

Veterinary pioneers

The story of Allerton Veterinary Laboratory

(This article is an adaptation of a talk given by Mr Brian Davies to members of the Pietermaritzburg Heritage Society when they visited Allerton on 12 October 2003.)

Allerton Veterinary Laboratory is situated in a park-like estate of about 23 hectares on Town Bush Road, Pietermaritzburg. The present Director, Dr H Weaver, tells us: ‘During his term of office Col. Watkins-Pitchford [the founder and first director of Allerton Laboratory] had arranged for the major portion of the property which now houses the Allerton complex to be purchased from a Mr Watson who was an avid tree lover, and responsible for planting most of the significant trees on the property.’

The original property had three homesteads, each probably on a separate sub-division. One of these was demolished, while the other two remain to this day. In 1897 an additional property was purchased for the complex and this had a 30-year-old house on it. Apart from the old buildings on the estate, there is a mysterious obelisk on which very faint lettering can be seen. Its origin and purpose are unknown. Another unique relic is an excavation which people thought was an old swimming pool, and rejoiced to think they might re-open it. Further discoveries led them to think it had been a tank into which huge quantities of formalin were poured and the carcasses of dead animals needing preservation were weighted down in it. There was no more talk of swimming in there!

The Heritage Society values Allerton for its older buildings, some of which were residences, and one of which was converted into offices, but with fine Edwardian building patterns and designs still visible. The gable of the office across the park is worthy of note, even if it needs some maintenance work.

The military and civilian importance of healthy draught animals in the late 19th century was evident. Goods trains were limited and motor transport unknown. Long before the Anglo-Boer War broke out, military men of both sides were aware that dead oxen do not pull wagons or heavy guns and ammunition up hills. Much of this article, however, will deal with personalities, as the present writer is not qualified to deal with topics like bacteria, viruses, venoms, germs, vaccines and serums.

There were four men, all moulded in the late 19th century, and their thinking flowed with the vast movements of humanity from what we now regard as primitive agriculture and animal care to methods which we vain mortals now think are the pinnacle of achievements in animal husbandry. The importance of healthy animals to human populations

is incalculable. Much of the story of Allerton deals with the personalities of these four pioneers – two Englishmen, a German and a Swiss.

Joseph Baynes, who came to Natal and established the famous dairy farm at Nel's Rust (later known as the Baynesfield Estate), was born on 2 March 1842 in Austwick, Yorkshire. In public life Baynes became a minister in the Natal colonial government. In 1902, he built the first cattle dipping-tank in South Africa to combat ticks, the carriers of east coast fever and other diseases. For the information on Baynes in this article I am indebted to the biography *Joseph Baynes, Pioneer* by R.O. Pearse.

Robert Koch was born on 11 December 1843, in Klausthal, Hanover. He was later to become a doctor, a world-renowned bacteriologist, Director of the Institute of Infectious Diseases in Berlin, and winner of the Nobel Prize for medicine in 1905. He visited South Africa in 1896 at the invitation of the Cape Government to help control the rinderpest then raging throughout the Cape and Transvaal.

Herbert Watkins-Pitchford was born on 3 June 1866, in Bath, England. His first and lasting love was the Army, and cavalry. However, at the suggestion of his father, a clergyman, he qualified at the Royal Veterinary College in 1889, and practised for seven years as a veterinary surgeon at the Royal Military College, Sandhurst. He was the first Director at Allerton and had the first laboratory built in 1897. He became a Lieutenant-Colonel in the Army, a Fellow of the Royal Society and of the College of Veterinary Surgeons, and a companion of the Order of St. Michael and St. George. He died at Illovo Beach, Natal, on 25 June 1951. In April 1979 the Watkins-Pitchford Building at Allerton, with its modern laboratories, was opened by the then Minister of Agriculture and named in honour of the energy and perseverance of Herbert Watkins-Pitchford.

Arnold Theiler was born on 26 March 1867 in Frick, Switzerland, and educated in Berne and Zurich. In 1891 he came to work for the Johannesburg Sanitary Board as a consulting veterinary surgeon. In 1893 he was promoted to be Veterinary Surgeon for the old Zuid-Afrikaansche Republiek (ZAR). By then rinderpest had broken out in Rhodesia, and the ZAR approached Robert Koch to help devise a remedy. He and Theiler worked together and the latter founded Onderstepoort, which grew into one of the largest and most important institutions of its kind in the world. He was appointed in 1897 as Veterinary Surgeon to the Transvaal State Artillery. His teams of relatively healthy oxen hauled big guns like Long Tom to the siege of Ladysmith, where Theiler remained with the Boer forces until the siege was lifted in 1900. Thelma Gutsche's book *There was a Man* records the life and times of Dr Sir Arnold Theiler in great detail.

