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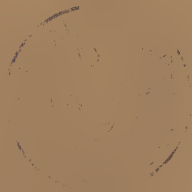
LEAGUE OF NATIONS

Health Organisation

**INTERGOVERNMENTAL CONFERENCE
OF FAR-EASTERN COUNTRIES
ON RURAL HYGIENE**

**Preparatory Papers :
REPORT OF THE PHILIPPINES**

GENEVA, 1937.



European Conference on Rural Hygiene (June 29th-July 7th, 1931.)

REPORT OF THE PREPARATORY COMMITTEE on the Principles governing the Organisation of Medical Assistance, the Public Health Services and Sanitation in Rural Districts. (C.H.1045.) (Ser. L.o.N. P. 1931.III.7) ... 2/- \$0.50

PROCEEDINGS.

Volume I. RECOMMENDATIONS on the Principles governing the Organisation of Medical Assistance, the Public Health Services and Sanitation in Rural Districts. (C.473.M.202.1931.III.) (Ser. L.o.N. P. 1931.III.II/I) 2/- \$0.50

Volume II. MINUTES. (C.473.M.202.1931.III.Vol.II.) (Ser. L.o.N. P. 1931.III.II/II) 6/- \$1.50

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REPORT ON THE WORK OF THE CONFERENCES OF DIRECTORS OF SCHOOLS OF HYGIENE held in Paris, May 20th to 23rd, 1930, and in Dresden, July 14th to 17th, 1930, with a Memorandum on the Teaching of Hygiene in Various European Countries submitted to the Dresden Conference by Professor Carl Prausnitz and an Introduction by Professor Léon Bernard, Chairman of the Commission on Education in Hygiene and Preventive Medicine. (C.H.888.) (Ser. L.o.N. P. 1930.III.10)... 5/- \$1.25

The following articles on Rural Hygiene will be found in the QUARTERLY BULLETIN OF THE HEALTH ORGANISATION :

Volume II, No. 1 (Typhoid Fever in Rural Areas).

Volume III, No. 1 (The Best Methods of Treating Manure-heaps to prevent the Hatching of Flies).

Volume III, No. 2 (Fly-free Manure-heaps). (Fly Control in Denmark.)

Volume V, No. 2 (The Fly Problem in Rural Hygiene. A series of four articles.)

Intergovernmental Conference of Far-Eastern Countries on Rural Hygiene

REPORT BY THE PREPARATORY COMMITTEE. (C.H.1234.) (Ser. L.o.N. P. 1937.III.3) 2/6 \$0.60

Preparatory Papers :

REPORT OF FRENCH INDO-CHINA. (C.H.1235.) (Ser. L.o.N. P. 1937. III. 4) 3/- \$0.75

NOTE ON PUBLIC HEALTH ORGANISATION IN BURMA ; NOTE ON MEDICAL ORGANISATION IN BURMA. (C.H.1235(a).) (Ser. L.o.N. P. 1937.III.5) 1/3 \$0.30

BRITISH INDIA (C.H.1235(b).) (Ser. L.o.N. P. 1937. III.7) 7/6 \$2.00

REPORT OF THE MALAYAN DELEGATION (C.H.1235(c).) (Ser. L.o.N. P. 1937.III.8) 1/- \$0.25

REPORT ON HEALTH ORGANISATION IN CEYLON (C.H. 1235(d).) (Ser. L.o.N. P. 1937.III.8) 1/6 \$0.40

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Geneva, April 1937.

LEAGUE OF NATIONS

Health Organisation

**INTERGOVERNMENTAL CONFERENCE
OF FAR-EASTERN COUNTRIES
ON RURAL HYGIENE**

**Preparatory Papers :
REPORT OF THE PHILIPPINES**

Series of League of Nations Publications

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INTRODUCTION.

In view of the Intergovernmental Conference of Far-Eastern Countries on Rural Hygiene, which will be held in Bandoeng (Java) from August 3rd to 13th, 1937, the participating countries have been invited to prepare national memoranda covering the items of the agenda of the Conference—*i.e.*:

- I. Health and Medical Services.
- II. Rural Reconstruction and Collaboration of the Population.
- III. Sanitation and Sanitary Engineering.
- IV. Nutrition.
- V. Measures for combating Certain Diseases in Rural Districts.

Herewith is the report of the Bureau of Health, Philippines.

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**INTERGOVERNMENTAL CONFERENCE
OF FAR-EASTERN COUNTRIES ON RURAL
HYGIENE.**

(Bandoeng (Java), August 3rd, 1937.)

REPORT OF THE PHILIPPINES

Population : 13,099,405.¹

HEALTH AND MEDICAL SERVICES.

The organisation and administration of public health in the islands are centralised. While there are insular, provincial and municipal health organisations, the health administration is nevertheless in the hands of a central authority—the Office of the Director of Health. The work in this office is carried out by the chiefs of the various divisions and offices enumerated below :



Division of Administration ;
Division of Epidemiology ;
Division of Hospitals and
Dispensaries ;
Division of Sanitation ;
Division of Maternal and
Child Hygiene.

In the provinces, at the head of each health district (usually one province) is a *district health officer* and under him are *presidents of sanitary divisions*. All district health officers are regular civil service employees,

¹ Editor.

while the presidents of sanitary divisions are not. While in former years the sanitary divisions, into which health districts consisting of regularly constituted provinces are divided, were in the charge of either nurses or sanitary inspectors or *cirujanos ministrantes*, now there are more applicants who are qualified physicians than there are divisions to fill. They are so numerous that, at the beginning of 1925, every president of a sanitary division had to undergo a refresher course before he could be appointed to the position, and in 1926 a final test or examination was included in the training. That policy was instituted in order to select good material and to eliminate the undesirables.

