

NEW SYNONYMS OF EUROPEAN CERATOPOGONIDAE (DIPTERA)

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Abstract.— Twenty new synonyms are proposed for four species of Ceratopogonidae: *Atrichopogon rostratus* (Winnertz, 1852), *Bezzia annulipes* (Meigen, 1830), *Dasyhelea flavifrons* (Guérin, 1833) and *Dasyhelea saxicola* (Edwards, 1929). *Atrichopogon transversalis* Kieffer, 1918, *A. ventralis* Kieffer, 1918, *A. homopterus* Kieffer, 1919, *A. coracellus* Kieffer, 1919 and *A. nigriventris* Kieffer, 1919 are junior synonyms of *Ceratopogon rostratus* Winnertz, 1852. *Bezzia digramma* Kieffer, 1925 is junior synonym of *Ceratopogon annulipes* Meigen, 1830. *Ceratopogon obscurus* Winnertz, 1852, *C. versicolor* Winnertz, 1852, *C. dufouri* Laboulbène, 1869, *C. hippocastani* Mik, 1888, *Dasyhelea brevitibialis* Goetghebuer, 1919, *D. goetghebueri* Kieffer, 1919, *D. lignicola* Kieffer, 1919, *D. sensualis* Kieffer, 1919, *D. paludicola* Kieffer, 1925, *D. oppressa* Thomsen, 1935 and *D. septuosa* Borkent, 1997 are junior synonyms of *Ceratopogon flavifrons* Guérin, 1833. *Dasyhelea geleiana* Zilahi-Sebess, 1931, *D. tecticola* Remmert, 1953 and *D. karellica* Glukhova et Brodskaya, 1997 are junior synonyms of *Tetrastichus saxicola* Edwards, 1929. *Culicoides karajevi* Dzhafarov, 1961 is treated as a junior synonym of *Culicoides semimaculatus* Clastrier, 1958.



Key words.— Diptera, Ceratopogonidae, synonymy, Europe.

INTRODUCTION

The biting midges of Europe still include named species of questionable identity. In this paper we report our study of a number of these species in the genera *Atrichopogon* Kieffer, *Bezzia* Kieffer, *Culicoides* Latreille and *Dasyhelea* Kieffer. As a result we propose 20 new synonyms for 4 European species.

TAXONOMY

Atrichopogon (Lophomyidium) rostratus (Winnertz, 1852)

Ceratopogon rostratus Winnertz, 1852: 31 (female, male, Krefeld, Germany).

Atrichopogon rostratus: Szadziewski et al. 1996: 304 (female, male, redescription, key, syn. = *putredinis*, distribution).

Atrichopogon transversalis Kieffer, 1918: 91 (female, male, Turkey, Hungary, Italy); Zilahi-Sebess 1940: 42 (male, syn. = *coracellus*, Hungary); Remm 1988: 90 (syns. = *coracellus*, = *homopterus*, distribution). A lectotype female from Hungary is designated here (see below) **syn. nov.**

Atrichopogon ventralis Kieffer, 1918: 91 (female, male, Turkey, Hungary); Remm 1988: 90 (syn. = *nigriventris*, distribution) **syn. nov.**

Atrichopogon homopterus Kieffer, 1919: 29 (as *A. transversalis* var. *homopterus*, male, Turkey, Hungary) **syn. nov.**

Atrichopogon coracellus Kieffer, 1919: 30 (as *A. ventralis* var. *coracellus*, male, Hungary, Poland – Silesia, Greece) **syn. nov.**

Atrichopogon nigriventris Kieffer, 1919: 30 (as *A. ventralis* var. *nigriventris*, female, male, Romania) **syn. nov.**

Discussion. In the biting midge collection at the Deutsches Entomologisches Institut (Germany), the senior author found a pinned specimen labeled by Kieffer (original handwriting) as *Atrichopogon transversalis*. It is a female from Gyón a locality mentioned by Kieffer (1918) in the original description of the species. The number of specimens in the type series is unknown as it was not indicated in the description, however, it included at least 17 females and males as they were collected from 17 localities (Turkey: Bashara, Hungary: Budapest, Árva - Váralja, Turcsek, Gyón, Héviz, Tãtrahãza, Visegrãd, Zimony, Felső - Bãnya, Pelsőcz, Péczel, Keszthely, Ószöd, Ugod, Italy: Suse, Rimini). We suspect it is the only preserved

specimen from the type series which was lost in the fire in 1956 in the Budapest Museum of Natural History. We here designate this female as the lectotype of *A. transversalis*. The specimen is labeled as follows: Gyón 17.VI.02, Kieffer det., *Atrichopogon transversalis* K. var., lectotype female, designated by Szadziewski and Dominiak 2005.

