The treatment of venereal disease and scabies in the army : report.

ADVISORY BOARD FOR ARMY MEDICAL SERVICES.

THE TREATMENT OF VENEREAL DISEASE AND SCABIES IN THE ARMY.

FIRST REPORT.

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FIRST REPORT.

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THE TREATMENT OF VENEREAL DISEASE AND SCABIES IN THE ARMY.

FIRST REPORT,

DEALING WITH RECENT PUBLICATIONS ON THESE DISEASES.

MEMBERS:

The DIRECTOR-GENERAL.	Dr. JAMES GALLOWAY (Chairman).
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Colonel D. BRUCE.	Sir COOPER PERRY.
Lieut.-Colonel DAVIES.	Sir FREDERICK TREVES, Bart.
Sir ALFRED FRIPP.	

I.—The Sub-Committee was appointed at the Forty-eighth Meeting of the Board, with instructions to consider the question of the treatment of Venereal Diseases in the Army, and to inquire into the question of the treatment of Itch (Minute 14, 48th Meeting, July 23rd, 1903).

II.—At the request of the Board the Director-General arranged to appoint a junior officer to collect information for the inquiry, and on the 29th of July the Chairman received intimation from the Director-General that Captain C. E. Pollock, R.A.M.C., had been appointed for this purpose.

III.—The following plan of investigation was arranged by Captain Pollock and the Chairman of the Sub-Committee to permit of the inquiry being carried out in order. The information contained in Captain Pollock's Report follows the lines of this plan of investigation :—

PLAN OF INVESTIGATION.

A.—To ascertain the exact references of recent publications and the records at Headquarters dealing with the subject, and to give the conclusions of the more important in abstract.

B.—To classify this information under the following headings, taking special note of the points mentioned.

I.—SYPHILIS.

1. Methods of prevention; with special reference to police regulations now in force in India and the Colonies. Contagion. Diagnosis.

In reference to these matters to ascertain the conclusions arrived at by the recent Congresses on Venereal Disease in Brussels, &c.

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2. Treatment:—

Mercury:—(*a.*) By the mouth.
(*b.*) By inunction.
(*c.*) By intramuscular injection.
(*d.*) By intravenous injection.
(*e.*) By vapour or other baths.

The Iodides.

Hygienic and tonic treatment.

To note the actual prescriptions used.

To note the risks of the various methods of treatment, *e.g.*, mercurial stomatitis, gastritis, enteritis in the oral methods; pain, suppuration, indolent inflammations, embolism in the injection methods; acute and fatal mercurial poisoning.

To take special note of the advantages of different methods of treatment in individual cases of the disease, or of patients under different circumstances, *e.g.*, while on duty or as out-patients, when segregated in hospitals for the purpose of treatment, &c.

To report on the period of commencement and duration of treatment, *e.g.*, in cases of primary lesion, during the early period of infection, and in cases of later syphilis; the treatment of special manifestations, *e.g.*, of chronic lesions of the mucous membrane, recurring gummatous and destructive lesions.

3. The attendants and nurses of syphilitic patients; precaution against infection; the personal care necessary.

4. The administrative arrangements required to secure continuous treatment while in the Army.

5. To ascertain whether it is advisable to retain soldiers suffering from inveterate syphilis in the Service, or when they should be discharged and to suggest arrangements to enable soldiers discharged on account of syphilitic disease to continue treatment either under military or civilian supervision.

II.—Soft Chancres.

Diagnosis.
Treatment.

III.—Gonorrhœa.

Diagnosis.
Contagion.
Treatment in acute and chronic cases.
Duration of infectivity.

IV.—Certain Consequences of Venereal Disease.

(1). Buboes: their Causation and Treatment.
(2). Phagedænic Ulceration: Causation and Treatment.
Syphilis complicated by pyogenic and other pathogenic influences.

V.—Scabies.

Diagnosis.
Treatment.
Disinfection of clothing, &c.

6. To ascertain the incidence of Syphilis, Soft Chancres, Gonorrhœa, and Scabies in the Army, with the view of determining the hospital accommodation and other arrangements necessary for the treatment of these diseases. These statistics should embrace a period sufficiently long to eliminate the errors caused by movement of troops, and should give the number of cases at different stations.

7. To take special note of the arrangement and equipment of wards and hospitals for the treatment of venereal diseases and of certain skin diseases. The baths, disinfectant apparatus and injection apparatus, &c., required.

IV.—Captain Pollock's report to members of the Sub-Committee deals principally with recent observations on the treatment of the diseases in question. The matter of hospitals and equipment and other arrangements for dealing with these diseases are for the present deferred.

V.—A memorandum has been circulated recently by the Director-General, A.M.S., to the principal medical officers in order to render the statistics on the subject more accurate and useful.

October 23, 1903.

PREFACE.

This report on the treatment of venereal diseases has been compiled from official documents and current literature on the subject. This literature being voluminous, and the opinions expressed frequently at variance, it has not been found possible to include all that has been published on the subject. In the following pages an attempt has been made to classify the more salient points, gathered from a careful perusal of the recent writings and reports of discussions on the treatment of venereal disease.

Tables are appended giving the number of Admissions and Constantly Sick for each form of venereal disease in the United Kingdom and abroad (Appendix B.). These show considerable fluctuations in the incidence of venereal disease, but many of them, it is satisfactory to note, indicate that of recent years there has been a marked reduction in the amount of venereal disease.

Certain charts are appended showing the admissions for all forms of venereal disease per 1,000 strength (Appendix D.). Charts I. and VII. dealing with the United Kingdom are of special interest. The former shows the admission rate for all forms of venereal disease before, during, and after the time that the Contagious Diseases Acts were in force, the latter shows the incidence of Primary Venereal Sores in stations under the Act, as also in those stations not so protected.

Chart II. deals with India, and is more fully referred to in the body of the report.

Chart III. refers to Hong Kong and the Straits Settlements. Before the introduction of the Contagious Diseases Act venereal disease of a severe type was very prevalent in these stations. A marked improvement followed the enforcement of the Act. The admission rate was again rising when the Act was repealed in 1887; the rise continued till 1897. In 1896 the "Women's and Girls' Protection Ordinance" was passed. Since 1897 there has been a marked diminution in the venereal admission rate, although it may be remarked that the same holds good for Ceylon, where no special legislation has been introduced.

Chart IV. contrasts Malta and Gibraltar, two very similar garrisons, but in Malta a Contagious Diseases Act has always been in force, whereas in Gibraltar the Contagious Diseases Act was abolished in 1887.

Chart V. shows the venereal admission rate for Egypt, a country with a mixed, low class population and no regulations in regard to venereal disease.

Chart VI. has been reprinted from the Army Medical Reports, 1897. Although one of the worst districts in India appears to have been selected for the purpose of comparison, still, the chart shows in a striking manner what legislation can do to prevent the spread of syphilis.

Both charts and tables show alternations in the incidence of venereal disease, some of which appear to be explicable by facts within our knowledge, *e.g.*, the introduction of Short Service might be held to explain the great rise which took place in the United Kingdom from 1875 to 1885, and the subsequent fall might perhaps be ascribed to the effect of the Education Act on the class from which the soldier is mostly recruited. For many of the fluctuations, however, no adequate explanation is forthcoming.

REPORT.

I.—The Prevention of Venereal Disease.

The main object of this Report being to collect the recently published opinions on, and the methods of treatment of Venereal Diseases, the question of prophylaxis has not been fully discussed. In dealing with venereal diseases, however, prevention is of such great importance, that no report on treatment could be considered complete without a short reference to preventive measures.

Legislation. Home.

1. In the United Kingdom legislation has been tried and abandoned. Capt. Howell,* R.A.M.C., in a very able summary of the question, concludes that we should not ask for the re-enactment of the Contagious Diseases Act, but that the police should deal with the low class of prostitutes who frequent the streets and other public places. The police at present have powers to arrest any woman soliciting or annoying the public, but have orders only to take women into custody when the person who has been annoyed consents to prosecute. It will hardly be denied that these women are responsible for most of the venereal disease in the Army at the present time. As there does not seem to be any prospect of controlling them by legal means, the only apparent alternative is Neisser's proposal, viz., that free treatment should be provided for all women suffering from venereal disease in special departments of general hospitals, thus avoiding the stigma attaching to treatment in special venereal hospitals.

When the Contagious Diseases Acts were repealed the existing Lock Hospitals were closed. In some of the garrison towns the local authorities appealed to Government for assistance in maintaining lock wards in the local infirmaries, on the grounds that a military garrison attracted prostitutes, who when sick had to be cared for at the expense of the ratepayers. In certain cases the justice of these claims was admitted, and grants were sanctioned in the following cases:—

Aldershot, 875*l.*, Cork, 490*l.*, Naas, 100*l.*, Dublin, 250*l.* per annum.

Abroad.

2. The prophylaxis of Venereal Disease generally, but more especially syphilis, is at present attracting considerable attention on the Continent. In Germany and France there already exists legislation for the control of prostitution and the prevention of the spread of venereal disease. The leading authorities are not, however, satisfied that as much is being done as is possible. Societies, consisting of members of the legal and medical professions and others interested in the public health, have been formed to consider the subject with a view to concerted action. The German Society holds an annual Congress, while the French one meets monthly.

France.

In France police regulations, which involve registration and periodical examination, do not seem to be very successful. This is ascribed to prevalence of clandestine prostitution.

Germany.

At the German Congress for the prevention of venereal disease held at Frankfort, March, 1903, most speakers expressed dissatisfaction with the working of the present German police regulations, which are much the same as the French. At the same time the general opinion was that some kind of restriction is necessary.

The plan of "Control Strassen"[2] seemed to meet with a fair amount of approval.

* The small reference numbers refer to the Bibliography commencing on page 27.

Prussian law [44] requires notification in the following cases :—

(1.) If the case is likely to be a source of venereal contagion, *e.g.*, secondary ulcers of the mouth among employés in workshops, or poor people living in overcrowded dwellings.

(2.) Civil doctors must inform the Commanding Officer when treating soldiers for venereal disease.

Congresses.

Recent congresses on the prevention of venereal disease :—

1. Congress for the prevention of syphilis in Russia.[11]
2. Discussion, British Medical Association meeting, 1899.[45]
3. First International Congress for the Prevention of Venereal Disease, Brussels, 1899.[15]
4. Committee appointed by the Medical Society of New York to inquire into the spread of venereal disease and means of its prevention.[16]
5. Second International Congress, Brussels, 1902.[16]
6. First Congress of the Deutsche Gesellschaft zur Bekämpfung der Geschlechts Krankheiten, June 1903.[33]

In the Russian Congress various proposals were adopted for the army, such as lectures to the men, keeping syphilitic cases under observation, &c. All these have either been adopted in the British Army already or are about to be so.

At the Second International Congress, Brussels, the only resolution adopted which affects the army was as follows :—

No. III. That all conscripts joining a regiment be given a short pamphlet describing the dangers of gonorrhœa and syphilis. This is also to contain a note to the effect that the date of an attack of venereal disease must be remembered in order to correctly inform the medical officer of the fact, should it be necessary later on ; also a brief reference to the dangers of alcoholic indulgence and of tubercular disease.

This pamphlet to be kept by the man on his discharge from the army.

Measures adopted for Prophylaxis in Armies.

European Armies.

3. Comparison of the incidence of venereal diseases in European Armies [41] :—

—	Admissions per 1,000 Strength.				
	German.	French.	Austrian.	Italian.	British.
1886 to 1890 (Average, Annual).	27·1	51·1	65·3	94·3	212·4
In 1900 - -	17·8	37·2	59·8	89·7	93·4

Russian.

Venereal disease is prevalent in the Russian army.[78] In 1899 out of a strength of 1,013,435 men 34,228 were admitted for this cause, = 33·77 per 1,000.

In Warsaw lectures are given to the men instructing them in the nature and dangers of venereal disease, also recommending continence and advising them to report sick early.

French.

In the French Army the following rules have been adopted :—

I.—Lectures to the men.
II.—Monthly examinations of the men in private.
III.—Secret register of syphilitics.
IV.—No punishment is awarded unless the disease is concealed.
V.—Houses of diseased prostitutes are put out of bounds.

The French colonial corps [69] suffer severely from venereal disease. In most French colonies there is no regulation of prostitution, and where it does exist it is very inefficiently carried out.

United States.

In the United States Army in Cuba weekly inspections for the detection of venereal disease were held. Those so suffering were treated in hospital, or as out-patients confined to barracks.

4. *Inspections.*—All men are medically inspected before embarkation. Special venereal inspections are held :— British Army—Abroad.

(1.) The day after embarkation.
(2.) The seventh day at sea.
(3.) The day before disembarkation.
(4.) On arrival at new station.
(5.) Surprise inspections by medical officers when it is supposed that disease is being concealed.

The venereal inspections, in the opinion of many officers, are very much objected to both by medical officers and well-conducted men, and it has been questioned whether the good they do is not more than counterbalanced by the irritation they cause.

India.—Sir George White, the Commander-in-Chief, issued a general order dated 14th July 1897, on the subject of venereal disease in the Army. In this order, among other suggestions, was one that selected combatant and medical officers should be invited to lecture to the men on the moral and physical degradation which is the almost certain result of consorting with loose women in India. The A.M.D. Reports mention lectures to the men as one of the factors which have led to a decrease in the amount of venereal. India.

In 1897 a confidential letter No. 26,066/2000, was sent to S.M.O.'s of troopships proceeding to India. In this letter S.M.O.'s were directed to give lectures to the men on the importance of the preservation of their health in India, and the general precautions to be observed, more especially in regard to venereal. Favourable reports were furnished by three M.O's.

Cantonment Hospitals.—Female lock hospitals existed in most Indian stations from about 1865 to 1888, when they were closed as the result of a resolution of the House of Commons. Owing to the great increase in venereal disease in the British Army in India which followed this (all venereal admission rate for 1895 was 522·3 per 1,000) a departmental committee was appointed to consider the question. After a great deal of correspondence[72] between the S. of S. India and the Government of India, the Cantonment Act, 1897, was introduced. The main features of this Act are—

(*a.*) Establishment of Cantonment General Hospitals for the reception of cases of contagious disease, as well as for other diseases.
(*b.*) Power to compulsorily examine and detain those suspected of suffering from such diseases.
(*c.*) Power to exclude any persons from cantonments who do not comply with the provisions of the Act.
(*d.*) Power to remove brothels and prostitutes.
(*e.*) Exclusion of brothels and prostitutes from regimental bazaars.
(*f.*) Prohibition of loitering and importuning.

Registration, compulsory examination otherwise than under (*b*), and jurisdiction outside cantonment limits, are not provided for. Since the introduction of this Act at the end of 1897 there has been a steady decrease in all forms of venereal disease, especially in primary syphilis. (*See* Chart II. and Table on p. 82.)

A.M.D. Reports for 1901 mention the following causes for this decrease in the number of venereal admissions :—

(1.) Increased age of the soldier and longer residence in the country (during the years 1899, 1900, 1901).
(2.) Successful working of the cantonment hospitals, and the rigid enforcement of the powers conferred by the Cantonment Act as regards the method of dealing with persons known to be suffering from contagious diseases. There is unfortunately a large class of prostitutes who ply their trade just outside cantonment limits during the day and loiter about after dark. They are well aware of the scope of the Act and take good care to keep just beyond its reach.
(3.) The interest taken in the matter by regimental and other officers.

(4.) The provision of means of ablution in barracks and the encouragement of their use.
(5.) Lectures on temperance and continence by chaplains, medical, and regimental officers.
(6.) Placing dangerous localities out of bounds.
(7.) The prolonged treatment of cases of syphilis out of hospital.
(8.) The fostering of games and athletic sports among the men.
(9.) The provision of concerts and other amusements in the evenings to keep the men out of the bazaars.
(10.) Decrease in the number of women who had been reduced to destitution by famine, and who in consequence adopted prostitution to obtain the means of existence.
(11.) The bad health of the men owing to malarial fevers.
(12.) The imposing of some disciplinary restrictions on men with a large number of admissions for venereal diseases.
(13.) Placing the bazaars out of bounds for lengthened periods owing to the prevalence of plague.

Hong Kong. *Hong Kong.*—A local ordinance was introduced in November 1898 strengthening the powers under the "Protection of Women and Girls Ordinance, 1897," for suppressing brothels and slavery in connection with prostitution. Registration of brothels or prostitutes and compulsory periodical examinations are not permitted.

Straits Settlements. *Straits Settlements.*—After the repeal of the Contagious Diseases Acts in 1887 a registration system continued till 1895, when it was abolished, and replaced in 1896 by the "Women's and Girls' Protection Ordinance." In 1899 this was strengthened by an Amendment Ordinance (promulgated 29th August 1899) compelling keepers of brothels, under penalty, to prevent women suffering from contagious disease from remaining in the brothel, also giving power to close brothels on complaint being made, and penalising persons importuning or soliciting for immoral purposes.

Periodical examinations and compulsory detention in hospital are not mentioned in the Ordinance. The admission rate for all venereal diseases per 1,000 strength in Hong Kong and this command is shown in Chart III. and Tables on pp. 80 and 81.

Ceylon. *Ceylon.*—In Ceylon there is no special Ordinance for dealing with venereal disease. Ordinance No. 5 of 1889, however, confers the power of closing brothels reasonably suspected of being special centres of disease. For admissions and constantly sick, *see* Table on p. 79.

Malta. *Malta.*—In Malta a local Contagious Diseases Act has been in force since 1871. This was amplified in 1898 to make it in effect an Infectious and Contagious Diseases Ordinance. The venereal statistics for this command are peculiar.

The total ratio for these diseases in 1879 was 91·3, then there was a rise for six years, and after that a fall standing as low as 76·4 in 1887. After 1890 there was a considerable increase, the figures for the last six years, however, showing a steady decline. (*See* Chart IV. and Table on p. 72.)

According to Colonel Bruce, R.A.M.C., most of the cases of primary syphilis in Malta were imported from England.

Gibraltar. *Gibraltar.*—An amended Ordinance was passed in 1901 by which venereal diseases were included under the heading of infectious diseases. When the Chief of the Police has reasonable grounds for suspecting that any person is suffering from an infectious disease, he may order such person to attend at the Colonial Hospital or other place and to remain there till the Medical Officer is satisfied that such person is no longer suffering from such disease. Any person failing to comply with this order is reported to the Governor.

In the Colonial Hospital one lock ward is maintained for males and two in a separate block for females. Males, unless certified to be indigent, pay for their subsistence; females are treated and supported in Hospital gratuitously.

During 1900 and 1901 the garrisons of Malta, Gibraltar, and Egypt were partially composed of Militia and Royal Garrison regiments. This may account in part for the diminution in the ratio of admission for venereal disease (*see* Chart IV. and Table on p. 71).

In *Egypt* there are no regulations in regard to contagious diseases. Egypt.

The admission rate for secondary syphilis was much reduced during the years 1900–1 owing to the general employment of out-patient treatment of syphilis (*see* Appendix A., Chart V. and Table on p. 83).

South Africa and *St. Helena*.—A Contagious Diseases Act was passed for Cape Colony in 1888; this was followed by a considerable diminution in the incidence of venereal disease. The actual figures are shown in table form on p. 77. (*See also* Chart VI.) South Africa and St. Helena.

In Canada and the West Indies there are no regulations. Canada and West Indies.

In Bermuda the admission rate is low owing to special local conditions. Bermuda.

5. Capt. Howell,[31] R.A.M.C., makes the following suggestions:— Suggested disciplinary measures.

(1.) That no official notice be taken of the first venereal admission or of any admissions for secondary syphilis, but that for every subsequent admission for venereal disease a V. to be entered on the man's Regimental Defaulter Sheet.

(2.) That all guards and fatigues missed by a man being in hospital for venereal disease (excepting first admissions and secondary syphilis admissions) should be made up by the man on his discharge from hospital.

(3.) That extra drills be imposed to regain the efficiency lost while in hospital.

(4.) At home permanent passes, and in India shooting passes not to be granted to men having many entries for venereal disease.

(5.) The number of V.s in a man's Defaulter Sheet to be taken into consideration by the man's Commanding Officer before promoting him, or assessing his character on discharge.

(6.) Any man who has suffered from syphilis not to be granted permission to marry until he has had a full course of treatment for syphilis, and has been clear of an entry for syphilis for at least two years.

(7.) Any man who has had no admission to hospital for an officially fixed period, say one year, should have his previous V.s cancelled.

(8.) Regiments showing an annual admission rate for venereal disease much in excess of the average admission ratio for the whole Army should be debarred from proceeding on active service till all regiments showing less than the average rate have proceeded to the front, and even then should, if possible, only be employed on the lines of communication.

The question of publishing an annual table showing the incidence of venereal disease by regiments might be considered. To be of practical use this would have to appear much earlier than the Annual Returns A.M.D. Lieut.-General Goodenough when commanding in South Africa called for monthly returns of venereal admissions by companies; he informed company officers what the average was, so that they could see whether their companies were above or below this figure.

If any of these proposals are adopted, the fact that anything in the nature of a punishment tends to the concealment of disease must be borne in mind.

6. *Local Applications*.—Giovanni,[13] as the result of a number of experiments, states that very thorough washing with soap and water immediately after exposure to infection will prevent the formation of a soft chancre. Prophylaxis by local applications.

The same author[11] states that 1 in 1,000 perchloride of mercury if applied for one minute within eight hours of infection will have the same effect.

Blakusewski[33] states that in the German navy a 2 per cent. solution of silver nitrate is used on the day following a suspected infection. Five drops are used with a special apparatus, Samariter III. (not described). The method is reported to yield satisfactory results.

Capt. Howell [71] notes the good results obtained by the R.A. at Aden by having a special ablution room in the bazaar supplied with antiseptic lotions.

He also states that mechanical appliances were tried with benefit by one regiment at Bombay.

II.—SYPHILIS.

Contagion and Diagnosis.

Most authorities [15] agree that the contagion in all venereal diseases is largely spread by clandestine prostitutes.

Audry,[16] on the other hand, states that prostitutes under supervision cause more than half of all venereal disease in Toulouse.

Common use of tools.

The recent Congresses point out the danger of infection through the common use of tools in workshops, the common use of drinking vessels, &c. The occurrence of extra-genital chancre in the British Army is comparatively rare, and when syphilitic men are subjected to regular inspection should hardly occur at all.

Diagnosis.—Recent writings, reports of discussions at various societies, &c. do not reveal any great advance in the well-known classical descriptions of Fournier and other writers in regard to the diagnosis of primary sores.

The general opinion of Syphiligraphers on the Continent and America is that if there is any doubt as to whether a chancre is an infecting or non-infecting one we must wait for the appearance of constitutional signs before making a diagnosis.

In later manifestations of a doubtful character Scarenzio [12] and others advise the use of calomel injections to clear up the diagnosis.

Inoculation on the patient is advised by many Continental writers in order to establish the diagnosis of soft chancre. But this diagnosis, although correct in itself, does not disprove the co-existence of syphilis.

Justus' blood reaction.

Justus [85] states that in patients suffering from syphilis the first injection of mercury is followed within a few hours by a diminution in the percentage of hæmoglobin amounting to about 10 per cent., which later on is followed by a rise. This does not occur in healthy people. Bayet [17] corroborates this in the case of untreated syphilis during the secondary period of the disease, but says it does not hold good in the tertiary stage.

Verrati [16] claims to diagnose syphilis in doubtful cases by the improvement in the blood following the administration of mercury.

Bacteria.

Lustgarten [85] described a bacillus in 1884 which he supposed was the cause of syphilis; since then Van Niessen,[79] Joseph, and Piorkowski,[9] Jullien and de Lisle,[84] have announced the discovery of the bacillus of syphilis. Paulsen [31] found a diplococcus albus in syphilitic blood, while Max Schueller [33] attributes the disease to a parasite resembling the protozoon of malaria. None of these micro-organisms, however, has been generally accepted by pathologists.

Treatment.

Specific Action of Mercury.

Effects of mercury on the economy.

Fischl [9] has made a prolonged chemico-histological study of the action of mercury on syphilitic tissue. He showed that mercury gains entrance to the special cells in syphilitic lesions; as a result the nucleus separates out from the cell and is carried away in the lymph stream; the cell then undergoes a fatty change, disintegrates and is absorbed.

In syphilis [67] the nitrogenous metabolism and excretion of urea are diminished. Under the influence of mercury these gradually return to their normal condition.

Reiss [18] and Ferras [16] have shown that syphilis produces the following changes in the blood. The hæmoglobin, number of red blood corpuscles, and the density of the blood are all diminished. The lymphocytes are increased. Up to a certain point mercury causes a return to the normal. During treatment the blood should be examined at stated intervals, and if

the proportion of hæmoglobin, and the number of red blood corpuscles are found to be decreasing in equal proportions, the administration of mercury must be suspended, as this reaction means that the mercury has exerted its full therapeutic effect and is now acting as a poison. From the results of a large number of observations Lévy Bing, Lafay, Barthélemy adopted their rule of giving a series of six injections of insoluble preparations over two months and then suspending treatment for a month.

Absorption.[61]—Mercury can be detected in the urine at the following periods after administration,—injections two to three hours, inunctions 24 hours, by the mouth, on the third day. After absorption mercury exists in the blood as metallic mercury in a fine state of subdivision, and not as was formerly taught in the form of an albuminate.

Mercury tends to accumulate in the body, especially in the liver and kidneys. It is mainly eliminated by the kidneys, and to a less extent by the saliva, bile, intestinal secretions, milk and sweat. Mercury can be detected in the urine up to about two months (Möller says six months) after completing a course of injections.

Barthélemy lays down that the action of any preparation of mercury depends almost solely on the proportion of metallic mercury which it contains. He states that one centigramme daily (= ⅛ grain nearly) of metallic mercury is the minimum effective dose for an adult.

Time of commencement of specific treatment.

All writers agree as to the value of mercury in treating early syphilis, but differ as to the best form in which to administer the drug. The question as to when mercurial treatment should be begun has been much debated. When the diagnosis of syphilis is certain all writers are unanimous that mercury should be administered at once and energetically.

In the case of doubtful sores opinions are divided. Some people hold that a short course of mercury should be given at once, believing that if the sore is a syphilitic one the severity of the disease will be much diminished by doing so; while if non-syphilitic no harm is done. Continental and American writers, on the other hand, state that when any doubt exists as to the existence of syphilis, mercury should be withheld till the appearance of constitutional symptoms places the diagnosis beyond doubt. They state that no harm is done by waiting, that the patient's mind is set at rest as to whether he is suffering from syphilis or not, and in the event of this being so, a full course of treatment is much more likely to be insisted on by the surgeon and followed by the patient.

Finger[62] says that an indurated chancre, plus bullet glands in the groin, is sufficient evidence on which to commence mercurial treatment.

General precautions to be observed before subjecting a patient to a course of mercurial treatment :—

(1.) Note the patient's weight.

(2.) Examine the urine for albuminuria; if present, look for evidence of Bright's disease. Syphilitic albuminuria will clear up under treatment with mercury, while Bright's disease may lead to fatal mercurial poisoning. In any case when albumen is present, it is safer to begin with much smaller doses and watch the effect on the urine.

(3.) Inquire as to any severe liver or bowel troubles within recent years. Such cases do not tolerate mercury well.

(4.) The teeth and gums should be examined. Badly decayed teeth had better be extracted. The use of the tooth brush and astringent mouth washes must be insisted on.

General precautions during the course:—

Anything likely to lower the general vitality is to be forbidden. Chills are to be specially avoided.

Smoking is usually prohibited, and in the earlier stages it is better to do so.

Diet.—The patient requires a plentiful supply of nourishment to compensate for the increased tissue-waste due to the disease. At the same time it must be remembered that mercury renders the gastro-intestinal tract more sensitive, hence such articles of diet as green vegetables, fresh fruit, spices, coffee, &c., which may cause irritation, should be limited, as otherwise troublesome diarrhœa, necessitating an interruption of the course, may ensue.

If alcohol is considered necessary, well diluted spirits, light wine, or beer may be ordered.

When any particular method is found to be unsuitable, it is better to change to another, rather than mask the objectionable symptoms by the addition of another drug.

Lévy Bing[67] states that when mercury is administered to syphilitic patients the excretion of urea, the percentage of hæmoglobin, and the body weight are all increased. By noting one or more of these points before beginning a course of mercury and taking subsequent regular observations a certain amount of information may be obtained as to whether to continue mercury or not; an increase being an indication to continue and a decrease the reverse.

The only reliable means of testing the absorption and elimination of mercury is by estimating the quantity of the latter in the urine. Unfortunately this is at present a somewhat complicated process. The following is the simplest clinical test which it has been possible to find :—

> Evaporate 500 c.c. (10 oz.) of the urine to be examined, to dryness, being careful not to overheat the dried residue. Treat the residue with 100 c.c. (3 oz.) of 20 per cent. hydrochloric acid and insert a piece of bright pure copper foil not larger than half a c.m. square. Keep the temperature near 100° C. for at least an hour, placing a condensation glass over the beaker or adding distilled water from time to time to keep the volume of the solution up to 100 c.c. The mercury is gradually deposited on the copper. Remove the copper and polish the surface with a piece of washleather, when, if mercury is present, the characteristic mercurial mirror is obtained.

An X-ray picture would reveal any accumulation of unabsorbed mercury at the site of injection.

When beginning a course of mercurial injections Lévy Bing recommends small doses to start with, in order to test the patient's susceptibility.

Mercurial Stasis.

Mercurial Stasis.—In certain cases, for some at present unknown reason, mercury (in whatever form administered) ceases to be absorbed, and what has previously been absorbed is not eliminated. This condition, known as mercurial stasis, involves great risk to the patient. This is especially the case when injections of insoluble preparations are being made use of, as a large quantity of mercury may be introduced into the tissues with serious or fatal consequences when absorption again commences. A careful study of recorded cases suggests that this condition is in some way dependent on impaired activity of the excretory glands.

Methods of administering Mercury.

By the Mouth.

By the mouth.

English and American writers favour this method, claiming in all ordinary cases that (1) This method yields as good results as any other. (2) It is clean. (3.) Does not necessitate frequent visits to the medical man. (4.) It can be carried out in private by the patient himself.

Many different forms have been used; the following are among the more common :—

Hutchinson recommends, Hydr. c. Cret. gr. 1 in pill every 2, 3, 4, or 6 hours according to the case; should diarrhœa supervene, he adds Pulv. Dover. gr. 1 to each pill. He also admits that the Liquor Hydrarg. Perchlor. is good treatment, but not so convenient to carry out.

Ramon Guiteras,[29] in a discussion on the treatment of syphilis at the New York Academy of Medicine, advocated the following :—

Mercurous iodide in pills $\frac{1}{6}$ to $\frac{1}{4}$ gr. each. Nine to be taken daily;
Tannate of mercury $\frac{1}{2}$ gr. pills, 5 pills daily;
Salicylate of mercury gr. $\frac{1}{5}$ t.d.s.; or
Grey powder or blue pill gr. 1 t.d.s.

Dietz [15] uses :—

Tannate of mercury 20 to 30 c. grm. (3 to $4\frac{1}{2}$ grs.) daily.

D'Arcy Power [65] mentions the following :—

Hydrarg. c. Cret. gr. 3 daily;
Liq. Hydrarg. Perchlor. one drachm. t.d.s.;
Hydrarg. Iod. Virid., gr. $\frac{1}{3}$ to $\frac{1}{4}$; or
Tannate of mercury gr. $\frac{1}{2}$ in pills.

Fournier [64] recommends green (mercurous) iodide of mercury 10 c. gm. daily ($1\frac{1}{2}$ grs.).

Ward [45] recommends grey powder or blue pill.

Gaucher [13] states he generally uses pills. (Does not give the composition.)

Brocq [15] advocates mercurial solutions (preparation not stated) well diluted, or given to the patient in capsules to be dissolved in any drink he likes, preferably milk.

Disadvantages of administering mercury by the mouth :—

(1.) Absorption is irregular, and judging by the time at which mercury first appears in the urine, is much slower. It requires a longer time to produce its therapeutic effect.

(2.) In some patients mercury when administered by the mouth does not seem to be absorbed at all, or at least has no visible effect on syphilitic lesions.

(3.) By this method there is a much greater probability of producing serious disturbance of the alimentary tract, with consequent interruption of the course, and greater severity of the disease later on. (Henry Lee, in Holmes System of Surgery.)

Length of Course.—Hutchinson [55] says six months for the first course. Further treatment only if symptoms recur. The general idea in England seems to be 18 months to two years' treatment.

De Méric treats for 18 months to two years.

Taylor,[58] when constitutional symptoms have appeared, begins mercurial treatment by the mouth, and continues for 2 to $2\frac{1}{2}$ years.

White and Martin[56] recommend mercurous iodide in pills for six weeks, then inunctions for two weeks. This alternating treatment is continued for two years; then mixed iodide and mercury treatment for six months.

D'Arcy Power,[65] when certain that the patient has syphilis, begins mercurial treatment. He omits treatment for three days at the end of each month, and for 14 days at the end of every third month.

Whitla[43] treats energetically for nine months, gauging the dosage by the patient's weight; if no signs of syphilis are then present, he omits treatment for two to three months. He then gives a mild mercurial course, alternating with iodides every six weeks, for nine months more; then a two months' rest followed by a three months' course of iodides to complete two years.

Sir W. Gowers,[43] for five years after the last appearance of symptoms, gives a three weeks' course of iodides twice a year.

The later continental writers do not mention any particular time during which treatment by the mouth is to be maintained.

Lapowski and Ramon Guiteras, New York, say two years.

Inunction.

Inunction.

Piccardi [72] made a number of experiments to determine how mercury enters the system when administered in the form of an inunction. He showed that absorption takes place both directly through the skin as well as by inhalation

of the volatilized metal. Schuster [15] corroborated this. Neumann showed the presence of mercury in skin sections after inunction with mercurial ointment.

Inunction was one of the earliest methods employed in the treatment of syphilis, but fell into disrepute owing to the reckless way in which it was used. It is the classical treatment of Aix-la-Chapelle, and is fully described by Major G. Cree [52] and Lieut.-Col. W. Dick.[53] The main points may be briefly described as follows:—

At 6.30 a.m. the patient drinks three glasses of hot spring water.

At 7.30 a.m. hot bath for half an hour followed by the inunction Breakfast.

Rises and takes light exercise in the open air till lunch 1.30.

More exercise, short of fatigue, out of doors.

Drinks three glasses of hot spring water.

Evening meal between 6 and 7. Bed, 10 p.m.

The bath may be taken at any time in the forenoon and is always followed by the inunction.

Three grammes of mercurial ointment (G.P.) (containing 15 grains of metallic mercury) are rubbed into the skin for 20 minutes exactly, by specially trained men.

The first day the calves are chosen, next the thighs, then the back, fourth day the chest, fifth day the arms, sixth day begin again at the calves. The change of site is to avoid irritation of the skin.

The patient dresses having the ointment still on the skin. He wears cheap underclothing, which is thrown away at the end of the course, as washing it is impossible.

Throughout the course strict attention is paid to the hygiene of the mouth. Teeth to be brushed, using tooth powder, after every meal.

Each patient carries a small bottle of acetate of alum* solution and is ordered to rinse the mouth out every half hour during the day.

The springs contain principally common salt and sulphides of soda, with traces of iodides and bromides.

The bath is to soften the skin and prepare it for inunction.

The waters internally act as a mild purgative assisting the excretion of mercury, also have a sluicing effect on the kidneys. The sulphides are supposed to combine with any excess of mercury present in the intestines and so prevent mercurial poisoning.

Should there be severe ulceration of the skin, preventing the use of inunctions, injections are employed till the ulcers have healed up.

Mecurial stasis may occur exceptionally. In this condition no more mercury is absorbed, and what has already been absorbed is not eliminated. Should this occur the course must be interrupted and treatment by hot baths be substituted.

Hutchinson says:—"I do not think that as regards permanency of "cure the inunction method presents any special advantages over others, "nor that the inunction at Aix is any better than the same plan carried out "at the patient's home. As regards the Aix treatment in general I may here "say that I have seen a great many cases in which the symptoms of syphilis "have relapsed after a temporary cure by inunction as practised there."

Doctor Wibel, of Wiesbaden, treats syphilis with striking success by the following method:—

The patient is first put into a bath of Kochbrunnen water (which has a high sp. gr.) at a temperature of 86° F. or more. This is followed by the inunction. Five to ten grammes of mercurial ointment prepared with pure resorbin in place of the usual fats is rubbed into the patient's skin for twenty minutes by a specially trained masseur, who uses a glass instrument instead of the hand, as at Aix. At the end of the process all the ointment has disappeared leaving the skin clean. Several times during the day the patient is ordered to drink a glass of Kochbrunnen water; this is not aperient

* Acetate of alum is prepared as follows:—Acetate of lead 1 oz. dissolved in distilled water, 5 ozs.; alum, 1 oz., dissolved in 5 ozs. distilled water. Solutions are mixed and filtered. The filtrate is scented according to taste. For use this should be diluted with 19 parts of water.

out merely diuretic. It is supposed to counteract any injurious effect which the mercury may have on the intestines and kidneys.

Hutchinson [55] gives the following directions for carrying out the inunction method in private:—

The patient is to go early to bed and lie on as long as possible in the morning. If the weather is cold he must have a fire in his room. A blanket is spread over the bed or a couch. The ointment, made up in the proper quantities by the chemist, is to be rubbed in to the chest and abdomen for 20 to 25 minutes. When finished a jersey and drawers to be put on for the night. Hands to be washed clean with soap and water. Next morning the patient takes a bath and puts on clean underclothing. The soiled underclothing can be worn every night for a week, and can be washed in soap and water.

D'Arcy Power [63] gives much the same directions, but recommends that the skin be sponged over with hydrarg. perchlorid. 1 in 1,000 solution, and carefully dried before rubbing in the ointment.

White and Martin [56] recommend the following formula:—

℞ Ung. hydrarg. (U.S.P.).
Ung. petrolei carbolat. of each 1 oz.

Divide into 16 parts. One part at bedtime.
Patient to rub the ointment in as described above.

Cheap woollen underclothing to be worn. Bath, only twice a week.

If much skin irritation is caused, use the following (White and Martin):—

℞ Ung. hydrarg. chlorid. mit.,* 2 drachms.
Ung. zinci oxidi
Ung. petrolei carbolat. } of each ½ oz.

These writers use inunctions for 14 days, alternating with six weeks' treatment by the mouth, during the first two years.

Lang [61] gives an alternative method; in this two to four grammes of mercurial ointment is spread over the skin with a spatula and a bandage applied, before going to bed. Next morning the skin is washed clean with soap and water. The skin areas selected, and the length of the course are the same as in the inunction method.

Unna [13] recommends a grey soap for inunction. This contains 30 per cent. by weight of mercury. He claims that this soap is cleaner, has a rapid effect, is well tolerated by the skin, and has no offensive greasy smell.

Schuster [56] uses Charcot's soap made of equal parts of mercury, mutton suet and potash soap.

Rille [13] recommends the following formula for inunction:—

Calomel sublimed, 0·5 to 1 gramme.
Lanoline (anhydrous), 3 grammes.
Oil of Theobroma, 1 gramme

Use 1 gramme of calomel daily.

In a discussion on the treatment of syphilis at the New York Academy of Medicine, Fordyce [29] suggested inunction treatment for out-patients by placing mercurial ointment in their socks. Attention was also drawn to the method of inunction by placing mercurial ointment on children's binders. The latter method has been used with success for adults in this country (Gibbs).

The special advantages claimed for inunction are:—

(1.) Mercury is regularly introduced into the system in well-regulated doses.
(2.) There is no interference with the digestive functions.
(3.) Painless.
(4.) The Aix treatment seems specially suited for debilitated cases returning from tropical countries.

* This drug is the equivalent in the U.S. Pharmacopœia for calomel.

The objections to the method are :—

(1.) It is dirty, necessitating special underclothing which may have to be destroyed at the end of the course.
(2.) There should be a staff of specially trained rubbers and an adequate supply of hot baths.
(3.) It is not exempt from the complications common to all forms of mercurial administration.
(4.) Mercury is in some cases not absorbed, and this treatment may have to be abandoned.

Ehrman,[16] Mracek, and Neumann report such cases. Thimm[32] reports a case of severe bullous eruption following inunction.

Length of Course.—The general consensus of opinion at Aix lays down that 45 rubbings form a cure. This is the first course. Subsequent, shorter courses are rather vaguely mentioned, but the exact length of these, at what interval, and how often they are to take place is not definitely stated.

Continental writers do not mention these points.

English and American writers seem to regard inunctions as merely of use when for any reason the mouth treatment has to be temporarily abandoned.

Surgeon-Major Rayner,[82] R.H.G., who has employed the inunction method extensively in his hospital and with excellent results, prescribes 40 to 60 rubbings for the first course. After an interval of six months the soldier attends daily for a second shorter course.

Chassaignac used Emplastrum Vigo c. Mercurio (F.P.).

Quinquaud got good results with calomel plaster made by suspending 1,000 parts of calomel in 300 of castor oil and adding 3,000 parts of melted diachylon plaster. This is spread on linen and a piece 4 inches square, containing three drachms of calomel, is applied to the skin and worn for eight days.

Blaschko introduced "mercolint." This is a fabric impregnated with mercurial ointment, and may be worn like a chest protector or as an under-vest, the mercury being absorbed in the form of vapour.

Welander's method.—In this method a quantity of mercurial ointment is placed in a bag and worn on the patient's chest, or placed under his pillow at night. The heat of his body causes volatilization of the mercury, which is constantly inhaled by him.

Ahman[13] treated thirty cases by this method, using mercuriol. For the first five to ten days fresh mercuriol was rubbed into the bag daily. After that, every second day to the end of the course. The course lasts from twenty to forty days. During the first fortnight the elimination of mercury in the urine was found to be almost equal to that after inunction, and remained high up to the end of the course. The therapeutic effect is practically the same as in other methods of administering mercury.

Intramuscular Injection.

Injection.

This method is at present extensively used in the British Army with excellent results.

The favourite preparation is Lambkin's cream (*see* p. 24), which, especially in its later form, closely resembles the grey oil of the Continental writers (A.M.D. Reports, Lambkin, 1891 ; Love, 1894 ; Surgeon-General Fawcett, 1900).

Perchloride solutions have also been tried and are advocated by some writers (Peeke, Donegan, Whaite,–Promotion Essays).

Lévy Bing[67] in his recent book gives a good summary of the present position. The following notes up to the end of Insoluble Preparations, p. 26, have been taken almost entirely from his book.

General advantages of mercurial injections :—

(1.) Definite dosage with certain absorption.
(2.) Requires fewer attendances.

(3.) Cleanliness.
(4.) Professional secrecy is maintained.
(5.) Rapidity of action.
(6.) Less time in hospital.

Disadvantages:—

(1.) Those common to all forms of mercurial administration, but in a less degree.

(2.) Pain. This is the one real objection to the method; it varies considerably according to the patient, the preparation used, and the manner in which the injection is made.

Accidents such as pulmonary embolism, abscess, gangrene, &c., are rare now and were due to faulty technique in the early days.

Unsuitable cases.—Patients who are about to travel and cannot be seen at least once a week, very sensitive people, cases suffering from nephritis or marked cachexia; these require special care in whatever form mercury is administered.

Special indications for the injection method :—

(1.) When a rapid therapeutic effect is desired.
(2.) Syphilis of the central nervous system.
(3.) In hot climates where the gastro-intestinal system is more liable to be upset by the oral administration of mercury.

Soluble Salts.

Soluble salts.

Advantages.—Any desired quantity of mercury can be introduced daily and is rapidly absorbed, its effects can be watched and the dose modified to suit each case.

Special indications for soluble salts.

They are specially useful in cases requiring frequent small doses, *e.g.*:— (1.) Tubercular cases. (2.) In extensive caries. (3.) Cases in which the liver or kidneys are not acting well. (4.) In young children, who tolerate injections of soluble salts better. (5.) In eye cases. (6.) In debilitated people.

A greater quantity of mercury can be injected in a given time by using soluble salts. Inflammatory reactions are rare, and pain, always variable, is less marked than with insoluble salts.

Disadvantages.—The great objection is the necessity of daily administration, resulting in waste of time to the surgeon and the patient, and a frequent recurrence of more or less pain.

Insoluble Salts.

Insoluble salts.

The object in using insoluble salts is to introduce into the system, at definite intervals, a quantity of mercury, which shall act as a supply depôt and be gradually but continually absorbed.

Advantages.—(1.) Fewer injections required. (2.) No waste of time for the surgeon or patient. (3.) Inexpensive.

Disadvantages.—(1.) Should mercurial poisoning take place it is impossible to get rid of the mercury in the body. This rarely happens if the method is carefully carried out. (2.) Pain. Grey oil causes little pain. (3.) Abscess is generally the result of sepsis. (4.) Nodes are usually small and not painful. (5.) Inflammatory reaction, this only occurs after the use of calomel, never after grey oil.

Contra-indications.—(1.) Kidney or liver disease, albuminuria. (2.) Bad caries of teeth. (3.) Very old or cachetic people.

Cardiac cases and well-nourished diabetics tolerate insoluble injections well.

Storage. Whatever preparation of mercury is used it should be kept in small sterilized bottles. For mercurial salts, these should be made of orange-coloured glass to prevent the action of light decomposing the salt. For emulsions, the inside should be rounded and perfectly smooth, so as not to present any corners in which the mercury may be deposited. The stoppers should be ground to fit the bottle.

The preparation must be sterile and have an alkaline or neutral reaction. With the same quantity of mercury the more concentrated the solution used (*i.e.*, the smaller the bulk of injection) the less the pain.

Vehicle. Soluble salts were usually dissolved in 0·75 per cent. sodium chloride solution or in distilled water. Insoluble salts were made up into emulsions with—(1.) Mucilage. (2.) Liquid paraffin (this results in slower absorption). (3.) Glycerine, this may cause pain. (4.) Vegetable oils, these are well tolerated, but tend to become rancid in time. (5.) Lévy Bing prefers vaseline oil, or a mixture of this with vaseline. He finds this vehicle to be non-irritating and easily sterilized.

Analgesic. Lévy Bing and Barthélemy do not combine any analgesic with mercurial injections for the following reasons :—

(1.) Some mercurial salts are decomposed by cocaine.
(2.) Frequent administration of alkaloids such as cocaine have a very bad physiological effect on the system.
(3.) These drugs do not prevent the later pains.

Instruments :—

Pravaz's Syringe. Objections. The leather plunger makes it difficult to sterilize, while rubber is destroyed by oily preparations. Lévy Bing recommends a glass or flax plunger or Luer's syringe made entirely of glass, kept in a flask of alcohol. The objections to it are, it is fragile and the rod is not graduated.

Mathieu's syringe. In this the barrel is of glass and the piston is softened ivory. It must be sterilized by boiling for half an hour before use, or the piston will not act. This is the best syringe for insoluble injections.

Pravaz's syringe contains exactly 1 c.c. It is useful as a standard measure for all injections.

Le Pileur's syringe. The dosage of grey oil was formerly calculated in drops. As the existing syringes were not graduated to suit this, Le Pileur introduced a syringe working with a screw piston, each half turn of which was equivalent to half a drop.

Barthélemy did not approve of measuring the dosage by drops. He accordingly introduced a syringe for injecting Lafay's grey oil, so graduated that each division contains one centigramme of metallic mercury.

Barthélemy has invented a capsule, with a needle containing one dose; by attaching a rubber cap a single sterile injection can be rapidly given. These are too expensive for general use, and the capsules may vary in size, hence allow of wrong dosage.

For soluble injections use Pravaz's syringe with a flax plunger or Luer's glass syringe : for insoluble use either of the above or Matthieu's or Feulard's syringes.

Technique. When a syringe is used for the first time it is to be sterilised by prolonged boiling, preferably in distilled water. If it is to be used for oily preparations it must be dried in either ether or alcohol. Having prepared the syringe, draw up the solution. If it is at all turbid, return it at once and take up a fresh quantity, till a perfectly limped fluid rests in contact with the piston.

Needles. Platino-iridium needles are not affected by the mercury and can be sterilized in a naked flame without damage. They do not pierce the skin as nicely as the steel needles. Steel needles must be sterilized by boiling.

Length, 5 c.m. for adults. Soluble preparations do not require the full length if non-painful preparations are used. In fat adults, when using insoluble preparations, a full length needle, or even a 7 centimetre needle, may be required, in order to penetrate to the muscles.

Warming the needle facilitates the passage of oily injections. The needles should be preserved in sterilized vaseline.

For Soluble Salts the following methods have been used:—

1. *Subcutaneous.*—Subcutaneous injections are always more painful than intramuscular, and are more likely to leave nodules. Site of injection.

2. *Intravenous.*—Lévy Bing does not approve of this. Considerable skill is required to perform the little operation successfully; also, he thinks that there is grave risk of phlebitis. Absorption is instantaneous, but the elimination is too rapid.

3. *Subconjunctival.*—Only suitable for use by ophthalmic surgeons. Every three or four days ½ c.c. of 1 in 5,000 cyanide of mercury is injected into the subconjunctival sac for syphilitic disease of the iris. Only to be used in very special cases as an adjuvant to intramuscular injections.

4. *Intervertebral.*—This method is too recent to pronounce a definite opinion on. It might be of use in syphilitic disease of the cord.

5. *Intratracheal*, recently introduced by Dr. Paul Carnot, requires a special apparatus, and has numerous objections.

6. *Intramuscular.*—The authors adopted this method in 6,000 injections, and the following paragraphs relate entirely to this plan of treatment, which is the only one permissible when insoluble preparations of mercury are employed.

These should always be injected deeply into muscular tissue, preferably the buttock. The following sites have also been used:—

(1.) Lumbar region.

(2.) On each side of the vertebral column 4 c.m. outside the spinous processes (Lang).

(3.) Scapular region. Jullien specially recommends this for chancre of the breast. The arms, thighs and legs are not good sites for injection, as, owing to the amount of movement, these injections are always very painful.

(4.) The buttock; this is the most suitable position.

The following special points for injection have been advocated:—

Smirnoff's, or retro-trochanteric region.

Gallict's,—the spot where a line, drawn horizontally, two fingers' breadth above the great trochanter, intersects a line drawn perpendicularly, parallel to, and two fingers' breadth outside the intergluteal fold.

Fournier's,—upper one-third of the buttock.

Barthélemy's,—the middle of a line joining the top of the intergluteal fold to the anterior superior iliac spine.

Whatever point is chosen, the position of the great vessels and sciatic nerve must be borne in mind.

Möller[3] made numerous experiments on corpses, to determine the dangerous area of the buttock, in reference to the liability to embolism. This lies between the posterior superior iliac spine and the great tuberosity of the ischium. The portion of the buttock lying above the level of the top of the great trochanter is much less dangerous.

Möller recommends the following procedure. Pinch up a thick fold of skin and subcutaneous tissue parallel to the middle line of the body. Introduce the full length of the needle obliquely into, and in the same plane, as the fold of the skin so as to deposit the injection on the surface of the muscle, or at most into its superficial layers. When using insoluble salts he insists on employing the method by two stages (*see* below).

Having selected a site carefully sterilize the skin. It is better to let the patient lie down, as he may become faint. The sterilized syringe is filled with the preparation.

The needle, after sterilization in the flame of a spirit lamp, is attached to the syringe and filled. Now drive the needle smartly in to its full length. If a watery solution is being used the injection may now be completed. This is called the single stage method. For all oily solutions and emulsions the method in two stages must be employed.

Two stage method.

The object of this method is to avoid forcing the injection into a vessel and so causing a pulmonary embolism. After inserting the needle, as in the single stage method, detach the syringe and wait for a couple of seconds. If the needle has entered a vessel the contents of the former are pushed out. Should there be any doubt as to this re-attach the syringe and try gentle suction. If the needle has pierced a vein blood will flow freely into the syringe and another site must be chosen; if not the injection may be completed at once. Apply collodion to the puncture.

Frequency of Injections.—Soluble salts are injected daily. A course consists of 20 to 30 injections. Insoluble preparations are injected at intervals of 7 to 14 days according to the case. A course of these varies between 5 and 10 injections. (Lévy Bing.)

Dosage.—This must vary with the preparation used, with the weight of the patient (important), with the resistance of the subject, and the object aimed at.

Duration of Treatment :—

Four courses in the first year.
Three „ second and third years.
Two „ fourth year.

These numbers are only a guide, and not a fixed rule.

Before commencing a mercurial course, the general precautions previously given should be attended to.

Soluble Salts.

Injection of Soluble Salts :—

1. *Alaninate of mercury.* Does not keep well. Painful for about two hours. Causes nodules.
2. *Asparaginate.* Therapeutic action, nil.
3. *Benzoate.* Percentage of mercury 45·25.

Formula :—

Benzoate of mercury, 1 gramme.
Pure chloride of sodium, 0·75 gramme.
Sterilized water, 100 grammes.

Each c.c. contains 1 centigrm. of benzoate = 0·0045 grm. Hg.*

The benzoate must be pure and freshly prepared.

Daily dose must be 2 centigrm. of the benzoate. 20 to 25 injections form a series. For rapid effect the daily dose should be 4 centigrms. This preparation causes no local inflammatory reaction, but frequently leaves nodes. It does not cause diarrhœa or stomatitis. Injections are painful for one to four hours, and may sometimes be very painful.

4. *Perchloride of mercury.* Percentage of mercury, 73·8.

Solutions in chloride of sodium do not precipitate either serum or hæmoglobin.

Lévy Bing's isotonic formula :—

Perchloride of mercury, 0·20 gramme.
Pure chloride of sodium, ·075 gramme.
Distilled water, 10 c.c.

1 c.c. contains 2 centigrm. of perchloride = 0·0148 grm. Hg.

Give a daily injection of 1 c.c. of this solution for 20 days. Pain is considerable for one to three hours. Nodes are frequent. Stomatitis must be guarded against. Diarrhœa almost always occurs. Instead of a daily injection 5 centigrm. may be dissolved in 1 c.c and be injected twice a week.

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* For convenience when converting measures from metric to Imperial standard, and *vice versâ*, the following table is inserted :—

One cubic centimetre is equal to 17 minims (nearly).
One gramme is equal to 15·4 grains (nearly).
One centigramme is equal to ¼ grain (nearly).
One ounce is equal to 28·35 grammes (nearly).
One grain is equal to 0·065 gramme (nearly).
One fluid ounce is equal to 28·4 cubic centimetres (nearly).
One minim is equal to 0·06 cubic centimetres (nearly).

Majors Donegan [82] and Peeke used perchloride gr. $\frac{1}{3}$ weekly.

D'Aulnay and Endlitz,[29] and Schwimmer [11] also advocate this form of treatment.

5. *Biniodide of Mercury.* Percentage of mercury, 44·05. It must be protected from light. Dissolved with alkaline salts it does not precipitate serum or hæmoglobin.

Aqueous solution :—

Biniodide of mercury, 0·20 gramme.
Pure iodide of sodium, 0·20 gramme.
Distilled water, 10 c.c.

2 per cent. solution. 1 c.c. contains 2 centigrm. of biniodide.

Sodium chloride may be added in the proportion of 0·75 gramme to 100 c.c. of solution. This the author calls his isotonic solution.

Inject 1 c.c. (= 2 centigrms. of biniodide) daily for 20 to 25 days. Pain is slight and there are no other complications. Without risk the dose may be increased to 4 or 5 centigrms. daily, dissolved in 1 c.c. of solution. The solution is easily prepared and perfectly stable. This preparation is the least painful of any soluble injection.

Solutions of biniodide in oil :—

A mixture of equal parts of castor oil and walnut oil (huile de noix) is used, each c.c. of this will dissolve 15 m.grms. of biniodide.

Inject 1 c.c. daily (15 m.grms. biniodide) for 20 days. The injection is often painful, and may leave nodes. The therapeutic effect is excellent. The oily vehicle is a great objection, making the injection difficult, as well as introducing the risk of embolism. The solution also requires great care in preparation and storing.

The injection must be carried out in two stages to avoid embolism.

Whichever solution is used, the injection must be made intramuscular. Subcutaneous injections are very painful, and leave indurated nodules.

For general convenience the watery solution is to be preferred to the oily one. Both preparations are very useful in secondary and tertiary syphilis, but Lévy Bing specially recommends the watery biniodide as a substitute for calomel injections in tertiary cases requiring energetic treatment.

Emery and Druelle express the same opinion.

6. *Cacodylate Iodo-Hydrargyrique.*—(Brocq.[15])

7. *Arrhénate* ,, ,,

These only act by virtue of the biniodide they hold in solution, are well tolerated, but inferior to the watery solution of biniodide.

8. *Cyanide of mercury.* Percentage of mercury, 79·36.

Formula :—

Cyanide of mercury, 2 grammes.
Chloride of sodium, 0·75 gramme.
Distilled water, 10 grammes.

1 c.c. contains 2 centigrms of cyanide, 0·0158 gramme Hg.

Doses of 1 centigrm. are too weak. The cyanide is the most painful of all soluble salts. It always causes diarrhœa and colic, and tends to produce severe stomatitis; also it easily produces mercurial poisoning with severe constitutional symptoms and a scarlatiniform rash.[16]

9. *Formamide of mercury.*

Formula :—

Formamide of mercury, 0·10 gramme.
Sodium chloride, 0·075 gramme.
Distilled water, 10 grammes.

This is an unstable salt, very painful for at least two hours; it frequently leaves nodules and indurations, but does not cause diarrhœa or stomatitis. Its therapeutic action is satisfactory, but it presents no particular advantage.

10. *Hermophényl.* Percentage of mercury, 40. Prepared by dissolving oxide of mercury in phenol bisulphite of soda. [$C_6H_3OHg\ (NaSO_3)_2$]

Formula :—

Hermophényl, 0·2 gramme.
Distilled water, 10 grammes.

Each c.c. contains 2 centigrm. of hermophényl = 8 m.grm. of Hg.

Inject daily 2 centigrm. of hermophényl for 25–30 days; if a rapid effect is desired, inject at least 4 c.grm. daily.

The salt is well tolerated, and is one of the least irritating of mercurial salts, but is more painful and less active than the watery biniodide solution.

11. *Lactate of mercury.* Percentage of mercury, 52·91.

Preparation, a 10 per cent. solution of lactic acid is boiled for half an hour. To this add an excess of freshly prepared yellow oxide of mercury, filter and evaporate to dryness at room temperature.

Formula :—

Mercuric lactate (pure), 0·2 gramme.
Distilled water, 10 grammes.

1 c.c. contains 2 centigrms. of lactate = 0·01 gramme Hg.

Use pure lactate prepared as above. Daily dose 2–3 c.grm. for 20–25 days. The injections are painful for two hours, frequently leave nodules, sometimes indurations, but are well tolerated. To get a good therapeutic effect, at least 3 c.grm. daily must be used; this dose is painful. Gaucher[16] recommends 1 c.c. of a 1 per cent. of watery solution of lactate.

12. *Oxycyanide of mercury.*

Not recommended, as it is very painful for two hours, and causes diarrhœa and stomatitis.

13. *Neutral mercuric salicylate.* Mercurial percentage, 42·19.

Prepared by precipitating a cold solution of mercuric nitrate with salicylate of soda.

Formula :—

Salicylate of mercury, 0·2 gramme.
Sodium chloride, 0·075 gramme.
Distilled water, 10 grammes.

Each c.c. contains 2 centigrm. salicylate = 8·4 m.grm. Hg.

Daily dose 2 c.grm. salicylate for 20 to 25 days. Does not cause any symptoms of poisoning. Painful for two hours. No inflammatory reaction. If rapid action is required the dose may be increased to 3 c.grm. daily. One of the best of the soluble preparations.

14. *Sozoiodolate of mercury.* Mercurial percentage, 35·58.

Formula :—

Sozoiodolate of mercury, 0·80 gramme.
Iodide of sodium, 1·6 gramme.
Distilled water, 10 grammes.

Each c.c. contains 8 centigrm. of sozoiodolate = 0·0285 gramme Hg.

A weekly dose of 8 centigrms. is not sufficient. To get a good result this quantity must be injected twice a week, or give 2 centigrms. daily. This salt does not cause stomatitis, diarrhœa, or other sign of poisoning. No inflammatory reaction. Pain is constant and variable, lasting from 3 to 4 hours to a whole day.

15. *Succinimide of mercury.* Percentage of mercury, 50·5.

Formula :—

Succinimide of mercury, 0·15 gramme.
Distilled water, 10 grammes.

Each c.c. contains 15 m.grm. succinimide = 0·010 gramme Hg.

Daily dose 15 m.grm. to 2 centigrms. of succinimide for 20 to 25 days. The solution must be perfectly clear. It causes no signs of intoxication, but is painful for about 2 hours, and frequently leaves nodules. The salt is generally well tolerated, but it has nothing in its therapeutic action to specially recommend it.

General Comparison of the Soluble Salts.

Barthélemy, Lafay, and Lévy Bing do not recommend the following :— (1) Alaninate; (2) Asparaginate; (3) Perchloride; (4) Cacodylate iodo hydrargyrique; (5) Cyanide; (6) Oxycyanide; (7) Formamide; (8) Succinimide. They consider a watery solution of biniodide to be the best. The benzoate, lactate, hermophényl used in 3 c.grm. doses daily are more painful than the biniodide, and not so active. The neutral salicylate gave good results.

Injection of Insoluble Preparations of Mercury.

Insoluble Preparations.

(1.) *Subchloride of mercury.* Percentage of mercury, 84·925.

Two forms of subchloride :—

(*a.*) Calomel made by combining one atom of mercury with one molecule of perchloride of mercury. Being crystalline it must be carefully ground before use.

(*b.*) Protochloride by precipitation, prepared by decomposing mercurous nitrate with hydrochloric acid, is a white amorphous powder. This makes a better emulsion, but has no other advantage.

Lévy Bing employs Dr. Balzer's formula :—

Calomel (made by dry method), 1 gramme.
Oil of vaseline, 10 c.c.

Each c.c. contains 10 centigrms. of calomel = 0·0849 grm. Hg.

Both calomel and vaseline must be pure.

The preparation must be vigorously shaken before use.

The number of injections to constitute a course is four to six; the interval between two courses is usually two months :—

(*a.*) To lessen the pain daily injections of 1 c.grm. calomel were tried but abandoned.

(*b.*) Watery mixtures recommended by Petrini were found to be useless, as the calomel immediately falls to the bottom and blocks the needle.

(*c.*) Neisser's sodium chloride mixture of calomel is difficult to prepare, is more likely to cause an abscess, and is more painful than the emulsion in oil. The calomel forms a kind of scum, is not properly emulsified, and much of it adheres to the syringe and needle.

(*d.*) Mucilage of calomel and sodium chloride in gum arabic (Kopp and Chotzen). This has no special advantage, but is better than Neisser's.

(*e.*) Danlos' preparation. Orthoform, 8 per cent. is added to prevent pain. It failed to do so. Spreclier confirms this.

(*f.*) Camphorated calomel oil was tried as it was reported by the Italians to be painless. This was not Lévy Bing's experience. The maximum pain usually lasted three days with great swelling of the buttock.

(*g.*) Protochloride (by precipitation) in oil, makes a much better emulsion, but is as painful as calomel.

Résumé.—In 100 calomel injections the authors had the following complications: two mild cases of stomatitis and one very severe one. One case had slight diarrhœa and vomiting. No albuminuria. No embolism.

Pain.—Of the 100 injections, pain in 20 was absent, in 20 was bearable, and in 60 was extremely bad. Ten of these 60 suffered such severe pain that they could neither sleep nor walk about, and were obliged to remain in bed for two to three days; the pain begins during the first night and usually lasts five to six days.

Local reaction.—Of the 100 injections 25 left no induration at all, 67 were followed by nodes of various sizes. In eight there was extensive swelling of the buttock, four of which suppurated. In three of these Neisser's formula was used, in the fourth the gum emulsion. The pus was sterile.

According to Jullien the dose should be regulated by the patient's weight. A weekly injection of 5 cgrms. is suitable for a person not exceeding 50 kilogrammes (110 lbs.) in weight, while a strong man weighing 80 kilogrammes (175 lbs.) will tolerate 10 cgrms. The course is from five to six weeks. The first injections may be made at intervals of eight days; the later ones at intervals of 10, 12, or 15 days, to prevent the accumulation of mercury.

The injection is extremely painful, is liable to be followed by intense inflammatory reaction, large swellings, indurations, and, in spite of all precautions, by abscess.

This method is to be looked on as an exceptional one, and reserved for particular cases in which a rapid or very energetic action is desired.

The authors mention the following conditions as suitable for calomel injections:—

(*a.*) Glossitis.
(*b.*) Palmar psoriasis.
(*c.*) Rupia.
(*d.*) Phagedænic chancres.
(*e.*) Malignant syphilis.
(*f.*) Syphilis of the central nervous system.
(*g.*) Uncertain diagnosis.
(*h.*) Where abortive treatment is desired.

This method, though very effective, is not infallible.

(2.) *Grey Oil, Oleum cinereum, Lambkin's cream.*

Lévy Bing gives six formulæ introduced by Lang, Neisser, Balzer, Brousse et Gay, Jullien and le Pileur, but recommends Lafay's.

Lambkin's formula:—

Mercury, 2 parts
Lanolin anhydrous, 2 parts } By weight.

To be well rubbed up till the mercury disappears, then add 2 per cent. Carbolized Paroleine (Burroughs & Wellcome's) 4 parts by measure. 3·225 minims contain one grain of metallic mercury (one grain is equal to 7 centigrammes, nearly).

Lafay's formula:—

Purified mercury, 40 grammes.
Lanolin anhydrous, sterilized, 12 grammes.
White vaseline, sterilized, 13 grammes.
Medicinal vaseline oil, sterilized, 35 grammes.
This contains 40 per cent. of mercury by weight.

Preparation.—The mortar and pestle to be be carefully flamed. While still hot, put in the sterilized lanoline, then the mercury. Rub together till the mercury has disappeared, add the vaseline, and when intimately mixed, the oil of vaseline. The consistence should be slightly varied according to the season, to prevent the mercury separating out.

One c.c. of grey oil (Lafay's formula) weighs 1·25 grm. and contains 50 centigrms. of metallic mercury.

Grey oil should be stored in small sterile flasks holding about 2 c.c. each. Before use, slightly warm the flask and shake it well. Syringes.—

Pravaz' may be used, but is inconveniently marked. Barthélemy's has 15 divisions. Each division corresponds to 1 centigramme of metallic mercury.

Dose.—Usual one for men 8–9 centigrms. a week. For strong men weighing 80 kilos. (175 lbs.) the dose may be increased up to 14–16 centigrms. weekly. For women 6–7 centigrms. weekly. For children under 3 years of age 1 centigrm. a week.

Grey oil should be administered in courses of 4 to 6 injections with intervals of 2 months between each course. Lévy Bing does not recommend measuring the dose in drops, as this is inaccurate. Edmund Fournier had a grey oil prepared of a strength of 16 per cent. so that each division of a Pravaz syringe = 1 centigrm. Hg. These preparations are more painful. X-Ray pictures show that grey oil, when injected, spreads out along the muscular fibres. In 48 hours it has nearly disappeared, and on the fourth day no trace of metal can be found.

Albuminuria may disappear with small doses, if so, the usual ones can be employed; if not, use soluble salts.

All the patients gained weight under treatment.

After the fifth injection the hæmoglobin should be watched. If the percentage falls, discontinue the treatment.

Stomatitis occurred in 8 patients out of 180. One case was severe. All of them had decayed teeth, and did not follow the instructions given them on the care of their mouths.

Lévy Bing advises the use of grey oil prepared according to Lafay's formula, which contains 40 per cent. of metallic mercury, by weight. Of this he injects weekly 6 to 12 centigrammes of mercury.

6 to 7 injections constitute a course. Each course to be separated by an interval of two months.

General rule.—1st year. Treatment during 8 months (as above).
2nd year. „ „ 6 „ „
3rd and 4th year. Treatment during 4 months. (Barthélemy.)

Grey oil is well tolerated, it does not cause pain, stomatitis, diarrhœa, or indurations, and exerts a marked therapeutic effect on all syphilitic manifestations, whether secondary or tertiary.

It is specially useful for prolonged intermittent treatment, as it possesses all the advantages of any insoluble preparation of mercury, and is not painful.

(3.) *Mercuric oxide.*—Yellow oxide. Mercurial percentage 92·6. Lévy Bing used Balzer's formula—

Yellow oxide of mercury, 0·50 gramme.
Vaseline oil, 10 c.c.

Each c.c. contains 5 centigrms. of yellow oxide = 46 m.grms. Hg.

This salt is less active and less irritating than calomel; 6 injections of yellow oxide = 4 of calomel.

Inject 10 centigrms. of yellow oxide weekly. The injections are much more painful than those of grey oil. They do not cause diarrhœa or stomatitis, but sometimes leave indurations. The therapeutic action is rapid.

(4.) *Carbolate of Mercury.*—Mercurial percentage, 51·81. Difficult to obtain. Injections are painful. Its therapeutic action is slow and feeble.

(5.) *Green iodide of Mercury.*—Mercurial percentage, 61·16.

Formula—

Mercurous iodide, 1 gramme.
Vaseline oil, 10 c.c.

Each c.c. contains 10 centigrms. of protoiodide = 61·2 m.grm. Hg.

Inject 10 to 14 centigrms. weekly (14 centigrms. of this = 10 centigrms.

of perchloride). It does not cause stomatitis, diarrhœa or inflammatory reactions, and is less painful than calomel but much more so than grey oil.

This salt has a marked effect on syphilitic lesions either secondary or tertiary.

(6.) *Basic Salicyclate.*—Mercurial percentage 59·52. Made by directly combining salicylic acid and yellow oxide.

Balzer's formula —

Salicylate of mercury, 1 gramme.
Vaseline oil, 10 c.c.

Each c.c. contains 10 centigrms. of salicylate (= 59 m.grm. Hg.).

Inject 10 to 13 centigrms. salicylate weekly or 6 centigrms. bi-weekly. The course should consist of 12 to 20 injections.

This salt does not cause stomatitis, diarrhœa, or any inflammatory reaction. The pain is quite bearable, being less marked than with calomel, but more so than with grey oil. Its action is slow and not very energetic, and is not sufficient for use in urgent cases. It is useful for continuance of treatment.

Fuller[80] uses 24 grs. of salicylate in one ounce of oil. He injects mims. 30 for late secondaries. Hallopeau[11] favoured the salicylate as being the least painful of the insoluble salts.

(7.) *Tannate of Hg.*—Not recommended.

(8.) *Thymol Acetate of Hg.*—Injections of this are less painful than calomel, but much more so than grey oil. Its action is rapid, and it does not cause complications.

(9.) *Urate of Hg.*—Mercurial percentage 54·34.

Injections are very painful and leave indurations. Causes no complications. Action is satisfactory.

Résumé of Insoluble Preparations.

1. Calomel is the most effective, but is always very painful.

2. Grey oil is the most suitable for ordinary cases. Barthélemy considers grey oil to be as effective as calomel. In urgent cases he injects 8 centigrms. of mercury (in grey oil) into each buttock.

3. Protoiodide seemed to give excellent results. It is not very painful. A further study of this salt was being conducted, as apparently it had not been used before.

4. Salicylate is suitable for cases requiring mild treatment only.

Mercuriol is a special preparation of mercury introduced by Möller[8] for intramuscular injection. It is an amalgam of mercury made by adding 0·6 per cent. aluminium and magnesium. For injection it is intimately mixed with dehydrated almond oil, the mixture containing 45 per cent. metallic mercury. In this preparation the mercury exists as a fine powder, and shows no tendency to form globules. It can only be heated to 150° C. without undergoing any change. After standing for a day or two the amalgam settles at the bottom of the vessel; a vigorous shake is sufficient to reproduce a perfect mixture. Many experiments were undertaken to determine whether the quantity of mercury injected with this preparation was liable to variation. If the bottle is smartly shaken before filling the syringe the quantity of mercury is found to be practically uniform. This amalgam on coming into contact with the body fluids is at once broken up, metallic mercury being set free in a state of extremely minute subdivision. Möller recommends 0·1 c.c. (1·7 minim containing one grain Hg.) of this preparation to be injected every fifth day for a series of 5 to 10 injections. He states that he has never had any local trouble after using this preparation, and that it solves the question of finding a powerful preparation of mercury which can be injected with a minimum of local irritation. The syringe must be quite dry, as the presence of moisture at once breaks up the amalgam.

Complications following Intramuscular Injections.

1. *Pulmonary embolism.*—Möller [1] collected 29 cases published by various writers between 1888 and 1892. In all of these an insoluble salt suspended in oil, vaseline or liquid paraffin was used. In his own clinique between 1891 and 1896 he gave 3,835 injections, and had 43 cases of embolism, 26 attacks of embolism occurring in 11 patients. In his private practice he had 28 other cases. Since adopting Lesser's method of giving oily injections in two stages he has not had a single case of embolism. Schulze [3] published a case occurring after the injection of salicylate in paraffin. Epstein [4] published 7 cases occurring in 8,292 injections in Jadassohn's clinique. Neumann [6] and Bendig report one case after injecting tannate of mercury in olive oil.

The cases seem to have varied much in severity; none of them were fatal, although some presented alarming symptoms.

Möller [1] made a series of experiments on rabbits by giving intramuscular injections of insoluble preparations of mercury. None of these rabbits died. He then injected his preparations directly into the rabbits' veins. All died. Post-mortem examination showed a pneumonic area surrounding an embolism formed by the preparation injected.

2. *Sloughing.*—Neumann [6] and Bendig reported the following case. The patient was suffering from relapsing tertiary symptoms and had slight albuminuria. Immediately after the third injection of sozoiodolate of mercury he complained of excruciating pain at the seat of injection. Rapid inflammation followed and ended in extensive sloughing of the integument of the buttock, exposing the muscles. Healing was very slow. The pain down the leg persisted for a long time. The authors thought that the sloughing was in some way due to wound of a nerve. In the same paper they quote a case of Möller's in which an injection was rapidly followed by extensive intramuscular hæmorrhage going on to sloughing. This Möller attributed to wound of an artery.

Brocq [15] reports a case of extensive sloughing after an injection of cypridol (10 milligrammes biniodide in oil) in an alcoholic subject. The same writer mentions two cases of Lesser's after sublimate injection.

Raconiceami [15] reported a case in which gangrene of the foot followed an injection of perchloride into the buttock, and necessitated amputation at the seat of election.

Klotz [7] reports a case of limited sloughing after injecting salicylate. He also refers to a case of Pfluger's after injecting biniodide.

Mercurial intoxication.—A fatal case of mercurial poisoning was reported from Barrackpore in 1895. The patient received eight weekly injections of 10 minims each of mercurial cream (mercury ʒ j, lanoline ʒ ij, olive oil ʒ ii). He became salivated, with swollen ulcerated gums. Under treatment he improved for a time. Recurrent diarrhœa with pyrexia then set in, followed by difficulty in swallowing, and finally symptoms of dysentery. Post-mortem: Necrosis of the lower jaw at each angle. The mucous membrane of the large intestine was quite black and seemed to be on the point of sloughing; there were numerous small ulcers, old and recent, along its whole course. Kidneys, the right was natural but congested, the left weighed 12 oz., the capsule was slightly adherent, and the organ congested.

In the annual return for Pembroke Dock, 1898, two fatal cases were reported.

One had previously suffered from dysentery. He received two injections of Lambkin's cream; 15 days after the second injection salivation set in, followed a week later by ulceration of the tongue and pharynx. These ulcers began to heal up in a fortnight and the general condition improved. Severe diarrhœa then began and continued practically up to his death, 43 days after the last injection. Post-mortem: Old and new dysenteric ulcers of the large intestine.

The other case was an old syphilitic one. He received four injections of Lambkin's cream; a week after the last injection he became salivated with sore gums, which soon became spongy. Ulcers then formed on the tongue, cheeks, and palate; the parotid gland became swollen and painful with

increased salivation. After a time a marked improvement took place and he was allowed up. This was followed by a relapse, with stomatitis and severe diarrhœa. He died, collapsed, 49 days after the last injection. Post-mortem: The liver weighed 72 oz. but was "healthy." Small intestines: the lower five feet were much congested. Large intestines: the mucous membrane had an unhealthy blue discolouration, and was worn away in patches without being ulcerated. The kidneys seem to have been rather large, but are reported "normal." Death was ascribed to syphilis.

Renault [11] reported two cases of severe stomatitis. Each began one month after the last injection of grey oil. The second case was a tubercular subject. In this one there were grave constitutional symptoms for a fortnight, accompanied by severe intestinal hæmorrhages. The stomatitis lasted over three months.

Surgeon-General Fawcett [54] reported 11 cases of mercurial poisoning in Egypt; as his report on the subject is of great interest, it has been reprinted in Appendix A.

Barthélemy [16] reported 10 cases treated by daily intramuscular injections of 2 centigrm. of cyanide of mercury. All of these cases had stomatitis, and two of them developed intense scarlatiniform rashes with pyrexia, followed by desquamation. After recovery in one case, a second injection was followed by a more severe erythema and pyrexia.

Lesser,[16] in the Berlin Dermatologische Gesellschaft, reported a case of acute poisoning, after the third injection of salicylate of mercury. Symptoms: Diarrhœa. Temperature 40·4° C. Slight albuminuria. The case improved, but three weeks later a sharp relapse set in. The posterior wall of the vagina sloughed into the rectum, and the general condition was grave.

In the same meeting Blaschko mentioned a case which died after a single inunction of mercurial ointment. Japha also reported a death after two injections of 1 centigrm. each of salicylate. This was a paraplegic case. Post-mortem examination revealed dysenteric ulceration and perforation of the intestine.

Chotzen [16] excised a tumour from the buttock. This had resulted from an injection of thymolate of mercury six years previously. In the centre were crystals of the mercurial salt. He concluded that failure of absorption was caused by mechanical compression of the tissues and an endarterial lesion.

In contrast to the above formidable list of accidents the following facts may be noted:—

Intramuscular injection of mercurial cream was introduced into the British Army by Lieut.-Colonel Lambkin in 1890. Up to 1899 this officer had given over 7,000 injections without any accident sufficient to incapacitate a man from duty.

The method has been largely used by other officers since then. At the present time about 1½ lbs. of mercurial cream are being supplied weekly for use in the Army. This corresponds to about 1,500 injections per week. The only reported accidents have been noted above.

(*d.*) *Intravenous Injection.*

This method was first described by Bacelli in 1893. The following description is taken from Lane's [42] paper. He injected a 1 per cent. solution of cyanide of mercury, the average dose being 20 minims every second day, or, in severe cases, daily. The skin of the arm is first carefully sterilized, a bandage is then applied above the proposed site of injection, usually the median basilic, in order to distend the veins. The syringe and needle previously carefully sterilized are now filled with the solution. The needle, preferably a fine platino-iridium one, is then thrust obliquely into the vein. The point should be felt moving freely in the lumen of the vessel. Now remove the bandage and slowly inject the solution.

During a discussion on this subject at the International Congress of Dermatology [83] the following opinions were expressed:—

Lane had given 1,000 injections in 76 cases with no bad results; he had given as many as 73 injections in each arm.

Blaschko said that after 10 to 12 injections the veins become occluded by phlebitis. Justus said the results were not encouraging. Jullien thought the method a suitable one for cases in which a profound effect is desired.

Abadie [12] recommends a Luers' glass syringe for intravenous injection.

Lindstrom [12] showed that perchloride of mercury in doses not exceeding 15 milligrammes had a good effect on the blood. Larger doses tended to produce anæmia, especially after the active signs of syphilis had disappeared.

Major S. Macdonald, R.A.M.C., in his Promotion Essay, reported 50 cases treated by Lane's method. In 25 cases the results were satisfactory.

Chopping [60] reported 84 cases treated by intravenous injection of 1 per cent. cyanide of mercury solution.

Tommasoli [16] in a long article described his attempts to abort syphilis in early cases by the intravenous injection of perchloride of mercury. He began with daily doses of 6 to 8 milligrammes and rapidly increased to 14 to 16 milligrammes. Out of 44 cases selected during seven years he claims 30 successes.

Bauzitat [27] recommended this method. He used either 1 c.c. of 1 per cent. solution of cyanide of mercury or perchloride of mercury 1 in 1,000, the daily dose of the latter not exceeding 5 centigrammes.

The writers on this method claim that it possesses the following advantages :—

(1.) The dosage can be accurately regulated for each case and varied according to circumstances.
(2.) Absorption is certain.
(3.) The therapeutic action is very rapid.
(4.) The method is almost painless.
(5.) There is no painful induration left.

Disadvantages admitted by these writers : —

(1.) Where the superficial veins are very small, this method cannot be used.
(2.) If the injection miss the vein, a good deal of swelling and acute pain results.

The writers on this method state that there is no danger of phlebitis, thrombosis, or embolism.

Macdonald recommends it for out-patient treatment of soldiers.

Baths.

Electric.—In the Encyclopedia Medica there is a full description of Gärtner's electric bath. This seems somewhat complicated, and not to possess corresponding advantages.

Vapour.—The ordinary calomel vapour bath is mentioned in the same work, as a mode of treatment, one bath every second day for one month being the course recommended.

