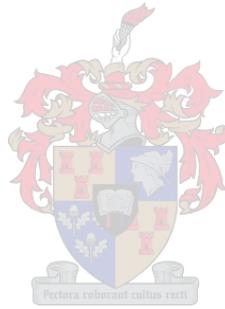


**THE STORY OF A DISEASE:
A SOCIAL HISTORY OF AFRICAN HORSE SICKNESS,
C.1850-1920**

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STELLENBOSCH**

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DECLARATION:

By submitting this thesis electronically I declare that the entirety of the work contained therein is my own original work, that I am the owner of the copyright thereof (unless to the extent explicitly otherwise stated) and that I have not previously it its entirety or in part submitted it for obtaining any qualification.

16 February 2009

ABSTRACT

African horsesickness is a disease endemic in Sub Saharan Africa affecting horses, a non-native species, which are extremely susceptible to this disease. Both the ‘dunkop’ form (with its dramatic high fever, laboured breathing, frothy nasal discharge and sudden death) and the ‘dikkop’ form (with its swollen head and eyes and bleeding in the membranes of the mouth and eyes) have been visited upon equine populations and their human owners in successive epidemics through the earliest colonial settlement until recent times.

This thesis traces the development of veterinary science in South Africa and the effect it had on the changing ideas surrounding African horsesickness. It explores not only the veterinary progress in the country but also the impact of the progress on African horsesickness as other diseases received attention. The discussion traces the disease from one of the major epidemics ever encountered in the country, in the mid nineteenth century, to the beginning of the development of veterinary services in South Africa when little was known about African horsesickness. It illustrates the implications of a country's struggle with animal disease, the reasons for a lack of knowledge and the ramifications of the Onderstepoort Veterinary Institute's interventions. This thesis shows that African horsesickness not only had an impact on the veterinary developments of the country but was also indirectly involved in the South African War, 1899-1902. It demonstrates the impact of disease during wartime while illustrating the importance of horses during such difficult times.

Thus, this thesis draws on works on animal diseases and on social history to explore not only the effect African horsesickness had historically on equines, but the effects it had more broadly on southern African society. This study is intended to bring insight into the social history of the disease itself: how it was experienced by livestock owners and also how settler and indigenous efforts were turned towards combating this dramatic disease.

OPSOMMING

Afrika-perdesiekte is 'n siekte inheems aan sub-Sahara-Afrika, en perde, as 'n nie-inheemse spesie, is die vatbaarste draer van hierdie siekte. Die “dunkop”-vorm (gekenmerk deur 'n geweldig hoë koors, swaar asemhaling, 'n skuimagtige afskeiding uit die neus en 'n skielike dood) sowel as die “dikkop”-vorm (gekenmerk deur 'n geswolle kop en oë en bloeding in die weefsel van die mond en oë) het perdepopulasies en hulle menslike eienaars in opeenvolgende epidemies getref vanaf die vroegste koloniale nedersettings tot in die laaste jare.

Hierdie tesis volg die spoor van die ontwikkeling van veeartsenykunde in Suid-Afrika en die impak wat dit op die veranderende menings oor Afrika-perdesiekte gehad het. Dit ondersoek nie net die vooruitgang van veeartsenykunde in die land nie, maar ook die impak van hierdie vooruitgang op Afrika-perdesiekte namate dié siekte meer aandag getrek het. Die bespreking volg die siekte vanaf een van die grootste epidemies ooit in hierdie land in die middel negentiende eeu tot aan die begin van die ontwikkeling van veeartsenydienste in Suid-Afrika toe daar nog bitter min inligting oor Afrika-perdesiekte bekend was. Dit wys op die implikasies van die land se worsteling met hierdie diersiekte, die redes vir die gebrek aan kennis, en die uitvloeisels van ingrype deur Onderstepoort. Hierdie tesis toon aan dat Afrika-perdesiekte nie net 'n impak op die ontwikkeling van veeartsenykunde in die land gehad het nie, maar ook 'n indirekte rol gespeel het in die Tweede Vryheidsoorlog in 1899-1902. Dit dui op die invloed van hierdie siekte in die oorlogtyd en illustreer terselfdertyd die belangrike rol van perde in sulke moeilike tye.

Hierdie tesis maak dus gebruik van werke oor diersiektes en kultuurgeskiedenis om nie net die gevolge van Afrika-perdesiekte op perde in die geskiedenis te ondersoek nie, maar ook die impak wat dit in 'n breër sin op die samelewing in Suider-Afrika gehad het. Die doel van hierdie studie is om insig te bied in die kultuurgeskiedenis van die siekte self: hoe uiteenlopend dit deur diere-eienaars ervaar is, en hoe koloniste en buitelandse se pogings gefokus is op die bestryding van hierdie ernstige siekte.