The district health officers and presidents of sanitary divisions may be regarded as field officers. Under them are sanitary inspectors, disinfectors and vaccinators. To help the above personnel in carrying out the health administration there is the corps of nurses assigned either as public health nurses or district nurses.

Thus, the administration of health, whether in the urban or rural communities, is carried on by health officers and personnel appointed in accordance with law. It has been observed that the field officers who are assigned to the provinces usually fall under the lethargic influence of the provincial atmosphere. In order to arouse them, it became necessary to give them refresher courses in the science of hygiene and public health. Thus, several conventions and assemblies were held—general, regional, and provincial. In these conventions, lectures were given, scientific papers were read, and problems of hygiene and sanitation and of health administration were presented. Another phase in the training of field health officers is the post-graduate course given in the School of Hygiene and Public Health of the University of the Philippines.

The *Bureau of Health* comprises the following personnel: medical officers, 598; sanitary inspectors, 11,430; vaccinators, 124; nurses, 835; clerks, 260; sanitary engineers, 4; pharmacists, 21; dentists, 5; laboratory technicians, 33; and other health personnel, 1,823.

The Division of Hospitals and Dispensaries has under its supervision the administration of all the hospitals of the bureau, except the maternity and children's hospitals, number-

ing thirty with a total bed capacity of 428, which are under the Division of Maternal and Child Hygiene. There are forty-five of these institutions, classified as follows: thirty-six general hospitals, six emergency hospitals, two contagious diseases hospitals and one psychopathic hospital, with a total bed capacity of 3,948. With the exception of the San Lazaro Hospital for contagious diseases, which is in the City of Manila, the others are located in the capitals and important towns of the various provinces. They are, of course, of varied sizes, depending upon the importance and financial ability of the respective provinces in which they are established. The total cost of their annual operation is approximately 1,354,204 pesos,¹ paid by insular, provincial and municipal funds.

The number of public dispensaries, unattached to hospitals and directly supervised by presidents of sanitary divisions, under the jurisdiction of this division is 1,063. These are generally located in each municipality and remote barrios of every province.

The operation of the above institutions takes care of the curative, and partly preventive, activities of the Bureau of Health in the preservation of public health.

For these curative and preventive activities, the Bureau of Health spends a total of 3,149,311.17 pesos—1,076,200.61 pesos for the curative and 2,073,110.56 pesos for the preventive.

SANITATION AND SANITARY ENGINEERING.

Owing to local conditions and circumstances, some of which may be mentioned—economic capabilities of the people, their educational and cultural attainments, their habits and customs, and certain environmental factors peculiar to given localities—little difficulty has been encountered in satisfactorily maintaining an adequate water supply, particularly to rural communities.

Fortunately, there is a public water supply for the City of Manila, administered by the Metropolitan Water District but under the super-

¹ One Philippine peso = 1.54 gold francs = £0.101, according to the average rate of exchange for 1936. — *Editor.*

vision, from the sanitary standpoint, of the Bureau of Health. The other source of supply in the city consists of some forty artesian wells scattered in the different districts. Although the sanitary control over them may be considered efficient, yet the chances of infection at any time may be potentially great. The significance of the water problem may be enhanced when we come to consider that typhoid fever, which is a water-borne disease and of which there may be an epidemic at any time, is endemic in Manila.

The question of the water supply in the provinces is even more difficult of solution. On the whole, there are no filter plants or reservoirs in the provinces where the water at its source may be chlorinated before it is allowed to go through the main pipes. However, about 80% of the rural communities are provided with potable water, although not all the people living in those districts are thereby benefited, owing to conditions peculiar to the locality. It has been our endeavour, in cases where no other sanitary means were available, to popularise the use of artesian-well water and to encourage the municipal authorities to drill these wells. Fortunately, we have been successful in such campaigns in certain districts. To supplement our campaign on the establishment of a potable water supply, instructions are given regarding the purification of drinking-water, with the happy result that the frequency of water-borne outbreaks is apparently diminishing.

Side by side with the problem of the water supply is that of sewage disposal. In the City of Manila, the flush system of toilet which is considered as sanitary is being used by the majority of the inhabitants. The septic tank and the pail system are still tolerated in the outskirts and slum districts of the city. The extension of the sewer system to the unsewered areas has been the subject of discussion by the competent authorities; but, because of lack of sufficient funds, not much headway has been made. The only hope lies in the fact that no new house is to be constructed without being connected with the sewer. The sewage of the city is disposed of by being discharged out in the Manila Bay about one mile from the coast. The purification here is by dilution, which, of course, is not the last word in science. There ought to be a system of preliminary sewage purification before the raw sewage is deposited into the bay.

In the provinces, sewage disposal on the whole is not satisfactory. The problem of establishing toilet facilities in the

provinces has always been perplexing. The incidence of infections subsequent to soil pollution, especially those of the gastro-intestinal type, has made us ever conscious of the seriousness of waste disposal in rural communities. Up to the present, the control of such infection has left much to be desired. Unless the present method of sewage disposal is not remedied and replaced by a sanitary one, the reduction of gastro-intestinal infection cannot be expected. From the soil, if the sewage is not properly disposed of, the infection is transmitted in a thousand and one ways to the source of drinking-water and of foods. We know that in our country flies and other insects become abundant precisely at the time when such diseases become prevalent. Attentive to these conditions, our efforts have been and always will be to improve the toilet facilities in rural districts. In well-to-do houses, of course, septic tanks are constructed. But, if this is not possible, the so-called Antipolo system and the " bored-hole latrines " are advocated, since they are so far regarded as being sanitary and practical under present circumstances.

