basal tergites shorter and fewer than with the ♂. Oviscapt (Figs. 23-24) with 4 short thick dornen; cerci with 2 long bristles at tip.

#### *Material examined*

Holotype ♂ : NETHERLANDS : Noord-Holland : Overveen, 26.VI.1974, B.VAN AARTSEN [coll. ITZ].

Paratypes : NETHERLANDS : same data as holotype 12 ♂♂ 1 ♀ [coll. MEUFFELS, ITZ and KBIN]; Noord-Holland : Overveen, 15.VI.1974 and 22.VI.1974, B. VAN AARTSEN, 2 ♂♂ [coll. MEUFFELS]; Gelderland : Heteren, 20.VII.1984, B. VAN AARTSEN, 1 ♂ [coll. MEUFFELS]; Zuid-Holland : 's Gravenhage, VII.1903, J.C.H. DE MEIJERE, 1 ♂ [coll. ITZ].

#### *Further material :*

AUSTRIA : 1 ♂, coll. VON WINTHEM [Naturhist. Mus. Wien].

ROUMANIA : Orsova, 1 ♂ [drawing of hypopygium sent by Dr. O. NEGROBOV, determined by him as *S. contristans* Wied.].

SWEDEN : Öland : Böda, 19.VII.1931, O. RINGDAHL, 1 ♂ [Zoöl. Mus. Lund].

SWITZERLAND : Tessin : Valle maggia, Bignasco, 450 m, 20.VI.1978, C.J. ZWAKHALS, 1 ♂ [coll. MEUFFELS].

#### *Sciapus contristans* (WIEDEMANN, 1817)

Figs. 11-13, 25-26

#### *Diagnosis*

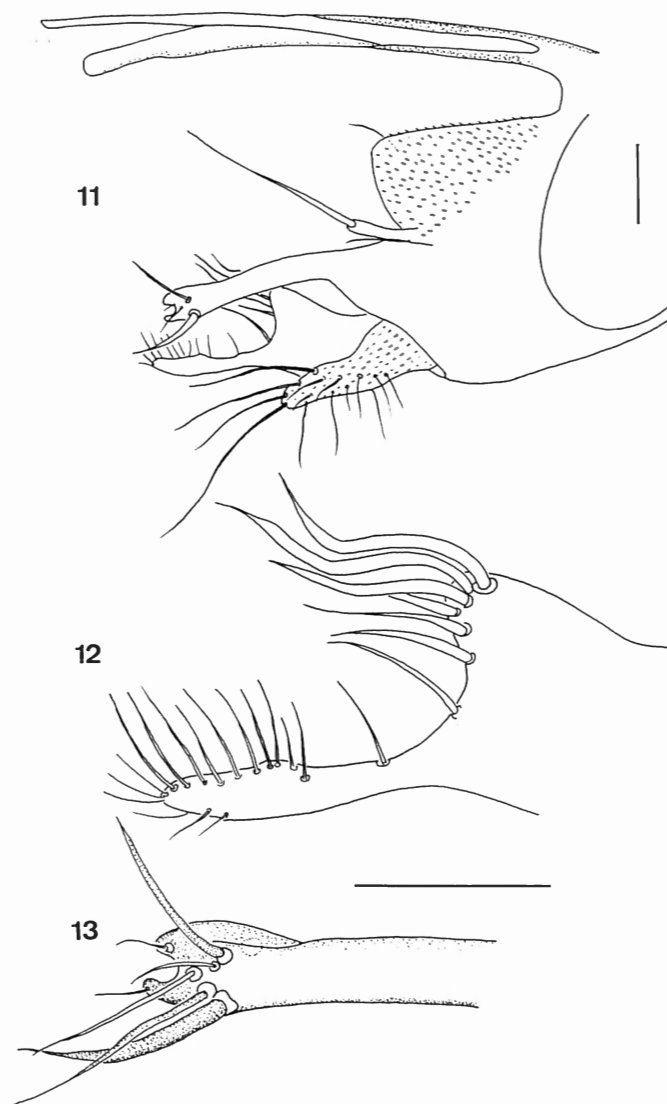
A species with yellow metaepimera and black uppermost postocular cilia; first joint of tarsus III distinctly longer than second joint. ♂ with a row of rigid ventral setae on femur I and irregularly curved hind margin of wing. Oviscapt of ♀ with slender, tapering, rather long dornen.

♂.

Body length 4.3-5.6 mm; wing length 4.0-4.6 mm.

*Head*. Formula 10: 3.5: 3.25: 2. Frons and face dark metallic green, completely covered by a thick greyish white dusting. Palpi small, yellow, with rather long pale hairs (a few hairs are very long and often darker coloured), and one very small black bristlet. Rostrum yellow or brown. Occiput with metallic green ground colour, brownish grey dusted. 2 ocellars, 2 slightly smaller verticals, 2 yet smaller postverticals; 2, seldom 4, very small postocellars. Uppermost 5-8 postocular cilia black, uniseriate; lateral and lower cilia white, becoming pluriseriate below.

*Antennae* : first two joints yellow, third joint dark brown. Second joint with black marginals, longest on ventral side; third joint rounded, a little deeper than long, pubescent.



Figs. 11-13. *Sciapus contristans* male : 11 hypopygium; 12 X-organ; 13 tip of telomere.

Arista dark, nearly bare, about three times as long as antenna; basal arista joint shorter than upper margin of third antennal joint.

*Thorax* and scutellum with metallic green ground colour, mesonotum and scutellum with a brownish grey dusting, leaving the ground colour to shine through; mesonotum with indistinct, shifting brown longitudinal striping. Pleurae completely covered by a thick whitish grey dusting; metaepimera yellow. acr biseriate, well developed; 6 dc, the foremost very weak and short. 2, seldom 3, rather long pale propleural setae. Scutellum with two marginals, each flanked by a short bristlet.

*Legs* and coxae yellow; coxa II often somewhat darkened at base or even on basal two thirds. Tarsi progressively browned from about tips of first joints; tarsus III darkest; fifth joint of tarsus I black.