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ABBREVIATIONS

Secretary for Agriculture	AGR
Annexures to the votes and proceedings of the house of assembly	AMPT PUBS
Cape Colony Publications	CCP
Colonial Office	CO
Chief Veterinary Services	CVS
Under-Secretary for the Department of Agriculture	DA
Government House	GH
Government Secretary	GS
Cape Town Archival Repository	KAB
Legislative Council	LC
Lieutenant Governor	LTG
Political Secretary	PSY
Public Works Department	PWD
National Archives Repository, public records of former Transvaal Province and its predecessors as well as of magistrates and local authorities (with SAB)	TAB
Transvaal Agriculture Department	TAD
Transvaal Volunteers	TVO
Free State Archive Repository	VAB

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CHAPTER 1: LITERATURE REVIEW AND METHODOLOGY

1. Introduction

This chapter will address the literature review and the methodology used in writing this thesis. It will include an overview of the interdisciplinary nature of socio-environmental history and will subsequently illustrate how this thesis intends to contribute to the historiographic trajectories discussed. This chapter will begin with a short discussion of general ideas concerning disease held by historians internationally, followed by the different conceptions and impressions about diseases in Africa. A brief synopsis of South African environmental history will position the thesis within the existing historiography. This chapter will explore the methodologies and sources used during the writing of the thesis, before delineating the use of conventional archival and printed scientific primary sources, as well as the application of less traditional and more popular texts. The final part of the chapter will introduce the subsequent chapters of this thesis.

2. Methodology

2.1. Socio-environmental history

Within the broad field of history, this thesis can be positioned in the field of environmental history. The point of departure lies within the growing sub-discipline of the socio-environmental domain as it does not lean towards an absolute environmental focus, due to the inclusion of social, political and sometimes economic factors.

This thesis examines the development of the veterinary services in South Africa. It became clear that the history of the government veterinary service is basically more a history of institutions, experiments for the attainment of knowledge and of the development of public policies. There was no overall analysis of the role played by veterinary medicine in Britain, let alone in the individual colonies. Therefore, the social history of horsesickness needs to be positioned within several historiographical contexts. One of these is the political and social economy of the country, because the veterinary branch of the Department of Agriculture originated as a result of the state's efforts to

foster and develop stock farming, therefore relating to the agrarian history of the region.¹ The rise of an official veterinary science and therefore a better understanding of horsesickness in the country, was also part of a more general application of science and technology throughout Britain and its different colonies. Horsesickness is only a small contributor to the general history of veterinary science, which is related to medical science. This thesis can make a historiographical contribution to other sections including diseases in general. Examining the existing historiography about disease reveals the lack of a detailed study on the social relations between the veterinary science and the disease in South Africa.

A historical perspective on ideas about nature, aids in the realisation that if such ideas are retold today, people will not accept them instantly. This also bears in mind material occurrences in society. People would instead evaluate those ideas against the ideological positions of people who advance them.²

It is only during the past decade that the socio-environmental discipline emerged as a visible category of analysis in South African history, therefore, one must look more widely for sources attributed to a specific area of the discipline. Due to the subjective matter of history, it is necessary to explore the different domains of the subject, approached by other disciplines. This is the case particularly with environmental history as it is necessary to connect with other historians and other disciplines if a credible piece of history were to be the outcome.

After illustrating general ideas about socio-environmental history, it is necessary to discuss in more detail the position and consequences of this historical revolution for southern Africa. Due to the fact that South Africa was locally and internationally isolated, people were unaware of the environmental revolution that was happening. The government's domestic policy of apartheid demanded the most attention and therefore, the emergence of the environment as a central character in some historical narratives from the late 1960's onwards, had a limited influence on historians writing on the South

¹ Gilfoyle, D. *Veterinary Science and Public Policy at the Cape Colony, 1877-1910*, PhD thesis, University of Oxford, 2002, p.8.

² Pepper, D. *Modern Environmentalism, an Introduction*, 1996, p.3.

African past.³ The majority of the South African historiography is still concentrated on the emergence of a strong revisionist interpretation of the country's past. Too few historians went beyond their historiographical limitations to tackle the problems of the environment as a central theme in their narrative. They are not explicit when using a more ecological paradigm although they are dealing with aspects that indirectly or directly have a certain impact on the environment.

