Ontario. In 1977, 17 *Ae. sollicitans* females were collected from May 24 to August 9 from Windsor and Sarnia. Mosquito collections in 1977 were lower in general than those in 1976, and this trend can be seen with *Ae. sollicitans*. All of these collections were by CDC trap and are listed in Table 2. The collection sites in both Sarnia and Windsor were adjacent to large brine pools associated with major chemical companies. *Ae. sollicitans* is a major vector of EEE (Crans 1977) and has been recorded previously from many inland states, particularly from sites with brackish water found in association with salt and oil wells (Fellton 1944).

Table 2. Dates of collection of *Aedes sollicitans* by CDC trap, Ontario, 1976–77.

Collection Week of:	Location	Number Collected
July 12/76	Sarnia	14
July 25/76	Sarnia	5
August 8/76	Sarnia	5
August 15/76	Sarnia	5
August 22/76	Sarnia	7
	TOTAL	36
May 25/77	Sarnia	1
	Windsor	1
June 15/77	Sarnia	1
July 6/77	Sarnia	1
July 13/77	Sarnia	1
July 20/77	Sarnia	9
August 3/77	Sarnia	2
September 14/77	Windsor	1
	TOTAL	17

Aedes grossbecki (Dyar and Knab) was represented by a single female collected June 15, 1977 by a CDC trap located in Windsor. This represents the first record of this species in Canada. The nearest distribution record to Windsor is New York State (Barnes et al. 1950).

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EFFECT OF TEMEPHOS AND CHLORPYRIFOS ON CRUSTACEA

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In the context of an environmental impact statement the Metropolitan Mosquito Control District needed information about the effects of its larval control program on Crustacea. Crustacea make up a substantial proportion of the diet of nesting waterfowl, and there was concern that the District's operations might adversely affect crustacean production, thus reducing waterfowl populations. To resolve this issue data on the occurrence of Crustacea were collected from sites treated with insecticide and from untreated sites. In particular, the effects of temephos and chlorpyrifos, both in granular formulations, were studied. Field observations were carried out in July, 1977.

For this study, 124 Type I sites in Anoka, Hennepin, Scott, and Washington counties of Minnesota were checked for the presence of Crustacea. (Type I sites are defined by the District as upland depressions which are intermittently filled with surface runoff.) Of these, 48 were treated with chlorpyrifos at rates of either 0.05 lb. AI/acre or 0.10 lb. AI/acre; 28 were treated with temephos at a rate of 0.025 lb. AI/acre; and 48 were untreated. All applications were carried out in the routine operations of the District larval control program; thus evaluation was coordinated with the normal field check procedure and was made 1 to 6 wk post-treatment.

All observations were made by operational field personnel. To verify their findings sam-

ples from 30% of the sites were collected and analyzed in the laboratory. Crustacea were observed in 85% of these samples. Among the Crustacea identified were copepods, ostracods, amphipods, and cladocerans.

Tables 1 and 2 show the data obtained in this study arranged in two 2 x 2 contingency tables. These were analyzed to determine whether or not each insecticide had a significant effect on the occurrence of Crustacea when compared to controls. The table comparing chlorpyrifos and untreated sites had an X^2 value of 10.3 while the table comparing temephos and untreated sites had an X^2 value of 3.0. (X^2 is the usual Pearson Chi square statistic defined as $X^2 = \sum_{\text{all cells}} \frac{(O-E)^2}{E}$ where O stands for observed cell count and E stands for expected cell count.) Since the tables are correlated these X^2 values should be compared to $\chi^2(1, \alpha/2)$ (Morrison 1976, p33). Thus, for an $\alpha = .05$ level of significance χ^2 (1,05/2) = 5.02. The probabilities of these values occurring by chance, assuming that the treatments had no influence on occurrence of Crustacea, are $p < .01$ and $p < .15$ respectively. This is strong evidence that chlorpyrifos has some effect on the occurrence of Crustacea while there is little evidence that temephos affects the occurrence of Crustacea in the Metropolitan Mosquito Control District.

The results of this study are in general agreement with other laboratory and field experiments conducted with chlorpyrifos and temephos (Rubber and Baskar 1968, Cooney and Pickard 1974). It should be noted that only occurrence and not numbers of organisms was analyzed in the present study.

The authors wish to thank Sandra Brogren for her help in the laboratory identification of Crustacea.

Table 1. Comparison of the occurrence of Crustacea in chlorpyrifos treated and untreated Type I sites.

Crustacea	Chlorpyrifos	Untreated
Present	28	42
Absent	20	6
Total	48	48

Table 2. Comparison of the occurrence of Crustacea in temephos treated and untreated Type I sites.

Crustacea	Temephos	Untreated
Present	20	42
Absent	8	6
Total	28	48

Table 3. 95% confidence bounds for the probability of occurrence of crustacea in Type I sites

Treatment	Lower bound	Probability of occurrence	Upper bound
Chlorphyrifos	.42	.58	.72
Temephos	.52	.71	.86
Untreated	.76	.88	.95

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A GYNANDROMORPH OF *CULISETA MELANURA*

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One *Culiseta melanura* (Coquillett) collected from Toad Harbor Swamp, West Monroe, New York on July 17, 1977 had antennae of a male and genitalia of a female (Figure 1). Also, the left palpus was typical of a male and the right of a female. During the seven years 1971 through 1977 numerous *Cs. melanura* were collected from this area and no other aberrant adults were found. June 1977, however, was the hottest and driest June of the 7 years investigated,