Elimination of Malaria in Palestine 90 years ago

What didn’t General Allenby and the early Jewish pioneers do …
An examination of the severity and consequences of Malaria 100 years ago in Palestine

And then a study of early attempts to control the disease there

MALARIA
100 YEARS AGO IN PALESTINE

During the 19th and 20th centuries and before, the mosquito infected, killed and decimated the population, leaving the land thinly populated....
‘Malaria stands out as by far the most important disease in Palestine. For centuries it has decimated the population and it is an effective bar to the development and settlement of large tracts of fertile lands ..... There are few regions actually free from it.’

1921 – “First Annual Report of the British Mandate Department of Health".
‘Palestine is a small country and, as a whole, thinly populated. ... Malaria ... has always been very prevalent, particularly at Jerusalem ..... at Jaffa, Acre ..... and in the Valley of the Jordan’

1925 - “Malaria Commission. Reports on the Tour of Investigation in Palestine in 1925”

….. the experts of 1918 ... (prophesied) that the future of this country (Palestine) might be considered to be almost hopeless from the malarial standpoint.....’

(Department of Health. A Review of the Control of Malaria in Palestine 1918-1941)
This map of the British Mandate shows the severity of Malaria in 1920 in Palestine. The map shows the worst areas, the dark blue areas, with a spleen rate of 50-100% (highly 'malarious'). Some of the dark blue areas were even declared uninhabitable by the Health Dept of the British Mandate.

This map (also from the same British Mandate review) shows the location of the more important swamp areas in Palestine in 1941.
100 years ago, this was the Holy Land, this was Palestine ....

AFULA (near Nazareth)

and this was the view of Jerusalem ..
Mark Twain in 1867 probably never asked why.....

‘A desolation is here that not even imagination can grace with the pomp of life and action. We never saw a human being on the whole route.’

so wrote Mark Twain in “Innocents Abroad” on his visit to Palestine in 1867.
The Palestine Exploration Fund, established in 1865, was the first scholarly society dedicated to the scientific study of what was then generally known as the Holy Land.

In 1878, maps of the Holy Land were prepared for the Palestine Exploration Fund which had appointed Lieutenants Conder and Kitchener (later to become General/Lord Kitchener) to survey and draw the maps, which remain one of the great standard works of reference for Middle East studies.
THE HAZARDS OF SURVEYING IN PALESTINE

In June 1872, Lt. Conder was appointed to the command of the Survey of Western Palestine in place of Captain Stewart, R.E., who had been taken ill in Palestine with malaria. In 1874, following the death in Palestine of his assistant, Mr. Charles Tyrwhitt-Drake, of Malaria, he was joined by his friend, Lt. Kitchener.

“For every inhabited village, ten ruined towns are found. .......... Old orchard walls and watch towers of huge stones stand half ruined in the wild districts, and the same story is repeated throughout the length of the land – the cultivation has shrunk with a decreasing population”

(From an article ‘The Present Condition of Palestine’ by Lieutenant CR Conder in the Palestine Exploration Fund Quarterly Statement for 1879)
“The general character of the scenery of Palestine is stern and sombre. It is no longer what it was before eighteen centuries of war and ruin and neglect has passed over it. ‘Above all other countries in the world, ... it is now a land of ruins. In Judea it is hardly an exaggeration to say that ... for miles and miles there is no appearance of present life or habitation ...’”

“Cook’s Tourists’ Handbook for Palestine and Syria. Thomas Cook & Son, Ludgate Circus E.C. 1876”

The first view of Jerusalem

“Most travellers have a feeling of disappointment on first seeing Jerusalem, its magnitude is so much less than the imagination had pictured. Associated as it is with the grandest and most sacred events of history, it is difficult to feel this little town, around whose walls you may walk in an hour, is the Holy City.”

Cook’s Tourists’ Handbook for Palestine and Syria. Thomas Cook & Son, Ludgate Circus E.C. 1876”
AND WHY WAS THE AREA SO THINLY POPULATED?

• Several factors explain the constant diminished population of Palestine over the centuries.
• In the 18th, 19th, and early 20th centuries, Bedouin raids were a common occurrence.
• Palestine also hosted several epidemic diseases. The Black Plague made appearances all the way up to the 20th century. Typhus fever, smallpox, cholera, made their rounds. Dysentery and tuberculosis were rampant.
• And above all, malaria was there for centuries.
• These diseases drastically cut down the population.
CONSEQUENCES OF MALARIA

“The testimony of pre-(1914) war residents in the country has definitely confirmed the fact that no adequate and practical medical organisation existed under the Ottoman Empire. It is not surprising, therefore, that Malaria, which is still the most important of local endemic diseases, was at that time an effective bar to general development and settlement, and that frequent epidemic outbreaks successfully wiped out the populations of whole villages in the space of a few months.”

