Final report of the Advisory Board for Army Medical Services on the treatment of venereal disease and scabies in the army

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ADVISORY BOARD FOR ARMY MEDICAL SERVICES.

THE TREATMENT

OF

VENEREAL DISEASE AND SCABIES

IN THE

ARMY.

FINAL REPORT.

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THE TREATMENT OF VENEREAL DISEASE AND SCABIES IN THE army.

FINAL REPORT.

1. The three previous reports have been drawn up with the intention of bringing together in an accessible form the most recent information on the subject of the Committee's inquiry.

It will be recollected that the First Report deals chiefly with current medical literature, both British and foreign, and with information in possession of the Army Medical Department; the Second Report contains the statements of physicians and surgeons who may be justly considered as representatives of expert opinion on this matter in British, civilian and military practice; the Third Report is an account of a tour undertaken by Major C. E. Pollock, R.A.M.C., by order of the Director-General, to collect information on the subject in various foreign centres suggested by the Committee. His interesting report gives a record of the opinions of experts abroad, and also describes the treatment at present employed both in civilian and military practice on the continent of Europe.

In this Final Report the Committee is desirous of presenting the principal conclusions to be drawn from the information thus collected, together with practical recommendations as to treatment.

The Prevention of Venereal Disease.

2. It may be premised that the subject of prevention of venereal disease, although not entering definitely into the terms of reference, is of so great importance that it has repeatedly claimed attention during the deliberations of the Committee.

Venereal diseases are so clearly contagious that the argument in favour of prevention by isolation of infected individuals, even by the operation of statutes having a penal character, such as the Contagious Diseases Acts previously in force in this country, seems at once to carry overwhelming weight.

The remarkable diminution of venereal disease among British troops in the stations where the Contagious Diseases Acts were in force, as shown on Charts I. and VII. (First Report), is an example of evidence which at first sight appears to bear the most cogent character. Closer consideration, however, of the figures and charts relating to periods subsequent to the abolition of the Contagious Diseases Acts demonstrates that other factors are concerned with variations in the prevalence of venereal disease in the army. In any case, the isolation of a particular section of infected persons, namely, of diseased prostitutes, cannot be considered to be an ideal method of arresting the disease while large numbers of infected persons of both sexes remain free to spread the contagion.

It is noteworthy that in certain foreign countries where the police supervision of prostitutes has been carried out much more strictly than was ever attempted in the United Kingdom, serious doubts are now expressed as to the efficacy of legal restraint in arresting these contagious diseases.

One of the most remarkable examples of diminution in prevalence of a contagious disease is afforded by the history of syphilis in Sweden during the past century. The main factor in bringing about this diminution is considered by Professor Welander, of Stockholm, to have been the effective

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and, if necessary, gratuitous treatment afforded in hospitals by the State to patients of both sexes without the stigma produced by police compulsion. The opinion of many competent continental authorities is to the effect that the voluntary submission to treatment by infected persons of both sexes is more likely to diminish the prevalence of venereal disease than the compulsory treatment by police regulation of a special class only.

Taking into consideration the present state of expert opinion abroad, and the opposition certain to be raised in this country should the re-enactment of a statute on the lines of the Contagious Diseases Acts be proposed, the Committee has come to the conclusion that in the United Kingdom, at any rate, an attempt to grapple with the problem of venereal disease by methods of compulsory isolation and treatment is neither practicable nor expedient.

Better results are likely to be obtained by the diffusion of the knowledge of the serious consequences of these diseases, and the provision of effective treatment for both sexes under conditions to which no penal stigma is attached. If this conclusion is sound, the more necessary is it that trustworthy methods of treatment should be thoroughly understood by members of the medical profession, and rendered readily available both in military and civilian practice.

SYPHILIS.

Treatment by Mercury.

3. The evidence gained by experience is at the present time unanimously in favour of the administration of mercury in the treatment of syphilis. Indeed, it may be said that the opinion of the majority of observers is to the effect that mercury is the only known drug which has a distinct effect in curing the disease. Other drugs and methods of treatment are of service in remedying certain manifestations of syphilis, or by improving the condition of the patient, but the administration of mercury must be looked upon as the main factor in effecting the cure.

The opportunity was taken during this investigation to obtain evidence as to the results of the non-mercurial treatment of syphilis occasionally attempted during recent times; in every case the results of non-mercurial treatment appear to have been unsatisfactory.

Commencement of Treatment.

4. Differences of opinion prevail as to the date after infection most advisable for the commencement of mercurial treatment. It is admitted by all that so soon as syphilitic infection has taken place mercury should be prescribed, but before committing the patient to a course of treatment which may last for some years, which is irksome and not devoid of danger, the necessity for treatment must be clear. The recognition of this principle is specially important when it is recollected that the administration of the drug may obscure evidence of the disease which would otherwise establish the diagnosis. If the syphilitic infection is in doubt, administration of mercury once begun must necessarily be continued, and if no further evidence of syphilis is forthcoming, doubt will always remain as to the true nature of the suspected disease. It is agreed, therefore, by nearly all that the presence of syphilis must be absolutely ascertained before this drug is administered. The amount of evidence, however, required by different individuals in order to establish the diagnosis appears to vary within considerable limits. Some state that they are able to determine the presence of syphilis from the character of the sore of inoculation. Others require in addition to the characteristic appearances of the sore further evidence, such as the enlargement of the nearest lymphatic glands or general lymphadenitis, while still other observers believe that in no case is the character of a sore sufficient evidence of syphilis to necessitate immediate administration of mercury, and that before treatment is com-

menced complete evidence of constitutional infection must be forthcoming, such as is afforded by the enlargement of lymphatic glands together with the appearance of characteristic eruptions on the skin and mucous membranes, associated with general constitutional disturbance.*

It appears to the Committee that accuracy in diagnosis is essential to thorough treatment, and in such a matter the judgment of the medical adviser must be guided by his own experience, and by the special condition of the patient. It is strongly felt, however, that in all cases of doubtful infection the patient should be kept under close and if necessary, prolonged observation, and that before mercury is administered, the presence of syphilis should be established without doubt. The risk incurred by delay in the administration of mercury is inconsiderable compared to the importance of a correct diagnosis.

General Scheme of Treatment.

5. With regard to methods of administration, duration of treatment, and the amount of mercury necessary, opinions vary widely. Speaking generally, two schools of treatment exist at the present time—

(*a*) The continuous school, who prefer to give a course of mercury for a definite period continuously, or with short interruptions only.

(*b*) The intermittent school, who give mercury for certain periods separated by intervals which are, taken as a whole, of longer duration than the periods of treatment.

The continuous school may be further subdivided into—

(1) Those who give as much mercury as the patient can tolerate during the whole period of treatment.

(2) Those who diminish the dose of mercury as the manifestations of the disease disappear.

Broadly speaking, the continuous school embraces English and American physicians.

The intermittent school may also be subdivided into—

(1) The periodic intermittent school: those who give definite courses of mercury at regular intervals, irrespective of the manifestations of the disease. (Most of the French, many of the German and other continental experts are embraced in this group.)

(2) The symptomatic school: those who prescribe courses of mercury only when the symptoms of the disease are manifested. (Professor Lang of Vienna, his pupils, Professor Havas, and other Austrians and Germans prescribe treatment in this way.)

Methods of the Administration of Mercury.

6. Of the methods of administering the drug, those which appear to be most efficient require special consideration.

At the present time the most common method of administration in general practice, both military and civilian, is by administering more or less continuous courses by the mouth for a period extending from 18 months to two years. Of the efficiency of this method when regularly carried out there can be no doubt.

In civilian practice in this country it is the method almost invariably adopted, and its value is supported by a great mass of evidence. The responsibility of taking the drug rests with the patient, and in the majority of instances when an individual infected by syphilis has explained to him the serious character of the disease, the necessity of cure, and the efficacy of the drug as the curative agent, the course of treatment is vigorously pursued till a satisfactory result is obtained.

In the case of individuals who, on account of ignorance, carelessness, or for other reasons do not pursue treatment regularly, it is clear that the results will not be satisfactory.

* The recent discovery of Spirochaeta pallida in syphilitic lesions may be of importance in facilitating early diagnosis of the disease.

