FEB 4 - 1938

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Steamer copy for Dr. Sawyer

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AIR MAIL

No. 7578

January 17, 1938.

Through Dr. W. A. Sawyer

o copy 912 Publications

Dear Mr. Fosdick:

Enclosed please find some attached suggestions for the presidential review. These suggestions are not limited to vaccination, but cover rather the principal developments in the field during 1937.

Photo file: 3050 21407a-h

I am enclosing also a series of photographs of the new yellow fever laboratory building in Rio de Janeiro, which was completed during the past year. Further photographs covering vaccination in the field, requested by cable from Mr. Appleget, cannot be forwarded until next week. The field vaccination units actually in the field are rather inaccessible from Rio; however, the laboratory has today reported two positive yellow fever livers from Mathias Barboza, close to Juiz de Fõra, in the State of Minas Geraes, which is only about four hours' travel from Rio by car. Vaccination of the rural inhabitants of this region is to be started immediately, and suitable photographs should be available for next week's plane.

Very sincerely yours,

Fred L. Soper

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Mr. Raymond B. Fosdick, President,
The Rockefeller Foundation,
49 West 49th Street,
New York City, N. Y.,
U. S. A.

FLS/DAS
Encs.

c.c. Dr. W. A. Sawyer, (air mail).

1 set of photos were sent by air mail for Mr. Fosdick
1 set " " are enclosed herewith
A further set will be sent with our annual report

Field experience in South America during 1937 has emphasized the importance of jungle yellow fever, both as a killing disease in its own right and as a permanent reservoir of virus for the production of aegypti-transmitted urban outbreaks.

The known range of jungle yellow fever, as outlined by the occurrence of fatal cases confirmed by viscerotomy or autopsy, was extended during the year to include the Amazonian region of Peru, northern Paraguay, the Brazilian state of Santa Catharina and additional territory in the Magdalena Valley in Colombia. Among the countries of South America, evidence of the occurrence of yellow fever during recent years is lacking for only Uruguay, Argentina, Chile and the Brazilian state of Rio Grande do Sul.

The existence of a permanent reservoir of infection in the jungle, in the absence of Aëdes aegypti, paradoxically forces the organization of permanent anti-aegypti measures in the cities and towns of threatened regions. Today's major problem in yellow fever control is the organization of anti-aegypti measures throughout endemic and epidemic regions, on such an economical basis that maintenance may be permanent. Any short-term interpretation of the threat of infection must lead to occasional disaster. The infection of Asunción late in 1937 is the first record of yellow fever in this inland capital during the present century. Fortunately, the existence of the disease in Paraguay had been uncovered some months previously, and anti-aegypti measures were being applied when the city was found to be infected. With the full cooperation of Brazilian, Paraguayan and Argentine authorities measures were taken which apparently limited the further spread of urban yellow fever and are believed to have prevented a major catastrophe involving the cities of the Paraguayah and Paraná River Valleys.

Important advances were made in the organization of anti-aegypti measures in South America during 1937, so that at the end of the year Brazil and Bolivia were believed to be adequately protected and promising services were operating in Paraguay, Argentina, Peru, Colombia and Venezuela.

Field studies during 1937 added much information regarding the conditions under which jungle yellow fever occurs; the absence of Aëdes aegypti in infected areas has been amply confirmed, and additional evidence has accumulated suggesting that human cases are not essential but are in fact relatively unimportant in the maintenance of the jungle infection. The method of control so successful in the case of urban yellow fever, viz., - the biological control of the insect vector, is not applicable in the case of jungle yellow fever. Likewise the elimination of animal hosts is not economically feasible throughout the vast regions of South America where the jungle infection abounds. The only hope of prevention lies in individual immunization of exposed populations by vaccination. As with other virus diseases, vaccination for yellow fever can be accomplished only by the use of a living virus. Since 1931, reports of The Rockefeller Foundation have reported the successful vaccination of laboratory workers with a modified virus whose action was further dampened by the use of relatively large doses of convalescent immune serum. Although effective, this method was too cumbersome and expensive for widespread application, and for several years attempts were made to increase the titer of immune serum so that smaller amounts would be effective, and to produce more highly modified strains of virus which would require little or no immune serum. Progress was made in both attempts, but the recent production of a mild virus has overshadowed the work with immune serum.

Early in 1937, a virus, developed by tissue culture methods in the laboratory of the Foundation in New York, from 1934 to 1936, was taken to South America, and used for vaccination without immune serum. Although preliminary work on monkeys and a small group of persons in New York had indicated that this virus was perfectly safe for vaccination, great caution was exercised to avoid any unpleasant accidents. Only after approximately 100 persons had been vaccinated and carefully observed was the vaccine taken to the field. Vaccinations with virus alone by months in 1937 in Brazil were as follows:

January	0
February	7
March	33
April	37
May	30
June	306
July	775
August	1765
September	3937
October	10740
November	7681
December	13076
Total	38387

Additional vaccinations carried out in Colombia bring this figure to well over 40,000 for South America. Vaccine was also furnished to the Pan American Sanitary Bureau for the vaccination of international flight personnel of the aviation companies.

The reaction to this virus is mild in comparison with those occurring after immunization against other disease organisms, such as typhoid, diphtheria, etc., and rarely amounts to more than a slight headache six or seven days after vaccination.

The results of vaccination with this virus have been measured by the mouse protection test in some 700 persons known to have been inoculated with living virus. Of these over 99% have shown full or partial immunity. Further studies are needed for a final evaluation of the present method. It is, however, safe to say that a definite step forward has been made, and that efficient protection of populations exposed to jungle yellow fever is in sight. The danger of the international spread of yellow fever through air traffic can be greatly reduced by immunization of air crews and passengers.

The completion during 1937 of the laboratory building in Rio de Janeiro, especially designed for the study of problems connected with yellow fever, and the approval of plans for a similar building in Bogotá, to be constructed during 1938, are a frank admission that although a decade has passed since yellow fever was first successfully maintained in laboratory animals, a large number of time-consuming problems remain to be studied before the complete story of jungle yellow fever can be written.

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List of Photographs sent to Mr. Raymond B. Fosdick under cover of our air mail letter No. 7578 of January 17, 1938.

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1. Front view of the new yellow fever laboratory, Rio de Janeiro.

2. Monkey cages in the backyard of the yellow fever laboratory.

3 to 8 - Interior views of the yellow fever laboratory building, Rio de Janeiro.

3. Epidemiological Section.

4-5. Viscerotomy Section, where liver tissues from all of South America are received and prepared for examination.

6. Mouse breeding colony. Capacity output - 3,000 per week.

7-8. Tissue Culture and Vaccine Production Section.

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