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For *Uranotaenia subannulata* Martini (1920b), p. 208. Pl. II. fig. 6 & 7. Gub. S. med. Res., 10: 235, 1922. Type possibly in Berlin Museum but this needs confirmation.

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## MOSQUITOES (DIPTERA: CULICIDAE) FROM THE TROPICAL INSTITUTE AT HAMBURG.

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DURING a recent visit to the Tropical Institute at Hamburg I was enabled, through the kindness of the Director, Professor Nauch, and of the Professor of Medical Entomology, Professor Weyer, to abstract some of the more valuable specimens from the collection of mosquitoes assembled there by Professor Martini and to bring them back as a gift to the British Museum (Natural History). The material in question contains specimens from the type series of many of the species described by Martini who had not, except in one or two cases, marked types. Where the actual type specimen appears to be identifiable with certainty, as in the case of species described from a single specimen, I have marked it as such. In other cases, where the whole or a part of the original type series is still available, I have marked lectotypes. It must, unfortunately, be presumed that types and type series which can no longer be traced were destroyed during the war, when a part of the Institute, including Martini's study, was damaged by bombing. Some notes on the collection follow.

*Chagasia fajardoi* var. *stigmopteryx* Martini (1932a). Described from a specimen in the Deutsches Entomologisches Institut in Berlin. I was unable to find any specimens in Hamburg.

*Anopheles amaurus* Martini (1929). This species was described from a small number of specimens from Turkestan collected by Chodukin. It would seem that the only specimens remaining from this series are two mounts of male terminalia, now in the British Museum (Natural History). I have marked one of these as holotype and the other as a paratype. The holotype is labelled as from Beu Anen, Taschkent, and dated 23. iv. 1924. The paratype is also from the Taschkent area and is undated.

*Anopheles chodukini* Martini (1929). This was described from a unique female adult from Turkestan sent to Martini by Chodukin. I was unable to find the specimen in question. The only specimen which I found under this name was an incomplete female adult from Tiflis, collected in 1930.

*Anopheles elutus* var. *elutior* Martini (1930), *Anopheles hyrcanus* var. *mahmuti* Martini (1930), *Anopheles cricillum* Martini (1932b), *Anopheles parapunctipennis* Martini (1932b). I was unable to find any material.

*Toxorhynchites hexacis* Martini (1931b). Described from a unique specimen which was stated by Martini to be in the Museen für Tierkunde und Völkerrkunde, Dresden, and may now have been destroyed.

*Trichoprosopon espini* Martini (1914). The specimen designated by Martini as the type is now in the British Museum. I have marked it as the holotype. The U.S. National Museum, Washington, has two paratypes.

*Trichoprosopon hyperleucus* Martini (1931b). Described from a unique specimen. Lane (1953) places this in the Hamburg Museum, meaning perhaps the Tropical Institute. Martini thinks it went to Dresden in which case it has probably been destroyed.

*Trichoprosopon splendens* var. *subsplendens* Martini (1931b). Described from a unique specimen which I was unable to find.

*Wyeomyia monoleuca* Martini (1931c). Described from a unique specimen stated by Martini to be in the Württembergische Naturalien-Sammlung, Stuttgart.

*Wyeomyia schmusei* Martini (1931b). The type is stated by Lane (1953) to have been in the Hamburg Museum. I was unable to find any specimens in the Tropical Institute. The same remarks apply as in the case of *Trichoprosopon hyperleucus*.

*Haemagogus lindneri* Martini (1931c). Martini stated that the type was in the Stuttgart Museum. I could find no material in Hamburg.

*Haemagogus uriartei* var. *obscurescens* Martini (1931b). Described from specimens from Bolivia and Peru. One female adult from each of these territories is now in the British Museum. I have marked the specimen from Peru as holotype and that from Bolivia as a paratype.

*Uranotaenia bicolor* Martini (1935). Described from a unique female adult now in the British Museum. I have marked this as the holotype.

*Theobaldia annulata* var. *ferruginata* Martini (1924a). Described from a unique female adult which is now in the British Museum. I have marked this as the holotype.

*Taeniorhynchus richiardi* var. Martini (1930). Since Martini did not name this variety there seems to be no point in marking a type. His description was based on a unique female adult now in the British Museum.

*Psorophora leucocnemis* Martini (1931b). Described from a unique female adult now in the British Museum. I have marked this as the holotype.

*Psorophora pruinosa* Martini (1935). The male was not described as such and was presumably not taken. The British Museum now has two female adults from the type series. I have marked one of these as the holotype and the other as a paratype.

