work among the Natives. In the whole of Swaziland, for example, with a Bantu population of over 122,000, a European population of about 3,000 and a coloured population of some 1,000 there are only 7 doctors, 4 of them mission doctors. It is therefore little wonder that the old beliefs are dying hard, and that the intention of the Administration to stop the traditional diviners from practising before it has provided any adequate substitute, is suspect and condemned by the mass of the Bantu.

THE HISTORY OF BILHARZIA IN SOUTH AFRICA.

J. B. BAYNASH.

It is an astounding fact that in Egypt, ten million out of the fifteen million inhabitants are infected with Bilharzial disease. It is known that Bilharzia existed there since the ancient times. Its presence in the Nile Valley as early as 1,250–1,000 B.C. was definitely proved in 1910 by Sir A. Ruffer’s discovery of ova in the kidney of a mummy of the twentieth dynasty, and so also does the ancient Egyptian papyrus of Ebers and Brugsch bear testimony as to its antiquity in that country. Can these facts have any connection with the presence of bilharzial disease in South Africa?

Just recently, Dr. Elsdon-Dew, from a study of the blood grouping among the Bantu, enunciated the view that these people came from the ancient Egyptian stock and it is interesting to recall the words of Allen of Pietermaritzburg, written in 1888. “It is very probable that in ancient Egypt the presence of Bilharzia in the waters of the Nile suggested the adoption of the operation (circumcision), and that the Jews, who have faithfully preserved it, adopted the custom and carried it with them when they left Egypt, and that gradually the cause of its origin became forgotten, and it advanced from being a sanitary precaution to a religious rite. In other parts of Africa, where the fluke exists, circumcision has been or is practised, at present in our own neighbourhood among the Basutos, and at one time, almost within living memory, amongst the Zulus. If these and other people of the Abantu race really did migrate to the south, from the Valley of the Nile or among the hills of N.E. Africa, it is at least likely that it originated as a protection against this fluke. And it will have to be practised again, if the Europeans, or indeed any race is to maintain its normal vigour in the infested countries.”

From a consideration of the geographical incidence it is seen, that the part of South Africa infested with Bilharzia corresponds to the area which the early Dutch settlers found inhabited by the Bantu. Although most text books state that bilharzia is present all over the coastal belt of the Cape Province, this is not correct. No case contracted west of Knysna has been recorded in the literature.

It would appear, therefore, that Bilharzial disease is no newcomer to South Africa, and that unlike some other diseases, now rife in the land, the settlement of the white man was in no way connected with its introduction into the country.

It was in 1851 that Theodor Bilharz revealed his discovery of the relationship of a bisexual distome to the symptoms of haematuria and dysentery so prevalent in Egypt at that time. He called the worm the “distome haematobium” and to this the generic name of “Schistosoma” or “Bilharzia” is now applied. He found ova with lateral spines and others with terminal spines.

In 1864, John Harley read a paper to the Medical Chirurgical Society of London on “The Endemic Haematuria of the Cape of Good Hope.” He showed that the condition was due to a species of Bilharzia which he called “Bilharzia capensis.” In 1871, seven years later, however, he admitted that he believed the special species he had described from South Africa, was the same as that discovered by Bilharz, although, as he said, “In all my own cases, I can say positively that only one form of egg has existed, viz:— that with a terminal spine. I have never seen any egg with even a tendency to the formation of a side spine;” whereas both Bilharz and Griesinger had described two forms of eggs, that with the terminal spine and that with the lateral spine.

In 1864, Mr. George Dunsterville, a surgeon in Port Elizabeth, gave a description of the Bilharzia as he found it in that Town. “It affects boys at the age of 3–4 years and is most prevalent between this age and 16. Two out of every three schoolboys are affected by it,” so he wrote. In the same year, there
were three further reports on the condition in South Africa; one by Dr. J. W. Johnson, Assistant Surgeon to the 85th Regiment, saying “Haematuria prevails to some extent among children of the civil community of Natal;” one by Mr. George Saunders, Staff Surgeon, saying “While in Port Elizabeth I was struck with the number of cases of haematuria in young boys and, on enquiry, was informed that the disease was very common in Uitenhage. I have never met with haematuria at Grahamstown, which is 95 miles from Port Elizabeth, nor at Fort Beaufort or Alice, 50 miles up country;” and Mr. Robert Speedy, of the 45th Regiment, added further to this account that “Haematuria is not prevalent either at East London or Kingwilliamstown.”

In 1870, Cobbold experimented with ova obtained from South African patients suffering from haematuria. His object was to establish the life cycle of the parasite. Although he was not successful in his efforts, the credit for being the first to attempt this goes to him.

Some observations as to the mode of entry of the parasite were contributed in 1888, by Allen, Medical Officer of the Corporation of Pietermaritzburg. Writing in the *Practitioner* of that year he said, “The parasite is practically confined to those who bathe, some streams being more dangerous than others,” and in this view he was supported by most authorities.

As early as 1893, Sir Patrick Manson suggested that there may be two forms of eggs, one with a terminal spine and the other with a lateral spine, the former only having been obtained from South Africa, while both forms were found in Egypt. The problem was finally solved in 1902, when he found only lateral spined eggs in a West Indian patient. To this form, Sambon gave the name of Schistosoma mansoni.

The second great advance in the Bilharzia question took place in 1915, when Leiper, as a result of brilliant researches, worked out the life cycle of the parasite and isolated the intermediate hosts in Egypt. Soon afterwards, Dr. J. G. Becker collected specimens of snail from a bathing pool in Nylstroom which was known to be infected. He was able to identify Bilharzial cercariae and to reproduce from these the life cycle of the worm in a guinea pig. The mollusc found infected were of the species Physopsis africana. In the same year, Dr. Cawston reported the finding of cercariae in numerous other mollusces, including Planorbis pfeifferi and Limnaea natalensis, recovered from the Tollgate brickfield in Durban, and the Umzinduzi River, Pietermaritzburg.

In 1920, Dr. Annie Porter incriminated Limnaea natalensis as harbouring Schistosoma haematobium and soon afterwards reported the presence of S. mansoni in 2 out of 1,050 specimens of Physopsis africana, and in a specimen of Planorbis pfeifferi obtained from pools in Mayville, Natal. In the following year, Cawston reported finding the ova of Schistosoma bovis in the urine of a man who was also passing ova of S. haematobium. In the same year, too, he reported the finding of ova of S. mansoni in the dejecta of a boy bathing in pools at Sydenham, Natal. In 1926, the finding of S. spindalis was reported in South Africa.

At this time was established the first treatment camp in Zeerust. Following the principle of mass treatment, as applied by the mobile hospital units in Egypt, infected school children were collected into holiday camps, and were there treated for the Bilharzia. The value of these camps lay, not so much in the curative results among the children, but as propaganda for enlightenment of the population as to the dangers of Bilharzia, its treatment and prevention. Since then, numerous other camps have been held in the Transvaal, warning notices against bathing in infected pools are being erected near likely bathing spots, the public is being educated against the danger by means of lectures and pamphlets and there are hopeful signs of awakening interest in the subject which bids fair for the future health of the nation.

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**THE NEWER KNOWLEDGE OF THE VITAMINS.**

**L. F. LEVY.**

The story of the discovery of the vitamins, of how infinitely minute quantities of substances in our food are necessary to health besides the commonly regarded constituents of the diet—proteins, carbohydrates, fats and mineral salts—is one of the most fascinating in the history of biochemistry. Research in this field is now-a-days so intensive and the literature so vast that it is becoming