In 1944 I revisited Greece. Some of my friends I could not find ; the others were prematurely aged and looked ill. A distinguished medical professor limped badly from a knee injury incurred when a Nazi soldier kicked him off a moving tram. Venereal disease was extremely prevalent. The Germans had kept open the venereal diseases hospital (under the care of Professor Photinos), but they would permit the use of medicaments and food only for the treatment of these diseases in young women. Outside the cities no treatment of venereal diseases had been given. In the cities syphilis had increased at least five-fold and it was difficult to compute the increased incidence of gonorrhoea and chancroid. I do not know whether or not the Germans suffered to the same extent from venereal diseases as did our troops—it was difficult to obtain reliable data on this subject—but the German *régime* certainly fostered conditions which produced a high incidence. Professor Photinos had collected a very fine set of wax casts and models of skin and venereal cases, some of them very unusual, and a very profitable hour could be spent in his museum.

Conclusions

Looking back on the war years after a short interval, certain strong impressions remain.

(1) Venerologists abroad had a tremendous volume and variety of experience, the value of which can scarcely be measured.

(2) Contact with other peoples, with different standards and codes, different medical views and practices, was very stimulating.

(3) Our policy regarding venereal diseases was evolved gradually, on the spot, by trial and error and after much delay. It would have been extremely valuable if the War Office—and not the medical branch—had set out clearly the principles of prevention of venereal disease. For example, a bold directive was required on the exclusion of troops from brothels and on the provision of prophylactic centres, as well as a strongly formed public opinion on the subject of prevention. Army discipline regarding venereal diseases could have been made a very powerful factor in safeguarding health and efficiency.

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VENEREAL DISEASES IN THE ARMED FORCES OVERSEAS (2)*

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Reminiscences of experiences in wartime are apt to be incorrect, perhaps boring, and often best left untold. To attempt a comprehensive review of venereal diseases overseas would take up far too much space, so I shall content myself with describing briefly some recollections of my sojourns in North Africa, Sicily and South Italy, and later on of the advance from Normandy to Germany, from 1943 to 1946.

Much has been written already of the progress of venereal diseases during the war, of the inevitable high rate of incidence and especially of the treatment in the armed Forces, and in view of all this I shall give you very few statistics. One major slogan of the war was "conservation of manpower". No greater avoidable wastage of manpower than that due to venereal diseases existed, and the manner in which venerologists were able to combat this wastage will never receive the recognition which it deserves. The reduction in time to effect cures makes un-

*An address to the Medical Society for the Study of Venereal Diseases, 25th May 1946.

believable history compared with World War I. All venereologists had a second great goal: to achieve such a standard of cure as to obviate the old relapses and failures so prevalent in the years after that first great struggle. In both theatres of war the diseases met with were similar to those common in Great Britain, except that in the Mediterranean Theatre chancroid was extremely prevalent. A diagnosis of lymphogranuloma venereum was never established, and the only case of granuloma inguinale reported proved to be dermal diphtheria and was diagnosed as such only when paresis developed.

In North Africa venereal diseases existed but were not too worrying in incidence or in response to treatment. Chancroid, which few of us had met with to any extent before, responded well to chemotherapy if given for seven days at least. Prior to the invasion of Sicily and Italy complacency ruled, to be shattered in a night with the sudden increases in incidence of all the diseases and the complete failure of chemotherapy in gonorrhoea. Since then this experience has become worldwide. Never shall I forget the chaos and gloom in those early months in the Latin countries, when this scourge strained medical personnel, hospital accommodation and manpower almost to breaking point. Meanwhile, syphilis, treated with the accepted four courses of neosarsphenamine and bismuth, was a worry only in that for many reasons the default from regular treatment reached 50 per cent. How we prayed for penicillin in those days! We had, however, to wait and use all our ingenuity until adequate supplies were available and the prejudices against its use for venereal diseases were overcome.

