SOME EXPERIENCES IN THE TREATMENT OF VENEREAL DISEASE AMONG BRITISH TROOPS IN IRAQ: OCTOBER, 1941, TO SEPTEMBER, 1943

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In October, 1941, a Combined General Hospital (Indian), consisting of one hundred British beds and one hundred Indian beds, commenced work in Baghdad. This hospital was entirely given over to the treatment of venereal disease. In September, 1942, this hospital packed up and moved elsewhere, but left behind a nucleus of its staff which were to continue treating venereal disease. This nucleus, together with one hundred beds for British troops, and one hundred for Indian troops, was attached to another hospital, also in Baghdad, the continuity of the work thus being maintained without a break. This arrangement was continued till the latter end of September, 1943, when, owing to the great reduction in the number of troops in the Command, it was finally terminated. This Centre in Baghdad received all cases of venereal disease from the immediate neighbourhood and from the countries north and north-east of Baghdad—Mosul, Kirkuk, Khanaqin, Hamadan, Kermanshah and other places just inside the Persian border. A larger Centre at Shaibah drained the south of Iraq, and Persia South of Ahwaz. Teheran and its neighbourhood were catered for by a Centre in the Persian capital.

This paper deals solely with the British troops which passed through the Centre in Baghdad during the period from October, 1941, to September, 1943, for all of which time I was in charge.

Our accommodation throughout this period was tented—for patients, treatment rooms, offices and laboratory work. The climate was most variable, ranging from 120° F. in the shade, and sometimes higher, during the summer months, to 15° F. of frost on one occasion during our first winter. Sand and dust storms were another trial, occurring throughout the year, and rain and mud during the winter months. For the first year we had very little specialized equipment, apart from the usual surgical equipment of a General Hospital, for dealing with venereal diseases, but during the second year we lacked little. Our dark-ground examinations were carried out in a tent and our source of illumination was the sun reflected from a mirror—a trying business during the heat of the summer and an exasperating business during the winter when the sky was cloudy. Blood tests were carried out in a neighbouring field laboratory. Wassermann's were performed as the routine test and a Kahn on every positive result or by request.

Although the Centre had one hundred beds, there were times when this number was exceeded and then patients were evacuated to the larger hospital at Shaibah. The cases chosen for evacuation, whenever possible, were soft sores which had had three dark-ground examinations and a preliminary blood test, diagnosed cases of syphilis already under treatment but still with an unhealed primary lesion, and, at times, chronic cases of gonorrhoea. Owing to this forced evacuation of cases before they were fit to return to duty, I do not know the total duration of stay in hospital of the majority, nor, in some cases, the final diagnosis. In reading the figures which appear during the course of this paper this fact must be taken account of, and special reference will be made to it where necessary. Consideration must also be given to the fact that I have written this paper in India where I have not recourse to my original records which remain in Iraq. The figures which I quote are all from notes which I compiled before leaving Iraq in December, 1943.
The records which I maintained in the Centre were complete histories of every case, and these records I kept in those large and useful Army (Indian) books—"I.A.F.Z. 2068"—each book having its first few pages in the form of an index from A to Z. Each patient on admission started off with a fresh page, which as a rule gave plenty of space for all one had to write. These pages were serially numbered, and when one volume was finished the serial numbers were carried on to the next volume. When a man attended as an out-patient, or if he got readmitted to hospital, it was a very easy matter to turn up his old record and carry on with it. On discharge from hospital his I.A.F. 1247 and other documents were prepared from these books.

