

REPORT OF THE BUREAU OF RURAL SANITATION
OF THE DEPARTMENT OF HEALTH OF PORTO RICO FOR THE
YEAR 1925-26

As the campaign against anemia advances from municipality to municipality this term is used by the public more and more every day in order to signify the activities of the Department of Health in the prevention and treatment of uncinariasis, which predominates in the rural zones. But it is clear that in order to carry out an adequate and properly organized crusade against this disease it has been necessary to establish the Bureau of Uncinariasis now known as the Bureau of Rural Sanitation.

The work in the rural zones, continues at present with the standard methods adopted according to previous experience and it differs only in volume and in those details which deal with the general organization.

In a circular letter issued on July 1, 1924, the local sanitary inspectors were instructed to extend their work into the rural zones and to dedicate from a sixth to a third part of their time to rural sanitation.

On September 29, 1925, Circular letter No. 25 was sent out and twenty-three inspectors located in small towns were ordered to give two-thirds of their time each week to rural sanitation also. Then Circular Letter No. 33 authorized twenty-five other local inspectors to give one-third of their time to this work.

Five units functioned during the fiscal year 1924-25 and during this year four new units were organized. The Bureau has directed three rural sanitation dispensaries and in cooperation with the International Health Board of the Rockefeller Foundation has maintained one at Bayamón under the supervision of Dr. George C. Payne.

Twenty-nine thousand and twenty-five latrines were constructed during the year. This number added to the figures of former years makes a grand total of 86,326. It is estimated therefore that at least a third of the rural population of Porto Rico is provided with sanitary service. The rural sanitation activities were completed in the following towns: Aguadilla, Aguada, Rincón, Añasco, Las Marías, Moca, San Sebastián, Lares, Arecibo, Barceloneta, Manatí, Quebradillas, Isabela, Utuado, Vega Baja, Bayamón, Adjuntas, Ciales,

Morovis and Corozal. The work in the remaining towns of the Island is progressing satisfactorily. The number of rural inhabitants examined for uncinariasis during the year was 67,727 and the percentage of infection or morbidity was 84.6

Total Number of Latrines Approved up to June 30, 1926

Latrines approved during the year 1925-26-----	29,025
Latrines approved in previous years-----	57,301

Total approved to date ----- 86,326

In the urban zones of Vega Baja, Moca, Aguada, Rincón, Lares, Ciales and Bayamón, 13,395 patients were cured during the fiscal year. Sixty-five per cent of the inhabitants were found to be infected.

The number of treatments administered in the homes by the Department of Health and the Rockefeller Foundation was 134,112.

Great attention was given to conservation in order to keep in good condition the large number of latrines constructed up to the present time, this being done by means of frequent re-inspection. More than 28,820 houses were reinspected and 13,721 latrines belonging to these houses were repaired.

The general work of the Bureau has been distributed in the following way: **SANITATION:** From six to nine inspectors were assigned to the various areas according to their extension. The chief in charge of this work assigned his inspectors to the various *barrios* of the municipality and in some of the larger districts it was necessary to assign more than one inspector.

First of all a census of the population is made and the number of patients determined. If the house is not provided with a latrine the owner is notified immediately by a written order and is at the same time instructed verbally as to the importance of the latrine as a means of protection not only from uncinariasis but from other transmissible diseases. Pamphlets, posters and other material are also freely distributed.

The nine units engaged in rural sanitation were located at Arecibo, Mayagüez, Vega Baja, Adjuntas, Bayamón, Ciales, Morovis, Corozal, Caguas and Villalba. As soon as the work was finished in one locality the units were transferred over to municipalities where the soil was heavily infested or where the index of morbidity caused by the hookworm was high. Some units were also detailed to sections where the inhabitants were in constant danger of typhoid fever, as the immediate construction of latrines usually stops further contamination of the rivers or streams which constitute the usual source of water supply. In this way the campaign serves a double purpose.

The unit at Arecibo was at first composed of two insular inspectors and a municipal inspector, which constructed approximately 2,162 latrines from the time the campaign began until the last of January 1926, a period of one year. This unit finished the rural sanitation campaign of that part of the municipality situated on the east side of the Arecibo river. Mayagüez has been completed although for special circumstances the force was reduced to three inspectors only, but they were able to finish the campaign in this large municipality, which comprises 19 *barrios* with approximately 22,508 inhabitants according to the last census. The total number of constructions in this region was 3,691. The unit then moved on to Maricao, a coffee zone of great importance.

Funds for three municipal inspectors were provided by the Municipal Assembly of Adjuntas and the spirit of cooperation and enthusiasm has been so satisfactory and edifying that the example set by this municipality might well be imitated by others who have more funds with which to back up rural sanitation work.

The Bayamón and Vega Baja units have given valuable services in the large number of durable construction, made this year.

