

directing council



PAN AMERICAN
HEALTH
ORGANIZATION

XII Meeting

regional committee

WORLD
HEALTH
ORGANIZATION

XII Meeting



Havana, Cuba
August 1960

CD12/7 (Eng.)
21 July 1960
ORIGINAL: SPANISH

Topic 23: STATUS OF Aedes Aegypti ERADICATION IN THE AMERICAS

By Resolution of the I Meeting of the Directing Council (Buenos Aires, 1947), the PASB was entrusted with the promotion and coordination of the Aedes aegypti eradication campaign in the Americas. In order to comply with this mandate, the PASB has been making every possible effort, within its budgetary limitations, to cooperate with the countries in carrying out the programs whose objective is the elimination of this vector.

During the thirteen years that have elapsed since the decision taken by the Directing Council, many difficulties and problems have arisen and have been solved, to such an extent that the results achieved can be considered satisfactory.

The XV Pan American Sanitary Conference (San Juan, Puerto Rico, 1958) accepted the reports indicating that Bolivia, Brazil, British Honduras, Canal Zone, Ecuador, French Guiana, Nicaragua, Panama, Paraguay, Peru, and Uruguay were free from A. aegypti, by reason of satisfactory fulfillment of the standards on which the criteria established by the Bureau are based. The XI Meeting of the Directing Council (Washington, 1959) adopted a similar resolution with respect to Guatemala and Honduras.

The Governing Bodies of the Organization have repeatedly called upon the still infested countries and territories to intensify their anti-aegypti activities, and upon those countries that have eradicated the vector, to maintain strict surveillance so as to prevent reinfestation.

A problem of capital importance that should be mentioned is that of physiological resistance of the A. aegypti to DDT in some areas of the Caribbean. In addition, dual resistance of the mosquito to dieldrin and DDT has been observed in Isla Verde, Puerto Rico. This fact should be appraised in all its aspects so as to learn its extent and to take the measures required to cope with it appropriately.

The A. aegypti problem persists especially in the United States and in certain areas of the Caribbean, where for geographical, administrative, and financial reasons it has been impossible up to the present to organize the activities.

A summary of the present situation, in accordance with the most recent information available, is given below in alphabetical order by country and other areas. Countries and areas that have been declared free are not included.

Argentina. The Government has been carrying out the campaign since 1955 with the collaboration of the PASB. The A. aegypti has already been eradicated in the provinces of Salta, Tucumán, Catamarca, Santiago del Estero, Formosa, Chaco, Corrientes, and Misiones. These provinces occupy the tropical and subtropical area of the country where conditions are more favorable to the development of the mosquito.

Work is being carried out actively in the provinces of Córdoba, Santa Fe, Entre Rios, and Buenos Aires. Notwithstanding the greater population density in those provinces, in advancing toward the south the infested areas are much sparser, as the ecological conditions, particularly the temperature, are not favorable to the development of A. aegypti. It is expected that the vector will no longer be found to the south of parallel 35. This will bring about a considerable reduction in the area that was considered presumably infested when the activities were started, and the time foreseen to complete the campaign may thus be shortened.

Of the 2,772 localities inspected, 156 were found infested and, of these, 147 are already free of the mosquito. Up to the present only very limited infestation was found in the capital and this was in an area with less than 3,000 houses that is expected to be treated shortly.

With the increase in resources recently made available to the program by the Government, great impetus is expected to be given to the campaign.

Chile. The activities are being brought to completion so as to achieve eradication throughout the country. Surveys were again made in the provinces of Tarapacá and Atacama and the activities continue in the Province of Antofagasta.

Colombia. Recent verifications confirm the eradication of A. aegypti throughout the country, with the exception of Cúcuta, near the border with Venezuela, where in December 1959 a small area was found to be still infested, possibly owing to ovular resistance. That area was treated and after two verifications proved to be negative. If the third verification to be made at the end of the year confirms the negativity, the country may be declared free. From the beginning of the campaign up to April 1960, 3,749 localities were checked and 354 were found with A. aegypti, but all are now negative.

Costa Rica. It is expected that the special verifications to be made by the authorities in collaboration with PASB, will confirm the eradication of A. aegypti, which has not been found in the country since 1952.

Cuba. The campaign started in 1954 made little progress until early in 1959, because of the small budget assigned to the work and the reduced number of personnel. Disregarding some coastal and practically uninhabited areas, and the highest portions of the mountains existing in the country, 100,000 square kilometers of Cuba's territory offer most favorable conditions for the development and dispersion of A. aegypti. All urban centers and the majority of the rural localities on the island can be considered as massively infested with the mosquito.