In military practice the patient is placed under widely different circumstances. The soldier is moved from station to station; he may be careless as to the effects of the disease, specially when outward manifestations are no longer visible, and the supervision of the medical officer cannot be constantly exerted. As a result the drug is often not taken.

From the evidence at the disposal of the Committee, it is evident that the method of administration by the mouth, though perhaps the most commonly employed, is especially liable to failure as a routine method in military practice. The methods of administration by inunction and injection are much more likely to prove efficient, both on account of the increased certainty that the drug is absorbed when administered by these methods, and because the drug is used under the personal supervision of the medical officer.

In this report, therefore, special attention has been given to the administration of mercury by methods of inunction and injection.

General Precautions before and during Treatment by Mercury.

7. In every case certain precautions should be taken before commencing treatment. The general condition and the weight of the patient should be noted for reference during treatment, and the weight should continue to be taken at regular intervals. Increase or diminution in the weight of the patient afford important indications of the action of the drug. The urine should be examined, especially to ascertain the presence or absence of albumen. If albumen is present, the administration of mercury must be continued cautiously, and the effect on the urine observed. In some cases the albuminuria disappears on the administration of mercury, but if albuminuria is due to chronic nephritis the administration of the drug must be continued with the utmost care.

The presence of actual or recent disorder of the alimentary system, *e.g.*, diarrhœa, dysentery, disease of the liver, should be noted, as individuals so affected do not tolerate mercury well.

The mouth and gums should be examined with special care, and every precaution taken to prevent the occurrence of mercurial stomatitis. Before treatment all useless stumps of teeth should be extracted, carious cavities stopped, and, if necessary, the teeth should be scaled. Many soldiers object to having stumps of teeth removed until the occurrence of stomatitis impresses the necessity for care of the mouth upon them. Each man must be taught to wash the teeth, preferably by means of a little cotton wool wrapped round a wooden handle or the finger. If a toothbrush is used, it must be carefully cleansed, as under the conditions mentioned it is specially liable to become foul. The teeth should be washed in this way morning and evening and once or twice during the day. The use of a special mouth-wash after ordinary washing of the teeth is frequently advisable. A useful astringent mouth-wash is made by dissolving one ounce of lead acetate in five ounces of water and one ounce of common alum in another volume of five ounces of water. The two solutions are mixed and filtered. The filtrate contains acetate of aluminium. A few drops of an aromatic oil or essence may then be added. For use the solution should be diluted with about ten parts of water. In cases where there is much foul ulceration of the mucous membranes, useful applications are potassium permanganate, one in 4,000, and peroxide of hydrogen, used as a spray, prepared by diluting the pharmacopœial solution in three parts of water. Every patient undergoing mercurial treatment should have his mouth inspected twice a week while in hospital, and every time he comes for treatment when an out-patient. In spite of full explanation as to the necessity for keeping the mouth clean, very few men can be thoroughly trusted to do so without being watched. Actual ulcers of the mucous membranes may be touched with solid silver nitrate, or by a strong solution of this salt. Fungating ulcers, warts, &c. should be carefully cauterised after the use of cocaine. The superficial ulcers of the fauces and mucous membranes should be touched with a 10 per cent. solution of chromic anhydride (acidum

chromicum—Ph. B.), and immediately afterwards with a strong solution of silver nitrate. The condition of the gums, or signs of early mercurial poisoning, should be carefully observed, and treatment regulated accordingly. The most reliable way to guard against mercurial poisoning is to have the urine analysed in order to determine the quantity of mercury excreted. The test for this purpose is, however, somewhat difficult and tedious, and to be of value should be done by a trained chemist.

Patients undergoing treatment in the hospital should be kept as much as possible in the open air. Regular exercise should be taken. During any course of mercurial treatment all debilitating influences should be avoided; smoking is usually and advisedly prohibited; the use of alcohol should be interdicted unless there are special indications for its administration. A plentiful supply of food is required, but it should be recollected that indigestible articles of food tend to make the intestinal tract irritable, and thus interfere with the administration of the drug.

Methods of administering Mercury by Inunction.

8. In order to obtain the best results by the method of inunction, frequent warm baths are necessary. If this plan becomes commonly used in military hospitals a large increase in the number of baths and in the supply of warm water provided for venereal wards must be arranged for. As a method of treatment of soldiers as out-patients, the main objection to inunction is that it requires time and special arrangements for treatment. That it can be carried out in the case of soldiers not in hospital is clear from the experience of Surgeon-Major Rayner ("Promotion Essay" by Surgeon-Major Rayner, referred to on page 16 of the First Report). In civilian practice the best results are obtained from inunction when used in specially equipped establishments, where baths are provided and the services of rubbers can be obtained.

The following plan of treatment for use in hospitals has been carried out and can be recommended:—

(1) Before the inunction is performed a hot bath is given for 20 minutes. When baths are not obtainable the patients must be directed to wash their hands, the part of the body to be rubbed, and the part rubbed on the previous day, before inunction.

(2) The following is a useful and easily prepared formula for the ointment:—

℞ Ung. hydrarg. - - - - - gr. 40
Adipis lanae (B.P.) - - - - - gr. 20

Mix thoroughly and wrap in wax paper. One packet to be used for each rubbing.

These packets should be handed out by the medical officer to each patient, the time noted, and directions given as to how long the inunction is to be continued. The rubbing should be done slowly, exerting considerable pressure so as to force the ointment into the skin. A non-commissioned officer, or trained orderly, should be told off to watch the men.

When the prescribed time has passed, the medical officer must himself inspect the men before dismissing them to wash their hands. When properly done the skin should look as if it had been rubbed over with black lead, not shiny and greasy. If there is any doubt as to whether the man has properly rubbed himself or not, the medical officer should order a further period of say 10 minutes' rubbing and watch the patient do this.

(3) The inunction is to be performed daily for 20 or 30 minutes. The course of inunctions is usually 42, but the number may be increased or diminished and intervals given as occasion arises.

(4) The parts are to be rubbed in the following order:—First day, both calves; second day, both thighs, avoiding the hairy parts; third day, the abdomen; fourth day, both forearms. If the inunction is used on the back, the application must be made by another patient, or by a trained orderly.

(5) Special flannel underclothing (condemned sets do well for this purpose) should be worn night and day for a week at a time during treatment.

Special facilities may require to be given to patients not resident in hospital.

Plan of Treatment for Two Years by Inunction.

	Months.	Grains Hg.
First Course:—		
42 daily inunctions	1½	840
Interval 3 months. Patient to be seen once a fortnight	3	—
Second Course:—		
42 daily inunctions	1½	840
Interval 3 months. Patient to be seen once a fortnight	3	—
Third Course:—		
30 daily inunctions	1	600
Interval 6 months. Patient to be seen at regular intervals	6	—
Fourth Course:—		
30 daily inunctions	1	600
Interval 6 months. Patient to be seen at regular intervals	6	—
Fifth Course:—		
20 daily inunctions	⅔	400
	23⅔	3,280

This scheme is suggested as advisable in the majority of cases. It need not be followed rigidly and will be varied according to the necessity of each individual case. The intervals may have to be shortened in some cases while in others the fifth course may be dispensed with entirely. A short course of potassium iodide, say 15 to 20 grains daily for a fortnight, may be administered with advantage after the early courses and for a month after the third, fourth, and fifth courses.

By Intra-muscular or Subcutaneous Injection.

9. This method of treatment has, specially of recent years, been largely employed. When first introduced the occurrence of septic complications, *e.g.*, inflammation at the site of injection, abscesses, was so frequent that its practical utility was at once questioned, while the risks of embolism and of severe mercurial poisoning appeared so great that the method promised to be of little value as a routine practice; but from the beginning the therapeutic advantages of this method of administration of the drug were so obvious that continuous trials were made with the result that at the present time the method of intra-muscular injection is well established as one of the most trustworthy methods of treatment of syphilis. The convenience of the method cannot be gainsaid. The requisite dose of the drug is administered by the medical officer himself; the patient attends daily, weekly, or monthly, receives treatment, and in the interval is able to follow his usual avocations. In military practice specially, when the medical officer has to contend not only against the prejudices and carelessness of the more ignorant of his patients, but in addition must encounter the difficulty of maintaining continuous treatment occasioned by the movements of troops from station to station, the practical advantages of the method render it specially serviceable.

