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### REPORT ON THE STATUS OF AËDES AEGYPTI ERADICATION IN THE AMERICAS

(Document presented by the Government of Mexico)

"STATUS OF AËDES AEGYPTI ERADICATION IN MEXICO"

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## BACKGROUND

The old medical literature in Mexico lacks information on yellow fever, and not until the sixteenth century do we find the first references to it.

There are references in Mayan writings about "xehik" or vomiting blood, and the description of the epidemic of 1648 is very pertinent since it is the first urban type which appears in the reports of the Spaniards in Yucatan.

We know that from that time forward every human resource was put into play to eliminate this scourge.

The eternal struggle for life no doubt inspired the first efforts at prevention and defense, and there is some evidence that the frequent migrations of the Mayas, which of course had other causes also, were an attempt to escape the cruel impact of the disease. It is mentioned in their codices and had an adverse influence on their progress and development.

Many years later, the first measures were adopted against a nosology, that to a great extent was well known and defined.

In 1876, when a severe epidemic occurred in Yucatan and it was noted that most of the cases occurred among the federal troops, it was decided to send the soldiers in small groups to villages in the interior as a prophylactic measure.

Toward the end of the nineteenth century, when the Second American Scientific Congress was held in Mexico, various campaign measures were proposed both for local and for international application.

In 1901 the health authorities decided to carry out an intensive campaign to eliminate yellow fever from the country, and 1902 and 1903 they drew up a plan of campaign against the "black vomit" in Veracruz, the main objectives of which were to isolate the patient and to annihilate the mosquito.

That campaign was begun on 1 September 1903. By then the role of Aedes aegypti as the transmitter of the disease had been verified. The campaign was later extended to Tampico, Merida, and Progreso.

In 1921, with the generous technical and financial assistance of the International Health Division of the Rockefeller Foundation, a Special Committee for the Yellow Fever Campaign was established, headed by Mexican and U.S. officials.

In October of that year the First Mexican Convention on Yellow Fever was held in Mexico City. The papers presented and the proceedings were most interesting. At that meeting it was decided to divide the territory of Mexico into six areas and to establish laboratories in Tampico, Veracruz, and Merida.

At the same time, the various publicity media were employed intensively to inform the public of the importance of destroying the breeding places of the mosquito and of notifying and isolating any suspect cases.

When urban yellow fever disappeared from the public health picture of Mexico with the occurrence of a last case in 1923 and the conclusion of the Special Committee's work in 1925, the campaign measures were basically changed to those of prevention.

These services succeeded in maintaining low infestation indexes in the main ports and in the city of Merida. At times the species actually disappeared, as happened in the port of Veracruz in 1930 (Bustamante, Miguel E.: La Fiebre Amarilla en México y su Origen en América. México, 1958).

By means of an agreement concluded between the Secretariat of Public Health and Social Welfare and the Pan American Sanitary Bureau, which entered into effect on 13 August 1950, the Office of Yellow Fever Prophylaxis was established.

The campaign against A. aegypti changed substantially with the advent of DDT, which was applied in the southeastern part of the country during 1949, 1950, 1954, and 1955 according to Brazilian techniques and with Brazilian instructors.

Mexico continued to pursue its policy of solving its public health problems as quickly as resources permitted, in accordance with their priorities and with the international commitment implicit in the resolution adopted by the PAHO Directing Council at Buenos Aires in 1947, and decided to implement an A. aegypti eradication program.

The susceptibility of this species to DDT has remained intact in Mexico, as have its purely domestic habits, which made it possible to establish and apply precise elimination techniques.

The malaria eradication campaign offered an opportunity to take advantage of the large-scale DDT sprayings and the conclusions reached in experimental work, and intradomiciliary DDT sprayings as the surest and swiftest method for destroying A. aegypti. (Ortiz Mariotte, Carlos, and Luna Batalla, Mateo: "Erradicación del Aedes aegypti en México" (Public Health of Mexico) Period V, Vol. I, No. 1, 1959.)

That is how the National Anti-mosquito Service came to be created in 1956 under the Department of Epidemiology and Public Health Campaigns, which is still the agency responsible for carrying out the eradication campaign.