When the lectotype female was mounted on a slide and examined under microscope it became clear that it is a typical member of the widely distributed in Europe *Atrichopogon rostratus* (Winnertz, 1852).

The lectotype has a paratergite with three setae in addition to a single strong bristle, wing length of 1.65 mm, two large seminal capsules, 0.176 mm and 0.148 mm long respectively, antennal ratio AR 2.09. The lectotype is missing right flagellum and hind legs.

We propose here to treat *A. transversalis* as a junior synonym of *A. rostratus*. In the original description of *A. transversalis* the sexes were misassociated and this caused troubles in subsequent interpretations of the species. Males of *A. transversalis* with macrotrichia on wing membrane represent another species, probably from the subgenus *Meloehalea*. Goetghebuer (1934) incorrectly recognized *A. transversalis* as a questionable junior synonym of *A. lucorum*. Subsequently Zilahi-Sebess (1940) recognized it as true junior synonym of *A. lucorum* and this proposal was followed by Havelka and Aguilar (1999).

The types of *A. homopterosus*, *A. ventralis*, *A. coracellus* and *A. nigriventris* are missing. Males of these species according to the original descriptions have elongated probosci and bare wing membrane which suggests that they can also be recognized as junior synonyms of *A. rostratus*.

Distribution. Canary Isl., Algeria, Turkey, Italy, Greece, Macedonia, Hungary, Romania, Germany, Poland.

Bezzia (Homobezzia) annulipes (Meigen, 1830)

Ceratopogon annulipes Meigen, 1830: 264 (female, Europe).

Bezzia annulipes: Goetghebuer, 1934: 77 (female, male, syns. = *media*, = *fossicola*, Europe); Remm 1974: 440 (key, female, male, syns. = *bidentata*, = *ploenensis*, = *phragmitis*, = *kyotoensis*, = *sicarti*); Wirth et al. 1984: 158 (key, female, male, syns. = *bidentata*, = *fossicola*, = *kyotoensis*, = *media*, = *phragmitis*, = *ploenensis*, = *sicarti*, Holarctic distribution).

Bezzia digramma Kieffer, 1925b: 428 (female, Poland – Silesia) **syn. nov.**

Discussion. The female named as *B. digramma* by Kieffer was collected by O. Harnisch in Silesia (Poland). Location of the type material is unknown, most probably lost. According to the original description the female of *B. digramma* has two ventral spines on fore femur, yellow legs with a brown ring before and after each dark knee, with the apices of tibiae dark. These characters indicate that this species is conspecific with

the widely distributed, well described, and common *Bezzia annulipes*.

Culicoides (Oecacta) semimaculatus Clastrier, 1958

Culicoides semimaculatus Clastrier, 1958: 55 (female, male, Algeria); Gutsevich 1966: 659 (key, male, syn. = *karajevi*, Middle Asia); Országh 1976: 48 (key, female, male, Slovakia, distribution).

Culicoides karajevi Dzhafarov, 1961: 77 (male, lake Geigel, Azerbaijan); Dzhafarov 1964: 341 (pupa, male, breeding site – tree-hole, Azerbaijan); Gutsevich 1973: 195 (male, removed from synonymy of *C. semimaculatus*, Azerbaijan, Turkmenia); Glukhova 1989: 303 (male, Turkmenia).

Material examined (adults reared from larvae and pupae). Poland: Gdańsk Politechnika, tree hole, *Aesculus hippocastanum*, 7 July–9 August 2004, 21 males, 11 females, leg. P. Dominiak; sap, *Aesculus hippocastanum*, 9 August 2004, 1 female, leg. P. Dominiak. Malbork, sap, *Acer pseudoplatanus*, 28 June 2004, 1 female, leg. P. Dominiak.

Discussion. In 1966 Gutsevich synonymized *C. karajevi* (wing pale without pattern) with *C. semimaculatus* (wing dark with pale spots) on the basis of the same shape of male genitalia. Subsequently he removed it from the synonymy with *C. semimaculatus* (Gutsevich 1973) and this proposition was followed by Glukhova (1989, 2005). As a result *C. semimaculatus* was known from Western Europe, Middle East and North Africa and *C. karajevi* was restricted to Azerbaijan and Turkmenia. The holotype male of *C. karajevi* was reared from a tree-hole. In all probability this specimen was teneral and this likely explains why it had pale wings. We have reared males and females from larvae found in both tree hole and sap's efflux in Poland. Examined specimens have wing with spots (Fig. 1D) typical of *C. semimaculatus*. Males of *C. karajevi* and *C. semimaculatus* have exactly the same unique genitalia (Fig. 1A) with parameres armed with lateral lobes (Fig. 1C) and the aedeagus with two processes on lateral arms (Fig. 1B) and their larvae live in the same habitats. We see no reason to treat them as distinct species and support previous suggestion by Gutsevich that *C. karajevi* is a junior synonym of *C. semimaculatus*.

