

**PAN AMERICAN HEALTH  
ORGANIZATION**

**ADVISORY COMMITTEE  
ON MEDICAL RESEARCH**

**SECOND MEETING**

**17-21 June 1963  
Washington, D.C.**

**CURRENT ACTIVITIES OF  
THE WHO REFERENCE SERUM BANK  
FOR THE AMERICAS**

**RESTRICTED**

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**PAN AMERICAN HEALTH ORGANIZATION**  
Pan American Sanitary Bureau, Regional Office of the  
**WORLD HEALTH ORGANIZATION**

**WASHINGTON, D.C.**

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BANK FOR THE AMERICAS\*

Introduction

The World Health Organization has recently established 3 Reference Serum Banks, one at the Institute of Epidemiology and Microbiology in Prague, Czechoslovakia, one at the South African Institute of Medical Research in Johannesburg, South Africa, and one in the Department of Epidemiology and Public Health at the Yale University School of Medicine, New Haven, Connecticut, U.S.A. Aims and purposes of these banks have been described several times (1, 2, 3, 4).

In brief, the Serum Banks take advantage of the fact that in a single sample of blood one can measure today 50-100 different items which pertain to the genotype or phenotype of the person from whom the blood sample was obtained. Most of these items relate to the individual's health and immunization status: i.e. presence and levels of antibodies to a variety of viruses or bacteria, his blood group and various other blood components, such as the rheumatoid factor, blood cholesterol, blood pepsin, etc.

The WHO Reference Serum Banks can be broadly described as a mechanism for gathering health information about individual populations utilizing serologic epidemiologic methods. Previous generations of investigators have usually gained health information on

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the basis of vital statistics gathered from local health departments or on the basis of the experience of physicians. Such methods have proved invaluable but not always adequate, particularly when sanitation has been primitive and local health facilities inadequate. The addition of the serum survey to these other established techniques has been useful.

Another important function of the Bank is to conserve residual amounts of serum from its collections for possible use in the future. Such preserved sera, which are usually lyophilized, may become available for various purposes when the need for new information arises, one, two or even three decades hence. Actually these sera may even be used for tests as yet undiscovered.

#### Recent Program of the Yale Serum Bank

Current activities during the years 1962/63 have been recorded in a number of reports (5,6). During this period the collections of sera have been steadily added to the Bank's holdings, which now roughly totals about 10,000 sera. They represent a wide variety of populations and have been used for several different projects, of which only a few will be mentioned: -

1. Studies in environmental comparisons. Blood samples from three ethnic, urban groups (approx. 250 each) which exist in New England, i.e. a) Puerto Ricans, b) Negroes and c) Cape Verdeans have been obtained. For comparative studies matched samples of 250 sera are in the process of being collected from 3 rural environments where members of these same ethnic groups had their origin, i.e. the Island of Puerto Rico, the Southern states

of the U.S., and Cape Verde Islands. Eventually this collection will total 1500-2000 sera and will represent 6 populations from 6 areas. It is our belief that the different ways of living will be reflected in the serum patterns.

2. Nation-wide recruit sample. A collection of approximately 3,300 sera, representing a national survey of recruits entering the three Armed Services was completed in July and August 1962. It consisted of men (17-22 years old) from every state in the United States. These have been roughly classified as to race, and urban, town and rural environments. Analyses on arbovirus and other viral antibodies are partially completed. A detailed preliminary report of this project (6) is available.

3. Another study from an all-age group of urban residents in New Haven has dealt with the decline of antibodies in older age groups. It has shown that in the older people (subsequent to age 60) some antibody levels seem to fall sharply, some do not. It remains to be seen whether different ways of living will affect the rate of decline in different populations.

#### Administrative

A Catalogue describing the existing collections at the Yale Bank as of December 1962 and a Manual for the use in the field and in the laboratory have been issued and are available on request.

#### Projects in Latin America

As to the responsibilities and activities which the Reference Serum Bank at Yale might have in Latin America, it should be

mentioned that at a meeting of the Directors of the Reference Serum Banks, held in Geneva in April 1961, it was tentatively agreed that the Bank at Yale might concentrate its activities within the Western Hemisphere, and in its first year, (1961-62) within the United States. This has been done, a major activity of this kind being our nation-wide survey in military recruits which will be the first time that material will have been assembled on a national basis on which one can outline the distribution of several antibody patterns for arthropod-borne virus infections. This project should also serve as a measure of the degree of poliomyelitis immunization which existed in the U.S. in 1962. Other patterns include antistreptolysin-O levels, type-specific streptococcal antibodies, diphtheria antitoxin, toxoplasma, the rheumatoid factor and several other blood components.

The results of this survey will serve as a base-line for comparison with collections from similar age groups in different countries. Thus an important project, on which discussions have already been initiated, would be that of a comparative nation-wide serum survey of military recruits in Brazil. From such material, much could be learned about the distribution of antibodies to arthropod-borne viruses in that country.

Plans have been discussed with a staff member of the Pan American Zoonoses Center, Azul, Argentina, as to how animal serum can be collected and utilized.

At the Congresses on Tropical Medicine and Malaria to be held in Rio de Janeiro, 1-11 September, 1963, it is hoped that various expressions of opinion can be gained on these two projects as well

as on a number of other lines along which the work of the serum bank might develop in Latin America.

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