A recent work which explains the animal turn and the importance and explanatory factors of animals in history is Swart's 'But where's the Bloody Horse? Textuality and Corporeality in the Animal Turn' (2007). The animal turn is a new departure that considers animals in the context of the social sciences instead of constricting them to the natural sciences. This sudden new input, of the animal turn in social sciences such as history, has been promoted by the encounter with new theoretical ideas derived from social theory, cultural studies, feminism, post-colonial studies and psychology.⁴ Using information and knowledge from this aspect of social sciences leads to better comprehension of the spaces which animals occupy in human society and the manner in which animal and human lives intersect. This shows how diverse human factions construct a range of identities for themselves in terms of animals. Animals can be understood through their role and agency in human cultures instead of simply drafting animals as fundamentals of ecological, agricultural or bio-geographical configurations. Swart states:

'Local interest in the animal studies has drawn impulsion from the environmental history focus: many of the issues at the crossroads of academic studies of the environment and environmental politics have an animal component. Hitherto, the label environmental or socio environmental history has been preferred to the animal turn in history, which has not (yet) become a phrase in common parlance in South Africa.'⁵

The study of animals can be used in more than a mere consideration of resources and production units. Swart's article is limited to the social implications of horses in Africa, which is of significance as this is linked to this thesis. This article gives a clear

³ Steyn, P. 'The Greening of our Past? An assessment of South African Environmental Historiography', *Historia*, Vol.49, No.2, November 2004, p.2.

⁴ Swart, S. 'Riding High, Horses, Power and Settler Society, c.1654-1840', *Kronos*, Vol.29, Environmental History Special Issue, Nov.2003, p.1.

⁵ Swart, S. 'But where's the Bloody Horse? Textuality and Corporeality in the Animal Turn', *Journal of Literary Science*, Vol.23, No.3, September 2007, p.279.

indication on how such studies, which include animals as the subject according to which aspects of society can be examined, can uncover interesting information and convey a unique point of view which has been ignored or not yet exposed.

Another recent book contributing to the socio-environmental discourse of southern Africa is *'The Animal Gaze, Animal Subjectivities in Southern African Narratives'* (2008), from Wendy Woodward.⁶ Her work discusses animal subjectivities in southern African narratives where she considers animals as subjects experiencing complex emotions, having agency, intentionality and morality as well as an ability to recognise and fear death. Her work is not about a confirmation of a human sense of superiority towards animals but a condition where humans and animals engage in an interspecies communication of kinship. This work also presents a unique view towards the human and animal relationship in history, which is new for Africa.

2.2. Human-animal relationship

For the first time in history, animals are attracting a lot of attention from academics, economists, scientists, health experts, politicians, environmentalists, ethicists and the general public. Our relationship with animals grew, developed and changed considerably over the years. In order to meet a wide variety of our needs and requirements, we were and still are dependent upon the exploitation of animals. Animals are still used for food production, traction (in some societies), entertainment, companionship and the promotion of scientific research. In general man tends to take good care of animals, whether it is a pig, a dog or a pet rat, although our management and use of other species has often been depicted as unnecessary, extreme, cruel and, in some instances, completely needless.⁷

Regarding the topic of horsesickness and its relevance, it is necessary to take a closer look at human-animal relationships and the fact that man has the need to control his environment. It is a highly emotive topic and stimulates pleas from public and academic quarters to reconsider our attitudes and treatment towards other animal species. The discourse that surrounds human-animal relations is instilled with morality, anthropomorphic sentiment and a heavy dose of idealism. This evolved not only through reason but our instinct also provides us with the need to give animals a specific place in

⁶ Woodward, W. *'The Animal Gaze, Animal Subjectivities in Southern African Narratives'*, Johannesburg, Wits Press, 2008.

⁷ Swabe, J. Animals, *'Disease and Human Social Life: the Human-Animal relationship reconsidered'*. <http://www.swabe.org>

the undomesticated and uncultivated world. In gradually evolving societies, it became impossible to move every time and it was necessary to control the forces of nature and eventually we tended to produce animal life under organized human control centuries ago, transitioning from hunting to herding and farming. The domestication and husbandry of a number of plants and animal species, accompanied by techniques to preserve some of their edible and fibrous products, permitted a revolutionary change in human societies. This was already demonstrated and acknowledged in the oldest laws in the world: 'The Laws of Hammurabi',⁸ verifying that there was already a sort of regulatory system over animal breeding, including rules for veterinary work, in Babylonia 2100 years B.C.⁹ People who deliberately injured animals were punished as criminals.¹⁰

Human relationships with animals are already respected fields of study in anthropology. However, there is now a renewed interest specifically among historians and sociologists as they are also starting to pay more attention to the connection between non-human animals and people. There is a dynamic movement in trying to understand animals and their role in human history. Not only are some universities offering courses in '*Animals, Cultures and Society*' but also new journals are formed, such as '*Anthrozoös*' and '*Society and Animals*' focusing on human-animal issues, having sociologists on their editorial boards. The already existing journals, such as '*Qualitative Sociology*', '*Social Research*', '*The Journal of Contemporary Ethnography*', '*Sociological Focus*', and '*The Sociological Quarterly*' have published articles focusing on human-animal interaction.¹¹

This new area under investigation has not been limited to historians, anthropologists or sociologists but is also a topic analyzed by many other disciplines including biology, literature and cultural studies. Not only historians and anthropologists but also sociologists have been previously occupied with different techniques of observation and classification of people and animals as both have been considered diverse in the way of

⁸ Established during the reign of King Hammurabi in Babylon. The roots of his legal manifesto can be traced to the days of an earlier Sumerian king who collated all laws into a codex but Hammurabi immortalized his Code of Law revision by engraving it on a diorite stele.

