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PART I. ORIGINAL COMMUNICATIONS.

ART. XI.—*The Prophylaxis of Venereal Disease.*^a

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THERE are few subjects relating to the hygienic welfare of the nations concerned to which more attention has been paid throughout Europe during the last half decade than the question of the spread of venereal disease. The matter appears to have first gained prominence in connection with the various military organisations of the different countries, and as a consequence it has come to be recognised as a subject of the most vital importance to the civil population of every European State. It has been the theme of Commission after Commission throughout the world even in our own time, and there are few diseases where patient scientific research has reaped more plentiful rewards in the shape of accurate diagnosis and treatment.

In order better to discuss the prophylaxis of venereal

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diseases it will perhaps be permissible to devote some little time to a synopsis of the nature and cause of these complaints; for in the recognition of the cause is the prevention thereof. Under the heading "Venereal Diseases" are grouped syphilis, gonorrhœa, and the ravages of the bacillus of Ducrey. Syphilis and gonorrhœa are two contagious diseases transmitted from person to person by direct contact, usually in the act of sexual intercourse. They may also be acquired innocently, but (apart from congenital transmission) this is not a common occurrence. Syphilis appears to have been unknown in Europe before the year 1493, when it is supposed to have been introduced into Spain by Columbus' crew. Since that time it has been rampant throughout the Continent, the tide of its intensity ebbing and flowing with the varying economic conditions. No nation appears entirely immune, though agricultural communities always fare best. The disease can be transmitted to young and old alike, and the liability of the offspring to be contaminated constitutes one of its most aggressive features.

There appears to be little doubt as to the prevalence of syphilis in Great Britain at the present time, though the inaccuracy of civil statistics renders it impossible to state whether the disease is on the increase or otherwise. Greater reliance, however, can be placed on the Army and Navy returns, and these show a decrease in the prevalence of the disease during recent years. Thus, in 1888 the incidence of venereal disease in the Army was 222.5 cases per 1,000, but in 1912 it had fallen to 56.5 cases per 1,000. The Navy, on the other hand, showed a statistical return of 48.92 cases per 1,000 in 1905, and this was reduced to 28.93 per 1,000 in 1912. This marked decrease in the prevalence of syphilis in the Services is most gratifying, and renders it worth while making a short analysis of the causes operating to bring it about. The Navy and Army have greater facilities than civil bodies for estimating the value of any preventive measures adopted, and this power they have utilised to the full, with the aforementioned excellent results,

Syphilis and gonorrhœa are essentially diseases of irregular sexual intercourse; it is therefore certain that as long as man gives free vent to the passions which he possesses, and which it is right for him to possess, he will run the risk of infecting himself with one or other virus. The opinion was held for many years, and is still held by many, that incontinence is necessary and healthful. Young men were brought up with the idea that it is manly to get drunk and manly to be incontinent. There is no foundation for either theory; continence is not only healthful but manly, inasmuch as all forms of self-restraint are manly. There are large numbers of men, both clerical and civilian, who do practise continence, and they are physically no worse for doing so, provided they are engaged in healthy and busy occupations. Sir William Osler pointed out many years ago that hard physical exercise is the best antidote for the irregularities of the imagination and sensual affections consequent on a lazy sedentary life accompanied with overfeeding and luxury. Bearing these facts in mind, the officers of the Royal Army Medical Corps are doing everything in their power to check illicit intercourse by encouraging all outdoor games and by instituting courses of lectures on the dangers of contracting venereal disease. The value of these lectures is unquestionable, and they could be easily adopted as a means for combating the evil among the civil population. The points that should be elucidated are as follows :—

(1) The nature and evil results of syphilis and gonorrhœa, with special emphasis on the disastrous effects these diseases exert on the next generation. Many men who were absolutely regardless of immediate personal consequences would pause and consider where others were concerned.

(2) It should be insisted that the only certain way to avoid infection is to keep out of harm's way.

(3) Men should be urged to seek immediate advice and treatment when they have the slightest suspicion that they have been infected.

If such a system of lectures were adopted universally, there can be little doubt that enormous good would result. The amount of venereal disease that is contracted through sheer ignorance is beyond conception, and the fallacy that only professional prostitutes are dangerous has led many a man to his fate. Young women and girls should also receive some instruction in matters sexual, and much good work has already been done with this object by the National Council for the Prevention of Venereal Disease.