Melazza [15] writes in favour of the treatment by calomel vapour bath. He claims the following advantages for it :—

(1) Rapid effect on the disease ; (2) Cleanliness ; (3) Causes no pain.

White and Martin [56] specially recommend calomel vapour baths for obstinate ulcers and hard papular syphilides ; also locally for palmar syphilides.

Mercuric.[63]—In widespread pustular and ulcerating skin lesions mercuric chloride baths are specially useful, as they minimise or altogether prevent the effects of pyogenic infection. These baths are specially indicated in cachectic patients who do not bear vigorous mouth treatment well. Finger recommends that 120 grains of mercuric chloride be dissolved in a pint of water and added to an ordinary bath, say, 30 gallons. This makes a strength of 1 in 20,000. The temperature should be 80° F., and be kept up for two hours while the patient lies in it. A local bath may be employed, *e.g.*, a sitz bath for lesions about the genitalia.

Application of Heat.—White and Martin ascribe the beneficial effects of thermal springs to the increased metabolism induced by a course of hot baths. Lustgarten agrees with this. A hot bath daily during a course of mercury is recommended, as it facilitates the elimination of mercury and induces tolerance of larger doses.

Hot-water baths should be from 100° to 104° F., hot-air from 180° to 200° F. In using this method for weakly patients an attendant must be at hand in case of syncope. The hot-air bath is most useful in cases of mercurialism, and can be improvised by raising the bedclothes on a hoop and placing a spirit lamp underneath. The bath should last from 10 to 20 minutes, and be followed by a brisk rubbing with a towel and change of clothes.

Borovski, after a series of investigations on this subject, came to the following conclusions:—The elimination of mercury is increased by hot baths, and increases directly with the rise in temperature of the bath. A mercurialised patient can be completely freed of the metal by the systematic use of heat. Mercurial stomatitis can be more readily cured by heat than by any other means. Hot-air baths at a temperature of 180° F. for 20 minutes are the most effective and best tolerated method of applying heat.

Kolashnikoff, as a result of detailed observations, says that heat locally applied in any form while mercury is being administered, markedly hastens the disappearance of all kinds of syphilides. He specially recommends this treatment for obstinate condylomatous lesions.

Iodides.

Hutchinson,[55] in discussing the use of iodides generally, lays stress on the importance of personal idiosyncrasy, which is much greater in the case of iodide compounds than in the case of mercurial preparations. He advocates as a general rule small doses of iodide of potassium. The iodides of mercury he does not approve of, stating that they are more irregular in action and more likely to gripe, purge, or even salivate. He usually prescribes a mixture of equal parts of potassium, sodium and ammonium iodide along with sal volatile or ammonium carbonate. Of late years he has inclined to a greater use of small doses of mercury instead of iodides, finding that the curative effect is as good or better.

The following opinion, which has been taken from the Encyclopædia Medica, furnishes a useful guide as to where iodides should be employed:—Syphilis leads to a chronic inflammation of the connective tissue, as is shown by the multiplication of small round cells in the earlier stages. These cells show a tendency to degeneration in various ways; this tendency is controlled by mercury. In later stages this tendency to degeneration is associated with certain conservative changes, *i.e.*, the production of fibrous tissue; this formation of fibrous tissue is controlled by iodides. As long as this new connective tissue remains cellular, iodides will cause its absorption, but once it has become fully formed fibrous tissue they have no further action on it.

Taylor[58] says iodides should, as a general rule, only be employed in the later stages of syphilis. Occasionally, however, their employment in the earlier periods is indicated, *e.g.*, when cerebral symptoms are present, in early osseous or articular lesions, or when the eye or ear is affected.

White and Martin[56] advise a six months' course of iodide of potash combined with mercury at the end of the second year of treatment. They state that there is some evidence to show that the elimination of mercury is retarded by iodides. The special use of iodides is to promote the absorption of late syphilitic granulomata.

They recommend the following—

℞	Red iodide of mercury - - - - - -	4 grains.
	Iodide of potash - - - - - -	240 „
	Sarsaparilla syrup (Syrup. Sarsapar. Co. U.S.P.?) -	6 ounces.

One teaspoonful in water four times daily. They also advise the combination of the iodides of potash, soda, and ammonia.

If the iodides disagree, these authors recommend that they should be taken in milk along with 5 to 10 grains of pepsin. All iodides should be given well diluted. A tumblerful of hot water, an hour after taking the mixture, prevents griping and promotes absorption.

The same writers quote the following opinions:—

Mauriac recommends iodides for (1) Phagedænic chancres, (2) in early secondaries with fever and headache, (3) erosive, ulcerative, and papulo-squamous syphilides, (5) all tubercular and malignant syphilides, (6) gummata.

Sigmund reserves iodides for marked general lymphadenitis, scrofulous conditions, rheumatoid diathesis, and syphilitic headaches. Finger uses combined mercury and iodides in the later stages of syphilis. Neumann uses iodides combined with inunctions in secondary relapses, tertiaries, and specially in periostitis, and tertiary affections of the eye and internal organs. White and Martin state that the value of iodides increases directly with the age of the syphilis. Jullien says the presence of syphilis establishes a marked tolerance for iodides.

At a discussion of the French Dermatological Society [18] it was suggested that mercury combined with iodides was more efficient than mercury alone, because the iodide prevented the elimination of mercury.

Fournier [64] says the treatment for tertiary syphilides is mercury combined with iodides. In the dry tubercular form the mercury should predominate. In the ulcerating tubercular syphilide the reverse is indicated. Cree [82] states that at Aachen iodide is given with great caution as it is considered to mask the disease. During a discussion [34] on the therapeutic effects of the iodides the following opinions were expressed:—

Schumacher was entirely favourable to iodide of potash. Bardach preferred iodalbacid as being more convenient but not superior to potassium or sodium iodide. Wolters favoured iodalbacid. Schuster had nothing to say against iodide of potash. Schroeder regarded potassium iodide and all potassium salts as poisons. If the kidneys are healthy he says that iodide of sodium may be used. Dreyer had seen iodism after the use of iodipin.

Colombini [13] recommends iodide of rubidium.

Feibes [32] strongly recommends injections of iodipin in early malignant syphilis. He uses a 25 per cent. solution and injects 50 grms. of the solution subcutaneously. Inunctions are used at the same time. Total quantity of iodipin required 800 to 1000 grammes per case.

Fischl [15] recommends iodipin injections for cases which do not tolerate iodide of potash.

Neuhauss [33] says iodipin is not superior to sodium or potassium iodide. Its action is milder and slower but its toxic effects are less than those of iodide of potash. In bone cases he has got good results by injecting a 25 per cent. solution at the site of the disease.

Lesser [7] in a long article on the action of iodipin quotes Feibes, that, after injecting iodipin, iodine can be detected in the urine for over a year. Iodine in the circulation always exists as an iodide of potash. Most of the iodine after absorption is stored in the lungs in the form of iodide of potash. In whatever form iodine is introduced into the body it is always excreted as iodide of potash.

Richter [55] advised the use of tincture of iodine in tertiary syphilis when the ordinary iodides are not well tolerated. He prescribed from 10 to 50 drops thrice daily in coffee or wine, with apparently satisfactory results.

Labadie [68] and Duclaux speak highly of local injections of 3 per cent. solutions of potassium iodide for persistent syphilitic ulceration.

Iodoform [62] has been employed in the form of pills, 5 to 15 grains daily. Finger says its use in this form is not to be recommended, as it soon causes gastric irritation.

As an injection the following formula is recommended:—

℞	Iodoform, finely powdered - - - - -	15 grains
	Glycerine - - - - - - - -	45 minims.

Mix thoroughly. Half of this for one injection.

Finger says that one or two injections will sometimes give relief in headache, neuralgia and painful periostitis of syphilis.

Other Methods.

Zittmann's Decoction.[65]—This method is specially indicated in late malignant cases, where the patient is debilitated, and will not bear mercury when prescribed by any of the commoner methods. The writer, after describing this method, says that it often acts like a charm when all other treatment has failed.

McGowan[23] reported two cases, in both of which mercury in various forms had been tried and failed, and which were cured by this method.

The following formula gives sufficient for one patient for six to ten days:

Bruised sarsaparilla root, 4 oz., is digested for 24 hours in 280 oz. of water.

To this the contents of No. 1 package are added, and the mixture boiled while the contents of No. 2 package, placed in a linen bag, are suspended in the vessel.

No. 1 package.—Fennel seed, Anise seed } Of each 80 grains.
Liquorice root cut up, Senna leaves } Of each 240 grains.

No. 2 package.—Powdered alum, Powdered white sugar } Of each 120 grains.
Calomel, 80 grains.
Cinnabar, 20 grains.

The mixture is kept just boiling till its bulk is reduced to a gallon. It is then strained through a fine cloth, and put up in bottles holding a little more than a pint. These are labelled Zittmann's Decoction No. 1 (Strong Dec.).

No. 3 package.—Cardamom leaves, Cinnamon bark, Liquorice root } Of each, 60 grains.

The contents of No. 3 package are then added to the residue, together with 280 ounces of boiling water, and the whole is simmered down to a gallon. This is strained and bottled as before, and finally labelled No. 2 (Weak Decoction).

Pills ℞ Hydrarg. subchlor., gr. 2.
Extract. colocynth., gr. 2.
Extract. hyoscyam., virid. gr. 2, make 2 pills.

The room must be kept at a temperature of 80° F.

The diet is not to contain sugar or spices.

The evening before the treatment is begun two pills are given. Next morning the patient has a light breakfast at 7 a.m. During the first four days, at 9, 10, 11, and 12 noon, the patient drinks half a pint of the strong decoction very hot. Smaller quantities may have to be used at first as the mixture is rather nauseating.

Patient is kept in bed to sweat.

At 12.30 a light lunch is given, and at 3, 4, 5, and 6 p.m. a half-pint of the weak decoction cold.

The patient allowed up for an hour in the evening.

An alcohol rub or massage may be employed.

About 6 p.m. the patient has a good dinner, but without green vegetables. This routine is continued daily up to the 5th day, when the patient is allowed up and has a bath. On the same evening he has two more pills, and the next day the decoction as before, up to the 15th day. This finishes the treatment.

Finger[62] mentions Pollini's decoction, but says it is less active. He also speaks highly of the use of cod-liver oil in cases complicated by tubercle, and of iron and arsenic in cases complicated by severe anæmia or malarial cachexia.

Open-Air Treatment.

Douty [29] advocates the open-air treatment of syphilis on the same lines as tubercle. He regards syphilis as strongly predisposing to tubercle, and states that at least 30 per cent. of tubercular men are old syphilitics.

Serum Treatment.

Artificial serum, injections of (Lavage du sang).

Augagneur [13] reports two successful cases. In one, malignant syphilis developed three months after infection, in the other five years after. Both were tried with pills and inunctions, and the second case with potassium iodide and calomel injections, but without any good result. He then tried injections of Hayem's artificial serum.

Formula :—

Chloride of sodium, 7 grammes.
Phosphate of soda, 2 grammes.
Water, 1 litre.

400 to 500 grammes were injected subcutaneously, every 5th or 6th day, into the abdominal wall or buttock. A sharp reaction followed. The first case had seven injections, after which pills were prescribed. The patient was quite well 18 months later. The author recommends 5–6 injections only.

The more marked the reaction the better the result; when the reaction is absent or very slight, it is no use continuing the injections.

Ward [45] reported a case of six years' duration, which had resisted all other treatment, but rapidly got well when ordered a pint of hot water before meals, and a reduced dose of iodide.

Specific serum.—Lambert [17] reviewed the then position of treatment by specific serum, and concluded that, up to that time, it had proved a failure.

Jullien [12] reported two cases treated by injections of ascitic fluid from a syphilitic case. In one the treatment failed, in the other the results were very good.

Viévoroski [18] reported five cases successfully treated by injections of serum obtained from robust tertiary syphilitics.

In a later article [21] the same author published the results of some later work on the same subject. He states that injections of the above serum, when made into early cases of syphilis, produce an increase in the percentage of hæmoglobin and the number of red blood corpuscles. In eight out of 16 cases the manifestations of syphilis entirely disappeared under treatment with serum alone.

In 1902 Moore [32] reviewed previous attempts to cure syphilis by means of a specific serum :—

i. Animal serum, also mercurialised animal serum : both were found to be useless.
ii. Pelizzari and Cotterel in 1896 tried serum from syphilitic patients without success.
iii. Bach, in 1894, successfully treated seven cases with hydrocele fluid obtained from a syphilitic case.
iv. Viévoroski reported twenty successful cases.

He then described his own work, which consisted of an apparently successful attempt to immunise a woman against syphilis by injecting liquor obtained from the healthy pregnant wife of a syphilitic husband. He therefore concluded that this liquor amnii could be used as a curative agent in syphilis. Owing to the difficulty of obtaining a supply of this special fluid the method had to be abandoned. He then employed serum obtained by blistering robust tertiary syphilitics. The daily dose injected was 5 c.c. The initial lesion is first affected, then lesions of the mucous membrane, and finally the enlarged lymphatic glands. The milk of a syphilitic woman mixed with an equal quantity of glycerine, acts as a curative serum, but, as it readily decomposes, its use had to be given up.

White and Martin [36] give an excellent summary of the serum treatment of syphilis. The writers state that up to the present little confidence can be placed in the reported successes by this method.

Excision of Chancres.

Wladislow [5] in a long paper on syphilis mentions a case of excision of an abrasion within five hours of suspected infection. In spite of this constitutional symptoms developed.

Lang [63] has given up excision of the chancre, except in early cases in which the lymphatics do not appear to be infected and the chancre is favourably situated for removal.

White and Martin [36] discuss the question of excision of the chancre. They report nine cases in which a typical chancre developing after connection with a syphilitic woman was excised within 12 hours to five days of its appearance. In four cases secondary symptoms were merely delayed. In five cases no constitutional signs of syphilis followed.

These writers quote Fournier as claiming one success out of every five cases excised, also Ehler who claims that the severity of the disease is lessened by excision of the chancre.

They recommend excision in cases seen early, where the chancre appears to be an infecting one, and so situated that its removal is easy.

COMPLICATIONS WHICH MAY ARISE DURING A COURSE OF MERCURY.

1. *Complications general to all forms of administration :—*

(1.) Salivation. This complication should not occur, and, except in a mild form, is only likely to do so when full doses of an insoluble preparation have been injected.

Half drachm doses of the alkaline sulphates is the best remedy.

(2.) Stomatitis, spongy gums, and loose teeth. When ordinary precautions are observed these should never be serious.

The gums should be frequently examined and evidence of tenderness and the appearance of a blue line looked for.

Dietz [15] says the earliest sign of stomatitis is the appearance of a small painful gland under the angle of the jaw.

(3.) Colic and diarrhœa. Should either of these occur, stop the mercury for a time and if necessary give an opiate or astringent. Should a recurrence take place on resuming treatment a different form of administration must be tried.

(4.) Marked anæmia is generally due to some cause other than syphilis under treatment. This should be sought for and treated, the mercury being meanwhile temporarily suspended or given in reduced quantities.

2. *Complications special to each method :—*

(1.) Oral treatment may cause gastro-intestinal disturbance.

(2.) Inunction in some people induces dermatitis.

(3.) Injections.

(*a.*) Pain, this is extremely variable in duration and intensity.

(*b.*) Local inflammation. This may be mild and rapidly subside, or, if more severe, it may leave indurations painful or otherwise. Suppuration with the formation of a local abscess may occur, especially when calomel has been injected, or as the result of sepsis; in exceptional cases extensive sloughing of the tissues has been noted.

(*c.*) Local hæmatomata rarely occur, and if they do, are usually only slight; but extensive cases, due to puncture of an artery, have been reported.

(*d.*) A corroded needle may snap off and remain embedded in the tissues.

(*e.*) Pulmonary embolism.

This can only happen with insoluble preparations, and is due to the oily vehicle. Lesser's two-stage method of injection, and avoidance of dangerous areas, will obviate this danger.

(*f.*) Mercurial poisoning.

This is only likely to happen with insoluble preparations, and, provided ordinary care is exercised, only in those exceptional cases in which mercurial stasis occurs.

Treatment of certain Special Manifestations.

Chronic Lesions of the Mucous Membrane.

Fournier[64] advises mercury and iodides internally; locally he cauterizes the lesions with silver nitrate or acid nitrate of mercury.

In the Sanitäts Bericht,[59] 1892–94, local applications of three to five per cent. solutions of chromic acid or one per cent. sublimate solution in water and spirit, followed by gargling with warm water, is reported to have yielded the best results. The importance of keeping patients as much as possible in the fresh air is insisted on; it is noted that mucous patches are much more common in the winter months than in the summer, this is attributed to patients remaining more indoors during the winter.

Taylor[58] recommends touching the lesions with silver nitrate thirty grains to the ounce, or with one to two per cent. solutions of chromic acid; he also uses strong solutions of borax, potassium chlorate, or alum. All smoking, the use of spices and stimulants to be forbidden.

The Encyclopædia Medica recommends local applications of chromic acid, ten grains to the ounce, or silver nitrate, 30 grains to the ounce.

Finger[62] recommends a mouth wash of perchloride of mercury, 1 in 3,000 of spirit and water; one teaspoonful of this to be added to a wineglass of water. As a local caustic he recommends one part of mercuric chloride in twenty of alcohol.

Spillman and Doyon say that they have got the best results from the local application of strong solutions of acid nitrate of mercury every fifth day.

Lang[63] recommends the following local applications:—

Mercuric chloride 0·05 to 0·2, spirits of wine and ether of each ten parts. Silver nitrate one part, absolute alcohol and distilled water of each two to ten parts. Ammonium sulpho-icthyol one part, rectified spirit of wine and ether of each five parts.

Recurring Gummatous and destructive Lesions.

Lang[63] says large chronic ulcers are to be treated on general surgical principles, *i.e.*, by rest, thorough cleansing, opening up pockets and sinuses and securing good drainage. At the same time, mercury, if tolerated, and potassium iodide are to be administered internally. He says that Zittman's decoction is an excellent general tonic in all cases of grave debility associated with chronic ulcerating lesions, and is not merely a specific for syphilis. For gummata he recommends a soothing application at first, and later a stimulating preparation, *e.g.*, mercurial ointment to begin with and liniment of iodine afterwards. In some obstinate cases resolution can be hastened by injecting very small quantities of grey oil into the immediate neighbourhood of the gumma, although occasionally this may cause suppuration. Iodoform emulsion injections have been tried, but Lang does not regard this treatment favourably, except in cases in which iodides, when given by the mouth, disagree.

Muller[15] recommended the following procedure:—

In the morning a bath for twenty minutes in the Kochbrunnen; in the afternoon prolonged irrigation with 1 in 1000 potassium permanganate at a temperature of 40° C. During the rest of the day the application of weak solutions of silver nitrate or balsam of Peru.

Finger[62] says for ulcerating gummata apply iodoform or mercurial ointment; if large and spreading destroy the infiltrated margin with solid caustic potash. For small ulcers silver nitrate makes an excellent application; this has a useful stimulating effect and produces healthy granulations. At the same time mercury should be given internally.

Spillman and Doyon[62] say that they have got the best results in these cases by curetting and dressing with perchloride of mercury.

Feibes[32] and Neuhauss[33] speak highly of injections of iodipin, combined with inunctions of mercury.

Verchère and Bernheim[16] reported a case of persistent syphilitic ulceration which had lasted for years and resisted all treatment; this was finally cured by baths, careful cleansing of the sore, and injections of biniodide of mercury.

Watson Cheyne[43] reported some cases of persistent syphilitic ulceration which were cured by excision followed by Thiersch's skin grafts.

Precautions against Infection.

Beyond general directions text books give no special instructions as to the care necessary on the part of attendants and nurses to avoid infection or to prevent the spread of the disease.

Pharmacological Notes.

When treating Syphilis by the injection method, it is important to know how much mercury is being introduced into the tissues. To enable this to be readily calculated, the following table, showing the percentage of metallic mercury contained in each of the following salts, has been appended :—

Asparaginate	contains	43·3	per cent.	Hg.
Benzoate	,,	45·25	,,	,,
Biniodide	,,	44·0	,,	,,
Calomel	,,	84·9	,,	,,
Cyanide	,,	79·4	,,	,,
Hermophényl	,,	40·0	,,	,,
Mercuric Lactate	,,	52·9	,,	,,
Mercuric Oxide	,,	92·6	,,	,,
Mercurous Lactate	,,	67·0	,,	,,
Perchloride	,,	73·8	,,	,,
Protoiodide	,,	61·2	,,	,,
Salicylate Neutral (soluble)	,,	42·2	,,	,,
Salicylate Basic (insoluble)	,,	59·5	,,	,,
Sozoiodolate	,,	35·6	,,	,,
Succinimide	,,	50·5	,,	,,
Thymol Acetate	,,	55·1	,,	,,
Tannate, Cacodylate	these vary.			

Certain selected Formulæ.

Lambkin's Cream (1903 formula).

The composition of this preparation is such that 3·225 minims contain one grain of metallic mercury; a dose of 5 minims therefore contains 1·55 grains of mercury. Expressed in metric standard, one c.c. contains 34 c.grms., and 0·2 c.c. contains 6·8 c.grms. or one grain (nearly).

Lafay's Grey Oil.—This contains 40 per cent. of mercury by weight. One c.c. weighs 1·25 grammes and contains 50 c.grms. of mercury. Expressed in Imperial standard, 17 minims contain 7·7 grains (nearly). Levy Bing regulates the dosage according to the weight of the patient. An ordinary man usually receives from 8 to 9 c.grms. of mercury weekly. In the case of a big man weighing over 12 stone, the weekly dose is increased from 14 to 16 c.grms. Expressed in Imperial standard, this may be taken as a weekly dose of 3 minims for ordinary men, and 5 minims for big men.

Perchloride of mercury solution.

A 2 per cent. solution is recommended.

Each c.c. contains 2 c.grms. of Perchloride = 1·5 c.grms. (nearly) of mercury, or 110 minims contain 2 grains of Perchloride=1·5 grains (nearly) of mercury.

The daily dose recommended by Lévy Bing is one c.c. Expressed in Imperial standard, this would equal 17 minims and contain $\frac{1}{3}$ grain of Perchloride = 0·23 grain of metallic mercury (nearly).

A 5 per cent. solution may be used instead; the dose of this being one c.c. injected twice a week.

Biniodide of Mercury, aqueous solution.

A 2 per cent. solution is recommended.

Each c.c. of this contains 2 c.grms. of Biniodide=0·88 c.grm. of mercury, or 110 minims contain 2 grains of Biniodide=0·88 grain of mercury.

The daily dose recommended by Lévy Bing is one c.c. Expressed in Imperial standard, this would equal a dose of 17 minims and contain $\frac{1}{5}$ grain of Biniodide=0·13 grain of mercury. When a rapid effect is desired, a 4 or 5 per cent. solution may be employed, the same amount of the solution being injected daily.

Other soluble salts may be calculated in the same way; the general working rule being that the quantity of metallic mercury injected should be equivalent to one c.grm. or 0·15 grain daily.

The strengths of the mercurial ointments in different Pharmacopœias is given below:—

American.—Unguentum Hydrargyri contains 1 of mercury in 2.

British.—Unguentum Hydrargyri contains 1 of mercury in 2·0265.

French.—Onguent Mercurial double contains 1 of mercury in 2.

French—Onguent Mercurial simple contains 1 of mercury in 8.

German.—Unguentum Hydrargyri (U. Cinereum) contains 1 of mercury in 3.

III.– SOFT CHANCRE.

Soft chancre or chancroid is a contagious ulcer of the genitals, inflammatory in nature and destructive in its course. Contagion is conveyed in the discharge from a previous chancroidal lesion.

Taylor [57] holds that as chancre is not a specific ulcer it may arise *de novo*.

Diagnosis.—This may be established by inoculating the patient with a little of the discharge. To confirm the diagnosis the bacillus of Ducrey should be found microscopically.

Ducrey's bacillus is a short thick rod, which stains readily with any basic aniline dye, but is quickly decolourised by acid or alcohol, and also by Gram's method. When stained by watery gentian violet it shows a tendency to bipolar staining. Its characteristic arrangement, as a Strepto-bacillus in short or long chains, is of more use in diagnosis than its staining reaction (Leishman).

Queyrat [16] recommends the following stain :—

Ziehl's fuchsin, 10 drops; saturated solution of methylene blue, 7 drops; distilled water, 20 c.c. Stain for ten minutes.

The protoplasm is coloured red, the bacilli and nuclei violet.

Treatment.—In a discussion on the subject, Haralamb [31] advocated treatment by means of air heated to 42° C. applied to the sore for one hour. He claims that this converts the chancroid into a simple ulcer.

White and Martin [56] insist on thorough cleansing of the sore and surrounding skin first with peroxide of hydrogen, then with 1 in 3,000 sublimate solution. They recommend wet dressings where there is much discharge. For out-patients of uncleanly habits they advise cauterization as follows :—Having thoroughly cleansed the parts, induce local anæsthesia by means of cocaine. Then apply the actual cautery or, if this is objected to, pure nitric acid. A wet dressing is then applied.

These writers do not advise excision, as the wound is very liable to contamination by the chancroidal pus. Should this happen, the result of excision is merely to produce a fresh chancroid, larger and more difficult to treat than the original one.

Taylor [57] does not advise excision; he says cauterization is only to be used for early cases, when there is no œdema. If the latter treatment is employed, it must be thoroughly applied to every portion of the sore. For shallow ulcers, liquefied carbolic acid answers well, and is not followed by inflammatory reaction. Where the base of the ulcer appears to be much thickened, nitric acid may be used; afterwards the patient must be kept quiet, and cold applied for the rest of the day, to counteract the inflammatory reaction and possible œdema. Watery solutions of formalin 10 to 40 per cent. applied once or twice a day are useful when treating sloughing chancroids. The use of nitrate of silver for cauterizing sores is to be emphatically condemned, as it merely irritates without destroying the ulcer.

This author states that the most efficient all-round application is powdered iodoform, plain or mixed with bismuth, starch, magnesia, or boracic acid. The best means of disguising its smell is to mix it with coumarin, the active principle of Tonka beans. Powdered roasted coffee beans, though not as efficient, may be used for the same purpose. When healthy granulations appear the use of iodoform is to be suspended. For mild cases, aristol, europhen, antinosine, nosophen, resorcin, and acetanilid are useful. Healing soft chancres are often much benefited by occasional applications of nitrate of silver, 10 to 20 grains to the ounce. Obstinate chancroids may be curetted. Frenal chancroids are specially liable to lead to œdema and phimosis. Those within the meatus should not be cauterized. Irrigation, through a small sized catheter, if necessary, followed by the application of iodoform, is indicated.

Lanz [37] stated that obstinate soft chancres with a tendency to become serpiginous will heal rapidly if potassium iodide is given internally, even in the absence of any indication of syphilis.

IV.—GONORRHŒA.

Gonorrhœa [56] is a specific urethritis caused by the gonococcus of Neisser.

Invasion.—In the human urethra the gonococci penetrate the mucous membrane, causing a desquamation of the epithelial cells, and inflammatory reaction in the tissues below; this is attended with great increase in the secretion. The organisms penetrate the subjacent connective tissue and are especially found, along with extensive leucocytic infiltration, around the lacunæ.

During the more chronic stages other pyogenic organisms may appear in the urethra.

Pathology.

Finger [62] says that chronic gonorrhœa is essentially chronic inflammation of the subepithelial tissue, causing infiltration and subsequent connective tissue formation, going on to cicatricial contraction. He has also shown that in the healing stages of urethritis the newly formed epithelium growing from the deeper layers towards the urethral lumen carries with it the gonococci and finally eliminates them all, provided there is no intercurrent inflammation. Each fresh attack of inflammation allows them to penetrate to the deeper layers and set up fresh suppuration. According to Bumm and Baumgarten only mucous surfaces provided with cylindrical epithelium, or epithelium transformed into this variety, are subject to infection. Thus they explain the immunity of the buccal mucous membrane and the vagina of adults.

Discharge.[56]—In the earliest stage when the secretion is glairy gonococci are found lying free or adherent to the epithelial cells. When the discharge becomes purulent the gonococci are found almost entirely lying within leucocytes. The Professor of Pathology, Royal Army Medical College, is of opinion that should the bulk of the gonococci be found lying free, at this stage of the disease, it denotes a feeble resistance on the part of the individual and a bad prognosis. In the stage of decline the discharge contains few pus cells and gonococci, but flat or transitional epithelial cells are common.

Staining.—The gonococcus may be readily stained by any basic aniline dye, but is entirely decolourised by Gram's method.

Cultivation is troublesome: blood agar is the most convenient medium.

Diagnosis.—In the German army no case is diagnosed as gonorrhœa unless gonococci are found in the discharge. A little of the latter is spread on a slide, stained with any basic aniline dye and examined microscopically. This only requires some ten minutes.

The progress of cases in hospital is noted by frequent microscopical examination. The routine is as follows: At night a slide is placed by the bed of each case to be examined. The orderly on duty in the early morning takes a smear of the discharge on this slide and leaves it to dry. Should the patient find it necessary to pass water before the orderly's arrival, he is instructed to first press the slide on to his meatus. The slides are numbered and collected. The whole batch can be stained by the orderly, washed and allowed to dry pending the Medical Officer's arrival. The latter then rapidly examines the preparations microscopically and notes the results.

Taylor [58] gives the following differential stain:—

Schütz's stain.—A film preparation is stained for 5 to 10 minutes with a saturated solution of methylene blue in 5 per cent. carbolic acid, then washed in water. It is next dipped into a solution of five drops of acetic acid in 20 c.c. of water for three seconds, and immediately washed in water. All organisms except the gonococci are decolourised. A light counter-stain of dilute aqueous safranine may be used. By this process the gonococci and epithelial cells are stained blue, pus cells and their nuclei salmon-coloured. Captain Lawson, R.A.M.C., has tried this stain in various chronic gonorrhœal inflammations, and states that the gonococcus could be easily detected although many other organisms were present.

Anterior urethritis.

Symptoms.—These vary according to the extent of urethra affected. White and Martin [56] summarise the symptoms of acute anterior urethritis as follows:—After an incubation period of three to five days, pufliness and

inflammation of the meatus, a mucopurulent discharge, ardor urinæ, diminution in the size of the stream, and painful erections. Unless checked by appropriate remedies, the symptoms steadily increase in severity for about two weeks. During this time gonococci have invaded the entire urethra, and have penetrated to the deepest epithelial layers. Acute anterior urethritis commonly spreads to the posterior urethra.

Posterior urethritis.

If the posterior urethra is attacked, this usually happens in the first week, and symptoms develop towards the end of the second week. In sub-acute cases these may not be very marked. In acute cases the attack begins with painful, urgent, and frequent micturition, and the appearance of pus in the last portion of the urine. In severe cases these symptoms are followed by perineal pain, persistent erections, hæmaturia, albuminuria, and sometimes retention of urine. Nocturnal emissions occur repeatedly, and are almost symptomatic of inflammation of the posterior urethra. The discharge of posterior urethritis, however profuse, never passes forwards, being prevented by the tonic contraction of the compressor urethræ muscle.

The actual extent of the disease can only be determined by employing one of the following tests:—

Thompson's test

Thompson's Two Glass Test.—The patient, having held his water for some time, is directed to pass it into two separate glasses. If the anterior urethra alone is affected, the first glass will contain cloudy urine, the second clear. If both glasses are cloudy the whole urethra is affected. In cases in which the secretion in the posterior urethra is small in amount, it may be washed away with the first urine. Jadassohn's test may then be applied as follows:—

Jadassohn's test.

Pass a small soft catheter into the urethra till it meets the resistance offered by the contraction of the compressor urethræ. Now thoroughly flush out the anterior urethra with 10 ozs. of weak boric lotion. Immediately after the irrigation the patient is directed to pass his water into two glasses. If the first is cloudy, and the second is clear, it shows inflammation of the posterior urethra, not causing sufficient discharge to completely fill the prostatic urethra and flow back into the bladder. Niebergall[37] says that if only a small quantity of urine is passed, the first portion may fail to wash all the secretion out of the anterior urethra, so that the second portion is also cloudy, thus causing an erroneous diagnosis of posterior urethritis. If it is important to determine accurately the extent of inflammation in a case where the discharge is slight, flush the anterior urethra with methylene blue 1 per cent. solution. Pass the urine into two glasses and examine the shreds microscopically. If unstained, these come from the posterior urethra.

Wolbarst states that in all cases, under his observation, in which the posterior urethra was affected the meatus was abnormally small, less than No. 8 English catheter.

Acute Gonorrhœa.

Treatment.

This may be considered under the following headings:—

In the rare extremely acute form, where there is a thick greenish discharge, with possibly hæmaturia and severe constitutional symptoms, the patient must be kept in bed. Local treatment is to be avoided. Large quantities of demulcent drinks, containing organic potash salts, and a milk diet should be prescribed. The bowels should be kept freely opened with saline purges. When the patient wishes to pass water it is advisable to place him in a hot hip bath and let him pass his water into this.

In the ordinary case, if seen within 48 hours of the commencement of the attack, and the microscope shows very few or no pus cells in the discharge, the question of trying to abort the disease may be considered. Usually, however, when patients present themselves for treatment, the gonococci have penetrated too deeply for this to succeed.

Methods to cut short the Disease in the Early Stage.

(*a*.) *Injection of strong Solution of Silver Salts.*—These act by causing desquamation of the superficial layers of the epithelium and active inflam-

mation of the deeper layers. In this way the gonococcus is supposed to be destroyed and cast off in the discharge which follows this application. This method can only be employed in early cases while the discharge is still mucoid, and shows few or no pus cells. When the meatus is swollen and urination painful this method is contraindicated. The use of strong solution of silver nitrate for this purpose has now been generally abandoned, as it is not certain in its result, and in the event of failure causes an alarming increase of the inflammation. White and Martin[56] advise a solution of Protargol, five grains in an ounce of water, to be used in the following way:—

The patient is told to pass his water. Ten drops of a 4 per cent. eucaine solution are then injected. When this has induced anæsthesia, one drachm of the protargol solution is then injected and held for three minutes. This injection is repeated every two hours. Each time the bottle is half emptied it is refilled with distilled water, thus causing constant dilution. If successful, the treatment should be complete in seven days.

Neisser[34] recommended glycerinated solution of 2 per cent. protargol with 5 per cent. antipyrine for this treatment of gonorrhœa.

(*b.*) *Boric Acid.*—The method of filling the bladder with hot saturated solution of boric acid, while the patient forces the fluid out alongside the catheter, has also been discarded on account of the frequency with which it causes epididymitis (Gibbs).

(*c.*) *Medicated Bougies.*—Cheyne and Burghard[61] recommend a soluble bougie. The bougie is made as follows:—Iodoform gr. v., oil of eucalyptus 10 minims, made up with oil of theobroma to form a cylinder 4½ inches long of No. 10 English gauge. If employed during the first 48 hours much success attends its use; if tried later the bougies will probably do more harm than good. When using these bougies the penile urethra should be first thoroughly flushed out with warm boric lotion. The bougie lubricated with eucalyptus oil is then pushed into the urethra till its end disappears within the fossa navicularis. A small pad of dressing is kept on the end of the penis by means of a strip of plaster. The patient should not pass urine till compelled to do so. A second bougie may be used 12 hours after the first, but none after that. At the same time large doses of sandalwood oil should be given. If the discharge becomes thin and watery, astringent injections are ordered.

(*d.*) *Irrigation Method.*—Apparatus required: A douche-can capable of holding a quart. Eight feet of rubber tubing, fitted with a nozzle flattened to fit the meatus. On the first morning use a solution of potassium permanganate, 1 gr. to the pint, the same evening 2 grs. to the pint. The following morning increase the strength to 2½ grs. to the pint. Never exceed this strength. The solution should always be as hot as the patient can comfortably bear it.

Having filled the douche-can, raise it 2 to 3 feet. Turn on the tap and wash the prepuce and glans thoroughly. Then, keeping the tap open, very slowly, with many pauses, introduce the nozzle into the urethra, and wash away as much discharge as possible. Next pinch the meatus round the nozzle till there is a sense of perineal distension, and the compressor urethræ is felt to contract. When this happens, shut off the tap and let out the fluid. Repeat till the quart is used up. If not well in 10 days stop the treatment. When the discharge stops continue the irrigation for three to four days, and slowly reduce the strength by ½ gr. daily. The first irrigation may be followed by some œdema of the penis; this will pass away if left alone.

Niebergall[57] states that after irrigation the urethra is very liable to be infected by pyogenic organisms, hence some aseptic covering should be worn. The same writer stated that as the result of his experience in the treatment of cases of gonorrhœa by irrigation, the average duration of treatment was reduced from 30 to 16 days.

During a discussion on the abortive treatment of gonorrhœa, which took place at a meeting of the French Association[19] of genito-urinary surgeons, in 1896, the following opinions were expressed:—Guiard advocated solutions of potassium permanganate of a strength of 1 in 6,000 to 1 in 10,000. He preferred a large syringe to the irrigation apparatus. The treatment should

be begun before the fourth day, and continued for at least two days after the gonococci have disappeared. Nognués said irrigations were only of use in the early stages. Viguéron said that if employed within 36 hours irrigations are strikingly successful. Evand thought that, while irrigations shortened the suppurative period, they lengthened the period of decline. He objected to irrigation of the posterior urethra. Desnos used 500 grms., thrown up by mean of a large syringe, leaving the meatus open during the injection. He reduces with a 1 in 500 solution of potassium permanganate, and gradually begins the strength to 1 in 5,000 by the fifth day.

Swinburne [18, 20, 21] reported well on permanganate irrigations, strength 1 in 4,000, followed by an injection of a silver preparation.

Franck [34] advocated permanganate irrigations as a means of aborting gonorrhœa. Lewin irrigated with protargol, 1 in 500. In one-third of his cases gonococci disappeared after two or three irrigations.

White and Martin [54] state that copious irrigations with dilute antiseptics may be applied at any stage of the disease.

Taylor [58] says that he has been able to abort very early cases of gonorrhœa by passing a catheter and retrojecting dilute antiseptic solutions. From the contents of pages 67 to 69 it is to be inferred that he does not approve of any treatment which aims at aborting the disease.

Marcus [32] reports very rapid cures by the application of heat. He has invented a hollow bougie, heated by an electric current, the temperature being shown by a thermometer. This instrument is passed into the urthera, and the temperature raised to 55° C. It is left in situ for thirty minutes at each application.

General Treatment.

Cheyne and Burghard [61] say that when the acute stage has developed, treatment must be directed to removing as far as possible all additional sources of inflammation. If local treatment is employed at all, it must be unirritating and never go beyond attempts to wash the pus out of the urethra.

The patient is to be kept as quiet as possible, preferably in bed. The bowels should be kept freely open with saline purges, and the urine diluted and made as unirritating as possible by mild diuretics, *e.g.*, citrate of potash. Large quantities of diluent drinks should be given. The diet must be light and plain, the following articles being forbidden :—

Alcohol absolutely, all spices, red meats, coffee and tea, all acid fruits, asparagus, pastry of all kinds.

A hot bath before going to bed often prevents painful erections. During the night water should be passed at least once. This washes out the urethra and prevents accumulation of infectious pus. The patient should sleep on a hard bed and not be too warmly covered.

For the purpose of catching the discharge, various plans such as a plug of absorbent wool tucked under the foreskin, wearing special bags or the foot of an old sock, containing a piece of absorbent wool have been tried. Taylor [58] objects to all these on account of the great likelihood of preventing free escape of the discharge. He recommends the following :—

Take a piece of absorbent gauze four inches square. In the centre cut a hole just large enough for the glans to pass through. Slip this over the corona and pull the foreskin forward, so as to retain the gauze in position. The patient must, of course, be warned of the contagious nature of the discharge and the danger of infecting the conjunctivæ.

In the treatment of chordee 20 grains of bromide of potash together with 5 drops of tincture of belladona may be given at 6 p.m. and repeated at 10 p.m.

White and Martin recommend bromide of potash, 1 to 3 drachms, or monobromate of camphor, 10 to 20 grains. If these fail, half grain suppositories of morphia at bedtime may be tried. In severe cases hypodermic injections of morphia may be necessary. Mild cases are often relieved by

a hot sitz bath or a cold douche. In troublesome cases leeches may be applied to the perineum.

For chordee, Taylor says anodynes are better avoided if possible. He recommends the following injection :—

℞ Liq. Morph. (Magendie)* ʒ ij.
Cocain hydrochlor. grs. vi. to viij.
Aq. ad. ʒ ij.

One to two drachms to be gently thrown into the urethra and retained for fully five minutes just before retiring. Antipyrine, phenacetin, sulphonal, and trional may all be used as sedatives in acute gonorrhœa.

Locally, in the acute stage, Taylor strongly recommends placing the penis in hot saturated solution of boric acid for at least fifteen minutes at a time. This relieves the pain and reduces the redness and swelling. If micturition is very painful, the patient may be put into a hot hip bath, and pass his water into this, or the penis may be placed in a basin of hot water. Injections of 4 per cent. solutions of eucaine are also recommended. Alkaline diuretic mixtures are useful in this stage of the disease. Astringent injections should not be employed during the acute stage.

White and Martin recommend salol during the acute stage in doses of from 5 to 30 grs. three or four times a day. Urotropine 5 to 10 grs. three times a day has also been advocated. Taylor says salol is practically useless.

During the Stage of Decline.

Balsams.—Fournier[46] in a clinical lecture expressed the following opinions on the use of balsams :—

(1.) As abortives they are failures.
(2.) In gleet, useless. They are not to be given during the acute stage. The untimely employment of balsams is the cause of 80 per cent. of gleet.
(4.) They are to be prescribed towards the close of the fourth week, when the inflammatory period is over.
(5.) Large doses must be given, *e.g.*, a mixture of cubebs, 10 grms. with 3 grms. of copaiba three times a day, for 10 to 12 days, then slowly diminish. At the same time the quantity of fluid imbibed should be small, so as not to dilute the balsams in the urine.

Sandalwood oil and other preparations are equally useful. There is no advantage in alternating the balsams.

Finger[62] withholds balsams till the stage of decline has begun. He says they are particularly indicated for acute posterior urethritis; turpentine is the best, but is liable to cause gastric trouble. Cubebs is specially indicated in late stages of gonorrhœa. Salicylate of soda in 15 to 30 grain doses three times a day often yields excellent results in acute posterior urethritis.

Most writers, Cheyne and Burghard, Taylor, White and Martin, say that balsams should not be given during the acute stage.

White and Martin[36] speak highly of salol and recommend one of the two following formulæ put up in capsules :—

℞ Salol gr. v.
Oleoresin cubeb. gr. v.
Balsam copaibæ gr. x.
Pepsin gr. 1.

In capsule; four to six daily.

or ℞ Salol gr. 3.
Ol. santali gr. 3
Oleoresin copaibæ gr. 3.
Ol. Cinnamomi, ɱ. i.

In capsule, six to ten daily, one hour after meals.

* Magendie's solution of the Sulphate of Morphine contains 16 grains in the ounce.

If these are not well borne by the stomach the following emulsion may be ordered :—

℞ Balsam copaibæ
Spirit. lavand. comp. } ā.ā. ʒ ss.
Spt. æth. nitrosi
Liq. potassæ ʒ ss.
Ol. gaultheriæ, ʒ ii.
Mucil. acaciæ, ad ʒ iv. m.

Two drachms three times a day after meals.

If these drugs increase the local inflammation they must be stopped. Boric acid in 15 grain doses four times a day may be tried. In marked kidney disease balsams and salol are contra-indicated.

The newer Silver and other Preparations.

Protargol.—Of these protargol is the best known and has been generally favourably reported on. It has been used in dilutions of the same strength as potassium permanganate for irrigations, and in stronger solutions as an injection.

Lewin [74] published the following method :—

First inject 10 c.c. of a 2 per cent. solution of eucaine, then irrigate with 500 c.c. of a $\frac{1}{4}$ per cent. solution of protargol. This is done daily. If this treatment is begun within four days of the commencement of an attack, he claims that the gonococci disappear in one to five days, and that the patient is cured in three weeks.

Swinburne [21] first flushes out the urethra with 1 in 4,000 potassium permanganate solution, then injects sufficient 2 per cent. protargol solution to slightly distend the urethra.

Neisser [12] begins with $\frac{1}{4}$ per cent. solution, and rapidly increases to 1 per cent. He orders three injections immediately after micturition. The first two are retained for five minutes each, the third for thirty minutes. In abortive treatment he uses 2 per cent. glycerinated solutions with the addition of 5 per cent. of antipyrine.

Blaschko [34] uses protargol not exceeding 2 per cent. in strength, which is allowed to remain for two minutes.

Finger [46] recommends the use of $\frac{1}{4}$ per cent. solution of protargol. He prescribes 12 c.c. of this solution to be injected every eight hours, and retained for ten minutes. This may reach the posterior urethra. To avoid this, three separate injections may be employed, each to be retained for three minutes. The strength of the solution is slowly increased to 1 per cent.

Wolbarst,[23] in anterior urethritis, begins with injections of 1 per cent. protargol. When the discharge has ceased, he uses $\frac{1}{2}$ per cent. zinc sulphate solution. He reports great diminution in the pain and discomfort, with shortening of the duration of the disease. In his out-patient cases treated by this method the discharge lasted on an average 13 days, the gonococci disappeared in 9 · 5 days.

When the posterior urethra is attacked he suspends protargol injections and uses permanganate irrigation.

Wassidlo [34] stated that protargol in 4 per cent. strength may be followed by severe pain and urethral irritation.

Honcamp at the same meeting advocated bougies coated with a low percentage of protargol.

Benario [75] recommends 1 per cent. to 5 per cent. protargol gelatine.

In the Vestre Hospital,[33] Copenhagen, 1 per cent. protargol is used.

Columbini [13] stated that in his opinion protargol is one of the best remedies for gonorrhœa. It is rapid in action and causes little irritation.

Preparation of a Solution of Protargol.—Neisser [25] gives the following directions :—Stir the protargol into a thick paste with a little cold water in a glass or earthenware vessel, using a glass rod, then add the bulk of the water. If using a mortar moisten it and the pestle with a few drops of glycerine. Or the powder may be evenly dusted on to the surface of the

water and allowed to stand 10 minutes without stirring. Cold water only is to be used in making solutions. Hot water may cause slight decomposition of the salt, which then becomes irritating. Solutions should be preserved in dark yellow bottles.

Recent stains in linen can be removed by washing with soda and ammonia. If old, by peroxide of hydrogen in the presence of ammonia.

Albargine.—Blaschko [31] recommends injections 1 per cent. to 2 per cent. solutions to be left in the urethra for two to five minutes.

Lewin at the same meeting spoke well of albargine, 1 in 2000, for irrigations in early cases. Both speakers regarded albargine as equal to protargol.

Largin.—Finger [46] mentions largin as a substitute for protargol, used in the same strength and in the same way.

Argentamine has been used by Neisser, also at the Vestre Hospital, Copenhagen, but nothing special in regard to its use has been published. Buschke [76] used argentamine 1 in 500 to 1 in 1000 and reported well of it.

Argonin.—Stark [12] said he considered argonin to be the best drug in the treatment of gonorrhœa.

Swinburne [29] used 10 per cent. argonin injections after flushing out the urethra with dilute permanganate, but discarded this drug in favour of protargol.

Pini [13] used silberol, 1 in 400 to 1 in 200, for irrigating the urethra and considered it to be an excellent remedy.

Argyrol is the latest American silver preparation. It is very well spoken of, but is extremely expensive (Shillitoe).

Airol.—Lutati and Benassi [16] reported on this drug (gallate of oxyiodide of bismuth). They used 5 per cent. solutions in glycerine to begin with, increasing to 25 per cent. towards the end of the case. They state that the gonococci disappeared after six to twelve injections and that after twenty-five injections there was no trace of secretion. In two cases the treatment failed. The authors conclude that the stronger solutions are useful when the anterior urethra alone is affected. If the whole urethra is affected, or the strong solutions are not tolerated, the drug is useless.

Stark [12] states he found airol useless.

Epstein [11] reported twenty-one cases treated with a 10 per cent. emulsion of airol. In eleven cases of anterior urethritis he got good results, but much the same as with other preparations. When the whole urethra was affected the drug was useless.

At the same meeting Baer reported three cases treated with airol. In one of these gonococci disappeared entirely after the third injection.

Picric Acid.—Antonelli [13] recommended copious injections of picric acid, strength 2 to 5 parts per 1,000. This causes free desquamation of the epithelium carrying the gonococci with it. The writer claimed complete cures in two to twenty days. Thomas in the same journal stated that he had given up this drug as it caused hypersecretion.

Formalin.—This was recommended by Orloff [11] in 5 per cent. solution.

Howland [13] used ½ per cent. solution hot for irrigation and reported favourably.

Methylene blue.[11]—Robinson reported this drug to be very uncertain in its action.

Iodoform oil.—Barrieu [13] used the following: Powdered iodoform, 1 part; almond oil, 6 parts; 2 drachms to be injected twice daily after micturition. The writer claimed rapid cures, without any complications.

Ichthyol.[51]—Jadassohn recommends 1 per cent. solutions in acute cases, gradually increasing the strength.

A long list of drugs, recommended by various writers for injections in gonorrhœa, will be found in Taylor's "Pathology and Treatment of Venereal Diseases," p. 145.

Cystogen.—Scherck[23] recommends cystogen (a formic aldehyde compound).

For acute gonorrhœa—

℞ Cystogen grs. ii. ss.
Ol. santali ♏. v. in capsule.

Two capsules every four hours.

In chronic gonorrhœa 5 grs. of cystogen every 4 hours, followed by a draught of water.

Injections and irrigations.

Finger[46] classifies all drugs used for the local treatment of gonorrhœa under three heads :—

(1.) Simple antiseptics, *e.g.*, protargol, largin.
(2.) Antiseptic astringents, *e.g.*, nitrate of silver, argentamine, argonin.
(3.) Simple astringents, *e.g.*, sulphate of zinc, permanganate of potassium and alum.

He recommends ¼ per cent. solutions of protargol used as injections from the beginning of the disease. This treatment shortens the acute stage and prevents posterior utheritis in half the cases.

Cheyne and Burghard.[61]—Whatever injection is used a very dilute solution must be employed to start with, as in some cases injections may cause great irritation and have to be postponed.

The fluid injected must get into contact with every portion of the urethra, but at the same time should not be forced back into the bladder. To prevent this the urethra may be compressed in the perineum near the bulb, while by pinching the meatus round the nozzle of the syringe sufficient force can be employed to gently distend the urethra. The patient should be directed to pass water before each injection in order to wash away as much of the discharge as possible. *The syringe should be boiled each time before use.* When there is a free discharge during the stage of decline irrigation may be employed. First tell the patient to pass his water. This washes out most of the discharge. Then introduce a small bulbous-ended catheter, with a backward flow, to just beyond the limits of the disease. Connect this with a Higginson's syringe and flush out the anterior urethra.

These writers recommend for early cases any of the following :—

Sulphate of zinc, 1 to ¼ grs. to the ounce ;
Chloride „ ½ „ 2 „ „ „ ;
Acetate „ 2 grs. to the ounce, or
Permanganate of potash, 1 in 4,000.

For more chronic cases nitrate of silver, 1 in 6,000 to 1 in 3,000, is the most useful.

White and Martin[56] recommend a blunt hard rubber syringe which cannot hurt the mucous membrane, but which if pressed into the meatus will prevent any escape of fluid.

All syringes with slender or sharp points which can penetrate for some depth into the urethra and still further inflame the mucous membrane must be forbidden. If the patient has trouble in using a piston syringe a soft rubber bulb provided with a conical point may be ordered. On completing the injection the syringe is to be immediately withdrawn and the meatus closed by pressure of the finger and thumb, the injection being retained for three minutes.

Injections are contra-indicated (1) in acute gonorrhœa ; (2) when they cause persistent and severe pain ; (3) during the course of an acute posterior urethritis.

The following formulæ for injections are given :—

(1.) ℞ Hydrarg. perchlor., gr. ⅛.
Sod. Chlor., ʒ i.
Aquæ destil., ʒ vi.

(2.) Protargol, 1 per cent. solution.
12 drops to a tablespoonful of distilled water. Gradually increase till 30 to 40 drops are added.

(3.) Potass. Permang., gr. i.
Aquæ destil., ʒ vi.

(4.) Or zinc Permang., gr. 1.
Aquæ destill., ʒ vi.

Dilute with an equal quantity of boiled and filtered water and inject. Gradually increase the strength of the injection.

White and Martin strongly recommend the following :—

(5.) ℞ Hydrarg. Perchlor., gr. ½.
Acidi carbolici, gr. xii.
Zinci sulpho carbolat., gr. 12 to 60.
Boro-glycerid (25 per cent.), ʒ ii.
Aquæ ad. ʒ vi.

The writers state that this injection has proved more efficacious than any other of the large number popular with the profession. It is appropriate to all stages of gonorrhœa, the strength being regulated to suit individual peculiarities.

When an astringent action seems to be strongly indicated, as shown by continued profuse muco-purulent discharge, uninfluenced by antiseptics, the following formulæ will be found useful :—

(6.) ℞ Ext. hydrast. fl. (colourless), ʒ vi.
Bismuthi subcarb., ʒ vi.
Boro-glycerid (25 per cent.), ʒ vi.
Aquæ distil. ad. ʒ vi.

(7.) Injection Brou.
℞ Zinc sulph., grs. xv.
Plumbi acetatis, grs. xx.
Tinct. opii. } ā ā ʒ ij.
Tinct. catechu. }
Water to ʒ vi.

This is particularly useful as an astringent injection during the last weeks of gonorrhœa. It should be diluted with an equal quantity of water to begin with.

Ultzmann's injection is useful in the subsiding stage when the discharge will not clear up under other treatment.

(8.) ℞ Zinci sulphatis } ā ā grs. iv. to xii.
Pulv. alum. }
Acidi carbolici, grs. iv.
Aquæ, ʒ vi.

(9.) ℞ Zinc sulph., gr. i.
Zinc sulpho-carbolat, grs. i. ss. to ij.
Aquæ ad. ʒ i.

In chronic suppurating discharges use the above; where the discharge is watery use zinc permanganate.

Injections containing sulpho-carbolate of zinc must not be used continuously for long periods, as they are apt to make chalk-like deposits on the urethral mucous membrane (Gibbs).

Deputy Surgeon-General Oliver[42] reported 83 cases treated in the following way, by which the average time of treatment was reduced from 21 to 11·88 days. On admission a full saline purgative and milk diet was ordered. Each morning the patient was given a hot bath for half an hour. While in the bath some of the bath water was injected, but so as not to reach the posterior urethra. Subsequent to the bath, four injections of one drachm each of warm perchloride of mercury solution, strength 1 in 4,000, were ordered. The injections were repeated in the evening. The patient was kept in bed during the treatment.

Taylor.—When the stage of decline has set in silver nitrate is the most useful drug. The first irrigation should consist of two to four ounces

of a warm solution of nitrate of silver 1 in 10,000. In favourable cases the strength can soon be increased up to 1 in 2,000. As improvement proceeds the irrigations may be dropped and instead, a few drops of nitrate of silver solution 1 in 1,000, 500, and 250 may be injected daily. In some cases it may be well to follow the silver nitrate injections for a few times with hot solutions of sulphate of zinc or alum 1 in 500 or 250.

The urine should be frequently examined, as its condition gives valuable information, as to the frequency and strength of the silver solutions to be employed. In general it may be stated that as long as there is much free pus and no epithelium in the specimen, the solutions should be of the weaker grades. As soon as epithelial cells begin to appear, the time is ripe for progressive increase in the strength of these solutions.

Taylor absolutely forbids irrigation during the acute stages. He states that the suppurative stage is cut short by irrigations, but that the urethral walls are left in an infiltrated condition, and that the patients often suffer from posterior urethritis, more or less incontinence of urine, and in some cases even a condition bordering on urethral stenosis.

White and Martin state that irrigations are applicable to any stage of the disease.

Irrigation of the anterior urethra is carried out as described on page 41. To irrigate the posterior urethra, begin by washing out the anterior urethra. Then raise the douche-can to 5 or 6 feet above the bladder and press the nozzle firmly into the meatus. Tell the patient to attempt to pass water, this relaxes the external sphincter and the fluid runs into the bladder. Fill the bladder till the patient complains of a feeling of distension, then remove the apparatus and let the fluid out with a rush. Repeat two or three times. Irrigate morning and evening for four days, then once daily. These writers advise slowly increasing the strength of potassium permanganate to 1 in 2,000, but never to use stronger solutions than this for the bladder. Perchloride of mercury may be used 1 in 12,000 to begin with, and slowly increased to 1 in 3,000. Protargol the same strength as potassium permanganate.

Janet[55] summarises the results of irrigation in acute cases as follows:—During the first few hours after an irrigation there is a whitish secretion, then clear serum which may be bloodstained. After this there is an absence of secretion for a short time, and then a purulent secretion begins again. This shows that the effect of the irrigation is passing off. Janet therefore recommends that the irrigation be repeated during the dry period following the first irrigation. If a slight mucous discharge persists after irrigation, Janet recommends irrigation with nitrate of silver 1 in 2,000. In applying irrigations it is a matter of cardinal importance to thoroughly disinfect any urethral crypts existing about the meatus. If a muco-purulent discharge reappear, after cessation of treatment, irrigations are to be resumed. If it persists astringent injections should be ordered instead.

Hirschbruch[6] recommends a special three-way catheter for irrigation. One tube keeps up a constant suction action, and is supposed to prevent the spread of infection to the posterior urethra.

Chronic Gonorrhœa.

Taylor[58] says a gonorrhœa which has lasted four months in a sub-acute form may be looked on as chronic. Gonorrhœa produces—(1) a chronic catarrhal condition of the urethra; (2) a severe exudative inflammation in the submucous tissue.

The anterior urethra may be affected alone, but commonly the posterior is also involved. By applying the two-glass test and searching for shreds in the urine, the extent of the disease may be determined. Short thick shreds point to disease of the follicles.

If the anterior urethra only is affected the patient usually suffers but little discomfort, the diagnostic sign being a slight discharge in the morning. When the posterior urethra alone is diseased there is usually no discharge. When the inflammatory process has reached the deeper layers of the urethra,

tenesmus, frequent desire to urinate, deep-seated pain in the perineum, or pain radiating to the testes, groins, and thighs, are prominent symptoms.

The conditions which give rise to a chronic discharge may be a persistent general catarrh of the whole urethra, or a localised area of inflammation. The favourite sites for the latter are Littré's glands, Cowper's glands, the openings of the ejaculatory ducts, and the prostatic follicles. Cheyne and Burghard say the commonest positions for local areas of inflammation are about three and a half to four inches from the meatus, and the junction of the membranous with the prostatic urethra. Taylor says the "peno scrotal" angle and the bulbous urethra are the most usual sites for the localised patches of inflammation.

Gonorrhœa has a natural tendency to become chronic, and this tendency may be augmented by alcoholic or sexual indulgence during the period of decline, or by too active treatment.

Treatment.

Taylor.[58]—Each case requires separate consideration and treatment. First obtain the history of the case, then determine the nature and site of the lesion.

1. *Catarrhal Cases.*—These cases present themselves with a history of repeated relapses as soon as treatment is stopped.

Daily irrigations of warm solutions of sulphate of zinc or alum, 1 in 500, should be used to begin with. The condition of the urine and the patient's sensations afford the best guides to treatment. If not improving after one to two weeks of this treatment, hot irrigations of potassium permanganate, 1 in 1,000 or 1 in 2,000, may be tried. Should this fail, irrigations of nitrate of silver, 1 in 16,000 or 1 in 8,000, are often useful.

Sounds should only be used with great caution in these cases, as they may seriously aggravate the disease.

When the disease is limited to the bulbous urethra retrojections of the above solutions may be tried. If these fail, instillations of nitrate of silver, 1 in 2,000 to 1 in 250, may be tried. These may be introduced by means of a special instrument or as follows:—Attach a No. 3 or 4 soft rubber catheter to a hypodermic syringe. Suck up 5 to 10 drops of the solution to be instilled. Carefully wipe the catheter and lubricate it with glycerine, then pass it as far as the opening in the triangular ligament (about six inches from the meatus), and slowly inject the solution. This should be repeated about every five days. The patient must meanwhile use mild astringent injections to wash away the ensuing discharge.

2. *Localised Inflamed Areas.*—These may be detected by:—

(1.) Palpation.
(2.) The increased resistance and localised pain on passing a bougie.
(3.) Endoscopic examination. As to the latter Taylor says it is not to be employed as a routine method, but as one of reserve, and by experts.

Taylor[58] recommends the bougie à boule for determining the extent of a morbid patch. Various sizes must be at hand. A No. 7 should be used to start with. In passing it seek for any local resistance due to an inflamed patch; the instrument is then passed beyond this spot, and on withdrawing it further information as to the degree and extent of the disease may be obtained. By palpating the penis with the bougie in the urethra additional information may be gained as to the extent and depth of the inflammatory process.

Having located the diseased spot, a few drops of silver nitrate solution, 1 in 1,000, 1 in 500, or 1 in 250, may be applied once a week or oftener. Should this fail, the endoscope must be used, and 1 per cent. silver nitrate solution applied locally.

For local urethritis at the "peno scrotal" angle and in the deep urethra sounds must be passed, in addition to the strong applications. He does not approve of the destruction of diseased follicles by operative treatment.

White and Martin[50]—If a localised area of inflammation is found, flush out the urethra with a dilute antiseptic, and pass a full-sized bougie. On withdrawing this, pus or blood on its shoulder will denote either erosions or an extremely congested condition of the mucous membrane. For local application they recommend silver nitrate, 10 grains to the ounce, or 1 per cent. perchloride of mercury solution, or 10 per cent. carbolic acid in alcohol. These observers say that the restoration of the urethra to its normal calibre is essential; if the meatus will not permit the passage of a No. 8 catheter it should be incised. For dilatation they recommend a rubber-covered dilator, which is introduced closed as far as the membranous urethra. It is then opened out and withdrawn, thus emptying all the crypts at the same time. Otis's urethrameter answers the purpose well. This is repeated every two or three days and is followed by a mild antiseptic flush.

For obstinate posterior urethritis they recommend the passage of a full-sized sound, coupled with prostatic massage and followed by an instillation of nitrate of silver.

Cheyne and Burghard,[61] and White and Martin, recommend the destruction of diseased follicles by the galvanic cautery or slitting these up and applying strong carbolic and iodine.

Finger[62] prefers medicated lanolin ointments. Unna uses sounds coated with a special ointment containing silver nitrate, grains 5 to 1 oz. of oil of theobroma, especially in cases of general catarrh. Tommasoli applies an ointment (creolin 5 to 15 minims in 1 oz. of lanolin) with a specially constructed piston catheter; medicated gelatine suppositories have also been used.

For certain methods of treatment the endoscope is essential. The following precautions are taken:—In using the endoscope strict asepsis must be maintained. Glycerine or boroglyceride is the best lubricant; oily substances are not suitable, cocaine should, if possible, be avoided, as any local tenderness is masked. The instrument must be passed as far as the triangular ligament before removing the obturator and the examination made from behind forward. If employed in the reverse direction the mucous membrane may be excoriated. After applying strong solutions, the surface should be carefully dried. These applications are followed by an acute urethritis with free discharge.

Ilinsky[19] treats chronic gonorrhœa by the following method:—

All astringent injections are stopped and an injection of pure lanolin is given to soothe the urethra. After several days, injections of ichthyol 2 per cent. are used, the strength being gradually increased up to 6 per cent. The latter causes some pain for about 20 minutes. Should the discharge reappear when the injections are stopped, the following ointment is applied on bougies every second day: the bougies are left in situ for 20 minutes:—

℞ Ung. Cinerei ʒ ss.
Adipis Lanae
Ung. Paraffini } ā ā ʒ ij.

If stricture is present, metallic bougies must be used. Fifteen applications are required.

Bougies eight centimetres in length, each containing one grain of ichthyol, are also recommended by Ilinsky.

Von Niessen[6] used the following method:—

The patient is told to pass his water. A special hygroscopic wick is then dipped in 1 per cent. protargol solution, and by means of a carrier is introduced into the urethra and left there. The end of the wick is placed in a jar of the same solution. One application of two hours' duration is made daily.

Schwenk[38] uses Kutner's method of irrigation under pressure. The jet of fluid suddenly impinging on the external sphincter causes this to contract. The fluid has therefore to escape at the meatus, and in doing so thoroughly washes out the urethra.

Casper,[77] in a long article on the treatment of chronic gonorrhœa, insists on the importance of finding and destroying all foci in the peri- and para-urethral glands. In obstinate cases he recommends passing a sound into the bladder and massaging Cowper's glands and the prostate.

Duration of Infectivity.

Various opinions which have been expressed are noted below.

Cheyne and Burghard[61] state that the best guide as to whether a man is cured of gonorrhœa is the absence of shreds and discharge from the urine. If shreds are present these should be stained for gonococci. A perfect cure can only be pronounced when gonococci have not been detected after repeated examinations during a period of, say, six months.

Blaschko and Finger[34] say that microscopical examination of the shreds is of more value, in determining the question of cure, than endoscopy.

Wolbarst[22] says an absolute cure cannot be guaranteed, as gonorrhœa may remain latent for years. To determine whether a cure has been effected or not, the writer proceeds as follows:—

(1.) Carefully examine the first urine passed in the morning for minute shreds.
(2.) When apparently cured give some diet known to irritate the urethra. Examine for discharge and stain this for gonococci.
(3.) Inject a few drops of silver nitrate solution, 5 to 10 grains to the ounce. This will produce a discharge, which may be stained for gonococci; if the result is negative, the patient may be looked on as cured.

During a discussion on gonorrhœa Neisser[34a] advised applying some irritant to the urethra when gonococci are suspected but not found, this brings them to the surface, and they appear in the pus.

Dommer[34] said no case of gonorrhœa could be looked on as cured until a large-sized bougie had been passed and no relapse had followed. He regarded this as the best means of attracting gonococci from the deeper layers to the surface.

Leonhard Leven,[4] in a long article on the question, concludes that in an uncomplicated case of gonorrhœa as long as leucocytes are present in the discharge so long are gonococci present in the urethra, although probably not detected by the microscope. The writer recommends three examinations of the morning discharge before micturition at the following intervals:—

(1.) On the fourth day after stopping treatment.
(2.) Ten days later.
(3.) Eight weeks later.

If nothing is found at the third test the case may be looked on as cured. Epithelial cells alone have no significance. This writer states that germs other than the gonococci do not cause a purulent urethral discharge.

Scholtz[4] does not agree with Leven's conclusions. He relies on Gram's method of staining. If other bacteria are present he irrigates the urethra with some antiseptic for two days, before taking a specimen for staining. He also states that only 10 per cent. of chronic urethritis is due to the gonococcus.

Taylor advises as the means of determining the absence of infectivity that the early morning urine should be examined. If pus cells are still present together with epithelial cells, the patient should be subjected to further treatment, even though the gonococcus cannot be discovered. If there has been no recurrence during six months after the cure it is safe for a man to marry. Many cases of chronic anterior and posterior urethritis are not infecting. In these cases the microscope shows withered pus cells and large flabby epithelial cells studded with flat globules.

In the German Army[41] a gonorrhœal patient is not discharged from hospital till there is complete absence of discharge from the meatus, and the urine is free from shreds. A test diet containing beer and other irritating

articles is ordered. The result of this is carefully noted. Some cases on being discharged are ordered light duty and kept under observation for a time.

Gonorrhœa in the Female.

The favourite sites are the urethra and the cervix uteri.

Bumm says the adult vagina is never affected. Taylor says prolonged contact with gonorrhœal discharge from the cervix may infect the vagina.

The symptoms are those of inflammation, there being nothing special to show a gonorrhœal origin.

Diagnosis.—This can only be established by finding the gonococcus; the woman must not be allowed to micturate or douche herself for some hours previous to examination. A little pus squeezed out of the urethra or taken from the os or vulvo-vaginal glands must be stained for gonococci. Failure to find these does not exclude gonorrhœa. In suspected chronic cases the cervix may be gently curetted and the scrapings stained. The chronicity of gonorrhœa of the os is due to infection of the deep-seated glands.

Treatment.—For acute cases Taylor recommends warm hip-baths and hot alkaline affusions; in sub-acute cases painting the vagina with nitrate of silver solution thirty grains to one ounce of water. When the urethra is attacked, injections of hot solutions of borax six grains to the ounce. Later still, carbolic acid, one half to one per cent. solutions, or silver nitrate solution, thirty grains to the ounce, applied through the endoscope. For chronic gonorrhœal affections of the os dilate, curette gently, and apply caustic solutions of chloride of zinc. In the Encyclopædia Medica douches are forbidden on account of the danger of causing an upward extension. The affected parts should be swabbed with strong silver nitrate or carbolic acid solutions. In acute cases this may be very painful. After applying silver nitrate solutions any excess should be washed off with boric acid or salt solutions.

Duration of Infectivity.—Hammer [11] says the disappearance of pus cells from the urethral secretion shows the absence of gonococci in this situation, but that the same does not hold good for the os uteri.

V.—CERTAIN CONSEQUENCES OF VENEREAL DISEASE.

Buboes.

Excluding inflammation of the inguinal glands, due to absorption of pyogenic organisms through non-venereal abrasions, three main varieties of bubo are met with :—

1. Those accompanying gonorrhœa.
2. „ „ soft chancre.
3. The non-venereal bubo.

1. *Gonorrhœal Bubo.*—Hansteen [11] says inflammation of the inguinal glands is common in gonorrhœa, but that suppuration is unusual. From this it was formerly thought that the absorption of gonorrhœal toxins caused non-suppurative inflammation of the inguinal glands, and that suppuration was due to the presence of pyogenic organisms. Hansteen, however, reports three cases of suppuration in which the gonococcus was the only organism found.

Muir and Ritchie suggest, as an explanation of suppuration in some cases of gonorrhœal bubo, that a minute urethral ulcer may permit of the absorption of other pathogenic germs which are present in abnormal conditions of the urethra.

2. *Bubo associated with soft Chancre.*—Various writers estimate the incidence of bubo at from 5 to 35 per cent. of all cases of soft chancre. The presence of the bacillus of Ducrey may be established either by inoculating the patient with secretion from the bubo and causing a fresh soft chancre, or by staining.

Montegazza [11] made eighteen inoculations with bubonic pus ; six of these produced soft chancres. This writer does not believe that toxins originating in soft chancres can of themselves produce buboes. Where inoculations fail, he thinks that an attenuated virus is present.

Krefting [11] says Ducrey's bacillus is present in 28 per cent. of all buboes accompanying soft chancres, and that these are "virulent buboes." In these pain is acute. Suppuration begins early and progresses rapidly. If not incised the skin is perforated, leaving a large cavity, which is very slow in healing.

Muir and Ritchie suggest that when the pus is found to be sterile, the organisms which caused the suppuration have been destroyed in the process.

3. *The Non-venereal Bubo.*—Strictly speaking this does not come under the group of venereal diseases, yet as it occurs commonly in tropical countries, and may be confounded with venereal bubo, its existence may be mentioned.

Goding [42] and Cantlie [43] gave full descriptions of this disease. Cantlie describes a very definite clinical course and calls it pestis minor. Lieut.-Colonel B. M. Skinner also wrote on the occurrence of bubo in association with intestinal lesions such as enteric fever and dysentery. This form usually occurs in debilitated subjects, and frequently after a strain or other local injury. Castellani, [73] in a recent paper on climatic bubo, states that he was unable to detect any organisms in the fluid obtained by aspiration from the enlarged glands.

The bubo itself may be treated according to its clinical condition. Goding advises the administration of arsenic in full doses.

Treatment.—Taylor [58] recommends cold applications when there is much swelling and inflammation, if not pressure combined with applications of iodine ; in more chronic cases, blistering. If these fail, excision of the whole mass of glands and suturing the wound, or if the tissues are much inflamed, antiseptic packing. For a suppurating bubo he recommends the following : Puncture the bubo and express the contents, next thoroughly irrigate the cavity with dilute antiseptics, and inject warm 10 per cent. iodoform ointment.

White and Martin [56] practically say the same, but if excision is refused they advise injecting antiseptics, *e.g.*, 10–15 drops of 1 per cent. benzoate of mercury solution, or the same quantity of a three per cent. solution of carbolic acid, in the hope of obtaining resolution.

Fournier [11] says single suppurating glands, if not severe, are to be incised; if more serious, incise and curette. If there is considerable polyadenitis excise the whole group.

Krefting [5] recommends iodoform or the application of heat (method not explained).

Miekley [11] says 56 per cent. of all chancroidal buboes require incision. The remainder resolve under treatment with grey ointment, red precipitate ointment, bandaging, &c.

In the Army, especially in tropical climates, the following clinical varieties have been personally observed: —

(1.) The ordinary bubo described in text books, which may resolve under treatment; if it does suppurate is merely a superficial abscess which heals readily with simple incision and aseptic dressings.

(2.) *The Sloughing Bubo.*—This one has the appearance of a ripe abscess, pointing and ready to be opened. On incising it only a little pus escapes leaving a more or less necrosed gland. The latter shells out easily and the cavity heals up.

(3.) *The Phagedænic Bubo.*—This is happily rare and must be treated as in other cases of phagedænic ulceration.

(4.) *The Indolent Bubo.*—In this variety there is a firm swelling of one or more glands. There is little pain as a rule, and no heat or redness. It may disappear under treatment, but returns immediately after any exertion. If this prevents the soldier performing his duty a strong antiseptic, such as five drops of liquefied carbolic acid, injected into the middle of the swelling will generally induce suppuration. The abscess can then be opened and curetted, when the wound will heal soundly by granulation.

(5.) *The Relapsing Bubo.*—Several glands are generally affected. Suppuration develops slowly and is always subacute. On incising the most prominent fluctuating spot a little thin pus escapes, leaving an unhealthy-looking cavity. Union takes place slowly with a weak scar. Then one or more places break down. A little thin pus escapes and the probe reveals a long sinus necessitating extensive slitting up. This heals after a time and again breaks down. In these subacute cases the best results will be obtained by thoroughly curetting every corner of the wound when it is first opened and packing with turpentine dressings for forty-eight hours. Where excision or extensive curetting of glands has been done it is often well to apply a long Liston splint to keep the parts at rest while healing.

Phagedænic Ulcerations.

Hutchinson [55] says that phagedæna is always due to local causes such as retained secretion. It is more common in association with hard sores than with soft ones, but any syphilitic ulcerating lesion may become phagedænic. Syphilitic phagedæna may originate an epidemic of hospital gangrene, hence such cases should be isolated.

For treatment he recommends potassium iodide and mercury internally, locally iodoform, nitric acid or carbolic acid; the most useful treatment being prolonged hot baths. In obstinate cases a change to the seaside is most beneficial. Hutchinson does not recommend iron or opium internally.

Fournier [64] recommends prolonged baths and iodoform locally; as a general rule he objects to all caustics and irritating applications. In some very obstinate cases it may be necessary to cauterize, in which case he prefers Ricord's paste; this is strong sulphuric acid mixed with charcoal to form a thick paste. Internally he recommends iodide of potash half to one drachm, combined with protoiodide of mercury one and a half grains daily or injections of calomel. Fournier says that phagedæna is due to lessened resistance of the individual and not to a special organism.

Balzer [11] reported good results from continuous irrigation with hot potassium permanganate solution (1 in 1,000); at a later stage in the same case he found that constant applications of zinc chloride (1 in 1,000) gave the best results.

Taylor [58] holds that phagedæna is due to a secondary bacterial infection.

White and Martin [56] recommend iodides in phagedæna.

De Méric [59] recommends nitric acid, liquor sodæ chlorinatæ, or prolonged soaking in hot carbolic acid solution.

Gaucher [13] recommends injections of grey oil in phagedæna.

Lang [63] recommends the thermo-cautery for phagedænic ulcers.

Syphilis complicated by Pyogenic and other Pathogenic Influences.

Bulkley [23] published a paper on this subject; his general conclusions were as follows:—

Small-pox and erysipelas exert a marked antagonistic influence on syphilitic eruptions. Typhoid causes a delay in the appearance of the eruption. Malaria aggravates the duration and severity of syphilis. Sepsis is a grave complication of syphilis.

Lang [66] says syphilitic manifestations usually disappear when another febrile condition is induced, this is especially so in the case of erysipelas. Measles and small-pox exert an unfavourable influence on syphilis. Malaria and residence in the tropics generally, by virtue of the debility they cause, tend to aggravate the severity of syphilis, and may even be the cause of "Syphilis Maligna" or "Galloping Syphilis."

In the German Army Medical Reports for 1900 the severity of syphilis contracted in the tropics is remarked on.

A report [69] on venereal disease among French troops in the colonies, mentions that syphilis contracted in the tropics is usually very severe, and frequently necessitates invaliding to Europe.

Finger [62] says that acute febrile diseases and the specific fevers cause a rapid disappearance of syphilitic manifestations for the time being. On the cessation of the intercurrent disease, the syphilitic eruptions return immediately, or after a time, and are aggravated in proportion to the extent of injury which the constitution has suffered from the intercurrent disease. All chronic general illnesses tend to aggravate syphilis by reason of the debility which they produce. Syphilis and tubercle mutually aggravate each other. Wounds and fractures are very unfavourably influenced by recent syphilis.

VI.—SCABIES.

In a recent article [66] on the subject of Scabies it is stated that the female lives about two months after burrowing, while the eggs hatch out in fourteen to fifteen days.

Schiscka [26] describes the burrow as having a wide mouth and occupying chiefly the middle layers of the Stratum Corneum.

Treatment.

The following is given as the routine treatment at the St. Louis Hospital.[66] The patient is thoroughly rubbed all over with soft soap for half an hour. He is then put into a hot bath for half an hour and given a good scrubbing. After drying, sulphur ointment is rubbed in for half an hour. In the meantime his clothes have been thoroughly baked. He now dresses, leaving the ointment on his skin. One application may produce a cure, if not the process is repeated.

Where there is much inflammation of the skin, the following ointment is recommended :—

℞ Sulphur sublimat. } ā ā ʒ ij.
Olei cadini }
Cret. preparat., ʒ ii. ss.
Saponis viridis } ā ā ʒ i.
Adipis }

If this application produces too severe a dermatitis, the following ointment may be used :—

℞ Styracis liquidæ } ā ā ʒ i.
Sulph. sublimat. }
Adipis purificat., ʒ i.

An even milder ointment is the following, which is white and has little odour :—

℞ Naphthol, ʒ ss.
Cret. preparat., ʒ iij.
Saponis virid., ʒ i. ss.
Adipis purific., ʒ iij.

One per cent. of any essential oil, *e.g.*, lavender, may be added to any of these prescriptions.

An ointment recommended when itching is troublesome is as follows :—

℞ Ichthyol - - } ā ā ʒ ss.
Potass. carbonat. }
Sulp sublimat. } ā ā ʒ ij.
Ung. picis. - - }
Ung. aq. rosae - ʒ vj.

Marion [11] recommends alcoholic solutions of various balsams, Peru, gurjum, styrax, tolu, benzoin, especially if severe ulceration is present.

Risso [15] reported good results from the use of sphagnol (huile de corba).

Juliusberg [34] recommended peruol ; this is an extract prepared from balsam of Peru. He used a 25 per cent. solution in olive oil.

Rosenberg [33] got good results with 1 per cent. naphthol-creta alba in velopurin (a compound of soap and olive oil).

Disinfection of Clothing.

In every case the patient's clothes and bedding must be carefully disinfected as laid down in Regulations for Army Medical Services, paragraphs 576, 578.

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APPENDICES.

APPENDIX "A."

A.M.D. Report, 1900.

APPENDIX No VI.

(I.)—A REPORT ON THE CONTINUOUS TREATMENT OF SYPHILIS IN THE BRITISH FORCE IN EGYPT 1900.

(II.)—FURTHER REPORT ON THE TREATMENT OF CONSTITUTIONAL SYPHILIS AMONGST THE TROOPS IN THE EGYPTIAN COMMAND FROM 1st JANUARY TO 31st OCTOBER 1901.

By Colonel W. J. Fawcett, M.B., Royal Army Medical Corps, Principal Medical Officer, British Force, Egypt.

I.

The satisfactory results following the course adopted in the Egyptian command for the systematic treatment of syphilis during the past year and in the last four months of 1899 justify the detailed description of the arrangements made by me.

The importance of continuous treatment in dealing with constitutional syphilis has been very prominently brought forward, both by Mr. J. Hutchinson and also in the interesting discussion at the General Meeting of the British Medical Association 1899, where the remarks of Majors Dick and Lambkin, R.A.M. Corps, and the paper of Mr. A. H. Ward, Surgeon to the London Lock Hospital, amongst many others of great value, laid down the principles on which the rational treatment of syphilis should be conducted.

In the autumn of 1899 the General Officer commanding the British force in Egypt Major-General the Honourable R. A. J. Talbot, C.B., who even then fully appreciated the special value of this treatment in military life, asked me to apply to the whole of Egypt the arrangements which I had practised in the Poona Garrison during 1898 and 1899 with considerable success.