As venereologists were so scarce, during the three months' preparation for the invasion of North-West Europe every endeavour was made to co-opt the help of all medical officers, still using the same medicaments as before, but increasing the two days' course of sulphathiazole in gonorrhoea to four days. Officers at all levels, particularly in field medical units, were taught injection methods, especially the administration of intravenous arsenic, so that treatment of syphilis might not be interrupted.

In the British Liberation Army, just as in North Africa, the first phase was calm; we were hemmed in for weeks in a small bridgehead where the civil population was sparse and not promiscuous; but interrogation of German medical officers, captured early in the campaign, gave warning that venereal diseases were very prevalent in the rest of France, Belgium and Germany. They also told us that, whereas in Western France gonorrhoea responded well to chemotherapy, this was not the case in the more easterly areas, where it failed, just as it did in the European countries bordering the Mediterranean Sea. Luckily, penicillin was released early, or many of us might still be in uniform.

Treatment with penicillin

As with all new treatments, early results were markedly successful, but it soon became apparent that to diagnose a case and administer penicillin were not the only requirements. Whereas most venereologists could show over 90 per cent of cure in sulphonamide-resistant cases of fresh gonorrhoea, some workers, dealing with the same strains of organisms and the same batches of penicillin, obtained only 70 per cent of successes. The residual failures, I am convinced, were due to poor standards of technique and sterility and often to irregularity of administration. The great variation of courses used by venereologists, as shown in Tables 1-6, is somewhat of a warning of what may happen once penicillin is more universally available. Unless adequate treatment and standards are maintained, we may meet one day with failures as great as those found with the use of the sulphonamides.

Rapid courses of treatment.—In an endeavour further to reduce the manhours lost, several rapid courses of therapy were tried. In the first group 8 injections of 12,500 units were given at fifteen-minute intervals. If there were not bacteriological cure within 24 hours, the course was repeated. The results in 164 cases are shown in Table 4. Four series, each of 100 cases, were treated with penicillin in a slow-release vehicle, the course differing also in other respects.

Calcium penicillin was injected in 3 cubic centimetres of 3 per cent beeswax in arachis oil. The immediate results for the four series are given in Table 5. The cases in this group have not been followed up to full tests of cure, but the patients have not shown (to date) any relapse after the initial cure.

Accidents and complications.—It is interesting that only three deaths from venereal diseases occurred. In one fatal case there was a straightforward anuria due to sulphathiazole. The dosage was less than 20 grammes and the condition was not relieved by ureteric catheterization. A postmortem examination of the kidney showed marked toxic degeneration of the tubules but no obstruction by crystals of the compound. The other two were cases of prostatitis following an acute gonorrhoea in which a staphylococcus, resistant to sulphonamides and penicillin, caused a generalized septicaemia. Other complications of penicillin therapy included the frequent appearance, 4–6 weeks after treatment, in men otherwise cured of their gonorrhoea, of arthritis or epididymitis not accompanied by a local relapse in the organs originally infected. With the cessation of continued injection therapy for syphilis, the incidence of jaundice from syringe infection decreased remarkably, but there is no doubt that also in the administration of penicillin infective jaundice may be spread; one medical specialist alone was able to demonstrate about 50 cases among men treated for gonorrhoea or syphilis with penicillin.

Social and psychological problems of prevention

In the early part of the period which I am describing, it was customary to refer all cases to hospitals, but it soon became obvious that we had to tackle the problems where they arose; consequently, venereal diseases units were forced to treat men in the advance lines in order to avoid evacuation, overloading of hospital beds and serious loss of manpower among fighting men. This revolutionary method was not accepted rapidly by the orthodox army medical officers, but divisional and corps commanders soon appreciated the advantages. The attitude of the authorities towards venereal diseases and those who treated them was still on the whole Victorian. It was amazing that regular army officers, both combatant and medical, seemed to be quite unable to appreciate the significance of the problems involved, and most of them seemed to be quite unwilling to face them. It was with the greatest difficulty that accommodation and help could be obtained for venereal diseases units at any level, and deplorable conditions often existed. In the general hospitals which admitted venereal diseases patients, the specialist staffs usually had to work long hours every day, in comparison with the bursts of activity with which surgeons and others had to contend; but there was a singular disinclination on the part of commanding officers or other medical officers to supplement the inadequate staffs which were coping with venereal diseases.