## PROGRAM

Once the method of intradomiciliary sprayings with recommended techniques had been approved, the program of activities was formulated as follows:

- (a) Thorough knowledge of the problem
- (b) Use of the collateral advantages derived from the Malaria Service sprayings
- (c) Treatment of all positive localities with two continuous cycles of insecticide sprayings (5 per cent DDT for the first cycle and 2.5 per cent for the second).
- (d) Verification: In rural areas, one verification of 100 per cent of the houses; in urban areas, three verifications. Of these three, the first covered 100 per cent of the houses, and the second and third 50 per cent of the houses; the third and last verification was supplemented by the capture of adult mosquitoes.
- (e) Special studies based on the verifications.
- (f) Surveillance to prevent reintroduction of the vector into sea and air ports and border towns.
- (g) Classification at the Service laboratory of the entomological material collected and captured.

Integration of the Working Area. Since the program was nation-wide, consideration was given to the entire territory including the islands, which totals 1,969,367 square kilometers and has 1,836 municipalities, 99,028 localities, and a population estimated at 30 June 1962 of 37,170,485. (Table 1)

Delimitation of the presumably infested area. The following criterion was used to delimit the presumably infested area:

It is difficult for A. aegypti to reproduce beyond 1,000 meters above sea level, and of the country's total surface 48.65 per cent, a little less than 1,000,000 square kilometers, is situated below this altitude.

Classification of areas. The attached map shows the distribution of the following areas:

- (a) Presumably infested with A. aegypti, surveyed by the National Anti-mosquito Service.

- (b) Presumably infested with A. aegypti and initially malarious
- (c) Initially malarious, without any problem of A. aegypti
- (d) Free from both A. aegypti and malaria.

Not counting the initially malarious area, the presumably infested area represents 380,430 square kilometers or 20 per cent of the country's total surface. It includes 116 (6.4 per cent) of the municipalities, which are composed of 7,291 (7 per cent) of the localities. The approximate population is 2,000,000, or 5.4 per cent of the country's total (Tables 2, 3, 4, and 5).

#### ACTIVITIES DEVELOPED AND RESULTS

Initial survey. A survey was made of 3,663 localities, or 50.24 per cent of the 7,291 previously mentioned.

A survey was made of all urban localities with 500 or more houses. Approximately 58 per cent of the rural localities with fewer than 500 houses were surveyed, preference being given to those with the largest number of houses. In other words, only the smallest and least populated localities, where the probability of finding A. aegypti is practically nil, remained to be surveyed (Table 6).

Initially positive localities. The systematic survey made in 3,663 localities outside the malarious area revealed 248 positive, of which 204 were rural and 44 were urban --respectively 5.8 per cent and 41.1 per cent of the localities surveyed. The latter percentage confirms the fact that A. aegypti is eminently urban, since two of every five urban localities surveyed were found positive.

The rest of the positive localities, that is to say the 352 that go to make up the total of 600 known, were found in various surveys made before 1956 in the malarious area.

When the survey had been completed in the continental part of the country, it was begun in the islands. Maria Madre, a Pacific island that is part of Nayarit State, was found positive and included in the total of positive localities (Table 7).

Number of houses in initially positive localities. The total of 4,235 localities surveyed had 769,320 houses, 287,986 of which were within the malarious area and 481,334 in the area non-malarious but presumably infested with A. aegypti.

There are 313,349 houses in the 600 initially positive localities, of which 120,982 are in the malarious area and 192,367 in the non-malarious but presumably infested area (Tables 8 and 9).

Surveys were made in various localities in the malarious area, especially the large population centers protected by a National Malaria

Service barrier. This survey revealed 5 positive localities, which were treated: Culiacan and Mazatlan in Sinaloa State; Guaymas and Navojoa in Sonora State; and Ciudad Victoria in Tamaulipas State. Three consecutive verifications have since been made in these localities, all of them negative.

Treatment. Insecticide application in localities found positive in the initial survey was as follows:

- (a) Method used: intradomiciliary spraying.
- (b) Insecticide used: DDT (75 per cent wettable powder).
- (c) Vehicle for application: water for permeable surfaces and kerosene for impermeable.
- (d) Concentration of mixture: 5 per cent to deposit 2 grams per square meter in the first application, and 215 per cent to deposit 1 gram per square meter in the second.
- (e) Number of applications and interval: 2 applications at an interval of 6 months, the insecticide thus remaining active for 12 months, which is sufficient time to exhaust the Aedes population.

