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XIV Regional Committee Meeting



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10 August 1962
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REPORT ON THE STATUS OF MALARIA ERADICATION IN THE AMERICAS

(Document presented by the Government of Mexico)

"STATUS OF THE MALARIA ERADICATION PROGRAM OF MEXICO"
MAY 1962

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President and Executive Director
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STATUS OF THE MALARIA PROGRAM OF MEXICO ^{1/}

INTRODUCTION

Mexico, loyal to the purposes expressed from its position as a pioneer in the eradication of malaria from the Americas, still with the support of UNICEF and PASB/WHO, continues its fight against malaria and observes that, although not in the time anticipated, the final result of its campaign will be: ERADICATION.

Since the XV Pan American Sanitary Conference, when the total coverage with residual action insecticides was already under way, the plan of operations has been executed without any interruption.

The application of insecticides has been carried out in the form of 28 million house-spraying for the protection of a population which -from 15 million at the beginning of the program increased to over 19 million at present- lives in the originally malarious area, 1,150,000 square kilometers, which represent 58% of the total area of the country. In this area there are more than 90,000 localities with over 4 million houses.

The volume of house-spraying revealed that the rate of increase in dwellings (more than a million in 5 years) exceeded that of the population (7% and 3.5% annually, respectively).

The Mexican program has been visited by 794 malariologists and trainees from practically all countries in the world. From 1957 to 1961 the National Malaria Eradication Commission (CNEP) trained 711 persons, professional and sub-professionals, of which 352 were foreigners.

It was in Mexico that the first alarm against dieldrin was given. This insecticide has subsequently excluded from other programs due to the resistance it apparently induces in anophelines, its high toxicity to man and domestic animals and because its residual action never lasted one year in the rural areas where it was applied.

Also in Mexico it has been shown that the same methods of attack, equally applied throughout the malarious area, do not necessarily produce the same results. Thus, it was possible to interrupt malaria in 75% of the original malarious area, where the vector was A. albimanus while persisting in the remaining area where the principal vector is A. p. pseudopunctipennis.

In order to attack the residual malaria, larviciding and collective drug

^{1/} Report presented to the XVI Pan American Sanitary Conference.

treatments are being employed as complementary attack measures.

STATUS OF THE PROGRAM.

Less than a year ago a report on the status of the Mexican malaria eradication campaign was presented to the XIII Meeting of the Directing Council of the Pan American Health Organization and the Regional Committee of the World Health Organization.

We are pleased to report to this XVI Pan American Sanitary Conference that the reorganization of the CNEP that was then mentioned was carried out and the results so far have been highly successful. This reorganization was considered necessary due to the shift from attack to consolidation phase in territory involving, by the end of 1961, 75% of the initially malarious area.

The changes made were based on the intensification of epidemiological activities, shift of spraying operation personnel to case detection as an aid to epidemiological evaluation, integration of logistics activities with field operations, combination of training and health education activities, and transfer of research studies to the pertinent dependencies of the Commission.

Finance.

During the period 1957-1962 the Commission spent 475.4 million pesos (over 38 million dollars) of which 74.0% was provided by the Government of Mexico.

For 1961 the total amount budgeted for the Campaign was 73.7 million pesos, including 12.5 million pesos contributed by UNICEF and 628,250 pesos by PASB. The Government furnished 82% of the total. It is worthwhile to mention that collaboration of the international organizations with the program has continued, even without a formal extension of the tripartite agreement, more as a moral than legal obligation.

Due to the fact that the problem areas will continue under attack, and in order to have a complete evaluation of the consolidation areas, there is no possibility of reducing the budget in the near future.

Personnel.

Since the beginning of operations the roster of employees of the Commission has approximated 5 thousand persons.

