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SYPHILIS INSONTIUM IN PALESTINE

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HISTORICAL

FOR several years during the decade following the war I was Medical Officer of Health for the Jerusalem District under the British Mandatory Power in Palestine. During that period I had the opportunity of studying the unusual incidence of syphilis which had been observed by my predecessor in certain localities. From the peculiar nature of its distribution, which sometimes involved whole families and even villages, and for other reasons which are advanced in this paper, I formed the opinion that it was innocently spread. With this explanation of the title I leave it to the reader to judge whether or not he agrees with my view.

The disease appeared to be limited to certain localities. In the North the town of Hebron and the region around it, and some of the villages near Jerusalem and Bethlehem; and in the South the Bedouin districts round Beersheba and Gaza were, as far as was known, the only areas in Palestine seriously affected.

A careful search failed to reveal any publications on the subject in either the Arabic or Hebrew languages, but I found a reference in English by Masterman (1919). This writer worked in Jerusalem from 1893 to 1914, and makes the following statement. "Syphilis while by no means so prevalent as in European lands, is not uncommon among the town-dwelling Moslems of the middle and upper classes, but on the whole it is of a rather mild type. The relative infrequency of this disease has without doubt much to do with the rarity of chronic nervous diseases such as locomotor ataxia." Masterman's hospital admitted, for missionary reasons, primarily Jewish patients, and he thus had little opportunity of seeing the village Arabs.

Paterson, the medical missionary of Hebron, provided me, however, with a mass of valuable information. He worked there from 1892 till the war and from 1918 to

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1922, and has a different story to tell. In a personal communication (1929) he says, in contrasting his experience with that of Masterman, "I was in the thick of the malady in the heart of an Arab district 40,000 strong. Even with such fitful and partial attendance at my clinic as occurred, largely on account of religious and quack opposition, during the first and second years of my work, half an eye could see that syphilis was everywhere and rampant. Not until attendance became regular and large did its appalling preponderance, an easy first, malaria not excepted, almost daunt me." He puts the incidence amongst his patients at 50 to 60 per cent., and says, "primaries were rarely seen, secondaries abounded, tertiaries were common, quaternaries apparently nil." Children, adolescents and adults of all ages and both sexes were about equally affected. He is not in agreement with Masterman as to the mildness of the disease, and states that it was often intractable. Paterson gradually formed the opinion that it was in the main non-venereally spread. Working single-handed under difficulties which do not exist to-day, it formed no part of his task to compile statistics like those contained in this paper. He advances, however, good reasons for his belief. Chancres or chancre scars were rare. Gonorrhœa was seldom seen and urethral stricture almost unknown. Patients had no shame in showing him their syphilitic lesions. Gonorrhœa, on the other hand, when it did occur, was hidden as being evidence of illicit intercourse. This is not surprising, for, in accordance with the Moslem code of behaviour, death is the punishment for the crime of sexual incontinence. Women were, and still are, not infrequently slain by members of their own family for such a reason, and it is only with difficulty even to-day that Arab judges are induced to agree to the death penalty for murder committed under such circumstances. The woman was not the sole sufferer, for the guilty male was followed, often with the utmost tenacity, until the opportunity to slay him arose.

With regard to the time and manner in which syphilis was introduced into this region, Paterson thinks that it came about in the following way. Until about the middle of the nineteenth century the "Mountain of Hebron" was untouched by syphilis. Its inhabitants were a turbulent, truculent people, virtually cut off from the

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rest of the country. The Sultan's writ scarce ran there. The town itself had been for centuries ruled by one or other of its powerful families. The place even defied the conqueror of Turkey, Ibrahim Pasha, who in the 1840's administered South Palestine for seven years. As a result of this defiance, he reduced it and subdued the inhabitants. On his retreat the Ottoman Government re-occupied the town in force. From that time the recruiting sergeant held sway there and annual levies replaced the occasional conscript. For the first time in its history large numbers of the young men found themselves in urban areas all over the Turkish Empire and freely exposed to the risk of venereal infection. On returning they would readily bring the seeds of disease to the virgin soil of their native land. And just as in Spain, Italy, France and Germany at the end of the fifteenth century, it would take root and multiply exceedingly.

In assessing the most likely channels of infection, Paterson reached the same conclusions as I did at a later date. "Lip contact," he says, "sufficed to diffuse the contagion widely and rapidly." The Arab is a lavish kisser. Mothers, fathers, brothers and sisters are prodigal in this form of physical demonstration of their affection for younger children and to some extent for each other. Adult males embrace on meeting, and mothers do not confine their kisses to the face, lips and hands. Infection would be still further facilitated by the promiscuous use of the same *argeelah* or hubble-bubble, and eating and drinking vessels.

