AN ANNOTATED LIST OF THE MOSQUITOES OF THE FLORIDA KEYS

ANOPHELINI

Anopheles (Anopheles) atropos Dyar and Knab.

Anopheles atropos Dyar and Knab: Howard, Dyar, and Knab, Mosq. N. & C. Amer. and W. I., 4:1033, 1917 (Fla. Keys) : Fisk, Jour. Econ. Ent., 32:469, 1939 (Key West); King, Bradley, and McNeel, U.S.D.A. Misc. Publ., 336:37, 1942 (Elliott Key); Roth and Young, Ann. Ent. Soc. Amer., 37:84, 1944 (Boca Chica); Wirth, Proc. Ent. Soc. Wash., 47:200, 1945 (Key Largo).

This mosquito is very common throughout the entire Keys, breeding primarily in the shallow tidal waters of the mangrove swamps. The following new locality records are based on larval collections: Windley Key, Ramrod Key, Grassy Key, Lower Matacumbe Key, Torch Key, Sugar Loaf Key, No Name Key, Summerland Key, Cudjoe Key, and Vaca Key. Light trap collections made on Stock Island and Big Pine Key have yielded considerable numbers of this species.

Anopheles (Anopheles) crucians Wiedemann

This species is of infrequent occurrence on the Keys, although it is very common on the adjacent mainland. Adults have been taken in the light trap on Stock Island and in resting places on Key Largo. A few larvae which were collected on Key Largo and Lower Matacumbe Key represent *A. crucians bradleyi* King, while larvae collected on Ramrod Key, Big Pine Key, and Lower Matacumbe Key represent *A. crucians crucians* Wied.

Anopheles (Nyssorhynchus) albimanus Wiedemann

Anopheles albimanus Wiedemann: Gardner, Publ. Health Rep., 19:1651, 1904 (Key West); King, South. Med. Jour., 30:943, 1937: Pritchard, Seabrook and Provost, Mosq. News, 6:183, 1947 (Big Pine Key).

The recent finding of a larva of this species on Big Pine Key, together with a review of McDonnell's early findings in Key West, have led the authors to believe that this anopheline is established on the Florida Keys and is possibly endemic.

CULICINI

Aedes (Finlaya) triseriatus (Say)

The larvae of this mosquito have been found in considerable numbers in the small tree holes of gumbo limbo *(Bursera Simarubra* Sarg.) on Upper Matacumbe Key and on Plantation Key.

Aedes (Ochlerotatus) atlanticus Dyar and Knab.

A. atlanticus has been taken frequently in the light trap on Stock Island. The identifications have been based on male terminalia. Larvae have been collected in temporary rain pools on Big Pine Key.

Aedes (Ochlerotatus) euplocamus Dyar and Knab.

Three fourth instar larvae of this species were collected in a temporary pool on Vaca Key, 15 November 1945 (Seabrook and Thurmân). Both Dr. Alan Stone and Mr. W. H. W. Komp have confirmed the identification. This constitutes the first record of occurrence of this Central American Species in the United States.

The larva of *A. scapularis* (Rond.) is very similar to that of *A. euplocamus;* and since this closely related species is of widespread occurrence over the Caribbean area, one might expect it to occur on the Florida Keys rather than *A. euplocamus.*

Aedes (Ochlerotatus) sollicitans (Walker)

Aedes sollicitans (Walker): Dyar, Proc. U. S. Nat. Mus., 62:90, 1922 (Ramrod Key); Roth and Young, Ann. Ent. Soc. Amer. 37:84, 1944 (Boca Chica).

This species was found to be a serious pest on Key West and Stock Island. It has been collected in smaller numbers on Vaca Key.

Aedes (Ochlerotatus) taeniorhynchus (Wiedemann)

Aëdes niger (Giles) (not Theobald): Howard, Dyar and Knab, Mosq. N. & C. Amer. and W. I., 4:675, 1917 (Fla. Keys, Knights Key, Key West, Loggerhead Key-Dry Tortugas).

Aedes taeniorhynchus (Wiedemann): Roth and Young, Ann. Ent. Soc. Amer., 37:84, 1944 (Boca Chica); Wirth, Proc. Ent. Soc. Wash., 47:200, 1945 (Key Largo).

An ubiquitous species which is often found in enormous numbers. Collections of numerous larvae and adults were made on Stock Island, Crawl Keys, Cudjoe Key, Torch Key, Big Pine Key, Bahia Honda Key, Vaca Key, Lower Matacumbe Key, Windley Key, and Key Largo.