At the beginning of 1961, the CNEP had 4784 employees, of which 1820 were spraymen and 1 288 were evaluation aides. At the end of the year, due to the

withdrawal of spraying activities from many areas, the number of workers was reduced to 3 194. The spraymen were reduced to 630 (a decrease of 65%) while the evaluation aides remained at more or less the same level: 1190 plus 119 supervisors, or an increase of 2%. Fifty-eight new posts of epidemiology aides were established, mainly for the radical cure treatment of malaria cases. In order to have a more strict supervision of the case-finding personnel, the number of engineering aides was increased by 21. All these increases were a reflection of the emphasis on epidemiological activities, principally case detection, as part of the consolidation phase efforts.

DEVELOPMENT OF ACTIVITIES IN 1961.

Epidemiological Operations.

Case detection:- In 1961 there was a considerable improvement in the CNEP network for case detection whose organization and operation were in accordance with the technical and administrative needs of the program. This net covered all those localities with more than 100 inhabitants, 25% of those under 100, and all those which had been found positive after January 1960, irrespective of size.

There were 36,160 voluntary collaborators of which an average of 5 743 sent blood smears every month, possibly as a result of 8 370 monthly visits made by CNEP personnel.

The number of slides obtained in 1961 was 1 574 625 (409 139 more than the previous year), equivalent to 8.6% of the population under risk. Slides from voluntary collaborators represented 2.4% of the population while those from CNEP personnel were equivalent to 6.2%. Case detection was four times more intensive in the attack areas than in those in consolidation, in order to determine more precisely the limits between these areas.

In order to make use of all official and decentralized medical establishments for case detection a program of coordination with these institutions was planned. In 1961 the state health services were made responsible for the surveillance activities in urban areas, thus, making it possible for the CNEP personnel to intensify their search for cases in the rural areas and to discover many that other wise would have been missed.

Information was obtained from 53,368 localities. Positivity of slides from voluntary collaborators was slightly higher than that from slides taken by CNEP personnel.

To establish the precise limits of the problem areas as well as to eliminate

the maximum number of sources of infection, special surveys were carried out wherever cases were discovered. In some instances these surveys made it possible to explore up to 36% of the population in 10 months. An analysis of the data available indicated a positive and significant correlation between the intensified case search and number of cases; however, the over all positivity rate was only 0.75%.

We are convinced that the increase in malaria cases in relation to 1960 is a result of the more intensified and better oriented case detection system rather than a real increase in the incidence of the disease. On the other hand, we believe that it can be deduced that the exploration of 10% of the population annually a criterion set as a goal for a satisfactory evaluation, does not discover all the cases even though it can reveal the infected areas.

Epidemiological investigations:- In 65% of the epidemiological investigations it was found that the infections were relatively recent and the remaining 35% were relapses. Although some cases were classified as imported, other as introduced or induced, their presence does not have epidemiological significance or importance: the fact is that there still are indigenous cases, two thirds of which were the result of recent infections.

Use of drugs: As in the previous year the radical cure treatment of all known malaria cases was continued. At the same time, this treatment was extended to relatives, to people living in the same house and to nearby neighbors of the patients. Occasionally mass drug treatments were carried out.

Entomological studies:- A substantial number of susceptibility tests to DDT were carried out. In 6 localities there was some suspicion of incipient resistance of A. p. pseudopunctipennis and A. albimanus, coinciding with that discovered to dieldrin since 1958. The mosquitoes involved were from rice fields.

In 20 localities in areas with persistence of transmission special studies of 6-weeks' duration were carried out. It was found that in the Atlantic slope six anopheline species bite man. This is not the case on the Pacific slope where the only biting species is A. p. pseudopunctipennis. In sprayed houses it was observed that all species have a tendency for to be exophilic, in indistinct combination with endophagy or exophagy. A. p. pseudopunctipennis from the rice growing areas still rest inside sprayed houses.

Spraying Operations.

As has been mentioned before, the volume of spraying operations was considerably reduced in 1961 when only 1 670 375 houses were protected with 2 434 790 house-

spraying in 37 419 localities with 7 645 000 inhabitants.

For this work, 1 200 738 kilograms of DDT 75% and 15 318 of DDT 100% were used.

The output of the spraymen was 11 houses per man-day, more or less the same as in 1960.