TUBERCULOSIS.

As in other parts of the world, tuberculosis is still the captain of death in our country, and to fight this scourge of humanity the Government spends thousands of pesos. The creation of the " Tuberculosis Commission " by Act 3743 on November 24th, 1930, approved on July 16th, 1931, started the tuberculosis work in the provinces along the following lines of activity :

- (1) Survey and study of tuberculosis conditions in the cities, towns and rural districts ;
- (2) Investigation and study of the problem of tuberculosis ;
- (3) Establishment of a central laboratory for the purpose of undertaking research work on tuberculosis.

The " Tuberculosis Commission " became the " Tuberculosis Control Section " of the Bureau of Health on January 1st, 1933, when the reorganisation of the Philippine Government was

effected, and the activities of this office for the control of the disease, especially in the rural areas, can be summarised thus :

(a) *Case-finding*. — This is accomplished through the co-operation of private medical practitioners, Government physicians, and by the diagnostic and X-ray clinics operated under or by the Bureau of Health and by the Philippine Islands Anti-tuberculosis Society in the different parts of the islands.

(b) *Adequate Relief and Treatment*. — A sanatorium with 300 beds and seven tuberculosis X-ray clinics and dispensaries in the most strategic points in the Philippines are being maintained by the Philippine Islands Anti-tuberculosis Society. The Bureau of Health operates the tuberculosis ward of 100 beds in the San Lazaro Hospital, eight tuberculosis cottages in Baguio, and several tuberculosis pavilions in various provincial hospitals.

(c) *Health Education Campaign*. — This is being carried out by the Bureau of Health, the community assemblies, and the Health Education Department of the Bureau of Education. This campaign is being carried out among the school-children through the agency of the school authorities, while the adult population is being taught to be tuberculosis-minded by lectures, conferences and radio talks given from time to time by experienced physicians, social workers and health specialists.

(d) *Follow-up Work*. — This work is being conducted on positive tuberculous cases by physicians and nurses trained in tuberculosis work. They render remedial services wherever and whenever these measures are available and needed.

(e) *Travelling X-ray Clinic*. — The travelling X-ray unit of the Bureau of Health conducts fluoroscopic examinations and clinics in all accessible places, and, so far, nearly 200,000 individuals have been examined by it, the majority of whom are school-children.

(f) *Community Health Social Centres*. — These health agencies carry out tuberculosis work as one of their functions, and these agencies are gradually being extended to the rural areas of the Philippines.



Figure 1. — Breeding-place of *Anopheles minimus* var. *flavirostris* that has been stagnated by a series of dams.



Figure 2. — The breeding-place of *Anopheles minimus* var. *flavirostris* has been thoroughly exposed to the sun by cutting all vegetation and having the banks of the stream clean-cut at 45° inclination with straight borders along the water level.

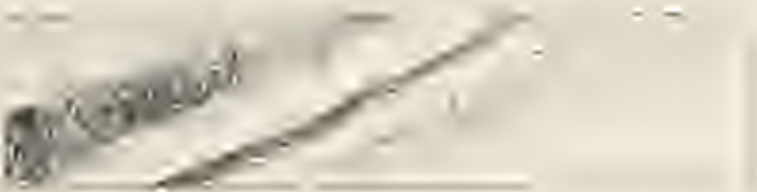


Figure 3. — Breeding-place of *Anopheles minimus* var. *flavirostris*, showing ditch built at about the middle of the stream bed along its course, thus allowing all of the water to flow through the ditch.



Figure 4. — Breeding-place of *Anopheles minimus* var. *flavirostris*. The water that has been accumulated upstream by a dam is being released through a gate, thus flushing *Anopheles* larvæ downstream.



Figure 5. — Breeding-place of *Anopheles minimus* var. *flavirostris*, where cut vegetation is being dumped so as to cover entirely the water to about a foot thick.



Figure 6. — Type of *A. minimus* var. *flavirostris* breeding-place. See the shade and slowly-flowing water.

(a) Catching anopheles adults ;

(b) Catching anopheles larvæ.



Figure 7. — Biological control work: exposing a stream to the sun and canalising it.



Figure 8. — A finished biological control work: see sloped banks and exposure to the sun.

MALARIA.

For the prevention and control of malaria, which causes the third greatest number of deaths among the Filipinos, the following measures are adopted :

(a) In districts where the population is sparse and houses are far apart or in localities where the disease is endemic with a tendency to considerable mortality, the “ dispensary system ” in the detection of cases is employed—that is, intensive and extensive search of cases by house-to-house visits is made and the diagnosis of these cases is confirmed by blood-smear examination. In the treatment, quinine is the drug most commonly used, plasmoquine being employed to a limited extent only.

(b) In rural areas where the population is considerable and the houses are closely grouped together, the anti-larval control measures against *A. minimus* var. *flavirostris*, the proved vector of malaria in the Philippines, show some promise of success.

(c) In communities where the population is of a temporary character (engineering construction, lumber works, etc.), the use of paris green mixture (1 part paris green and 99 parts of fine road dust) in spraying weekly all the mosquito-vector breeding-places within the control area of 1.5 to 2 km. radius to the periphery of the community being protected against malaria, is found to be effective.

(d) In poor rural communities with endemic malaria, where the breeding-place of the anopheles vector is not so extensive and the population is permanent, “ naturalistic ” or biological control measures have been instituted. This procedure consists of changing or altering the conditions, nature or character of the breeding and harbourage places of the anopheles vector of malaria in that region, so that they cease to be sources of the mosquito factor concerned in the transmission of the disease (see Figures 1 to 8).

