1

Prologue

Almost all of the cattle in Rhodesia died in 1896: "total annihilation of the cattle by rinderpest – no milk, no beef in a few days – but lots of lovely smells from dead cattle." Thus Earl Grey, writing to his son from Bulawayo, Rhodesia, May 8, 1896.¹

Less than six years later, after a slow and costly replacement of the cattle that had been wiped out by rinderpest, another almost invariably fatal disease of cattle broke out in Rhodesia. Originally thought to be a virulent form of an already well-known disease, Texas fever or redwater, it was, in fact, a disease never before seen in Rhodesia, a disease unknown to veterinary science, a disease that we now call East Coast fever.

Stanley Portal Hyatt, who made a living by operating ox-drawn wagon trains, and who was bankrupted by the death of his oxen, later wrote:²

Rinderpest was the Act of God. The spread of African Coast Fever was due entirely to the criminal folly of men . . . The Chartered Company’s government was bombarded with requests, prayers, petitions to take prompt measures . . . The only answer was . . . that the plague did not exist . . . the reason was obvious – Rhodes had just died, and to admit the existence of a new cattle disease would have sent down Rhodesian shares.

Months afterwards, when all the cattle on the high veld were dead, the government found itself compelled to admit that mistakes had been made . . . I attacked them so strongly in the columns of one of the great London financial dailies, that they were compelled to do something. What they did was send Dr. Koch out to investigate. He could not stop the disease, because there were practically no more oxen to die; but he could tell them the cause of it.

Hyatt’s letter, dated Hartley, Mashonaland, October 1, 1902, appeared anonymously in the Financial News on November 28, 1902, a few days after the great German bacteriologist, Robert
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Koch, had been asked to undertake an investigation. Hyatt was wrong in his belief that his letter provoked the employment of Koch, he overvalued the results of Koch’s work, and he was probably wrong in believing that the spread of the disease could have been prevented. But he was not wrong about the British South Africa Company’s concern over the price of its shares. The day that his letter appeared a copy was sent by the Company’s managing director in London to the Company’s administrator in Salisbury with a covering letter: “Some idiot sent the enclosed letter to the Financial News and it appeared this morning. Fortunately it is so obviously biased and extravagant that it produced no effect on the market . . . . Do you think you can spot the writer?”

East Coast fever was not a new disease, but it was unknown to veterinary practice or veterinary science until it appeared in epidemic form in Rhodesia late in 1901. The spread of the disease produced an angry public reaction directed against the local representatives of the British South Africa Company and an equally stubborn refusal by the public to follow sound expert advice. Urgent requests for help and advice went to Australia, Cape Town, Buenos Aires, London, Paris, Toulouse, Berlin, Baton Rouge and even the famous Texas cattle ranch, the King Ranch. The progress of the disease, and of the investigation of it, were followed closely by veterinary scientists throughout the world. The colorful and controversial Colonial Secretary, Joseph Chamberlain, furiously opposed the employment of a famous bacteriologist to investigate the disease because that bacteriologist was a German. In spite of Chamberlain’s objections, Robert Koch, who was one of the founders of modern bacteriology, was brought from Berlin to Bulawayo at great expense (including a personal fee equivalent to £200,000 today), spent more than a year in Bulawayo and contributed little that was useful. While Koch was at work in Bulawayo, in South Africa a salaried government entomologist, Charles Lounsbury, and a salaried government veterinary bacteriologist, Arnold Theiler, sorted out the facts and got most of them right. It took more than fifty years to bring the epidemic fully under control in Rhodesia and South Africa. And all this may have been caused by a single infected tick or infected animal that managed to find its way, by sea and land, from Dar-es-Salaam to Umtali.
Spread of the disease

The spread of the disease

The annual Umtali Agricultural Show, in late April and early May, 1901, was a great success. Twenty prizes were awarded for cattle and the local newspaper, the *Rhodesia Advertiser,* commented on May 9, 1901: “The cattle exhibits were really extraordinary for such a place as Umtali both as regards to quality and variety. We have no hesitation in saying that there are few places in Africa that could compete with Umtali for the quality of its cattle.” On May 16, the Advertiser reported that a speaker at the Agricultural Dinner on May 3 had said that “the class of cattle now in Rhodesia . . . were much better than what was here before the rinderpest.” After votes of thanks, the band struck up *God Save the King* and “there terminated one of the pleasantest social functions ever held in Umtali.”

