

## THE BRITISH JOURNAL OF VENEREAL DISEASES

adenitis these were regarded clinically as soft sores (chancroid). Many gonococci being found in the copious urethral discharge, he was given the routine course of penicillin (5 doses of 20,000 units at 3-hourly intervals).

On the second morning his condition was much improved; there were no gonococci in the slight watery discharge, the adenitis was resolving and the conjunctivitis had almost cleared. The Ito-Reenstierna skin test gave a definitely positive result. The case was considered to be a mixed infection of gonorrhoea and chancroid—a combination common in Southern Asia. Later in the day, however, masses of *Treponema pallidum* were found on dark-ground examination. The Kahn test was negative. After confirmation that *Tr. pallidum* was present, the routine anti-syphilitic course of penicillin was given (2 million units in 10½ days). At the end of this course the urethritis, balanitis, adenitis, conjunctivitis and sores had all resolved, and the Kahn test remained negative.

The object of this communication is not to draw any conclusions but just to record an interesting case, and one in which spirochaetes were still found in the local lesions 24 hours after the administration of 100,000 units of penicillin for a concurrent gonococcal infection.

It may be irrelevant, but is nevertheless interesting, to record that this patient contracted a common cold half way through his course of 2 million units of penicillin.

I am indebted to Surg. Capt. E. B. Pollard, R.N., for permission to record this case.

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## REVIEWS OF BOOKS

*Serology in Syphilis Control: Principles of Sensitivity and Specificity.* By R. L. Kahn, M.S., D.Sc. 206 pp. The Williams and Wilkins Company, Baltimore, and Baillière, Tindall and Cox, London, 1942. Price \$3'00 or 16s. 6d.

This book is essentially an attempt—and a highly successful one at that—to explain what is meant by sensitivity and specificity, to stress that these are the two fundamentals of serum testing and to show how serology can and should be applied to syphilis control in the general civil population, in the Forces and in industry.

Syphilis control requires a long-term programme and the same requirement applies to serology employed for that purpose. The term, sensitivity, should be limited to cases of syphilis. "Specific sensitivity" is the capacity of a given test to detect antibody in syphilitic sera, whereas "diagnostic sensitivity" is the sensitivity of a test which makes it worthy of the name, serodiagnostic. Specificity is the capacity of a test to give the minimum of positive reactions in non-syphilitic cases. Dr. Kahn is at great pains to make it clear that a very small difference in the percentage of false positives between two tests may represent a relatively large difference in the actual number of false positives, whereas, on the other hand, a relatively large difference in the sensitivity of two tests may represent a comparatively small difference in the actual number of true positives.

By various means the sensitivity of a given test may be increased until the test gives positive reactions with the sera of all persons, syphilitic and non-syphilitic; that is to say, nearly every serum contains a "biological" antibody which will react with the antigen used in serum tests for syphilis if the conditions are made favourable. It is quite clear therefore that it is impossible to attain 100 per cent sensitivity; situations arise in syphilis which cause serum tests to be negative and it appears that 70-80 per cent sensitivity is about the optimum attainable at present; in any case the only safe guide to sensitivity is specificity, which should attain a percentage of at least 99.9.

The history of the origin and development of complement fixation and precipitation tests, with an account of how this sensitivity has been brought up to present-day standards, leads on naturally to the practical aspects of establishing the sensitivity of a test. "Diagnostic sensitivity" is defined as optimal sensitivity combined with maximal specificity. Experience over a considerable period has shown the Kahn test to be a very reliable one; its sensitivity may be increased, as in the presumptive test, and this test is of value as a laboratory check on the standard test, as a screen test in the examination of blood donors and in certain cases of treated syphilis; it is claimed also to be a useful aid to diagnosis in special cases in which repeated exposures to venereal infection are known to take place. (Not everyone would agree with this last; surely a positive presumptive Kahn reaction in such a case would have no more value than a  $\pm$  standard one.)

Chapter IX is devoted to an analysis of the results reported on at three serum conferences, from which it is clear that the sensitiveness of different tests varies a good deal. Multiple tests are considered to be of questionable value; undoubtedly they increase sensitivity but at the expense of specificity. In any case all tests depend upon the same principle—the detection of antibody—and this latter substance may be present not only in certain pathological conditions but even in normal persons. Spirochaetal antigens have not so far proved to be very successful and it appears that we must wait for improved cultural technique before they are likely to become altogether satisfactory.

## REVIEWS OF BOOKS

In Chapter XI the author stresses the need for standardizing the sensitivity level of diagnostic tests and in Chapter XII he considers the advantages of quantitative tests. There can be no doubt that many syphilologists in the past have been slow to realize the value of these tests but, with the advent of penicillin, it seems likely that more use will be made of them although there is still room for improvements in technique.