The higher administration and instructions relevant to venereal disease varied during these two years. During the first year, when we were successively British Troops in Iraq and then Tenth Army, venereal disease came under a consultant dermatologist, who also dealt with skins. During this period each patient on discharge from hospital received an A.F. I. 1247 (venereal case card). This card, on completion of surveillance or treatment, was sent to the consultant dermatologist for perusal and final disposal, this being the original peacetime practice in India. During the second year venereal disease came under an Adviser in Venereology, the Command then being known as Paiforce. On discharge from hospital each man was then given a small booklet (I.A.F. 1247A, equivalent to the Middle East V. 15) in which was written a brief summary of his case, and in which were printed columns for injections, gonorrhhea surveillance or the results of blood tests. This booklet the soldier was instructed to keep in his pay book, and to produce it each time he reported for treatment or examination. An I.A.F. 1247 was also completed in full and posted to the soldier's unit, where it was the duty of the unit medical officer to keep it up to date from any entries which might be made in the 1247A. On completion of surveillance or treatment both books were returned to the venereal centre which originated them. There the books were perused by a specialist in venereology and disposed of to Second Echelon.

During these two years the numbers of British troops in Persia and Iraq varied greatly. There were rapid and sudden influxes of troops from India, from the Middle East and from Britain. These troops might stay for a few months in the Command before moving off again to the Middle East, to North Africa, and later to Sicily. It was not altogether surprising, perhaps, that many of their venereal case cards never found their way back to Paiforce. Towards the end of the second year, perturbed on account of the large number of cases on my books which had no entry subsequent to their discharge from hospital, I circularized all these cases with the following letter:—

Subject: V.D. TEST OF CURE.

No. . . . . . . . . Rank . . . . . . . . . . . . . . . . . . . Name . . . . . . . . . . . . . . . . . . . . . . . . .

The a/m BOR was treated for . . . . . . . . . . . . . . . . . . . . . . . in this hospital from . . . . . . . . .
to . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

No record has yet reached this hospital showing whether this man has had a Final Test of Cure: If a Final Test of Cure has been carried out on this man please forward the date and results of the test to this hospital. If he has not had a Final Test of Cure please arrange for him to have one carried out at the nearest V.D. Hospital and forward the results to this hospital.

This letter was sent to every case, except cases of syphilis, about whose final disposal I was unaware. Unfortunately I left Paiforce before replies could be received from all of them. But such replies which arrived before I left were most gratifying, and showed that commanding officers and medical officers, despite their operations in North Africa, and landings in Sicily, were making efforts to have final tests of cure carried out on their men. An analysis of the replies to this circular letter would be most interesting, but, as far as I am concerned, an impossibility as the replies remain in Baghdad.

ANALYSIS OF ADMISSIONS.

The total number of cases of venereal disease which passed through the Centre during these two years was 2,270. This figure includes cases which were readmitted, either for a
relapse or on account of a second infection. Out of this number there were 54 cases which had a double infection, either gonorrhœa and NYD. VS., or gonorrhœa and syphilis. There were 58 admissions of officers.

Of first admissions, excluding all readmissions, the total was 2,067. The percentages of the various diseases works out as follows (these being the diagnoses on discharge from hospital):

<table>
<thead>
<tr>
<th>Disease</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gonorrhœa</td>
<td>29%</td>
</tr>
<tr>
<td>NYD. VS.</td>
<td>35%</td>
</tr>
<tr>
<td>Warts, penile</td>
<td>1%</td>
</tr>
<tr>
<td>Syphilis</td>
<td>14%</td>
</tr>
<tr>
<td>Urethritis</td>
<td>15%</td>
</tr>
<tr>
<td>Balanitis</td>
<td>6%</td>
</tr>
</tbody>
</table>

In these figures I have made no mention of lymphogranuloma inguinale. That there were cases of this I do not deny but, for two reasons, I always diagnosed them NYD. VS. The first reason being that no Frei antigen was available. The second reason was that the majority of cases which I saw having large masses of enlarged inguinal glands, suggestive of lymphogranuloma inguinale, also had some penile lesion, and giving them the diagnosis of NYD. VS. was the safest method of ensuring that they had blood tests subsequent to discharge from hospital.

