

Dissemination of Undulant Fever SIR TEMI ZAMMIT'S DISCOVERIES

By J. STORAGE

The story of how the microbe of undulant fever was discovered and the battle waged and won against it, was told by Professor J. E. Debono, C.B.E., M.D., F.R.C.P., in a lecture to a distinguished audience at the University Theatre recently.

Although the cause of this disease and the preventive measures taken to eradicate it, have been known for some years now, yet the records were scattered and some of the measures taken were hitherto unknown.

It may be safely said with a measure of assurance that the history of medicine, indeed, all of Malta, is indebted to Prof. Debono for collecting all the known information to which he added the result of his own research work. Thus, for the first time, we have an excellent comprehensive account on this scourge, and which Prof. Debono read in an appropriate setting, that is, with a large painting of Professor Sir Themistocles Zammit, next to his lectern.

A New Chapter

Prof. Debono paid tribute to Sir Themistocles Zammit, for it was he who discovered in 1905 the notorious micrococcus, the cause of undulant fever in the goat. It was reserved for him to point out a simple and reliable method of prevention — the pasteurization or boiling of milk. "It was left to him to open a new chapter in medicine. The value of his work was not only local but international."

A plaque commemorating the inauguration of the M.M.U. was unveiled at Hamrun, but another plaque should be unveiled at the Lazaretto to commemorate a memorable date — June 14, 1905.

"It was on that day and in that place," pointed out Prof. Debono, "that the first stone of this organization (the M.M.U.) was put down."

On Sir Themistocles' discovery, the Services immediately started preventive action. The result was that from 913 cases in 1905, the figure dropped dramatically to 12 in 1907 in which year preventive action was in full swing.

Similar progress was not achieved among the local population. Consumers were incredulous, sceptical and prejudiced despite official warnings to boil milk. By 1946, the number of reported cases of undulant fever reached the unprecedented figure of 1,402 for that year alone.

However, after a lapse of 57 years, the incidence of undulant fever has decreased to insignificant figures, thanks to Sir Themistocles' discovery in 1905. "It is the story of this momentous — epochal — discovery that I intend to unfold to you" stressed Prof. Debono.

The learned lecturer had the good fortune of being associated with Sir Themistocles in further research work at Lazaretto in 1928. It was from the latter's lips that he learnt the "inside story" which has not been written to date.

"In Malta, Sir Temi as he was affectionately known, was never sufficiently appreciated. He attained international eminence in many fields. He founded our national museum, was an eminent archaeologist, was Rector of the Malta University, a foremost author in the Maltese Language, represented Malta with honour and distinction in international medical conferences, and did valuable work in two cholera epidemics

Great Character

"Above all he was a Man". Fearless and never servile but loved and respected; brusque and not suffering fools gladly but with a heart of gold; explosive at times but loyal, unselfish and never bearing a grudge for long.

Sir Themistocles did not publish many of his discoveries but the tests of brucella infection must be mentioned. "The presence of specific agglutinins in milk, a test known by his name and the origin of the ring test, which is used universally to detect brucellosis in cow's milk" were originated by him.

Professor Debono gave a short account of how undulant fever came to be known in medical history.

The origin and many names it was given, the close resemblance between the micrococcus discovered in man by Bruce

and the bacillus abortus in cattle; the similarity in fever caused by the two germs; the acceptance by the medical world of the generic name of Brucella for the group which includes goats, cattle, swine, rabbits and squirrels; disease incidence and its repercussions among the local population and Services personnel; study of the disease in foreign lands; immunization; how the disease was traced; the isolation of the micrococcus in patients by Colonel Bruce helped by Dr. Caruana Scicluna, M.O.H.; the work of the Mediterranean Fever Commission which included Sir Themistocles (then Dr. Zammit); and the various experiments carried out.

First Experiments

Finally Sir Themistocles started experimenting on goats and in September 1904 he succeeded in infecting a goat with micrococci. Early in 1905 Bruce reported: "He (Zammit) considers goats very susceptible to Mediterranean Fever and that the disease is spread in human beings by goats."

Further experiments by Zammit at Lazaretto on six apparently healthy goats resulted in five positive reactions to the agglutination test. This news was passed on to Bruce in London, then to the Royal Society as "A Pre-
tibility of Goats to Malta Fever by Dr. T. Zammit, Member of the Mediterranean Fever Commission, and communicated by Colonel Bruce, C.B., F.R.S., R.A.M.C., Received 25th June, 1905".

Prof. Debono said, "I have heard recently that some people claimed the merit of this discovery for Dr. Caruana Scicluna. At the end of the Note there is this paragraph: *Material from Abattoir* — Dr. Caruana Scicluna having suggested the possibility of infected goats in the abattoir, I have examined 46 spleens and have recovered the M. Melitensis from one. The blood of seven goats gave a positive reaction to the agglutination tests."

Zammit informed Major Horrocks, member of the Commission, who went to Lazaretto and found micrococci in goats' milk on June 20. Zammit succeeded in isolating the microbe from the blood of goat No. 6 on June 25.

Scepticism

There was much controversy as to who made the discovery, said Professor Debono. The Services backed Horrocks but the scientific world gave the honour to Zammit.

The immediate practical result of Bruce's discovery was almost nil. No counter measures could be taken. But Sir Themistocles' discovery of the microbe in the goat 'let the cat out of the bag'. However, there was a certain amount of scepticism about the cause of the disease.

The experience the crew of a ship bound from the U.S.A. to Antwerp, who had goats aboard and had drunk their milk was illuminating. 28 out of a crew of 30 went down with undulant fever. The reason that the other two did not get the disease was that they had boiled their milk.

This 'fortunate' incident confirmed Sir Themistocles' discovery. The Services in Malta took immediate ac-

tion. In Services hospital milk was boiled and Services personnel were warned not to drink milk in cafés and restaurants.

Goatherds supplying Services establishments objected to having their goats examined. Services Authorities then prohibited goats' milk and introduced tinned milk. The result was that undulant fever never troubled the Services again.

Local Prejudice

Professor Debono then explained the warnings and appeals to boil milk made by Government; the prejudice of the local population against the recommended official measures; Government efforts to control the sale of milk to hotels, cafés and restaurants; the impossible task of exterminating infected goats; the experiments carried out to find a vaccine against the microbe; and the settings up of a Brucella Research Centre.

With the death of Sir Themistocles, his driving force behind the Centre was no longer available and experiments fizzled out.

Sir Themistocles was in favour of pasteurization and signed the reports of the 1932 and 1934 Committees without reservation. As a scientist he was more interested in the total elimination of the Brucella infection but he showed how it could be controlled.

"Today with the M.M.U. covering all Malta and Gozo, we see the result of his memorable discovery But Sir Themistocles' work is not limited to Malta Zammit laid the foundation of something much bigger a disease known by the name — Brucellosis."

"Whenever you open a book on this subject you will find his photograph in an honoured place....." concluded Prof. Debono.

After the lecture, the Hon. Dr. C. Caruana, Minister of Agriculture, Power and Communications — who also presented the speaker to the audience — thanked Prof. Debono for his erudite lecture.

Among those present were the Hon. Dr. A. Paris, Minister of Education; the Hon. Dr. P. Borg Olivier, Minister of Health; Prof. J.A. Manché, Vice-Chancellor and Rector Magnificus; Heads of Government Departments; University professors; and members of the Medical and other professions.