

## DISTRIBUTION OF MOSQUITOES AND CHAOBORIDS IN WASHINGTON STATE, BY COUNTIES \*

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**INTRODUCTION.** This paper represents a summary by counties of the known distribution of mosquitoes in Washington State through the year 1961. It was occasioned by the need of the Department of Health for data on which to base recommendations to local health departments on mosquito control procedures. This report will be followed by further reports on the distribution within each county, and by notes on the ecology of each species.

The data are compiled from the literature and from mosquito collections and collection records. Boddy (2) and Stage et. al. (19) provided the initial data, and additional literature was reviewed. The literature references are indicated by numbers in parentheses. Four collections for the years through 1961 were used and are referred to by letter, in the Distribution List below. These are (A) collection records of the Communicable Disease Center, Public Health Service collections in the Columbia Basin, 1950-51; (B) collection records of Project IV of the Inter-Agency Committee on Water Resources at Lake Wenatchee, 1959-61; (C) Washington Department of Health collection records; and (D) Washington State University collections.

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**COMMENTS.** Three species are here recorded for the first time from the state, namely, *Aedes melanimon* Dyar, *Aedes punctor* (Kirby) and *Culiseta particeps* (Adams). Details are given in the appropriate places in the list. The records

are not totally unexpected since the species have been collected in neighboring states or Canadian provinces. Other species may be expected also.

In the following list, no attempt has been made to remove duplication between citations, or to identify new distribution within the state except for the three new records.

### DISTRIBUTION—BY SPECIES AND BY COUNTY.

*Aedes aboriginis* Dyar—Chelan County (19, B); Ferry County (19); Grays Harbor County (2, 3); Island County (2, 19, C); King County (2, 19); Kitsap County (2, 7, 16, 17, 19); Kittitas County (19); Lewis County (19); Mason County (2, 7, 19); Pacific County (C); Pierce County (2, 3, 7, 19); Skagit County (2); Skamania County (19); Snohomish County (2); Spokane County (19); Thurston County (19); Walla Walla County (19); and Whatcom County (2, 3, 7).

*Aedes campestris* Dyar and Knab—Benton County (D); Cowlitz County (C); Grant County (2, 9, A, C, D); Grays Harbor County (6); Mason County (6); Okanogan County (19); Pierce County (6); Whitman County (19); and Yakima County (9).

*Aedes canadensis* (Theobald)—Ferry County (19); Grant County (19); Okanogan County (19); Pend Oreille County (C); and Stevens County (C).

*Aedes cataphylla* Dyar—Chelan County (B) and Kittitas County (19, C).

*Aedes cinereus* Meigen—Chelan County (19, B, C); Clark County (19); Cowlitz County (C); Ferry County (19, C); Grant County (1, A, D); Island County (C); King County (2, 19, C); Kittitas County (19); Mason County (2, 3, 7, 19); Okanogan County (19); Pend Oreille County (C); Pierce County (1, 6, 19); Skamania

County (19); Snohomish County (19); Spokane County (19); Stevens County (19); Thurston County (19, C); Walla Walla County (19, C); Whatcom County (2, 3, 5, 19); and Yakima County (2, 9, 13, 19, C).

*Aedes communis* (DeGeer)—Chelan County (19, B); Ferry County (19); Grant County (19, A); Jefferson County (C); Kittitas County (19); Lewis County (19); Lincoln County (19); Okanogan County (19); Pierce County (2, 3, 6, 19); Skamania County (19); Whatcom County (19); and Yakima County (9, 19).

*Aedes dorsalis* (Meigen)—Adams County (9, 16); Benton County (19, A, C, D); Chelan County (19, D); Cowlitz County (C); Douglas County (19); Franklin County (9); Grant County (2, 19, A, C, D); Grays Harbor County (19); Island County (19); Jefferson County (19); King County (2, 3, 6, 19); Kitsap County (19, C); Kittitas County (19); Mason County (19); Okanogan County (2, 6, 19, C); Pacific County (19, C); Pierce County (2, 19); Stevens County (19); Walla Walla County (5, 19, C); Whatcom County (2, 3); and Yakima County (2, 3, 5, 9, 13, 19).