**GONORRHŒA.**

608 cases of fresh infections of gonorrhœa passed through the Centre. Some of these cases were already diagnosed and under treatment when they reached me, others were cases which had become chronic and were evacuated to the Centre in Baghdad for further treatment. The treatment for all fresh infections was sulphapyridine. Supplies of sulphathiazole were never sufficient to enable it to be used as a routine.

Two different dosages of sulphapyridine and routine management of the cases were employed, and are referred to as Series A and Series B in the following table of comparisons:

<table>
<thead>
<tr>
<th>Series</th>
<th>Total cases</th>
<th>Average stay in hospital</th>
<th>Cured with one course of M &amp; B 693</th>
<th>Cases requiring additional treatment</th>
<th>Relapses of “X”</th>
<th>“Z”</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>271</td>
<td>18·8 days</td>
<td>81·9% in 12·1 days</td>
<td>18·1% for 44·1 days</td>
<td>8·6%</td>
<td>5·8%</td>
</tr>
<tr>
<td>B</td>
<td>147</td>
<td>16·0 days</td>
<td>82·9% in 14 days</td>
<td>17·1% for 33·8 days</td>
<td>4·9%</td>
<td>8·0%</td>
</tr>
</tbody>
</table>

In collecting the cases for these two comparisons I have not included any cases which had a double infection, no cases which had already commenced treatment before they reached me, nor any cases in whom there was any doubt as to whether they were fresh infections or relapses of old infections.

In Series A the patient received 3½ grammes of sulphapyridine daily for seven days, and was given irrigations of his anterior urethra twice daily with 1:8,000 potassium permanganate. In Series B the dose of sulphapyridine was 8 grammes on the first day, followed by 3 grammes daily for four days, given in doses four-hourly, day and night. He received no irrigations and was kept in hospital for fourteen days, having frequent examinations of early morning smears and two routine prostatic massages before being discharged.

Drug rashes occurred in eight cases in Series A, and in one case in Series B. These cases were only seen during the summer months. The rash, appearing first as a bright red scarlatiniform erythema, and within two days becoming confluent, was only seen on those parts of the body which had previously been exposed to sunlight. After a further three or four days it faded away. There were no constitutional symptoms while it lasted.

One case of particular interest must be mentioned. An elderly man, with fair hair and blue eyes, was admitted with a fresh infection of gonorrhœa. I commenced him on the routine course of sulphapyridine. After his first 2 grammes I stopped it, the man having developed an acute erythema and oedema of his face, hands and arms. This developed into a localized exfoliative dermatitis of these regions. He recovered from this. Meanwhile he had developed
a sore on his penis. Although repeated dark-ground examinations of the serum from this sore failed to show the *Treponema pallidum*, his blood eventually showed a W.R. ++ and a Kahn ++, and the diagnosis of late primary syphilis was added to his previous diagnosis of gonorrhrea. Cautiously I commenced him on anti-syphilitic treatment, fearing a flare-up of his recent dermatitis. However, no such flare-up occurred and I was able to get him on to the full routine arsenic-bismuth course. Meanwhile the sore on his penis remained unhealed. One day I applied sulphanilamide powder to his sore. The following day his face was red and swollen. I stopped the sulphanilamide powder at once and in a few days his face returned to normal. He continued his anti-syphilitic treatment without any untoward effects, although his gonorrhrea remained uncured.

Time is a great healer, and maybe it was only time which cured some of the chronic cases. Nevertheless, some of these cases cleared up when given a second course of sulphapyridine. Cases which had been hanging fire for several weeks sometimes responded to sulphanilamide. The passage of straight and curved sounds was employed in suitable cases, likewise prostatic massages. Artificial hyperpyrexia, induced by $\frac{1}{2}$ c.c. T.A.B. vaccine in 5 c.c. saline intravenously, repeated three or four times at three day intervals, was of benefit in some cases. A urethroscope was available during the second year, but its use was limited being non-operating in type. Gonococcal vaccine was not available.

Urethritis.

