THE OPHTHALMIC OBSERVATIONS OF DAVID LIVINGSTONE*

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DR. DAVID LIVINGSTONE is well known as an explorer and a missionary, but his excellent medical observations have not been sufficiently acknowledged. His notes on various ophthalmic diseases are careful and of great interest.

Before he came to Africa he attended Moorfields Eye Hospital from October, 1839, to April, 1840. This is recorded by Sir J. Risdon Bennett, who was later to become President of the Royal College of Physicians. Risdon Bennett wrote:

"My acquaintance with David Livingstone was through the London Missionary Society, when, having offered himself to that Society, he came to London to carry on those medical and other studies which he had commenced in Glasgow. I was at that time Physician to the Aldersgate Street Dispensary, and was lecturing at Charing Cross Hospital on the practice of Medicine, and thus was able to obtain for him free admission to hospital practice as well as attendance on my lectures and my practice at the dispensary. I think that I also obtained for him admission to the Ophthalmic Hospital in Moorfields" (Blackie, 1882).

Soon after Livingstone's arrival in Africa he wrote to Risdon Bennett from Kuruman, the letter being dated December 22, 1841:

"The Bechuanas have a great deal more disease than I expected to find amongst a savage nation. Indigestion, rheumatism, and ophthalmia are the prevailing diseases; the last is caused by the hot winds which, coming over the extensive sandy plains of the North West, load themselves with myriads of fine particles and produce a disease which for its virulence deserves to be called the Bechuana purulent ophthalmia." (Chamberlin, 1940).

During his time at Kuruman he made journeys to other parts of the country and in 1843 he was among the Bakwains. (These people are now known as the Bakwena and live in South East Bechuanaland, that is East of Gaberones and approximately 250 miles from Kuruman).

David Livingstone (1857) records that among the Bakwains:

"The diseases most prevalent are the following: pneumonia—produced by sudden changes in temperature, and other inflammations, as of the bowels, stomach and

* Received for publication October 15, 1962.

pleura; rheumatism; disease of the heart; various forms of indigestion and ophthalmia; and every year the period preceding the rains is marked by some sort of epidemic. Sometimes it is general ophthalmia closely resembling the Egyptian.

In ophthalmia the doctors cup on the temples, and apply to the eyes the pungent smoke of certain roots, the patient at the same time taking strong draughts of it up his nostrils. We found the solution of nitrate of silver, two or three grains to the ounce of rain water, answer the same end so much more effectually, that every morning numbers of patients crowded round our house for the collyrium. It is a good preventive of an acute attack when poured into the eyes as soon as the pain begins, and might prove valuable for travellers. Cupping is performed with the horn of a goat or antelope, having a little hole pierced in the small end. In some cases a small piece of wax is attached, and a temporary hole made through it to the horn. When the air is well withdrawn and kept out by touching the orifice at every inspiration with the point of the tongue, the wax is at last pressed together with the teeth, and the little hole in it closed up, leaving a vacuum within the horn for the blood to flow from the already scarified parts. The edges of the horn applied to the surface are wetted, and cupping is well performed, though the doctor occasionally, by separating the fibrine from the blood in a basin of water by his side and exhibiting it, pretends that he has extracted something more than blood. He can thus explain the rationale of the cure by his own art, and the ocular demonstration given is well appreciated".

David Livingstone was one of the first to record deterioration of vision associated with dietary deficiencies. In 1854 he was in Cabango, a village in the Luanda Province of Angola (on the Chiumbe river, south east of Vila Henriques de Carvalho). He states;

"The chief vegetable food is the manioc or lotsa meal. These contain a very large proportion of starch and when eaten alone for any length of time, produce a most distressing heartburn. As we ourselves experienced in coming North, they also cause a weakness of vision, which occurs in the case of animals fed on pure gluten or amylaceous matter only. I now discovered that when these starchy substances are eaten along with a proportion of groundnuts which contain a considerable quantity of oil, no injurious effects follow" (Livingstone, 1857b).

As Gelfand (1957) quite rightly says;

"This early reference to a nutritional disorder affecting the eyes of the people is nowadays usually linked with a deficiency of vitamin A, and is an observation which corroborates Livingstone's great powers of observation".

It was at this time that David Livingstone himself received an ocular injury. He records:

"Having met with an accident to one of my eyes, by a blow from a branch in passing through a forest, I remained some days here, (Cabango) endeavouring, though with much pain, to draw a sketch of the country thus far" (Livingstone, 1857c).

While travelling near Lake Tanganyika he made a most interesting observation. On September 11, 1872, he records:

"Majwara has an insect in the aqueous chamber of his eye. It moves about and is painful" (Waller, 1874).

This must have been one of the filarial worms, probably *Mf. volvulus*.]

These examples show that David Livingstone deserves to be recognized as an excellent clinical observer. His record of visual changes associated with a poor diet made so long before a knowledge of vitamins demonstrates his gift of exact observation.

Thanks are due to Mr. J. Edwards, Research Officer, National Archives of the Federation of Rhodesia and Nyasaland, for his help in obtaining this material, and to the Director of Medical Services, Southern Rhodesia, for permission to publish this article.

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