We have thus seen that increased education in such matters is considered by the Naval and Military Authorities to be an asset of considerable importance in the reduction of the incidence of venereal disease. Of equal, if not of greater, significance is the matter of sobriety. A man under the influence of drink is more liable to contract venereal disease for two reasons :

- (1) He loses his self-control and judgment.
- (2) The condition lowers his physical resistance, rendering him an easier prey to the gonococcus or spirochæte.

During the last few years there has been a great wave of temperance throughout all His Majesty's Forces, both Naval and Military. The causes of this movement do not concern us—whether it be due to the increased prominence given to games, the better education of the lower classes, or the work of the various religious organisations. Let it suffice that such a wave of sobriety does exist, and its results in connection with venereal disease are most manifest and encouraging.

We now come to the subject of preventives. The question of the encouragement of the use of preventives as a means for combating syphilis and gonorrhœa is one around which a fierce controversy has been raging for many years. The subject presents grave difficulties owing to the ethical and moral problems which are involved in its consideration. As is usual in such discussions, the solution for the difficulty lies in a mean between the two extremes, but it is somewhat difficult to bring this point before the

general public. Metchnikoff has shown that a 25 per cent. calomel ointment applied to the affected part within twenty-four hours of infection will obviate the risk of contracting syphilis. It has also been demonstrated that a sufficiently strong silver salt acts in the same way with regard to the gonococcus. Of the efficacy of these methods of prophylaxis I am convinced.

About the year 1910 the Admiralty issued to ships large supplies of calomel cream 33 per cent., and a jelly known as nargol $2\frac{1}{2}$ per cent., which is a chemical combination of silver with nucleinic acid. These were to be issued to men, if they demanded them, but no note was to be made of the names of those who presented themselves, and the matter was to be perfectly voluntary. The jelly is run into collapsible tubes with nozzles suitable for intraurethral injection, and these, together with tubes of calomel cream, are issued in small and convenient cardboard boxes. The majority of the men avail themselves of these preparations whenever they are likely to require them, and I have had many different opportunities of estimating their value.

On one occasion, shortly after the evacuation of the Gallipoli Peninsula, the ship in which this Thesis is being written put into Malta for a few days, and gave two nights' leave—the first that had been granted for nine months. During these past nine months the ship's company had been through a time of considerable stress and strain, both in the North Sea and at the Dardanelles. Under such circumstances it would be reasonable to expect that a sudden temporary relaxation of discipline would produce a high incidence of venereal disease on board. The result was quite the reverse; three men alone out of 860 being infected—two with gonorrhœa and one with chancroid. Many other ships have had equally good results with these measures, and from a purely scientific point of view their worth may be considered thoroughly established. Viewed from an ethical standpoint they are undoubtedly wrong, but into this question I do not propose to enter.

Of the numerous mechanical methods of prophylaxis

there is little to be said beyond the fact that they can never be considered absolutely reliable. The liberal use of soap and water before and after intercourse, combined with a high standard of personal hygiene, would prove of considerable value if it were generally adopted; but all artificial appliances, if not kept in perfect condition, are worse than useless.

We now come to what I consider to be the most powerful weapon at our disposal for dealing with venereal disease, namely, the early diagnosis of syphilis. To speak of "early diagnosis" as a "means of prevention" may at first appear slightly paradoxical, but when it is pointed out that we are dealing with the community at large rather than with the individual, its application will be easily understood.

In the recent report of the Royal Commission on Venereal Disease the following passage occurs:—"The lack of facilities for diagnosis undoubtedly accounts for the large amount of venereal disease, and particularly syphilis, which, not being recognised at an early stage, is inadequately treated or entirely neglected." This is only too true. Men who have contracted syphilis, but in whom it has not been recognised until secondary symptoms develop, have probably, in a great many cases, passed on the infection to others before they are themselves aware of their complaint. Again, if syphilis is allowed to proceed to the secondary stage, all the secretions of the body become infective, thus rendering the disease even more contagious than it originally was.

In the Navy in May, 1912, the proportion of cases of primary to secondary syphilis was 715 to 2,744, or a ratio of practically 1 to 4. Now all these cases of secondary syphilis must have passed through a primary stage which has either been inadequately treated or gone undiagnosed. We have, however, learnt by experience that the combined use of salvarsan and mercurial cream injections, if applied in the primary stage, are practically certain preventives of any secondary lesions appearing. Allowing, therefore,

