

## A preliminary checklist of European mosquitoes

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### Abstract

A list of currently recognised European taxa with synonyms is presented.

### Introduction

The Culicidae comprises three subfamilies: Anophelinae, Culicinae and Toxorhynchitinae. All of the European mosquitoes belong to a single anopheline genus, *Anopheles*, or to one of six culicine genera, *Aedes*, *Coquillettidia*, *Culex*, *Culiseta*, *Orthopodomyia* and *Uranotaenia*. There are no representatives of the Toxorhynchitinae in Europe.

### The checklist

Below is a listing of currently recognised European taxa with synonyms used in Europe and contiguous regions. Those originally described from areas outside the continent, are indicated as follows: <sup>1</sup>Greenland; <sup>2</sup>Afrotropical Region (including SW of Arabian Peninsula); <sup>3</sup>Oriental Region; <sup>4</sup>Palearctic east of European Russia, Trans-Caucasia; <sup>5</sup>Nearctic; <sup>6</sup>North Africa, Middle East, Asia Minor and Atlantic Islands. A taxon in squared brackets indicates a misidentification. The synonymy is from Knight & Stone (1977) and its supplements. The checklist builds upon that published by Dahl & White (1978) and the distribution chart of Snow & Ramsdale (1999).

## FAMILY CULICIDAE

### SUBFAMILY ANOPHELINAE

#### Genus *Anopheles* Meigen, 1818

##### Subgenus *Anopheles* Meigen, 1818

- algeriensis* Theobald, 1903<sup>6</sup>  
*lukisii* Christophers, 1916<sup>6</sup>  
*atroparvus* van Thiel, 1927 (note 1)  
*fallax* Roubaud, 1934  
*cambournaci* Roubaud & Treillard, 1936  
*beklemishevi* Stegny & Kabanova, 1976  
*claviger* (Meigen, 1804) (note 2)  
[*bifurcatus* Linnaeus, 1758]  
*villosus* Bobineau-Desvoisy, 1827  
*grisescens* Stephens, 1829  
*turkestanii* Shingarev, 1926<sup>4</sup>  
*amaurus* Martini, 1929<sup>4</sup>  
*missiroli* del Vecchio, 1939  
*pollutus* Torres Cañamares, 1945  
*hyrcanus* (Pallas, 1771) (note 3)  
*pictus* Loew, 1845  
*pseudopictus* Grassi, 1899  
*flerowi* Portschninsky, 1910<sup>4</sup>  
*mesopotamiae* Christophers & Chand, 1915<sup>6</sup>  
*marsinovskii* Shingarev, 1926<sup>4</sup>  
*popovi* Shingarev, 1928<sup>4</sup>  
*mahmuti* Martini, 1930<sup>6</sup>  
*labranchiae* Falleroni, 1926  
*pergussae* Missiroli, 1935  
*sicaulti* Roubaud, 1935<sup>6</sup>

- maculipennis* Meigen, 1818  
*alexandrae schingarevi* Shingarev, 1928  
*basili* Falleroni, 1932  
*typicus* Hackett & Missiroli, 1935  
*marteri* Senevet & Prunelle, 1927<sup>6</sup>  
*sogdianus* Keshishian, 1938<sup>4</sup>  
*conquensis* Torres Cañamares, 1946  
*melanoon* Hackett, 1934  
*messeae* Falleroni, 1926  
*petragnani* Del Vecchio, 1939 (note 2)  
*plumbeus* Stephens, 1828  
*nigripes* Stäger, 1839  
*corsicanus* Edwards, 1928  
*intermedius* Shingarev, 1928  
*sacharovi* Favre, 1903<sup>4</sup>  
*elutus* Edwards, 1921<sup>6</sup>  
*relictus* Shingarev, 1928<sup>4</sup>  
*elutior* Martini, 1930<sup>4</sup>  
*subalpinus* Hackett & Lewis, 1935 (note 4)