303 cases passed through the Centre. Under the diagnosis of urethritis I always included those cases which to my mind are neuroses, but which are more correctly placed under that grandiloquent term urethrorrhrea. Young, excitable men, who, in many instances, had just had their first sexual intercourse and, being full of the horrors of venereal disease fear the worst for their indiscretion. They know a little, and every morning they milk their urethra to see if they have any discharge. And quite often they see what they imagine to be a discharge and at once report sick. They report sick early, within three or four days of the intercourse, and on examination can sometimes, but not always, produce a mucoid drop which proves to contain only epithelial cells bruised from their urethral wall and some excessive normal urethral secretions. Their urines are clear. Their treatment consists of a few reassuring words together with a simple explanation of the cause. I will cite one extreme case as an example. A young man reported sick and was admitted to hospital as an "NYD. Urethritis." On questioning him I learnt that he had visited a prostitute a few days previously, but, being unable to produce an erection, did not have connexion with her. The only contact which his penis had with her was her hands. His "discharge" proved to be only a few epithelial cells, and his treatment was reassurance. That it is a misnomer to call these cases urethritis I fully recognize; but it serves a most useful purpose in that they can all be placed under surveillance for three months and receive a blood test at the end of that time. Too many blood tests cannot be taken where there is an acknowledged intercourse with a prostitute in those parts of the world.

Under the heading urethritis two other groups emerged. The non-specific urethritis which may be caused by a variety of organisms other than the gonococcus, and the urethritis which is a legacy of a previous attack, or attacks, of gonorrhrea, but in whom the gonococcus was not demonstrable by our available methods of diagnosis. The line of demarcation between these two types was not well marked. But an arbitrary differentiation between the two groups can be made. The non-specific urethritis giving no history of a previous infection, and in whom no gonococci can be found but only secondary organisms, is an entity in itself. The incubation period may be long, perhaps as long as two months. The treatment for these cases was 1 : 8,000 potassium permanganate irrigations, sulphanilamide by mouth (3 grammes daily for four days), and T.A.B. hyperpyrexia. Complications were not seen. In those cases of urethritis which were most probably the legacy of previous gonococcal infection the treatment was difficult and exasperating, complications occurred and the prognosis was indefinite.
Some Experiences in the Treatment of Venereal Disease among British Troops in Iraq

NYD. VS. (Not Yet Diagnosed—Venereal Sore).

Not counting any cases which had a double infection, 645 cases were discharged from the Centre with the diagnosis of NYD. VS. Unfortunately, as I have already said, I left Iraq before all the replies to my circular letter had returned, and so I must remain ignorant of the ultimate fate of these cases. Of these 645 cases, 125 were evacuated to Shaiba before their sores were healed. Of the remaining 520 which were treated and discharged as cured from the Centre the average duration of stay in hospital worked out at 15·9 days. The longest stay in hospital before being discharged was sixty-two days.

Let me make it clear now that every case with even the slightest abrasion on the penis (sustained during coitus), and which was not proved to be syphilis, was diagnosed NYD. VS. on discharge from hospital, and fortnightly blood tests demanded for three months. This diagnosis resulted solely from the elimination of syphilis. No effort was made to isolate or distinguish the organisms responsible, nor were any intradermal tests available. The routine employed was the standard Army one of saline dressings, three dark-ground examinations and blood tests. The treatment adopted for a clinical soft sore, after three dark-ground examinations had failed to reveal the Treponema pallidum, was sulphanilamide by mouth—two tablets three times a day for four days, making a total of 12 grammes. Of the value of sulphanilamide in these cases I have no doubt whatever, and its efficacy can only be described as miraculous. So excellent were the results that local treatment of the sore mattered little, provided it was kept clean and an efficient drainage established.

These 645 cases of NYD. VS. I have classified into four groups.

(1) The traumatic group. 63 cases: All cases of abrasions and other traumatic injury sustained during coitus which did not proceed to ulcer formation and which were on the genitalia or pubic region are placed in this group.

