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A CHECK LIST OF THE MOSQUITOES OF THE GREATER ANTILLES AND THE BAHAMA AND VIRGIN ISLANDS

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This compilation is the result of efforts to consolidate the available literature dealing with the mosquitoes reported from the Greater Antilles of the West Indies and the Bahama and Virgin Islands. It is presented in an attempt to authenticate distribution records for the mosquitoes from this area.

The Greater Antilles, for the purpose of this text, include the following major islands and such smaller nearby islands as come within the administrative boundaries of these: Cuba, Hispaniola (including both the Dominican Republic and Haiti), Jamaica and Puerto Rico. The Virgin Islands include those islands immediately to the east of Puerto Rico. The Bahama Islands refer to the chain of British West Indian islands to the south and east of Florida and north of Cuba and Hispaniola.

The selection of this area of limited scope was deemed most practical in our concern over the species of mosquitoes which could accidentally be introduced into the United States by means of aircraft and ships. Every day, in one way

or another, man is probably responsible for the transportation and establishment of insects and/or other organisms from one area to another. Many ship and airline traffic routes from South America have made use of these larger islands of the Caribbean for intermediate stops. In addition, the attractiveness of some of these areas as tourist resorts increases the traffic flow to and from the islands and the United States. Current defense and security measures in this area have added to this flow of traffic.

Within the area of the Greater Antilles and the Bahama and Virgin Islands have occurred in the recent past—or occur now—many of the familiar mosquito-borne diseases. These diseases and the primary vectors from the Caribbean area are: malaria, *Anopheles albimanus*; dengue fever, *Aedes aegypti*; eastern equine and St. Louis encephalitis, *Culex* spp., probably *nigripalpus* and *quinquefasciatus* which are known vectors of these maladies in Florida. *Wuchereria bancrofti* as transmitted by *Culex quinquefasciatus* has created at times a filariasis problem in St. Croix, Virgin Islands and in Puerto Rico. Yellow fever transmitted by *Aedes aegypti* has not occurred in the area of the Greater

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Antilles, the Bahama and Virgin Islands since 1914. The expanding of *Aedes aegypti* eradication programs of various countries reduces the probability of introduction and establishment of yellow fever in this area.

Quarantine officials must be more alert than ever before to the potential hazards of accidental pest introduction. Rapid recognition of mosquitoes encountered aboard arriving vessels and aircraft and in surveillance programs around interna-

tional points of entry is useful to Public Health Service personnel charged with protecting our shores from the possible introduction and establishment of these pests and potential disease vectors.

The numbers used in the following list of mosquitoes serve as confirming references and correspond to reference citation numbers of the text. In the listing accepted specific names are shown in **boldface** type; pertinent synonyms are indicated in *italics*.

Subfamily ANOPHELINAE
Genus ANOPHELES Meigen
Subgenus ANOPHELES

atropos Dyar and Knab. 1906.	6, 12, 13, 23, 24.
crucians Wiedemann. 1828.	4, 6, 7, 12, 13, 24.
grabhamii Theobald. 1901.	7, 9, 10, 12, 13, 15, 18, 22, 24.
vestitipennis Dyar and Knab. 1906.	7, 9, 10, 12, 18, 22, 23, 24.

Subgenus NYSSORHYNCHUS

albimanus Wiedemann. 1821.	4, 7, 9, 10, 12, 13, 18, 22, 23, 24.
<i>cubensis</i> Agramonte. 1900. Cuba; <i>albipes</i> Theobald. 1901. Jamaica.	

Subfamily TOXORHYNCHITINAE
Genus TOXORHYNCHITES Theobald
Subgenus LYNCHIELLA

guadeloupensis (Dyar and Knab). 1906.	24.
haemorrhoidalis superbus (Dyar and Knab). 1906.	7, 24.
portoricensis (Röder). 1885.	7, 9, 12, 22, 24.
<i>haitiensis</i> Dyar and Knab. 1906. Dominican Republic.	

