

— *The* —

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# PHILIPPINE MEDICAL ASSOCIATION

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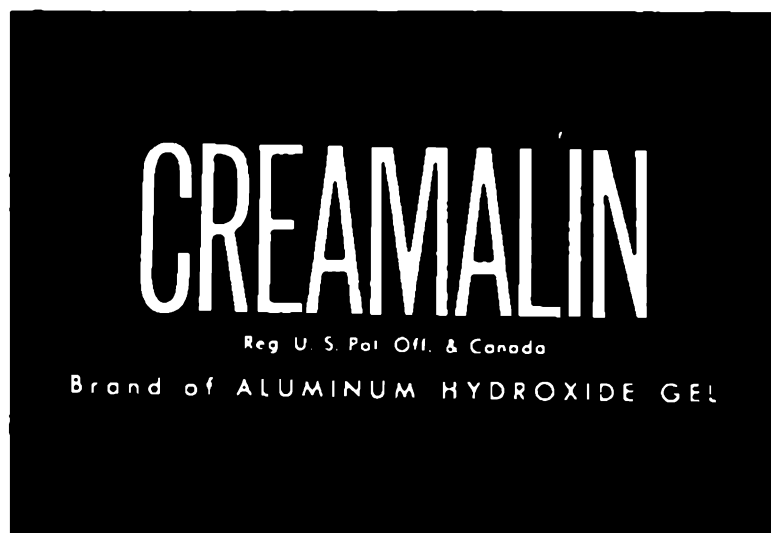
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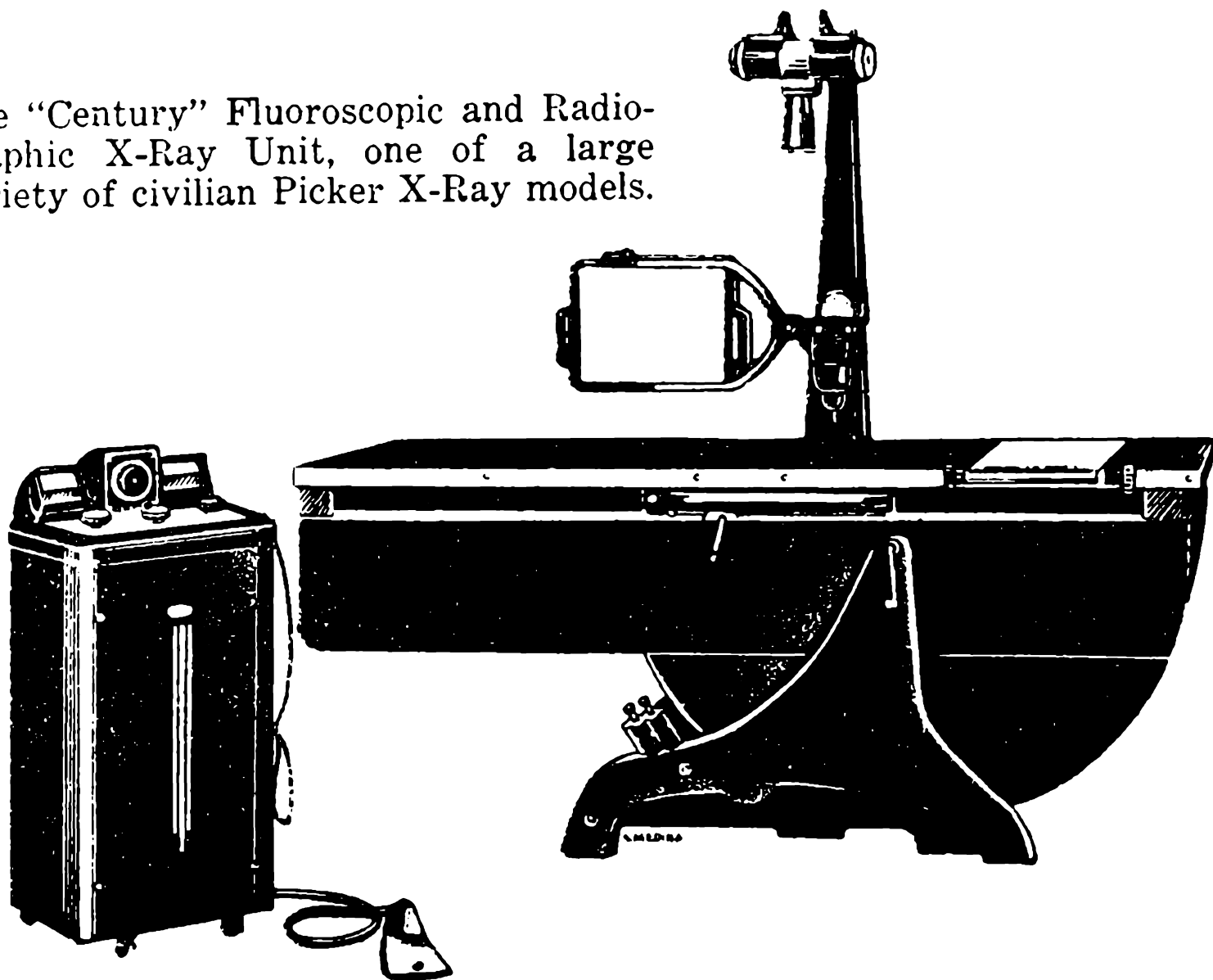
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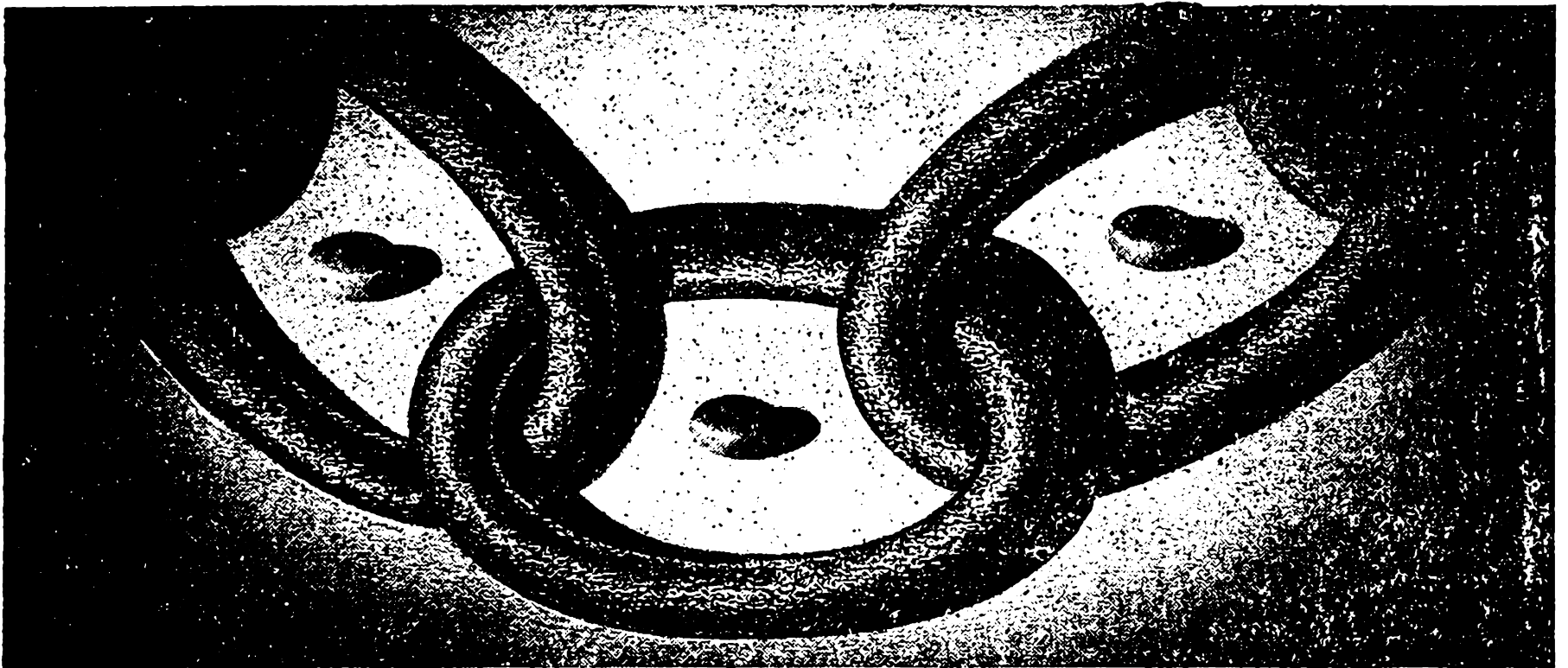
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### Original Articles

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#### OBSERVATIONS AND PROBLEMS IN TUBERCULOSIS IN THE CITY OF MANILA BEFORE, DURING AND AFTER THE JAPANESE OCCUPATION

SIXTO A. FRANCISCO, M.D.

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AND

CESAR ONGPIN, M.D.

*Phthisiologist-Supervisor*

This paper is presented from a public health view point, and it consists of the observations made and problems encountered in the city of Manila before, during, and after the Japanese occupation. These problems are so complicated and extensive that the steps taken in their solution have proved inadequate and ineffective. From the epidemiologist point of view, tuberculosis as a public health problem in the city of Manila or elsewhere in the Philippines, is practically the same now as, if not worse than, it was many years ago.

#### X-RAY MASS SURVEY FOR TUBERCULOSIS

Before World War II, an X-Ray mass survey for tuberculosis incidence was conducted among 24,005 Philippine government employees residing in the city of Manila. These employees were classified into 10 groups — technical employees teachers, nurses, midwives, clerks, policemen, detectives, sanitary inspectors, soldiers, trainees, janitors, helpers, laborers; and, under miscellaneous, were chauffeurs, mechanics, guards, gardeners, and others, who were too few to be classified separately into individual groups. (See Table 2) Out of these 24,005 individuals who were X-Rayed, 1,492 cases or more than six per cent (6%) were discovered suffering from pulmonary tuberculosis. This approximates very closely our findings among 1,037,577 Filipinos examined by the Traveling X-Ray Clinic in 19 provinces in the Philippines, which is 6.83%. (See Table 1)

Another extensive X-Ray mass survey was conducted before the recent war among the city of Manila public schools, comprising 6,171 teachers, 125,640 students, and 426 janitors — a total school population of 132,237. (See Table 3) Among the 125,640 students, 1,027 positive cases were found, giving a percentage of 0.817. There were 285 positive cases among the 6,171 teachers or a percentage rate of 4.618, and still a higher tuberculosis incidence among the janitors. Of 426 janitors examined, 39 were discovered suffering from pulmonary tuberculosis or a percentage of 9.154. In other words, the tuberculosis incidence among the students is less than one per cent (1%), but the tuberculosis incidence among the teachers is five times that of the students, while among the janitors, it is practically twice as high as among the teachers. This is significant, for it will enable us to trace the source of the infection, as well as the potential carriers of the disease.

### CLINIC OR DISPENSARY CASES

During the three years before the Japanese occupation of the city of Manila—that is, from 1939 to 1941 inclusive—a total of 246,437 persons were examined fluoroscopically with a total of 26,487 positive cases or a percentage of 10.75. (See Table 4) This relatively high tuberculosis incidence needs explanation. Most of those persons X-Rayed were dispensary cases, and they came to the clinic of their own accord, because they already felt something wrong with their health. A number of them were recommended to be X-Rayed by physicians who had discovered signs and symptoms of the disease. The X-Ray positives among this group of individuals would naturally be high as compared with our findings in an X-Ray mass survey.

During the three years of Japanese occupation of the city of Manila (1942-1944), a total of 102,006 persons were examined by X-Ray, with a total of 17,785 positive cases or a percentage of 17.44. (See Table 4b) The following year after the Japanese occupation of the city of Manila, a total of 51,550 individuals were examined with 11,258 positive cases or a percentage of 21.84. (See Table 5)

This glaring increase of the tuberculosis incidence in the city of Manila during the Japanese occupation may be attributed to (1) undernourishment or malnutrition, (2) traumatic injury resulting from physical tortures inflicted by the Japanese on a big number of people either at Fort Santiago or elsewhere, (3) prolonged exposure to sun and rain and starvation during “zonification”, (4) low bodily resistance brought about by the war with its attendant worries, lack of medical facilities and food, fear, etc., (5) poor living conditions, and (6) presence of concurrent infections as attacks from malaria, dysentery, and intestinal parasites.

After the liberation—that is, during the year 1945—the tuberculosis incidence ought to have come down because of the improved conditions of living and the availability of foodstuffs; but our findings in Table No. 7 point to the contrary. This may be explained by the fact that tuberculosis is a chronic disease, and those who had contracted it during the Japanese occupation had shown great physical resistance to the infection and only developed the disease a year later when their bodily resistance manifested a “breakdown” due to many causes, among which were overwork, excessive physical efforts, and abuses of all kinds.

### TUBERCULOSIS MORTALITY

According to Dr. M. C. Icasiano, Manila City Health Officer, tuberculosis has

rated as the number one scourge in the city for the past several years, causing more deaths to the city inhabitants than any other disease. During the three years previous to the war (1938-1940), the average number of deaths from tuberculosis was 2,000 per year. During the Japanese occupation (1942-1944), this average rose to 6,000 deaths per year. In 1945, the figure went down somehow, but later—in 1946—it showed a tendency to go up.

With these statistical data on hand on tuberculosis mortality in the city of Manila, any competent and impartial observer can readily realize the extent and magnitude of the tuberculosis problem in this country. It is decidedly a public health problem, because of its vast ramifications with various public health problems. The different aspects of the tuberculosis problem — medical, socio-economic, educational, and moral — make it extremely difficult for any health entity other than the governmental to carry out a balanced anti-tuberculosis campaign on a national scale. In fact, in the United States of America, the control and prevention of tuberculosis is the primary concern of the U.S. Public Health Service; and the activities of all the other health organizations dealing with tuberculosis merely supplement those of the Federal Health Service.

#### OBSERVATIONS AND PROBLEMS

An analysis of our findings has revealed an exceedingly high incidence of tuberculosis infection and an alarmingly large number of open cases of tuberculosis. There are convincing evidences that tuberculosis in the city of Manila, is becoming a more and more serious public health menace because of the social and economic factors involved. Our observation and study of the problem according to age-group is significant especially to public health workers, because it points out to what particular age-group — the middle-age group — all the efforts in the campaign must be directed if a headway is to be made in the prevention and control of the disease.