(2) No adenitis present. 454 cases: The typical, small, multiple, irregular ulcers with yellow purulent bases and ragged undermined edges, usually found on the coronal sulcus of the penis, form the largest group. There is very little surrounding inflammation or reaction. There is usually some pain. There is no destruction of tissue, and when healed there is no scar.

(3) Inguinal adenitis marked. 122 cases: In this group glandular involvement of the inguinal lymphatic glands is the predominant feature, either with an active sore, usually single, or the scar of a healed sore. As previously explained I never made the diagnosis of lymphogranuloma inguinale. Clinically, this group can be subdivided into the latter condition, where the picture is characterized by large, slightly tender, solid inguinal glands, which often persisted for months and frequently relapsed, and for whom intravenous T.A.B. acted as a specific, and into those cases having red, tender, fluctuant "buboes." These "buboes," if treated with rest in bed, sulphanilamide by mouth and local heat, will, in most cases, resolve. Some, however, required aspiration with a wide-bored needle. Incision of these "buboes" is seldom required, and if performed may result in a chronic suppurating sore in the groin which may take many weeks to heal.

(4) The phagedenic ulcer. 6 cases: Most of the cases in this group which I saw got their infection in Persia and not in Iraq. They are rapidly spreading ulcers producing much surrounding inflammation in the tissues and great destruction, especially if there is not efficient drainage and there is a phimotic prepuce. The patient suffers much pain and runs a temperature of 101/103° F. The discharge from these ulcers is most particularly foul smelling. Lymphatic glandular involvement is not common. The first essential in the treatment of these cases is the establishment of good drainage which, in all phimotic cases, can only be achieved by a dorsal slit. Thereafter, I have got excellent results with the routine four-day dosage of sulphanilamide. As an example of the destruction of tissue which can result from these ulcers, I had one man, who, when his ulcer had healed, was left with a glans penis the top half of which only remained from a coronal section passing from his external urinary meatus to his coronal sulcus, leaving the channel of his urethra exposed on the under surface.
of his glans penis. This man had a dorsal slit performed, but unfortunately not early enough.

**Syphilis.**

The total number of cases of syphilis admitted to the Centre during the two years was 309. The majority of these were fresh cases which were diagnosed in the Centre, but there were also a small number which were admitted to the Centre subsequent to diagnosis, usually on account of some complication. Of these 309 cases, 75 were evacuated to Shaiba before their primary lesion was healed and they were fit to return to duty. Of the remaining 234 cases which were discharged to their units fit for duty, these men spent an average of 25.9 days in hospital. The longest stay in hospital was 116 days, although one man with a concurrent attack of gonorrhoea remained 126 days. Each man received an average of three injections of arsenic and bismuth before being discharged from hospital.

The following list of sources of infection will emphasize the dispersal of the patients, both before and after admission to hospital, and the impossibility of keeping in touch with them.

<table>
<thead>
<tr>
<th>Location</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baghdad</td>
<td>67</td>
</tr>
<tr>
<td>Hamadan</td>
<td>25</td>
</tr>
<tr>
<td>Egypt</td>
<td>9</td>
</tr>
<tr>
<td>Khanaquin</td>
<td>3</td>
</tr>
<tr>
<td>Mosul</td>
<td>51</td>
</tr>
<tr>
<td>Kermanshah</td>
<td>20</td>
</tr>
<tr>
<td>Alwaz</td>
<td>7</td>
</tr>
<tr>
<td>S. Africa</td>
<td>2</td>
</tr>
<tr>
<td>India</td>
<td>31</td>
</tr>
<tr>
<td>Teheran</td>
<td>18</td>
</tr>
<tr>
<td>Syria</td>
<td>4</td>
</tr>
<tr>
<td>Elsewhere</td>
<td>6</td>
</tr>
<tr>
<td>Basra</td>
<td>27</td>
</tr>
<tr>
<td>England</td>
<td>13</td>
</tr>
<tr>
<td>Palestine</td>
<td>4</td>
</tr>
<tr>
<td>Unknown</td>
<td>22</td>
</tr>
</tbody>
</table>

The different stages of the disease on diagnosis worked out as follows:

- Primary (T.P. positive: W.R. negative) 107 cases
- Late primary (T.P. positive: W.R. + +) 46 cases
- Secondary rash (W.R. + +) 48 cases
- Late secondary (No active lesion) 22 cases

No cases of neurovascular syphilis were admitted.