The patient can be rapidly brought under the influence of mercury by the use of both the soluble and insoluble preparations. It is considered by some that the soluble preparations, such as the biniodide and the perchloride, are more transient in their influence, the drug when absorbed being rapidly excreted. Frequently repeated injections are therefore necessary to maintain the therapeutic effect. In the case of the insoluble preparations on the other hand the mercury when injected into the tissues is absorbed slowly, and thus an influence of some duration results from a single administration. It is in consequence of slow absorption that one of the dangers in the use of the various mercurial creams and of calomel seems to arise, for it appears that the drug may remain unabsorbed for some time in the tissues, then rapid uncontrolled absorption may take place, and serious mercurial poisoning occur. The fact that injections of the insoluble preparations require to be made at intervals of a week, or even longer, is of importance so far as convenience of administration is concerned.

Injection of Soluble Salts.

10. The most readily obtainable salt in military hospitals, and one of the most efficient in treatment, is perchloride of mercury. The solution for injection should be prepared by dissolving the salt in normal saline solution, as the painful after effects are considerably lessened in this way. The following is a useful formula:—

℞	Hydrarg. perchlor. - - - -	grs. viii.
	Sodii chloridi - - - - -	grs. iv.
	Aq. destill. - - - - -	m. 400

Ten minims of this solution are to be injected three times a week till the symptoms begin to abate; then twice weekly till all symptoms have disappeared. One injection a week should then be given to complete the course. If common table salt is used in the preparation of this solution it should first be dissolved and then filtered, as it always contains a certain amount of dust which will when injected cause local irritation.

Many other soluble salts of mercury are employed in treatment. An account of these is given in the First Report. (Report I., page 20.)

The soluble salts possess two great advantages — (1) the ease with which they can be administered subcutaneously; (2) the rapidity with which they attack the syphilitic lesions. They do not produce so lasting an effect as the insoluble salts, and it is probable that to produce an equally good result approximately the same quantity of metallic mercury must be used in both instances. Recent experience of insoluble preparations seems to show that the full dose of metallic mercury required in an ordinary case to produce beneficial results is about $1\frac{1}{2}$ grs. of metallic mercury per week for six weeks as a first course. Perchloride of mercury contains 73·8 per cent. of metallic mercury. To inject 9 grs. of mercury it is therefore necessary to use about 12 grs. of the perchloride. Ten minims of the above solution contains one-fifth of a grain of perchloride, so that in order to inject 12 grs. of perchloride, 600 minims of the solution, or 60 injections of 10 minims each, must be given. This may be considered to constitute a full course, and is indeed a much larger amount than is usually given. The fact that the actual amount of mercury commonly used in treatment is much less when soluble salts are made use of than when insoluble preparations are employed probably explains the so-called "transient effect" of soluble salt injections.

Injection of Insoluble Preparations.

11. In practice a carefully-made suspension of mercury in an oily medium, the "grey oil" of continental pharmacopœias, appears to fulfil all requirements. It is desirable that the mercury shall be suspended in as small an amount of the medium as is possible. A small injection appears to produce less discomfort to the patient; it is well not to inject a larger amount of inert material than is necessary; and it is convenient to avoid frequent refilling of the syringe and consequent loss of time, when large numbers of patients are undergoing treatment.

Experiments have been carried out for the purposes of this report by Messrs. Davy, Hill and Co. in order to determine the most serviceable preparation. As the result of many experiments and careful testing it has been found that the amount of mercury which can be safely suspended in ordinary media corresponds to a strength of 1 grain of mercury in 8 minims.

A cream now frequently used in the Medical Service of the Army contains 1 grain of mercury in 10 minims and is only slightly more bulky than is absolutely required. It is suggested that this cream, made according to the following formula, be retained as a standard preparation:—

℞	Hydrargyri - - - - - - - -	℥i.
	Adipis lanae (B.P.) - - - -	℥iv.
	Paraffini liquidi (Carbolisat. 2 per cent.) -	ad ℥x.
		mix.

The mercury and the wool fat by weight, the liquid paraffin to be added by volume.

10 minims of this cream contain 1 grain (0·065 gram.) of metallic mercury.

15 minims of this cream contain 1½ grains (0·10 gram.) of metallic mercury. The dose of 1½ grains corresponds to the 10 centigramme dose mentioned by continental authors, and may be regarded as the full dose.

The consistency of this cream can be varied to suit the temperature of different climates. The prescription above noted is arranged to keep the mercury in good suspension at ordinary temperatures in temperate climates.

Great care must be taken during the preparation of mercurial creams of this type to obtain a thorough mixture of the mercury with the excipients; the mixture must be prevented from being too fluid, as the mercury naturally tends to precipitate. The consistency suitable for injection can be conveniently arranged by standing the vessel containing the cream in water of the requisite temperature.

The cream should be supplied in capsules or tubes containing sufficient for one or two injections, or in small jars of not more than two ounce capacity. If sent out in large jars to hospitals and stored, the mercury is apt to settle as a layer at the bottom of the vessel, leaving nearly pure oil in the upper portion. Under such circumstances, unless care is taken to obtain a thorough mixture of the mercury and the excipients before injecting the cream, dangerous accidents may readily occur. Such accidents are more likely to happen in the case of stronger mercurial creams.

A very useful preparation, which has recently been used for intra-muscular injection, is the salicylate of mercury. The following formula is successfully used:—

℞ Hydrarg. salicylat. - - - - - grs. x.
Paraffinum liquidum - - - ad. m. 100.

Sig. 10 to 15 minims to be injected once a week.

This salt must be very finely triturated before being mixed with the paraffin, so as not to block the needle. The special advantages of this preparation are (1) it can be prepared by simply mixing with the paraffin, no prolonged stirring being necessary; (2) it can be sterilised by heat as often as required, without undergoing alteration; (3) vigorous shaking before use is all that is required to ensure proper consistency of the mixture; (4) it is not affected by heat or cold, and is therefore suitable for use in any climate without special precautions to ensure its remaining fit for immediate use. It is supposed not to be quite so active as the mercurial creams or grey oils, but has been proved to produce good results.

Numerous other insoluble preparations of mercury, including those containing calomel, have been used for intra-muscular injection. For an account of these the First Report should be consulted. (Report I., p. 23.)

General Routine of Treatment by Intra-muscular Injection.

12. The following routine of treatment, where large numbers of patients are being injected (Woolwich), has been found to work smoothly. Two days in the week are selected as injection days, and every patient is ordered to attend on one of these days. Two orderlies assist the medical officer. One has the list of names and calls the patients in order. The other orderly sterilises the site selected for injection by rubbing the skin with salalembroth wool moistened with methylated spirit till a red blush appears. In the meantime orderly No. 1 has noted the man's name, and also the dose and date of injection on the syphilis sheet. The medical officer makes the injection himself. If necessary, the cream is first made sufficiently fluid by standing the vessel containing it in water at 80° Fahr. Immediately before use it is well stirred with a glass rod. The rod should be carefully wiped before using it with a glass cloth, and not with lint or wool. Both the latter fabrics leave large numbers of filaments adhering to the rod, which are then introduced into the cream, and in many instances are no doubt injected into the patient. These accidents may account for some of the painful indurations which occasionally follow the injection. In any case, it is a wise precaution to pass the rod through a flame before stirring the cream, as this not only sterilises the rod, but destroys any filaments adhering to it.

The all-glass syringes with iridium pointed needles which have recently been issued are most serviceable in giving the injection. The syringe, having been sterilised by drawing up olive oil heated to 160° Fahr., is now filled with the cream, and the quantity selected as the dose is injected deeply into the muscles. It is advisable to have sterilised cloths at hand on which the syringe can be laid, or to wipe the needle and operator's fingers, as it is important *not* to leave a deposit of the cream along the needle track.