All the positive localities have already received these two treatments.

Verification. All positive urban localities were verified three times after the last treatment except the localities of Merida, Piedras Negras, Villa de Fuentes, Guerrero Viejo, and Maria Madre Island, which have been verified only once. Both the former and the latter groups were found negative each time (Table 10).

Special verification. Since the prescribed verifications had all been negative, a special verification was begun in October 1961 in cooperation with the Pan American Sanitary Bureau. The National Anti-mosquito Service was instructed to provide all necessary staff, vehicles, and equipment to facilitate the work of the Bureau personnel.

Surveillance. Surveillance has been established at sea and air ports and border stations communicating with other countries that still have A. aegypti. The inspection of transport and adjacent ground installations has to date not yielded any larval foci or adults.

At times adults of other species are discovered in foreign ships. In every case it was possible to verify that the adults captured had arrived in the same ship.

These foreign vessels had originated or stopped at, for example, New Orleans, Houston, Jacksonville, Tampa, Key West, and Galveston in

the United States; in Liverpool, England; in Rio Haina, Dominican Republic; in Hamburg and Bremen, Germany; in Kingston, Jamaica; in Havana, Cuba; in Oslo and Christiansund, Norway; in Antwerp, Belgium; and other, unknown ports of call. The following mosquitoes have been found on them: Culex quinquefasciatus, C. tarsalis, Anopheles pseudopunctipennis, and A. albimanus.

#### SUMMARY

1. The international commitment under the 1947 resolution of the PAHO Directing Council, which met in Buenos Aires, has been fulfilled.
2. The original Aedes aegypti eradication program has been fully complied with up to the date of this paper.
3. The survey and re-survey of localities with an ecology favorable to the development and reproduction of Aedes aegypti has been completed.
4. Intradomiciliary sprayings with DDT have been completed in all initially positive localities.
5. The verification of all sprayed localities has been completed, and all were A. aegypti negative.

Because of the time that is supposed to elapse after spraying, the following communities have been verified only once: Piedras Negras and Villa de Fuentes, Coahuila State; Guerrero Viejo, Tamaulipas State; Maria Madre Island, Nayarit State; and Merida, Yucatan State. All have also been found negative.

6. With the cooperation of the Pan American Sanitary Bureau, the Special Verification to confirm eradication has been started. The results so far have been negative. In Merida a few foci were found, but, as has been said, they have been treated and the first verification was negative.

In this check 77 localities in Yucatan and Chiapas States and Quintana Roo Territory, with 69,787 houses, were verified. Sixty-three of these 77 localities were rural, with 7,769 houses, and 14 were urban, with 62,018 houses. Among the latter were such sizable towns as Tapachula, with 8,746 houses and a population of 41,701, and Huixtla, with 2,871 houses and a population of 12,344. Special verification now continues toward the north of the country and is expected to be completed in 1963.

7. A surveillance program has been established in sea and air ports and border stations with a view to preventing or detecting



any importation of A. aegypti from any country abroad where this vector still exists.

This surveillance includes the inspection of areas adjacent to ports and stations and the periodic desinsectization of national transport.

#### CONCLUSION

The operations of survey, re-survey, and spraying envisaged in the original program have been concluded. The verifications made to date, which covered the great majority of the localities sprayed, proved them to be A. aegypti negative. The special verification being carried out with the aid of the Pan American Sanitary Bureau has so far also been A. aegypti negative. The results of these verifications have shown that intradomiciliary sprayings with DDT according to our standards are effective. A surveillance service has been established to prevent the re-introduction of A. aegypti into the country. It is therefore estimated that the eradication of Aedes aegypti in the territory of Mexico will be completed in the course of this year.

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Annexes

C u a d r o 1

SUPERFICIE, MUNICIPIOS, LOCALIDADES Y POBLACION

ESTADOS UNIDOS MEXICANOS.