Beginning in 1959 the Government has been giving full support to the campaign, which now has all the necessary resources. The activities are being carried out in conformity with a new plan of operation that provides for the eradication of A. aegypti in Cuba within approximately four years and in four stages. Of the 95 localities inspected since the start of the campaign, 78 were found to be infested. Post-treatment verification has been made in 54 of the latter and 31 were found to be still positive.

Dominican Republic. The work in the Capital has been suspended since the existence of DDT resistance was confirmed. The available personnel are being used in some cities in the interior. The spraying with dieldrin against malaria has covered all the rural areas, and it is hoped that the A. aegypti has been eliminated as a result. Apparently, the eradication of A. aegypti in the Dominican Republic would not be difficult and could be achieved within quite a reasonable period, so long as all the necessary resources are made available for the normal development of the campaign activities.

El Salvador. The final verification was completed in November 1959 and the eradication of A. aegypti in the country was confirmed.

Haiti. The ecological conditions existing in the country are most favorable to the mosquito, whose resistance to DDT in the Capital is confirmed. The country was obliged for economic reasons to suspend the eradication campaign late in 1958. It is hoped that the campaign can be resumed within a short time.

Mexico. The spraying operations with residual insecticides of the malaria campaign and those specifically directed against the A. aegypti in the urban areas, have brought about a considerable change in the problem that existed formerly. During the last quarter of 1959 the Government, with the technical collaboration of PASB, made a special evaluation that covered 34 localities situated in the previously most infested areas in the States of Yucatán, Campeche, Tabasco, Veracruz, Oaxaca, and Chiapas, and A. aegypti was found in only one locality, Motul, Yucatán. It is expected that with one year more of systematic work eradication will be achieved in the entire country.

United States of America. All or part of thirteen states in the southeastern portion of the country have been declared to be receptive to yellow fever by the United States Public Health Service, in addition to Puerto Rico, the U.S. Virgin Islands, and the State of Hawaii. In 1957 the dock area of Key West was found heavily infested, after being reported negative for many years. In 1958 an inspection of airports in Florida revealed that six out of 25 were infested with A. aegypti; and a survey of 94 localities, urban and rural, in the receptive area, revealed 32 of them infested -- including three positives in the nine rural areas studies. While there is some evidence to indicate that the aegypti-infested area in the continental U.S.A. may be shrinking somewhat, it seems unlikely that A. aegypti will "spontaneously" disappear from the country.

A pilot project for the eradication of A. aegypti is under way in Pensacola, Florida. This project was initiated in November 1957 for the purpose of providing data on unit costs, working methods, and the practicability of eradicating the species from a typical metropolitan area in the southeastern United States. This project is an essential step in the adaptation of the perifocal method of applying residual insecticide, which has been so widely successful in Latin America, to the conditions existing in the continental United States. These conditions are vastly different from those in the American tropics. One need mention only three: the greater profusion of discarded tin cans and automobile tires -- the latter an ideal breeding place for A. aegypti, in part because of their indestructibility; the fact that A. aegypti cannot breed at all during about half the year; and the appreciably higher hourly wage that has to be paid to the sprayment of the service.

When the results of the Pensacola study have been evaluated it should be possible to estimate the total cost of eradicating A. aegypti from the continental United States and Puerto Rico.

Venezuela. In 1958 the Government decided to give extra impetus to the program, for which it requested and received the collaboration of PASB. The year 1959 can be considered as the first one of complete activities. Delays in recruiting personnel, to the extent that only one half of the posts budgeted have been filled, caused a lag in the pace originally planned.

Of the 3,777 localities inspected since the start of the campaign, 440 were found to be infested; post-treatment verifications were made in 332 of the latter, and 49 were found to be still positive.

Verifications in the metropolitan area of Caracas revealed the existence of small infested areas in the old part of the city; two places near the Petare locality and peripheral areas of the Sucre and Antimano parishes. The capital of the State of Miranda, Los Teques, was found to be infested. Verifications made in the coastal area of the Federal District, including the Maiquetía airport and the port of La Guaira, gave negative

results. San Cristóbal, capital of the State of Táchira, presented diffuse infestation; San Antonio, near the border with Colombia, had a small infested area. The Urefia area, along the same frontier, was completely inspected with negative results.

Guianas. In British Guiana the 93 previously infested localities continue negative. Only the final verification remains to be made.