Subfamily CULICINAE
Tribe SABETHINI
Genus TRICHOPROSOPON Theobald
Subgenus RUNCHOMYIA

longipes (Fabricius). 1805.	24.
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Genus WYEOMYIA Theobald
Subgenus WYEOMYIA

bahama Dyar and Knab. 1906.	7, 24.
<i>minor</i> Dyar and Knab. 1906. Cuba.	
caracula Dyar and Nunez Tovar. 1906.	12, 24.
hirsuta (Hill and Hill). 1946.	12, 24.
mitchellii (Theobald). 1905.	7, 12, 24.
ochrura Dyar and Knab. 1906. Dominican Republic; <i>violescens</i> Dyar and Knab. 1906. Cuba; <i>glaucocephala</i> Dyar and Knab. 1906. Dominican Republic.	
pertinens (Williston). 1896.	12, 24.
vanduzeei Dyar and Knab. 1906.	7, 12, 24.
<i>sororcula</i> Dyar and Knab. 1906. Dominican Republic; <i>argyrura</i> Dyar and Knab. 1908. Cuba; <i>conchita</i> Dyar and Knab. 1909. Cuba.	

Subgenus DENDROMYIA

autocratica Dyar and Knab. 1906.	24.
pampithes (Dyar and Nunez Tovar). 1928.	12, 24.
ulocoma (Theobald). 1903.	24.

Genus LIMATUS Theobald

hoffmani Root. 1927. 7, 24.

Genus SABETHES Robineau-Desvoidy
Subgenus SABETHES

bipartipes Dyar and Knab. 1906. 7, 24.

Tribe CULICINI

Genus MANSONIA Blanchard
Subgenus MANSONIA

flaveola (Coquillett). 1906. 9, 10, 17, 24.
indubitans Dyar and Shannon. 1925. 9, 12, 17, 22, 24.
titillans (Walker). 1848. 7, 17, 22, 24.

Genus COQUILLETIDIA Dyar
Subgenus RHYNCHOTAENIA

nigricans (Coquillett). 1904. 7, 24.
persephassa Dyar and Knab. 1909. Cuba.

Genus URANOTAENIA Lynch-Arribalzaga

cooki Root. 1937. 9, 10, 17, 21, 22, 24.
lowii Theobald. 1901. 7, 9, 10, 12, 18, 21, 22, 24.
sapphirina (Osten Sacken). 1868. 7, 9, 10, 11, 12, 18, 21, 22, 24.
socialis Theobald. 1901. 11, 24.

Genus ORTHOPODOMYIA Theobald

signifera (Coquillett). 1896. 7, 9, 12, 22, 24.
waverleyi Grabham. 1907. Jamaica.

Genus AEDEOMYIA Theobald

squamipennis (Lynch-Arribalzaga). 1878. 24.

Genus PSOROPHORA Robineau-Desvoidy
Subgenus PSOROPHORA

howardii Coquillett. 1901. 7, 24.

Subgenus JANTHINOSOMA

ferox (Humboldt). 1819. 7, 12, 24.
echinata Grabham. 1906. Jamaica; *jamaicensis* Theobald. 1907. Jamaica; *pazosi* Pazos. 1908. Cuba.
johnstonii (Grabham). 1905. 7, 9, 15, 24.
coffini Dyar and Knab. 1906. Bahama Islands; *schwarzi* Dyar and Knab. 1906. Cuba.

Subgenus GRABHAMIA

cingulata (Fabricius). 1805. 7, 12, 24.
infine Dyar and Knab. 1906. Dominican Republic.
confinnis (Lynch-Arribalzaga). 1891. 7, 9, 10, 12, 18, 22, 24.
jamaicensis Theobald. 1901. Jamaica; *walsinghamii* Theobald. 1907. Jamaica.
insularia (Dyar and Knab). 1906. 7, 12, 15, 24.
haruspicus Dyar and Knab. 1908. Jamaica.
pygmaea (Theobald). 1903. 7, 9, 10, 12, 15, 22, 24.