The follow-up work among tuberculous patients in their homes has also brought to light certain points which may have important bearings on the practical application of health rules and regulations for those afflicted with the disease. This consists mostly of compiling epidemiological data, and giving instructions on the practical methods of disinfection, prevention, and control of the disease. The greatest number of the cases visited were those living in poor and insanitary environments, densely populated, and with little or no sanitary facilities. As a general rule, all of them belonged to the lower social strata and led what might be called a hand-to-mouth existence. Many of them could not even stay home for the required rest, they had to go out to earn a living. Accustomed to active life, they could not accept the fact that they were far from well; and enforced inactivity caused them great mental distress.

Let me give a rough picture of a family with somebody ill of tuberculosis. In that family, the care of the sick is inadequate and preventive measures are not observed. Sputum is scattered everywhere. The cloth and the utensils of the sick are mixed with those of the rest of the family. Both the sick and the healthy slept in the same room and often under the same mosquito net. Medical advice is not heeded.

Not infrequently the sick member is the main support of the family. The necessity to provide for himself and his dependents forces him to disregard and

violate all rules and regulations for an ideal treatment. The desire to provide his dependents with food, clothing, and other necessities often leads the breadwinner to sacrifice his own health and well-being—even his life. It is only when he feels sure that the livelihood of his family is secure, or when he can no longer endure his suffering, that he would give up his job. By that time, unfortunately, the disease would be too far advanced to check.

The prevention and control of tuberculosis, the necessity for a more extensive and intensive health education campaign, the lack of hospital accommodations for even the open cases (there are less than 1,000 beds altogether available at present for tuberculous patients throughout the Philippines), and the inadequate measures taken in the industrial and food-handling establishments to protect the employees against cases of tuberculosis — these are among the outstanding problems that have to be met and solved if the ravages of tuberculosis in this city are to be curbed. Tuberculosis in the city of Manila — or anywhere else in the Philippines, for that matter — cannot be eradicated or even controlled merely by expert medical diagnosis and modern treatment. This is not to belittle the curative phase of the campaign against this dreadful disease; it is only one way of stressing that “an ounce of prevention is worth more than a pound of cure.” Preventive measures, for this reason, should be given more importance and financial support than the cure.

They are less expensive and decidedly more effective. Above all it must be borne in mind that tuberculosis is a disease requiring *social diagnosis* and *social treatments*. From our point of view, “it is the soil and not so much the seed that matters.”

To cope adequately with the great and extensive tuberculosis problem in this city, or elsewhere in this country, a long range national plan has been prepared which has for its goal the control of tuberculosis within a fixed period of ten years. A condensation of this project into a four-year tuberculosis program to conform with the requirements of the “Rehabilitation Legislation” has been recently effected, retaining the most important and immediate activities, and doing away with those that are not urgent. The tuberculosis problem in the Philippines admittedly would be too big a task for any health entity other than the Government to tackle. And, what is needed more urgently than anything else, is money.

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TABLE 1—Total Number of Fluoroscopic Examination with the Total Number of Positive P.T.B. Discovered by X-Ray from 1933-1942

Number	Province	Total Number of Examination	Total of Positive Cases	% of Positive
1	Albay	49,009	2,390	4.88
2	Bataan	12,109	671	5.54
3	Batangas	10,508	1,256	11.95
4	Bulacan	8,706	359	4.12
5	Cavite	8,569	211	2.46
6	Camarines Norte	16,306	960	5.89
7	Camarines Sur	43,215	2,005	4.64
8	Davao	9,628	652	6.77
9	Laguna	1,059	24	2.27
10	Manila	509,559	47,448	9.31
11	Negros Occ.	175,100	5,055	2.89
12	Negros Or.	502	8	1.59
13	Nueva Ecija	10,419	736	7.06
14	Pampanga	3,293	69	2.09
15	Pangasinan	125,072	3,530	2.82
16	Rizal	22,267	762	3.42
17	Sorsogon	6,597	188	2.85
18	Tayabas	9,093	307	3.38
19	Zambales	16,546	1,119	6.76
Total .....		1,037,577	67,750	6.53

Incidence of P.T.B. Discovered by X-Ray Arranged According to Intensity of Infection

1	Batangas Manila Davao Nueva Ecija	540,114	50,092	9.27
2	Zambales Cam. Norte Bataan Albay Cam. Sur	137,185	7,145	5.21
3	Bulacan Rizal Tayabas Negros Occ. Sorsogon	221,763	6,671	3.01
4	Pangasinan Cavite Laguna Pampanga Negros Or.	138,495	3,842	2.77
Total .....		1,037,557	67,750	6.53

TABLE 2.—Results of 24,005 X-Ray Examinations

Classification	Negative	Positive	Total No. of Examinations	Percentage
Technical Employees	348	26	314	6.951
Teachers (Public Schools)	6,991	405	7,396	5.475
Nurses and Midwives	574	31	605	5.123
Clerical Employees	9,939	706	10,645	6.632
Policemen and Detectives	1,300	86	1,386	6.204
Sanitary Inspectors	195	14	209	6.698
Soldiers and Trainees	1,447	43	1,490	2.885
Janitors and Helpers	854	76	930	8.172
Laborers (skilled & unskilled)	314	40	254	11.299
Miscellaneous	551	65	616	10.551
<b>T O T A L . . . . .</b>	<b>22,513</b>	<b>1,492</b>	<b>24,005</b>	<b>6.215</b>

TABLE 3.—Prevalence of Tuberculosis Among Teachers, and Students

Occupation	Number of Examinations	Positive Cases			Total	Percentage
		Minimal	Mod. Adv.	Far Adv.		
Students	125,640	825	137	65	1,027	0.817
Teachers	6,171	238	36	11	285	4.618
Janitors	426	24	13	2	39	9.154
<b>T O T A L . .</b>	<b>132,237</b>	<b>1,087</b>	<b>186</b>	<b>78</b>	<b>1,351</b>	<b>1.021</b>

TABLE 4.—Summary of X-Ray Examinations Conducted in the City of Manila from 1939-1945

Year	No. of Examinations	P O S I T I V E C A S E S			Total	Percentage
		Minimal	Mod. Adv.	Far Adv.		
<b>Before Japanese Occupation</b>						
1939	102,111	8,789	1,784	261	10,834	10.61
1940	73,135	6,130	2,358	708	9,196	12.57
1941	71,191	3,700	2,147	610	6,457	9.07
<b>T o t a l . . . . .</b>	<b>246,437</b>	<b>18,619</b>	<b>6,289</b>	<b>1,579</b>	<b>26,487</b>	<b>10.75</b>
<b>During Japanese Occupation</b>						
1942	27,312	2,093	1,719	603	4,418	16.18
1943	45,113	3,206	2,739	1,474	7,419	16.45
1944	29,581	2,610	1,960	1,373	5,948	17.44
<b>T o t a l . . . . .</b>	<b>102,006</b>	<b>7,912</b>	<b>6,418</b>	<b>3,455</b>	<b>17,785</b>	<b>17.44</b>
<b>After Japanese Occupation</b>						
1945	51,550	4,263	3,918	3,077	11,258	21.84

TABLE 5.—Incidence of P.T.B. Discovered by X-Ray (Fluoroscopy) After Liberation of The Philippines from the Japanese by the American Forces (1945)  
Summary of X-Ray Examinations by Months (New Cases)

Month	Number of Examinations	P O S I T I V E C A S E S			Total No. of Positives	% of Positives
		Minimal	Mod. Adv.	Far Adv.		
January	627	62	81	69	212	33.81
February	495	47	76	56	179	36.16
March	5,941	345	424	462	1,231	20.72
April	5,294	442	456	412	1,310	24.75
May	5,446	519	502	381	1,402	25.74
June	5,631	512	443	312	1,267	22.50
July	4,951	475	385	307	1,167	23.57
August	4,862	437	369	266	1,072	22.05
September	4,266	353	325	211	889	20.84
October	4,955	423	289	238	950	19.17
November	4,941	350	313	186	849	17.18
December	4,141	298	255	177	730	17.63
Total ...	51,550	4,263	3,918	3,077	11,258	21.84

Summary of X-Ray Examinations by Age-Group

Age-Group	Number of Examinations	P O S I T I V E			Total No. of Positives	% of Positives
		Minimal	Mod. Adv.	Far Adv.		
0-9	1,681	236	215	122	573	34.09
10-19	5,040	384	318	265	967	19.19
20-29	14,841	1,208	1,071	844	3,123	21.04
30-39	13,600	1,198	1,083	830	3,111	22.88
40-49	9,486	703	680	575	1,958	20.64
50-59	4,904	398	396	322	1,116	22.76
60-up	1,998	136	155	119	410	20.52
Total ...	51,550	4,263	3,918	3,077	11,258	21.84

X-Ray Examinations by Sexes

Sexes	Number of Examinations	P O S I T I V E			Total No. of Positives	% of Positives
		Minimal	Mod. Adv.	Far Adv.		
Male	28,667	2,169	2,000	1,681	5,850	20.41
Female	22,883	2,094	1,918	1,396	5,408	23.63
Total ..	51,550	4,263	3,918	3,077	11,258	21.84

X-Ray Examinations by Civil Status

Civil Status	Number of Examinations	P O S I T I V E			Total No. of Positives	% of Positives
		Minimal	Mod. Adv.	Far Adv.		
Child	2,274	321	266	168	755	33.20
Single	14,482	1,108	926	813	2,847	19.66
Married	27,370	2,123	2,001	1,497	5,621	20.54
Widowed	7,424	711	725	599	2,035	27.41
Total ....	51,550	4,263	3,918	3,077	11,258	21.84



# CANCRUM ORIS: OBSERVATIONS ON ITS INCIDENCE AND TREATMENT

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Reports in 1878-1882<sup>1, 2, 3</sup> pointed to a widespread distribution of cancrum oris, also called noma or gangrenous stomatitis, in Europe. Later reports, however, showed it became rare. Y. Durant<sup>4</sup>, Goebels<sup>5</sup>, and Eckstein<sup>6</sup>, agree that the disease is now very rare.

Cancrum oris is not infrequent in the Philippines. Stransky and Pecache reported<sup>7</sup> 42 cases in five and one half years (1935-41), an average of 7-8 a year. Albert and Pecache<sup>8</sup> collected five cases from December 8, 1941 to May 31, 1943 and twenty-three from June 1, 1943 to October 31, 1944. The unusual and sudden rise in the frequency of the disease in the latter years of the Japanese occupation instantly attracted attention of everyone and was attributed by the authors partly to the outbreak of an epidemic of measles.

From the reopening of the Philippine General Hospital on April 4, 1945 until April 5, 1946, a period of one year, we studied and treated 15 cases. In the last seven months of our investigation, however, the tendency for the disease to decrease in frequency was very evident.

We believe that the high incidence of the disease during the Japanese occupation, especially in its latter years, is largely due to the scarcity of food and partly to the poor hygienic and living conditions—factors which are accepted to play a role in the formation of noma. This latter belief seems logical because diseases like nutritional anemia and edema and chronic ulcers, which are closely related to the above named factors and which were prevalent among the poor and starving classes during the Japanese occupation, decreased hand in hand with noma, despite the continued epidemic of measles, as a result of the more abundant food supply and better hygienic and living conditions brought by the coming of the Americans.

## AGE INCIDENCE

The disease is no respecter of age. However, most cases were observed in children. The Stransky-Pecache and the Albert-Pecache reports showed the disease to be more frequent after the first year through the fifth. The age distribution of our cases confirms this observation (Table 1).

TABLE 1—Age Incidence

Age	Tupas-Jongco	Stransky-Pecache	Albert-Pecache
Below 1 year	0	2	0
1—2 years	1	10	5
2—3 years	6	11	6
3—4 years	4	8	8
4—5 years	2	6	6
Over 5 years	2	3	3
Adults	0	2	0
Total	15	42	28

Our youngest patient was one and one half years while the oldest was six years.

### SEX INCIDENCE

Mohler,<sup>9</sup> Osler and McCrea<sup>10</sup> reported the disease to be more frequent in females. On the other hand, Eckstein found it more frequent in males. Stransky-Pecache and Albert-Pecache found out that cancrum oris has a tendency to predominate in females. Of our 15 cases, 9 are females and 6 male. (Table 2).

TABLE 2—Sex Incidence

	<i>Eckstein</i>	<i>Stransky-Pecache</i>	<i>Albert-Pecache</i>	<i>Tupas-Jongco</i>
Females	12	26	16	9
Males	28	16	12	6
Total	40	42	28	15

### SEASONAL INCIDENCE

Eckstein's, Albert's, and Pecache's reports showed a much higher incidence of the disease in the last six months than the first six months of the year (Table 3). Although lack of food; measles; poor oral, personal, and general hygiene; and fatigue—factors known to predispose the individual to the formation of noma—may explain the unusually high frequency of the disease during the Japanese occupation, yet we cannot see why it should be frequent in the last six months of the year. Stransky's and Pecache's report as well as ours showed practically an equal distribution of the cases in the two halves of the year.

TABLE 3—Seasonal Incidence

<i>Month</i>	<i>Eckstein</i> <i>(Ankara)</i>	<i>Stransky</i> <i>Pecache</i> <i>(Manila)</i>	<i>Albert</i> <i>Pecache</i> <i>(Manila)</i>	<i>Tupas</i> <i>Jongco</i> <i>(Manila)</i>
January	2	3	1	2
February	2	3	0	2
March	1	4	0	0
April	1	3	1	1
May	1	4	2	1
June	2	3	1	2
<i>Sub-Total</i>	—	—	—	—
	9	20	5	3
July	3	5	4	5
August	9	2	5	0
September	5	4	7	2
October	6	5	4	0
November	5	3	1	0
December	3	3	2	0
<i>Sub-Total</i>	—	—	—	—
	31	22	23	7
<i>Grand Total</i>	40	42	28	15

No specific organism has been found to cause the disease, although many<sup>11</sup> believe that it is caused by Vincent's fusiform bacillus and spirochetes. It is known, however, that noma is a contagious disease and that it affects those with run-down general condition. It usually develops after other infectious diseases, most frequently measles<sup>12</sup> and ileocolitis. It is also frequently observed in poor individuals with poor oral and personal hygiene. The parts affected are usually the sites of previous local diseases.

The diseases with which our fifteen cases are associated are shown in the following table.

TABLE 4—Diseases associated with Noma

<i>Etiologic Diseases</i>	<i>Males</i>	<i>Females</i>
Ileocolitis	1	5
Measles with Bronchopneumonia	3	3
Tuberculosis	2	0
Ileocolitis and Malaria	1	0
	7	8

### SYMPTOMATOLOGY

In the cases we studied, the constitutional symptoms of the disease were modified by the nature, location, and severity of the primary infection and by the patient's capacity to react. A few showed high fever, many low or moderate, and some none at all. Dullness, apathy, weak, rapid pulse, muscular relaxation, and often diarrhea were observed.