French Guiana, where A. aegypti had been eradicated, was reinfested in 1959, probably by way of Surinam. The mosquito was found in Cayenne, Sinamary, Saint Laurent du Marovin, the Acaronamy Leprosarium, Houron, Maccourie, and Rerivre. These localities were treated and now show negative.

In Surinam it is known that indices are high and infestation disseminated. Resistance to DDT was confirmed in some areas. The Government is taking measures to reorganize the campaign and, with the collaboration of PASB technical personnel, a small group of local inspectors are making a survey of the territory to pinpoint the infested area.

Caribbean Area. The campaign is encountering serious obstacles in the Lesser Antilles, owing to the geographic dispersion of the islands and, in the majority of them, to various administrative problems.

Bahamas. The campaign in these islands is having financial difficulties and the personnel assigned to it are insufficient even for the activities on the Island of New Providence, much less for the many other islands.

British Virgin Islands. The eradication campaign was started during the first quarter of 1960, with the collaboration of PASB, and there is being carried out a program of total spraying of the houses in all the islands. Negative results are expected to be obtained in less than one year.

Saint Kitts - Nevis-Anguilla. Both Nevis and Saint Kitts are negative. Anguilla was treated one time, and plans are now being made for the verification and a second treatment within a short time. A PASB consultant is stationed at Saint Kitts and also handles the programs in the neighboring islands.

Montserrat. This island, which was negative for more than a year, had a focus of reinfestation that was discovered by the surveillance service during the first quarter of 1960. Measures were taken immediately to eliminate it.

Antigua - Barbuda. Both these islands are negative and are under permanent surveillance service.

Dominica. There is no eradication program on this island. Recently, the Government agreed to make a survey of the entire island, with the collaboration of the PASB, to determine the mosquito infestation situation, before discussing bases for the eradication campaign.

Saint Lucia. After a long interval of negativity, a focus was found near the port, but it was not possible to determine whether the reinfestation was due to ovular resistance, or the introduction of the species from the outside. The local authorities took the necessary measures to correct the situation. This incident showed the need for maintaining strict surveillance until such time as all the neighboring islands are negative.

Saint Vincent. All the islands included in this group are negative and are under a surveillance regime.

Grenada. This island is negative. In Carriacou (Grenadines) where A. aegypti persists, the authorities are studying the possibility of organizing an intensive campaign.

Barbados. Owing to administrative difficulties the campaign has been greatly delayed, and the problem of inspecting vacant houses has not yet been solved.

Trinidad and Tobago. In order to confirm the negative results that have been reported for some time, with PASB cooperation, a special verification was started in March which has shown negative results so far.

Guadeloupe. The campaign, which was started in 1956 with PASB collaboration, continues to cope with important problems, particularly administrative ones. Instead of covering the entire island, as had been planned, the work is limited to the capital and neighboring areas, leaving untreated about 70 per cent of the houses on the island.

Saint-Martin. (French part) The verification that had been planned for the latter part of 1959 to check the treatment applied to the island, has not yet been carried out.

Martinique. This island has a program for the control of insects by periodic treatment of houses, but A. aegypti infestation persists.

Netherlands Antilles. Aruba, Bonaire, Saba, Saint Eustatius, and Saint Martin continue to be negative. In Curaçao a verification is under way.

- - - - -

Attached are a table showing the numerical results and a map giving an over-all picture of what has been accomplished, as well as what is still to be done to complete the campaign.

As described in the text of the report, the Republic of El Salvador has completed the final verification of the campaign against Aedes aegypti and, consequently, this country may be added to the list of those that have been declared free of this vector.