Loyal friends of each of these four men argued the case for recognition as the man who discovered the cure for rinderpest and for various other cattle diseases. They also made these claims themselves, even though they were all busy in their fields of work in different parts of the world.

The first Colonial Veterinary Surgeon in Natal was Dr Samuel Wiltshire, who had military experience as an observer during the American Civil War in the 1860s. He came to Natal in 1874, and retired early in 1896. Dr Weaver explains that Wiltshire was virtually 'forced into retirement by the politicians who at the time were reluctant to lose favour with the farmers by legislating to control diseases such as lung sickness'. During his 20 years in service Dr Wiltshire occupied offices in Church Street where the Colonial Building stands today.

In 1896 when Watkins-Pitchford took over there were, of course, no office buildings at Allerton, and his offices were situated in the newly-completed, and first, City Hall in Pietermaritzburg. He said his first equipment consisted of ‘a damaged microscope, a few dilapidated instruments and some dozen bottles containing drugs’. He, too, found the opposition of the politicians and their agricultural constituents a severe trial.

The post Dr Watkins-Pitchford was appointed to was that of Principal Veterinary Surgeon for the Colony of Natal, at an annual salary of £500. He was 30 years of age, and had been selected from 101 applicants. On arrival in Natal after a voyage of four weeks, he placed his family in a boarding-house in Pietermaritzburg and travelled extensively, learning about his new country and job.

The Commissioner for Agriculture and Watkins-Pitchford were acutely aware of the need for a properly equipped laboratory for experimental research and bacteriological work. Watkins-Pitchford approved the Allerton site in the Town Bush Valley a few miles from the city centre, which had been previously identified as a suitable one by Wiltshire. A settler named Matthew Stead (c1800–1867) from Chapel Allerton near Leeds in Yorkshire had owned the original farm, and had given it its name, which has remained ever since. Watkins-Pitchford applied for the land and the building of a laboratory there. He got both, and in 1897 work began on the construction of the Allerton Research Laboratory.

Plans were prepared and the successful tenderer was one John Hardy who would do the work for £2 050. The new laboratory had an attic which housed a weather office. This is still to be seen, but is no longer put to its original use. Dr Weaver discovered an article in a now defunct newspaper of the time, *The Sketch*. Part of it reads ‘The government of Natal has just established at Pietermaritzburg a research laboratory for the investigation of the many diseases of stock incidental to this country. The building is sunken below ground level about six feet, so that the temperature of the lower storey may be as equable as possible during the hot weather.’

It is appropriate at this point to say something about rinderpest – a German word meaning ‘cattle plague’ – and the following information is an adaptation of material in R.O. Pearse’s biography of Joseph Baynes.

‘It is one of the most infectious animal diseases. The 1896–1897 outbreak in South Africa was a disaster of the first magnitude. Actually it is an Asiatic malady, originating on the steppes of Russia, and has been known and dreaded from the very earliest times. Some of the diseases mentioned by Virgil and even Homer were probably rinderpest ...

In the 5th century A.D. Western Europe was invaded by Attila the Hun, and rinderpest followed him. Charlemagne in A.D. 810 returned with his armies and brought it back into France. In 1870–71 it destroyed 70 000 cattle in France and 30 000 in Alsace-Lorraine. It broke out from time to time, apparently after periods of war and the disruption of agriculture.

One theory about its introduction into Africa is that during the British invasion of the Sudan in about 1880, they had imported large numbers of cattle from Russia to feed their armies, and they brought the infection with them, spreading it down the Nile valley, into Uganda, and the whole of East Africa. Another theory is that the Italians introduced it when they invaded Eritrea and Somaliland about 1890 and imported diseased cattle for their armies. The Russian Government had offered a reward of one million roubles for the person discovering the most effective method of treating rinderpest.’

As rinderpest moved southwards in Africa, alarm grew. It spread to Bulawayo, then to Bechuanaland. The Transvaal and the Orange Free State were next. In 1890 the Volksraad had been asked by President Kruger to set up a Department of Agriculture, but it turned down his request. 'Free independent farmers working their own lands for which they had fought refused to allow the imposition of bureaucratic control.' In 1894 another attempt was made.

