Vol 19 No 2, p 111-113

Short note

THE ONE-HUMPED CAMEL IN TANZANIA: ATTEMPTED INTRODUCTION BY THE MISSIONARY-EXPLORER DAVID LIVINGSTONE IN 1866

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ABSTRACT

The missionary-explorer David Livingstone imported six camels from India to Zanzibar and thence to what is now southern Tanzania in 1866. His purpose was to test the use of camels for transport and assess their resistance to the disease he believed to be transmitted by tsetse flies which was later discovered to be trypanosomosis. His camels did not live long and died from a combination of extreme ill treatment by their handlers and the effects of the tsetse fly within a few weeks of their arrival on the African mainland.

Key words: East Africa, exotic species, trypanosomosis, tsetse flies

An earlier paper on the one humped camel in mainland Tanganyika/Tanzania provided data on the history of the animal in the country (Wilson, 2011). No information was provided, however, about the introduction of the camel to what is now southern Tanzania in the 1860s by the missionary-explorer David Livingstone. This note is based on extracts from Livingstone's diaries covering the period 1866 to 1874 (Waller, 1874).

Livingstone arrived in Zanzibar for what was to be his last voyage to Africa on 28 January 1866 after a passage of 23 days from Bombay on the screw schooner Thule. In addition to exploration and missionary work he was anxious to try camels and domestic (water) buffalo in tsetse-infested country[1]. To this end six camels, three buffalo (plus a calf), two mules and four donkeys arrived at Zanzibar on HMS Penguin about 15 March 1866[2].

The Penguin's Captain agreed to take Livingstone to the Rovuma River, towing a dhow (Figure 1) in which was housed the menagerie. The mouth of the Rovuma was reached on 22 March but tide and wind conditions prevented the animals being landed. Subsequent exploration on foot of the shore and its hinterland convinced Livingstone that there was no possibility of landing the animals and on 24 March it was decided to return northwards and land at the port of Mikindany [Mikindani] which was 25 miles (40 km) from the Rovuma and convenient for the country Livingstone was to visit. All the stock were landed on the evening of 24 March.

In Malindi a house was hired for four dollars a month. On 25 March the cattle (Livingstone's word for his stock) were very much the worse for their voyage in the dhow. A start was made on making saddles from the wood of a very strong tree called

1. Livingstone was the first to suggest the relationship between the parasite and the vector when, in 1852 on an earlier voyage, he noted the occurrence of a disease along the Limpopo and Zambezi rivers and the shores of Lakes Nyasa and Tanganyika from which all his cattle died after being bitten by tsetse flies (recorded in Vickerman, 1997) but it was not until some 50 years later the Scottish pathologist and microbiologist David Bruce identified trypanosomes as the causative agents of the disease in animals and of sleeping sickness in humans (Bruce, 1895).

2. The Thule had a chequered history: she had been purchased by the British Government and presented to the Emperor of China along with several other ships (some ex-Royal Navy) to help in the control of piracy: these ships were commanded by a British Naval Officer detached from the service and operating independently of the British Government: the Thule arrives in Zanzibar as a present from the Bombay Government to the Sultan. HMS Penguin was a Philomel-class gun vessel built by William Cowley Miller at Toxteth Dock (Liverpool): the keel was laid on 14 June 1859 and she was launched on 8 February 1860 then sold to Lethbridge & Drew for breaking on 26 February 1870. Philomel-class ships were armed with a 68-pounder 95 cwt muzzle-loading smooth-bore gun, two 24-pounder howitzers and two 20-pounder breech-loading guns (all ships of the class later had the 68-pounder replaced by a 7-inch/110-pounder breech-loading gun) (Colledge, 1969).

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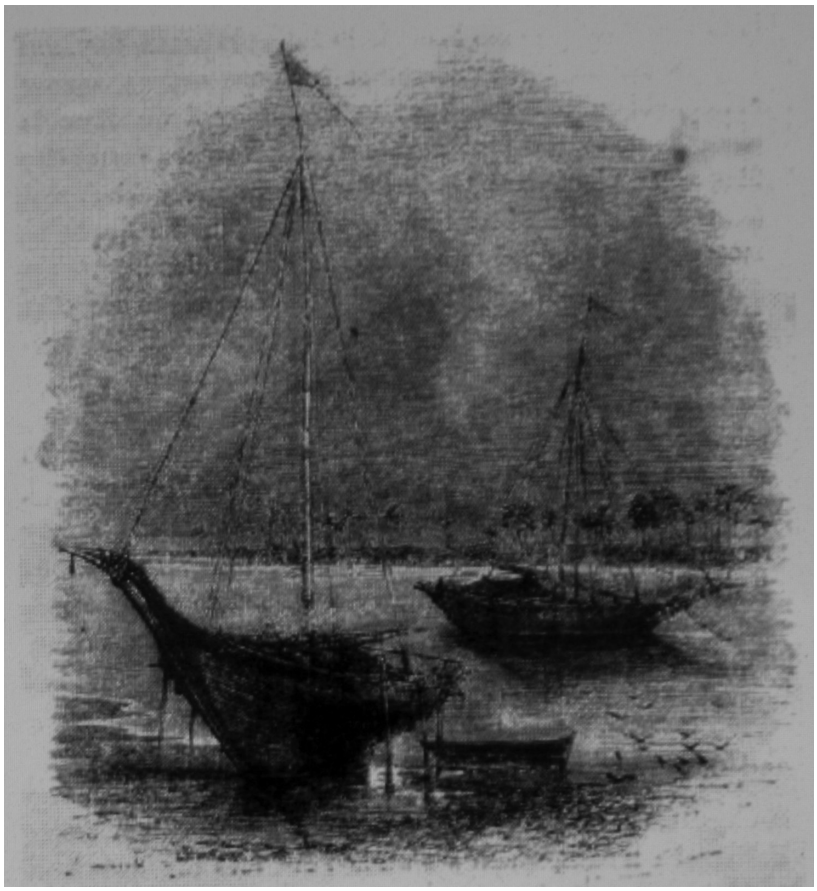

Fig 1. Dhow used for transport of Dr Livingstone's camels.