In almost all our cases, the foul offensive odor of the breath was the first to attract attention; very rarely, the dusky spot on the cheek or lip. All our patients were undernourished due to the presence of a chronic and wasting primary disease. The majority of them manifested vitamin deficiency in the form of xerophthalmia, keratomalacia, and angular stomatitis.

Besides these manifestations, three cases showed only slight or no swelling of the part affected, with very little necrosis in the gum or cheek. In 12 cases, the gum or inner side of the cheek or lip revealed dark, greenish, black, necrotic masses, surrounded by swollen, edematous tissues, so that the cheek or lips, as the case might be, was two to three times thicker than its normal size. The swelling, which always extended way beyond the gangrenous part, was easily noticed outside and appeared tense and brawny. As the disease progressed, the teeth loosened and fell out. In two of our patients, the necrosis involved the alveolar processes with perforation of the cheek. Extensive sloughing and ulceration of the face (1½ inches in diameter) was observed in three patients, resulting in their horrible, unsightly appearance. Pain was seldom complained of and was not severe. Profuse hemorrhage was never observed.

### MORTALITY

All previous reports on cancrum oris gave a very high mortality rate. In the earlier reports, the mortality was as high as 95 to 100 per cent. Later reports by V. Bruns and Durant gave a fatality of 70 to 75 per cent. R. Valenzuela<sup>13</sup> reported only six recoveries out of his thirty-six cases. Stransky and Pecache gave a death rate of 88%. Albert and Pecache estimated their deaths at 83 to 85%. All these reports clearly point to the malignant nature of the disease.

Out of our 15 cases, only two died, a mortality of 13.33%. One of our deaths was a patient who was brought in a very critical state and died a few hours after admission in the hospital, so that the drugs given had no time to act. The other death was in a patient who suffered from protracted ileocolitis with xerophthalmia, cachexia, and terminal bronchopneumonia; but the patient died after the local lesion, noma, in the mouth had practically healed. From the standpoint of noma alone, the second case should be included with improved cases, thus bringing down our death rate to

6.67%. With earlier treatments of noma cases, we would not be surprised if the mortality of this disease would, some day, be even lower than 6%.

Why is our mortality rate very low? We will refrain from answering this question categorically because of the few cases we have had so far, although we are constrained to believe that the modern therapeutic agents, perhaps not entirely, contributed materially in bringing about the high percentage of cure.

### TREATMENT

As in any other condition, the best treatment is to prevent the disease. Cancrum oris should be prevented by prompt and thorough treatment of all buccal infections and by paying particular attention to the mouth in acute infections. Irrigating the mouth with an oxidizing agent like dilute potassium permanganate or some antiseptic solution whenever any form of stomatitis is present may help in preventing the disease.

When noma is already present, earlier investigators advised complete excision of the gangrenous area under local anesthesia without delay. The excision should be done beyond the area of visible involvement and the margin of the apparently healthy tissue should be cauterized with concentrated nitric acid. As has been stated above, the mortality rate was very high despite the early surgical treatment.

In 1943 R. Valenzuela<sup>13</sup> reported that local application of sulfathiazole gave a better effect than any other method he had ever used in the treatment of noma. With the coming of chemotherapeutic agents like the sulfa drugs and penicillin, we have surprisingly reduced the fatality rate to a little less than 7%. The result of our treatments undoubtedly indicates that the medical care of cancrum oris is not only better than the surgical one but is also the best treatment of the condition at present. Incidentally we may state the reason why we used the sulfa drugs and penicillin<sup>14</sup> in the treatment of noma even before we had read the Valenzuela report. It is because these drugs have not only proved to be effective in the treatment of the primary disease associated with cancrum oris, but they have also been found to be effective against the fusiform bacilli and spirochetes<sup>15</sup>.

Like the other workers, we almost invariably gave antiseptic gargles, most often dilute potassium permanganate solution, especially among those with fetid, offensive odor of the breath. The mouth was first cleansed with an antiseptic solution, usually dilute potassium permanganate; and the sulfanilamide, sulfathiazole, or sulfadiazine powder was applied locally to the lesions in almost all cases. In addition, eight patients received either sulfathiazole or sulfadiazine by mouth at a dose of 15-25 centigrams per kilo body weight per twenty-four hours. The two deaths were with this group, although I have already stated that one death should properly be included with improved cases. The remaining seven cases were given sulfathiazole or sulfadiazine by mouth and penicillin intramuscularly. These seven patients recovered. We varied the dose of penicillin from 100,000 to 250,000 units daily depending upon the freshness of the drug obtained and the age of the patient. In general, we gave a dose much bigger than the one usually advised in the different literature.

The nourishment of all the patients was carefully taken care of either through the mouth or parenterally. Stimulants and other symptomatic treatments were also given as necessity arose.

All noma cases were isolated to prevent contamination of other patients.

The improvements we observed during the treatment were immediate. In from



24 to 72 hours, the foul, offensive breath, the swelling and edema of the affected part subsided considerably, if not entirely. The rapidly progressing gangrene was arrested and became well demarcated from the healthy tissue. In the cases with sloughing and ulceration, granulation and cicatrixation took place very slowly with resulting horrible disfigurement of the face. These improvements were soon followed by gain in flesh and weight.

### CONCLUSIONS

1. Fifteen cases of cancrum oris admitted and treated in the Pediatrics Department of the Philippine General Hospital from April 4, 1945 to April 5, 1946 were presented.
2. The incidence of noma in the Philippines, before, during, and after the second world war was discussed.
3. A reduction of the mortality rate from 70%—100% to 6.67% with the use of sulfa drugs and penicillin was reported.
4. Other reports on the incidence, mortality, and treatment of cancrum oris were briefly reviewed and compared with our findings.

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# PRACTICAL CONSIDERATIONS IN REFRACTION

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To anyone who has practised ophthalmology, the high incidence of refractive errors is well known. This is because people in all walks of life and of all ages strain their eyes through excessive indulgence in near work, especially in reading, either for necessity or for pleasure. Pre-school tots who become engrossed in comic strips even before they learn their alphabet, children in the grades, youngsters in the high school, young men and women in colleges and universities, young professionals, clerks, bank tellers, printers—especially type-setters—all these subject their eyes to undue strain during their waking hours.

It is not surprising, therefore, that, whereas 30 or 35 years ago only myopes and presbyopes wore glasses and there was only one or two optical stores in the city, now people wear glasses for all kinds of ametropic conditions and no less than 30 or 40 optical stores are doing good business. Neither should it be strange that 75% or 80% of eye cases in private practice are cases of errors of refraction.

An authority has aptly remarked that refraction is the mainstay of the ophthalmologist. For one thing, the number of cases of errors of refraction is always large. For another, as the practitioner gets older, he finds in the surgical field less and less attraction; whereas in the field of refraction his accumulated wealth of experience can be put to greater and more valuable use.

The object in presenting this paper is to pass on to those who are starting in practice what observations we have found practical and helpful in our refraction work during the last 25 years of private practice and 12 years (1929-1941) in the University of the Philippines Infirmary.

About 75 to 80% of all eye cases in private practice are cases of refraction, and in the U.P. Infirmary the relative frequency of these cases is even higher. Out of the average yearly enrollment of 5000 students in the Manila colleges alone, from 1929-41, 10% were found wearing glasses for the correction of ametropia. Actually this figure is much lower; for many of those who were supposed to wear correcting lenses, especially among the girls did not do so because of "looks", while others whose eyes had not yet been put to the test of college work, were not aware that there was something wrong with their eyes. In the University of the Philippines before the war, it was not uncommon to have from 10-15 cases of refraction a day, especially during the latter part of the semester or one or two weeks before the final examinations. With cases coming at this rate and especially with the ordinary methods then employed, we feared that somehow the examinations might not be accurate. In 1939, fortunately, the Infirmary acquired a Green's Refractor, which because of its mechanical efficiency the examinations could be done with speed and accuracy.

Looking over our records for the last eleven months (all other previous records were burned) the cases of refraction that have come up for correction fall into two main

groups—those found in the young (below the presbyopic age) and those found in presbyopes. Out of 554 eyes examined, there were:

*Group I—In the Young*

1. Hyperopia simple .....	16.3 %
2. Myopia, simple .....	9.3 %
3. Hyperopic Astigmatism .....	8.1 %
4. Compound Myopic Astigmatism .....	6.9 %
5. Myopic Astigmatism .....	3.6 %
6. Comp. Hyperopic Astigmatism .....	2.25 %

*Group II—In Presbyopes*

1. Presbyopia with Hyperopia, simple .....	21.8 %
2. Presbyopia with Myopia .....	6.7 %
3. Presbyopia with Hyperopic Astigmatism .....	5.0 %
4. Presbyopia with Myopic Astigmatism .....	4.6 %
5. Presbyopia with Comp. Hyperopic Astigmatism .....	4.0 %
6. Presbyopia with Myopic Astigmatism .....	1.6 %
7. Presbyopia alone .....	9.1 %

These figures show that the great majority of the cases of refraction that come to the ophthalmologist are not the simple ones, the correction of which offer no problem like simple myopia or presbyopia. They are rather the cases that are attended by symptoms of strain, ocular or nervous, that make reading or any other form of near work not only uncomfortable but also many times distinctly painful and exhausting. Among these are those referred by the internists or general practitioners to whom the patients have gone for medical advice and treatment because of symptoms like headache, dizziness, nausea, vomiting, gastric disorders, etc., the underlying cause of which were suspected to be of ocular origin.

In both groups we find that hyperopia tops the lists of errors. It is clear, therefore, that much of the work of the ophthalmologist consists not only in correcting the manifest errors, simple or associated with astigmatism, but also and mostly in uncovering the latent amount if these cases are to be satisfactorily managed. As everybody knows, this is done by fogging and by the use of cycloplegics. There are no hard and fast rules as to when to use one or the other. Each has its own advantages and disadvantages. While with fogging we do away with the objectionable paralysis of accommodation, not all cases lend well to fogging and in the young with strong accommodative power we prefer to use a cycloplegic.

Although some authorities claim to be able to uncover even a greater amount of latent hyperopia by this method than by the use of cycloplegics (and we have had occasion to confirm this observation in some of our cases) still we seem to feel a greater sense of reliability in our results when a good and efficient cycloplegic is used especially in individuals below 18. The long-lasting effect of atropin on accommodation is with reason objected to by many of the patients—students, professionals, and employees—who depend on near work in their daily living.

From 1939 to 1941 in our refraction work at the U P. Infirmary we used homatropin hydrobromide 5% solution in combination with paredrine hydrochloride 1% ophthalmic. With this, refraction can be effected in about an hour, and the effect passes off in about 48 hours at most. These distinct advantages over atropine has made this combination our cycloplegic of choice. Shortly after the outbreak of the war, however, our supply of paredrine was exhausted and we had to revert to atropin cycloplegia. The paredrine was ordered directly from the manufacturers, Smith, Kline and French laboratories of Philadelphia.

As a general rule we use both methods to relax accommodation, fogging, and cycloplegia. Among the young, we almost always use cycloplegia; while among the older patients we depend more on fogging, except in cases where there are reasons to believe that there is spasm of accommodation so that the manifest error is not the real ametropic condition of the eye.

A patient 37 years old came to us, after having been given a  $-.50$  ax  $180^\circ$  to correct what appeared to be a manifest error, because of unrelieved headache and dizziness. She would not fog satisfactorily. Actually she accepted the correction she was using. Refraction under cycloplegia revealed an error correctible with  $+.75$  ax  $90^\circ$ , and after the use of the latter she no longer complained of headache. Low myopic errors, spherical or cylindrical or spherocylindrical, attended with discomfort or headache on use of the eyes for near, should make one suspicious; and no prescription for glasses should be given until an examination has been made under a cycloplegic.

Whether we use atropin or homatropin with paredrine, we adhere strictly to the recommended method of instilling cycloplegia to insure maximum absorption of the drug—i.e., to drop the solution on a horizontal cornea by tilting the head way back and instructing the patient to direct his gaze downwards so that as much as possible of the limbus is bathed in the solution. The lids are held open by the index finger and thumb for about 30 to 40 seconds to give time for the drug to be absorbed; otherwise, if the lids are allowed to close as soon as the solution is dropped, it will be squeezed out and then we will be wondering later why the accommodation has not been relaxed in spite of the drug.

One point to remember when refracting under a cycloplegic is to find out whether the accommodation has been fully and completely paralyzed before refracting; or, how much residual accommodation was still left. This is roughly tested by asking the patient whether she can no longer read the J #1 at the ordinary reading distance—in which case we presume that the accommodation is already fully paralyzed and the patient ready for refraction. With this procedure, we can not be sure that the result of the refraction obtained is the true measure of the total amount of hyperopia; for, if there has been a considerable amount of residual accommodation left, our deductions later in prescribing the correction to be worn will not be correct.

For example, a young individual—say, about 20 years old—complains of headache, blurring of the types when reading even for a short time, etc., has vision of 20/20 and J #1. We try fogging and the most that can be uncovered is .50 or .75D. We are convinced, however, that an error of this amount would hardly give rise to such symptoms as the patient complains of, especially when the individual is young and apparently in good health. Refraction is then done under a cycloplegic. But even if the vision were 20/20 and the patient could no longer read J #1, it would not yet be quite accurate to conclude that there is no error. For the accommodation might have been incompletely relaxed; i.e., not enough to see J #1 at  $33\frac{1}{3}$  cm. but enough to see 20/20. If he can do this with  $+1.$  or  $+1.50$  then we know that 2.D or 1.50 D of accommodation is still active.

Another point which we have observed is that low errors which would otherwise remain latent or comfortably overcome in young and healthy individuals may become manifest or may give rise to symptoms of ocular strain under such conditions as overwork, physical exhaustion, convalescence, or lowered bodily resistance due to foci of infection. We should have this in mind before prescribing glasses so

as to avoid burdening the patient with an unnecessary expense and subjecting him to an equally unnecessary discomfort of wearing a correction that is practically useless.

Hyperopes do not usually accept their correction as readily as the myopes and they would insist that they can see better without the glasses than with them. It is our routine practice to anticipate this of the patients and explain to them that they have to wear the correcting lenses if they expect to be relieved of their headache, ocular pain, and other symptoms which are the direct results of the strain entailed by the use of the eyes in the presence of an uncorrected error of refraction. After all, in these cases of hyperopia with or without astigmatism, the glasses should be considered more as a therapeutic than as a visual measure.

Not infrequently these patients, after the initial relief consequent to the use of the hyperopic correction, feel that their eyes are again normal and strong, and so gradually forget to wear the glasses and eventually discard them altogether. After a few months they come back complaining that their glasses no longer fit them. They are again bothered, (regardless as to whether or not they wear their glasses) by headaches and by the other symptoms they used to have. Our procedure is to put them again under a cycloplegic and advise them to wear their glasses constantly.