A few figures are submitted showing the extent of primary and secondary syphilis amongst the troops in the command for the past five years.

(*See* Tables at the end of the Report.)

The tables show a serious loss to the force, both under the head of "Constantly Sick" and under that of "Invaliding," as well as four deaths during the five years 1896 to 1901, but in 1900 the admissions for primary syphilis were only 32 compared to 201, the average annual admission ratio for the four preceding years, and the admissions for secondary syphilis were only 48 in 1900 compared to 195, the average annual admission rate of the four preceding years.

During the years 1896 to 1899, 30 men were invalided for syphilis, or an annual average of 7·5 per annum, while in 1900 one man was invalided, and this case was one of very long standing constitutional syphilis in a man whose health had broken down from other causes.

The extraordinary diminution in the number of admissions for primary syphilis cannot fail to attract attention, and this diminution can probably be accounted for, in a great measure, by consideration of the three factors given below :—

(*a*) Granting for the moment that the ravages of secondary syphilis in the force were very much modified, probably almost removed, it follows that during the year 1900 there were but very few diseased men in the garrison capable of infecting those prostitutes with whom their comrades habitually consort.

(*b*) The greatest possible accuracy in the differential diagnosis of venereal sores was arrived at by all the surgeons; no cases were shown as primary syphilis unless they were undoubted infected sores; and as a consequence the number of admissions for primary syphilis was reduced to a minimum.

(*c*) In March 1900, the 3rd Battalion Seaforth Highlanders arrived to garrison the Citadel, Cairo. This militia battalion, composed largely of young men from the Western Islands of Scotland, is remarkable for its exceptionally good conduct; and there were only three admissions for primary syphilis from this battalion with an average annual strength of 602 men, against 32 admissions in the remainder of the force in Egypt, giving a ratio per 1,000 for the 3rd Battalion Seaforth Highlanders of 4·98, and for the rest of the garrison of 10·11 per 1,000.

It is now proposed to consider by what means this enormous reduction in admissions, invaliding, and deaths was brought about.

In October 1899 the following rules were published for the information and guidance of all medical officers in the command, the main object being to obtain a uniform and continuous treatment of constitutional syphilis, and as far as possible to make certain that no case could escape regular medical supervision and a sustained treatment.

No originality is claimed for these rules, the heading of the record of syphilis being but a modification of one previously in use in the R.A.M.C. hospitals.

Memorandum on the Treatment of Syphilis.

In order to cure cases of syphilis it is essential that they remain under medical observation and, generally speaking, under continuous medical treatment, for a minimum period of eighteen months.

To attain this end the following modifications of existing arrangements will at once come into force:—

No. 1.

At each station hospital and inspection room in the command a book, to be called the "Record of Syphilis," is to be kept up; a copy of the headings is subjoined.

Note.—The books now in use can be modified to the new form.

No. 2.

By means of the intra-muscular injection of mercury a sufferer from this disease can, while doing his duty, receive effectual treatment. It will therefore be adopted generally and carried out for the period of eighteen months.

A full and instructive account of the treatment by Surgeon-Major Love, A.M.S., is given in the Army Medical Report for the year 1894, Appendix III.

No. 3.

When a man under treatment is transferred to another charge, the officer who had the care of the case will send a memorandum giving the necessary professional information to the man's new medical attendant, making an entry that he has done so in the last column of the Syphilis Register.

No. 4.

In the case of a man objecting to treatment after a full and careful explanation of the principle has been given him, the officer in charge of the man will refer the matter to the officer in charge of the Station Hospital.

Except on medical grounds no man is to escape continuous treatment.

No. 5.

Every man on the Register will be seen once a fortnight so long as active symptoms are present. At no time will a longer interval than a month elapse without an examination of the patient. No case will be discharged as cured until it has been eighteen months under continuous observation and treatment.*

No. 6.

A copy of the foregoing will be made and pasted in the beginning of the Syphilis Register.

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* Great care will be exercised in the diagnosis of true infecting sores; and on the discharge from hospital of every case of primary syphilis, should the patient not have already developed signs of constitutional infection, his name will be sent to his Regimental Medical Officer, who will place him on the list for periodical inspection. If at the end of three months from discharge from hospital he has not developed either skin or throat symptoms, his name may be erased from the register.

Notes on Special Points.

No. 1.

The use of perchloride of mercury as a hypodermic injection is objectionable for many reasons, but principally because it is absorbed and excreted too rapidly.

No. 2.

The most useful prescription is given in the A.M. Dept. Report for 1894. The ingredients require to be rubbed together for at least four hours, and even then, in hot weather, the mercury may fall to the bottom; attention to the condition of the mixture is therefore necessary to prevent disastrous consequences.

No. 3.

The needles of the syringe will not bear repeated heating in a lamp flame, but are most readily and quickly sterilized in a porcelain dish containing sweet oil heated to the temperature at which a crumb of bread floating in the oil begins to brown.

No. 4.

The needles must be plunged in deeply; an injection into the subcutaneous arcolar tissue is always painful; it is inadvisable to inject near the site of a recent injection.

No. 5.

The patient should be exhorted to use a tooth-brush regularly while under treatment. The evidences of slight constitutional mercurial effects, such as a little sponginess of the gums, especially if maintained for some considerable time, is favourable to cure, and a condition to be desired.

No. 6.

It is to be clearly understood that the foregoing are but statements of sound general principles, and are not to hamper the exercise of the medical attendant's free judgment in each and every case.

It may be well to state here that the prescription now universally used is

℞ Hydrarg. 3i.
Lanoline 3ii.
Olive oil 3ii.

Sterilize the olive oil by boiling, then rub the ingredients well together for at least four hours; dose. five to ten minims.*

It is important to notice that by the foregoing rules no man once entered on the Syphilis Register could, while the rules were obeyed, escape continuous treatment, no matter how often he moves from place to place.

The rules were well received by all medical officers and most loyally carried out, for without their cordial co-operation the results given above could never have been attained.

The number of men under observation and treatment during the year was 107, and they have had an average of 20 injections per man.

At first a few men declined to submit to the treatment, but all unwillingness on their part has now passed away, and in one corps alone five men who had contracted constitutional syphilis without applying for treatment for the original sore voluntarily presented themselves for intramuscular injections.

Practically no unfavourable effects followed the treatment; in a few instances a lump could be felt at the side of the injection for a week or ten days, but this lump was nearly painless, and if the injection is done about the upper portion of the gluteus maximus it is not pressed on or rubbed, and the patient continues to do his duty without inconvenience.

At first some men presented signs of rather severe mercurial stomatitis. In these cases probably the surgeon had lost sight for the moment of the golden rule that the long-continued use of mercury in small doses is of paramount importance, while any attempt to press the drug is much to be deprecated.

In Lower Egypt the climate is favourable to the out-door treatment of syphilis, and even more important is the absence of malaria, with its consequent debility, which so often gives rise to a condition of ill-health that renders any attempt at the curative treatment of syphilis futile.

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* In consequence of a series of cases of mercurial ptyalism of a grave character having arisen in the year 1901, the maximum dose should be 5 minims; to be administered not more frequently than once a fortnight for not more than three consecutive periods of fourteen days. An interval of four weeks will then follow during which no mercury is to be given. The treatment may then be resumed.

Early in 1901 a careful inspection of the British force in Egypt, some 4,000 men showed that there were only two men unfit for active service on account of secondary syphilis, a condition of things which may be considered unprecedented in the British Army.

It is still more remarkable that further examination of one of these cases showed that the man, while suffering from old standing secondary syphilis, had been struck off the roll of those attending hospital after only six months' treatment, contrary to the orders on the subject; he returned to hospital three months later the worst case of secondary syphilis in the garrison.

The two points which make this treatment of the greatest value in military life are that the patient can do his duty all the time he is under treatment, and, even more important still, he cannot fail to receive medicine regularly, as one injection at intervals of from one to five weeks is all that is required.

While both the truth of the principles on which the treatment sketched in the foregoing and the facility with which it can be adopted in military life are equally undoubted, yet on account of the constant changes of stations and commands to which both soldiers and their medical advisers are exposed it is essentially necessary that the arrangements should receive the close attention of the medical administrative officers to ensure the success of this treatment of syphilis of which the special efficacy in military life is beyond all doubt.

II.

Further Report on the Treatment of Constitutional Syphilis amongst the Troops in the Egyptian Command by the Intramuscular Injection of Mercury and Continuous Observation from the 1st January to 31st October, 1901.

Between April and July, 1901, a series of cases of mercurial poisoning has arisen amongst the soldiers undergoing treatment for constitutional syphilis by the intramuscular injections of mercury; and of so grave a character were the symptoms of these cases that it is essential to deal fully with them, and very carefully to review the opinions expressed in the report for 1900.

It will therefore be best first to give a concise history of the worst cases as well as notes of some less grave but typical instances, and afterwards to relate the effects of this treatment on the whole body of troops in Egypt.

The cases arrange themselves under three headings:—

1st. One, or possibly two, fatal cases of mercurial poisoning.
2nd. Three men who suffered so gravely as to require change to England.
3rd. Seven patients who have unfortunately shown symptoms of excessive mercurial ptyalism, but have now recovered completely.

An appendix is given which shows in a tabular form all particulars concerning the whole of the cases, except a few of no real importance.

Case of Private G.

Age.	Service.	Disease.
25	7	Secondary syphilis.

He came under continuous treatment on September 11th, 1900, at the Station Hospital, Cairo, and was discharged from hospital on September 22nd, 1900, having had one injection. When discharged he had a secondary rash on his chest.

He subsequently received, up till February 1901, eleven injections, and afterwards had injections on February 13th, 27th, March 6th, 13th, 27th and April 3rd, making eighteen in all. On April 18th he complained of soreness of the gums, and on examination he was found to have rather severe stomatitis. The fauces were ulcerated, the ulcerations being deep with a velvety grey slough at the bottom. The process, was, however, localized, and but little sponginess of the gums was present, while fœtor of the breath was not marked.

On April 24th the ulceration had extended to the soft palate on the right side and there was sponginess of the mucous membrane reflected between the maxillæ on the right side, the third molar tooth on that side being almost enveloped. Even at this time there was no more salivation and fœtor of the breath than would occur in a simple stomatitis.

He was again admitted to hospital on April 24th, where the condition slowly improved; towards the end of May he commenced to take solid food, the ulceration having receded, and he appeared to be nearing convalescence, when on June 1st he took a sudden turn for the worse and anorexia and debility suddenly reappeared. He died rather unexpectedly in the early morning of June 2nd.

Post-mortem:—A large, white, firm ante-mortem clot was found in the left-chambers of the heart; the large intestine was congested, the small one being normal. The tongue was swollen, and there was ulceration of the buccal mucous membrane, the teeth being decayed but firm. The local condition of the mouth was markedly better than in April on his second admission. Private G. thus had a total of eighteen injections from September 11th, 1900, to April 18th, 1901, a period of thirty weeks, or an average of ·6 injection per week. The maximum dose given was ten minims; he had therefore thirty-six grains of mercury in thirty weeks, or slightly over one grain a week.

Case of Private R.

Age.	Service.	Disease.
31	9	Secondary syphilis.

Between 1894 and 1898 he had many admissions for secondary syphilis, and in October and in November, 1899, was thirty-two days in hospital with that disease.

On December 18th, 1900, he was again admitted to hospital, and from December 29th, to March 16th, 1901, he had twelve intramuscular injections. He was discharged on March 18th, and subsequently had four intramuscular injections on April 3rd, 10th, 24th, and May 1st. Symptoms of ptyalism appeared on May 8th; at that date the symptoms of syphilis were predominant, amongst which a perforation of the palate and a scaly syphilide of the lower extremities were marked.

He was admitted to hospital on the 8th May, injections of course being discontinued. He had since December 29th had sixteen injections, being an average of one per week. The maximum dose administered was ten minims, containing two grains of mercury.

Subsequent to his admission to hospital he improved, and on 20.6.1901 was transferred to Alexandria Hospital for change of air. He was discharged as convalescent to Mustapha Barracks, but on 6.7.1901 was readmitted to hospital with severe stomatitis. He alternately improved and retrograded, a brief period of improvement being quickly followed by a severe relapse, as if, as was doubtless the case, some fresh focus of mercury were being absorbed. The emaciation, notwithstanding a large ingestion of food, was progressive, and from his normal eleven stone he fell finally to seven stone. He died of exhaustion on 17.8.1901.

Post-mortem:—There was extreme emaciation, together with ulceration of the buccal mucous membrane and periostitis of the lower jaw. The mucosa of the sides of the tongue was deeply ulcerated, part of it, however, showing granulations. There was also deep ulceration of the lateral glosso-epiglottidean folds, and the epiglottis itself was much involved.

The tissues were searched chemically and microscopically for traces of mercury, but none were found.

Case of Private S.

Age.	Service.	Disease.
25	2	Secondary syphilis.

Private S. commenced continuous treatment in April, 1900. He left hospital June 6th, 1900, and up till February, 1901 had had 17 injections: after the 7th February he had two only, viz., on March 13th and 27th. On May 1st he showed marked tenderness of the gums and slight ulceration of the buccal mucous membrane on the right side.

The alimentary tract was evidently extensively involved, for the tongue was furred and digestion bad, while traces of blood were noticeable in the stools.

He was admitted to hospital on May 3rd, the ulceration having progressed, and the condition of the bowels reminding one of dysentery. In this case, again, the salivation was not out of proportion to the local lesion.

In hospital Private S. improved and was discharged to duty. Shortly afterwards an exacerbation of stomatitis occurred, and he was readmitted to hospital. He was subsequently transferred for change of air to Alexandria on 4.7.1901, and after a protracted illness improved, and was invalided to England on 14.11.1901.

Case of Private McL.

Age.	Service.	Disease.
24	5	Secondary syphilis.

Private McL. was subjected to continuous treatment by intramuscular injections on 19.1.01. He had in hospital four injections and was discharged on March 2nd. Between this date and April 24th he had five more injections, viz., on March 2nd, 13th, and 20th, and April 3rd and 10th. He was admitted to hospital on April 24th with intense salivation and marked fœtor of the breath, while there was but slight ulceration. The salivation and fœtor of the breath were more severe in this case than in any of the other cases in their early stage. In hospital McL. improved, though but slowly, and after a change of air at Alexandria returned to duty quite recovered, and in an excellent state of health. He had a total of nine injections, being an average of ·8 per week, or about 1½ grains of mercury per week, and altogether 18 grains of mercury.

The occurrence of these 12 cases was as alarming as unexpected. In the very wide experience of this treatment gained by the management of hundreds of cases of men, many of whom had far more mercury than had been administered to any of these men, nothing similar had ever been met with.

In the very careful inquiry which followed, consideration was given to many matters but the chief points of interest elicited are noted below :—

The cases all occurred in Cairo, not one at Alexandria, though at both stations the intramuscular injection of mercury for all cases of secondary syphilis was the universal practice.

The whole of the cases arose in the practice of four medical officers,* all extremely careful, reliable men, who have from one to two years' acquaintance with the details of this work.

The mercury used was free from adulteration; and it was proved that the beer sold in barracks did not contain arsenic, though a very remarkable majority of the sufferers were heavy drinkers.

Several cases of stomatitis, some of more than moderate severity, occurred either as a sequela of influenza, or without apparent cause, during the hot weather amongst the troops in all barracks in Cairo, though in none of them had mercury in any form been given.

That some of the men under treatment by injection for constitutional syphilis at the same time obtained medicines from the pharmacies in the town is undoubtedly a fact, but this can be considered to account for but a small proportion of these cases of mercurial poisoning. Individual idiosyncrasy and a peculiar susceptibility to the effects of mercury was also present in a small number of these men, and doubtless caused aggravation of their symptoms.

The form of injection used was that recommended in the report for 1900. It was thought probable that the metallic mercury had in some instances not been completely mixed with the fats, but further experiments showed that when the mercury is still in the globular form it is not easy to send it through the syringe.

One case, that of Private R., given above, had 12 injections between 29th December, 1900, and 16th March, 1901, of 10 minims each, and between 3rd April, 1901, and 1st May, 1901, four injections of 10 minims each; that is, roughly speaking, about 20 or 30 grains of metallic mercury spread over four months. This is not a large quantity of the drug, yet its administration was followed by a most serious train of symptoms, the most remarkable of which were periodical exacerbations of the poisoning, followed closely by more than one interval of marked improvement, and as this train of symptoms was also present in the case of Private S. and to a less extent in some others, it must be considered proved that in some of the patients improvement in general health is followed by absorption of mercury which has hitherto remained inert in the site of the injection. Unfortunately also this absorption from the tissues sometimes goes on for months; for example, Privates R. and McL. were still suffering from mercurial poisoning two or three months after the injections had ceased. Before leaving Private R.'s case it may be remarked that the number of injections given in the time was nearly the maximum possible; this therefore being the only instance in the series in which it might be argued mercury had been pushed too far.

* The term medical officer throughout this report includes civil practitioners in regular military employ.

The case of Private G. is worthy of special comment. In the seven months preceding death he had 18 injections, or a total of considerably less than 36 grains of mercury; yet he was certainly salivated, though clinical observation of the case leads me to the belief that the ulceration of the tongue and mouth were syphilitic rather than mercurial, though undoubtedly aggravated by the drug. Therefore the death was recorded as due to syphilis though the case is alluded to here, for obvious reasons.

The regrettable circumstances detailed above naturally attracted the attention of all concerned, and it was accepted that a large proportion of the cases were due to the injections alone, yet so great was the confidence felt by every medical officer in the command in this line of treatment, and so high an opinion had they formed of its efficacy, that not one of them wished to abandon it. If, however, the treatment was to be continued, it was essential to so modify it as to make it absolutely certain that no further cases of mercurialism could occur amongst those undergoing the treatment, and the directions shown in the footnotes to pages 60 and 61 were circulated for the information of all concerned. Whether this great reduction in the amount of mercury will diminish or destroy the efficacy of the treatment remains to be seen.

The tables which follow will, by a comparison with those on page 2 of last year's report, enable an opinion to be formed as to the efficacy of the work of the past year. In the column of deaths is entered the case shown in the statistical returns as mercurial poisoning.

British Troops in Egyptian Command.

Primary Syphilis. Admissions and Invaliding.

Year.	Admissions.	Ratio per 1,000	Average Number constantly Sick.	Ratio per 1,000.	Invalided.	Ratio per 1,000.	Remarks.
1896	312	79·7	27·40	7·00	—	—	
1897	124	27·9	14·73	3·31	—	—	
1898	229	46·6	22·46	4·57	3	·61	
1899	140	35·4	16·23	4·10	—	—	
1900	32	8·5	3·25	·86	—	—	
*1901	19	4·73	1·80	·45	—	—	* To 31.10.01.

Secondary Syphilis. Admissions and Invaliding.

Year.	Admissions.	Ratio per 1,000.	Average Number constantly Sick.	Ratio per 1,000.	Invalided.	Ratio per 1,000.	Remarks.
1896	208	53·1	22·19	5·66	—	—	
1897	230	51·7	28·74	6·46	8	1·79	
1898	221	45·0	21·53	4·38	10	2·03	
1899	122	30·8	11·78	2·27	9	2·27	
1900	48	12·7	4·33	1·15	1	·27	
*1901	76	19·0	7·27	1·81	4	·99	* To 31.10.01.

Secondary Syphilis. Mortality.

Year.	Deaths.	Ratio per 1,000.	Remarks.
1896	—	—	
1897	1	·22	
1898	—	—	
1899	1	·25	
1900	—	—	
*1901	2	·50	* To 31.10.01.

Of the four cases invalided, all but one are due to the effects of mercury, and the remaining one that of a man who contracted syphilis at Khartoum; the original disease escaped early recognition, and his condition has gone on from bad to worse; intramuscular injection failed to improve the symptoms, and the case is the first in which, during two years' Egyptian experience, the continuous treatment has failed.

Early in November a very careful inspection of the whole force in Egypt enables me to say that amongst the 4,000 men, there is, excepting the invalids mentioned above, only one man unfit for active service owing to syphilis, and he arrived from England

this year in an advanced condition of secondary syphilis in which nothing but palliative treatment is possible.

If the figures in the tables given above for the ten months of the current year be compared with those of the years prior to the commencement of this treatment in the autumn of 1899, it will be seen that a most remarkable diminution in the numbers in all the columns of the return has taken place, and I think the tables for the last two years show a ratio for admissions and invaliding unequalled in any command at any time. If, moreover, a little special pleading be permitted for a moment, and the cases due to this disastrous epidemic of mercurialism be erased, there will be a great reduction in the column for admissions for secondary syphilis; the invaliding will be one case, with a ratio per 1,000 of ·25, and the deaths will be *nil*, giving statistics which display a diminution of the manifestations of constitutional syphilis which leaves but little to be desired.

The decrease in the number of admissions for primary syphilis is due in a great measure to accuracy of diagnosis, no case being ever shown under that head, unless presenting every characteristic of the true infecting sore.

During 1900, 107 men underwent treatment; during the ten months of 1901 under consideration, 106 men have been treated, and at this date only 56 men remain on the register, a most satisfactory diminution in the number of the cases.

The following is a summary of facts and conclusions, which it is hoped may be considered justifiable:—

The dose of the mercurial injection in Appendix to A. M. D. Report for 1894 and repeated in my report of 1900 is dangerously large; attention has been directed to this fact by an authority some years ago, but prior to the occurrence of these cases very extensive use of the drug for years had warranted the medical officers of Egypt in believing the quantity used to be within the bounds of safety. For example, 107 men were treated in this Command in 1900 and received an average of twenty injections per man without a single bad symptom arising; yet between April and July 1901 a series of grave cases occurred in men who had individually received a smaller quantity of mercury.

A prescription containing mercury in a form suitable for intramuscular injection, in which the drug will be slowly but regularly absorbed, is much to be desired.

A system of continuous inspection of all men infected by syphilis, combined with a treatment by which but one dose of mercury is required at long intervals, is the key to the treatment of syphilis in the army; and this course is practicable, as has been proved in Egypt, where every one has co-operated to attain the end in view

Cases of Ptyalism occurring during intramuscular Injections of Mercury, 1901.

Rank and Name.		No. of Injections.	Date of commencement of continuous Treatment.	Date of last Injection.	Date of onset of Ptyalism.	No. of weeks under Treatment.	What Symptoms present during Injections.	Result.
Private	G., J. -	13	11.9.00	3.4.01	18.4.01	30	Secondary syphilitic ulceration of fauces.	Died 3.6.01.
„	McL., J.	9	19.1.01	10.4.01	24.4.01	12	Secondary syphilitic sinuous ulceration of tonsils.	Recovered.
„	S., F. -	19	April, 1900	27.3.01	1.5.01	48	Secondary syphilitic ulcerations of buccal mucous membrane.	Invalided.
„	R., W. -	16	29.12.00	24.4.01	1.5.01	16	Syphilitic perforation of soft palate and extensive rash.	Died 17.8.01.
„	C., W. -	19	2.10.00	8.5.01	24.5.01	29	Severe stomatitis -	Invalided.
Gunner	S., G. -	26	25.11.00	25.5.01	13.6.01	28	Stomatitis - -	Recovered.
Private	T., H. -	13	10.11.00	5.6.01	23.6.01	30	Severe stomatitis -	„
„	B., Jas. -	6	22.5.01	17.7.01	21.7.01	8	Profuse rash on lower extremities.	Invalided.
„	B., J. -	22	17.6.00	29.5.01	3.4.01	46	Ulceration of fauces -	Recovered.
„	McP., W.	54	30.11.99	14.3.01	20.3.01	68	Considerable ulceration of gums with blue line. Great debility.	„
„	C., S. W.	11	14.1.01	3.7.01	19.7.01	40	Stomatitis with febrile symptoms.	„
„	H., A -	4	4.5.01	10.7.01	20.8.01	10	Severe stomatitis -	„

APPENDIX B.

Number of Admissions and Constantly Sick for each Form of Venereal Disease at Home and Abroad for the last 15 Years (1888–1902).

UNITED KINGDOM.—*Admissions.*

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Strength.	101,695	100,790	100,120	99,368	100,302	100,105	99,360	99,795	99,821	96,526	96,651	99,832	132,921	100,811	93,665
Primary Syphilis	6,737	6,225	6,924	6,263	6,692	5,694	4,737	4,292	4,344	3,218	2,962	2,666	2,492	1,938	2,077
Secondary Syphilis	4,095	3,601	3,734	3,493	3,392	3,188	3,456	3,478	3,225	2,919	2,573	2,459	1,941	1,909	2,230
Soft Chancre	2,742	2,189	1,656	1,392	1,248	1,764	2,071	2,030	1,365	1,177	1,101	1,115	976	988	1,182
Gonorrhœa	9,268	9,362	8,948	8,455	8,856	8,838	7,858	7,546	6,867	6,176	6,196	5,978	6,993	5,796	6,001
Ulcer of Penis	—	—	—	—	—	—	—	—	—	122	132	115	235	150	130
Total	22,842	21,377	21,262	19,603	20,188	19,484	18,122	17,346	15,801	13,612	12,964	12,333	12,637	10,781	11,620
Total of all diseases	75,345	73,620	81,159	76,693	76,364	75,234	65,168	70,132	64,395	61,841	62,782	66,948	87,078	75,319	66,617
Percentage of Venereal	30·7	29·1	26·2	25·5	26·4	25·9	27·8	24·7	24·5	22·0	20·6	18·4	14·5	14·3	17·4

Percentage of Venereal Admissions.—Average 1888–1897, 26·3; 1898–1902, 16·8; 1888–1902, 23·17.

Constantly Sick.

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901	1902.
Primary Syphilis	630·53	583·95	646·90	548·92	614·40	579·26	486·93	417·54	428·96	327·42	301·85	249·68	216·81	205·75	192·23
Secondary Syphilis	399·32	332·63	349·13	326·54	334·54	331·59	386·32	390·28	348·93	316·11	303·17	267·58	193·98	216·18	245·43
Soft Chancre	203·56	163·57	115·59	96·98	89·95	133·13	181·19	177·73	111·62	96·79	84·71	84·26	74·49	71·04	100·12
Gonorrhœa	616·59	629·95	597·73	551·38	611·37	626·04	577·62	539·97	501·84	464·99	440·05	400·21	423·67	425·12	394·68
Ulcer of Penis	—	—	—	—	—	—	—	—	—	10·37	7·94	5·81	11·79	8·65	8·57
Total	1850·00	1710·10	1709·35	1523·82	1650·26	1670·02	1632·06	1525·52	1391·35	1215·68	1137·72	1007·54	926·74	926·74	941·03
Total of all diseases	4520·11	4180·78	4434·69	4137·19	4287·89	4414·49	4064·64	4167·25	3844·93	3662·96	3657·16	3687·02	4564·01	4395·01	3901·02
Percentage of Venereal	40·9	40·9	38·5	36·8	38·5	38·0	40·1	36·5	36·1	33·2	31·1	27·3	20·3	21·0	24·1
Ratio per 1,000 of strength of Average number of men constantly sick from Venereal diseases.	18·19	16·97	17·07	15·34	16·46	16·68	16·42	15·28	13·94	12·59	11·77	10·09	6·97	9·19	10·04

Average Number Constantly Sick.—Percentage of Venereal cases.—Average 1888–1897, 38·0; 1898–1902, 24·4; 1888–1902, 33·6.
Venereal constantly sick per 1,000 of Strength, Average for the 15 years 1888–1902, 13·8 per 1,000.

GIBRALTAR.—*Admissions.*

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Strength.	4,736	4,761	4,659	4,682	4,936	4,743	4,704	4,690	4,630	4,726	4,556	4,721	4,858	5,031	4,595
Primary Syphilis	91	151	249	94	189	96	38	38	27	90	99	62	19	23	39
Secondary Syphilis	168	131	86	112	103	109	98	139	97	147	108	82	61	32	59
Soft Chancre	310	390	268	238	304	481	594	637	302	517	373	309	265	200	209
Ulcer of Penis	—	—	—	—	—	—	—	—	—	—	—	—	—	7	4
Gonorrhœa	433	462	404	406	732	768	722	670	655	582	697	468	533	315	230
Total	1,002	1,134	1,007	850	1,328	1,454	1,452	1,484	1,081	1,336	1,277	921	878	577	541
Total of all diseases	2,777	2,948	3,524	2,866	3,364	3,780	3,916	3,899	3,239	3,888	3,490	2,938	2,573	2,034	1,447
Percentage of Venereal	36·08	38·47	28·58	29·66	39·47	38·47	37·08	38·06	33·37	34·37	36·59	31·35	34·12	28·37	37·39

Constantly Sick.

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Primary Syphilis	12·46	12·89	22·92	12·12	15·19	11·96	5·84	4·28	3·22	12·71	12·63	8·10	2·05	3·28	4·23
Secondary Syphilis	16·14	11·40	8·72	11·43	11·45	11·45	11·75	18·64	11·92	20·17	13·71	9·93	8·23	4·30	8·50
Soft Chancre	21·55	25·33	15·91	16·15	22·90	44·84	61·67	71·08	38·16	45·76	39·11	30·96	22·64	19·73	25·91
Ulcer of Penis	—	—	—	—	—	—	—	—	—	—	—	—	—	·57	·39
Gonorrhœa	25·74	29·97	23·32	27·51	58·18	63·50	63·95	54·43	65·64	44·58	64·06	41·01	45·10	23·82	19·69
Total	75·89	79·59	70·87	67·21	107·72	131·75	143·21	148·43	118·94	123·22	129·51	90·00	78·02	51·70	58·72
Total of all admissions	172·75	187·93	187·27	186·02	228·04	259·87	277·57	277·29	246·74	263·75	258·52	191·55	180·37	150·83	120·70
Percentage of Venereal	43·93	42·35	37·84	36·13	47·24	50·70	51·59	53·53	48·20	46·72	50·10	46·99	43·26	34·28	48·65

MALTA.—*Admissions.*

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Strength.	6,353	6,516	7,055	7,697	7,847	7,161	7,911	8,292	8,316	9,175	9,091	8,609	8,732	8,700	9,218
Primary Syphilis	84	84	51	248	131	117	140	217	394	392	194	99	52	28	55
Secondary Syphilis	86	82	72	168	146	95	108	184	135	220	146	132	113	92	98
Soft Chancre	93	131	191	422	212	252	155	67	106	89	152	306	254	155	160
Ulcer of Penis	—	—	—	—	—	—	—	—	—	12	10	13	12	2	8
Gonorrhœa	338	350	419	532	656	664	614	647	810	825	891	734	609	476	495
Total	601	647	733	1,370	1,145	1,128	1,017	1,115	1,445	1,538	1,393	1,284	1,040	753	816
Total of all diseases	3,477	3,579	4,151	5,054	5,686	5,433	5,059	6.397	6,602	8,080	9,517	7,399	8,052	8,246	6,483
Percentage of Venereal	17·29	18·08	17·66	27·11	20·14	20·76	20·10	17·43	21·89	19·03	14·64	17·35	12·92	9·13	12·59

Constantly Sick.

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Primary Syphilis	8·23	9·72	6·49	28·69	12·38	14·97	16·06	26·76	37·54	37·29	16·54	9·56	4·64	3·54	6·39
Secondary Syphilis	7·79	7·63	8·20	16·90	15·14	12·14	14·66	25·76	15·70	22·59	12·64	11·94	12·56	8·43	11·95
Soft Chancre	6·56	8·98	14·69	35·78	14·92	17·62	12·34	6·49	10·08	6·69	10·34	23·56	19·05	11·57	13·16
Ulcer of Penis	—	—	—	—	—	—	—	—	—	·79	·46	·46	·62	·42	·55
Gonorrhœa	21·33	24·47	32·61	39·07	45·41	48·54	47·52	51·51	61·45	69·15	64·97	60·17	44·88	44·53	35·70
Total	43·91	50·80	61·99	120·44	87·85	93·27	90·58	110·52	124·77	136·51	104·95	105·69	81·75	68·49	67·75
Total of all admissions	211·18	239·86	270·13	344·76	371·84	349·91	358·85	440·85	433·52	487·51	482·91	422·53	427·67	468·46	398·66
Percentage of Venereal	20·79	21·18	22·95	34·94	23·63	26·66	25·24	25·07	28·78	28·00	21·73	25·01	19·11	14·62	17·00

CANADA.—*Admissions.*

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Strength.	1,329	1,422	1,381	1,424	1,392	1,421	1,443	1,347	1,504	1,601	1,581	1,618	1,768	1,677	1,740
Primary Syphilis	39	29	43	30	24	39	47	37	52	50	24	24	32	43	22
Secondary Syphilis	23	35	43	14	16	17	23	11	20	49	27	25	25	44	15
Soft Chancre	20	10	6	—	8	17	12	21	23	4	4	2	8	6	13
Ulcer of Penis	—	—	—	—	—	—	—	—	—	5	5	3	7	2	3
Gonorrhœa	95	123	57	56	62	65	57	120	100	99	144	96	249	165	128
Total	177	207	149	100	110	138	139	189	195	207	204	150	321	260	181
Total of all diseases	690	677	600	531	631	721	664	789	856	863	1,074	906	1,638	1,211	971
Percentage of Venereal	25·65	30·58	24·83	18·83	17·43	19·14	20·93	23·95	22·78	23·99	18·99	15·06	19·60	21·47	18·64

Constantly Sick.

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Primary Syphilis	2·83	3·31	2·48	1·44	1·83	2·80	3·42	2·60	3·74	4·37	1·36	1·18	3·53	4·37	1·51
Secondary Syphilis	2·24	2·71	3·45	1·26	1·42	1·30	1·93	·63	2·01	4·43	1·95	1·89	3·25	4·07	1·40
Soft Chancre	1·24	·88	·17	—	·30	·73	·57	·71	1·45	·14	·09	·13	·56	·53	·66
Ulcer of Penis	—	—	—	—	—	—	—	—	—	·23	·04	·11	·24	·03	·12
Gonorrhœa	5·31	7·90	3·00	2·69	2·38	2·45	1·82	4·58	3·68	3·59	5·68	3·39	9·02	8·82	8·31
Total	11·65	14·80	9·10	5·39	5·93	7·28	7·74	8·52	10·88	12·76	9·12	6·70	16·60	17·82	12·00
Total of all admissions	46·15	40·66	34·88	24·37	25·51	32·12	30·60	33·66	42·66	38·05	48·74	40·59	61·82	62·50	43·28
Percentage of Venereal	25·24	36·45	26·09	22·12	23·25	22·67	25·29	25·31	25·50	33·54	18·71	16·51	26·85	28·51	27·73

BERMUDA.—*Admissions.*

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Strength.	1,345	1,329	1,546	1,601	1,363	1,390	1,410	1,447	1,387	1,521	1,730	1,700	632	1,014	2,051
Primary Syphilis	34	31	20	9	9	17	17	18	3	11	10	5	4	5	11
Secondary Syphilis	29	19	44	35	12	10	8	26	17	21	23	19	2	11	13
Soft Chancre	3	21	6	7	2	3	10	1	4	—	5	1	2	—	2
Ulcer of Penis	—	—	—	—	—	—	—	—	—	2	2	4	—	1	3
Gonorrhœa	28	20	18	19	19	31	34	43	27	34	41	24	20	6	25
Total	94	91	88	70	42	61	69	88	51	68	81	53	28	23	54
Total of all diseases	928	534	988	773	638	642	678	924	653	687	865	645	233	615	1,171
Percentage of Venereal	10·13	17·04	8·21	9·06	6·10	9·50	10·18	8·94	7·81	9·90	9·36	8·22	12·02	3·74	4·61

Constantly Sick.

Year.	1888.	1889.	1890.	1891.	1892	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Primary Syphilis	2·52	2·21	2·21	·74	·70	1·16	1·57	1·57	·15	1·37	·40	·85	·16	·20	1·48
Secondary Syphilis	2·20	1·63	2·76	3·27	2·28	·83	·83	3·00	2·41	2·94	3·83	1·86	·11	·99	2·29
Soft Chancre	·19	1·24	·29	·40	·05	·20	·48	·28	·22	—	·41	·10	·08	—	·06
Ulcer of Penis	—	—	—	—	—	—	—	—	—	·03	·16	·11	—	·05	·23
Gonorrhœa	1·66	·92	1·73	1·19	1·68	2·16	2·35	3·34	1·54	3·05	3·33	1·98	1·19	·49	2·64
Total	6·57	6·00	6·99	5·60	4·71	4·35	5·23	8·19	4·32	7·39	8·13	4·90	1·54	1·73	6·70
Total of all admissions	46·57	31·80	44·65	40·69	34·75	35·79	35·98	56·56	37·26	40·64	48·02	34·79	11·67	49·48	77·33
Percentage of Venereal	14·11	18·87	15·66	13·76	13·55	12·15	14·54	14·48	11·59	18·18	16·93	14·08	13·20	3·50	8·66

BARBADOS.—*Admissions.*

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Strength.	—	615	568	631	717	761	775	739	766	767	959	737	714	769	972
Primary Syphilis	—	7	6	34	21	14	21	17	62	115	163	133	82	94	141
Secondary Syphilis	—	15	15	31	42	45	32	35	65	96	49	75	51	56	31
Soft Chancre	—	97	102	137	95	79	134	90	116	74	28	17	1	—	78
Ulcer of Penis	—	—	—	—	—	—	—	—	—	10	—	—	2	—	3
Gonorrhœa	—	121	118	150	170	168	130	145	158	134	143	93	64	67	148
Total	—	240	241	352	328	306	317	287	401	429	383	318	200	217	401
Total of all diseases	—	743	769	1,030	957	971	1,040	992	1,108	1,248	913	781	597	698	1,387
Percentage of Venereal	—	32·30	31·34	34·17	34·27	31·51	30·48	28·93	36·19	34·38	41·95	40·72	33·50	31·09	28·91

Constantly Sick.

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Primary Syphilis	—	·55	·48	2·93	2·19	1·57	1·96	1·56	6·32	11·85	14·93	14·63	7·43	75·8	13·16
Secondary Syphilis	—	1·15	1·83	2·84	5·35	5·15	2·73	4·09	7·37	11·40	6·17	10·44	6·23	8·62	3·17
Soft Chancre	—	7·56	7·80	10·56	6·82	6·69	10·05	7·78	9·36	5·10	2·82	2·33	·01	·07	7·07
Ulcer of Penis	—	—	—	—	—	—	—	—	—	·97	—	—	·11	—	·08
Gonorrhœa	—	8·84	8·76	11·92	14·23	15·78	10·77	8·46	11·86	11·73	10·10	8·56	4·47	5·03	10·44
Total	—	18·10	18·87	28·25	28·59	29·19	25·51	21·89	34·91	41·05	34·02	35·96	18·25	19·30	33·92
Total of all admissions	—	39·21	41·74	60·32	65·05	65·51	58·07	54·82	70·56	81·04	63·97	61·44	41·73	38·03	70·92
Percentage of Venereal	—	46·16	45·21	46·83	43·95	44·56	43·93	39·93	49·48	50·65	53·18	58·53	43·73	50·75	47·83

JAMAICA.—*Admissions.*

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Strength.	—	446	476	465	484	500	562	548	527	583	849	506	566	538	603
Primary Syphilis	—	13	58	24	32	24	47	53	40	38	46	41	38	34	34
Secondary Syphilis	—	20	25	22	16	15	29	24	34	33	18	19	21	26	23
Soft Chancre	—	9	10	9	3	5	5	22	13	—	—	9	4	3	13
Ulcer of Penis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Gonorrhœa	—	16	37	46	29	51	65	42	48	61	77	58	53	44	55
Total	—	58	130	101	80	95	146	141	135	132	141	127	116	107	126
Total of all diseases	—	299	472	361	299	339	557	382	431	513	659	450	342	391	435
Percentage of Venereal	—	19·40	27·54	27·98	26·76	28·02	26·21	36·91	31·32	25·73	21·40	28·22	33·92	27·36	28·97

Constantly Sick.

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Primary Syphilis	—	·93	4·53	2·80	2·49	2·56	3·40	4·84	4·07	3·83	3·36	4·02	2·98	3·58	4·33
Secondary Syphilis	—	2·95	2·50	1·77	2·00	1·30	2·12	2·52	2·49	3·66	1·84	2·18	2·82	2·38	2·00
Soft Chancre	—	1·46	·56	·72	·22	·22	·33	1·19	·92	—	—	·74	·61	·17	1·74
Ulcer of Penis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	·16
Gonorrhœa	—	1·07	2·29	3·37	2·51	3·34	3·47	2·24	4·03	5·52	5·51	4·27	4·34	2·87	2·70
Total	—	6·41	9·88	8·67	7·22	7·42	9·32	10·79	11·51	13·01	10·71	11·21	10·75	9·00	10·93
Total of all admissions	—	16·48	26·04	22·46	20·61	19·13	24·88	25·58	30·81	36·41	40·03	30·53	25·01	24·60	31·86
Percentage of Venereal	—	38·90	37·94	38·60	35·03	38·79	37·46	42·18	37·35	35·73	26·76	36·72	42·98	36·59	34·30

SOUTH AFRICA AND ST. HELENA.—*Admissions.*

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Strength.	3,713	3,397	2,961	3,185	3,209	3,214	3,172	3,491	3,412	7,205	8,313	—	—	—	—
Primary Syphilis	276	296	221	201	186	185	275	294	304	428	256	—	—	—	—
Secondary Syphilis	351	174	148	141	220	161	132	165	145	289	352	—	—	—	—
Soft Chancre	227	27	38	39	71	100	30	14	22	49	96	—	—	—	—
Ulcer of Penis	—	—	—	—	—	—	—	—	—	67	13	—	—	—	—
Gonorrhœa	410	292	198	229	317	376	433	517	486	679	425	—	—	—	—
Total	1,264	789	605	610	794	822	870	990	957	1,512	1,142	—	—	—	—
Total of all diseases	3,277	2,729	2,327	2,656	3,111	2,930	2,754	3,247	3,810	6,298	7,325	—	—	—	—
Percentage of Venereal	38·57	31·20	26·00	22·97	25·52	28·05	31·59	30·49	25·12	24·01	15·59	—	—	—	—

Constantly Sick.

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Primary Syphilis	23·48	21·50	18·02	16·12	18·68	16·63	23·87	28·37	28·82	41·45	25·87	—	—	—	—
Secondary Syphilis	26·85	17·50	14·06	12·67	25·91	16·98	13·60	21·38	18·52	36·39	45·90	—	—	—	—
Soft Chancre	15·78	1·84	2·06	3·23	4·52	7·54	2·97	1·06	2·64	3·06	6·81	—	—	—	—
Ulcer of Penis	—	—	—	—	—	—	—	—	—	6·76	·59	—	—	—	—
Gonorrhœa	25·81	16·68	14·09	15·64	23·75	29·26	33·03	45·95	43·01	57·37	40·70	—	—	—	—
Total	91·92	57·52	48·23	47·66	72·86	70·41	73·47	96·76	92·99	145·03	119·87	—	—	—	—
Total of all admissions	217·58	178·81	149·84	182·51	179·59	176·21	174·75	207·79	240·11	411·97	469·73	—	—	—	—
Percentage of Venereal	42·25	32·17	32·19	26·11	40·57	39·96	42·04	46·57	38·73	35·20	25·52	—	—	—	—

MAURITIUS.—*Admissions.*

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Strength.	405	524	516	580	560	551	583	657	676	756	823	832	463	429	425
Primary Syphilis	27	16	24	14	27	17	32	24	26	26	19	83	36	17	37
Secondary Syphilis	18	12	17	15	17	7	26	27	33	18	15	46	11	7	4
Soft Chancre	21	37	29	16	18	22	13	14	24	38	30	27	—	—	1
Ulcer of Penis	—	—	—	—	—	—	—	—	—	3	—	—	—	1	—
Gonorrhœa	36	104	63	39	26	42	51	63	90	120	124	87	40	28	36
Total	102	169	133	84	88	88	122	128	173	205	188	243	87	53	78
Total of all diseases	400	728	816	684	597	1,001	759	1,018	799	881	979	863	349	384	536
Percentage of Venereal	25·50	23·21	16·30	12·28	14·74	8·79	16·07	12·57	21·65	23·27	19·20	28·16	24·93	13·80	14·55

Constantly Sick.

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Primary Syphilis	1·58	1·50	2·39	1·49	1·78	·94	2·26	2·26	2·98	4·20	2·12	7·28	3·89	4·43	3·46
Secondary Syphilis	1·60	1·42	1·06	·88	·76	·66	2·32	3·14	3·99	2·78	2·52	3·63	2·42	1·38	·59
Soft Chancre	1·00	3·20	1·98	·95	1·05	1·26	1·30	·91	2·14	3·83	2·93	2·66	—	—	·04
Ulcer of Penis	—	—	—	—	—	—	—	—	—	·08	—	—	—	·02	—
Gonorrhœa	2·15	6·94	4·46	2·78	1·07	2·45	3·20	5·04	7·59	9·03	9·35	6·18	2·61	2·25	2·17
Total	6·33	13·06	9·89	6·10	4·66	5·31	9·08	11·35	16·70	19·92	16·92	19·75	8·92	8·08	6·26
Total of all admissions	21·33	45·29	47·14	35·42	24·94	41·29	41·92	55·76	55·90	60·60	59·64	50·30	26·05	32·75	32·69
Percentage of Venereal	29·68	28·84	20·98	17·22	18·68	12·86	21·66	20·36	29·87	32·87	28·37	39·26	34·24	24·67	19·15

CEYLON.—*Admissions.*

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Strength.	1,133	1,146	1,028	1,251	1,261	1,436	1,411	1,350	1,336	1,324	1,401	1,395	1,039	1,986	2,017
Primary Syphilis - -	36	33	76	114	127	89	112	120	183	134	121	75	30	39	28
Secondary Syphilis -	51	59	102	101	40	99	83	62	63	54	79	45	13	44	17
Soft Chancre - -	181	207	31	30	52	45	63	66	24	1	30	26	13	24	55
Ulcer of Penis - -	—	—	—	—	—	—	—	—	—	1	2	12	21	31	28
Gonorrhœa - -	134	149	84	119	186	191	187	155	199	169	189	140	88	129	156
Total - - -	402	448	293	364	405	424	445	403	469	359	421	298	165	267	284
Total of all diseases -	1,265	1,345	867	1,147	1,320	1,160	1,322	1,359	1,765	1,443	1,318	1,587	844	1,238	1,183
Percentage of Venereal	31·78	33·31	33·80	31·73	30·68	36·55	33·66	29·65	26·57	24·88	31·95	18·78	19·55	21·57	24·01

Constantly Sick.

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Primary Syphilis - -	2·60	2·85	5·40	8·71	9·63	10·35	9·60	12·12	12·80	10·77	12·34	6·45	1·91	4·16	3·24
Secondary Syphilis -	4·00	4·05	7·62	8·58	3·07	8·85	7·52	6·87	4·20	3·77	6·31	3·84	1·08	2·47	1·75
Soft Chancre - -	11·66	12·93	2·97	3·02	2·85	2·99	4·96	5·41	2·51	·02	1·79	2·32	·61	2·17	5·14
Ulcer of Penis - -	—	—	—	—	—	—	—	—	—	·03	·13	1·65	1·48	2·35	3·45
Gonorrhœa - -	6·51	7·47	4·89	6·78	9·28	11·47	11·69	10·13	13·58	13·49	14·64	10·39	5·33	9·98	13·03
Total - - -	24·77	27·30	20·88	27·09	24·83	33·66	33·77	34·53	33·09	28·08	35·21	24·65	10·41	22·13	26·61
Total of all admissions	72·72	76·56	55·80	67·28	64·65	69·34	76·37	82·97	86·72	75·76	80·12	78·96	39·46	79·47	70·76
Percentage of Venereal	34·06	35·66	37·42	40·26	38·41	48·54	44·22	41·62	38·16	37·07	43·95	31·22	26·39	27·85	37·61

CHINA.—*Admissions.*

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Strength.	1,241	1,432	1,346	1,334	1,382	1,414	1,446	1,515	1,470	1,417	1,569	1,643	1,484	1,673	1,381
Primary Syphilis	19	37	35	74	65	69	98	67	96	168	98	120	38	15	14
Secondary Syphilis	40	72	50	77	41	68	98	96	156	121	131	113	116	112	32
Soft Chancre	159	184	148	129	191	176	179	156	210	247	334	255	93	115	69
Ulcer of Penis	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—
Gonorrhœa	160	150	171	137	194	225	275	292	277	411	400	459	169	193	271
Total	378	443	404	417	491	538	650	611	739	947	964	947	416	435	386
Total of all diseases	1,342	1,535	1,688	1,651	1,763	2,015	2,035	2,096	2,729	2,973	2,535	2,814	1,986	2,465	2,994
Percentage of Venereal	28·17	28·86	23·93	25·26	27·85	26·70	31·94	29·15	27·08	31·85	38·03	33·65	20·95	17·65	12·89

Constantly Sick.

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Primary Syphilis	1·68	3·76	3·02	6·88	5·41	6·86	9·24	5·93	8·10	17·26	9·40	12·80	3·93	2·91	1·77
Secondary Syphilis	4·63	4·51	2·69	4·37	2·85	5·75	8·45	6·54	12·23	10·33	12·99	15·89	12·84	10·57	3·50
Soft Chancre	12·91	14·90	10·09	10·22	15·53	13·37	15·88	13·46	18·36	18·31	32·24	22·64	8·03	10·52	4·74
Ulcer of Penis	—	—	—	—	—	—	—	—	—	—	·02	—	—	—	—
Gonorrhœa	9·81	8·80	10·49	9·48	13·09	14·98	17·62	22·50	17·91	33·29	39·25	41·67	16·79	18·66	22·32
Total	29·03	31·97	26·29	30·95	36·88	40·96	51·19	48·43	56·60	79·19	93·90	93·00	41·59	42·66	32·33
Total of all admissions	69·13	76·44	69·40	72·17	83·06	115·97	112·75	111·18	128·73	162·07	175·88	186·43	123·98	139·48	131·70
Percentage of Venereal	41·99	41·82	37·88	42·88	44·40	35·31	45·40	43·56	43·97	48·85	53·39	49·89	33·54	30·58	24·55

STRAITS SETTLEMENTS.—*Admissions.*

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Strength.	1,088	1,057	1,257	1,270	1,205	1,223	1,317	1,368	1,352	1,352	1,411	1,450	527	374	489
Primary Syphilis	43	84	150	124	174	161	158	330	227	117	40	26	7	—	7
Secondary Syphilis	45	118	204	208	110	137	137	190	181	146	97	99	27	10	10
Soft Chancre	167	257	155	208	19	19	16	46	54	81	168	113	8	5	23
Ulcer of Penis	—	—	—	—	—	—	—	—	—	12	6	1	—	—	1
Gonorrhœa	206	224	281	187	142	119	171	287	240	154	186	166	40	21	77
Total	461	683	790	727	445	436	482	853	702	510	497	405	82	36	118
Total of all diseases	1,298	1,700	1,570	1,463	1,209	1,064	1,008	1,469	1,453	1,357	2,511	1,751	338	252	466
Percentage of Venereal	35·52	40·18	50·32	49·69	36·81	40·98	47·82	58·07	48·31	37·58	19·79	23·13	24·26	14·29	25·32

Constantly Sick.

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Primary Syphilis	3·90	8·20	14·95	12·38	14·48	14·01	13·58	28·82	19·43	12·40	5·36	2·24	·75	·06	·68
Secondary Syphilis	2·95	10·97	23·41	26·23	13·05	14·44	14·69	14·49	19·14	15·36	11·33	11·02	3·19	·74	1·87
Soft Chancre	9·76	17·79	11·69	17·82	2·34	1·24	1·37	3·19	3·45	6·65	13·99	12·25	1·21	·50	2·13
Ulcer of Penis	—	—	—	—	—	—	—	—	—	1·18	·26	·01	—	—	·10
Gonorrhœa	14·06	16·72	20·46	15·93	10·24	8·75	11·31	16·05	16·18	11·09	18·41	13·69	3·11	1·41	4·67
Total	30·67	53·68	70·51	72·36	40·11	38·44	40·95	62·55	58·20	46·68	49·35	39·21	8·26	2·71	9·45
Total of all admissions	81·29	105·53	122·36	118·73	77·79	71·19	71·16	96·98	97·74	89·81	107·88	97·54	24·22	15·24	26·58
Percentage of Venereal	37·73	50·87	57·63	60·95	51·56	54·00	57·55	64·50	59·55	51·98	45·75	40·20	34·10	17·78	35·55

INDIA.—*Admissions.*

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Strength.	68,139	68,545	67,456	66,178	68,045	69,865	70,983	68,331	70,484	64,531	65,397	67,697	60,553	60,838	60,540
Primary Syphilis - -	4,915	9,270	9,208	6,949	6,990	9,060	12,295	12,208	11,228	8,108	5,288	3,884	2,597	2,021	2,128
Secondary Syphilis -	2,218	3,461	4,478	4,068	3,940	4,314	5,299	5,929	6,888	6,853	5,771	4,866	3,786	3,544	3,019
Soft Chancre - -	4,951	6,286	5,765	3,690	3,985	5,907	5,339	4,565	4,733	5,500	4,439	4,271	4,042	3,921	4,350
Ulcer of Penis - -	—	—	—	—	—	—	—	—	—	76	102	146	108	178	100
Gonorrhœa - -	12,294	12,315	11,709	10,048	10,826	12,777	13,401	13,979	13,209	12,307	8,788	8,196	7,624	7,303	7,539
Total - - -	24,378	31,332	31,160	24,695	25,741	32,058	36,334	36,681	36,058	32,844	24,388	21,363	18,157	16,967	17,136
Total of all diseases -	94,489	103,119	102,337	91,811	103,070	98,983	106,967	99,766	97,738	96,824	95,103	77,765	69,225	67,181	65,288
Percentage of Venereal	25·80	30·38	30·45	26·90	24·97	32·39	33·97	36·77	36·89	33·92	25·64	27·34	26·23	25·25	26·25

Constantly Sick.

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Primary Syphilis - -	361·56	758·61	788·39	596·87	588·33	775·26	1061·52	1115·54	1022·14	781·79	508·56	381·39	262·77	205·99	210·91
Secondary Syphilis -	210·11	331·71	434·40	418·68	397·77	457·84	536·42	603·79	738·22	751·74	621·65	510·63	399·06	366·55	293·40
Soft Chancre - -	296·11	447·92	411·09	258·03	274·01	440·04	454·90	374·95	365·85	448·22	373·36	324·15	347·29	300·15	365·56
Ulcer of Penis - -	—	—	—	—	—	—	—	—	—	5·00	6·92	9·24	7·97	13·01	6·24
Gonorrhœa - -	842·50	898·68	848·21	722·58	780·41	946·34	1009·34	1070·92	1036·22	1009·84	608·24	635·14	621·21	543·35	560·97
Total - - -	1710·28	2436·92	2482·09	1996·16	2040·52	2619·48	3062·18	3164·84	3162·43	2996·59	2208·73	1860·55	1638·30	1429·05	1437·08
Total of all admissions	4929·61	5988·28	5865·97	5308·78	5707·81	6050·05	6509·83	6396·35	6614·74	6541·90	5934·90	4942·13	4342·21	4069·90	3995·76
Percentage of Venereal	34·70	40·69	42·31	37·60	35·75	43·30	47·04	49·48	47·81	45·81	37·22	37·65	37·73	35·11	35·96

EGYPT AND CYPRUS.—*Admissions.*

Year	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Strength.	4,201	4,175	3,717	3,726	3,633	5,623	5,805	4,680	3,916	4,449	4,915	3,959	3,767	4,123	4,299
Primary Syphilis	384	261	286	228	141	300	224	137	312	124	229	140	32	24	16
Secondary Syphilis	153	120	151	176	150	241	351	267	208	230	221	122	48	76	55
Soft Chancre	235	359	204	291	264	788	827	434	318	385	482	259	251	348	322
Ulcer of Penis	—	—	—	—	—	—	—	—	—	—	5	2	4	—	1
Gonorrhœa	430	430	359	396	415	844	629	460	417	363	699	328	403	346	374
Total	1,232	1,170	1,000	1,091	970	2,173	2,031	1,298	1,255	1,102	1,636	851	738	794	768
Total of all diseases	4,254	3,822	3,480	3,432	3,542	7,126	5,806	4,306	3,220	3,242	5,974	2,757	2,934	3,427	2,907
Percentage of Venereal	28·96	30·61	28·74	31·80	27·39	30·49	34·98	30·14	38·98	33·99	27·39	30·87	25·15	23·17	26·42

Constantly Sick.

Year.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Primary Syphilis	29·51	24·28	23·64	17·21	13·99	28·97	21·02	11·22	27·49	14·73	22·46	16·23	3·25	2·22	1·51
Secondary Syphilis	12·15	12·49	12·47	13·38	14·83	22·84	38·36	26·09	22·19	28·74	21·53	11·78	4·33	6·63	4·81
Soft Chancre	16·01	25·30	17·84	22·17	20·72	51·54	68·90	33·18	24·95	34·64	24·88	21·49	21·16	26·16	26·97
Ulcer of Penis	—	—	—	—	—	—	—	—	—	—	·22	·08	·22	—	·14
Gonorrhœa	27·77	24·61	20·49	17·85	30·29	66·98	45·82	32·46	26·36	28·46	46·58	23·51	28·68	25·03	28·73
Total	85·44	86·68	74·44	80·61	79·83	170·33	174·10	102·95	100·90	106·57	115·67	73·09	57·64	60·04	62·16
Total of all admissions	262·88	249·49	224·17	200·51	231·43	442·40	424·50	295·45	247·23	242·95	411·62	181·66	174·55	209·70	187·65
Percentage of Venereal	32·50	34·74	33·20	40·20	34·49	38·50	41·01	34·85	40·81	43·86	28·10	40·23	33·02	28·63	33·13

The following tables were drawn up for the purpose of estimating the number of beds required for venereal cases at home:—

AVERAGE ANNUAL NUMBER of VENEREAL CASES TRANSFERRED to NETLEY and WOOLWICH, from ABROAD. *Period* 1896 *to* 1902.

	Number transferred.			*Invalided out of the Service.*			*Constantly Sick.*		
	Netley.	Woolwich.	Total.	Netley.	Woolwich.	Total.	Netley.	Woolwich.	Total.
Primary Syphilis -	16	4	20	·57	·0	·57	1·63	·23	1·86
Secondary Syphilis -	491	95	586	158·5	9·0	167·5	80·91	9·14	90·05
Gonorrhœa - -	44	12	56	10·5	·8	11·4	4·93	·93	5·86
Soft Chancre (and Ulcer Penis).	9	2	11	·42	·0	·42	1·18	·12	1·30
Total No. of cases transferred to each Hospital -	560	113	—	169	10	—	88·65	10·42	—
Avarage Annual Number - -	673			180			99·07		

NOTE.—The bulk of the invalids arrive during the winter months and in large parties, hence the actual number of men in hospital during the winter months may largely exceed the average constantly sick for the year, while in summer there may be a corresponding decrease in the number of patients under treatment.

NUMBER of MEN FINALLY DISCHARGED the SERVICE as INVALIDS, for VENEREAL DISEASES, 1892 to 1901.

	Primary Syphilis.	Secondary Syphilis.	Gonorrhœa.	Total.	Decennial Average.
From Abroad - - -	7	1,496	110	1,613	161
United Kingdom - - - -	3	1,058	88	1,149	115
Total - - -	10	2,554	198	2,762	276
Decennial Average -	1	255	20	276	Ratio per 1,000 strength 1·3048

PERCENTAGE of each FORM of VENEREAL DISEASE in the UNITED KINGDOM. Period 1888 to 1902. (From Major McCulloch's Tables.)

	ANNUAL AVERAGE (1888 to 1902.)									
	All Venereal.		Primary Syphilis.		Secondary Syphilis.		Gonorrhœa.		Soft Chancre (and Ulcer Penis).	
Strength.	Constantly Sick.	Ratio per 1,000 Strength.	Constantly Sick. No.	Percentage of All Venereal.	Constantly Sick. No.	Percentage of All Venereal.	Constantly Sick. No.	Percentage of All Venereal.	Constantly Sick. No	Percentage of All Venereal.
101,450	1,388	13·68	428·74	31	316	23	520·5	37	122·5	9

United Kingdom, 1886 to 1895.

District.	Strength.	Average constantly Sick.					Estimated Number of Beds required.	Percentage of Venereal Beds to Strength.	Ratio of Venereal Beds to Strength. One Venereal Bed for	Approximate Decrease in Venereal Percentage.	Number of Beds estimated, multiplied by (·71) the factor of Decrease for the United Kingdom.	—
	Average Annual.	Primary Syphilis.	Soft Chancre.	Secondary Syphilis.	Gonorrhœa.	Total Venereal.						
Northern { N. Western / N. Eastern }	10,267	43	16	28	59	147	152	1·48	70	25	108	
Eastern - -	5,432	26	10	19	34	90	92	1·69	60	16	65	
Western - - -	6,697	38	20	20	42	120	126	1·88	53	—	89	
Thames - -	4,111	24	2	13	21	60	62	1·50	66	—	44	
Southern - - -	8,444	52	22	43	55	172	173	2·05	49	—	122	
South Eastern - -	7,452	39	3	25	36	103	103	1·38	72	45	73	
Home - - -	7,516	81	7	36	67	191	200	2·66	37·5	—	142	
Woolwich - -	5,753	40	12	23	40	115	110	1·91	52	—	78	
Aldershot - - -	14,078	107	25	56	84	272	278	1·97	50·6	—	197	
Channel Isles - -	1,643	8	2	6	11	28	29	1·76	56·6	—	20	
Dublin - - -	8,330	58	13	31	66	169	177	2·12	47	39	125	
Cork - - -	8,423	18	6	13	34	72	75	0·89	112	30	53	
Belfast - - -	3,801	19	5	9	18	52	54	1·42	70	10	38	
Scottish - -	3,621	9	5	7	14	35	35	0·96	103	—	25	
Curragh - - -	4,325	25	7	11	20	63	66	1·52	65	29	47	
United Kingdom - -	99,893	587	155	340	601	1,689	1,732	Average 1·65	Average 64·2	—	1,226	

Note 1.—The number of "Beds required" has been arrived at by deducting half the average of secondary syphilis from the average total venereal constantly sick, and adding 15 per cent. for fluctuation.

Note 2.—The percentage decrease shown is only roughly approximate and cannot be used to base calculations on.

Note 3.—From 1896 to 1899 the average venereal constantly sick = 12·09 per 1,000. Dividing 16·8 into 12·09 we get 0·71 as the factor of decrease for the United Kingdom.

This complete period of ten years was selected as the figures were available from Netley.

APPENDIX C.

INSTRUCTIONS REGARDING PROCEDURE IN CASES OF SYPHILIS.

The scheme outlined in the Memorandum accompanying this office letter 4890/6/1441 A.M.D. 2, dated 10th September 1903, was issued tentatively, with a view to its ultimate adoption should reports as to its working justify such a course. The reports received have been favourable, and it has accordingly been decided to continue the scheme with certain modifications which experience has shown to be desirable.

The following instructions are now circulated for general information, and it is directed that the procedure indicated should be taken into use at all stations :—

Dealing as we have to do with garrisons liable to constant change, it follows that there are many obstacles in the way of framing a scheme comprehensive enough to meet every possible contingency. It may be, therefore, that some points are not fully provided for, but the Director-General believes that, with the exercise of initiative on the part of the individual Medical Officer, insurmountable difficulties are unlikely to be met with. Bearing in mind the desirability of uniformity in procedure, and having regard to the importance of thorough treatment in cases of syphilitic disease not only in the interests of the patient, but also in the interest of the State, Medical Officers are asked to use every endeavour to ensure the successful working of the scheme in all its details. Difficulties may be encountered as regards securing the regular attendance of men, and also probably sometimes in obtaining the man's consent to undergo a prolonged course of treatment, but the Director-General is sure that with due exercise of tact, and careful explanation to patients, such difficulties can be overcome.

Diagnosis of Primary Venereal Sores.

It not infrequently happens that a sore, presenting all the characters of a soft chancre, is followed by a constitutional infection, and the converse is also true. In a considerable number of cases the character of the sore can only be settled by watching for the appearance or otherwise of constitutional symptoms. This difficulty leads to error, if a too early attempt at diagnosis be made, as witness the frequency with which we see several entries for primary syphilis in the same medical history sheet, and often without any evidence at all of secondary syphilis having followed. The Director-General desires that Medical Officers will exercise care in the diagnosis of venereal sores, and that they will only return cases as syphilis when no doubt exists as to the nature of the disease.

When the nature of the sore is doubtful, but the Medical Officer thinks that he ought to prescribe a short course of mercury, he may do so, but a case of this kind should not be placed on the Syphilis Register, or returned as syphilis, unless or until constitutional signs of the disease develop. Should the latter fail to appear within a reasonable period, say 2 months, the case will be returned as one of soft chancre. In the event of syphilis manifesting itself at a later period presumably, the case must have been one of double infection, and the subsequent syphilis should be dealt with as disease supervening.

After careful consideration of the replies sent in by Medical Officers in connection with the working of the experimental scheme, it has been decided that the proposed Primary Venereal Sores Register is not required, and that the object aimed at by having such a register, namely, the more accurate diagnosis of primary venereal sores, will be equally well obtained by entries in the Admission and Discharge Book.

The following rules will be observed in diagnosing and returning venereal sores :—

1. Cases admitted with venereal sores will be entered in the Admission and Discharge Book, and the disease column will be filled in "venereal sore" in pencil, until such time as the medical officer has made a definite diagnosis, when this will be entered in ink.
2. Cases which have to be transferred from one station to another, before the diagnosis of the sore has been established, will be notified to and kept under observation at the new station, and the diagnosis, when made, will be communicated to the original station.
3. In the Annual Return the cases will be classified as "soft chancre" and "syphilis" (omitting distinction between primary and secondary syphilis. When the Annual Return is being made up at the close of the year a certain number of cases may remain undiagnosed, but the return need not be delayed on that account, as stations can send slips to the Principal Medical Officer showing the ultimate diagnosis. These slips must be transmitted to the Principal Medical Officer not later than the 14th February in each year

4. Cases diagnosed syphilis will be entered in the "Syphilis Register" for a course of continued treatment.

5. In the Monthly Return, when cases remain undiagnosed at the end of the month, a note will be made as follows:—

   Of the N.Y.D. cases . . . . . are venereal. In the succeeding Monthly Return the following note will be made—

   Of the venereal cases remaining last month . . . . . are now shown as syphilis . . . . . as soft chancre, and . . . . . remain N.Y.D. venereal.

Syphilis Register.

The purpose of this register is to secure continued treatment for every case of syphilis, and to ensure that the courses of treatment are carried out in a definite and systematic manner.

It is also thought that the register will assist the Medical Officer to check the attendances of men under treatment, and that it will furnish, in a simple and readily available form, the information asked for in the Medical Transactions of the Annual Return.

The following rules will be observed in keeping the register:—

1. Every case diagnosed "Syphilis" will be entered in the register.
2. No name is to be removed until the patient has undergone a full course of treatment. Should any special reason arise to prevent this procedure being systematically carried out, the Principal Medical Officer will be notified and a full explanation given.
3. Transfers from other stations will be entered in red ink with a "T" in place of the serial number.
4. In the case of a man who is already on the register, and who has been discharged to attend for treatment outside, but who may happen to require re-admission on account of the occurrence of symptoms necessitating hospital treatment, a red ink "R" should be placed in the column of remarks in the Syphilis Register; should he require a second re-admission a second red ink "R" may be added. In this way a record of re-admissions for syphilis will be obtained in a form which should permit of the totals being readily ascertained at the end of the year. The register may also be the means of enabling reliable data to be obtained as to the efficacy of different methods of treatment, the proper length of time during which treatment should be maintained in an average case, &c. These and other points, which up to the present have not been determined, should be, with the co-operation of Army Medical Officers, to a great extent cleared up.
5. Many Medical Officers have asked that a definite ruling should be given as to the minimum period during which treatment should be kept up. After a careful consideration of the available evidence, the Director-General wishes that treatment should be continued for at least 12 months after the disappearance of active signs of the disease, and that, if possible, cases should be kept under observation for a year after that.
6. A special case-sheet has been drawn up, and will be kept for every case of syphilis. It will bear the same serial number as that given to the case in the register.

The Special Case Sheet.

As it has been recognised that taking every case of syphilis would, in large stations at least, add very considerably to the work, a special case-sheet has been prepared with the object of lessening clerical labour as far as possible. All headings, dates, and such entries as do not require special professional knowledge, *may be filled in by the wardmaster or orderly from the Medical Officer's dictation at the time when the case is seen.*

The following rules will be observed:—

1. The special case-sheet will be retained by the Medical Officer who is treating the case.
2. When treatment has been completed, it will be retained in the Station Hospital in which the man would be treated if sick, for a further period of 1 year. At the end of this time, if the man has remained free from symptoms of syphilis, or has in the meantime become non-efficient, the case-sheet will be sent to the War Office for disposal.

3. A note will be made in the medical history sheet "Syphilis," giving dates of placing on and striking off the register; the former will be entered by the Officer placing the case on the Syphilis Register, the latter by the Officer striking the name off on completion of treatment.

4. If a relapse should occur at a later date, information to that effect will be sent to the War Office, giving the station and date of origin (the latter to enable the case to be traced). When the case has been disposed off, or when the necessary course of treatment has been completed, a case-sheet giving the additional particulars should be sent to the War Office for attachment to the original case-sheet.

5. When a man is transferred, the special case-sheet will be sent to the Medical Officer at the new station, no other notice being required.

SYPHILIS CASE-SHEET.

Serial number in register_____ Station_____

Regtl. No.____ Rank and name_____ Corps_____

(1.) Probable date and place of infection_____

(2.) Date of appearance of sore_____

(3.) Character of sore_____

(4.) Treatment (if any) before being placed on the Syphilis Register_____

_____

(5.) Date of being placed on the Syphilis Register_____

(6.) Condition at that time as regards—Weight_____

Urine_____ Skin_____

Mucous membranes_____ Lymphatic glands_____

Other symptoms_____

Treatment and progress. (The weight should be noted at regular intervals, any constant decrease being an indication to suspend treatment. Changes of station, re-admissions to hospital, and alterations of treatment, with dates, should be noted. The dates and doses of mercurial injections should be given.)

Date_____

Syphilis Register.

Serial Number of Case.	Corps.	Regimental Number.	Rank and Name.	Date of being placed on this Register.	Date on which Constitutional Treatment Commenced.	Drug Used, in what Form Administered.	Number of Days under Treatment.		Date of being Struck off the Register as		Remarks. Station to which Transferred and Date. Re-admissions to have "R" placed in this Column.
							In Hospital.	Out of Hospital.	Transfer to other Stations.	On Completion of Treatment.	
1	2nd Bn. King's Royal Rifles.	4,509	Private - Atkins, T.	7.1.04	1.1.04	Hydrar. in pill; later injections hydrar. cream.	45	548	—	1.6.05	R. R.
2	45th Battery, Royal Field Artillery.	123,059	Bombardier - Thomas, A.	15.1.04	15.1.04	Hydrar. inunction. Cream injections when an out-patient.	40	548	—	15.6.05	
T	2nd Bn. South Wales Borderers.	45,093	Corporal - Smith, T.	20.1.04	1.12.03	Hydrar. by mouth. Calomel vapour baths. Hydrar. ch. mixture.	90	670	—	1.10.05	R. R. R. Severe case.

FORM to be USED by MEDICAL OFFICERS for COMMUNICATING with EACH OTHER, or OFFICERS COMMANDING UNITS, regarding the ATTENDANCE or DIAGNOSIS of MEN under OBSERVATION, or CONTINUED TREATMENT for SYPHILIS.

To be printed on a quarter sheet of white foolscap.

RETURN OF A SOLDIER UNDER MEDICAL SURVEILLANCE FOR VENEREAL DISEASE.

Corps.	Company.	Regimental No.	Rank and Name.	Remarks.

To _____.

Station and Date _____.

The Officer who places the man under surveillance will prepare this form in duplicate. One copy will be forwarded to the Officer Commanding, and the other to the Medical Officer who will have the surveillance of the man. When a man under surveillance is transferred to another station, his Commanding Officer will apprise the Medical Officer of the fact.

RETURNS.

ADMISSION AND DISCHARGE BOOK.

Admissions to hospital will be entered in the Admission and Discharge Book as formerly.

ANNUAL RETURN.

Admissions for soft chancre and syphilis will be returned as formerly in Table 1 of the Annual Return, except that in the case of syphilis no distinction will be made between primary and secondary forms of the disease.

MEDICAL TRANSACTIONS—ANNUAL RETURN.

The following information will be given along with the usual notes on venereal disease:—

1. The number of cases which have been placed on the register during the year (excluding transfers).
2. The number of cases coming under treatment as transfers.
3. The number of cases which have required admission or re-admission while undergoing treatment.
4. The number of cases which have relapsed after being struck off the register on completion of a full course of treatment.

With the view of obtaining as accurate data as possible regarding the methods of treatment most in use, the relative value of different methods, and the average duration of treatment of cases of syphilis, it is requested that the information asked for in the following form be given in the medical transactions: –

METHOD OF TREATMENT.

Placed on Register.	Number of Cases.	In Hospital.					Out of Hospital.				
		Mouth.	Inunction.	Injection.	Other Methods.	Mixed Treatment.	Mouth.	Inunction.	Injection.	Other Methods.	Mixed Treatment.
For the first time - - -											
As transfers from other stations.											

RE-ADMISSIONS WHILE BEING TREATED BY

Re-admitted.	Number of Cases.	Mouth.	Inunction.	Injection.	Other Methods.	Mixed Treatment.
Once - - -						
Twice - - - -						
Thrice - - -						
Four or more times -						

The object of this table is to obtain, if possible, information as regards the efficacy of different methods of treatment. It is recognised that it will be difficult to obtain accurate information of this kind in all cases, and that it may be impossible in many instances. Medical Officers are, therefore, requested only to supply such information as can be depended on. A few cases well observed will be of more value than attempts to give particulars in every case, some of which may be doubtful.

AVERAGE NUMBER OF DAYS UNDER TREATMENT.....

In the case of transfers, the average duration of treatment of each case of syphilis will be obtained from the register by taking the date on which the man was originally placed on constitutional treatment and the date of his being struck off on completion of treatment.

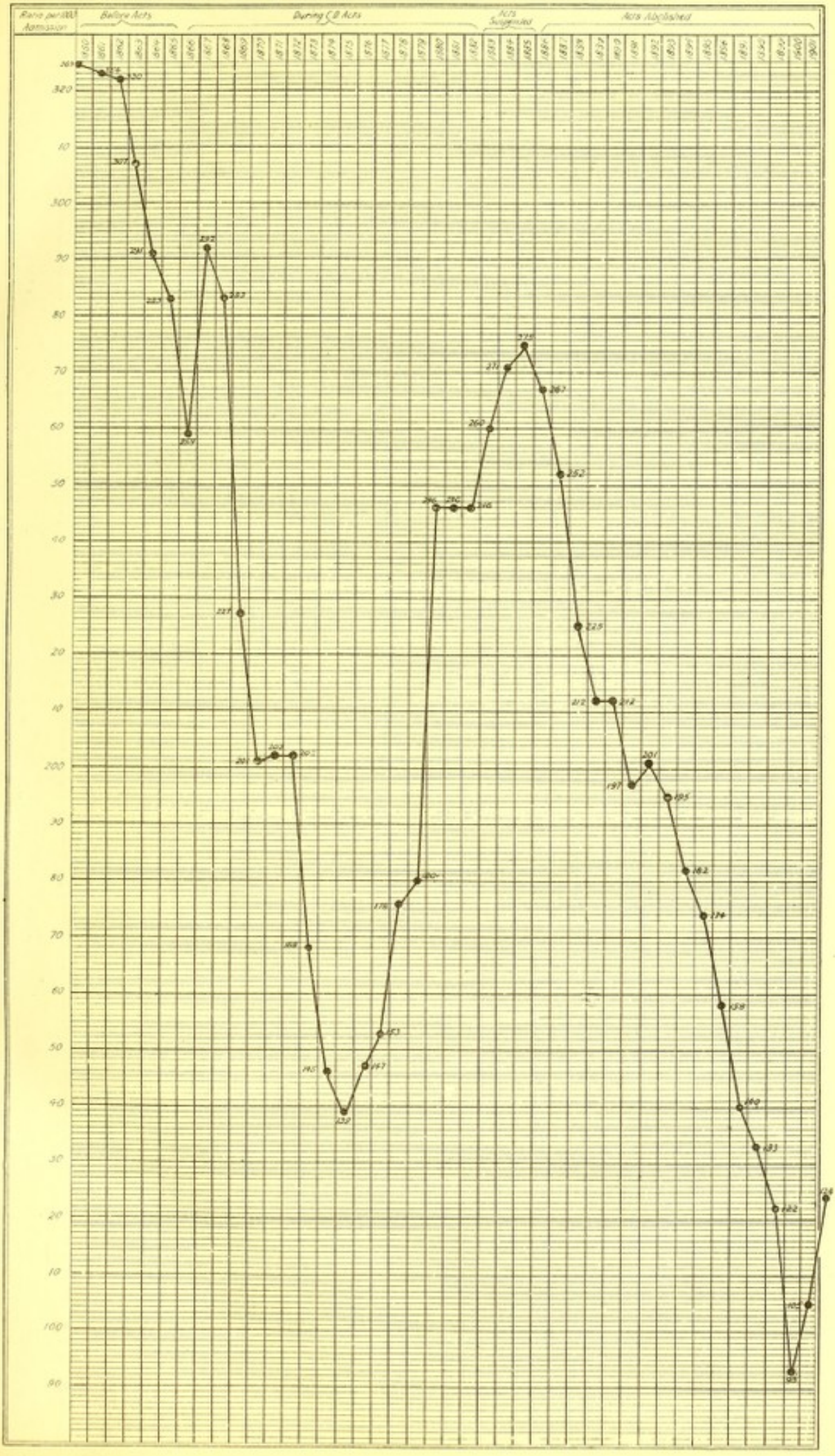
Only cases which have completed their treatment during the year are to be included in this average.

APPENDIX D.

Charts showing Admissions per 1,000 of strength for All Venereal Diseases in Certain Commands.

CHART I

ALL VENEREAL DISEASES - UNITED KINGDOM. 1860 TO 1901.



