g range evaluation of the dispersal pat-
n of these two salt marsh species.

SUMMARY. From the release of approxi-
tely 3 million P^{32}-tagged *Aedes taeni-
ynchus* near Savannah, Georgia, 415
ales and 29 males were recovered in
ht traps located at distances up to 20
les from the departure point. Recov-
es beyond 4 miles did not occur until
fourth night after release. Female
cimens were captured at distances up
18 miles but more than 75 percent of
recoveries, exclusive of one trap 0.1
le from the release point, were within 4 miles. The maximum distance at which males were trapped was 2 miles from the departure point.

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FIELD TESTS ON THE PERSISTENCE OF MOSQUITO LARVICIDES IN ALKALINE WATER IN CALIFORNIA

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NTRODUCTION. The frequency of ap-
cation of mosquito larvicides in control
ograms in certain areas of California
pends in part on the persistence of the
ecticide in waters which are highly
aline. When chlorinated hydrocarbon
ecticides were used prior to the develop-
nt of resistance, one larvicidal applica-
n often remained effective for several
ys (Robinson, 1946). Miles (1960) re-
rted on the residual effectiveness of sev-
l chlorinated hydrocarbons for 2 to 3
sons against floodwater mosquitoes.

Residue problems on agricultural crops
d the development of physiological re-
tance have precluded the use of chlor-
ted hydrocarbons for mosquito larvicid-
in most California abatement districts;
a consequence organophosphorus com-
unds have become widely used in mos-
ito control programs.

Organophosphorus compounds vary considerably in the rate with which they are hydrolyzed by alkaline water. Easily hydrolyzed insecticides frequently are not effective in the field even at high dosage rates, and under certain conditions they remain toxic to mosquitoes for only a few hours. To plan the most effective frequency of applications, the stability of organophosphorus compounds and other mosquito larvicides must be evaluated under field conditions.

METHODS AND MATERIALS. Since irrigated pastures were not suitable for field studies, a pilot study area was provided at Traver with the cooperation of the United States Department of Agriculture, the Delta Mosquito Abatement District, and the Kaweah Delta Gun Club of Traver.

In these 10′ x 136′ (1/32 acre) test plots, variables such as depth of water and movement of water from one plot to another were controlled. A natural cover of

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ance of Mr. William H. Wilder in conducting
s for this study.

TABLE 1.—24 hr. percent mortality of 4th instar *Culex tarsalis* after specific time interval.

Compound	Application (lb./acre)	Time after application for placement of larvae					
		Immed. aft.	4 hrs.	8 hrs.	24 hrs.	48 hrs.	72 hr
DDT E.C.*	1.0	100	100	100	71	..	..
Malathion E.C.	0.5	100	80	45	..	..	
Malathion bentonite 20/30 mesh granules	0.5	72	..	..	37	..	..
Hercules 7522 E.C.	0.75	99	..	..	5	.	..
Dimethrin	0.3	88	43	32	..	..	..
Parathion E.C.	0.1	100	100	100	80	2	..
Parathion 30 mesh sand core granules	0.1	100	100	100	100	3	..
Baytex® E.C.	0.1	100	100	100	75	..	..
Baytex® 30 mesh sand core granules	0.1	100	100	100	55	..	..
Cynem® E.C.	0.1	100	100	100	80	61	..
Methyl Trithion® E.C.	0.25	100	100	100	70	36	..
Trithion® E.C.	0.5	100	100	100	100	100	99

* Emulsion concentrate.

grasses, weeds, and sedges developed on the sides and bottom of each plot. The plots were filled with water to a depth of about six inches before the application of insecticides and records of water temperature and pH were kept.

Emulsion concentrate sprays were diluted with one-half gallon of water and applied with a one-gallon B and G compression sprayer fitted with a 3004 Teejet nozzle on the wand. Granules were applied with a horn seeder (Raley, 1961).

