

SOUTH EAST ASIA MOSQUITO PROJECT  
DEPARTMENT OF ENTOMOLOGY  
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LECTOTYPES OF MOSQUITOES (DIPTERA : CULICIDAE)  
IN THE BRITISH MUSEUM.

PART II. GENERA *Toxorhynchites*, *Aedes* (Subgenera *Aedimorphus*, *Bankinella*), *Culex* (Subgenera *Neoculex*, *Culiciomyia*, *Mochthogenes*, *Culex*).

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THE present paper is the second of a series designed to validate lectotypes in the British Museum by publication. It deals mainly with Ethiopian species described by Edwards (1941) of which the types had not been marked by him at the time of his death. References not included in the bibliography to the present paper will be found in the first paper of the series (Mattingly 1955).

ORIENTAL SPECIES.

Genus *CULEX* Linnaeus.

*Culex (Culex) mimeticus* var. *mimuloides* Barraud, 1924, *Indian J. med. Res.* 11 : 992.

Edwards (1934) raised this variety to specific rank. He records it from Ootacamund (*Fletcher, Puri*), Coonoor (*Puri*), Kodaikanal (Palni Hills, *Patton*) and unnamed localities in the Nilgiri Hills (*Kazan Chand*). Barraud did not mark types. His original description refers specifically to material from the Nilgiri Hills and from this it is inferred that Patton's specimens (which are in the British Museum and are undated) cannot have formed part of the type series. Puri's specimens were collected in 1928, four years after the type series was described. Fletcher's specimens were collected in 1913 and were mentioned by Edwards (1921 : 338) in his revision of the Palearctic mosquitoes. Barraud (1924) states that he has not seen the specimens mentioned in this revision. It thus seems clear that the type series is the one collected by Khazan Chand and presented to the British Museum by Barraud, and since this fits all the data given by Barraud, I have marked a ♂ from it as the holotype, a ♀ as the allotype and the remaining 11 ♂ and 12 ♀ as paratypes. The holotype is numbered 1484 and has associated terminalia on a slide as have 5 of the ♂ paratypes, numbers 1442, 1483, 1485, 1486 and 1489 respectively. Data for the whole series are " Nilgiri Hills, x.1915, Khazan Chand."

*Culex tritaeniorhynchus* var. *siamensis* Barraud & Christophers, 1931, *Rec. Malar. Surv. India* 2 : 283.

Barraud and Christophers do not appear to have marked types. The British Museum has four ♂ from the type series with terminalia on slides. These are probably the ones stated by Barraud and Christophers (1931) to have been sent to Edwards. I have marked one, numbered Y.454, as the holotype and the other three as paratypes. Data for the holotype and one paratype (No. Y.460) are " Chiengmai, Siam, 17.xii.30, J. A. Sinton ". Data for the

other two paratypes (Nos. Y.376 and Y.381) are "Phya Thai Hotel, Bangkok, Siam, xii.1930, J. A. Sinton."

PALAEARCTIC SPECIES.

Genus *THEOBALDIA* Neveu-Lemaire.

*Culicella morsitans* var. *litorea* Shute. 1928, *Entomologist* **61** : 186.

Shute did not mark types. The original description refers only to material collected in January, 1928. The British Museum has specimens marked as collected in the type locality by Shute in March and May of that year and one slide of terminalia without date. Shute informs me that all this material was taken into account in drawing up his description and therefore forms part of the type series. I have accordingly chosen a ♂ holotype and a ♀ allotype and have marked the remaining specimens as paratypes. Data for the holo- and allotype are "Walton-on-the-Naze, Essex, v.1928, P. G. Shute". Among the paratypes, 2 ♂, 4 ♀, 4 whole larvae, 2 ♂ heads on slides and one set of ♂ terminalia have the same data. Two whole larvae were collected in March and one ♂ and one ♀ adult in April instead of in May, 1928 and one set of ♂ terminalia on a slide is undated.

Genus *TOXORHYNCHITES* Theobald.

*Megarhinus erythrurus* Edwards, 1941, *Mosq. eth. Reg.* **3** : 30.

Described from 3 ♂ and 3 ♀ from NIGERIA : Ibadan, 22. viii. 1929 (*H. W. Kumm*); 1 ♀, same locality, 20. vi. 1913 (*W. A. Lamborn*); 2 ♀, Lagos, undated, (*J. Cauchi*). I have marked one of Kumm's ♂ as the holotype and the other specimens as paratypes.

Genus *AÈDES* Meigen.

Subgenus *AÈDIMORPHUS* Theobald.