LEPROSY.

Leprosy is one of the major health problems the Philippine Commonwealth has to cope with. The method of control of the disease is based mainly on :

(1) *Legislation.* — The Segregation Law (Act No. 1711), as embodied in Administrative Code of 1917 (Article XV, Sections 1058-1071), provides measures for the detection, isolation, treatment and care of all bacteriologically positive cases of leprosy and the control and follow-up of paroled and negative (clinical) cases.

(2) *Treatment.* — The main drug used for the treatment of the disease is chaulmoogra oil and its derivatives. These are given by intramuscular or intradermal injections once or twice weekly in 8-c.c. doses for the oil and 4-5 c.c. of its derivatives once a week. Other drugs are being experimented with for use in the treatment and other medicines are used as adjuvants whenever they are indicated and feasible.

(3) *Establishment of Leprosaria, Treatment Stations, Sub-treatment Stations, Detention Camps, Skin Dispensaries, and Travelling Clinics.* — In order to carry out the programme for leprosy control as outlined by the Health Office, all field officers of the Bureau of Health are trained in the detection of leprosy, and, apart from the Culion Leper Colony and the Leprosy Department of the San Lazaro Hospital, treatment stations for compulsory detention of positive cases are established in regions where the disease is rampant, as in Albay, Cebu and Iloilo. Attached to these stations are skin dispensaries for the purpose of encouraging all persons suffering from skin diseases to seek free consultation, thereby facilitating the detection of early or incipient cases of leprosy as well as the discovery of more advanced but yet undetected cases. All clinically negative and paroled lepers go to these dispensaries for continued observation and treatment. Educational propaganda is also carried out among the dispensary patients, in schools and outlying municipalities, and the dispensaries serve as training centres for rural practising physicians and nurses. The physician in charge of the dispensaries also conducts

travelling skin clinics at regular intervals in other towns, where the people from rural districts may gather for consultation and treatment.

The activities of these skin clinics can be more appreciated by the figures included in the 1935 annual report :

	Albay	Cebu	Iloilo	Total
Number of patients treated	1,684	5,435	1,905	9,024
Number of treatments given	6,642	14,025	4,418	25,085
Number of newly detected cases of leprosy :				
Clinically positive	18	86	22	126
Bacteriologically positive ..	2	202	20	224

Smaller sub-treatment stations are situated in regions far from the regular treatment stations where there are cases of leprosy in numbers not sufficient to warrant the establishment of regular stations. Such sub-treatment stations are in operation in Zamboanga, Sulu, Lanao, Cotabato and Davao. Every province in the Philippines maintains a detention camp for the temporary isolation and treatment of cases of leprosy until their final collection and transfer to a station.

(4) *Control of Paroled Negatives, Clinical Lepers, Suspicious Cases and Contacts.* — Contacts are examined at intervals, and suspicious cases are required to undergo treatment for a year and be examined clinically and bacteriologically at least once every six months for two years. Clinical lepers are compelled to receive treatment for years and be examined clinically and bacteriologically every three months during the treatment, and later re-examined as required for parole negatives. Positive cases which have become negative or quiescent are required to undergo treatment and further observation for two years. During the first six months, the patient is under probationary observation and must be examined once every two months. After the first six months, he is released and paroled to report weekly for treatment and be examined once every three months. After two years of negative observation, he is discharged and no longer compelled to report for treatment, but must be re-examined once every three months for a period of one year more and thereafter once every six months for four years longer.

For the above purposes, the patients report to the treatment or sub-treatment stations or to the nearest health office to receive treatment. Examining committees are created by the Director of Health. The "Local Examining Committee" is composed of the district health officer, the assistant district health officer and a bacteriologist detailed by the Director of Health. Where there are treatment stations, the physician in charge of the station takes the place of the district health officer. The Local Examining Committee examines all cases reported from dispensaries and from the different municipalities suspected of having leprosy; and those found to be positive clinically or both clinically and bacteriologically are presented to the "Disposal Committee", which decides the final diagnosis and arrangements to be made for every case. The Local Examining Committee also meets at regular intervals to examine paroled negatives and clinical lepers.

The Disposal Committee is a permanent body of three members, composed of a chairman and a bacteriologist. The third member is the physician in charge of the station of the region, or, where there is no station, the district health officer. This committee visits every region where there are many cases of leprosy and where there are stations once every six months for the purpose of disposing of new cases and the follow-up of those under parole, the object being to detect cases that have relapsed and to recommend what measures should be taken in such cases.

There are also nurse social workers who go to the remote barrios to study the conditions of those under parole, advise them and recommend measures for their relief, and to aid in rounding them up for the scheduled examination by the examining committees.

INTESTINAL PARASITES AND YAWS.

The campaign against the ravages of intestinal parasites and yaws is placed in the hands of the provincial and municipal health officers. Roughly estimated, about 90% of the Filipinos are affected with intestinal parasites (YEAGER). As to yaws

infection, there are no available data regarding the number affected.

The prevention and control of intestinal parasitism in the Philippines are based on these measures :

- (1) Five-year programme for the improvement of human excreta disposal in the provinces, municipalities and barrios ;
- (2) Survey of parasite indices in the different localities by microscopic examination of human stools for eggs and larvæ of parasites ;
- (3) Treatment of the infected persons.

Against yaws, the preventive and control measures are :

- (1) Reporting of all cases found by the health officer ;
- (2) Segregation of cases, especially among school-children ;
- (3) Treatment of all cases found ;
- (4) Furnishing of medicines by the provincial and insular Governments, the arsenical preparations being the most preferred.