In the correction of supposedly myopic errors (simple or associated with astigmatism) in young or older individuals, especially when the amount of error is low and symptoms of strain are present, we invariably do a cycloplegic refraction; for, at times, errors for which the patients accept minus sphere or cylinder, turn out to be hyperopic when the accommodation is relaxed. Illustrative cases:

Case 1,—B.L., 14 years old, single. Complains of dizziness and headache.

O.D. = 20/25 — 4. with — .50 ax 180° = 20/20

O.S. = 20/25 — 3. with — .50 ax 180° = 20/20

Under atropin cycloplegia

O.D. = 20/40 with + .75 ax 90° = 20/20

O.S. = 20/40 with + .75 ax 90° = 20/20

Post cycloplegic refraction—

O.D. + .50 ax 90°

O.S. + .50 ax 90°

Case 2.—E.V., 35 years old, single. Came because of headache and dizziness. Has glasses prescribed by an optician.

O.D. = —.50 ax 180° = 20/20

O.S. = 20/20 Fogging unsatisfactory.

Refraction under atropin:

O.D. = 20/70 with + 1.00 ax 90° = 20/20

O.S. = 20/50 with + 1.00 ax 90° = 20/20

Post-cycloplegic refraction—

O.D. + .75 ax 90°

O.S. + .50 ax 90°

Before leaving this subject of refraction among the young, I should like to point out that those with moderately high myopia, especially when associated with astigmatism—those who have not been wearing their correction or who will be using their

correction for the first time or who have been wearing an insufficient correction for a long time—generally cannot have their vision corrected beyond 20/30 or 20/40 (ametropic amblyopia); but, after the administration of a series of strychnine or thiamin injection, their visual acuity is improved and the correction could be brought down to 20/20 and we give the prescription for the glasses then. We have had several illustrative cases of this condition:

Case 3.—A.L., 24 years old, medical student. Lost her glasses during the liberation.

O.D. = 20/200 with — 2.50 = 20/40

O.S. = 20/200 with — 3.50 = 20/30

Thiamin chloride 25 mgms. daily for 10 days.

After the administration of thiamin

O.D. = 20/200 with — 2.50 — .75 ax 180° = 20/20

O.S. = 20/200 with — 3.50 — .50 ax 180° = 20/20

Case 4.—V.C., 22 years old, Senior student Nurse, North General Hospital. Has been wearing glasses since 8 years ago.

O.D. with her glasses on — 3.50 = 20/200

O.S. with her glasses on — 3.50 = 20/200

Refraction:

O.D. — 6.00 — .75 ax 180° = 20/25

O.S. — 6.00 — .75 ax 180° = 20/25

Refraction after administration of strychnine

O.D. with — 5.50 — .50 ax 180° = 20/20

O.S. with — 5.50 — .50 ax 180° = 20/20

Case 5.—C.J., 18 years old student, Pagsanjan, Laguna

O.D. = with glasses worn — 5.50 = 20/100 ) She has been wearing  
O.S. = with glasses worn — 5.50 = 20/70 ) this correction for the  
last 7 years.

Refraction:

O.D. with — 7.00 — 2.50 ax 90° = 20/40

O.S. with — 6.00 = 20/40

Was given a series of 10 injections of strychnine sulphate and another refraction done afterwards with the following results:

O.D. — 8.00 — 1.25 ax 165° = 20/20

O.S. — 6.00 — 1.50 ax 45° = 20/20

The real work of the refractionist has to do with those who are nearing the presbyopic age and not aware of an error of refraction which they could have overcome previously, begin to have the most annoying symptoms, general or ocular, on doing their accustomed near-work. For example, a patient who used to be able to do any amount of near-work comfortably during his younger years, would at about the age of 37 or 38 begin to suffer from dizziness, headaches, and at times even nausea accompanied by cold clammy perspiration. This latter symptom is induced by a fear that they may be suffering from some serious ailment like hypertension and that an

attack of unconsciousness might even be impending. This is especially true of those with a nervous or easily excitable temperament.

When the hyperopia, with or without astigmatism, is manifest; or when it becomes manifest by fogging, the patient generally accepts the glasses uncomplainingly. However, those in whom the hyperopia remains latent so that vision registers 20/20 or even 20/15, but in whom the near correction varies from what should be expected according to the age of the patient, are bound to have trouble if the lenses prescribed are just plano for distance and uncorrespondingly high for near vision. In these cases, we take time and patience to do fogging or refraction under cycloplegia; and not infrequently we are able to uncover a considerable amount of hyperopia, alone or with astigmatism.

An illustrative case is that of a patient 49 years old who, in spite of the glasses given her by an optician, suffered from headaches every time she used the glasses for reading even for short periods. Her glasses were plano for distance but the near correction was +2.75 sp. Without glasses this patient could see 20/20 and even 20/15 but after fogging she accepted a +1.00 and +1.25 sp. for distance. As her accommodation was evidently strong, we just prescribed +.75 and +1.00 for distance and reduced her near correction to +1.75.

Nor are the hyperopes the only ones that have trouble as they approach the presbyopic age. Myopes, especially those with astigmatism, who have worn their corrections constantly, are apt to be bothered by dizziness on doing near work when they pass 40. As these patients have been able to see well with their glasses both far and near until then, they are not aware that other changes have taken place in their eyes, making it impossible for their distant correction to be worn unchanged for near work any longer. A physician 41 years old who had been wearing a minus spherocylindrical combination for distance, began to be bothered by severe dizziness. Thinking that his glasses needed a change, he had these checked; and a slight change was made in the cylinder. However, even with this, the dizziness continued. The trouble proved to be that, although this patient was 41 years old, no provision had been made for the presbyopic change. Just because he had been able to see J No. 1 at first glance, he had not been aware of the change.

In correcting presbyopia, it is preferable to undercorrect, especially when the correction is to be worn for the first time. Too often, the tendency is to give as much as the patient would accept, and the result is overcorrection. These many patients can not tolerate when first they begin to use the correction.

Cases of anisometropia, especially when one eye is myopic and the other hyperopic or normal, come late for their presbyopic correction because one eye can compensate for the other so that vision is apparently just as good for distance as for near, although they have lost single binocular vision.

Lastly, before we give out a prescription for glasses, we always check one examination with a subsequent one; and, in case we use cycloplegia, the results of at least three examinations are taken into consideration together with the near point of accommodation.



# A MODIFIED FIELD STAIN FOR RAPID STAINING OF THICK AND THIN BLOOD SMEARS<sup>1</sup>

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## INTRODUCTION

The sudden outbreak of the war in the Pacific between Japan and the United States on December 7, 1941, took us by surprise. We found ourselves without a sufficient stock of materials, especially stains for malaria; and, because communications were cut off, orders from abroad could not come. Malaria smears that had to be examined in our laboratory increased tremendously even while the Bataan campaign was still raging, because of the great number of civilian refugees returning from evacuation centers, when Bataan surrendered and thousands of prisoners of war almost all sick with malaria were released, we were faced with an unprecedented shortage of staining materials for malarial parasites. By the middle of April, 1942, our stock of Wright and Giemsa stain had almost completely disappeared. At the same time, all our attempts to replenish our supply from any possible source proved in vain.

We were therefore, forced to evolve a substitute stain from whatever materials we had on hand, in order not to paralyze the work in the Department. Our efforts resulted in the discovery of the stain, which is the subject of this report.

From the very beginning, we had the following aims in mind: (1) to eliminate methyl alcohol, if and whenever possible, because of its scarcity at the time; (2) to shorten the staining process without sacrificing clarity of blood picture, a particularly important consideration in handling a large number of smears at one time; (3) to make the technic less delicate; and (4) to devise a means whereby a rigid economy in the use of the stain could be attained. With all these objectives, we began making different mixtures of stains out of whatever materials we had on hand, then modifying them, trying one vehicle after another, and finally testing different mixtures in varying proportions with different timing.

The literature on different blood stains already used in the past helped us a lot in solving our problem. Thus, from the monochromatic stain of Manson, we were able to pick the borax solution which we found to be the most suitable vehicle for an aqueous stain, eliminating at the same time the methyl alcohol as we had intended. We also noted that even if the Manson stain, was diluted to 1:10 or even to 1:20, malarial parasites in thin smears could be stained in only 5 to 10 seconds. We later discovered that this speed of staining malaria parasites had also been attained successfully by Field (1940, 1941) but only in thick smears by means of aqueous mixtures with isotonic buffer solution as vehicle. With 2.5% borax solution

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<sup>1</sup> Read at the 39th Annual Convention of the Philippine Medical Association, Manila, May 7-11, 1946.

<sup>2</sup> Dr. E. Y. Garcia resigned on October 15, 1944 and is no longer with the Institute of Hygiene.

as vehicle, however, we tried to prepare a new mixture, which may be considered as a modification of Field stain; and we found that we could stain beautifully malarial parasites not only in thick but also in thin smears.

Thus, after a considerable time spent in preliminary trials, we adopted tentatively the formula of our mixture, which we later subjected to continuous testing, varying the timing of staining every now and then from 5 to 15 seconds to find out the most appropriate time that would produce the most vivid picture of the cellular elements of the blood and of the malarial parasites. After several weeks of constant and critical trial, we noted that the staining quality of the stain improved gradually as the stain was ripened. As a result, we no longer felt the shortage of Wright and Giemsa stains. About the middle of August, 1942 we decided to adopt the present formula; and, throughout the Japanese occupation, we used this stain satisfactorily in our routine diagnosis, and even in class work, for both thick and thin films.

### COMPOSITION AND PREPARATION OF THE STAIN

There are three separate solutions in this stain when used for fresh thin blood films:

- I. Methyl alcohol.—Absolute or 95% for fixation. (Old thin smears and thick blood films do not need fixation, so methyl alcohol can be dispensed with; but this can not be done with fresh thin smears.)
- II. Basic stain
 

Brilliant cresyl blue .....	0.35 Gm.
Azure II .....	0.50 Gm.
Borax solution 2.5% .....	100.00 cc.
- III. Acid counter-stain
 

Eosine-Y (Water soluble) .....	0.20 Gm..
Distilled water .....	100.00 cc.

The basic stain is best prepared by heating 100 cc. of distilled water in a flask. When near boiling, 2.5 grams of borax powder is added. Borax powder dissolves faster in hot water. To this solution 0.35 gm. of brilliant cresyl blue, first ground in a mortar, and 0.50 gm. of Azure II are added and shaken very well. The flask is plugged with cotton and the mixture filtered after being allowed to stand 24 hours. The stain is ready for use, but better results are obtained if it is allowed to ripen for a week or more. It may not be necessary to re-filter the solution until several weeks later. It will maintain its good staining quality for many months more.

The counter-stain is more easily prepared by simply adding 0.20 gm. of eosine-Y (water soluble) powder to 100 cc. of distilled water in a flask, shaking the solution and filtering it. This solution is at once ready for use. It is advisable, however, to have a 1% eosine solution kept in stock from which to prepare a 0.2% solution by mere dilution. This stock solution can remain good for an indefinite length of time.

To effect rigid economy in the use of the stain, a very important consideration during the Japanese occupation, we found it best to place the solutions in Coplin jars with cover, using the same solutions over and over again. A very fine layer of metallic scum may form on the surface of the basic stains especially when left unused in the Coplin jar for some time, but this may easily be removed by scooping the surface with the edge of a slide. Although no scum forms on the surface of the

counter-stain, this solution when constantly used lasts for a shorter time. This is due to the constant admixture of small amounts of the basic stain carried over by the slide in the staining process.

### TECHNIC OF STAINING

Thick and thin smears may be prepared together on one slide by the simple and ordinary conventional procedure; taking all the usual precautions as to cleanliness of the slide; sterilization of the finger and prickling needle; rapid smearing before coagulation begins; protection from dust; rapid drying of the film with the aid of an electric fan, a lighted bulb, or sunshine. It is ideal for the thin smear to be as thin as possible to avoid overlapping of the red blood cells, and for the thick smear to be not more than 50 micra in thickness, spread evenly with the aid of one corner of another slide in a circular area about 5-7 mm. in diameter.

Technic for staining fresh thin smears alone:

1. Dip in methyl alcohol for a second and wash in running water.
2. Dip in the basic stain for 6 seconds or just count 15 with moderate speed and then wash in running water.
3. Dip in the counter-stain for 4 seconds or count 10 with the same speed and wash in running water.
4. Dry in air by placing vertically in a rack and examine under oil immersion.

Technic for thick smears and old thin films:

The same procedure is followed as above, but fixation with methyl alcohol (or step No. 1 above) after dehemoglobinization is omitted. This can be done simply with tap water. When partial dehemoglobinization of the thicker portion of any thin smear is desired, it may be dipped directly into the basic stain and then washed in running water for a little while. But it should not be held under the tap too long; otherwise, all the hemoglobin and the stain may be washed off. Old thin films are best treated this way and then counter-stained.

When thin and thick smears are together in one slide, the thin smear is first fixed in methyl alcohol and then passed into another Coplin jar full of water, immersing the whole slide to dehemoglobinize the thick smear while at the same time washing the thin smear. The rest of the procedure is the same as that described above.

Under ideal conditions, if the technic above described is followed, the cellular elements of the blood and many haemoprotozoan parasites are very vividly stained and sharply differentiated. By this technic of dipping the smears in the stain placed in Coplin jars, we do not only economize on the stain and avoid the appearance of precipitates on the slide; we also obviate the danger of making a mistake of staining the wrong face of the slide. This happens sometimes when the ordinary method of pouring the stain over the smear is employed as in Wright or Giemsa staining.

This aqueous stain has an added advantage. Used slides are easier to clean, because the slides themselves are never stained, as when the Giemsa or the Wright stain is used. There are, of course, various difficulties to be encountered; but these may be overcome through experience in the use of the stain, especially in timing. Corrections may be made by destaining or decolorizing the stain with alcohol, washing with running water, and restaining it.

## COMMENTS

Like other blood stains evolved in the past and now available under various names, our stain is polychromatic. It is based on the well-known principle of Romanowsky, who in 1891 first combined eosine and methylene blue to produce a mixture that exhibits great selective staining properties especially for malarial parasites. Although the true chemistry of the mixture was not known recently, Romanowsky soon realized that the mixture of the two dyes he had produced did not merely stain the nuclei of the parasite red and the cytoplasm blue, but also that this selective staining quality of the mixture grew with age.