[Department of Health. A Review of the Control of Malaria in Palestine 1918-1941]
Rosh Hanikra, marking the border between the provinces of Syria and Palestine, was guarded by a small company of Turkish soldiers. The platoon had to be changed every month because Malaria sickened & debilitated everyone after 10 days.


‘The villagers (of Samaria Village in the Beisan Area) state not one child out of ten born in the village ever reaches maturity. (Malaria) carries them off before they are 10 years of age.’

9th December 1922 – Report of ‘Malaria in Samaria Village’.
In 1890 a settlement was started in Hadera: by 1910 the majority of workers had died from Malaria (210 died of Malaria out of a population of 540 (‘Khan Museum, Hadera’)) - only an idealistic commitment to overcome such destructive conditions avoided abandonment.

Below may assist in an appreciation of just how thinly populated was Palestine of 100 years ago, Malaria being a huge factor in the population decimation.

Population of the former Palestine Mandate (including Gaza and the West Bank) 757,182 (British Mandate Census 1922) giving a density of 29.1 inhabitants per sq. km

To develop a sense of what 29.1 inhabitants per sq. km looks or feels like, note the densities in 2012 of the following countries:
- Holland – 497 inhabitants/sq km
- Belgium – 365 inhabitants/sq km
- United Kingdom – 260 inhabitants/sq km

Population of Israel in 2012 (NOT including Gaza and the West Bank) 8,051,200 giving a density of 364 inhabitants/sq km.

making Israel now the 35th most densely populated country in the world.
EARLY ATTEMPTS TO CONTROL OR ERADICATE MALARIA IN PALESTINE.

Attempts by the early Jewish settlers before 1914 to either control or eliminate Malaria in Palestine.
100 years ago, the early Jewish pioneers suffered terribly from disease, and only an idealistic commitment sustained them from total collapse. Many died and many others left, unable to cope with the environment and the destructive conditions.
Between 1882-1914, approximately 75,000 idealist Eastern European Zionists, fleeing anti-Jewish restrictions and pogroms/massacres, arrived to settle in Palestine (not to be confused with the religious Jews who for centuries came to try to live – and die - in the Holy Land). However, by 1914, about half this number of Zionists either had died or had left unable to cope with the severe pestilential conditions.
The Zionists had attempted sanitary and drainage anti-malaria measures as part of an anti-larval attack on the disease. It was even reported in 1911 that some 400,000 eucalyptus trees had been planted to drain the soil.

Before 1914, attempts to eradicate by drainage alone had little effect.

Later, after 1922, it was demonstrated that drainage alone of the swamps would have had little effect on the Malaria, because mosquitoes breed in little, out-of-the-way unsuspected places, which even the most elaborate system of drainage would not have reached. It was also subsequently pointed out that at least half of the Malaria could be ascribed simply to human carelessness and neglect.
Despite the Zionists’ cooperation and enthusiasm, their desperate need to succeed and make the area habitable, Malaria continued to savage the area, and many of the early Zionists either died or left. Despite some basic knowledge of the transmission of malaria, but perhaps also on account of their mistaken understanding of other aspects of the disease, the attempts before 1914 to settle these Zionists faltered.

Attempts by the British Army under General Allenby to control Malaria in Palestine.
The area known as Palestine after World War 1, 1914-1918, had been a part of the Ottoman Empire, ruled by Turkey, until they were defeated by the British Army in 1917-1918.

BUT WHAT WOULD HAVE HAPPENED IF THE TURKS HAD KEPT FIGHTING FOR TWO MORE WEEKS .....
“A remarkable example of the potentialities of malaria in war was seen during the Palestine-Syria campaign of 1918. Allenby's final advance started on 19th September. A severe epidemic of Malaria began on 5th October, ...... During the advance 773 men died of Malaria. The infection was contracted while passing through the Malaria-ridden country behind the enemy's front line, more especially through the notorious Jordan Valley. Fortunately in the interval before the epidemic burst, the Turkish armies had been decisively defeated - the campaign was won by troops in the incubation period of Malaria! If the advance had been held up by the enemy for another two weeks,- a great victory might have been replaced by disaster with far-reaching consequences. “

Steps were taken to try to protect the front line British troops from Malaria whilst waiting before the final advance northwards against the Turks in Sept 1918

“Turning to a more detailed scrutiny of the record of the advancing British Army, heavy malarial infection in newly occupied areas rendered necessary temporary measures of (Malaria) control as soon as possible. ....... Antimalarial measures had to be undertaken under a quickly organised and special scheme: anti-larval measures such as clearing, draining and oiling, by special squads: .......”

(1946 - Extract from talk given in May 1946 by Brigadier J A Sinton (Hon. Consultant in Malaria to the British War Office) entitled 'Malaria at War'.