Health Education and Training.

The network for health education throughout the country, consisting of 61 530 honorary health aides and 8 634 community action groups, was maintained. These collaborators were active in 28 497 localities.

The public relations activities carried out mostly through this network have sustained the cooperation of the people in the spraying of houses, taking of blood smears and acceptance of drug treatments.

The CNEP training programs are being constantly revised as the campaign progresses and additional experience has been acquired. As mentioned earlier in this report a considerable number of foreign students have participated in these courses. They not only benefit from what Mexico can offer but also contribute, through their technical knowledge and experience, to the solution of our problems which are familiar to them.

In brief: up to date the original plan of operations has been fulfilled in 75% of the initially malarious area. In part of this area it was possible to terminate the attack phase ahead of schedule.

In 25% of the malarious area where transmission still persists we are faced with the problem of determining the relative role played by each of the following basic factors:

- Incomplete effectiveness of insectidal action in maintaining, in some rural areas, the barrier against infected mosquitoes, due to incomplete application of the insecticide, characteristics of the sprayable surfaces, alterations of these surfaces after spraying, and habits of the population.
- Behaviour of the anophelines which permit them to avoid the action of the insecticides.

It has been planned to strengthen the above mentioned barrier by a more frequent application of insecticides (3 cycles instead of 2) and by extending the spraying to include all roofs and outbuildings, even those uninhabited.

Reference the behaviour of mosquitoes, special studies are being carried out to verify the observations made in routine investigations. But, aside from the results of these studies, the CNEP has already undertaken measures which complement

the spraying in areas with persistence of transmission (larviciding and collective drug treatment). These measures are independent of a large scale field trial to be carried out in Oaxaca, where collective drug treatments will be given to 75 000 persons.

We present these facts before this XVI Pan American Sanitary Conference as evidence of our active participation in the eradication programs that will liberate the world from malaria, fully convinced that Mexico will be one of the countries that will achieve this goal.

Annexes

DIRECCION GENERAL

SECRETARIA DE
COORDINACION TECNICA

SECRETARIA DE
ADMINISTRACION SANITARIA

DIRECCION DE
EPIDEMIOLOGIA

AREAS PROBLEMA

TERAPEUTICA Y PARASITOLOGIA

ENTOMOLOGIA

DIRECCION DE
OPERACIONES DE CAMPO

BUSQUEDA DE ENFERMOS

ROCIADO

LOGISTICA

DIRECCION DE ENSEÑANZA
Y RELACIONES PUBLICAS

EDUCACION SANITARIA

ENSEÑANZA

PROMOCION DE NOTIFICANTES

DIRECCION DE
CUENTA Y ADMINISTRACION

CONTRALORIA

PERSONAL

CONTABILIDAD

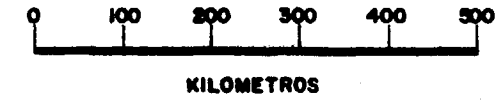
SSA-CNEP.
ORGANIZACION DE LA DIRECCION GENERAL
(Después de la Cobertura Integral)

JULIO 1961.

Aportaciones anuales para el
programa de erradicación del paludismo
CNEP - SSA - MEXICO
1956 A 1961

Fase y año		Aportaciones en millares de pesos			
		GOBIERNO	UNICEF	OSP/OMS	TOTAL
PREPARATORIA	1956	30 000	17 289	1 015	48 304
	1957	52 000	14 167	1 198	67 365
ATAQUE	1958	51 600	20 472	852	72 924
	1959	63 500	29 635	1 361	94 496
	1960	66 500	29 687	1 252	97 439
CONSOLIDACION	1961	60 500	12 500	1 685	74 685
Total		324 100	123 750	7 363	455 213