*Front leg* : Coxa with yellow hairs, longest and bristlelike at apex; exteriorly an irregular row of some short yellow spinelike bristles. Femur I ventrally on basal half with 4-5 long pale rigid hairs, some of which are longer than

diameter of femur; posteroventrally near base some shorter pale hairs. Tibia I without bristles, but a few of the hairs may be a little longer and suggest very small bristlets. Tarsus I: first joint very long, ventrally without or with a few very inconspicuous spinules; fifth joint flattened dorsoventrally and slightly broadened. Length ratio of tibia I and tarsus I: 1.35 : 1.15 : 0.45 : 0.325 : 0.2 : 0.175. Average length ratio of tibia I and first joint of tarsus I: 1.05 : 1 [measured on a total of 29 specimens].

Middle leg: Coxa bearing yellow hairs. Femur II posteroventrally on apical third with a row of short black hairlike bristles. Tibia II usually has only one ad near base; sometimes a much weaker and shorter ad is present at about one third from base. Tarsus II: first joint very long, ventrally bearing a few inconspicuous short spinules. Length ratio of tibia II and tarsus II: 2.05 : 1.7 : 0.6 : 0.45 : 0.25 : 0.2.

Hind leg: Coxa with a few pale hairs and usually two long pale bristlelike hairs. Femur III posteriorly near base with a few longer pale hairs; an anterior black preapical bristle. Tibia III with some of the antero- and posterodorsal hairs somewhat longer, bristlelike, including 1 real ad near base; also some of the antero- and posterodorsal hairs may be bristlelike, all very short. Tarsus III: first joint a little longer than second joint, somewhat thickened at very base, bearing there a short ventral bristlet. Length ratio of tibia III and tarsus III: 2.6 : 1.05 : 0.85 : 0.5 : 0.3 : 0.15.

Wing hyaline, very slightly tinged brownish; veins dark brown. Costa straight, not thickened. Hind margin irregularly curved. Anterior branch of fork (m1) makes about a right angle with the stem (m1 + 2), often somewhat recurring at base; it rises towards r4 + 5 reaching beyond half the distance between stem of fork (m1 + 2) and r4 + 5, before bending and running towards tip of wing. Posterior branch of fork (m2) reaches nearly unto wing margin. Tp straight, oblique, a little longer than both adjacent part of stem of fork (m1 + 2) and apical part of m3 + 4. Anal vein only a fold. Halteres yellow. Squamae yellow with a narrow black margin and long pale cilia.

Abdomen with metallic green ground colour, slightly dusted whitish grey; tergites 2-6 with a large dark brown basal triangle; sides of tergites 2, 3, and usually also 4, with distinct yellow spots. Tergites with short black hairs and thin black marginal bristles; yellow hairs are present on sides of tergites 1, 2 and 3. Sternites yellow, with short yellow hairs; sternites 2 and 3 each with 2-4 very long pale hairs at distal margin.

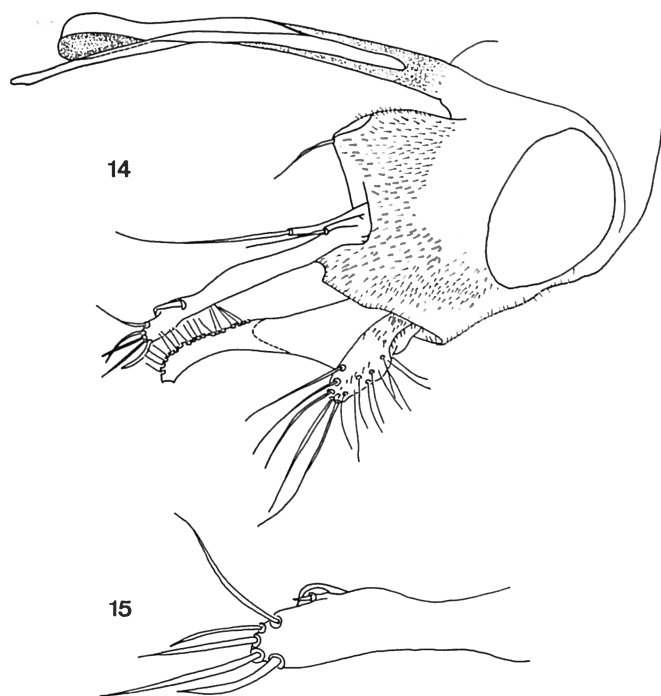
Hypopygium (Figs. 11-13) brownish black with yellow appendages; cerci small, yellow, fused together, with short pale hairs and long black apical bristles. Organ X with a very slender horn. Telomeres slender.

♀.

Body length 3.7-4.4 mm; wing length 3.9-4.4 mm.

Head. Formula 10:4.5:3.5:2.5. Frons and face completely covered by a greyish white dusting, often with a yellowish or brownish hue. Palpi with two small black bristlets. Antennae as with the ♂.

Thorax. Mesonotum brownish grey dusted, with indistinct



Figs. 14-15. *Sciapus pallens* male: 14 hypopygium; 15 tip of telomere.

bronze brown stripes and dark spots at the insertion of the larger bristles. Pleurae grey; metaepimera yellow, often somewhat darkened at middle.

Legs and coxae coloured as in ♂. All tarsi gradually darkened from tip of first joints onwards. Coxa I exteriorly and at tip with strong yellow spinelike bristles, longer than in ♂. Femur I ventrally with a row of 4-6 (mostly 5) strong yellow spines. Tibia I with 1 ad and 2-3 pd, all very small. First joint of front tarsus very long, ventrally with some very tiny spinules. Fifth joint not broadened. Length ratio of tibia I and tarsus I: 1.1 : 1 : 0.4 : 0.3 : 0.2 : 0.15. Femur II posteroventrally on apical third with an inconspicuous row of very short black hairs. Tibia II with 2 ad, 3 pd and some av and pv, all very small; only the first ad is stronger. Length ratio of tibia II and tarsus II: 1.6 : 1.25 : 0.55 : 0.35 : 0.225 : 0.15. Femur III without longer pale hairs at base; anterior preapical bristle present. Tibia III with 1-2 ad and some very small bristle-like hairs in the ad, pd, av and pv lines. First joint of tarsus III about as long as second joint. Length ratio of tibia III and tarsus III: 2.1 : 0.8 : 0.8 : 0.45 : 0.25 : 0.175.

Wing as with the ♂.

Abdomen. Brown basal triangles on tergites smaller than in ♂, on tergites 3, 4 and 5 often more shaped like bands. No yellow spots on sides of tergites; venter of the same colour as dorsum. Pale hairs short, almost confined to sides of first two tergites. Sternites without long pale hairs.