E S T A D O S	Kilómetros <sup>2</sup> en 1962.	Municipios en 1962	Localidades en 1950	Población al 30 junio 1962
Aguascalientes	6 472	8	837	259 024
Baja California Norte	71 627	4	554	553 638
Baja California Sur	72 465	7	1 256	86 845
Campeche	50 952	8	901	179 044
Coahuila	150 395	38	2 280	966 148
Colima	5 205	9	555	175 053
Chiapas	74 415	111	6 809	1 288 791
Chihuahua	245 612	66	5 346	1 305 739
Distrito Federal	1 483	13	748	5 184 326
Durango	123 520	38	3 513	809 797
Guanajuato	30 575	46	4 946	1 847 171
Guerrero	64 458	75	3 147	1 263 083
Hidalgo	20 870	82	2 960	1 058 602
Jalisco	80 683	124	9 370	2 600 485
México	21 414	119	2 817	2 019 981
Michoacán	60 093	110	6 094	1 971 047
Morelos	4 964	32	286	411 121
Nayarit	27 317	19	1 107	415 022
Nuevo León	65 103	52	4 096	1 148 273
Oaxaca	94 211	30 <sup>+</sup>	3 072	1 838 418
Puebla	23 997	222	2 728	2 100 857
Querétaro	11 480	18	971	377 893
Quintana Roo	50 843	4	280	53 397
San Luis Potosí	63 241	54	3 062	1 115 756
Sinaloa	58 488	16	4 082	892 357
Sonora	182 553	72	3 383	833 790
Tabasco	25 337	17	5 857	528 280
Tamaulipas	79 602	41	4 238	1 090 090
Tlaxcala	4 027	44	574	369 010
Veracruz	71 896	198	7 872	2 903 443
Yucatán	38 508	106	2 322	653 664
Zacatecas	72 843	53	2 965	870 460
Islas	4 718			
<b>T O T A L</b>	<b>1 969 367</b>	<b>1 836</b>	<b>99 028</b>	<b>37 170 485</b>

+ En Oaxaca son Ex-Distritos.

Q u a d r o 2.

SUPERFICIE SEGUN AREA

ESTADOS UNIDOS MEXICANOS.

ESTADOS	En área inicialmente palúdica.	En área limpia a más de 1000 metros	En área solamente aérea	T O T A L
Aguascalientes	3 581	2 891		6 472
Baja California Norte			71 627	71 627
Baja California Sur			72 465	72 465
Campeche	50 952			50 952
Coahuila	6 746	52 075	91 574	150 395
Colima	5 205			5 205
Chiapas	71 800	2 615		74 415
Chihuahua	36 300	198 169	11 143	245 612
Distrito Federal		1 483		1 483
Durango	58 873	64 647		123 520
Guanajuato	15 554	15 021		30 575
Guerrero	64 458			64 458
Hidalgo	9 549	11 321		20 870
Jalisco	72 183	8 500		80 683
México	3 024	18 390		21 414
Michoacán	49 458	10 635		60 093
Morelos	3 748	1 216		4 964
Nayarit	27 317			27 317
Nuevo León	19 795	15 376	29 932	65 103
Oaxaca	92 354	1 857		94 211
Puebla	17 541	16 456		33 997
Querétaro	6 029	5 451		11 480
Quintana Roo	50 843			50 843
San Luis Potosí	19 371	43 870		63 241
Sinaloa	58 488			58 488
Sonora	88 058	18 100	76 395	182 553
Tabasco	25 337			25 337
Tamaulipas	59 664	2 223	17 715	79 602
Tlaxcala		4 027		4 027
Veracruz	67 847	4 049		71 896
Yucatán	33 647		4 861	38 508
Zacatecas	25 786	47 057		72 843
Islas			4 718	4 718
T O T A L	1 043 508	545 429	380 430	1 969 367

C u a d r o 3.

MUNICIPIOS SEGUN AREA.

ESTADOS UNIDOS MEXICANOS.