PLAGUE AND LOBAR PNEUMONIA.

Of these two diseases, plague has ceased to be a concern of the local health office. Since September 14th, 1914, when the last case of plague occurred in Manila, no other case has been registered, although, before that time, it had been occurring sporadically in the city, where more often than not the cases terminated fatally. In the provinces, no record shows that the disease has even been found there. The control of plague mainly rests on (*a*) quarantine of ships coming to our ports, especially of those coming from infected places ; the ships are disinfected and fumigated, and the crews and passengers are kept on board until they are thought to be free from infection ; (*b*) use of rat-proof devices and rat-traps to prevent the rats from coming to the shore ; (*c*) prohibition of the erection of houses for residential purposes in the zone of the Manila wharves ; and (*d*) rigid measures for the extermination of rats.

Unlike plague, lobar pneumonia has claimed more deaths from year to year among the Filipinos, both urban and rural residents, for the last twenty-five years. The death rate from

lobar pneumonia per 10,000 population in the City of Manila from 1911 to 1935 in five-year periods is computed hereunder:

1911-1915	2.44
1916-1920	3.85
1921-1925	4.15
1926-1930	8.69
1931-1935	12.16

The same trend of the increasing death rate due to lobar pneumonia has been observed in the provinces.

Control measures against the disease consist principally of routine procedures, as treatment and isolation of cases, improvement of the sanitary conditions of the homes and environment, prevention of overcrowding, advice against exposure to cold and for securing the maximum amount of light and ventilation in dwellings, proper disposal of patients' discharges, concurrent and terminal disinfection of fomites, and health education in the form of lectures and radio talks. It is lamentable to mention, however, that, despite all these intensive preventive measures, the result of the campaign has been discouraging. It may be that some factors and conditions which cannot be easily and rapidly altered are responsible for the increasing mortality due to lobar pneumonia. The poverty and ignorance of the masses must be seriously considered in this case; lack of proper clothing and defective nutrition plus the absence of medical facilities, or refusal to submit to scientific treatment—all of these unremedied factors may contribute to the prevalence of lung affections among the mass of our population.

NUTRITION.

(1) COMPOSITION OF FOOD AND METHODS OF ITS PREPARATION.

The composition of foods used by the Filipinos is determined by chemical analysis made by Government institutions like the University of the Philippines, the Nutrition Laboratory of

the Bureau of Science, which is now under the School of Hygiene and Public Health, University of the Philippines, and the Bureau of Plant Industry. No chemical analysis is made by the Bureau of Health.

For a better understanding of the chemical analysis of Filipino foods and food materials, reference is made to two pamphlets already published, the first being that of SANTOS and ADRIANO: "The Chemical Composition of Philippine Food Materials", Office of the Public Welfare Commission, Manila, Bureau of Printing, 1929; and the other by Ariston HERMANO: "Food Values," Popular Bulletin No. 16, Bureau of Science, Manila, Bureau of Printing, 1932.

The methods of preparing Filipino foods are dealt with by the Home Economics Division, Department of Agriculture and Commerce, now under the Bureau of Plant Industry, and the Home Economics Department of the Bureau of Education.

(2) NUTRITIVE VALUES OF THE PRINCIPAL FOODS PECULIAR TO THE PHILIPPINES.

The chemical analysis and nutritive values of the principal foods peculiar to the Philippines are given below. These foods are the more popular in use by our people.

Foods	Moisture	Ash	Protein	Fat	Carbo- hydrates	Calories per kg.
<i>Eggs, Fish and Shells.</i>	%	%	%	%	%	
Balut (uncooked).....	71.76	0.99	12.69	14.23	—	1,964
Balut (cooked).....	70.40	0.97	15.23	12.84	—	1,834
Maalat (salted eggs)	67.92	3.45	13.13	11.50	4.00	1,750
Bagoong (fish)	57.70	24.98	13.44	1.25	2.63	775
Patis (fish)	67.85	23.04	4.51	3.27	—	489
Tinapa (dried fish)	36.05	7.04	53.31	3.60	—	2,520
Tuyo (tunsoy)	44.90	16.24	30.63	7.57	—	1,596
Dilis (anchovy, dried)	20.69	8.42	67.48	3.30	—	3,074
Alamang (bagoong)	67.87	14.30	15.63	2.22	—	847
Alamang (pressed)	67.08	15.20	10.44	1.15	—	540
Heko (small shrimps products) .	67.37	20.70	12.38	0.90	—	591
Talangka	61.02	1.38	15.81	12.50	9.29	2,192