Subgenus *Cellia* Theobald, 1902

- cinereus* Theobald, 1901<sup>2</sup> (note 5)  
*hispaniola* Theobald, 1903 (note 6)  
*jehafi* Patton, 1905<sup>2</sup>  
*myzomyifacies* Theobald, 1907<sup>6</sup>  
*italicus* Raffaele, 1928  
*rifenus* Baeza Cuellar, 1933<sup>6</sup>  
*multicolor* Cambouliu, 1902<sup>6</sup>  
*impunctus* Dönnitz, 1902<sup>6</sup>  
*chaudoyei* Theobald, 1903<sup>6</sup>  
*nigrifasciatus* Theobald, 1907<sup>3</sup> ←  
*sergentii* (Theobald, 1907)<sup>6</sup> (note 7)  
*superpictus* Grassi, 1899 (note 5)  
*palestinenensis* Theobald, 1903<sup>6</sup>  
*nursei* Theobald, 1907<sup>2</sup>  
*cardamatisi* Newstead & Carter, 1910  
*vassilievii* Portschninsky, 1911<sup>4</sup>  
*macedoniensis* Cot & Hovasse, 1917  
*berestnevi* Shingarev, 1926<sup>4</sup>  
*hellenicus* Peus, 1954

SUBFAMILY CULICINAE

Genus *Aedes* Meigen, 1818

genus  
*Aedes* → Subgenus *Aedes* Meigen, 1818

- cinereus* Meigen, 1818  
*rufus* Gimmerthal, 1845  
*nigritulus* Zetterstedt, 1850  
*leucopygus* Eysell, 1903  
*esoensis* subspecies *rossicus* Dolbeskin, Gorickaja &  
Mitrofanova, 1930 (note 8)  
*tarnogradskii* Martini, 1930  
*geminus* Peus, 1970

add *japonicus*

↖ ↘ *genus Aedes*

Subgenus *Aedimorphus* Theobald, 1903

*vexans* (Meigen, 1830)

*parvus* Macquart, 1834  
*articulatus* Rondani, 1872  
*malariae* Grassi, 1898  
*arabiensis* Patton, 1905<sup>2</sup>  
*sudanensis* Theobald, 1911<sup>2</sup>

*vittatus* (Bigot, 1861) (note 9)

*brumpti* Neveu-Lemaire, 1905<sup>2</sup>  
*albopunctata* Theobald, 1907<sup>2</sup>

Subgenus *Finlaya* Theobald, 1903

*echinus* (Edwards, 1920)

*geniculatus* (Olivier, 1791)

*guttatus* Meigen, 1818  
*lateralis* Meigen, 1818  
*ornatus* Meigen, 1818  
*guttatus* Curtis, 1835

*albo-punctatus* Rondani, 1872

*gilcolladoi* Villa, Rodriguez & Llera, 1985 (note 10)

} now all  
ochlerotatus

Subgenus *Ochlerotatus* Lynch Arribalzaga, 1891 (note 11)

/  
now all genus  
& subgenus

add japonicus  
japonicus

*annulipes* (Meigen, 1830)

*quartus* Martini, 1920

*atropalpus* (Coquillett, 1902)

*behningi* Martini, 1926

*berlandi* Seguy, 1921

*praeteritus* Seguy, 1923

*longitubus* Cambournac, 1938

*heracleensis* Callot, 1944

*cantans* (Meigen, 1818)

*reptans* Meigen, 1804

*waterhousei* Theobald, 1905

*subvexans* Martini, 1922

*Caspia* Complex (Pallas, 1771)<sup>4</sup> (note 12)