Aedes (Ochlerotatus) tortilis (Theobald)

Aedes tortilis (Theobald): Staebler and Buren, Pub. Health Rep. 61:685, 1946 (Key West).

This species was originally recorded from the United States on a basis of a single female taken in a light trap on Key West, 28 August 1945. New records for the Florida Keys include one female, Vaca Key, 13 October 1945, biting (Pritchard); one female, Vaca Key, 15 November 1945, biting (Pritchard); one female, Cudjoe Key, 15 October 1945, biting (Seabrook); and one female, Stock Island, 30 October 1945, light trap. One male was taken in a light trap in the everglades, Clewiston, Florida, on 26 October 1945. Staebler and Buren suggested the probability that *A. tortilis* had been recently introduced into this country by aircraft. However, the widespread occurrence of this species in the Keys and southern Florida leads the present writers to believe that it is endemic.

The mesonotal pile of the Florida females is reddish brown, considerably darker than that of specimens collected by the senior author in Jamaica (near the type locality) and Puerto Rico. The mesonotal vestiture of the Clewiston male and others reared in Puerto Rico is white; this sexual difference has not been previously described. Dr. Alan Stone has verified the determination of this species.

Aedes (Stegomyia) aegypti (Linnaeus)

Aëdes calopus (Meigen): Howard, Dyar, and Knab, Mosq. N. & C. Amer. and W. I., 4:839, 1917 (Key West).

The yellow fever mosquito is common in Key West, although a considerable amount of control has been obtained in the past few years. A few larvae were collected on Cudjoe Key and Plantation Key.

Culex (Culex) bahamensis Dyar and Knab.

Culex corniger Dyar (not Theobald): Proc. U.S.N.M., 62:23, 1922 (Knights Key); King, Bradley, and McNeel, U.S.D.A. Misc. Pub., 336:41, 1939.

Culex bahamensis Dyar and Knab: Fisk, Jour. Econ. Ent., 32:469, 1939 (Key West); King, Bradley, and McNeel, U.S.D.A. Misc. Publ., 336:42, 1942 (Elliott Key); Roth and Young, Ann. Ent. Soc. Amer., 37:84, 1944 (Boca Chica Key); Wirth, Proc. Ent. Soc. Wash., 47:199, 1945 (Key Largo, Elliot's Key).

C. bahamensis is found locally in large numbers when temporary rain pools are favorable for breeding. A number of larvae were collected on Lower Matacumbe Key in February.

Culex (Culex) nigripalpus Theobald

This species is found commonly throughout the Keys. Collections of larvae or adults were made on Stock Island, Cudjoe Key, Big Pine Key, Vaca Key, Upper Matacumbe Key, Plantation Key, and Key Largo.

Culex (Culex) quinquefasciatus Say

Culex quinquefasciatus Say: Howard, Dyar, and Knab, Mosq. N. & C. Amer. and W. I., 3:356, 1915 (Key West).

Larval, light trap, or resting place collections of this common species were made on Key West, Stock Island, Cudjoe Key, Big Pine Key, Plantation Key, and Key Largo.

The proximal air tuft on the siphon of the larva may occur either beyond the pecten or proximal to the distal end of the pecten. The variability of this character renders it of little value as an aid in the identification of the species as used by King, Bradley, and McNeel (1939), and Matheson (1944).

Culex (Culex) salinarius Coquillett

This species appears to be of infrequent occurrence on the Keys. A few larvae were taken on Cudjoe Key and Vaca Key, and a few males have been taken in the light trap on Stock Island.

Culex (Melanoconion) atratus Theobald

Culex atratus Theobald: Roth and Young, Ann. Ent. Soc. Amer., 37:84, 1944 (Boca Chica Key); Wirth, Ann. Ent. Soc. Amer., 37:199, 1945 (Elliot's Key); Pritchard, Seabrook, and Provost, Mosquito News, 6:184, 1947 (Big Pine Key).

C. atratus is a very common species throughout the Keys. Larval collections (many reared) were made on Stock Island, Saddle Bunch Keys, Ramrod Keys, Crawl Keys, Sugar Loaf Key, Cudjoe Key, Summerland

Key, Torch Key, Big Pine Key, Little Pine Key, Vaca Key, Long Key, Grassy Key, Lower Matacumbe Key, Plantation Key, and Key Largo. Light trap collections (males) were made on Stock Island, Big Pine Key and Vaca Key.

The following light trap collections constitute the first records of occurrence of this species on the Florida mainland: 1 male, Cortez, 29 October 1946 (Leeper); and 1 male, Copeland, 17 September 1946 (Simmonds).

