

## THE "AEDES AEGYPTI" SITUATION IN THE UNITED STATES\*

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As this group undoubtedly is aware, the yellow fever and dengue mosquito, *Aedes aegypti*, occurs commonly throughout the southern United States. To most of us in this country it is just one more annoying mosquito, and we give little thought to its disease-carrying potentialities. Yellow fever has not occurred in this country since the New Orleans outbreak of 1905, and dengue has been of infrequent occurrence in recent years. In the countries to the south of us, however, this mosquito is still of major public health concern since outbreaks of yellow fever continue to recur. As recently as January 6 of this year newspapers carried an account of a yellow fever epidemic in Presidente Prudent, a town having a population of about 12,000 in the state of São Paulo, Brazil, in which 90 cases and 40 deaths were reported. (This outbreak, as well as all other outbreaks which have occurred in South America since 1942, was considered to be of the jungle yellow fever type.)

Because of the finding that yellow fever exists in the forests of South and Central America as an animal disease (entirely independent of man and the *A. aegypti* mosquito) and because of the rapidity of modern transportation, this permanent source of virus constitutes a constant threat to communities heavily infested with *A. aegypti*. For this reason the Pan American Sanitary Organization went on record in 1947 as favoring campaigns for the eradication of *A. aegypti* from the Americas as the only logical answer to the yellow fever prevention problem. Such campaigns are now well advanced in many South American countries, and we receive frequent inquiries re-

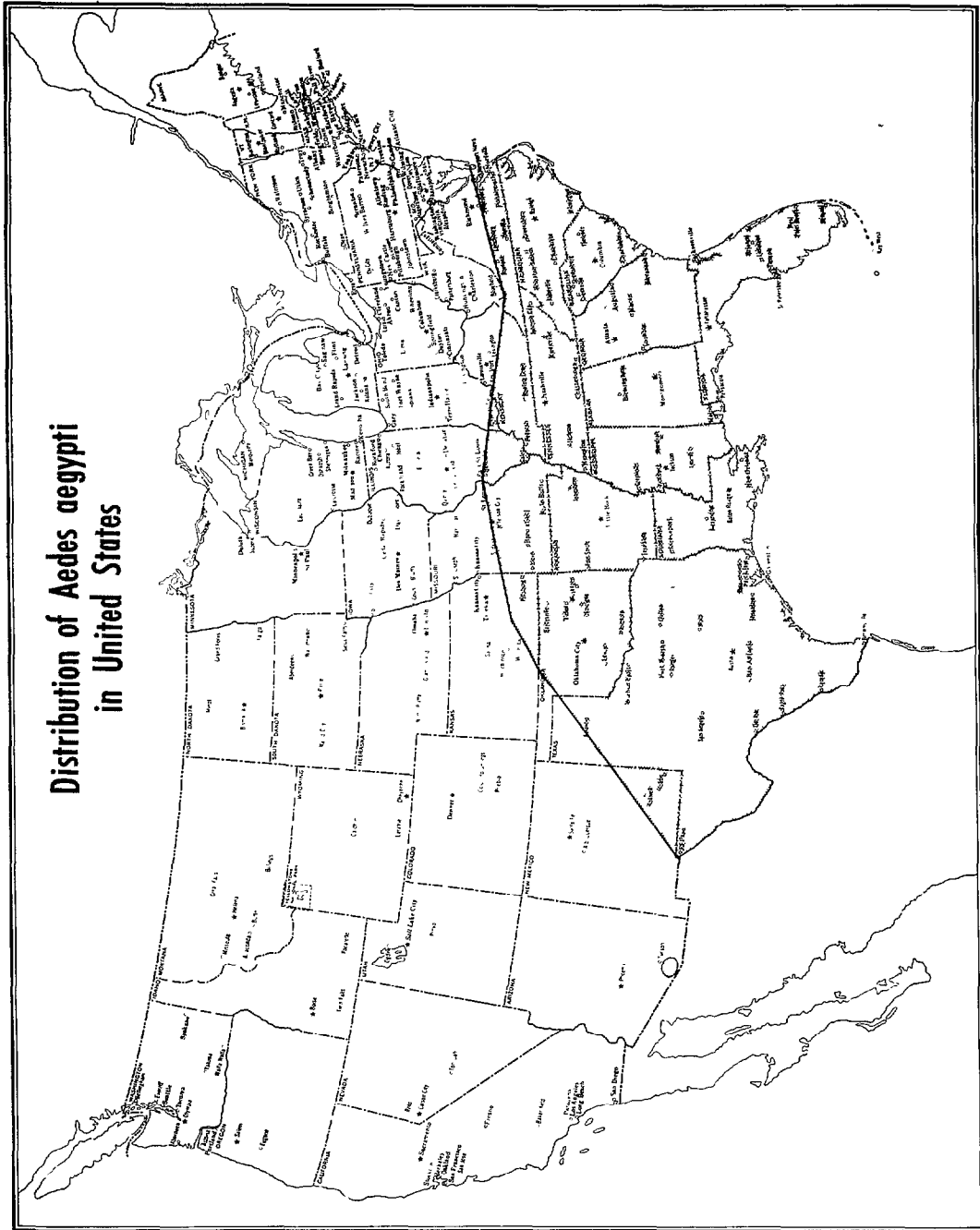
garding the status of *A. aegypti* in the United States.