The units of Ciales, Morovis and Corozal were organized into one large unit of 24 inspectors in order to cover that entire region as quickly as possible as it is near other municipalities which had already been cleaned up. This was deemed most necessary for three reasons: (A) In planning the campaign the Island was divided into three sections from west to east, with a physician as director of each section who is entrusted with the supervision and direction of the entire district; (B) the work being completed in the municipalities of Manatí, Vega Baja and Barceloneta, it was necessary to include the territory adjacent to these municipalities so as to avoid the infestation of the soil and the propagation of *uncinariasis* on the coast. (C) The index of infection occurring among the inhabitants of barrio San Lorenzo of Morovis having been determined by means of the Stoll method of egg-count, and no steps having been taken to clean up the territory mentioned, it was considered best, as a trial, to make a new investigation of the index under these conditions and then to proceed in the regular way in order to complete the work.

Hence it was necessary to assign a physician to Ciales as director of this unit in order that the technical personnel under his direction might repeat the laboratory work and complete the study of this region and in this way arrive at proper conclusions.

The consolidation of the unit of Ciales, Morovis and Corozal gave most satisfactory results as it was possible to fully complete the work in these municipalities and on the date planned to start the work in Ciales. This was early in March of the present year.

In Caguas it was found necessary to assign a unit, due to its strategic position, as it offers a splendid field for the extension of the work to the coast.

TABLE I
LATRINE CAMPAIGNS

Municipality	Begun	Fin- ished	Total Houses	Latrines approved			Approved 1925-26	Remarks
				Old	New	Total		
		1926						
Añasco	2-1-24	2-28	1,986	99	1,887	1,986	674	Completed
Aguada	4-1-24	2-28	2,429	97	2,332	2,429	590	Completed
Barceloneta	6-1-24	6-30	2,397	1,423	974	2,397	263	Completed
Arecibo	9-1-24	.....	3,843	45	3,798	3,843	1,782	In progress
Mayagüez	10-1-24	.....	3,691	139	3,552	3,691	1,783	In progress
Rincón	11-1-24	10-30	1,382	98	1,284	1,382	64	Completed
Manatí	12-1-24	10-30	3,173	724	2,449	3,173	408	Completed
		1926						
Vega-Baja	3-1-25	4-30	2,327	130	2,197	2,327	1,840	Completed
Bayamón	5-1-25	4-30	2,206	99	2,107	2,206	1,870	Completed
Adjuntas	8-17-25	.....	1,858	72	1,786	1,858	1,858	In progress
Caguas	2-28-26	.....	231	62	169	231	231	In progress
Guaynabo	3-15-26	.....	477	45	432	477	477	In progress
Comerio	3-8-26	.....	141	27	114	141	141	In progress
Río Piedras	5-10-26	.....	509	97	412	509	509	In progress
Morovis	1-10-25	6-30	1,968	206	1,762	1,968	1,968	Completed
Ciales	1-10-25	6-30	3,197	118	3,079	3,197	3,197	Completed
Corozal	1-10-25	6-30	2,433	518	1,692	2,433	2,433	Completed
Total			34,248	3,999	30,026	34,248	20,088	

TABLE II
LATRINE CONSTRUCTION IN THE ISLAND DURING THE YEAR 1925-26
Exclusive of Those Reported in Table 1

Municipality	Latrines Approved	Municipality	Latrines Approved
Aguas Buenas	19	Maricao	383
Arroyo	141	Mannabo	54
Barranquitas	15	Naguabo	68
Barros	366	Naranjito	101
Cabo Rojo	286	Patillas	168
Carolina	110	Peñuelas	39
Cataño	289	Río Grande	164
Ceiba	82	Sabana Grande	133
Dorado	27	Salinas	296
Fajardo	562	San Germán	342
Guayanilla	126	San Lorenzo	182
Gurabo	128	Santa Isabel	134
Huacacao	205	Toa Alta	198
Jayuya	452	Toa Baja	115
Juana Díaz	12	Trujillo Alto	167
Juncos	386	Vega Alta	150
Lajas	302	Vieques	146
Las Piedras	198	Villalba	1,536
Lotza	103	Yabucoa	271
Luquillo	143	Yauco	334
		Total	8,937

CONSERVATION OR REINSPECTION

One or two inspectors according to the size of each municipality have been detailed to insure the conservation of the constructions or repairs made.

The type of latrine adopted for sanitary convenience at present, is very durable and covers the need of the rural population completely. All those constructions of straw and *yaguas* (palm leaves) and other inappropriate material which were permitted formerly have been reconstructed of wood and covered with galvanized iron.

More than 18 inspectors give their time exclusively to the reinspection work or conservation and a total of 28,820 latrines were reinspected during the fiscal year, 5,432 of which were found in good condition.

In the daily visits of the inspectors approximately 23,388 latrines were neglected or destroyed and could not be used. These had deteriorated because in most cases they had been very poorly constructed.

