

A LIST OF MAINE MOSQUITOES INCLUDING  
NOTES ON THEIR IMPORTANCE AS  
PESTS OF MAN

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Lathrop (1939) listed 15 species collected in Maine largely in 1938. Bean (1946) published records of 32 species of Culicinae and 4 of Chaoborinae. Later, Shaw (1959) recorded *Aedes decticus* H. D. & K. in his list of 18 species from Mt. Desert Island. Since 1964, numerous biting collections have been taken over the State as well as light trap collections at Orono. The purpose of the present paper is threefold: to provide an up-to-date list including 2 new species, add distribution records on 2 others only recorded once before, and to rank them according to their status as pests of man (Table 1).

As is the case in most of the states, only a few of the recognized species are important as major pests of man, although it is possible that some of the less common species may figure in the epidemiology of certain diseases of man and animals. McDaniel and Webb (1974) devised an accurate method of separating adult females of *Aedes fitchii* from *Aedes stimulans*. Field observations to date suggest that both *A. fitchii* and *A. excrucians* are migratory and only occasionally attack man. *Aedes stimulans* seldom moves more than 1/8 to 1/4 mile from where it develops but attacks man readily. It is a long-lived species, and we have records of adults living 8 months. Also, eggs have hatched after 3 years of storage in the laboratory, which indicates a possible life-span of nearly 4 years. Productive sites within communities usually are a source of severe annoyance nearly all season long. *Aedes communis* is the most abundant species, but populations decline by late July. *Aedes abstratus* appears to be migratory and frequently invades towns in large numbers. *Culex pipiens* often has been reported as a pest in other areas, but it has never been taken in the act of biting man in Maine. They have been taken in numbers in chicken houses as has been the case with *A. fitchii* and *A. excrucians*. My experience suggests that Maine populations of these species are adapted to birds.

*Aedes hendersoni* is not uncommon, at least as far north as Lincoln. The only prior record is that of Zavortink (1972), who felt it only extended into the southern part of the State. *Aedes decticus* is rare but general throughout the State. *Aedes implicatus* and *A. pionips* are reported for the first time, the former from Orono and the latter from Rista Siding. *Culiseta melanura* is of interest because of its ability to harbor virus of eastern encephalitis. It is easily collected as larvae in certain areas in Old Town (swampy edges of Perch Pond). *Aedes cantator* is more prevalent than *A. sollicitans*, but both cause problems in

Table 1. Mosquito Species Occurring in Maine.

AEDES (AEDES)	
<i>cinereus</i> Meigen	<sup>2</sup>
AEDES (AEDIMORPHUS)	
<i>vexans vexans</i> Meigen	* <sup>2</sup>
AEDES (FINLAYA)	
<i>atropalpus atropalpus</i> Coquillett	<sup>4</sup>
<i>hendersoni</i> Cockerell	<sup>2</sup>
<i>triseriatus</i> (Say)	* <sup>2</sup>
AEDES (OCHLEROTATUS)	
<i>abstratus</i> (Felt & Young)	<sup>1</sup>
<i>awifer</i> (Coquillett)	<sup>3</sup>
<i>canadensis canadensis</i> (Theobald)	<sup>2</sup>
<i>cantator</i> (Coquillett)	<sup>1</sup>
<i>communis communis</i> (DeGeer)	<sup>1</sup>
<i>decticus</i> Howard, Dyar and Knab	<sup>3</sup>
<i>diantaeus</i> Howard, Dyar and Knab	<sup>2</sup>
<i>excrucians</i> (Walker)	<sup>2</sup>
<i>fitchii</i> Felt & Young	<sup>2</sup>
<i>implicatus</i> Vockeroth	<sup>3</sup>
<i>intrudens</i> Dyar	<sup>3</sup>
<i>pionips</i> Dyar	<sup>3</sup>
<i>punctator</i> (Kirby)	<sup>2</sup>
<i>sollicitans</i> (Walker)	* <sup>1</sup>
<i>sticticus</i> (Meigen)	<sup>3</sup>
<i>stimulans</i> (Walker)	<sup>1</sup>
<i>trichurus</i> (Dyar)	<sup>2</sup>
<i>trivittatus</i> (Coquillett)	<sup>3</sup>
ANOPHELES (ANOPHELES)	
<i>earlei</i> Vargas	<sup>2</sup>
<i>punctipennis</i> (Say)	<sup>2</sup>
<i>quadrimaculatus</i> Say	<sup>2</sup>
<i>walkeri</i> Theobald	<sup>3</sup>
COQUILLETIIDIA	
<i>perturbans</i> (Walker)	* <sup>1</sup>
CULEX (CULEX)	
<i>pipiens pipiens</i> Linnaeus	<sup>4</sup>
<i>restuans</i> Theobald	* <sup>4</sup>
<i>salinarius</i> Coquillett	* <sup>3</sup>
CULEX (NEOCULEX)	
<i>territans</i> Walker	<sup>4</sup>
CULISETA (CLIMACURA)	
<i>melanura</i> (Coquillett)	* <sup>4</sup>
CULISETA (CULISETA)	
<i>impatiens</i> (Walker)	<sup>4</sup>
CULISETA (CULICELLA)	
<i>morsitans dyari</i> (Coquillett)	<sup>4</sup>
WYEOMYIA (WYEOMYIA)	
<i>smithii</i> (Coquillett)	<sup>4</sup>

<sup>1</sup> Major pest.

<sup>2</sup> Minor pest.

<sup>3</sup> Rare species.

<sup>4</sup> Rarely or never bites man.

\* Species known to harbor virus of eastern encephalitis (EE or EEE).

coastal areas. We have one record of *A. cantator* taken in Orono.

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## PREDATION OF ADULT SAND FLIES (DIPTERA: PSYCHODIDAE) <sup>1</sup>

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Records on the predation of adult phlebotomine sand flies have been very limited, and all definitive results have been derived from laboratory studies. In the Old World, the gecko *Tarentola mauritanica*, and the toad *Bufo bufo gargarizans* have been seen to feed on sand flies (Adler and Theodor, 1935; Feng and Chung, 1940). Another Old World record of adult sand fly predation is that reported by Schülze (1919), in which he noted that engorged *Phlebotomus papatasii* apparently were fed upon by a reduviid bug, *Ploiaria domestica*. New World sand fly predators include

the lizards *Sceloporus occidentalis*, *Gerrhonotus multicarinatus* and *Phrynosoma coronatum* (Chaniotis, 1967). We have observed the geckos *Thecadactylus rapicaudus* and *Gonotodes abogularis fuscus* feed on Panamanian sand flies in the laboratory. The toad, *Bufo boreas halophilus*, also was reported to feed on sand flies under laboratory conditions in California (Anderson and Ayala, 1968).

We had the opportunity recently to observe predation of sand flies in primary forests near the villages of Achiote and Quebrada Bonita, Colon Province, Panama. Blood-engorged sand flies were being collected from a horse used as a bait animal shortly after sunset. Sand flies are not strong fliers. Those that were not collected, after having fed on the horse, escaped by making short hopping flights near the surface of the forest floor litter. A small cricket, *Anaxipha gracilis*, aggressively preyed on the blood-engorged flies in the leaf litter. Also, this species of cricket has been seen actively and successfully foraging for flies on the horse. The same cricket has been collected in castor oil traps, used for sand fly collections, baited with dogs and hamsters. *A. gracilis* appears to be a very common cricket in Panama and may contribute significantly to sand fly predation in nature.

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