*Psorophora simplex* Martini (1935). Described from a series of specimens of which three female adults are now in the British Museum. The male was not described as such and was presumably not taken. I have marked one of the females as holotype and the others as paratypes.

*Aedes behningi* Martini (1926a). This species was described twice by Martini (1926a, b). The description in *Arb. biol. Wolga-Sta.* clearly has priority since the part of this journal in which it is contained was received at the British Museum in June, while the description in *Bull. Acad. Sci. U.R.S.S.* was not published until the following August. The British Museum now has five female adults from the Saratow area, two of which undoubtedly belong to the type series. I have marked one, from Saton, as the holotype and another, from Krasny-Kut, as a paratype. A larval skin from the same area also appears to belong to the type series. I have preferred not to mark it as paedotype since it is not associated with any one adult. I have, however, marked it as a paratype.

*Aedes duplex* Martini (1926a). The same remarks regarding publication apply as in the case of the preceding species. The original description refers to two males collected at Elshanka on 28.v.1925. I could find only one of these, which I have marked as the holotype. Placed with this in Martini's collection were a female from the Saratow area and a male, with associated terminalia on a slide, from Samsun in Turkey. These also are now in the British Museum.

I also have a set of male terminalia on a slide agreeing with respect to data with the holotype. I have marked these as part of the hololectotype although it must be admitted as possible that they belong to the second male referred to by Martini since they bear no individual reference number.

*Aedes gallii* Martini (1920a). The type locality for this species is given by Galli-Valerio and Rochez de Jongh (1907), followed by Martini (1920a), as "im kleinen See von Rogneda (2390 m. üb d. M. in Veltlin) . . . ganz umgeben von Geröllhalden". Veltlin is that part of the valley of the Adda now known as Valtellina. I have had difficulty in locating Geröllhalden, but it must be remembered that since the specimens were collected all place names in the area in question have been italianised. I have little hesitation therefore in equating it with Gerola Alta, a locality at the head of the River Gerola, a left bank tributary of the Adda. Both Galli-Valerio and Martini state that the species was taken on 21. vii. 1906. The few specimens I was able to find are all labelled either 1901 or vii. 1901. I feel sure this represents a *lapsus calami*. The material comprises a unique male adult mounted in balsam, without terminalia, and two whole larvae and a pupa similarly mounted. Subsequent attempts have failed to reveal any further material in Hamburg and I have therefore been reluctantly compelled to mark the incomplete male as hololectotype. The three slides of early stages I have marked as paratypes. Dr. Torres-Canamares and I have compared this material with other specimens from Russia and Germany placed by Martini under *Aedes pullatus* Coquillett. It has previously been customary to place *Aë. gallii* in the synonymy of *Aë. pullatus*, but as a result of these comparisons we now feel that it is possibly a distinct species. This matter will be discussed at greater length elsewhere. I also brought from Hamburg a female adult, mounted in balsam, and a pupal skin, both collected by Galli-Valerio in the area of the Grubensee in the Swiss canton of Valais. It seems likely that these also are *Aë. gallii* although they are labelled "*pullatus*".

*Aedes nigrocanus* Martini (1927). Described from a unique male adult. I was unable to find the terminalia but the rest of the specimen is now in the British Museum. I have marked it as the holotype.

*Aedes oroecetor* Martini (1931b). Described from nine specimens. Two of these, an adult male with associated terminalia on a slide and an adult female, were presented to the British Museum by the Hamburg Institute in 1950. I have marked these as the hololectotype and allolectotype respectively. All or some of the other specimens probably went to the Dresden Museum and may have been destroyed.

*Aedes pix* Martini (1935). Two female adults were sent to the British Museum by the Hamburg Institute in 1950. I marked these as cotypes. One of them is now in the Washington Museum. Other specimens probably went to Dresden and may have been destroyed.

*Aedes quartus* Martini (1920a). I have specimens from Borsteler Tager, Schnelsen and Wohldorf which were apparently among those recorded in the type description as from "der Nähe von Hamburg". I have marked an undissected male adult from Borsteler Tager as the hololectotype and a female adult from the same locality and with the same date (1914) as the allolectotype. I have marked a female adult from Wohldorf (1910) and another from Schnelsen (1914) as paratypes.

*Aedes rostochiensis* Martini (1920b). This species was described from the

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Schwerin, Warnemunde and Müritz areas in northern Germany. The British Museum now has an adult male which I have marked as holotype and three females from which I have marked the allotype and two paratypes, all from Müritz. The allotype has associated larval and pupal skins, and I have marked it also as the paratype. One of the paratypes also has associated larval and pupal skins, and the holotype has an associated larval skin. I also brought from Hamburg a larval skin from the Saratow region assigned by Martini to this species and an unassociated larval skin from the type locality.