The site usually preferred by the patient for the injection is also the most adapted for the operation, viz., the upper and inner part of the buttock. Some, however, prefer the shoulder, but the skin is tougher, and there is not so great a depth available for inserting the needle. Occasionally stiffness is complained of in the arm after injection in this area. It is recommended that the syringe should be detached for a few seconds after inserting the needle, to see if any blood wells up. If this occurs a vein has been punctured, and a fresh place should be selected for the injection. Between each injection it is necessary to dip the point of the needle only into the heated oil, the barrel of the syringe having been sterilised at the outset does not require further sterilisation between injections.

13. The plan of treatment usually adopted in England when mercury is given by the mouth is a course, practically continuous, for eighteen months or two years. This plan, as already indicated, is liable to prove unsatisfactory in military practice. The following scheme is therefore drawn up on the supposition that intra-muscular injections of insoluble preparations are being administered. Modifications will be necessary according to the preparation used for injection, and still more so if treatment is being carried out by inunction or by other methods. At present there are no reliable data for what may be considered the minimum mercurial treatment of syphilis. The following course of two years' treatment may be considered as approximating to this idea :—

On being placed on the Syphilis Register, a course of six weeks' energetic treatment, usually in hospital, should be undertaken. This involves six injections of the mercurial cream referred to above, and may be considered to correspond to daily inunctions for this period, or tri-weekly injections of soluble salts.

On finishing this course the soldier should have an interval of two months without any treatment, but should be inspected by the same medical officer once a fortnight. If he remains free from syphilitic manifestations for two months he should then be ordered a further course of four injections, one a fortnight. If fresh symptoms appear, a second course of six weekly injections must be ordered, followed by two months' interval. If free from signs of the disease, the next interval may be increased to four months, followed by another course of four injections. The succeeding interval may be increased to six months, followed by four injections, one each month.

The course just described is planned on the understanding that full doses of mercurial cream, containing 1½ grs. of mercury in each, are administered, and that the case is of ordinary severity, yielding readily to mercurial treatment. It must be clearly understood, however, that no hard-and-fast rule can be laid down to suit every case. This scheme is suggested as the average amount of treatment required to cure the disease, and to permit of the soldier fulfilling his contract with the State. If officers prefer to use other methods, such as the injection of the soluble salts, inunction, or administration by the mouth, the course of treatment must be modified accordingly. Every care, however, must be taken to make sure that continuous treatment under medical supervision is carried out.

The scheme mentioned above may be put in tabular form thus :—

Six weeks' treatment.—6 injections = 9 grs. of mercury.
Two months' interval.
Two months' treatment.—4 injections = 6 grs. of mercury.
Four months' interval.
Two months' treatment.—4 injections = 6 grs. of mercury.
Six months' interval.
Four months' treatment.—4 injections = 6 grs. of mercury.
Total, 21½ months' treatment.—18 injections = 27 grs. of mercury.

Experience alone can show whether such a plan as this is sufficient or not, but if strictly carried out it will make certain that a continuous course of treatment has been administered. It is likely, in the majority of cases, to be an improvement on the plan of giving mixtures and pills to the patient and leaving them to be taken or not at his own convenience.

Scheme of Treatment for Out-patients.

14. The following routine of treatment of out-patients has been in operation at Woolwich and has been found satisfactory. It is recommended as a plan to be used by medical officers in large stations with the modifications which may be found necessary under local conditions.

The injections are made on two afternoons of the week, say, Tuesday and Friday at 2.15 p.m. When a soldier is discharged from hospital after completing his full course of six weeks' energetic treatment he is directed to attend at the hospital in a fortnight on one of the injection days. He is inspected and his syphilis sheet is looked at to see whether there have been any special features in his history. The medical officer then determines the further procedure. He may require further treatment immediately or may be directed to attend for observation for a period of one, two, or three months according to the circumstances of the case. When treatment is resumed, the usual plan is to give four injections of cream, each containing $1\frac{1}{2}$ grs. of mercury, at intervals of a fortnight, as already described.

In large stations where the out-patients belong to different units it is often a matter of considerable difficulty to check the attendance and treatment of the men. The following system permits of this being carried out thoroughly with, it is believed, the minimum amount of labour :—

(1) *The Syphilis Sheet.*—This furnishes the man's previous history and treatment, and is necessary for the purpose of determining his future treatment. The future treatment having been prescribed is entered on the attendance diary and the man is told when to come again. A notification is then made to the man's commanding officer informing him of the dates of attendance.

(2) *The Attendance Diary.*—This is a "scribbling diary," having large pages for each day of the month. Under the date on which the man is first told to attend, his name and number are entered with the treatment decided on, thus :—

21345, Gunner Jones F., 4.F. This indicates that the man is to have four fortnightly injections ; or

3146, Private Smith R., 6.W., means six weekly injections; or

74681, Driver Brown G., Obs. M. This man is to attend for inspection once a month.

After being seen and treated, his name is crossed off with *blue* pencil to show that he has attended, and his name is at once entered on the date on which he is next due, together with the balance of treatment still required ; thus if originally marked 4.F. the next entry will be 3.F.

It is only by a plan of this character that the attendance of men in large stations can be systematically checked.

(3) *Treatment Book.*—This is a foolscap book ruled so as to leave a space in a line for the man's name and squares for each day of the month opposite to this. When a man has had his injection, the letter I. in red ink is entered on the square corresponding to the day of the month and the man's name. Should he leave the station on transfer to another, or go abroad, or on furlough, become sick and be admitted to hospital, or for any reasons become a "casualty," this is shown in this book by entering an initial letter in the corresponding square, thus :—H. indicates admitted to

hospital, F. gone on furlough, &c. At the end of the month a summary is carefully and distinctly entered on the syphilis sheet, and this may be forwarded to the hospital or to the patient's new station as the case may require.

This method seems a little complicated, but experience has shown that such a system is absolutely necessary if the syphilis sheets are to be accurately kept and continuous treatment carried out.

(4) *The Staff required* in a large station consists of two officers, one non-commissioned officer, and one orderly.

This staff is necessary to permit of the treatment being carried out with as little loss of time as possible, an important point, as most of the patients are on duty, and leave to attend has to be obtained from their commanding officers. One officer examines the men as they come into the room, paying particular attention to the mouth and throat, a most necessary precaution. When soldiers are attending as out-patients for syphilis they are apt to pay little attention to lesions of the mucous membranes, and frequently do not mention them. These lesions should be noted, as they are nearly always highly infectious. If the man is progressing satisfactorily, he is told to continue and report himself again at the proper time, or he is passed on to the other officer for treatment, and a note is made in the attendance diary. The other officer gives the injections with the usual precautions. When dealing with large numbers of men, it becomes a matter of considerable difficulty to take the weight and test the urine on every occasion. These precautions must not be omitted, however, and the weight of the patient should be recorded, and the urine examined at regular intervals during a course of treatment.

The non-commissioned officer's duty is to enter in the attendance diary whatever instructions are given by the medical officers as to attendance and treatment, and at the conclusion of the patient's visit to enter the results in the treatment book.

The orderly's duty is to prepare the patient for the injection. The skin must be cleansed by means of friction with spirit and salalembroth wool, by the use of absorbent wool or gauze with a solution of Lysol, or as otherwise directed, and when ready, the patient is brought forward to the medical officer.

Experience in a large station has shown that treatment arranged in this way is satisfactory even when large numbers are under care.

By the Mouth.

15. This method of administration of mercury is commonly used, and if properly carried out, there can be no doubt of its efficiency. In military medical practice the objections to its employment as a routine method of treatment have already received attention and need not be recapitulated There are occasions, however, in which administration of mercury by the mouth may be necessary, and probably in many cases for intelligent men who are anxious to get well, the method can be used with advantage. The preparations of mercury ordinarily used in the form of pills are the grey powder, the blue pill, the green iodide of mercury, the salicylate, and the tannate of mercury. The preparations used in solution most commonly are the perchloride and biniodide (Report 1, p. 12). It is a usual custom to combine courses of mercury given by the mouth with the administration of the iodides, or to give alternating courses of mercury and the iodides. Experience seems to show that this method has its advantages. It requires to be emphasized that all the precautions prescribed for treatment by the other methods should also be taken when the drug is administered by the mouth. Indeed, special care should be taken of the teeth and mucous membranes, and the diet should be carefully regulated.