Oviscapt (Figs. 25-26) with long slender dornen; dornen slightly tapering towards tip, the outer ones longer than the inner ones. Hemitergites deep; distal hemitergital bristle very small, much shorter than basal hemitergital bristle. Cerci short.

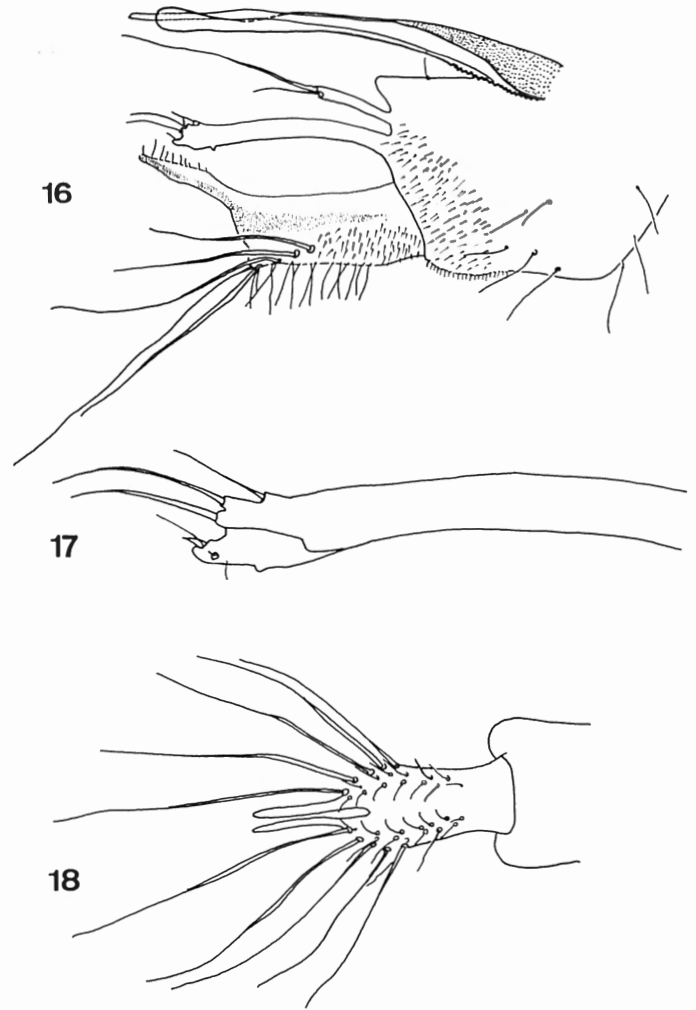
*Material examined*

GERMANY. Schleswig-Holstein : [Kiel], 1 ♀ [VII,C.R. W.WIEDEMANN] [Naturhist.Mus.Wien] (lectotype).

BELGIUM. Antwerpen : Arendonk, 1 ♀ 29.VI.1926, A. BALL [KBIN]; Balen, 1 ♀ 20.VIII-3.IX.1985, T. BACKELJAU [KBIN]; Blauwberg, 1 ♂ 1 ♀ 19.VII. 1938 [KBIN]; Deurne, 1 ♂ 28.VI.1919 (coll. O.PARENT) [Mus.Hist.Nat.Paris]; Hoogstraten, 1 ♀ 28.VI.1918, G. SEVERIN [KBIN]; Postel, 1 ♀ 10.VII.1922, 1 ♂ 12.VIII.1922, 1 ♀ 15.VIII.1922, G. SEVERIN [KBIN]; 2 ♂♂ 6 ♀♀ 13.VIII.1958, M. BEQUAERT [KBIN; coll. MEUFFELS]; Wilrijck, 1 ♂ 22.VII.1922 (coll. O.PARENT) [Mus.Hist. Nat.Paris]; Brabant : Genval, 1 ♀ 26.VI.1917, A. TONNOIR; 2 ♀♀ 5.VII.1942, R. TOLLET [KBIN]; Ottignies, 1 ♂ 18-25.VII.1981, P. DESSART [KBIN]; Testelt, 1 ♀ 27.VII.1938 [KBIN]; Uccle, 1 ♂ 12.VII.1916, A. TONNOIR [KBIN]; Limburg : Lanklaar, 1 ♂ 4.VII.1922, M. GOETGHEBUER [KBIN]; Luxembourg : Marais de Vance, 1 ♀ 9.VI.1919, G. SEVERIN [KBIN]; Saint-Mard, 1 ♂ 28.VII.1918, A. TONNOIR [KBIN]; Oost-Vlaanderen : Deurle bij Gent, 1 ♂ 16.VII.1955, M. BEQUAERT [KBIN]; Gent, 1 ♂ 19.VI.1939, M. BEQUAERT [KBIN]; omgeving Gent, 1 ♂ 28.VII.1938, M. BEQUAERT [KBIN]; Melle, 1 ♂ 1.VIII.1939, M. BEQUAERT [KBIN]; Sint-Martens-Latem, 1 ♂ 12-18.VII.1981, P. GROOTAERT [KBIN]; Wachtebeke, 1 ♂ 1 ♀ 18.VII.1945, M. GOETGHEBUER [KBIN]; West- Vlaanderen : Snellegem, 1 ♂ 19.VII.1984, op licht, Ch. VERBEKE [coll. Ch. VERBEKE].

FRANCE. Manche : Cotentin, 1 ♂ 1927; Fermanville, 4 ♂♂ VIII.1926 (coll. O.PARENT) [Mus. Hist. Nat. Paris].