⁹ Mohler, J.R. 'Relationship of Veterinary Science to Animal Breeding and Public Health-Legal Protection of the Practice of Veterinary Science'. *Science*, New Series, Vol. 80, No. 2074, September 28, 1934, p.278.

¹⁰ Dunlop, R.H. & Williams, D.J. 'Veterinary Medicine, an Illustrated History.' 1996, p.55.

¹¹ Reviewed work of Swabe, '*Animals, Disease and Human Society: Human-Animal Relations and the Rise of Veterinary Medicine*' by J. Sanders, C.R. *Contemporary Sociology*, Vol. 28, No. 6, November, 1999. p. 695.

relating to them and the environment. Animals are drawing much more attention and academic interest because of the changes explored by historians in the socio-political ideas.¹² Mullin says: 'The controversial aspects of human-animal relationships are likely to encourage greater interest in sociocultural analysis of these relationships'.¹³ Still, relationships between humans and animals can be used as an expedient opportunity to examine many aspects of human societies.

Following the short description of today's interest in human and animal relationships, it is necessary to discuss evolution as this will illustrate the long journey of the co-existence between humans and animals. The shift from hunter and prey to master and servant fundamentally changed our relations with animals.¹⁴ Traditional hunters regarded animals as their equals, exercising no power over them, and this equal relationship changed when people started to domesticate animals. With the advent of domestication people made a fundamental change in the nature of their relations with animals. The domestic animal became dependent for survival on its owner and was subservient to his will. Humans became overlords and masters while the animal was reduced to being a servant and slave.

The roots of Western perceptions of animals and the attitudes towards them are embedded in the Judaeo-Christian philosophical tradition. The Christian church used to have a strict doctrine, making sure that people did not forget about separating themselves from the animals.¹⁵ It was believed that the earth, along with all the animal and plant species, was created to serve the interests of humanity. This was supported by the Bible stating in the first chapter, the Book of Genesis, that God distinguishes humans from animals by creating the former 'in his own image' and at the same time, He awards man 'dominion over every living thing that moveth upon the earth'.¹⁶ During the Middle Ages perceptions regarding animals changed when humans did not separate nature from society, but this reversed again when people started to make nature more vulnerable to

¹² Swart, S. 'But where's the bloody Horse?: Textuality and Corporality in the Animal Turn', *Journal of Literary Science*, Vol.23, No.3, September 2007, p.282.

¹³ Mullin, M.H. 'Mirrors and windows: Sociocultural Studies of Human-Animal Relationships'. *Annual Review of Anthropology*, Vol. 28, 1999, p. 217.

¹⁴ Swabe, J. 'Dieren als een Natuurlijke Hulpbron: Ambivalentie in de Relatie tussen Mens en Dier, binnen en buiten de Veterinaire Praktijk'. 1996. pp.12-37.

¹⁵ Serpell, J. 'In the Company of Animals. A study of Human-Animal Relationships' Cambridge, 1986, p.150.

¹⁶ Genesis 1:28.

human control, by means of engineering, and felt less subject to its mercy. Darwin stated: ‘Animals, whom we have made our slaves, we do not like to consider our equal.’¹⁷ Their reasoning relied on the basis that humanity is divine and anything inferior was associated with animals and associated behaviour, including a whole list ranging from women to poor people, insane people, people from a different race, and people with disabilities.¹⁸ This kind of thinking was supported by influential philosophers such as Aristotle and Thomas Aquinas.¹⁹ The former denied animals rationality and immortality as he believed that only the reasoning part of the soul lived on after the body had died. Since animals did not possess reasoning power, their souls perished along with their bodies. This reinforced the notion that humans should not feel morally concerned about the treatment of non-human species as this philosophy rescued Christians from the prospect of being attacked by vengeful spirits of animal victims after death. Descartes²⁰ statement ‘*Cogito ergo sum*’ (I think, therefore I am) and his notion that animals did not feel pain helped to ease the consciences of many farmers and animal owners.²¹

The traditional teaching of the Church, that animals existed for the utilization of men and that man had no duties towards animals, was also believed and supported by Kant.²² If the behaviour of colonized people resembled that of animals, it was only fair to enslave and exploit them as this was only in accordance with their nature and the divine plan. However, another explanation for the failure of Christianity to include a love for animals is that early Christianity had to overcome pagan religions which included the worship of animals.²³ This is not the case anymore as people tend to realise that humans share some behaviours and qualities that can be compared to those of animals, even though we are living in an age of rapidly expanding commodities, structuring boundaries and values to suit all sorts of purposes. The Catholic Church remained uncertain about people’s responsibilities towards animals. Even as late as the nineteenth century Pope Pius IX

¹⁷ Serpell, J. *In the Company of Animals. A study of Human-Animal Relationships* Cambridge, 1986, p.147.