The following plan of treatment has been drawn up in order to indicate what may be considered to be an efficient course. The preparation used as the standard is a pill containing 1 grain hydrarg. cum creta :—

	Months.	Pills.
First Course :—		
One month, taking 6 pills a day	1	180
Interval of 3 days without pills	—	—
One month, taking 4 pills a day	1	120
Interval of 7 days	—	—
One month, taking 3 pills a day	1	90
Interval of 1 month	1	—
Second Course :—		
Three months, taking 3 pills a day	3	270
Interval of 1 month	1	—
Third Course :—		
Three months, taking 2 pills a day	3	180
Interval of 1 month	1	—
Fourth Course :—		
Three months, taking 1 pill daily	3	90
Interval of 3 months	3	—
Fifth Course :—		
Three months, taking 1 pill daily	3	90
	21	1,020

Patients should be inspected once a week while under treatment, particular attention being paid to the mucous membranes of the mouth and tongue. The effect on each individual must be carefully watched, and the treatment varied to suit each case. After the third, fourth, and fifth courses, a short course of potassium iodide, 15-30 grains daily, may be administered with advantage.

The Comparative Values of the different Methods of Treatment.

16. Owing to the constant changes of stations of both medical officers and their patients, and to the fact that different medical officers will no doubt prefer different methods of treatment, a scale of equivalents has been drawn up as the result of experience, and is suggested tentatively, so that a soldier who has commenced treatment by one method may continue his treatment satisfactorily, though another plan of treatment is adopted :—

(i.) One injection of mercurial cream containing 1½ grains (=10 c.gm.) of metallic mercury, is equivalent to—

(ii.) Three injections of a soluble salt (say, perchloride of mercury containing one-fifth grain in each injection) ; or to—

(iii.) Seven inunctions of mercurial ointment using 20 grains of mercury daily ; or to—

(iv.) Twenty-one pills each containing two grains hydrarg. cum creta, three pills administered daily.

The above scale of equivalents represents energetic treatment for one week.

The Mercurial Bath.

17. Of other methods which have been made use of for the administration of mercury in the treatment of syphilis, the mercurial bath deserves some attention.

In the case of soldiers returning from tropical service, who may have become debilitated in health from other causes in addition to syphilitic disease, it is not uncommon to find multiple cutaneous syphilitic lesions, showing a marked tendency to necrosis and ulceration. In such cases the use of the bath containing mercury in solution is frequently found to be of service. The drug appears to exert a local curative effect on the cutaneous lesions, in addition to its recognised influence by absorption.

All the precautions directed to be observed during mercurial treatment must be scrupulously observed in the case of such patients.

The mercurial bath may be prepared according to the following prescription :—

Mercuric chloride - - - -	60–180 grs.
Ammonium chloride - - - -	1–3 drs.
Water (at 98° F.) to - - - -	30 gallons.
or	
Mercuric chloride - - - -	60–180 grs.
Dilated hydrochloric acid - - - -	1 dr.
Water (at 98° F.) to - - - -	30 gallons.

The patient may remain in the bath from ten minutes to half an hour. The water in the bath must not be allowed to become too cold, and the patient must not become chilled after the bath. The baths may be continued till the cutaneous lesions have healed, when mercurial treatment may be carried out by other methods appropriate to the case.

Treatment by other than Mercurial Methods.

The Administration of Iodides.

18. Of the other medicinal methods in the treatment of syphilis one meriting serious consideration is the use of the iodides. Medical opinion, which found repeated expression at the meetings of the Committee, is strongly in favour of the value of treatment by iodides, although it is generally held that these salts must not be considered as substitutes for mercury. The majority of medical observers are specially convinced of the value of the iodides in the phases of syphilis attended by the formation of granulomatous infiltrations. The influence of the iodides in bringing about the absorption of the syphilitic granuloma is undoubted. In the opinion of some experts, however, the drug has a beneficial influence even in the early stages of the disease in which granulomatous infiltration is as a rule little marked. The iodides are prescribed in association with or in courses alternating with the administration of mercury.

The Method of Treatment known as Zittmann's Treatment.

(Report No. I., p. 32.)

19. Zittman's treatment has been favourably reported on recently, and appears to be of special benefit in the treatment of debilitated syphilitic patients returning from the tropics.

Accommodation should be arranged in the venereal divisions of large military hospitals to permit of this method of treatment being used in suitable cases.

Surgical and Hygienic Treatment.

20. The attention of the Committee has been drawn on many occasions to the good results obtained in the treatment of syphilis by other methods of treatment than the administration of specific drugs. It is pointed out that syphilis is a chronic infective disease, resembling, in the lesions which it produces, and in its progress, the maladies of which tuberculosis may be cited as an example. In the case of tuberculosis no remedy of specific value equal to that of mercury in syphilis, is known, still much can be done for the alleviation and cure of tuberculosis by the methods of treatment at our disposal. Similarly much good may be expected in the treatment of syphilis by other means than by drugs. This opinion the Committee wishes to emphasize.

The employment of surgical treatment by the removal of bony sequestra and other necrosed tissues, and various plastic operations, should be utilised with discretion. In all cases of syphilis care as to the general health of the patient and as to his hygienic surroundings should be scrupulously observed, but in cases where great debility is present, it may be as the result of the disease or of some complicating malady, proper care not only mitigates the influence of the disease, but permits of the more efficient treatment by means of drugs. The

general health of the patient can often be much improved by change of residence to the seaside, or to other favourable climatic surroundings, or by carrying out the treatment recognised in the case of tuberculosis as the "open air treatment."

The Performance of Military Duty by Soldiers while under Mercurial Treatment.

21. The Committee has attempted to ascertain the opinions of medical officers as to the fitness of soldiers to perform their military duties while undergoing mercurial treatment. As was to be expected opinion is not in complete agreement on this matter. It is generally held that in the early stages of the disease when contagion is easily possible, patients should be actually in hospital under treatment so as to avoid the risk of spreading infection by contamination of clothing, eating utensils, &c. The divergence of opinion manifested itself in the case of patients who no longer suffer from the disease in its early and more contagious period, but still require mercurial treatment. Some medical officers are of opinion that patients under these conditions should perform light duties only, while others consider that such patients are fit for all duties. This divergence of opinion appeared to depend, to some extent, on the views held as to the amount of mercurial influence required to obtain therapeutical results. A much larger amount of mercury is considered necessary to produce a satisfactory result by some authorities than by others; and it is reasonable to believe that patients under a serious course of mercurial treatment are rendered less resistant to the effects of exposure, however much they may benefit from the cure of their disease. There is reason, therefore, for care. It is also to be borne in mind that the character of the climate must be taken into consideration. The effects of exposure are more likely to show themselves at extremes of temperature than when the climatic influences are favourable.

The opinion is, however, widely held, and is supported by experience, that a patient suffering from syphilis without destructive lesions and under controlled mercurial treatment is capable of undertaking all ordinary military duties.

Syphilis and Active Military Service.

22. Divergence of opinion was also manifested among officers as to the question whether men who had recently suffered from syphilis were fit for active military service in the field. This divergence of opinion may be explained by the fact that attacks of the disease vary in severity, and that if lesions of destructive type have resulted, a factor has been introduced capable of producing loss of efficiency apart from actual syphilitic poisoning. The fact is undoubted in cases of imperfectly cured syphilitic patients, especially if destructive lesions have already resulted, that debilitating influences of whatever origin tend to produce recurrences of the disease. Such recurrences are frequently met with, and have entailed invaliding to a degree seriously diminishing the numbers and efficiency of troops.

The opinion is, however, generally held that if the attack of syphilis has been of ordinary severity, especially if no destructive lesions have ever made their appearance, if no evidence of the malady has been observed during the previous six months, and a course of treatment has been carried out of the character recommended in this report, then the soldier may be permitted to proceed on active service in the field.

TREATMENT OF GONORRHŒA IN MILITARY HOSPITALS.

23. The procedure about to be detailed fulfils the requirements of our present knowledge of the treatment of gonorrhœa. The appliances and staff provided in the venereal divisions of our military hospitals are at present not sufficient to carry treatment on the lines indicated, but arrangements should be made to permit of this being done.

Diagnosis.