It does not require an accumulation of statistical evidence to permit of due weight being given to the opinion of one who could claim twenty-six years' experience of the disease which he describes. And it is interesting to find that L. Glück (1888 *et seq.*), working in Bosnia and Herzegovina, and E. von Düring (1902) in Asia Minor, have published descriptions of syphilis insontium in those countries which closely resemble the account here given.

MANIFESTATIONS OF THE DISEASE

I. HEBRON

In September, 1924, a Government venereal diseases' clinic was established in the town of Hebron. Careful

TABLE I

Being an Analysis of Cases attending the Hebron Clinic from September, 1924, to December, 1929, in two Groups: Group A from September, 1924, to December, 1926, and Group B from January, 1927, to December, 1929.

The Hebron Statistics.

	Group A.	Incidence per cent. of cases.	Group B.	Incidence per cent. of cases.
I. Primary Lesions.				
(a) On the genitalia	3			
(b) On the lips or in the mouth	7			
(c) In other situations	4			
	—			
	14	0.7	1	0.1
	—		—	
II. Affections of the skin and subcutaneous tissues.				
(a) Secondary.				
(1) Rashes	15		125	
(2) Condylomata	51		11	
(3) Other forms	295		92	
(b) Tertiary.				
(1) Gummata, non-ulcerated	18		7	
(2) Ulceration	215		7	
	—		—	
	594	28.2	242	31.1

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III. Affections of the lips, mouth and tongue, pharynx and nose, excluding destruction of the hard palate and bridge of the nose.					
(a) Secondary.	(1) Sore Throat	63			17
	(2) Mucous patches	797			217
	(3) Lesions on lips	98			21
	(4) Fissured tongue				12
(b) Tertiary.	(1) Gummata	161			2
	(2) Ulceration, excluding nose	25			107
	(3) Ulceration in nose				9
		<u>1,144</u>	54.4		<u>385</u>
					49.5
IV. Affections of cartilage, bones, joints, including destruction of hard palate and bridge of nose.					
(a) Tertiary.	(1) Destruction of hard palate	23			2
	(2) Destruction of bridge of nose	53			4
	(3) Other lesions	42			25
		<u>118</u>	5.6		<u>31</u>
					4.0
V. Other affections.					
(1) Headaches and bone and joint pains		99			54
(2) Laryngitis		78			49
(3) Affections of the eyes		11			2
(4) Cardio vascular lesions		3			—
(5) Affections of the C.N.S.		7			0
(6) Varia		28			14
(7) Congenital		8			0
		<u>2,104</u>	11.1		<u>778</u>
	GRAND TOTAL				15.3

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records were kept, and at the end of five years' work these were tabulated and are presented in Table I. It will be observed that they are arranged in two groups, A and B. This has been done because of the 2,104 cases in group A, which represents the first two years' work, only a proportion were subjected to a blood Wassermann examination. The majority presented lesions which were so typical that it was possible to make a diagnosis without examining the blood.

Group B represents the next three years' work. During this period blood examinations of all patients with manifestations of a syphilitic nature were undertaken, and the series is limited to those in whom the reaction was positive. We found in point of fact that 99 per cent. of patients so examined gave a positive blood Wassermann reaction and the lower numbers, as compared with Group A, are due to the fact that fewer patients were attending the clinic than during the initial years.

ANALYSIS OF TABLE I

Sex Incidence

	Males.	Females.
Group A . . .	40 per cent.	60 per cent.
Group B . . .	38 „ „	62 „ „

The high incidence amongst females corresponds with the findings of L. Glück and E. von Düring already quoted, and J. Neumann (1884 *et seq.*, South Austrian States).

Age Incidence.—This is presented, along with the age incidence, in another series of cases in Table II.

Primary Lesions.—In Group A there were 0.7 per cent. and in Group B 0.1 per cent. of primary lesions. This is in marked contrast to what is seen in syphilis clinics in civilised countries. It will be noted that in Group A three were seen on the genitalia whereas more than twice that number were on the lips or in the mouth and four in other situations. That is to say, that there were eleven in “non-venereal” to three in “venereal” situations.

Affections of the Skin and Subcutaneous Tissues.—These accounted for about 30 per cent. of the lesions in their respective groups. Inasmuch as the ratio of primary to other manifestations has been observed to fall much below the figure for modern venereal diseases clinics in

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civilised countries, so, in reverse fashion, does the proportion of affections of the skin and subcutaneous tissues far exceed it.

The lesions presented all grades of severity from roseola to rupial encrustment and an assortment of shape and form sufficiently varied to please the eye of the most fastidious syphilologist.