NETHERLANDS. Friesland : Beetsterzwaag, 1 ♀ 30.VI.1976, B.VAN AARTSEN [coll. MEUFFELS]; Gelderland : Assel, 1 ♂ 9.VII.1978, B.VAN AARTSEN [coll. MEUFFELS]; Gortel, 1 ♂ 18.VI.1978, B. VAN AARTSEN [coll. MEUFFELS]; 't Harde, 1 ♀ 25.VII.1977; 1 ♂ 14.VIII.1977; 1 ♂ 6.VI.1981; 1 ♀ 10.VI.1982; 4 ♂♂ 2 ♀♀ 29.VII.1984; 1 ♂ 2 ♀♀ 7.VIII.1984; 3 ♂♂ 7 ♀♀ 11.VIII.1984, B. VAN AARTSEN [coll. MEUFFELS]; Heerde, 5 ♂♂ 12 ♀♀ 9.VII.1973 [coll. MEUFFELS]; Lochem, 1 ♂ VI.1896; 1 ♂ VII.1896, J.C.H. DE MEIJERE [ITZ]; Nunspeet, 1 ♂ 10.VII.1975; 1 ♂ 21.VI.1976; 3 ♂♂ 3 ♀♀ 4.VII.1976; 1 ♀ 20.VII.1976; 1 ♂ 3.VII.1977; 1 ♀ 23.VII.1977, B. VAN AARTSEN [coll. MEUFFELS]; Oldebroek, 1 ♀ 19.VII.1978, B. VAN AARTSEN [coll. MEUFFELS]; Oosterbeek, 1 ♀ 5.VII.1981, CHRISTA GRASSE [coll. MEUFFELS]; Otterlo, 4 ♀♀ 24.VII.1973; 2 ♂♂ 2 ♀♀ 28.VI.1974; 2 ♂♂ 4 ♀♀ 28.VII. 1977, B. VAN AARTSEN [coll. MEUFFELS]; Putten, 1 ♂ 15.VIII-6.IX. 1971, J. VAN DE VECHT [coll. MEUFFELS]; Winterswijk, 1 ♂, 19.VI. 1929, J.C.H. DE MEIJERE [coll. MEUFFELS]; Limburg : Azenray, Luzenkamp, 1 ♂ 5.VIII.1972, H. MEUFFELS [coll. MEUFFELS]; Beegden, 1 ♂ 19.VII.1984, B. VAN AARTSEN [coll. MEUFFELS]; Beegderhei, 3 ♂♂ 5 ♀♀ 2.VII.1970, H.MEUFFELS [coll. MEUFFELS]; Swalmen, Boukoul, 1 ♂ 24.VII.1961;



Figs. 16-18. *Sciapus longulus* male : 16 hypopygium; 17 X-organ; 18 tip of telomere.

1 ♀ 10.VIII.1965, H. MEUFFELS [coll. MEUFFELS]; Venlo, 2 ♂♂ VI.1894, J.C.H. DE MEIJERE [ITZ]; Noord-Brabant : Oisterwijk, 1 ♂ VI.1921, G. DOORMAN [ITZ]; Tilburg, 1 ♀ 10.VIII.1985, A.M. MEUFFELS [coll. MEUFFELS]; Noord-Holland : Hilversum, 1 ♂ 11.VII.1909, J.C.H. DE MEIJERE [ITZ]; Hilversum, Hollandse Rading, 1 ♂ 14.VII.1921, J.C.H. DE MEIJERE [ITZ]; Utrecht : De BILT, 1 ♀ 30.VII.1960; 1 ♀ 1.VIII.1962, G. DOORMAN [ITZ]; Zuid-Holland : 's Gravenhage, 1 ♂ 2.VIII.1971, A. GROENENDIJK [ITZ]; Wassenaar, 1 ♀ 25.VI.1950, G. DOORMAN [ITZ].

## 6. Notes on distribution and bionomics

Previous statements concerning the occurrence of *Sciapus maritimus* BECKER are only partly reliable because of its being confounded with *S. zonatulus* (ZETT.) (and perhaps *S. basilicus* n.sp.). The species was described by BECKER from the island of Sylt (German North Sea). He mentions also specimens from S. France and Poland; we have not seen those specimens, so the statement remains doubtful. With certainty the species is known - besides from Ger-

many (Sylt) - only from Belgium, the Netherlands and Sweden [ZETTERSTEDT, 1855 (as *contristans*); RINGDAHL, 1849 (as *flavomaculatus*)]. To our experience *maritimus* seems to be a coastal species and its occurrence in coastal regions of England, Norway, Denmark and France is highly probable. Emeis (1964 : 73) calls it a typical dune species on the coasts, repeatedly caught in *Ammophila* dunes on Amrum, and also in *Empetrum* heath near Morsum on Sylt. He considers it to be a thalasso-xerobiont species. RINGDAHL (1928 : 198) says that a species, named by him *contristans* in 1921, but probably representing BECKER's *maritimus*, occurs in the Swedish sanddunes. The specimens we saw from the Netherlands were caught partly in the dunes (Overveen), partly on the sandy beach (Katwijk) and partly on "schorren" (Zuid-Sloe).

*Sciapus zonatulus* (ZETT.) seems to be more an inland species, but is encountered also in coastal regions. Probably in most cases the species is meant or involved, where *S. contristans* is mentioned, and it seems to have a wide distribution in Europe; confusion with either *basilicus* or *maritimus* is always possible. With certainty it is known from Belgium, the Netherlands, England, Denmark, Germany, France, Spain and Sweden; occurrence in Italy (VENTURI & PARRINI, 1960 : 68-69), Bulgaria (BESCHOVSKI, 1967 : 223), Roumania (PARVU, 1984 : 210), Czechoslovakia (OLEJNÍČEK, 1974 : 63) and Norway (ZETTERSTEDT, 1855 : 4643) has to be confirmed. Nothing seems to be known about the bionomics of this species; it is often encountered in rather dry surroundings and also in gardens, running on the leaves of herbs and shrubs. The type series of *Sciapus basilicus* n.sp. partly originates from sanddunes (Overveen), but further nothing is known about biotope preference of this species.

The distribution of *Sciapus contristans* (WIED.) is yet incompletely known. It is found (usually mentioned as *vialis* RADD. or *loewi* BECK.) in : Spain (a specimen from Denia, Alicante in ITZ), France, Bulgaria, Germany (incl. Kiel as loc. typ. of *contristans* and Augsburg as loc. typ. of *flexus* LOEW), Belgium, the Netherlands and England. It seems to be largely an inland species with a more southern distribution than the former three species. It is found in gardens (so the type specimens of WIEDEMANN), in rather dry sandy regions (as p.e. the Veluwe in Gelderland, Netherlands) and near rivulets (TIMON-DAVID, 1944 : 37 mentions it from the Ruisseau des Ayalades near Marseille in France); BESCHOVSKI (1967 : 223) found a ♀ on halophile vegetation near the village Kranevoplascha in Bulgaria. So its seems to be difficult to find a biotope preference of this species.

## 7. Key

Key to the species of *Sciapus* ZELLER hitherto found in the Netherlands and in Belgium.