Culex (Melanoconion) elevator Dyar and Knab

Culex elevator Dyar and Knab: Wirth, Proc. Ent. Soc. Wash, 47:200, 1945 (Key Largo); Pritchard, Seabrook, and Provost, Mosq. News, 6:184, 1947 (Big Pine Key).

This species is of frequent occurrence throughout most of the Keys. Recent locality records include reared material from Ramrod Key and Vaca Key.

Culex (Melanoconion) erraticus (Dyar and Knab)

C. erraticus appears to be rare in the Keys, although it is very common on the adjacent mainland. A few males have been taken in the light trap on Stock Island.

Culex (Melanoconion) pilosus (Dyar and Knab)

C. pilosus is of generally frequent occurrence throughout the Keys. A few larvae have been collected on Cudjoe Key, Torch Key and Vaca Key; and several males were collected in spider webs on Key Largo. A number of males have been taken in the Stock Island light trap at the southern end of the Keys where this is a common species.

Culiseta (Culiseta) inornata (Williston)

A number of specimens of *C. inornata* have been taken in the light trap on Stock Island.

Deinocerites cancer Theobald

Deinocerites cancer Theobald: Roth and Young, Ann. Ent. Soc. Amer., 37:84, 1944 (Boca Chica Key).

The larvae of this species breed commonly in crab holes throughout the Florida Keys. Numerous larval collections were made on Stock Island, Cudjoe Key, Big Pine Key, Bahia Honda Key, Vaca Key, and Key Largo, while light trap collections were made on the latter two Keys.

The lower head hairs of the larva are occasionally double, triple, or multiple on one or both sides, so that this character is of limited value for the separation of this species from *D. spanius* (Dyar and Knab) as used by Fisk (1941) and Matheson (1944).

Psorophora (Grabhamia) confinnis (Lynch)

P. confinnis has been taken in large numbers in a light trap on Stock Island, and it is probable that it is a common species throughout the Keys. A few larvae were collected on Big Pine Key and Vaca Key.

Psorophora (Grabhamia) pygmaea (Theobald)

Culex nanus Coquillett, Canad. Ent., 35:256, 1903 (Key West).

P. pygmaea is a common species in the Caribbean region, but it has not been recognized from the Florida Keys since 1903. The even distribution of white and dark scales on the tibiae in contradistinction to the patches of white scales on the tibiae of *P. confinnis* makes this species easily recognized in the field.

Psorophora (Janthinosoma) johnstonii (Grabham)

Psorophora varipes King, Bradley and McNeel (not Coquillett), U.S.D.A. Misc. Pub., 336:51, 1939 (Matecumbe).

P. johnstonii has been previously known only from the Greater Antilles. The following biting collections constitute the first records for the United States: 5 females, Cudjoe Key, 13 October 1945 (Seabrook and Pritchard); 1 female, 30 October 1945 (Seabrook); 2 females, 12 December 1945 (Seabrook). One male was taken in a light trap on Cudjoe Key, 14 October 1945. Dr. Alan Stone has confirmed the identification. The larva is undescribed.

It is probable that an examination of the female on which King, Bradley and McNeel based their record will reveal that it represents *P. johnstonii.*

Psorophora (Psorophora) ciliata (Fabricius)

Psorophora ciliata (Fabricius): Howard, Dyar and Knab, Mosq. N. & C. Amer. & W. I., 4:535, 1917 (Key West).

A few specimens of this species have been taken in the light trap on Stock Island.

Psorophora (Psorophora) howardii Coquillett

A few specimens of *P. howardii* have been taken in the light trap on Stock Island.

Uranotaenia lowii Theobald

Uranotaenia lowii Theobald: Pritchard, Seabrook, and Provost, Mosquito News, 6:184, 1947 (Big Pine Key).

U. lowii is a common species throughout the Keys. Larval collections (many reared) were made on Cudjoe Key, Big Pine Key, Vaca Key, Lower Matacumbe Key, Plantation Key, and Key Largo. Many adults have been taken in the light trap on Stock Island.

Uranotaenia sapphirina (Osten Sacken)

A few specimens of *U. sapphirina* have been taken in the Stock Island light trap.

Wyeomyia (Wyeomyia) mitchellii (Theobald)

A few larvae of this species were collected from bromeliads on Cudjoe Key.

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RESEARCH REQUEST

Mr. J. B. Gerberich, Dept. of Biological Science, Michigan State College, East Lansing, Michigan, wants to obtain reprints, copies of unpublished manuscripts, and results of observations made in connection with the biological control of mosquitoes. He wants to bring this information together in the form of annotated bibliographies.