The drugs at our disposal varied. The majority of our injections were intramuscular, and these were associated with very little pain, apart from the initial one or two injections which were always more painful. The drugs used were "sulphostab," "sulpharsphenamine," and "MAB," with occasional small supplies of "NAB" and, during my last few months "mapharside." The bismuth preparations available were "bismostab" and "biglucol." Approximately two thousand injections each of arsenic and bismuth were given during the two years.

Before I proceed to outline the toxic effects encountered, I must once more refer to the conditions under which we were working. We would diagnose a case, commence treatment, and, once the sore was healed or the active stage passed, discharge the man back to his unit. Under unit arrangements the man's further treatment was continued. Provided the man developed no toxic reactions he would not be seen again by the Centre. And even if he did develop any it is quite possible that his unit might have moved out of the Command.

Eight cases developed toxic effects attributable to bismuth. The average amount of drug administered before these effects became apparent was 3.4 grammes, i.e. after 17 injections. In seven of these cases the only sign was an albuminuria, but two of these seven cases also showed a gingivitis associated with bad dental sepsis. The eighth case was one of gingivitis alone. In only three of the cases was the total albumin estimated, and this varied from 0.1 per cent to 0.05 per cent. One case of albuminuria had an old history of chronic osteomyelitis of the leg.

The scheme of treatment used was the standard Army schedule—weekly injections of 0.6 gramme arsenic, and 0.2 alternating with 0.3 gramme bismuth, for ten weeks, a rest period of four weeks, and then repeated a further three or four times.

At no time during this period of two years did jaundice—"infective hepatitis"—appear in an endemic form among men receiving injections of arsenic as out-patients, or in-patients, in this Centre. As already pointed out our patients came from great distances, and their treatment, after discharge from hospital, was continued under unit arrangements. Never
theless, a small number of men, averaging between ten and twenty a week, who were stationed locally, did attend the Centre once a week for injections of arsenic and bismuth. It is from observation of these men that the opening sentence of this paragraph is based. Since returning to India I have been amazed by the numbers of men seen on any out-patient injection day who have entries in their venereal case cards saying that they have had jaundice and are to receive no arsenic for six months.

Whether this freedom from such a complication was due to the fact that I have always boiled my syringes between each injection, or to the fact that the majority of our injections of arsenic were given intramuscularly, are points which merit much consideration.

Five cases of jaundice following injections of arsenic were admitted to the Centre. In two of these cases definite prodromal signs of intolerance to arsenic appeared before the icterus—urticarial rash, purpuric eruption and rigor in one of the cases. A third was a case of late secondary syphilis who developed jaundice after his twenty-fifth injection. Three months after his jaundice had cleared his W.R. and Kahn remained strongly positive, despite continuation of his treatment with bismuth. The remaining two cases admitted were probably cases of catarrhal jaundice, unconnected with arsenical intolerance.

One case of purpura was sent to the Centre. His attack commenced after his twenty-fifth injection, and consisted of hemorrhages from all mucous membranes. When I saw him he was quite well and fit, apart from a large area of skin on his right arm which was discoloured by a subcutaneous hemorrhage.

There were four cases of mild dermatitis. They all took the form of an eczematous condition, affecting mainly the hands and feet, which cleared up rapidly when the arsenic was stopped. They all had a previous history of skin trouble.