Less than a year later, on March 18, 1902, Lionel Cripps, whose farm was in the hills of the Vumba, well outside Umtali, made an entry in his diary: “Large numbers of cattle are dying and have died during the past few months – the [illegible] have lost nearly all their spans [of oxen] and losses heavy in town. In Melsetter the disease is spreading and it is now bad in Salisbury.”

Nothing had appeared in the *Rhodesia Advertiser* from May 1901 through September 1901 to suggest any problem. Although three cattle belonging to the Sanitary Board were quarantined for red-water in late June, the Advertiser published no reports of serious cattle disease in July or August, or even as spring approached, as it does in the southern hemisphere, in September. But on October 10 the Advertiser reported that the Sanitary Board had lost six more cattle and its issue of October 24 contained an official proclamation listing five areas in which “Red-Water” had broken out. It said: “By virtue of the provisions of the Animals Diseases Act of 1881, I hereby declare the said areas to be infected . . . no animals shall be allowed to stray or to be removed into any uninfected area from the said infected areas.” One of the areas was the Quarantine Station of the Umtali Sanitary Board (19 cases) and another was the Waterworks Farm, Umtali (29 cases). But the other three areas, with a total of 112 cases, were in Melsetter, which is nearly sixty miles south of Umtali and considerably further along ox-cart trails.

The spread was relentless. The *Rhodesia Advertiser* for November 14, 1901 reported that the Sanitary Board had been put to heavy expense in hiring cattle to replace those affected by the disease. On
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Fig. 1 Southern Africa: map showing places mentioned in the text and showing railroads as of late 1901. Dar-es-Salaam is not shown; it is on the coast of German East Africa (Tanzania) about 1,000 miles north and 500 miles east of Beira. Based on a map in R. I. Rotberg, *The Founder: Cecil Rhodes and the Pursuit of Power*, New York, Oxford University Press, 1988.

December 5, the *Advertiser* carried another infected area proclamation, this time dealing with the Penhalonga Valley a few miles north of Umtali, although there was still no comment in the news columns. By January 23, 1902, we find another official notice in the *Advertiser*: "Transport Riders and Cattle Owners in the Umtali district are warned that by reason of the thorough infection of the Umtali commonage with the 'RED-WATER TICK' Outspanning or Grazing Animals on this ground is dangerous, as by so doing there is considerable risk of losing unacclimatized cattle, and of spreading the disease throughout the district."

That notice appeared again on January 30, 1902, but it was probably far too late to check the spread of the disease, even if that had ever been possible, for in the same issue we find that "the disease is now unusually prevalent in the Salisbury, Umtali and
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Melsetter districts.” Within three months of the October outbreak the disease had reached Salisbury, 165 miles west of Umtali and was on its way south to Bulawayo, 275 miles south-west of Salisbury.

The Bulawayo Chronicle for April 25, 1902 noted that the disease had reached Gwelo, halfway from Salisbury to Bulawayo, where the “outbreak has been the sole topic of conversation in town for the past two days, for its serious nature cannot be underestimated.” The same issue of the Chronicle contained a Government Notice: “during the prevalence of the Redwater in the Salisbury and Umtali districts, permits will not be granted to allow stock to move in the direction of Salisbury beyond Enkeldoorn.” (Enkeldoorn, now Chivhu, is about 90 miles south of Salisbury and 85 miles north-west of Gwelo.) On April 29, the Chronicle reported that no cattle were to proceed from Gwelo towards Bulawayo, or to cross the Shangani river in the opposite direction (the Shangani is about two-thirds of the way from Bulawayo to Gwelo). But, on May 7, we read in the Chronicle that “a disease — whether redwater or not does not seem to be ascertained — has broken out ... at Khami [a mere seven miles south-west of Bulawayo],” that “farmers in general view the situation with gloomy foreboding and fear that many cattle will be carried off,” and that “the price of donkeys has risen further.” The Chronicle of May 12 reported that “the much dreaded pest has made its appearance in Bulawayo.” Much dreaded indeed: “there was a stampede on account of it, in all directions, of white men fleeing with their cattle from the African Coast fever which had worked its way from Beira via Salisbury to Bulawayo.”

Many Government Notices had appeared, designed to prevent the spread of the disease. A very different notice appeared on July 24, 1902, advising the public that “Farmers, Transport-Riders and others” would be given assistance in purchasing donkeys. On August 5, 1902 the Board of Directors of the British South Africa Company appropriated £10,000 for that purpose and soon began attempts to buy donkeys in India and Spain, thus conceding that oxen could no longer be relied on for transport in Rhodesia.