24. When a soldier is admitted to a military hospital with a purulent urethral discharge, and admits having exposed himself to infection, it is usual to diagnose the disease as gonorrhœa, and in practically all instances this diagnosis is correct, but the diagnosis should always be confirmed by the recognition of the gonococci by microscopic examination of the pus. This precaution not only permits of the confirmation of the diagnosis, but permits of a forecast being made as to the progress of the case. If the stains and appliances are in readiness a specimen of the pus should be ready for examination in less than five minutes. The staining should be repeated at least once a week, as the composition of the discharge affords a good deal of information as to the results of treatment.

Thompson's Two-glass Test.

25. This well-known and important test seems to have been very much neglected in England, but is always practised on the continent. It is performed as follows:—

The patient is told to pass about three ounces of urine into one glass and the remainder into the second. The first urine passed in the morning should be obtained for the test, as all the discharge which has accumulated during the night is washed out, and a much more accurate indication of the actual state of affairs is presented than if the test is performed later in the day, when the patient may have swallowed large quantities of fluid and so diluted the urine. The results may be quite misleading in the latter case. If the first specimen of urine is turbid and the second clear, the indication is that the anterior urethra alone is infected and that all the purulent discharge has been washed out of the urethra by the clear urine coming from the bladder, *i.e.*, the disease is acute anterior urethritis. If both the first and second specimens of urine are turbid, the indication points to the fact that the gonococcus has extended backwards and infected the posterior urethra and that a condition of gonorrhœal cystitis exists, or as ordinarily expressed, the case is one of acute posterior urethritis. As the disease subsides the urine becomes less turbid, and the presence of "threads" become more noticeable, the "chronic" stage is indicated by a clear urine containing "threads." If the first specimen of urine is clear but contains mucous filaments, the condition is chronic anterior urethritis, while if both specimens of urine are clear but contain mucous "threads" the whole urethra is infected—the condition is one of chronic anterior and posterior urethritis, commonly called "gleet."

Treatment.

26. Having determined the nature of the disease, the extent of the urethra infected, and the stage of the inflammation, the exact form of treatment can be arranged.

The view that gonorrhœa is an inflammatory catarrh and should be treated by general measures with rest, in order to allay the inflammatory processes is no longer tenable, in view of the ascertained facts of the pathology of gonorrhœa and the specific nature of the gonococcus. Treatment should be directed to the destruction of the infective agent as speedily as possible before it has had time to extend to the posterior urethra. The unpleasant or even dangerous consequences of gonorrhœa, *e.g.*, epididymitis, arthritis, pyæmic infection, &c. do not in all probability occur unless the posterior urethra becomes involved. The mode of treatment must be specially selected according to the stage of the disease and the part attacked.

Acute Anterior Urethritis.

27. This condition should be dealt with by the method proposed by Neisser, or by irrigation.

Neisser's Method.—This procedure consists in attempting to bring the gonococcus into contact with a powerful antiseptic at regular intervals during the day. The most powerful parasiticide we possess for this purpose is silver nitrate. This salt unfortunately causes a considerable degree of pain when applied to the infected urethra and in the presence of sodium chloride is precipitated, losing much of its antiseptic power. To obviate these two objections various compounds of silver with albuminous substances have been introduced. These salts do not become precipitated in the presence of sodium chloride, and are not supposed to cause much pain, while at the same time they retain their antiseptic properties. The best known is protargol, others are albargin, argyrol, ichthargan, &c.

Two solutions of protargol are made, one of the strength of $\frac{1}{4}$ per cent., the other of 2 per cent. The injections must be made at least once in eight hours during the day and always immediately on rising and just before going to bed. The injections used must be of sufficient volume to moderately distend the urethra, so that the folds of the mucous membrane are opened out and the solution brought into contact with all portions of its surface. The fluid should be retained in the urethra as long as possible in order to destroy the micro-organisms.

On the first day the injections should remain in the urethra for two minutes, on the second day for three minutes, on the third day for four minutes, and so on till each syringeful is retained for a quarter of an hour. During this time the urethra may be gently manipulated with the fingers so as to make slight currents in the fluid and to wash away the gonococci and pus cells adherent to the mucous membrane. A case of acute anterior urethritis properly treated by this method should be free from visible discharge in a few days, and therefore, according to the usual standard of cure in practice up to the present time, fit for discharge. The urine should be examined if possible daily, or at least once a week, and treatment regulated according to its conditions; so long as "threads" are present the case cannot be looked upon as cured.

Irrigation Method.—This mode of treatment may be used either by means of an irrigator or a large syringe. If the former is preferred, the apparatus required consists of an irrigator-can to hold at least one pint, six feet of rubber tubing, and a Maiocchi's double-channelled glass nozzle. The patient is first told to pass his water, which is examined. The can is filled with potassium permanganate solution, 1 in 4,000, at a temperature of 100° F. The stream is then turned on and the outer surface of the glans and meatus washed over with the solution; the nozzle is now introduced into the meatus and the anterior urethra washed out by allowing a pint of fluid to run through the urethra. As a general rule it will be found sufficient to do this once a day or at most twice. In some cases a certain amount of œdema of the penis occurs, but this passes off if left alone, and need cause no anxiety.

If a large syringe (6 oz.) is used a rubber tip must be fitted to the nozzle to prevent damage to the urethra. The urethra is then to be washed out by filling it rather suddenly and then allowing the fluid to escape. The urethra should be filled and emptied frequently in this way. Experience is necessary to use this method correctly, for if insufficiently filled the urethra is not distended and the result is disappointing, while if used too frequently or over-distended the solution may be forced into the bladder.

Acute Posterior Urethritis.

28. For this condition irrigations of the bladder with a solution of potassium permanganate of the strength of two grains to the pint of water should be used, together with the administration of antiseptics, such as the salicylates, benzoic acid, urotropine, the balsams, &c.

Chronic Anterior Urethritis.

29. This condition is shown by the presence of threads in clear urine. These threads are casts of Littré's glands, and indicate that the gonococci have gained a firm footing and penetrated deeply into their ducts. The

administration of balsams, and the employment of astringent injections administered by the patient, are of very little value in such cases. Various methods are employed in the treatment of this condition. The simplest plan is to dilate the urethra, either by passing a large sound, or better by using an expanding dilator. The result of stretching the mucous membrane is to squeeze out the contents of the inflamed follicles, and irrigation if then used will wash away the inflammatory material, including the gonococci, or an injection of protargol retained for a few minutes will destroy the active agent. This procedure may be repeated on successive days, and a cure is usually speedily effected. In a few obstinate cases it may be necessary to use the endoscope in order to locate the inflamed follicles, which should be slit open or cauterised, and an injection given.

Chronic Posterior Urethritis.

30. This condition is much more difficult to treat, on account of the inaccessibility of the affected parts. Irrigations of the bladder by means of nitrate of silver 1 in 1,250, albargin 1 in 2,000, ichthargin 1 in 2,000, should be used first, and the urine watched to see what improvement results. Should the result be disappointing, dilation by passing a large bougie should be attempted. Should treatment fail, as it is likely to do when the prostate is the seat of the mischief, massage of the prostate must be employed. This is usually performed by filling the bladder with an antiseptic solution, the prostate is then massaged through the rectum, and the contents of the prostatic follicles expressed. Any obstinate or recurring gleet may often be cured by this method in a few days. In many cases, however, treatment for a considerable period is necessary.

Irrigation of the Bladder.—The bladder may be irrigated by means of a large syringe, or the irrigator. If the former is used, the anterior urethra must first be flushed out, the syringe being then filled and applied to the meatus, the surgeon makes steady pressure till he feels the sphincter relax, and the contents of the syringe flow easily into the bladder. The patient should then be told to stand up, and after some ten minutes empty his bladder into a glass vessel.

The quantity retained in the bladder without discomfort, and the character of the evacuated fluid, should be observed. As progress towards cure continues, the fluid returned is less altered in character. When the irrigator is used to fill the bladder the anterior urethra is first washed out, using about half a pint of the solution; the outflow tube is then closed by the finger, and the patient is told to breathe deeply. The fluid will now run into the bladder, and the patient is asked to state when he feels that the bladder is full.

The treatment otherwise is the same for both methods.