52163

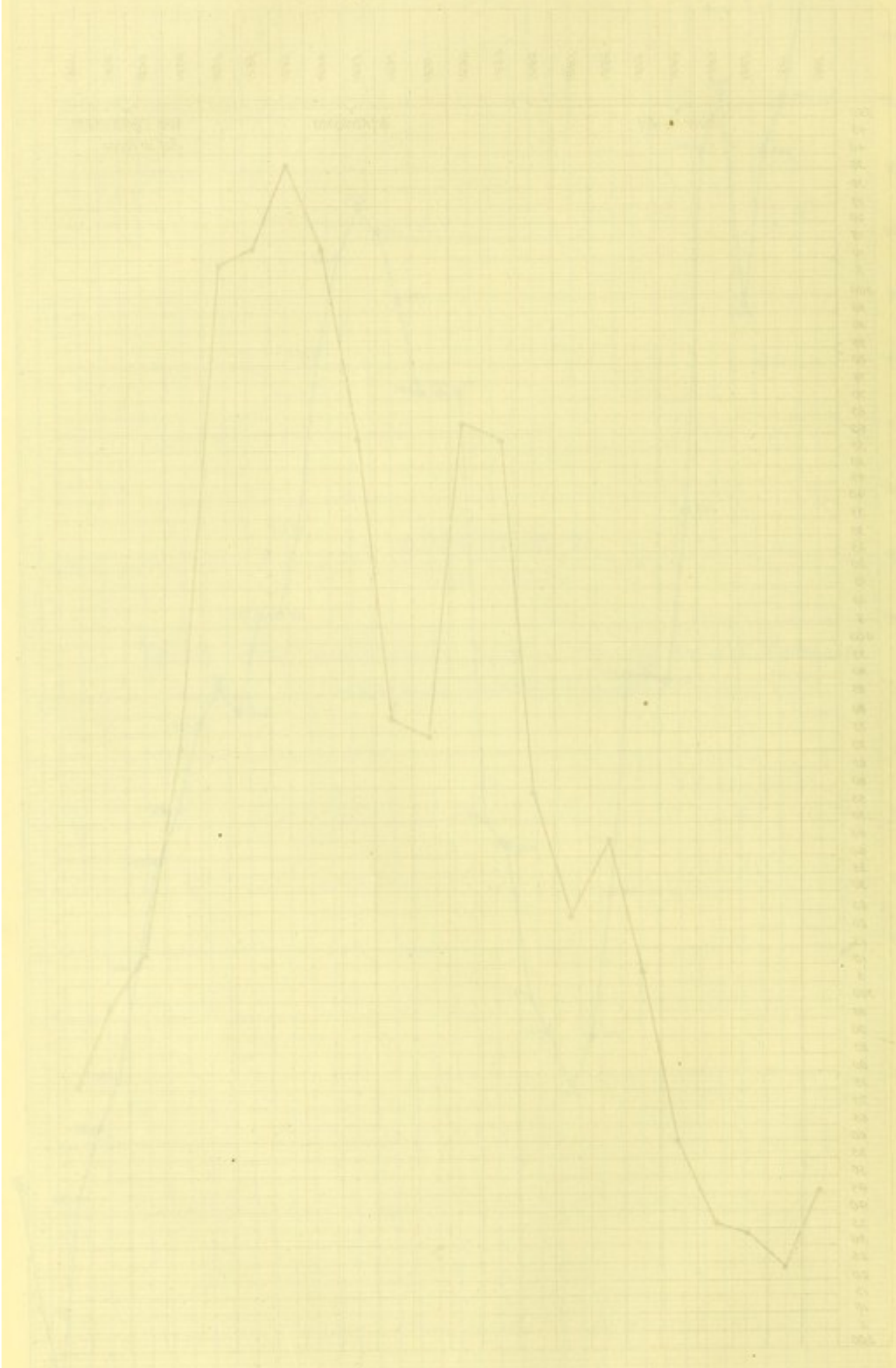
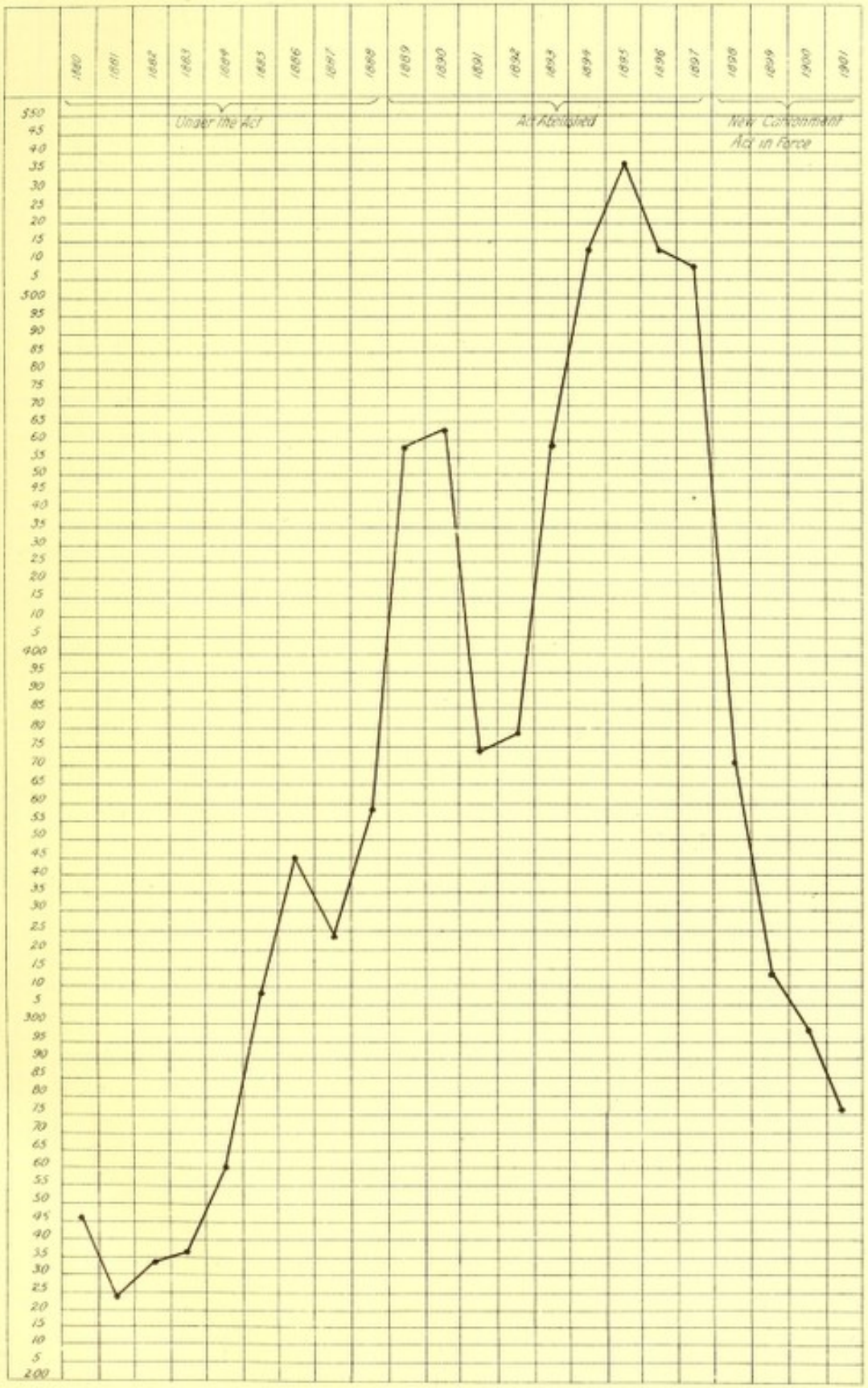


CHART II

BRITISH FORCES IN INDIA.

Ratio per 1000. Admissions for all Venereal diseases



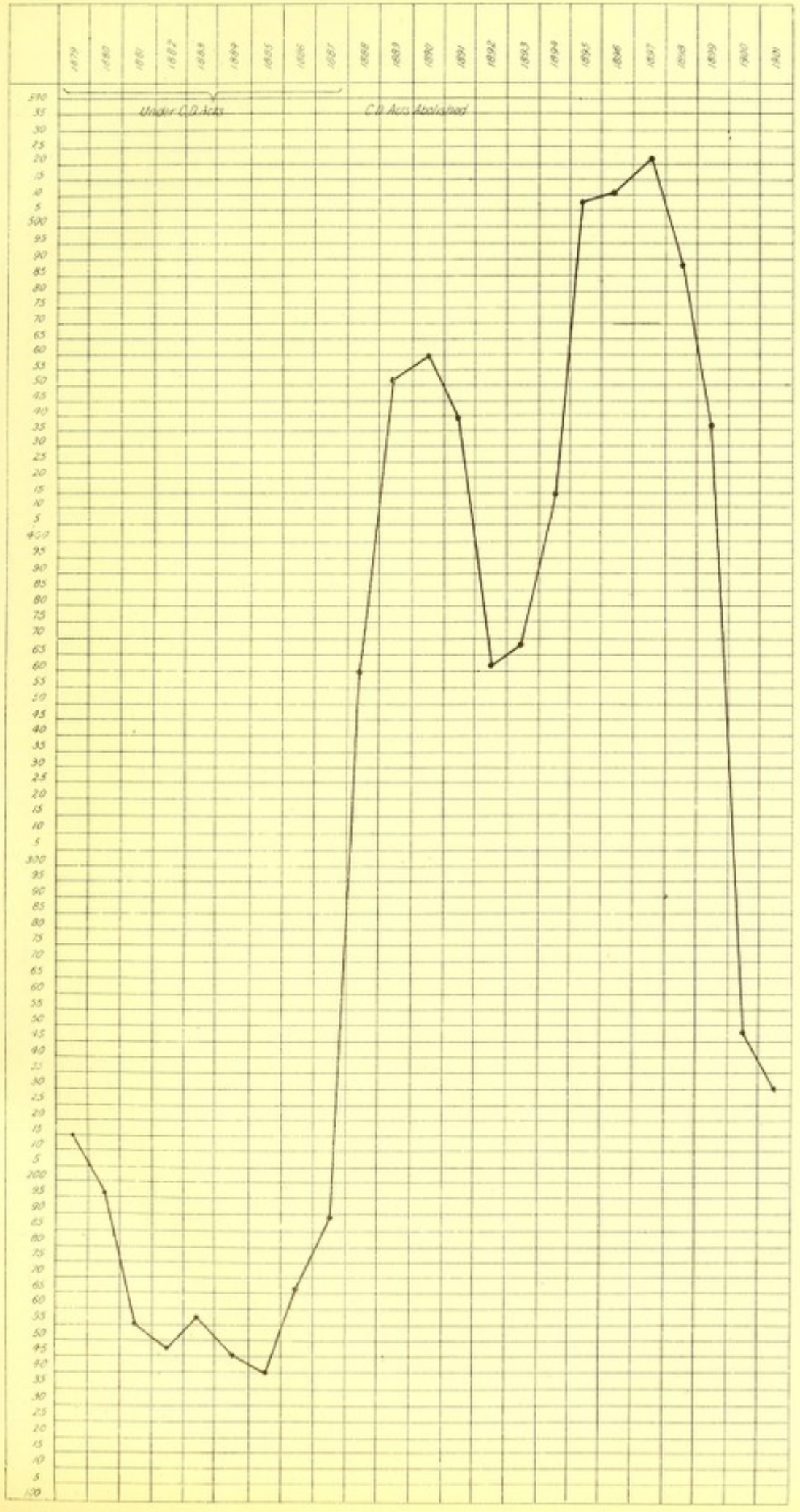
32183

Ratio per 1000 Admissions for all Venereal Diseases

CHINA & STRAITS SETTLEMENTS.

CHART III

In China Protection of Women and Girls Ordinance was passed 1897 and strengthened in 1898
In Straits Settlements - do - do 1896 - do - 1899



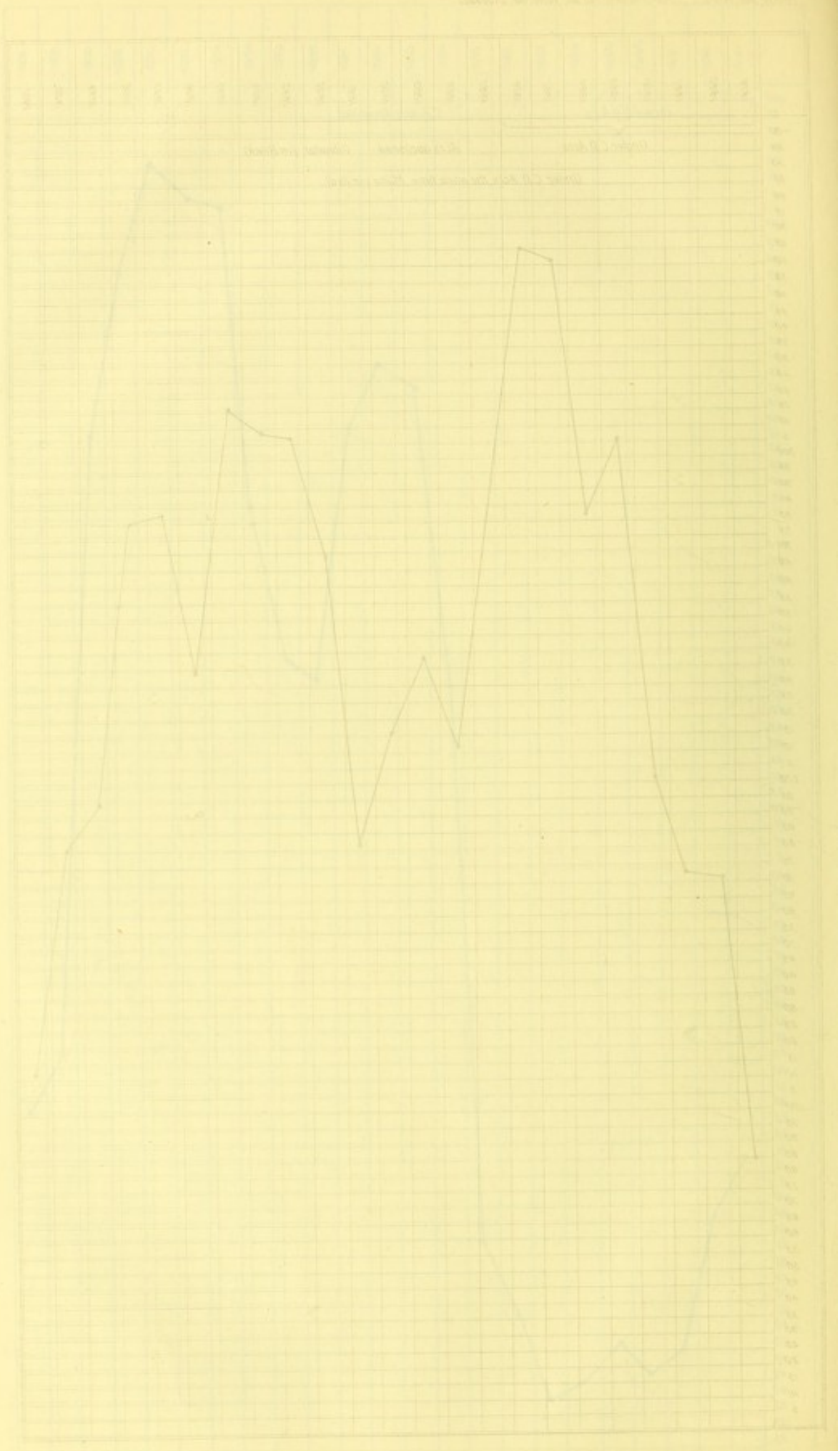


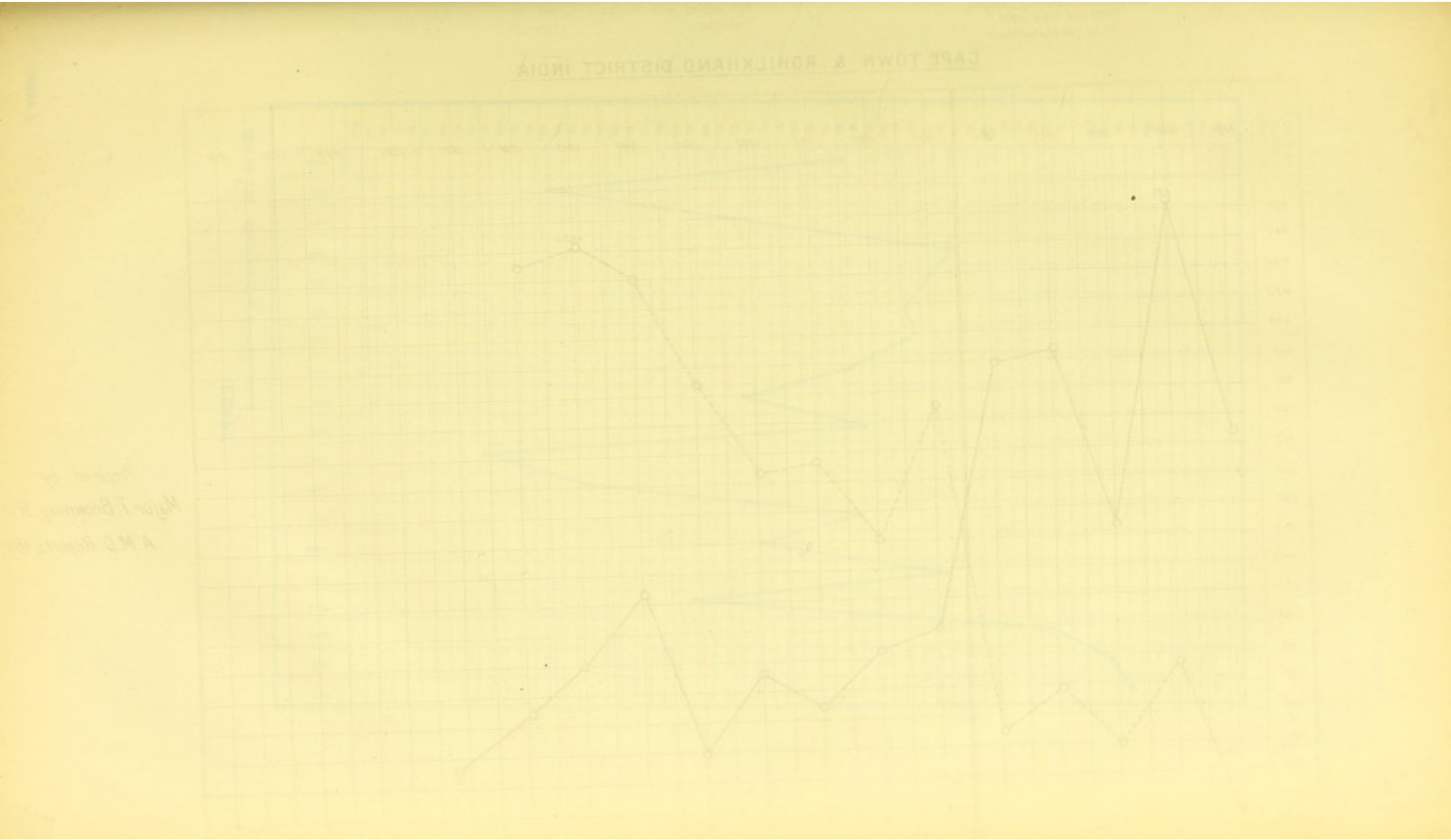
CHART IV

Ratio per 1000 Admissions for all Venereal Diseases

CHART V

EGYPT

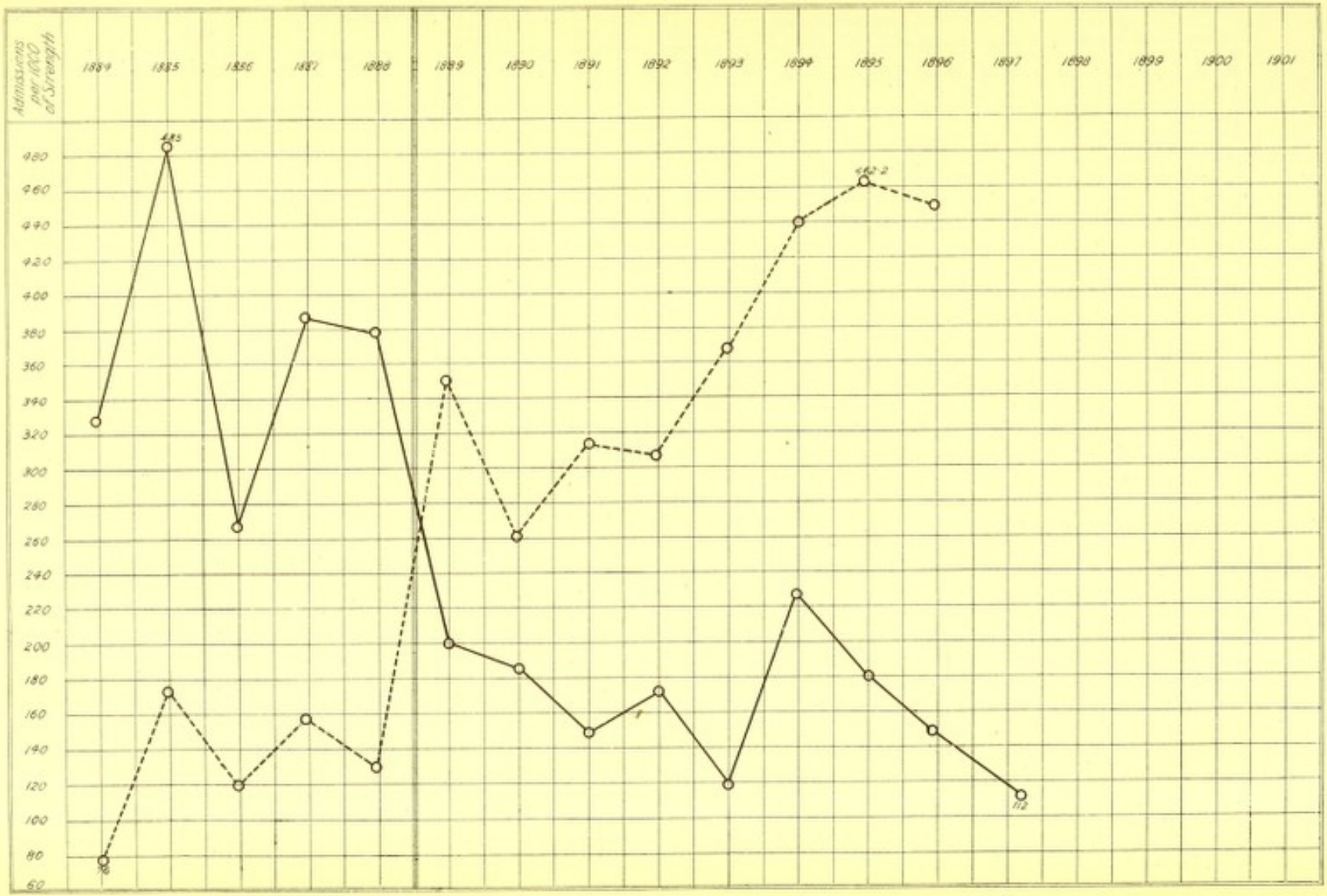
Ratio per 1000 Admissions for all Venereal Diseases



Primary and Secondary Syphilis
Black line Cape Town
Dotted line Rohilkhand

Rohilkhand with	.	1884-88	. 132
Cape Town	.	1889-97	. 168

CAPE TOWN & ROHILKHAND DISTRICT INDIA.



32163

Prepared by
Major T. Browning, R.A.M.C.
A.M.D. Reports, 1897.

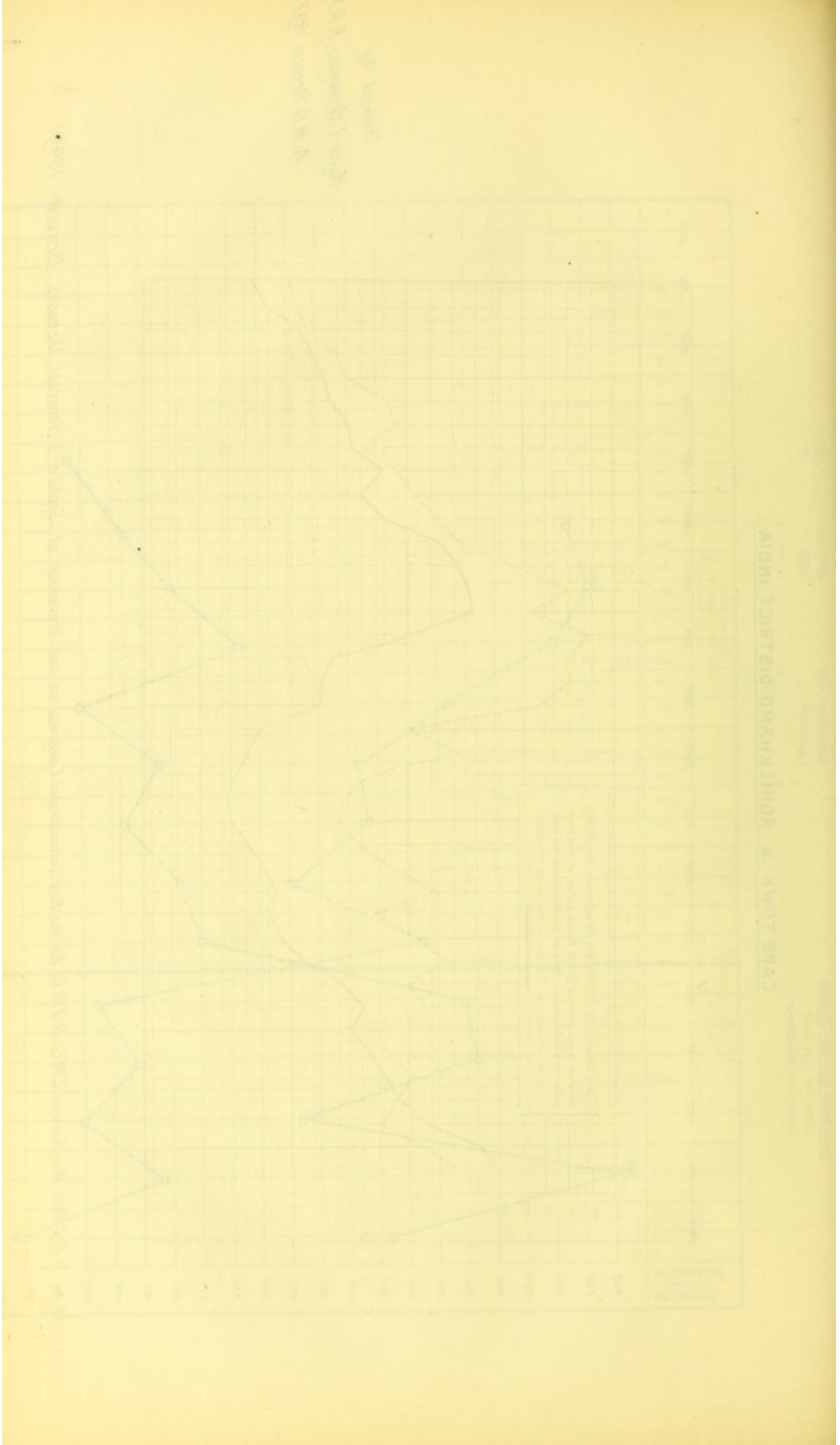
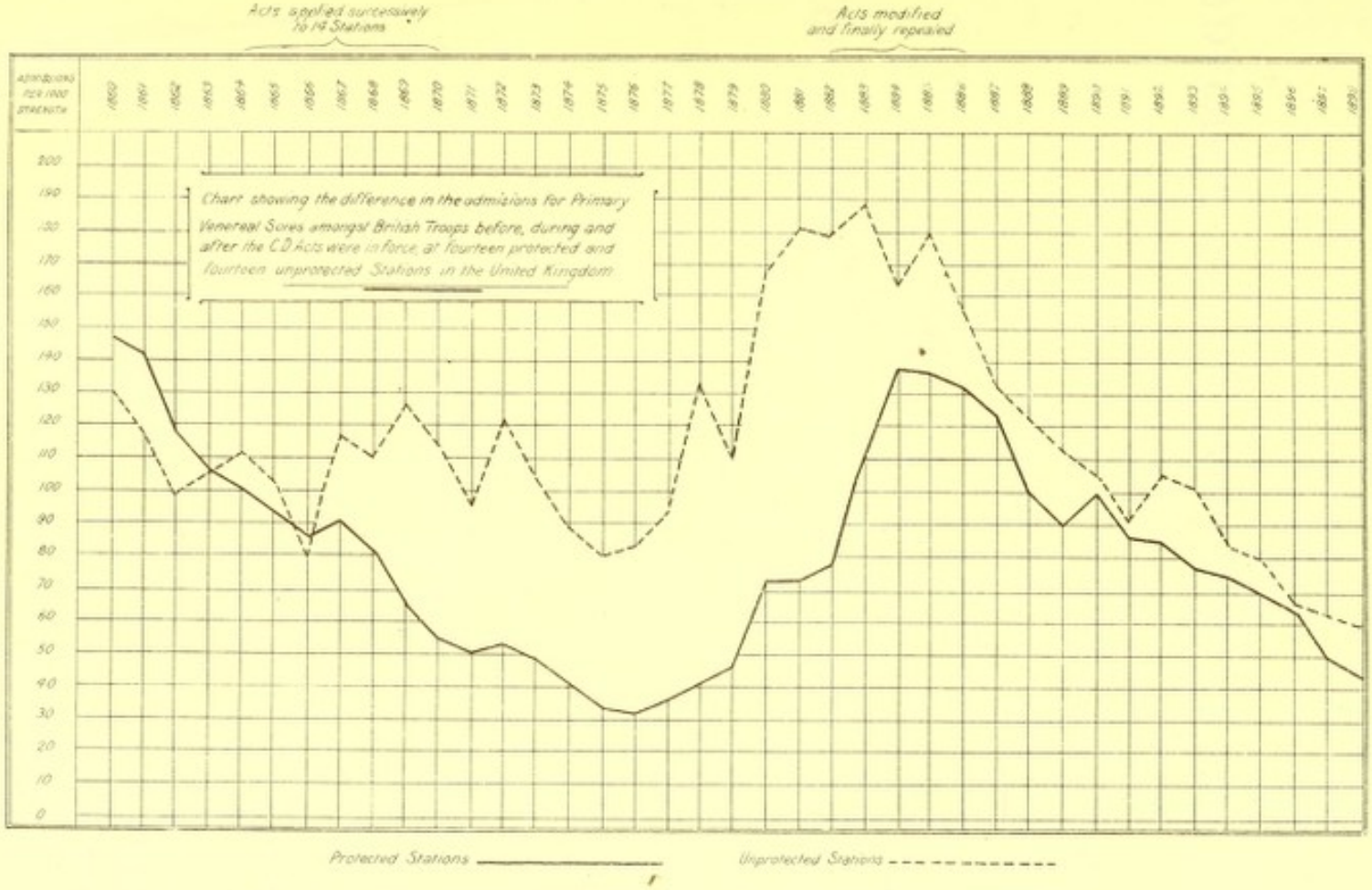
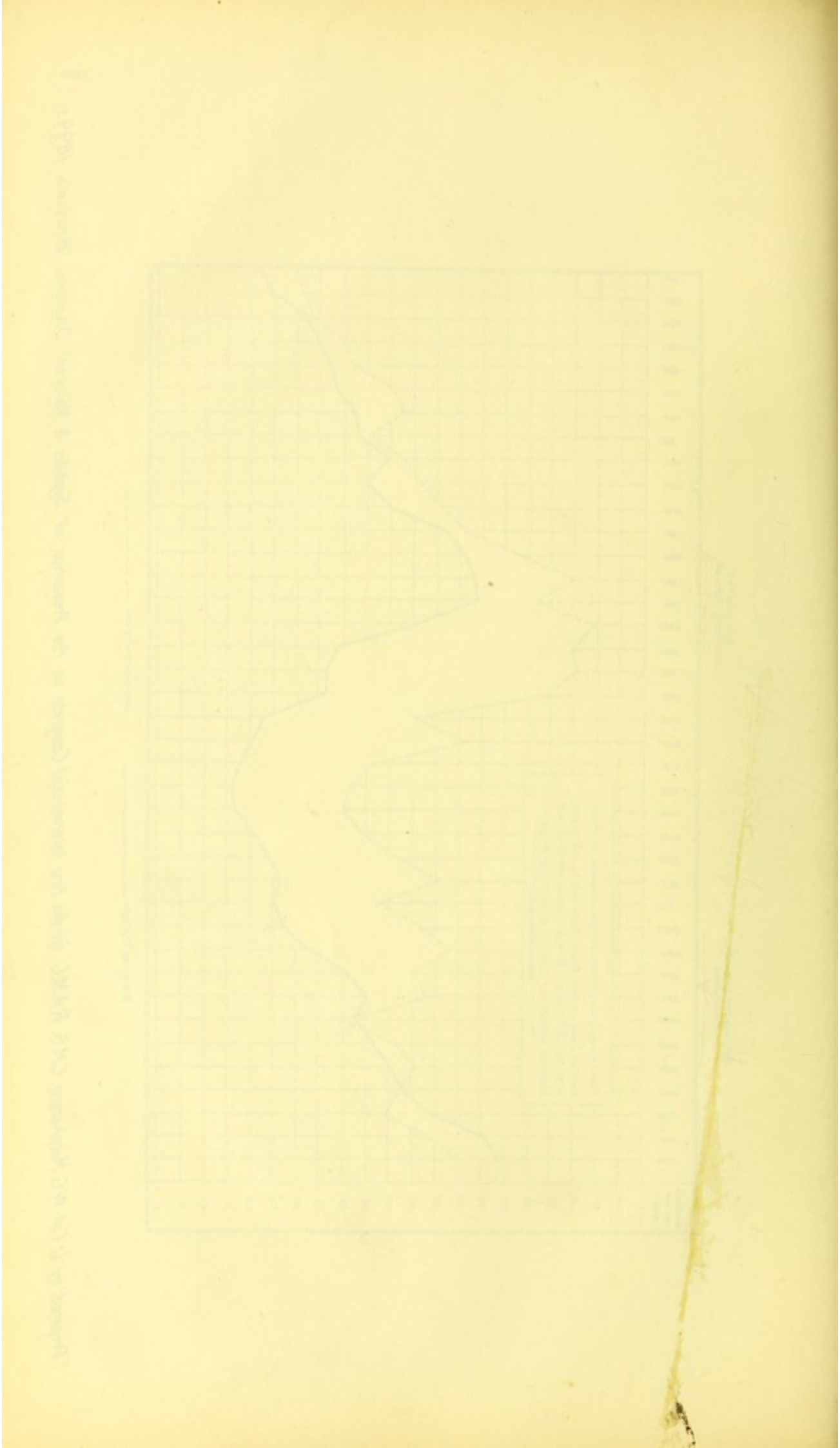


CHART VII.



(Prepared by Lt Col. W.G. Macpherson, C.M.G. R.A.M.C. for the First International Congress on the Prevention of Syphilis & Venereal Diseases, Brussels, 1899.)



(Catalogued as part of previous item)

ADVISORY BOARD FOR ARMY MEDICAL SERVICES.

THE TREATMENT OF VENEREAL DISEASE AND SCABIES IN THE ARMY.

SECOND REPORT.

33586. 100.—1/05. Pk. 643. E. & S.

SECOND REPORT.

TABLE OF CONTENTS.

THE TREATMENT OF VENEREAL DISEASE AND SCABIES IN THE ARMY.

SECOND REPORT.

(Containing the Evidence of Experts.)

PREFACE.

The previous Report on this subject dealt mainly with the recent literature on the subject of Venereal Diseases.

In order to render the investigation undertaken by the Board as complete as possible it was determined to obtain the opinions of members of the medical profession having special knowledge of this department of practice. The result of this portion of the inquiry is embodied in this Report.

To give effect to this decision a list of civilian members of the profession was drawn up and submitted by the Director-General to the Presidents of the Royal Medical and Chirurgical Society, and the Clinical Society of London, with an explanation of the nature of the inquiry and a request that the Presidents would add the names of other gentlemen whose opinion they considered to be of value. Invitations were then issued to these gentlemen to be present at meetings of the Sub-Committee arranged for the purpose in order to state their opinions.

The Director-General also made arrangements for the attendance of officers of the Royal Army Medical Corps who were known to have special experience in the treatment of Venereal Diseases in the Army.

A Memorandum indicating the lines of investigation proposed by the Sub-Committee was drawn up and circulated with each letter of invitation. This Memorandum which will be noted to be slightly different in the case of military and civilian members of the profession is included in this Report (pp. 5 and 6).

At these special meetings the proceedings were reported verbatim, and the reports were subsequently submitted to all of those concerned for approval. The statements made to the Sub-Committee are given in this Report, and for convenience of reference are classified under the headings of the Memorandum already referred to.

The Advisory Board now wishes to record its appreciation of the valuable assistance rendered by these gentlemen and of the helpful interest taken in the treatment of the sick by Major-General the Hon. Sir Reginald Talbot, K.C.B., who attended one of the meetings to give his experience while in command of British troops in Egypt. Their views will be read with profit by all concerned in the treatment of Venereal Diseases in the Army or in general medical practice.

December 1904.

Names of Witnesses Examined by the Committee.

Lieut.-Colonel P. M. Ellis, R.A.M.C.
Lieut.-Colonel H. R. Whitehead, F.R.C.S., R.A.M.C.
Lieut.-Colonel G. H. Sylvester, R.A.M.C.
Lieut.-Colonel C. A. Webb, R.A.M.C.
Major and Bt. Lieut.-Colonel S. Hickson, R.A.M.C.
Lieut.-Colonel G. D. C. Mosse, R.A.M.C.
Mr. Arthur Shillitoe, F.R.C.S.
Mr. P. J. Freyer, M.D., M.Ch.
Mr. Edgcombe Venning, F.R.C.S.
Mr. Malcolm Morris, F.R.C.S.E.
Mr. James Ernest Lane, F.R.C.S.
Lieut.-Colonel R. L. Love, R.A.M.C.
Lieut.-Colonel F. J. Lambkin, R.A.M.C.
Surgeon-General Sir Thomas Gallwey, K.C.M.G., C.B.
Dr. T. Colcott Fox.
Mr. Charles Gibbs, F.R.C.S.
Mr. Arthur Ward, F.R.C.S.
Dr. W. Allan Jamieson.
Dr. Radcliffe Crocker.
Mr. David Wallace, C.M.G., F.R.C.S.E.
Sir Alfred Cooper.
Dr. Arthur Whitfield.
Mr. Jonathan Hutchinson, F.R.C.S., F.R.S., LL.D.
Professor Alex Ogston.
Lieut.-Colonel J. D. T. Reckitt, R.A.M.C.
Major T. Du. B. Whaite, R.A.M.C.
Captain J. Stuart Gallie, R.A.M.C.
Major-General The Hon. Sir Reginald A. J. Talbot, K.C.B.

MEMORANDUM INDICATING THE LINES OF INVESTIGATION.

A.

The following questions were circulated in order to serve as a guide to those gentlemen whose opinions were invited by the Committee.

1. In case of venereal sore—

   (*a*) Should mercury be given at once?

   (*b*) Should the administration of mercury be deferred until the generally accepted signs of local primary syphilitic inoculation are present?

   (*c*) Should mercury be given only when symptoms of constitutional syphilis have appeared?

2. If it is determined to give mercury to a patient to whom the character of the inoculation sore is doubtful, what doses should be given, and for how long should the treatment be continued should no further evidence of syphilis be forthcoming?

3. In cases of syphilis under observation from the commencement, how long should mercury be given to obtain the best results or to effect a cure?

4. When the obvious signs of syphilis have disappeared under treatment, what proportion of the previous doses of mercury should be considered sufficient to maintain the anti-syphilitic effect?

Are there any conditions, *e.g.*, the condition of the blood and the weight of the patient, which serve as guides for interrupting or continuing the mercurial treatment?

5. In the case of patients effected with syphilis, what forms of treatment appear to be the most suitable under the following conditions:—

   (*a*) In early cases of mild degree occurring in patients permitted to pursue their daily avocations?

   (*b*) In similar cases in-patients who are able to give up their employment for the purpose of carrying out satisfactory treatment?

   (*c*) In cases of severe type under complete medical control, as in the case of hospital in-patients?

   (*d*) In cases of syphilis, showing destructive lesions?

6. Opinions are specially invited as to the methods of injection of the soluble and insoluble preparations of mercury under the conditions of military service.

7. Are the advantages of the methods of treatment by injection sufficiently great to warrant their adoption as routine methods in place of inunction or treatment by other means?

8. What is the most advisable course to be pursued in the administration of the iodides in syphilis?

What advantages may be expected from treatment by other methods than by the use of mercury and the iodides?

9. In the treatment of gonorrhœa have recent methods of irrigation, injection, the use of any new medicaments, &c., shown themselves of greater value than the older methods?

10. What are the most satisfactory methods of treating scabies?

B.

The following questions were circulated in order to serve as a guide to those officers whose opinions were invited by the Committee.

1. In case of venereal sore—

(*a*) Should mercury be given at once?

(*b*) Should the administration of mercury be deferred until the generally accepted signs of local primary syphilitic inoculation are present?

(*c*) Should mercury be given when symptoms of constitutional syphilis have appeared?

2. If it is determined to give mercury to a patient in whom the character of the inoculation sore is doubtful, what doses should be given and for how long should the treatment be continued should no further evidence of syphilis be forthcoming?

3. In cases of syphilis under observation from the commencement, how long should mercury be given to obtain the best results or to effect a cure?

4. When the obvious signs of syphilis have disappeared under treatment, what proportion of the previous doses of mercury should be considered sufficient to maintain the anti-syphilitic effect?

Are there any conditions, *e.g.*, the condition of the blood and the weight of the patient, which would serve as guides for interrupting or continuing the mercurial treatment?

5. In the case of soldiers affected with syphilis, what forms of treatment appear to be the most suitable under the following conditions:—

(*a*) In early cases of mild degree occurring in men still employed in their military duties?

(*b*) In similar cases relieved of their military duties but still remaining in barracks for the express purpose of satisfactory treatment?

(*c*) In cases of severe type admitted to hospital as in-patients?

(*d*) In cases of syphilis, showing destructive lesions?

6. Opinions are specially invited as to the methods of injection of the soluble and insoluble preparations of mercury under the conditions of military service?

7. Have the injection methods advantages over methods of treatment by inunction, or by other means sufficiently great to permit of their recognition as routine methods of treatment?

8. What is the most advisable course to be pursued in the administration of the iodides in syphilis?

What advantages may be expected from treatment by other methods than by the use of mercury and the iodides?

9. In the treatment of gonorrhœa, have recent methods of irrigation, injection, the use of any new medicaments, &c., shown themselves of greater value than the older methods?

10. In the treatment of scabies, what are the most advisable methods in order to obtain rapid and lasting effects?

11. Are soldiers under mercurial treatment by inunction, injection, or other methods, fit for ordinary military duty?

12. Are soldiers who have recently shown syphilitic manifestations, either of the early or later stages of the disease, though apparently cured at the time, fit for active service?

Question I.	In case of venereal sore— (*a*)—Should mercury be given at once? (*b*)—Should the administration of mercury be deferred until the generally accepted signs of local primary syphilitic inoculation are present? (*c*)—Should mercury be given only when symptoms of constitutional syphilis have appeared?

By whom.	Report of Evidence.
Lieut.-Col. P. M. Ellis, R.A.M.C.	(*a*)—Yes. (*b*) and (*c*)—No.
Lieut.-Col. H. R. Whitehead, R.A.M.C.	(*a*)—Personally, I should not give mercury simply because of a man having a sore which he contracted by having connection. So my answer to that is no. (*b*)—I suppose by that is meant induration of the sore and enlargement of the glands. As a rule I would wait until some induration occurred and some enlargement of glands took place. But the mere fact that the sore was not indurated would not prevent me giving mercury if I thought other matters pointed towards it. For instance, if a man developed a sore three weeks after connection, and his health was obviously failing, and the sore was healing badly, or not at all—that is, it was indolent, I would regard it as probably syphilitic, and I should then proceed to give mercury, even if the classical signs of chancre were not present, because I have seen sores in which the secondaries have occurred when no induration was present in the original sore. (*c*)—I know it is stated by a well-known school of syphilographers that they wait until constitutional syphilis has made its appearance before they give mercurial treatment. I would not do that, because I regard it as of the utmost importance to begin early with mercury; though I usually wait for induration and classical symptoms, the mere fact that these did not occur would not stop me giving mercury if other things pointed to the sore being syphilitic.
Lieut.-Col. G. H. Sylvester, R.A.M.C.	(*a*)—No, I think not. (*b*)—Yes, I think so. (*c*)—I should give it as soon as there is evidence of hardness; or if there is a doubtful hardness in the sore, as soon as I think it is suspicious. I would not give it unless there was some evidence of induration. I might if I thought the sore was suspicious. Sometimes one sees sores, particularly those on the glans penis, which are suspicious, although there may be no definite hardness, and in these I would give mercury without waiting for more definite signs of constitutional syphilis.
Lieut.-Col. C. A. Webb, R.A.M.C.	(*a*)—Of the first question, I would say that mercury should not be given at once in the case of an undiagnosed or simple venereal sore. (*b*), (*c*)—If it is perfectly certain that the sore is a hard chancre, mercury should be given, but I think generally it would be advisable not to give it until there are some secondary manifestations. I would prefer to wait and see, to make absolutely certain. My idea is that a man should be put under treatment for two years if he has syphilis, and I do not think that anyone is justified in putting a man under treatment for two years unless he is perfectly certain that he has the disease. In the case of what appears to be a hard chancre I think one is rarely certain. I should prefer to wait without giving mercury. In the case of a hard sore I think it better to wait until there are some secondary manifestations, as I think one cannot be absolutely sure a man has syphilis until he has got secondary manifestations. A typical Hunterian chancre may occasionally be picked out, but I think one is rarely justified in starting a two years' course of mercury on the appearance of a sore. I should start mercury directly I was absolutely certain, but I am rarely certain about a hard sore.
Major and Bt. Lieut.-Col. S. Hickson, R.A.M.C.	(*a*) I would not give mercury unless an infecting sore is reasonably suspected. (*b*)—There are some sores about which one is never certain, whether syphilitic or only soft sores. But generally speaking, I would give mercury when I was pretty well certain that the sore was a primary syphilitic sore. (*c*)—I would not necessarily wait to give mercury until the symptoms of constitutional syphilis have appeared. I would give it when I was reasonably certain that the case was one of syphilis.

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Lieut.-Col. G. D. C. Mosse, R.A.M.C.	(*a*)—I should say, if there is the faintest suspicion of the sore being an infecting one, I would give mercury at once, because I have known constitutional symptoms to follow sores apparently benign. I should suspect an infecting sore if there was only one sore, or if there was any sign of induration; if there were multiple sores, small ulcers, the probability of their not being infective sores would be greater. When there is a single sore it is often difficult to arrive at a positive diagnosis, and if there was the slightest induration, or if I was in any doubt whatever about the sore, I should certainly give mercury. (*b*)—I do not think the administration of mercury should be deferred until the generally accepted signs of local primary syphilitic inoculation are present. (*c*)—I should certainly say not; the administration of mercury should not be deferred until symptoms of constitutional syphilis have appeared.
Mr. Arthur Shillitoe, F.R.C.S.	(*a*)—In case of venereal sore, I should not give mercury at once; I always wait. (*b*)—In my opinion, the administration of mercury should be deferred until the generally accepted signs of local primary syphilitic inoculation are present. Sufficient evidence for starting the administration of the same I should consider to be the presence of an indurated chancre and indurated glands in the groin. (*c*)—I should give mercury if I was satisfied with the appearance of the glands and the chancre alone without waiting for general manifestations.
Mr. P. J. Freyer, M.D., M.Ch.	(*a*)—I presume venereal sore means either a soft chancre or a hard infecting chancre. In that case, my answer is in the negative. I do not think mercury ought to be given until the case is diagnosed as one of true Hunterian infecting chancre. (*b*)—The administration of mercury should be deferred until the generally accepted signs of local primary syphilitic inoculation are present. The typical infecting chancre is diagnosed in the first place with reference to the length of time after connection; that is to say, it does not come on immediately after connection, or within two or three days, as does a soft chancre. It takes, generally, three to six weeks before it develops, before it appears, and the lesion itself is the ordinary indurated lesion, like shot under the skin, and going on scarcely to ulceration, accompanied by the typical hard non-suppurating glands in the groins. I think that these would be sufficient signs to commence treatment. I should not wait for secondary symptoms to appear. I know that certain observers do not agree with that. I acknowlege that it is a doubtful question as to the advisability of that, but my experience is, that once you diagnose true Hunterian chancre, an infecting chancre, you should treat it; and in the vast majority of cases you are practically certain that it is so, particularly when it comes on such a length of time after connection. In that case I should commence treatment at once.
Mr. Edgcombe Venning, F.R.C.S.	(*a*)—If it is a true venereal sore I should say yes, at once. By that I mean provided it has all the characters of an infecting chancre. I would define an infecting chancre as a sore with a hard base, and then accompanied by an amygdaloid condition of the glands in the neighbourhood. (*b*)—Having made up my mind quite clearly, and decided that I have to deal with a true venereal sore, I should put the patient on mercury at once. I should not wait for the generally accepted signs of primary syphilitic inoculation, if I was certain I was dealing with a true syphilitic sore. I should not do as many modern syphilologists do who believe it is safer to wait till actual roseola makes its appearance before they give mercury, I should give mercury at once if I was certain about what I was dealing with. If the sore, however, were doubtful, I should decidedly wait. It occurred to me in my practice a short time ago to have a young man come to me with a sore which was most suspicious of being truly syphilitic, but there were no amygdaloid glands. He was a very delicate man, and my first impression was that it was a true syphilitic sore. But on looking carefully at it I decided to wait, as there were no enlarged glands, and everything passed away. That was many months ago, and he has had no sign of venereal poisoning. I do not think there would be any severe loss of time in a case of that kind if it turned out to be a syphilitic sore. I do not think the loss of time would be very much against the patient.

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Mr. Malcolm Morris, F.R.C.S.E.	(*a*)—In case of venereal sore mercury should be given at once. (*b*)—As to whether the administration of mercury should be deferred until the generally accepted signs of local primary syphilitic inoculation are present, Mr. Morris said that it is not an easy question to answer. In the majority of cases, yes; but in certain exceptional cases, no. It depends where the primary lesion is, to a very large extent. For example, if it was on a doctor's finger and it was a doubtful question I certainly would give mercury, without question. I would give him the off-chance of the benefit from mercury as quickly as possible, even though I was not absolutely certain of the diagnosis. So in the majority of cases I would do so, but not all. There are certain exceptions. I do not think I need go into those exceptions. The answer would be yes in the majority of cases. (*c*)—I would give mercury without waiting, as the Americans and Germans say should be done, until symptoms of constitutional syphilis have appeared.
Mr. James Ernest Lane, F.R.C.S.	(*a*)—Mercury should not be given at once in case of venereal sore. (*b*)—My practice is to withhold mercury until the symptoms of constitutional syphilis, as shown by the appearance of some syphilide, are in evidence. I hold that opinion very strongly. I do not think the loss of time which might be incurred in withholding the treatment would be in the least bit prejudicial; and in fact I think the cases in which mercury is given before the occurrence of the syphilide are very likely to have rather a chronic course, especially with reference to lesions about the throat and mucous membrane of the mouth. I think the early administration is apt to make the cases chronic. (*c*)—I have practically answered. I am very strongly of opinion that the course which should be followed is to wait for the roseolar eruption or a syphilide of some sort.
Lieut.-Col. R. L. Love, R.A.M.C.	(*a*)—No. (*b*)—Yes. (*c*)—See reply to (*b*). Many cases, however, are never seen by the medical officer until constitutional signs have appeared, when treatment by mercury should be commenced without delay.
Lieut.-Col. F. J. Lambkin, R.A.M.C.	(*a*)—Certainly not in the absence of any indication that the sore is of a syphilitic nature. (*b*)—As soon as there are fair grounds for believing the initial lesion to be syphilis, mercury must be given. (*c*)—In my opinion the medical man who, having fair grounds for suspecting the initial lesion to be syphilis, withholds mercury until the appearance of other constitutional symptoms, commits a great error, knowing, as we do, how mercury when given early modifies after-symptoms, and that very often the first sign of secondary constitutional symptoms of the disease is often some grave organic or nervous lesion which would not have occurred had the metal been exhibited in the first instance.
Surgeon-General Sir Thomas Gallwey, K.C.M.G.	I consider that if a medical officer thinks he is dealing with a case of syphilis he should give mercury at the earliest opportunity. In my opinion it is unjustifiable to wait for the appearance of secondary symptoms before commencing treatment with mercury.
Dr. T. Colcott Fox.	(*a*)—My answer to the first question is that mercury should not be given until a firm diagnosis has been made as to the nature of the sore, syphilitic or otherwise. (*b*)—The administration of mercury should be deferred until the generally accepted signs of local primary syphilitic inoculation are certain. A firm diagnosis ought to be made between the hard chancre of syphilis and other sores, such as the ulcers molle and herpes. That is most important, because I do not think it is justifiable in such cases to embark on a long course of mercurial treatment, and label a person as syphilised, unless the diagnosis is clear. In the majority of cases the diagnosis is in very little doubt. But

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Dr. T. Colcott Fox—*cont.*	everyone knows there are cases in which the diagnosis, for a time at any rate, is very difficult. There may be, for example, a double infection. It may be necessary in a few cases to wait until there are secondary symptoms arising; you may remain in doubt up to that stage. Such delay need not cause anxiety. (*c*)—My doctrine is, that directly a firm diagnosis is made at any stage, the treatment should be commenced at once. There is considerable difference of opinion as to the desirability of instituting a mecurial course before the onset of secondary symptoms. Professor Kaposi, although approving it theoretically, counsels against it. He says such treatment only delays and disorders the evolution of the symptoms of infection, and makes tertiaries more frequent. This is not my experience. In the absence of any recognition of a definite bacillus as the cause of syphilis, we do not know how the mercury acts. Some authorities hold that mercury is a direct parasiticide of the presumed bacillus, or that at any rate it counteracts the virus which does the mischief. Others say it is simply a resolvent of the lesions which constitute the syphilitic manifestation. Of course there is a very radical difference between those two views, and we are not yet in a position to settle that point I believe there is evidence that mercury is not only a powerful resolvent, chiefly of the earlier syphilitic manifestations, but that it has a certain influence in killing the bacillus or virus. And I think the chief evidence of that is, the rapid way in which, after a course of mercury, syphilis ceases to be communicable in a hereditary way to a child. I think that is very strong evidence that it has considerable influence over the virus. The whole treatment of syphilis is, to a certain extent, empirical; we are not on very sure or sound ground. I think that if the syphilis is entering the system, and the mercury has the powerful effect of attacking this virus, no time ought to be lost. By the time the chancre has existed for any period the infection of the system is going on, and if you give mercury then, the system has not got entirely under the influence of the disease. Mercury may stop the secondary symptoms; at any rate there are cases where you do not get them pronounced, so to speak. Unquestionably the mercury mitigates them enormously.
Mr. Charles Gibbs, F.R.C.S.	(*a*)—I should not give mercury at once in the case of venereal sore. (*b*)—I should defer the administration of mercury until the generally accepted signs of local primary syphilitic inoculation are present. (*c*)—I do not think you should wait for secondaries to turn up. If it is a characteristic primary sore, (*a*) with some induration, (*b*) or if it have the right incubation after copulation, (*c*) or if the glands be enlarged in the characteristic way, (*d*) or if it obviously be not a septic sore, or two or three sores (of course, a hard chancre can be multiple)—if it be a typical sore I should not think there is any necessity to wait. I commence mercury as soon as I have made up my mind definitely from the primary lesion. I would not wait for the constitutional symptoms. At the Lock Hospital we get very bad cases which, perhaps, the local doctor has failed to cure by local antiseptic treatment. But in the majority of cases we can, with a little experience, spot them almost at once, and, as the house-surgeon recently remarked, those which are doubtful always turn out to be syphilitic.
Mr. Arthur Ward, F.R.C.S.	(*a*)—Mercury should not be given at once. (*b*)—The administration of mercury should be deferred until the generally accepted signs of local primary syphilitic inoculation are present. (*c*)—I think it is a pity to wait to give mercury until symptoms of constitutional syphilis have appeared. I think the inoculation period and the appearance of shotty glands are sufficient evidence to be certain the case is one of syphilis.
Dr. W. Allan Jamieson.	(*a*)—Stated that, in his opinion, in cases of venereal sore mercury should not be given at once. (*b*)—I would still not be, as a rule, inclined to give it when the generally accepted signs of local primary syphilitic inoculation are present; I would wait. (*c*)—My opinion is quite strong that mercury should not be given until the symptoms of constitutional syphilis have appeared. By constitutional syphilis I mean such a condition as the roseola or the early papulo-squamous syphilide. It is not my experience that the interval of time which would elapse between the appearance of the chancre and the appearance of the roseola would be a very great loss to the patient. It is certainly not any serious loss. Another

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Dr. W. Allan Jamieson—*cont.*	reason for it is this: that in many cases it is difficult positively to say whether this is really a case of syphilis or not. And if the person, the medical man, who is to conduct the treatment is not very experienced there might certainly be unnecessary administration of mercury. I have seen such occur. Another thing is that if mercury is given before any roseola or papulo-squamous rash appears it interferes very materially with the further development of the symptoms. These are postponed often, or altered in their character by such administration. But my experience is not that of Mr. Hutchinson, that in that way you can absolutely prevent constitutional symptoms, such as rashes, appearing. I have seen cases treated in that way, and the rash appeared after all, sometimes in an altered or modified form. Therefore, I certainly prefer to wait until the symptoms of constitutional syphilis have appeared before administering any mercurial treatment. I mean internally. I think that in view of the gravity of a course of mercury being undertaken it is much wiser to be absolutely certain before committing the patient to such a course, for one reason, if for nothing more; if mercury is administered and it should turn out afterwards that it was not syphilis, he will have been submitted to this mercurial treatment, which raises a very great difficulty in his own mind. That may not apply in all cases so much, but in some cases it certainly would, and the patient has a doubt in his mind about it; he has been told by one it is syphilis, and perhaps some other medical man whom he has consulted—for they go about from one to another—will say it is not. And then at some future time, when tertiary, or supposed tertiary symptoms have made their appearance, one has a difficulty in determining, from the history at all events, that there was syphilis present or not. If I had a case of what I should say was undoubted chancre, I would treat it locally with mercury, but not internally, nor by any other method of administration. I always treat these cases with a piece of very soft mercurial plaster locally, and that is all the treatment I have been in the habit of advising and applying—a small piece of soft mercurial plaster over the chancre. Of course, my experience in this respect has been chiefly with men; I have not seen so many cases of syphilis in women, though I see a number of cases in them too, but not cases of the primary sore among them. Women coming with syphilis to the infirmary or in private have practically all come with an eruption. The cases I have seen, with a few exceptions, have been those, so in them I had not an opportunity of treating the local sore from the first.
Dr. Radcliffe Crocker.	(*a*)—If I thought it was only a local sore I should not give mercury at once. (*b*) I should wait until I was convinced it was a generally infective sore, i.e., until an indurated chancre and possibly enlarged glands were present. As soon as I was convinced that it was a generally infective sore I should begin; I should not wait for secondary symptoms, but I should not give it as long as I thought there was a chance of its being a local infection only. If the sore did not develop the typical condition, I should wait until the symptoms proved it to be syphilis. I should not commit my patient to a mercurial course until I was quite certain. You would have to give him a very long course if you presumed it was syphilis, and there would always be the uncertainty as to whether the patient ever had syphilis or not. The idea that he might have had it would make him very unhappy; and it would subject him to severe lowering treatment unnecessarily; while there is no harm in waiting. (*c*) I do not suppose there would be any great harm done if you wait for secondary symptoms, but personally if I had a chancre I should certainly start mercury as soon as I felt satisfied it was a Hunterian chancre, but I would wait until the symptoms were typical, and then if convinced that it was a generally infective sore I should begin treatment at once.
Mr. David Wallace, C.M.G., F.R.C.S.E.	(*a*)—In his opinion mercury should not be given at once. (*b*)—It should be deferred until the generally accepted signs of local primary syphilitic inoculation are present, or even until secondaries appear to confirm the diagnosis. It is sometimes difficult even with some appearances which are more or less definite to say the case is one of syphilis, and in such a case I think it is desirable sometimes to delay until we have positive evidence. I do not think the time lost by such delay is at all important, compared with the fact of being absolutely certain that the patient is infected with syphilis. That practically also answers question (*c*). Mercury should certainly be given after the surgeon is certain that the patient is infected with syphilis.
Sir Alfred Cooper.	(*b*)—I should give mercury if I was sure I was treating syphilis, not otherwise. If it was a doubtful sore I should not give any mercury. Venereal sore is a different question. I take it that I should certainly not give it. If it is a sore on the man's penis it might be herpes, or several other things. I did not understand the question. I should not give mercury until I was certain I was treating the indurated sore which is called a chancre, that is until the

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Sir Alfred Cooper—*cont.*	glands were enlarged and there was no reason to doubt it was syphilis. If I was sure of it I should put him on blue pill three times a day. Anyone who is accustomed to see an indurated chancre could make no mistake about that, there would be induration and enlarged glands on both sides. Supposing a doubt still remained, I should certainly wait until there were more general and definite manifestations of syphilis. I should certainly make certain that the man had syphilis before committing myself to a course of mercury. If there was any doubt I should treat the sore simply as if it was a local sore; I would give no mercury at all until I was convinced that I was treating syphilis, and that might mean having to wait three or four months. I do not think the loss of time which would be involved in such a case would be serious. (*c*)—I should give mercury if I was sure about the character of my sore, first of all, because I should then be sure I should have secondaries much lighter. That would be my reason. The sooner you attack the enemy the better, in my opinion.
Dr. Arthur Whitfield.	(*a*)—I am strongly against giving mercury at once in the case of a venereal sore, even if the sore is apparently syphilitic. (*b*)—I habitually wait for something more than a Hunterian chancre, either bilateral adenitis of the usual type, or an induration of the dorsal lymphatic string, or even generalised adenitis if necessary. The reason is that I have seen sores which appeared to me to be absolutely characteristic of Hunterian chancre, and yet these, although untreated by mercury, have not been followed by symptoms of constitutional syphilis for a year afterwards. This practically answers (*c*), except that as a rule I do not wait for the rash, because one can generally be certain before then, but I would do so rather than proceed to constitutional treatment before being certain of the diagnosis. I do not agree with the statement made by some that they would wait until the rash appears. That is the form of treatment which was usual in Vienna when I was studying there, but I disagree with it entirely, as I see no object in it. It is losing time and is very inconvenient for the patient. My only point is to secure an absolutely certain diagnosis before starting on the course of constitutional treatment.
Mr. Jonathan Hutchinson, F.R.C.S., F.R.S., L.L.D.	(*a*)—That goes, I think, with the next, "Should the administration of mercury be deferred until the generally accepted signs of local primary syphilitic inoculation are present?" I think the administration should be deferred until certain signs indicating that the sore is syphilitic are present. I think it an advantage to begin very early indeed, but if one began before those signs were present one would often be giving it when it was not absolutely necessary, for instance in cases of doubtful lesions. The indications I consider sufficient to commencing a course of mercurial treatment are: If the sore have commenced after a certain lapse of time from the supposed infection; and above all, if it have become indurated in any degree, that is, in any degree indurated, and if there are indurated glands in the groin. Of course induration is a thing which it is a little difficult to judge of sometimes. But under many conditions induration is certainly quite sufficient to form a basis for judgment. (*c*)—I would not agree with those who would postpone the administration of mercury till, let us say, a papulo-squamous syphilide or roseola made its appearance. I should regard it as a very great error to wait until secondary symptoms are present. Such cases are much more difficult to treat than those in which the secondary symptoms are anticipated. I never expect to see secondary symptoms now if I have seen the sore before we begin. I think that loss of time at the commencement is a very serious element, and that syphilis is very much more severe if it be allowed to, so to speak, breed in the system.
Professor Ogston.	(*a*)—Should mercury be given at once? Said, No. (*b*)—Mercury should be deferred. (*c*)—I believe that in the army they use the term "constitutional syphilis differently to what we do in civil practice. We call it constitutional, I think, in civil practice where the primaries show—that is, the characteristic local infiltration and glands. Assuming the question means that, then the mercury should be begun. Our practice is to begin at once when the primary manifestations show themselves locally and in the groin; I mean by that the characteristic induration and the characteristic shotty, infiltrated tender glands—if these are present I would commence the administration of mercury at once. I would not wait for the appearance of secondaries. I am aware that the converse has been advised, especially amongst the American surgeons, but it is not, I think, the practice in this country. It is not the practice I should recommend.

Question II.	If it is determined to give mercury to a patient in whom the character of the inoculation sore is doubtful, what doses should be given, and for how long should the treatment be continued should no further evidence of syphilis be forthcoming?

By whom.	Report of Evidence.
Lieut.-Col. P. M. Ellis, R.A.M.C.	Full doses until the primary sore has healed. If no induration of the sore, or gland enlargement has then appeared, the administration should be stopped, but the patient kept under observation for a period of two months from the date of the initial lesion, to see whether these appear, or other symptoms of constitutional infection manifest themselves.
Lieut.-Col. H. R. Whitehead, R.A.M.C.	The method I have usually adopted is, if I have a case which is doubtful, as a rule I should give mercury for six months; and after that I should be inclined to stop it for two or three weeks, and see if any secondaries appeared. If they did not appear, I should then consider other things, such as the man's general health, and so on, and see. If I thought it was probable he had syphilis I should be inclined to go on with the mercury, but would not if I thought it was very doubtful. But in any case where I had a sufficient amount of reason to commence treatment with mercury, I should continue it in small doses for six months, even if no further developments took place.
Lieut.-Col. G. H. Sylvester, R.A.M.C.	I should give the same doses as the doses in normal cases, that being two grains of the pil. hydrarg. twice a day. If there are no further evidences of syphilis, I would continue the dose in the ordinary way, as in a normal case, being guided by the effects of mercury on the system, for six weeks. Then should no further evidence be forthcoming I would stop it entirely, and not proceed to give any further remedy; I think I would wait and see if secondary symptoms came on.
Lieut.-Col. C. A. Webb, R.A.M.C.	I should not give mercury.
Major and Bt. Lieut.-Col. S. Hickson, R.A.M.C.	In regard to doubtful sores, it is best to treat them as if they were syphilitic sores; there are many sores about which one cannot make up one's mind, whether they are soft sores or infecting sores. In such doubtful cases I think it safer to continue treatment for six months, even if there is not further evidence of syphilis. It is very hard to pin one down to an exact statement. My general rule would be that if I had grave doubt about a sore I should give the patient six months' treatment and the same doses as in a case about which I had no doubt whatever.
Lieut.-Col. G. D. C. Mosse, R.A.M.C.	In doubtful cases I should like to give Hyd. cum creta one grain, quin. sulph. one grain, pulv. opii one-sixth of a grain, ext. gentian q. s. pil. 1, three or four times daily. I would continue it for three months afte r the first manifestation of the local disease—that is to say, until such time as secondary manifestations might be expected to appear. If at the end of this period there have been absolutely no manifestations, no sore throat or no rash, I should be inclined to stop treatment, keeping the patient under careful observation, if possible, or warn him to be on the look-out for sore throat or rash, and to return at once for treatment.
Mr. Arthur Shillitoe, F.R.C.S.	This does not apply to my method.
Mr. P. J. Freyer, M.D., M.Ch.	I would not give mercury at all.
Mr. Edgcombe, Venning, F.R.C.S.	I would not treat the patient with a doubtful sore at all with mercury, until a more definite symptom showed itself with the more constitutional symptoms.

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By whom.	Report of Evidence.
Mr. Malcolm Morris, F.R.C.S.E.	This opens up the question of what is the best way of getting mercury into the body. We start on the assumption that mercury is the antidote, and the very next question is, the best way to apply it? On the whole I would say the best way is by mercurial inunction. And that brings in the question of doses. I would give it by strong mineral baths and mercurial inunction, what it popularly known as the Aachen treatment, or the Wiesbaden treatment. If you cannot send the people to such places, you can carry out the treatment in this country. I have done it for a great number of years here. I have carried on this treatment by stimulating baths and inunctions, meaning by that, warm saline baths. This opens up another question, as to the particular form of syphilis which you are treating. Roughly speaking, they may be divided into two departments: those in which the nervous system is affected more especially, and those in which the skin and mucous membrane and glands are affected. Those are the two main groups. When the skin is affected, more especially in the working classes, who work with their skins rather than with their nervous systems, I would recommend treatment by stimulating baths and inunctions as a general routine treatment. This question is involved in the others as to what doses should be given. I would more especially administer that treatment for working people. I am opposed to giving minute doses of grey powder. That is one of the points. I believe those small doses are practically useless, and they are very largely passed out of the system by means of the bowels, and so on. But with a proper course of mercurial inunction there is no doubt about the antidote getting into the body, and with the minimum amount of injury to the body. Of course there are exceptions, which can be dealt with better in connection with the questions lower down in the paper. But what I have said is, in the main, what I would recommend as the routine treatment. I see you ask how long you should go on with it. I think the best way to do it is to give it in short courses with intervals between, very much in the way the Germans do; a course of 21 frictions and then a rest for a time, and then treating the human being according to the circumstances of his condition, giving iron if he is in a weakly, anæmic state, and so forth. But that comes later on. I do not think it is a particularly good thing to give small doses of grey powder over very many months; it has never produced any active real change, and it is doubtful how much mercury such people get. I think it is difficult to keep the amount taken in regular also. I look upon grey powder as the worst of all, because it is the most uncertain. I agree with what Dr. Bristowe wrote in the "Lancet," that the most unsatisfactory preparation of mercury to give is grey powder. I have had considerable experience of the Wiesbaden method of treatment in London by saline baths, given at a private institution, which is kept by a doctor, at the suggestion of Sir Frederick Treves, myself and others, nine years ago, perhaps. I have sent all the cases of the disease in the upper classes that came to me there; that is to say, those who did not want to go abroad, but who wanted to be treated at home privately. I have treated a large number of officers in the army, medical and otherwise, for syphilis there, and it has been most satisfactory; they have been very pleased with it. As to the expense, it is done here with the utmost refinement, suitable for the upper classes, therefore a little dear; but, like all these treatments, it is a little elastic; it is capable of being adapted to the pockets of the individuals. But, roughly speaking, it comes to about half a guinea a bath, and it takes one and a half hours to do. It is carried out with large glasses with a glass hammer, and the mercury is rubbed in until it practically disappears. It leaves no stain upon the clothes, and that is a great advantage with the upper classes. In the majority of cases a person having that treatment is able to go on with his work, but not all. We have had some very bad ones; in the ordinary way he would be able to go on with his work.
Mr. James Ernest Lane, F.R.C.S.	This question is practicalfy answered by a previous one. I cannot see that it is any good giving mercury to a patient with a doubtful sore. If the mercury is given, the effect may be to abort the syphilis, or to modify it so that no skin lesions show themselves, and the patient may be submitted to treatment for a long time who has not had syphilis. The advantages of being certain of the diagnosis are so great, that it is worth while withholding the mercury; also I am sure of this, that a considerable number of people are treated for syphilis who never had it, on account of the difficulty of diagnosis between an inflamed sore, or one which has had some irritating application and a syphilitic sore.
Lieut.-Col. R. L. Love, R.A.M.C.	Five minims of mercurial cream as follows:— Receipt—Hydrargyr. pur. (by weight) ℥j. Lanolin pur. ,, ℥ij. Olei Olivæ (by measure) ℥ij. Sterilised by heat. Triturated thoroughly in a mortar. Should be injected into the gluteal muscles once a week for four weeks The patient should then be inspected every week for three months. At the end of this time, if no signs of syphilis have appeared, either the patient may be considered cured, or he has never contracted the disease.

Question II.	If it is determined to give mercury to a patient in whom the character of the inoculation sore is doubtful, what doses should be given, and for how long should the treatment be continued should no further evidence of syphilis be forthcoming?

By whom.	Report of Evidence.
Lieut.-Col. F. J. Lambkin, R.A.M.C.	To such patients I would give a course of the usual intramuscular treatment, but stop it after four months, provided there have been no symptoms.
Dr. T. Colcott Fox.	I should not give mercury until I had made a firm diagnosis. If one is in doubt I think one is justified in waiting until secondary or other confirmatory symptoms appear, because it is a serious thing to condemn a man for several years to courses of mercury, and have this diagnosis, as it were, hanging round his neck when, after all, it is a matter of uncertainty. My experience is that it is a bad thing for the doctor and a bad thing for the patient, and you never know where you are.
Mr. Charles Gibbs, F.R.C.S.	I do not think I should be in doubt; of course you can easily tell. If you get a case early—and there is only difficulty in diagnosing a case when it is an early lesion—that is, if you get it in the first week or so, and give mercury for a week and produce absolutely no effect, we generally give them mercury and iodide of potassium for another week. And then if there is no effect at all, you would say to yourself it is not syphilis. And you can prove it, because you can see your patient five weeks after the onset of the sore, or seven or eight weeks after copulation, and you can strip the man and examine him twice a week for two or three weeks. Then at the end of a month strip him and look for your secondaries. A week or a fortnight of mercury will not have spoiled your secondaries altogether. People miss secondaries very often because they look for them in a casual sort of way. You must strip your man thoroughly from top to toe and hunt for them.
Mr. Arthur Ward, F.R.C.S.	I would certainly not give mercury if the inoculation sore was doubtful. The danger of giving mercury is that you are never aware whether the patient has syphilis or not, and, therefore, the only safeguard for the patient is to go straight through the course for the full time as if it were syphilis. I should like to say that if mercury is given, it should be given in full doses and continued for the full course. In these doubtful cases the practical way to make the diagnosis is to treat them all as soft non-infecting sores by local cleanliness and antiseptics of a non-mercurial sort, preferably powders. Soft sores are due to the growth of a microbe in the serous exudation coming from an abrasion or herpetic vesicle. If this exudation is persistently dried up with antiseptic powders the microbes cannot grow, and the lesions very soon heal. A powder of equal parts of oxide of zinc, boric acid, and starch is as good as any, quite as good as iodoform without any offensive odour. Supposing the doubtful sore is non-infecting, its complete healing in this way settles the case. If, however, there is also the syphilitic infection present, it will develop its characteristics at its normal period. The sore will either refuse to heal and become indurated; or, if it has healed, it will break down again and follow the usual course of the hard chancre. Normal induration of the sore will practically always show itself if waited for, so long as mercury is not being given, if the case is one of syphilis. The only exception is when the soft, or hard, or doubly infected sore is attacked by phagedaena. This is due to an extreme activity of the soft sore process, with retained discharges. If induration is present, it is rapidly dissolved by the spread of the phagedaena. Under these circumstances, in my judgment the same rule of local cleanliness and antiseptics should be followed, together with prolonged exposure of the sore in antiseptic baths. Eight hours a day, two hours at a time, followed by a rest, will almost invariably stop the destructive process. It is due to the virulent toxins which bathe the sore and poison the tissues to such a degree that they necrose. The exposure to the bath permits these toxins to diffuse into the water; the tissues are therefore relieved and sloughing stops. In the intervals of rest, the sore should be dusted with iodoform, and dressed with a very wet gauze dressing surrounded with macintosh. In this way the bath is more or less carried on. When the phagedaena has stopped, and the slough has come away, if syphilis has been present induration may occur. I have also seen it occur in the scar of such a sore. The glands will then indurate and the diagnosis can be then established. In exceptional cases the secondary rash must be waited for before diagnosis can be made. It may be safely laid down that as long as active phagedaena is present mercury is contra-indicated, even in a case of syphilis. There is no margin of tolerance in such a case, and the tendency to slough will be increased by the presence of the smallest dose of mercury.

Question II.	If it is determined to give mercury to a patient in whom the character of the inoculation sore is doubtful, what doses should be given, and for how long should the treatment be continued should no further evidence of syphilis be forthcoming?

By whom.	Report of Evidence.
Dr. W. Allen Jamieson.	I have practically answered.
Dr. H. Radcliffe Crocker.	I have practically answered.
Mr. David Wallace, C.M.G., F.R.C.S.E.	If mercury is given in a case in whom the character of the inoculation sore is doubtful, the treatment should be continued in the same way as if the patient had syphilis. I would give mercury for at least two years. I would not give mercury unless I believed the patient had syphilis. I might explain that further by saying I would only give it at my private practice if the patient made a definite point of having it done. I would demur to begin the use of mercury until my diagnosis was practically definite, because by doing so I think we mask the symptoms, and we are unable to say at any time whether the patient has had syphilis, and that means two years of treatment with mercury, which is a very fine thing, particularly if it is not a definite case of syphilis!
Sir Alfred Cooper.	I would not give mercury to a patient in whom the character of the inoculation sore is doubtful.
Dr. Arthur Whitfield.	I have never given mercury for a doubtful sore, and can therefore offer no opinion on the dose.
Mr. Jonathan Hutchinson, F.R.C.S., F.R.S., LL.D.	As a rule I do not give mercury when it is doubtful; but I think it is an error on the safe side to begin when there may be a little doubt, rather than to defer it. But sometimes I do begin when it is doubtful. The dose would be the same under all circumstances. My dose is always the same. There may be a little allowance for the condition of the patient; as to whether he is a robust man or a weak man; a big man or a little man. But it is always the same dose, and I always stipulate, or always recommend, that it be continued for one year. I always say to the patient at the beginning, "You must go on with this for one year." If the sore were sufficiently doubtful to induce me to begin, I should certainly then go on for a year.
Professor Ogston.	Has been practically answered. I might simply add as a reason, that if the inoculation sore is doubtful it turns out nine times out of ten to be not a constitutional sore, and if mercury were given it would puzzle the diagnosis, and in nine times out of ten it is useless, while it is quite in time if it is given when the characteristic manifestations present themselves.

Question III.	In cases of syphilis under observation from the commencement, how long should mercury be given to obtain the best results or to effect a cure?

By whom.	Report of Evidence.
Lieut.-Col. P. M. Ellis, R.A.M.C.	No definite time can be fixed, as this would depend upon the severity of the disease, as indicated by the character of the primary sore and the idiosyncrasy and general health of the patient. Speaking generally, it should be continued until all indications of the disease disappear, but it may of course be necessary to intermit it for a time. I would not be willing to state any general time, as a general rule; I always, myself, go so much by the character. Some of the cases are extremely mild, others very severe. I could not advise a definite time. If I had a mild case, if the question were asked, to state how long the patient should remain under anti-syphilitic treatment, I would continue the treatment as long as there were any symptoms and consequences present. I would have the mercury continued until then, and if the symptoms vanish in three or four months' time, as they often do, I would wait for three months, and at the end of three months if no further symptoms showed themselves I should not give any further treatment. I would keep the patient under mercury after the symptoms disappeared for a time, the length of which would depend on the disease, on how severe it was. I should judge by the severity: in a very mild case three months. I cannot lay down a general rule; I should judge patient by patient. I think the character of the initial lesion gives an indication of what the resulting constitutional condition is going to be. It indicates whether it is going to be severe or mild, I think, sooner or later, by the amount of induration present, or by the infection of the glands. The greater the induration, the greater the liability to constitutional symptoms. That is my experience, I think. Of course the induration may be slow in appearing, but when it does appear I think the character of it provides an indication. I think there is some relation between the amount of induration and the severity of the constitutional symptoms which follow.
Lieut.-Col. H. R. Whitehead, R.A.M.C.	I should say, as in the previous question, not less than six months. If the man had undoubted syphilis, I should be more inclined to continue treatment for a year, I think. I do not think I should go for two years. I think a year is sufficient.
Lieut.-Col. G. H. Sylvester, R.A.M.C.	One year.
Lieut.-Col. C. A. Webb, R.A.M.C.	Mercury should be given for two years.
Major and Bt. Lieut.-Col. S. Hickson, R.A.M.C.	I should continue the treatment of syphilis for at least a year. There are many people who say two years, but it depends upon the case. My general rule would be one year.
Lieut.-Col. G. D. C. Mosse, R.A.M.C.	In cases of syphilis under observation from the commencement, mercury should be given for at least one year, if anything for longer, with occasional interruptions; in the majority of cases I should like to keep on the mercury for eighteen months.
Mr. Arthur Shillitoe, F.R.C.S.	The rule I observe is that mercury should be given for a minimum of 18 months or two years. I think this was the rule my father observed; he was one of the introducers of that rule. I think once one has determined that a case is syphilitic, one must go on for a minimum of 18 months. I prefer to go on for two years. Constitutional symptoms, I think, need not necessarily follow, but even in these cases I should keep up my mercury treatment. When I have found the maximum dose that suits the individual case, I continue with that with only such interruption as would be determined by the presence of other lesions. I should interrupt the administration of mercury if I considered that lesions are aggravated by giving that drug, otherwise I should give for two years the largest amount which the patient will take.
Mr. P. J. Freyer, M.D., M.Ch.	I should give mercury for about two years. I would keep a typical case under treatment for about two years, assuming the symptoms disappeared at the end of that time.

Question III.	In cases of syphilis under observation from the commencement, how long should mercury be given to obtain the best results or to effect a cure?
By whom.	**Report of Evidence.**
Mr. Edgcombe Venning, F.R.C.S.	In cases of syphilis under observation from the commencement I think mercury should be given for three years. My scheme of treatment for some years now has been to use the sozoiodolate of mercury, and to use it by injecting the patient once a week, intramuscularly. I give the man 5 m. doses of sozoiodolate of mercury, which contains one-eighth grain. I have been very satisfied with this treatment. It is a cleanly treatment; the patient is able to go about his occupation; he has no trouble about it for a whole week, and if he is impressed with the idea that it will do him good, he goes on with it. I lay it down to every patient that he must either make up his mind to go through with the treatment thoroughly for three years, or else to say so at once, and give it up entirely; for a partial course is worse than useless. I give it once a week for a year, once a fortnight for the second year, and once a month for the third year. And so far as I have gone, my results have been very satisfactory indeed.
Mr. Malcolm Morris, F.R.C.S.E.	Mercury should be given them, off and on, for a period of two years approximately. As to when a person is fit to marry, which is the best test, or one of the best tests, I should say two years' treatment, and a year after the disappearance of the last recognisable symptom.
Mr. James Ernest Lane, F.R.C.S.	In cases of syphilis, under observation from the commencement, I should say two years was the minimum of treatment. It would require occasional intermissions; but two years as a minimum; three years preferably.
Lieut.-Col. R. L. Love, R.A.M.C.	Intra-muscular injections of mercury as above should be given once a week until all signs of syphilis have disappeared, usually from five to ten weeks, then once a month for three months, when they may be discontinued if there is no sign of syphilis. The patient should be inspected regularly once a month for 12 months after the disease was contracted, when, if no signs of disease have appeared in the meantime, he may be considered cured.
Lieut.-Col. F. J. Lambkin.	My rule is that after a patient has been under continued treatment for eight months, to stop it then, provided that during the three previous months there have been no fresh signs of the disease; if there have been, treatment is continued for another three months, and so on. I have seen no reason to depart from this rule.
Dr. Colcott Fox.	My opinion is, that as syphilis is a chronic infection, the treatment should be a prolonged one; and my own personal custom is to advise that the treatment should be carried out, off and on, over certainly three years. I am aware, of course, that this is often difficult to carry out; but if you get the treatment even for two years, I think it is of value; intermittent treatment, with gradually lengthening periods. I think perhaps the five years recommended by Fournier is very difficult except in certain cases in private practice. Neisser advises four years. As a matter of fact, it is, from my own experience, excessively difficult to carry out. Also the treatment has rather a depressing effect on the patient when you treat him for such long periods as that. But I am a strenuous advocate for, if possible, a three years' treatment, because we know now that many of the most dangerous effects of syphilis occur in the first three years. For instance, the treatment of an enormous number of syphilitic lesions of the brain and cord falls in the first year, or at all events in the first three years. It has been well established by statistics that that is the case. There are the tertiary lesions generally which affect patients in the first four years. After that time they get less.
Mr. Charles Gibbs. F.R.C.S.	An absolute minimum of two years. Three is wisest, because I have seen people who have left the Lock Hospital after a two years' treatment have recurrences fairly frequently. Three years is what I always give my private patients.
Mr. Arthur Ward, F.R.C.S.	I think mercury should be given for two years. In my experience that is sufficient as a general rule.