¹⁸ Mullin, M.H. ‘Mirrors and windows: Sociocultural Studies of Human-Animal Relationships’. *Annual Review of Anthropology*, Vol. 28, 1999, p. 205.

¹⁹ Thomas Aquinas (1224-1274) was one of the most influential philosophers of the Middle Ages, trying to reconcile Greek philosophy with Christianity. The scholastic philosophers of that time tried to resolve religion and reason.

²⁰ René Descartes (1596-1650) often called the first modern philosopher, stepping away from medieval religious beliefs.

²¹ Ryder, R.D. *Animal Revolution. Changing Attitudes towards Speciesism.* Oxford, 2000, p.52.

²² Immanuel Kant (1724-1804) examined the aspects where we can be sure of in our world and tried to formulate universal rules needed to be followed by every man.

²³ Ryder, R.D. *Animal Revolution. Changing Attitudes towards Speciesism.* Oxford, 2000, p.27.

refused permission for the establishment of a Society for the Prevention of Cruelty to Animals in Rome because he found it a theological error that man had any duties towards animals at all.²⁴ However, the end of this theological belief was assisted in many respects by Darwin's²⁵ *The Origin of Species*, published in 1859. Although very negatively received by the Church and a mass of less educated classes, it became very influential. With that publication he took away the concept of purpose and design and in the same time the whole idea of a supreme creative being and human superiority above other species.²⁶ Theologians had until then, used design as one of their major arguments to convince people of the existence of God. Darwin changed the whole concept by classifying humans, animals, plants and other organism together. They are all driven by the pressure of natural selection. A sharp decline in traditional religious beliefs made the Darwinian Theory more acceptable together with a continually growing enthusiasm for biological sciences, conservation and environmentalism, animal welfare, pet-keeping and other non anthropocentric pursuits.

People realised that animals were important and started to secure their offspring. The meat of slaughtered animals, and any other by-products of the dead animal became less important and the secondary products such as eggs, milk, fibre and power, became crucial in everyday life. Animals were more significant to people alive than dead, therefore, caring for the animals became an important activity and people began to collect and conserve specific knowledge and skills to guarantee the health of animals.

The difficulty of understanding human-animal relations according to any single principle or master narrative that would accommodate both hunting and disease control suggests that the very notion 'animal' was not determined exclusively by the concrete zoological and economic realities embodied by the creatures, however, compelling those realities might have appeared on a superficial level.²⁷ Instead, it was significantly influenced by human control or cultural contingencies.

²⁴ Serpell, J. *In the Company of Animals. A study of Human-Animal Relationships* Cambridge, 1986, p.162.

²⁵ Charles Darwin (1809-1882) is the founder of the theory of evolution, claiming that all species and plants are developed from pre-existing examples.

²⁶ Serpell, J. *In the Company of Animals. A study of Human-Animal Relationships* Cambridge, 1986, p.165.

²⁷ Ritvo, H. *Animals in nineteenth-century Britain. Complicated attitudes and competing Categories.* Manning, A. & Serpell, J. (ed.) *Animals and Human Society. Changing Perspectives.* London, 1994, p.114

Today, animals are still serving many commodities at once: they are treated as part of our family, they are consumed and they are the personification of nature providing considerable emotional attachments and satisfactions. It is not only Western communities that maintain domestic animals. However, western societies tends to depend more on the social and economic features of these domestic animals and these societies basically encourage middle class people to invest more in the emotional side of the relationships with the animals. The heightened awareness and increased sensitivity to our interactions with animals can be attributed to intensified discussions with the public sphere.²⁸ To some extent, this has become obvious in the visible changes of consumer behaviour, specifically relating to animal produce. Western society is less inclined to think of animals in terms of food even though the consumption of meat is very high. Even the food-making 'business', such as the abattoirs and incinerators, moved out of sight because of the increased emotional investment made to the animals. Wild animals are valued as refuge from consumer capitalism²⁹ although this can be argued as these animals are also effective in the tourism and game ranching industry. Animal rights movements started only in the late twentieth century.