At that time Arnold Theiler was the only veterinarian in the Transvaal, and in 1896 was sent to Matabeleland to investigate the disease. He telegraphed back to Pretoria that cattle lay in stinking profusion along the roads, dead from rinderpest. Theiler ordered the slaughter of all infected herds and the payment of compensation by the state. Transport-riders were spreading the disease unwittingly, as were trekboers and black herders.

There were then two kinds distinct types of cattle farmer. Firstly there was the trekboer who moved his stock up to the highveld in early summer to get the fresh new grazing, and in winter he trekked them down to 'the thorns' in the Lowveld where the grass was sweet and the cold less intense. He was the beef farmer. Secondly there was the dairy farmer whose herds did not move long distances. Joseph Baynes was very successful at this type of farming, producing high quality milk, cream, butter and cheese. He had a chain of outlets in Natal called The Model Dairy, which many of us still recall.

When the Natal Colonial Government prohibited the movement of livestock from the Transvaal, the trekboers of northern Natal were caught with some of their cattle in the summer grazing lands of the highveld in the Transvaal, and they were stuck there. Irritation was intense, and they were not very co-operative. Indeed it was suspected that they had a peculiar sabotage plan against the 'over-educated' veterinarians from Europe who, they thought, were trying to teach their grandmothers to suck eggs.

The 'home remedies' for rinderpest are now regarded with sympathy but disbelief. They included snake venom, a soup made from the carcass of a diseased animal, and a mixture of brandy, salt, linseed oil, copper sulphate, potassium permanganate and onions tied in a cloth to the horns of oxen. President Paul Kruger himself had a remedy: four inches of tobacco, a cup of flour, about 250 ml of paraffin, and a bottle of water. If the beast was still alive the next day, the drench was to be repeated. Watkins-Pitchford thought all these were nothing more than hoaxes. The Commissioner of Agriculture in Natal, Charles Banastre Lloyd, put him wise. 'It is absolutely genuine and serious, and typical of the mental grasp of 90% of the farmers of the country. That is what you are up against!'

While waiting for his laboratory to be built, Watkins-Pitchford had been sent to the Transvaal in 1896 and spent some weeks with Arnold Theiler, where they looked at a newly-developed technique from Europe called 'serum therapy'. They felt confident that the only way to beat this plague was through the laboratory. Rinderpest spread extremely quickly, and in 1896 it was reaching a climax. Theiler found a kindred soul in Watkins-Pitchford when he took him to the Waterberg to show him the disease at first hand, and found him an eager pupil.

Other animal diseases including east coast fever, horse sickness and bubonic plague were also occupying Watkins-Pitchford's attention at this time – the late 1890s before the outbreak of the Second Anglo-Boer War. Quarter-evil was brought under control with a single-dose vaccine.

The Cape Government called a conference at Vryburg on 31 August and 1 September 1896, attended by delegates from Transvaal, Natal, the Cape, Basutoland, Bechuanaland, German South-West Africa and the Orange Free State. Watkins-Pitchford was one of the two Natal delegates. 'Home remedies' for rinderpest were criticised, but Watkins-Pitchford remained silent throughout much of the conference, having so recently arrived from Britain. He did, however, make a good point at the end: 'I think that all the time spent administering medicines internally for rinderpest is not only wasted but very badly spent. The only possible hope of a remedy is in the serum treatment. I do not think any drug would check the disease when the organism is in the blood multiplying there, while you are only acting on the alimentary canal.'

After the Vryburg Conference Theiler, and Watkins-Pitchford were sent by their respective governments to the Marico district 20 miles from the Bechuanaland border, and laboured in the summer heat trying to immunise cattle using injections of virus in the form of fresh blood from an infected beast that had already recovered from the disease. The system of rinderpest vaccination in use today differs little from the process discovered by Watkins-Pitchford and Theiler in 1896. Gutsche writes of their association: 'They appeared a singularly incongruous couple – Theiler with his swarthy complexion and continental, his guttural English, slight swagger and determination to hunt for the pot between his official duties; Watkins-Pitchford the very picture of an English vet., in breeches and gaiters with billycock hat, clean-shaven, blue-eyed and voluble.'