♂♂ and ♀♀.

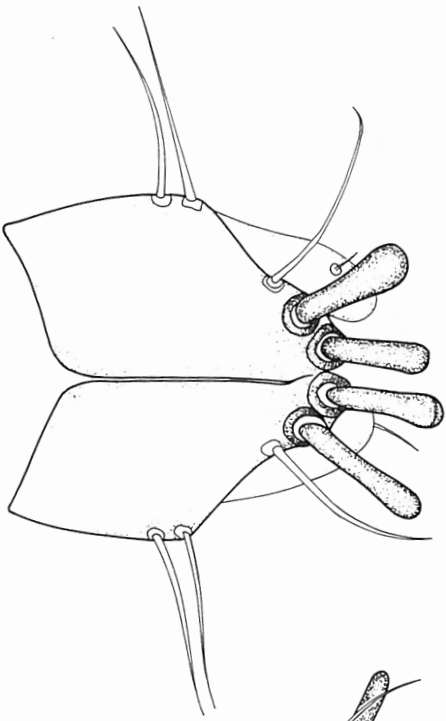
1. - Antennae black. Frons, upper half of face and whole body shining green, undusted; only lower

part of face dusted. ♂ : tibia and tarsus of middle leg ciliated. Hypopygium with free cerci, no organ X. ♀ : oviscapt with rather long cerci and very thin and slender dornen (Figs. 27-28).

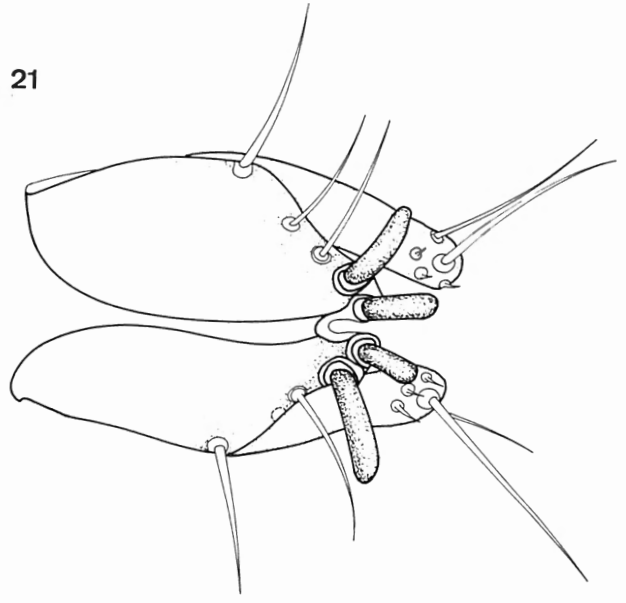
- . . . . . *S. laetus* (MEIGEN, 1838) ♂♀
- Antennae partly or entirely yellow. Body usually more or less dusted; at least face entirely dusted . . . . . 2
- 2. - No acr present. Second antennal joint with pale bristles. Wing : tp strongly convex (curved outwards). First joint of hind tarsus much longer than second joint. ♂ : fourth joint of front tarsi with a large dorsal lobe. Hypopygium with very long telomeres, bearing long hairs. ♀ : outer dornen of oviscapt about 1.5 times as long as inner dornen. (Figs. 29-30) . . . . .
- . . . . . *S. nervosus* (LEHMANN, 1822) ♂♀
- acr present. Second antennal joint with dark bristles. Tp of wing straight or nearly straight . . . 3
- 3. - Third joint of front tarsus at least as long as or rather longer than second joint. Ventral bristles on second antennal joint not longer or even shorter than dorsal bristles. Face narrow (even in ♀ at most 3/20 of width of head. First joint of hind tarsi nearly twice as long or even more than twice as long as second joint. ♂ with broad wing; hypopygium black, squarish, without organ X . . . . . 4
- Third joint of front tarsus always shorter than second joint. Some ventral bristles on second antennal joint longer than dorsal bristles. Face broader (even in ♂ at least 1/5 of width of head). First joint of hind tarsi not much longer than second joint, often even shorter. ♂ : wing of normal width; hypopygium usually with organ X . . . . . 5
- 4. - (Only ♂ known). Middle tarsi unmodified. Front femur ventrally with a row of 7-9 long, spinelike yellow bristles. Wing length less than 5 mm. . . . . *S. spiniger* (ZETTERSTEDT, 1859) ♂
- (♂ and ♀ known). Third and fourth joints of middle tarsi of ♂ laterally compressed and slightly broadened, milky white. Front femur of ♂ ventrally with a row of pale hairs, becoming gradually longer and bristlelike on apical fourth. Wing length of ♂ more than 5 mm. . . . .
- . . . . . *S. platypterus* (FABRICIUS, 1805) ♂♀
- 5. - Abdomen largely yellow. Antennae entirely yellow. First joint of hind tarsus distinctly longer than second joint. ♂ : costa of wing distinctly concave; fourth joint of front tarsi compressed, dorsally lengthened into a triangular lobe. Organ X present. . . . . *albifrons* (MEIGEN, 1830) ♂♀. <sup>(1)</sup>

<sup>(1)</sup> [*S. heteropygus* PARENT, 1926 also has a largely yellow abdomen and completely yellow antennae, but first joint of hind tarsus is about as long as second joint. Costa of ♂ wing straight; front tarsus simple. Hypopygium of a peculiar shape (PARENT, 1938, fig. 970; D'ASSIS FONSECA, 1978, fig. 216). It is a more southern species, but is found in England and also in northern France (Ardennes)].