*punctatus* Meigen, 1804<sup>6</sup>

*siculus* Robineau-Desvoidy, 1827

*maculiventris* Macquart, 1844<sup>6</sup>

*penicillaris* Rondani, 1872

*longisquamosa* Theobald, 1905<sup>6</sup>

*subtilis* Sergent & Sergent, 1905<sup>6</sup>

*africanus* Neveu-Lemaire, 1906<sup>6</sup>

*arabica* Giles, 1906<sup>6</sup>

*wilcocksii* Theobald, 1907<sup>6</sup>

*arabicus* Becker, 1910<sup>2</sup>

var. *hargreavesi* Edwards, 1920

*albineus* Seguy, 1923<sup>6</sup>

*epsilon* Seguy, 1924<sup>6</sup>

*caspia* Species A Cianchi, Urbanelli, Sabatini,

Coluzzi, Tordi & Bullini, 1980

*caspia* Species B Cianchi, Urbanelli, Sabatini,

Coluzzi, Tordi & Bullini, 1980

*cataphylla* Dyar, 1916<sup>5</sup>

*rostochiensis* Martini, 1920

- coluzzii* Rioux, Guilvard & Pasteur, 1998 (note 13)  
*detritus* species A Pasteur, Rioux, Guilvard, Pech-  
 Ferieres & Verdier, 1977  
*communis* (De Geer, 1776)  
*fasciatus* Meigen, 1804  
*nemorosus* Meigen, 1818  
*sylvaticus* Meigen, 1818  
*obscurus* Meigen, 1830  
*diplolineata* Schneider, 1913  
*palmeni* Edwards, 1921  
*cyprius* Ludlow, 1919<sup>4</sup>  
*freyi* Edwards, 1921  
*detritus* (Haliday, 1833) (note 13)  
*terriei* Theobald, 1903  
*detritus* species B Pasteur, Rioux, Guilvard, Pech-  
 Ferieres & Verdier, 1977  
*diantaeus* Howard, Dyar & Knab, 1912<sup>5</sup>  
*serus* Martini, 1920  
*dorsalis* (Meigen, 1830) (note 14)  
*grahami* Ludlow, 1919<sup>4</sup>  
*duplex* Martini, 1926  
*euedes* Howard, Dyar & Knab, 1912<sup>5</sup>  
*beklemishevi* Denisova, 1955  
*grandilarva* Sazanova, 1955  
*excrucians* (Walker, 1856)<sup>5</sup>  
*dytes* Martini, 1922  
*flavescens* (Müller, 1764)  
*lutescens* Fabricius, 1775  
*variegatus* Schrank, 1781  
*bipunctatus* Robineau-Desvoidy, 1827  
*flavus* Von Motschulsky, 1859<sup>4</sup>  
*flavescens* Theobald, 1901  
*arcanus* Blanchard, 1905  
*hexodontus* Dyar, 1916<sup>5</sup>  
*hungaricus* Mihalyi, 1955  
*impiger* (Walker, 1848)<sup>5</sup>  
*parvulus* Edwards, 1921  
*intrudens* Dyar, 1919<sup>5</sup>  
*leucomelas* (Meigen, 1804)  
*salinellus* Edwards, 1921  
*schtakelbergi* Shingarev, 1928  
*mariae* (Sargent & Sargent, 1903)<sup>6</sup>  
*desbansi* Seguy, 1923  
*nigrinus* (Eckstein, 1918)  
*nigripes* (Zetterstedt, 1838)<sup>1</sup>  
*innuitus* Dyar & Knab, 1917<sup>1</sup>  
*pionops* Dyar, 1919<sup>5</sup>  
*pulcritarsis* (Rondani, 1872)  
*leucocanthus* Loew, 1873  
*stegomyina* Stackelberg & Monchadskii, 1926<sup>4</sup>  
*simici* Baronoff, 1927  
*pullatus* (Coquillett, 1904)<sup>5</sup>  
*jugorum* Villeneuve, 1919  
*gallii* Martini, 1920  
*metalepticus* Dyar, 1920  
*seguyi* Apfelbeck, 1929  
*punctodes* Dyar, 1922<sup>5</sup>