Question III.	In cases of syphilis under observation from the commencement, how long should mercury be given to obtain the best results or to effect a cure?
By whom.	**Report of Evidence.**
Mr. Allen Jamieson.	I think mercury should be given for three years from the primary infection if possible.
Dr. H. Radcliffe Crocker.	I always lay it down that a patient should be under medical treatment for two years. He may not be taking physic the whole time actually, but he should be under medical supervision the whole of that time, if he wishes to have a good chance of escaping tertiary troubles. I would lay down at least two years as the average limit. Some cases I would keep under longer. When I see a patient in private, and in fact in hospital too, I say you must make up your mind for two years' medical treatment, but by no means necessarily taking medicine all the time.
Mr. David Wallace, C.M.G., F.R.C.S.E.	Mercury should be given for two years from the last manifestation; possibly it may be longer, therefore, than two years. But if any other manifestations do not appear during treatment, then two years after the last manifestation or lesion of syphilis, that might involve the continuance of mercury for over four or five years, except in exceptional cases where mercury proved to be not only inefficacious but deleterious, as I think it sometimes is.
Sir Alfred Cooper.	Mercury should be given for not less than two years—two years from the beginning of the treatment.
Mr. Arthur Whitfield.	As far as I am able to keep my patients under control I like to give mercury from the commencement of the treatment for three years. I give them six months' mercury, then a month's holiday, then three months' mercury and a month's holiday, then another three months' mercury and another month's holiday. The same for the second year. I think the holiday is beneficial; it seems to enable them to take the mercury with less damage to the health, and I believe it renders the mercury more efficacious, therefore tending to prevent relapse. I always begin with small doses and increase these until I either reach the tolerance of the patient or find the disease beginning to yield. Nearly always the symptoms begin to die away before the patient shows signs of mercurialisation. As soon as symptoms have disappeared I drop the mercury down a little (Question 4), but in any case if the patient is free from symptoms I like to give him the month's holiday at the end of six months, and then go on again whether he has symptoms or not, but I do not give the patient as much mercury as he can stand.
Mr. Jonathan Hutchinson, F.R.C.S., F.R.S., LL.D.	I think mercury should be given for one year; and in many cases we go on longer. In cases with which the mercury agrees well I say it is safe to go on for six months longer, or for another year if you like; it will be better to do so. A year is the shortest limit I would give the treatment, and if it is given for two years perhaps so much the better.
Professor Ogston.	So far as I believe the general practice is to get the disease entirely out of the system. It is necessarily a temporary disease, and if one can find any sign by which we know that it has gone, then is the time to stop the mercury, or at least to begin to discontinue it. And those signs are the glands. They are longest infiltrated. The disease remains there; and the patient, especially an intelligent patient, is perfectly conscious of the condition, either in the groins or in the neck, by the existence of tenderness, and the surgeon knows simultaneously by the infiltration in those glands. If the mercury be continued until those glands, or their enlargement, have disappeared, it is an almost unknown thing in my experience for the tertiaries, as we call them, to ever show themselves. That is my answer to the question; that by such characters as the infiltrated tender glands, of which the patient is conscious, and which the surgeon can detect, you have a test as to when the syphilis is gone. By this I would judge rather than by mentioning any period of time. It varies, of course, in different individuals, just as many other similar chronic diseases do. You cannot give any exact date for any individual; only a general date for the whole. As a general statement, I think probably a year to eighteen months.

QUESTION IV.

When the obvious signs of syphilis have disappeared under treatment, what proportion of the previous doses of mercury should be considered sufficient to maintain the anti-syphilitic effect?

Are there any conditions, *e.g.*, the condition of the blood and the weight of the patient, which serve as guides for interrupting or continuing the mercurial treatment?

By whom.	Report of Evidence.
Lieut.-Col. P. M. ELLIS, R.A.M.C.	A third, or even a sixth, but this, again, would depend upon the severity of the previous symptoms. I should be guided by these and by the general health of the patient. Every case must be judged on its own merits. The amount might be one-third or even one-sixth, but I cannot lay down a definite quantity for all cases. About the second part of No. 4.: I do not think there are any special conditions. Every case must be judged on its own merits. I think I could not lay down any particular condition. I judge by the general condition of the patient. I have not made any observations on my own account as to the condition of the blood, so far as its content of hæmoglobin is concerned, as a guide in the continuance of the treatment of mercury. As to the rise and fall in the weight of the patient as an indication, I have weighed them, but I do not attach much importance to weight. I judge more by my own general observation. I have made no continuous records as to this.
Lieut.-Col. H. R. WHITEHEAD, R.A.M.C.	I think every case should be treated on its merits, and that if you have made up your mind that a man has syphilis it is important that in that year he should have as much mercury as he can bear without destroying his health. Quite apart from the severity of the attack, I have in my mind that a certain amount of mercury is necessary to a cure, and that amount I would give him. But I should be inclined to diminish the amount of mercury if he had bad health. It is important to get as much mercury as possible into the man. As a practical matter, I give one grain of hydrarg. cum creta three or four times a day, and continue that throughout the year, with short intervals, if no symptoms occur to stop it. As indications for stopping it. If a man gets markedly anæmic I drop the mercury for a little time. If he is still anæmic when I commence again, I give him iron with mercury. I should be inclined to modify the treatment if the man were getting very markedly anæmic. As to investigating the quantity of hæmoglobin in the blood as a guide to treatment, as has been recommended by certain foreign observers, we began counting the red blood corpuscles at Woolwich, when Captain Lawson was there, and I asked him to make certain investigations on those lines. We were beginning it, but we had not got very far with it when he was removed. It was not found to be of any advantage. I judge clinically, by means of the anæmia, and by the weight of the patient. I consider the weight a most important factor in syphilis.
Lieut.-Col. G. H. SYLVESTER, R.A.M.C.	I do not think you can lay down any definite rule about that. I do not think any scheme can be laid down. You must treat the individual patient, I think. I have not experience of either of those conditions scientifically taken, but one has gone by the appearance of the patient, and the way in which he is standing the treatment. The points in the appearance of the patient I would regard as important are, whether his digestion is good, and whether he is getting thinner. It would mean the ordinary signs of mercurial poisoning, so far as the patient was concerned, with anæmia and loss of weight.
Lieut.-Col. C. A. WEBB, R.A.M.C.	I should give injections. The proportions I found most satisfactory in Egypt were a cream which consisted of crude mercury one drachm, lanoline two drachms, olive oil two drachms, which was practically one in five. Five m. ought to be injected once a fortnight for the first three months; five m. doses should be given for the rest of the two years, one dose every three weeks. This treatment I should continue to the end of two years. In giving the mercury I would stop at a slight sponginess of the gums; you may touch the gums very slightly; the body weight I consider should be carefully taken, and if a man is losing weight the mercury should be very much reduced, if not stopped for the time being. I have no experience of blood examinations in the disease. Albumen in the urine would be an indication for stopping mercury.
Major and Bt. Lieut.-Col. S. HICKSON, R.A.M.C.	When obvious signs of syphilis have disappeared under treatment, I do not see any reason why one should diminish the dose if one only gives mild doses of mercury. I would go on practically for a year, provided I was certain it was syphilis. I might give an interval now and then. Guides for interrupting or continuing the mercurial treatment: The weight would serve as a guide. With diminishing weight I would judge that the mercury did not agree with the patient, and I would change it for the iodides, giving him an interval from the mercurial treatment. We always take weights regularly. We have, I should think, 300 venereal cases at Woolwich, and the weights were taken once a week. In a great measure I should be guided by the weight. I have no personal experience in testing the blood in syphilis.

When the obvious signs of syphilis have disappeared under treatment, what proportion of the previous doses of mercury should be considered sufficient to maintain the anti-syphilitic effect?

QUESTION IV. Are there any conditions, *e.g.*, the condition of the blood and the weight of the patient, which serve as guides for interrupting or continuing the mercurial treatment?

By whom.	Report of Evidence.
Lieut.-Col. C. G. D. MOSSE, R.A.M.C.	Had I been using the hyd. c. creta pill noted under 2, I should be inclined to diminish my dose after the first three months; I should diminish the dose to one-third or one-quarter of that previously given, *i.e.*, I should give one pill daily instead of three or four previously given, and let my patient go on with that dose up to the end or one year. After the expiration of one year, I should give one pill a week up to eighteen months, with possible interruptions, should there be special reasons for such interruptions. I think the anti-syphilitic effect can be obtained by giving one-third or one-quarter of the previous dosage, after three or four months. The above would apply to an average case, but treatment must often be varied according to the severity or otherwise of cases. If a patient's general health became bad, if he became anæmic, if there were evidences of kidney trouble (albuminuria) or steady loss of weight—these would be indications for an interruption of mercurial administration. Mercury given judiciously, as a rule, improves the general health and increases the weight. Where general improvement and increase of weight was evident, I have not taken weights of patients regularly. Patients were weighed when it was evident that they were not doing well; such patients I would weigh fortnightly.
Mr. ARTHUR SHILLITOE, L.R.C.S.	The first portion of the question was answered along with III. As regards the second part, I have not done any work in carrying out these tests. I generally keep a record of the weights of patients. I think the weight is perhaps as important a question as any. If the patient were increasing in weight I might push the mercury, but if he were diminishing in weight I think some modification would be necessary.
Mr. P. J. FREYER, M.D., M.Ch.	When obvious signs have disappeared under treatment I would continue the full doses of mercury for six months, whatever the symptoms were, even if there were no secondary symptoms. I would give it first till the gums were just touched; then slacken off, and keep up the effects of it, so that the gums should not be touched. I would go on with the full dose, whatever that dose might be, for about six months. I would test the capacity of the patient by going on till the gums were touched, because some people will bear a much larger dose than others. For the next six months I would give two-thirds of the doses which I found suited the patient; and for about a year I would give, say, half for the first six months, and then one-third. As an example: Suppose we adopt the ordinary commonplace method of giving hydrarg. cum creta in one-grain doses, combined with a grain of Dover's powder, giving six of these at the commencement, two or three times daily, or one every four hours. Then I go on with that, supposing the patient is not salivated, but brought on to the verge of salivation, for six months. And then for the next six months I would give four of these; then I would give three; and then gradually I would come down to one of these twice daily for the last six months, and complete the two years. I do not know of any indication as to the condition of blood and the weight of the patient which would serve as guides for interrupting or continuing the mercurial treatment.
Mr. EDGECOMBE VENNING, F.R.C.S.	When the obvious signs of syphilis have disappeared, I keep them, now that I inject them, on the same dose all through for three years. There are certain conditions which serve as guides for interrupting or continuing the mercurial treatment, that is with regard to the weight. Mr. Cutler, who was surgeon at St. George's Hospital, and I was his house surgeon, had a large syphilitic practice, as large as any man in London at that time, and he always kept every patient weighed who was taking mercury, and directly they began to lose weight he stopped the mercury, and gave them a purge, and they immediately began to gain weight. When I was a surgeon in the Life Guards, which I was for 15 years, I carried it out to a considerable extent, and it was the best guide I could have as to whether the mercury was suiting the patient or not. I kept a continuous record of the weight.

Question IV.	When the obvious signs of syphilis have disappeared under treatment, what proportion of the previous doses of mercury should be considered sufficient to maintain the anti-syphilitic effect? Are there any conditions, *e.g.*, the condition of the blood and the weight of the patient, which serve as guides for interrupting or continuing the mercurial treatment?

By whom.	Report of Evidence.
Mr. Malcolm Morris, F.R.C.S.E.	When the obvious signs of syphilis have disappeared under treatment, I would diminish the mercury by making the intervals longer; that is a definite point. And very often I would use half doses. Instead of a drachm being rubbed in I would use half a drachm. Another method is not to do it so frequently; not to use it every day; use it every other day or every second day, thus extending it over a longer time. That is rather a question of the person's physical health. I pay the greatest possible attention to the person's physical health. The old authors use to teach that the lower the vitality was and the worse the health the quicker the antidote had effect. The modern teaching, on the other hand, is, that the better the person's health the better the chance of eliminating the disease. The elder Boeck, of Christiania, of former days, always taught that the more emaciated the patient was, the quicker he got rid of the syphilis. Now-a-days we think the opposite. I would supplement it by other treatment as well. I do not think it bars the other treatment. There is a pill which is very much in disuse now, but which I use a great deal, and that is Plummer's pill. If a person cannot have baths, that is, supposing he is going to travel, I think Plummer's pill is a useful alternative to keep up the mild effect of the mercury. I would prefer this to hydrarg. cum creta, and rather than do nothing I would give 5 grs. of Plummer's pill divided into two parts, i.e., 2½ grs. night and morning. It hardly ever salivates. As to guides for interrupting or continuing the mercurial treatment, one of the tests I was taught when I was young and was at the Lock Hospital as a resident there, 34 years ago, was to watch very carefully the condition of the glands. I have always paid very special attention to the condition of the glands, but there are certain cases in which syphilitic glands never go away, so that is not an absolutely trustworthy test. But, roughly speaking, it helps as showing how much more treatment is required. It is of use, but it is not an infallible guide. I should say the condition of health of the patient and the condition of his glands, and any signs there may be on mucous membrane or skin, would be a better guide than any condition, so far as I know, of the blood. I should note the weight for what it is worth. If the person is emaciated the course should be modified, but under the Wiesbaden treatment they remarkably improve in weight. If he ran down in weight I should take it as an indication to stop the mercury for a time.
Mr. James Ernest Lane, F.R.C.S.	My general scheme of treatment would be as follows:—I should put the patient upon mercury directly his syphilides or sore throat appeared, and keep him on for six months if there are no signs of salivation, or if the gums were perfectly tolerant of it. Six months would be a good primary course, and then he should have a month or six weeks off, and then another three to six months' treatment, according to the severity of the case, and continued for two years, at least. Of course sometimes one would have to intermit the treatment considerably, for three or six months, or longer than that, according to the way in which the patient stood the mercury. As a general rule that is the plan I should adopt. As guides for interrupting or continuing the mercurial treatment I lay a great deal of stress on the weight of the patient being carefully recorded, and I usually find that the weight goes down coincidentally with the mercury disagreeing with him. The weight is the principal factor in judging of the general condition of the patient. I cannot say I have done any of the modern blood examinations for syphilis. Of course the blood is profoundly modified, but to examine the blood of a large number of patients would be a matter of some difficulty and would take an enormous amount of time. I cannot say I have done any experiments to corroborate or otherwise the experiments of Justus. I think they are considered to be fallacious. Nothing has happened in connection with more recent experiments to change my opinion about that.
Lieut.-Col. R. L. Love, R.A.M.C.	Five minims of mercurial cream should be injected once a month for three months. Should the patient's general health deteriorate during treatment, as indicated by loss of weight, anæmia, increased cachexia, the treatment by mercury should be interrupted and iodide with tonics tried instead. This rarely occurs. I have come across a few cases of syphilis, however, in such a low state of vitality, that I was chary of commencing with the usual dose. In these I began with a smaller dose, two to three minims of mercurial cream, and carefully watched the result, which in the majority of cases was favourable and the dose was increased to five minims. In a few the treatment was unfavourable and had to be interrupted, and the iodide and tonics given until the health improved, when mercury was resumed if necessary.
Lieut.-Col. F. J. Lambkin, R.A.M.C.	In treating syphilis by the intramuscular method I advise just half the dose as soon as the patient has been discharged from hospital. Body weight is the chief indicator to watch for to guide as to interrupting or continuing the mercurial treatment.

Question IV. When the obvious signs of syphilis have disappeared under treatment, what proportion of the previous doses of mercury should be considered sufficient to maintain the anti-syphilitic effect?

Are there any conditions, *e.g.*, the condition of the blood and the weight of the patient, which serve as guides for interrupting or continuing the mercurial treatment?

By whom.	Report of Evidence.
Dr. Colcott Fox.	My answer to that would be, that I should maintain as complete a mercurialisation of the patient as he will stand, provided that he keeps in good health and is not suffering from any poisonous effects of the mercury. As long as I was giving mercury I should keep him, as far as possible, saturated with it, throughout the three years of treatment, of course with intervals. With regard to the condition of the blood, of course if a patient got more anæmic, and I suspected the deleterious action of mercury, that would be an obvious reason for discontinuing the drug. I do not think the blood tests which have been advocated in recent years are very important. It appears that they are not of very practical value, and they are of considerable delicacy, and require to be carefully carried out. I doubt if the blood examination is of any use, such as that stated by Justus. But with regard to the weight, obviously if the patient while under mercury was losing weight I should regard it from a serious point of view; I should take careful note of it from the continued administration of mercury point of view. But the practical effect of taking large doses of mercury on many stout people is to cause them to lose a lot of their fat, and with very great advantage to them. In them the loss of weight is not an indication to stop the mercury; they are losing their fat, but they become more robust with it. In continuing mercurial treatment it would be on the safe side to keep a record of the weight.
Mr. Charles Gibbs, F.R.C.S.	To maintain the anti-syphilitic effect I should give the full dose; you want to keep your man on the maximum quantity; you want to give him as much mercury as he can bear. I do not believe in tailing it off—no, not for a single day. They generally increase in weight, and do extremely well if the ordinary precautions are taken. I would let him carry on every day right through, and if a patient misses three weeks during the time I make him make it up at the end; or if he misses a few days. The weight of the patient, I think, is a most important guide for interrupting or continuing the mercurial treatment. If I found my patient getting anæmic I would reduce the mercury and knock off my treatment, perhaps. If he is losing weight that is the most important of all. In the Lock Hospital I keep a record of the weight of the patient, and the really bad cases are weighed every week, and of course those who are in-patients are only bad cases. All in-patient syphilitics are weighed once a week. The urine, of course, is important, and should be tested once a month at least. You often get traces of albumen in the urine if you press the mercury too far. As a matter of fact, in your injection treatment you get one per cent. of nephritis. You will find that, if you take care of your urines; and it would be continued so long as the mercury is kept up. It comes on during the course of the treatment.
Mr. Arthur Ward, F.R.C.S.	I do not think you can state any definite proportion of mercury to be given to maintain the anti-syphilitic effect. I think the largest amount of mercury that the patient can take without being depressed in vitality is the right thing. I want the patient to take as much mercury during the two years' treatment as he can stand, up to toleration point. My experience has been to go right along with the course without any intermission at all, if possible. If the patient loses weight and no other cause for it can be found, then, in my opinion, that is a sign of over-dosing, and then the dose should be reduced. As long as the weight remains constant the patient cannot be over-dosed. I have not had experience of testing the blood. I have read of experiments carried on at Buda-Pesth by Justus.
Dr. W. Allan Jamieson.	When you have treated a case from the first appearance of constitutional symptoms you find out the idiosyncrasy of the patient, and you find out what dose of mercury you can safely and with advantage give to him, and with due effect on the syphilis. That would regulate the dose you would prescribe during the intermittent treatment which would follow. I would advocate intermittent treatment; not a treatment directed against the appearance of symptoms, but intermittent even apart from symptoms. A continuous one up to the disappearance of all symptoms, but not during the whole of the three years. From that time I would advise intermittent treatment of short periods, perhaps three and four of these during the last two years of treatment, or during the last eighteen months of the three years, as a precautionary measure to a large extent, because my experience of mercury is, that, if given properly, the patient improves under it. I have never seen a case where mercury properly given did harm, in all my experience. I do not agree with the former teaching of the Edinburgh school, of the mischief that mercury is capable of producing. Absolutely I am opposed to the one or two men who still in Edinburgh maintain these views—absolutely opposed to them. My experience in all respects

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Dr. W. Allan Jamieson—*cont.*	has been to convince me that mercury, properly administered, is the remedy which has a really powerful effect in neutralising—I will not go to the length of saying curing—the injurious effects of syphilis. I have never seen mercury do harm when given in proper doses, and therefore I have never had any occasion to interrupt the treatment. As to continuing it, of course one would certainly go on with it. As regards the effect upon syphilis, there have been cases in which it has not done all one would have liked, but there have never been cases, in my experience, where harm has been done by it when properly administered. I would advocate recording the weight of the patient. Most of the cases of the disease I have seen have been out-patients, and I judge of their general state of nutrition, and by examining the tongue and the pulse, and noting the general aspect of the patient, and what they tell me about the state of their appetite. I have not troubled much about their weight, or any examinations of the blood of a physical character, or of a microscopic character. I do not think any experiments of the kind have been done in Edinburgh. I have never done anything of the sort myself.
Dr. H. Radcliffe Crocker.	In order to maintain the anti-syphilitic effect my own treatment is very mild doses of mercury, and I am guided by the effect upon the patient. I do not leave off mercury because the patient has no symptoms. The line of treatment I take is as follows: I start off with three grains of grey powder three times a day for six weeks; then ten days of iodide of potassium in 5-grain doses. I give this, at the end of six weeks, not with the idea of influencing the syphilis, but to bring back the insoluble albuminate of mercury into the tissues. Then I start again with grey powder. I do not give much iodide of potassium. My idea is that it is not curative of the syphilis, but it is given simply to clear out the insoluble mercury in the tissues. Then I give another six weeks' mercury, followed again by ten days washing out. And so I go on generally for six months, unless there is some other indication. If, however, at the end of four months, say, the patient had shown no signs for a considerable time, for a couple of months, for instance, I might give it him only twice a day instead of three times. At the end of six months I often give the patient a holiday of perhaps a month, to see how he gets on, being ready to resume the medicine if the symptoms recommence, then I again give six weeks of mercury, then ten days iodide, and so on into the second year. In the second year I give him more frequent holidays, and very often diminish the dose, perhaps to two grains, or even one grain three times a day. The effect is easily kept up by small doses of mercury. In all these cases of course I am very careful not to salivate the patients if I can help it. If there is salivation I clear out all the mercury and give him a rest, and then I start again more cautiously. I do not give mercury and iodide of potassium together; in the secondary stage I think that is a mistake, although it is sometimes useful to remove troublesome lesions. I do not think it cures the disease at all; it takes the mercury out of the system too quickly. My belief is that the element of time is the most important thing; you require to spread the mercurialisation over a long period; and though you cannot kill the presumed organism of syphilis right off, you can make the soil unsuitable for its existence, and the process gradually attenuates the vitality of the bacillus, and so it gives a chance of dying out. I do not believe in giving the patient during the whole two years of the treatment the largest doses of mercury he can stand without obvious evil effects. I do not believe there is any advantage in it; in fact I think there are very great disadvantages. I prefer moderate doses spread over a long time. I have felt very strongly on that point for a long time. As to the condition of the blood as a guide in the treatment. I have not worked very much with Justus's tests; but I am aware of them, of course, and I have read that there are sources of fallacy about them. I cannot speak with any authority on it from personal experience. I have very few in-patients in the hospital under treatment, which of course is the only way one could follow out that line of investigation. But according to the evidence I have read about it I should not think it sufficiently reliable to make it of any real practical value. It is of great scientific interest; but I am now speaking from a clinical point of view, as far as I can, and from the evidence I know of it, it is not sufficiently reliable. I think there is advantage in keeping records of the weights of patients. I certainly think it would be advisable to do so in the case of in-patients who are under mercurial treatment. You can lay down no absolute rules in regard to all cases of syphilis. They must be adapted to individual cases. It is very easy to remove the symptoms but by no means easy to cure the disease. It wants judgment and experience, and I attach great importance to putting the patient into the best hygienic conditions and spreading the treatment over a long period. Alcoholism, and of course tuberculosis, are very bad influences; we cannot remove the one, but we sometimes can remove the other.

Question IV.

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By whom.	Report of Evidence.
Mr. David Wallace, C.M.G., F.R.C.S.E.	I think it is a wholly variable dose, depending on individual idiosyncrasy. I do not think a definite rule can be laid down, but in ordinary practice I vary it, gradually increasing the doses and then gradually diminishing the dose. I begin with half a grain of grey powder, and if it causes no gastro-intestinal disturbance, if it does not salivate the patient, at the end of a week I increase it to two pills of half a grain each three times a day. And if that causes no gastro-intestinal disturbance and the patient is doing all right, I increase it in the next week to three pills three times a day for a week. Then I diminish the dose the following week, that is to say the fourth week, to two pills three times a day; next week one pill. Then I begin to go up again, varying it in that way as a routine at first. If I observe no manifestations of syphilis, I then go on with one pill of half a grain of hydrarg. cum creta three times a day. Of course I ought to say that the patient is debarred from smoking and that sort of thing, and his general health attended to. I do not think that the patient should be given as much mercury as he can bear; I do not think that is necessary. I do not agree with those who say that the patient may be given as much mercury as you can get into him. I have not found it necessary to have intermittent courses of mercury, I do not think such a procedure is advantageous. I prefer going on with the mild courses of mercury, in the way I have indicated, for the whole period of two years from the last manifestation of the disease. I think the general condition of the patient, which, if poor, is very often indicated by loss of weight distinctly influences the treatment. I should keep a careful note of the weight. I have only had, to a slight extent, opportunity for blood observations; these corroborated the test which had been advocated by certain observers, to the extent of showing that while the patient improved, the red blood corpuscles increased in number and improved in shape. My personal observations have not been more than that, but I think if you have the number of red corpuscles increasing and the corpuscle improving in shape, such a condition indicates the continuance of the drug, not otherwise.
Sir Alfred Cooper.	I should give the mercury more actively during the first year of treatment than I would the second. Of course one would naturally see how the patient was in every way. As regards the weight, I should not pay much attention to that, because the weight generally goes down from the effect of syphilis, from the effect of the fever which accompanies it, as a rule. But the weight goes up when the treatment is succeeding; it is one of the first symptoms of improvement. At the Lock Hospital, when I was in charge of hospital wards and used to keep a record of weights of patients to guide us in our treatment, I cannot say we paid much attention to that as a guide to treatment. The general condition of the patient rather than any individual sign would be what would guide me.
Dr. Arthur Whitfield.	In order to maintain the mercurial effect after the obvious signs have disappeared I generally drop the mercury to about half the amount, but I am not in the habit of using large doses at any time unless the symptoms seem to demand it. In those cases where I have been forced to give large doses in order to get control of the symptoms, I would drop the mercury to less than half as soon as the desired effect is obtained. In such a case I should give the usual holiday at the end of the first six months if there were no symptoms, but I should delay the holiday if symptoms were still present. I have done several "Justus" tests, but they are useful rather as diagnostic tests, and therefore do not come under this heading. Of course patients under treatment may get mercurial anæmia, which is a bad thing, but I do not think it is usually necessary to examine the blood to detect it. You can see from the accompanying symptoms that the patient is becoming mercurialised, and I do not know that a blood examination would enable you to distinguish the anæmia of syphilis from that of mercury provided that the patient is already taking mercury. As regards weight, it is very difficult to decide whether a loss is due to syphilis or mercury; but one must be guided by the general aspect of the case. As regards the Justus tests, I have examined 25 cases of suspected and undoubted cases, and a few cases of undoubtedly non-syphilitic disease as controls. If I may deal with the syphilitic cases first, they have been positive in every case in which constitutional symptoms have been or have been said to have been present, with the exception of one which was doubtful and in which I lost the patient too early to become positive, and one undoubted case of syphilis in the eruptive stage. I have always given the mercury for doing the test either in the form of the inunction or injection, as this is a point on which Justus laid stress. Formerly I gave it as inunction, but since using injection for treatment I use it for diagnosis, as it is less trouble to the patient, and one is more certain that it is efficiently carried out. I have never examined the cases of severe malaria in which Professor Wright told me he obtained a positive reaction, as I have not had the opportunity, but Dr. Otto Grunbaum examined some cases of pernicious anæmia by this test for me and obtained negative results. The

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By whom.	Report of Evidence.
Dr. Arthur Whitfield—*cont.*	test is, therefore, in my opinion, of great value though not infallible. There has been no great difficulty in carrying it out. What I have always done is to give the mercury on one day after estimating the hæmoglobin and to estimate the hæmoglobin on the following day again. I have generally obtained a fall of 10 per cent., but in one case I obtained as great a fall as 25 per cent.
Mr. Jonathan Hutchinson, F.R.C.S., F.R.S., LL.D.	Unless the mercury disagrees, I go on with the same dose; usually that is three, four, five, or even six times a day, if the early symptoms have been severe. I reduce it when the symptoms disappear, two or three times a day. But during the year it is always a dose three times a day, never less than that. I give quite continuously unless I am compelled to interrupt the course. I make a great point of the course being continuous, no intermission. I would give enough mercury to control the disease, certainly not as much as the patient can take, because then you might give him a great deal more than he ought to have in most cases. I do not agree with the opinion that the amount of mercury given should be as much as the patient can possibly stand in the time, unless the symptoms require it. If there were symptoms requiring it, I should give him as much as ever he could bear. Very, very seldom are there any conditions; for instance, the condition of the blood and the weight of the patient, which serve as guides for interrupting or continuing the mercurial treatment; I may say almost never. I do not know of any case; I do not remember one. Perhaps there are a few exceptions, but very few. Patients always lose weight at first under the treatment, and then they begin to gain it again, and they almost always get into very good condition afterwards, after the first two or three months. If the patient has lost weight quinine is my favourite remedy in such cases; to combine quinine with the mercury, and give a more liberal diet. If there were no diarrhœa, nor any ptyalism, I should not stop the mercury. I do not know that I have ever stopped mercury on account of loss of weight. And I have not heard of such a case. If I begin by giving mercury three times a day I never increase if the symptoms vanish under it. I only increase if the symptoms resist the treatment. I almost always begin by giving the medicine three times a day. If the patient is a strong, stout man, an able-bodied man, I give it four times a day from the beginning, but three times a day is my usual standard to begin with; four or five, or even six times a day is necessary. Five times a day if the symptoms did not yield quickly. The induration of the chancre should begin to diminish in a week. If it did not diminish in that time I should increase the mercury, Dover's powder being combined with the grey powder. The great defect, so far as I can judge, in general practice, is in not giving enough mercury in the treatment of syphilis, and in interrupting the courses, being willing to interrupt the administration of the mercury on too slight grounds. And in my own practice in a few cases what I have regarded as an indication not to go on with it because it was injuring the patient was really a sign that it was necessary to give more of it. And that applies especially to what is called malignant syphilis. I have seen cases where the remedies have been set aside because it was thought the patient was losing ground under the treatment, that the mercury was depressing, whereas really all that was necessary was to give more.
Professor Ogston.	For a scheme of treatment a very usual and successful conduct in those cases is, when once the glands have ceased to be infiltrated, to lessen the mercury—say, devote the following three months to some such line of treatment as this:—Discontinue the treatment altogether for three weeks, and at the end of that time continue it for other three weeks in half the former doses. Then another interval of three weeks, during which no medicine is administered; and another three weeks in which quarter doses are given; and in that time one can usually see whether the opinion that the disease is eradicated be true, and, if necessary, take the steps to renew the treatment. This is the most successful treatment I know. As regards the condition of the blood, hæmatology has played a considerable part of late years, and hæmatology, no doubt, from the statements which have been made, may be regarded as something of a guide generally. But it is of very little use in the individual. You cannot by examination of the blood, I think, get a reliable opinion regarding the individual. So practically in private practice we have discontinued the hæmatological examination of the blood; it is of little or no use. The diminution in the amount of hæmoglobin has not been found of much use. In the individual it is not sufficiently valuable to make it worthy of practice as a rule. Then as regards the point of the weight of the patient, that is rather the reverse. The weight is valuable, considerably valuable, but not alone. It has to be taken with other things, such as the disappearance of manifestations, especially glandular infiltrations, and so forth. But it is often of decided value; and I think in the army, where it can be carried out so well, and when conjoined with other things, it is, or may be, very valuable, and is worthy of being practised and the results contrasted, the weight being regularly taken and recorded.

Question V.

The sub-committee considered it advisable to vary the wording of this question in order to make it applicable to the personal experience of officers of the Royal Army Medical Corps and civilian experts respectively. The first wording was used for R.A.M.C. officers, the second for gentlemen in civilian practice.

In the case of soldiers affected with syphilis, what forms of treatment appear to be the most suitable under the following conditions:—

(*a*)—In early cases of mild degree occurring in men still employed in their military duties.

(*b*)—In similar cases relieved of their military duties but still remaining in barracks for the express purpose of satisfactory treatment.

(*c*)—In cases of severe type admitted to hospital as in-patients.

(*d*)—In cases of syphilis showing destructive lesions.

In the case of patients affected with syphilis, what forms of treatment appear to be the most suitable under the following conditions:—

(*a*)—In early cases of mild degree occurring in patients permitted to pursue their daily avocations?

(*b*)—In similar cases in patients who are able to give up their employment for the purpose of carrying out satisfactory treatment?

(*c*)—In cases of severe type under complete medical control, as in the case of hospital in-patients?

(*d*)—In cases of syphilis showing destructive lesions?

By whom.	Report of Evidence.
Lieut.-Col. P. M. Ellis, R.A.M.C.	(*a*)—I should exclude from treatment in barracks all cases except those in which the symptoms of the disease had disappeared, or in which they were limited to a skin affection, neither pustular nor ulcerative, induration at the site of the primary lesion, indolent enlargement of the glands, or a mild degree of cachexia. Ulcers of the mouth or fauces, which are the commonest symptoms of the disease met with, should, in my opinion, be treated in hospital both to avoid the risks of contagion and to promote more rapid recovery. In such cases I prefer the intra-muscular injection of mercury, when the patients are willing to submit to it, as attendance only once a week is necessary. But if this is objected to, ordinary doses of pil hydrarg., liquor hydrarg. perchlor, pot. iod., or hydrarg. cum creta, daily, or twice or three times a week. I would be willing to treat in barrack cases, let us say, of secondary syphilide with papulo-squamous eruption on the body, provided that the mucous membrane lesion, and the initial sore, had vanished. I would treat the early cases in that way where there was that kind of eruption on the body. I should be willing to treat those with a papulo-squamous eruption, but with no ulceration or chancre left, in the barracks; cases of psoriasis, for instance. I would treat an early papulo-squamous syphilide in the first four months in the same way, unless it was very severe. (*b*)—If the disease necessitates the man being struck off all military duties it is desirable he should be treated in hospital, both for his own sake and for disciplinary reasons. In answer to (*c*) and (*d*) I would say mercury in one of the above forms, either alone, or combined with iodide of potassium. If the speedy action of mercury is required, inunction. I see no particular advantage in intra-muscular injection. I mention that in connection with the question later about intra-muscular injection.
Lieut.-Col. H. R. Whitehead, R.A.M.C.	(*a*)—The question is whether he ought to remain at his duty at all during the early stage of syphilis. My ideas are, that a man, during the first six weeks, at all events, of the disease, should be practically in hospital. After that I would discharge him if fit to go out, and he must continue his mercury by the mouth or by means of intra-muscular injection. In early cases, therefore, even of mild degree, I would not recommend the men being employed on any military duty whatever, because you cannot be certain of the nature of the disease at first. What apparently is a mild case may turn out to be an extremely serious one. Suppose it is the case of a man who has got a chancre, and in which all the signs of the chancre vanish in six weeks or two months, but he remains with a papular or slightly squamous eruption during the next three or four months, I think the most satisfactory way of treating that man would be with mercury by the mouth. In the case of a man who has a doubtful sore, I would determine to give him mercury in small doses, but I would not allow him to go out of hospital and be employed in ordinary duty. In a doubtful case of a man whom I thought had syphilis, I would like to keep him under observation for six weeks. I mentioned a class of case in which the sore appeared three weeks after sexual connection, in which, although there is some induration or enlargement of glands, I would give him small doses of mercury. That sore heals, there are no induration, no enlarged glands. I would keep such a man in hospital six weeks, then discharge him and give mercury by the mouth. I think for the soldier it is better to continue

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Lieut.-Col. H. R. Whitehead —*cont.*	it by the mouth. But perhaps the intra-muscular injection is best, because it is an easier application. You give the treatment yourself. We have had several cases in which men have spat out their pills, and so on, when they have had it by the mouth. But in spite of the difficulty my general course of treatment is to give the pills. That is the form I have been most accustomed to, and which I should be most inclined to practise in hospital. In military cases I inject a man of that kind when out of hospital; they go to the hospital at Woolwich and have intra-muscular injections. I do not think he would take pills outside; I think you would never get a man to do it. (*b*)—I think in this case the man might have pills if you could be quite sure of the man taking them; or you could use the injection. The views I hold are those held by Mr. Jonathan Hutchinson—that small doses of hydrarg. cum creta are the best form of treatment for those who can take it. But I think for convenience in military practice the injection method is suitable. A soldier with a sore I would not let out of hospital, because I think it most important that he should definitely get the first six weeks' treatment, and that he should be kept under a particular sort of restriction. In regard to barrack-room and chance infection, and so on, I think it is a matter of supervision; I think the man ought to be under some sort of supervision. It would not be sound to let him be doing what he liked outside. (*c*)—I should not like to lay down any particular rule. I should give the man hydrarg. cum creta; if he was not taking mercury by the mouth I should give inunctions. I have had excellent results from that. But I should judge according to the case. (*d*)—If it were a tertiary lesion I should push iodide of potassium. I should judge by the case and the stage of the disease. I think the main point is to get the man to take a certain amount of mercury, and in the form which upsets him least.
Lieut.-Col. G. H. Sylvester, R.A.M.C.	(*a*)—I do not think those cases ought to be employed in military duties. I would lump (*a*) and (*b*) together. They should not be fully employed in military duties. I think on the whole the injection treatment is the best for those. The only one I have had experience of is Lambkin's mercurial cream. The dose is three minims of the mercurial cream, which contains rather over one grain of mercury. It is about ten years ago that I did this. I have not tried it since. I think it is very difficult to control the dose. You may go on for a fortnight or three weeks with it and the man may get salivated and you cannot stop it. I have had a bad experience of it in the way of ptyalism, occurring after three days, and the ptyalism was severe in those cases I am thinking of, and I have heard of others. In about one in every 20 cases I have treated with it the man had ptyalism. I have no recent experience of it, in the last ten years; my experience was in India. (*c*)—Cases of severe type admitted to hospital under your own control. I would treat in the ordinary way by the mouth or by inunction; by the mouth in the same dose as I mentioned. I have not had much personal experience of the inunction method, I only mention it as an alternative. (*d*)—I would combine the iodides and mercury, and give it by the mouth, under those circumstances.

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Lieut.-Col. C. A. Webb, R.A.M.C.	(*a*)—Intra-muscular injection. I would allow a man to continue to do his duty in a climate like that of Egypt. (*b*)—In this case I would use intra-muscular injection of the insoluble preparations. I have no experience of other preparations. (*c*)—The treatment may vary, but as a rule intra-muscular injections may be used, occasionally fumigation. I think mercury may be given by the mouth while a man is in hospital, but after this treatment is followed he is discharged, and there will be some difficulty to get the man to go on with it. I have known men object. I do not find it easier to give mercury by the mouth. When a man has had mercury given by the mouth and he comes out he may be inclined to reject the intra-muscular injection treatment. A few cases of men in Egypt objected to the injection treatment. Objections most frequently arise when the medical officer is changed. Men get accustomed to getting injected by one officer, and they will go on and be satisfied while he is doing the work, but when a new officer comes on the men object. (*d*)—In these cases I think probably iodide of potassium by the mouth is better treatment, or occasionally calomel fumigation, but iodide of potassium chiefly. I would not continue intra-muscular injections even in a modified form.
Major and Bt. Lieut.-Col. S. Hickson, R.A.M.C.	(*a*)—My answer to this question is, that in early cases, no matter what degree, I would not employ them on their military duties, that is when they have obvious symptoms of syphilis or rash; if they have overt symptoms of syphilis I would keep them in hospital until they were cured. The form of treatment I should use is hydrarg. cum creta, three or four grains per diem, combined with Dover's powder. I have not much experience of the injection method, but I have seen it used. We use it at Woolwich in some cases. I should prefer to use treatment by hydrarg. cum creta while the patient has any obvious signs of syphilis in the early stages. I use hydrarg. cum creta until the symptoms of early syphilis have disappeared, then discharge them from hospital. We give hydrarg. cum creta for a month, or two months, or longer, or shorter, until the obvious signs of syphilis have disappeared; then we discharge them to their barracks, and after that period they get the injection. While under my care at the hospital they are treated with hydrarg. cum creta; when they become out-patients they are treated in that other way, so that I have no great experience recently of carrying on the treatment by hydrarg. cum creta for a long time. Of course they return to us now and again and have another course. (*b*)—For this class of case the form of treatment would be the same. Men not in hospital should be supervised when taking mercury pills. In the Royal Herbert Hospital pills are administered to patients in the annexes of the venereal wards. An orderly standing there gives them the pill and sees that they drink some water afterwards; this is carried out as long as he is in hospital. Supposing the patient is not in hospital, all depends on the arrangements made outside. If you have only an ordinary barrack room, I do not think it would be suitable for treatment of patients with obvious secondary syphilis. If you have a sort of out-patient department with proper attendants men might then get treated with hygrarg. cum creta. I have never arranged for men to attend in this way for treatment. I would not be willing to give a soldier, say, 20 pills, and tell him to take them, say, three times a day. He would have to come three times a day, and we would see that he took them, otherwise he might spit them out. I am certain that many men would not take their pills if it were left to their own discretion.

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Lieut.-Col. Hickson, R.A.M.C.—*cont.*	(*c*)—Treatment depends on the stage. In early stages hydrarg. cum creta ; later I would give a solution of perchloride of mercury, with or without potassium iodide. (*d*)—Every case showing destructive lesions would be treated on its own merits, but iodides are very valuable for late symptoms. The administration of mercury under these circumstances would depend on the stage. I judge more by the stage than by the nature of the lesion.
Lieut.-Col. G. D. C. Mosse, R.A.M.C.	(*a*)—I think the intra-muscular is the only method that can be employed in the case of soldiers performing their military duties. I do not think the administration of pills can be carried out ; the soldier might take them all together, or might throw them all away. (*b*)—In such cases I should prefer the intra-muscular method, although it would be possible to administer mercury by the mouth, as patients might be made to attend hospital two or three times a day, but I am of opinion that the intra-muscular method would be the most satisfactory way of treating these cases. (*c*)—For cases of *severe* type admitted to hospital, I rather like inunction followed by hot baths, because the action of the mercury is more rapid thus administered than when given by the mouth in the form hydrarg. cum creta. My method of carrying out this treatment would be as follows: Thoroughly cleanse the part where the ointment is to be rubbed in ; rub in twenty or thirty grains of ung. hydrarg. morning and evening ; the following day give a hot bath, but no inunction ; the day after the hot bath two more inunctions as on the first day, and so on. While undergoing this treatment the patient should be watched carefully to see the effects of treatment on the symptoms and on gums. The patient should have the best possible dietary, and should not be exposed to cold ; he should certainly be kept in hospital, but allowed to take gentle exercise in the open air, when there might be some alleviation of his symptoms, and a break in the treatment. I would not recommend a walk of four miles daily. In cases of syphilis showing destructive lesions, I should give iodide of potash—that would be my sheet anchor. Often, however, the association of mercury is necessary. Opium is very often useful in these cases ; one grain might be given twice daily in a pill. A generous dietary is most necessary, and tonics are often useful, and cod-liver oil particularly where there is much loss of flesh. I have no experience of treatment in the open air on the same lines as the open-air treatment of tuberculosis.
Mr. Arthur Shillitoe, F.R.C.S.	(*a*)—In ordinary cases of the kind described in the question I always put them on the pills. For the majority of the cases I use salicylate of mercury, one-fifth of a grain three times a day. These cases go about their daily work. Mr. Shillitoe handed in a document showing instructions given to patients using inunction. He said that a good many patients carry it out well ; one has some trouble to get out-patients to have baths properly, but those who get baths do remarkably well on inunction. I am considerably increasing the patients having inunction in my own out-patient department. I find that they are actually able to carry it out. I did not know that I should find it so easy to get it carried out.

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Mr Arthur Shillitoe—*cont.*	(*b*)—I should classify these cases with group (*a*), giving them salicylate of mercury. (*c*)—"Cases of severe type under complete medical control."—I might either inject them or use inunction. At Dean Street we use inunction or injection; for the in-patients we do not use pills in a severe case; we very often treat them with mixed iodides and hydrarg. perchlor.; that would be in the later stages or in the severe early cases, or in the late secondaries. (*d*)—In cases showing destructive lesions we bring them under mercury as rapidly as we can, either with fumigation, inunction, or injection. At Dean Street we have no convalescent place to send the patients to, and I have no experience of sending such cases to an ordinary hospital, or the country, or the seaside. In private cases we should probably decentralise them.
Mr P. J. Freyer.	(*a*)—An ordinary case. Supposing you get an ordinary hard chancre before the secondary symptoms have come on, or any ordinary case in which there is a mild dose of secondaries, you commence treatment then, the method depending upon the avocation of the patient. In the case of a man pursuing his daily avocations the proper treatment to my mind is small doses of hydrarg. cum creta with a little opium. It is one of the most effective methods from beginning to end, and is the method I should choose in such a case. (*b*)—The former is a good, sound method when people are able to go about; but I say if the patient could lie up for about a month I would undoubtedly use the inunction method. For this method it is necessary for the patient to lie up completely—to stay in his room. I do not think it would be advisable to treat a patient permitted to go about by inunction. I would choose inunction if the patient were completely under my control. The inunction method is given uninterruptedly—that is to say, you go through a course for a month, and rub in, say, half a drachm to a drachm. As a rule, I have a drachm of mercurial ointment rubbed in every day. The patient has to get a bath, then the ointment is rubbed in, we will say into the skin where it is thinnest. You rub it in in successive parts each night, say, into the inner surface of the arm, one arm one day, the other arm another day, and then into the groin, &c. The system known as the treatment at Aix-la-Chapelle. (*c*)—We do not take cases of any type as in-patients in St. Peter's Hospital. We treat them externally. Severe cases we send to the Lock Hospital. In private practice I would rely practically upon mercury. I think the more convenient method for treating the case is by hydrarg. cum creta, but liquor hydrarg. perchloridi is an excellent substitute or alternative, and if one could see that the patient takes it I would rely on that as much as on the other. (*d*)—In cases of syphilis showing destructive lesions (tertiary symptoms) one would rely on iodide of potash as well as on mercury; in fact, rely in the first instance mainly on iodide of potassium. But there are certain cases in which you find iodides are practically valueless, and in which mercury is undoubtedly best, even in tertiary stages. But for all the destructive lesions involving the bones, and nodes, and things of that kind, I would rely mostly upon iodide of potassium. I would propose to combine the two. I think it would be advisable in the case of a soldier with chancre in the early stages to be in hospital, unless it is absolutely essential he should go about his duty. One has to be guided by the emergency of the matter. If I thought a soldier would take pills of hydrarg. cum creta I would allow him to have them himself, the same as for a private patient. But if he is allowed to go about, it would be necessary to see that he is thoroughly warmly clad, and that he did not catch cold.

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Mr. Edgecombe Venning.	(*a*)—In reply to (*a*), should I use injections of the sozoiodolate of mercury, I have never had any trouble whatever in the cases I have treated. None of my patients complained of pain. There was no local induration sufficient to give rise to pain. I have never had any accidents of any description, such as profuse ptyalism. Giving it in the small quantity of one-eighth grain I have had no trouble at all. I have no experience of injection of the other soluble salts of mercury, such as the biniodide. I have given up the treatment by the mouth and by inunction. I find all my patients will submit to the intra-muscular injection. It is only once a week, then once a fortnight, then once a month. I get them to do it, but I warn them and say, "Now let us understand one another; if you are not willing to go on with it for three years, say so. But if you will promise to carry it out properly I can guarantee you will get well." I consequently have no trouble at all. I ought to mention one patient whom I have under care at the present time, a Frenchman. His syphilis has taken a tremendous hold on him, and I have had some severe secondaries with him, though nothing more than you would get with any other form of treatment. (*b*)—I do not find it is necessary for my patients to give up their employment. I consider the cavalry soldier would be able to do his duty when under treatment. I have had hunting men among my patients, and it has not interfered with their sport. My former treatment when I was in the army was, that when a patient presented himself at hospital, I put him upon two grains of blue pill, two grains of quinine, and one-eighth grain of opium, to be taken twice daily, and I kept him in bed. (*c*)—Recently I have not had much experience of hospital in-patients, but I have sufficient confidence in the treatment to use the sozoiodolate for such patients. (*d*)—In cases of chancre, with secondary and tertiary stages of syphilis, provided my patient had not been thoroughly treated with mercury, I should put him upon it at once; if he had been thoroughly treated with mercury I should put him upon large doses of iodide. I have had slight experience of the Zittmann treatment, certainly it has seemed to do good. I think this is successful because perhaps the patient is kept at a good heat while it is applied; it seems to have succeeded where other methods have failed. And I think it is well to keep the patient warm while the mercury is being thoroughly rubbed in. It is of the utmost importance that it should be done in an equable temperature. I think nothing can equal the intra-muscular injection of mercury. I think it very suitable for the service. I believe it to be the very best practice for the service.
Mr. Malcolm Morris, F.R.C.S.E.	(*a*)—This I have practically answered, and the same answer applies to (*b*). (*c*)—I think that is a question of "stuffing"—extra food and fresh air; the general principles such as those on which you would treat tuberculosis, plus mercury in the way I have mentioned. And as regards the last one, in the case of destructive lesions, a very important element of treatment is by calomel fumigations, as an adjunct to other treatment; that is to say, when you have a sloughing ulcer and so on you can use fumigations of calomel when you cannot do other things. I have lately had a case, which I saw in consultation with a well-known London surgeon, of a very large old-standing syphilitic sore. The person's health was getting bad, and he was wasted from the effects of it. The combined treatment by the Wiesbaden method, carried out

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Mr. Malcolm Morris—*cont.*	in the place I have spoken of, together with calomel fumigations to the limb, brought about an entire resolution of the whole thing. Other treatments, such as ordinary lotions, had been used extensively over a very long period. So I think that is a valuable adjunct in the treatment, together with other things, in these cases. He had had doses of iron, and so on, for the improvement of his general health. I have seen certain men who have had the Zittmann's method, but I do not believe very much in Zittmann. I would rather have these other things that I have spoken of than the Zittmann. I have never seen very much benefit from Zittmann's method. With the exception of excessive drinking and excessive sweating there is so little in it. There is a tiny quantity of perchloride of mercury about it, and that is about all. The rest is large quantities of fluid, and so. To some extent, without the sweating, the Zittmann method is copied, giving large quantities of fluid and a good alterative treatment. I was very much impressed with the way they use their mercury at Luzon. But of course you want the methods which are applicable to a large number of people.
Mr. James Ernest Lane, F.R.C.S.	(*a*)—I think the treatment by mercurial pills in ordinary cases of syphilis is perfectly satisfactory—some form of mercury pill. The particular pill I am in the habit of giving is the tannate of mercury, which, being insoluble in the stomach, does not upset the gastric digestion at all, and the pill is not dissolved until it gets into the small intestine; and it seems to act in the same way as inunction. I prefer that to treatment by means of hydrarg. cum creta, or powder or pills containing it. I think it is very much more efficacious. There is no comparison between them. (*b*)—If the case is a mild one I do not see the necessity of pursuing any course but that just mentioned. I think the results of mercurial pill or inunctions are satisfactory. (*c*)—In cases of severe type, I might tell you the course I pursue at the Lock Hospital. The ordinary mild cases are treated with pills. In severe cases of pernicious or malignant syphilis, or tertiary syphilis with severe ulcerative lesions, I use intra-muscular injections of sozicdotate of mercury. My experience of that is good, there is not much pain. I do not think they interfere with the number of patients attending. The treatment has always been with soluble salts, and the pain after those injections is not so very severe. Going back a good many years, when the treatment was not carried out so carefully as it is now, as regards cleansing of the skin, there may have been cases of abscess following. I only use the soluble salts. I have never seen the insoluble preparations much used. As to the intravenous injections, I fancy I was the only one who used the system to any extent in this country, and I was extremely satisfied with it as a treatment; but I do not think it could be carried into general use. There are difficulties about it, and now I do not use it at all, because I am attached to the female department of the Lock Hospital, and in women there is often a difficulty in introducing the needle into a vein. When I had the beds in the male hospital I treated all the patients with intravenous injections, over a thousand injections I know, and no accidents. The result was wonderful in some cases, in the bad cases it was extraordinary. The salt I used was cyanide of mercury. (*d*)—Cases showing destructive lesions are those in which I use intra-muscular injections, of soluble salts for choice.

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Lieut.-Col. R. L. Love, R.A.M.C.	I have been so impressed by the favourable results obtained in treating syphilis by intra-muscular injections of mercury that I prefer treating all the conditions referred to in (*a*), (*b*), (*c*), and (*d*) by that method. It is advisable, however, to keep all cases undergoing this treatment in hospital till four injections have been given, when a correct estimate can be come to as to how the patient bears the treatment. Those bearing it well and showing marked improvement, as the majority do, can then be discharged and the treatment continued outside. Others, in whom improvement is not so satisfactory, and who still require careful observation, should be retained in hospital. This also obtains with men who from their antecedent character are liable to take too much drink when discharged from hospital or give way to any excess deleterious to their health. All patients undergoing this treatment should have their general health most carefully looked after. Ten years ago, when I began the treatment by intra-muscular injections, I gave 10-minim doses at the commencement, reducing the dose afterwards. Experience soon taught me that this dose was too large, some of the patients showing signs of mercurialism, causing interruption of the treatment at too early a stage in the treatment. My maximum dose is now five minims, and the majority can bear this until cure is effected without it being necessary to interrupt the treatment.
Lieut.-Col. F. J. Lambkin, R.A.M.C.	(*a*), (*b*), (*c*), (*d*)—In all cases, with the possible exception of (*d*), the intra-muscular method is the most suitable; in the latter, should it fail, inunction may be tried. In my opinion, mercury given internally never succeeds when they fail.
Surg.-Gen. Sir Thomas Gallwey, K.C.M.G.	I do not think it is possible to say at an early stage whether a case is a mild one or not; those cases which only show slight manifestations in the early stages may escape detection and treatment, and so develop severe symptoms at a later stage of the disease. As to the method of treatment, I am all in favour of intra-muscular injection, with metallic mercury, and not the salts of mercury. This treatment I would strongly recommend for every case of syphilis, whether treated in hospital or out of hospital, and at any stage of the disease. As regards soldiers being treated in hospital or as out-patients, I consider that a soldier with a primary sore must be treated in hospital. As soon as this has healed over, I think that treatment should be continued out of hospital. The fact of the man being in the open air, taking a certain amount of exercise and carrying on his ordinary duty among his fellow-men, has a most beneficial effect on the man's mind and general health; it also facilitates the cure of the disease. If necessary, I would apportion a separate barrack room for these cases; but I do not think this need be done, and further, it tends to upset regimental arrangements. I do not think that under these conditions there is any danger of spreading the disease in barracks.
Dr. Colcott Fox.	(*a*)—I think there is no doubt, with regard to the first class, that the method of giving mercury by the mouth is perfectly satisfactory. I think that some of the injection methods are equally satisfactory. I think the answer depends very much on how the patient is constituted and situated. But I am satisfied with the ingestion method in the majority of cases. My own favourite treatment is by grey powder, hyd. cum. creta. It is bland, and I find patients

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Dr. COLCOTT FOX —*cont.*	bear it well; it does not upset the digestive system very much, and I think it is the best. That is the one I generally use in the case of my hospital patients, and I have been very well satisfied with it. I generally start with larger doses than some people do, I give two grains three times a day at first. Its effects in the adult are often rapidly apparent. Anyone who has had occasion to give this preparation on a large scale in congenital syphilis, including grave cases with bone disease, must be impressed with its almost magical effects, and the absence of ill-effects. (*b*)—In this case I still think the ingestion method is quite satisfactory in the majority of patients, but the inunction method in patients who can give up their time to it is a most admirable method. It is a question whether it is not the best of all, except for the dirtiness of it. (*c*)—In this case I should certainly advocate either the inunction method or one of the hypodermic injections in severe cases—grave cases where important organs were threatened, such as the nervous system, or a grave type of syphilitic ulceration of the skin, precocious or malignant syphilide. In beginning strong treatments like that you have to feel your way, to see what the idiosyncrasy of the patient is with regard to mercury. But that established, I should, of course, be strongly in favour of either the injection method or the inunction method in grave cases. I have seen a malignant syphilis in a patient with an extraordinary idiosyncrasy against mercury, and I think a calomel injection would have killed him. Such cases, however, are rare. (*d*)—In cases of syphilis showing destructive lesions the same thing holds good. Of course, there is always this reservation—that in certain of those cases the patient can hardly take any mercury; and there are exceptional cases, and you have to be careful about that.
Mr. CHARLES GIBBS, F.R.C.S.	(*a*)—I should think just the ordinary mercurial pill would be best. At the Lock Hospital I give pil hydrarg., two grains, twice a day. I personally do not use grey powder; as a matter of fact, none of us do. I think it is much more irritant to the alimentary canal. Hyd. cum creta is extremely irritant. You put some pulv. ipecac. co. in it, but you probably get some constipation. I have tried it, and it is not to be compared to the pill—the pil. hydrarg. You have a cup of black coffee after dinner and you get gripes, and so on. (*b*)—I would keep them on the pill certainly. (*c*)—For ordinary cases of syphilis, I should give them a drachm or one and a half drachms of liquor hydrarg. perchlor., and then iodide of potassium, 10 or 15 grains three times a day, as internal treatment. If the case were severe from the point of view of iritis, say, or extremely bad ulceration, or if a man had a swollen tongue, or bad laryngitis, or severe pharyngitis, I think I should give intravenous injection, as being the most rapid, for two or three days, and then at the end of that two or three days you could put him upon his pill. (*d*)—In this case I should use more iodide of potassium and less mercury, of course feeding the patient up, and general hygienic measures.
Mr. ARTHUR WARD, F.R.C.S.	(*a*)—For these cases I should say, in my experience, blue pill or grey powder by the mouth. I think perhaps the grey powder is a little more active of the two, but at the hospital Dr. Hill always used blue pill, and I have done so, and it is very satisfactory, I consider. For a man I use 6 grs. a day of blue pill, for a woman 4 grs., and the same of grey powder. I think perhaps grey powder is a little more inclined to cause diarrhœa, but not much.

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MR. ARTHUR WARD—*cont.*	(*b*)—For these cases I should carry out the same treatment. In the majority of cases the patients will be able to carry on their work during the treatment. For choice I would treat them in this way. I have seen a great number of cases do satisfactorily on it, and go straight on for two years without any trouble at all, and I do not think you can beat that. (*c*)—In cases of severe type, as in the case of hospital in-patients, I should give a mixed treatment of iodide of potassium and mercury perchloride solution, till the severe symptoms have disappeared, and then I should go on with mercury only for the rest of the course. My experience of the mixing of iodides with mercury is that it hurries up the removal of the lesions. My belief is that the iodide of potassium acts upon the toxine of syphilis. In my belief there is a microbe at the back of syphilis, and that the lesions are produced by the irritative effects of the toxine. And I think that mercury acts by retarding the development of the microbe. Iodide acts, I think, by decomposing the toxine in some way. (*d*)—In cases of syphilis showing gummatous lesions, if the lesions are destructive, I think that indicates that the resisting power of the patient is very low indeed, and such patients as that do not stand mercury at all well. In such cases I give iodides alone first and feed them up in every conceivable way; build up the system and then begin with very small doses of mercury with iodides; and by degrees you get them up to the normal dose of mercury. I should like to say that, in my experience, with regard to the dose of liq. hydrarg. perchloridi, the drachm dose is a small one; it is the maximum dose of the Pharmacopœia; but, in severe cases, two-drachm doses are strongly indicated, and do not overdose the patient, repeated three times a day. The treatment of iritis, or severe symptoms of that kind, will be effectual if you give two-drachm doses of liq. hyd. perchloridi, but not if you give one drachm; one is not enough, in spite of the common belief.
DR. W. ALLAN JAMIESON.	I would combine (*a*) and (*b*) together, because, as a rule, unless the patient is suffering from eruptions which interfere, from their situation or their nature, with his occupation, I prefer them to go on with their occupation so far as it can be carried out safely with regard to others. Hence these two come pretty much together. And as regards the treatment, after trying a number of methods of mercurial treatment I have resorted only to two. The one which I principally use is a combination of perchloride of mercury and iodide of potassium, consisting of one grain of perchloride of mercury and half a drachm of iodide of potassium in two ounces of water. Of this, one measured teaspoonful, one drachm, is given well diluted night and morning. In most cases that seems to be quite a sufficient dose. In some cases it has been too much, and after a time we have had symptoms of inflammation of the gums or slight ptyalism, which required the dose to be reduced. But in the majority of cases the patients bear that dose of one-sixteenth grain admirably well, when due precautions are taken—for instance, seeing that the teeth are brushed carefully night and morning, and, as I always do, administer a lozenge of chlorate of potash night and morning, to be dissolved slowly in the mouth, so that the chlorate of potash acts slowly upon the gums and throat. In that way I have found the mercury, as a rule, do good, and the patients immediately improve. If they are pale and languid, and have evening headaches, and so on, these disappear in a short time, and in a very short time the patients greatly improve. But I must say that the majority of cases of syphilis we see in Edinburgh are not very severe. We do meet with

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DR. ALLAN W. JAMIESON—*cont.*	severe cases occasionally, but not as a rule with very severe ones, in my experience, and hence the patients almost invariably improve in the course of two or three weeks. You would hardly recognise them in that time; they have improved so much under treatment. And then of course I tell them not to smoke, and I advise them to either discontinue entirely the use of alcohol, or to limit it to taking only small quantities at meals; and in that way these cases do remarkably well. The great difficulty we have is in keeping them sufficiently long under treatment. In any case, whether the patients are private cases or hospital patients, after their symptoms are relieved to a considerable extent or are entirely removed, they disappear and we cannot get hold of the patients again. I have an alternative treatment to that, and that is inunction, but that alternative treatment I seldom use. They are the rare cases, and I only use it where that mixture of perchloride and iodide does not agree with them. I have occasionally seen it produce diarrhœa, but only rarely, and then I have resorted to inunction of unguentum hydrarg. carried on in the ordinary way. But that, of course, is a treatment which the patients do not very well like; they much prefer administration by the mouth. Why I give it in solution in that way is because by that means you can so accurately determine the dosage. If you give it in the form of a pill, the pill may be hard and dry, or it may not be dissolved, and consequently the patient gets more mercury than you want him to. And if you give it in the form of grey powder it has been my almost constant experience that it will produce diarrhœa. To combine it with opium is objectionable, because in that way you lock it up in the system and bring about a good deal of trouble in the bowel; whereas given in this solution which I have spoken of it has always answered, in my experience, remarkably well. And in cases which have been treated by other means by other men I have found this method compared favourably with the previous experience of the same patient. Hence I invariably use that method of treatment, inunction being resorted to only occasionally. The answer as given to (*a*) and (*b*) would hold good with regard to (*c*). The syphilis being of a severe type, I would probably be inclined to try inunction rather than the fluid treatment; because of course one wishes to get the patient as soon as possible under the influence of the drug, the mercury, and there may be often severe mouth symptoms, and some symptoms connected with the digestive tract which would interfere with the internal administration, which are obviated to a large extent by the use of inunction. And therefore in these cases I prefer, probably, inunction; but that would depend on the particular case; it would not depend so much upon the fact of it being in hospital, or even on it being of a severe type. (*d*)—In my opinion cases of syphilis showing destructive lesions may depend upon some phagedaenic condition of the original chancre, in which case of course I would treat it by pretty sharp measures—the application of nitric acid, or dusting with iodoform, or sometimes an application which I have found also useful, peroxide of hydrogen. That is a very good application, but these we do not see much of. Those patients go, I suppose, more to the Lock Hospital than to me, and I do not see much of that description. But when destructive lesions occur is a little later on, perhaps at the end of the first year, or even before that; we may have them in the form of rupial eruptions on the skin. Therefore, I still use the mercury. But if it occur towards the end of the first year I have often substituted iodide of potassium without mercury; I substituted it, and certainly with distinct advantage. I must say that many of these cases have been alcoholic, more or less so, though perhaps not all. Still they have been either that or they have been persons who were very much run down by overwork, or by bad food, or by bad occupation. In the case of a workman who had to mix in the course

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Dr. Allan W. Jamieson—*cont.*	of his work with other people, such as in a factory, supposing he had infective lesions, as chancre or a papulo-squamous syphilide, if there were bad lesions about the mouth it would be advisable to get him into hospital. I have seen cases of this sort occurring in private practice; for instance, where domestic servants have got the disease, and where it became a difficult question to know what it was best to do. In several cases one has had to warn the master or mistress that the patient had better be sent away home, but one was in a difficulty about stating what was the nature of the disease. If I had a free hand I would endeavour to take steps to put such a patient definitely under hospital treatment, so as to have complete control of him.
Dr. Radcliffe Crocker.	(*a*)—Cases in 5 (*a*) I should treat by means of hydrarg. cum creta in the way I have indicated. (*b*)—Sometimes if there is a very extensive syphilide at the hospital I use calomel fumigations, as well as for cases under (*c*). In cases under complete medical control I would occasionally use fumigation, but not always. You have to watch the effect. In some patients it is rather depressing, so that it may have to be given up, but I still use fumigation for both in-patients and out-patients, most frequently for local tertiary conditions, like bad gummata of the leg, and so on. I use it also for extensive syphilides in cases which perhaps have not had much treatment. The other day I had a man at the hospital who had had untreated syphilis for six months; he was covered with eruption. Under calomel fumigation the lesions rapidly disappeared. As a rule, I would still give hydrarg. cum creta. I often, but do not as a rule, give it combined with Dover's powder, or opium. It depends upon the tolerance of the particular patient. I do not use opium unless the patient shows he is easily purged by mercury. Some patients are very intolerant of mercury in any form. I have a female patient now whom a grain of grey powder three times a day salivates. For such cases I use inunction. (*d*)—I think that includes the malignant syphilis. I am very careful in administering mercury, especially to start with, carefully watching its effects, and give tonics and good food and the best hygiene I can possibly arrange for. Some cases do better without mercury for a while, with large doses of perchloride of iron, good feeding, cod-liver oil, &c., especially in phagedaenic cases. Those cases often do not bear mercury at all. I might give iodide of potassium for the time being sometimes where there is great pain in the bones, but only with the idea of subduing the symptoms. I do not give it with the idea of curing the disease. As to patients with actual infective lesions, mixing freely with their friends and colleagues, I tell them, if they are married people, about the risks of kissing, and drinking out of cups and so on; but, as a rule, I do not lay down any rule to workmen beyond cautioning them that all their secretions are infective. If I had the opportunity I would put such a patient under complete medical control in hospital. The chance of spreading the disease in barracks might be more serious and the spread more easy, so it is no doubt better to keep them under control if you can. For injection my opinion is strongly in favour of soluble preparations. In the Services its use is no doubt extremely convenient, as it ensures the patient having the medicine; but I should not consider that it diminished the time during which the patient should be under medical control. I think that is very important. Perhaps I may be allowed to relate a case which I saw a

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Dr. Radcliffe Crocker—*cont.*	short time ago, that of a German gentleman who contracted syphilis in Italy. He contracted the disease in May last. Dr. Tommasoli gave 20 intravenous injections from the appearance of the chancre on May 20th 1903, and the patient took perchloride pills till July 29th. From July 29th to August 25th he had 20 inunctions, of 3 grammes each. From November 27th to December 8th he had four injections in the gluteal region, and four of salicylate of mercury. At that time, however, he told me he still had roseola, that is over seven months. On December 28th he had mucous plaques on the tonsils, and had been having a decoction of sarsaparilla. On January 11th I saw him, and he had slight ulceration of the tonsils. So that, in spite of eight months' strenuous treatment by the intravenous and the intra-muscular methods, by pills, inunctions, &c., he still had lesions.
Mr. David Wallace, C.M.G., F.R.C.S.E.	(*a*)—I carry out my usual plan of treatment, already indicated, varied sometimes if there is gastro-intestinal disturbance; that is, if the patient finds it produces diarrhœa I try another form, or I combine it with small quantities of opium. Sometimes I give another preparation of mercury; the perchloride not infrequently. If it is very obvious that the diarrhœa is likely to be troublesome, I try inunction, and I have used hypodermic injection in these circumstances. But in ordinary cases I follow out the plan I have indicated. As a rule I do not find hydrarg. cum creta given in the way I recommend causes gastro-intestinal disturbance. I would give half a grain of hydrarg. cum creta and half a grain of ferrous sulphate, but not Dover's powder. (*b*)—In such cases I have used inunction, because in some severe cases I have found quicker results from inunction than by giving mercury in pill form. I recommend a bath in the morning, and mercury ointment rubbed in at the various parts of the body, and particularly where the skin is thin—in the inner side of the upper arm, the inner side of the thigh, and the anterior aspect of the abdomen, once a day. I have found that secondary manifestations disappeared in quite a number of cases within a fortnight to three weeks; so that not infrequently I have found that 15 inunctions were sufficient, and then I have passed on to giving mercury by means of a pill; these are of course patients who have given themselves up to the treatment in hospital. In reply to the question as to this method of treatment causing destruction of bed clothing, I ought perhaps to explain that patients suffering from venereal disease in Edinburgh, as elsewhere I daresay, are looked upon as individuals who have to submit to treatment. I have practically complete power, and if that treatment be not accepted they go out. So that there are practically no complaints. Men come in with the full knowledge that they are absolutely under my control. If there is the least indication of dissatisfaction, in any shape or form, they are turned out, very much because so many of them belong to a very low class. They come from all parts of the country; many of them are tramps, quite a number sailors, some soldiers, who have been sent in. And naturally they submit to the treatment that is recommended. As to the point of view of the hospital authorities, there again I am in absolute control; I and not anyone else would make objection; nobody else would object to of in any way interfere with the treatment. And from the point of view or clothing it is practically what I say that has weight. Though supposing any objection were raised it would not have any effect. This reply covers (*c*) also. (*d*)—I have not had much experience of syphilis showing destructive lesions. The syphilis that we see in this country differs, of course, entirely, one may say, from that of Burmah and India and Barbados, so far as I had the

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Mr. DAVID WALLACE, C.M.G.—*cont.*	opportunity of seeing it when I was at Netley. We do not often have cases with marked destructive lesions. I have looked at this question and considered it, and I can only recall three or four cases in 18 months in which I should say there were marked destructive lesions; and in them I used inunction. I keep the inunction method for the most severe cases. Of course I ought to say that a special feature of the treatment was the dealing with the local lesions.
Sir ALFRED COOPER.	(*a*)—Well, I do not believe in a mild degree of syphilis; I believe syphilis is syphilis, and it depends on the ground it gets on whether it becomes severe or not. I do not believe there are stages of mildness in that way. The only place where I have seen it mild is in Russia, because they have very much stamped it out there. But in England I should say there is very little difference; I think it is all the same, depending on the person it catches hold of. Therefore I should treat every case of syphilis I had the same as I have treated it for 20 years at the Lock Hospital, and that is by the method I have continued up to the present time. That is giving the person three grains of the blue pill with a quarter grain of opium three times a day, and continue that treatment for one year. The following year I should give him two of those pills during the day. That has been my experience since the year 1863, so I think I have good reason to know. That is the best treatment I know of. And I would give the three grains continuously. But if the patient is out of sorts or has a cold, I say to him—knock off the pills for a day or two, or a week even. That does no harm. If the person is in a fair state of health he takes the pill regularly three times a day. I prefer opium with it. And most decidedly I prefer the blue pill to such preparations as hydrarg. cum creta. I have tried one and the other, and I have seen a great many failures with hydrarg. cum creta. I have seen the return of the syphilis after three or four years where that has been the treatment. I have never found blue pill, given in the way I suggest, produce much irritation of the bowels. If that has seemed to be the case I have used the tannate of mercury, but that has a much more irritative action than the blue pill; the patient goes about his daily work. (*b*)—I should not make any alteration in this case. Of course if there was any reason for it I should carry out inunction. I am very fond of inunction, and if you get them in private you cannot do it; it is dirty, and there are other reasons. But if I get them in hospital I am very fond of giving them a course of inunction; I think it helps things very much indeed. (*c*)—I do not see any reason for making any alteration in the treatment for these cases. (*d*)—That is a very important question. I have seen a good deal of that, and I am a very great believer in Zittmann's treatment for it. I am sorry to say it is very little known, and used in this country. I have had considerable experience of it, and the results I must say are marvellous. The good attained by it comes in this way: Syphilis remains in the glands, and you cannot get it out of them, and the only thing that removes it from them, as far as I have seen, is Zittmann's method. The treatment consists of sweating and purging, and a great deal of decoctions are taken, and the patients are in a temperature of at least 80 degrees all the time, for at least 14 days. The actual amount of mercury taken in that treatment is not very great; it is only taken in the form of calomel, to purge and act on the liver, but not as a specific. The course of Zittmann's treatment lasts for 14 days, and is not necessarily repeated; I have very seldom had to repeat it. As illustrating a case of severe destructive lesions, I cannot give you a better one than this: I was called in

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QUESTION V.

In the case of soldiers affected with syphilis, what forms of treatment appear to be the most suitable under the following conditions:—

(*a*)—In early cases of mild degree occurring in men still employed in their military duties?

(*b*)—In similar cases relieved of their military duties but still remaining in barracks for the express purpose of satisfactory treatment?

(*c*)—In cases of severe type admitted to hospital as in-patients?

(*d*)—In cases of syphilis showing destructive lesions?

In the case of patients affected with syphilis, what forms of treatment appear to be the most suitable under the following conditions:—

(*a*)—In early cases of mild degree occurring in patients permitted to pursue their daily avocations?

(*b*)—In similar cases in patients who are able to give up their employment for the purpose of carrying out satisfactory treatment?

(*c*)—In cases of severe type under complete medical control, as in the case of hospital in-patients?

(*d*)—In cases of syphilis showing destructive lesions?

By whom.	Report of Evidence.
SIR ALFRED COOPER—*cont.*	some years ago to a gentleman who had got phagedaenic ulceration of his foreskin; it was nearly all being eaten away. I had him put in a sitz bath, and kept in hot water. I knocked off all mercury—they were giving him mercury all the time—and it healed. I said, "Don't take any mercury again," because he was a strumous subject, and could not stand mercury. He went to Margate, and there, coming out in tertiary eruption, he went to a local man, and was put upon mercury again—I was away for my holiday—and at last the whole of his penis was absolutely gone, and he had lost the greater portion of his nose. They were going to send him to Aix-la-Chapelle, but I had him brought to one of my homes in Devonshire Street. He could not walk; he was covered with rupia. He was only in there 14 days, and he went out perfectly free from any eruption. The place round the entrance to the urethra had healed, his nose had healed, and I sent him to the seaside. In two months he came back again, and I had a nose fitted on to him, and a very good nose too, and from that day to this he has been perfectly well. That is after only 14 days of the treatment, and he has never had any symptoms since. The treatment produces marvellous results. The carrying out of this treatment does not require very much special arrangement. It only requires that the patient shall be kept in a room at 80 degrees. It takes two or three days to make the medicines up, the decoctions, but that is all, because it is a wonderful treatment for these cases. I used this treatment when I was at the Lock Hospital, as well as in private. It was very easily carried out. There is not the slightest difficulty in making the decoctions. Any chemist can make them up for you. I think the cost is about 30*s*. I have not found any objection raised on this score. I have carried out that treatment successfully in two or three private homes. The heat is kept up by ordinary fire. I have no special heating apparatus for the purpose. I have never had any difficulty in hospital in carrying it out. I have a most interesting case, that of a gentleman, a captain in the army, who has been as bad as you can have anybody. He went out to the war in South Africa, when he had a fit and fell off his horse, and cut his head badly. He came back and had every form of syphilitic trouble, almost, which one could have. He then had epileptic fits, and he got into the hands of an eminent surgeon, who thought those fits were very likely due to a gumma on the brain. He opened the man's head, but it was not very successful. And he had tremendous ulcerations in his nose and all over his face. I took him in; in fact that surgeon sent him on to me asking if I could do anything for him. Mercury and iodide of potassium had been given him, but seemed to have no effect upon him. He is in one of my homes now, and you would hardly believe the difference there was in a week. He has had no fits since he has been there, whereas previously he was having a fit every second or third day. I have used it not only for severe cases, but that of mild ones, and with great benefit. One man had secondaries very badly indeed, and he wanted to get rid of them quickly, and I used the treatment for him. I use it for producing a rapid effect, as well as in severe lesions; on account of its rapidity in bringing about benefit, as well as on account of the severity of the lesions. I am sorry that the Zittmann method is not more known and used. I consider that it ought to be.
DR. ARTHUR WHITFIELD.	(*a*)—I am in the habit of giving grey powder, but I have also used a good deal of the yellow iodide, which is, I believe, a trifle cheaper and is, I think, equally efficacious. I do not like the solution of the perchloride, as I have frequently noticed that, without intestinal symptoms developing, the patient does not

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(*a*)—In early cases of mild degree occurring in patients permitted to pursue their daily avocations?

(*b*)—In similar cases in patients who are able to give up their employment for the purpose of carrying out satisfactory treatment?

(*c*)—In cases of severe type under complete medical control, as in the case of hospital in-patients?

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DR. ARTHUR WHITFIELD—*cont.*	seem to be absorbing it. I use the grey powder in almost every case alone, beginning with three doses of a single grain in the day and running it up to five, eight, or more, but I find few patients can stand high doses on account of salivation. Even five grains will frequently salivate a patient in a few weeks. As regards gastro-intestinal irritation, I have practically never seen it with this drug. I have given it with pulv. ipecac. co., and in cases of marked anæmia with reduced iron, but I may say that I nearly always use it pure. (*b*)—I am bound to say that for the average case I think this form of treatment eminently satisfactory, though there are of course exceptions in which it fails. (*c*)—I should say that in hospital patients having a severe type of the disease inunction is the most efficacious, or a soluble injection. I use both. I seldom see hospital in-patients, but in a few cases where it is necessary to take the patient in these are what I use, and I think of late years I have used injection rather than inunction for adults. My actual experience of inunction is not very great, but I saw a very large number so treated in Vienna. (*d*)—I have not had enormous experience of syphilis showing early destructive lesions, and I cannot say that I have ever had under my care a case of really malignant syphilis, which I believe to be very rare in this country. I have had one or two cases which have shown destructive symptoms at the end of six months, and I have given them iodide in addition to their mercury, and with success. In the case of late destructive lesions I always give them large doses of iodide at once, as well as moderate doses of mercury, and I treat them locally with mercury. In one instance of a child with bad destructive lesions I fumigated her with satisfactory results, but I should not like to draw conclusions from one case. The only point I might add to what I have said is that in the later stages of syphilis (skin troubles are the only parts of the disease I see), I place more reliance on local treatment than I do in the earlier stages. For instance, late palmar syphilides are almost hopeless treated constitutionally alone, but with mercury or iodide, or both, given internally and the addition of local mercurial treatment they usually yield rapidly.
MR. JONATHAN HUTCHINSON, F.R.C.S., F.R.S., LL.D.	(*a*)—My prescription is one grain of hydrarg. cum creta three times a day, four times a day, five times a day. It is very simple. I almost always combine with the compound ipecacuanha powder. I always begin with the mercury combined with the Dover's powder. I always begin with a rather full dose of opium, to make certain that there shall be no diarrhœa. Then I diminish the opium when I find the treatment does not cause diarrhœa. But I always begin with a good dose of opium; at least a moderate dose; two, or perhaps three, grains of Dover's powder to the pill. If the patient be liable to diarrhœa, and diarrhœa is the great drawback to the giving of mercury by the mouth, I give what I have said. Diarrhœa is the most frequent inconvenience, and to prevent it is the object. My experience is that diarrhœa is frequent if you do not give opium, and the doses I have mentioned. I should immediately reduce it to one grain of Dover's powder if the patient had no diarrhœa. And I am very strict in the matter of diet to prevent diarrhœa occurring, in forbidding all green vegetables, soups, and so on. It was very early in my experience that I commenced giving Dover's powder with it. I soon found that diarrhœa was of very frequent occurrence. (*b*)—In these cases I make no difference. Still the same prescription.

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(*b*)—In similar cases in patients who are able to give up their employment for the purpose of carrying out satisfactory treatment?