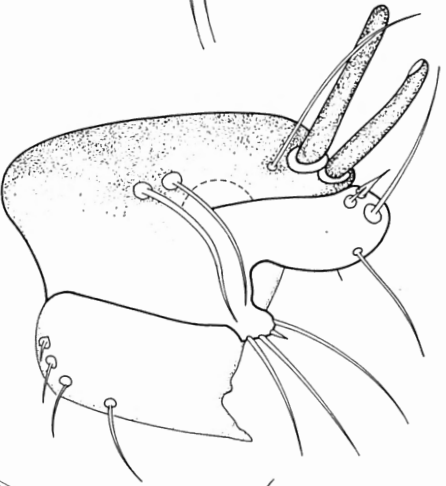
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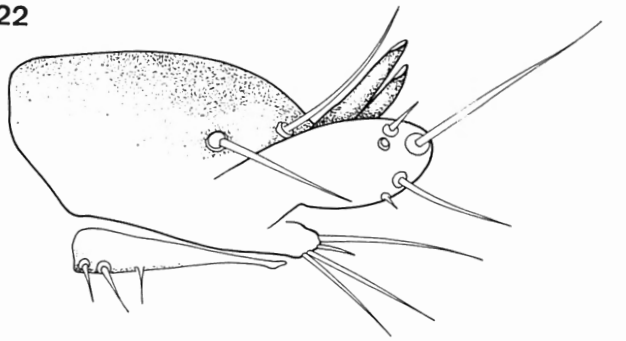
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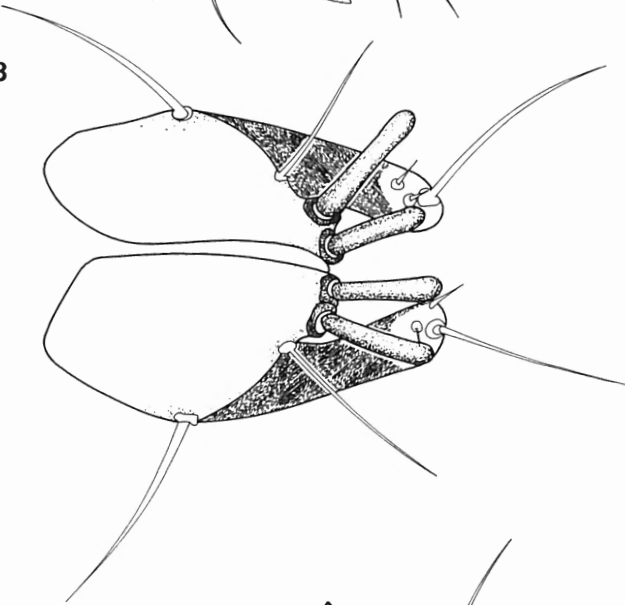
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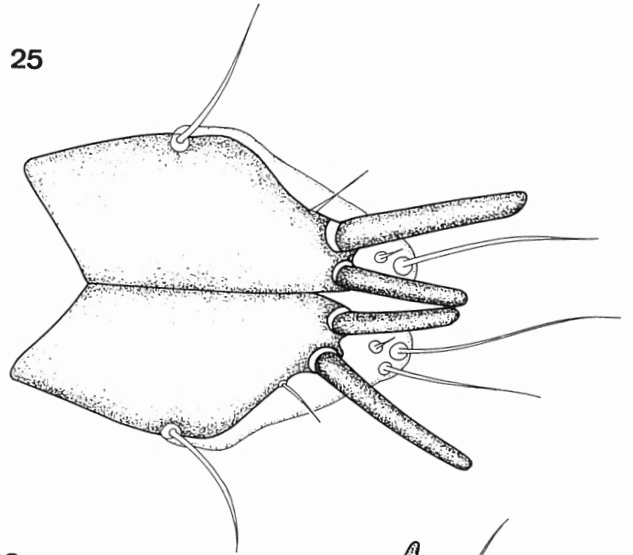
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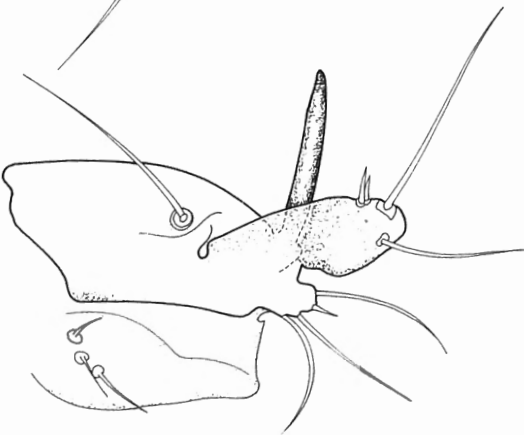
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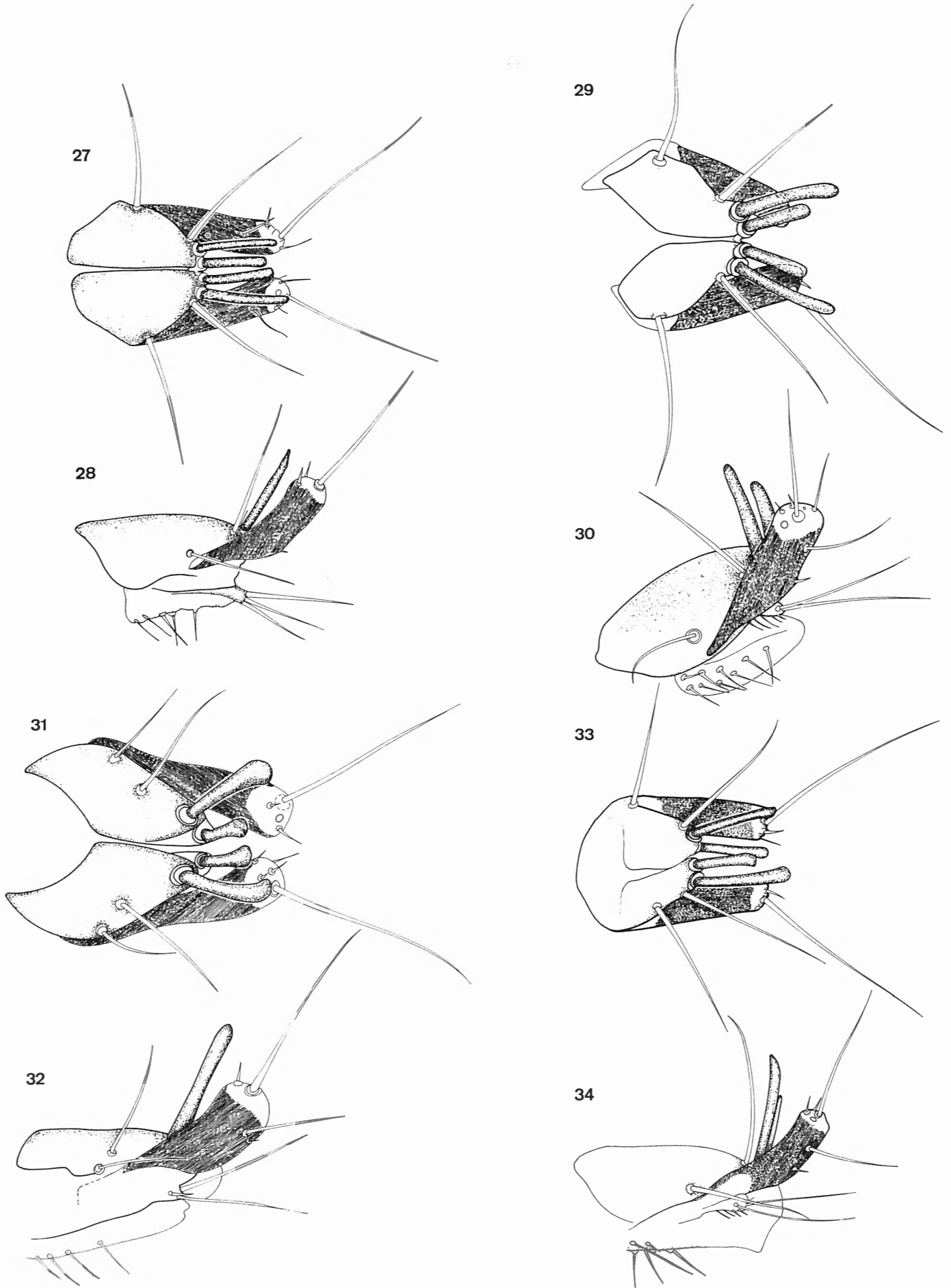
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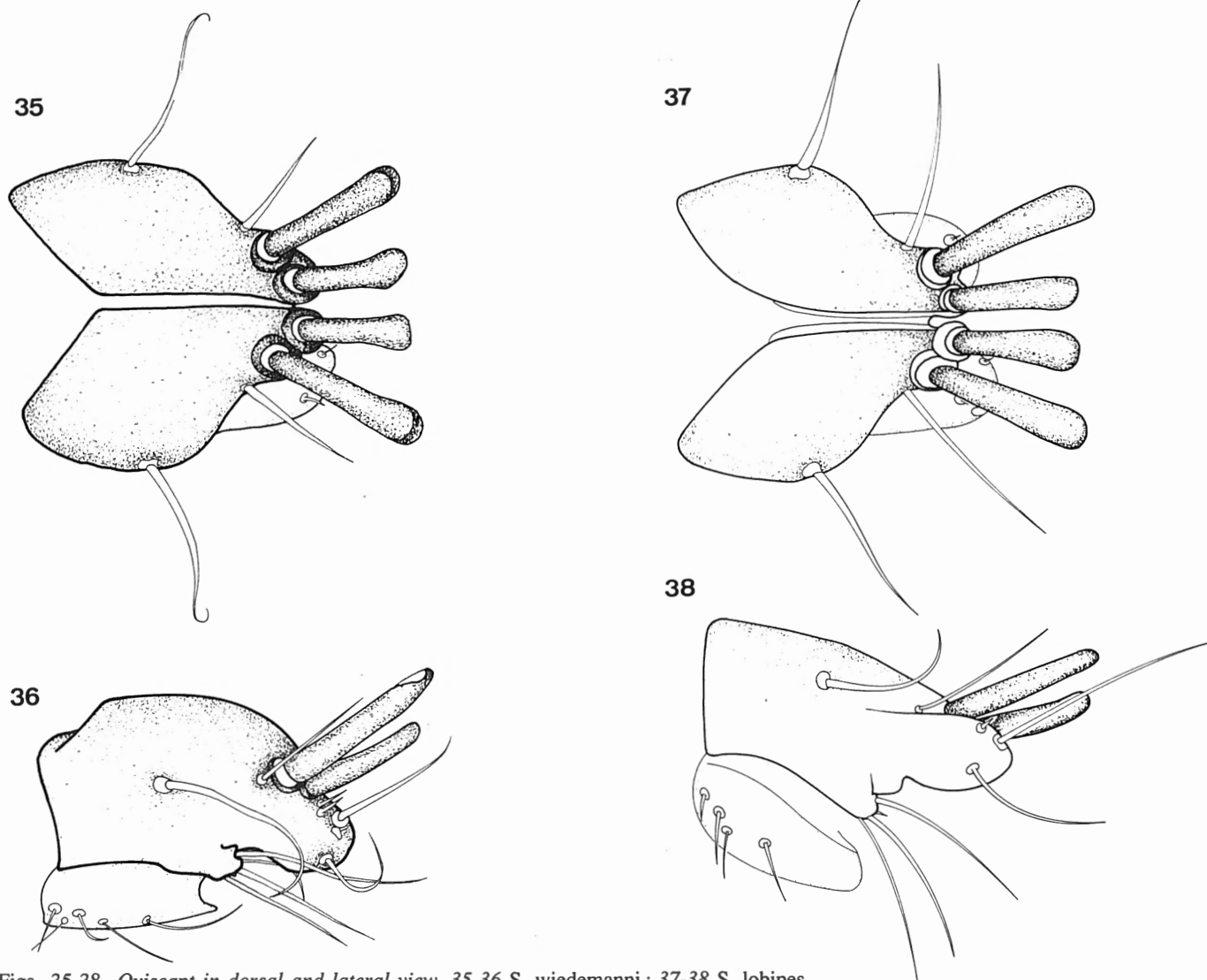