Foods	Moisture	Ash	Protein	Fat	Carbo- hydrates	Calories per kg.	Vitamin		
							A	B, G	C
<i>Leaves.</i>									
	%	%	%	%	%				
Alugbati	91.20	1.18	2.10	0.37	3.86	271	++	++	+++
Ampalaya	81.94	2.06	2.30	0.13	14.82	796			
Camote	84.81	1.84	1.96	0.28	8.41	450		++	+
Cangcong	89.70	1.67	4.25	0.04	3.64	330			+++
Colitis	86.58	2.32	3.53	0.64	5.22	407			+++
Cuchay	91.92	0.92	1.85	0.55	3.66	280			
Himbabao	15.31	8.49	22.69	5.19	33.99	2,960			
Malungay	76.67	2.14	7.30	1.10	11.04	854			
Pako	90.38	1.14	3.11	0.28	3.86	310			
Papaít	10.79	17.45	17.85	2.40	36.54	2,450			
<i>Vegetables (Succulent).</i>									
Ampalaya	92.73	0.68	1.26	0.03	5.18	266			
Kamansi	89.16	0.88	2.24	0.55	6.08	400			
Mongo	9.21	4.23	18.30	0.88	62.49	3,394	+		++
Togue	92.85	0.41	2.38	0.45	3.82	300	+	++	+++
Bataw	87.56	0.45	3.32	0.25	6.19	413			
Patani	65.50	1.84	7.29	0.16	2.61	320			
Patola	94.58	0.28	0.63	0.13	4.25	210			
Papaya	93.98	0.41	1.09	0.17	3.70	210			
Pepino	90.98	0.54	1.07	0.45	6.14	337	+	+	
Seguidillas	91.58	0.77	2.94	0.27	3.80	280			
Sitaw	86.75	0.90	2.65	0.18	7.49	452			
<i>Leguminous Food Products.</i>									
Papaít	10.36	19.29	11.94	2.49	25.51	1,770			
Tahuri	55.76	—	14.56	7.12	—	—			
Tokua	72.10	1.27	17.56	10.99	—	—			
Toyo	47.62	22.45	5.58	—	—	—			
<i>Shoots.</i>									
Labong (bambwo)	92.77	0.55	1.26	0.51	4.24	290			
<i>Flowers.</i>									
Banana	92.67	0.02	1.99	0.31	3.35	227			
Squash	91.63	1.08	2.70	0.58	4.54	350			
Kakawate	85.46	1.04	3.67	1.47	5.94	550			
Katuray	91.02	0.53	1.22	0.36	6.87	365			

Foods	Moisture	Ash	Protein	Fat	Carbo- hydrates	Calories per kg.
<i>Tubers and Roots.</i>						
	%	%	%	%	%	
Araro (powder)	8.50	4.58	4.79	0.68	79.66	3,530
Apulid	47.49	1.33	2.68	1.62	45.82	1,140
Camote	68.87	1.00	0.80	0.52	27.87	1,230
Cassava	67.97	2.69	1.00	0.17	26.47	1,140
Gabi	63.21	1.01	1.29	0.39	32.51	1,420
Galian	62.61	1.05	0.81	0.09	33.87	1,430
Namé (dried)	11.48	0.05	3.53	0.80	81.26	3,550
Pulao	53.95	1.13	5.87	1.06	36.44	1,833
Sinkamas	84.47	0.38	0.82	0.12	13.93	620
Tugi	67.49	1.07	1.50	0.19	28.80	1,260
Ubi	63.70	1.45	2.86	0.05	30.91	1,390
<i>Fruits.</i>						
Ates	76.18	0.73	1.67	1.10	19.16	960
Anona	71.48	0.75	1.07	0.45	26.20	1,159
Balimbing	93.91	0.42	0.24	0.74	4.08	250
Camachili	78.28	0.47	2.47	0.34	17.14	840
Camias	94.78	0.38	0.68	1.39	2.16	250
Ciruelas	76.60	0.90	0.63	0.09	21.16	900
Chico	72.50	0.53	0.51	—	—	—
Duhat	80.80	0.70	0.81	0.85	16.23	777
Durian	55.50	1.24	2.31	—	24.65	—
Guava	81.65	0.73	0.96	0.07	9.75	450
Lansones	86.70	0.65	0.76	0.14	11.31	510
Lipoti	85.13	0.72	0.54	2.12	0.81	483
Mabolo	71.95	0.86	0.25	0.25	24.01	1,043
Makopa	91.40	0.27	0.50	—	—	—
Mango (ripe, carabao)	83.80	0.45	0.22	—	12.79	—
Pineapple (native)	83.24	0.59	0.43	0.28	15.01	659
Rimas	89.16	0.88	2.24	0.55	7.08	400
Santol	83.07	0.88	0.89	1.43	11.43	640
Sampalok (ripe)	17.80	3.16	3.00	—	41.11	—
Sampalok (raw)	78.15	1.08	2.31	0.93	14.19	760
Banana : Maldaba	64.30	1.05	1.44	0.57	32.16	1,430
Yambo	84.15	0.29	0.79	0.18	11.73	517
Zapote	81.54	0.49	1.15	0.26	16.13	733
<i>Miscellaneous Native Foods.</i>						
Bird's nest (white)	6.84	5.34	58.45	0.45	28.36	3,601
Bird's nest (brown)	5.50	8.50	60.72	0.49	24.12	3,524
Bucayo (coconut candy)	8.42	0.70	0.85	6.40	83.63	3,850
Coconut milk (gata)	50.80	1.40	3.52	34.75	1.52	3,440
Gulaman dagat (seaweed)	17.80	3.45	4.22	1.14	73.39	3,290
Lucton	75.95	1.88	10.33	0.69	7.86	810
Locust	59.61	1.79	7.89	—	—	—
Nata (piña) juice	90.07	0.60	0.67	0.37	7.06	385
Nata (sugar-cane)	98.77	0.02	—	—	—	—
Puto (white rice)	49.92	0.54	2.98	1.34	45.49	2,110
Poto seco (rice)	7.23	0.42	5.72	1.24	84.97	3,830
Satsaron (pig-skin)	12.96	1.03	41.22	22.01	22.20	4,650
Shark fins	76.54	0.52	13.24	Trace	9.70	940

(3) MINIMUM COST OF ADEQUATE NUTRITION AND ALLOWANCE FOR FOOD IN FAMILY BUDGETS.