Genus AEDES Meigen
Subgenus OCHLEROTATUS

condolescens Dyar and Knab. 1907. 4, 7, 24.
fulvus pallens Ross. 1943. 24.
obturator Dyar and Knab. 1907. 7, 24.
scapularis (Rondani). 1848. 7, 12, 24.
hemisurus Dyar and Knab. 1906. Jamaica; *indolescens* Dyar and Knab. 1907. Cuba.

- serratus** (Theobald). 1901. 9, 12, 24.
pertinax Grabham. 1906. Jamaica; *quasiserratus* Theobald. 1907. Jamaica; *nubulis* Theobald. 1903. British Guiana.
sollicitans (Walker). 1856. 7, 9, 10, 12, 22, 24.
taeniorhynchus (Wiedemann). 1821. 4, 7, 9, 10, 12, 15, 16, 22, 24.
portoricensis Ludlow. 1905. Puerto Rico.
tortilis (Theobald). 1903. 4, 7, 9, 10, 12, 15, 18, 22, 24
bracteatus Coquillett. 1906. Cuba; *habanicus* Dyar and Knab. 1906. Cuba; *auratus* Grabham. 1906. Jamaica; *balteatus* Dyar and Knab. 1907. Dominican Republic; *plutocraticus* Dyar and Knab. 1907. Bahama Islands; *virginensis* Dyar and Knab. 1922. Virgin Islands.

Subgenus FINLAYA

- mediovittatus** (Coquillett). 1906. 7, 9, 10, 12, 15, 22, 24.
uncatus Grabham. 1907. Jamaica.

Subgenus HOWARDINA

- albonotatus** (Coquillett). 1906. 7, 24.
busckii (Coquillett). 1906. 12.
inaequalis (Grabham). 1907. 7, 12, 22, 24, 27.
aurcostriata Grabham. 1906. Jamaica; *aurites* Theobald, 1907. Jamaica.
stenei Thompson. 1956. 24, 27.
walkeri (Theobald). 1901. 7, 12, 24.

Subgenus STEGOMYIA

- aegypti** (Linnaeus). 1762. 1, 5, 9, 12, 15, 22, 24.
fasciatus Fabricius. 1805. (*Culex*). Antilles; *frater* Robineau-Desvoidy. 1827. (*Culex*). West Indies, Antilles; *mosquito* Robineau-Desvoidy. 1827. (*Culex*). Cuba.

Genus HAEMAGOGUS Williston
Subgenus LONGIPALPIFER

- equinus** Theobald. 1903. 7, 12, 24.

Genus CULEX Linnaeus
Subgenus CULEX

- bahamensis** Dyar and Knab. 1906. 4, 7, 9, 12, 15, 22, 24.
eleuthera Dyar. 1917 (1918). Bahama Islands; *peterstoni* Dyar. 1920. Virgin Islands.
bicklei Forattini. 1965. 3.
chidesteri Dyar. 1921. 9, 12, 18, 24.
corniger Theobald. 1903. 7, 12, 24.
hassardii Grabham. 1906. Jamaica; *subfuscus* Theobald. 1907. Jamaica.
duplicator Dyar and Knab. 1909. 7, 24.
finlayi Perez Viguera. 1956. 26.
habilitator Dyar and Knab. 1906. 7, 9, 10, 20, 22, 24.
eremita Howard, Dyar and Knab. 1912 (1913). Dominican Republic.
inflictus Theobald. 1901. 24.
interrogator Dyar and Knab. 1906. 3.
janitor Theobald. 1903. 7, 9, 12, 22, 24.
nigripalpus Theobald. 1901. 7, 9, 12, 15, 18, 22, 24.
similis Theobald. 1903. Jamaica; *microsquamosus* Theobald. 1905. Jamaica; *carmodyae* Dyar and Knab. 1906. Dominican Republic. *regulator* Dyar and Knab. 1906. Dominican Republic; *prasinopleurus* Martini. 1914. Cuba.
quinquefasciatus Say. 1823. 4, 5, 9, 10, 12, 15, 16, 22, 24.
cubensis Bigot. 1856. Cuba; *revocator* Dyar and Knab. 1909. Jamaica; *aseyehae* Dyar and Knab. 1915. Bahama Islands; *fatigans* Wiedemann. 1828. East Indies.