- Abdomen dark, at most with yellow spots on basal segments. Third antennal joint usually entirely dark (light to dark brown), at least with dorsal margin and tip dark. ♂ : costa of wing straight . . . . . 6
6. - ♂♂ . . . . . 7
- ♀♀ . . . . . 14
7. - No organ X. Cerci with a long apicoventral projection [suggesting an organ X, but not separated from cerci (Figs 16-17). <sup>(2)</sup> Frons, thorax and abdomen shining green, only very feebly dusted. Front femur ventrally on ventral half with four yellow spines, longest towards base, much longer than diameter of femur. Tibia and tarsus of middle legs with a prickly appearance as a result of short erect hairs. . . . .  
. . . . . *S. longulus* (FALLÉN, 1823) ♂
- Organ X present, distinctly separated from cerci. Frons, thorax and abdomen with a thick dusting, hardly shining . . . . . 8
8. - Fourth joint of front tarsus entirely or largely black, broadened into a lobe . . . . . 9
- Fourth joint of front tarsus not broadened into a lobe, either white, or concolorous with other tarsal joints . . . . . 10
9. - Front tarsus yellow, black on apical half of fourth joint and on fifth joint. Uppermost 5-6 postocular cilia black. Hypopygium : ventral margin of organ X only slightly concave, with long hairs on whole length. . . . .  
. . . . . *S. wiedemanni* (FALLÉN, 1823) ♂
- Front tarsus entirely black. Of the uppermost postocular cilia usually only one or two, seldom more (up to five) cilia are black. Hypopygium : ventral margin of organ X strongly concave, haired only at apical and basal parts. . . . .  
. . . . . *S. lobipes* (MEIGEN, 1824) ♂
10. - Fourth joint of front tarsus milky-white, slightly broadened and laterally compressed. Antennae yellow, third joint brown at tip and dorsally. Front coxa with yellow hairs, without bristles even at tip. Hypopygium : organ X very slender (Figs. 14-15). . . . . *S. pallens* (WIEDEMANN, 1830) ♂
- Fourth joint of front tarsus not milky-white or broadened. Third antennal joint entirely brown. Front coxa at least apically with bristles or bristlelike hairs. Hypopygium : organ X broad . 11
11. - Front femur ventrally on basal half with a row of rigid hairs, some of which are longer than diameter of femur. First joint of hind tarsus distinctly longer than second joint. Uppermost 5-8 postocular cilia black. Metaepimera yellow. Hind margin of wing irregularly curved. Hypopygium : organ X with a very slender "horn" (Fig. 12). . . . . *S. contristans* (WIEDEMANN, 1817) ♂
- Front femur ventrally bare or with hairs shorter than diameter of femur. First joint of hind tarsus about as long as second joint. Hypopygium : organ X with a stouter "horn" . . . . . 12
12. - Uppermost postocular cilia white. Middle tibia with 3 ad and 3 pd (less often with only 2 ad and/or 2 pd). Hind tibia likewise rather strongly bristled. Metaepimera yellow. Middle coxae basally usually not darkened. Hypopygium Figs 1-3. . . . . *S. maritimus* BECKER, 1918 ♂
- Uppermost 6-10 postocular cilia dark. Middle tibia with only one ad near base, seldom with some more very small bristles. Hind tibia poorly bristled (generally only one ad developed). Metaepimera dark. Middle coxae darkened at base . . . . . 13
13. - First joint of front tarsus bearing, besides a small basal pv, 1-3 other small pv. Hind margin of wing irregularly curved, with a bulge at tip of discal vein. Telomeres of hypopygium not very broad (Fig. 6). . . . .  
. . . . . *S. zonatulus* (ZETTERSTEDT, 1843) ♂
- First joint of front tarsus bearing only one small basal pv. Hind margin of wing regularly curved. Telomeres of hypopygium very broad (Fig. 10) . . . . .  
. . . . . *basilicus* n.sp. ♂
14. - Third antennal joint yellow, brown only at tip and dorsally. . . . . *S. pallens* (WIEDEMANN, 1830) ♀
- Third antennal joint entirely brown . . . . . 15
15. - Thorax, abdomen and frons only feebly dusted, distinctly shining. Oviscapt with four slender dornen (Figs. 33-34). Cerci with a very long bristle at tip; similar long bristles on lobes of tenth tergite. . . . . *S. longulus* (FALLÉN, 1823) ♀
- Thorax, abdomen and frons with a thick dusting, only feebly shining. . . . . 16
16. - Metaepimera yellow . . . . . 17
- Metaepimera dark (as dark as pleurae) . . . . . 20
17. - Uppermost postocular cilia white. First joint of hind tarsi about as long as second joint. . . . .  
. . . . . *S. maritimus* BECKER, 1918 ♀
- [Some specimens of *lobipes* (MEIGEN) may have only few upper postocular cilia dark, but have first joint of hind tarsi slightly longer than second joint].
- Uppermost postocular cilia dark . . . . . 18
18. - Dornen of oviscapt long and thin, tapering towards apex (Figs 25-26). Anterior branch of fork (m1) closing postmarginal cell for more than half of its width. . . . .  
. . . . . *S. contristans* (WIEDEMANN, 1817) ♀