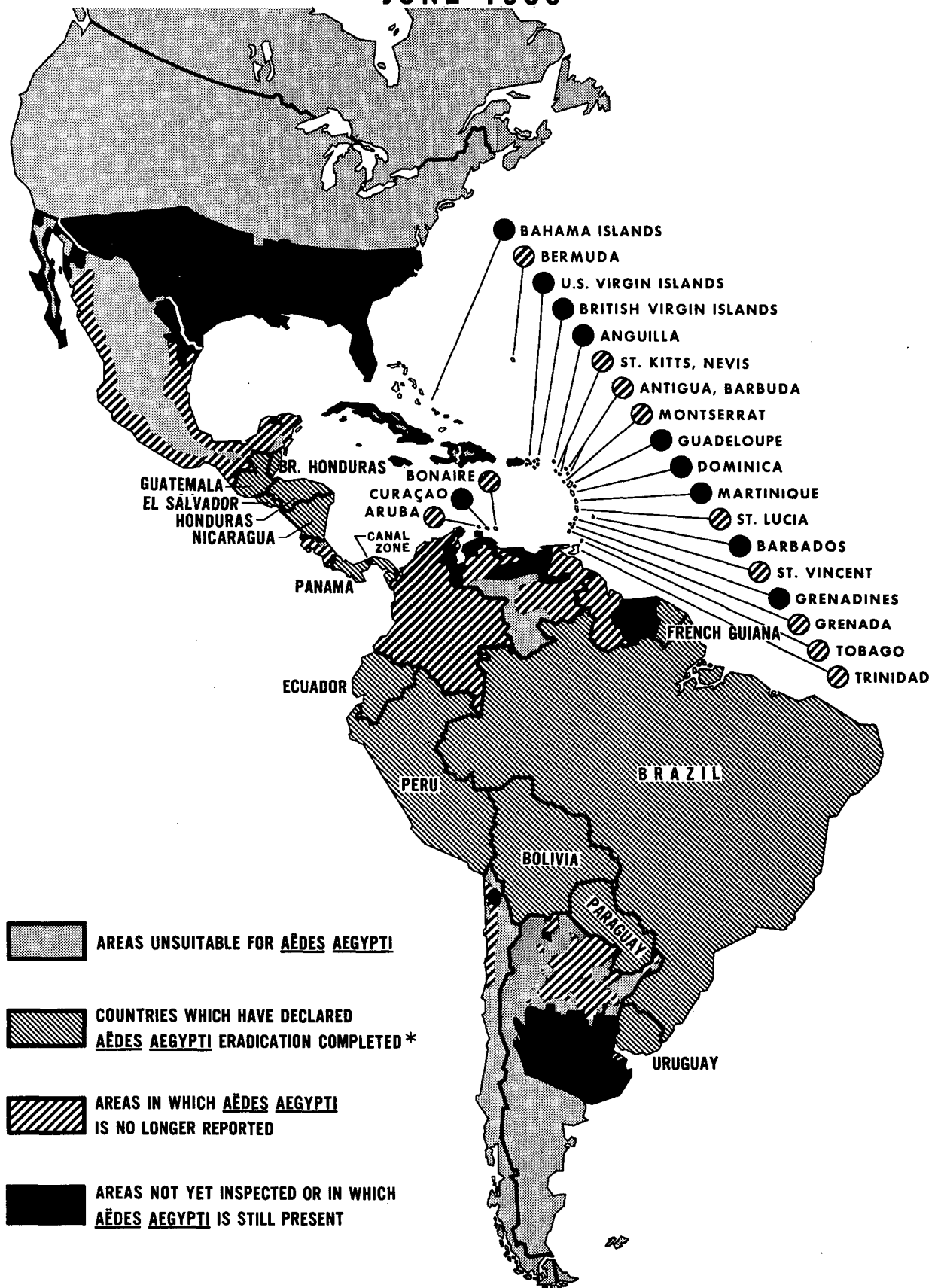
As was indicated at the beginning of this document, the Governing Bodies of the Organization have, on several occasions, stressed the need for the countries that are still infested with A. aegypti to make the greatest possible efforts to eliminate it. The Ministers of Public Health of Central America and Panama, at their last two meetings, also insisted on this point. It is hoped that these countries will proceed to intensify their programs, so that the countries that have achieved freedom from the mosquito, after great and costly efforts, may not be under constant risk of reinfestation, and in addition, that the goal established by the Organization 13 years ago may be achieved: the elimination of the vector mosquito of urban yellow fever throughout the Western Hemisphere.