Distribution. Algeria, Azerbaijan, France, Italy, Israel, Iran, Morocco, Poland, Slovakia, Turkmenia

Dasyhelea (Dasyhelea) flavifrons (Guérin, 1833)

Ceratopogon flavifrons Guérin, 1833: 165 (male, pupa, female, breeding site – sap of elm *Ulmus* sp., France – Passy).

Dasyhelea flavifrons: Edwards 1926: 403 (combination).

Ceratopogon obscurus Winnertz, 1852: 45 (female, Germany) **syn. nov.**

Dasyhelea obscura: Keilin 1921: 576 (description, biology – egg, larva, pupa, breeding sites – sap of elm *Ulmus* sp.; from Edwards personal communication: decaying roots of angelica *Angelica* sp., sap of

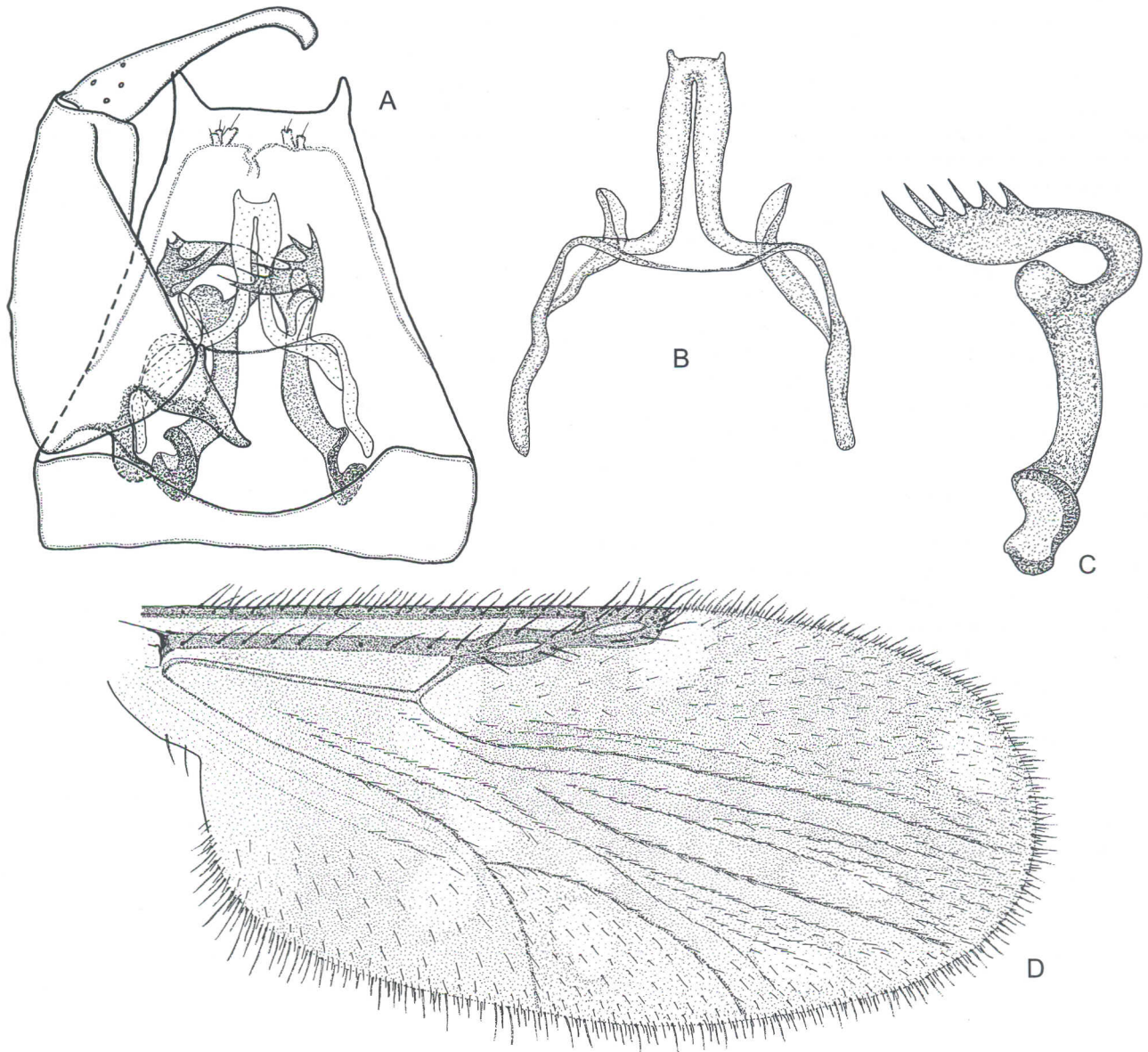


Figure 1. *Culicoides semimaculatus* Clastrier, 1958. (A) Male genitalia; (B) aedeagus; (C) paramere; (D) female wing.

oak *Quercus* sp., sap of hornbeam *Carpinus betulus*, from stagnant water in tree-hole of oak *Quercus* sp., England); Keilin 1927: 369 (sap of horse chestnut tree *Aesculus hippocastanum*, biology, England); Goetghebuer 1934: 34 (a comparison with *D. versicolor*, breeding site follows Edwards – roots of *Angelica*, distribution).