The prevention of venereal diseases was one aspect of the whole matter which we did our utmost to tackle. There were actually two problems: (1) the prevention of exposure to risk and (2) the prevention of infection. The latter—a negative approach no doubt—was attempted by means of the free issue of condoms and antiseptic mercurial creams and the provision of prophylactic ablution centres. Condoms had not been used by 56 per cent of those who contracted venereal diseases, because, as the victims explained, “the woman looked respectable”, “seemed well educated”, often “told them that she had a horror of venereal diseases herself” or “assured them that she was clean”, or even “carried a card, stamped weekly by the civil authorities, suggesting that she had been carefully examined”. A further 17 per cent did not use condoms because the use of them would impair their pleasure, 10 per cent because the condoms were not available and 13 per cent because the men had been under the influence of alcohol. Despite all our endeavours, it was an almost hopeless task to get men to use even well equipped prophylactic ablution centres after exposure to risk.

The psychiatrists made many attempts at formulating reasons for the excessive promiscuity of wartime. Long absence from home was probably the most

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TABLE 1—RESULTS OF PENICILLIN TREATMENT OF 296 CASES OF EARLY SYPHILIS OBSERVED FOR MINIMUM OF SIX MONTHS*

	TYPE OF SEROLOGICAL REACTION	NUMBER OF CASES
(1)	<i>Seronegative</i> at the time of diagnosis and remaining so at subsequent surveillance up to 6 months Of these cases 12 (8.4%) showed a positive Kahn reaction after treatment, but it had reverted to negative at the end of 2 months†	143 (48.3%)
(2)	<i>Seronegative becoming seropositive</i> 5 became positive at 2 months 1 became positive at 4 months All remained positive at 6 months but the positivity was less than 20 Kahn units	6 (2.03%)
(3)	<i>Seropositive becoming seronegative</i> 48 became negative at the end of 2 months 72 became negative at the end of 4 months 20 became negative at the end of 6 months	140 (47.3%)
(4)	<i>Seropositive remaining seropositive up to the end of 6 months</i>	7 (2.36%)
	Total number of cases	296

*Treatment consisted of a total of 2,400,000 units given in 40,000 unit doses every 3 hours for 7½ days, at venereal disease treatment centres attached to general hospitals or to medical units in the advance lines.

†A much larger percentage probably would have given this result, but it was a routine in all centres to repeat the Kahn test before the end of 2 months' surveillance.

TABLE 2.—RESULTS OF PENICILLIN THERAPY IN 1,602 CASES OF SULPHONAMIDE-RESISTANT GONORRHOEA

(1) NON-COMPLICATED CASES.			
Cure with single course of penicillin	Number of cases	Number requiring adjuvant treatment	Percentage
3 injections of 50,000 units	13	3	23
6 injections of 15,000 units plus 1 of 10,000 units ...	208	4	2
5 injections of 20,000 units	300	8	2.7
8 injections of 15,000 units	788	40	5.1
6 injections of 20,000 units	188	33	17.5
TOTALS	1,497	88 (5.9%)	
(2) COMPLICATED CASES*			
(a) Cure with single course of penicillin	Number of cases	(b) Failure with single course of penicillin†	Number of cases
Arthritis	3	Arthritis	3
Epididymitis	30	Epididymitis	5
Prostatitis and vesiculitis	13	Prostatitis and vesiculitis	2
Littritis	19	Littritis	4
Total	65	Total	14

*In all these cases the suitable adjuvant treatment was given as well.

†Failure=positive finding of gonococci.