Data on *aegypti* occurrence in the United States assembled from various authors show that the species has been reported from localities throughout that portion of the country which lies south of a line roughly drawn from southern Virginia westward through northern Oklahoma and then southwestward to the United States-Mexican border at El Paso, Texas. In general, this line lies just north of the 60° isotherm. It also has been reported from two localities farther west along the Mexican border, Tucson, Arizona and Carlsbad, New Mexico, but never has been found on the Pacific Coast of the United States (Map). Before discussing the present status of the infestation in this country, it might be well to summarize briefly recent anti-*aegypti* activities.

During World War II, specific anti-*aegypti* campaigns were carried on jointly by federal and state health agencies in several cities, principally ports of entry, in the infested area. The purpose of this work was to protect the country from the possible entry of yellow fever and to provide corps of individuals trained in *aegypti* control techniques who could be called for duty immediately in any part of the country should yellow fever or dengue gain a foothold. We are glad to state that we had no occasion to use them for this latter purpose.

In general, these wartime programs were an effort to reduce the *aegypti* abundance in vulnerable situations to a point below the threshold of sanitary significance of the species. (Less than 5% of premises infested.) In only one city, Key West, Florida, was an attempt made to eradicate *A. aegypti*. Here the index of abundance was lowered to a fraction of 1 per cent. These intensive efforts in Key West were continued after the

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war by local civilian and naval interests, with the result that Mr. Mulrennan of the Florida State Board of Health, was able to announce recently that the species had not been encountered there for two seasons. Apparently it has been eradicated from that Island. Thus, North America has one successful eradication project to its credit.

In the other cities in which wartime programs were conducted, only a small corps of inspectors under the project supervisor was employed on actual inspection and control. The work of these men was directed principally toward evaluating the problem and giving assistance in finding and eliminating so-called "mother foci"—those permanent year-round breeding places which maintain the species in an area. Emphasis was placed on education of the citizenry to consider the *A. aegypti* control work as a community endeavor to which all should contribute. Continual news releases and radio and movie contacts were made, and talks were given to school children, to firemen, and at luncheon and other club meetings. Support and assistance from the individual citizen were solicited, without awaiting the enactment of legislation, for organizing for group action or for seeking outside financial support. At the close of the war, Public Health Service support of these programs was largely withdrawn, but the work was continued by local agencies in some cities.

To gain an idea of the current status of *A. aegypti*, brief surveys were made during the 1952 season in each of 28 towns and cities by CDC workers in cooperation with state and local health department personnel. In 16 of these cities, specific *A. aegypti* control programs were carried on during World War II; the 12 additional cities had had no such programs. Data on the results of this survey are presented in Tables I and II.