Koch's 'serum method' was brought by him to South Africa in 1897, but in his laboratory in Kimberley he found his method not as good as Theiler's and Watkins-Pitchford's 'bile treatment'. The latter two ran out of animals to treat in the Marico district and moved to Rustenberg in 1897, but Theiler was ordered back to Pretoria by the Transvaal Government, leaving Watkins-Pitchford to carry on until recalled by the Natal Government.

The desire to gain fame by being credited as the discoverer of the cure for such an infamous disease as rinderpest spurred these men on. The million-rouble prize offered by the Russians also helped, no doubt. A hundred years later we speculate whether, if there had been no rinderpest outbreak then, the Allerton laboratory might not have been erected so speedily, and Watkins-Pitchford might have died as a veteran veterinarian in England.

Interestingly, had it not been for Watkins-Pitchford there might have been a different City Hall standing in Pietermaritzburg today. The old one was built in 1893 and burned down in July 1898. Thelma Gutsche reveals a case of political intrigue which some may find hard to believe. Briefly, it was alleged that a spy had been placed in Watkins-Pitchford's entourage at the instance of politicians put up to it by furious northern Natal cattle farmers who had suffered severe losses through the closing of Natal's borders against cattle movements. They blamed Watkins-Pitchford for disregarding their interests.

The 'spy' is alleged to have been venal and cattle entrusted to his care had mysteriously disappeared. Charges of stock theft against him were being investigated and the statements of the witnesses were in Watkins-Pitchford's office in the tower of the City Hall.

The spy's stock records had been abstracted from his desk by those loyal to Watkins-Pitchford, with the consent of the Colonial Secretary, and they are alleged to have shown discrepancies which would have proved damning. Watkins-Pitchford suspected

that the Colonial Auditor's department and the Accounts departments had been warned by government officials in cahoots with the spy that their records were in danger. They were in the same building as Watkins-Pitchford's offices, namely the 1893 City Hall.

The fact that this spy and the civil servant who had appointed him were using money from the 'rinderpest funds' instead of the usual Civil Service allocations, was uncovered by the investigations of Watkins-Pitchford and his colleagues. A man's career was at his mercy. The civil servant informed on the spy to Watkins-Pitchford, but then joined up with him again when Watkins-Pitchford refused to stop his enquiries into the irregularities. The two conspirators had only one way to escape being exposed – to destroy the evidence.

The City Hall was broken into on the night of 31 July 1898 while the caretaker was conveniently in Durban. A Zulu worker in the City Hall saw a European male leaving the building long after locking-up time. A fire broke out shortly afterwards, which destroyed the whole building. In Watkins-Pitchford's office the papers relating to the stock theft case were destroyed, and almost all his scientific records on the rinderpest epidemic, which were to be used to claim the Russian reward.

Watkins-Pitchford had returned home to Allerton that evening and at dinner was informed by his Zulu servants that the City Hall was on fire. He saddled up and rode back again to witness the destruction of the building, its great bells crashing down the tower to the basement. Having seen photographs of the interior of the first City Hall, I am rash enough to say that the unknown arsonist or spy did Pietermaritzburg a favour that night. Our present City Hall seems to me a better and more dignified building.

Late in 1899, after the outbreak of war, Watkins-Pitchford and some of his senior Allerton staff were sent to Ladysmith where the British army was assembling, with cavalry and horse-drawn artillery regiments needing some veterinary advice. British cavalry regiments were often fresh from England where the horses were stall-fed, and putting them out to graze on unfamiliar Natal pastures was affecting their nutrition and condition. Also, because their tails and manes had been cut, the stinging and sucking Natal horse flies could not be whisked off by the luckless animals, and they had become bad tempered and difficult to manage.

The Allerton team was still there when the Boer army surrounded Ladysmith and commenced its bombardment with 'Long Tom' from the top of Umbulwana. Watkins-Pitchford was inside British-held Ladysmith throughout the siege, while his colleague Arnold Theiler was caring for draught animals on the Boer side, employed by the Transvaal State Artillery which was lobbing shells into the besieged town.

Food grew scarce, and Watkins-Pitchford advised the military command to start slaughtering horses for food. The cavalrymen objected. Their horses were highly cherished. Without them they became infantrymen. One day a Boer shell dropped into the cavalry lines and killed two or three horses. That night in a cavalry regiment officers' mess, steaks were served for the first time in many months. Watkins-Pitchford had ordered the butchers to cut up the carcasses, and on each steak was a splinter with a note stating that it was horse meat. Opposition to the slaughter of horses began to wane. Watkins-Pitchford wrote an account of his experiences during the siege in the form of a series of letters to his wife. It was published but is not widely known. (*Besieged in Ladysmith: A letter to his wife, written in Ladysmith*, Pietermaritzburg: Shuter and Shooter, 1964.)