Ntibwé[1] and this continued whilst the camels and other animals were recovering from their fatigue and bad bruises.

The troop left Mikindany for Pemba on 4 April 1866. Arriving at a level spot devoid of vegetation and with a hard surface the camels sank up to their bellies as there was a subterranean water table but they were eventually hauled out. Three days later Livingstone remarked that, not having experience of camels, he had to trust them to the sepoys who overloaded them, resulting in their being exhausted long before the day's 7-mile march ended.

The camels were first bitten by tsetse fly on the evening of 7 April. The caravan had passed through dense jungle which offered no obstruction to people (indeed, it provided shade) but had to be cut for the tall camels, the job being done by Makondé tribesmen who worked on a daily rate as woodcutters or porters. Having discovered that he could engage local porters Livingstone then reduced the load on the camels and remarked that these local people were very much more taken up with the camels and buffalo than with him.

On 13 April the party began descending back to the Rovuma whilst still having to cut a route for the camels. On 17 April the camels were left with the sepoys who had instructions to load them lightly but this order was ignored and the overloading was compounded by the porters who also hid their own belongings in the loads. Livingstone was now convinced that the camels would die of overwork and that his experiment with the tsetse would be ruined: at this stage the camels showed no symptoms of illness but were weary from work.

The camels destroyed a tobacco patch on 20 April with the result that the unfortunate herder was made to compensate the landowner with a piece of cloth. The naturally "distressingly slow" pace of the camels was exacerbated by their handlers who preferred to sit and smoke rather than make forward progress. On 26 April a handler was caught beating a camel with a stick as thick as his arm and as the path was narrow it could not escape with the result that an inflammation of the hip-joint prevented it moving at all and it had to be left behind. Livingstone now concluded that the festering bruises on the camels that had formerly been unaccountable had been wilfully bestowed. On 30 April the camels were suffering from many ulcers and came back from grazing bleeding in a way that no rubbing against a tree would account for but Livingstone was not always near enough to prevent the ill treatment.

In addition to the tsetse the animals were seen to be bitten by another fly exactly like the house-fly but having a straight hard proboscis instead of a soft one and other large flies made the blood run[2]. Tsetse

1. It has not been possible to identify this tree.

2. The small fly is Stomoxys calcitrans often known in English as the Stable Fly is one of the few members of the family Muscidae (house flies) that suck blood: although it seems from the context in the diary that Livingstone did not know this fly it was described by Linnaeus in the first edition of his Systema Naturae in 1758. The other large flies were members of the Family Tabanidae or Horse Flies.

fly apparently preferred feeding on the camels rather than the buffalo, donkeys and mules but the camels did not seem to feel the fly.

A camel died during the night of 6/7 May and, although he was unable to distinguish between disease and ill treatment as the cause of death Livingstone expected that many camels were still to die (although if he set out with six as indicated earlier he now had only four left). Another camel – " a very good one" – died during the day of 7 May and although its shiverings and convulsions were unlike those seen in horses and oxen that died from tsetse bites but he considered that the fly may be the cause of the mortality.

By now forward progress was only four miles (about 6.5 kilometres) per day and food very difficult to obtain. On 8 May one camel was a mere skeleton from bad sores and another had an enormous hole at the point of the pelvis which stuck out at the side. Livingstone suspected the latter was made maliciously because the animal came from the field bleeding profusely and no tree could have perforated such a round hole.

Another camel had died by 20 May when the location of the camp was close to the confluence of the Ngomano with the Rovuma at latitude 11° 26' 23" S, longitude. 37° 40' 52" E[1]. On the death of this camel Livingstone wrote "Were I not aware of the existence of the tsetse, I should say [it] died from sheer bad treatment and hard work". On 2 June the sepoys – Livingstone was always careful to distinguish his Indian bearers from the local natives – killed one camel with the butt ends of their muskets by beating it till it died. He was still ambivalent, however, about the true cause of death of some of his animals, sometimes writing he feared the tsetse to be the chief enemy but "here is a place like a bayonet wound on its shoulder, and many of the wounds or bruises on the camels were so probed that I suspect the sepoys". Although Livingstone now noted the dissimilarity of the symptoms observed in the camels and buffaloes with those he saw in his oxen and horses, on his earlier journey he still considered "the evil may be the tsetse, after all, but they have been badly used, without a doubt. The [....] camels have had large ulcers, and at last a peculiar smell, which portends death. I feel perplexed, and not at all certain as to the real causes of death".

The important dates are 24 March when the camels were put ashore, 4 April when the safari began and 7 April when the camels were first bitten by tsetse flies. One camel was so exhausted less than three weeks later that it had to be left behind on 26 April. Only 30 days after being bitten by tsetse two camels died, a further one died 13 days later and another was killed on 2 June some 59 days into the journey. It is not clear what happened to the sixth camel but it has to be assumed that it died or was left behind.

Livingstone could not decide whether the camels died from overwork, ill treatment or disease. Some 160 years later it is still not possible to decide but it is probable that all three factors were involved in the deaths of the camels.

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1. Ngomano village is now in Mozambique on the south bank of the Rovuma at its confluence with what Livingstone called the Ngomano but which is now known as the Lugenda.