*Aedes excrucians* (Walker)—Chelan County (19, B); Island County (19); Jefferson County (19); King County (2, 19); Kittitas County (19); Lincoln County (19); Mason County (2, 3, 4, 19); Pierce County (2, 4, 19); Skagit County (2, 19); Snohomish County (19); Spokane County (19); Whatcom County (2, 19); and Yakima County (19).

*Aedes fitchii* (Felt and Young)—Benton County (C); Chelan County (19, B, C); Clallam County (2); Ferry County (19, C); Grant County (2, 19, C); Island County (2); Jefferson County (C); King County (2); Kitsap County (2, 6, 7, 19); Okanogan County (C); Pacific County (C); Pend Oreille County (C); Skamania County (19); Spokane County (19, C); Stevens County (19); Thurston County (19, C); Whatcom County (19); and Yakima County (19).

*Aedes flavescens* (Müller)—Chelan County (B); Franklin County (9); Grant

County (9, 19, A, D); Jefferson County (19); Lincoln County (19); Okanogan County (19); Pierce County (C); Spokane County (19); and Yakima County (9, 19).

*Aedes hexodontus* Dyar—Chelan County (19, B); Ferry County (19); King County (19); Kitsap County (19); Kittitas County (19); Pierce County (2, 19, C); and Skamania County (19).

*Aedes spenceri/idahoensis* (Theobald)—Chelan County (B); Clark County (C); Cowlitz County (C); Kittitas County (C); Okanogan County (2, 6, 19); Pend Oreille County (C); and Yakima County (19).

*Aedes impiger* (Walker)—Chelan County (B); Ferry County (C); Lewis County (C); Pierce County (1, 2, 15); Skamania County (19); and Yakima County (19).

*Aedes implicatus* Vockeroth—Ferry County (19); Okanogan County (19), and Skamania County (19).

*Aedes increpitus* Dyar—Benton County (C); Chelan County (19, B); Cowlitz County (C); Ferry County (19, C); Grant County (2); Island County (2, 19); Jefferson County (C); Kittitas County (19); Lincoln County (2, 19); Mason County (2, 3, 19); Okanogan County (19); Pacific County (C); Pend Oreille County (C); Pierce County (C); Skagit County (19); Skamania County (19); Snohomish County (2, 19); Spokane County (2, 6, 19); Stevens County (2, 19); Walla Walla County (19); Whatcom County (19); Whitman County (D); and Yakima County (2, 9, 13, 19, C).

*Aedes intrudens* Dyar—Chelan County (19, B); Cowlitz County (C); Ferry County (19, C); Pierce County (19); and Whatcom County (19).

*Aedes melanimon* Dyar—Benton County (C); Grant County (C); and Yakima County (C). NEW STATE RECORD—This species was collected in a light trap at Paterson (Benton County) on June 21 and 25, 1960, and biting at the same site, June 26, 1960; both larvae and adults were collected south of Toppenish in Yakima County, August 2, 1961, and adults

were collected near Quincy in Grant County, August 8 and 9, 1960. (C)

*Aedes nigromaculis* (Ludlow)—Benton County (C, D); Franklin County (A); Grant County (D); Kittitas County (19); Walla Walla County (19); and Yakima County (2, 13, 14, 19).

*Aedes pullatus* (Coquillett)—Chelan County (B); Clallam County (19); Okanogan County (19); Pierce County (2); Skamania County (19); Spokane County (19); and Olympic National Forest (13, 16).

*Aedes punctor* (Kirby)—Chelan County (B). NEW STATE RECORD—Adults of this species were collected in biting counts at Lake Wenatchee (Chelan County) in the Project IV study, June 18, 1961. (B)

*Aedes sierrensis* (Ludlow)—Benton County (C); Chelan County (B); Clallam County (C); Clark County (C); Grant County (C); Jefferson County (19); King County (2, 6); Kitsap County (2); Lewis County (2, 19); Mason County (2, 6, 19); Okanogan County (C); Pacific County (C); Pierce County (2, 3, C); Skamania County (19); and Yakima County (2, C).