The annual Umtali Agricultural Show was held again the next year; it began on May 2, 1902. The Rhodesia Advertiser for May 8 described it as “a brilliant success,” but there were no prizes for cattle. The cattle disease had appeared in Umtali in October, 1901; by May, 1902, there were no cattle left to compete for prizes. And if
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there were a few cattle still alive, their owners were certainly not going to risk bringing them to or anywhere near Umtali.

In the chapters that follow I will tell how the public reacted (usually by blaming the government while not cooperating with it); tell how several governments (that of the British South Africa Company, which governed Rhodesia, that of Great Britain, and those of South Africa) responded; tell of a prolonged and complicated search for expert advice; tell why, for purely local political reasons, the British South Africa Company insisted that Robert Koch work in Bulawayo instead of Pretoria and why that mattered so much; tell of the work of veterinarians and of scientists (especially Robert Koch and Arnold Theiler); tell how difficult it is to prove that a new disease is a new disease and to identify its cause; tell of the long struggle to contain the disease by quarantine, dipping to kill ticks, fencing and even the eradication of herds; tell what we know about East Coast fever today; and tell why Joseph Chamberlain, outraged at being asked to secure the services of Robert Koch, scribbled:¹⁰ “if the Royal Society has another candidate I would suggest to Rhodesian Government that Bacteriology is not entirely ‘made in Germany’. Then if they still want Koch they may ask him themselves.” They did want him and they did ask him themselves – much good it did them.
2

The places and the players

It is not easy to set the stage on which our story was played. It is a story of two diseases, of two kinds of parasite, of two kinds of tick, of many governments and of many people. The diseases were redwater (Texas fever) and Rhodesian redwater (East Coast fever). The parasites were those that cause those diseases. The ticks were the blue tick and the brown tick, which have very different habits. As many as eight governments played a role: those of Great Britain, Germany, Rhodesia and Australia, as well as the governments of the four provinces of what is now the Republic of South Africa. (When East Coast fever first invaded South Africa, two of those provinces were British colonies: the Cape Colony and Natal. The other two provinces, about to lose the Boer War and become British colonies, were the still independent Orange Free State and the Transvaal.) As to people, they ranged from the Secretary of State for the Colonies (Joseph Chamberlain) and a future winner of the Nobel Prize (Robert Koch) to bankrupt European settlers and African communal farmers whose store of wealth and way of life were at risk.

The country that is now known as Zimbabwe was, for many centuries, protected from the outside world by being remote from the Indian Ocean and by being, along much of its eastern border, separated from that ocean by a mountain range. Thus protected, it largely escaped the attention of the slave trade. Its eastern regions were the object of Portuguese exploration and trading at market centers (“trade fairs” or “feiras”) in the sixteenth, seventeenth and eighteenth centuries and even into the nineteenth century. Although Zimbabwe escaped actual colonization by the Portuguese, the Portuguese influence remained strong as late as the 1880s, particularly in the regions now known as eastern Mashonaland and Manicaland. Apart from that, the original peoples of what
is now Zimbabwe were not seriously disturbed from outside their territory until 1838, when a group of Zulu origin, led by Mzilikazi, invaded the south-west. The main settlement of that group was named Bulawayo as two of Chaka's towns had been some years earlier. The region occupied by Mzilikazi and his followers (the Ndebele or Matabele) became known as Matabeleland; the rest of the country, still occupied by the Shona, became known as Mashonaland, at least for the administrative purposes of the British South Africa Company.¹

Livingstone's Zambezi expeditions occurred between 1853 and 1863. Europeans seeking elephant ivory, including the famous hunter F. C. Selous (known in fiction as Allan Quatermain), ranged far and wide across the region in the late 1870s and 1880s. Although the discovery of gold by Hartley and Mauch in the late 1860s had attracted what C. D. Rudd called a "rum lot" of adventurers to the country, it remained reasonably autonomous until Mzilikazi's successor, Lobengula, signed the fateful Rudd concession in 1888. The Rudd concession gave its grantees "complete and exclusive charge over all metals and minerals" in Lobengula's kingdom. The ownership of the Rudd concession was soon transferred to an organization called the Central Search Association, which continued to own it until the formation of the British South Africa Company. Rhodes and his partner, Alfred Beit, having amassed a huge fortune from the diamond and gold mines of South Africa, now proposed to extend the British empire in Africa to the north. That extension of the empire was to cost the taxpayers nothing, because it would be funded by a private company, the British South Africa Company, which, once formed, would be in a position to sell shares because it owned the Rudd concession with its promise of rich new gold fields.²