*Aedes (Aedimorphus) kapretwae* Edwards, *ibid.* : 162.

Described from 9 ♂ and 16 ♀ from KENYA : Mt. Elgon, v. 1939 (*T. H. E. Jackson*). I have marked one of the ♂ as the holotype and one of the ♀ as allotype. I have marked the remaining specimens as paratypes. One paratype of each sex has been presented to the United States National Museum in exchange for other material.

*Aedes (Aedimorphus) tricholabis* Edwards, *ibid.* : 179.

Described from 2 ♂ and 2 ♀, KENYA : Gede, 1940 (*E. C. C. Macdonald*). I have marked one of the ♂ as holotype and the other specimens as paratypes.

*Aedes (Aedimorphus) abnormalis* ssp. *kabwachensis* Edwards, *ibid.* : 181.

Described from 1 ♂ and 8 ♀ and two sets of ♂ terminalia from KENYA : Kabwach, undated (*C. Teesdale*). I have marked the ♂ as holotype and the remaining specimens as paratypes. The ♂ is numbered 44. This and 4 of the ♀ paratypes are accompanied by liaison larval and pupal pelts. One ♀ paratype

has been presented to the United States National Museum in exchange for other material.

*Aedes (Aedimorphus) wigglesworthi* Edwards, *ibid.* : 182.

Described from 5 ♂ and 2 ♀ from NIGERIA: Sapele, vi. 1928. (*V. B. Wigglesworth*) and 1 ♂ from NIGERIA: Ebute Metta, near Lagos, 29.vii.1929 (*C. B. Philip*). I have marked one of the ♂ from Sapele as holotype and the other specimens as paratypes. Edwards (1941: 394) also described the pupa of this species from three pelts which were until recently in the collection of the London School of Hygiene. It appears to me that his description may reasonably be construed as forming part of the type description since it was published in the same work and only appears on a later page for formal reasons. The late Professor P. A. Buxton very kindly presented the three pelts to the British Museum, and I have marked them as paratypes. At the same time he also presented a whole larva collected by Wigglesworth in the type locality. So far as I am aware this is the only specimen of the larva in existence. It is possibly the one figured by Wigglesworth (1929, reproduced in Hopkins 1936, 1952), but this is uncertain. In any event it clearly played no part in Edwards' description and accordingly I have left it unmarked.

*Aedes (Aedimorphus) cumminsi* ssp. *holocinctus* Edwards, *ibid.* : 193.

Described from a unique ♂ from KENYA: Gede, 1940 (*E. C. C. Macdonald*). I have marked this as the holotype.

*Aedes (Aedimorphus) hirsutus* var. *adenensis* Edwards, *ibid.* : 198.

Edwards cites as the type series 1 ♂ and 8 ♀ from W. ADEN PROTECTORATE: Jebel Jihaf, 7100 ft., ix.1937 (*Scott & Britton*). In fact, however, there are 10 specimens in the type series with the following data: 2 ♀, Jebel Jihaf, c. 7100 ft., -x.1937 (*H. Scott & E. B. Britton*) and 1 ♂ and 7 ♀, W. ADEN PROTECTORATE: Dhala, 4800 ft., 14.ix.1937 (*H. Scott & E. B. Britton*). Since the critical factor, if any, is likely to be altitude I have marked one of the ♀ from Jebel Jihaf as the holotype and the ♂ from Dhala as allotype. The other specimens I have marked as paratypes.

*Aedes (Aedimorphus) leesoni* ssp. *verna* Lewis, 1944, *Proc. R. ent. Soc. Lond.* (B) 13 : 27.

Described from holotype ♀ with associated (paedotype) larval and pupal pelts and 3 ♂ paratypes from SUDAN: Danagla Forest, 22.viii.1943 (*D. J. Lewis*) and 7 ♂ and 3 ♀ paratypes from SUDAN: Wad Medani, 11-12.ix.1943 (*D. J. Lewis*). It was stated that the holotype and some paratypes would be sent to the British Museum, but owing to the war this was not done. Dr. Lewis has now kindly sent the holotype ♀ and a ♂ from Danagla Forest marked by him as allotype. The ♂ has no terminalia, but it is hoped that these, together with the paedotype pelts and some further paratypes, will be sent later.

*Aedes (Aedimorphus) eritreae* Lewis, 1942, *ibid.* 11 : 165.

Described from 11 ♀ and 4 ♂ from ERITREA: Acchele Guzai, "27.iv.42 (including types) and 30.iv.42". Dr. Lewis has kindly sent a ♀ dated 27.iv.1942

and a ♂, without terminalia, dated 30.iv.1942. The holotype has not yet been marked. I have marked the ♀ as a cotype and the ♂ as a paratype pending the receipt of further material which has been promised.