- scimitar** Branch and Seabrook. 1959. 4, 25.
secutor Theobald. 1901. 7, 9, 12, 15, 22, 24.
lamentator Dyar and Knab. 1906. Dominican Republic; *quasi-*
secutor Theobald. 1907. Jamaica; *toweri* Dyar and Knab. 1907.
 Puerto Rico.
sphinx Howard, Dyar and Knab. 1912 (1913) 7, 24.

Subgenus MELANOCONION

- atratus** Theobald. 1901. 4, 7, 8, 9, 10, 12, 18, 20, 22, 24.
falsificator Dyar and Knab. 1909. Cuba.
carcinophilus Dyar and Knab. 1906. 7, 8, 24.
elevator Dyar and Knab. 1906. 8, 24.
erraticus (Dyar and Knab). 1906. 8, 9, 10, 12, 21, 22, 24.
invocator Pazos. 1908. Cuba; *borinqueni* Root. 1922. Puerto Rico.
flabellifer Komp. 1936. 12, 24.
inhibitor Dyar and Knab. 1906. 7, 8, 9, 12, 24.
iolambdis Dyar. 1918. 9, 10, 20, 24.
mulrennani Basham. 1948. 24.
opisthopus Komp. 1926. 8, 9, 10, 18, 21, 24.
peccator Dyar and Knab. 1909. 8, 24.
sardineræ Fox. 1953. 9, 24.
taeniopus Dyar and Knab. 1907. 7, 12, 24.
annulipes Theobald. 1907. Jamaica.

Subgenus MOCHLOSTYRAX

- pilosus** (Dyar and Knab). 1906. 4, 7, 8, 9, 12, 22, 24.
cubensis Dyar and Knab. 1906. Cuba; *jamaicensis* Grabham.
 1906. Jamaica; *agitator* Dyar and Knab. 1907. (*nom. nov.* for
cubensis); *reductor* Dyar and Knab. 1909. (*nom. nov.* for *jamaicen-*
sis Grabham); *ignobilis* Dyar and Knab. 1909. Cuba; *mastigia*
 Howard, Dyar and Knab. 1912 (1913). Cuba.

Subgenus AEDINUS

- bisulcatus** Coquillett. 1906. 7, 9, 12, 15, 18, 22, 24.
 as *americanus* (Neveu-Lemaire). 1902. (*nom. dub.*) *antillum-*
magnorum Dyar. 1928. Cuba.

Genus DEINOCERITES Theobald

- cancer** Theobald. 1901. 2, 4, 7, 9, 10, 12, 15, 20, 22, 24.
magnus (Theobald). 1901. 2.

There is a paucity of information regarding the specific geographic distribution of many of the eighty-four described species of mosquitoes known to occur generally in the region defined in this text. In many instances distribution of certain mosquitoes has been limited only by terms: "Antilles," "Greater Antilles," and/or the "West Indies." With two species, world-wide distribution within the areas of warmer climate is an acceptable limitation—so widely scattered are the recoveries of these mosquitoes noted. A question mark "?" after a species name indicates that, although some authors may have reported the species from a given area, later studies indicate these records are questionable—perhaps based on incorrect identifi-

cations. The literature specifically reports the geographic occurrence of these species as follows:

BAHAMA ISLANDS—*Anopheles crucians*, *A. albimanus*; *Wyeomyia bahama*, *W. autocratica*; *Psorophora confinnis*, *P. ferox*, *P. johnstonii*, *P. pymaea*; *Aedes condolecens*, *A. obturbator*, *A. sollicitans*, *A. taeniorhynchus*, *A. tortilis*, *A. albonotatus*, *A. aegypti*; *Culex bahamensis*, *C. nigripalpus*, *C. quinquefasciatus*, *C. scimitar*, *A. sphinx*, *C. atratus*, *C. pilosus*; and *Deinocerites cancer*. References: 1, 4, 7, 8, 24, 25 and 28.