E S T A D O S	En área inicial- mente palúdica.	En área limpia a más de 1000 Metros	En área sola- mente áedica	T O T A L
Aguascalientes	2	6		8
Baja California Norte			4	4
Baja California Sur			7	7
Campeche	8			8
Coahuila	5	11	22	38
Colima	9			9
Chiapas	97	14		111
Chihuahua	11	54	1	66
Distrito Federal		13		13
Durango	12	26		38
Guanajuato	27	19		46
Guerrero	75			75
Hidalgo	32	50		82
Jalisco	113	11		124
México	8	111		119
Michoacán	75	35		110
Morelos	22	10		32
Nayarit	19			19
Nuevo León	25	7	20	52
Oaxaca	28	2		30
Puebla	121	101		222
Querétaro	8	10		18
Quintana Roo	4			4
San Luis Potosí	28	26		54
Sinaloa	16			16
Sonora	34	11	27	72
Tabasco	17			17
Tamaulipas	31	2	8	41
Tlaxcala		44		44
Veracruz	157	41		198
Yucatán	79		27	106
Zacatecas	24	29		53
T O T A L	1 087	633	116	1 836

C u a d r o 4.  
LOCALIDADES SEGUN AREA .  
ESTADOS UNIDOS MEXICANOS.

E S T A D O S	En área inicial- mente palúdica.	En área limpia a más de 1000 metros	En área sola- mente aédica	T O T A L
Aguascalientes	552	285		837
Baja California Norte			554	554
Baja California Sur			1 256	1 256
Campeche	901			901
Coahuila	79	1 256	945	2 280
Colima	555			555
Chiapas	6 292	517		6 809
Chihuahua	1 848	3 382	116	5 346
Distrito Federal		748		748
Durango	1 950	1 563		3 513
Guanajuato	2 619	2 327		4 946
Guerrero	3 147			3 147
Hidalgo	1 469	1 491		2 960
Jalisco	7 862	1 508		9 370
México	334	2 483		2 817
Michoacán	4 910	1 184		6 094
Morelos	219	67		286
Nayarit	1 107			1 107
Nuevo León	2 011	567	1 518	4 096
Oaxaca	2 868	204		3 072
Puebla	1 316	1 412		2 728
Querétaro	510	461		971
Quintana Roo	280			280
San Luis Potosí	1 740	1 322		3 062
Sinaloa	4 082			4 082
Sonora	1 696	459	1 228	3 383
Tabasco	5 857			5 857
Tamaulipas	2 903	53	1 282	4 238
Tlaxcala		574		574
Veracruz	7 401	471		7 872
Yucatán	1 930		392	2 322
Zacatecas	1 384	1 581		2 965
T O T A L	67 822	23 915	7 291	99 028

## C u a d r o 5.

POBLACION SEGUN AREAESTADOS UNIDOS MEXICANOS

ESTADOS	En área inicial mente palúdica	En área limpia a más de 1000 metros	En área sola- mente aédica	T O T A L
Aguascalientes	183 350	75 674		259 024
Baja California Norte			553 638	553 638
Baja California Sur			86 845	86 345
Campeche	179 044			179 044
Coahuila	71 536	619 489	275 123	966 148
Colima	175 033			175 033
Chiapas	1 130 741	158 050		1 288 791
Chihuahua	109 427	1 174 999	21 313	1 305 739
Distrito Federal		5 184 326		5 184 326
Durango	349 113	460 684		809 797
Guanajuato	874 017	973 154		1 847 171
Guerrero	1 263 083			1 263 083
Hidalgo	411 643	646 959		1 058 602
Jalisco	2 408 285	192 200		2 600 485
México	100 972	1 919 009		2 019 981
Michoacán	1 247 834	723 213		1 971 047
Morelos	352 541	58 580		411 121
Nayarit	415 022			415 022
Nuevo León	954 154	91 341	102 778	1 148 273
Oaxaca	1 705 057	133 361		1 838 418
Puebla	820 911	1 279 946		2 100 857
Querétaro	96 898	280 995		377 893
Quintana Roo	53 397			53 397
San Luis Potosí	501 595	614 161		1 115 756
Sinaloa	892 357			892 357
Sonora	581 653	55 368	196 769	833 790
Tabasco	528 280			528 280
Tamaulipas	581 244	12 702	496 144	1 090 090
Tlaxcala		369 010		369 010
Veracruz	2 539 604	363 839		2 903 443
Yucatán	342 539		311 025	653 564
Zacatecas	336 083	534 377		870 460
T O T A L	19 205 413	15 921 437	2 043 635	37 170 485

C u a d r o 6.