The British South Africa Company, the B.S.A.C. or Chartered Company, was granted a Royal Charter in October, 1889. That Charter gave, or appeared to give, the British South Africa Company extensive powers over the region that makes up the countries now known as Zimbabwe and Zambia, "including powers necessary for the purposes of government, and the preservation of public order" (subject, however, "to the approval of one of our Principal Secretaries of State," i.e. the Colonial Secretary). The charter thus appeared to give the directors of a shareholder-owned, profit-making company full governmental powers, powers ranging all
the way from the right to hang people to the right to print postage stamps.3

The Chartered Company soon took advantage both of the Rudd concession and of its charter, to send a small army, the “Pioneer Column,” north to “Fort Salisbury” (now Harare). This began the occupation and colonial settlement of what was to become Rhodesia. A bewildering series of proclamations and legal maneuvers designed to bring the government of the country under the control of the Colonial Office occurred in 1891, but by 1892 the government of Rhodesia was, for all practical purposes, in the hands of the Chartered Company and its Administrator, L. S. Jameson. In 1894 a complex agreement was reached which gave the Colonial Office’s High Commissioner for South Africa extensive powers to confirm or overrule various actions, but the Chartered Company continued to retain all day-to-day power.

In 1898, partly as the result of African uprisings and partly as the result of the Jameson raid, which is discussed below and in chapter 6, the Colonial Office strengthened its control over Rhodesia by restricting the power of the Chartered Company’s Administrator and by increasing the power of its own Resident Commissioner. The Resident Commissioner was given “full power to call for reports or information from the Administrator [and], on information furnished by him, the High Commissioner would act in confirming, reserving or disallowing ordinances.”4 The decree of 1898 also created a local Executive Council and a local Legislative Council but, in practice, the B.S.A.C. and its Administrator remained in full control. However, although the Chartered Company’s Administrator had full local power, he was subordinate to the London office of the B.S.A.C. The Resident Commissioner also had extensive local powers of oversight, but he too was subordinate, not only to the High Commissioner for South Africa but also to the Colonial Office in London. And both the Administrator and the Resident Commissioner had to deal with the colonial settlers.

Between 1890 and 1898 Rhodesia had produced a little gold, many problems and no dividends for the shareholders of the B.S.A.C. But it had succeeded in one of Rhodes’ goals, that of attracting settlers, who increasingly demanded a role in the government. They did obtain seats on the Legislative Council in 1898. By 1902, the economic dislocation caused by the Boer War, combined
with the death of Rhodes, led to increased demands by the settlers for an even greater voice in the government, a voice which they obtained in 1903. East Coast fever thus appeared in a country that had two sources of governmental authority, the Chartered Company and the Colonial Office, and a settler population that was demanding more and more self-government. The Chartered Company and the Colonial Office had many reasons to distrust each other and the settlers were only too ready to distrust the Chartered Company and were not ready to take its view of the new cattle disease on faith.

The ticks

Both Texas fever (redwater) and East Coast fever are transmitted by the bite of a tick. There are four stages in the life of a tick. It begins life as an egg; that egg hatches to yield a “larva.” The larva, having sucked blood from a host, retires for a time to grow, shed its skin, and emerge as a “nymph.” The nymph, after it too has sucked blood from a host, in turn retires for a time, which it also dedicates to growing and to shedding its skin. Having shed its skin (or “moulted”) the nymph emerges as an adult tick, either male or female. Adult ticks, having again fed on the blood of a host, mate. The fertilized female, engorged with blood, lays thousands of eggs.

The larval forms, the nymphs, the adults and the mating adults of the blue tick remain on the same animal. The female finally drops off that animal to lay her eggs on the ground. A tick that spends all of its life on one animal cannot transmit a disease by feeding on another animal. But the female blue tick, if she has fed upon an animal infected with Texas fever, acquires its causal parasite and passes it on to her eggs. The generation that is born from those eggs then infect the animal they feed upon. The brown tick, which transmits East Coast fever, passes through the same stages of egg, larva, nymph and adult, but each time it sheds its skin, it moves from one animal to another, and can thus, in a single generation, carry the disease from one animal to another. But the parasites do not appear in its eggs and thus do not pass from one generation to the next.