After Romanowsky, other investigators tried to produce other blood stains; but they could not depart very far from the original Romanowsky stain—the eosine-methylene blue combination. As a matter of fact, Conn, in a review of the different biological stains (1925), stated that almost all present-day blood stains are simply modifications of the Romanowsky formula. Notable among these are those of Jenner (1899), Leishman (1901), Wright (1902), Giemsa (1904), and McNeal (1922, 1925). These stains, which are known in the market by the names of their originators, are all based on the Romanowsky principle. They differ only in the manner of preparing the eosine-methylene blue mixture or compound.

Thus, for instance, Jenner produced, in 1899, eosine-methylene blue by mixing equal parts of 1% untreated or unpolychrome methylene blue and 1.2% eosine. To Jenner, it must be remembered, belongs the honor of being the first to make use of the precipitated compound stain formed from the mixture which he later dissolved in methyl alcohol. This stain, however, lacked the nuclear staining principle or the true "Romanowsky effect" due to the quality of the methylene blue that he used, which was the untreated methylene blue.

In 1901, Leishman improved on it by utilizing polychrome methylene blue which he prepared by heating it with 1/2% sodium bicarbonate for 12 hours at 65°C, letting the mixture stand for 10 days, and mixing it with an equal part of 0.1% aqueous eosine. The Wright stain (1902) is almost the same as the Leishman, differing only in the manner the polychrome methylene blue is prepared—that is, by heating it only for an hour in flowing steam.

In 1904, however, Giemsa departed a little further from the techniques of his predecessors by obtaining first methylene azures in purer form and combining them with eosine. The resulting products are now known in the market as Azure II and Azure II-eosine, the main components of the well-known Giemsa stain.

Later in 1922, McNeal produced a tetrachrome blood stain, almost exactly the same as that of Giemsa, but which he prepared more scientifically by mixing definite proportions of methylene blue, methylene violet, methylene azure, and eosine. The most important of these constituents of McNeal tetrachrome stain is the methylene azure now known in the market as Azure I and is a variable mixture mainly of Azure A and B.

At this point, it is worth while to note that in all the above described stains, now available in the market in pure powder form, methyl alcohol is used as the vehicle for dissolving the powder stain, in which are combined both the fixing and staining qualities. Except with Giemsa, which requires preliminary fixing and takes longer to stain—from 30 minutes to 1 hour—the staining process takes about 5 minutes.

Lately, however, various workers have shifted to aqueous preparations of blood stains, perhaps with the same purpose of doing away with methyl alcohol as we hoped to do at the start of this work. Among these workers, we found that the most recent was Field, who, in 1940, first reported a rapid method of staining malarial parasites in thick blood films for only a few seconds by using 1% brilliant cresyl blue in isotonic buffer solution. In 1941, Field reported another rapid method of staining with more vivid differentiation of the malarial parasites by the use of basic mixture and a counter-stain but applying it only to thick blood films. The basic mixture of Field was composed of 0.18% methylene blue and 0.10% Azure I in isotonic buffer solution adjusted to pH 6.6, while the counter-stain was a 0.20% eosine in the same kind of vehicle adjusted to the pH. Although this is merely a modified Romanowsky stain, it differs radically from the latter in that the two solutions are not mixed but are separately applied and allowed to interact in the film itself.

Basically, our stain is like the Mason monochromatic stain, which consists of a simple 2% solution of methylene blue in 5% borax. But we modified it afterwards and made it polychromatic by the use of a counter-stain. Always using 2.5% borax solution as vehicle we tried the methylene blue by Manson, Azure I used by MacNeal, Azure II used by Giemsa, the brilliant cresyl blue used by Field in all conceivable combinations and proportions. We finally arrived at the present formula of our basic mixture with 0.2% eosine in distilled water as our counter-stain.

Very much like Field, our stain, as finally adopted and described here, consists of two aqueous mixtures separate from each other—a basic mixture and a counter-stain. Applied separately 6 seconds and 4 seconds respectively, they produce a very high degree of clarity of the cellular elements of the blood and haemoprotozoan parasites, almost free from distortion and with vivid differentiation especially in thin smear. The red blood cells maintain their perfect contour and take up a purplish blue or greyish blue color, the nuclear chromatin of the malarial parasites turn red or lilac red, while the cytoplasm becomes deeper blue. The malarial pigments retain the same natural color as in other blood stains. The leucocytes are even more beautifully stained. Their contour is well shown in faintly purplish outlines. The internal structures of the nuclei are vividly differentiated, taking different shades of lilac or purple; and the cytoplasmic granules take their characteristic colors—red for eosinophiles, purplish for neutrophiles, and bluish for basophiles. The cytoplasm of the lymphocytes and mononuclears stains like the neutrophiles. The blood platelets appear lilac with purplish border. The thinner the smear, the clearer and the more vivid are the structures of the cellular elements of the blood and the more distinct are the malarial parasites.

In the thick smear which has been sufficiently dehemoglobinized, the same tinctorial reactions appear, although there is slight dimming or haziness of the border of the leucocytes and of the malarial parasites. The lysed red blood cells, however, appearing as a thin purplish blue cloudiness, furnish a good background for the malarial parasites and leucocytes and make them clearly visible. This is not only because of their greater concentration per microscopic field, but also and mostly because of the marked contrast between the stained elements and their background.

It may be added here that in thick smear, the malarial parasites tend to appear smaller than in fixed thin smears, and to be obscured, diffused, or distorted. This

renders species diagnosis more difficult. Their numerical advantage per unit field and the more distinctive appearance of malarial pigments, however, render it more certain to make at least a positive or negative diagnosis of malaria than is thin smears, especially in extremely light infections or in those that have received treatment.

With this stain, young red blood cells are even recognizable, especially in partially dehemoglobinized smears. We attribute this to the brilliant cresyl blue in the basic stain. To experienced workers in malariology and hematology, this is definitely more an advantage than a drawback; for it affords a check-up for the supposedly greater affinity of malarial parasites especially *P. vivax* to young red blood cells. If this affinity is true, then spotting of malarial parasites may even be made easier through these recognizable young red blood cells. More than that, as in Field stain, the tendency for the appearance of precipitates is practically nil. We have also used our stain for splenic, bone marrow, and brain smears, and in staining microfilaria and trypanosomes with satisfactory results. Above everything else, our stain is undoubtedly very economical, for the same solutions placed in Coplin jars can be used over and over again for months without impairing its staining quality and without even the necessity of pH control.

Our stain, then, closely resembles Field stain but differs radically from it chiefly in the isotonicity and pH of the solutions and in the vehicle used. Field relied very much on the isotonic buffer solution which he used as vehicle for both basic stain and the counter-stain and both adjusted to pH 6.6. We, on the other hand, attribute our success to the 2.5% borax solution which we use as vehicle for our basic mixture. Because of this, our stain is very much less sensitive to isotonicity and pH control, whether the stain be freshly prepared or old. Alone, 2.5% borax solution has a pH of 9.5; with the mixture, it has a resulting pH of 9.0, which is definitely basic or alkaline.

Our counter-stain, on the other hand, is a simple 0.20% eosine solution in distilled water, not in isotonic buffer, with a resulting pH of 5.5 which is decidedly acidic—very different, for this reason, from the counter-stain of Field. Briefly stated, the 2.5% borax solution probably exerts a very good mordanting effect on the basic mixture of 0.35% brilliant cresyl blue and 0.50% Azure II a solution very rich in methylene azures and produces an excellent differential staining with 0.20% eosine in record speed of only 10 seconds.

We feel justified in reporting on this modified Field stain and on its application not only to thick blood films but also to thin smears. For, in this stain, we have found the three most important desiderata of a good stain for blood and hemoprotozoan parasites, namely—(1) good clarity of blood picture allowing easy and accurate diagnosis of malaria, (2) rapidity of staining, and (3) economy in the use of the stain. It must be emphasized, further, that with it, staining can be done satisfactorily even on unfixed smears—that is, without the use of methyl alcohol, if none is available. The technic of staining is very simple and not at all delicate. Even students trying to learn staining for the first time can get fairly good results with it.

It must be added, however, that thick and thin smears stained with this stain fade easily, especially after several examinations under oil immersion and repeated wiping with xylol, because the stain is easily removed. Although this makes it easy to clean used slides, it makes it difficult to keep slides for permanent file or for

detailed morphological studies without further re-staining them with Wright or Giemsa. By this combined or the so-called "panoptic" process, the tinctorial characteristic of the parasites and the cellular elements of the blood show more clearly than by Wright or Giemsa alone.

### CONCLUSION

A modified Field stain for the rapid and accurate diagnosis of malaria in both thick and thin smears is here described. It is particularly useful in routine laboratory diagnosis and is very economical. Its usefulness may also be taken advantage of in studies of bone marrow, splenic, and brain smears; in other hematological studies; and in staining other haemoprotozoan parasites such as trypanosomes and microfilaria.

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## Editorial

### THE MEDICINE OF TOMORROW

The type of medical practice follows the pattern of the social structure from which it has sprung. Thus the earlier physicians were linked with sorcerers, barbers, and priests. In the course of social evolution and civilization, there appeared the figure of the family physician, who was not only the healer of all kinds of ailments afflicting the families under his care, but also a consultant on family and personal matters. This familiar figure is fast disappearing due to the amazing developments in the fields of science and industry. The tremendous progress at-

tained during the last quarter of the century in all branches of human endeavor, specially in the science of medicine, has made it utterly impossible for one single physician to master the different branches of the art of healing. And we venture to predict the complete disappearance of the traditional family physician, the general practitioner.

The family doctor has evolved with the social structure. Before the era of industrialization, no one felt the need of social security. For, out of every five individuals, four were independent farmers; and only one was dependent upon his employment in some sort of organization. But, with the advent of modern methods and technics that led to the development of assembly lines and mass production, the situation was reversed. Now, out of every five individuals, four are dependent upon their employment in one organization or another: and only one can consider himself independent of industrial fluctuations. This has forced individuals to form groups for security.

Likewise, the physician today finds himself more and more dependent upon his colleagues in performing his task. For society demands the best available medical care which highly skilled and trained men alone can give. And, in order to render the best medical service, physicians trained in the different branches of medicine will have to group themselves into a sort of medical center where patients may come for the relief of their ailments.

Group practice, in short, will inevitably replace the present general practitioner. But group practice can not render the best service to the greatest number, because the cost of medical care will necessarily be very high. The individual physicians have spent much time and energy to become proficient in their respective lines, and the modern methods of diagnosis and treatment also require large sums of money. On the other hand the bulk of the population demands a certain degree of health security, so that in times of distress, they may call on the best medical service available. The medical profession can answer this demand of society only by the adequate training of the individual physician along modern methods, and by group practice. And, in order to make their services available to the greatest number of individuals in the low-income group, some sort of cooperative enterprise in the form of pre-paid medical service must be organized in the different communities. This is the medicine of tomorrow.—A. B. M. S.

## Miscellaneous

### ABSTRACTS FROM CURRENT LITERATURE

#### ABSTRACTORS

Isabelo Concepcion, M. D.  
Walfrido de Leon, M. D.  
Felisa Nicolas-Fernando, M. D.  
Carmelo Reyes, M. D.

*Summary of Some Known Facts Concerning the Common Cold*, by A. C. Hilding, M.D.,  
*The Annals of Otology, Rhinology and Laryngology*, 53:457 (September) 1944.

The author made the following conclusions:

These facts about the common cold seem to be fairly well established. It is a widespread, contagious, epidemic disease which occurs in all climates, especially in the autumn and spring months. It is spread by droplet infection and can be controlled by isolation like other communicable diseases. It is caused by a specific virus and is frequently followed immediately by complications due to bacterial infection. These are purulent rhinitis, otitis media, laryngitis, bronchitis. Chilling and exposure are definite etiologic factors probably because of prolonged reduced temperature in the nasal mucosa. Immunity following attacks is very brief both as far as the virus and the complicating bacteria are concerned. Vaccination is unsuccessful, apparently because both the virus and bacteria have such poor antigenic properties.

Prevention by the giving of vitamins, or by so-called "hardening processes" are also largely unsuccessful.

The local pathology centers about injury to the epithelium, presumably by direct action of the toxins on the epithelial cells, and consists in the destruction of the superficial cells. There is a marked submucosal cellular reaction. The secretion increases tremendously in volume and contains a lower percentage of mucin. There is at least some indication that the lysozyme content decreases even before the volume increases. The change in pH is small, if any, and tends toward the alkaline side.

Systemic pathological changes are largely unknown.

Treatment is not very successful and consists principally in symptomatic measures and attempts to prevent complications.—F. N. F.

*Prolonging the Effect of Penicillin by Chilling*, by Lt. Commander Max Trumper, H(S), U.S.N.R. and Commander Gershon J. Thompson, MC(S), U.S.N.R., *J.A.M.A.* 130:627 (March) 1946.

The ephemeral power of penicillin has set clinicians and scientists working on methods of prolonging its effective action, aiming to make unnecessary the renewal of intramuscular doses every few hours. Effective and prolonged blood levels have been obtained by using a penicillin beeswax-peanut oil mixture.

#### TECHNIC

The chilling procedure may be summarized by the following directions which were issued to hospital ward personnel:

1. Two hours prior to the injection of penicillin, fill the ice bag 90 per cent full of crushed ice.
2. Before closing the bag squeeze out all excess air and repeat one hour later, so that the bag can be molded around the deltoid muscle.

3. Enclose the ice bag in the shoulder bag and place on the upper arm and shoulder, fasten it to the vest and see that it is maintained there for two hours.

4. Chill the bottle of penicillin (100,000 units in 10 cc. of saline solution) in crushed ice for at least five minutes prior to the injection.

5. With a 1/2 inch hypodermic needle in a cool syringe, inject the chilled penicillin slowly into the deltoid muscle.

6. Replace the ice bag immediately and maintain it around the deltoid area for twelve hours, renewing the ice every few hours as needed.

The authors gave the following Summary and Conclusions:

One hundred patients with uncomplicated gonococcal urethritis were treated with a single dose of from 50,000 to 100,000 units of penicillin dissolved in saline solution and injected into the deltoid muscle, which was chilled before and after the injection.

Results from dosages of 50,000 and of 70,000 units gave cures of 77.3 per cent and 85.7 per cent respectively.

The 100,000 unit dosage cured 91 per cent of the patients. This percentage compares favorably with the results obtained by others using multiple injections as well as the single injection of 100,000 units of penicillin in mixtures of beeswax and peanut oil.

It can be concluded from the high percentage of cures that the chilling technic prolonged the effective action of penicillin, reduced to one the number of injections required to treat uncomplicated gonorrhea and rendered that injection painless, all of which was accomplished without introducing any other foreign substance intramuscularly.—F. N. F.