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convenient explanation, and eighteen months' service overseas was apparently the zero line with men who were otherwise stable and not habitually promiscuous. Age played little part, marriage was not a strong deterrent and fear decreased with absence from home, particularly among certain colonial and allied troops. The arm of the Service did not seem to matter; rather it was a question of

TABLE— 3.—RESULTS OF PENICILLIN THERAPY IN 1,160 CASES OF FRESH UNTREATED GONORRHOEA

Uncomplicated cases cured with single course of penicillin*			
Course of treatment	Number of cases	Number requiring adjuvant treatment	Percentage of total
6 injections of 15,000 units plus 1 of 10,000 units ...	196	—	—
5 injections of 20,000 units	215	5	2.32
8 injections of 15,000 units	491	20	4.07
6 injections of 20,000 units	192	13	6.7
1 injection of 40,000 units plus 5 of 20,000 units ...	86	—	—
TOTALS	1,180	38	3.2

*Injections given at three-hourly intervals.

TABLE 4.—RESULTS IN 162 CASES OF RAPID COURSES OF PENICILLIN THERAPY*

Results obtained	Number of cases	Percentage of cases
Cure with single course	93	57
Cure with 2 courses	45	27.6
Cure with 3 courses	7	4.2
Failure with 3 courses, but subsequent cure with a further routine three-hourly course ...	19	11.5
Total	162	—

*Each course consisted of 8 injections of 12,500 units of penicillin given at 15-minute intervals.

TABLE 5.—RESULTS OF TREATMENT OF 400 CASES WITH PENICILLIN IN A SLOW-RELEASE VEHICLE

Method of administration	Percentage of cures	Mode of treatment
1st series (100 cases) 100,000 units calcium penicillin in 1 injection ...	77	Kept in hospital for 8 days
2nd series (100 cases) as in last series with additional 40,000 units sodium penicillin. Both injections given at same time... ..	94	Kept in hospital for 8 days, but with heavy fatigue
3rd series (100 cases) As in 2nd series	88	Treated as out-patients and reviewed at 4 and 8 days after full duties
4th series (100 cases) Calcium penicillin, 150,000 units	95.8	Treated as out-patients on full duties

For discussion of this group of cases see p. 160

geographical position and opportunity. Some reviews suggested that the risks decreased with rank, but there always seemed to be a very large proportion of

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senior non-commissioned officers in venereal diseases wards. Religion (when this factor was studied) did not seem to play a big part, although the rate of incidence seemed to be higher among Presbyterians and Roman Catholics. Undoubtedly, as with malaria—that other disease of neglect and personal carelessness—bad soldiers provided a large percentage of our venereal diseases casualties. Another great factor, to my mind, was that of discipline and morale in the unit. There was no question that the Officer Cadets Training Units turned out officers who were highly skilled in the art of war but singularly inexperienced in that of managing men. There seemed to be a general inability among soldiers to entertain themselves. It was my impression that the very high standards among professional artists of stage, screen and radio have “killed” the inexperienced amateurs.

We tried to educate the soldier by means of pamphlets, especially in leave centres

TABLE 6.—RESULTS OF TREATMENT OF 150 CASES OF NON-GONOCOCCAL URETHRITIS

(1) NON-COMPLICATED CASES		
Courses of treatment and results	Number of cases	Numbers requiring adjuvant treatment
(a) Cure with one course of penicillin (three-hourly injections) after failure with sulphonamides	86	14
(b) Cure with penicillin alone	24	9
(c) Failure with sulphonamides plus single course of penicillin (without adjuvant treatment)	21	—
Total	131	23
(2) COMPLICATED CASES*		
Failure with sulphonamide plus single course of penicillin (without adjuvant treatment)		
Epididymitis		14 cases
Littritis		4 „
Prostatitis		1 „
Total		19 „

*This series of 150 cases shows the relative failure of penicillin as compared with results in gonococcal urethritis.

such as Brussels and Paris. The well-known approach by means of posters was balked habitually by the finer feelings (?) of a high-ranking minority and particularly by the Church. These authorities did allow us to use posters of the type issued by the Ministry of Health in Great Britain, but I did not consider these to be robust enough to appeal to men so far removed from normal domestic influences. In Algiers, once the Arab quarters or “Casbah” had been placed out of bounds, risks could be run only in the brothels. These were under good medical control and gave rise to little infection, especially as adequate ablution centres were placed in close proximity to the brothels and Military Police directed those who emerged from brothels to the centres for preventive treatment. Similar conditions prevailed throughout North Africa, except that the standards of medical supervision fell far short of those in Algiers.