It is necessary to emphasise strongly the importance of perfect surgical cleanliness for all instruments employed in urethral treatment.

Question of Cure in Gonorrhœa.

31. When the urine is found to be quite clear on three successive mornings all treatment should be stopped. Full diet should then be given, and directions to take sharp exercise for three days. Directions may also be given for allowing a certain amount of malt liquor. If the first urine passed in the morning after this is still clear, the patient can safely be considered as cured. The majority of cases, however, present considerable difficulty. When the posterior urethra has been attacked, and probably this occurs in about 85 per cent. of the cases which are not energetically treated from the first, the urine will be found to contain threads day after day. In these cases it is necessary to examine the threads microscopically after staining. When no gonococci are found on three successive mornings in spite of the application of mildly irritating applications, for instance, the injection of a 1 per cent. solution of silver nitrate, the patient may be pronounced to be cured with reasonable certainty.

There is a great tendency to adopt a routine treatment by means of internal medications or injections performed by the patient for himself in all cases of gonorrhœa, irrespective of the stage of the disease or the exact seat of the inflammation. In consequence many cases of simple anterior urethritis are allowed to spread to the posterior urethra, thus greatly increasing the duration of treatment and exposing the man to secondary inflammations of the testes and more serious complications, such as arthritis and pyæmic infection. On the other hand, too prolonged treatment by means of astringents, *e.g.*, injections of sulphate of zinc, a favourite remedy, tends to induce a chronic catarrh of the mucous membranes and so maintain spurious gonorrhœa. It should be constantly borne in mind that treatment must be regulated by the indications given after examination of the urine, especially by using the two-glass test as described, supplemented by repeated microscopic examinations.

TREATMENT OF SOFT CHANCRES.

32. The treatment usually adopted in the case of soft chancres is to apply *lotio hydrargyri nigra* to the sore daily, and to await events. This is not always satisfactory, and it may be useful to call attention to one or two alternative methods, which produce good results.

Application of Heat.—The bacilli known as the *bacilli of Ducrey*, considered to be the specific cause of soft chancre, are rapidly destroyed by heat. An apparatus has therefore been invented by means of which a temperature of 107° F. can be maintained on the surface of the sore for twenty-four hours. The specific bacilli are then considered to be destroyed, and the soft chancre becomes a simple ulcer, which rapidly heals. Short of using the special apparatus, a good deal may be accomplished by applying fomentations as hot as the patient can possibly bear them, for the first few hours following admission into hospital. The ulcer will then be dressed with any simple antiseptic ointment.

A rapid method of treatment much in use is to paint the surface with liquefied carbolic acid; after waiting for one or two minutes the acid is thoroughly rubbed in to the sore by means of a glass rod, or a piece of wool, and then a simple dressing is applied to the sore.

An application recommended by Dr. Unna consists of *one part* of salicylic acid with *two parts* of iodoform.*

Pure nitric acid may be applied to the sore after the use of an analgesic. This method of treatment is apt to cause pain, and should be used with caution. It is naturally not so popular as some of the others recommended.

TREATMENT OF BUBOES.

33. Operations on inflamed and suppurating lymphatic glands should be carried out in every case with care and strict antiseptic precautions. In many hospitals, especially on the continent, as much care is taken in operating on these cases as with abdominal sections, and it is in consequence of this that the chronic suppurating bubo is rarely seen.

In the cases where indurated masses of enlarged glands are found they should be removed by careful excision. Experience shows that it is not necessary to remove every trace of these glands, and it is indeed often dangerous to do so, as they frequently surround the femoral vessels. The residue will usually become absorbed and disappear in a short time.

When suppuration has not occurred, or only slightly, the wound may be sutured, provided surgical cleanliness has been observed, when primary union usually results, and the period of healing is greatly shortened.

* This dressing is often found to irritate, and must be used with caution and for short periods only.

SCABIES.

34. The treatment of scabies appears to have given rise in many cases to difficulty in practice. The inquiry of the committee bears out the fact that much of this difficulty arises from the exaggerated importance attached to the local use of alkalies and sulphur while the value of the hot bath has been overlooked. The most effective part of the treatment of scabies consists in the use of repeated hot water and soap baths.

Baths of this nature are difficult to arrange in the wards in which cases of itch have hitherto been treated. The strongly alkaline preparations of sulphur have therefore been resorted to, and are, no doubt, more or less efficacious so far as the cure of scabies is concerned, but they have the almost certain result of producing an inflammation of the skin which is more difficult to cure than the actual attack of scabies, and make it almost impossible to determine with certainty, when the disease has been got rid of. In the treatment of an attack of scabies, arrangement should first be made to give the patient a warm water and soap bath twice daily. After the bath, a parasiticide ointment should be thoroughly applied over the whole body, and specially on the usually affected areas. The drugs which appear to be most efficacious in the treatment are sulphur, the balsam of Peru and β-naphthol. The ointment should be left in contact with the skin for so long a time as is convenient, and thoroughly washed off in the bath.

A course of eight baths with inunctions on four successive days is sufficient to cure all ordinary cases of the disease. If further treatment proves to be necessary, care should be taken to avoid the dermatitis which may result from the over-use of these parasiticide remedies.

All the clothing of the patient should be thoroughly disinfected by means of dry heat after the course of treatment, and the bedding which has been made use of should be dealt with in the same way.

The patient should be inspected at intervals of three days, seven days and 14 days after a course of treatment to make certain that there is no recurrence.

The dermatitis which is sometimes apt to occur even with mild applications of sulphur, balsam of Peru and β-naphthol should be treated on ordinary principles:—the removal of the irritant, the use of bran baths, followed by sedative calamine or lead lotions, usually effect a rapid cure.

ARRANGEMENTS FOR THE TREATMENT OF VENEREAL AND SKIN DISEASE.

35. An important point arises at the threshold of any consideration of the arrangements required for treatment of venereal disease, viz., whether this disease should be treated in special hospitals or not.

Much importance attaches to the strongly-expressed opinion that special hospitals for venereal diseases are not desirable. It is stated that a certain amount of disgrace would attach to those sent to these hospitals, and that soldiers would frequently conceal their disease rather than seek treatment in order to avoid being immured in a venereal hospital. Another point of considerable importance has to be borne in mind. With the tradition still existing as to the treatment of venereal patients, there is a tendency to regard the venereal division as a somewhat inferior part of the hospital, with the result that neglect of various kinds is apt to make its appearance. If the hospital is isolated it is possible that this tendency might increase. It appears, therefore, preferable that cases of venereal disease should be treated in specially arranged sections of hospitals equipped for the purpose. When it is necessary for purposes of convenience or economy to utilise existing buildings suitable for the purpose of the treatment of venereal cases, these buildings should be considered as sections of general hospitals, and included so far as is possible in the ordinary scheme of administration.

In the arrangement of such a division cases of syphilis and of gonorrhœa should so far as is possible be treated in separate wards. It is also advisable under present arrangements that a section of such a hospital should be devoted to the treatment of skin diseases, including scabies, and that the necessary equipment of baths and warm water supply should be provided on a liberal scale.

In charge of these sections for the treatment of venereal and skin diseases should be placed officers who have qualified as "Specialists in Dermatology, including Venereal Diseases." These officers should be encouraged to develop the study and treatment of these diseases in the light of modern methods. It will be also of advantage to the service, that junior officers intending to present themselves for examination in the subject of dermatology and venereal diseases when qualifying for promotion to major, should be appointed to stations where wards for the treatment of these diseases exist under the charge of an officer with the "Specialist" qualification. Sections of military hospitals properly equipped in the way indicated will give advantages for the training of medical men, especially in the subject of venereal disease, greater than can be obtained at any civilian hospital in this country.

The "Specialist" officer in charge would naturally be interested in giving instruction in his special subject to his junior officers, and possibly to other medical men who may desire to attend. In the future it may be made a part of his duties to impart this instruction.

Scabies.—A special ward must be provided for the treatment of patients suffering from itch, and this ward must have its own bath-room and sanitary annexe. In view of the use of sulphur compounds in treatment, and the destructive effect of sulphur on most metals, the bath should be of glazed earthenware and not of enamelled or painted metal.

TREATMENT BLOCK.