*Oral Penicillin*, by P. Gyorgy, Katharine W. Evans, Elizabeth K. Rose, Josephine G. Perlingiero and W. F. Elias, *Pennsylvania Medical Journal*, 49:385-496 1946 p. 409.

Gyorgy and his associates compared the blood levels of penicillin in children after ingestion of aqueous penicillin solution and of buffered penicillin (mixed with sodium citrate.) Less irregular, higher and more prolonged blood levels were the rule after administration of buffered penicillin by mouth. As buffers aluminum hydrate gel was considered by the writers as a possible substitute for sodium citrate. The blood levels obtained were higher after ingestion of buffered penicillin than after the ingestion of capsules containing the penicillin-oil-beeswax mixture. However, trisodium citrate seemed superior to aluminum hydrate gel. The blood levels obtained after the use of 15,000 units of penicillin given intramuscularly do not differ materially from those observed following the use of 40,000 units of penicillin buffered with trisodium citrate administered by mouth. Given in doses which were approximately three times higher than the customary parenteral doses, penicillin by mouth proved to be therapeutically effective in pneumonia, in upper respiratory infections and their complications, in gonorrhea and in pyogenic cutaneous infections. It appears inadvisable to supplant parenteral with oral penicillin indiscriminately. Parenteral administration in their opinion still remains the method of choice, at least during the early acute phase in very sick patients with septicemia or meningitis.—F. N. F.

*Cancer and Caloric Restriction*, Editorial, *J.A.M.A.* 129:1169 (December 22) 1945.

Tannenbaum demonstrated that underfeeding—restriction of the ad libitum intake by approximately one third—invariably caused a significant reduction in the incidence of tumors in mice. Furthermore, the tumors of the underfed groups appeared, on the average, later than those of the full-fed groups.

Tannenbaum suggested that the inhibition of tumor formation through underfeeding (all components and caloric content being reduced proportionately) was due mainly to restriction of calories rather than to restriction of some essential components of the diet. In subsequent investigation only the carbohydrate content of the diet was restricted, while the protein, minerals and vitamins were maintained constant (caloric restriction per se) and yet the nature and extent of inhibition of tumor formation was similar to that observed in the earlier investigations. Tannenbaum concluded that any degree of caloric restriction may exert some inhibitory effect on the formation of tumors; however, the lower the caloric intake, the greater the inhibition.

Although nutrition may be of some value in the prevention of tumors, the evidence suggests that there is little likelihood that it is of practical help in controlling the growth of tumors.

This dependence of the genesis of tumors in mice on the caloric value of the diet would obviously suggest inquiry into its applicability in human cancer. Tannenbaum's review of the available insurance statistics suggests that persons of average weight or less are not as likely to develop cancer as are those who are overweight. Obesity and the consumption of more food than the body needs for its current activity appear to be contraindicated.

Other nutritional factors undoubtedly have some effect on the formation of tumors. Probably avoidance of overweight besides being of value prophylactically in diabetes, heart disease and arthritis, may aid in the prevention of many types of cancer occurring in man or, at least, delay the onset. The study of relationship of nutrition to the origin and growth of tumors appear to be a fruitful and possibly practical field of investigation.—F. N. F.

PROGRAM OF THE THIRTY-NINTH ANNUAL MEETING  
OF THE PHILIPPINE MEDICAL ASSOCIATION TO BE  
HELD AT STO. TOMAS UNIVERSITY GYMNASIUM MAY  
7-11, 1946, MANILA

SCHEDULE OF SESSIONS, VISITS AND ENTERTAINMENTS

TUESDAY, May 7, 1946.

8:00 a.m.—5:00 p.m.—Registration of Members (Gymnasium).

2:30 p.m.—First Meeting of the House of Delegates (Gymnasium)

4:00 p.m.—Tea Party offered by the President of the Manila Medical Society,  
Dr. Jose Y. Fors, to welcome the Guests, Delegates, and Members.  
St. Luke's Hospital, Magdalena St.

WEDNESDAY, May 8, 1946.

8:00 a.m.—Registration (continued)

9:00 a.m.—Opening General Session (Gymnasium)

Noon —Luncheon offered by the President of the Philippine Medical Association,  
Dr. Victorino de Dios, in honor of the guests and delegates.  
Ye Old Mansion, Gral. Solano St.

4:00 p.m.—Visit to the Emergency (Orthopedic) Hospital, Mandaluyong

THURSDAY, May 9, 1946.

8:00 a.m.—12:00 noon—Scientific Sessions.

(Section on Surgery;

Section on Medicine and Pediatrics;

Section on Ophthalmology and Otolaryngology).

4:00 p.m.—Visit to the First General Hospital, Phil. Army, Mandaluyong.

FRIDAY, May 10, 1946.

8:00 a.m.—12:00 noon—Scientific Sessions.

(Section on Hygiene and Public Health;

Section on Medicine and Pediatrics;

Section on Obstetrics and Gynecology).

2:30 p.m.—Second meeting of the House of Delegates, (North General Hospital)

4:00 p.m.—Visit to the North General Hospital, España.

SATURDAY, May 11, 1946.

8:00 a.m.—12:00 noon—Scientific Sessions.

(Section on Surgery:

Section on Medicine and Pediatrics.

N.B.—Papers not read in previous days may be read today.)

2:30 p.m.—General Business Meeting of the Association. (Election of Officers and their Installation). Members are requested to bring their membership cards.

1:00 p.m.—Closing Meeting of the House of Delegates.

OPENING GENERAL SESSION

Wednesday, May 8, 1946, 9:00 a.m.

Sto. Tomas University Gymnasium

Dr. Victorino de Dios, *Presiding*

Dr. A. S. Fernando, *Secretary*

- I. OVERTURE—  
Philippine Army Band
- II. INVOCATION—  
Very Rev. Fr. Eugenio Jordan, O.P.  
*Rector Magnificus, Sto. Tomas University.*
- III. WELCOME ADDRESS—  
Dr. Jose Y. Fores  
*President, Manila Medical Society.*
- IV. PRESIDENTIAL ADDRESS—  
Dr. Victorino de Dios,  
*President, Philippine Medical Association.*
- V. Awarding of a Gold Medal and a Citation to the late Dr. Candido M. Africa for his  
outstanding contributions to Medical Science.
- VI. ADDRESS BY THE GUEST OF HONOR—  
Hon. Elpidio Quirino,  
*Vice-President-Elect of the Philippines*
- VII. MARCH—  
Philippine Army Band

SCIENTIFIC SESSIONS  
SECTION ON SURGERY

Thursday, May 9, 1946. 8:12 a.m.

Chairman ..... Dr. Januario Estrada  
Secretary ..... Dr. Luis F. Torres, Jr.

Chronic Intussusception: Diagnosis And Treatment

Dr. Porfirio Recio

*Department of Surgery, College of Medicine, U. P.*

Report Of A Case Of Pulmonary Embolism After A Pelvic Operation

Drs. J. Z. Sta. Cruz and M. D. Peñas

*Department of Pathology, Faculty of Medicine and Surgery, University of Sto. Tomas.*

Tenoplasty And Tendon Transplantation as Treatment In Some Chronic Cases of Infantile Paralysis

Dr. Rodolfo Gonzales

*Department of Surgery, Faculty of Medicine and Surgery, University of Sto. Tomas.*

Cranial Metastases Of Carcinoma Of The Thyroid

Dr. Porfirio Recio

*Department of Surgery, College of Medicine, U. P.*

Report Of A Case Of Mullerian Duct Cyst In An Adult

Drs. J. Y. Fores and J. Z. Sta. Cruz

*Departments of Surgery and Pathology, St. Luke's Hospital.*

Surgical Management Of Carcinoma Of The Stomach

Dr. J. Y. Fores

*Department of Surgery, St. Luke's Hospital.*

The Management Of Prostatic Obstructions

Dr. Luis F. Torres, Jr.

*Department of Surgery, College of Medicine, U. P., and St. Luke's Hospital.*

Spinal Cord Injuries

Drs. Andres Zavalla and Victor A. Reyes

*Department of Surgery, College of Medicine, U. P.*

Acute Appendicitis: Diagnosis And Treatment

Drs. C. D. Franco and P. Recio

*Department of Surgery, College of Medicine, U. P.*

Bilateral Orchiectomy In Cancer of The Prostate

Drs. Luis F. Torres, Jr. and Pablo Morales

*Department of Surgery, College of Medicine, U. P.*

## Aspiration Biopsy: Its Value in Cancer Diagnosis

Drs. J. Z. Sta. Cruz and Mario Oca  
Department of Pathology, St. Luke's Hospital.

## Transurethral Resection In The Treatment Of Prostatic Median Bar

Drs. Luis F. Torres, Jr. and Pablo Morales  
Department of Surgery, College of Medicine, U. P.

## Blood Bank—Its Management At St. Luke's Hospital

Drs. J. Z. Sta. Cruz and J. Y. Fores  
Department of Pathology and Surgery, St. Luke's Hospital.

## Present Status Of Acute Appendicitis Based On A Study Of Cases At the North General Hospital

Drs. Francisco C. Guzman and Felipe Constantino  
North General Hospital

## Newgrowths Of The Gastrointestinal Tract: A Statistical Study

Drs. C. D. Franco and P. Recio  
Department of Surgery, College of Medicine, U. P.

## Ileo-Cecal Tuberculosis: An Evaluation Of The Progress In Its Management

Drs. C. D. Franco and P. Recio  
Department of Surgery, College of Medicine, U. P.

## SECTION ON MEDICINE AND PEDIATRICS

THURSDAY, MAY 9, 1946. 8-12 A.M.

Chairman ..... Dr. Victorino de Dios

Secretary. .... Dr. Mariano Alimurung

## Paratyphoid Fever Among Filipinos

Dr. Pedro Lantin  
Department of Medicine, Faculty of Medicine and Surgery, University of Sto. Tomas.

## Diet In Typhoid Fever

Dr. Pedro Lantin  
Department of Medicine, Faculty of Medicine and Surgery, University of Sto. Tomas.

## Clinical Observations On Post-War Pneumonias

Drs. Pedro Lantin, Aniceta Barcelon-Guevara, Mariano Alimurung and Raymundo Katigbak  
Department of Medicine, Faculty of Medicine and Surgery, University of Sto. Tomas.

## Report Of A Case Of Lymphogranuloma Venereum Simulating Dysentery

Dr. Victorino de Dios  
President, Philippine Medical Association.

## Splenomegaly In Malaria

Drs. A. G. Sison, R. J. Navarro and N. M. Santiago  
Department of Medicine, College of Medicine, U. P.

## Mediastinal Tumor Treated By Radiation (5 years follow-up. Report of 2 cases)

Dr. P. Chikiamco  
Department of X-Ray and Physical Therapy, Philippine General Hospital.

## Pneumococcal Meningitis Successfully Treated With Combined Penicillin And Sulfadiazine Therapy

Dr. Fe del Mundo  
Department of Pediatrics, Faculty of Medicine and Surgery, University of Sto. Tomas.  
Dr. Ester Sugang  
North General Hospital.

## Allergic Peritonitis: Presentation Of A Case

Drs. S. Ador Dionisio, J. A. Silva and P. C. Chavez  
Department of Medicine, College of Medicine, U. P. and Department of Laboratories,  
Philippine General Hospital.



Has Infantile Beri-Beri, Disappeared In Manila?

Drs. Moises B. Abad and Leon V. Pecache  
*Department of Pediatrics, College of Medicine, U. P.*

Hypoglycemia In Children

Drs. Renato Ma. Guerrero and Felix Estrada  
*Department of Pediatrics, Faculty of Medicine and Surgery, University of Sto. Tomas.*

Urotherapy In Urticaria: Further Studies

Dr. S. Ador Dionisio  
*Department of Medicine, College of Medicine, U. P.*

Blood Bilirubin Determinations As An Aid In The Differentiation Between Peptic Ulcer  
And Portal Cirrhosis In Gastric Hemorrhage

Drs. R. J. Navarro, P. Ignacio and J. A. Silva  
*Department of Medicine, College of Medicine, U. P.*

Subacute Lobar Pneumonia

Drs. Renato Ma. Guerrero and William Huang  
*Department of Pediatrics, Faculty of Medicine and Surgery, University of Sto. Tomas.*

Simplified Artificial Infant Feeding

Drs. Peregrino H. Paulino and Jose R. Jimenez  
*Indigent Children's Hospital, Bureau of Public Welfare.*

SECTION ON OPHTHALMOLOGY AND OTOLARYNGOLOGY

Thursday Morning, 8:12

Chairman ..... Antonio S. Fernando, M. D.

Secretary ..... Jose N. Cruz, M. D.

Chairman's Address—

Dr. Antonio S. Fernando,  
*President, Philippine Ophthalmological and Otolaryngological Society.*

Ocular War Injuries

Drs. A. R. Ubaldo and C. V. Yambao,  
*College of Medicine, U. P.*

Local Instillation of Penicillin in Acute Conjunctivitis

Dr. G. Farrales.  
*St. Luke's Hospital and Afable College of Medicine.*

Disturbances of Associated or Conjugate Ocular Movements

Dr. Geminiano de Ocampo,  
*St. Anthony's Hospital, Manila.*

Chronic Iridocyclitis with Occlusio et Seclusio Pupillae

Dr. H. Velarde,  
*College of Medicine, U. P.*

Retropharyngeal Abscess

Drs. A. R. Ubaldo and J. N. Cruz,  
*College of Medicine, U. P.*

Practical Considerations in Refraction

Dr. Felisa Nicolas-Fernando  
*North General Hospital, Manila*

Local Instillation of Penicillin in Chronic Suppurative Maxillary Sinusitis

Dr. Jesus Tamesis,  
*North General Hospital, Manila*

Foreign Bodies of the Air and Food Passages

Dr. Jose N. Cruz  
*College of Medicine, U. P.*

The Fogging Method of Refraction

Dr. Geminiano de Ocampo,  
*St. Anthony's Hospital, Manila.*

## Acute Epiglottitis

Dr. C. V. Yambao

College of Medicine, U. P.

N. B.—On Friday and Saturday from 8—12 in the morning there will be demonstrations in North General Hospital and Phil. General Hospital, of Slit-lamp microscopy, Ophthalmoscopy, Direct Laryngoscopy, etc. as well as an operation on nasal accessory sinuses and chronic glaucoma by specialists chosen by the Committee on Postgraduate Course of the P. O. & O. S. for the benefit of the members of the Association. This committee consists of Drs. Edmundo Reyes, *chairman*, Jesus Eusebio and Cesar Maloles, *members*.

## SECTION ON HYGIENE AND PUBLIC HEALTH

FRIDAY, MAY 10, 1946. 8-12 A. M.