Subgenus *Banksinella* Theobald.

*Aedes (Banksinella) flavimargo* Edwards, 1941, *Mosq. eth. Reg.* 3 : 209

Described from 2 ♀ from KENYA: Gede, undated (*E. C. C. Macdonald*). I have marked one of these as the hololectotype and the other as a paratype.

*Aedes (Banksinella) ellinorae* Edwards, *ibid.* : 212.

Described from 2 ♂ and 12 ♀ from KENYA: Gede, undated (*E. C. C. Macdonald*). I have marked one of the ♂ as hololectotype and the remaining specimens as paratypes.

Genus *CULEX* Linnaeus.

Subgenus *Neoculex* Dyar.

*Culex (Neoculex) subrima* Edwards, *ibid.* : 262.

Edwards himself marked the holotype. His type series contained 2 ♂ from BELGIAN CONGO: Stanleyville, viii-ix.1928 (*J. Schwetz*). I have only one specimen with these data, but the series in the British Museum also contains another ♂ from Stanleyville without data as to collector or date. The series is also said (Edwards, 1941) to have contained 3 ♂ from BELGIAN CONGO: Pawa, 28.v.1938 (*Dr. Radna*). I have these and I have marked all 5 specimens as paratypes. I have also 3 further ♂ from Pawa, viii.1938, (*Radna*), but Edwards does not mention these so I have left them unmarked.

*Culex sunyaniensis* Edwards, *ibid.* : 263.

Edwards marked as holotype a ♂ from GOLD COAST: Sunyani, 1915. I have also another ♂ with identical data and 2 dissected ♂ from SUDAN: K. (? Khor) Namburi and an undecipherable locality, 1911 (*H. H. King*) and one from SUDAN: Meridi, 5.xii.1936 (*W. Rutledge*) respectively. I presume that the first two are specimens mentioned by Edwards from Upper White Nile, Sudan, and I have marked all three as paratypes. A dissected ♂ from SUDAN: Yei, 21.xii.1935 is not mentioned by him and I have left it unmarked. I have marked as paratypes two dissected ♂ from NIGERIA: Lagos, undated (*S. L. M. Connal*) and GOLD COAST: Koforidua, vii.1919 (*F. H. Storey*). ♀ and undissected ♂ from these localities I have left unmarked as Edwards does not appear to have wished to include them in the type series. I have not been able to find the pupal pelts described by Edwards (1941: 411). I have marked the whole pupae which he described as paratypes.

*Culex (Neoculex) wigglesworthi* Edwards, *ibid.* : 264.

Edwards himself marked the holotype. I have marked the 4 other ♂ and 1 ♀ with data detailed by him as paratypes. A dissected ♂ from BELGIAN CONGO: Thysville (*J. Schwetz*), I have left unmarked as Edwards does not mention it.

*Culex (Neoculex) albertianus* Edwards, *ibid.* : 265.

Edwards himself marked the holotype. The head and pharynx are on a slide. It is undated. I could find only one of the ♂ from Kericho which he mentions and this I have marked as a paratype. It is dated xii.1938.

*Culex (Neoculex) calabarensis* Edwards, *ibid.* : 265.

Edwards marked the holotype. I have marked the other two ♂ which he mentions as paratypes. The specimens from Calabar are dated 18.vi.1910 and the one from Forcados 26.vi.1910.

*Culex (Neoculex) galliardi* Edwards, *ibid.* : 266.

Edwards marked the holotype. I have marked the other 3 specimens which he mentions as paratypes. He does not state the dates. These are Forcados, 18.vi.1910, Coquilhatville, 20.x.1910, Bap, 21.v.1925, Onitsha, iv.1928.

*Culex (Neoculex) adersianus* Edwards, *ibid.* : 268.

Described from 2 specimens. I have marked the specimen from Mombasa as the holotype, in accordance with the intention which he expresses and the specimen from Zanzibar as a paratype. The date on the holotype is ix.1924. The paratype is undated.

*Culex (Neoculex) acrostichalis* Edwards, *ibid.* : 268.

Edwards did not mark the type. I have marked one of the 3 ♀ from Kasala as holotype and the other 2 specimens from this locality and the specimen from the Sudan which he mentions as paratypes. I can only find two of the specimens from Kampala, and one of these is represented by a slide of head and pharynx only. It is undated. The whole specimen is dated 21.x.1926. I have marked both as paratypes.