*Aedes sticticus* (Meigen)—Benton County (C); Chelan County (19, B); Clark County (19); Cowlitz County (2, 16, 19, C); Franklin County (C); Island County (C); King County (2); Kittitas County (19); Okanogan County (19, C); Pacific County (2, 6, C); Pend Oreille County (C); Pierce County (19); Skamania County (2, 16, 19); Snohomish County (19); Whatcom County (2, 3, 19); and Yakima County (2, 9, 13, 19).

*Aedes ventrovittis* Dyar—Chelan County (19, B); Kittitas County (19); and Pierce County (6).

*Aedes vexans* (Meigen)—Benton County (A, C, D); Chelan County (19, B); Clallam County (C); Clark County (19, C); Cowlitz County (19, C); Douglas County (19); Ferry County (19, C); Grays Harbor County (19); Jefferson County (19, C); Kittitas County (19, C); Klickitat County (19); Lincoln County (19); Okanogan County (19, C); Pacific

County (C); Pend Oreille County (C); Skagit County (19); Skamania County (19); Snohomish County (19); Spokane County (C); Stevens County (19, C); Walla Walla County (5, 19, C); Whatcom County (2, 5, 19); Whitman County (D); and Yakima County (2, 5, 9, 13, 19, C).

*Mansonia perturbans* (Walker)—Grant County (A); King County (2); Pacific County (C); and Yakima County (2, 9, 10, 13, 19).

*Anopheles freeborni* Aitken—Asotin County (11, 19); Benton County (11, 19, C, D); Chelan County (B); Clallam County (11, 19); Clark County (11, 19); Columbia County (11, 19); Cowlitz County (11, 16, 19); Ferry County (C); Grant County (9, A, C, D); Island County (C); Kittitas County (2, 11, 19, C); Lincoln County (C); Okanogan County (11, 19, B); Pend Oreille County (C); Skamania County (11, 19); Spokane County (11, 19, B); Stevens County (11, 19, B); Walla Walla County (11, 19, B); Whatcom County (11, 19, B); Whitman County (11, 19); and Yakima County (9, 11, 13, 19).

*Anopheles occidentalis* Dyar and Knab—Benton County (C); Franklin County (C); Okanogan County (C); Pend Oreille County (C) Stevens County (2, 11, 19); and Whatcom County (2, 3, 19).

*Anopheles punctipennis* (Say)—Benton County (C); Chelan County (11, B); Clallam County (11, 19); Clark County (11, 19); Columbia County (11); Cowlitz County (11, 19); Garfield County (11, 19, D); Grays Harbor County (2, 19); Island County (11, 19); King County (2, 11, 19); Kittitas County (11, 19); Lewis County (11, 19); Mason County (11, 19); Okanogan County (11, 19); Pierce County (2, 6, 19, D); Skamania County (19); Snohomish County (19); Spokane County (11, 19); Thurston County (2, 19); Walla Walla County (11, 19); Whatcom County (2, 11, 19); Whitman County (11, 19); and Yakima County (9, 11, 13, 19).

*Culex peus* Speiser—Benton County (C); Cowlitz County (C); King County (C); Klickitat County (19); Lewis

County (19); Walla Walla County (19); and Yakima County (19).

*Culex pipiens* Linnaeus—Adams County (C); Benton County (A, C, D); Chelan County (19); Clallam County (2, 19); Clark County (6, 19, C); Cowlitz County (C); Franklin County (9, A, D); Grant County (9, A, C, D); Grays Harbor County (2, 8, 19); Jefferson County (C); Island County (19); King County (2, 19, C); Kitsap County (19); Kittitas County (19, C); Lewis County (19, C); Okanogan County (19, C); Pacific County (C); Pend Oreille County (C); Pierce County (2, D); Skamania County (19); Snohomish County (2, 19, C); Spokane County (C); Stevens County (C); Thurston County (C); Walla Walla County (5, 19); Whatcom County (19, C); Whitman County (C); and Yakima County (2, 6, 9, 13, 19, C).