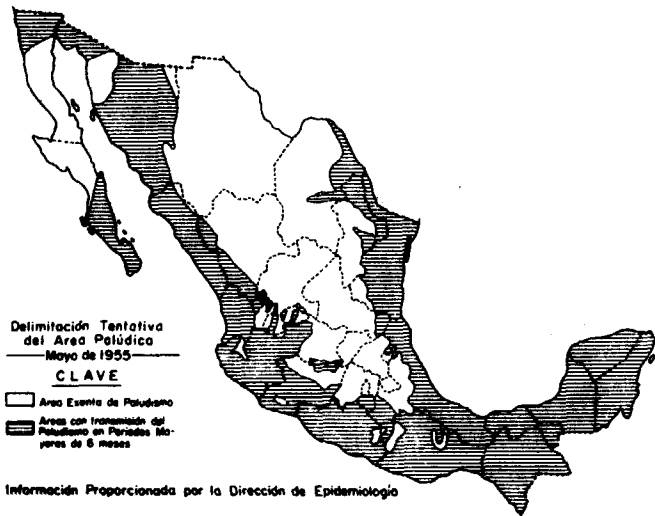
ESCALA GRAFICA



SIGNOS CONVENCIONALES

- Límite Estatal
- Límite Zonal
- ▲▲ Sedes de Zonas
- ▨ Area Palúdica al iniciarse la Cobertura Integral
- Aumento del Area Palúdica en 1957.
- Aumento del Area Palúdica en 1958.

NOTA: Rociada una sola vez en 1957, la Baja California Sur se encuentra en vigilancia epidemiológica.



Perro: _____
Dibujó: _____
Revisó: Jorge Herrera Tejeda

SECRETARIA DE SALUBRIDAD Y ASISTENCIA
COMISION NACIONAL PARA LA ERRADICACION DEL PALUDISMO
VOCALIA EJECUTIVA-DIRECCION DE OPERACIONES DE ROCIADO