#### Subgenus *Culiciomyia* Theobald.

*Culex (Culiciomyia) subaequalis* Edwards, *ibid.* : 276.

Edwards marked the holotype. I have marked the other specimen which he mentions as a paratype.

#### Subgenus *Mochthogenes* Edwards.

*Culex (Mochthogenes) simpliciforceps* Edwards, *ibid.* : 279.

The British Museum has all 5 specimens listed by Edwards. The 3 ♂ are all dissected. I have marked 1 ♂, UPPER WHITE NILE : Bundle to Hierallah, 19.iii.1911 (*H. H. King*) as holotype. The other ♂ from this locality has the same date. The 2 ♀ are dated 29.iii.1911 (Aow River) and 2.iv.1911 (Khor Namlini). The ♂ from Arua is dated 7.vii.1932. I have marked these 4 specimens as paratypes. The holotype bears the number 1013.

#### Subgenus *Culex* Linnaeus.

*Culex (Culex) aurantapez* var. *jinjaensis* Edwards, *ibid.* : 293.

The British Museum has a series of 7 ♂ and 7 ♀ from the type locality. Edwards did not mark the type. I have marked a ♂ dissected by him as

hololectotype and the remaining specimens as paratypes. The holotype is dated 10. xi. 1930 and the paratypes have various dates in the same year. All were collected by *G. H. E. Hopkins*. The British Museum also has a ♂ from KAMPALA: 5. ii. 1930 (*G. H. E. Hopkins*) and I have marked this as a paratype.

*Culex (Culex) striatipes* Edwards, *ibid.* : 311.

Described from 3 specimens only. Edwards did not label the holotype, but his designation leaves no possible doubt as to the specimen intended. I have accordingly marked it. I have marked the accompanying ♂ from Mt. Elgon and ♀ from Nairobi as paratypes.

*Culex (Culex) terzii* Edwards, *ibid.* : 312.

Edwards marked the holotype. I have marked a series of specimens from Salisbury and Bindura and 2 ♀ from Waterval Boven as paratypes. The holotype is dated April, 1900.

*Culex (Culex) umbripes* Edwards, *ibid.* : 321.

As noted previously (Mattingly & Lips, 1953), Edwards failed to mark the type. I have therefore marked one of the two specimens examined by him as hololectotype and the other as a paratype. The British Museum also has a third specimen with identical data which Edwards appears to have overlooked. I have left this unmarked. The type locality is misspelt on the data labels. The correct rendering is discussed by Mattingly & Lips (1953) under *Aedes leptolabis* Edwards.

*Culex (Culex) trifilatus* ssp. *aenescens* Edwards, *ibid.* : 323.

Described from 3 ♂ and 2 ♀ from UGANDA: Kameranjoka (*G. H. E. Hopkins*). I have marked one of the dissected males, dated 18. ix. 1931, as hololectotype and the other specimens as paratypes. The latter include a dissected ♂ dated 18. ix. 1931, an undissected ♂ with the same date, a ♀ dated 8. ix. 1931 and another ♀ dated 16. ix. 1931. I have marked the pupal pelts described by Edwards (1941 : 421) as paratypes.

*Culex (Culex) andersoni* ssp. *bwambanus* Edwards, *ibid.* : 325.

Described from a unique ♂ which I have marked as the holotype. The data are as given by Edwards (1941).

*Culex (Culex) andersoni* ssp. *abyssinicus* Edwards, *ibid.* : 325.

Described from 5 ♂ from ABYSSINIA: Addis Ababa, various dates in April, 1936 (*J. W. S. Macfie*). One of these is dissected and I have marked it as hololectotype. It is dated 18. iv. 1936. I have marked the other specimens as paratypes. I have also marked as paratypes 3 dissected ♂ from the same locality, dated i. 1927, (*H. Scott*), 1935 (*H. Sharp*), and 24. xii. 1935 (*C. E. Bevan*), one dissected ♂, 1 undissected ♂ and 1 ♀ from ABYSSINIA: Dessie, 1936 (*C. E. Bevan*), 2 ♀ from the same locality, 21. iii. 1936 (*J. W. S. Macfie*), 2 ♀ from ABYSSINIA: Koram, iii. 1936 (*J. W. S. Macfie*), 1 dissected ♂ from L. Ashangi, 1936 (*C. E. Bevan*) and 1 undissected ♂ and 1 ♀ from ABYSSINIA :

Maji, vii. 1928 (*P. Holland*). The British Museum also has a dissected ♂ from ABYSSINIA: Mulu, 19–21. xii. 1926 (*H. Scott*) but Edwards does not mention this, so I have left it unmarked.