*Chairman* ..... Dr. Bienvenida P. Caro*Secretary* ..... Dr. Rosales

## The Public Health Laboratory, Manila Health Department

Dr. A. P. Roda

Section of Public Health Laboratory

## Studies on the Treatment of Industrial Coconut Waste

Dr. P. I. de Jesus

Institute of Hygiene, University of the Philippines,

P. E. Chavez, B.S.C.E.,

Bureau of Health

## Modified Field Stain for Rapid Staining of Thick and Thin Blood Smears

Drs. T. P. Pesigan and E. Y. Garcia

Department of Parasitology, Institute of Hygiene, U. P.

## Biological Assay of Annatto (Bixa Orellana) for Vitamin A Activity

Drs. P. I. de Jesus and R. Lim

Institute of Hygiene, U. P.

## Penicillin in the Treatment of Gonorrhea and Syphilis

Lt. Col. Alonso F. Brand

U. S. Public Health Service, Venereal Disease Control Adviser, Office of the American High Commissioner.

## Simple Qualitative Tests for Adulterated Fresh Milk

Dr. Segundino G. Jao

Section of Industrial Hygiene, Drugs and Laboratories.

## The Advisability of Using Chemical Preservatives in Soft Drinks

Dr. A. P. Roda

Section of Public Health Laboratory

## Modern Trends in the Therapy of Gonorrhea and Syphilis

Dr. Jaime O. Quiazon

Division of Social Hygiene, Manila Health Department.

## Venereal Disease Control in the Philippines After the Liberation

Dr. Trinidad Yusay

Venereal Disease Control Section, Bureau of Health, and

Dr. Florencio Z. Cruz

Division of Social Hygiene, Manila Health Department.

## The Carrier State Among Food Handlers and its Relation to the Incidence of Intestinal Infections in the City of Manila

Dr. A. P. Roda

Section of Public Health Laboratory.

## The Mazzini's Flocculation Test—A Comparison With the Kahn and Kolmer Tests—Preliminary Report

Drs. J. Ramirez, J. Tanquintic and Miss F. Catanjal

## A Report of the Serological Findings of Cerebro-Spinal Fluids

Drs. J. Ramirez, J. Tanquintic and Miss F. Catanjal

The Bacteriological Examinations of Soft Drinks

Drs. A. P. Roda and R. Valdes  
Section of Public Health Laboratory.

Biological Assay for Thiamin of the "Carabao" Variety of Philippine Mango (*Mangifera Indica* L.)

Drs. S. G. Jao and P. I. de Jesus  
Institute of Hygiene, U. P.

Biological Assay for Thiamin of Three Varieties of Rice Grown in the Philippines

Drs. P. I. de Jesus, and S. G. Jao and M. Gutierrez  
Institute of Hygiene, U. P.

The Incidence of Intestinal Parasitism Among Food Handlers

Drs. P. Calubaquib and Mr. H. Rolda  
Section of Public Health Laboratory.

*Digenia Simplex* as a Substitute in the Treatment of Ascariasis

Drs. H. Lara, T. M. Gan, M. Y. Matias, and A. C. Reyes  
Department of Epidemiology, Biostatistics and Public Health Administration, Institute of Hygiene, U. P.

SECTION ON MEDICINE AND PEDIATRICS

FRIDAY, MAY 10, 1946. 8-12 A. M.

Chairman ..... Dr. Daniel Ledesma  
Secretary ..... Dr. Jose G. Cruz

Report of the First Case of Intestinal Heterophyidiasis Diagnosed in the Philippines

Drs. P. D. Gutierrez and A. A. Lozano  
Department of Medicine, Philippine General Hospital.

Evaluation of Diets Served to Woman Students of the University of the Philippines

Drs. P. I. de Jesus and S. G. Jao  
Institute of Hygiene, U. P.

Report of a Case of Polycythemia Vera

Drs. Jose R. Cruz, Elpidio Gamboa and Emiliana Escosa  
North General Hospital.

Incidence of Cardiac Arrhythmias

Dr. Jose M. Barcelona  
Department of Medicine, College of Medicine, U. P.

The Treatment of Pneumonia in Children—A Study of 400 Cases

Dr. Fé del Mundo  
North General Hospital

The Bromsulphalein Test in Liver Dysfunctions

Dr. Medina Cue  
Section of Clinical Laboratory and  
Dr. Mariano Alimurung  
Department of Medicine and Surgery, University of Sto. Tomas.

Megakaryocytic Reaction Localized in the Bone Marrow: Report of New Hematologic Syndrome With Observations on the Origin and Development of the Megakaryocytes and on the Derivation of Platelets

Dr. Victorino de la Fuente  
Section of Hematology, Department of Medicine, Faculty of Medicine and Surgery,  
University of Sto. Tomas.

Ventricular Aneurysm

Drs. Isidro Pertierra, Mariano M. Alimurung and Paulino J. Garcia  
Section of Radiology, Department of Medicine, Faculty of Medicine and Surgery, University of Sto. Tomas.

Blood Examination for Private Cases

Dr. Victorino de la Fuente

*Section of Hematology, Department of Medicine, Faculty of Medicine and Surgery,  
University of Sto. Tomas.*

The Bio-Chemical Basis for the Use of Protein Hydrolysates in Peptic Ulcer

Dr. Isabelo Concepcion

*Department of Bio-Chemistry, Faculty of Medicine and Surgery, University of Sto. Tomas.*

Observations of War-Time Pneumonias, With Special Reference to Chemotherapy

Drs. Agustin Liboro, Hermogenes Santos and Emmanuel Gatchalian

*Department of Medicine, Faculty of Medicine and Surgery, University of Sto. Tomas.*

The Adequacy of Post-War Diet of Filipino Wage Earners in the City of Manila.

Dr. Isabelo Concepcion

*Department of Bio-Chemistry, Faculty of Medicine and Surgery, University of Sto. Tomas.*

The Use of Human Ascitic Fluid in Shock, Nephrosis and Allied Conditions

Drs. Ricardo D. Molina (deceased), Hermogenes Santos, and Mariano Alimurung.

*Department of Medicine, Faculty of Medicine and Surgery, University of Sto. Tomas.*

Tetrachlorethylene Treatment in Ankylostomiasis

Drs. Ricardo D. Molina (deceased) and Hermogenes Santos

*Department of Medicine, Faculty of Medicine and Surgery, University of Sto. Tomas.*

#### SECTION ON OBSTETRICS AND GYNECOLOGY

FRIDAY, MAY 10, 1946. 8-12 A.M.

Chairman ..... Dr. Honoria Acosta-Sison

Secretary ..... Dr. Jose Villanueva

War Strain as a Contributory Cause of Prolapse of the Uterus

Dr. F. Bayan

*Department of Gynecology, College of Medicine, U. P.*

Dystocia and Occipito-Posterior Position

Dr. Jose Villanueva

*Department of Obstetrics, College of Medicine, U. P.*

Stillbirths and Neonatal Deaths in the Philippine General Hospital From April 1, 1945 To  
April 15, 1946.

Drs. Honoria Acosta-Sison and Jose Villanueva

*Department of Obstetrics, College of Medicine, U. P.*

Caesarian Section—A Critique—

Dr. Jose Genato

*Department of Gynecology, Faculty of Medicine and Surgery, University of Sto. Tomas.*

The Management of Placenta Previa

Drs. Guillermo Rustia and Gloria Tancinco-Yambao

*Department of Obstetrics, College of Medicine, U. P.*

The Importance of HBEs in the Positive Diagnosis of Uterine Chorioepithelioma

Dr. Honoria Acosta-Sison

*Department of Obstetrics, College of Medicine, U. P.*

The Rh Factor Among Filipinos

Drs. Constantino P. Manahan and Mamerta Andaya

*North General Hospital.*

Is Hypoproteinemia The Cause of Toxemias of Pregnancy?

Drs. Honoria Acosta-Sison and Angelica Infantado

*Department of Obstetrics, College of Medicine, U. P.*

The Early Diagnosis of Cancer of the Cervix

Dr. Constantino Manahan

*St. Luke's Hospital and North General Hospital*

Rupture of the Uterus on Previous Cesarean Section

Dr. Alfredo Baens

*Department of Obstetrics, College of Medicine, U. P.*

The Management of Prolapse of the Uterus

Drs. Constantino P. Manahan and Jovita Coronado  
North General Hospital.

Pyelonephritis of Pregnancy

Drs. Jose Villanueva and Gregoria Marcelo  
Department of Obstetrics, Philippine General Hospital and  
Dr. Luis F. Torres, Jr.,  
Department of Surgery, Philippine General Hospital.

Chorionepithelioma: Its Relationship to Hydatidiform Mole

Drs. N. A. Espinola and C. P. Manahan  
North General Hospital.

SECTION ON SURGERY

SATURDAY, MAY 11, 1946. 8-12 A.M.

Chairman ..... Dr. Jose Y. Fores

Secretary ..... Dr. Luis F. Torres, Jr.

Pancreatic Aneurism, Report of a Case

Dr. M. C. Magboo  
Department of Surgery, St. Luke's Hospital.

A Rare Case of Umbilical Fistula With Evisceration

Drs. J. Y. Fores and C. P. Manahan  
Departments of Surgery and Gynecology, St. Luke's Hospital.

Modern Trends in Urology

Dr. Domingo Antonio, Jr.  
Departments of Surgery and Urology, Faculty of Medicine and Surgery, University of  
Sto. Tomas.

The Incidence of Cancer in General Hospitals for the Past Five Years

Drs. J. Z. Sta. Cruz and Mario Oca  
Department of Pathology, St. Luke's Hospital.

Some Problems in Goiter Surgery

Dr. Aurelio Dayrit  
Department of Medicine, Faculty of Medicine and Surgery, University of Sto. Tomas.

Experiences With Surgery of the Autonomic Nervous System

Drs. G. Santos-Cuyugan and G. Veloso  
Department of Surgery, College of Medicine, U. P.

Cranium Bitidum With Encephalo-Meningocele: A Case Report

Drs. Andres Zavalla and Victor A. Reyes  
Department of Surgery, College of Medicine, U. P.

Arrest of Growth as a Complimentary Surgical Treatment for Old Untreated Fractures of  
the Lower Extremity

Dr. Rodolfo Gonzales  
Department of Medicine, Faculty of Medicine and Surgery, University of Sto. Tomas.

Gallbladder Disease—An Analysis of Cases in the North General Hospital

Drs. Francisco Guzman and Pablo Morales  
North General Hospital

Surgical Aspects of Scurvy

Dr. Alberto A. Galves, Lt. Col., MC, PA  
Camp Olivas Station Hospital.

Benign Giant-Cell Tumor of the Right Humerus: Case Report (5 years follow up after X-Ray  
treatment)

Dr. P. Chikiamco  
Department of Physical Therapy, Philippine General Hospital.

Epidermoid Carcinoma of the Vulva: Radical Vulvectomy

Dr. M. C. Magboo  
Department of Surgery, St. Luke's Hospital.

## The Radiological Aspects of Gastro-Intestinal Adhesions

Drs. P. Garcia and M. C. Magboo

*Departments of Surgery and Radiology, St. Luke's Hospital.*

## Repair of Bucal Fistula By Transplantation of Skin Using Tube-Flap Method

Dr. Jaime E. Laico

*Department of Surgery, College of Medicine, U. P.*

## A Case of Ureteral Leukoplakia: Resection of Ureter

Drs. Luis F. Torres, Jr. and Porfirio Recid

*Department of Surgery, College of Medicine, U. P.*

## Modification in the Repair of Inguinal Hernia

Drs. C. S. Harn, M. de Leon, Jr. and M. S. Ocampo

*St. Luke's Hospital.*

## Report of a Case of Motile Body in the Thigh ("Pague" Bone)

Dr. Jose Leviste

*Department of Surgery, St. Luke's Hospital*

## SECTION ON MEDICINE AND PEDIATRICS

SATURDAY, MAY 11, 1946. 8-12 A.M.

Chairman ..... Dr. Gonzalo Santos

Secretary ..... Dr. Jose G. Cruz

## A Morphological Variation of Plasmodium Vivax

Dr. T. P. Pesigan

*Department of Parasitology, Institute of Hygiene, U. P.*

## Hemophilia in Four Generations

Drs. Alberto V. Tupas and Domiciana F. Dauis

*Department of Pediatrics, College of Medicine, U. P.*

Dr. Potenciana Kabigting-Chavez

*Department of Laboratories, Philippine General Hospital.*

## Primary Atypical Pneumonia (A Study of 241 Cases of "Lobar Pneumonia")

Drs. P. D. Gutierrez, F. F. Tangco and D. Ruiz

*Department of Medicine, College of Medicine, U. P.*

## Multiple Serositis Caused by Tuberculosis

Drs. Alberto V. Tupas and Artemio P. Jongco

*Department of Pediatrics, College of Medicine, U. P.*

## Amoebiasis in Children

Drs. Alberto V. Tupas, Artemio P. Jongco, Jose O. Chan and Domiciana F. Dauis

*Department of Pediatrics, College of Medicine, U. P.*

## Cancrum Oris—Recent Observation on its Incidence and Treatment

Drs. Alberto V. Tupas and Artemio P. Jongco

*Department of Pediatrics, College of Medicine, U. P.*

## The Efficiency of Hexylresorcinol in Ascariasis as Observed in 200 Children

Drs. Fé del Mundo and Ester Sugang

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*Department of Parasitology, Institute of Hygiene, U. P.*

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*Department of Pediatrics, College of Medicine, U. P.*

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Treatment of Malaria in Children as Observed in 100 Cases

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Xerophthalmia and Keratomalacia in Children With Report of 96 Cases

Drs. Alberto V. Tupas, Leon V. Pecache and Adolfina Melo  
Department of Pediatrics, College of Medicine, U. P.

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## NATIONAL HEALTH PROGRAM OF THE AMERICAN MEDICAL ASSOCIATION

Adopted by the Board of Trustees and the  
Council on Medical Service, Feb. 14, 1946  
(Published J. A. M. A., 130:641 (March) 1946.)

1. The American Medical Association urges a **MINIMUM STANDARD OF NUTRITION, HOUSING, CLOTHING AND RECREATION** as fundamental to good health and as an objective to be achieved in any suitable health program. The responsibility for attainment of this standard should be placed as far as possible on the individual, but the application of community effort, compatible with the maintenance of free enterprise, should be encouraged with governmental aid where needed.

