FIVE HUNDRED CASES OF MALARIA IN
PENSIONERS.

BY

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DURING the latter half of 1919 a very great number of demobilized and discharged soldiers appeared before the various pensions' boards throughout the United Kingdom, claiming for disabilities incurred during service in the late war.

The following table gives the correct figures for the months of October, November and December, 1919:

	Oct., 1919.	Nov. 1919.	Dec., 1919.	Total for 3 months.	Per- centage.
Total malarial cases ...	5,626	6,702	6,972	19,300	7.7
Total number of cases ...	77,308	86,461	84,518	248,217	100
Total wounds and injuries cases ...	2,4864	29,826	29,418	84,108	33.8
Total diseases cases ...	52,444	55,635	55,100	164,179	66.2

These numbers comprise all those men who have appeared before the pensions' boards during these three months. Of the total, 33.8 per cent. were claiming a pension for wounds and injuries, and the remaining 66.2 per cent. for various diseases. The malarial cases examined during this period were 19,300, or 7.7 per cent. of the total number of cases seen—that is, 1 in every 13 cases. Comparing the malarial cases with other diseases, the percentage is 11.6, or 1 in every 9 cases. Since obtaining these figures the proportion of malarial cases seen has increased.

From the United Kingdom 5,704,416 men were sent overseas, and of these roughly 403,000, or one-fourteenth, served in malarial countries.

Thus it can be realized that malaria has played a big part, not only amongst the casualty diseases during the late war, but is still continuing to cause a large amount of sickness and expense, both through loss of man power and pensioning at the present time. This shows that the incidence of malaria in those serving in countries where the disease is endemic is very high, and that the prognosis as regards complete recovery is bad.

The 500 cases to be described were examined consecutively at the Ministry of Pensions, and comprise 356 men who contracted malaria on the Salonica front, 62 from Egypt and Palestine, 45 from East Africa and 37 from other theatres of war, including a few recurrences of fever contracted during service in India prior to 1914.

I have endeavoured in these cases to compare the three main malarial theatres of war—that is, Salonica, Egypt and Palestine, and East Africa—and to show in what respects their immediate and later effects resemble and differ from each other.

1. *Discharged Medically Unfit.*—The following table gives the totals and the percentages:

	Total.	Percentage.
Salonica	45	12.6
East Africa	13	28.9
Egypt and Palestine	5	8.1
Miscellaneous	6	16.2
Total for all theatres	69	16.4

Thus over 16 per cent. of these collected cases had been discharged permanently unfit. This is a considerable proportion since it does not take into account the large number who have died from the disease. The other feature about the above table is the high percentage, 28.9, of the cases contracted in East Africa.

2. *Length of Service.*—There was also quite a marked difference in the average time spent in the malarial country before the soldier was transferred to a non-malarial theatre of war. The following table shows that the average time spent in East Africa was considerably less than that spent in Salonica and in Egypt and Palestine.

It is difficult to account for the difference, but it seems that the length of the lines of communication had a great deal to do with it. This was in a great measure responsible for the difficulties in bringing up supplies, in establishing hospitals with adequate accommodation and necessary comforts, and in setting up ordnance depôts where the men could be provided with fresh boots and clothing to replace those worn out or lost on the campaign.

Theatre of War.	Average Times in Months.
Salonica	24.23
East Africa	14.15
Egypt and Palestine	24.37

In all these three theatres of war, malignant tertian fever was common. Unfortunately, I was only able to get a record of the type of infection in a very limited number of cases. All these cases were sent for blood examination at the time of being boarded, but were in every case negative, save in two in which benign tertian trophozoites were found.

3. *Seasonal Prevalence.*—An examination of the seasonal prevalence on the three malarial fronts also showed certain differences.

In Salonica the malarial incidence rose in June and continued high through the summer months, reaching its maximum in September. October showed a slight decline, and the minimum was reached in January. In Palestine and Egypt the number of malarial cases rose in July, continued through the summer months, reached its maximum in October and November, and then dropped rapidly, reaching its minimum in March. In East Africa the seasonal prevalence was not marked, and showed only slight increases in January, March, April, and June.