Affections of the Mouth and Nose.—If the ratio of skin affections is so high as to attract attention, the proportion of mouth and nose manifestations may fairly be regarded as quite exceptional. It will be observed, for example, that every second or third patient presented mucous patches. It was these lesions which were chiefly responsible for bringing the patients to our clinic. They paid no attention to a primary lesion on the genitalia. Skin manifestations would often be suffered without concern. But mucous patches in the mouth and on the lips were uncomfortable and interfered sufficiently with the business of feeding to demand attention.

Other Affections.—In this group interest centres around the scarcity of the late lesions of the central nervous system. Headaches and generalised pains were common complaints enough, but only seven "established" lesions are recorded. Only one of these was a typical case of tabes dorsalis and no case of general paralysis was observed. Nor are such cases seen amongst the inhabitants of this area in the general clinics to which the native is accustomed to resort. Finally, examination of the records of admissions to the two mental hospitals of Palestine failed to reveal a single case of general paralysis drawn from the Arabs of the syphilised areas.

Abortions.—The low incidence of neuro-syphilis and what appeared to be a marked scarcity of congenital manifestations led to an investigation of the abortion rate. Amongst fifty married women in Group B, abortion occurred in seven only. The average number of miscarriages per head in this series was 1.8. These figures do not exceed the rate for healthy native women in Palestine.

II. NAHALIN

In April, 1928, it was found that the village of Nahalin, to the south-west of Bethlehem, was heavily infected. Here, in contrast to Hebron, the infection had been

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recently introduced. If it had been of long standing we would certainly have known of it before.

Nahalin is a closely built village amongst the hills. The houses are small, and the families, which generally include several relations, live together at close quarters, often under the same roof as their animals. It has a population of 380, of whom seventy-five, or 23·5 per cent., were found to be diseased. It is divided into six quarters. Two of these quarters were more heavily infected than the others. The incidence in them rose as high as 37 and 38 per cent.

The lesions presented the characteristics with which we had become familiar at Hebron, and 69 per cent. of blood Wassermann examinations made gave positive reactions.

The unusually high incidence of the disease among the young which had been observed at Hebron was accentuated in this epidemic. The figures are presented in Table II.

TABLE II
Age Incidence in Hebron and Nahalin Cases

Age period.	Incidence per cent. of cases.		
	Hebron.		Nahalin.
	Group A.	Group B.	
Birth to—			
1 year . . .	1·2	0·8	3·3
1-2 years . . .	1·5	0·8	3·3
2-5 „ . . .	6·8	1·1	13·3
5-10 „ . . .	15·1	9·9	14·6
10-15 „ . . .	12·3	9·7	5·3
15-25 „ . . .	23·5	26·2	17·3
25-45 „ . . .	31·1	40·3	26·6
45-60 „ . . .	6·7	10·2	13·7
60 and over . . .	1·8	1	2·6

It will be seen that the incidence per cent. of cases of ten years and under is as follows :—

Proportion of Cases aged Ten Years and Under.—

Nahalin	35·4 per cent.
Group A	24·6 „
Group B	12·6 „

It is upon the age incidence here presented that the main

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argument for the innocent spread of infection is based. Children under ten cannot be regarded as acquiring the disease venereally.

It is not only, however, amongst the young that the proportion is high. We find the same tendency in persons of forty-five and over. An analysis of the figures on this basis gives the following results.

Proportion of Cases aged Forty-five Years and Over.—

Nahalin	.	.	.	.	6.3 per cent.
Group A	.	.	.	.	8.5 „
Group B	.	.	.	.	11.2 „

These rates are high for a venereally contracted infection.

At Nahalin the further opportunity was taken to trace the infection in as many families as possible. Three typical genealogical trees are presented. They indicate how widespread was the infection. For instance, in No. 2 a grandmother of sixty, her children of sixteen, twenty, twenty-two and twenty-five, and her four grandchildren between one and three years old, all had early secondary lesions. Such a state of affairs would be impossible if the disease were venereally spread. In the first place, those at the extreme ages could not have contracted it in this manner. In the second, the fact that all the cases were in the same stage indicates that they were all infected about the same time. This is what occurs when infection takes place by simple contact. It is quite foreign to conveyance by the venereal route.

DIAGNOSIS

A diagnosis of syphilis was based upon the clinical manifestations and blood Wassermann reaction, and the *Treponema pallida* was demonstrated by Fontana's stain in fourteen patients.