AREA PALUDICA EN ROCIAMIENTO
AÑO DE 1959, 3º DE COBERTURA INTEGRAL

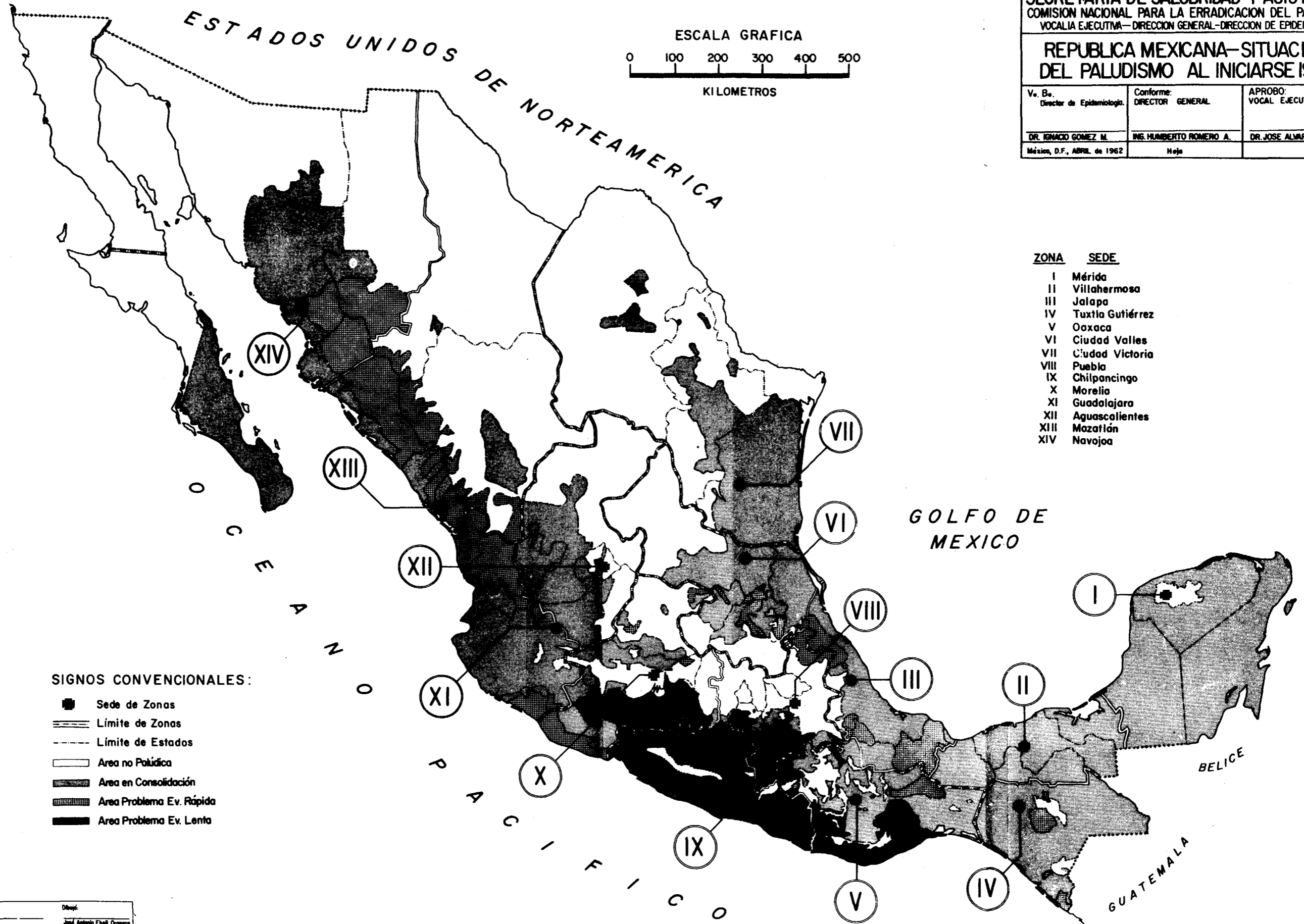
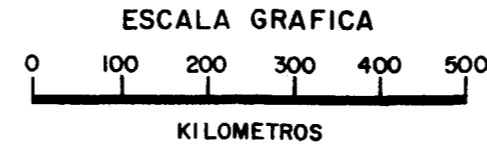
Yo, Sr. Director de Op de Rociado	Confirmando: VOCAL EJECUTIVO	APROBO: SECRETARIO
Dr. Humberto Ramos Aguilar	Dr. Manuel B. Múgica Escobedo	Dr. José Álvarez Rodríguez

México, D.F., Agosto de 1959

SECRETARIA DE SALUBRIDAD Y ASISTENCIA
COMISION NACIONAL PARA LA ERRADICACION DEL PALUDISMO
VOCALIA EJECUTIVA—DIRECCION GENERAL—DIRECCION DE EPIDEMIOLOGIA

REPUBLICA MEXICANA—SITUACION
DEL PALUDISMO AL INICIARSE 1962

V. B. Director de Epidemiología.	Conforme: DIRECTOR GENERAL	APROBO: VOCAL EJECUTIVO
DR. IGNACIO GOMEZ M.	ING. HUMBERTO ROMERO A.	DR. JOSE ALVAREZ AMEZQUITA
México, D.F., ABRIL de 1962	Heja	



ZONA	SEDE
I	Mérida
II	Villahermosa
III	Jalapa
IV	Tuxtla Gutiérrez
V	Oaxaca
VI	Ciudad Valles
VII	Ciudad Victoria
VIII	Puebla
IX	Chilpancingo
X	Morelia
XI	Guadalajara
XII	Aguascalientes
XIII	Mazatlán
XIV	Navojoa

SIGNOS CONVENCIONALES:

- Sede de Zonas
- ══ Límite de Zonas
- - - Límite de Estados
- Area no Palúdica
- ▨ Area en Consolidación
- ▩ Area Problema Ev. Rápida
- Area Problema Ev. Lenta

Forma: _____ Dibuja: José Antonio Ebell Crespo
Revisó: _____

VARIACION MENSUAL DE LAMINAS EXAMINADAS
Y PORCENTAJES DE POSITIVIDAD
CNEP - SSA - MEXICO
1957 A 1961