Ceratopogon versicolor Winnertz, 1852: 45 (female, Germany) **syn. nov.**

Dasyhelea versicolor: Edwards 1926: 403 (key, description, breeding sites – sap of elm *Ulmus* sp. and other trees, roots of greater burdock *Arctium lappa*, England); Goetghebuer 1920: 46 (female, male, breeding site – sap of poplar *Populus* sp., Belgium); Keilin 1921: 585 (humus surrounding roots of meadowsweet *Spiraea ulmaria*, England); Goetghebuer 1934: 36 (female, male, sap of poplar *Populus* sp., *syns.* = *flavifrons?*, = *hippocastani*, = *brevitibialis*, = *goetghebueri*, distribution); Kaczorowska 1996: 49 (larva, pupa, female, male, breeding site – sap of horse chestnut tree *Aesculus hippocastanum* and white birch *Betula pendula*, *syns.* = *hippocastani*, = *brevitibialis*, = *goetghebueri*, Poland).

Ceratopogon dufouri Laboulbène, 1869: 158 (all stages, breeding site – sap of elm *Ulmus* sp. France – Paris) **syn. nov.**

Dasyhelea dufouri: Strenzke 1951: 186 (breeding site – sap of common elm *Ulmus campestris*, *syn.* = *sensualis*, Germany).

Ceratopogon hippocastani Mik, 1888: 185 (larva, pupa, female, male, breeding site – sap of horse chestnut tree *Aesculus hippocastanum*, Austria) **syn. nov.**

Dasyhelea brevitibialis Goetghebuer, 1919: 72 (unnecessary new name for *Culicoides versicolor*: Goetghebuer, 1914: 181, larva, pupa, breeding site – sap of poplar *Populus* sp., Belgium) **syn. nov.**

Dasyhelea goetghebueri Kieffer, 1919: 53 (in key – male, Belgium) **syn. nov.**

Dasyhelea lignicola Kieffer, 1919: 57 (key, female, male, breeding site – hollow in a tree trunk, Czech Republic) **syn. nov.**

Dasyhelea sensualis Kieffer, 1919: 55 (key, female, male, Croatia, Greece) **syn. nov.**

Dasyhelea paludicola Kieffer, 1925a: 152 (female, Estland); Remm 1962: 114 (female, male, Estland) **syn. nov.**

Dasyhelea oppressa Thomsen, 1935: 285 (female, New York); Waugh and Wirth 1976: 230 (female, male, breeding site – fluxes of sap, tree holes of different trees and similar habitats, North America) **syn. nov.**
Dasyhelea geleiana: Mayer 1937: 301 (sap of elm *Ulmus* sp., Germany), nec *Dasyhelea geleiana* Zilahi-Sebess, 1940 (see below).
Dasyhelea septuosa Borkent, 1997: 58 (new name for *D. obscura* (Winnertz, 1852) preoccupied by *Forcipomyia obscura* (Walker, 1848)) **syn. nov.**

Material examined (adults reared from larvae and pupae). From sap of trees: Poland: *Acer platanoides*: Kadyny near Elbląg, 30 May 2004, 3 males, 9 females, leg. P. Dominiak. Szwecja near Wałcz, 22 July 2004, 1 pupa, 6 males, 6 females, leg. P. Dominiak. *Acer pseudoplatanus*: Malbork, 28 May 2004, 11 males, 13 females, leg. P. Dominiak. *Aesculus hippocastanum*: Elbląg, 30 May 2004, 3 females, leg. P. Dominiak. Gdańsk, 17 May–29 June 1995, 2 larvae, 4 pupae, 2 males, 6 females, leg. E. Kaczorowska. Gdańsk Oliwa, 3 June 2004, 5 larvae, 2 pupae, 292 males, 339 females, leg. P. Dominiak. Gdańsk Politechnika, 1 June–9 August 2004, 3 pupae, 149 males, 143 females, leg. P. Dominiak. Gdańsk Stocznia, 18 May–9 August 2004, 1 larva, 63 pupae, 243 males, 379 females, leg. P. Dominiak. Gdańsk Wrzeszcz, 17–29 May 2005, 5 males, 1 female, leg. E. Kaczorowska. Malbork, 25 May 2004, 1 larva, 12 males, 21 females, leg. P. Dominiak. *Betula pendula*: Gdańsk, 3–15 April 1989, 3 males, 2 females, leg. R. Szadziewski. Gdańsk, Dolina Radości,