3. Disease in History

3.1. Environmentalism and disease

Environmental history in and about South Africa did not develop overnight. It is only in the last millennium that South Africa has taken an explicit place in environmental history's package. However, it is mostly the Cape and its surrounding environmental aspects that is often the subject for environmental historians. The fact that it is mostly the Cape that enjoys this kind of preferential treatment from environmental historians, lies in the fact that this region is the oldest of British missionary and imperial endeavour in the subcontinent. This guarantees extensive archival material in the northern hemisphere and explains the lack of a comparable scholarship on any other part of southern Africa and at the same time the bias in the current scholarship towards the pre-

²⁸ Swabe, J. Animals, '*Disease and Human Social Life: the Human-Animal relationship reconsidered*'. <http://www.swabe.org/human>

²⁹ Mullin, M.H. 'Mirrors and windows: Sociocultural Studies of Human-Animal Relationships'. *Annual Review of Anthropology*, Vol. 28, 1999, p. 216.

1910 period.³⁰ It reveals a shift away from political economy to the history of ideas to the late twentieth century radical social history tradition. Many historians covering history in South Africa are loyal to the political economic paradigm and its many aspects while other historians tend to see beyond the political and economical struggles and emphasise other components of South African history which are as important as the previous founders of South African history. Intellectual and cultural perspectives have become increasingly important.

However, van Sittert claims:

‘The generic African environmental history espoused by Social History and African Environments is in danger of becoming a flag of convenience for contraband cargos and unseaworthy tramps fit only for the breakers yard to ply the intellectual sea lanes with impunity.’³¹

He also stresses the importance of considering the concept of power in an environmental history. According to him, it is necessary to identify influence, authority and material advantages in society, as this is necessary for being able to understand the historical dynamic between people and the biophysical environment. It should be kept in mind that this consideration of power should be regarded as being more than a historical exercise.

Diseases do not merely exist. They are dependent on humans and animals. According to McMichael, there have been several major transitions in the relationship of Homo sapiens with the natural world, living and . Each of these transitions resulted in the emergence of new or unfamiliar infectious diseases. The three great historical transitions since the initial advent of agriculture and livestock herding, from 10 000 years ago, occurred when: (i) early agrarian based settlements enabled sylvatic enzootic to make contact with Homo Sapiens; (ii) early Eurasian civilizations came into military and commercial contact with each other around 3000-2000 years ago and exchanged their dominant infections; and (iii) the expansion of Europe over the past five centuries which caused the transoceanic spread of lethal infectious diseases.³² The increasingly widespread impact of demographic, environmental, behavioural, technological and other rapid changes in human ecology is responsible for the contemporary spread and

³⁰ Van Sittert, L. ‘The Nature of Power: Cape Environmental History, the History of Ideas and Neoliberal Historiography’, *Journal of African History*, Vol.45, No.2, p.305.

³¹ *Ibid.*, p.306.

³² McMichael, A.J. ‘Environmental and Social Influences on Emerging Infectious Diseases: Past, Present and Future’, *Philosophical Transactions: Biological Sciences*, Vol.359, No.1447, 29 July, 2004, p.1049.

increased liability of various infectious diseases.³³ This is not exclusive to human diseases; it includes animal diseases as well. People are responsible for the spread of many diseases, human or animal related. The speed, volume and range of today's travels are unprecedented in human history. It is the ideal route for multiple microbial spread around the world. For example, the African malaria vector mosquito 'Anopheles gambiae' entered Brazil in 1937, immigrating from western Africa on the mail boats that traversed the Atlantic in three to four days and cost the lives of 50 000 people.³⁴ This disease was eradicated in the early 1940's by an extraordinary elimination program. The West Nile virus, dangerous to humans and animals, emerged in North America, originating from Africa and sporadically occurring in the Middle East and parts of Europe. Arriving on an aeroplane in New York in 1999, via an infected mosquito on an aeroplane, it quickly affected first the birds, followed by human sufferers.³⁵ It has now established itself as an endemic virus, harboured by animals, including birds and horses.

The above stated example indicates the serious implications of ordinary worldwide travel. With the aid of today's transport possibilities, 'new' diseases such as tropical illnesses, gained access to new parts of the globe which made it necessary to develop tropical medicine as a discipline. Tropical medicine, although a young discipline, emerged equally from the biological and the medical sciences and was undergoing key changes, which shifted away from a narrow and linear understanding of disease causation, in which microbes alone were targeted as the culprit, towards a more integrated and comprehensive approach.³⁶

One of the most influential and international authors about disease was Michel Foucault. Although labelled as a philosopher, he wrote some interesting missives dealing with disease. His many publications are widely read and have been translated into several languages. Foucault started his history of disease in the Middle Ages, noting the social

³³ For examples of recent research as well as historical commentary, see Mervyn Susser, 'Does Risk Factor Epidemiology put Epidemiology at Risk? Peering into the Future', *Journal of Epidemiology and Community Health*, Vol.52, 1998, pp.608-611; Roy Anderson and Robert May, *Infectious Diseases of Humans: Dynamics and Control*, London, 1991; Eli Chernin, 'The Early British and American Journals of Tropical Medicine and Hygiene: an Informal Survey', *Medical History*, 36, 1992, pp.70-83.