LOCALIDADES ENCUESTADAS RURALES Y URBANAS.

ESTADOS	Fuera área palúdica			Dentro área palúdica			Total en el país		
	Rurales	Urbanas	Total	Rurales	Urbanas	Total	Rurales	Urbanas	Total
B. California Norte	79	7	86				79	7	86
B. California Sur	123	2	125				123	2	125
Campeche				35	13	48	35	13	48
Coahuila	607	15	622				607	15	622
Colima				4	5	9	4	5	9
Chiapas				98	21	119	98	21	119
Chihuahua	3	5	8				3	5	8
Guerrero				1	1	2	1	1	2
Jalisco					1	1		1	1
Michoacán				1		1	1		1
Nayarit	1		1		1	1	1	1	2
Nuevo León	544	13	557				544	13	557
Oaxaca				7	7	14	7	7	14
Quintana Roo				57	2	59	57	2	59
Sinaloa	2	6	8				2	6	8
Sonora	1 058	20	1 078				1 058	20	1 078
Tabasco				22	10	32	22	10	32
Tamaulipas	785	16	801		1	1	785	17	802
Veracruz				13	20	33	13	20	33
Yucatán	354	23	377	230	22	252	584	45	629
<b>T O T A L</b>	<b>3 556</b>	<b>107</b>	<b>3 663</b>	<b>468</b>	<b>104</b>	<b>572</b>	<b>4 024</b>	<b>211</b>	<b>4 235</b>

C u a d r o 7.

LOCALIDADES INICIALMENTE POSITIVAS

RURALES Y URBANAS

E S T A D O S	Fuera área palúdica			Dentro área palúdica			Total en el país		
	Rural	Urbana	Total	Rural	Urbana	Total	Rural	Urbana	Total
Baja California Norte								1	1
Baja California Sur		1	1					13	46
Campeche				33	13	46	33	8	12
Coahuila	4	8	12				4		
Colima				4	4	8	4	4	8
Chiapas				1	8	9	1	8	9
Chihuahua									
Guerrero									
Jalisco									
Michoacán									
Nayarit	1		1				1		1
Nuevo León	5	4	9				5	4	9
Oaxaca									
Quintana Roo				35	2	37	35	2	37
Sinaloa		2	2					2	2
Sonora	3	2	5				3	2	5
Tamaulipas	1	4	5		1	1	1	5	6
Veracruz					1	1		1	1
Yucatán	190	23	213	228	22	250	418	45	463
T O T A L	204	44	248	301	51	352	505	95	600

AAU/rf.



C U A D R O 8.

TOTAL DE CASAS EN LAS LOCALIDADES ENCUESTADAS, RURALES Y URBANAS.

ESTADOS UNIDOS MEXICANOS

ESTADOS	Fuera área palúdica			Dentro área palúdica			Total en el país		
	Rural	Urbana	Total	Rural	Urbana	Total	Rural	Urbana	Total
Baja California Norte	7 798	13 886	21 684				7 798	13 886	21 684
Baja California Sur	4 327	5 434	9 761				4 327	5 434	9 761
Campeche				3 804	22 442	26 246	3 804	22 442	26 246
Coahuila	8 998	37 203	46 201				8 998	37 203	46 201
Colima				521	14 298	14 819	521	14 298	14 819
Chiapas	15			11 643	37 752	49 395	11 643	37 752	49 395
Chihuahua	158	10 500	10658				158	10 500	10 658
Guerrero				320	18 244	18 564	320	18 244	18 564
Jalisco					1 990	1 990		1 990	1 990
Michoacán				160		160	160		160
Nayarit	322		322		4 920	4 920	322	4 920	5 242
Nuevo León	7 486	21 534	29 020				7 486	21 534	29 020
Oaxaca				1 896	32 919	34 815	1 896	32 919	34 815
Quintana Roo				3 997	2 347	6 344	3 997	2 347	6 344
Sinaloa	490	27 865	28 355				490	27 865	28 355
Sonora	19 775	72 793	92 568				19 775	72 793	92 568
Tabasco				3 979	10 909	14 888	3 979	10 909	14 888
Tamaulipas	21 287	123 386	144 673		585	585	21 287	123 971	145 258
Veracruz				3 255	61 452	64 707	3 255	61 452	64 707
Yucatán	20 915	77 177	98 092	29 526	21 027	50 553	50 441	98 204	148 645
T O T A L	91 556	389 778	481 334	59 101	228 885	287 986	150 657	618 663	769 320

C u a d r e 9.