*Culex tarsalis* Coquillett—Adams County (9, C, D); Asotin County (19); Benton County (19, A, C, D); Chelan County (19, B); Clallam County (C); Clark County (19, C); Columbia County (19); Cowlitz County (19, C); Douglas County (19, C); Ferry County (C); Franklin County (9, A, C); Garfield County (C); Grant County (2, 9, 19, A, C, D); Grays Harbor County (3, 19, C); Jefferson County (C); King County (3, 19, C); Kittitas County (2, 19, C); Klickitat County (19); Lewis County (2, 3, C); Lincoln County (19, C); Okanogan County (2, 6, 19, C); Pacific County (19); Pend Oreille County (C); Pierce County (2, 3); Skagit County (19); Skamania County (19); Snohomish County (19, C); Stevens County (19, C); Thurston County (19); Walla Walla County (2, 5, 19, C); Whatcom County (2, 3, 19, C); Whitman County (19, C); and Yakima County (2, 3, 5, 9, 13, 19).

*Culex territans* Walker—Benton County (19); Chelan County (19, B); Clark County (C); Cowlitz County (19, C); Ferry County (C); Grays Harbor County (2, 19, C); Island County (19, C); Jefferson County (C); King County (2); Lewis County (C); Mason County (19);

Okanogan County (19, C); Pacific County (19, C); Pend Oreille County (C); Skagit County (19); Snohomish County (2, 19); Thurston County (19); Whatcom County (2, 3, 19); and Yakima County (2, 19).

*Culiseta impatiens* (Walker)—Chelan County (B); Clallam County (19, C); Cowlitz County (C); Jefferson County (C); King County (2, 19); Lewis County (19, C); Mason County (2, 3, 19); Pierce County (2, 3, 19); Skagit County (2, 3, 19); Skamania County (19); Snohomish County (2, 19); Stevens County (C); Whatcom County (2, 3); and Yakima County (19).

*Culiseta incidens* (Thomson)—Benton County (C); Chelan County (19, B); Clallam County (C); Clark County (19, C); Cowlitz County (C); Franklin County (A); Garfield County (19); Grant County (2, A); Grays Harbor County (2, 3); Island County (19, C); Jefferson County (19, C); King County (2, 3, 19, C); Kitsap County (19); Kittitas County (19, C); Lewis County (2, 3, 19, C); Lincoln County (C); Mason County (6, 19); Okanogan County (19); Pacific County (C); Pierce County (2, 3, 19, C, D); San Juan County (C); Skagit County (19); Skamania County (19); Snohomish County (2, 19, C); Stevens County (C); Thurston County (19); Walla Walla County (19); Whatcom County (3, 19); Whitman County (19, D); and Yakima County (2, 9, 13, 19, C).

*Culiseta inornata* (Williston)—Adams County (9, D); Benton County (19, A, C, D); Chelan County (B); Clallam County (2, 19); Clark County (19, C); Cowlitz County (C); Douglas County (C); Franklin County (9, A, D); Grant County (2, 9, A, C); King County (19); Kittitas County (19, C); Lewis County (C); Okanogan County (2, 19); Pierce County (2); Skamania County (19); Snohomish County (2, 19, C); Spokane County (19); Stevens County (C); Walla Walla County (19); Whatcom County (19); Whitman County (19, D); and Yakima County (2, 9, 13, 19).

*Culiseta minnesotae* Barr—Benton County (C); King County (C); Kitsap

County (19); Kittitas County (19); Pend Oreille County (C); Snohomish County (2); and Yakima County (2, 6, 13).

*Culiseta particeps* (Adams)—Jefferson County (C). NEW STATE RECORD—Larvae of this species were collected at Port Townsend (Jefferson County) on July 26, 1961. (C).

*Mochlonyx cinctipes* (Coquillett)—Chelan County (E); Clark County (C); Ferry County (C); King County (2); Kittitas County (C); Mason County (3, 14); and Snohomish County (2).

*Eucorethra underwoodi* Underwood—Chelan County (B); Grays Harbor County (2, 14); Jefferson County (C); King County (2, C); Mason County (2, 14); Pierce County (C); Snohomish County (2); and Thurston County (2, 14).

*Chaoborus albipes* Johannsen—Whitman County (D).

*Chaoborus eluthra* Dyar and Shannon—King County (14) and Whitman County (14).

*Chaoborus nyblaei* Zetterstedt—King County (2); Kitsap County (2, 14); Mason County (2, 14); and Snohomish County (2).

*Chaoborus trivittatus* Loew—Kitsap County (1) and Mason County (1).

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