The possibility that the condition might not be syphilis, and that we were dealing with frambœsia or yaws occurred to us. Yaws had never been described so far outside the tropical belt as Palestine (Lat. 35°, N.) nor had the natives ever had commercial or other relations with those parts of the world where it is endemic. An incidence of mucous patches so high as 50 per cent. is foreign to frambœsia. In the latter disease, males are more frequently affected than females (Shircore, 1930, East

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FAMILY TREE, No. 1.—NAHALIN.

This family tree, also from the village of Nahalin, is similar to No. 1. It brings out strikingly the distribution of mucous patches alike in the very old and the very young. All those alive lived closely huddled together in a condition of extreme poverty and dirt.

♂⁴₂ = Legend: Male child who died at 4 months. Dead.

FAMILY TREE, No. 3.—NAHALIN.

Another family tree from the village of Nahalin. It displays the same conditions as Nos. 1 and 2, but to a somewhat less extent.

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Africa and Manson Bahr, 1928), whereas in my series the contrary is recorded.

TREATMENT

Here was a syphilis of an aspect so different from that which it presents in civilised countries under modern conditions that one was naturally led to enquire whether in the varied history of the disease it had shown itself in such a form. A study of the literature soon led me to the discovery that not only has this been the case in the past, but that even to-day in countries like Morocco and Russia similar conditions prevail. It is to such a condition that the name endemic syphilis may properly be applied, and it is where it is endemic that the non-venereal route is found to play a considerable part in its dissemination.

Of particular interest in this field is the wealth of almost forgotten German literature which appeared during the last decade of the nineteenth century over the names of Neumann, Zeichmeister, Von Zeissl and L. Glück. Their description of the endemic in Dalmatia, Croatia, Bosnia and Herzegovina and of the widespread measures adopted to control it provide a romance of State medicine. Science has since that time placed in our hands weapons of which these workers were deprived. Thus in Palestine in 1924, thanks to the discoveries of Schaudinn, Wassermann and Ehrlich, we were better equipped to combat the disease.

Nor was our problem so vast. The Hebron area had a population of 40,000. Out of that number it was estimated that 5 per cent. had active lesions. Two thousand persons thus required to be dealt with. The numbers in South Austria in Glück's time were much greater.

We had the good fortune to appreciate early that infection spread mainly from the active secondary lesions in the mouth. In addition, we realised that even if left to itself the disease appeared to be rarely followed by the sequelæ which make thorough and prolonged treatment so prominent a feature in venereal diseases clinics in England at the present time. Besides this we knew, and so, very soon, did our patients, that one or two injections caused the active infective lesions to clear up. It was clear that the most important thing to do was to heal as many of these lesions as quickly as possible. Our treatment was therefore planned with this object, and in spite

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of a good deal of criticism we kept it consistently before us.

It will also be realised that the frequent examination of the blood for the purpose of controlling treatment would have increased the cost of and labour entailed in our work. Patients would not return voluntarily during or at the end of the course for this purpose. Indeed, it was at first impossible to get them to do so even for injections as soon as their sores had gone.

They had to be cajoled, begged, and almost beaten into coming. All the weight of authority exercised legally and often illegally was for long necessary to make them submit even to six weeks' regular treatment. A four to six hours' absence from her home, involving the physical labour of a walk which few English women would undertake, presented little attraction to the ignorant Arab mother with three or four of a family to leave at home and one or two to drag or carry with her. In Palestine the husband rides a donkey, his wife follows on her feet. Women and girl children are often no more valued than cattle. She would receive little but discouragement from her man when the time came to set out.

In the Hebron clinic, based upon a certain amount of previous experience, we adopted as standard a minimum course of 4 grammes of neosalvarsan. This was given intravenously once a week in doses ranging from 0.3 grammes to 0.9 grammes dissolved in 5 to 10 c.c. of distilled water. The course occupied six weeks or more. The patients themselves generally provided the intervals of rest, which form a feature of arsenical therapy to-day. Few immediate and no late ill-effects were observed. Vasodilator reactions were rare, and jaundice is not recorded. The lesions healed quickly, sometimes after two injections. This was, as I have pointed out, a disadvantage from one point of view, for, as a result, it became difficult, often impossible, to secure an attendance for the rest of the course. Neither mercury, bismuth nor potassium iodide was employed as a routine. The patients objected to the intramuscular route either for neosalvarsan or the metal, and they threw away their bottles of iodide mixture. In Series A the Wassermann reaction was used only as an aid to diagnosis in the doubtful cases, in Series B, however, I insisted on it being carried out as a preliminary to treatment in every case.

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For the reasons already presented, it was not often employed in the control of treatment.

The question of the permanency of our results naturally presented itself, and we arranged to undertake the examination of patients in their villages at varying periods after treatment had ceased.