*Culex (Culex) vansomereni* ssp. *elgonicus* Edwards, *ibid.* : 328.

Described from 2 dissected ♂ and 1 ♀ from Buginyanya, 15. viii. 1929 (*G. R. L. Hancock*). I have marked one ♂ as the holotype and the other two specimens as paratypes.

*Culex (Culex) vansomereni* ssp. *toroensis* Edwards and Gibbins, 1939, *Ruwenzori Expt.* 1 : 32.

Described from 3 dissected and 2 incomplete ♂ and 1 ♀ from UGANDA: Kisomoro, 20. vi. 1936 (*F. Shillito*) and 9 ♂ and 9 ♀ from Kararama Camp, Namwamba Valley, 5. i. 1935 (*E. G. Gibbins*). I have marked one of the dissected ♂ from Kisomoro as holotype and the remaining specimens as paratypes.

*Culex (Culex) vansomereni* ssp. *macrophyllus* Edwards and Gibbins, *ibid.* : 31.

Described from 5 dissected ♂ and 4 ♀ from Lugezi Camp between Mt. Mgahinga and Mt. Sabinio, xi. 1934 (*F. W. Edwards*). I have marked one of the ♂ as holotype and the other specimens as paratypes. I have left unmarked an undissected ♂ from Mt. Sabinio, 29. xi. 1934 (*F. W. Edwards*) since this seems to have been collected somewhat below the type locality and is not mentioned by Edwards in his description.

*Culex (Culex) chorleyi* Edwards, 1941, *Mosq. eth. Reg.* 3 : 330.

The British Museum has 2 dissected and 1 undissected ♂ from the type locality. I have marked one of the former as holotype. It was previously marked by Hopkins as the paedotype of *Culex pallidocephalus* Theobald and has an associated larval skin, much damaged by desiccation of the mountant, which I have marked as part of the holotype. I have marked the two other specimens as paratypes. Their dates are 3. ix and 5. ix. 1932. The date on the holotype is 3. ix. 1932. I have also marked as paratypes 7 ♀ and 5 ♂ from Kampala (*Hopkins*), 1 ♂ from BELGIAN CONGO: Nyangezi, 1939 (*J. Schwetz*) and 5 ♀ and 2 ♂ from BELGIAN CONGO: Kabare, viii–ix. 1939 (*J. Schwetz*) as paratypes. Finally I have marked as paratypes the 5 pupal pelts, 3 from Masaka and 2 from Kampala, described by Edwards (1941 : 423).

*Culex (Culex) invidiosus* var. *vevillatus* Edwards, *ibid.* : 339.

Described from 5 ♂, 3 of them dissected, and 1 ♀ from UGANDA: Kampala (*G. H. E. Hopkins*). I have marked one dissected ♂, dated 24. ii. 1930, as holotype and the other specimens, which are dated 20 and 21. xii. 1929, as paratypes. I have also marked 2 ♂ and 2 ♀ from NIGERIA, Ibadan, 30. viii. 1929 (*C. B. Philip*), 1 ♂ and 1 ♀ from BELGIAN CONGO, Stanleyville, v–vii. 1928, (*J. Schwetz*), 5 ♂ and 1 ♀ from BELGIAN CONGO, Popokabaka, undated (*J. Schwetz*) and 4 ♂ from BELGIAN CONGO: Léopoldville (*C. Henrard*) as paratypes. Edwards also saw 2 ♂ from BELGIAN CONGO: Masua, 11. ix. 1929 (*J. Schwetz*)

and dissected one of them, but I have not marked these, since he does not mention them.

*Culex (Culex) guiarthi* var. *sudanicus* Edwards, *ibid.* : 345.

Described from 6 ♂ from GOLD COAST: Bole, 1911 (*A. Ingram*) and 2 ♂ and 1 ♀ from NIGERIA: Gadau, 1931 (*A. W. Taylor*). One of the undissected ♂ from Bole is dated 22. viii. 1911. The others are marked only with the year. Two of them are dissected and I have marked one of these as the holotype. Of the specimens from Gadau one ♂ is marked only with the year. The others are dated -. viii. 1931. I have marked all the specimens, other than the holotype, as paratypes.

*Culex (Culex) weschei* ssp. *gediensis* Edwards, *ibid.* : 345.

Described from 6 ♂ and 5 ♀ from KENYA: Gede (*E. C. C. Macdonald*). Of these I have been able to find only 4 ♂ and 2 ♀. They are undated. Two of the ♂ are dissected and I have marked one of these as holotype. I have marked the remaining specimens as paratypes.

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