2. The provision of **PREVENTIVE MEDICAL SERVICES** through professionally competent health departments with sufficient staff and equipment to meet community needs is recognized as essential in a health program. The principle of federal aid through provision of funds or personnel is recognized with the understanding that local areas shall control their own agencies as has been established in the field of education. Health Departments should not assume the care of the sick as a function, since administration of medical care under such auspices trends to deterioration in the quality of service rendered. Medical care to those unable to provide themselves is best administered by local and private agencies with the aid of public funds when needed. This program for national health should include the administration of **MEDICAL CARE, INCLUDING HOSPITALIZATION TO ALL THOSE NEEDING IT BUT UNABLE TO PAY**, such medical care to be provided preferably by a physician of the patient's choice with funds provided by local agencies with the assistance of federal funds when necessary.

3. The procedure established by modern medicine for advice to the prospective mother and for **ADEQUATE CARE IN CHILDBIRTH** should be made available to all at a price that they can afford to pay. When local funds are lacking for the care of those unable to pay, federal aid should be supplied with the funds administered through local or state agencies.

4. The child should have throughout infancy **PROPER ATTENTION INCLUDING SCIENTIFIC NUTRITION, IMMUNIZATION AGAINST PREVENTABLE DISEASE AND OTHER SERVICES INCLUDED** IN INFANT WELFARE. Such services are best supplied by personal contact between the mother and the individual physician but may be provided through child care and infant welfare stations administered under local auspices with support by tax funds whenever the need can be shown.

5. The provision of **HEALTH AND DIAGNOSTIC CENTERS AND HOSPITALS** necessary to community needs is an essential of good medical care. Such facilities are preferably supplied by local agencies, including the community, church and trade agencies which have been responsible for the fine development of facilities for medical care in most American communities up to this time. Where such facilities are unavailable and cannot be supplied through local or state agencies, the federal government may aid, preferably under a plan which requires that the need be shown and that the community prove its ability to maintain such institutions once they are established (Hill-Burton bill.)

6. A program for medical care within the American system of individual initiative and freedom of enterprise includes the establishment of **VOLUNTARY NONPROFIT PRE-**

PAYMENT PLANS FOR THE COST OF HOSPITALIZATION (such as the Blue Cross plan) and VOLUNTARY NONPROFIT PREPAYMENT PLANS FOR MEDICAL CARE (such as those developed by many state and county medical societies.) The principles of such insurance contracts should be acceptable to the Council on Medical Service of the American Medical Association and to the authoritative bodies of state medical associations. The evolution of voluntary prepayment insurance against the cost of sickness admits also the utilization of private sickness insurance plans which comply with state regulatory statutes and meet the standards of the Council on Medical Service of the American Medical Association.

7. A program for national health should include the administration of **MEDICAL CARE, INCLUDING HOSPITALIZATION, TO ALL VETERANS**, such medical care to be provided preferably by a physician of the veteran's choice, with payment by the Veterans Administration through a plan mutually agreed on between the state medical association and the Veterans Administration.

8. **RESEARCH FOR THE ADVANCEMENT OF MEDICAL SCIENCE** is fundamental in any national health program. The inclusion of medical research in a National Science Foundation, such as proposed in pending federal legislation, is endorsed.

9. The services rendered by **VOLUNTEER PHILANTHROPIC HEALTH AGENCIES** such as the American Cancer Society, the National Tuberculosis Association, the National Foundation for Infantile Paralysis, Inc., and by philanthropic agencies such as the Commonwealth Fund and the Rockefeller Foundation and similar bodies have been of vast benefit to the American people and are a natural outgrowth of the system of free enterprise and democracy that prevail in the United States. Their participation in a national health program should be encouraged, and the growth of such agencies when properly administered should be commended.

10. Fundamental to the promotion of the public health and alleviation of illness are **WIDESPREAD EDUCATION IN THE FIELD OF HEALTH** and the widest possible dissemination of information regarding the prevention of disease and its treatment by authoritative agencies. Health education should be considered a necessary function of all departments of public health, medical associations and school authorities.—F. N. F.



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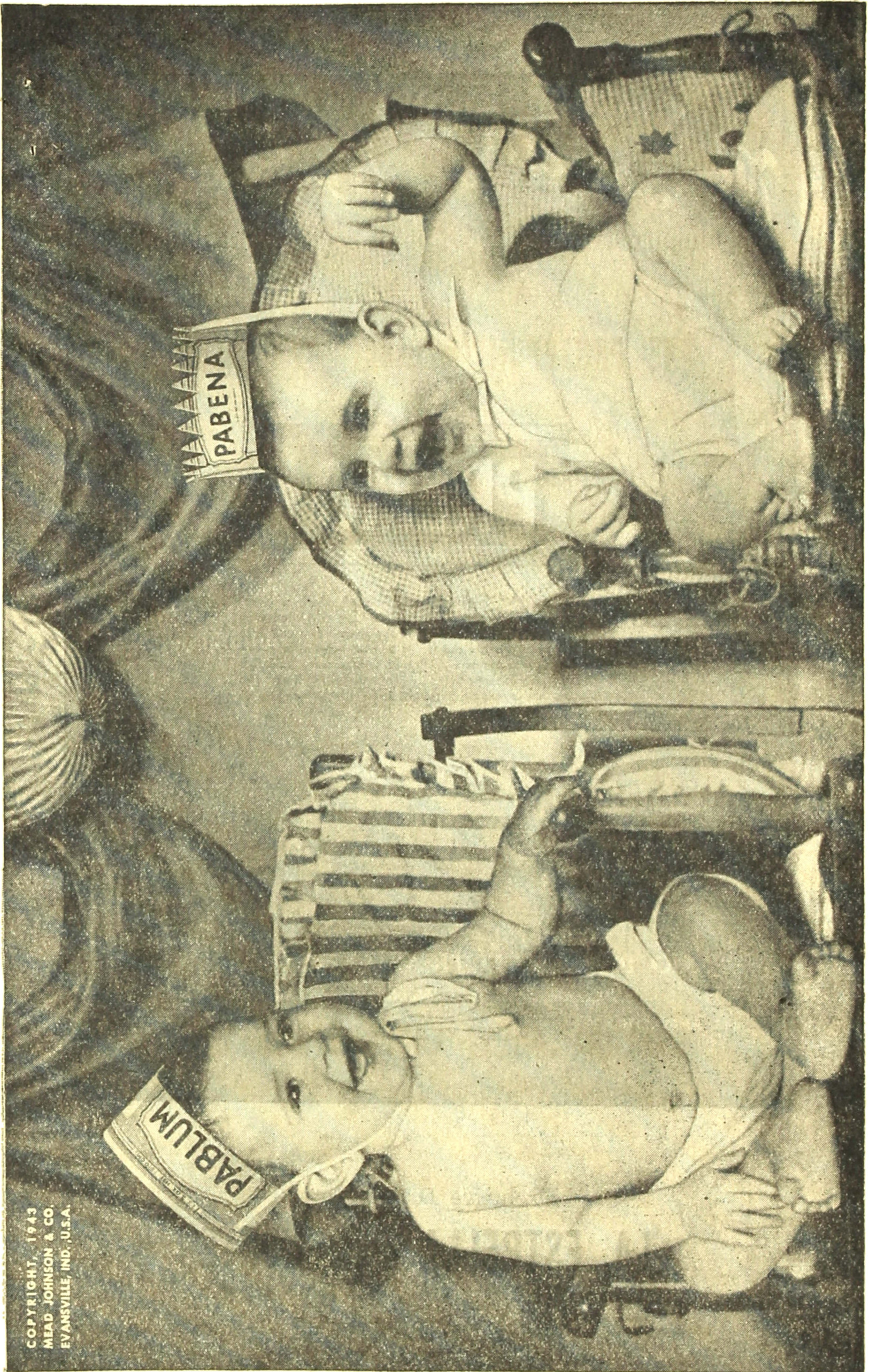
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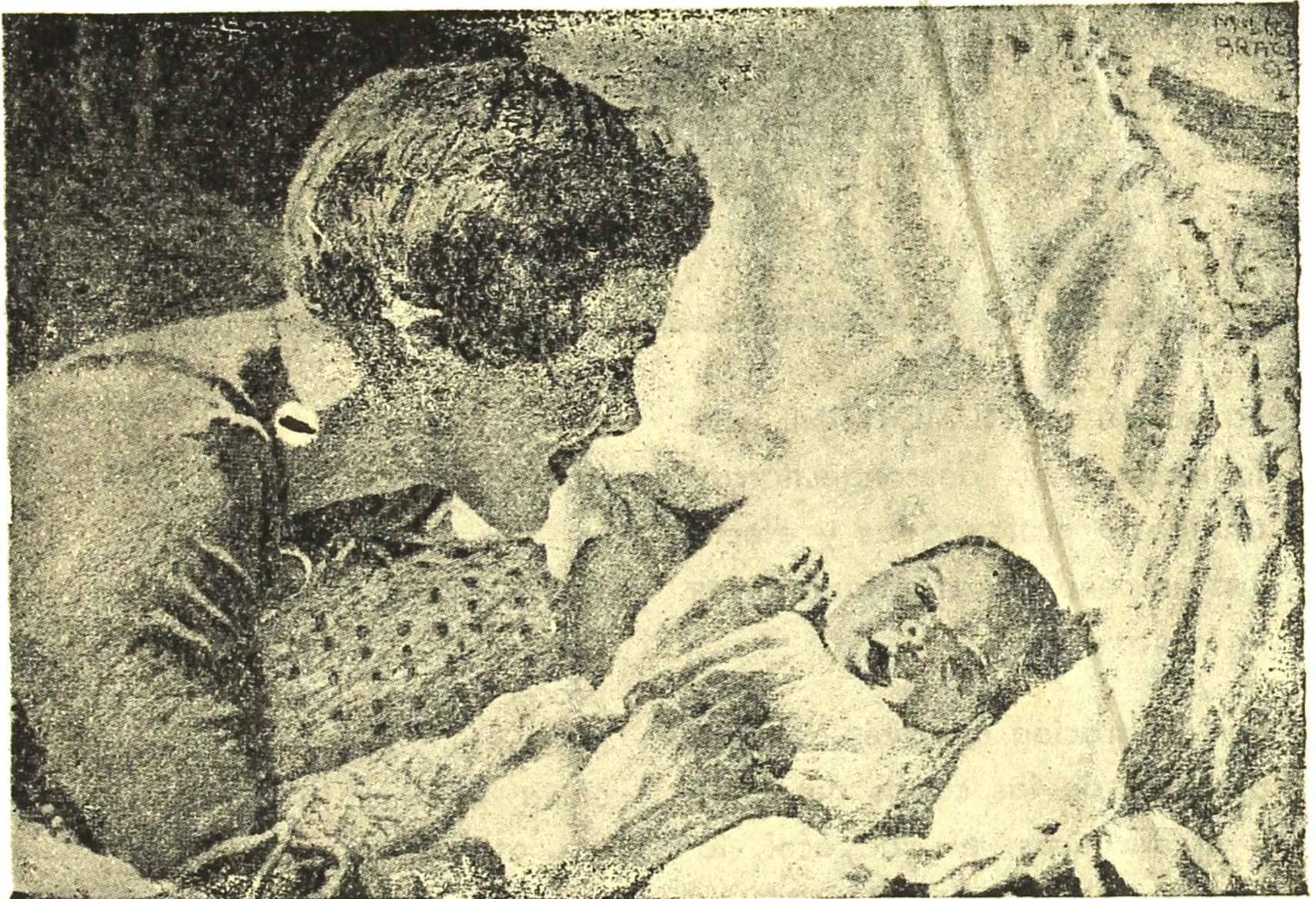
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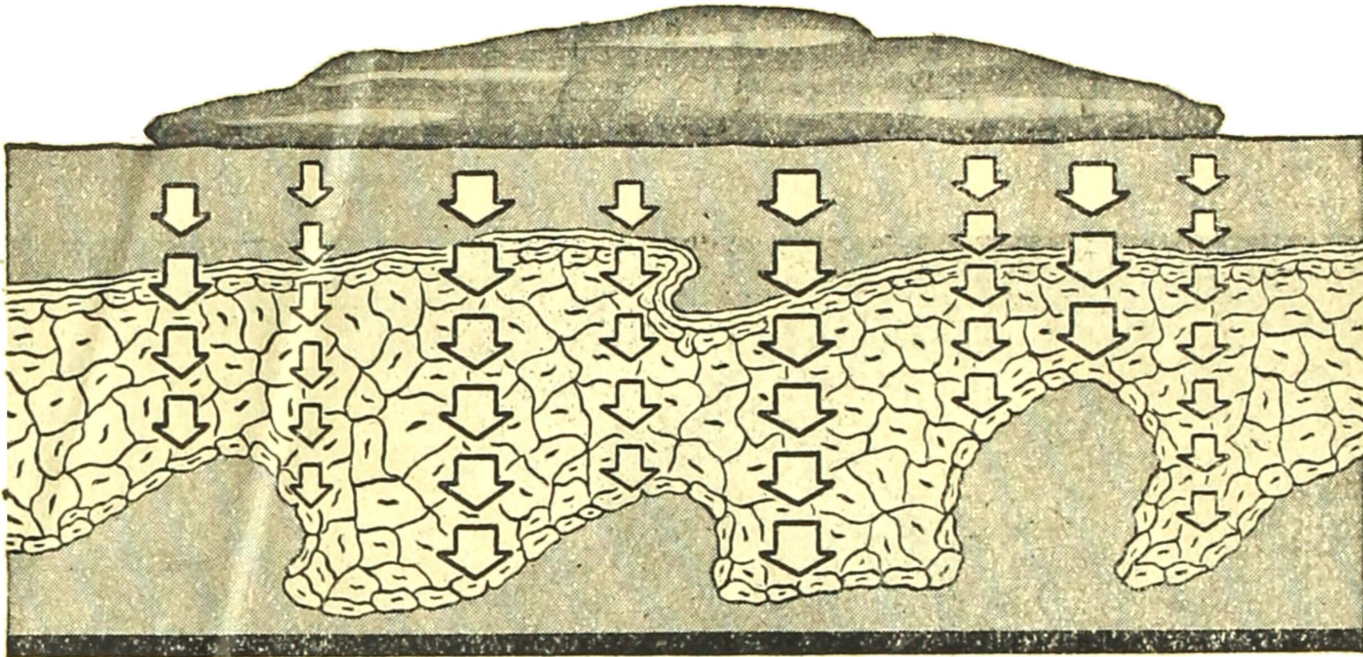
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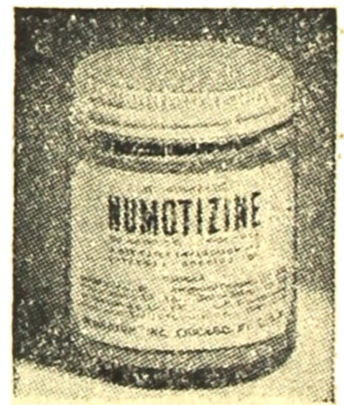
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