- punctor* (Kirby, 1837)<sup>5</sup>  
*fusculus* Zetterstedt, 1850  
*wahlgreni* Theobald, 1910  
*alineata* Schneider, 1913  
*haplolineata* Schneider, 1913  
*meigenanus* Dyar, 1921  
*riparius* Dyar & Knab, 1907<sup>5</sup>  
*semicantans* Martini, 1920  
*sticticus* (Meigen, 1838)  
*concinnus* Stephens, 1846  
*sylvae* Theobald, 1901  
*dorso-vittatus* Villeneuve, 1919  
*lesnei* Seguy, 1920  
*paradiantaeus* Apfelbeck, 1929  
*surcoufi* Theobald, 1912  
*thibaulti* Dyar & Knab, 1905 (note 15)  
*innuitus* Dyar & Knab, 1917  
*zammatii* (Theobald, 1903)

1910

Subgenus *Rusticoidus* Schevchenko & Prudkina, 1973

- krymmontanus* Alekseev, 1989  
*lepidonotus* Edwards, 1920  
*quasirusticus* Torres Cañamares, 1951  
*refiki* Medschid, 1928<sup>6</sup>  
*stampari* Apfelbeck, 1929  
*pseudorusticus* Callot, 1945  
*rusticus* (Rossi, 1790)  
*maculatus* Meigen, 1804  
*musicus* Leach, 1825  
*pungens* Robineau-Desvoidy, 1827  
*quadratimaculatus* Macquart, 1834  
*diversus* Theobald, 1901  
*luteovittata* Theobald, 1901  
*subdiversus* Martini, 1926

now all  
Ochlerotatus

Subgenus *Stegomyia* Theobald, 1901

- aegypti* (Linnaeus, 1762)<sup>6</sup>  
*argentius* Poiret, 1787<sup>6</sup>  
*calopus* Meigen, 1818  
*sugens* Wiedemann, 1828<sup>2</sup>  
*kounoupi* Brulle, 1833  
*viridifrons* Walker, 1848  
*elegans* Ficalbi, 1889  
*canariensis* Pittaluga, 1905<sup>6</sup>  
*albopalpus* Becker, 1908<sup>6</sup>  
*anguste-alatus* Becker, 1908<sup>6</sup>  
*albopictus* (Skuse, 1894)<sup>3</sup>  
*cretinus* Edwards, 1921  
*delta* Seguy, 1924  
*lindtropi* Shingarev, 1927

genus Aedes

Genus *Coquillettidia* Dyar, 1905

Subgenus *Coquillettidia* Dyar, 1905

- buxtoni* (Edwards, 1923)<sup>6</sup>  
*richiardii* (Ficalbi, 1889)  
*nikolskyi* Shingarev, 1927

**Genus *Culex* Linnaeus, 1758**

**Subgenus *Barraudius* Edwards, 1921**

- modestus* Ficalbi, 1889  
*tanajcus* Stschelkanovzev, 1926  
*nudipalpis* Shingarev, 1927  
*pusillus* Macquart, 1850

**Subgenus *Culex* Linnaeus, 1758**

- brumpti* Gaillard, 1931  
*laticintus* Edwards, 1913  
*mimeticus* Noe, 1899  
    *pseudomimeticus* Sergent, 1909<sup>6</sup>  
*peregrinus* Theobald, 1903<sup>6</sup> (note 16)  
    [*univittatus* Theobald, 1901]<sup>2</sup>  
*pipiens* Linnaeus, 1758  
    *bifurcatus* Linnaeus, 1758  
    *fasciatus* Müller, 1764  
    *trifurcatus* Fabricius, 1794  
    *luteus* Meigen, 1804  
    *bicolor* Meigen, 1818<sup>2</sup><sup>6</sup>  
    *rufus* Meigen, 1818  
    *marginalis* Stephens, 1825  
    *meridionalis*, Leach, 1825  
    *calcitrans* Robineau-Desvoidy, 1827  
    *thoracicus* Robineau-Desvoidy, 1827  
    *pallipes* Waltl, 1835  
    *unistriatus* Curtis, 1837  
    *pallipes* Macquart, 1838<sup>6</sup>  
    *rufinus* Bigot, 1888<sup>6</sup>  
    *agilis* Bigot, 1889<sup>6</sup>  
    *phytophagus* Ficalbi, 1889  
    *melanorhinus* Giles, 1900<sup>6</sup>  
    *azoriensis* Theobald, 1903<sup>6</sup>  
    *longefurcatus* Becker, 1903<sup>6</sup>  
    *varioannulatus* Theobald, 1903<sup>6</sup>  
    *doliorum* Edwards, 1912  
    *disjunctus* Roubaud, 1957  
    *erectus* Iglsch, 1977  
    *torridus* Iglsch, 1977  
    issp *molestus* Forskål, 1775<sup>6</sup>  
        [*quinquefasciatus* Say, 1723]  
        *domesticus* Germar, 1817  
        *haematophagus* Ficalbi, 1893  
        *quasimodestus* Theobald, 1905<sup>6</sup>  
        *autogenicus* Roubaud, 1935  
        *berbericus* Roubaud, 1935<sup>6</sup>  
        *sternophallidus* Roubaud, 1945  
        *sternopunctatus* Roubaud, 1945  
        *calloti* Rioux & Pech, 1959