The book concludes with an appendix containing chapters on serology in syphilis control for the health officer and for the industrial physician. Mass blood testing is based theoretically on the assumption that because persons who have syphilis give positive reactions those who give positive reactions have syphilis. Such an assumption is very dangerous and whenever mass testing is adopted very stringent controls must be set up; some of these are discussed, and it would appear that conditions must be nearly ideal if more good than harm is to come of such a policy. Some of the methods recommended for syphilis control in industry would hardly find favour in Great Britain, for example, the reference of cases which give positive reactions to their family physician. I shudder to think what might happen if this were done on any scale in Great Britain, and am led to wonder how many non-syphilitic persons would be doomed to a diagnosis of syphilis off-hand, with all which that entails, to say nothing of how the public would react. Another controversial matter is the teaching of prophylaxis to civilian employees; there are many arguments both for and against this but, although it may be applicable in the United States of America, it seems very doubtful whether it would not do more harm than good in Great Britain, at any rate until the public has become more "V.D. conscious".

As to the value of the verification test, no final judgment can be pronounced, but it certainly seems to be worth an extended trial; false positives are causing so much trouble nowadays that any procedure which will help to clarify the issue ought to be given consideration.

This is a book which deserves the attention of the syphilologist, the serologist and the health officer, all of whom might learn much from a study of it. The British reader ought to remember that it was written, presumably, for Americans and make due allowance for that. If at times the reader gets the impression that the general theme is the "boosting" of the Kahn test, he should remember that this test has proved its worth over and over again; nevertheless the attempt to kill the Wassermann test looks rather like a desire to destroy a competitor, more particularly in view of the fact that the Committee of Experts of the League of Nations expressed the view that the simultaneous use of two tests was better than that of a single test and that seventeen out of twenty-one of the delegates thought that one of them should be a complement fixation test.

T. E. O.

*Handbook of Diagnosis and Treatment of Venereal Diseases.* By A. E. W. McLachlan, M.B., Ch.B., D.P.H., F.R.S.Ed., 364 pp., 159 illustrations (19 in colour). E. & S. Livingstone, Edinburgh, 1944. Price 15s.

The appearance of this book in war-time is well timed, for the present war, like all its predecessors, brings in a large increase of venereal diseases among the civil population no less than in the armed Forces, an increase which, in Great Britain, has received wide and minatory advertisement and is nevertheless often concealed and denied. Everybody will support the author's dictum that it is imperative for the practitioner to have an adequate knowledge of the subject and to maintain a constantly high index of suspicion as to the possible occurrence of a venereal disease. The author, by his wide experience over many years as medical director of a centre for the treatment of venereal diseases and as a teacher of students and post-graduates, is well equipped for the task he has set himself: to provide in this book a concise introduction to the principles of diagnosis and treatment of the venereal diseases, suitable for the instruction of medical students and yet adequate for the needs of practitioners.

It may be said confidently at once that the author has amply succeeded in producing a handbook in which practitioner and student may find readily set out, in simple prose and in pleasing order, the essential evidences of the venereal diseases and their proper consideration in diagnosis, treatment and cure.

The methods of diagnosis of the main diseases, syphilis, gonorrhoea and chancroid, are not only carefully and adequately described in their clinical and laboratory aspects but are well illustrated by photographs, many in colour. Separate chapters and sections are devoted to a systematic consideration of these diseases in their different stages in the male and the female, as well as to the affections of various regions and organs of the body. The matter is all well arranged and this, with the good index, makes reference easy.

On the matter of treatment it is somewhat unfortunate, though certainly no fault, that, almost as soon as his book appeared in print, the author should find much of the old and well tried therapy for syphilis and gonorrhoea which he carefully describes already in process of considerable modification by the advent of treatment with penicillin. It is hardly likely, however, that in the near future penicillin will have been made readily available to the practitioner outside the special treatment centres for venereal diseases. The value of this book for the practitioner is not lessened seriously therefore by the absence of a description of penicillin treatment. In it are set out clearly and in sufficient detail the standard treatments with arsphenamines, bismuth and sulphathiazole which have given such good results in the past.

Further chapters deal, again concisely and adequately, with those conditions, such as genital warts, genito-urinary trichomoniasis, and proctitis (lymphopathia venereum), among others, which are usually referred to a venereal diseases department.

The author is to be congratulated on this handbook, for which a deserved success can be predicted.

H. M. H.



## Serology in Syphilis Control: Principles of Sensitivity and Specificity

T. E. O.

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