Observations made by me in June, 1927, and December, 1928, on 113 cases two years or more after the completion of treatment showed eighteen recurrences. These consisted of joint pains, fissured tongue and mucous patches in the mouth. Eight fell in the last two categories and were regarded as still infectious. In 1929, 515 patients were again observed two years after completing treatment. Eighty-six of them, or 17 per cent., required a further course. Some of these had only neuralgic pains, some had laryngitis, some still had mucous patches and skin lesions. 6.4 per cent. fell in the last two categories and were therefore infectious. These results are by no means perfect. But by the end of 1929, at no very great expense, the incidence in most of the affected villages had been considerably reduced.

NAHALIN

It was not until 1928 that the village of Nahalin became seriously infected and we were thus able to apply the experience already gained to the problem as it presented itself there. Just at this time, too, by a measure of good fortune, our attention was directed to an arsenical preparation which was on the market in tabloid form. This was Spirocid, a Bayer preparation, which had been in use for some time in Palestine and other countries in the treatment of spirochætal conditions and particularly in yaws. It was decided to give it a trial.

The dosage recommended by Oppenheim was employed and was as follows: For adults two of the 0.25 gram tabloids on the first day, three on the second and three on the third in the morning before food. A rest of three days was then prescribed and the dose repeated. This was continued until a quantity equal to approximately one tablet to each kilogramme of body weight had been taken. Proportional quantities were used for children, and the course lasted for six weeks to two months. The experiment justified our expectations. Amongst the seventy-five patients who received treatment in Nahalin, all the

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open lesions were healed in less than four weeks and the obvious advantages of oral administration for adults and still more so for children were experienced. No ill-effects were noted.

Replacement of the needle by the tabloid had important practical advantages. The drug could be administered by a male nurse instead of by a doctor. As soon as a survey had revealed the extent of the infection and a list of all the patients had been prepared, the attendant was despatched to the village and remained there until his work was finished. It was his duty to administer the prescribed dose to each patient with his own hand, and the more thoroughly he did this the sooner were they all cured and he could return to his home. The difficulty of obtaining continuous attendance until the course was completed had been overcome, and, what was of importance from the preventive point of view, it was possible to render all the sufferers non-infective at one time. By this means syphilis in almost epidemic form was cleared out of the village of Nahalin in two months, and no relapses had been observed up to two years later, when this paper was commenced.

The success of the Nahalin experiment led to the adoption of the method on a more extensive scale. It was gradually applied to the whole of the affected region. It is justified on the grounds that patients, whether they be thoroughly treated, insufficiently treated, or not treated at all, do not appear to develop those sequelæ which make syphilis a dread disease elsewhere. The policy of dealing with the infecting source and letting the rest take care of itself has so far proved sound in Palestine.

DISCUSSION

Since this paper was written I have had the opportunity of reading a publication by Hudson and Young (1931). They have worked for a number of years at Deir El Zor in the Middle Euphrates, and describe syphilis as they see it amongst the Bedouin of that district. It presents the same features as in Palestine, and sequelæ are an inconspicuous feature.

This question of the incidence of sequelæ is one which has long teased the syphilologist. It was apparently lower in the "good old days" when the disease was

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permitted much greater licence than it is at present. What I have described here is a picture of syphilis in its former clothing ; a return to the fashions of the eightennineties.

What are the essential differences to-day ? Simply these : that the patient reports to his doctor sooner ; that, as a result, treatment is instituted at an earlier stage ; that it is more energetically practised and continued longer. The question naturally arises as to whether all these changes have been for the better. It is one which leading syphilologists are constantly asking themselves, and I do not pretend that our experience in Palestine has provided the answer. But it is not an isolated experience. In Morocco at the present time, in Russia and on the Euphrates where old-fashioned conditions still impose " old-fashioned " methods the dreaded sequelæ of syphilis are conspicuous by their absence.

Various theories have been advanced to account for the apparent increase of neurosyphilis in modern times. Both seed and soil have been held to have their share in the responsibility, and our methods of treatment have not gone unquestioned.

The author's experience suggests that we may be commencing treatment too early. So early that the manufacture of immune bodies in an important tissue like the skin is interfered with at the start. The weakening, in this way, of the body's first line of defence may be the vital factor in a protracted struggle with the organism.

He lays no claim to be the originator of such a view, nor does he pretend to speak with the voice of authority. But amongst a good deal of speculation this view possesses the virtue of being one which can be subjected to the test of experiment. If it be proved to be correct, it would exert so formidable an influence upon our methods of dealing with the disease that he has been emboldened to expose it to the light of publicity.

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