³⁴ McMichael, A.J. 'Environmental and Social Influences on Emerging Infectious Diseases: Past, Present and Future', *Philosophical Transactions: Biological Sciences*, Vol.359, No.1447, 29 July, 2004, p.1053.

³⁵ *Ibid.*, p.1054.

³⁶ Tilley, H. 'Ecologies of Complexity: Tropical Environments, African Trypanosomiasis, and the Science of Disease Control in British Colonial Africa, 1900-1940', *Osiris*, Vol.19, 2004, p.27.

and physical exclusion of lepers in *Folie et déraison: Histoire de la folie à l'âge classique*, (1961, English edition: *Madness and Civilization*). This was one of the first interdisciplinary works dealing with disease as he examined ideas, practices, institutions, art and literature relating to the madness in Western history. A second major book is *Naissance de la Clinique: une archéologie du regard médical*, (1963, English edition: *The Birth of the Clinic*), in which Foucault traced back the development of the medical profession, putting the main focus on teaching hospitals. Foucault claimed that a disease has a nature and a life cycle, which could only be distorted and rendered dangerous by an unnatural environment or by medical intervention. Its manifest symptoms, stressed by physicians, were a natural (family) environment, non interventionist therapy and the accurate naming of a disease. This kind of a free, undistorted space of medical ideas and care instituted a structural analogue in a similar free economic environment. The new perception of the hospital as a proper environment of disease and the superposition of the already established knowledge of disease lay before the conversion to empiricism in hospital medicine. This epistemic change in medical knowledge was characterised by the altered relationship between life, disease and death. In the eighteenth century, death was an absolute which stopped short both disease and life, each having its own natural history and which had specific characteristics to mark its approach. A change came about towards the end of the eighteenth Century when death stood above life and disease as an analyser, in that it arrested disease and exposed a moment in the natural history of disease to the gaze of the dissecting anatomist. Even though these views were highly philosophical, it had an impact on the public view of medicine as death eventually lost its absolute character by spreading back into the life of an organism in the form of many instances of less people dying and more localized deaths. Disease became degeneration as death became the foundation of disease and lost its position as the absolute analyser which named an illness and suggested the correspondence between a normal life cycle and disease.

In *Les mots et les choses. Une archéologie des sciences humaines*, (1970, English edition: *The Order of Things: An archaeology of the human sciences*), Foucault claims that all periods of history have possessed certain underlying conditions of truth that constituted what was, for example, acceptable as scientific discourse. At the same time he argued that these conditions for discourse have changed over time, in the form of major and relatively sudden shifts. This was a very influential book as it directed some

scholars to analyse the bases for knowledge today while criticising the projection of modern categories of knowledge onto subjects that remain intrinsically unintelligible, despite our historical understanding. In one of his debates with Noam Chomsky (1928)³⁷ he stated:

‘It seems to me more likely that the transformations of biological knowledge at the end of the eighteenth century, were demonstrated on one hand by a whole series of new concepts for use in scientific discourse and on the other hand gave rise to a notion like that of life which has enabled us to designate, to delimit and to situate a certain type of scientific discourse, among other things.’³⁸

To him, the notion of life and that of human nature are not scientific concepts as both are epistemological indicators of which the classifying, delimiting and other functions had an effect on scientific discussions. In this later work, Foucault clearly formulated an anticipation of the transition from taxonomic to the organic historical episteme. This included a transition from the almost mechanical impact of disease and death upon a living organism to the inward maturation of a degenerative mode of life. Foucault serves as a good example for this thesis as he was one of the first authors to combine disciplines when writing about disease. In this thesis investigating merely accounts of African horsesickness would have proved insufficient. It was necessary to examine practices, ideas and institutions to create a full comprehension of this specific disease and its many implications for society.

Foucault did not receive widespread recognition in British history of science and medicine as he indirectly proclaimed that men are only marginally important to archaeological historians due to the problematical creation of a new theoretical structure, that influences of ideas are unintelligible and that there are no subjects of history.³⁹

Roy Porter, professor of the social history of medicine at the Wellcome Institute for the History of Medicine,⁴⁰ was another author very much involved in writing about disease.

³⁷ American linguist and politic publicist, Chomsky is the founder and important representative of one of the most influential and productive directions in the descriptive and theoretical language science. He introduced, mid 1950's the transformational-generative language theory which gave a profound methodological renewal of the language science.

³⁸ *Human Nature: Justice versus Power*, Noam Chomsky debates with Michel Foucault, third debate of the International Philosophers' Project, 1971.