3–24 April 1989, 4 larvae, 6 pupae, 20 males, 13 females, leg. R. Szadziewski. Głowaczewo near Wałcz, 23 July 2004, 5 pupae, 34 males, 39 females, leg. P. Dominiak. *Carpinus betulus*: Białowieża Primeval Forest, 2 May 2004, 3 larvae, 4 pupae, 45 males, 15 females, leg. P. Dominiak. *Fagus sylvatica*: Gdynia, 5 June 2004, 2 males, 13 females, leg. P. Dominiak. Kadyny near Elbląg, 6 June 2004, 1 female, leg. P. Dominiak. *Populus balsamifera*: Kadyny near Elbląg, 30 May 2004, 19 males, 30 females, leg. P. Dominiak. *Populus canadensis*: Malbork, 10 July 2004, 3 pupae, 5 males, 7 females, leg. P. Dominiak. *Populus nigra*: Gdynia Wzgórze Św. Maksymiliana, 26 May 2004, 1 pupa, 4 males, 2 females, leg. P. Dominiak. *Quercus robur*: Kadyny near Elbląg, 6 June 2004, 3 males, 1 female, leg. P. Dominiak. *Tilia platyphyllos*: Gdańsk Politechnika, 1 June 2004, 2 pupae, 59 males, 80 females, leg. P. Dominiak. Gdańsk Stocznia, 9 August 2004, 16 pupae, 80 males, 84 females, leg. P. Dominiak. *Ulmus* sp.: Wigierski National Park, Wiatrołóża Reserve, 2 July 2005, 8 males, 3 females, leg. P. Dominiak. From tree holes: Poland: *Alnus* sp.: Strzebielino Morskie, 8 May 1983, 4 pupae, 1 male, 2 females, leg. R. Szadziewski. *Acer pseudoplatanus*: Płocice near Kościerzyna, 14 July 2004, 2 larvae, leg. P. Dominiak. *Aesculus hippocastanum*: Gdańsk Politechnika, 5 April–7 July 2004, 2005, 6 males, 11 females, leg. P. Dominiak. *Fagus sylvatica*: detritus in trunk cavity, Kadyny near Elbląg, 6 June 2004, 2 pupae, 3

