

## Autogeny in *Culex Peus* Speiser (\*)

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The close relationship of *Culex peus* Speiser to *Culex tarsalis* Coquillett has been noted by many workers in the Western U.S. Since autogeny appears to be widespread in natural populations of the latter species (Bellamy and Kardos, 1958; Moore, 1963), it has been speculated that *C. peus* was also autogenous. Chapman (1962) found autogeny in 10 of 17 species studied in Nevada, but not in *C. peus*. To determine whether autogeny could be found in this species by examining California populations, observations were made in Solano County, California during the early, middle and late summer of 1968. Since food may be a limiting factor in the expression of autogeny (Bellamy and Kardos, 1958; Kardos, 1959), larvae and pupae were collected from a breeding situation with considerable organic matter (oxidation pond). In the laboratory, emerging females from these collections were kept for a minimum of ten days with sugar as the only source of food. They were subsequently killed and ovaries dissected and examined. Females with ovaries in Christophers' stage I or II were considered immature, and those with ovaries in stages III-V were called mature and therefore were considered autogenous.

The results of examining *C. peus*, *C. tarsalis* and *Culiseta inornata* females from collections of IV stage larvae and pupae are summarized in Table I. Autogeny was found in all three species. An additional 156 *C. peus* females reared in the laboratory and collected as early instar larvae were treated in the same manner. None of the females reared from early instar larvae developed mature eggs.

Autogeny can be reported for the first time in *Culex peus* as was speculated, but we have tentatively concluded that it exists at levels considerably lower than in *C. tarsalis* (Table I and Moore, 1963). This is generally consistent with Chapman's findings (1962) in which he found considerable variation in the level of autogeny from one species to another. Autogeny in *C. inornata* is reported for the first time in California and confirms earlier findings in Minnesota (Owens, 1942) and Nevada (Chapman, 1962).

### Literature Cited

- BELLAMY, R. E., and KARDOS, E. H. 1958. A strain of *Culex tarsalis* Coq. reproducing without blood meals, Mosq. News 18:132-134.  
CHAPMAN, H. C. 1962. A survey for autogeny in some Nevada mosquitoes. Mosq. News 22:134-136.

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TABLE 1.—Oogenesis in non-blood fed nulliparous females, April, July and September, 1968, Solano County, California.

Species	April			July			September		
	No. examined	Females with mature eggs	Percent females with mature eggs	No. examined	Females with mature eggs	Percent females with mature eggs	No. examined	Females with mature eggs	Percent females with mature eggs
<i>Culex peus</i>	49	2	4.1	70	7	10.0	51	1	2.0
<i>Culex tarsalis</i>	222	59	26.6	18	4	22.2	..	..	..
<i>Culiseta inornata</i>	27	4	14.8	..	..	..	..	..	..

KARDOS, E. H. 1959. The effect of larval nutritional level on development of autogeny in a colony of *Culex tarsalis* Coq. Proc. Papers Calif. Mosq. Control Assoc. 27:71-72.

MOORE, C. G. 1963. Seasonal variation in atogeny in *Culex tarsalis* Coq. in Northern California. Mosq. News 23:238-241.

OWENS, W. B. 1937. The biology of *Theobaldia inornata* Williston, in captive colony. J. Econ. Entomol. 35:903-907.