While he was trapped in Ladysmith during the siege, the work at Allerton came to

a total standstill. Searchlights were used by the British signallers in both the besieged and the relieving armies to communicate by Morse code on cloudy nights. One such message to Watkins-Pitchford from Allerton was to ask him where he had put the keys of certain doors and cupboards. He replied that he had them with him!

Four days after the relief of Ladysmith on 28th February 1900, the team was back at work at Allerton. Watkins-Pitchford's health had suffered during the four-month siege, however, and later that year he returned to England on recuperative leave, having sent his wife and children there before the war began.

When he returned to Natal in 1901 he was appointed Chief Government Bacteriologist and his successor as Principal Veterinary Surgeon was Dr S. B. Woollatt. At Allerton Watkins-Pitchford worked on research into many of the other diseases affecting cattle in the Colony: horse-sickness, quarter-evil, bubonic plague and blue-tongue. He also worked on the production of snake venom serum. His most valuable work at this time was probably in combating east coast fever, carried by ticks, by means of dipping-tanks and sprays. It was in collaboration with his friend Joseph Baynes that he devised this means of treatment and so enabled diseases such as redwater and east coast fever to be brought under control.

At Baynesfield one can see the first cattle dipping-tank built in South Africa. Baynes had bought cattle in Australia and shipped them from Queensland to Durban. Mr Brooker, an Australian stockman, accompanied them on the voyage, and when they arrived here only about 100 head remained from a herd of over 500. Brooker suggested dipping cattle against tick-borne diseases, as they were doing in Queensland. Baynes, Watkins-Pitchford and others agreed it was a good idea, and had the dipping tank constructed in 1902. Dipping proved to be effective in the fight against redwater. The Australian dipping mixture was modified by Watkins-Pitchford to deal with the tougher ticks we have here. The mixture sounds quaint now, and echoes some of those remarkable 'home remedies' used against the rinderpest. Baynes's formula was: 6 lbs arsenic, 24 lbs common yellow soap, 24 lbs washing soda crystals, 5 gallons Stockholm Archangel tar, 400 gallons of water. The mixture was boiled for at least 6 hours before use, and a warm dip (about 38°C) was found to be most effective. It could be used several times, and needed topping up only occasionally. It had desirable side-effects too, removing scurf and dirt from the animals' coats.

The Bambatha Rebellion broke out in 1906 and refugees drove their cattle around Natal and Zululand to escape the conflict. East coast fever then broke out, and dipping-tanks were hastily built in other districts, using Baynes's pattern. Baynes is reported to have lost only eight animals from east coast fever in the period 1906 to 1908. He and Watkins-Pitchford worked in close collaboration to improve the dips in use. Much of the research was done in laboratories at Allerton, much of the field testing at Nel's Rust. The two men became close friends.

Watkins-Pitchford applied for the post of Chief Veterinary Officer of the newly-formed Union of South Africa in 1910, but was pipped at the post by his former colleague Dr Arnold Theiler, who knew the new Prime Minister Louis Botha personally and had the advantage of being able to speak Dutch, which Watkins-Pitchford had not mastered. Watkins-Pitchford resigned in 1912, and returned to England with his family, where he rejoined the Army.

After serving in the First World War he returned to Natal and settled on the South

Coast where he died on 25 June 1951 at the age of 86. He was interested in historical matters, and his studies of the Barry family led him to write a novel, *In God's Good Time*, published in Pietermaritzburg in 1948. He was a self-taught water-colour painter, and illustrated his numerous scientific papers in careful detail. He was also an organist. His military decorations are in the Africana Museum, Johannesburg.

Harry Lugg, a former Chief Native Commissioner in Natal, and author of *Historic Natal and Zululand* (1949) observes: 'Colonel Pitchford's preventive measures have effected enormous savings in losses from animal diseases. He was awarded the CMG. by the Imperial Government for his work ... during the first Great War where, as Commandant of the Royal Army Veterinary School, he was instrumental in saving thousands of horses in England and France from a mysterious epidemic introduced from America, but for his services in South Africa he received only the thanks of a grateful public and the blessings of the Natal Parliament.'

BRIAN DAVIES