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EXPERT COMMITTEE ON VENEREAL INFECTIONS

Report on the First Session of the Subcommittee on Serology and Laboratory Aspects

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EXPERT COMMITTEE ON VENEREAL INFECTIONS

First Session of the Subcommittee on Serology and Laboratory Aspects

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Consultants and Advisers :

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The report on the first session of this subcommittee was originally issued in mimeographed form as document WHO/VD/38, 10 November 1949.

COMMENTS BY THE EXECUTIVE BOARD

The Executive Board examined at its fifth session the report of the Subcommittee on Serology and Laboratory Aspects, which had been accepted by the Expert Committee on Venereal Infections at its third session. Attention was drawn to the difficulties which had often resulted from mass screening carried out in the field of tuberculosis control, when treatment facilities had not been available, but it was noted that, in the programme of venereal-disease control, hospitalization in the great majority of cases would not be necessary, since ambulatory treatment would be possible following mass examinations.

The Board agreed that, in view of the new serodiagnostic methods based on cardiolipin antigens, the holding of the international serodiagnostic laboratory conference, already approved by the Health Assembly, would be an important undertaking of the Organization in 1951 or 1952 as a basis for the wide standardization of serodiagnostic procedure on which any antisyphilis programme is dependent.

EXPERT COMMITTEE ON VENEREAL INFECTIONS

Report on the First Session of the Subcommittee on Serology and Laboratory Aspects [1]

1. Introduction

The ad hoc Expert Committee on Venereal Diseases recommended in October 1948 that a subcommittee on serology and laboratory aspects be established as soon as possible, that this subcommittee be composed of not more than four members, and that a preliminary programme for the conduct of the next international serodiagnostic laboratory conference be drawn up by the subcommittee as soon as possible for consideration by the Expert Committee on Venereal Infections, to which the subcommittee would report.[2]

During the early part of 1949, members were appointed to the Subcommittee on Serology and Laboratory Aspects.

Dr P. Krag was elected Chairman and Dr I. N. Orpwood Price Vice-Chairman of the subcommittee.

The agenda was accepted, including items referred to the subcommittee by the parent committee, and items proposed by a corresponding member, Dr T. Vogelsang.

During the session 11 meetings were held and the report was approved by all members.

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[1] The Executive Board, at its fifth session, adopted the following resolution:

The Executive Board

(1) APPROVES the publication of the report of the Subcommittee on Serology and Laboratory Aspects accepted by the Expert Committee on Venereal Infections; and

(2) REQUESTS the Director-General to draw the attention of Member Governments to:

(*a*) the desirability of national laboratories guiding standardization work in serology, and

(*b*) the holding of the international serology conference, approved by the Health Assembly,

and to facilitate the arrangements for this conference in every way possible.

[2] *Off. Rec. World Hlth Org.* **15**, 25

2. Prospectus

A venereal-disease activity is dependent to a major degree upon the efficient conduct of serological tests for syphilis and other laboratory procedures. It has been rightly stated by the ad hoc Expert Committee on Venereal Diseases that: (*a*) there is great lack of uniformity of procedure technique; (*b*) the manner of reporting results has had the effect of producing confusion and rendering many studies in serology of syphilis in the past valueless; and (*c*) it is possible for an individual under the present lack of uniformity to be judged as being syphilitic in one country and considered to be free from the disease in another.[3]

The subcommittee is in agreement with the outlook and philosophy stated in the reports on the two sessions of the Expert Committee on Venereal Diseases [4] and has noted the objectives set forth by the parent committee and the preparatory work carried out by WHO up to the present in serology and laboratory aspects with the advice of the parent committee. Among the visualized activities of WHO on this question, the international serodiagnostic laboratory conference approved by the World Health Assembly is undoubtedly the major undertaking, and the subcommittee feels that a major proportion of its work at its first session and at sessions during the next two years should be devoted to developing sound plans for the conference of serodiagnostic laboratory workers.

However, consideration should also be given by the subcommittee in due time to the standardization on purity control of serodiagnostic reagents (e.g., cardiolipin), the application of seroreactions for special purposes (mass serological screening techniques) and the laboratory work relating to experimental syphilis and other treponematoses.