In Sicily and Italy we met a world sexually mad. Women of all ages were easily available, partly because of the economic chaos which made chocolate, food and cigarettes their only price. In the streets of Italian towns, such as Naples, soliciting and pimping were unbelievably prevalent and open. Wines of doubtful strength were thrust upon the soldiers, and it was only due to the fact that Naples was placed out of bounds on account of typhus that the incidence of venereal diseases did not rise to heights which might have made the campaign quite impossible. The civil authorities were quite unable, if not unwilling, to tackle the problem, and the

standards of inspection were deplorably low ; it was no uncommon thing to find a prostitute buying a negative blood report. Allied Military Government tackled the problem to the best of its ability, but it will take years to clean up these areas.

The belief that the recognition of brothels is the only cure was often thrust at me, especially by senior officers of the medical services. Judging from the results of experience in Algiers, the belief would seem to have some foundation. In Naples one eminent commander decreed that brothels should be available for his troops, especially those on leave ; but the incidence of venereal diseases which resulted soon produced a demand for a reversal of this order. Where there is promiscuity among women in the streets of a city, brothels will never remain uninfected.

So deplorable were all the factors predisposing to venereal diseases, that Lees and I wrote a treatise (Lees and Campbell) which was accepted by the War Office as a guide for all future theatres of war. However, as a result of the conglomeration of orders with which commanding officers had to deal, the recommendations were often forgotten. In the British Liberation Army, Field-Marshal Montgomery had to write very stern letters reminding commanding officers of their great responsibilities in these matters.

In France and Belgium the enthusiastic welcome to our men coming as liberators was offset only by the easy promiscuity of the population and by a high rate of incidence of venereal disease in these countries so long occupied by the Germans. No less was disease prevalent among German women, who, despite all attempts to prevent fraternization, prostituted themselves for food and chocolate in the early months of our occupation of that sadly battered country. World War II has confirmed the depressing fact that, despite the higher standards of education throughout the world in the preceding years, once war is unleashed promiscuity and venereal diseases assume the tremendous proportions which have accompanied wars throughout history. The consolation with which we are left is that standards of treatment have been so high and the work of venereologists, nurses and orderlies so commendably unselfish, that the aftermath left will not prove to be so damaging as in previous wars.

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DISCUSSION ON THE PRECEDING PAPERS

Dr. G. L. M. McElligott (the President) said that he thought that all those present would agree that the two papers had been no mere "travelogues", but that they had learned a great deal from them as well. They would all realize and agree that at home, now, they were in the midst of an epidemic of venereal disease which was not yet controlled. The ideas put forward about the prevention of venereal disease, as well as about its treatment, would be helpful.

With regard to the short-period sulphonamide treatments which had been advocated by certain workers, he had felt in 1943, and still felt now, that if a case of gonorrhoea did not react to a sulphonamide within two days it would not react at all. He would be interested to hear from Dr. Lees whether or not any work on this aspect of treatment had been done on the Continent. He had spoken to an American pathologist in Naples, who was probably connected with the laboratory to which Dr. Lees had alluded, and he had been told that the gonococcus, in such cases as had been investigated, was susceptible to sulphonamides *in vitro*.

Dr. A. H. Harkness had been particularly interested in Dr. Lee's statement that at one stage in the Italian campaign the two-day course of sulphonamide therapy had been partly responsible for the high rate of incidence of drug resistance. Dr. Harkness considered that the sulphonamide drugs still held an important place in the treatment of acute gonorrhoea, because in its treatment with penicillin there was always the danger of delaying the development of a concomitantly acquired syphilis. In view of this fact he still prescribed, in the first place, a course of sulphathiazole or sulphadiazine. Penicillin was used only in the treatment of failures, but he always made a thorough search for the primary lesion of syphilis before giving the injections. By the adoption of this method, the cure of gonorrhoea was delayed in only a small percentage of cases (the incidence of drug resistance not being so high as many workers thought) ; there were fewer