*theileri* Theobald, 1903<sup>2</sup>  
*creticus* Theobald, 1903  
*pettigrewii* Theobald, 1910<sup>3</sup>  
*onderstepoortensis* Theobald, 1911<sup>2</sup>  
*annulata* Theobald, 1913<sup>2</sup>  
*alpha* Seguy, 1924  
***torrentium*** Martini, 1925  
*pavlovsky* Shingarev, 1928<sup>4</sup>



#### Subgenus *Maillotia* Theobald, 1907

*deserticola* Kirkpatrick, 1924<sup>6</sup> (note 17)  
***hortensis*** Ficalbi, 1889  
*pilifera* Theobald, 1907<sup>6</sup>  
*lavieri* Larrousse, 1925

#### Subgenus *Neoculex* Dyar, 1905

*impudicus* Ficalbi, 1890  
*sergentii* Theobald, 1903  
***martinii*** Medschid, 1930<sup>6</sup>  
***territans*** Walker, 1856<sup>5</sup>  
 [apicalis Adams, 1903]  
*pyrenaicus* Brölemann, 1919  
*nematooides* Dyar & Shannon, 1925

#### Genus *Culiseta* Felt, 1904

##### Subgenus *Allotheobaldia* Brolemann, 1919

*longiareolata* (Macquart, 1838)  
*spatipalpis* Rondani, 1872  
*leucogrammus* Loew, 1874  
*seratipes* Becker, 1908  
*marocanus* d'Anfreville, 1916

##### Subgenus *Culicella* Felt, 1904

*fumipennis* (Stephens, 1825)  
*ficalbii* Noe, 1899  
*theobaldi* De Meijere, 1911  
*setivalva* (Monchadskii, 1936)  
***litorea*** (Shute, 1928)  
***morsitans*** (Theobald, 1901)  
*ochroptera* (Peus, 1935)

##### Subgenus *Culiseta* Felt, 1904

*alaskaensis* (Ludlow, 1906)<sup>5</sup>  
*siberiensis* Ludlow, 1919<sup>4</sup>  
*arctica* Edwards, 1920  
*wassilievi* Shingarev, 1927<sup>4</sup>  
***annulata*** (Schrank, 1776)  
*annulatus* Fourcroy, 1785  
*annulatus* Fabricius, 1787  
*affinis* Stephens, 1825  
*nicaensis* Leach, 1825  
***bergrothi*** (Edwards, 1921)  
*borealis* Shingarev, 1927  
*koglevnikovi* Shingarev, 1927  
***glaphyoptera*** (Schiner, 1864)  
*zottae* Ungureanu, 1956  
***subochrea*** (Edwards, 1921) (note 18)  
*ferruginata* Martini, 1924

**Genus *Orthopodomyia* Theobald, 1904**

*pulcripalpis* (Rondani, 1872)  
*albionensis* MacGregor, 1919

**Genus *Uranotaenia* Lynch Arribalzaga, 1891**

**Subgenus *Pseudoficalbia* Theobald, 1912**

*unguiculata* Edwards, 1913<sup>6</sup>

**NOTES ON CHECKLIST**

1. *Anopheles atroparvus*, *beklemishevi*, *labranchiae*, *maculipennis*, *melanoon*, *messeae*, *sacharovi* and *subalpinus* are placed in the Maculipennis Complex (White, 1976).