The minimum cost of adequate Filipino diet has been determined by several investigators from ARON in 1909 to SANTOS in 1936. CONCEPCIÓN has also carried out a similar investigation on the minimum amount of adequate diet. According to the opinion of these investigators, as well as the investigations made by the Home Economics Division of the Bureau of Plant Industry, the cost of a minimum adequate diet is around 0.12 to 0.15 peso per head per day.

The family budget for food among the labourers is around 40% of their income. The present wage of Government labourers in the Philippines is 1 peso a day, while in private enterprises the wages are less.

(4) DIET AND HEALTH : DEFICIENCY DISEASES.

There is no doubt that the Filipinos are suffering from the effects of inadequate nutrition due either to poverty or to the ignorance of nutritive foods. Even among the well-to-do

Table I. — DEATHS FROM BERIBERI IN THE PHILIPPINES.

Year	Population ¹	Deaths	Rate per 100,000
1906	5,061,377	3,541	69.93
1907	6,405,634	1,752	27.35
1908	6,436,420	3,380	52.49
1909	6,610,204	3,620	53.14
1910	7,328,481	5,606	76.47
1911	7,613,375	6,009	78.89
1912	7,817,126	5,462	69.59
1913	8,067,981	8,023	49.84
1914	8,315,129	5,144	62.60
1915	8,353,013	5,516	66.03
1916	8,492,407	6,773	79.72
1917	9,149,901	7,953	86.93
1918	9,314,445	12,597	135.29
1919	9,478,929	12,387	130.68
1920	9,627,450	13,036	135.44
1921	10,081,267	15,847	157.19
1922	10,547,349	16,270	154.25
1923	11,067,117	18,100	163.55
1924	11,234,415	19,013	165.63
1925	11,401,708	18,542	162.62

¹ Christians and non-Christians.

Table I (continued). — DEATHS FROM BERIBERI IN THE PHILIPPINES.

Year	Population ¹	Deaths	Rate per 100,000
1926	11,568,994	19,204	165.99
1927	11,736,286	17,069	145.44
1928	11,903,579	16,783	140.99
1929	12,070,872	20,216	167.48
1930	12,251,594	21,574	176.09
1931	12,420,927	19,538	157.30
1932	12,591,369	17,173	136.39
1933	12,759,811	18,682	146.41
1934	12,929,526	21,419	165.65
1935	13,099,405	18,614	142.10

¹ Christians and non-Christians.

Table I A. — DEATHS FROM BERIBERI IN THE PHILIPPINES BY AGE-GROUPS (1930-1935).

Age-group (years)	1930		1931		1932	
	M.	F.	M.	F.	M.	F.
Under 1	9,227	7,258	8,645	6,373	7,633	5,669
1.....	161	159	163	139	130	84
2.....	78	49	65	59	42	27
3.....	38	38	43	29	31	25
4.....	20	22	16	19	24	12
5-9	84	85	62	41	52	42
10-14	63	55	43	33	42	34
15-19	160	98	137	96	121	76
20-24	150	213	109	160	96	158
25-29	151	217	116	182	118	177
30-34	138	189	123	151	101	138
35-39	181	188	157	176	132	141
40-44	206	123	161	148	161	115
45-49	223	159	178	157	159	116
50-54	193	133	165	144	160	108
55-59	206	117	208	131	145	80
60-64	281	178	264	169	245	164
65-69	205	89	168	99	151	88
70-74	112	80	106	96	140	64
75-79	57	30	49	33	42	28
80-84	40	44	38	31	38	21
85-89	22	9	17	11	17	8
90-94	14	8	6	8	4	4
95-99	3	4	2	3	2	2
Over 100....	8	4	4	4	1	4
Unknown age	0	0	0	1	1	0
Total	12,025	9,549	11,045	8,493	9,788	7,385
Grand Total.	21,574		19,538		17,173	
Rate per 100,000	176.09		157.30		136.39	



Table I A (continued). — DEATHS FROM BERIBERI IN THE PHILIPPINES BY AGE-GROUPS (1930-1935).

Age-group (years)	1933		1934		1935	
	M	F	M	F	M	F
Under 1	8,396	6,324	9,653	7,401	8,176	6,123
1	127	123	120	108	117	107
2	36	40	36	29	59	42
3	25	14	30	17	37	18
4	8	15	20	16	16	17
5-9	43	44	56	42	60	41
10-14	57	41	47	37	42	34
15-19	120	93	146	99	147	106
20-24	180	123	125	173	129	160
25-29	112	160	127	191	116	196
30-34	130	156	128	186	101	156
35-39	146	126	146	154	164	205
40-44	159	115	151	117	156	117
45-49	191	136	207	126	189	126
50-54	160	133	193	136	164	129
55-59	191	93	211	123	177	122
60-64	261	136	239	181	264	168
65-69	167	82	181	113	192	115
70-74	100	75	103	76	92	73
75-79	28	24	57	31	44	23
80-84	30	25	24	26	31	21
85-89	9	12	14	4	10	7
90-94	8	9	3	7	4	9
95-99	2	1	3	2	2	4
Over 100	1	3	1	2	1	3
Unknown age	1	1	1	0	2	1
Total	10,608	8,074	12,022	9,197		
Grand Total.	18,682		21,419			
Rate per 100,000	146.41		165.65		142.10	

people, under-nutrition and malnutrition occur under such conditions. The high incidence and mortality from beriberi, the lack of resistance of the people to infectious diseases—as, for example, the respiratory diseases—the high percentage of dental caries throughout the country, the early ageing and short duration of life of the average man in the Philippines and the high incidence and mortality from tuberculosis are all strong indications of definite nutritional deficiency among the Filipinos. Attached are statistical data of deaths from deficiency diseases in the Philippines, such as beriberi, scurvy and rickets (see Tables I, I A, II).