CUBA—*Anopheles atropos*, *A. crucians*, *A. grabhamii*, *A. vestitipennis*, *A. albimanus*; *Toxorhynchites haemorrhoidalis superbus*, *T. portoricensis*?; *Trichoprosopon longipes*; *Wyeomyia bahama*, *W. mitchellii*, *W. vanduzeei*; *Coquillettia nigricans*; *Uranotaenia sapphirina*, *U. socialis*; *Aedeomyia squamipennis*; *Psorophora howardii*, *P. ferox*, *P. johnstonii*, *P. cingulata*, *P. confinnis*,

P. pygmaea; *Aedes condolecens*, *A. fulvus palens*, *A. scapularis*, *A. sollicitans*, *A. taeniorhynchus*, *A. tortilis*, *A. aegypti*, *A. mediiovittatus*; *Culex corniger*, *C. finlayi*, *C. infictus*, *C. nigripalpus*, *C. quinquefasciatus*, *C. scimitar*, *C. atratus*, *C. erraticus*, *C. mulrennani*, *C. pilosus*, *C. bisulcatus*; and *Deinocerites cancer*. References: 1, 2, 4, 6, 7, 8, 11, 13, 14, 23, 24, 26 and 28.

DOMINICAN REPUBLIC—*Anopheles crucians*?, *A. grabhamii*, *A. vestitipennis*, *A. albimanus*; *Toxorhynchites portoricensis*; *Wyeomyia medioalbipes*?, *W. mitchellii*, *W. vanduzeei*, *W. ulocoma*; *Limanus hoffmani*; *Sabethes bipartipes*; *Psorophora cingulata*, *P. insularia*, *P. confinnis*, *P. pygmaea*; *Aedes tortilis*, *A. mediiovittatus*, *A. albonotatus*, *A. busckii*, *A. aegypti*; *Culex duplicator*, *C. habilitator*, *C. nigripalpus*, *C. quinquefasciatus*, *C. secutor*, *C. carcinophilus*, *C. inhibitor*, *C. bisulcatus*; and *Deinocerites cancer*. References: 1, 2, 7, 13, 23, 24 and 28.

HAITI—*Anopheles crucians*?, *A. grabhamii*, *A. vestitipennis*, *A. albimanus*; *Toxorhynchites guadeloupeensis*, *T. portoricensis*; *Limatus hoffmani*; *Wyeomyia mitchellii*, *W. vanduzeei*; *Sabethes bipartipes*; *Uranotaenia cooki*, *U. lowii*, *U. sapphirina*, *U. socialis*; *Orthopodomyia signifera*; *Psorophora ferox*, *P. cingulata*, *P. confinnis*, *P. insularia*, *P. pygmaea*; *Aedes scapularis*, *A. serratus*, *A. taeniorhynchus*, *A. tortilis*, *A. mediiovittatus*, *A. albonotatus*, *A. aegypti*; *Culex bahamensis*, *C. corniger*; *C. duplicator*, *C. habilitator*, *C. nigripalpus*, *C. quinquefasciatus*, *C. secutor*, *C. atratus*, *C. carcinophilus*, *C. erraticus*, *C. bisulcatus*; and *Deinocerites cancer*. References: 1, 2, 7, 8, 13, 18, 23, 24 and 28.