2. *Anopheles claviger* and *petragnanii* are placed in the Claviger Complex (Coluzzi, 1962).

3. The Hyrcanus Group comprises a large number of species, including the Far Eastern malaria vector *An. sinensis*, and has a wide Oriental and Palaearctic distribution. This Group has been intensively studied in the Oriental Region and the contiguous extreme eastern part of the Palaearctic, from where no less than 27 species have been described (Reid, 1968; Harrison, 1972; Harbach, 1994). Comparable studies have not been made elsewhere in the Palaearctic Region, where a number of forms differing in certain aspects of adult morphology and behaviour occur (Livadas & Sphangos, 1941; Ward, 1972; Postiglione *et al.*, 1973; Critescu *et al.*, 1975; Gutsevich, 1976). These include the named forms, *flerowi*, *mahmouti*, *marzinovski*, *mesopotamiae*, *pictus*, *popovi* and *pseudopictus*, treated by Knight & Stone (1977) as synonyms of the type form.

Laboratory crosses between *An. lesteri* (a member of the Hyrcanus Group) from the Philippines and '*An. hyrcanus*' from southern France, southern Turkey and Sri Lanka indicated that each population belonged to a different species (Ross Institute, unpublished reports to W.H.O., 1976; 1977). The same work showed a population of '*An. hyrcanus*' from southern France to be conspecific with another from southern Anatolia. At least two Anatolian populations are morphologically distinguishable (Postiglione *et al.*, 1973). Until it is more thoroughly investigated, '*An. hyrcanus*' in the western Palaearctic, including Europe, must necessarily continue to be treated as a single entity. However, it is already evident that existing biological information refers to an aggregate of species and not to a single polytypic species.

4. Taxonomic position discussed by Bullini *et al.*, 1980; Cianchi *et al.*, 1987; Ribeiro *et al.*, 1988.

5. Variations in adult coloration of both species, and especially of the arrangement of banding of the female palps, have led to instances of confusion between *Anopheles cinereus* and *An. superpictus* (Ramsdale, 1991). Larvae of the Asiatic and eastern Mediterranean species, *An. superpictus*, develop in clear pools, often devoid of vegetation and subject to considerable solar heating. In the western Mediterranean this niche is filled by *An. cinereus*, which is found in the Iberian Peninsula, Sardinia (but not Corsica), Sicily, and the south of Italy. *An. superpictus* occurs in southeastern Europe, as far west as Italy and Corsica (but not Sardinia).

6. From subspecies to synonym of *cinereus* (Dahl & White, 1978).

7. There are two European records of *An. sergentii*, from Bulgaria and from the Mediterranean island of Pantelleria. The unique Bulgarian record was by Markov & Morov (1929) but this species has not been recorded subsequently. The record from Pantelleria occurred during an epidemiological investigation of two indigenous cases of malaria (d'Alessandro & Sacca, 1967). Larvae found at this time were reported to have atypical abdominal tergal plates.

*An. sergentii* occurs in two geographic forms, presently classified as subspecies, between which there are fine differences in larval morphology (relative width and depth of abdominal tergal plates). These are often difficult to interpret, especially where both forms may be present (Mattingly & Knight, 1956; Rioux & Juminier, 1964; Gillies & de Meillon, 1968; Ramsdale & de Zulueta, 1983), which has led to questioning of their value. Despite their close morphological similarity, strikingly different behavioural patterns strongly suggest more fundamental differences (Senevet *et al.*, 1959; Gillies & de Meillon, 1968).