*Aedes semicantans* Martini (1920b). Described from a number of specimens from Müritz. The British Museum now has three male and two female adults from the type series. I have marked one of the males as holotype and one of the females as allotype. The other specimens I have marked as paratypes. The holotype has associated larval and pupal skins, and I have therefore marked it also as the paratype. The allotype has an associated larval skin. I also brought from Hamburg an associated larval and pupal skin, without associated adult, from the type locality, a female adult from the Schwerin area with associated larval skin, a slide of whole larvae from the type locality and a male from East Prussia, without terminalia, assigned by Martini to this species. The unassociated larvae and skins from Müritz I have marked as paratypes.

*Aedes serus* Martini (1920a). I have a male adult from Ahrensburg without terminalia and this is the only specimen referable to the type series which I could find. A female adult accompanying it was collected after publication of the type description. I have therefore had no option but to mark the male as holotype.

*Aedes subdiversus* Martini (1926a). The same remarks regarding publication of this species apply as in the case of *Aedes behningi*. It was described from a unique male adult from the Saratow region. This specimen is now in the British Museum and I have marked it as the holotype. Also placed under this name in the Hamburg collection were a female adult from La Granja, Spain (almost certainly *Aedes quasirusticus* Torres-Canamares) and a male adult from (?) Württemberg. Both are now in the British Museum.

*Aedes subtrichurus* Martini (1927). This species was described from specimens from Seldjuk and from the eastern end of the Gulf of Ismid. The British Museum now has two females from the former locality and a male and a female from the latter. I have marked the Ismid male and female as holotype and allotype respectively and the Seldjuk specimens as paratypes.

*Aedes sylvae* Martini (nec Theobald) (1920a). The original description appears to have been based on material from widely scattered areas. The British Museum now has a male and a female adult collected in 1919 at Escheburg and Niendorf respectively. Although the name was preoccupied at the time of publication it has seemed best to mark types, and I have accordingly marked the male as holotype and the female as allotype. Under this name I also found two male adults from Norway and a female from East Prussia, all of later date than the type description. These are now in the British Museum.

*Aedes tarnogradskii* Martini (1930). Described from a larva or larvae from the Caucasus. The British Museum now has one of these larvae, from Naltschick, which I have marked as the holotype. I have no evidence that Martini saw any others.

*Aedes terriei* Martini (nec Theobald) (1920a). The original description was

based on material from various parts of northern Europe. The British Museum has a male and a female adult from Müritz believed to have formed part of this material. I have marked these as holotype and allotype respectively. I also brought back a whole larva from Ostsee, undated, and two males from the Saratow region, of later date than the original description, placed under this name in Martini's collection.

*Aedes vanemdeni* Martini (1931b). Described from two specimens from Bolivia. The British Museum now has one of these, from Yungo Coroico, which I have marked as the holotype. The other probably went to Dresden and may have been destroyed.

*Culex alticola* Martini (1931b). Described from specimens from Bolivia. The British Museum now has one male and one female adult, which I have marked as the holotype and allotype respectively.

*Culex chalcocorystes* Martini (1914). Described from a series of adults and one larva. The British Museum now has one male adult and three females. I have marked the male as holotype, one of the females as allotype and the other females as paratypes. The Washington Museum also has paratypes.

*Culex prasinopleurus* Martini (1914). Described from eight male and four female adults. The British Museum now has two adults of each sex from the type series. I have marked one male as holotype, one female as allotype and the other specimens as paratypes. The Washington Museum also has paratypes.

*Culex torrentium* Martini (1924b). Originally described from Schwarzathal in Thuringia. The British Museum has had two male and two female adults from the type series since 1925. After ascertaining that Martini did not mark any types I have marked one male as the holotype, one female as the allotype and the other two specimens as paratypes. In 1951 Professor Weyer kindly sent to the Museum three further specimens from Martini's collection from the Saratow region and I brought back from Hamburg a slide of male terminalia from East Prussia (coll. Skwarra) and three slides of terminalia and a larva from Anatolia, labelled "*vagans*", which may be part of the material from Asia Minor referred to by Martini (1931a).

In addition to Martini's own species I was able to bring back a very valuable collection of other species not previously represented in the British Museum and of specimens from parts of the world previously poorly represented and, in some cases, relatively inaccessible at the present time, notably the Balkans, Turkey and the U.S.S.R. A short list of this material follows.