<sup>(2)</sup> [Figures of the hypopygium, e.g. in PARENT (1938 : fig. 981) and BUCHMANN (1961 : Taf. 11 Abb. 68) wrongly show a dividing line between the cercus and the projection].



Figs. 27-34. Oviscapt in dorsal and lateral view. 27-28 *S. laetus*; 29-30 *S. nervosus*; 31-32 *S. platypterus*; 33-34 *S. longulus*.



Figs. 35-38. Oviscapes in dorsal and lateral view. 35-36 *S. wiedemanni*; 37-38 *S. lobipes*.

- Dornen of oviscapes stout, shorter and broader, not tapering towards apex. Anterior branch of fork (m1) closing postmarginal cell for about half its width . . . . . 19
- 19. - Oviscapes with hemitergites less high and more flattened dorsally (Figs. 37-38). Usually only few (1-4) upper postocular cilia dark. . . . . *S. lobipes* (MEIGEN, 1824) ♀
- Oviscapes with higher and more arched hemitergites (Figs. 37-36). Uppermost 5-8 postocular cilia dark. . . . . *S. wiedemanni* (FALLÉN, 1823) ♀
- 20. - First joint of front tarsus ventrally with some of the short hairs a little longer, giving the impression of minute spinules. Middle and hind tibiae bearing several short bristles. Oviscapes: figs. 21-22. . . . . *S. zonatulus* (ZETT., 1843) ♀
- First joint of front tarsus ventrally with all hairs equally long. Middle and hind tibiae very poorly bristled, generally with only one ad near base. Oviscapes: figs. 23-24. . . . . *S. basilicus* n.sp.

#### Terms and abbreviations used

Organ X - part of the ♂ hypopygium [term originating from BECKER, 1918] ("appendix dorsalis" in Buchmann, 1961; part of the proctiger acc. to ULRICH, 1974).

- acr - acrostichal bristles.
- ad - anterodorsal(s).
- av - anteroventral(s).
- dc - dorsocentral bristles.
- ITZ - Instituut voor Taxonomische Zoölogie, Amsterdam.
- KBIN - Koninklijk Belgisch Instituut voor Natuurwetenschappen, Brussels.
- pd - posterodorsal(s).
- pv - posteroventral(s).

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