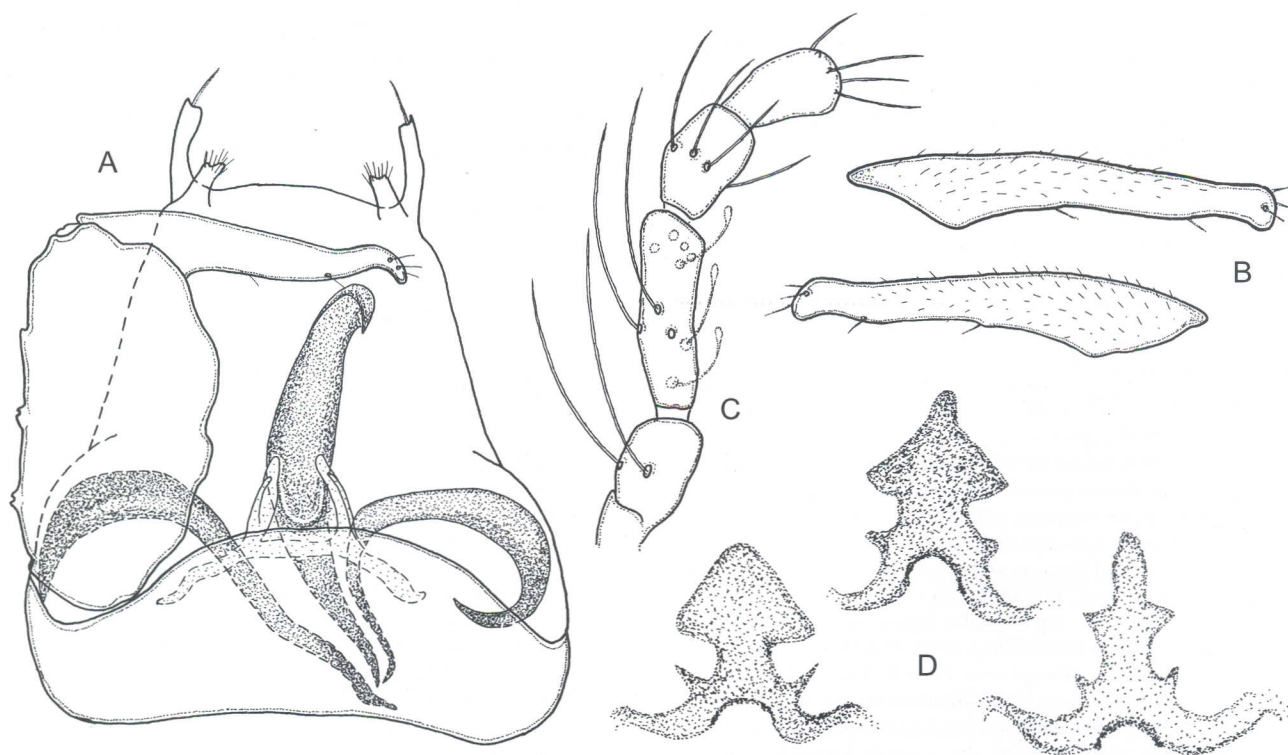


Figure 2. *Dasyhelea flavifrons* (Guérin, 1833). (A) Male genitalia; (B) gonostylus; (C) male palpus; (D) female subgenital plate.

males, 4 females, leg. P. Dominiak. Tree species unknown, adults reared from detritus by R. Ludwińska: Gdańsk, 26 April 1986. Gdańsk Oliwa, Park Oliwski, 27 June 1987, 4 males, 10 females. Piaśnica, 29 June 1986, 7 males, 2 females. Wejherowo, 13 May–17 August 1986, 1987, 2 pupae, 7 males, 14 females. Wejherowo, on Reda river, 17 May 1986, 1 male, 2 females. Wejherowo, near forester's house Migi, 13 May–9 June 1986, 18 males, 20 females. Wejherowo, park, 24 July 1987, 2 males, 3 females.

Other material. USA: Colesville, MD. Montgomery Co., 29 July–18 September 1975, 1977, light trap, 1 male, 2 females, leg. W.W. Wirth. Los Angeles, CA, Monrovia, Monrovia Canyon, 3 June 1995, 1 male, leg. W. L. Grogan.

Diagnosis. Small species with wing length in both sexes 1.1–1.5 mm. Third palpal segment relatively short with low palpal ratio 2.5–3.8 in male (Fig. 2C), and 2.4–3.6 in female. Colouration variable. Scutellum either yellow, sometimes darker medially and laterally or completely dark brown. Legs pale, pale with dark rings or almost wholly dark with pale rings before knees. Apical portion of subgenital plate most often in shape of equilateral triangle (Fig. 2D). Gonostylus almost straight, slightly sinuous (Fig. 2A, B).

D. flavifrons can be separated from *D. saxicola* by its smaller size, straight and sinuous gonostylus, lower palpal ratio (in male 2.5–3.8), and by its short triangular subgenital plate. *D. saxicola* is a bigger species with a C-shaped gonostylus, higher palpal ratio (4.0–4.8 in male), and the subgenital plate in the shape of an elongated triangle.

Discussion. In 1833 Guérin reared *D. flavifrons* from larvae collected from elm flux. Subsequently, various authors described various European species developing in sap of different tree species, tree holes, decaying roots (*Arctium lappa* and *Angelica* sp.) and similar habitats, and these were recorded, misinterpreted or synonymized in various combinations.

There is no type material of *C. flavifrons* and *C. dufouri* in the Muséum national d'Histoire naturelle France (Dr. Dany Azar, personal comm.). The types of *C. versicolor* and *C. obscurus* described by Winnertz were destroyed in 1944 in Bonn, while the types of species named by Kieffer (1918, 1919) were destroyed in 1956 in Budapest.

Goetghebuer (1934), without comment recognized *D. goetghebueri* briefly described in a key by Kieffer (1919) from Belgium, as well as *D. brevitibialis* named by Goetghebuer (1919) from Belgium, as junior synonyms of *D. versicolor*, which has been reared from poplar (Goetghebuer 1920). We suspect that the all three names are based on the same species of *Dasyhelea* from Belgium reared in 1914 by Goetghebuer. We believe that Goetghebuer knew this when he proposed those synonyms.

In Poland we reared *D. flavifrons* from larvae found in sap flows, tree holes and trunk cavities of thirteen tree species (Norway maple *Acer platanoides*, sycamore maple

A. pseudoplatanus, horse chestnut tree *Aesculus hippocastanum*, alder *Alnus* sp., white birch *Betula pendula*, hornbeam *Carpinus betulus*, beech tree *Fagus sylvatica*, balsam poplar *Populus balsamifera*, Canadian poplar *P. canadensis*, black poplar *P. nigra*, common oak *Quercus robur*, large leaved lime *Tilia platyphyllos*, elm *Ulmus* sp.).