<i>Species.</i>	<i>Provenance.</i>
✓ <i>Anopheles claviger</i> Meigen.	Italy, Turkey.
✓ <i>hyrcanus</i> Pallas.	Greece, Italy, U.S.S.R.
✓ <i>italicus</i> Raffaele.	Italy (Martini's name).
✓ <i>maculipennis</i> Meigen.	U.S.S.R. (Martini's name).
✓ <i>plumbeus</i> Stephens.	Jugoslavia.
✓ <i>sacharovi</i> Favr.	Greece.
✓ <i>superpictus</i> Grassi.	Jugoslavia, Turkey.
✓ <i>Toxorhynchites bambusicolus</i> Lutz and Neiva.	Peru.
✓ <i>Trichoprosopon digitatum</i> Rondani.	Panama, Peru.
✓ <i>trichopus</i> Dyar.	Panama.

- Uranotaenia unguiculata* Edwards. Greece, Italy, Turkey.  
*Orthopodomyia pulchripalpis* Rondani. - Yugoslavia, Turkey.  
*Theobaldia alaskaensis* Ludlow. Germany.  
     *annulata* Schrank. Yugoslavia.  
     *borealis* Shingarew. U.S.S.R. (Martini's name).  
     *fumipennis* Stephens. Germany.  
     *glaphyoptera* Schiner. Germany, Yugoslavia. (Martini's name.)  
     *longiareolata* Macquart. Greece, Yugoslavia, Turkey, U.S.S.R.  
     - *subochrea* Edwards. U.S.S.R. (Golodnaya Steppe, -Turkestan, see Martini 1930).  
*Taeniorhynchus araozi* Shannon and Del Peru.  
     Ponte.  
     *richiardi* Ficalbi. Hungary.  
*Psorophora holmbergi* Lynch Arribalzaga. Paraguay, Uruguay.  
*Aedes albifasciatus* Macquart. Chile.  
     - *annulipes* Meigen. U.S.S.R.  
     *cantans* Meigen. U.S.S.R.  
     *caspicus* Pallas. U.S.S.R.  
     *colonarius* Dyar. Chile.  
     *communis* Degeer. U.S.S.R.  
     *condolenscens* Dyar and Knab. Cuba.  
     *cretinus* Edwards. U.S.S.R. (Georgia. Described in detail elsewhere (Mattingly, 1954b.))  
     *cyprius* Ludlow. Manchuria, U.S.S.R.  
     *detritus* Haliday. Greece, Turkey.  
     *diantaeus* Howard, Dyar and Knab. Germany.  
     *dorsalis* Meigen. Yugoslavia, Turkey, U.S.S.R.  
     *echinus* Edwards. Yugoslavia, Turkey.  
     *excrucians* Walker. Turkey, U.S.S.R.  
     *flavescens* Muller. Danzig, U.S.S.R.  
     *geniculatus* Olivier. Germany, Yugoslavia, Turkey, U.S.S.R.  
     *lepidonotus* Edwards. Turkey.  
     *mariae* Sergent. Balearic Is., Italy, Turkey.  
     *pulchritarsis* Rondani. Yugoslavia, Turkey.  
     - *pullatus* Coquillett. Germany, Yugoslavia, U.S.S.R.  
     - *refiki* Medjid. - Germany (Wurttemberg, see Martini 1930), Yugoslavia, Turkey.  
     *rusticus* Rossi. Germany.  
     - *sticticus* Meigen. Germany, Yugoslavia.  
     *vexans* Meigen. Germany, U.S.S.R.  
     *vexans nipponii* Theobald. U.S.S.R. (Bikin R., Maritime Province, see Martini 1930).  
*Culex hortensis* Ficalbi. Greece, Turkey, U.S.S.R.  
     *laticinctus* Edwards. Yugoslavia, Turkey.  
     *martinii* Medjid. Yugoslavia (Metkovic, see Medjid 1930 and Martini 1930), Turkey.  
     *mimeticus* Noé. Bulgaria, Greece, Italy, Yugoslavia, Turkey.  
     *modestus* Ficalbi. U.S.S.R.  
     - *univittatus* var. *peregrinus* Theobald. Egypt, Italy, Turkey (for use of this name see Mattingly, 1954a.)

✓ <i>pipiens</i> Linnaeus.	Turkey, U.S.S.R.
✓ <i>poecilipes</i> Theobald.	Madagascar (paratypes of <i>C. auritaenia</i> Enderlein).
— ✓ <i>territans</i> Walker.	Germany, Greece, Italy, Jugoslavia, — Turkey ( <i>apicalis</i> auctt., see Mattingly 1953).
— ✓ <i>theileri</i> Theobald.	Greece, Italy, Jugoslavia, Turkey.
✓ <i>vagans</i> Wiedemann.	China, Manchuria.

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