8. The taxa *esoensis* and *rossicus* both exhibit some variation. Peus (1972) reduced *rossicus* to subspecies rank within the species *Aedes esoensis* because they seemed to have allopatric distributions. He regarded *Aedes esoensis esoensis* as an eastern Palearctic form with a middle latitude Far Eastern distribution covering Japan, Korea, and NE. China, from where it extends westward to Kazakhstan, and *Aedes esoensis rossicus*, absent from Japan, as having a more northerly Far Eastern distribution in Jakutien (= Yakut), from where it extends through the Urals to Tchuwaschien (= Chuvash), the Caucasus and western Europe, possibly to the Atlantic.
9. From subgenus *Stegomyia* in Knight (1978).
10. *Aedes gilcolladoi* was named for a form from central Spain differing in certain features of larval chaetotaxy from both *Aedes echinus* and *Ae. geniculatus*. The position regarding the validity of this species is unsatisfactory. Type specimens were not deposited, and material is not available for examination.
11. Edwards (1932) divided the heterogeneous worldwide assemblage of then recognised species in the Subgenus *Ochlerotatus* into eight groups, four of which, the *Annulipes*, *Dorsalis*, *Communis* and *Rusticus* Groups are represented in Europe. Since then the subgenus has lost or gained species to synonymy, by resurrection, by description of new species and by creation of a new Subgenus *Rusticoides* Schevchenko & Prudina, 1973 for the *Rusticus* Group.
12. Two apparently morphologically identical forms, provisionally designated species A and B, were detected by isomorphic analysis of wild populations from Italy (Cianchi *et al.*, 1980).
13. Two apparently morphologically identical forms of *Aedes detritus*, designated sibling species A and B, were detected by isomorphic analysis of wild populations from the Camargue area of France (Pasteur *et al.*, 1977). There is evidence that the more northern European populations are species B. Hence the taxon described by Haliday (1833) from Holywood, Ireland equates to sibling species B (Rioux *et al.*, 1998). Species A has recently been named *Aedes coluzzii* by Rioux *et al.* (1998).

The synonyms *salinus* Ficalbi, 1896 and *maculosa* Theobald, 1905 used for *detritus* s.l. from Italy and Tunisia respectively, are not given in the listing as they cannot currently be ascribed, while *terriei* Theobald, 1903 (location Kent, England) is given as a synonym of *detritus* s.s.

14. To subspecies of *caspicus* in Knight (1978) but raised to specific rank by Lambert *et al.* (1990).
15. A Nearctic species recorded from the river Dnieper, Ukraine (Gutsevitch & Govitskaya, 1970). No longer found there according to Gutsevitch & Dubitskiy (1987).
16. *Cx. perexiguus* was consigned to synonymy with *Cx. univittatus* by Edwards (1932), elevated as a form (Mattingly, 1954), and then as a variety (Mattingly & Knight, 1956) of *Cx. univittatus*, and returned to species rank by White (1975). Harbach (1999) examined specimens from southern Europe (Greece, Italy and Turkey) and, on characteristics of the male genitalia and larvae, considered these to be *Cx. perexiguus*. He concluded that "based on the available evidence, the species of the Univittatus Complex that occurs in southern Europe should be regarded as *Cx. perexiguus* rather than *Cx. univittatus*".
17. From subgenus *Neoculex* (Harbach *et al.*, 1989).
18. From subspecies of *annulata* (Ribeiro *et al.*, 1977).

## References

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#### Lectotype selection for *Aedes quasirusticus* (Diptera: Culicidae)

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#### Abstract

A lectotype is selected from syntype specimens of *Aedes quasirusticus* Canamares. Condition and label data of the lectotype are provided.

#### Introduction

During revisionary studies of the subgenera of genus *Aedes* Meigen, I examined the species of subgenus *Rusticoidus* Shevchenko & Prudkina deposited in The Natural History Museum, London, United Kingdom and the National Museum of Natural History, Smithsonian Institution, Washington, DC. Based on this examination of specimens and published descriptions, an expanded definition of subgenus *Rusticoidus* was developed and published (Reinert 1999). That report also provided a chronology of published articles used in resolving the confusion about which species are included in the subgenus. A list of included species was provided. During that study it was found that the following species did not have a primary type designated.

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