tions were missed; the renewed improvement with their resumption, left the same kind of impression on one's mind as is left by the improvement of the throat after diphtheria antitoxin. The evidence is clinical; it seems in accord with the accumulating statistical evidence. Of course it is unsafe to draw conclusions—one can only have "impressions"—from two cases. They are the only cases I have had. Neither of them had convulsions. The occurrence of tetanus in the two brothers was probably merely a coincidence from both happening to have accidents in connexion with horses. Possibly the long dry weather of June may have favoured the inoculation and virulence of the tetanus bacillus. At any rate I considered it wise to give a prophylactic injection of antitetanic serum to a third patient, another vanman, who fell from his van on July 1st and received a compound comminuted fracture of left clavicle, and dirty wound of ear and scalp. The wounds were dressed, the scalp wound being swabbed with pure carbolic acid. The patient recovered, but on the nineteenth day he had a febrile attack, with temperature of 102° , pains in muscles and joints. These were probably rheumatic, and lasted two days. They yielded to 60-gr. doses of sodium salicylate together with 120 gr. of sodium bicarbonate night and morning.

As the tetanus bacillus is an anaërobie, H_2O_2 seems an ideal solution to use for such wounds as occurred in these cases. The inoculations kindly made by my friend, Dr. R. M. Buchanan, Bacteriologist to the City of Glasgow, from pus taken about the fourteenth day were negative. Obviously in tetanus lumbar puncture should be done under chloroform.

IMPROVED METHODS FOR¹ RECOGNITION OF BLOOD AND SEMINAL STAINS,

ESPECIALLY IN TROPICAL CLIMATES.

By E. H. HANKIN, M.A., Sc.D.,

LATE FELLOW OF ST. JOHN'S COLLEGE, CAMBRIDGE; HONORARY
FELLOW OF ALLAHABAD UNIVERSITY; CHEMICAL EXAMINER
AND BACTERIOLOGIST TO THE GOVERNMENT OF THE
UNITED PROVINCES OF AGRA AND OUDH.

[From the Agra Government Laboratory.]

THE high temperature of tropical climates has a twofold action on blood and seminal stains. If the stains are kept damp they are liable to putrefy rapidly. If they are kept dry they become so insoluble as to be acted on with difficulty by the ordinary reagents. Either of these changes may render recognition of the stains difficult or impossible.

If a blood stain is so altered in this way that it refuses to respond to the ordinary tests, I have found that it may give the absorption bands of haemochromogen, even although the blood-colouring matter is in an apparently undissolved and insoluble condition. The method of carrying out the test based on this fact is as follows:

If on clothing, etc., the suspected stain is cut out and plunged into boiling water for a few moments. It is then placed on a glass slide and wetted with ammonium sulphide. It is examined under the microscope, and the specimen is moved until the whole field of view is occupied by a portion of the coloured material. If this cannot be achieved with a low power, the use of an oil immersion may be necessary. The eyepiece is then taken out and replaced by a microspectroscope. If the stain is of blood the two absorption bands of haemochromogen will be seen. Should the bands not be visible—as may occur apparently owing to the effects of commencing putrefaction—a drop of a 10 per cent. solution of potassium cyanide should be allowed to fall on the stain. Two bands will at once develop resembling those of haemochromogen, but situated a little nearer to the red end of the spectrum.

The object of boiling the blood-stained cloth is to prevent the colouring matter from going into solution. If this was to occur, as might happen with a fresh stain, the colour might be so diluted that the absorption bands could not be observed. If the stain is on a weapon or a piece of jewellery, it should first be wetted with ammonium sulphide. A small portion may then be scraped off with a knife and treated as above.

Extended experience during the last four years has given me confidence in the value of this method. It has also been employed with success by Captain Windsor, I.M.S., Chemical Examiner to the Government of Burma.

In dealing with difficultly soluble seminal stains, I attempted to take advantage of the known solvent action of potassium cyanide on proteid matter. I found that spermatozoa were rapidly disintegrated under the action of this reagent, unless they were first hardened by immersion in boiling water. The suspected seminal stain is first placed for a minute in boiling water. It is allowed to cool. It is then placed for two minutes in a 2 per cent. solution of potassium cyanide. It is then rapidly washed in distilled water, placed on a glass slide, teased up and scraped, and larger pieces of the cloth are removed. The film on the slide is dried at air temperature; it is then fixed by heating, stained with gentian violet, and examined. This treatment gave distinctly better results than methods previously at my disposal, but was not quite satisfactory in that the tails of the spermatozoa were not always adequately stained. Better results may be obtained as follows:

1. The suspected stain is boiled for two minutes in a watery solution containing tannin $\frac{1}{2}$ per cent., and sulphuric acid 1 per 1,000.

2. The stain is washed for two minutes in a solution made by adding one part of saturated ammonia solution to 400 of water.

3. It is then transferred for two minutes to a 2 per cent. solution of potassium cyanide.

4. It is then rapidly washed in distilled water, scraped, and teased up on a glass slide, dried, fixed by heat, and stained.

It is stated in textbooks that seminal stains must be gently treated, and not roughly teased up, to avoid breaking off the flagella from the heads of the spermatozoa. My experience indicates that breaking off of the tails is mostly due to treatment with inappropriate solvents, but partly to changes that may occur spontaneously, especially in a thick layer of the stain.

By the above method I have been able to detect spermatozoa in a stain in which they were covered with masses of bacteria, and were only visible with the help of an oil immersion lens; in another stain which had been covered with a mixture of red ink and starch paste, and also in a stain that I had heated to 140° C. in a hot air sterilizer.

ITALIAN TUBERCULOSIS CONGRESS.—The Italian Congress on Tuberculosis was held at Milan in the last week of September. In the opening address Dr. F. Gatti, President of the Organizing Committee, contrasted the vigorous action taken for the abatement of the tuberculosis scourge in Great Britain and in Germany with the little that was being done in Italy. Resolutions were passed urging the organization of an efficient public service of disinfection, the sanitary control of the milk supply and the provision of hospital accommodation for the subjects of tuberculosis. In regard to the latter question the feeling of the meeting was that such persons should be treated in separate hospitals with distinct departments for curable and incurable cases respectively. Professor Di Veste dwelt on the importance of the teaching of the principles of hygiene, with special application to tuberculosis, in all schools. Professor Foà advocated the establishment of prophylactic dispensaries; curative dispensaries, he thought, did more harm than good, as it was impossible to treat the tuberculous successfully as out-patients. He proposed that the prophylactic dispensaries should be under the direction of the municipal authorities, and a resolution in that sense was adopted by the Congress. A committee, consisting of Professors Gatti, Bordoni-Uffreduzzi and Zenoni, was appointed to submit the resolutions to the Mayor of Milan and to urge upon him the expediency of establishing a prophylactic dispensary in that city without delay.

NEW GERMAN MEDICAL SOCIETIES.—As an outcome of the recent meeting of the German Association of Scientists and Medical Practitioners, it has been decided by the Section of Neurology that a German Society of Specialists in Nervous Diseases should be formed. A provisional committee, under the presidency of Professor Oppenheim of Berlin, has been appointed to draw up a scheme of organization. A German Society of Urology has been formed with Professor Oberlander as its president. Congresses are to be held every two years in Berlin and Vienna alternately.