3. International Serodiagnostic Laboratory Conference

3.1 *General*

International serological laboratory conferences were held in Copenhagen in 1923 and 1928, and in Montevideo in 1930. A fourth international serological laboratory conference was scheduled to take place in Copenhagen in 1939 but was cancelled owing to the outbreak of war. Two years later it was found necessary for evaluating the seroreactions in the Western Hemisphere to hold a serological laboratory conference in Washington, 1941. Results from this conference have been useful in guiding scientific developments in the USA during the years which followed.

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[3] *Off. Rec. World Hlth Org.* **8**, 62

[4] *Off. Rec. World Hlth Org.* **8**, 60; **15**, 18

During the past five or six years the need for another international serodiagnostic laboratory conference has become increasingly evident due to the following developments : (*a*) mass testing of large sections of populations has placed more importance on test specificity ; (*b*) many laboratories have adopted the use of a multiple " battery " of serological test procedures in order to offer more clues to the diagnostician regarding possible " false-positive " reactions. This development has multiplied the work of the testing laboratory but has been only partially successful in solving the problem.

Intense laboratory investigations in the USA and elsewhere during these years have resulted in several new seroreactions, many of which are based on antigen components of more purified types than were available for the older seroreactions. Antigens composed of cardiolipin and purified lecithin have been shown to be capable of a higher degree of specificity and sensitivity than was obtained with cruder extract antigens. This offers the possibility that the chemical composition of serological antigens may now be more closely studied, and reference standards may possibly be developed.

Evaluation studies between many laboratories during the past few years have shown that discrepancies continue to exist between the same tests in different laboratories and different tests in the same laboratories to such a degree that additional efforts toward standardization of testing procedures are called for in each country and internationally.

During the last two years there has been developed the treponemal antibody technique (Nelson's treponema immobilization test), the details of which are referred to in section 6 of this report. Although the chief value of this technique would appear to be in the immunology of syphilis and other treponematoses, it may also play an important role in evaluating biologically false-positive tests for syphilis. This additional armament is of significant value since ordinary verification tests in serology of syphilis have not yet been evaluated in an international serodiagnostic laboratory conference. Experience has shown that the treponemal antibodies detected by this new technique are independent of and can be separated from the reagins detected by our ordinary serodiagnostic tests, even those employing cardiolipin-lecithin antigens.

The finding of surprisingly large numbers of positive seroreactions in some geographical areas (tropical) and the prevalence of seropositivity depending to some extent on the reactions used, indicates that the evaluation of relative test-efficiency and the selection of reactions which may be most useful in the various areas are world problems. Donor-groups from several geographical areas will therefore be necessary for the contemplated international serodiagnostic laboratory conference. The avail-

ability of source material from venereal-disease field units of WHO in various parts of the world would be of importance in this regard.

3.2 *Organization*

The subcommittee has carefully studied the preliminary data for the conference collected by WHO and the ad hoc Expert Committee on Venereal Diseases including objectives, organization, and operation of the conference. The principal features of the parent committee's statements in this regard meet with the approval of the subcommittee. The subcommittee desires to commend particularly the Chairman of the parent committee for the thorough manner in which the features of the conference have been outlined.

The subcommittee also studied the views of its members as expressed in the memoranda exchanged over the last few months in preparation for the first session. This has permitted detailed discussions of the actual preparations, organization, and operation of the conference during the session. The outline for the conference forming the basis for the subcommittee's discussions and the memoranda expressing the views of each member of the subcommittee are given in annexes. Additional details will be resolved at subsequent sessions of the subcommittee. It is, however, desired to record the following observations at this time :

3.3 *Time, place, and participation*

The time of year for the conference should be, if possible, chosen with due consideration to meteorological conditions. The conference should be held in a city with a large medical centre, having access to significant reservoirs of clinical syphilis, and with an airport on one or several of the main world air-routes. The laboratory space should be selected with a view to obtaining the best working conditions for a maximum number of participants.

With this in mind, WHO should explore the possibilities of holding the conference in Europe, especially Paris, London, or Copenhagen. These cities would be convenient from the point of view of easy access by air from areas of South-East Asia, Middle East, and tropical America—a few days each way—permitting minimum transportation time for serum samples.

The proposed conference should be announced as soon as possible by WHO through health administrations, large laboratories, and WHO publications. Preliminary applications for participation in the conference should be received as soon as possible.

It is estimated that approximately 40 procedures will be available for the conference. Each author-serologist should be allowed to enter more than one reaction.