The following table gives the numbers and percentages found:

	Salonica.		Palestine and Egypt.		East Africa.	
	No.	Per cent.	No.	Per cent.	No.	Per cent.
May	18	6.1	2	3.7	3	7.7
June	42	14.3	3	5.6	5	12.8
July	33	11.2	7	12.9	3	7.7
August	43	14.6	6	11.1	3	7.7
September	58	19.7	7	12.9	3	7.7
October	36	12.2	12	22.2	3	7.7
November	23	7.7	11	20.4	2	5.1
December	8	2.7	2	3.7	2	5.1
January	2	0.7	1	1.4	4	10.3
February	6	2.0	1	1.4	2	5.1
March	12	4.0	0	0	4	10.3
April	13	4.8	2	3.7	5	12.8

The following suggestions are put forward to account in some measure for the seasonal differences.

1. *Climatic.*—Salonica, Egypt, and Palestine are non-tropical countries, and as such undergo marked variations in external temperature, depending on the time of year. In Salonica especially the winters are severe, and in Palestine and even Egypt the differences between the winter and summer temperatures are quite marked. East Africa, on the other hand, is tropical, the equator passing through British East Africa, and the theatre of war being situated directly south of this. For this reason there is very little difference in the winter and summer temperatures, and any coolness is dependent on the rains. These occur in the various parts of the country at different times of year. Thus, in the interior plains, the rains commence about October. In the highland plateau they are later, not appearing till December and lasting till the middle of April. On the coast the rains commence about June. Now, just as a certain temperature is essential for the breeding of mosquitos, so also is an adequate amount of water necessary for the depositing of the eggs. During the dry months the heat of the sun tends to dry up all collections of water, so preventing the eggs hatching. Also, the heavy rains are apt to wash away and destroy deposits of eggs, so that the mosquito has to wait till the end of the rainy season, when there is a plentiful supply of suitable water, before its eggs can be hatched out to the

best advantage. For this reason the seasonal prevalence of malaria alters for the various parts of the country, depending on the time of the rains.

2. *Conditional.*—By this is meant the alterations of service conditions in the increasing or mitigating the contraction of the disease. This especially applied to Palestine, where the rapid advance into the highly malarious country of the Jordan Valley in the summer of 1918, accounted for a very great number of the total malarial cases. Unlike Salonica, Egypt and Palestine were not wholly malarious; and in Palestine, where the majority of cases occurred, the incidence seemed to depend on the movements of the troops from a camp where antimosquito measures had been effectively taken into a fresh unprotected and more highly malarious district.

Salonica itself is a highly malarious country, notably the Struma Valley, where many miles of marsh land render satisfactory antimalarial measures quite impossible owing to the enormity of the task. Another factor was that in this theatre of war the campaign was less progressive, so that the incidence depended for the most part on the climatic conditions. This is indicated in the following table, showing the number of cases and the percentages contracted on the three fronts during 1915 to 1919 inclusive. It will be noticed that the years 1916 and 1917 show the highest malarial incidence, which declined markedly in 1918. During the autumn of 1915 a few troops only were disembarked at Salonica, and no serious operations were attempted that year. The year 1916 shows increased activity. Large numbers of reinforcements arrived, and an advance was made into the Struma Valley. In this highly malarious part, the incidence during the summer and autumn months was very high. In 1917, more reinforcements arrived, and the advance, which had been held up for more than a year, recommenced. Monastir was recaptured, and fresh malarial country opened up. This year showed the maximum incidence. The incidence declined in 1918, when sanitary measures began to prevail, and more suitable country was occupied by the troops.

In East Africa the real offensive commenced with the arrival of General Smuts in the spring of 1916, and by the autumn of that same year the whole of German East Africa north of the central railway running from Dar-es-Salaam to Ujiji was freed from enemy forces. This part, though malarious, was not so highly infected as further south, where the next stage of the campaign was fought. This fresh country became the seat of operations in 1917, and the climatic conditions here, especially during the rains, could easily account for the marked increase of malarial cases. In fact, the climatic conditions were considered so deleterious that practically all European troops were replaced by Indian and East African native troops. This is probably the reason of the decrease in number for 1918, as only men from the British Isles are noted in these cases.