Exfoliative dermatitis occurred in three cases. These all occurred early on in treatment, after their fourth, sixth, and eighth injections of arsenic. They all recovered but remained in hospital for periods of sixty-two, seventy and one hundred days. One of these cases after recovery developed a well-marked pigmentation of the skin of the whole body.

Finally, in this summary of toxic effects attributable to arsenic there were two deaths.

**Case 1.**—Corporal, aged 28.

16.5.42: Admitted to hospital. No previous history of V.D. History of exposure seven days previously. Sore on penis seen one day ago. C.O.E.—Ulcer on inner surface of prepuce discharging serous fluid. Prepuce only partly retractable. W.R. +.


20.5.42: Anti-syphilitic treatment commenced. Sulphostab 0·45, Bi. 0·2.

23.5.42: Swelling of prepuce less.

26.5.42: Sulphostab 0·6, Bi. 0·2, I-M. (2).

28.5.42: Prepuce more retractable and urethral orifice visible.

2.6.42: Prepuce retractable; sore healed. Sulphostab 0·6, Bi. 0·3. Discharged from hospital.

9.6.42: Marked degree of phimosis with penile warts. To return later for circumcision.

Sulphostab 0·6, Bi. 0·2, I-M. (4).

15.6.42: Readmitted to hospital. Large tender gland in left groin. Sulphostab 0·6, Bi. 0·3. I-M. (5).

17.6.42: Commenced four-day course of sulphanilamide (3 grammes daily).

21.6.42: Swelling of gland in left groin still present, but now quite painless.

22.6.42: Circumcision performed under chloroform and ether.

30.6.42: Stitches removed; wound healing.

2.7.42: Redness and some swelling around circumcision wound. Sulphostab 0·6, Bi. 0·2. I-M. (6).

3.7.42: Commenced second four-day course of sulphanilamide.

7.7.42: Wound now clean and healing.

9.7.42: Sulphostab 0·6, Bi. 0·3, I-M. (7).
10.7.42: Partial collapse; temperature normal; skin cold and moist. Very lethargic; only co-operates with great difficulty, but appears to understand what is said to him although he does not reply. Appears to complain of pain in his throat. T.W.B.C.: 7,400.


Evening: Becoming more comatose with stertorous breathing.


1200 hours: Died. Temperature at death 110° F.

Post-mortem (Brain).—Macroscopic examination: Slight excess of cerebral spinal fluid, particularly noticeable over the sulci of the cerebral hemispheres. The cortical arterial system was engorged. In the grey matter of the cerebral hemisphere and basal ganglia small brownish areas were present, darker than the surrounding brain tissue and slightly translucent. They varied from ½ in. to ¾ in. in diameter. Vessels in these areas were engorged and very dark. There was nothing abnormal found elsewhere in the body.

Microscopic examination: Pathological change is limited to the white matter of the brain. Thalamus, internal capsule, caudate nucleus, cerebral hemispheres and pons are most affected, in that order. All the histological appearances found in hemorrhagic encephalitis, due to one of the pentavalent arsenicals, are present.

The vessels show patchy degeneration, occasionally actual necrosis of their endothelial lining, edema of the Virchow-Robin space, thrombosis, hemorrhage into the perivascular space and into the brain substance, laking of red blood corpuscles and leaking of a highly eosinophilic fluid into the white matter. Perivascular infiltration is present but nowhere marked. Advanced, patchy demyelination is the most extensive change present and forms the most marked feature of this particular case.

Cause of death: Poisoning, acute, due to neo-arseno-benzaldehyde. (J. M. Bowie. Major, I.M.S., Pathologist.)

Case 2.—Fusilier, aged 22.