REPORT FOR MAY 1960 ON THE AEDES AEGYPTI ERADICATION CAMPAIGN
IN THE AMERICAS, FROM ITS BEGINNING

Country	Date started	Latest report available	Area assumed initially infested (Km ²)		Localities inspected					Present stage
			Total	Inspected (%)	Number	Initially positive			Still positive	
						Total	Treated	Number		
Argentina	IV.58	V.60	1,500,000	37.5	2,772	156	149	147	-	A
Bolivia	VI.32	XII.56	100,000	100.0	282	65	65	65	-	E
Brazil	I.31	IX.59	5,358,822	100.0	270,588	36,119	36,119	36,119	-	E
Chile	VI.45	V.60	50,000	100.0	203	44	44	44	2	A
Colombia	XI.50	IV.60	280,000	100.0	3,802	354	354	354	-	N
Costa Rica	IV.49	V.60	20,000	100.0	1,238	104	104	104	-	N
Cuba	III.54	V.60	100,000	1.0	95	79	79	54	31	A
Dominican Republic	X.52	V.60	42,020	80.4	1,408	352	352	312	44	A
Ecuador	VI.46	XII.59	69,454	100.0	2,824	337	337	337	-	E
El Salvador	IV.49	XII.59	18,675	100.0	989	190	190	190	-	E
Guatemala	I.49	III.60	36,423	100.0	2,485	138	138	138	-	E
Haiti	X.53	IX.58	27,750	49.4	2,379	605	602	435	27	I
Honduras	IX.49	III.60	69,929	100.0	600	53	53	53	-	E
Mexico	I.51	III.60	1,000,000	60.0	1,179	587	573	571	80	A
Nicaragua	I.50	VI.59	65,263	100.0	3,126	18	18	18	-	E
Panama	II.49	III.60	56,246	100.0	2,853	44	44	44	-	E
Paraguay	I.48	III.60	200,000	100.0	1,561	98	98	98	-	E
Peru	I.40	IX.58	638,000	100.0	4,320	191	191	191	-	E
United States	-	-	777,000	-	-	-	-	-	-	P
Uruguay	X.48	III.60	187,000	100.0	1,020	133	133	133	-	E
Venezuela	VI.48	V.60	600,000	85.0	3,777	440	403	332	49	A
France French Guiana	V.49	III.58	91,000	100.0	222	55	55	55	-	E
Guadeloupe	I.57	IV.60	1,619	4.9	53	38	38	35	14	A
Martinique	XI.53	XII.59	1,813	100.0	132	95	8	8	6	A
Nether-Aruba	III.52	V.60	174	100.0	9	9	9	9	0	N
lands Bonaire	IX.52	IX.59	246	100.0	6	6	6	6	0	N
Curacao	X.51	V.60	448	100.0	155	155	155	155	12	A
Saba, St.Eustatius,St.Martin	VII.58	VIII.59	60	100.0	34	30	30	30	-	N
Surinam	-	-	143,000	-	-	-	-	-	-	P
United Antigua	VIII.54	V.60	283	100.0	50	47	47	47	0	N
Kingdom Bahamas	VI.54	V.60	11,396	1.3	13	11	11	11	8	A
Barbados	III.54	V.60	171	100.0	95	95	95	95	25	A
Bermuda	I.51	XII.51	53	100.0	9	9	9	9	-	N
British Guiana	III.46	V.60	4,662	100.0	93	93	93	93	-	N
British Honduras	X.50	III.60	22,965	100.0	84	2	2	2	-	E
Cayman Islands	-	-	259	-	-	-	-	-	-	P
Dominica	II.51	X.56	789	90.0	136	66	66	66	16	I
Grenada	XI.52	VII.59	311	100.0	8	8	8	8	-	N
Grenadines	XI.52	VII.59	65	100.0	7	5	5	5	1	A
Jamaica	II.50	IV.60	11,424	77.3	67	45	45	31	13	A
Montserrat	V.56	V.60	83	100.0	33	16	16	16	0	N
St.Kitts-Nevis-Anguilla	V.50	III.60	396	100.0	62	33	33	33	15	A
Saint Lucia	V.53	IV.60	259	100.0	50	50	50	50	0	N
Saint Vincent	III.53	III.59	332	100.0	8	8	8	8	-	N
Trinidad and Tobago	I.51	V.60	3,108	100.0	128	122	122	122	-	N
Virgin Islands	III.60	V.60	174	74.6	15	15	15	-	-	A
United Canal Zone	...	VI.59	1,432	100.0	21	21	21	21	-	E
States Puerto Rico	V.50	IV.60	8,896	61.8	481	249	248	248	116	A
Virgin Islands	-	-	124	-	-	-	-	-	-	P

P = Preparatory; A = Active; N = Negative for A. aegypti; E = A. aegypti eradicated; I = Interrupted Programs;
- = Zero or without movement; ... = No data available.

STATUS OF THE AÈDES AEGYPTI ERADICATION CAMPAIGN JUNE 1960



-  AREAS UNSUITABLE FOR AÈDES AEGYPTI
-  COUNTRIES WHICH HAVE DECLARED AÈDES AEGYPTI ERADICATION COMPLETED*
-  AREAS IN WHICH AÈDES AEGYPTI IS NO LONGER REPORTED
-  AREAS NOT YET INSPECTED OR IN WHICH AÈDES AEGYPTI IS STILL PRESENT

*ERADICATION VERIFIED IN ACCORDANCE WITH THE STANDARDS ESTABLISHED BY PASB