Present examination of large numbers of males and females reared from different trees and collected by net in the field showed that colouration of the scutum, scutellum, legs and halteres, often used at old descriptions, are greatly variable and have no diagnostic value. Similar variation is observed in the closely related *D. saxicola*, which has reared from fully aquatic habitats and is often confused with *D. flavifrons*. Comparisons of our reared *Dasyhelea* from different habitats lead us to the conclusion that all the specimens from the habitats listed above which live in sap flows and tree holes represent only one species in the Holarctic – *D. flavifrons*. As a result we propose to treat *D. obscura*, *D. versicolor*, *D. dufouri*, *D. hippocastani*, *D. brevitibialis*, *D. goetghebueri*, *D. lignicola*, *D. sensualis*, *D. paludicola*, *D. oppressa* and *D. septuosa* as its junior synonyms.

D. bilineata Goetghebuer, 1920 reared from larvae living in the water in the leaf axil of *Dipsacus sylvestris* (= *Dipsacus fullonum*) in Belgium and England was correctly excluded from the synonymy of *D. versicolor* and *D. dufouri* by Disney and Wirth (1982). According to the original description it is similar or synonymous with *D. saxicola* (see below).

Distribution. Greece, France, Croatia, Hungary, Austria, Belgium, Germany, England, Czech Republic, Poland, Estland, North America.

Dasyhelea (Dasyhelea) saxicola (Edwards, 1929)

Tetrastoma saxicola Edwards, 1929: 426 (male, breeding site – rock-holes, England).

Dasyhelea saxicola: Szadziewski 1986: 47 (female, male, breeding site, syn. = *D. lithotelmatica*, distribution).

Dasyhelea obscura: Storå 1939: 17 (breeding site – rock-holes, Finland, distribution); Remm 1962: 113 (male, Estland), nec *Dasyhelea obscura* (Winnertz, 1852) (see above).

Dasyhelea geleiana Zilahi-Sebess, 1931: 321 (larva, pupa, female, male, breeding site – rock pool, biology, Hungary) **syn. nov.**

Dasyhelea lithotelmatica Strenzke, 1951: 178 (larva, pupa, female, male, breeding site – rock pool, Austria); Disney 1975: 227 (England).

Dasyhelea (Dasyhelea) tecticola Remmert, 1953: 334 (larva, pupa, female, male, breeding site – in a rain gutter, Germany); Sannino and Espinosa 2004: 32 (larva, pupa, female, male, breeding site – float system in a greenhouse, Italy) **syn. nov.**

Dasyhelea (Dasyhelea) karelica Glukhova et Brodskaya, 1997: 443 (larva, pupa, female, male, breeding site – rock pool, Russia – Karelia) **syn. nov.**

Material examined (adults reared from larvae and pupae). Algeria: Les Falaises near Jijel, rock hole, 15