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By whom.	Report of Evidence.
MR. JONATHAN HUTCHINSON—*cont.*	(*c*)—I know of no better treatment for these severe cases than the administration of grey powder. That is what I should do under all circumstances. (*d*)—In such cases of destructive lesions I should give mercury, and very probably some iodide of potassium with it—give them in separate forms: the mercury in a pill, and the iodide of potassium in a mixture, to be taken together. But very often to push the mercury is all that is indicated, I think, in most cases, if they are not getting on.
Professor OGSTON.	(*a*)—In private practice we are in a somewhat transition stage. Hitherto perhaps the best accredited practice has been the use of Hutchinson's grey powder, and I need not detail that. But Lambkin's treatment has been giving surprisingly good results, and I somewhat think that Lambkin's treatment, especially as regards the Army, will prove to be preferable to the treatment on Hutchinson's plan, for several reasons. If you give a patient in the Army a powder or a prescription you cannot always ensure his taking it; you cannot be certain that the dose administered, even if it enters the mouth, enters his system. But with Lambkin's treatment you are absolutely certain of this, and I think Lambkin gives better results than Hutchinson, probably owing to that. Where one finds the disappearance of the disease not satisfactory, Lambkin's gives very satisfactory results, and within a short time. I have not used Lambkin's method in the infirmary; in private only. I have been more than satisfied with it, exceedingly hopeful of it. It has its drawbacks, but they can always be overcome with a little management. I am very pleased with Lambkin's treatment of such cases. (*b*)—The same answer applies. (*c*)—I am inclined to think that the same answer could be given to that. (*d*)—I would suggest a modification of treatment for these cases. The iodides in well-marked tertiary disease are still the best treatment that could be given, so far as my experience goes. In such cases I would not be inclined to give mercury at all, but there is no distinct line between secondary and tertiary, and very often one overlaps the other; and then you get scaly eruptions, and that sort of thing. And in that condition you require to use iodides combined with mercury. There is no distinct moment when you can say stop mercury and begin iodides. But in gummatous lesions I would depend on the iodides to cure the patient as well as to cure the lesion; I think the two are synonymous, using it according to Hutchinson's method, that is, always to toleration. You are aware—he was the first to point out, I think—that iodide sometimes requires to be used in heroic doses, and in such cases will fail in ordinary doses. It is said that those patients will often support half a drachm at a dose, and drachm doses even. Indeed, I think he mentioned in his paper ounce doses—at any rate, very large doses. And, conversely, many were so susceptible to iodides that they exhibited iodism with ordinary doses; but that those were the very patients in whom iodide was of most service, by using fractional doses. I have had no experience which would contradict that, but much which would confirm it. With regard to giving mercury in these cases after the secondary lesions have gone, you have to judge each individual case; and I think one cannot entirely exclude the use of mercury in tertiary disease where iodide has not succeeded; but I think if iodide is used in the way Hutchinson recommends, it is almost invariably successful.

Question VI.	Opinions are specially invited as to the methods of injection of the soluble and insoluble preparations of mercury under the conditions of military service.

By whom.	Report of Evidence.
Lieut.-Col. P. M. Ellis, R.A.M.C.	I carried out treatment by means of the injection of insoluble preparations of mercury, in India, for some years, continuously, so that I could watch and observe these cases. I did not have the opportunity of comparing a set of cases in which the insoluble preparations were injected intra-muscularly and used for inunction, because the cases I should have treated would be those which were regularly attending and treated by injection only. For months, I should think for a couple of years, I treated all out-patients with injections. But in many cases I had to put pressure on the men. I would say "If you are not willing to submit to injection I must bring you into hospital." I had to put pressure on the men, but they vary. Sometimes I have had no difficulty. But I have been at stations where it seems to be impracticable, for some reason, as the men objected so strongly that one could not use it. The corps differ so much from one another. My answer to No. 6 is this: The insoluble form of mercurial injection is very suitable for outdoor patients, as one injection a week is usually sufficient, and so frequent attendance can be dispensed with. The objection to all intra-muscular injections is that they interfere with mounted duties, and that many men are so intolerant of them that they have to be abandoned. This last is particularly the case where no active symptoms of syphilis are present. I do not think injections of the soluble drug have any special advantage over oral administration. In the insoluble form care has to be taken that over-mercurialisation is not produced.
Lieut.-Col. H. R. Whitehead, R.A.M.C.	I have had a little experience with Lambkin's cream when it first came out. I saw a certain number of cases, and I think it was always followed by a certain amount of hardness at the site of injection. I have always used a soluble salt. I have used either hydrarg. perchlor. or sal-alembroth for injections. I think it is the method best suited to military practice, on account of its convenience, and on account of being certain that the patient gets it. It is a matter of convenience, and I think it is efficient. I think it is best suited to military practice. I do not think it has any special therapeutic value. I think it is a question of getting so much mercury into the man. I do not, as a rule, give it by injection to an ordinary case of syphilis; I prefer them taking it by the mouth—the hydrarg. cum creta.
Lieut.-Col. G. H. Sylvester, R.A.M.C.	I have not been able to compare the methods of injection of the soluble and insoluble preparations of mercury under the conditions of military service. I have used Lambkin's cream in 20 cases, and with one unfortunate result; it was bad, but the man lived; the others I was satisfied with. As a general method of treatment under military service the only fault, I say, is that you cannot control the dose properly. So far as other accidents are concerned, the formation of lumps and painful nodes, I have not had much trouble.
Lieut.-Col. C. A. Webb, R.A.M.C.	I have always used the insoluble preparations of mercury, and find them satisfactory. I have no experience of soluble preparations for injection purposes. I have used Lambkin's cream practically in the whole of my experience, and I think that is the best method of treatment in military service; it has always been injected deep into the muscles of the buttock—the needle, of course, being sterilised; it may be injected deep into the gluteus muscle, rather high up, so that it does not affect a man's sitting, and below where the belt would come. I have never seen any accident happen by accidental injection into the veins producing embolism, nor have I felt nervous about that possibility. I always plunge the needle directly into the muscle, and never adopt the plan of injecting by two stages. The needle is sterilised in a flame. I use boiling oil for sterilising by dipping the needles into it; subsequently I employ the flame. I have never had any accidents by needles breaking, and to the best of my belief there were no such accidents in Egypt; the needles used were steel ones, and we never had any accidents. I have never used platinum-iridium needles.
Major and Bt. Lieut.-Col. S. Hickson, R.A.M.C.	For injections I am altogether in favour of the soluble salts of mercury. We have a preparation at the Royal Herbert Hospital of three grains of perchloride of mercury with some chloride of ammonium, and two drachms distilled water. Each 10 m. of that contains one-fourth grain of perchloride of mercury, and we give 5 m., that is, one-eighth grain, of perchloride of mercury once a week. I do not think it gives rise to much pain. Of course, men will complain of pain, to get off duties very often. I do not think, as a rule, it gives rise to much pain, not so much as the oily mixtures, such as Lambkin's cream. We are giving this perchloride at the Herbert Hospital. We use perchloride solution because we are certain of the dose in this, but Lambkin's cream is only a mixture.

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By whom.	Report of Evidence.
Lieut.-Col. G. D. C. Mosse, R.A.M.C.	I must admit that my personal experience of injection methods is limited; at the same time I have read and heard a great deal about this method of treatment, and am inclined to favour the same. Some years ago, when I used injections, the formula I used was Bloxam's formula, viz.: hydrarg. perchlor., 32 grains; ammon. chloridi, 16 grains; aq. destillat. to two ounces; 10 mins. for each injection = one-third grain perchloride of mercury—that was the injection I used, but only in a limited number of cases. It seemed to me to be a very satisfactory form of injection; pain was hardly complained of at all, and was very transient, and no abscess followed. I have had no experience of injections with the insoluble preparations.
Mr. Arthur Shillitoe, F.R.C.S.	For injection I think the insoluble preparations are preferable to the soluble, the reason being that you have to inject them only once a week, instead of their having to come once a day. In using soluble preparations there is a great deal more trouble in giving the injection every day, than in treating them with salicylate of mercury. I do not think the soluble preparations given as an injection are of any special advantage therapeutically in the majority of cases. In the case of insoluble preparation I use a special preparation called grey oil, the formula for which is— Mercury, purified, 40 grammes, Sterilised lanoline, 12 grammes, Sterilised white vaseline, 13 grammes, Sterilised medical oil of vaseline, 35 grammes, that is 40 per cent. of mercury. This is the grey oil which they use in France, exactly the same strength, called Lafay's grey oil. I have never used Col. Lambkin's cream. I have seen several of his patients. The reason I chose Lafay's preparation was, that the particular gentlemen I am thinking about told me that the carbolic oil as used in Lambkin's preparation gave rise to a considerable amount of pain, and this Lafay's oil gives no pain. Whether Lafay's oil would keep in the tropics so well I do not know, and I think that was Lambkin's idea in introducing the carbolic oil, so that it might keep better. I do not find that this preparation gives any difficulty through separating out the mercury from the solution. In cases of Lafay's preparation I find it remains well in suspension, which is very important, and the patients complain of no pain whatever. I have heard about the continual giving of these preparations being sufficient to deter the patients from going to a certain hospital. I think in those cases the soluble solution which did give rise to a good deal of discomfort was being used. My experience with the Lafay's grey oil is that the amount of pain can be practically neglected. No accident of any sort whatever happened in my experience. No abscesses formed. Nothing in the nature of severe ptyalism which I have been made to control. I give it about once a week, two or three minims. Perhaps I have given smaller doses than Lafay suggests, because the people who generally come are debilitated, and though we want to get them under mercury quickly, we have been afraid of pushing the remedy too much. I would go on giving this weekly injection for months at a time, two or three minims of Lafay's preparation. I have used the soluble preparations, Bloxam's formula, but gave it up because it gave so much more pain, indurations at the seat of puncture. The soluble preparations seem to give rise to pain and induration, and so far as the therapeutic value is concerned I would not choose them. I would not prefer them to the salicylate which I give as an ordinary thing.
Mr. P. J. Freyer, M.D., M.Ch.	I have used injections of hydrarg. perchloridi; for many years I used them, but I have given them up completely. I did not see any advantage in them whatever. The disadvantages are that one is liable to get sloughing and abscesses in connection with the injections. Injections are given once a week, and you are never certain about it. I have had a considerable amount of trouble with this method in my experience, so that I have abandoned it completely.
Mr. Edgecombe Vensing, F.R.C.S.	Methods of injection. Well, I have thought this matter carefully out, and I do not think that you could have a better plan of treatment than by the intra-muscular injection. For instance, a patient comes into the hospital, and you find he has a chancre, that he has amygdaloid glands. You want to cure him. I should then inject him once a week, and on his medical history sheet I should put, "This patient to be injected once a week." The man would then show himself at the hospital. Then very likely the secondaries would show themselves, and he would be treated, but would go on with his work regularly. I think it is a cleanly method; I mean you do not upset the man's stomach. He takes his food as usual, and he can still go on with his occupation. It is a system by which continuity of mercurial treatment can be carried out all through the service. My experience of it is clear of accidents, I would have no hesitation in recommending it. I have no experience of using the insoluble preparations instead of the soluble.

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By whom.	Report of Evidence.
Mr. Malcolm Morris, F.R.C.S.E.	I am opposed to injections. I think they are painful, and I think they are very uncertain. Injections with the insoluble salts I have seen most of, and they are very uncertain; you cannot tell how much is absorbed into the body; it is exceedingly doubtful. I have watched many cases which have been treated in that way abroad, and here; and I think as a routine treatment it is uncommonly risky. You run the risk of using a dirty syringe, and of putting other things into the body besides mercury. And I think there is considerable risk in it as a routine treatment because it cannot be always carried out by the doctor's own hand. He would take care to sterilise the needle before use, but when handing it over to other people there is considerable risk. If the injection were in careful hands and were being done in the best way, even then I would not recommend it as a routine method in hot climates. I am thinking of the intra-muscular and subcutaneous. But when it comes to intravenous, another question is opened up. In certain cases where there is iritis, and where you want to be in a hurry to get the mercury in, I think it is possible that intravenous injections may be of some service; but not as a general routine method. And I would lay the greatest possible stress on the absence of alcohol. Alcohol in a large proportion of cases, and tobacco too, in my opinion, makes a totally different disease to what syphilis is without them.
Mr. James Ernest Lane, F.R.C.S.	I should say that the insoluble preparations were not suitable, because in many cases they give rise to severe pain which would incapacitate a man from carrying out any military duty whatever. And there are other disadvantages, there is a certain amount of danger attending them, cases of death have followed injection of insoluble salts from pulmonary thrombosis; also occasionally very severe mercurial poisoning from the mercury becoming encysted, and for some reason bursting suddenly into the system. Of course there is no doubt that the action of it is very powerful—that is, the insoluble injections, but I think those dangers are a drawback to the insoluble salts. So far as the soluble preparations are concerned, I do not think there is any danger, if any ordinary care is taken to render the skin and syringe aseptic. The amount of sozoiodolate of mercury I use is rather more than one-fourth of a grain usually, and rather less than one-third, with a small amount of iodide of sodium.
Lieut.-Col. R. L. Love, R.A.M.C.	I have no experience of any preparation of mercury for injection but that given above, with which I am quite satisfied. The only difficulty I have encountered with it is, in very cold weather the cream solidifies to such an extent as to make it difficult to force it through the needle. This is easily remedied by placing the vessel containing the cream in another containing water at a higher degree of temperature, the cream being vigorously stirred up with a glass rod. In a very short time it will return to the fluid condition. With this preparation I have never seen an abscess at the seat of injection, and no further local disturbance than the natural inflammatory action set up during the absorption of the injection, which disappears in three days or less time.
Lieut.-Col. F. J. Lambkin, R.A.M.C.	In the treatment of syphilis by intra-muscular injections I give undoubted preference to metallic mercury over the soluble salts of the same. In the first place, I find that given in the form of the cream it is decidedly less painful; and secondly, that whereas its effects are decidedly superior to them in removing the early symptoms of the disease, that its effects on the later symptoms are not only more marked but are far more lasting. The form of the cream which I now use is as follows:— ℞. Hydrarg. - - - - - ℥ i Lanolin anhydros - - - - ℥ iv Paroleine carbol 2% } - - - ℥ v or Ol. carbol 2% } Dose: m. x. as a maximum dose "once a week," m. 5 for patients attending hospital. Paroleine is used in temperate climates to insure the consistence of the cream, whilst in the tropics carbolic oil is substituted for it for the same reason. By using paroleine it is never necessary to apply heat to the cream. In the tropics the vessel containing the cream ought, when the latter is required for use, to be placed in ice to bring the latter to a proper consistence whereby the metal is suspended. The cream on every occasion it is required for use ought to be well rubbed up. The manipulations necessary in using the metallic cream are certainly troublesome, and undoubtedly the solutions of the soluble salts are much easier to use, but my experience whilst employing both preparations of mercury during the past 15 years is that the advantages one gains in using the metal itself in the treatment of syphilis are so overwhelming that no trouble is too great.
Surgeon-General Sir Thomas Gallwey, K.C.M.G.	I consider that the treatment of syphilis by the injection method has many advantages over other methods of treatment. At the same time, I do not think it right to lay down any particular line of treatment to be followed. Each medical officer must be left to do as he thinks best, but what I would wish to emphasise is that the medical officers should not neglect the intra-muscular injection of mercury in the case of in-patients. Some medical officers apparently think that a weekly injection will not have the same effect as giving mercury

Question VI.	Opinions are specially invited as to the methods of injection of the soluble and insoluble preparations of mercury under the conditions of military service.

By whom.	Report of Evidence.
Surgeon-General Sir Thomas Gallwey, K.C.M.G.—*cont.*	by the mouth daily. I am not in favour of giving mercury by the mouth, and am of opinion that grey powder does harm in the long run to syphilis patients, as it produces digestive troubles. You cannot go on with it continuously; it affects a man constitutionally very much more than it does given in the other way. Further, you give 14 or 21 grains of grey powder per week, whereas by the intra-muscular injection you only give half a grain of metallic mercury in the same time. There should be no marked constitutional symptoms as the result of giving mercury, and this is more likely to occur when treatment by the mouth is used than when intra-muscular and inunction methods are employed. In India I have issued several circulars containing instructions as to the continuous treatment of syphilis. I have sent home copies of these, giving a summary of this treatment, and the experience of medical officers with it (*see* Appendix A). What I am trying to do in India is, to have the continuous treatment of syphilis vigorously carried out. Soldiers should not be sent home, as they have often been, without the continuous treatment being first tried. If they must be sent home, they should be sent in a comfortable state, and not in the noticeable stages of the disease, if possible. I think there will be a marked reduction in the number of invalids for syphilis sent home from India for this year. As regards treatment, I favour the intra-muscular injection of mercurial cream; this is being generally carried out in India, and you will see the effect of it. As regards the detail and carrying out, it is quite simple. The men attend once a week; in some stations Thursday was selected, but I object to this, as Thursday is a holiday in India, and by making the men attend on that day you penalise them. In this severe disease treatment is so necessary in order to make the Army efficient, and prevent the tremendous losses by invaliding, that men should be encouraged to come up to hospital and undergo this treatment. I am doing it by persuasive means; there is no compulsion. When I go to a station where there are penalties I discourage it, as also at headquarters, because I say it will interfere with treatment. It causes men to avoid the doctor and conceal disease, no matter how rigorous the inspections. *Syphilis should be treated as a disease, not as a vice.* As regards accidents, &c., from the treatment, I have not made any special rules, but leave the prevention of this to the medical officers. The greatest danger arises from ignorance about the manipulation of the cream, and carelessness in making it up (*see* Appendix A, No. 706, Sanitary). It insists on medical officers performing the injection themselves, and when the officer who has been specially deputed to do so is detailed for other duties, he must carefully hand over and explain details to his successor. Instructions as to the sterilisation of the syringe, mixing of the cream, &c., are laid down in the printed instructions which I have circulated. The experiment is being carried out all over India at present. I have only heard of one untoward event. I have advocated a five-minim dose, on the principle that in order to obtain the curative effect of this cream you should not produce a very large physiological effect. In fact you should not be able to notice the effects. You will find men will get better if you do not notice their taking mercury. The moment you notice the gums are beginning to bleed, you should stop the injection. Certain other precautions, *e.g.*, taking the patient's weight, are emphasised. As regards syringes, I am trying to get an all-glass one for India. I prefer the platino-iridium needle; steel is liable to snap off and require to be removed by operation; this deters the patient from attending. Continuous treatment by the mouth cannot be carried out, it is too troublesome, and has not such a good effect. As regards treatment by inunction, it is much too troublesome, and requires a tremendous amount of supervision and paraphernalia, such as baths. It is a dirty method, and also, medical officers cannot be expected to stand over their cases while this inunction is going on, while if you get one syphilitic patient to rub another the results are far from satisfactory. I carried it out in the Egyptian Army largely, myself, with marvellously good results, but I prefer the injection method. I do not think that inunction could be carried on for six, seven, or eight months as the injection method can. As to getting the men to submit to injection, it depends very largely on medical officers and the absence of penalties. The men are at first rather shy of it, but medical officers who believe in the treatment make the men believe in it, and they flock up for treatment. I have insisted on the regiments being inspected periodically for this disease, and the medical history sheets scrutinised. I have even thought of introducing a new weekly inspection, not having the regiments up, but having a weekly inspection of a company; taking, say, eight weeks to inspect a regiment, and having every man belonging to the company present. This would be a general inspection, and not a special one for primary venereal sores. I do not think the medical officer would go on giving the man intra-muscular injections if he had no signs of secondary symptoms within a reasonable period. I think Col. Lambkin generally continues treatment for one year. I have introduced similar treatment among the native troops, especially in the case of the Gurkhas, who suffer severely from syphilis. My great object is to get medical officers to follow out this treatment, without worrying them for reports. I will judge by results at the end of the year.
Dr. Colcott Fox.	I cannot say I have any experience of military service. I have, nevertheless, experience to give me a fair idea both of hospital and private practice. I think now that treatment has been put on a firm basis, and we know what doses to give, and have made a certain selection of the remedies, I can speak in the highest terms of it. For instance, I think the grey oil which has been used in the Army is one of the best of all. Personally, I like it, and almost everyone who has tried it regards it as a favourite injection. I think the one next to the

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By whom.	Report of Evidence.
Dr. Colcott Fox —*cont.*	grey oil is biniodide. Patients tolerate large doses of it. I have had no accidents or difficulties as the results of its use. Of course, it is a method which has to be carried out with the greatest detail and attention, and unless you are very careful to have all your apparatus sterile, and to disinfect the skin as far as possible, and get the injection in properly, you get difficulties arising. If you take care in that way you will seldom have difficulties, except with some preparations. I would not allow anyone who is not a trained medical man to carry on routine injection, because I think it is a method which should be carried out by an expert in detail. For instance, if I may mention one particular detail, many of those who inject are very careful about pricking a vein, and I think they are right. They put in the injection syringe first of all empty, then they withdraw the piston a little. If blood comes out, they take the needle out and insert it in another place. One should not inject in that way into a vein. If no blood comes out they screw on the syringe with the medicament, and then inject; and that is a point which I think is important. Such precautions are absolutely necessary. With reference to the comparative value of soluble and insoluble preparations, one point is that the soluble injections have to be applied practically every day, and that is obviously a drawback; unless you have the patient in hospital it is intolerable, and there is the expense and time in private, and so on. The patients can do nothing else hardly for thinking about it. There are grave objections to that. And where you want to get rapid effects they are not so effective as grey oil, especially calomel; that is the most potent of all. It has to be given carefully, and I think it should be given only in grave cases. I do not think there is very much advantage in soluble preparations even in grave cases of syphilis over administration of mercury by the mouth. Of course, with a drug like grey powder, the effect is slow; it takes some time before you get the patient under its influence. I think the urgency for these injections is only in grave cases; but beyond that I would say that the grey oil is an admirable routine method. There is very much to be said for it, especially in the Army, I should think; very much indeed.
Mr. Charles Gibbs, F.R.C.S.	During the last year the house-surgeon at the Lock Hospital and I have been using injections. We principally used the soluble ones, and it is only during the last two or three months that we discontinued them. We have for 20 or 30 cases used insoluble salicylate and grey oil, and we are extremely disappointed in our result. Of course, the principal disappointment is that the patients do not stop in hospital. We have never been able to make a patient submit to more than six injections of either the soluble or the insoluble. Intra-muscular I am talking of. They go out; they would rather have the disease than the injections. That is during the last year. We have done about 150 cases during the last year. And the patients object to it so much that they will not stop in hospital at all. It is only two or three years ago we started to treat females with intra-muscular injection, and I used to have 50 or 60 women. And in three months I had three women. The reason of that was the pain—simply the pain of injection. There is the pain of the puncture; it is not pleasant, of course, to have a needle jabbed into one. It does not seem very much to the surgeon; but I had one jabbed into me once for cocaine for a small operation, and it was not at all pleasant. And then there is the pain afterwards. They do get pain afterwards, without the slightest doubt. They get a hard, indurated swelling, as a general rule, underneath the gluteus maximus, or in the substance of it, and that is very painful and tender. The women do not complain more than the men. This has been my experience in this prolonged series of observations. No man has had more than six injections, and they go out. They will go out; they will not stop any longer. In one case I did not give the injection; one of the nurses gave it, and he put it under the skin. At the point of puncture there was a little hyperæmia, spreading for an inch or so, but no pus formed. The inconvenience and pain were sufficient to decimate my clinique. Most of the women would not come at all. And Mr. Bloxam told me when he started the treatment many years ago he used it at the Female Lock Hospital, Harrow Road, and they did not get a single patient. The insoluble preparations we have used only in 20 or 30 cases, and we cannot say very much about them except from the point of view of pain. I do not think there is any difference; but from the point of view of mercurialisation they seem to be extremely dangerous substances. A man goes on nicely, and he gets well up to a certain point. Then one day the house-surgeon will come down and find the man's gums enormously swollen, and foul breath, and there is mercurialisation produced in about two minutes, and you can do nothing; you are helpless. You can give sulphates, but they do no good. We use sulphates, and start with good doses of sodium sulphates, Epsom salts, perhaps; but there is no effect in the world. It slowly and gradually gets better, whether we give sulphates or not.
Mr. Arthur Ward, F.R.C.S.	In regard to this question, not knowing the conditions of military service I cannot give the information. My own experience was, that when I was surgical registrar at the Lock Hospital, Mr. Bloxam used sal alembroth; I went through the out-patient notes to make statistics, and I was struck by the number of the patients who only took one injection and never came again. I have never tried them myself; I thought it was obvious that it was no use if the patients would not stand it. I suppose it hurts too much. At the Lock Hospital I am not using injection methods in any form.

Question VI.	Opinions are specially invited as to the methods of injection of the soluble and insoluble preparations of mercury under the conditions of military service.

By whom.	Report of Evidence.
Dr. W. Allan Jamieson.	I have no experience of the methods of injection. What I have seen of them has been simply cases under treatment abroad, or mostly, in the different hospitals that I have visited. In those I have seen and observed it, I must say i was not favourably impressed by it, for various reasons. If you use a soluble preparation it is absorbed pretty quickly; and you may have very serious immediate results if you use the insoluble preparations. Such a preparation may not be absorbed and you have risks of thrombosis, and there may also be risks of local inflammation and other disturbance. In both forms you have put into the system a dose of mercury over which you have no further control, but which has to be absorbed. It has to be used once or twice a week, or at whatever period it may be, according to the amount you choose. The fact that one had not control over it led me not to adopt it. Besides, it is a method which, in private at all events, and I think also in the case of hospital patients, the patients are not at all willing to submit to. They do not like it, in Scotland at least; they kick against repeated injections, or any injections at all. I do not think it has been used largely by any of my colleagues in Edinburgh. I do not feel inclined to say much more about those methods beyond the general expression I have given.
Dr. H. Radcliffe Crocker.	As to the insoluble preparations, from a study of the literature of the subject it seems that the dangers of the insoluble preparations are considerably greater than those of the soluble. And if once salivation sets in you have no controlling power over it at all. Calomel injections into the buttock, for instance, are supposed to be slowly converted into perchloride; but if it is rapidly converted you cannot take it out of the system. I think there have been more fatal cases from the insoluble than the soluble injections; and therefore, personally, I would not incur the risk of using insoluble preparations, though I know they have been used in thousands of cases without accident. I have used in my own practice the soluble preparations to a considerable extent. I always now use the sozoiodolate of mercury, and I have employed it for a long time both in private and in hospital. There has not been much objection raised by hospital patients, but in private practice there is more difficulty. They object, and if you are not careful you will lose your patient. In hospital I find some of them go away and do not come back. As you are aware, I use intra-muscular injections extensively for leprosy, and those patients, of course, will put up with anything. They have gone on for months and months, and even for years, without serious objection. I find the sozoiodolate of mercury much less painful than the perchloride. I have used biniodide as an injection, but I have found it very painful, while sozoiodolate is not seriously so.
Mr. David Wallace, C.M.G., F.R.C.S.E.	I have not used insoluble preparations at all. I have used soluble preparations. I cannot, of course, speak of the difficulties connected with military service, but I have thought about this matter, and it seemed to me that it was very much a question of control over the individual. And I would like to explain that my experience of the ordinary hospital patient is, that you may divide these patients into two groups, more or less. Firstly, if there are lesions which render him unsightly, or unable to follow his work, he is willing to use treatment; he is anxious, temporarily, to be well. But if he suffers no inconvenience, very frequently he does not care anything at all about the fact of having a disease termed syphilis, which he does not understand. These men get their medicine, and perhaps take the 100 pills which I first order. But possibly the patient never comes back to see me again. Or he comes back three months later, or ten weeks later it may be, with secondary manifestations more marked, mucous patches; he may have his hair coming out, and he is again anxious to be treated. I treat him again, and he improves, and again he stops treatment. Now, I will suppose that a large number of soldiers correspond to that group; they are absolutely regardless so long as they are not suffering inconvenience. Then there is the other group, a much smaller one, where the patients are particularly anxious to be well; they appreciate that they have got what is properly termed, in the north at any rate, "the bad disorder," and they are very anxious to be well. They are rather a nuisance as well, because they are constantly coming back when it is unnecessary. They go on with the treatment, and they do everything in their power for as long as you like, in order to be well. If the soldier, in the mass, corresponds with the first group, I think hypodermic injection would be a very excellent way to treat him, if it is feasible for the medical officer to give him a hypodermic injection. What objection could a soldier take to that? Pain after the injection. There is no doubt about that; he has a pain as if he had had a severe blow or kick. So much is that so that I have known men incapacitated for 24 hours; they have had to go home and lie up. They have been unfit to get about, though anxious to do so. That gradually passed off with the soluble preparation, of which alone I have had experience. So that perhaps half a dozen injections are given and the patient thinks nothing of it. I have a patient, as it happens, just now who requires injection. It is not hypodermic, but deep injection. He requires injection because, with mercury given in any other way, he gets diarrhœa. If he had the pill form or inunction he got diarrhœa at once, remarkably quickly. But with injections of soluble preparations of mercury—the perchloride—he has had no trouble, and now he thinks nothing of having injections twice a week. He suffered from the pain of which I speak at first, but he does not suffer from it any longer. Another point

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By whom.	Report of Evidence.
Mr. David Wallace, C.M.G.—*cont.*	I have found is, that sometimes a swelling appears, and may persist for a time. That, however, gradually becomes absorbed. With regard to any objection to the method, the risk of abscess, and so on, I do not think that that is common. Writers refer to it as very uncommon. For instance, Jullien says he has met with it twice; Gailleton says he has had it among his cases once. And I am not surprised, that if proper precautions are taken, there is an absence of sepsis. I have never seen it occur, and I was very much interested in this case from that standpoint, and I thought that one might get some information regarding the likelihood of sepsis by an analogous injection. Take, for instance, plague injection. I asked a medical officer of the Indian Medical Service what he found, and he told me that he had done 7,000 injections for plague himself, and never saw sepsis, with one exception, when the man started and the needle broke in his arm. Naturally, my first question was, "Did you see the patient after you injected him"? He said he saw these patients on the third day after injection. I then asked what precautions he took, because I thought these precautions would be similar to those necessary for injecting mercury. And I think the method is so simple that it does not invalidate the use of mercury as an injection for syphilis. And, altogether, I would think from my experience of hospital patients and the way in which they refuse to continue treatment, that if this method could be carried out, it would be a very excellent one for the treatment of soldiers who suffer from syphilis. I ought to say, of course, that that is a question rather outside my knowledge. Cases vary so much that I am not prepared to say that it is either equal or better than the other methods from the small experience I have had. I have never used the insoluble preparation at all. And the soluble preparation I have used is the perchloride. And with that I have had a distinct occurrence of pain, such as I have described, lasting sometimes 24 hours. I have tried no other preparations besides the perchloride; I have found it most satisfactory. The pain of the others, judging from my reading, was greater. I was satisfied after a time that my patient was doing well with this, and I continued it. I have never tried injections of soluble preparations in out-patient work. If I were to draw a distinction between the soldier and the civilian, I should presume that the soldier would be under your control and made to do what he was told. With regard to civilians, the class I refer to as desirous to get well, would undoubtedly come back for anything; but the majority, I think, would not tolerate it. But I should, perhaps, say that you are dealing with a comparatively low class in hospital practice.
Sir Alfred Cooper.	I have had experience of injection treatment. I have done it for eight years. I have found that the sozoiodolate was the best preparation, and that is the one I have stuck to for a number of years. I have never had abscesses or boils of any sort. Some suffer more pain than others: some do not suffer pain at all. You need to stretch the skin when you insert it, and my practice is to rub the site of the injection for a little time afterwards. If that is done they feel very little pain. For a little time they feel as if they have had a blow there, but that goes off before they go to bed. The pain has never been a serious objection. With regard to its therapeutic value when balanced against my blue pill treatment, I am not so fond of it altogether, because I have seen one or two cases where, five or six years afterwards—five years afterwards certainly—there has been a return of symptoms in the nervous system; two cases I can remember now. Both those cases were men who would not subject themselves to taking pills, and they begged for treatment by injection, and that is why I injected them. Of course, cases soon get talked about. A man says, "They want to give me pills, will you give me injections?" And I have done so. Neither of those cases turned out as well as I should have liked. I have injected for eight years, ladies as well, and neither ladies nor men have complained much of the pain.
Dr. Arthur Whitfield.	I have no experience of my own on the question of insoluble injections. There are so many untoward results and even deaths published in the journals devoted to syphilis that I consider that the use of insoluble injections is hardly justifiable, especially as one practically never sees a death recorded in syphilis treated by any other method. I have used soluble injections a good deal, in fact I now put all my resistant cases upon this form of treatment. I have used several kinds but now limit myself to the use of the succinimide. I usually give one-fifth of a grain, but one can use two-fifths without causing any trouble. It stands boiling, it gives practically no pain, and it is efficacious. I have used it freely in my out-patient departments and find that the patients do not stop coming owing to its use. They have asked for it again and again, and they think light of it. They say that there is a slight dull aching in the part about an hour or an hour and a half afterwards, but it is not severe, and in what must be about 200 injections I have never been able to detect even a lump at the site of injection a week afterwards. I give it either in the shoulder or buttock, but I prefer the latter. I have tried the perchloride and the biniodide, but they are both much more painful, and I think the succinimide is as efficacious. It contains a slightly smaller quantity of mercury in the same weight I believe. It was introduced to me by an assistant of Messrs. Burroughs and Wellcome, and I tried it, and was so satisfied that it has come to form my routine salt for injection I have seen the grey oil used but have never given it personally.

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By whom.	Report of Evidence.
Mr. Jonathan Hutchinson, F.R.C.S., F.R.S., LL.D	I am afraid I cannot give you any information on injection; I have no experience of the injection treatment at all. I have seen the results of it, and seen it given on many occasions. What I have said about the administration of grey powder is the result of a balancing in my own mind these various forms of treatment. I have seen many patients who have been treated by the injection plan; I have no doubt it is a very effectual plan in many cases; but I do not think it is so good as the administration of grey powder. It is not so convenient, and it has risks; I am sure it has risks of severe salivation, and so forth. And you can modify the dose much more when you give it by the mouth in repeated doses, than you can by injecting a powerful dose into the muscle. I do not agree with French writers that the continuous administration of mercury by the mouth in this way is apt to produce trophic changes in the mucous membrane of the digestive tract. The general rule is for the patients, at the end of a year, to say they were never in better health in their lives, and most of them are unwilling to leave it off.
Professor Ogston.	In reply to a question as to whether he was quite satisfied in the case of the intra-muscular injection of mercury, that the physician has an equal knowledge of what he is doing as he would have if the drug were given by the mouth, Professor Ogston replied, I think so. Patients complain of the pain of it a little, but that is very easily done away with by a little eucaine on the skin; and putting it behind the scapula causes extremely little inconvenience. Intra-muscular injection is still on its trial, but certainly the results have been surprisingly good that I have seen. I should not say the method is absolutely tested, but I know of no method of treating syphilis which is so promising. Except for some pretty old observations with the use of the soluble salts of mercury my experience is limited to Lambkin's cream, and, as I have already said, I think the effects of it are exceedingly good. I think, on the whole, probably they are better than Hutchinson's treatment. I think Lambkin's cream is an exceedingly promising method. I found the soluble salts gave very much more pain; inconveniences to a certainty. The salts were so powerful that there was the toxic element to be considered. I believe under the conditions of military service the injection of insoluble preparations would be specially valuable, and I think it will prove to be so.

Question VII.	Are the advantages of the methods of treatment by injection sufficiently great to warrant their adoption as routine methods in place of inunction or treatment by other means?

By whom.	Report of Evidence.
Lieut.-Col. P. M. Ellis, R.A.M.C.	My answer is yes, but I think I have dealt with that in the previous question, really. I should be willing to see it adopted as a routine method of treatment. I think it is more easily applicable. I do not think it has a therapeutic advantage over the other methods. Once a week only enables you to dispense with a good deal of attendance. I do not really prefer it as a matter of treatment. Supposing I had a choice of methods of treatment; let us say inunction, administration by the mouth, or injection; supposing I were able to have the patients under control, I should not inject them, because I do not think there are special advantages. I should prefer to give them small doses frequently. I would use the inunction method for in-patients, but I think the value of the intra-muscular method lies in the fact that it enables you to dispense with frequent attendance. I do not think you can carry out the inunction very well in the case of out-patients. I use inunction, and I think it is very valuable in many cases. My usual mode of treatment is by the mouth. I give liquor hydrarg. perchlor.; but I prefer the pil. hydrarg. I get very good results by administration by the mouth, and I am satisfied with that, also the benefit of that is seen in outdoor patients.
Lieut.-Col. H. R. Whitehead, R.A.M.C.	Yes, I think it is the ideal treatment for a man who is out of hospital.
Lieut.-Col. G. H. Sylvester, R.A.M.C.	I think yes. Under military conditions the injection method by Lambkin's cream might be introduced as an ordinary routine method, but the disadvantages of it have to be pointed out. That would have to be considered, but I would be willing to see it introduced if I had charge of a large station. I should look upon it as the best method of treatment for soldiers who are to be treated out of hospital. I think the advantages of it are that the men only attend once a week. I do not think they would take pills. I think those 20 cases in India* could have been treated equally well with pills, but it would have been much more troublesome to carry out. Instead of the men coming up once or twice a week, they would have to come up twice a day. I would not trust to their taking the medicine themselves.
Lieut.-Col. C. A. Webb, R.A.M.C.	I think the injection method is the only method by which you can treat a soldier and let him do his duty. I do not think inunction equally applicable; in the case of pills by the mouth, you would have to follow the man about to see that he took them; they cannot be trusted to take the pills by themselves.
Major and Bt. Lieut.-Col. S. Hickson, R.A.M.C.	I think the injection methods have advantages over inunction. The inunction method is not easy to carry out; you require special rubbers, or you ought to have skilled rubbers. Injection is given by the medical officer himself, and he knows how much he is giving; it is cleanly; it is easy to give; it is definite as to dosage, and it is not needed frequently; you need only give it once a week; and the men can be on duty. Our routine method of treating syphilis is: We take the man off military duty and keep him in hospital until all the obvious secondary symptoms of syphilis have disappeared, then discharge him to barracks and carry on the treatment by injection, and for the injections I prefer perchloride of mercury.
Lieut.-Col. G. D. C. Mosse, R.A.M.C.	I think the injection methods have advantages over other methods of treatment, by inunction or by other means, in military practice, speaking generally, provided the injections can be regularly and continuously carried out. The difficulty appears to be to keep the men constantly in touch for their injections. I have personally of late had no experience of such difficulties, but I have been told that such difficulties are experienced by medical officers at home, and I imagine that such difficulties would be less at stations abroad, where men are not moved about to the same extent as they are at home, and where medical officers are undoubtedly in closer and more personal touch with commanding officers. I think regulations should be definitely laid down holding commanding officers responsible for the regular attendance of men undergoing treatment by injection methods. If general officers were instructed to lay down orders in their districts about it, and issued such orders, then I imagine there ought not to be such difficulties. I do not know whether this plan has been tried, and, as before stated, I have of late years had no personal experience with reference to this question. This treatment was, I know, extensively carried out in Egypt by Colonel Fawcett; whether difficulties were experienced in carrying it out there I cannot say. Some commanding officers would have a strong objection, for instance, to allow men to get away from their musketry; they would think it far more important for their men to attend musketry than to attend at hospital. Finally, I say that if the difficulties noted, which, I am told, do exist at home, are overcome, and injections can be regularly and continuously carried out, this method of treatment is the best all-round treatment in military practice, and is the only treatment which can be successfully carried out out of hospital.

* Referred to on page 41.

Question VII.	Are the advantages of the methods of treatment by injection sufficiently great to warrant their adoption as routine methods in place of inunction or treatment by other means?

By whom.	Report of Evidence.
Mr. Arthur Shillitoe, F.R.C.S.	The advantage of the method of treatment by injection is that it is a great convenience to the individual if he thinks he is only taking one dose of medicine a week. From the therapeutic aspect I think you have given him a store of mercury into his system which certainly does a week's work, and perhaps a little more, and it is a more continuous treatment. I think many patients can stand more mercury given in this way, and more continually, than if it were given by the mouth, provided the mouth is in a decent condition. The only danger is that if you do get a patient salivated it is more difficult to stop the salivation, because you have already got a good store of mercury in the system. I think that salivation may be kept up by the focus mercury being absorbed in these cases. There are cases in which the mercury seems to be unabsorbed for a certain time, and then rapid absorption takes place. I have never taken X-ray photographs to observe if the mercury has actually been absorbed, but I know this has been carried out successfully.
Mr. P. J. Freyer, M.D., MCh.	I have not used insoluble preparations. In my opinion the advantages of the method of treatment by injection are not sufficiently great to warrant its adoption as a routine method in place of inunction or treatment by other means. In fact I would advise its not being had recourse to.
Mr. Edgecombe Venning, F.R.C.S.	Has been practically answered. I might mention another thing with regard to sozoiodolate of mercury. I made inquiries about it, that is, so as to get an idea of the cost in the Service. I found out that the cost of sozoiodolate of mercury, which is a German preparation, was about five to six shillings an ounce, and that an ounce would make two quarts of solution. If we use 5 mm. for a dose the cost would be very small indeed, and that is a matter which has to be looked at.
Mr. Malcolm Morris, F.R.C.S.E.	I have practically answered. I do not think the advantages of the methods of treatment by injection sufficiently great to warrant its adoption as a routine method in place of inunction or treatment by other means.
Mr. James Ernest Lane, F.R.C.S.	I do not think the advantages of the methods of treatment by injection in ordinary cases of syphilis are so great. It is only in the extraordinary or unusually severe cases that I should try that method. I should certainly never adopt it, or think of doing so, as a routine, certainly in military service, nor from the therapeutic point of view. The pill treatment appears to be so very satisfactory in the ordinary mild cases of syphilis that one meets with in this country that I am content to use that. I should treat mild cases by tannate of mercury pills, severe cases by injection of sozoiodolate of mercury.
Lieut.-Col. R. L. Love, R.A.M.C.	I have no experience of giving mercury by inunction. I have given it in a variety of forms by the mouth, and in many cases the treatment was continued from one to six months without much benefit. Why should this be so? My own opinion is that the mercury, thus given, never reaches the general circulation at all in any appreciable quantity, but is either voided per anum unchanged or is locked up in the liver or some other organ until nature sees fit to get rid of it in her own way. If the patient can bear the intra-muscular method I have seldom seen a case in which marked improvement did not set in after the second injection. The greatest care must, however, be taken by those practising the intra-muscular method. As soon as the slightest sign of mercurialism appears, indicated by tenderness, congestion, and sponginess of the gums, the treatment must be at once interrupted, otherwise stomatitis, followed by ulceration with marked factor of the breath, is sure to follow. In a weakly subject this condition endangers life.
Lieut.-Col. F. J. Lambkin, R.A.M.C.	As practical experience teaches us that the intra-muscular method is absolutely the only one by which we can hope to carry out the treatment of syphilis in the Army "uninterruptedly over a long continuous period," its advantages are apparent.
Dr. T. Colcott Fox.	I do not think it is necessary in every case. I can quite believe that in the Army it is a very desirable thing, and it appeals to me very much. I should think there is very little to choose between injection and inunction, because by inunction you can get the patient under the influence of mercury. One drawback to inunction is that it is very apt to set up ptyalism; I think it is allowed that ptyalism does occur with considerable frequency in the inunction cures.

Question VII.	Are the advantages of the methods of treatment by injection sufficiently great to warrant their adoption as routine methods in place of inunction or treatment by other means?

By whom.	Report of Evidence.
Mr. Charles Gibbs, F.R.C.S.	As to the advantages of the treatment by injections, I do not think they are advantageous except that they are quicker, for instance, in certain severe cases of swollen tongue, or larynx or pharynx, and so on. I believe if you give intravenous injection you get the disease under quicker. For rapid effects I should certainly choose intravenous injection, but I should only give it for a few days. The bad results are about equal, I think. It is always said about injections that you do not get mercurialisation, or that you do not get it so often, or that you do not get diarrhœa, and so on. But, as a matter of fact, you do. The percentage of cases of diarrhœa in intra-muscular injection of both the soluble and the insoluble salts—but more soluble than insoluble—is four per cent. I do not suppose if you give ordinary blue pill or salicylate you get four per cent. of diarrhœa, if the people are taking care. In intravenous injection you get three per cent. of diarrhœa. I certainly would not trust the intravenous injection to the hands of anybody but a skilled surgeon, or other injections, intra-muscular.
Mr. Arthur Ward, F.R.C.S.	In civilian practice I should say the advantages of the methods of treatment by injection are not sufficiently great to warrant its adoption as a routine method in place of inunction or treatment by other means. At the Female Lock Hospital inunction used always to be done, but as far as I saw—it was before I was on the staff—the objections to it are considerable, inasmuch as it sets up irritation of the skin at times, is very dirty and disagreeable, and it causes just as much diarrhœa as treatment by the mouth. I do not think its therapeutic value is any greater than the method by the mouth. I think you may as well rub it into the intestine as into the skin. They will take a sufficient quantity by the mouth, that is my experience, if the administration is carefully managed and diarrhœa prevented.
Dr. W. Allan Jamieson.	I do not think the advantages by injection are of such a degree as to specially warrant its adoption.
Dr. H. Radcliffe Crocker.	As to the advantages of the methods of treatment by injection, I think there are cases for which one would undoubtedly use it. In the public services I think there is a great advantage in knowing that the patient is having a definite dose of mercury, and you know how long he is having it, and you have him under control. The patient cannot run away under those circumstances, and you know that he is taking the medicine which you want him to take. But I should not stop it because the symptoms were suppressed. I think it is most important to spread the drug over two years. In cavalry and others who ride the injection should not be in the glutei.
Mr. David Wallace, C.M.G., F.R.C.S.E.	If the term "advantages" is used with reference to treatment, I mean the therapeutic action of the drug, I would say No. If the term be used with regard to the facility to treat the individual I would be inclined to say, dealing with the class we are now speaking of, Yes. If it is a question of convenience of administration I would answer Yes.
Sir Alfred Cooper.	With regard to the therapeutic action, I would not select injection. The good of it in the Army would be that you would know your man has got a dose, which is something. He may shirk his medicine, but with the injection he is under you; you look at him, and you can make sure he is getting his medicine once a week. It is useful in that way, but I do not give it in preference to internal treatment, which I prefer. In those cases which were not satisfactory they had undergone the full treatment by injection. Well, one of them did not have very much, because, as I told him, he put it into spirits, and if you put syphilis into spirits you keep it. He drank rather more spirits than were good for him.
Dr. A. Whitfield.	I do not think the advantages of the method of treatment by injection are sufficiently great to warrant its adoption as a routine method in the place of inunction or other methods. In ordinary cases I think the patients do well with treatment by the mouth, and my experience of injections is limited to those cases which resist this form, and such patients are likely to make some slight sacrifice if they obtain relief from their disease.

Question VII.	Are the advantages of the methods of treatment by injection sufficiently great to warrant their adoption as routine methods in place of inunction or treatment by other means ?

By whom.	Report of Evidence.
Mr. Jonathan Hutchinson, F.R.C.S., F.R.S., LL.D.	I can conceive it possible in military practice that there are advantages in the injection treatment. I am told that soldiers are unwilling to go on taking medicine by the mouth, that they interrupt the course, and that you cannot compel them to go on. And I can conceive it would be a better plan to use the injection, because the patient is more under the control of the surgeon than by the other means. I should not think of adopting it in private practice; from what I have seen, I do not think it is nearly so good as continuous administration by the mouth. In reference to inunction, I think it is exceedingly good, but is very disagreeable. In comparison with the administration of grey powder I think it is inconvenient, that is all. It is as good in result. It is an excellent plan, is inunction, no doubt. I use inunction occasionally if I cannot control the diarrhœa. If a patient always gets diarrhœa by taking the pill I use inunction; otherwise the pill is so convenient and simple. With regard to the administration of mercury by the mouth, I am not strongly in favour of grey powder compared with blue pill, or with the administration of liquor hydrarg. perchloridi. Any preparation will do. But I know the strength of the grey powder, and I know exactly what it will do generally. And it is the most convenient. I prefer it to the blue pill, and it is less disagreeable to the stomach than the liquor hydrarg. perchloridi. The liquor, as prescribed by my friends, generally, in my experience, is given in far too small doses. I do not think that the doses of hydrarg. perchloridi usually given are equal to the doses of grey powder which I give, in efficiency. It is a disagreeable remedy to the stomach in most people. Between blue pill and grey powder there is very little to choose; but the balance is in favour of grey powder. I think fumigation is an excellent plan, but very troublesome, and no better than the administration of grey powder.
Professor Ogston.	I should be inclined to say Yes as a routine method.

QUESTION VIII. What is the most advisable course to be pursued in the administration of the iodides in syphilis?
What advantages may be expected from treatment by other methods than by the use of mercury and the iodides?

By whom.	Report of Evidence.
Lieut.-Col. P. M. ELLIS, R.A.M.C.	To determine the natural susceptibility of the patient to the iodides, as upon this the actual dosage should be based. Care should be taken that depression is not produced. Consistent with this, large doses should be given in cases of gummata and visceral lesions. The drug is not generally of much value in the early stages of syphilis. No other special treatment appears to be of much value. I find that in syphilitic rheumatism, as it is called, syphilitic pains, it is very useful. I would give it when there is actual infiltration, such as gumma, and when there are arthritic pains. I give it in those cases where there are severe arthritic pains. I give it in cases of periostitis and late secondaries. I give it alone frequently. Sometimes I combine it with other things. It would depend on the patient a good deal. Many of these patients are very cachectic, and then one is unwilling to give them mercury. As regards the next section of No. 8. I do not know of any other specific treatment. I should be unwilling to give up iodides and mercury altogether. If I had a severe cachectic case, such as I referred to, of such severity that he could not take iodides of mercury, I should devote myself entirely to attempting to improve his general health. I find in many of the cases of syphilis after long treatment in hospital that they improve when they are discharged, assuming that the cases are not severe and the patient can go about. I think cases with gummata in which you cannot give iodides or mercury are uncommon. Of course you would meet with them. You meet a man when he is broken down in health, and so forth, but in such cases there is generally combined some other condition, such as the presence of arthritic pains—what is called syphilitic rheumatism—and in such a case as that I treat the patient with alkalies. If I had the opportunity of sending such a patient to a convalescent home, or to the seaside, if there were such a thing possible, I should do so. I think that would be likely to be beneficial. These severe cases of syphilis abroad are usually invalided home, so it is not often that one sees these very cachectic cases, except at Netley.
Lieut.-Col. H. R. WHITEHEAD, R.A.M.C.	I personally hold that the iodides are not required, or are not advisable until the later stages of the disease. I never think of giving them in the early stages. They are advisable in gummatous conditions, bone lesions, and later sore throats—the later secondaries. I have no experience of other methods. I would not like to give up mercury or the iodides. I do not hold at all by the so-called tonic plan of treatment. In a case of bad syphilis with gummatous lesions and cachectic to such a degree that you cannot treat him with mercury and the iodides, I have always in such cases stopped the mercury or iodide of potassium or both combined and tried to improve their general health by cod-liver oil and malt extract, with sea air and tonics; but I think the essential point in the treatment of all syphilis is either mercury or iodide of potassium if you wish to destroy the disease. I had a large experience at Netley of sending such a man to the seaside when I was assistant to the professor of surgery. We had a lot of syphilis, and the men did uncommonly well by the sea—cases sent home.
Lieut.-Col. G. H. SYLVESTER, R.A.M.C.	I have not any plan. I confine iodides to late secondary and tertiary syphilis, according to the rule which has been emphasised in this country, in gummatous and late secondary lesions and in tertiary lesions, and large doses are sometimes required combined with mercury. But it depends on the condition of the patient, how he is. There are certain cases which will not stand mercury or the iodides, and I think tonics are good for them. We do keep them at Netley in the open air as much as possible. There is no scheme yet for systematically carrying out open-air treatment, but as a matter of fact we do treat many of them in that way. They sleep in a room at night.
Lieut.-Col. C. A. WEBB, R.A.M.C.	*Tertiary Manifestations.*—Iodides should be given well diluted and continued for a long time. I do not think it is a practice now in military hospitals to give a mixture of iodide of potassium and liquor hydrarg. perchlor.; it used to be, but I do not think it is now. My experience in Egypt has been with injection as the routine practice. In the early stages I would rather give mercury without the iodides. I do not know of any other methods of treatment of syphilis except the use of mercury and the iodides. I have no experience of any school where mercury is not given at all. In Egypt we used to occasionally send our cases to Alexandria from Cairo, but I think if anything the syphilis cases were not benefited at all by the change. The climate is damp at Alexandria, which is at the seaside, and this may have had something to do with it.
Major and Bt. Lieut.-Col. S. HICKSON, R.A.M.C.	In the administration of the iodide we give about 10 grains three times a day with some spirits of ammonia. We are guided to the administration of iodides by the stage of the syphilis. I do not give iodides in the early secondaries. I think authorities tell us to give it in the late secondaries and the tertiaries. I have no experience of other methods of treatment than by mercury and iodides. On the severely cachectic cases with bad gummatous lesions, I adopt, of course, dietetic treatment. Good diet, perhaps cod-liver oil and some tonics. If it is a gummatous lesion I would give iodides.

Question VIII.	What is the most advisable course to be pursued in the administration of the iodides in syphilis? What advantages may be expected from treatment by other methods than by the use of mercury and the iodides?

By whom.	Report of Evidence.
Lieut.-Col. G. D. C. Mosse, R.A.M.C.	I generally give 5-grain doses of iodide of potash thrice daily for three days, and then increase each dose by one grain, until I give 10 or 15 grains three times a day (if necessary), but 5-grain doses, *well diluted*, three times a day often suffices. I think all advanced lesions are benefited by the iodides, and more particularly all infiltrating lesions. I think iodides should be continued for at least three months and not stopped directly manifestations have disappeared. I have no experience of treatment by other methods than by the use of mercury and the iodides. I do not believe in other methods of treatment, and should be very sorry to be without mercury.
Mr. Arthur Shillitoe, F.R.C.S.	I very seldom give iodides alone. I generally combine with them mercury, and very seldom use the potassium salt, because, in my experience, you get less evil effects with ammonium and sodium salts, and when I am giving iodides I always endeavour to flush the system and make the patients drink half a pint or a pint of really hot water, too hot to drink off, to sip it one hour before their meals. I would commence the administration of iodides at any period of the disease. If I got a very early bad secondary I would start the pushing of the mixture. My guide for starting would be the nature of the lesion, rather than time of the disease. My definition of the nature of the lesion would be a breaking down lesion, or a very bad eruption, say a facial eruption, where it is easily seen. I think I should get rid of it a little quicker perhaps by introducing iodides with the mercury than by using mercury alone. I would give iodides before the appearance of an actual gummatous lesion. By a bad secondary I mean a bad early secondary or purpuric type, or one which readily breaks down. I have no experience of other methods of treatment, and should not like to give up mercury entirely, as in Professor Bocok's clinique. I have never visited that clinique.
Mr. P. J. Freyer, M.D., M.Ch.	The iodides are reserved, in my opinion, or should be reserved, for the tertiary stages, gummatous indurated lesions; the symptoms that recur remotely, say, after two years. A patient is, say, two years under treatment, and you keep him under control by means of mercury. Then he passes out of your hands, but comes back with an eruption. Then I would be inclined to give iodides. Gummatous infiltrated lesions often occur before two years, and if they do so I would give iodides combined with liquor hydrarg. perchloridi; a drachm of liquor hydrarg. or half a drachm combined with certain quantities of iodides. That would vary, with the idiosyncrasy of the patient, from 3 to 10 grains. I have not had experience of other methods of treatment of syphilis than by mercury and iodide of potassium. In severe cases that cannot take mercury I would give iodide of potassium. I would advise him to go to the seaside or to the country, and I would combine, in these cases, tonics. I have had personal experience of such cases. I would not say much at present, as in private I do not lay myself out for this kind of work, but I have seen cases benefit very much in this way. I have not used iodide of sodium and ammonium. I have always depended upon potassium iodide. I have no feeling that this drug is dangerously depressing, and that advantage is gained by using other salts. I hold by iodide of potash, and when it is depressing I give aromatic spirits of ammonia combined with it. I do not think it is more depressing than other iodides.
Mr. Edgcombe Venning, F.R.C.S.	I have only used iodide of potash. I should wait until I had some indication, such as roseola or sore throat, or mucous tubercle, or something of that sort, I should administer it long before the occurrence of actual infiltrating lesions, such as gummata. In fact, every patient I have treated with mercury, I have, in addition, treated with iodide of potassium at the same time; directly I have seen manifestations of constitutional symptoms presenting themselves, I put them upon iodides as well, 10 grains three times a day, and if they are people who can afford it, I give them sarsaparilla; if they are not, I put them upon compound tincture of bark. There is no advantage to be expected from treatment from other methods than by the use of mercury and iodides. I think there is no one thing of which I can be more sure of than this, that mercury is the only drug that will have any really curative effect on syphilis. I saw once the case of an officer who was in the 43rd Regiment. He contracted syphilis, and was under a homœopath. Subsequently I was asked to see him. He had a large chancre, and I advised mercury, but he would not hear of it; he absolutely refused to take it. The disease was allowed to run riot in him from beginning to end. I have had an opportunity of seeing that man from time to time. He was covered with ecthyma; there were great thick crusts all over him. He also had severe iritis, and nearly lost the sight of both eyes. The disease in him was allowed to expend itself without treatment. He was scarred all over his body. I took him to see Sir James Paget one day, and he was astonished. He said, "Here is an instance of where the disease has been allowed to run riot from beginning to end." The man has been perfectly well since; he has never had a symptom of syphilis since. As to sending cases to the seaside, I find that anything which improves the general health improves the patient. I think this a great point of great importance.

Question VIII.	What is the most advisable course to be pursued in the administration o the iodides in syphilis? What advantages may be expected from treatment by other methods than by the use of mercury and the iodides?

By whom.	Report of Evidence.
Mr. Malcolm Morris, F.R.C.S.E.	With regard to iodide, it must be clearly and distinctly stated that it does not take the place of mercury. It is an adjunct in the treatment, but does not take the place of mercury. Mercury is the antidote; iodide is only the resolvent. It is useful mainly in the later stages of syphilis, but it may be used in between courses of inunction. I would not give iodide in the early secondary eruptions, unless there were some special circumstances peculiar to the individual; I would be inclined to administer iodides only when the late infiltrating lesions, such as gummata, make their appearance, and then distinctly only as a supplementary treatment, and not to take the place of mercury. At no stage from beginning to end would I say it takes the place of mercury. I have seen a considerable number of individuals who have been treated with iodides only, not with mercury at all; and I have seen the results in regard to their own health, and the results in marriage, in the condition of their children. I could mention a considerable number of cases, because at the time I first began to study the subject it was the fashion to decry mercury. But I was fortunately the pupil of a very strong mercurialist, George Gascoigne, to whom I owe a great deal of my knowledge of syphilis. He was perhaps known to some here; he was one of the surgeons of the Lock Hospital at that time. I know at that time people treated without mercury, including fellow-students, and they have had disastrous careers. Some of them you know and I know who have had disastrous careers. But I also know the children of these who were treated with mercury at that time, and many of them I treated at the early part of my career with mercury, and they are absolutely well. At that time it was the fashion to say it was not possible to cure syphilis. But I know many cases of people who had syphilis and now have healthy children. Some of the people whom I know to have had syphilis and been treated with mercury have got grandchildren now, and that I attribute to the thoroughness of their treatment by mercury in their earlier years. I would not use other methods of treatment than mercury and iodides, except in those rare, exceptional cases, where the patient's health is so bad that you have to balance between their dying and something else being carried out. There may be a limited number of cases in which you would not give mercury, and could not, nor iodides; and you cannot help yourself then. As to sending such cases to the seaside, I would rather have drugs myself than they should go to the seaside. It is possible when people having the disease are emaciated and very ill, especially those who have been in the tropics, that seaside treatment might be an advantage. It is possible. I would never knock off medicinal treatment and substitute seaside treatment for it.
Mr. James Ernest Lane, F.R.C.S.	The iodides are of extraordinary value in getting rid of certain symptoms of syphilis, but I do not think they influence the course of the disease very much. But in any ulcerative lesion about the throat or any mucous membrane, I think they are of extreme value. As a matter of fact, I do not give iodide of potassium; I give the iodides of sodium and ammonium mixed. Perhaps it is only a fad on my part, but I do not think that mixture is so depressing as the potassium iodide. They are of greater effect, I think, and cause less iodism. I would administer the iodides on the occurrence of certain lesions about the throat, or about mucous membrane; or very intractable eruptions. In a case of precocious syphilis, as gummata, I should prefer mercury, certainly. The indication for iodides would, to my mind, be throat lesions and lesions of the nervous system; large doses of iodide in any lesions of the brain or spinal cord. I do not know that there are many other methods. There is a plan which is occasionally adopted, called the Zittmann method; I have not much confidence in that. In certain very intractable cases of syphilis, I have seen it succeed where other treatment has failed. I would never give up mercury. I know Professor Boeck; he does not give mercury; but his opinions are not in accord with the majority.
Lieut.-Col. R. L. Love, R.A.M.C.	In cases where mercury is not well borne and in those where mercurialism has appeared before the signs of syphilis have completely disappeared, I have interrupted the treatment by mercury and substituted iodide instead with good results, in many cases completing the cure; in others I had to resume the mercury before a cure could be obtained. I have no belief in any other treatment of syphilis but that by mercury and iodide.
Lieut.-Col. F. J. Lambkin, R.A.M.C.	Iodides should never be given for any long continuous time. They ought to be given in conjunction with a mercurial course intermittently, and then only to relieve symptoms. I advise giving pot. iodi. in doses up to 5 ii. per diem for not more than a week at a time; it should then be stopped, and repeated every alternate week until the desired result is obtained. If continued over the time named it is apt to act as a depressant, and tends to debilitate. No advantages may be expected from other modes of treatment without mercury.

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By whom.	Report of Evidence.
Dr. T. Colcott Fox.	My opinion is that the iodides have very little effect in the earlier stages of syphilis. It is claimed, of course, that given in between the mercurial doses, it liberates the mercury from the tissues, and so on, but I think there is no proof of that in any way. We know that in the later stages of syphilis, iodide of potassium, especially in large doses, has a marvellous resolvent effect, but I do not think it kills the parasites or the virus. It is not curative in the full sense. I consider it very valuable in cases of precocious tertiary lesions. It is the peculiar character of the tertiary lesions which it attacks; they have characteristics different from the early lesions. I more frequently give large doses now, 30 grs. a day, and more. No real good effects may be expected from treatment by other methods than by the use of mercury and the iodides. Other methods are simply accessories—sulphur baths, and so on, and bathing generally, and what they used to call sudoriferous weeds, sarsaparilla, and so on. I have very little experience of Zittmann's decoction, but it is claimed in certain intractable cases, where other mercurial methods have failed, that it has a striking effect; there are cases of that on record. I have never followed the results myself of the cliniques abroad in which mercury is not used at all. At Lyons and at Christiania it was carried out, and no mercury given at all. I would not like to give up mercury. The fallacy comes in here, the course and the amount of the syphilitic infection vary enormously in different patients. There is no doubt that some patients have practically no secondary eruption at all; in others the symptoms are very slight, and they have no treatment, and they never hear any more about their syphilis. There may be the mildest infection possible up to the gravest. I have no record about results obtained in Edinburgh when they did not use mercury.
Mr. Charles Gibbs, F.R.C.S.	I think the iodides are mere adjuvants to the treatment of syphilis. In late secondaries and tertiaries you would give iodide of potassium until all the symptoms of the disease are gone, and then start the man on the routine course of mercury and give him two years, no matter whether it is primary, secondary, or tertiary. I do not consider iodides of value in any individual lesions, because we have patients in the hospital who have taken, you may say, tons of iodides, and the syphilis still persists. I should not like to treat syphilis without mercury. I would give it to every single patient unless they had marked albuminuria or similar contra-indicating signs. In a bad case of course the patient would be admitted to hospital, and you would treat him for about a week, getting up his general strength by dieting and so on before starting the mercury. At the end of that time I would risk mercury, watching the amount of albumen carefully.
Mr. Arthur Ward, F.R.C.S.	In the administration of iodide in syphilis I think you should begin with small doses, 5 grs., and increase them steadily till the therapeutic effect is produced, and give plenty of water. Giving plenty of water apparently makes the iodide much more active, or it acts in some beneficial way. In my opinion that is the main advantage underlying Zittmann's method of treatment. I think it is the large quantity of water which flushes the system and washes out the toxines. I have a great deal of experience of giving large quantities of water to patients who are very anæmic or very wasted—in-patients at the Lock Hospital in an extremely bad condition. I am sure giving large quantities of water helps them very much. I think it increases the effect of the iodides, and even water only seems to have a beneficial effect. I think it frees the system of toxic products. As to the other methods of treatment besides mercury and iodides, my experience is that very good feeding is vastly important, and drinking plenty of water, an excessive amount of water, is very valuable because it helps the system to clear itself. Also fresh air, sunshine, and all such things are important, and iron where there is anæmia. The best preparation in my experience is Blaud's pill. I have not visited cliniques abroad where the treatment of syphilis is conducted without mercury. I do not think I have ever seen cases coming from Christiania or Lyons. I do not remember to have seen cures absolutely untreated by mercury from the beginning. I should certainly not like to imitate that method. I should like to say further with regard to the point about giving the patient the benefit of plenty of hot water; that I advise principally in tertiary cases with very severe lesions. In my experience it certainly helps the organism to recover its lost energies and cause the lesions to heal. I think it is the same as Zittmann's treatment. Under Zittmann's treatment I have seen terrific lesions heal, but since I have taken to giving water only, they seem to do just as well, and the Zittmann has a drawback from the hospital point of view of being expensive and causing the patients diarrhœa, and having to shut them up in a hot atmosphere and so on. That is a strain upon the organism. I think if you give three pints of hot water a day an hour before meals instead of the Zittmann it does just as well. Zittmann's treatment is practically impossible at a general hospital on account of hospital accommodation. They used to do it at the Lock, and they do it now occasionally in bad cases; it comes off and does a great deal of good. I think the water is really the true inwardness of it.

Question VIII.	What is the most advisable course to be pursued in the administration of the iodides in syphilis? What advantages may be expected from treatment by other methods than by the use of mercury and the iodides?

By whom.	Report of Evidence.
Dr. W. Allan Jamieson.	As regards the use of the iodides in syphilis they are of the greatest value in the tertiary symptoms, whether those appear at a long period after the primary disease, or whether they occur, as they do sometimes, comparatively early, in gummata or other lesions which are usually called tertiary. In that the method I always adopt is the administration of doses of iodide in this way:—I order ½ oz. of iodide of potassium and ½ drachm of carbonate of ammonia and 6 ozs. of water; and of that a dessert spoonful, 2 drachms, is given three times a day, well diluted. I have certainly found that, given in that way, the iodide is better borne than in any other way. An instance occurred long ago. A gentleman had been in the Army and suffered from a tertiary lesion of the foot, and had been treated by a number of different people. He came to me and he said, "I cannot take iodide of potassium; you must not give me that." I said, "I am certain the only way to get rid of it is by giving you iodide," and, after some conversation with him, I persuaded him to take this preparation I have mentioned. He took it for a long period of time, many months, and with perfect success. That occurred now some five or six years ago, and he has remained permanently free from his lesion, which had gone on giving him trouble for some years previously to my seeing him. And there are also other instances which led me to believe that that combination of iodide with carbonate of ammonia is exceedingly valuable diluted in half a tumbler of water. The patient I have spoken of, when he took iodide of potassium before, it disagreed with him and made him so ill that he could not take it; there was, for a little time, transient iodism, catarrh in the throat, and head symptoms. But that soon passed off, and afterwards he continued steadily on the medicine for a number of months, with the result that his ulcer healed entirely; it was one on the heel. I know that he has remained well for a number of years, certainly five or six. I regard the solution I have mentioned as being of great value. I always tell patients to take it in a tumbler of water. There is another point, and that is being impressed upon me very much recently; it is, that the urine should always be examined before the administration of the iodide, both as to its quantity and as to its nature. If it is deficient in quantity, it probably may show some certain renal inadequacy, some want of activity in the kidneys. If the urine contains albumen you cannot give iodide at all, unless with the greatest caution, because I have frequently seen as a result that severe iodide eruptions occur. It seems to be comparatively rare in syphilis, because I have given iodides largely and have examined the urine, but without finding that it contains albumen to any great extent. I must say it has not been common, but in cases where the disease was suspected to be tertiary, and iodide has been given, I have seen bad results from it, and then they were found to be so from the fact that there was nephritis present of some form or other, and that that prevented the elimination of the iodides, and in consequence of which small doses produced disastrous effects. Supposing mercury had to be given under these circumstances, that is to say, the concurrence of subacute nephritis and a primary chancre, I do not think mercury would be so harmful, but I should reduce the dose, giving $\frac{1}{50}$ of a grain instead of $\frac{1}{10}$ of a grain for a dose. I think it would be more important to have the syphilis cured, so to speak, under those circumstances, even if a little risk to the nephritis were run at the hands of the mercury. Other methods of treatment than by the use of mercury and the iodides are merely adjuncts. I have found that if you can keep your patient warm in the early stage he seems to do better, but it has not such a good effect upon the general health. Sometimes I have combined the iodide with some cinchona. I do not know whether there was much benefit in that, but as to other methods I have not found that they have been of any use at all. The only two remedies I have found of value have been mercury and iodide. I remember when syphilis was treated in Edinburgh largely without mercury, because when I was a medical student we were told by Professor Syme and Professor Bennett that there was nothing more harmful than mercury, and I saw a number of cases of severe tertiary lesions, such as we do not see now, and I feel inclined to put that down to the want of mercury in treatment. I know that that prevailed pretty much over the country. First of all, just after I had graduated, I went to Preston in Lancashire, where there was a great deal of syphilis, and there a good deal of the syphilis was treated without mercury or had not been treated at all, and we saw some very severe tertiary lesions, large ulcers of the bones of the skull, destruction of the nasal bones and cartilages, and of the palate, such as we now seldom see, in Edinburgh at all events.
Dr. H. Radcliffe Crocker.	I have already mentioned as to the effect of the iodides in the earlier stages of syphilis. In the latter stages, of course, I use it largely. It has certainly a very valuable effect in removing gummata and similar tertiary lesions; but even then, after I have removed them, I give a mild course of mercury, but in much smaller doses. In cases where gummata are present it removes these products, and sometimes very rapidly. I have seen a person made very ill by removing them too quickly where they have been very extensive. But may I add that a very convenient method, which I think would be very useful in the Service, is called Larrieu's method. He gives 15 grains of iodide of potassium and 3 or 4 mm. of tincture of iodine in half a tumbler of water the first

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Dr. H. Radcliffe Crocker—*cont.*	thing in the morning. He gives it in the secondary or tertiary stages as well. In the secondary stage I have not found it of much use, but in the tertiary stage it is extremely convenient for workmen. And even private patients say that they are very glad to be relieved of the second and third doses of medicine. I think dilution has some value in connection with the therapeutic action of iodide of potassium. I am a great believer in the dilution of drugs, or at all events of copious libations after their ingestion. I think Zittmann's method is largely a question of sweating. A very important part of Zittmann's is keeping them at a rather high temperature, and the treatment has a diaphoretic effect. There is no doubt diaphoretics are of great assistance in the treatment of syphilis; and sulphur baths no doubt aid in that way. I think there is very little advantage to be expected from treatment by other methods than by the use of mercury and the iodides. Except that, as I have said, diaphoretics are an assistance, I should never rely upon any of the various substitutes for mercury. I have tried some of them, but I do not rely upon any of them. I would certainly not like to give up mercury, as I think the others are only adjuvants. Sarsaparilla, for example, I cannot make out has any effect at all; but it is one of the leading ingredients in Zittmann's decoctions, with which some cases appear to do well, but the treatment is inconvenient and of limited application.
Mr. David Wallace C.M.G., F.R.C.S.E.	With reference to the question of iodides in syphilis, I have nothing to say, further than that I think in tertiary syphilis one of course must give iodide of potassium: and one has merely to use it like any other therapeutic measure. I do not think there is anything special to say regarding it. By tertiary syphilis, under these circumstances, I mean syphilis with infiltrating lesions, gummata. I find iodides have a special action on the infiltration produced by the disease. In comparing its curative action with mercury, I was going to partly answer that question, I think, by saying that mercury is not necessarily a curative drug. I do not think we can say, when a secondary lesion has disappeared, that our patient is cured. We have temporarily got rid of a syphilitic manifestation. But iodide of potassium actually cures the lesion; it dissipates the infiltration of the gumma wholly.
Sir Alfred Cooper.	I am not a very great believer in iodides, except that they are extremely useful as palliatives. I think they are useful in rupial cases and gummata, very useful indeed. But I would not give them in a case with secondary symptoms. Only in the later manifestations. As to the other methods of treatment, there are no other methods that I know of. Of course I give cod-liver oil and iron. I should not like to give up mercury. Mercury is the sheet anchor, and it is the only thing to cure it. There was a gentleman who believed in iodide of potassium so much that he tried to cure several cases by it. I know three cases which never had a grain of mercury, and died from late syphilis.
Dr. Arthur Whitfield.	I limit the use of iodide to painful and destructive lesions. I occasionally give it early to help a severe throat, and especially for severe headache and osteocopic pains, but I never give it as a routine treatment, only where I wish to heal up an ulcer or stop a gumma from bursting externally. I think it is more rapid in its action on gummata than mercury is. I have never used Zittmann's treatment myself, but have seen it used, and it appeared to do good, but, as I have said, I have never seen a malignant case in this country.
Mr. Jonathan Hutchinson, F.R.C.S., F.R.S., LL.D.	I never give iodides unless I am compelled in the secondary stage. I never give iodides unless the symptoms are such as to definitely require iodides; for instance, such symptoms as tertiary, and anything of the nature of a gumma or ulcerating eruption. In a case of superficial late syphilide of the face, for instance, with circinate margins occurring say about four or five years after primary symptoms, I should give iodide of potassium. I should consider it gummatous infiltration. And I should give mercury too. I do not know that I should quite like to say that it is for the purpose of helping to remove the infiltration that I consider iodide valuable. It does do that in a most wonderful way. It makes sores heal which would not otherwise. I have not any great faith in iodide as influencing the disease. I have no faith in it as influencing the disease in its early stages, in the secondary stage, in the blood stage. In that stage I do not think it is of any value, or very little indeed, and I do not think it is efficient in preventing the development of tertiary symptoms. But tertiary symptoms I should look upon very much as local ones, not implying evidence of the blood disease, and frequently better cured by local applications than by the internal administration of iodides. As to the administration of iodides, I always combine with ammonia. I always combine sal volatile with it; I never give it without ammonia. I do not combine the mercury with it. If I want to give both I always give them in separate

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Mr. JONATHAN HUTCHINSON, F.R.C.S., F.R.S., LL.D.—*cont.*	prescriptions. I do not know that that matters, but it is my custom. The iodides when combined are uncertain in my experience. One gets into habits, and I have got into the habit of always giving separate prescriptions, but letting the patient take both medicines at the same time. They take a dose of iodide of potassium with which to wash down the pill of mercury. With regard to "What advantages may be expected from treatment by other methods than by the use of mercury and the iodides?" I have very little experience of any other method. In the schools of medicine in which the mercury is still withheld from syphilitic patients, I believe the results are very unfortunate; that is my experience. The worst cases of syphilis I have seen used to come from Edinburgh at the time mercury was not used there by some of the leading surgeons. I saw Boeck's practice in Christiania, but I did not, I confess, think it was very triumphant. I do not know anything of it of recent years, so I could not say anything about it at all. I saw it at the time that Boeck was living there. There is also the importance of giving quinine. In some of the cases I give quinine much more freely now than I used to; that is to say, in all cases in which the patient loses health at all, and in which the mercury seems to depress. Then there is the advantage of sending the patient to the seaside. I am speaking of the exceptionally severe cases, cases which are intractable under ordinary treatment, many cases of tertiary, and malignant forms of secondary syphilis. I give the patient quinine and send him to the seaside, and at the same time go on with the specifics. That is very often effectual when you could not cure him in town. My impression is that the local lesions of tertiary syphilis are often quite local, and that if you can make the place heal it will be perfectly sound, and there is very little constitutional tendency to relapse—that the patient will not relapse, and does not need internal treatment. Iodoform, iodol, and xeroform have risen very greatly in my estimation. I claim iodoform as a local specific; all those remedies I have mentioned are really local specifics. Certainly iodoform has a wonderful effect in deep ulcerations in the throat, ulcerations in the nose. Local application in those cases seems to be exceedingly important. I think iodoform is still the best. I have changed between one and the other, and if one does not cure the patient the other perhaps does. But the one which suits best is iodoform. I have no special knowledge or idea that iodide is better taken in any particular relation with food than any other time. I think ordinarily after meals. But I have no strong opinion about that at all. I think to get the maximum effect quickly it should be given in frequently repeated doses. I have never gone so far as to wake the patient up and to give it during the time for sleep; but I think it is better given in divided doses. Still, four, five, and six times in the 24 hours is as far as I have gone. With regard to heroic doses, I have known a patient take half-an-ounce three times a day. It was not in my prescription, he took it on his own hook. No, I do not give heroic doses: scruples, half-drachms, and drachms. I do not often have to give it in heroic doses, and my impression is that combination is extremely important. I have seen patients who say their doctor told them iodide of potassium would not cure them. I say to the patient it must be taken and be combined with ammonia; he does take it and it cures. There are many fallacies. I always insist upon local treatment, and very likely I give carbonate of ammonium at the same time. Even given with ammonia I have come across cases in which it has acted as a depressant. I give iodide of potassium as little as ever I can; it does depress certainly. I begin as ordinary routine with four grains, I never begin with large doses. Four grains three times a day. I do not like to continue the iodide of potassium at all longer than it is absolutely necessary under any circumstances. It depresses a great many persons very much, and depresses permanently. Supposing a person showed great depression, and with the comparatively small dose of four grains three times a day, I am afraid it would not imply that smaller doses would do by any means in many cases. I am afraid it depresses many patients who otherwise seem to require a larger dose. It is a very difficult thing to know what to do in such a case. Those are the cases which are sent to the seaside and given tonics at the same time. And I should try local remedies too; but the seaside above all.
Professor OGSTON.	I have already answered this question. I have a recollection of the times when mercury was not advised by some in Scotland. I should not like to give up mercury. I believe the disease is curable without mercury, spontaneously curable under favourable circumstances, but mercury is of advantage, both in private practice and in hospital practice; and in such conditions there can be no doubt about its use. I have no doubt about its beneficial effect in shortening the disease. I remember some cases which were treated without mercury in the olden days; they seemed to me to run a longer course, and I think they were more susceptible to outbreaks of tertiary; but I could not vouch for that. I have not visited Professor Boeck's clinique in Christiania. I believe they are treated there without mercury. In private practice one is obliged to treat the manifestations, especially when they appear on the face, for patients feel that they are very noticeable, and perhaps that is aided by the effects of a guilty conscience. In military practice the men do not mind, but we cannot tell private patients to put up with it; we must treat them. I have no doubt that

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Professor Ogston —*cont.*	mercury is of advantage in these cases. Might I add in regard to that that the question embraces a good many things. In modern treatment of lesions of syphilis there are many things which are not strictly medicinal which are very helpful. There are exceptional conditions, say iritis, choroiditis, and so on, where extra and additional treatment is absolutely necessary. So you cannot quite assume that mercury and iodide will cure everything. There are additional things to be used. The same thing with regard to the nose; local applications to the nose, local operations in the nose, are very much coming into practice with regard to lesions there, and if carried out, considerably abridge the duration of the disease and limit its extent. And the same is true of the larynx, and of bone and cartilage. There are conditions, especially of the tertiary type, in bone and cartilage, which seem to be incurable without operation, but are perfectly curable by being treated by operation, as if it were malignant disease, and eradicated. And I have seen instances of perichondritis of the ribs, where, after four or five operations imperfectly done with scraping, and after treating by ordinary means for tertiaries, there has been an instantaneous cure by the more radical operation of complete extirpation of part of the sternum and the rib cartilage which was affected. That would be a type of bone and cartilage, and it is applicable to the nose. These changes possess pathological characters by which you can at least suspect them. The number and characters of giant cells in a microscopical slide is often sufficient to make one say it is not tubercular but probably it is syphilitic. And sometimes the probable diagnosis of these cases has to be made by the microscopical appearances. They have gone beyond the stage of simple infiltration. The changes are different. They are greater. And operations generally are now being more used in syphilis, for soft nodes and that sort of thing. The operative treatment is very much more employed than it used to be. And another thing is baths. We find in practice, private practice, especially among better class patients, including officers, that the use of baths is enormously advantageous to the various forms of treatment; such baths as vapour baths, medicated baths, warm baths, fumigation baths, and even electric baths for nerve lesions. You cannot very well answer this question, No. 8, the latter part, without taking into view that those things exercise a sensible effect on the duration of the disease and the capacity of a man to go about his duty. In speaking of baths, I do not like to entirely exclude mercurial baths. In my experience fumigation is inert, but others do not think so, and I should not like to exclude fumigation as an adjunct to the treatment of difficult and exceptional lesions due to syphilis. I have no remarks to make about the second part at present.

Question IX.	In the treatment of gonorrhœa, have recent methods of irrigation, injection, the use of any new medicaments, &c., shown themselves of greater value than the older methods?