In Table I, the 16 cities in which wartime programs were conducted are ranked according to *A. aegypti* abundance as indicated by their 1952 index ratings. The index for each city for a comparable period during

TABLE I.—*Aedes aegypti* Survey 1952. Indexes<sup>1</sup> for Cities with Comparative Data for 1945.

City	Month	1952 Index	No. premises inspected, 1952	1945 Index (for comparison)
Tampa, Fla.	September	24.7 <sup>2</sup>	105	13.8
Mobile, Ala.	August	14.7	1296	16.7
San Antonio, Tex.	July	12.0	767	6.4
Houston, Tex.	August	9.0 <sup>3</sup>	565	1.2
New Orleans, La.	September	7.0	1286	8.8
Miami, Fla.	July	6.5	9576	6.1
Charleston, S. C.	July-August	2.5	1065	11.2
Brownsville, Tex.	August	0.7	406	1.1
Laredo, Tex.	July	0.5	226	4.3
Galveston, Tex.	August	0.2	643	2.5
Key West, Fla.	July	0.0	?	21.6
Savannah, Ga.	September	0.0	530	8.2
Norfolk, Va.	May-August	0.0	1593	4.1
Corpus Christi, Tex.	August	0.0	799	2.1
Portsmouth, Va.	July-August	0.0	1990	1.6
Hidalgo County, Tex.	August	0.0 <sup>4</sup>	463	1.0

<sup>1</sup> Per cent of premises inspected found positive.

<sup>2</sup> Limited general survey.

<sup>3</sup> All sections of city not inspected.

<sup>4</sup> Cities of McAllen and Mission.

TABLE II.—*Aedes aegypti* Survey, 1952. Indexes<sup>1</sup> for Cities for Which No Comparative Data Are Available for Preceding Years.

City	Month	No. premises inspected	Index
Montgomery, Ala.	July	177	11.3
Birmingham, Ala.	July	237	4.6
Biloxi, Miss.	August	543	2.2
Gulfport, Miss.	August	565	1.9
Little Rock, Ark.	July-August	574	0.9
Columbia, S. C.	July-August	347	0.6
Lake Charles, La.	August	373	0.5
Beaumont, Tex.	August	37	0.0
Beeville, Tex.	August	69	0.0
Greenwood, Miss.	August	187	0.0
Jackson, Miss.	July	236	0.0
Pine Bluff, Ark.	August	250	0.0

<sup>1</sup> Per cent of premises inspected found positive.

1945 also is shown. It will be noted that 4 of the cities were found to have higher indexes in 1952 than in 1945. In two cases the indexes for the 2 years were approximately the same, while in the remainder the indexes were much lower than in 1945. In 6 cities, no breeding at all was found. Table II gives the results of recent inspections in the group of 12 cities where no comparable data on *aegypti* abundance for prior years are available. Among these, only 1 city had a high index (11.3), while 6 had low indexes (below 5), and no *aegypti* could be found in the remaining 5 cities.

No claim can be made that the foregoing fragmentary data reflect the true situation with regard to *aegypti* abundance in the United States, and they will not be discussed in detail. It would appear, however, that the over-all problem is lessening, as compared to that which existed during the past war. This situation undoubtedly has

resulted, in part at least, from the wartime effort which built up, on the part of many communities, an awareness of the *aegypti* problem and the need for keeping premises free of breeding containers. Also, it may well reflect the effect of the greatly increased use of the new and potent household insecticides which came into use during the war.

In spite of the improved situation, these survey data also indicate that *aegypti* continues to be a common and widespread occurrence in the United States. Thus, any all-out *aegypti* eradication effort in this country would be a major task. Whether it would be justifiable as a disease preventive measure, in view of what appears to be a relatively minor chance that yellow fever might be introduced, is controversial. Nevertheless, the idea is an intriguing one about which we may hear more as eradication efforts are intensified in other American countries.