Municipality	First Inspection				Final Inspection		
	Houses				Latrines approved		
	With latrines		Without latrines	Total	Old Repaired	New	Total
	Good	Poor					
Arecibo	88	883	95	1,066	488	51	539
Aguadilla	1,376	1,372	206	2,954	1,205	362	1,567
Utua	510	4,479	332	5,321	3,989	308	4,297
Barceloneta	1,812	335	123	2,270	229	88	267
Lares	910	2,721	2,462	6,093	2,187	2,119	4,306
San Sebastián	44	833	571	1,448	712	507	1,219
Camuy	81	866	431	1,378	500	271	771
Moca	6	756	446	1,188	584	256	880
Quebradillas	32	895	125	553	125	107	238
Las Marias		362	40	392	159	25	184
Rincón	136	100	14	250	690	3	63
Aguada	110	1,154	329	1,593	901	192	1,095
Hatillo	133	1,661	984	2,778	1,480	813	2,293
Isabela	52	641	291	984	551	130	681
Añasco	64	366	44	474	144	10	154
Manatí	78			78	403	641	1,044
Totals	5,432	16,894	6,494	28,820	13,721	5,873	19,594

TREATMENT OF THE DISEASE

Unit No. 1 is situated on the western part of the Island. The physician in charge is Dr. Domingo A. Nochera, who has given treatment in Moca, Aguada, and Rincón. This unit was transferred later to Añasco and will soon take up activities in Mayagüez.

Unit No. 2 is located in the central part of the Island with headquarters in Ciales. Dr. Julio A. Santos is the physician in charge. As soon as the treatment is completed in that section the unit will be

transferred to Morovis and Corozal. This unit consists of a medical director, a microscopist, a druggist, a clerk and ten inspectors.

The third unit is located in Lares. This unit has no medical director but has a chief inspector and six inspectors for routinary treatment. The proper name for this group should be "Treatment Unit". It was established in order to provide massive treatment in those localities where the infestation of the soil and percentage of infection was high. This unit began to work in the municipality of San Sebastián and at present is finishing Lares and will later take up the municipality of Adjuntas.

A fourth unit organized in cooperation with the Rockefeller Foundation is located at Bayamón under the direction of Dr. Geo. C. Payne of the International Health Board.

The following towns and their rural zones have been treated: Utuado, San Sebastián, Aguadilla, Isabela, Quebradillas, Hatillo, Camuy, Arecibo (town and section on the west side of the river), Barceloneta, Manatí, Vega Baja, Lares, Rincón and Aguada. The grade of infection in the rural districts not treated, has always been above 90 per cent. On observing a certain uniformity in the percentage of infection in the urban zones (this being from 45 to 65 per cent) it may be seen that the disease reigns also in the towns and is by no means limited to the rural sections. The high infestation of the soil and frequent emigration of the country people to the towns all make the problem a highly difficult one to solve, especially if we consider the fact that the municipal sewerage systems are imperfect and that in many towns latrines are used and constant vigilance must be had to keep them in good condition.

The treatment of the disease does not bring a solution to the problem of uncinariasis in Porto Rico. Sanitation of the rural zones being the most important phase of the campaign.

Special care is taken in the preliminary census so that the figures will balance properly with the Federal Census. Children under three years of age and adults over 65 years are excluded. Each unit cures more than 80 per cent of the persons who begin treatment besides bringing about a notable improvement in the community as only one treatment of the new mixture of tetra-chloride of carbon and oil of chenopodium (proportion 2×1 per volume) given, the patients expel on an average 90 per cent of the parasites.

The domiciliary treatment is the last, as each inspector sees the patient in his home when the medicine is administered so that there is no economic loss through ignorance, apathy or neglect.

TREATMENT CAMPAIGN**Total Work Done During Year**

Municipality	Time operated	Census	Positive	Persons Treated	Total Treatments	Cured
Moca	5 months	14,750	13,062	13,482	35,191	12,135
Aguada	6 months 7 days	11,459	6,559	9,727	24,816	8,407
Vega Baja	6 months	15,674	12,674	12,780	18,817	12,414
Rincón	3 months 23 days	6,540	5,647	5,900	13,148	5,199
Lares	1 year 6 months	19,759	19,759	19,759	27,844	12,698
Ciales	In progress	7,528	6,564	5,648	9,664	3,450
Bayamón	In progress	5,844	4,273	3,594	4,632	2,147
Total .....	.....	81,122	68,538	70,890	134,112	56,450

RESUME OF TREATMENTS GIVEN SINCE 1921

Year	Census	Infected	Treated	Total Treatments	Cured
1921-1925	168,282	143,007	135,390	503,614	115,301
1925-1926	81,122	68,538	70,890	134,112	56,450
Total	249,404	211,545	206,280	637,726	171,751