By whom.	Report of Evidence.
Lieut.-Col. P. M. Ellis, R.A.M.C.	No, as far as I can judge, but I have had little or no experience of very recent methods, many of which appear unsuited for general application in a military hospital.
Lieut.-Col. H. R Whitehead, R.A.M.C.	I think protargol has given good results as an injection, 1 to 2 per cent. solution. And I should be inclined to treat gonorrhœa with urotropine. I think it is doubtful if I would use protargol rather than nitrate of silver. I have seen a good deal of it at the Herbert, and I think it seems a good preparation, but whether it is better than nitrate of silver, which it is, in another form, is doubtful. A man does injection in the latrine. Each man has a bowl given to him with his injection, and he is told to do it three or four times a day and to keep his syringe clean. He keeps his syringe himself, and of course in each case when the syringe is taken in it is sterilised. The orderly supervises the matter of injections. The orderly explains how he is to do it. He has instructions. He is told to inject about an ounce, and to keep hold of the penis so that it does not run too far backwards. He is told to hold it in for a certain time, as long as possible, and then to allow it to flow out. The medical officer gives the orderly these instructions and from time to time shows him; it is part of the orderly's training; he is told how to use it, and also the fact that the man should make water before he uses it.
Lieut.-Col. G. H. Sylvester, R.A.M.C.	I have no experience of recent methods in the treatment of gonorrhœa.
Lieut.-Col. C. A. Webb, R.A.M.C.	With reference to gonorrhœa, I do not think the newer methods have diminished the time that the patient is under treatment, such methods as the use of protargol and irrigation. My experience of these methods is not much, but as far as I have been able to judge, the man remains as long under treatment.
Major and Bt. Lieut.-Col. S. Hickson, R.A.M.C.	I have nothing to say about the recent methods, of my own knowledge. We give various injections; protargol we have been giving lately at the Herbert Hospital; this has been done under my supervision in my wards. We use a good deal of 1 per cent. solution of protargol. We do not use irrigation but injection. We have used urotropine, but of course it is expensive.
Lieut.-Col. G D. C. Mosse, R.A.M.C.	I have had no experience of recent methods of treatment of gonorrhœa by irrigation, &c.
Mr. Arthur Shillitoe, F.R.C.S.	As to the more recent methods of treating gonorrhœa, I have never gone in for irrigation, but I have seen what I regard as bad results afterwards. I do not think those who go in for that treatment get their cases better any quicker than we do without irrigation. Certainly some of the most chronic cases which we see in private are cases which have been irrigated in their early stages. The most commonly used irrigation, I suppose, is the permanganate for continuous irrigation for some time. In my experience the most satisfactory plan for treating early cases of gonorrhœa is certainly with injections. The injection I am using at present, which I think is one of the best we have had, is argyrol, a silver salt, used as a 10 per cent. solution or a 5 per cent. solution given in an ordinary half-ounce syringe. I think many chronic cases of gonorrhœa are due to and kept up by over treatment. I have had considerable experience in using strong applications by the endoscope. In some cases it does very well, but it is very disappointing in a great many, perhaps in the majority. I think irrigation fails to cure chronic cases because you interfere with the deep urethra. I think you can do pretty well what you like with the anterior two-thirds of the urethra, but when you come to irrigate you interfere with the deep urethra. These prolonged irrigations get much deeper and are liable to set up posterior urethritis. In my method of injection a half-ounce syringe is used and the patient injects himself, retaining the fluid for two, three, or four minutes, which is then allowed to escape. I have had no experience of continuous irrigation. I have seen what I consider to be the non-satisfactory results. This has been done by some of my colleagues in Dean Street some time back. I did not see those cases.

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Mr. P. J. Freyer, M.D., M.Ch.	Gonorrhœa irrigation is a very awkward method. Irrigation is utterly unsuitable for acute gonorrhœa, that is Janet's method. Janet's method was originally introduced for the purpose of curing gleets, after the acute stage of gonorrhœa has passed off, in which you find, on examination by the urethroscope, patches of ulceration. That is what Janet's method was intended for. I would like to see anybody with acute gonorrhœa have Janet's method applied to him. One would see how he would roar with agony. The pressure of a column of water 3 feet high on the urethra will send a person mad with agony in the acute stage of gonorrhœa. I think it would bring about ulceration of the mucous membrane, and probably infiltration of fluid leading to abscesses; peri-urethral abscesses I should think would form. But as a matter of fact I do not think anybody would stand it. In the early stages of the disease I pin my faith entirely on injections. I believe gonorrhœa to be a local disease, and that it can be most efficiently dealt with by injections by means of a urethral syringe. As a matter of fact it does not really matter much what the astringent drug is. I find myself that sulpho-carbolate of zinc is the best. But it does not really matter what the astringent is, whether it is alum or permanganate of potash, or sulphate of zinc, provided it is used in the proper way. The proper way to employ it is to use the injections repeatedly, every two hours at first, but to have the injections of such a weak character that they will not hurt the patient. After the injections he should just feel an astringent there, just as you feel alum on your tongue, but he shall not suffer pain or scalding after it. Of course a patient with acute gonorrhœa is best treated by being put to bed and kept there for a week, and if you can take the case in an early stage and put the patient to bed and keep him there, and give him hot baths, and make him devote himself to his cure, he will completely reduce the gonorrhœa in a week or ten days. I do not mean there will not be a tendency to gleet for some time; but, in my opinion, you should send him to bed and let him have a week of injection. We will take, for example, sulpho-carbolate of zinc. I would make the patient a bottle of that, say 4 grains to the ounce, and every two hours the patient will take out a quantity of that and an equal quantity of warm water, so as to make the temperature of the mixture the same as that of the body, and use it, of course passing his water in the first instance, so as to clear the urethral canal. This should be used with a urethral syringe, and the injection should be thrown as far as it would go. There is no danger of it going too far, it will not go too far. The point of importance is not to make the astringent strong enough to hurt the patient, because he will not bear it. And in a short time he will check the tendency to discharge, suppurative discharge, and the whole thing gradually passes off. In the latter stages of the disease I think irrigation is thoroughly efficient by Janet's method. When you come to a gleet there is no doubt it is a thoroughly efficient method, but it is a method which requires a good deal of trouble. As to the newer astringents, I have tried protargol, but I was not at all impressed by it, I am bound to say. I believe when you use silver at all that the nitrate of silver is the most efficient in any of these cases.
Mr. Edgcombe Venning, F.R.C.S.	I have no opinion to give you on that. I know very little about it. I have never treated patients by irrigation, nor new medicaments. I cannot give you any information on those points.
Mr. Malcolm Morris, F.R.C.S.E.	I know nothing about recent methods of treatment of gonorrhœa.
Mr. James Ernest Lane, F.R.C.S.	Certainly I think there has been an enormous advance in the treatment of gonorrhœa recently by the introduction of the silver salts, which are penetrating and non-irritating; the particular salts being protargol, argonin, nargol, argentamine, all of them silver compounds containing a certain amount of silver nitrate, of which the best, in my opinion, is nargol. It is prepared by Parke, Davies, & Co., and it contains a greater proportion of silver salts than any of the others. It is more penetrating, and it certainly destroys the gonococcus more quickly than any other application. I do not think the methods of irrigation, which have been so much vaunted, are of any very great value; I do not think they produce any better results than treatment by ordinary injection with a hand syringe. There is of course a possibility of producing cystitis by washing gonococci into the bladder by irrigation methods, especially if the stream is a powerful one. Janet's method forces the fluid through the compressor urethra into the bladder. There are other methods where a catheter is passed down to the deep urethra, and the urethra is irrigated from behind forward. I do not think there is a special value in either of these methods. I have used a good many irrigations too. I used to irrigate when I had the male wards of the Lock Hospital, but I am satisfied my results are better now by using injections of nargol and those compounds of silver, and having them retained in the urethra for a longer time than was the ordinary habit; that is to say, 10 minutes up to 20 minutes; 20 minutes as

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Mr. James Ernest Lane, F.R.C.S.—*cont.*	a maximum. These preparations should be injected directly the discharge shows itself. I should give the patient very careful instructions for carrying out the treatment. I am in the habit of giving instructions to patients with syphilis and with gonorrhœa, printed instructions, of which I will hand you a copy. I have not started this very long. It was always done at the Lock Hospital, and now I am doing it at the St. Mary's Hospital, where I get a considerable practice in venereal disease; and I think those instructions, to an intelligent individual, are sufficient to enable him to use the injection efficiently. I lay great stress on the early administrations of injections. I do not think the pain and inconvenience caused by that would be enough to stop it. If you withhold the treatment you are allowing gonococci to get to parts which are much more inaccessible, and where complications may result. The great object of treatment is to destroy the gonococcus before it gets to the prostatic urethra. I think the disease is a local one, and the sooner the gonococcus is killed the better. With regard to soldiers, I think the trained orderly should make the patient read the instructions, and see him use the injection for two or three times; and then I should say that the man could be trusted to do it himself. I do not think it would be necessary to employ a commissioned officer to look after that sort of treatment.
Lieut.-Col. R. L. Love, R.A.M.C.	I have for some time treated gonorrhœa cases by injections of picric acid of strength half to two per cent. in equal parts of glycerine and water with more benefit than by any other injection or method. The weaker strength is used in the acute stage.
Lieut.-Col. F. J. Lambkin, R.A.M.C.	No answer.
Dr. T. Colcott Fox.	I cannot afford any useful information.
Mr. Charles Gibbs, F.R.C.S.	I do not think the new medicaments have shown themselves of very much greater value than the older methods. With regard to irrigation, it removes all symptoms at once after a man has been properly irrigated with Chetwood's apparatus or Valentine's, he has no more pain or scalding, absolutely none, if it is properly done. I think the method an advisable one to use in the acute stages of gonorrhœa, but would not continue the irrigation beyond seven days. I do not see why a man should not do all his work if he is washed properly daily. There is no risk in it, if you press the urethra behind the seat of inflammation. The ordinary gonorrhœa only affects one to two inches of the urethra. You instruct the patient how to compress the urethra, and then he cannot get any posterior urethritis, because it does not go any further back than the anterior part of the urethra. The irrigation only takes three or four minutes. For irrigation I think the best preparation is permanganate of potash. Of the new organic compounds of silver, I think argyrol is the best. I do not think protargol is so good as that. Lanergol is the latest, and they are getting an increasing quantity of silver in them. Argyrol has 30 per cent. of solid silver in it. As to its advantages over permanganate of potash, I think if you try it on a dozen cases, two are miracles, and the others are just ordinary cases. For irrigation I use 2½ grains of permanganate of potash to the pint, which is about 1 in 4,000. If you irrigate a man for a week, it does very well. Private patients having this treatment go to their office every day. If you grasp the urethra behind, it cannot produce posterior urethritis. It is certainly said that it does so, but it cannot produce posterior urethritis, because that is behind the constricted urethra. I think argyrol is the best injection for acute gonorrhœa.
Mr. Arthur Ward, F.R.C.S.	I doubt if the recent method of irrigation, injection, the use of new medicaments, &c. have shown themselves of greater value than the older methods. I have not carried out irrigation myself; I think these irrigation methods involve a good deal of interfering with the urethra, and I think by that means you may easily open the gates to a general infection of the system by the gonococcus. I do not think the method is wise, and therefore I have not adopted it. In treating the early and acute stages of the disease, I always give either copaiba or sandalwood. My experience with the working classes is that they will stand copaiba without getting a rash, particularly if you give the resin. Gentlemen will not stand it, they are very intolerant of it. Therefore I give them sandalwood, and I like them to use injections. I use permanganate of zinc; a good deal of water should be drunk to keep the urethra flushed out. Of the permanganate, I use one-sixth grain to start with, with hot water. An ordinary urethral syringe is used. I make the patient use a two-drachm

Question IX.	In the treatment of gonorrhœa, have recent methods of irrigation, injection, the use of any new medicaments, &c., shown themselves of greater value than the older methods?

By whom.	Report of Evidence.
Mr. Arthur Ward—*cont.*	syringe, and hold in the injection two minutes, and use three syringefuls, or a total of six minutes. That should be done night and morning, and in the middle of the day if possible. I think it is dangerous to treat gonorrhœa more vigorously at the beginning, by using strong antiseptic injections, protargol, and so on. I think the mucous membrane in this condition is in a very irritated state, and you may easily make abrasions, giving the gonococcus access to the system, and so affecting the joints or heart. I think the risks of that are considerable. I saw a case once that frightened me very much. I think there is no very great advantage in these new methods to set against the risks.
Dr. W. Allan Jamieson.	I have had very little experience of gonorrhœa.
Dr. Radcliffe Crocker.	In regard to No. 9 I am unable to give any answer of value.
Mr. David Wallace, F.R.C.S.E.	In my experience the recent methods of irrigation, injection, the uses of new medicaments, &c., have not shown themselves of greater value in the treatment of gonorrhœa than the older methods. I do not think that any one of the newer methods has any special advantage over the older methods. I have used several of them, and I have, as a routine, fallen back upon the older methods. And I would like to say with regard to the proto-silver methods that I question very much indeed if, except in the hands of those who are exceptionally careful, who use distilled water, who wash out the urethra first, and indeed carry out in practice what is almost impossible as routine, these drugs will be used to any extent at all. I think the precipitate is so easily brought about that I would be inclined to say that, as a rule, you are merely washing out with a milder form of silver preparation, if with one at all; and then you would diminish your quantity of nitrate of silver to, say, half a grain to two ounces, or even less. In the acute stage I think you would have very great difficulty in getting your patients to come regularly for irrigation. I have tried it in the hospital, where I had complete control, and where the patients, as I say, have got to do exactly what I want. It is too difficult to try among out-patients. Perhaps just at the time that the patient has come I may have done it, but not as a routine measure. I should explain with regard to out-patients that I do not see them every day, and the numbers are so large that I do not take the personal treatment of the out-patients. They come back merely to tell me how they are getting on. I may look at them, but probably my clinical assistant does that. I think the difficulty of applying irrigation in the out-patient department is too great.
Sir Alfred Cooper.	Protargol is the principal thing used now I think. I am very pleased with it. I think it is very successful, more especially in posterior urethritis. I daresay you know that in the German Army they are believers in it. They look upon it almost as a specific. The amount of good they have done there is extraordinary. It can be procured by a penny-in-the-slot arrangement. I daresay you have heard of it. I think this protargol is of special value. I think it is wonderful what it does after two or three applications with prolonged irrigation.
Dr. Arthur Whitfield.	I have no experience in the treatment of gonorrhœa.
Mr. Jonathan Hutchinson, F.R.C.S., F.R.S., LL.D.	I always treat gonorrhœa with injections, and I treat it from the very beginning. I always begin the abortive plan in the early stage; the earlier the better. Chloride of zinc is my invariable practice: three grains to the ounce. With that I cause the patient free purgation, and I give him iodide of potassium internally. I give the injection by an ordinary small syringe. I have no experience of the newer salts of silver, protargol, and such like. I keep to the old way. Chloride of zinc is very effectual, and I believe it to be perfectly safe to use in even the most acute cases and stages, provided you give a purgative with it. I purge the patient freely, and let them use the injection from the beginning.

Question IX.	In the treatment of gonorrhœa, have recent methods of irrigation, injection, the use of any new medicaments, &c., shown themselves of greater value than the older methods?

By whom.	Report of Evidence.
Professor Ogston.	The treatment of gonorrhœa in entirely changed from the older days, I think, and in a very short time I believe the older treatments will be entirely abandoned. It is merely necessary in the treatment of gonorrhœa to be absolutely thorough in local disinfection; before it affects the joints, &c. Thorough local disinfection is carried out in the anterior urethra, *e.g.*, irrigations with permanganate of potash—it does not matter in what way so long as the man knows what his object is and sees that it is effected—will cure. Washings out locally with permanganate of potash and protargol, or any of the new silver salts, combinations of organic bodies with silver, cure gonorrhœa in a very much more satisfactory and rapid way than the older methods. There is the posterior urethra, which is now very much the subject of treatment, and in that there comes the question of irrigation by permanganate lotions one in 1,000, or one in 5,000, and the use of protargol one in 400, retained for a time in the urethra, or if necessary, in the bladder, and then passed out. These methods have pretty much revolutionised the treatment of gonorrhœa. In injections of permanganate of potash in the anterior part of the urethra, injections may be in large or small quantities, but it does not seem to me that the method matters much. But the thoroughness of the method matters everything. You can do it by a syringe, or by a catheter with an irrigator attached to it. One can get the same result provided one satisfies oneself that the effects are thoroughly produced. The gonococci are not to be washed away easily; they lie amongst the epithelial cells, and therefore a certain duration of the operation is necessary. And the same is true with regard to protargol. And it is customary to give by the mouth still the old sandalwood, or something equivalent to it; and that constitutes the backbone of the treatment. I think if I had a patient in whom I could do everything myself, I could treat him as well with the half-ounce syringe of olden days as with the modern catheter irrigator. But you could not trust that to an orderly to do; or if you did he would require to be very highly trained. If you had one of the medical officers to train him, you could be certain to cure the case in a week or ten days, in almost every case; save in cases of inflammation of Cowper's glands and complications of that sort. In nearly every case it would be successful; it is almost universally so in private practice.

Question X.	What are the most satisfactory methods of treating scabies?

By whom.	Report of Evidence.
Lieut.-Col. P. M. Ellis, R.A.M.C.	Early detection is the first point; and then a combination of sulphar applications in the form of liquor calcis sulph. or ung. sulphuris, with hot baths; frequent changes of bedding and clothing. Barrack bedding should not be used. I have entirely given up using barrack bedding, because I could not cure the patients. Severe cases of scabies are nearly always accompanied by eczema, and that delays the cure a good deal. Militiamen often come in with scabies. The longest duration I have ever seen in a case of scabies, in my experience of the service, has been six or eight weeks; I do not think longer than that. It is only within the last two years that I have come across scabies again, because it is a disease one never sees abroad, and most of my service has been abroad. I do not remember it in the old days. I never come across cases which have lasted six or eight or ten months. I find about a fortnight is the usual time required to detain an ordinary case of scabies in hospital. I cannot cure them in less time than that. Some have extended to three and four weeks; but recently I have instituted the practice of giving them hospital clothing and bedding entirely, and not allowed them to use the barrack clothing and bedding, because I find the difficulties of disinfection are very great. I supply them with a complete set of clean clothing, and I hope by that means to reduce its prevalence. I think treating them while they had the barrack clothing prolongs the period of treatment a great deal. They used to bring in their clothing, and when they brought their barrack bedding I used to send it down occasionally to be disinfected. But I found that was unsatisfactory, and that the best way was to put it away altogether after disinfection and give them hospital clothing. In saying that I cannot discharge under a fortnight the patient who has come in with scabies, a truly uncomplicated case of scabies, without anything else, I have not been treating them personally, but that is the experience in my hospital. It used not to be my experience when I saw them more, but I am very much bothered with it at Colchester; the cases are very severe and there is a great tendency to eczema there. A fortnight is the time I put, at present it seems unduly long. There are plenty of baths. I get two changes of clothing a week. My experience in earlier years was that four or five days was the limit.
Lieut.-Col. H. R. Whitehead, R.A.M.C.	When a man comes in he is put into a hot bath, his clothing is taken away and disinfected, and he remains in this bath 20 minutes, and during that time he is well soaped with common soap. I think soft soap is better. He is thoroughly done, and when he gets out of the bath he is sponged over with equal parts of liquor calcis sulph. and hot water. He then puts on hospital clothing without drying. At night the lotion is again sponged over. Next morning he has a bath, and this liquor calcis sulph. and hot water, equal parts, is sponged over him again. He is then considered to be cured, after three applications. He is still kept in hospital because a great deal of dermatitis nearly always follows the sulphur application. I prefer the liquor calcis sulphurata. I think one great reason is that it does not destroy the clothing like unguentum sulphuris does. The unguentum sulphuris makes the clothing very greasy, and it is difficult to wash. I keep the patients in for three or four days, as a rule, unless he has a very extensive dermatitis, and one is not certain whether he has itch or eczema. If a man comes in with scabies in four days I send him out, but not in every case; but that is the idea. Some, of course, have itching, and one is not certain what it is, and then one has to keep the case in longer. I do not go on with the sulphur. I have not sufficient confidence in these three applications to send the man into the ordinary ward after he has had them. I have not sufficient confidence that he is cured; I am not certain. I do nat iike to expose other patients to the risk. It occasionally happens that he is not cured, and has to go back and have the treatment again. In the majority of cases I think it cures them if it is properly done and the man is not re-infected again. It is difficult to prevent his being re-infected with the itch acarus because he plays cards with the other fellows. I think they should go to another place really. I have no means of isolating.
Lieut.-Col. G. H. Sylvester, R.A.M.C.	I think, personally, that the milder are better than the more severe applications. But I have not treated them for a long time. I have confined myself almost to sulphur and baths. For ten years I have not treated scabies. That was the conclusion I came to then.
Lieut.-Col. C. A. Webb, R.A.M.C.	In treating scabies it is absolutely necessary to keep the men under treatment seven days at least, if not longer. The best treatment is a prolonged hot bath directly he comes in, rubbing well with plenty of soap and sponged all over with equal parts liquor calcis sulph. and hot water; this should be done twice a day for about three or four days, then perhaps a day or so off, because the skin will not stand any more for a bit. I think you must keep the man under treatment for seven or eight days. His bedding and clothing should be properly disinfected. The barrack bedding is used, and I think it a good plan, for it has to be brought to the hospital for disinfection. The man's bedding and all his kit, directly a man is admitted, we telephone for it to be brought to hospital, and the whole is disinfected at once and then taken to the ward where the man uses it; it is again disinfected before he goes out. You constantly get returned cases,

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Lieut.-Col. C. A. Webb, R.A.M.C.—*cont.*	even if you keep them a week or ten days. For one thing it is difficult to know if the whole of his kit is brought to hospital. Further, he often contracts it from some prostitute or somebody, and directly they get out of hospital they go back to the prostitute, as men have admitted to me they have done. I would not take a man in the itch ward off treatment. I would have him rubbed over the day he goes out. You may kill the acarus, but the eggs are the difficult point, and I think they take a week or ten days to hatch out, and one is not sure they have been cleared off the man. I have had trouble with dermatitis following treatment in this way. Liquor calcis sulph. is better than sulphur ointment.
Major and Bt. Lieut.-Col. S. Hickson, R.A.M.C.	When cases of scabies come in we give them a good hot bath with lots of soap and hot water, and paint them with liquor calcis sulph.; and that night we give them a second painting. Next morning another hot bath, and more liquor calcis sulph. and we often find then that the scabies is cured. After these three applications, lasting over 36 hours, with two hot baths, we get all his clothing and bedding disinfected. Of course very many men stay in longer than two or three days. I think evidence of cure is in the first place that the man does not scratch, and one would look for acarus. We have a good deal of trouble with the dermatitis following the three applications. For the dermatitis I would keep the man in hospital for a week, and then keep him under observation two or three days. I would keep him under observation until his dermatitis is cured. Very often they have to have another scrubbing and painting. But my routine method would be three applications of liquor calcis sulph. One is often disappointed, and gets them in for weeks instead of days. I think three or four weeks is the longest case I know. Of course there was a case in the "British Medical Journal" of two years' standing, and sometimes syphilis is mixed up with scabies.
Lieut.-Col. G. D. C. Mosse, R.A.M.C.	I generally soak my patient in a hot water bath for ten minutes or a quarter of an hour, have him well scrubbed with soft soap, then have him rubbed over with liquor calcis sulph. diluted with an equal quantity of hot water. I carry out this procedure once daily. The length of treatment varies—one rarely gets rid of a case under a week, and very often not as early as that. I have seen little or no dermatitis follow the use of liquor calcis sulph., which, however, should be diluted as above noted. My criterion of a man being cured is that absolutely all itching stops—as long as an "acarus" has escaped there will be itching. The length of time I would keep a man out of the barrack-room depends on the severity of the case, but ten days would be a likely time for an average ordinary case; one sees severe cases which would require a fortnight. All the patient's clothing and bedding, &c., should be thoroughly disinfected by steam; this procedure I consider *most* important. I do not believe in the method of bringing a man in, giving him a bath, disinfecting his clothes, and sending him out. I have heard of itch being cured in Paris in 24 hours, but I must confess such rapid cures have never occurred in my experience.
Mr. Arthur Shillitoe, F.R.C.S.	We see cases of scabies every night at Dean Street. We treat them with sulphur ointment. Mr. Shillitoe handed a document* showing printed directions to patients as to what to do in regard to scabies, and also with regard to syphilis and gonorrhœa. It is the common way of doing it abroad amongst out-patients. We have no special treatment to bring to your notice.
Mr. P. J. Freyer, M.D., M.Ch.	I think scabies is a very easy thing to treat, simply by ordinary sulphur ointment. I have never had a case which did not pass off in three days or a week. I have never known them to last a month or two, but I am not sufficient of an authority to say they do not occur.
Mr. Edgcombe Venning, F.R.C.S.	My experience of treating scabies has not been a very large one. I have only lately, in the last year, come across two casesof scabies in my practice. But, as far as I have seen, I know of nothing so good as sulphur. The first thing I am sure is to give the patient a good hot bath with soft soap and rub it well in, so as to get the skin softened. Then dry him, and rub him well with the Pharmacopœia preparation of sulphur, and put him into blankets 48 hours. Then give him a second thorough rubbing, and then I think in the majority of cases the patient goes out well. I saw a case once which had gone for a long time, and I did not know what it was. Sir William Gull diagnosed it as scabies. I did a great deal of work with him then, and he told me he had one or two cases which were doubtful and had had several kinds of treatment. It was not suspected that they were scabies. They were cured by sulphur.

* *See* Appendix B.

Question X.	What are the most satisfactory methods of treating scabies?
By whom.	Report of Evidence.
Mr. Malcolm Morris, F.R.C.S.E.	I have a good deal to say about the treatment of scabies, but before I speak of the treatment I would like to mention the number of cases I have seen. I have had 24 years' experience in the out-patient department of a London hospital—four years assistant and 20 years full, and I retired the year before last. That, of course, is a long period of out-patient work. I have seen during that time a great number of men who have been invalided out of the Army, and they ultimately drifted to our skin department. And a very considerable number of them have been people who have been treated for scabies when, in my opinion, it never existed. Therefore, my preliminary remarks about the treatment of scabies concern the accuracy of diagnosis. That is absolutely essential. Where men have been scratching, merely that, of course it is likely to be another disease. And we know very well that other diseases have been vigorously treated as if they were scabies. I have in my mind several bad old-standing cases of dermatitis herpetiformis, which had been treated originally as itch, which of course aggravated the patient's sufferings very considerably. I understand some of the routine treatment in the past has been extremely violent, the painting of the unfortunate person all over with Vlemingck's solution. That I look upon as barbarous, and a treatment which ought to be abolished. I think the treatment of scabies, when the diagnosis is actually made, is as easy as possible. In the upper classes, in whom the diagnosis is much more simple, I send the patient to the same place as that for syphilis. I have had four cases of it in the last week, all of whom got well in a week. One man came from Belfast and had five treatments, and has now gone back absolutely well. It had existed five months before he came. So it is not so rebellious as some people fancy it is. I do not know whether it is true, but I am told that many cases in the Army go on for months and do not get well. I cannot understand it. Perhaps I should doubt the accuracy of the diagnosis, because several diseases are easily mistaken for it. Sometimes it is very difficult to be certain about your diagnosis of scabies. People think it is very easy, but it is not. Often the pathognomonic signs are well marked, but sometimes they are not, and then the diagnosis is difficult. I say the routine treatment is by a very simple, cheaply prepared sulphur bath. What I always use is nascent sulphur bath, then dry the person carefully afterwards, and then apply the compound ointment, very mild, not enough to set up irritation of itself. Most of the applications which are used are too strong; they set up dermatitis, and cause the patient a good deal of suffering which is unnecessary. I do not go so far as John Hughes Bennett and say that all you require is a good stiff fat. I think it requires drugs, but those generally used are all far too strong. A mild one is enough. I make a compound of naphthol and balsam of Peru and extremely weak sulphur, in the form of a pomade. It is made into a stiffish paste, and adheres very well. I never use more than 10 grs. of sulphur to the ounce, and that is far weaker than the usual. The routine treatment is first of all to wash the skin with soft soap, and the patient to soak afterwards in a nascent sulphur bath, and then to have an application of the ointment every day for a few days, it being kept on and old clothes worn for a few days and then destroyed. To a very large extent a week might be the natural limit of the disease, but not absolutely. Still, I should say a very few days.
Mr. James Ernest Lane, F.R.C.S.	I get a good number of cases of scabies at the Female Lock Hospital. We treat them with a sulphur bath. They are immersed in a warm bath containing sulphur, for about half an hour, and then the next day, or two days after, they have sulphur ointment rubbed in and kept on. As a rule they clear up rather satisfactorily; but there are exceptions where the treatment does not seem to do much good, and they go on for a very long period. But I should say that, as a rule, the cases clear up by the end of a week. But in chronic cases there does not seem to be any activity in the acarus; it seems to be an eczema resulting from treatment to some extent. I do not see many of those cases. The cases which come in are those of young girls who have recently contracted scabies, and it is usually easy to get rid of it. My usual treatment is soft soap and a warm bath with potassium sulphurate and ordinary sulphur ointment.
Lieut.-Col. R. L. Love, R.A.M.C.	A patient with scabies should, on admission, have a warm bath with a free use of soft soap. After being dried, liquor calcis sulph. should be freely applied to all affected parts. Next day, if the disease has not been quite killed, a further application of liquor calcis sulph. should be made to affected parts. On the following day a warm bath should be given, when 9 out of 10 cases will be found cured. If any disease still remains sulphur ointment should be applied until cure is effected.
Lieut.-Col. F. J. Lambkin, R.A.M.C.	(No answer.)

QUESTION X. What are the most satisfactory methods of treating scabies?

By whom.	Report of Evidence.
Dr. T. COLCOTT FOX.	There ought to be no difficulty in framing a plan to deal with it satisfactorily, for it is the most easily managed thing in the world, if the conditions of the problem be clearly understood. We have to deal with a superficial inflammatory affection of the skin caused by an animal parasite, which burrows in the epidermis of certain regions. We can easily kill the parasite by a number of remedies, and we have to do this efficiently without causing any further irritation. Directly the parasite is killed, and we can guarantee that by a proper method, all that remains to do is to heal the existing inflammation. The method in use at the St. Louis Hospital in Paris is a striking example of a rapid and rather energetic treatment. It is most efficacious, but it is all done in under two hours. They call it "la frotté." Patients are taken and first of all rubbed 20 minutes with soft soap. This is not carried out in exceptionally inflamed cases, in which there is a good deal of eczema. In the ordinary run of cases the patient is soaked in a hot bath, during which time he goes on scrubbing himself, especially about the hands, and so on. Then when he comes out of the bath he is rubbed all over with a modification of Helmerich's sulphur ointment. Then they get the patient to go home and persuade him to leave it on till next morning. But sometimes they wash it off there and then; and it is said only about 6 per cent. of the patients come back with any trace of the disease after that two hours' treatment. They get such cases in hundreds there. My experience of Vlemingck's fluid is that it is a very strong remedy. It is used by some country practitioners, and as matter of routine in some Belgian hospitals. In my opinion, it cannot compare with the ordinary sulphur ointment. The mildest and most effective and agreeable remedy of all no doubt is Professor Kaposi's naphthol ointment. There is a good deal of soft soap in that, which is apt to be irritating sometimes; and if that is taken out in very inflammatory cases it is most agreeable. My routine treatment at the hospital, where there are no special baths available, is as follows, and I find it most effective. I order a warm bath to be taken for 20—30 minutes in order to macerate the skin. Then I direct the patient to scrub the softened skin thoroughly with soap in order to cleanse away all crusts and scales and acari, to break vesicles and pustules, and devoting special attention to the hands to clear away the roofs of the burrows. I order creosote soap, but any soap from soft soap to a toilet soap can be used according to the delicacy and state of the skin. Then the skin being dried a weak sulphur and mercury ointment is carefully smeared over the whole surface, except the face as a rule, paying special attention to the hands. The ointment is left on and re-applied every night and morning for three days and three nights, the patient wearing the same underclothes throughout and gloves. The acari are then effectively killed. A bath is taken and any inflammation of the skin is healed up, and any itching left soothed. With regard to the treatment, my brother's favourite maxim was "not too long and not too strong." It is impossible in out-patient practice to have the bedclothes, &c., disinfected. I use styrax ointment for babies who get very eczematous. I think balsam of Peru is probably the most effective killer of the parasite of all. It is fragrant, but it is smelly, and I do not use it very much in private practice, because of the scent. I have no other objection to the treatment; you can paint the patient all over with it, and then again next day, and they are well the next. It is the most effective treatment.
MR. CHARLES GIBBS, F.R.C.S.	I know nothing about the treatment of scabies.
MR. ARTHUR WARD, F.R.C.S.	I have nothing very definite to say about that.
Dr. W. ALLAN JAMIESON.	There are three methods that I employ in the treatment of scabies. If in hospital a case comes up we treat him in this way: The patient has a warm bath, with plenty of black soap, and this is rubbed in thoroughly. Immediately afterwards, before a warm fire, he rubs in some ordinary unguentum sulphuris of the Pharmacopœia, and he does that for three nights without a second bath. That is, he takes his single bath, and for three nights rubs in the ointment. He has another bath, and then we give him a mild ointment, composed of ammoniated mercury, 5 grains to the oz., which he rubs in for the purpose of getting rid, if they are present, of any pustular lesions by destroying the activity of the staphylococcus. That we find to be the best treatment, as a rule. In private work it is sometimes not advisable, and sometimes even in hospital practice, to use sulphur. Some of the patients' skins are irritated considerably, and then I substitute ß-naphthol, which is of course more expensive; and I give it in the proportion of 1 in 10 in Lassar's paste, omitting the salicylic acid. When I use this instead of the sulphur the patient does rather differently. He washes first of all with soap and warm water, in the same way as I have mentioned, so as to open the pores and interstices of the skin. Then he rubs the naphthol paste in for four nights. Then he takes a bath again. As a rule it is quite cured by that time. The third method which is sometimes used is to employ Vlemingck's solution (quick-lime one part, precipitated sulphur two parts, water twenty parts. The lime and the water are first to be well mixed, then the sulphur is added, and the fluid boiled slowly down to twelve

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By whom.	Report of Evidence.
Dr. W. Allan Jamieson—*cont.*	parts. When cold the liquid may be filtered.), which is, however, more apt to cause irritation. I have used Vlemingck's solution in private sometimes, but I have not had much trouble from dermatitis from its use, because I never use it on people whose skins are at all tender. I use it in persons with a greasy skin, in whom there is not so much risk. But I do not use it much in private practice; it is only in some rare cases that I have done so. But in my earlier years of practice I saw a great deal of it in Preston. In the workhouse there we used it constantly, and it certainly rapidly cured the scabies. We gave the patients a bath and painted them over by means of a stiffish brush with Vlemingck's solution, left them for 24 hours, then gave them another bath, and, as a rule, they were then cured. I have had experience of the so-called inveterate cases of scabies, but in those cases I could never find the acarus, although I examined them carefully. I am inclined to think that in many of them the condition was a sort of pruriginous state of the skin left behind by the acarus itself, or by the toxines produced by the acarus in the skin. Certainly, I have seen them, and they are very troublesome. The treatment which has succeeded best in those cases is the use of lead lotion thickened with talc and starch, in the following proportions: 100 parts talc, 100 parts powdered starch, 100 parts dilute lead lotion, and I generally add also 100 parts of a 1 per cent. solution of boracic acid. To that is added 40 parts of glycerine, and this solution, which forms a thick lotion, is diluted by adding a little *cold* water so that it shall not interfere with the starch. This is painted on night and morning. I have found that that gave more relief to the pruriginous condition in scabies, or after it, than anything I have tried. This is rather evidence that the cases which resist treatment by sulphur are not cases of scabies.
Dr. H. Radcliffe Crocker.	Personally, I think that sulphur never fails if the treatment by it is properly carried out. The failures are, I think, only apparent. They may be due to the imperfect knowledge of medical men, inaccurate knowledge of what the primary and secondary symptoms of scabies are, or in regarding the itching and the secondary dermatitis, which sulphur and other applications excite, as part of the primary disease, so that parasiticides are persisted in when soothing applications to remove the secondary dermatitis should be employed. Then again, some source of re-contamination is often overlooked, the trouser pockets or the gloves, for instance. Recently a gentleman came with repeated attacks, and I traced them to the edge of his great-coat, which had come into contact with his wrists when he had worn no gloves, and he kept re-infecting himself from that. Thus the failures are really owing to the curative and prophylactic measures not having been properly carried out. While I do not think that sulphur ever fails I have never seen any disadvantage from it except from secondary dermatitis. With children and women with sensitive skins I use naphthol β, a certain parasiticide but much more expensive than sulphur. I do not think there are any advantages in the balsam of Peru, which costs more, and a case of fatal absorption of it is on record. I should say that from a military point of view, in large fixed camps like those at Aldershot, it would be worth while to establish sulphur baths. But where that cannot be done the sulphur ointment inunctions, a drachm to the ounce, or 10 per cent., never fails if it is properly carried out. Sulphur baths sometimes fail when the brushes get worn out, or become soft, because they then do not open the burrows. In private practice I send the patients to sulphur baths, and after two or three days inspect them to see if there are any burrows which have not been opened up. If there is an unopened burrow I run a needle through it, and put on a little sulphur or naphthol ointment. In private I always use naphthol so as to avoid the secondary dermatitis. I think Sherwell's plan of sprinkling a little sulphur in the sheets is a useful plan as a supplementary measure, and perhaps in helping to avoid re-infection. Patients should turn out their trousers pockets and have a very hot iron run over them. At University College Hospital we have the clothes disinfected by steam while the patient is in the bath. I think Vlemingck's solution excites too much secondary dermatitis, but it is effectual.
Mr. David Wallace, C.M.G., F.R.C.S.E.	With regard to the treatment of scabies, I use sulphur ointment and baths. I perhaps ought to say that I am not a specialist upon venereal disease; I am only an individual who, by an unfortunate accident, has to be in charge for a short period of the Lock wards at the Royal Infirmary. I have been in charge of them for 18 months, and, as a surgeon, one has to take an interest in these diseases. But when it comes to be a question of scabies I am afraid I cannot say.
Sir Alfred Cooper.	With regard to No. 10, I do not know anything about that.
Dr. Arthur Whitfield.	In the treatment of scabies I use the Pharmacopœial sulphur ointment, to which I sometimes add soft soap to increase the decorticating action. I always order a bath with soft soap at the beginning, and I usually rub the ointment in for

QUESTION X. | What are the most satisfactory methods of treating scabies?

By whom.	Report of Evidence.
Dr. ARTHUR WHITFIELD—*cont.*	three successive nights, during which time the patient does not wash but wears the same underclothes, including socks or stockings, day and night during the whole time. On the fourth morning he has a bath to cleanse himself and does nothing further until he sees me again. In 19 cases out of 20 this is sufficient, and the patient is cured. Used thus I get very little after irritation with the sulphur. I have not used balsam of Peru, but have used styrax, which I do not find so good as sulphur. β-naphthol I have given up, as I found relapses with it were certainly more common even after three applications, although one is supposed to cure. I have seen one case of persistent scabies at the Great Northern Central Hospital—a little girl with undoubted scabies which was said to have been present two years. I was a good hour finding a burrow, and the whole skin had become quite warty. Under tar and sulphur ointment the disease was cured in a fortnight and the skin returned to the normal wonderfully quickly. I have never used Vlemingck's solution, but it appears to set up a great deal of irritation in Paris.
Mr. JONATHAN HUTCHINSON, F.R.C.S., F.R.S., LL.D.	With regard to scabies, I have no hospital practice, and never have had much to do with the poor with scabies. With the wealthy my remedy is Peruvian balsam. Patients rub that over the skin every night for three or four nights, without washing; then at the end of that they wash it all off, and the cure is complete after three or four applications. As to the inveterate cases of scabies norvegica, and similar cases, that was always a great rarity in Norway. It was a very exceptional case which was published. Of course, scabies is exceedingly common in its milder forms at all times. A sulphur bath is very effective, and sulphur ointment is very efficacious; but the balsam is the most pleasant thing to use in private practice, I think. I do not know anything of the bad effects from using Peruvian balsam.
Professor OGSTON.	The old Vlemingck treatment which you have tried in the Army is not satisfactory. It produces skin eruptions, and so keeps a man off his duty for a while. What we do, say in the case of a domestic servant who comes to us and does not wish to give up her place, is something like the Vlemingck treatment, but carried out on more modern lines. We arrange that the patient shall be bathed by a nurse or someone we can trust—an orderly would do well for a soldier. She is put into a bath with some strong disinfectant—mercury is the best, but some of the mercurial salts are irritating. I use in private practice sublamin, which is one of the organic salts of mercury, the ethyl-diamin sulphate of mercury. It produces no skin irritation, and it is a thorough disinfectant, though it does not penetrate. To make up for that I use afterwards the Peru balsam, either strong or diluted. It is easily diluted, and it penetrates, and I think the patient is absolutely cured in 24 hours. I give two baths and two applications of the balsam of Peru; two or three applications you may depend will cure the scabies. It is the same principle as the Vlemingck's, carried out with milder remedies. I prefer it to methods by sulphur.

Question XI.	Are soldiers under mercurial treatment by inunction, injection, or other methods, fit for ordinary military duty?

By whom.	Report of Evidence.
Lieut.-Col. P. M. Ellis.	Not as a general rule, and only those in whom the manifestations of syphilis have disappeared. As a general rule, I do not think a soldier under mercurial influence is fit for ordinary military duty, unless it is a very mild dose. It would depend on the severity; I think some of them are. Supposing he is under mercurial influence, that he has got a slightly touched gum, I do not think he is fit for ordinary duty. I think you must judge differently in England from the cases in hot climates. It is always laid down that mercury shall not be given to a man who is exposed to the weather, as they are in England, for instance, in such weather as this. I would not expose such a man to guard duty or night duty on such a night as last night, for instance, nor one who showed the symptoms of mercurialism and spongy gums. I only speak of those cases which would not show any signs of mercury. I would allow such a man to be employed on light kinds of duty. I think a man should come into hospital if he is struck off all duty. I would not employ any man taking mercury outside on full military duty. But I would allow them to be employed on light duty.
Lieut.-Col. H. R. Whitehead.	Yes, I think so. My practice in India was to inject these men on a Thursday morning, which was a holiday, and give them one day excused duty. All the other days they did their work, and I never had any bad results. If I had a regiment here in this weather I would say the same. I think the effects of mercury with regard to cold have been exaggerated. I have never myself thought that in the way one gives mercury that cold has such a tremendous influence on the system. I say he ought to do his military duty under ordinary circumstances. I would certainly not put a man on the heights of Dover on a snowy night on sentry-go with spongy gums. I would not give him mercury to that extent. I would not expose a man who was thoroughly under the influence of mercury, certainly not. But I do not think mercury should be given in such a case to that extent. It may happen without my knowing it whilst continuing mercury. If I give an injection on Thursday, and perhaps do not see him till the next Thursday or Friday, by that time he may have salivation; but I have given instructions that if a man has any symptoms or pain he is to report sick. I should say every case must be judged on its merits. I do not mean suffering from mercurialism. If his gums were spongy he would not be fit to do any duty. I am assuming the case has not gone so far as that. I know the ordinary civilian patient takes his mercury and goes out shooting for long days in the cold, without any bad influence; I have known several officers who have been exposed when shooting in very bad weather. If a man, having inunction, is under the influence of mercury, I think that is a much more severe method than by the mouth. If he had inunction he would not be fit for ordinary duty. I would not have a man outside hospital taking mercury by inunction. I do not think it would be feasible. I think the state of his clothes and other conditions would be against it.
Lieut.-Col. G. H. Sylvester, R.A.M.C.	Soldiers undergoing the ordinary treatment, such as I proposed, the pil. hydrarg., twice a day, and when that is going on for six weeks, I do not think they are fit for military duty if taking mercury. He is not fit for general military duties.
Lieut.-Col. C. A. Webb, R.A.M.C.	Men under treatment by mercurial injections are fit for ordinary military duties. I would not push the treatment further than making the gums very slightly tender. I think this may be watched by having the man up once a week, this would be sufficient. As to climatic influences, I think even in this climate the ordinary case of syphilis may be put on his ordinary military duty in winter time, provided he was having regular treatment by injections.
Major and Bt. Lieut.-Col. S. Hickson, R.A.M.C.	I think soldiers under mercurial treatment by inunction, injection, or other methods are fit for ordinary military duty; the proof is that they are doing their military duties now and getting injections, many of them at Woolwich. They get injections once a week.
Lieut.-Col. G. D. C. Mosse, R.A.M.C.	I think those cases—which, of course, are the milder ones—capable of treatment out of hospital by injection methods, should be usually fit for ordinary military duty. If a man appeared to be losing flesh or his general health was not up to the mark, then the question would have to be reconsidered.
Lieut.-Col. R. L. Love, R.A.M.C.	Soldiers receiving mercurial injections should be kept in hospital for four weeks or until four injections have been given. After this, cases doing well can have the treatment continued outside of hospital. Mounted men should not be required to ride for three days after an injection.

Question XI.	Are soldiers under mercurial treatment by inunction, injection, or other methods fit for ordinary military duty?

By whom.	Report of Evidence.
Lieut.-Col. F. J. Lambkin, R.A.M.C.	I consider that men undergoing treatment by the intra-muscular method are fit for all their military duties during peace time. At Bangalore a few days ago I saw 130 men undergoing this treatment, who were doing all their military duties and appeared to thrive on it. The average time these men were undergoing treatment was four months when I saw them; there had been very few re-admissions into hospital and no complaints about the treatment.
Surgeon-General Sir Thomas Gallwey, K.C.M.G.	As regards the men under treatment for syphilis being fit for duty, it depends, of course, on the stage of the disease; I should think at least half the men in India undergoing injection treatment are doing their ordinary duty. I consider that these men are fit for all their duties, but a medical officer should have discretion to excuse them from any duty which necessitates excessive exposure. If a man objects to the injection treatment he must be put on the "attending" list, as one cannot force him to undergo the treatment while doing his duty. No compulsion should be used; men should be gradually worked up to appreciate this form of treatment. A great deal depends on the way in which the medical officer deals with the man.

Question XII.	Are soldiers who have recently shown syphilitic manifestations, either of the early or later stages of the disease, though apparently cured at the time, fit for active service?

By whom.	Report of Evidence.
Lieut.-Col. P. M. Ellis, R.A.M.C.	In the early constitutional stages, provided these have been very mild, but each case must be judged on its own merits. In the later stages, not. When I examine a regiment for active service, if I see a man in whom I notice no sign of syphilis, but see by his sheet that he has had syphilis two or three months before, I allow him to go, if he had it mildly and had none at the time of inspection. If the attack had been severe I would not send him at all. But if he had syphilis say two years ago I would let him go, but not within six months. I would let mild cases go within six months, if they showed no symptoms in six months and the attack had been mild, not under six months; the mildest cases I would reserve for that. I do not think six months is a sufficient time to enable me to pronounce on the cure or otherwise of syphilis. I do not think he has got rid of all danger by that time, but it is a question whether it is worth while; I balance in my own mind the advantages and the disadvantages, bearing in mind the State as well as the man. I have in my mind the question, "Is it fair to let the State lose the benefit of this man's work for so long?" If he can do any work at all I do not make any difference with regard to syphilis in selecting men for the Tropics as against men selected for temperate climates, like Halifax, we will say.
Lieut.-Col. H. R. Whitehead, R.A.M.C.	I think every case would have to be taken on its merits. Take, for instance, the man who has had syphilis, and had a good course of mercury, and it is two years since the disease, and he comes into hospital with sore throat and ulceration which seems to be syphilitic. You give him iodide of potassium and a local application, and perhaps in two or three weeks he would be cured. I do not think he would be unfit to go on active service. It is a question of time, and we want you to tell us that. If I had evidence of a gumma within the previous four months, cured when I saw him, I should see what state the man was in, I would judge by the physical state. But the mere fact of his having had a gumma would not necessarily prevent me sending him on active service. About the selection of men for active service, I should look at the man's medical history sheet, and see how many attacks he had had. If he had a papular syphilide three months ago, an early secondary—if he had been in hospital six months ago, and he had a syphilide three months ago, and there is nothing now, and he had been taking mercury all the time, I do not think I should let him go. But I would treat every case on its merits. I would not lay down any hard and fast rule in my own mind. About the beginning of the administration of mercury in a doubtful case, where you are not certain whether it is infective or not, I do not think mercury in small doses harms a man at all. Many men improve in weight under it, and I should be much more inclined, if I had any doubt myself, to begin with mercury early, if it was not a very pronounced case. I would not wait, so as to be quite sure. I think the main point in cases of syphilis is to treat them early, and that gives the man his best chance. I do not think it is hurtful to the man to give him mercury, if he has no syphilis at all, for a month or six weeks. If he begins mercury he has to go on for six months; but I do not think it would hurt him in the slightest. Hutchinson, in his book, quotes several cases of men who were improved under treatment.
Lieut.-Col. G. H. Sylvester, R.A.M.C.	No, I think not. No man who has recently had syphilis or has any signs whatever is fit, in my opinion, for active service. I do not think I would pass him at all. If he had syphilis two years ago I would let him go for active service; but not six months, unless he was very strong, and in good health.
Lieut.-Col. C. A. Webb, R.A.M.C.	I would not send him on active service if he has shown any manifestation of syphilis within six months. If he has not had any manifestation, and has been under treatment for that time, and is otherwise sound and in good health, I would let him go. I do not think that two years' treatment is absolutely necessary in the case of a man required for active service, provided he has been free from active manifestations for six months. I think the antisyphilitic treatment should be kept up in such a case wherever practicable. I have not been on a troop ship going out on active service but on ordinary trooping duty. I think venereal inspections are of value. I have not heard of any objections raised to them. There is only one point, and this is about the continuous treatment. The great difficulty in carrying it out at home is to get the men. That is an enormous difficulty. Of course in Egypt there were only two stations, either Cairo or Alexandria, and when the man was put on the roster for continuous treatment and was ordered to come up regularly there was very little difficulty. But at home the difficulties are enormous, and the misunderstandings entailed, even if you have only half a dozen men on the register, are enormous. The man may have to come up, as they do, every Sunday; but he has perhaps gone to musketry, or gone on furlough, and you are always following this man and trying to get him. The only way it could be worked would be for commanding officers to be responsible for twice in the month sending the man on fixed days

Question XII.	Are soldiers who have recently shown syphilitic manifestations, either of the early or later stages of the disease, though apparently cured at the time, fit for active service?

By whom.	Report of Evidence.
Lieut.-Col. C. A. Webb, R.A.M.C.—*cont.*	for continuous treatment. They should be sent regularly to the medical officer who is treating the corps at the time. That is to say, if the men had gone to musketry, all the men who were on the roster there should come before the medical officer who was treating the corps at the time. Men go out of the district; they are constantly moving about. It might be arranged, but I think if it could be done for the whole country it would be better; if commanding officers were responsible that on certain fixed days the men should be sent, wherever they were, to the medical officer. That the medical officer under whom they have been treated should be informed 48 hours before they go away, so that he might send his extract from the syphilitic register to the next place. We do that now, but it is an accident that we find out when he goes.
Major and Bt.-Lieut.-Col. S. Hickson, R.A.M.C.	As to the fitness for active service of soldiers who have recently shown syphilitic manifestations, I think it all depends upon what the lesion is or has been. For instance, if it is only a mild patch on the tonsil, or a little soreness of the tongue, and if the man has had a satisfactory course of mercury, I do not see anything to prevent him being fit for active service. I would let him go on active service if he had had a good course and the lesion was slight, of course after the lesion had disappeared. I would not mind letting him go a month or so after. If you excluded the men who had had recent syphilis the Army would be much diminished in size. I have known men in a campaign who have had recent syphilis and who have been through it all right, both men and officers. The chances of a breakdown depend on such various circumstances, such as the nature of the campaign, and the work they have to do. I cannot say I saw much evidence of breakdown in South Africa from syphilis itself, but all my work during the late campaign was in a general hospital, so that I had not much experience of this breaking down in marching. Many men came into hospital suffering from it, and I saw several men invalided from South Africa for syphilis. I think invaliding was small from syphilis, smaller than I would have supposed. I have not been on active service on the North-West Frontier though I have been there. But I think men would break down more rapidly there. I think one is more liable to break down in a campaign in India than in South Africa. As to venereal inspections on board ship, one has detected cases of venereal often. I do not remember a voyage when I did not do so. I do not think medical officers like this inspection, but one has often to do things one does not care about. I think the inspection should be made. I do not think the men have any objection to being examined, or not much.
Lieut.-Col. G. D. C. Mosse, R.A.M.C.	I do not think that soldiers who have *recently* shown syphilitic manifestations, either of the early or later stages of the disease, though apparently cured at the time, are fit for active service. I should be inclined to stop a man from going on active service if there had been manifestations of disease within the previous six months. With regard to climatic influences, my experience has chiefly been India, where the climate undoubtedly acts prejudicially in the case of syphilitics, and where large numbers of such break down, and have to be invalided. I should therefore be unwilling to allow such cases to go to India.
Lieut.-Col. R. L. Love, R.A.M.C	Soldiers are liable to break down on active service if not six months clear of the disease before taking the field at the front. On lines of communication where they are well fed and undergo little hardships a three months' clean bill of health might be sufficient.
Lieut.-Col. F. J. Lambkin, R.A.M.C.	No soldier who has exhibited recent manifestations of either early or late stages of the disease is fit for active service until he has had at least six months' course of treatment and then has been three months free from symptoms.
Surgeon-General Sir Thomas Gallwey, K.C.M.G.	I think that men under treatment for syphilis who have shown no manifestation of the disease for a certain length of time, say, two or three months, are fit for active service; a good deal depends on the actual length of treatment which the men had undergone. I should like to add a few remarks as regards specialists and special hospitals I am all in favour of specialists but dead against special hospitals. If you have special hospitals they are noticeable spots, and if you send officers, non-commissioned officers, and men there you set them against the treatment of the disease, and you will raise a tremendous outcry. I consider the same objections to hold good in this country. The treatment of syphilis generally in all hospitals means the spread of information. This treatment is being carried out on a large scale in India, very many intra-muscular injections are being given every week, and as far as I can make out is going on well. My principle is, if I do not hear anything it is going on all right.

Further Statements by Civilian Witnesses.

By whom.	Report of Evidence.
Mr. P. J. Freyer. M.D., M.Ch.	*Syphilis in India.*—I find these cases do just as well in India as in this country, and I think syphilitics are treated there as well as in this country; at any rate in the parts of India that I was in. There may be depressing parts, like Lower Bengal and Burmah, where the climate is not bracing. But I think in the Punjab and North-West Provinces, where you have five or six months cold weather, followed by good hot weather, I do not think you can have a better climate for treating syphilis. As to active service, I would allow a man to go on active service after two years. At the same time I would qualify it by this, that no matter at what period, if it is 20 years after, a man has had an attack of syphilis, if he goes on an arduous campaign it is possible that the symptoms may reappear. In inspecting a regiment for active service I would not eliminate constitutional syphilis within two years. A man, after he has had an attack of syphilis, becomes as healthy as any other man, except in a few instances, and except that it will out sometimes, otherwise such men are as strong and healthy as others. I would certainly let him go if no symptoms have appeared after a year. I would not let him go after three months. I think it would be advisable for him to have been under treatment six months or a year. I think I would allow him to go if he had had no symptoms for six months, bearing in mind that a person suffering from syphilis becomes thoroughly healthy in time, though there are exceptions to that. Cases that are liable to break down are exceptional, and you cannot take cognisance of these when selecting men for service, because there are no means for diagnosing them. In reply to a question regarding injection, I do not think that it is a better method than either inunction or the administration of medicine by the mouth, either in the form of hydrarg. cum creta or liquor hydrarg. perchloridi. I think it has got great disadvantages. I do not see the advantage of this method over older methods, and there are certain disadvantages, such as the occurrence of abscesses. I do not think you can control them. You cannot give these injections more than once a week, and they have to be injected deep down into the muscles, and I do not think you are quite so certain of what you are doing. In reply to a question, I think that if a soldier had not come to the end of the two years' mercurial treatment he might go on active service, and even after six months if it is a case of urgency or emergency, certainly if it had been a mild case, and all symptoms had disappeared.
Mr. Edgcombe Venning, F.R.C.S.	I would not employ a soldier on ordinary duty when he was taking mercury in very cold weather. I think it would be advisable not to. I would not put him upon sentry go in snowy weather or severe wintry weather, but I would allow him to stop in barracks doing barrack work. When in the service I examined soldiers from time to time for active service. I should be very doubtful about letting a man go on active service who had recent syphilis, that is to say, in a year from the date of infection. I would not let him go on active service before he had been a year under treatment since the beginning of his symptoms. You would have to use your judgment about the men. There are some men in whom the disease is much slighter than in others. Supposing a man came to me with syphilis, say, to-morrow morning, and reported himself, and the regiment was about to embark for active service, I would not let him go. I would keep him under observation for a year. It is a specific disease which you have to deal with, and a very grave disease, but I honestly believe it to be a perfectly curable disease if the treatment is carried out long enough. I think men with recent syphilis would break down on active service.
Mr. Malcolm Morris, F.R.C.S.E.	The difficulty of diagnosis leads me to the next point. My point is, with regard to syphilis, that after 34 years trying to learn everything about syphilis that one can learn, one recognises at this time how extremely difficult the subject is, and how every day one sees cases, after all that experience, and spending so long trying to understand it, in which the diagnosis is very difficult, or almost impossible. And I think that is a point which should be clearly understood and appreciated. If it is true that a man who has set up as an expert in the subject, and has tried to master it, and has seen in his fellow-experts the same mistakes made that he makes himself, how impossible it must be for the young man who leaves hospital and goes into the Army to diagnose and treat properly. It is practically an impossibility. I have had 24 years' teaching experience, and I venture to say there are very few men going away from the hospital who know anything about the subject. How, then, do they learn it? Do they learn it at Netley? Nothing of the kind! They do not get any experience at all. And therefore I think the strongest recommendation I can make to this Committee is, that there should be centres where men who are going to treat this disease, and in fact all skin diseases, should be taught. They should learn about them before they start in the Army. And the only way would be by establishing a hospital and school for their instruction in the big centres, to which civilian experts should be attached as teachers. It is snubbed, as you know perfectly well, sir, in every medical school in London and in the country. It is snubbed as a subject; it is not taught, except more or less incidentally, and in an indifferent manner, just when it happened to come into different departments, such as the eye or the throat. But as a whole it is not taught in the routine way it should be to stamp out the national scourge. The only way that could be done would be by establishing centres where it is not only taught but studied. That, I think, is the most important point in connection with it.

Further Statements by Civilian Witnesses.

By whom.	Report of Evidence.
Mr. Malcolm Morris, F.R.C.S.E. —*cont.*	I am saying this after a considerable amount of thought, and, may I say, a good deal of experience; and I know the difficulty men have in learning the subject. It is exceedingly difficult to learn all its phases. We had an instance of that. At a meeting of dermatologists an old Army officer happened to be present, and he said of a case, "I am certain it is syphilis." But all others—who were experts—in the room doubted the diagnosis. If such a doubt could arise among men who are accustomed to the subject, how impossible it must be for the men who know little or nothing about the subject! The truth is, that no knowledge is imparted systematically, and, as usual in such cases, they make shots, and it is very doubtful with how much accuracy, or how accurate the treatment. And I should doubt the statistics which are compiled. I think it is a most important thing, and you will agree with me as to the difficulty of learning it, and how very imperfectly it is taught in the medical schools. My class was always a voluntary class, and, that being so, only a percentage attended it; the others went into practice not knowing anything about the subject. And where would they learn it, then? It is impossible. Of course, we had brilliant men who went in for it. Rogers was one; he was a pupil of mine; and these men know all about it. Rogers has gone out to India, and done excellent work there. But that is exceptional. The main body of students know nothing about it. That is one of the points. It is a question of teaching, and civilians who are experts should take their share in it. I do not know if there are any experts on the subject in the Army. I daresay there are. I have no means of judging; I have not come across the senior men in the Army. I have never heard of some of the juniors making it a special subject. I admit you have great opportunities for studying the disease, but to a large extent it is started on an imperfect basis. Men like Rogers are not absolute exceptions, perhaps, but they are rare. The other point was this: I was house surgeon at the Female Division of the Lock Hospital at the time the "C.D." Acts were in force, and then syphilis went down at that side of the hospital to a very small amount. It became a very slight disease. I am speaking of 1870 to 1871. But it is impossible ever to revert to that, much as we should like it. Many men who are interested in the subject would like to see it, but it is not possible from political points of view. I was on the committee which was working at that time; and I know the fight and the difficulties, and the agitation; and I do not think that any Government would dare to do it; there would be such an outcry again. At all events I think it is out of the region of practical politics: at the present moment, at all events. What occurred to me then, and has always occurred, is, that if you cannot control the women, you might have some system of controlling the men. The disease spreads through the men as well as the women; and men carry it from one part of the country to another, and from one station to another, and they propagate it. Other contagious diseases come under an Act in which it is a crime to propagate disease. It is a punishable thing to transmit smallpox knowingly, and I think it ought to be the same when a man has had the official statement that he is suffering from a transmissible disease. I do not mean that a mere concealment of syphilis should be a punishable offence, but that propagating syphilis should be punishable.
Mr. J. Ernest Lane, F.R.C.S.	As to prevention of venereal disease: The British soldier and the British civilian are extremely ignorant of sexual physiology; also of the effects of venereal disease; and I think it would be a great advantage to the soldier, as well as to the civilian, if some method of imparting instruction in that line could be given, i.e., on the physiology of the sexual organs. Also on the possibilities of disease and the grave results of disease which might be the result of immorality. Also I imagine the idea is prevalent in the Army, as it is among civilians, that a continent life is not healthy. It is the sort of idea that I think is in vogue among the young men of the present day, and I should say very likely among soldiers. They should be instructed that a life of continence is an ideally healthy one, that they cannot suffer from continence. I should say a lot of these men were immoral from ignorance. I did not know that a certain amount of instruction was already given on those lines, lectures being held for the men, and the advantages of a continent life pointed out to them, and the disadvantages of an immoral life. Regarding the instructions given to the German Navy, I have got a pamphlet, and I think it is a most objectionable thing, and I do not think it would be stood in this country for a moment; it is simply encouraging immorality by rendering it more safe. As I understand they have a sort of penny-in-the-slot machine; they put a penny in and take out a medicament and an ointment to smear themselves with before coition. With regard to inunction: I have used inunction a good deal, and I think the effect of giving tannate of mercury is practically identical with that of inunction. My idea is, and I believe it has been experimentally proved, that tannate of mercury is broken up into minute globules of metallic mercury, and that they are absorbed by the intestines and get into circulation, just in the same way as, but in a more reliable way than, mercury introduced by the skin. The disadvantage of that method is the uncertainty of the results. Sometimes salivation will be produced by a very small quantity, and at others the effect appears to be very slight indeed. I have been at Wiesbaden and I know the baths there. It is very much on the same lines as the Aachen treatment. I cannot say that I have much experience of it. I have seen patients who have been to Dr. Wibel of Wiesbaden, and I have corresponded with him. I do not think there is anything peculiar about his method, though he rubs in by a glass pestle. I think there is nothing in that, it is done in this country.

By whom.	Report of Evidence.
Mr. Charles Gibbs, F.R.C.S.	The only remarks I could add would be in regard to the cases we have done ourselves in the last year, with regard to intra-muscular treatment. My intravenous statistics are Mr. Lane's, which he did three or four years ago. They were reported by a house surgeon called Chopping. I should like to put in the figures of the intra-muscular injections, because I think they are very striking. I will hand them in. Sulpho-carbolate of zinc is very good where there is a watery discharge. It does harm if it is purulent. It clots. If you use sulpho-carbolate for three weeks and pass an endoscope you can see little particles of sulpho-carbolate along the urethra. I do not know very much about it, but would it be possible in the case of soldiers with syphilis to give them one pill per day? I have tried it at the Lock Hospital and it is exceedingly satisfactory. If you give a man a three- or four-grain pill to be taken every night it produces just as good a result as giving a one-grain pill three times a day. And always for women, who are mostly prostitutes, I give a 2½- to 3-grain pill of hydrarg. to take every night, or rather every morning. They will not take their medicines; they are frightfully careless, and if they take a pill once a day they are more likely to get benefit. I do not mind what time the man takes the pill. At the Lock Hospital there are three of us taking out-patients, and my patients come to me much more than they do to the other two. That is not because I get the biggest share of the work; they get as many patients as I do; and I do not mean I am better at treating them. But the house surgeon said, "You get these patients to come up more frequently, and for longer periods than the other men." The reason is because, as far as possible, I educate them by telling them in a few simple words what will happen. I say to a man, "You have got a hard chancre; if you do not go on with this treatment thoroughly and for a long time, you will go blind, or your nose will drop off, or you will become paralysed." If you fix those remote results in their minds they are much more inclined to take the treatment. I think it would be quite possible to educate them in that way as a regular thing. Statistics of own intra-muscular injections for all stages of syphilis. Intravenous, viz.:— 3 per cent. diarrhœa. 3 per cent. mercurialism. 4 per cent. polyuria. (KI or NaI also used.) Intra-muscular, viz., (*sal alembroth* 4 per cent. diarrhœa. 1 per cent. salivation. 1 per cent. nephritis. Severe relapses are twice as frequent after injections as after inunction or pill treatment. Iritis is peculiarly common in the relapses from intra-muscular injection. Notes. 1. Opium is unnecessary in the exhibition of Hg. 2. Teeth should be *scaled* and kept clean. The first evidence of mercurialism is a swelling of gum *behind* last molar tooth (generally).
Mr. David Wallace, C.M.G., F.R.C.S.E.	In addition to what I have already said, I would like to make one or two remarks. The first is with regard to: "What doses should be given, and for how long should the treatment be continued?" I think syphilis is a very interesting disease, but I do not think that it is a mysterious disease, and I think that it requires to be treated upon general principles, with the special therapeutic methods which have been found valuable in syphilis. Therefore, while laying down more or less as a rule that mercury might have to be given for two years after the last manifestation, I think one has to recognise that syphilis may continue much longer than that, and that in spite of treatment with mercury. There are cases that do not quickly recover, and in which, later on, other syphilitic manifestations may appear, so that mercury might again be required. I merely make the statement that in my practice two years after the last manifestation is, to my mind, a suitable measure to adopt. The other point is this: that while one lays great stress upon mercury, not infrequently it is necessary to use other drugs—arsenic and iron, for instance. And in particular I should say that special attention should be devoted to the skin, to the avoidance of irritation to the throat. That is of the very first importance, to prevent skin lesions and mucous patches, either in the mouth or in the throat. In other words, I would elaborate the treatment a little bit. And I think you may give as much mercury to a man as you may please, but if at the same time he is not attending to his general health you will do him very little good. So while keeping in view what I presume is the object of this investigation, the use of mercury and the best way to give it in the treatment of syphilis—really a continuous treatment—I would like to say that in many cases it would be imperative to see that the general health of the individual is attended to as well. It is not enough to give a man mercury and say, "You go away and take this and come and see me again and you will be all right." He must be seen from time to time. During the first three or four months he requires to be seen weekly, to see that he is not having other manifestations which would require to be treated at the time. Thus, if he smokes, and gets mucous patches on his throat it may be necessary to give him chlorate of potash as a gargle. Or it might be necessary, if he had some papillomatous lesion and infiltration, to touch it with chromic acid, and so on.

By whom.	Report of Evidence.
Mr. David Wallace, C.M.G., F.R.C.S.E.—*cont.*	But there is another point I would like to remark on, and it is this: I do not know whether I am in order in making the remark or not; but from the point of view of the Army, all this is merely treatment after the soldier has got syphilis. I think there is a much more important thing than that, and that is to prevent him getting syphilis or any other form of venereal disease. I am of opinion that prevention is better than cure, and the way to prevent is to re-introduce the Contagious Diseases Act. I dare-say you are familiar with the pamphlet that was written the other day, upon "Army Inefficiency: its Greatest Cause;" and I think if that knowledge were made public it ought to have a very considerable influence in doing something towards protecting the soldier. I think if information were obtained as to the proportion of venereal disease in the British Army, as compared with that in Continental armies, that it ought certainly to do good. And I think that the sooner the people of this country recognise that it is mere hypocrisy to keep these things under a curtain, and that it is a mistake to do so, the better. I think there is a very strong case for the soldier; it is a tremendous argument to use. And, after all, I do not believe that very many people in this country know about it. I do not believe that more than a very small number take any interest in the Contagious Diseases Act being introduced or being kept out; it is only a small number who interest themselves in it. Of course, one enters here into a rather polemical discussion, but I am expressing my view, and I feel very strongly in the matter. I think it is a perfect disgrace to this country, and I feel that every medical officer in the Army ought to do his utmost to bring this before the public. And I think that civilians would assist; and I know, from what I have found in connection with the Lock in Edinburgh, what happens, because I have charge of the Female Lock as well as the Male, and I know how the women go out when they have got secondary syphilis. I see them in Prince's Street as I walk along in the evening, with secondary syphilis; out of the hospital a couple of days before. I know those women are distributing the disease. Of course, you are much more familiar than I am with what goes on in India; but you know very well that whenever a medical officer takes a little control into his own hands he is able to reduce the number of men who come in with venereal disease. I would not pay the faintest attention to any opposition which might be raised to such efforts.
Professor Ogston.	In the Army it seems to me you could do, under present circumstances, a very great deal by improving the venereal wards, providing your medical officers with better appliances, and altogether improving the wards in every way, as regards cheerfulness, means of investigation, means of treatment, and so on. I think a good deal could be done in that way. There is another point which I beg your pardon for alluding to: whether a special venereal hospital, or special venereal hospitals would not be an enormous advantage to the Army. If you treat a man in your small military hospitals, he can practically defy you. He can often get out. I know he can. And not only that, but he can get things smuggled in to him. Beer is brought in to a man with gonorrhœa, and his treatment is enormously prolonged. If you had a big hospital, or big hospitals, devoted to venereal disease, you would enormously abbreviate the incapacity of the soldier for duty. You would have him under military control, and in that you could, with much less expense than in every little hospital, have all those satisfactory appliances, such as baths, instruments, operation theatre, and special means of investigation, for eye and ear treatment, nose treatment, and so on. I think, perhaps, you will excuse me for mentioning it, because the present crisis is just one when I suppose you will be considering these things, and how far you can go. The question of travelling expense could be done away with by putting down those hospitals where necessary. Get zealous officers attached to them, who would give their interest to the work. And if you get them out of the routine it would be interesting to see whether you could train your orderlies to be specially skilful, and if so, you would find far more benefit. Then, with regard to officers, non-commissioned officers, good-conduct men, would it not be possible to let them sometimes have the advantage of bathing and watering places and health resorts? I believe it is done elsewhere. Men with good conduct very often are permitted to supplement the cure by going to one of those places, where they are specially cared for and treated. And this is done at Government expense. And there is another point on which I would like to make a suggestion, that is, the Contagious Diseases Acts. They were discontinued thirty years ago, you know. I can possibly gauge the opinion of the laity fully as well as the military medical officers, and I do not think the institution of some means of control would be opposed nowadays. We are more enlightened than we were in the last generation. Of course you remember the difficulty really arose not from the use but from the abuse, as it was supposed, of the Contagious Diseases Acts. My recollection is very distinct that they were overturned in Parliament on account of the supposition—or perhaps the fact—that modest women should be subjected to inspection in the places where they were in force. But it would surely be possible to do away with that difficulty or defect in the Act. As to the result, I do not think there could be any doubt. You would save an enormous amount of money, and secure an enormous amount of efficiency. I was told by a foreign medical officer that they have not half the men in hospital that we have; and one man told me they have not one tenth part.

Further Statements by Civilian Witnesses.

By whom.	Report of Evidence.
Professor Ogston —*cont.*	I live in a part where I see not only the man's side, but the woman's; and I think it would be an act of great humanity to the women themselves.
Dr. W. Allan Jamieson.	I would like to add that there are some minor points, for instance, those chronic affections of the tongue which are so often troublesome in later syphilis. I have had some trouble with them, and they have sometimes been difficult to treat. They have generally done best with iodide of potassium internally, and by painting with a 10 per cent. or 5 per cent. solution of chromic acid. The tongue is treated by 1 in 10,000 perchloride of mercury, which has suited very well when the cases are obstinate. And palmar syphilis is a very troublesome thing. There are some of these cases of palmar syphilis where you have a sort of general exfoliative condition of the palm, with no deep horseshoe shaped condition in the centre merely, but a general exfoliation. That certainly has been very troublesome, and it has never yielded to purely antisyphilitic treatment. It has always done best with me when I combined with the treatment that for a sort of eczema. What I do with these cases—and I frequently get them into my ward—is to poultice them with boracic acid and cold starch, about one drachm of boracic acid to a pint of starch. A thick poultice of this is placed on, and changed every six hours. Then the parts are well rubbed, so as to thin down the dry skin and get rid of it. In that way we produce a great improvement in the palm. Then we dress it with an ointment consisting of equal parts of lead plaster and vaseline, spread thickly upon linen and bound on. If it is necessary to go a step further I have found that the best treatment of all is a very weak ointment of oxidized pyrogallic acid, 15 to 20 grains, with 10 grains of salicylic acid and 1 oz. of vaseline. This, when rubbed in, has a most marvellous effect in repairing the damaged condition of the skin and causing the renewal of healthy epidermis. It smooths it down, and the epidermis becomes better and better, until it assumes a generally normal appearance. In these cases I would give iodide of potassium with the carbonate of ammonium which I have mentioned.

THE following OFFICERS were specially invited by the SUB-COMMITTEE to give EVIDENCE on their personal experience of METHODS of MERCURIAL INJECTION in the ARMY.

By whom.	Report of Evidence.
Lieut.-Col. J. D. T. RECKITT, R.A.M.C.	At Woolwich the preparation we use is the cream as recommended by Colonel Lambkin. We have not used anything else since I have been there; but there is a good deal of difficulty in getting soldiers to submit to it. We inject the cream by means of a vulcanite syringe, sterilised either by a spirit lamp or boiling. In case of spirit lamp the needle is passed through the flame, in the case of boiling the whole syringe is boiled; 8 or 10 m. of the cream are then taken in the syringe. At Woolwich we inject between the shoulders, or somewhere in the lumbar region. We have chosen this position because most of the men are mounted artillerymen and Army Service Corps. And if we inject them in the gluteal region, which is decided to be the best place, they complain that they cannot ride. It gives them a sort of stiff feeling, and raises a slight lump. There is a definite complaint amongst the men if it is used in the buttock. In the first place they do not like the idea; they have not got used to it. The reason that we have chosen the back is on account of the inconvenience expressed by the men. We inject into the cellular tissue, between the shoulder blades, not intra-muscularly. It is injected into the cellular tissue, deep down into the fascia. We have not experienced any difficulty as to the quality or nature of the cream supplied, or the way in which it keeps. We get it made up and sent to us. It keeps all right. There are no difficulties in this country about it separating. There is a difficulty in tropical countries. I have carried out that system in Jamaica extensively. In Jamaica I used it both amongst natives and amongst European troops. I have not failed to find that method an excellent one, and have no fault to find with it. It is easy enough to carry out if you can get the patient to submit to it. It is always done by one of the medical officers. I would not allow the very best trained orderly to do this. It is an operation. I sterilise the skin by rubbing it over with carbolic lotion before carrying it out. We do not use soap and water but carbolic only. There are so many coming in that there would be a difficulty, and using carbolic is sufficient in my experience. We have had no casualties of any consequence. The men do not like it, except a few who have consented to it. There is some difficulty in getting them to submit to it to start with on account of the idea of being pricked. As soon as they find it does not hurt—and of course it does not hurt—they tell others, and then they come in larger numbers to have the injections. As to after effects, pain, or discomfort, or anything of that kind, there are none much. Occasionally we get men coming a couple of days afterwards with a little swelling, but it goes down. And I have seen a couple of abscesses in Woolwich, small abscesses, quite circumscribed, about the size of a five-shilling piece, perhaps. Recently I saw a case of rather severe ptyalism, in a man who had had 10 m. of the cream; he had had several injections, at least four to my knowledge. He was brought to me by one of the young medical officers recently joined. He did not seem to understand quite what the nature of the gum affection was, I thought. I concluded the patient was salivated, and I thought he ought to stop the injections at once. He stopped them and the man is getting all right. I do not think it has taken longer in his case to recover from the mercurialisation than if he had been treated by pil. hydrarg. I have seen the same occur after treatment in that way. With the injection method it is very sudden sometimes. I have found it two or three times. You are giving a man six or eight m., and he is going on all right and seemingly in perfect health; then suddenly he comes and complains about his gums; you have probably injected him once a week for several weeks, and he comes to you one morning with ptyalism. Three or four mornings afterwards he complains of ptyalism and spongy gums, salivation. I have formed no opinion in my own mind as to the reason why some of these patients show ptyalism and not others. In the recent case we had at Woolwich I do not think the urine was examined, but the man I am certain was healthy in other respects. This particular youth, about 19, was in good health in other respects. We do not examine their urine before putting them upon mercury. Speaking roughly, we have just over 100 cases attending as out-patients. Only a proportion of them are under treatment by intra-muscular injection by Lambkin's cream; the others are getting a drachm of liquor hydrarg. and 5 grains of iodide of potassium, with a little bark, one dose a day. They attend in the morning for the drachm of liquor hydrarg. perchlor. The cases I get before me are those who have been discharged from the Herbert Hospital. They have been treated there for their primary sores, and probably slight secondary eruption, and they are sent out often with the eruption not cured. Then we carry on the treatment at my Auxiliary Hospital at Woolwich, where they are treated as out-patients. As to there being any good in sending patients to the Herbert Hospital, I think they ought to go there in the first place, because they have got sores, and they should get them healed. It is not nice to have them running about barracks with open sores. I think that they would be infecting others. And if the men knew a man had a syphilitic sore they would probably complain, and would express their objections in the usual way. I am sure commanding officers would strongly object. We let patients into barracks with a papulo-squamous eruption, but they are comparatively slight cases. But if we get a man with a sore throat, that is, with lesions of the throat, ulcers, we send him back immediately to hospital. My objection to having men going about barracks with a small primary chancre on the penis is that their comrades object to the idea of it. I think it is better to treat him in hospital for a start. You can

By whom.	Report of Evidence.
Lieut.-Col. J. T. D. Reckitt, R.A.M.C.—*cont.*	get him under mercury at hospital and watch him carefully, not only a Hunterian chancre, but every type of venereal sore. I think it would be better a great deal to keep him under treatment by mercury in hospital than as an out-patient, and I think commanding officers would object to their coming to be treated for open sores as out-patients. They would have to attend three times a day. Usually a chancre is not an open sore. Supposing a man has a primary chancre, and the surface is not very much abraded, it would be objected to. I think you could treat them better in hospital. You can bring them better under the influence of mercury, and it is better for them to be in hospital. Then there would be the inconvenience of the man attending at least three times a day as an out-patient so as to put him properly under the influence of mercury. There has been some difficulty at Woolwich in getting them to submit to injection. I talk to them and tell them it is a splendid idea, *it will soon get all right* (the injection prick), and the man will only have to come up once a week instead of every day. But I think they like coming every day. Of course I mention to them the consequence of the disease. I think intra-muscular injection is an excellent idea. For out-patients intra-muscular injection is a very good thing to do. You could, of course, use it for in-patients. I say for out-patients because they need only come once a week; for in-patients I always use the pill. or hydrarg. cum creta to start with. I do not know why I prefer it, it has been my method always.
Major T. Du B. Whaite, R.A.M.C.	I have had a good deal of experience in dealing with the syphilitic soldier, principally by the injection treatment; that is the method I have been going in for since 1895 or 1896. I mean by injection, the injection of soluble salts of mercury. We tried the oils when I was in Quetta in 1887, but it is a cold climate there, and we found that the oil did not do; and we had one or two cases of abscess at the site of injection. The oil used was lanoline and olive oil. It is a cold country, and the thing is more or less solid, and if you warm it too much your mercury drops to the bottom, and it is hard to keep it in suspension. And if you are down in the plains of India, in hot places, your mercury does not remain in proper mixture with the oily substance, the vehicle. So I started the injection of a salt, sal-alembroth salt; I used perchloride of mercury, chloride of ammonium, and distilled water. I used it of such a strength that 10 mm. of my solution was equal to one-third of a grain of perchloride of mercury. For bad cases I use a solution which is slightly stronger, that is to say, ½ grain of perchloride of mercury to the 10 mm. That 10 mm. was a very definite unit, because with a 20-mm. syringe you can give two injections without the necessity of refilling between. If one had a larger syringe, one of 40 mm., one could give several injections, merely by changing the needle and cleansing it. My experience at that time was with the soluble salt, I have given the insoluble, but I have not adopted it. I prefer the soluble salt. I wrote my thesis for promotion on the subject in 1898, and I had then given about a thousand injections. Of course they were divided. I used to give two a week to each patient, about ⅓ grain, and when they improved I reduced it to once a week. Since I have been in Woking I have carried out the same system steadily, and this was the result of the men I put through; on this sheet I tabulated the men I put through the course of treatment while I was in charge at Woking. I struck an average of the number of days. There were two men who went over a year. One was a man who had contracted syphilis in Tangier when the regiment was at Gibraltar, and he came to me very bad; rupial sores over his body, and his throat very severely ulcerated. I had him in hospital for many days. It is the first case given on the list. He had over a year's treatment, and I took him off the treatment some time back, and I have inspected him periodically, and there has been no return of the affection. The average was 7½ months for these cases in the list, including mild and severe cases. When I used the insoluble preparations I was in Quetta. I cannot exactly say what was the cause of the abscesses, but I know there were two cases of abscess which rather choked us off that method of treatment altogether. If you get abscesses it may not be the medical officer's fault; it may not be the fault of the preparation. But whatever is the cause, it gets about among the men, and if they hear that so-and-so had injections for syphilis and it caused an abscess, they will not come and submit to it. Wherever these abscesses occurred, the place became inflamed and brawny the next day, and it turned to an abscess, and had to be opened in the course of time. We had no other accidents except those. There was no mercurial poisoning, nor headache, nor fat embolism, nor anything of that sort. In reference to the treatment I adopt, sal-alembroth preparation, I do not find any objection at all, the men do not complain of pain. I have enquired if they do suffer from pain. Some of them wince a little, but in India I had men who had an injection in the morning and went through the riding school that day, and they never complained. I have asked them. I said I would relieve them from this duty if they found any inconvenience—that is, I would relieve of duty for the day. I would put down "Excused riding." And the men in the Army Service Corps, I have a few of them under treatment at Woking, and I excuse them riding or driving for the day, because I do not want them to be in pain, as they might be, and it is desirable to prevent the method of treatment getting into bad repute. I never have any objections from men which I cannot get over by just explaining the nature of the disease and what the consequence will be if it is not treated rigidly and efficiently, so that, so far as the pain is concerned, I have had no real difficulty. I think they must have the pain for 24 hours afterwards. I suppose they have a little uneasiness, but of course I move it about; a man does not get an injection in the same place twice. In

By whom.	Report of Evidence.
Major T. Du B. Whaite, R.A.M.C.—*cont.*	India sometimes when a man was having a stronger injection there was a little nodule in the place of injection, but I always avoided the nodule in subsequent injections. For one thing, the needle will not easily enter a hard indurated spot such as was sometimes produced. I have been in the habit of passing my finger down to find the hard spot, and then move the needle to one side. I never give it in the same place repeatedly. I have had no trouble as regards mercurial poisoning. I have had one or two men in India get slightly salivated, but I never had a man get his gums tender or any salivation at home. And, of course, when they salivate I let them off the mercury for a while. I do not think the salivation in such cases is worse than it would be if preparations by the mouth were given, and I do not think the cases are more severe. I took up this method of injection in preference to the more easy method of administration by the mouth because I found mercury by the mouth did not give me the results I wished for in sufficient time. For instance, I have recorded here several cases of men who had been for a considerable time on mercury by the mouth, the usual routine treatment, what we call the routine mixture, the stock specific mixture, which is a drachm of liquor hydrarg. perchlor., 5 grains of iodide of potassium, and some tincture. They get three doses of this in a day. I had several men with primary indurated sores which showed no tendency whatever to heal with giving the specific mixture by the mouth, and a wash locally. But as soon as I commenced giving an injection with the soluble salt, they took on a healing action at once, as if the mercury given by the mouth was eliminated so much that you did not get the effect produced in the system. And I should think that out of a drachm of the liquor, not more than one-third of it is absorbed, the rest passing out in the faeces. I have not tested the faeces, but I believe that is about the proportion. So, by the other means, I make sure that what I put into the man is absorbed—it must be absorbed, it cannot do anything else. Consequently, I think the therapeutic value of injection is distinctly greater in the Army. It has the advantage for treating out-patients, that you can make sure that he is getting his treatment. But, of course, if you give a man mixtures or pills to take outside, the ordinary average patient even, who pays his doctor, frequently forgets to take his medicine; and, besides, it is open to abuse in the way of any other man getting similar symptoms obtaining the medicine which a patient might have in his locker. So it is not always the man you give the mixture to who would consume the whole of it. I think there is a serious likelihood of the soldier not taking the medicine. On the whole, it is more agreeable to take the medicine by the mouth. I have had one or two men demur to the injection treatment, but as soon as it was explained to them and I showed them that the fears of its effects were more imaginary than real, I have managed to persuade them. I have never had men who declined absolutely to submit to the treatment. I have never had a man come and ask me for it in preference to the other; and have not had anyone say they would prefer injection than by the mouth. I cannot say whether they would, but I think, when the man understands what the treatment means to him, I have never yet met one who was unwilling to undergo it. With regard to the syringe, I have used, up to now, the vulcanite-mounted glass syringe with an iridio-platinum needle. The only piece of metal that came into contact with the solution was the end of the piston-rod, where the washer is held on by a small nut; but by putting a little grease or vaseline on that, it kept it away from contact with the solution. A more ideal syringe would be the aseptic syringe of Burroughs and Wellcome—all glass. I am going to get one myself, with an iridio-platinum needle—you must have that, it is a necessity; no other needle will stand it. This needle is absolutely sharp; it is very hard. Iridio-platinum is harder than the steel which the ordinary needle is made of. I never sterilise a hypodermic needle by fire, it takes the temper out of a steel needle altogether. With the iridio-platinum needle, the heat does not destroy the temper, but travels along the needle, and is liable to loosen it in the vulcanite holder or socket. You could not use a steel needle for more than a few injections, it corrodes so rapidly. I have now one of two iridio-platinum needles which I started with when I was beginning in India, and it is going strong still. I sterilise it by simply washing it. The solution is a powerful antiseptic, and every time I use it it is washed through. I never inject another man without washing the syringe after doing the last, and I also wipe it with carbolic lotion, as a rule. I wipe the outside of it, and run some of the lotion through the needle before I refill the syringe for the next man. It could not be septic with the strong solution of perchloride of mercury in contact with it. I do not use precautions as to the skin of the patient; I inject straight off. I have never had an abscess occur, or any septic effects at all. I have given nearly five thousand injections, I should think. That is to say, five thousand individual injections, not five thousand patients treated. There is one point about those needles. The makers give an iridio-platinum needle, but they put a stilette in of a base metal, which is affected by perchloride of mercury. The metal is probably a bit of brass wire; and I once had great difficulty owing to that. I put the stilette in the needle, and it corroded the brass, and I had great trouble to clear the needle. I do not, therefore, leave a stilette in the needle now. I push it through, to see that the needle is free, and then it is washed through. I have not used Lambkin's cream, nor have I seen it used; I still fight shy of it. I find this answers every purpose. It is cleanly, and it is aseptic, and I do not see why I should change to any other solution or preparation. I have tested it repeatedly, and I can thoroughly rely upon it, and therefore I do not see why I should change. If I had a choice of using grey powder or blue pill by the mouth, and was absolutely certain it would be taken, and had also the choice of this injection

By whom.	Report of Evidence.