JAMAICA—*Anopheles atropis*, *A. crucians*, *A. grabhamii*, *A. vestitipennis*, *A. albimanus*; *Toxorhynchites portoricensis*; *Wyeomyia caracula*, *W. hirsuta*, *W. mitchellii*, *W. pertinans*, *W. vanduzeei*, *W. pumpithes*; *Mansonia flaveola*, *M. indubitans*, *M. titillans*; *Coquillettidia nigricans*; *Uranotaenia lowii*, *U. sapphirina*, *U. socialis*; *Orthopodomyia signifera*; *Psorophora ferox*, *P. johnstonii*, *P. cingulata*, *P. confinnis*, *P. insularia*, *P. pygmaea*; *Aedes obturbator*, *A. scapularis*, *A. serratus*, *A. sollicitans*, *A. taeniorhynchus*, *A. tortilis*, *A. mediiovittatus*, *A. busckii*, *A. inaequalis*, *A. stenei*, *A. walkeri*, *A. aegypti*; *Haemagogus equinus*; *Culex bahamensis*, *C. bickleyi*, *C. chidesteri*, *C. corniger*, *C. janitor*, *C. nigripalpus*, *C. quinquefasciatus*, *C. secutor*, *C. atratus*, *C. erraticus*, *C. flabellifer*, *C. inhibitor*, *C. iolambdis*, *C. taeniopus*, *C. pilosus*, *C. bisulcatus*; and *Deinocerites cancer*. References: 1, 2, 3, 7, 12, 17, 18, 23, 24, 27 and 28.

PUERTO RICO—*Anopheles crucians*?, *A. grabhamii*, *A. vestitipennis*, *A. albimanus*; *Toxorhynchites portoricensis*; *Wyeomyia mitchellii*?; *Mansonia flaveola*, *M. indubitans*, *M. titillans*?; *Uranotaenia cooki*, *U. lowii*, *U. sapphirina*, *U. socialis*; *Orthopodomyia signifera*; *Psorophora johnstonii*, *P. confinnis*, *P. insularia*, *P. pygmaea*; *Aedes condolecens*?, *A. obturbator*, *A. scapu-*

laris?, *A. serratus*?, *A. sollicitans*, *A. taeniorhynchus*, *A. tortilis*, *A. mediiovittatus*, *A. aegypti*; *Culex bahamensis*, *C. chidesteri*, *C. habilitator*, *C. interrogator*, *C. janitor*, *C. nigripalpus*, *C. quinquefasciatus*, *C. secutor*, *C. atratus*, *C. carcinophilus*?, *C. elevator*?, *C. erraticus*, *C. inhibitor*?, *C. iolambdis*, *C. opisthopus*, *C. peccator*?, *C. sardineriae*, *C. pilosus*, *C. bisulcatus*; *Deinocerites cancer*? and *D. magnus*. References: 1, 2, 3, 8, 9, 10, 11, 13, 15, 17, 18, 19, 20, 21, 22, 23, 24 and 28.

VIRGIN ISLANDS—*Anopheles grabhamii*, *A. albimanus*; *Mansonia flaveola*; *Uranotaenia cooki*, *U. sapphirina*, *U. socialis*; *Psorophora johnstonii*; *Aedes taeniorhynchus*, *A. tortilis*, *A. mediiovittatus*, *A. aegypti*; *Culex bahamensis*, *C. duplicator*, *C. quinquefasciatus*, *C. atratus*, *C. habilitator*; and *Deinocerites magnus*. References: 1, 2, 5, 7, 8, 11, 16, 17, 18, 19, 23, 24 and 28.

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ADDENDUM:

The article, "Mosquitoes of the American Virgin Islands" by M. B. Fleming and R. D. Walsh (*Mosq. News* 26(3):424-426) appeared too late for inclusion in the text of the above article. It reported the following species which should be included in this text: *Toxorhynchites portoricensis*; *Uranotaenia lewii*; *Orthopodomyia signifera*; *Psorophora confinnis*, *P. pygmaea*; *Aedes sollicitans*; *Culex nigripalpus* and *C. erraticus*.