Immediately after treatment of each plot, fourth instar *Culex tarsalis* Coquillett larvae were placed within the confines of a floating basket (tea strainer). An untreated plot with larvae in floating baskets served as a control. Negligible mortality was observed in the control baskets. Four baskets with 25 larvae in each were placed at random in each plot. At various intervals after treatment, fresh larvae were placed in other baskets set into the plots to determine if the water was still toxic. Mortality counts were made after 24 hours on all time sequence tests. Results of the tests are presented in Table 1. Each figure represents the average of three replications. The chemical compositions of the tested compounds are given in Table 2.

RESULTS. The study extended from March into the first week of June, 1961. During this period the water temperat varied little; the mean temperature v 50° F. The average pH was 8.8. Dra changes in temperature and pH may aff the residual activity of insecticides, noted by Mulla and Axelrod (1960).

Under the test conditions DDT, m athion (both granular and emulsion co centrate), Hercules 7522, and dimeth were rapidly hydrolyzed. Trithion® em sion concentrate at 0.5 lb/acre was

TABLE 2.—Chemical composition of tested compounds.

DDT	1,1,1 - trichloro - 2,2 - (*p*-chlorophenyl) ethan
Parathion	O,O-diethyl O-*p*-nitrophe phosphorothioate
Malathion	S - [1,2 - bis(ethoxy bonyl)ethyl]O,O - methyl phosphorodithi
Hercules 7522	2-chloro-5-isoprophylphen N-methylcarbamate
Baytex®	O,O-dimethyl O-[4(met thio)-m-tolyl] phosph thioate
Methyl Trithion®	O,O-dimethyl S-*p*-chl phenylthiomethyl p phorodithioate
Trithion®	S[(p - chlorophenylt methyl]O,O-diethyl p phorodithioate
Cynem®	O,O-diethyl O-(2-pyrazin phosphorothioate
Dimethrin	2,4-dimethylbenzyl chrys themumate

ost persistent material tested. Parathion -mesh sand core granules persisted ghtly longer than the emulsion concen- ate applied at the same rate. On the her hand, Baytex® emulsion concentrate rsisted slightly longer than 30-mesh nd core granules applied at the same te.

These results indicate that both the rmulation of insecticide and the chemi- l nature of the compound affect residual tivity. Furthermore, the rate of hydroly- s in the field may be an important factor persistence.

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MOSQUITOES AND OTHER ARTHROPODS FOUND IN AGGAGE COMPARTMENTS OF INTERNATIONAL AIRCRAFT

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INTRODUCTION. The potential hazard of rcraft introducing an exotic arthropod arthropod-borne disease into the United ates has long been recognized. Routine thropod surveillance of airports and ap- opriate control measures on aircraft en- ring the United States from foreign untries are applied by the entomological aff of the Division of Foreign Quaran- ne, U. S. Public Health Service.

While there have been numerous re- orts in the literature (Welch, 1939; Whit- eld, 1939; Dethier, 1946; Denning *et al.*, 947; Miller *et al.*, 1947; Hughes, 1949; aird, 1951; Hughes *et al.*, 1956; and orter, 1958) of arthropods recovered om aircraft, little has been published ith reference to the comparative signifi- ance of the various compartments. The urpose of this study made in 1960 and 961 was to evaluate the importance of e baggage compartments as a carrier of arthropods, especially mosquitoes, in inter- national traffic entering New Orleans, Louisiana; Honolulu, Hawaii; and Miami, Florida.

Griffitts and Griffitts (1931) found that the front baggage compartments of the Sikorsky amphibian aircraft were ideal for harboring mosquitoes. The majority of mosquitoes recovered by these authors were from this part of the airplane. In inspections of aircraft at Khartoum, Sudan, from 1935 to 1938, Whitfield (1939) found most of the insects in the main cabin, but reported that occasionally speci- mens were collected from the baggage compartments.

METHODS. The baggage compartments and cabins of 210 aircraft were inspected for arthropods at the Moisant International Airport in New Orleans. These planes were all four-motored propeller-type air- craft, each with two baggage compart- ments.

A total of 89 aircraft was inspected at the Honolulu International Airport. All of these planes were four-motored jet-type aircraft, each with two baggage compart- ments.

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