TOTAL DE CASAS EN LAS LOCALIDADES INICIALMENTE POSITIVAS

ESTADOS UNIDOS MEXICANOS.

ESTADOS	Fuera área palúdica			Dentro área palúdica			Total en el país		
	Rural	urbana	Total	Rural	Urbana	Total	Rural	Urbana	Total
Baja California Norte									
Baja California Sur		4 000	4 000					4 000	4 000
Campeche				3 505	22 442	25 947	3 505	22 442	25 947
Coahuila	840	22 372	23 212				840	22 372	23 212
Colima				521	10 121	10 642	521	10 121	10 642
Chiapas				353	23 948	24 301	353	23 948	24 301
Chihuahua									
Guerrero									
Jalisco									
Michoacán									
Nayarit	322		322				322		322
Nuevo León	555	2 910	3 465				555	2 910	3 465
Oaxaca									
Quintana Roo				2 454	2 347	4 801	2 454	2 347	4 801
Sinaloa		19 792	19 792					19 792	19 792
Sonora	439	12 057	12 496				439	12 057	12 496
Tabasco									
Tamaulipas;	55	36 716	36 771		585	585	55	37 301	37 356
Veracruz					4 505	4 505		4 505	4 505
Yucatán	15 132	77 177	92 309	29 174	21027	50 201	44 306	98 204	142 510
<b>T O T A L</b>	<b>17 343</b>	<b>175 024</b>	<b>192 367</b>	<b>36 007</b>	<b>84 975</b>	<b>120 982</b>	<b>53 350</b>	<b>259 999</b>	<b>313 349</b>

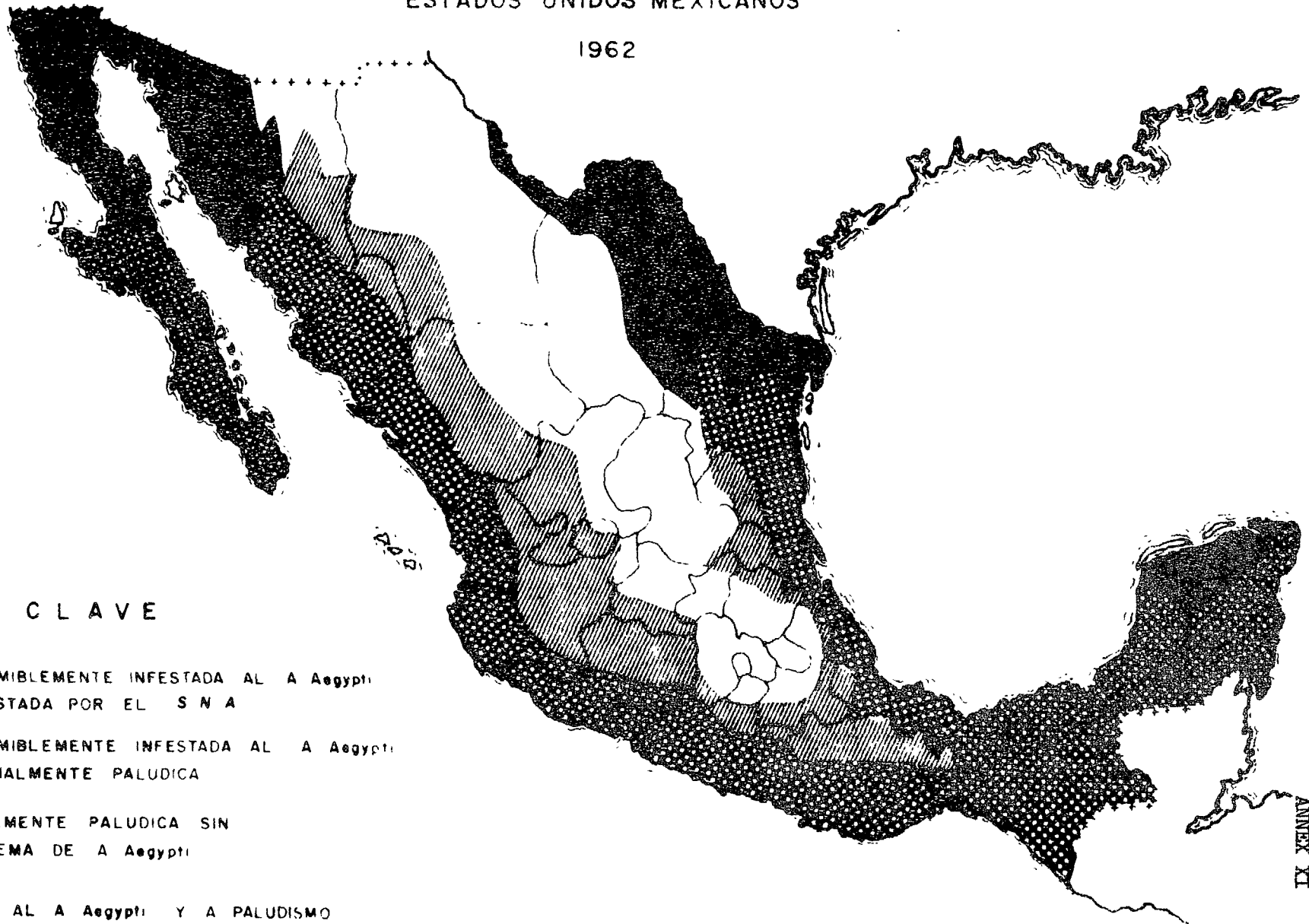
C u a d r o 10.  
RESULTADOS DE LAS OPERACIONES DE ERRADICACION DEL AEDES AEGYPTI  
ESTADOS UNIDOS MEXICANOS.