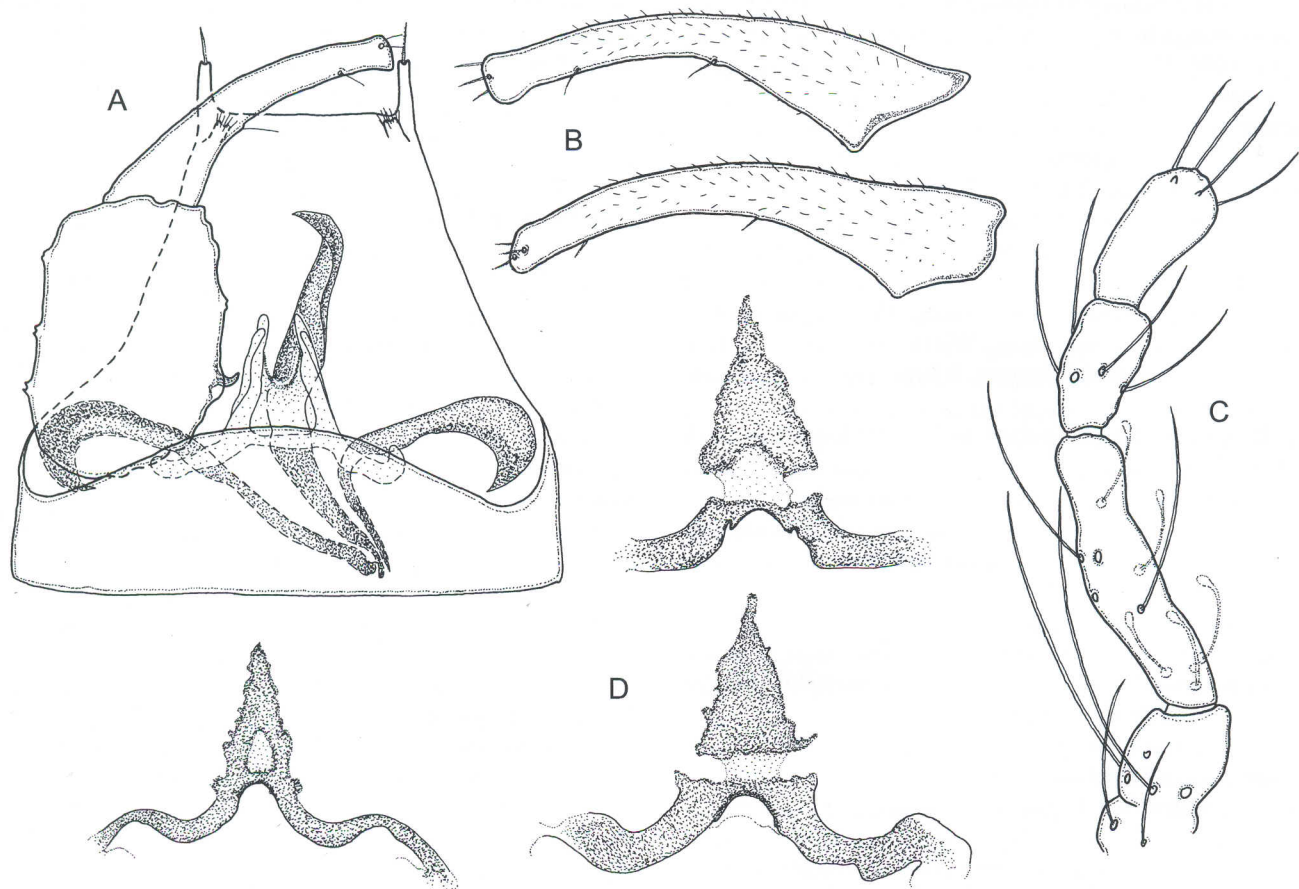


Figure 3. *Dasyhelea saxicola* (Edwards, 1929). (A) Male genitalia; (B) gonostylus; (C) male palpus; (D) female subgenital plate.

April 1981, 1 larva, 6 pupae, 2 males, 1 female, leg. R. Szadziewski. England: Highfolds, Malham Tarn, Inst., pavement, 18 April 1979, 4 pupae, 6 males, 2 females, leg. R.H.L. Disney. France: near Strasbourg, hole in a stone, 4 July 1982, 2 larvae, 12 pupae, 4 males, 3 females, leg. R. Szadziewski. Germany: Hannover, rain gutter, 20 December 1952, leg. H. Remmert (paratype female of *D. tecticola*) Senckenberg Museum, Frankfurt a. M. Gibraltar, rockpool, 15 April 1954, 1 pupa, 1 male, Senckenberg Museum, Frankfurt a. M. Italy: Caserta, greenhouse tobacco in float system, April 2001, 2 larvae, 2 pupae, 3 males, 3 females, leg. L. Sannino. Poland: Gdańsk, sink, 20 June–7 October 1979, 1980, 1982, 4 larvae, 24 pupae, 13 males, 15 females, leg. R. Szadziewski; rain gutter, 8–20 July 1980, 1 pupa, 3 males, 9 females, leg. R. Szadziewski.

Diagnosis. Larger than *D. flavifrons*. Wing length of male 1.4–1.9 mm, of female 1.6–1.9 mm. Colouration variable. Third palpal segment in both sexes relatively long, palpal ratio 4.0–4.8 in male (Fig. 3C) and 3.0–4.4 in female. Legs usually pale with distinct dark rings or almost whole dark with a pale ring before knee. Female

subgenital plate in shape of elongated triangle (Fig. 3D). Gonostylus in male genitalia evenly curved, C-shaped (Fig. 3A, B).

Discussion. *D. saxicola* together with *D. flavifrons* belongs in the group of very similar biting midges in the subgenus *Dasyhelea* s. str. in which fourth palpal segment is devoid of sensilla capitata. Larvae of *D. saxicola* live in lithotelmatic habitats like rock pools, holes in stones and similar small water bodies (rain gutters, watering and floating system in gardens, fountains, etc.). Examination of material reared from different lithotelmatic habitats in Europe show that they do not differ morphologically and this leads us to the conclusion that *D. geleiana*, *D. tecticola* and *D. karelica* are junior synonyms of *D. saxicola*. Pupae of *D. saxicola* do not differ from those of *D. flavifrons*. In both species the opercula bear from 2 to 4 tubercles and have a similar number of spiracular openings on the thoracic horns.

This species was misidentified as *D. obscura* by Storå (1939) and Remm (1962). *Dasyhelea geleiana* is removed from a list of synonyms of *D. dufouri* (Laboulbène, 1869) as proposed by Remm (1988).

Distribution. The species is widely distributed in the Palaearctic region and is recorded from Algeria, Gibraltar, France, Italy, Hungary, Austria, England, Germany, Poland, Estland, Finland, Russia – Karelia.

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