36. In large stations where numbers of patients suffering from skin and venereal disease will naturally be found, divisions of hospitals equipped with wards, treatment and operating rooms, will, it is hoped, be arranged, but in the case of small hospitals, where special divisions cannot exist, the treatment of these diseases would benefit greatly if it were possible to establish a room fitted with the necessary apparatus for special means of treatment in the case of in-patients, and where injections, applications and dressings could be made in the case of out-patients. The intra-muscular injection of mercury in cases of syphilis, the local treatment of syphilitic lesions, the injection and irrigation methods now used with so much success in the treatment of gonorrhœa, and special treatment in the case of skin diseases would be carried out in the Treatment Room. Many of these methods of treatment require to be done actually by medical officers themselves; it is only rarely the case that they can be left entirely in the hands of orderlies, however skilful. If carried out in the Treatment Room everything would be done under the supervision of the medical officer. The establishment of such a room for treatment is calculated to encourage the development of regular and efficient methods by medical officers.

37. The Committee has finally taken into consideration the question of structural alterations in existing hospitals, and the planning of new treatment blocks for efficiently dealing with venereal diseases.

It is understood that, under the centralisation scheme of the Army Hospitals Committee, venereal cases in each command are to be aggregated for treatment either in special wards in the large central hospitals or in separate venereal hospitals, the policy to be adopted in each instance being conditioned by considerations of finance, distances, structures, adaptability, and the like.

Hence it is evident that each case must be judged on its merits, and that only general suggestions can be made for the guidance of the Army Hospitals Committee.

The Committee was at first inclined to think that the ward annexes might be remodelled to serve for treatment rooms as well, but further consideration has convinced them that, generally speaking, this course is undesirable, and the annexes of venereal hospitals should, therefore, follow the lines of the approved annexes for general hospitals.

What, however, should be done in all but the smallest venereal hospitals is to provide a cubicle or room for a bath intended for continuous mercurial treatment in the proportion of one bath to 50 beds, and, in the large central venereal hospitals there should be a room for the Zittman treatment, capable of being kept at 80° F. day and night, and another room for a radiant-heat bath, sometimes required for the treatment of patients coming from the tropics.

It will often be practicable to adapt single-bed wards for these purposes.

For the large venereal hospitals at Bulford, Aldershot, and elsewhere, which are erected in hutting, it will be desirable to provide a treatment block in permanent materials, situated at a convenient distance from the huts, and connected with them by a covered corridor.

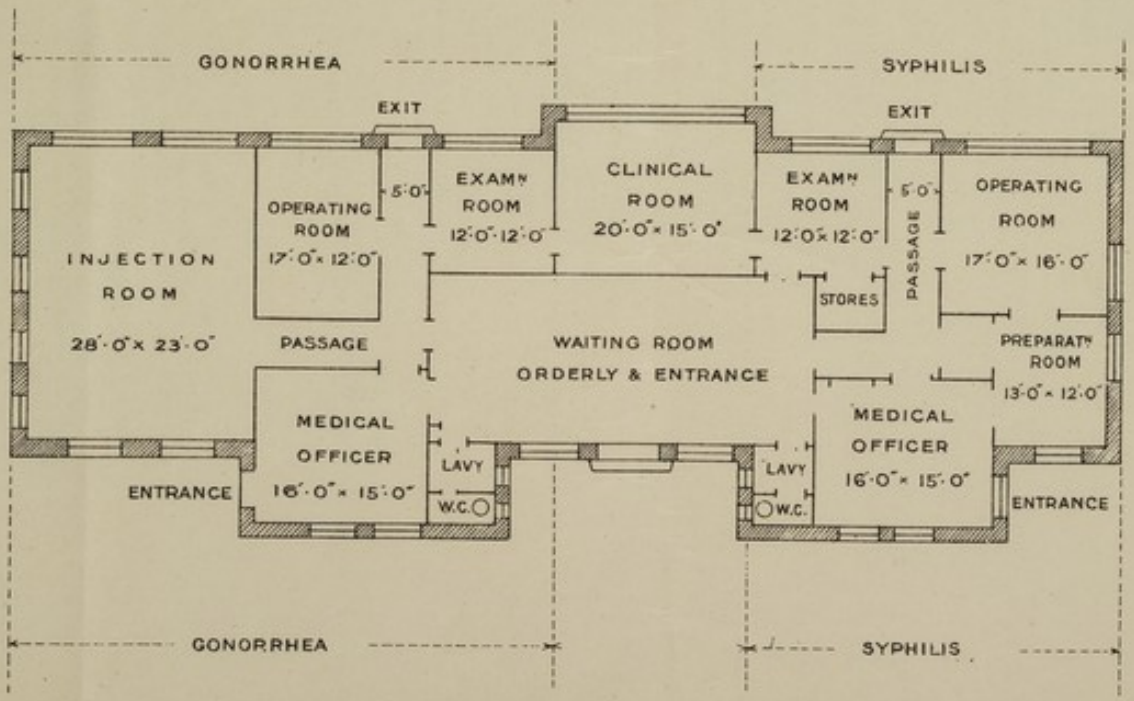
The schedule of accommodation which the treatment block should afford is detailed as under, premising that where practicable syphilitic cases should be kept separate from patients with gonorrhœa, both for housing and treatment rooms, and that of 100 beds for venereal diseases it may be assumed that 60 will be required for syphilis and 40 for gonorrhœa.

The sketch plan opposite the following page shows what would appear to be a convenient arrangement of the various rooms required for the treatment of syphilis and gonorrhœa when this is carried out in a separate building, but it is intended only as a guide and not as a plan to be rigidly

followed by the Director of Barrack Construction. When existing hospitals are adapted, it may be advantageous to omit certain rooms (say the waiting rooms), to combine the medical officer's office with the patients' examination room, to use the same room for irrigation room and operation room screened off, and in the treatment of syphilis to let the same room serve for the preparation of patients and for operations. The measures to be adopted in each case must be carefully considered and adapted to existing conditions, with due regard to efficiency and economy.

SCHEDULE.

Purpose.	Accommodation.	Fittings and Equipment.
For syphilis cases -	Medical officer's office, 16 feet by 15 feet.	Hanging cupboards for white coats, uniform, and private property. Two tables for note-taking, with drawers. Two writing chairs. Three chairs. Lock-up bookcase for records and forms.
	Patients' examination room, 12 feet by 12 feet.	Fixed lavatory basins (2) and small sink with hot and cold water laid on. Couch for examination of patient. Small dressing-table, lotion jar, lotion bowls. Dressing box. Waste bucket. Glass spatulas. Antiseptic bath for spatulas. Lamp for throat and eye examinations.
	Preparation room, 13 feet by 12 feet.	Lotion jars (3). Dressing box. Waste buckets.
	Operation room, 17 feet by 16 feet.	Fixed lavatory basins (2) with small sink, and hot and cold water laid on. Two operation tables of simple pattern. Lotion stand. Two dressing tables, two dressing boxes. Instrument steriliser and Bunsen burner or spirit lamp. Glass cupboards for drugs and instruments. Two waste buckets.
For gonorrhœa cases -	Medical officer's office, 16 feet by 15 feet.	As for syphilis cases.
	Patients' examination room, 12 feet by 12 feet.	As for syphilis cases.
	Operation room, 17 feet by 12 feet.	Two fixed lavatory basins and sinks (hot and cold). One operation table. Lotion stand. Syringes. One dressing table. Instrument cupboard. Porringers. Urinal, fixed. One anæsthetic table. Dressing box. Two stools. Waste buckets. Instrument steriliser. Catheter and sound boxes. Rubber tubing.
	Irrigation room, 28 feet by 23 feet.	Sixteen stalls for urethral irrigation, divided into sets of four, and so arranged as to secure privacy for the patient with supervision by medical officer. Maiocchi's nozzles.
For general services -	Waiting room - -	Benches as required.
	Clinical laboratory, 20 feet by 15 feet.	Fixed basin and sink (hot and cold). Urine testing apparatus. Centrifuge. Microscopes. Microscope tables. Shelves and drawers for reagents. Bunsen's burners and spirit lamps. Incubators.
	Lavatories and w.c.	



PLAN OF TREATMENT BLOCK.

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