A R E A	Tipo de localidades.	Número de localidades								
		Encuestadas			Tratadas.	Verificadas				
		Total	Posi- tivas	Total		Aún posi- tivas	Negativas			
						Una vez	Dos veces	Tres veces		
Fuera área palúdica	Rurales	3 556	204	204	204	0	204	0	0	
	Urbanas	107	44	44	44	0	3	0	41	
	Suma	3 663	248	248	248	0	207	0	41	
Dentro área palúdica	Rurales	468	301	301	301	0	301	0	0	
	Urbanas	104	51	51	51	0	0	0	51	
	Suma	572	352	352	352	0	301	0	51	
Total en el país	Rurales	4 024	505	505	505	0	505	0	0	
	Urbanas	211	95	95	95	0	3	0	92	
	Suma	4 235	600	600	600	0	508	0	92	





A R E A	Tipo de las localidades.	Total de casas en las localidades				
		Encuestadas		Tratadas	Verificadas	
		Total	Positivas		Total	Aún positivas
Fuera área palúdica	Rurales	91 556	17 343	17 343	17 343	0
	Urbanas	389 778	175 024	175 024	175 024	0
	Suma	481 434	192 367	192 367	192 367	0
Dentro área palúdica	Rurales	59 101	36 007	36 007	36 007	0
	Urbanas	228 885	84 975	84 975	84 975	0
	Suma	287 986	120 982	120 982	120 982	0
Total en el país	Rurales	150 657	53 350	53 350	53 350	0
	Urbanas	618 663	259 999	259 999	259 999	0
	Suma	769 320	313 349	313 349	313 349	0

CLASIFICACION DE AREAS PRESUMIBLEMENTE INFESTADAS  
AL AEDES AEGYPTI E INICIALMENTE PALUDICAS  
ESTADOS UNIDOS MEXICANOS

1962



CLAVE

-  PRESUMIBLEMENTE INFESTADA AL A *Aegypti*  
ENCUESTADA POR EL S N A
-  PRESUMIBLEMENTE INFESTADA AL A *Aegypti*  
E INICIALMENTE PALUDICA
-  INICIALMENTE PALUDICA SIN  
PROBLEMA DE A *Aegypti*
-  LIMPIA AL A *Aegypti* Y A PALUDISMO