Admitted to the Centre on 11.1.43. No previous history of venereal disease. His last exposure was on 23.11.42, as a result of which he developed a penile sore and was admitted a week later to a C.C.S. There the diagnosis of primary syphilis was made, a dark-ground examination from his sore having revealed the Treponema pallidum. His Kahn was + > 1. He was given three injections of arsenic at the C.C.S., the last one being given on 30.12.42. No ill-effects were recorded on his venereal case card following these three injections. On admission he still had a superficial ulceration along his frenum. There was no rash and his general health was good. At 14.30 hours on the day of his admission I gave him 0·6 gramme sulphostab (Boots—3 Aug. 40) intramuscularly and 0·2 gramme bismostab. Within five minutes of receiving the injection he developed retching and salivation which quickly passed into a comatose condition—pulse weak, fast and uncountable, and face and lips cyanosed. Despite adrenaline and coramine his breathing became more stertorous, his cyanosis increased and he died within an hour of receiving the injection.

Post-mortem.—"Commentary: (1) The congestive signs present are those following cardiac failure. (2) Pathological changes found are those due to a toxin or poison. (3) The degenerative changes found in the liver, kidney and heart indicate that the pathological changes found are of some duration, and could not have occurred in the hour which intervened between the administration of the drug and death. (4) The dilatation of the right ventricle is apt to occur when the myocardium is unhealthy. In this case degenerative changes were marked both macroscopically and microscopically.

"Opinion: In my opinion this patient had some idiosyncrasy to arsenic. The three previous injections had produced degenerative changes in the different viscera compatible with chronic arsenical poisoning. The sequelae of events which followed the fourth fatal
injection would appear to have been as follows: First, a nitritoid crisis occurred. This led to shock in which a peripheral circulatory failure occurred, with dilatation of the capillaries. This caused an excessive strain on the damaged myocardium which led to dilatation and death.

"Findings: In my opinion death was due to acute dilatation of the right ventricle in a person who had an idiosyncrasy to arsenic. Owing to this idiosyncrasy, fatty degeneration of the liver, and degeneration of the other viscera, which included myocardial degeneration, occurred." (A. Sachs. Lieut.-Col., R.A.M.C., A.D.P., Paiforce.)

BALANITIS.

The line of demarcation between balanitis and NYD. VS. is not always an easy one to decide. The typical case of an uncomplicated balanitis, as distinct from an acutely inflamed phimotic prepuce due to a concealed ulcer, is the partially, or completely, retractable prepuce with a purulent sub-preputial discharge and very little, or no, surrounding inflammation of the preputial tissues. The pathology of the condition is an acute inflammation limited to the mucous membrane of the prepoto-balantido fold. Varying degrees of this inflammation are met, from a hyperaemia with a slight serous discharge, to the frankly purulent discharge. In the milder cases, having a retractable prepuce, the condition responds readily to simple hygienic measures, being frequently caused by a lack of these measures. The purulent cases respond to sub-preputial irrigations and to sulphanilamide by mouth, but are very prone to relapse. These purulent cases are frequently left with a greatly thickened mucous membrane. The only cure for these cases, once the acute stage has passed, is circumcision. And the treatment of the acute stage does not call for a dorsal slit or any other form of surgical intervention.

At times associated with balanitis is the condition of penile warts. Being without diathermy or a cauteried my lines of approach to these were reduced to three. Moi warts I painted frequently with pure carbolic. Dry warts I painted with trichloracetic acid. Failing with either of these, and if the case was suitable, I performed a circumcision.

Appendix.

Graphical representation showing the duration of stay in hospital of the first 1,246 patients admitted to the centre suffering from venereal disease. The average duration of stay in hospital works out at 19.12 days. The maximum duration of stay was 155 days. Out of this number 63 were evacuated to Shaiba before being fit for duty.
Graph showing the monthly admissions of gonorrhoea, syphilis and NYD. VS.

Before closing I wish to pay a word of tribute to the R.A.M.C. Orderlies who worked with me—"S.T.O.s"—and a particular word for Sergeant P. C. Bushnell, R.A.M.C., whose work in the clinical side room (a tent) under very varying conditions of climate never varied. Apart from the dark-ground examinations and urethral smears which he examined for the British Section daily, he also did all the similar work for the Indian Venereal Section whose numbers were always double, and often treble, our own.