Palestine shows the most interesting figures. In 1916 the troops were advancing towards El Arish, in 1917 they were hung up before Gaza, and only in 1918 was made the big advance ending with the capture of Jerusalem and Damascus. It is generally observed that even in highly malarious countries stationary camps in time become fairly healthy, as modern sanitary methods have been found most efficient in combating the anopheles; stagnant water is either got rid of or treated, proper mosquito-proof beds and living rooms are constructed for the troops, and also the protective measures can be more easily enforced. The great advance took place early in 1918, and, once started, continued very rapidly. The troops had no time to take adequate protective measures against infection, suffering the more on this account. In addition, the country through which they were passing was highly malarious. Major Manson-Bahr, in describing the malarial incidence from *Laverania malariae* and *Plasmodium vivax*, shows that in the eastern sector from the Jordan Valley to Jerusalem, during the summer of 1918, the benign tertian epidemic commenced the beginning of June, and reached its maximum of 340 cases a week on July 13th. The malignant tertian epidemic commenced later and was very severe, reaching its maximum of 1,800 cases a week on October 12th. In the western sector from Jaffa to Ludd the benign tertian epidemic was the more severe, and reached its maximum of 850 cases a week on August 3rd.

It was followed by a less severe epidemic of malignant tertian, reaching its maximum of 600 cases a week on the same date as in the eastern sector.

	1915.		1916.		1917.		1918.		1919.	
	No.	%	No.	%	No.	%	No.	%	No.	%
Salonica ...	5	1.4	117	32.2	173	48.0	59	16.6	3	1.0
East Africa...	2	4.8	10	23.8	22	52.4	7	16.6	1	2.4
Palestine and Egypt	3	4.8	7	11.3	13	20.9	38	61.4	1	1.6

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A NOTE ON THE SURGICAL USES OF THE FASCIA LATA.

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THE extraordinary variety of injuries to all parts of the body which occurred during the war afforded to surgeons concerned in their treatment vast opportunities for exercising their ingenuity and invention. The application of the fascia lata to the repair of many of these lesions certainly received a great stimulus, and the results were on the whole eminently satisfactory. As one who, during the last eighteen months, has utilized fascia lata fairly extensively in different conditions, I venture to indicate some of its more obvious applications.

I. In the repair of, or as a substitute for, tendons and ligaments:

- Injuries in which there is loss of tendon substance, recent or old standing.
- In lieu of dividing and transplanting a healthy tendon, in order to reinforce a paralysed one, connecting these two by a fascial intermediary tendon.
- As a substitute for intrinsic or extrinsic articular ligaments—for example, the crucial (Hey Groves) and the internal lateral ligaments of the knee.
- As an auxiliary ligament—for example, in lieu of tendon fixation for a "dropped" foot—a Y-shaped fascial ligament may be employed; or in recurrent dislocation of the shoulder a fascial "sling" passed through the quadrilateral space may be used, or it may be passed through a hole drilled in the head of the humerus and the acromion process.

II. For clothing an area which has been deprived of its normal covering tissue.

- After the excision of adherent scars.
- In the abdomen, after extensive resections of the colon, to aid in "peritonization."
- In arthroplasties, interposed between the two raw bony surfaces (Murphy).
- As a sheath to protect a nerve suture.
- In gunshot or other injuries of the skull, where there has been extensive loss of substance of bone and dura mater prior to bone grafting.

III. To reinforce defects in the parietes of the chest, the abdomen, and of vessels.

- To cover in a lateral defect in a vessel wall.
- In repair of the urethra, after excision of stricture.
- In closure of faecal fistulae and ventral hernia, where parietes are deficient.
- In reconstruction of an intercostal space in hernia of the lung.

There are doubtless many other purposes to which this valuable tissue can be applied, and the above list only aims at giving some concrete idea of its scope.

Among the many little details that count towards success are the following: first, that the graft should be of