Major T. De B. Waite, R.A.M.C.—*cont.*

method, I would prefer the latter. If I were to have syphilis myself, I should elect to be treated by the injection method, undoubtedly. These men are able to go about their duty in the ordinary way, and I rarely have to relieve them of their duty, even in the case of cavalry men. I think soldiers who are under mercurial treatment by inunction, injection, and other methods, are fit for the whole routine of ordinary military duties. I think they are fit for all their duties—that is to say, any man who is in a fit state of health to be out of hospital. Of course there are cases which you must take into hospital, very severe cases of ulceration of the mouth. From an æsthetic point of view, I think one should not leave them to go about on chance, because they may be using mugs at the canteen belonging to other men, and that sort of thing. But without active ulceration of the throat, or open sores, or anything of the kind, I think they are certainly fit to do their military duty, under ordinary doses of mercury. I do not think they would be more likely to have evil results from exposure on sentry-go, for instance, in England on a cold winter evening.

With regard to their fitness for active service, I have put down here, after thinking it over, that they were fit; that is, if the man is in good condition otherwise. Of course one would naturally take into consideration his general condition of health. But the man who would otherwise, if you did not know he had syphilis, pass as fit for service, I do not think is unfit for field service. If he had great hardships there is a chance of his breaking down, but I refer above to a man who has undergone a complete course of treatment and is apparently cured. In the case of a man who had a gumma, a distinct gumma which had broken down, in his leg, or in his arm, three months previous to his being examined for field service, if he had no other signs, a gumma anywhere else, I might let him go. But three months is rather a short time. It depends on what interpretation one gives to the word "recently." I think a man who had had a gumma as recently as that I should not be inclined to pass as "fit." Most likely the disease would recur while he was on service. I have passed eleven years of my service in India. With regard to men breaking down on field or active service in India, as a rule the syphilis in India is more severe than at home. Whether it is that the virus is more active there, or whether that climate exercises a lowering effect on the man's system generally, I do not know. But I have had much severer cases of syphilis in India than at home. I have been on service in South Africa. The syphilitics I met with there were those who had had the disease before; they were recurrences, more or less. There were not many primary sores which came under my observation there. Whenever the men got secondary syphilis we generally invalided them home as not being soon likely to take the field again. I had no war service in India. In South Africa it was not recently contracted syphilis, as a rule, which we came across, most of them had had some previous record of syphilis on their sheets; and when they had that we invalided them. I should like to lay down a law about passing a man for field service who had had syphilis, because I think that he would want to have been through a thorough course of treatment, and to have been under observation for a good time. I would not like to send a man with a gumma as fit for active service. I take into consideration the man's general condition, and the time since his last admission for syphilis.

I think a soldier who has a recent chancre should be treated as an in-patient. I would not allow any man with an open sore to remain out of hospital. For a soft or a hard chancre I would take them in. I do not think they are fit cases to treat outside; they are only loafing about the barrack room. A man cannot work with a sore on his penis without the risk of getting buboes. I would take them all in. I do not allow any primary syphilis case out of hospital until the sore is healed up. And I keep them under outdoor treatment, by injections, until all induration has disappeared at the site of the sore. Afterwards I keep them for about a month or six weeks on treatment, and under observation, until I think I have tided them over the period when they are likely to develop secondary symptoms, then I let them off. If they have not developed secondaries by that time I think that there is not much necessity to go on. I instruct them to come to me if they get a sore in the mouth, or any rash breaks out on the body. I would keep them under treatment in the way I have mapped out in the chart for six months for secondary syphilis, under treatment for the whole time. They would come up regularly for treatment. In my memorandum of questions there is a question about examination of the blood, and the examination of the urine. I am not in the habit of examining blood and urine. If I find the man's general health is improving, that he is getting fatter and putting on flesh, I do not go to the trouble of examining his urine or his blood. I weigh them periodically, and if a man is not in good condition, I weigh him to see if he is going up or down. But I do not think it is absolutely necessary to examine the urine and the blood in every case. Of course if one had a suspicion that the man's kidneys were diseased one would look for other symptoms, but it would take a long time in treating these cases if you had many of them to attend to. It would take an interminable time to examine the urine and blood in every case. There is a question about whether mercury should be given in a case usually accepted as a local primary sore. I decidedly think it ought to be given. Some say that seeing on a man's sheet that the man has been several times admitted for primary syphilis is a proof that that diagnosis was wrong at first. But I do not agree with that view at all. I say that the fact of a man having got a primary sore a second time does not show that it was not properly diagnosed before. If he was properly treated for the first it is probable that the virus was destroyed by the treatment in the first instance, in which case I think he would be liable to get an indurated hard sore on another occasion without a manifestation of secondary symptoms intervening. Therefore, I think that in many cases the failure of secondary symptoms to show themselves may be attributable to good treatment when the man had his

By whom.	Report of Evidence.

Major T. Du B. Whaite, R.A.M.C.—*cont.*

primary sore, and that it was not a case of incorrect diagnosis. I have seen many soft sores followed by secondary symptoms, particularly sores that invade the meatus, or sores on the glans penis, where induration is very slight, if the sore is not at the corona. At the corona they get induration round the foreskin and by the frænum, but sores which are on the glans itself are often followed by secondary symptoms, though you can make out no induration. It is the want of connective tissue in the glans penis, apparently, which determines the absence of induration. As soon as I make out that the sore is a syphilitic one I commence treatment. And if a soft sore does not show manifest signs of healing like an ordinary ulcer in a week or ten days, I begin syphilitic treatment in that case too, without any other evidence than want of healing. An ordinary ulcer in any part of the body in a healthy man should show some signs of healing in a week or ten days. If it does not, I look upon it as a sore which may be followed by secondary symptoms if not treated with mercury. I do not say I embark on an eight months course on those symptoms. I embark on what I call my modified course for primary syphilis, a course which will tide him over the induration and the eight or ten weeks which, in the ordinary course, would bring out the secondary symptoms. Then I stop. And if he has not developed the secondary symptoms I have done pretty well all I could—perhaps I ought not to have ceased treatment, but I have done what I think is needed for the time being; I have tided him over the time when he might have developed secondary symptoms, and I keep him under observation; and if it happened that he showed any secondaries, I would recommence the same course of treatment.

I may positively state that I have never found any man the worse for doing his duty while undergoing this treatment for syphilis; nothing I could attribute to it—cold, pneumonia, chill, or anything of the sort, or any inflammation of the kidneys from it. I have never had a case of a man getting Bright's disease while under the course from any exposure. I cannot recall any case of Bright's disease among the patients I was treating for syphilis. I know it is the general idea that when you give mercury you should be careful that the patient should wear flannel, and that he should be kept warm, but I have never found ill effects. The soldier, as a rule, does wear flannel, he has a woollen shirt; but I cannot say I have found any ill effects from the man who was under mercury doing his military duty; and I have had ample opportunity of discovering any such cases if they occurred.

I use this injection method, I think in every case. I do not begin injecting at once. It may be a hobby, but I like to see what I can do with him by the usual treatment. I put him upon that to see if my treatment has any advantage; and if he does not show improvement I put him upon the other. That I have done in many cases. I have in Woking now a man named K. He had gonorrhœa, but he also had a small sore, a small ulcer, in the meatus, which looked suspicious. I had to pass a catheter a couple of times to keep it clear, and apply a local dressing to the urethra. I had him for weeks under treatment, and had him on specific treatment, and it did no good. This was by the mouth. On the Saturday before last I gave him an injection, last Saturday I gave him another, and that ulcer is healing up rapidly now. That result has been caused by even two injections added to his mercury by the mouth. I give a drachm of the liquor three times a day. This is our usual stock specific preparation. In treating a series of cases by giving mercury by the mouth, and another series at the same time being treated by injection, I do not think that if you had some control experiments, it would be found that the mercury given by the mouth would be as good as by injection. The cases are not in hospital for so long as five or six weeks, not with a primary sore. I generally get the man out in about a month. But I continue my treatment until the induration has disappeared. You have my promotion thesis on this subject filed in the War Office.

With regard to itch, Surgeon-General McNamara suggested it might be treated by the German method, by Peruvian balsam; we might kill them by exclusion of air. But I have used liquor calcis sulph. baths, and sulphur ointment. I have nothing special to say about that, I think.

Cases which have Completed a Course of Treatment.

1st Royal Berkshire Regiment.

——	Days.	Total Days.	Solution used.
1. L.	In 169 / Out 217	386	Hydr. perchlor - gr. 16 Ammon. chlor. - gr. 8
2. F.	In 46 / Out 222	268	Aq. Dist. - - oz. 1 Solve.
3. G.	In 30 / Out 158	188	
4. R.	In 54 / Out 219	273	mX = ½ gr. hydr. perchlor.
5. M.	In 15 / Out 268	283	To A.R. on 11.3.04.
6. G.	In 31 / Out 326	357	
7. G.	In 76 / Out 112	188	
8. B.	In 18 / Out 225	243	
Carried forward	—	2,186	

By whom.	Report of Evidence.

Major T. Du B. Whaite, R.A.M.C.—*cont.*

Cases which have Completed a Course of Treatment—*cont.*

——	Days.	Total Days.	Solution used.
Brought forward - -	—	2,186	
9. L. - - - -	In 34 / Out 130	164	
10. B. - - - -	In 32 / Out 149	181	
11. S. - - - - -	In 37 / Out 199	236	
12. M. - - - -	In 38 / Out 58	96	
13. H. - - - -	In 23 / Out 22	45	
		2,908	

Average for each case, 223·7 days, or about 7½ months.

Woking, 25.4.04. (Signed) T. Du B. Whaite, Major, R.A.M.C.

Captain J. Stuart Gallie, R.A.M.C.

I have had rather more experience than falls to our lot usually of the treatment of syphilitic soldiers. Recently I have been giving intra-muscular injection with insoluble cream. I have used Lambkin's cream—the recent preparation with the carbolic acid in the lanoline. I am stationed at Bordon Camp. As to the other preparations, I followed Dr. McCall Anderson with the injection of soluble perchloride, a watery solution of it. I watched his clinique, and now I am using insoluble preparations. I did this in Mauritius, as well as at home. My experience has extended for perhaps five years, with the insoluble salts all the time. I have not had any difficulties, but I can see where I might have had a lot, save that we took particular care not to have abscess formation. We have been very near it on several occasions, but nothing serious. We have had a thickening, but not abscess formation; there was no pus formation in any one case. We have had no troubles from the absorption of mercury. I do not know of any cases of ptyalism, or any trouble from the non-absorption of mercury. I have no record; I did not think you would want one. I think the cases were fairly satisfactory. I think that the method I have been carrying out in these five years, so far as their therapeutic result is concerned, putting aside for the moment the question of convenience, has appeared to be satisfactory; and I think more satisfactory than what I saw done by Dr. McCall Anderson, or by treatment by the mouth. I judge that by the disappearance of the lesions. The injection of Lambkin's cream has been complained of by the soldier, and it took a lot of persuasion to get them to go on with it in many cases on account of the pain sometimes. Sometimes the patients did not object. Recently I had to detain a man for three days; he could not do his duty; he complained of pain. There was induration, but the induration passed away. I would not say that the pain was considerable. On the contrary, I would say it was anything but considerable. I must have injected it at least 600 times. I cannot recall pain being complained of in more than five or six cases. Many of the boys came laughing, and they have hurried away. Afterwards the pain of the injection itself is not great. In some few cases it was the pain of the injection afterwards that was the matter of considerable moment, but certainly not generally. The pain did not appear to be a very serious drawback; they did not complain very greatly of it. I now use 5 mm. of the cream. The method of supplying it to us is faulty; we get jars of it, and we have to place it on the fire to melt. You cannot melt it sufficiently, so to speak. Every time you take the cork out there is a danger of micro-organisms sinking into it. It would be much better for us if we could have the stuff in a small phial, in the way you have serum supplied, and I think that could be done. The syringe we have is a bad one. It is an impossible syringe, vulcanite, glass, and steel. We have used the antitoxine syringe; it is better. Vulcanite melts if you put it into a temperature which is anything like sufficient to make it aseptic. You could not make it aseptic in that way without it bending. The steel corrodes; it gets rusty, and goes wrong in time. I think we should have an all-glass syringe, and that there should be more care in serving out mercurial cream. And then I think they could dispense with the carbolic acid, which is a necessity in the cream just now to keep it. If we could have it in small phials we could dispense with the carbolic. The injection of carbolic must necessarily cause irritation. I have used an all-glass syringe with an iridio-platinum needle in Mauritius. It was satisfactory. I did not find any difficulty in driving the iridio-platinum needle in. It does not go in so easily as a clean steel needle, but it is difficult to keep them clean. I have had no personal experience of the injection of soluble preparations. It depends upon the condition of the soldier while under mercurial treatment by this method of injection whether he is fit for his ordinary duty. If the lesions are marked I should not keep him on duty. If the soldier was in fairly good health and of good appearance, and had no obvious lesion, an open sore for instance, and he is undergoing treatment by means of Lambkin's cream, having the full course of 5 mm. once a week, I have found him fit to do his ordinary duty. I have found him so; he does not shirk his duty, and he never complains of it. He would be a marked man, of course, that

By whom.	Report of Evidence.
Captain J. Stuart Gallie, R.A.M.C.—*cont.*	is, a man under observation; and if he complained to me of doing night duty, that it was too much for him, that it caused him aches and pains in his bones, I should treat him specially. If a man had albumen in his urine, I think he should be in hospital until the urine was clear of albumen. It is very difficult to treat men in barracks in a condition like that, because there are the canteens, and any amount of attractions. You can overdo the treatment in barracks. If a soldier has recently shown recent manifestations of syphilis I do not think he should be chosen or passed for field service. He would always have a reason for falling out or complaining. He would be a trouble to everybody. You could not continue treatment in the field, consequently I think a man like that would be no good in the field. I think the hardships of field service may bring about such debilitating conditions that his state would be aggravated. The gumma may break down. It is against the traditions of the service, so to speak, to pass such a man fit for field service. I would not have thought of passing him. I was not in South Africa. Another point I should like to mention is that many young soldiers are frightened of this intra-muscular injection. I think they have been frightened by a case of abcess which perhaps they have seen. There is no doubt, also, that young officers approach the subject very gingerly by asking the men or persuading the men to undergo the treatment. The young officer is desirous of having good results, and he is anxious to have the man brought in in the early morning and his skin prepared as for operations. The haphazard injection of mercury, getting a man in off the square, getting down his clothes, putting in the needle of a vulcanite syringe, and injecting the mercurial cream, brings it into disrepute and frightens the young soldier. If it is properly done I do not think the soldier would object to it. I have come across a feeling against injection, the men have refused, but I have managed to persuade them later on. I have gone on with the pills at first, and then persuaded them to have the other. I have told them it is fifty times as good and they have come back to it. They have been influenced by what they have seen and heard. You cannot help accidents. If you see a pot containing mercury, looking like a huge jam jar, so to speak, and it is put on the fire to melt, it does not improve, and you cannot pretend to be aseptic under the circumstances. But if you prepare your patient's skin partly as for operation and you had an all-glass syringe, with a needle which would bear boiling in oil, as we did the needles in the case of the plague patients, I think you would have excellent results, and you could never have an abscess. Another thing which frightens certain soldiers was, that men who had undergone a severe course of mercury by the mouth, would not be willing to undergo hypodermic or intra-muscular injections; where it was done there was severe ptyalism in those who had previously been treated by the mouth. I think those men were saturated with mercury, and that the intra-muscular injection overdid it. Certainly that caused a very grave condition, and it frightened a good many. It is curious how quickly these things get known among soldiers. You can imagine you have a lot to do in carrying out the treatment to persuade men. I think by force of example we can get them to do it. Certainly it is a convenient method. Pill-taking does not seem to be satisfactory. The difficulty is to get your men to take it. Unless you follow them up and get them to take it in front of you. I think the difficulty of getting the young soldier to take mercury is he does not realise the importance of it. He does not know what syphilis means. He gets a chancre and does not think anything of it. In the olden days in India they knew what syphilis was; they saw the awful effects of it, and that frightened them.

By whom.	Report of Evidence.
Major-General the Hon. Sir REGINALD TALBOT, K.C.B.	I cannot say that in the West Indies I had much experience of the continuous treatment of syphilis, but I there met Colonel Lambkin, and he told me that was his great hobby at that time. I inquired about it, and it impressed me so much that I said if I had an opportunity I would not forget what I learnt out there. When I went to Aldershot and commanded the Cavalry Brigade from 1896 to 1899, I brought the matter before the medical authorities and suggested that in my brigade they might try the experiment. But it was not met and, of course, I should not press the matter. When I went to Egypt in 1899 I took up the question. The witness then read the following document addressed to the War Office by him:—

"SIR,

"I HAVE the honour to call special attention to Appendix 'A' in the Sanitary Report for the year 1900, by Colonel Fawcett, P.M.O., Egypt, to the Director-General of the Army Medical Service. The remarkable and satisfactory results of the continuous treatment of syphilis by intra-muscular injection of mercury are shown in that report, but it may be convenient that I should recapitulate some of the figures and points of interest. From the tabular statement it will be observed that admissions to hospital for primary syphilis were reduced from an average in the four years 1896 to 1899 of 201 to 32 in 1900, the average ratio per 1,000 from 47·4 to 8·5 in 1900. The admissions for secondary syphilis gave an average for the four years 1896 to 1899 of 195 against 48 in 1900, 45·2 per thousand against 12·7 in 1900. Invalided for syphilis, average 1896 to 1899 7·5, in 1900 one (a case of very old standing).

"2. Early in 1901 a careful inspection of the men in the command was made, and out of 4,000 men only two were found to be unfit for active service owing to secondaries, a proportion I am informed probably unprecedented in the British Army. One of the two cases was of a man whose treatment was discontinued by mistake, and he returned to hospital three months after its discontinuance.

"3. The treatment—Intra-muscular injection of mercury carried out for a minimum of 18 months. The patient attends weekly at the commencement, but in no case is a longer period than one month allowed to elapse without examination.

"The number of men under treatment in 1900 was 107, with an average of 20 injections per man. At first a few men objected to submit to the treatment, but now all unwillingness has passed away, and in one corps alone five men who had contracted constitutional syphilis voluntarily presented themselves for treatment. Practically no ill effects have followed the treatment. One great advantage is that the men continued at duty during their course of treatment.

"4. With regard to the diminution in primary syphilis, three causes have been ascribed:—

(*a*) The smaller number of men with secondary syphilis capable of infecting prostitutes.
(*b*) Greater accuracy in the diagnosis of primary syphilis.
(*c*) The continence of the men of the 3rd Battalion Seaforth Highlanders.

"(*a*) and (*b*) do not affect the figures relating to secondary syphilis, and with regard to (*c*), although the amount of primary and secondary syphilis has declined to a remarkable extent, I regret to say that notwithstanding the good conduct of the 3rd Battalion Seaforth Highlanders the amount of other venereal disease has not decreased in proportion.

"Gonorrhœa only { 1896–9 - - 102 per 1,000.
1900 - - - 106 per 1,000.

"5. The trial of the system in Egypt was mainly due, if indirectly, to Major Lambkin, R.A.M.C., whom I met in the West Indies some years ago, and was impressed with the success in Jamaica attending the treatment of syphilis by intra-muscular injection of mercury, the practicability of carrying it out for men under military discipline, and the great advantage of doing so without admission to the hospital.

"I have since followed up the subject as far as is practicable for a layman, and became convinced that the objections raised had not been proved, and that the system had never had a trial on a sufficiently wide scale nor systematically for a sufficient time to prove or disprove the efficacy of the treatment.

"6. Shortly after I assumed command in Egypt I consulted the principal medical officer, Surgeon-General Price, and found that he was in favour of the treatment. He remained but a short time in Egypt, and upon the arrival of his successor, Colonel Fawcett, in 1899, I expressed a wish that if he approved a full and systematic trial should be given. He took up the idea warmly, having had previously satisfactory experience in Poona, and it is due to his zeal, tact, and skilful organisation, and assisted by his medical officers, that the system has been systematically tried for 15 months with the results above mentioned. Colonel Fawcett makes no claim to originality, but he has given the treatment a fair trial.

"7. I venture to hope that a still wider trial may be given to the system and that it may prove to be a means of scotching a disease which annually keeps so many men from their duty, and the after-effects of which continue for years, often for life, not to mention that the uncured men may be a centre of infection in the civil population.

"I have, &c.,
(Signed) "R. TALBOT, Major-General,
Commanding in Egypt."

By whom.	Report of Evidence.
Major-General the Hon. Sir Reginald Talbot, K.C.B.—*cont.*	Witness (continuing)—

If you will allow me I should like to say one word more, and that is, that when Col. Fawcett left the command Col. Webb became acting P.M.O. Col. Webb was not originally very much in favour of the treatment as far as I could understand. I did not ask questions, but that was the impression I had. Upon my giving up the command in July 1903 I asked him for his opinion about this treatment, and this is what he says :—

"*Some Remarks re Syphilis in the Egyptian Command.*

"During the last four years I have had experience of the treatment of syphilis by intra-muscular injection of mercury; the cream which has been used is Hydrarg., 1 dr.; lanoline, 2 drs.; olive oil, 2 drs. I feel perfectly confident that this is the best method of treating constitutional syphilis in the Army, out of hospital, and usually in hospital. In 1901 there were a series of cases of mercurial ptyalism. In consequence of this the dose was diminished to a maximum of m. v., to be administered not more frequently than once a fortnight for not more than three consecutive periods of 14 days. An interval of four weeks will then follow during which no mercury will be given. This diminished dose seems to have been quite as beneficial in eliminating the syphilitic poison, and there have been no unpleasant symptoms in any cases since it has been in vogue. The custom is for all cases of syphilis to be kept under observation and treatment for 18 months, and the following line is adopted :—

"All men with secondary syphilis are injected. Those with primary syphilis are divided into two classes : 1st, those in which there is no doubt of the nature of the primary sore; 2nd, those in which doubt exists. The former are injected, and the latter kept under observation for three months. From the return appended it will be seen that there has been a very small admission rate for syphilis in the command during the last three years, and the invaliding for this has been almost nil. In 1901 there was an increase in the number of admissions for secondary syphilis; this increase was due to the 3rd Royal Fusiliers coming from Gibraltar to Egypt with a number of cases and relieving the 3rd Seaforth Highlanders, who are exceptionally clear of the disease. There are now 38 cases in Cairo and 17 in Alexandria attending for injections; a large number of these are recent arrivals from South Africa. Very few men have objected to the treatment after it has been thoroughly explained to them. Two men who refused injections, after seeing the improvement in their friends who were under treatment, volunteered. There having been so few changes in the units of the garrison for a long period, this command has been an exceptionally good one in which to show the benefits of this system of treatment, of which I am assured.

"C. A. Webb,
Lieut.-Colonel, R.A.M.C., P.M.O."

Egypt Command.

Return of Venereal Disease (Primary and Secondary Syphilis) for the past three years in Egypt and Khartoum.

Headquarters, Cairo, 9th April 1903.

Primary Syphilis.

Year.	Strength.	Admissions.	Ratio per Thousand of Admission.	Average Constantly Sick.	Ratio per Thousand A. C. Sick.	Died.	Ratio per Thousand Deaths.	Invalided.	Ratio per Thousand Invalids.	Remarks.
1900	3,655	28	7·66	2·92	·80	None.				
1901	4,015	20	4·98	1·58	·39					
1902	4,198	16	3·81	1·51	·36					

Secondary Syphilis.

1900	3,655	42	11·49	4·03	1·10	—	—	1	·27	
1901	4,015	73	18·18	6·53	1·62	2	·49	3	·75	
1902	4,198	52	12·39	4·64	1·10	—	—	1	·24	

(Signed) C. A. Webb,
Lieut.-Colonel, R.A.M.C., P. M. Officer, Egypt.

The Chief Staff Officer, Egypt.

By whom.	Report of Evidence.

Major-General the Hon. Sir REGINALD TALBOT, K.C.B.—*cont.*

RETURN of ADMISSIONS for VENEREAL DISEASES, first three months of 1903, at Stations as under :—

Headquarters, Cairo, 9th April 1903.

Cairo.

Month.	Primary Syphilis. Strength.	Admissions.	Ratio per Thousand.	Secondary Syphilis. Admissions.	Ratio per Thousand.	Remarks.
January -	3,155	*2 1	·32	*16 2	·63	* Transfers sick from S.S. Plassey.
February -	3,250	Nil.		4	1·23	
March -	3,105	2	·64	12	3·86	

Alexandria.

January -	1,207	3	2·48	2	1·66	
February -	1,036	2	1·93	1	·96	
March -	1,027	1	·97	2	1·94	

Khartoum.

January -	707	Nil.	Nil.	Nil.	Nil.	
February -	726	1	1·38	2	2·75	
March -	(Information not available.)					

(Signed) C. A. WEBB,
Lieut.-Colonel, R.A.M.C., P.M. Officer, Egypt.

The Chief Staff Officer, Egypt.

Witness (continuing)—

The very large diminution in syphilitic cases, both primary and secondary, has been attributed to the supposed reason that the garrison of Egypt consisted throughout four years (1899—1902) of old soldiers, and that, therefore, the conditions for the treatment were unusually favourable. This is not the case. Although the units did remain longer than usual in Egypt during the war, the rank and file (not officers or N.C.O.'s) were constantly changed. The 1st Battalion of the Seaforth Highlanders, with a strength of about 1,000, sent out about 700 men in large drafts to South Africa, and they were replaced by recruits from England. The same was the case with all the other units in the command.

The garrison of Egypt during the war was comprised of young soldiers. I wish to say, as to whether the men disliked the treatment, that no pressure was exercised except the persuasion of the medical officer, there was no difficulty at all; and to assure myself about this, I wrote, since you asked me to attend, to the colonel of the 11th Hussars, and he said undoubtedly it was the fact that the men did not object to it at all. In his regiment five men when they came from India volunteered to attend. After the cases of mercurial poisoning there was a little hesitation about it, but not to any great extent, and I think what Col. Webb said, who was there the whole of that time, shows that there are no practical objections from the point of view of the men. I think you will find that the regulation published by Col. Fawcett was never necessary; but it was my expressed wish that there should never be any form of compulsion used at all, but that the men should be shown what the benefit was by seeing the results upon others. The practical result was that there was no objection; perhaps there were two or three in the course of the whole time, but I do not think more. It was my idea to have as many men free of syphilis and fit for active service as possible. My object was the public service, and instead of having all these men sent to hospital for perhaps two or three months, they were there doing their work. One thing that has been said is that Egypt is a peculiarly favourable country for this treatment; of course I am not at all able to give an opinion on that point, but I should say it is a place where there is a great deal of rheumatism. Rheumatism is one of the prevalent illnesses, especially at Alexandria; a great portion of the men are in hospital from different forms of rheumatism. I did not have any experience myself of men under treatment by mercury suffering as a result of military duty during that time. I did not hear of any. They were never excused from the manœuvres, to which we went without tents, and, although sometimes it was very cold and sometimes wet, our sick rate was absolutely nil. No men were excused, so far as I am aware. They went through all the ordinary manœuvres, sleeping out, and so on, even in wet weather. Wet weather is rather rare there, but we had some alternations of temperature; sometimes it was very hot, sometimes very cold. I think that at Alexandria the climate is about the worst there is for anybody with a tendency to rheumatism. It is very damp, and there is a considerable rainfall. There is, however, only one battalion there.

By whom.	Report of Evidence.

Major-General the Hon. Sir REGINALD TALBOT, K.C.B.—*cont.*

I think something can be done from the point of view of the officers of the regiments in helping in this matter, but you had better trust to the persuasive arguments of the medical officer, and if he cannot persuade them I should be very sorry to see the ordinary company officers try to persuade men and go beyond what the medical officer would do. As to their undertaking any responsibility in the matter, I would not care for them to go further than I have said. Of course there is a great deal of difference in medical officers, some are new to the work and may be disinclined to the treatment.

May I say one word about cases of mercurial poisoning, because I do not think Col. Fawcett's report mentions everything. Naturally he is very loyal, and did not wish to put the responsibility upon junior men, but, as a matter of fact, where these cases happened was at one particular place, and principally under one medical officer, a civilian, a young fellow, very clever, but I do not think he was what you would call a very careful man. All these cases—or I would not say absolutely all, but certainly 10 out of 12—occurred at the barracks where he made the injections. He has now left the Government employ. Before you question me about any particular regiment, I want to say that, as you probably know, the cavalry soldier, though—as I am one myself, I ought not perhaps to say it—is a sharper man, and a better man, I should say, than the average infantry man, and in the 11th Hussars there was less venereal, and among them there was no difficulty about the treatment; they understood the advantage of it at once. I only mention that point because I think the better men you get the less they are likely to object to the treatment; that is to say, the more sensible they are. The men who were undergoing intra-muscular injection did their duty like anybody else, they were not excused at all. I do not think any man was excused. The ordinary course was that they did their duty like anybody else: night work and drill and manœuvres. They were not excused from mounted drill; that was not considered to be necessary in any way. I was not cognisant of any case occurring, but perhaps I should not be; but if there had been many I should have heard of it, no doubt.

There are not any measures taken by Government to prevent syphilis in Egypt. There is absolutely no jurisdiction at all. It is a very mixed population, and a large proportion of the women are diseased with gonorrhœa and syphilis. They are a very low class of dirty women, and there is no power over them at all.

The following figures are entirely taken from the official report:—

"EGYPTIAN COMMANDS, BRITISH TROOPS. Extract from Official Returns.

Secondary Syphilis.

——	Admissions.	Rate per 1,000.	Ratio per 1,000 constantly sick.
1896	208	53·1	5·66
1897	230	51·7	6·47
1898	221	45·0	4·38
Intra-muscular Injection commenced in 1899.			
1899	122	30·8	2·27
1900	48	12·0	1·15
1901	73	18·0	1·62
1902	52	12·0	1·10

The amount of primary syphilis has decreased from 312 admissions (ratio 79 per 1,000) in 1896 to 16 admissions (ratio 3·7 per 1,000) in 1902."

Extract from Annual Report for 1902.

"*Syphilis.*—There has been a considerable reduction in the number of admissions from syphilis. There have been no men invalided or deaths from this cause. Intra-muscular injections of mercury in all cases of secondary syphilis have been continued with no unsatisfactory results. A diminished dose has been in use with apparently good results, but the acting P.M.O. states that enough time has not elapsed to prove that it is not sufficient to eliminate the syphilitic poison. The ratio per 1,000 has been: Primary syphilis, 3·7, against 4·98 in 1901; secondary syphilis, 12·8, against 18·18 in 1901."

APPENDIX A.

No. 1690.

REPORTS AND RETURNS

It is requested that the above heading, with number and date of this communication, may be quoted in any subsequent correspondence on this subject.

ARMY HEAD QUARTERS, INDIA,
MEDICAL DIVISION,
Simla, the 20th April 1903.

To the LIEUT.-GENERAL COMMANDING THE FORCES, PUNJAB, BENGAL, MADRAS, BOMBAY.

SIR,

IN continuation of this Office, No. 2619, dated 15th June 1898 (copy attached for facility of reference), I am directed by the Commander-in-Chief to state that when a British soldier has been placed under medical surveillance for venereal disease, the medical officer should prepare a return on the attached form* in duplicate. One copy of this return should be forwarded to the man's Commanding Officer and the other retained by the medical officer.

2. When a man under medical surveillance is transferred from one station to another, the Commanding Officer will apprise the medical officer of the fact, and the latter will then forward the copy of the return in his possession to the medical officer of the hospital at the station to which the man is proceeding in order that the surveillance may be continued.

I have the honour to be,
Sir,
Your most obedient servant,
T. J. GALLWEY,
Surgeon-General, A.M.S.,
Principal Medical Officer.
H.M.'s Forces in India.

COPY forwarded for information to the Adjutant-General in India.

J. T. GALLWEY,
Surgeon-General, A.M.S.,
Principal Medical Officer,
H.M.'s. Forces in India.

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* To be printed and distributed by the Command authorities.

To be prepared on quarter sheet foolscap paper.

RETURN of a Soldier who is under Medical Surveillance for Venereal Disease.

Station _____.

Date _____.

Corps.	Regimental No.	Rank.	Name.	Treatment adopted.

Medical Officer.

No 2619.

SANITARY.

It is requested that the above heading, with number and date of this communication, may be quoted in any subsequent correspondence on this subject.

ARMY HEAD QUARTERS, INDIA.
MEDICAL DIVISION,
Simla, the 15th June 1898.

MEMORANDUM.

With a view to check, as far as may be possible, both the severity and spread of venereal disease, as well as to ensure the constitutional treatment being persisted in, in order to prevent any further development of the disease, the Commander-in-Chief in India directs that when British soldiers who have suffered from venereal disease are discharged from hospital, they be kept under medical surveillance for so long as may be deemed expedient, by being required to attend hospital once a week for inspection and treatment, if necessary.'

ALBERT A. GORE,
Surgeon-Major-General,
Principal Medical Officer.
H.M.'s Forces in India.

COPY forwarded for information to the—

Lieutenant-General Commanding the Forces		Punjab.
Ditto	ditto	Bengal.
Ditto	ditto	Madras.
Ditto	ditto	Bombay

By order,
ALBERT A. GORE,
Surgeon-Major-General,
Principal Medical Officer,
H.M.'s Forces in India

[*Confidential.*]

No. 5162.

SANITARY.

It is requested that the above heading, with number and date of this communication, may be quoted in any subsequent correspondence on the subject.

ARMY HEAD QUARTERS, INDIA,
MEDICAL DIVISION,
Simla, 17th October 1903.

To the PRINCIPAL MEDICAL OFFICER, PUNJAB, BENGAL, MADRAS, BOMBAY, BURMA DISTRICT COMMAND.

MEMORANDUM.

With reference to Memorandum No. 5966, dated 14th November 1902, from the Principal Medical Officer, His Majesty's Forces in India, to which attention is again specially called, and which should be read by every officer and hung up for frequent reference in the office of every hospital, the Principal Medical Officer, His Majesty's Forces in India, considers that by circulating a summary of the reports of the medical officers who have tried the intra-muscular mercurial treatment of syphilis, a useful purpose will be served in furthering this method of treatment.

It will be noticed that the large majority of officers are entirely in favour of it, and those who

have been familiar with it are unanimous as to its efficacy, as by this means they have been enabled to decrease admissions and invaliding to a very large extent.

The prescription generally used has been cream, viz.:—

Rx.

Hydrarg. - - -	1 dr.
Lanolin Pur. - -	2 drs.
Ol. Carbol. 2 per cent. -	4 drs.

The first two by weight, the latter by measure.

Five to ten minims as an injection. To be well stirred before use in order that the mercury may be well suspended and equally distributed in the lanoline.

It should be dispensed locally and not made up at medical store depôts.

With regard to the dose, much depends on the patient, but it is generally accepted now that, in order to produce a gradual amelioration of the symptons in such a chronic affection, large doses are a mistake, and the best results are obtained by the slow and continuous action of small quantities of the "antitoxin" mercury. Five minims are therefore recommended. In connection with this subject, according to the latest bacteriological researches, there is reason to believe that small doses of antityphoid vaccine create greater immunity than large doses which induce immediate marked disturbance of health.

The injection should be made with a sterilized all glass syringe, having a platino-iridium needle, and it is essential that the needle should be driven into the muscle itself.

The Paroleine Cream recommended in this office No. 1943, dated 1st May 1903, is only for use in the cold weather, and it should be carefully tried, as it is only in the experimental stage.

The undermentioned prescriptions which are habitually used at Aix le Chapelle (where mercurial inunction is practised) are furnished for information—

Rx.

Potas. Iod. - - -	1 oz.
Fer. et Amon. Cit. - -	1 dr.
Tr. Nux Vomicæ - -	1 dr.
Aquæ Distil - - -	1 oz.
Tr. Cinchonæ - -	4 oz.

To be well shaken before taken.

A teaspoonful in water three times a day after food.

Rx.

Salol - - -	1 dr.
Pulv. Flor. Irid. - -	1½ oz.
Calc. Carb. Precip. - -	2 dr.
Ol. Menth. Pip. - - -	M. xv.

A dentifrice.

Rx.

A saturated solution of acetate* of alum.

A tablespoonful in a pint of water to be used frequently as a mouth wash, particularly after food.

It is advisable to take the weight of a patient at the beginning of the treatment and at intervals throughout it, as much loss of weight is an indication to stop the injections for a week or more.

As a rule the injections require to be made once a week, but every case should be treated on its merits, and no hard-and-fast rule can be laid down, but it is generally recognised that mercury should not be given by the mouth during the intra-muscular treatment. On the other hand, the iron and iodide of potassium mixture can be so administered and is advisable in many cases.

The open air treatment should be adopted as much as possible, and patients not doing well in the plains should be sent† to the hills in the hot weather.

With good food and gentle exercise a moderate amount of beer or wine may be taken, but alcohol in other forms should be avoided.

Records of all cases should be kept in the simple form of a nominal roll with a column for treatment, and notification on the transfer of men from one station to another should be strictly carried out in accordance with this office No. 1690, dated 20th April 1903.

The continuous supervision and treatment of cases of syphilis is compulsory, as the disease, particularly if treated early, can be eradicated and efficiency attained, and those medical officers too, who do not practise the intra-muscular method, must treat their cases with unremitting care and attention.

It is considered, especially from a perusal of the reports, that any objections raised on the part of the patients to the intra-muscular treatment can be overcome by the tact and discretion of the medical officer.

It is confidently believed that by vigorously following up this hydra-headed disease, by careful inspection of corps and scrutiny of medical history sheets, the efficiency of the army will be greatly improved, and its fighting strength very much increased.

While these curative measures are being carried out, prevention should not be lost sight of, and the medical officers at their periodical inspections can largely contribute in this direction. As regards prophylaxis, reports received indicate the efficacy of the special ablution rooms now in use, and at one station the use of vaseline as a protection is stated to have greatly reduced infection.

Tables A and B showing the incidence of venereal disease in the British Army in India during 1902 are attached.

Information will be distributed from time to time to all stations showing the results of the action taken by medical officers in controlling this disease.

By order,
W. H. W. Elliot,
Major I.M.S.,
Secretary to the P.M.O.,
H.M.'s F. in India.

* Acetate of alum is much more astringent than ordinary alum and pleasanter to taste.

† Paras. 1111 and 1175, Army Regulations, India, Volume VI., will be modified at an early date.

Summary of Reports of Medical Officers who have tried the Intra-muscular Mercurial Treatment of Syphilis.

Lieutenant-Colonel R. H. Forman, Bangalore	Very valuable, but not the specific enthusiasts urge. (Lieutenant-Colonel Forman uses the word "hypodermic" in connection with its use. It is supposed he means "intra-muscular.")
Captain R. Selby, Bangalore - - -	Very satisfactory. In no instance has anything more than slight local inconvenience been caused by the injections.
Lieutenant-Colonel C. R. Bartlett, Lieutenant C. H. Stratton, Meerut.	On the whole the treatment has proved favourable.
Major H. N. Thompson, D.S.O., Captain T. H. Corkery, Delhi.	Not satisfied that it has many advantages over other methods; one man developed a bad abscess.

Lieutenant-Colonel F. W. Wright, I.M.S., Dehra Dun.	Has given excellent results so far.
Lieutenant-Colonel W. Rowney, Lieutenant W. H. P. Adye-Curran, Muttra.	Not impressed with the results; no advantage over older methods of treatment.
Lieutenant J. B. Clarke, Chakrata - -	The results in 24 cases of secondary syphilis most satisfactory.
Major S. Macdonald, Lucknow - - -	Has no advantage over the administration by the mouth on patients treated in hospital. Is much objected to by the majority of the men. Treatment is hampered by being unable to get efficient syringes. The cream most difficult of manipulation.
Lieutenant-Colonel G. W. Brazier-Creagh, Captain T. H. Stevenson, Lieutenant G. T. Roche, Fyzabad.	Decidedly efficacious; 17 cases have been under treatment attending hospital weekly. Results most satisfactory.
Major H. St. G. S. Hore, Sitapur - -	On the whole the treatment appears to be preferable to giving mercury by the mouth.
Lieutenant-Colonel H. L. Battersby, Cawnpore	Fifteen cases treated and three men refused the treatment after first injection. No ill effects occurred and the men performed their duty the whole time.
Lieutenant-Colonel A. O. Geoghegan, Shahjahanpore.	None of the cases using Hyd. Paroleine intra-muscular injection have had any local inconvenience, and the effects have been satisfactory.
Major G. Douglas-Hunter, Captain J. M. D. McCarthy, Naini Tal.	Cases improving. Injection had to be stopped in one case owing to attacks of ague.
Captain G. Carroll, Ranikhet - - -	Patients say they are unable to do their duty while undergoing treatment, therefore stopped it; but results were satisfactory.
Major B. Forde, Captain H. P. Johnson, Captain F. S. Irvine, Lieutenant R. F. Ellery, Allahabad.	Twenty-nine cases treated and all have undoubtedly improved.
Major W. E. Berryman, Major J. Riordan, Captain H. A. Stalkartt, Lieutenant J. B. Cautley, Dinapore.	One hundred and four cases treated with very good results.
Major W. C. Poole, Major E. McK. Williams, Jubbulpore.	Injections given with ordinary antiseptic precautions; no bad effects, and men performed their ordinary duties. If needle is driven in with a sharp plunge, men do not complain of feeling pain. The effects of the treatment have been very satisfactory. Intra-muscular injections are invaluable as a practical method under army conditions of carrying out the necessary prolonged treatment.
Captain J. E. Hodgson, Calcutta - -	Very good results.
Captain G. J. Buchanan, Lieutenant P. G. Hyde, Major S. E. Duncan, Captain R. C. Lewis, Dum Dum.	During the past 3½ years 114 cases treated, viz., 61 admissions to hospital, 53 attending; of these, 5 were invalided, 17 transferred under supervision, and 92 discharged to duty.
Major J. B. Buchanan, Lieutenant P. G. Hyde, Darjeeling.	Major Buchanan states: "I found treatment very satisfactory. No man ever refused the treatment when it was suggested to him; there were no bad results, and the majority continued at their duty. The syringe used was obtained from Smith Stanistreet, Calcutta, and was of glass with platino-iridium needle. The syringes supplied by the Medical Store Depôt are not suitable. "I strongly recommend the treatment, but it must be carefully carried out; the gums must be carefully watched, and toothbrush and powder used. "A minim 10 dose is too much, minims 5 being quite sufficient."
Major D. Hennessy, Lebong - - -	Sufficient time has not elapsed to judge of its efficacy. In no case have the injections given rise to any inconvenience. "From past experience I never expect magical results, and I consider quite as good results can be obtained from internal administration carried out systematically."

Lieutenant-Colonel E. Butt, Dagshai -	"During the greater part of my service I have adopted this method of treatment when opportunity offered or I was permitted to resort to it, "In recent years, wherever I had a charge, it has been my custom to examine the troops individually to satisfy myself as to their health conditions, and I have not been surprised at finding numbers suffering from the effects of syphilis in varying degrees, or that their ailments were attributed to everything and anything but what was occasioning them. "I have also enjoined on Officers Commanding and on the sufferers the necessity of having the disease treated, not only for the men's sake, but on the grounds of efficiency and as a safeguard to the healthy. "Ignorance on the part of the men and want of support, if not opposition, on the part of officers, have prevented me, on occasions, from adopting the remedial measures I considered necessary, and even now, when we are empowered to enforce treatment, the same factors are at work to prevent it. "As I have already stated, I have been using the intramuscular treatment for years and, at the present time, I have over 100 men under treatment or medical surveillance for syphilis. "I do not employ the intra-muscular treatment empirically; it is only adopted in carefully selected cases, and I can testify to its invariable usefulness and to the excellent results that follow this method of administration, when intelligently employed. "In my opinion it is as useful in controlling the ravages of the disease on the blood, blood vessels, and internal organs, as it is in removing the effect on the skin and its appendages, and if adopted early and intermittently the disease is often cured or very materially modified. I can quote instances where it succeeded when other well known methods of treatment failed, including those adopted by continental specialists. "I have never had an untoward result, and I can affirm that none will follow, if attention is paid to the details of administration. "The facts that this method of treatment can be pursued without interfering with the ordinary duties of the men, and that it is not accompanied by stomachic or intestinal troubles are also in its favour."
Captain J. F. M. Kelly, Dagshai - -	The results were very good. No ill effects followed. At present there is deep prejudice amongst soldiers against the treatment, probably due to the men in their ignorance attributing to the injection what is really caused by the syphilis in their system.
Major F. W. G. Hall, Dalhousie - -	"I have injected large numbers of men myself during the past four years and I have found this method of treatment of the greatest use."
Captain H. W. Gratton, Dalhousie - -	Gets equally good results in other ways.
Lieutenant H. W. Long, Dalhousie - -	The treatment is useful.
Lieutenant-Colonel J. Carmichael, Ferozepore	The administration in this form is of undoubted benefit; in no case has abscess formed or have there been any bad results.
Lieutenant-Colonel W. L. Chester, Rawalpindi	"I can personally speak highly of the treatment from a fairly large experience."
Major R. N. Buist, Captain L. P. More, Lieutenant H. E. Weston, Sialkot.	The results have been disappointing, and appear to possess no special advantages to recommend it.
Major A. O. C. Watson, Mian Mir - -	Intra-muscular injection for syphilis has been employed regularly for some years with excellent results.
Lieutenant-Colonel D. Wardrop, Rawalpindi	"The actual treatment of the disease has been by mercury inunction, or grey powder, while in hospital followed by courses of the intra-muscular injections of mercurial cream as soon as the patient is fit for duty. I have followed this course now for many years and have personally given over 1,000 injections without a single mishap or abscess forming, and so strongly am I convinced of its utility that I cannot think a medical officer does his duty to the State or his patient, who does not carry it out. In 1893 when I first took it up there was some difficulty in sterilizing the syringes,

	but now with the modern glass one there should never be an accident, and the only points the operator should bear in mind are to see that the cream is well rubbed up for half an hour before he uses it and to place his injection well in the body of the muscle. The operation properly performed causes no pain or discomfort and the man does all his work and makes an efficient soldier."
Captain H. O. B. Brown-Mason, Rawalpindi -	The results have been uniformly satisfactory and the patients have confidence in the treatment.
Captain P. MacKessack, Rawalpindi - -	"The treatment has been carried out by me during my service. The results are satisfactory and in no case have I seen an injection followed by sepsis."
Captain G. B. Carter, Rawalpindi - - -	"I have treated many cases for the past two years, both primary and secondary syphilis, by intra-muscular injection and have had excellent results; no ill effects."
Major C. J. Holmes, Cherat - - -	"The results obtained by me from this method of treatment since 1897, have been highly satisfactory."
Lieutenant-Colonel R. Kirkpatrick, Lieutenant-Colonel J. R. Dodd, Major R. F. Windle, Captain J. Hennessy, Captain D. J. Collins, Captain G. G. Delap, D.S.O., Poona.	The intra-muscular treatment is continued for a year the men being at duty all the time, no relapses have taken place, no salivation and no ill effects. Invaliding has greatly diminished in recent years as the result. Marginally noted prescription* is used for the following reasons: (*a*) can be sterilized; (*b*) dose can be accurately measured; (*c*) causes little pain; (*d*) produces required constitutional effect.
Captain J. H. Ross, Kirkee - - -	"I have used the Hydrarg. Perchlo. and Ammon. Chloride injection for four years with very satisfactory results."
Lieutenant P. H. Henderson, Ahmednagar -	"I have used Hydrarg. Perchlo. and Ammon. Chloride injections with favourable results."
Captain F. G. Richards, Satara - - -	The results have not been satisfactory in two cases out of three tried.
Lieutenant-Colonel G. H. Bull, I.M.S., Followers' Hospital, Poona.	Out of 49 cases treated all recovered except one invalided.
Lieutenant G. Baillie, Mhow - - -	Highly satisfactory results.
Captain T. J. Lenehan, Indore - - -	The marginally-noted prescription† was used and gave excellent results.
Lieutenant R. S. F. Henderson, Deesa -	The intra-muscular method is the only one which enables a soldier to do his duty and get proper mercurial treatment. In the cold weather the cream tends to solidify, hence Paroleine ought to be an improvement during cold weather.
Lieutenant-Colonel J. P. Greany, I.M.S., P.M.O., Aden.	"I am of opinion that this form of treatment is very useful, specially as one can be certain that the mercurial treatment is being kept up for months after the patient has left hospital."
Captain I. A. O. MacCarthy, Lieutenant F. E. Robinson, Aden.	Find that the secondary manifestations disappear under its use and do not recur while it is continued.
Captain F. F. Carroll, Nasirabad - - -	It gave very good results.
Lieutenant W. S. Patton, I.M.S., Poona -	Gave good results substituting Albolene for Paroleine.
Lieutenant J. Tobin, D'thala - - -	Gave up the treatment as the men complained so much.
Captain M. Corkery, Mount Abu - - -	"Have adopted the marginally noted prescription‡ for four years with most excellent results. The syringe and needles require to be sterilized in boiling olive oil, buttock disinfected by assistant with 1 in 2,000 Sol. of Hyd. Perchlor., and injection made into gluteal region by the surgeon filling his syringe with cream (which has been previously sterilized by being boiled in a water bath) thoroughly stirred by a glass rod. If these simple precautions are taken no abscess or untoward results ever happen, nor if the gums be inspected is there any fear of stomatitis or mercurial poisoning.

* Rx. Hydrarg. Perchol. grs. x; Ammon. Chlorid. grs. x; Aqua distil. ad oz. i.; Ten minims are injected at a time.
† Rx. Mercury 2 drs.; Lanoline 4 drs.; Ol. Arachis 4 drs. Mix mercury and lanoline and rub well for over 4 hours, adding oil in small quantities until no mercury globes are visible. Ten minims injected weekly deep into gluteal region.
‡ Rx. Hydrarg. drachm. 1, by weight; Lanoline, drachms 2, by weight Olive oil, drachms 2, by weight. The cream to be thoroughly mixed and mercury incorporated in the lanoline and olive oil.

	No hard-and-fast rule can be laid down regarding the length of time a case should be kept under treatment, but a good practical rule is to inject every case once a week for the first three months and then bi-monthly for three months and subsequently once a month till all symptoms disappear. Many cases require to be under treatment for over a year.
Captain C. R. Pearce, I.M.S., Fort Stedman -	Results were very satisfactory in 1899 when tried by him.
Lieutenant-Colonel J. M. Jones, Rangoon -	Prefers the Hydrarg. Perchlor. Ammon. Chloride and Aqua destil. solution to cream.
Major J. S. Davidson, Captain M. Swabey, Shwebo.	These officers used the treatment at Belgaum. It was disliked by the men as it was painful; no proper syringes were supplied. The cream had constantly to be heated to keep it fluid and the treatment under the disadvantages stated did not appear to warrant its use.
Captain N. P. O'G. Lalor, I.M.S., Medical Officer, 2-10th Gurkha Rifles, Maymyo.	"The noticed favourable points of the treatment were (*a*) the painlessness of the injection, (*b*) the total absence of all after ill effects. I make the following suggestions:— (1) The syringe should be kept specially for the purpose. (2) Needles and syringe should be kept aseptic between administration. (3) Before use, needle and syringe should be sterilized by drawing into them olive oil heated to 160° C.; this is reached when a piece of bread crumb floated on the oil is observed to turn brown.

VENEREAL STATISTICS.

EUROPEAN TROOPS—PUNJAB COMMAND—1901, 1902.

Table A.

Stations.	1901.			1902.			Difference.	
	Average Annual Strength.	Total Number of Admissions from Venereal Diseases.	Ratio per 1,000 of Average Annual Strength.	Average Annual Strength.	Total Number of Admissions from Venereal Diseases.	Ratio per 1,000 of Average Annual Strength.	Increase.	Decrease.
Umballa - -	1,224	199	*162·6*	1,274	226	*177·4*	14·8	...
Jullundur - -	536	118	*220·1*	510	111	*217·6*	...	2·5
Ferozepore - -	1,040	317	*304·8*	886	195	*220·1*	...	84·7
Amritsar - -	194	31	*159·8*	238	35	*147·1*	...	12·7
Meean Meer - -	808	240	*297·0*	731	152	*207·9*	...	89·1
Fort Lahore - -	107	11	*102·8*	115	17	*147·8*	45·0	...
Sialkot - -	695	119	*171·2*	1,126	282	*250·4*	79·2	...
Rawalpindi - -	2,612	800	*306·3*	2,377	739	*310·9*	4·6	...
Campbellpore -	281	103	*366·5*	263	65	*247·1*	...	119·4
Attock - -	144	41	*284·7*	214	67	*313·1*	28·4	...
Khanspur - -	481	67	*139·3*	106	46	*113·3*	...	26·0
Nowshera - -	722	163	*225·8*	529	117	*221·2*	..	4·6
Peshawar - -	1,606	307	*191·2*	1,445	234	*161·9*	...	29·3
Mooltan - -	741	244	*329·3*	734	255	*347·4*	18·1	...
Solon - -	166	27	*162·7*	36	4	*111·1*	...	51·6
Dagshai - -	543	79	*145·5*	455	47	*103·3*	...	42·2
Subathu - -	336	120	*357·1*	334	36	*107·8*	...	249·3
Jutogh - -	241	28	*116·2*	242	65	*268 6*	152·4	...
Khyragully - -	60	10	*166·7*	60	18	*300·0*	133·3	...
Baragully - -	51	6	*117·6*	52	9	*173·1*	55·5	...
Kuldunnah - -	481	143	*297·3*	373	83	*222·5*	...	74·8
Kalabagh - - -	50	11	*220·0*	57	15	*263·2*	43·2	...
Camp Gharial - -	434	120	*276·5*	458	86	*187·8*	...	88·7
„ Thobba - -	257	67	*260·7*	246	67	*272·4*	11·7	...
„ Upper Topa -	186	46	*247·3*	...	...	...	...	...
„ Lower Topa	81	15	*185·2*	99	47	*474·7*	289·5	...
Kakool - -	...	...	...	203	50	*246·3*	...	...
Cherat - -	358	22	*61·5*	331	33	*99·7*	38·2	...
Kasauli Convalescent Depôt.	354	71	*200·6*	333	63	*189·2*	..	11·4
Dalhousie Convalescent Depôt.	856	136	*160·8*	757	114	*150·6*	...	10·2
Murree Convalescent Depôt.	119	23	*193·3*	138	15	*108·7*	...	84·6
Marching - -	678	80	*118·0*	615	108	*175·6*	57·6	...
Punjab - -	16,431	3,764	*229·1*	15,636	3,401	*217·5*	...	11·6

EUROPEAN TROOPS—BENGAL COMMAND—1901, 1902.

Table A.

Stations.	1901.			1902.			Difference.	
	Average Annual Strength.	Total Number of Admissions from Venereal Diseases.	Ratio per 1,000 of Average Annual Strength.	Average Annual Strength.	Total Number of Admissions from Venereal Diseases.	Ratio per 1,000 of Average Annual Strength.	Increase.	Decrease.
Fort William (Calcutta).	1,077	541	*502·3*	992	506	*510·1*	7·8	...
Fort Fulta - -	10	1	*100·0*	24	14	*583·3*	483·3	...
„ Chingri Khal -	49	10	*204·1*	43	10	*232·6*	28·5	...
Dum Dum - -	577	113	*195·8*	407	106	*260·4*	64·6	...
Barrackpore - -	312	86	*275·6*	343	112	*326·5*	50·9	...
Dinapore - -	621	150	*241·5*	563	170	*302·0*	60·5	...
Benaret - -	408	100	*245·1*	205	69	*336·6*	91·5	...
Allahabad - -	1,100	315	*286·4*	804	221	*274·9*	...	11·5
Fort Allahabad -	249	46	*184·7*	194	48	*247·4*	62·7	...
Fyzabad - -	629	120	*190·8*	653	332	*508·4*	317·5	...
Sitapûr - -	424	64	*150·9*	460	138	*300·0*	149·1	...
Lucknow - -	1,747	336	*192·3*	1,930	445	*230·6*	38·3	...
Cawnpore - -	770	171	*222·1*	482	90	*186·7*	...	35·4
Fatehgarh - -	212	51	*240·6*	163	55	*337·4*	96·8	...
Shahjahanpur -	169	39	*230·8*	523	165	*315·5*	84·7	...
Bareilly - -	930	200	*215·1*	974	206	*211·5*	...	3·6
Roorkee - -	406	77	*189·7*	389	121	*311·1*	121·4	...
Meerut - -	1,583	407	*257·1*	1,379	310	*224·8*	...	32·3
Delhi - -	317	91	*287·1*	283	57	*201·4*	...	85·7
Muttra - -	75	25	*333·3*	29	16	*551·7*	218·4	...
Agra - -	980	305	*311·2*	1,919	355	*348·4*	37·2	...
Jhansi - -	851	277	*325·3*	747	307	*411·0*	85·5	...
Nowgong - -	274	92	*335·8*	203	65	*320·2*	...	15·6
Saugor - -	288	151	*524·3*	258	82	*317·8*	...	206·5
Jubbulpore - -	640	271	*423·4*	566	229	*404·6*	...	18·8
Ranikhet - - -	986	163	*165·3*	949	288	*303·5*	138·2	...
Bhim Tal - -	...	...	...	130	21	*161·5*	...	...
Bhaubuttia - -	307	55	*179·2*	275	43	*156·4*	...	22·8
Chakrata - -	917	189	*206·1*	967	296	*306·1*	100·0	...
Lebong - -	289	70	*242·2*	315	42	*133·3*	...	108·9
Darjeeling Convalescent Depôt.	313	90	*287·5*	324	112	*345·7*	58·2	...
Naini Tal Convalescent Depôt.	143	33	*230·8*	126	40	*317·5*	86·7	...
Landour Convalescent Depôt.	205	58	*282·9*	193	52	*269·4*	...	13·5
Pachmarhi Sanitarium	119	30	*252·1*	124	11	*88·7*	...	163·4
Marching - -	1,023	190	*185·7*	728	184	*252·7*	67·0	...
Bengal - -	19,000	4,917	*258·8*	17,765	5,318	*299·4*	40·6	...

EUROPEAN TROOPS—MADRAS COMMAND—1901, 1902.

Table A.

Stations.	1901.			1902.			Difference.	
	Average Annual Strength.	Total Number of Admissions from Venereal Diseases.	Ratio per 1,000 of Average Annual Strength.	Average Annual Strength.	Total Number of Admissions from Venereal Diseases.	Ratio per 1,000 of Average Annual Strength.	Increase.	Decrease.
Port Blair - -	146	12	*85·7*	137	13	*94·9*	9·5	...
Rangoon - -	909	488	*536·9*	907	437	*481·8*	...	55·1
Thayetmyo - -	310	72	*232·3*	231	78	*337·7*	105·4	...
Meiktila - -	320	111	*346·9*	282	94	*333·3*	...	13·6
Fort Dufferin (Mandalay).	703	215	*305·8*	614	174	*283·4*	...	22·4
Shwebo - -	548	154	*281·0*	504	113	*224·2*	...	56·8
Bhamo - -	25	12	*480·0*	...	...	...	...	...
Secunderabad - -	2,123	896	*422·0*	2,036	855	*419·9*	...	2·1
Belgaum - -	1,095	654	*597·3*	1,203	456	*379·1*	...	218·2
Cannanore -	70	13	*185·7*	74	51	*689·2*	503·5	...
Calicut - -	97	36	*371·1*	69	20	*289·9*	...	81·2
Mallapuram - -	145	20	*137·9*	127	18	*141·7*	3·8	...
Bellary - -	580	140	*241·4*	633	205	*323·9*	82·5	...
Bangalore - -	836	325	*388·8*	1,498	573	*382·5*	...	6·3
Pallavaram - -	8	1	*125·0*	13	5	*384·6*	259·6	...
St. Thomas' Mount -	286	95	*332·2*	354	84	*237·3*	...	94·9
Madras - -	592	217	*366·6*	535	235	*439·3*	72·7	...
Trichinopoly - -	361	98	*271·5*	462	115	*248·9*	...	22·6
Ramandrug - -	23	5	*217·4*	...	...	...	...	...
Wellington - -	749	155	*206·9*	942	183	*194·3*	...	12·6
Poonamallee Depôt -	145	67	*462·1*	142	34	*239·4*	...	222·7
Marching - -	217	47	*216·6*	334	68	*203·6*	...	13·0
Madras - -	10,282	3,833	*372·8*	11,097	3,811	*343·4*	...	29·4

EUROPEAN TROOPS—BOMBAY COMMAND—1901, 1902.

Table A.

Stations.	1901. Average Annual Strength.	1901. Total Number of Admissions from Venereal Diseases.	1901. Ratio per 1,000 of Average Annual Strength.	1902. Average Annual Strength.	1902. Total Number of Admissions from Venereal Diseases.	1902. Ratio per 1,000 of Average Annual Strength.	Difference. Increase.	Difference. Decrease.
Hyderabad	390	99	253·8	458	120	262·0	8·2	...
Kurrachee	998	203	203·4	1,095	310	283·1	79·7	...
Deesa	279	98	351·3	311	146	469·5	118·2	...
Ahmedabad	222	56	252·3	226	96	424·8	172·5	...
Neemuch	326	101	309·8	237	85	358·6	48·8	...
Nasirabad	681	285	418·5	370	123	332·4	...	86·1
Indore	120	43	358·3	115	43	373·9	15·6	...
Mhow	1,634	422	258·3	1,062	252	246·7	...	11·6
Kamptee	840	231	275·0	705	330	468·1	193·1	...
Sitabaldi	65	9	138·5	60	20	333·3	194·8	...
Satara	35	21	600·0	135	43	318·5	...	281·5
Poona	2,091	878	419·9	1,879	644	342·7	...	77·2
Kirkee	675	209	309·6	775	231	306·0	...	3·6
Ahmednagar	776	209	269·3	998	303	303·6	34·3	...
Colaba (Bombay)	1,240	267	215·3	1,322	326	246·6	31·3	...
Quetta	2,446	607	248·2	2,336	418	178·9	...	69·3
Taragarh	48	16	333·3	42	22	523·8	190·5	...
Mount Abu	88	9	102·3	65	24	369·2	266·9	...
Purandhar	143	25	174·8	121	11	90·9	...	83·9
Khandalla	56	19	339·3	63	21	333·3	...	6·0
Deolali	793	308	388·4	941	377	400·6	12·2	...
Aden	1,010	133	131·7	1,071	172	160 6	28·9	...
Marching	168	27	160·7	37	3	81·1	...	79·6
Bombay	15,125	4,275	282·6	14,404	4,130	286·7	4·1	...
China Expeditionary Force.	727	219	301·2	...	...	...	...	...
Delhi Manœuvres and Durbar Force.	..	...	...	1,638	376	229·5	...	...
Punjab Command	16,431	3,764	229·1	15,636	3,401	217·5	...	11·6
Bengal ,,	19,000	4,917	258·8	17,765	5,318	299·4	40·6	...
Madras ,,	10,282	3,833	372·8	11,097	3,811	343·4	...	29·4
Bombay ,,	15,125	4,275	282·6	14,404	4,130	216·7	4·1	...
India	60,838*	16,789	276·0	60,540†	17,036	281·4	5·4	...

* Excluding China Expeditionary Force. † Including Delhi Manœuvres and Durbar Force.

EUROPEAN TROOPS, 1902.

Table B.

Punjab Command.

Average Annual Strength, 15,636.

Detail of Venereal Diseases.	Number of Admissions.	Ratio per 1,000 of Average Annual Strength.	
Primary Syphilis	456	29·2	76·7
Soft Chancre	744	47·6	
Secondary Syphilis	732		46·8
Gonorrhœa	1,469		93·9

Madras Command.

Average Annual Strength, 11,097.

Detail of Venereal Diseases.	Number of Admissions.	Ratio per 1,000 of Average Annual Strength.	
Primary Syphilis	530	47·8	136·4
Soft Chancre	984	88·7	
Secondary Syphilis	750		67·6
Gonorrhœa	1,547		139·4

Bengal Command.

Average Annual Strength, 17,765.

Detail of Venereal Diseases.	Number of Admissions.	Ratio per 1,000 of Average Annual Strength.	
Primary Syphilis	580	32·6	112·7
Soft Chancre	1,422	80·0	
Secondary Syphilis	734		41·3
Gonorrhœa	2,582		145·3

Bombay Command.

Average Annual Strength, 14,404.

Detail of Venereal Diseases.	Number of Admissions.	Ratio per 1,000 of Average Annual Strength.	
Primary Syphilis	524	36·4	110·7
Soft Chancre	1,071	74·4	
Secondary Syphilis	759		52·7
Gonorrhœa	1,776		123·3

Delhi Manœuvres and Durbar Force.

Average Annual Strength, 1,638.

Detail of Venereal Diseases.	Number of Admissions.	Ratio per 1,000 of Average Annual Strength.
Primary Syphilis -	38	23·2 } 102·0
Soft Chancre - -	129	78·8 }
Secondary Syphilis -	44	26·9
Gonorrhœa -	165	100·7

India.

Average Annual Strength, 60,540.

Detail of Venereal Diseases.	Number of Admissions.	Ratio per 1,000 of Average Annual Strength.
Primary Syphilis -	2,128	35·2 } 107·0
Soft Chancre - -	4,350	71·9 }
Secondary Syphilis -	3,019	49·9
Gonorrhœa - -	7,532	124·5

No. 706.

SANITARY.

It is requested that the above heading, with number and date of this communication, may be quoted in any subsequent correspondence on this subject.

ARMY HEAD QUARTERS, INDIA,
MEDICAL DIVISION,
Simla, 12th February 1904.

From MAJOR W. H. W. ELLIOTT, D.S.O., I.M.S.,
Secretary to the Principal Medical Officer,
His Majesty's Forces in India.

To the PRINCIPAL MEDICAL OFFICER, Punjab,
Bengal, Madras, Bombay Command,
Burma District.

MEMORANDUM,

WITH reference to the continuous treatment of syphilis, the Principal Medical Officer, His Majesty's Forces in India, noticed the following points during his recent tour of inspection:—

(*a*) Some hospitals were without the marginally noted communications issued by this office, and at others, they were not available for reference, and a certain number of officers had never seen them.*

(N.B.—In this connection it should be understood that these communications are not confidential as regards the Medical Services.)

(*b*) There has been some difficulty in getting the all-glass syringe of the proper size, owing to a limited supply in the market, the makers not † being able to keep pace with the demand. The vulcanite and glass syringe with platino-iridium needle in a *metal* socket, is however a cheap and efficient substitute, and has hitherto been used with great success and absolute safety.

(*c*) Sufficient attention has not been paid to recording the weight of patients. This should invariably be done, as it is a most important means of testing the success of the treatment.

(*d*) At one station, treatment was carried out by giving one dose of mercury by the mouth once a week. It is not considered that treatment on these lines will be of help in the direction of attainment of efficiency in the Army.

(*e*) It appeared to the Principal Medical Officer, His Majesty's Forces in India, that in some hospitals, patients were confined too much to bed.

2. Any difficulty connected with the use of the mercurial cream can be surmounted by a careful perusal of the instructions laid down for its preparation ‡ and manipulation before injection, and by practice. It must be dispensed locally and not obtained made up from the Medical Stores Department.

3. It cannot be too strongly emphasised that, in the opinion of those who know most about the treatment of syphilis by the method of intra-muscular injection with mercurial cream, it should not be confined to out-patients, as in many cases of grave disease under treatment in hospital it is a most powerful remedy. The introduction of metallic mercury in minute doses is considered to be the secret of the success of this treatment as compared with that by its soluble salts.

4. There are the strongest grounds for believing that invaliding will be largely reduced by the adoption of continuous treatment, and those exceptional cases which require to be invalided, will be sent home, it is hoped, in a relatively comfortable state of health, and not as has often been the case in the past, in acute and noticeable stages of the disease.

No cases, therefore, will be brought before an invaliding board until continuous treatment has been given a fair trial.

5. District Principal Medical Officers will notify through Command Principal Medical Officers to the Principal Medical Officer, His Majesty's Forces in India, that the communications issued by this office dealing with the continuous treatment of syphilis in India are available for ready reference in every military hospital under their administration, and that all medical officers attached thereto have read them. They should be specially brought to the notice of officers on first joining from England or elsewhere.

6. The intra-muscular method of treatment, when adopted, must invariably be carried out by Medical Officers, and those officers who are specially deputed to carry out the out-patient treatment, must when detailed for other duties, carefully hand over and explain details to their successors.

By order,
(Signed) W. H. W. Elliot,
Major, I.M.S.,
Secretary to the Principal Medical Officer,
His Majesty's Forces in India.

* No. 5966, dated 14th November 1902; No. 1630, dated 20th April 1903; No. 5162, dated 17th October 1903; and No. 2619, dated 15th June 1898.

† Steps are being taken to remedy this.

‡ *Vide* this office Nos. 5966, dated 14th November 1902, and 5162, dated 17th October 1903.

APPENDIX B.

LEAFLETS USED BY MR. J. E. LANE, F.R.C.S.

Directions for Treatment in Syphilis.

1. The disease from which you are suffering is syphilis, which, *unless carefully attended to and treated*, may seriously affect your health, your power of work, and even your life. If you follow out instructions and continue the treatment for the time prescribed, you will, in all probability, be eventually cured.

2. There is a danger of your conveying the disease to others for at least two years after it has been acquired, and even while you are carrying out the treatment prescribed.

3. Any spot, sore, or ulcer on any part of your body may convey the disease to those with whom you come in contact; consequently great care must be taken to avoid transmitting the disease by means of cups, spoons, pipes, or other things placed in the mouth. Such things should never be used by others unless thoroughly washed; further, the disease may be conveyed by kissing.

4. Your diet should be plain but nourishing; all excess in drinking must be avoided, and no spirituous liquor should be taken.

5. The teeth should be cleansed morning and evening with carbolic tooth powder, and smoking should not be indulged in.

6. The treatment must be continued at intervals for a space of three years, but if a metallic taste is noticed or an excessive flow of saliva from the mouth, it should be discontinued for a time.

7. Should you get married before you are informed that you are free from all traces of the disease, your wife will probably contract it, and also any children born of the marriage.

Directions for Treatment in Gonorrhœa.

1. Gonorrhœa is a contagious disease contracted through sexual intercourse. Although not usually very serious, it may be attended by the most grave consequences, especially if the treatment is neglected.

2. Great care must be taken that the discharge is not conveyed to the eyes, as inflammation will be set up, which may lead to loss of sight.

3. Sexual intercourse must not be indulged in while there is the least discharge, as there is danger of conveying infection, and the discharge will be increased thereby.

4. No wine, beer, or spirits should be taken while the discharge continues, or for at least fourteen days after it has stopped. You should drink nothing but tea, milk, water, soda water and milk, barley water, light beef tea, broth or gruel.

5. Rules for Using Injection.

(*a*) Get a glass syringe holding about four teaspoonfuls and having a bulbous end.

(*b*) Having first emptied the bladder, fill the syringe with the injection and introduce sufficient to thoroughly distend the canal; this should be allowed to remain in the urinary canal for from five to ten minutes, being retained there by pressure of the finger and thumb on the opening of the canal.

(*c*) The injection should be used four times daily until the discharge begins to subside, when it need only be used morning and evening; it should not be used immediately before going to bed.

Leaflets used by Mr. Arthur Shillitoe.

Directions for carrying out inunction in private:—

LONDON LOCK HOSPITAL.

Male and Out-Patient Department.

Rules for using the Ointment.

I. Every night take a warm bath for fifteen minutes.

II. Rub a piece of the ointment as large as the last joint of the forefinger into some part of the body every night, with the palm of the hand for a quarter of an hour.

III. The ointment is to be rubbed into one of the following places:—Inner side of thighs, avoiding the groins and purse; sides of chest, avoiding the hairy parts of armpits; inner surfaces of arms and forearms; buttocks; back or belly.

IV. Never rub into the same place two nights running.

V. After rubbing in the ointment, leave it without washing any off until the next bath.

VI. Clean the teeth twice a day.

VII. Use the gargle four times a day.

LONDON LOCK HOSPITAL.

Warnings in Syphilis.

1. There is danger of conveying the infection for two years after this disease has been acquired, even while treatment is being pursued, and when no symptoms are present.

2. Great care must be taken to avoid conveying the infection by cups, spoons, or pipes, or other things placed in the mouth. Such things should never be used by other persons, unless thoroughly washed.

3. There is great danger in kissing.

4. The best possible diet should be taken, but no spirits of any kind.

5. The teeth should be cleaned morning and evening with carbolic tooth powder.

6. This treatment must be continued for at least two years, otherwise the disease may recur.

LONDON LOCK HOSPITAL.

Male and Out-Patient Department.

Gonorrhœa.

1.—Rules for using the Injection.

1. Get a glass syringe, holding about four teaspoonfuls, and having a bulbous end.

2. Make water, and inject some tepid water before using the injection, to clean and clear the passage.

3. Inject so as to distend the urinary canal; let the injection stay in two minutes; do this twice each time.

4. Repeat the injection each time after making water, except at bed-time.

5. The injection may be weakened by the addition of water, when the discharge has ceased, and gradually discontinued.

N.B.—Every patient must keep his person thoroughly clean by washing with soap and water every day.

2.—Diet in Gonorrhœa.

No wine, beer, or any spirits of any description should be taken while the discharge continues, or for fourteen days after it has ceased. If this be neglected, the discharge will be rendered much worse, or will re-appear. Patients should drink nothing but tea, milk, cold water, or soda water and milk, light beef tea, broth, or gruel.

3.—Precautions.

1. Great care must be taken that the discharge is not conveyed to the eyes, as violent inflammation would follow.

2. Sexual intercourse must be absolutely abstained from while there is the least discharge, as it will certainly be made worse, and there is danger of conveying infection.

MALE LOCK HOSPITAL.

Direction for Treatment of Scabies.

The whole body must be scrubbed with soap, hot water, and a flannel every night. Then rub ointment hard into all the skin, especially where the disease is worst. Do not wash the ointment off, but let it stay on until the next night's soaping.

All the under-clothes must be boiled before they are put on again, or else the disease will be caught from them anew.