for a certain number of these secondary syphilitics being of old standing, we are driven to the unpleasant conclusion that a large proportion of cases have passed undiagnosed through the primary stage. If this is true in a Service where the cost of Wassermanns and of microscopical examinations does not enter into our consideration, how much more so must it apply to civil communities, especially among the poorer classes? The means at our disposal for making an early diagnosis of syphilis are two in number—(1) clinical, (2) microscopical. With regard to the first of these methods, it may be remarked that the clinical signs of primary syphilis are often slight and very misleading. In a case with a history of an incubation period of from three to five weeks, and manifesting the typical hard chancre attended with bullet buboes in the groin, the matter presents little difficulty. On the other hand the classical Hunterian chancre does not appear to be as common as text-books lead us to believe. Almost any lesion appearing on the penis after exposure to infection may be the starting point of syphilis, and the matter is even more complicated by the occasional appearance of chancres in such regions as the anus, mouth, and hand. During four months spent in a parent ship for small craft, where plenty of leave was given and there were numerous opportunities of infection, I only on one or two occasions saw cases of syphilis beginning with the classical sore described by text-books.

Now, as has been shown above, if we await the appearance of secondary symptoms before making a diagnosis of syphilis, we have not only increased the chances of spreading the disease but are delaying our treatment with “606” and mercury until the effectiveness of these drugs is greatly diminished. We therefore turn to the microscope for further information in this earlier stage.

That the *Spirochæte pallida* of Schaudinn is the actual cause of syphilis has now been proved beyond all question, and the recognition of the organism in any suspicious lesion renders the diagnosis of syphilis certain. During the early

stages of the disease the organism is to be found in the superficial parts of the sore, or in the immediately surrounding tissues, or in the lymphatic glands. A scraping from the sore, or a puncture in the case of the gland, when suitably prepared and examined under the microscope, ought to demonstrate the causative organism. Here a word of warning is necessary. It is useless to hunt for spirochætes in a sore which has been treated locally with mercury. The pathognomonic agent will in these cases have been driven into the deeper layers of the tissues, and will be impossible to find. Any suspicious sore should be dressed in gauze soaked in saline solution until a diagnosis has been arrived at.

There are three chief methods of demonstrating the spirochæte under the microscope :

(1) By the use of the ultra-microscope. This method is at present out of the reach of the ordinary practitioner, but the results it gives appear most satisfactory. It consists of passing rays of light through the specimen parallel to the surface of the slide. The field will appear absolutely dark except where the ray meets with an object, which causes it to be reflected in all directions. The object is thus seen as a brilliant spot on a black ground.

(2) Burris' Indian ink method consists in applying an emulsion of fine particles of carbon. These settle down on either side of any organisms that may be present, so that the latter are seen as transparent bodies on a dark background.

(3) The third method consists in applying different stains to the suspected matter. It is difficult and takes considerable time, though in the hands of an expert the results are excellent.

Of these three methods of demonstrating the spirochæte, Burris' Indian ink is the only one practicable for the average medical man, and even this method is not very simple owing to the difficulty of obtaining a thin enough smear. I have purposely avoided any mention of the Wassermann reaction in connection with early diagnosis ; when positive,

it is undoubtedly of value, but in many cases weeks elapse between the time of infection and the appearance of a positive Wassermann.

It will be seen, therefore, that the early diagnosis of syphilis is to a great extent dependent on the laboratory expert; the easier we can obtain the advice of a bacteriologist, the greater is our chance of preventing the spread and checking the course of syphilis. In this lies the whole future of the prophylaxis of venereal disease; the greater number of laboratories there are throughout the country attached to our smaller hospitals, the more easily shall we be able to combat the disease. Here, and here alone, can our legislative bodies help us. All other forms of administrative interference have failed us in the past, as they are failing on the Continent at present.

To sum up, the essence of the system that should be adopted is as follows:—The poorer classes should receive better education in matters sexual. It is foolish to object to such lectures on the grounds that they lower the general moral tone. The only possible effect they could have would be to instil into the minds of the next generation a healthier and saner attitude towards matters of the most vital importance to our national hygienic welfare. Human nature being what it is, we cannot let our efforts rest here. Every facility should be given throughout the country for the early diagnosis and free treatment of those infected without any disability or punishment being attached thereto. Adopting these measures, we may hope in time to considerably reduce the incidence of this terrible disease. Total immunity we shall probably never know, but we can at least direct our steps in the right direction.

ART. XII.—*Cardiac Curves and Sounds.* By G. ARBOUR STEPHENS, M.D., B.S., B.Sc. (Lond.); Hon. Physician, Royal Cambrian Institution for the Deaf.

A FEW months ago a leading London specialist was endeavouring to impress me with his great knowledge concerning heart murmurs, and, by way of contrast, my