Table II. — DEATHS FROM OTHER DEFICIENCY DISEASES IN THE PHILIPPINES.

Year	Rickets	Pellagra	Scurvy
1923	1,000	28	67
1924	1,343	28	118
1925	1,154	12	82
1926	1,438	0	86
1927	1,412	0	100
1928	1,246	0	54
1929	1,617	2	66
1930	1,926	0	84
1931	1,687	0	60
1932	1,261	0	55
1933	1,484	0	36
1934	1,566	0	59
1935	1,812	0	65

Note. — Data for the years previous to 1923 are not available for the whole of the Philippines.

(5) PLANS FOR A CO-ORDINATED NUTRITION POLICY BASED ON THE COLLABORATION OF THE HEALTH, EDUCATIONAL AND AGRICULTURAL SERVICES.

The Government has different services which deal positively with the improvement of the nutrition of the people.

(a) The Bureau of Plant Industry not only aims at improving the raising or planting of useful plants for food and other articles of industry, but it has a plan for increasing the food supply and improving its proper distribution.

The Bureau of Plant Industry has among its many branches the Division of Home Economics, which aims at extending its activities to the homes of the Filipinos in the cities and towns and barrios in order to improve their methods of preparing food, and at teaching mothers sound ideas on nutritional problems. This division has many extension agents, who go to the different parts of the country to do this work.

(b) The Bureau of Animal Industry not only aims at improving breeding in order to better the stock of useful animals, but also has plans to increase the domestic animals where food can be procured, like cattle, carabao, goats, etc. It also has

plans to convert animal products into products of industry, as in more advanced countries. The manufacture of animal products like ham, sausages, butter, milk, cheese, etc., is included in the plans of the Bureau.

(c) The Health Service, apart from the fact that it aims at better sanitation, eradicating epidemic diseases and lowering the incidence and mortality from the most common diseases—as, for example, tuberculosis, malaria, beriberi, gastro-intestinal and respiratory diseases, etc.—endeavours to improve the social condition of the poor. The instruction of pregnant mothers and instruction in the care of babies are conducted by this service, which was formerly under the Bureau of Public Welfare. The nurses allotted to this work, as well as other nurses engaged in other forms of public health work, receive instruction in nutrition, in order that they may be better prepared to give sound advice to mothers as to the preparation of their food and the selection of foods which are not only nutritive but also readily available and cheap. Lectures and conferences on nutrition in the vernacular language are being given regularly to mothers attending the puericulture and community health-social centres in order that they may become more nutritionally minded. Leaflets on nutrition are also distributed to mothers during those lectures and conferences.

(d) The Bureau of Education includes in its curriculum the fundamentals of nutrition education, beginning with the elementary grades and extending to the secondary grades. It has a department of home economics, which is responsible for the dissemination of nutrition education throughout the public schools of the country. The home economics teachers, under whom are different grades of female students, conduct classes in the various schools. Apart from this, the Bureau of Education encourages home gardening and other projects like poultry-raising in order to educate the young, so that they have their own home gardens and are able to raise their food and improve their living conditions when they leave school.

(e) In an Executive Order (No. 440, dated September 1st, 1933) of His Excellency former Governor-General Frank Murphy, the Government defines how nutrition work may be

co-ordinated in the Philippines so as to prevent duplication. The Executive Order created the Advisory Committee on Nutrition, the members of which were as follows: Director of Health, Chairman; and a representative from each of the following departments: Bureau of Plant Industry, Bureau of Animal Industry, College of Medicine (University of the Philippines), College of Agriculture (University of the Philippines), Bureau of Commerce, Bureau of Health, Bureau of Science, Bureau of Education, Division of Home Economics (Department of Agriculture), Red Cross, Anti-tuberculosis Society, Technical Adviser on Health Matters to the Governor-General. This committee had already submitted plans of the different activities for making co-ordination more effective; but, owing to lack of the necessary funds to finance these activities, the plan could not be carried out as desired.

TREATMENT AND CONTROL OF MENTAL AND NERVOUS DISEASES.

During the early part of the American regime, insane patients from the City of Manila and those found in nearby provinces were isolated in a department of the San Lazaro Hospital, a dependency of the Bureau of Health, situated in the City of Manila. The inmates of the department rapidly increased in number, so that it became necessary for the Government to establish a separate institution for them. It was with this aim in view that the Philippines Legislature, in 1926, made a generous appropriation of 1,000,000 pesos for the construction of a mental asylum in the municipality of Mandaluyong, Rizal, about 11 kilometres east of Manila. The construction work was terminated in 1928, and in December of that year the patients in San Lazaro Hospital were transferred to the new institution, now the National Psychopathic Hospital.

On the medical staff of the hospital are specialists in mental and nervous diseases with extensive psychiatric training in noted institutions abroad.

Only patients suffering from mental and nervous diseases are admitted and treated in this hospital, the only one of its

kind under the Commonwealth Government. There are a clinic for out-patients and a mental hygiene clinic for city residents and school-children situated in the City of Manila. Patients are admitted upon certification of at least two physicians, by order of the Director of Health or by court order. The presidents of sanitary divisions (rural health physicians in the Government service) send the mental patients in their respective localities to the National Psychopathic Hospital. For charity patients, a certificate of indigency for the patients and for those responsible for their care is secured from the local municipal treasurers. The transportation expenses of indigent patients to the hospital and return to their homes after recovery are borne by the Bureau of Health.

At the end of December 1936 there were 2,025 patients in the hospital.

DRUG ADDICTS.

Those who have taken to drug habits are treated in the Bilibid Hospital in Manila.

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