(Department of Health. A Review of the Control of Malaria in Palestine 1918-1941)
Attempts at protection against Malaria included:

“The area drained by the Auja River and its tributaries near Jaffa is a case in point. The British Occupation took place in 1918 and active drainage had to be started at once, ….. Large detachments of British (Army) pioneers and Sikhs were engaged over a long period on this work. ….. 8,500 primary cases of Malaria were reported in the front line troops from April to October, 1918, a number which was considerably exceeded in the final months of that year.”

(Department of Health. A Review of the Control of Malaria in Palestine 1918-1941)

And then when the advance began:

“The advance was planned for mid-September (1918), the height of the malarial season, through country which was known to be as highly malarious as that occupied by our own troops during the summer. ….. ‘It is clear that the troops were infected directly they crossed our old lines, apparently getting at once into a highly malarial zone on the first night of the advance’. ….. From all along the line of advance came the same massive epidemic of Malaria, its onset clearly traceable to moving out of the country which had been made fit for habitation only by endless labour on our part.’

(Department of Health. A Review of the Control of Malaria in Palestine 1918-1941)
Number of Malaria admissions to hospital of British and Dominion Troops when advancing deeper and deeper into Palestine during World War 1.

In 1916, when advancing along the north coast of the Sinai Peninsula and invasion of Palestine – number of admissions - 1,423.

In 1918, in the final advance against, and defeat of, the Turkish Army, mainly along the coastal plain and the Jordan Valley – number of admissions – 30,241

In 1917, when capturing Gaza and Jerusalem – number of admissions – 8,480

Source: “Medical Services – Casualties and Medical Statistics of the Great War” – Mitchell and Smith – Imperial War Museum

And if no anti-malarial work had been done ......

“It will probably be asked what would have happened to our troops had no anti-malarial work been done, seeing that the Turk survived in the same or similar country though taking no precautions. The answer is that undoubtedly our troops would have simply melted away. It is true that many Turks survived, but very many did not. Their deaths from sickness in the field were high. The condition of those who remained as regards physical fitness was deplorable ..... Within a short time of their capture more than 20,000 of the 100,000 prisoners had to be admitted to hospital.”

(From Department of Health. A Review of the Control of Malaria in Palestine 1918-1941)
“There is no doubt that our victory over the Turkish Army was in great part due to the fact that we were able to outlast them as regards physical fitness and morale, both of which were subject to very depressing influences from the occupation of disease-laden areas of country.”

[Department of Health. A Review of the Control of Malaria in Palestine 1918-1941]

The Expense

“The Auja River – The problem of dealing with this river was a most formidable one. If it was necessary to train the banks for the whole course of the river – a distance of 15 miles – the task was a gigantic one. ……… In the 6 months during which the work was carried out the amount of labour, as estimated by the Royal Engineers, was 222,840 men-days.”

(An Anti-Malaria Campaign in Palestine. An account of the Preventive Measures undertaken in the 21st Corps Area in 1918. By Colonel E P Sewell RAMC and Major A S M Macgregor RAMC)
AND THE GLOOMY PESSIMISTIC
BRITISH CONCLUSION ....

“It is interesting to speculate on what can be the future of a country such as this from the health point of view. One cannot conceive the problem which faced the Army last spring being undertaken by a Civil Authority. The expense alone would be prohibitive ...... yet this represented only the treatment of one strip of country for one year. The great bulk of the work was washed out by the first rain of October (1918).”

(Department of Health. A Review of the Control of Malaria in Palestine 1918-1941)

• ‘Malaria ...For centuries it has decimated the population.’ 1921 – “First Annual Report of the British Mandate Department of Health”.

• “For every inhabited village, ten ruined towns are found. .......... the cultivation has shrunk with a decreasing population” (From an article ‘The Present Condition of Palestine’ by Lieutenant CR Conder in the Palestine Exploration Fund Quarterly Statement for 1879)

• “...frequent epidemic outbreaks successfully wiped out the populations of whole villages in the space of a few months.” (Department of Health. A Review of the Control of Malaria in Palestine 1918-1941)

• ‘... not one child out of ten born in the village ever reaches maturity. (Malaria) carries them off before they are 10 years of age.’ 9th December 1922 – Report of ‘Malaria in Samaria Village’.
But a Dr Israel Kligler was to arrive in Palestine in 1920, and who was to become the architect in Palestine of probably the first successful national Malaria-elimination campaign anywhere in the world. This was notwithstanding the pessimism of:–

“... the experts of 1918 ... (who prophesied) that the future of this country (Palestine) might be considered to be almost hopeless from the malarial standpoint.....”

(Department of Health. A Review of the Control of Malaria in Palestine 1918-1941)

To study more about Dr Kligler and his methods of Malaria elimination, see....

www.eradication-of-malaria.com, and also see the following views that he made possible.
Jerusalem

Approx 1890

Turkey troops marching past the American Colony during World War I.

Jerusalem

2010
Haifa

2010

Railway line and German army camp in World War I

AFULA (near Nazareth)

2011