

observed in all cases where the sexes were together, but at a much greater rate in the younger mosquitoes. Females two weeks of age and older mate at a much lower rate than do younger females, in all probability because they spend much less time in flight, where mating is initiated.

SUMMARY AND CONCLUSIONS. 1. Under the conditions of the experiments, young mated females (i.e. those in association with males) of *Aedes aegypti* lived 12-17 percent longer than did virgin females (females never in association with males).

2. The repeated addition of young males to a group of females shortened the life-span of mated females or females associated with males, compared with virgins, if the insects were fed a non-egg-producing diet of sucrose. This was not true with an egg-producing blood and sucrose diet.

3. Up to about 2 weeks of age, association or mating with males of similar age increased the female lifespan over that of virgins even if the mating or association period was as brief as 1 hour.

4. Male lifespan was shortened apparently in proportion to length of time in association with females, as well as in proportion to the number of females with which they were present.

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SOME EFFECTS OF RESIDUAL INSECTICIDES ON ADULT MOSQUITOES

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In the study of the habits of the anopheline vectors of malaria, in areas where residual insecticides are applied inside houses, consideration must be given to the influence exerted on the mosquitoes by the sprayed surfaces of all the houses of the locality and of all the localities of the area. The habits that receive most attention are

resting, or looking for shelter, inside or outside of the houses, and the frequency of biting man or animals inside or outside of the houses. With the introduction of insecticides, of greatest importance is the study of susceptibility, irritability and longevity.

The purpose of this note is to call atten-

tion to the interpretation of some observations related to these factors. It is easy to agree on methods to estimate endophily, endophagy, susceptibility or nulliparity. It is more difficult to determine and evalu-

responsible for persisting transmission. Under other circumstances it would seem that when driven out of the houses they succumb to lethal factors outdoors, thus interrupting transmission.

TABLE I.—Irritability in relation to size of the mosquito population.

Observations		Interpretation	
Originally non-irritable	All	Extinction of the population due to the lethal effect of DDT.	
	Most	The irritated group persists	{ First there is a sharp decline in population because of the disappearance of the non-irritated { Later the population recovers because of the predominance of the irritated group
		The irritated groups disappear or are reduced in numbers because of adverse outdoor conditions	
	Least	The irritated group persists	{ First there is a decline in population in relation to the proportion of non-irritated { Later the population recovers by the increase in the irritated
		The irritated disappear or are reduced in number because of adverse outdoor conditions	
	Originally irritable	All	The population is not adversely affected by DDT
Most		The irritated group persists	{ First there is a decline in population in relation to the proportion of the non-irritated { Later the population recovers by the increase in the irritated
		The irritated disappear or are reduced in number because of adverse outdoor conditions	
Least		The irritated group persists	{ First there is a decline in population in relation to the proportion of the non-irritated { Later the population recovers by the increase in the irritated
		The irritated disappear or are reduced in numbers because of adverse outdoor conditions	

NOTE: All the mosquitoes are endophilic, exophagic and susceptible to DDT.

In a mixed population the non-irritated may disappear by the lethal action of DDT and the irritated by outdoor conditions.

ate the density of the population, the age of mosquitoes and their irritability. The epidemiological significance of this last character is very controversial. In some cases it seems that the irritable mosquitoes, formerly endophilic and exophagic, which escape the lethal action of DDT are

In some of the methods recommended to measure irritability it seems that the specimens observed exhibit an escape reaction when confined in a restricted space, whether or not they are exposed to a toxicant. This reaction has been considered in the interpretation of the observations. We

TABLE 2.—Interpretations of the interplay of irritability and nulliparity.

Observations		Interpretation
Non irritated	Mostly nulliparous	{ Productive breeding places Previous adverse meteorological conditions Susceptibility
	As many nulliparous as parous	{ Productive breeding places; they are not endophilic, they are resistant, avoid restricted confinement or there is a combination of these factors
	Mostly parous	{ Breeding places almost or totally unproductive. There is resistance; they avoid restricted confinement or there is a combination of these factors
Irritated	Mostly nulliparous	{ Productive breeding places Previous adverse meteorological conditions Susceptibility
	As many nulliparous as parous	{ Productive breeding places. They are resistant, avoid restrained confinement or there is a combination of these factors
	Mostly parous	{ Breeding places almost or totally unproductive. They are resistant or there is a combination of these factors

hope that these notes may be of use in the epidemiological interpretations.

In Table 1, irritability is considered in relation to the size of the population of the

mosquitoes. In Table 2, is presented an interpretation of the interplay of irritability, nulliparity, susceptibility and size of the population.

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