³⁹ Figlio, K. 'Review: The Birth of the Clinic. An Archaeology of Medical Perception by Michel Foucault' by Foucault, *The British Journal for the History of Science*, Vol.10, No.2, 1977, p.165.

⁴⁰ *The Guardian*, March 5, 2002.

An empirical, anti-theoretical research methodology based upon autopsy and pathological anatomy, practical clinical instruction at the bedside, and the placing of both research and teaching in large hospitals, where a limitless variety of morbidity was available, are both constituents of this revolution. Porter's best known works resembled an embracing view of madness, quacks, gout, London, the Enlightenment and his *Greatest Benefit to Mankind: a Medical History of Humanity* (1997) is a synthesis of medical history of several periods. He moved easily between social, medical and psychiatric history. In this book he quotes:

‘I discuss disease from a global viewpoint; no other perspective makes sense; nevertheless, I devote most attention to what is called western medicine, because western medicine has developed in ways which have made it uniquely powerful and led it to become uniquely global; its dominance has increased because it is perceived, by societies and the sick, to work uniquely well, at least for many major classes of disorders.’⁴¹

Porter claimed, although historians and historical sociologists have taken more sceptical views of medicine's past, possibly stressing its failures or underlining the self-serving features of professionalization, that the history of healing is par excellence the history of doctors.⁴² This involved a major historical distortion as it takes at least two to make a medical encounter, the doctor and the sick person. Therefore, medical history should be about the two-ways encounters between doctors and patients. In such histories the role of the sufferer, in social and cognitive dimensions, has been largely ignored by scholars.

Of course, this is difficult when dealing with animal medicine and disease. When writing the history of animal medicine, one part will remain silent: the encounter of the animal. The historian should, therefore, be very aware of this silent factor and compensate for it to the best of his or her abilities. Sickness should not and cannot be regarded in isolation: it is important to view responses to health and sickness as constitutive parts of whole cultural sets. Another interesting point Porter made, was the fact that people tend to see the doctor as the agent of primary care. This is incorrect as people tend to take care of themselves before approaching a physician. What people tend to label as primary care is, in fact, secondary care as it is only once the sufferer has become a patient that he or she

⁴¹ Sharav, V.H. ‘Professor Roy Porter-Greatest Benefit to Mankind’, *Alliance for Human Research Protection*, www.ahrp.org/cms

⁴² Porter, R. ‘The Patient's View: doing Medical History from below’, *Theory and Society*, Vol.14, No.2, 1985, p.175.

enters the medical arena. This viewpoint is easily extended, even more so, in the analysis of medical care for animals. People tend to do the primary care first and after the intentions are unsuccessful, the secondary caretakers are informed and advise a suitable medical plan.

Porter's main concern in *Disease, Medicine and Society in England, 1550-1860*, was how people responded to sickness and the threat of death. There are different attitudes to illness and sufferers and in the early modern and modern periods these are contrasted effectively. It shifted from a time where disease and death was very common and where illness presented a more central part of life that required spiritual as well as physiological explanation and response, to a time where health was the normal expectation, not illness and disease is regarded by the patient as an alien entity that needs to be defeated by a doctor. Porter did not limit himself to a social history but his work was also useful for economic historians as he described the fortunes and class views regarding doctors. He was unable to address the rise of medical authority due to the lack of work written by historians on the preliminary inroads into the territory of the social history of medicine.⁴³

Porter became interested in adding visual evidence in his work while he noted that historians in general were negligent in doing so. Visual evidence, with regard to medicine, can bring some important issues to the foreground, according to Porter, such as the symbolic significance of medicine and the use of the body and medical practice to comment on wider social and political issues. One of Porter's main achievements in the history of medicine was the fact that he was able to demonstrate the extent of the autonomy of the patient and the control in the physician-patient relationship.⁴⁴

3.2. Disease and animals in history

Some of the works used in this thesis are not necessarily part of a socio-environmental history. They are, however, helpful to socio-environmental historians, in their attempt to write a piece of history as completely as possible. The lack of a clear socio-environmental discipline in South Africa, whereas it was noticeable trend in the United States and United Kingdom in the late 1960's, can be ascribed to the many problems the country had to face, making historical writers preoccupied with political as well as

⁴³ Digby, A. 'Review: Disease, Medicine, and Society in England, 1550-1860' by Roy Porter, *The Economic History Review*, New Series, Vol.41, No.3, August 1988, p.471.

⁴⁴ Guerrini, A. 'Review: Bodies Politic. Disease, Death and Doctors in Britain, 1650-1900' by Roy Porter, *Albion: a Quarterly Journal Concerned with British Studies*, Vol.35, No.3, 2003, p.499.

economic struggles. Nature was not dealt with outside its functioning as a resource, be it economical or agrarian. This was also often the case when dealing with disease. Disease tended to be only interesting, outside science, by the mere facts of economical loss. Although it does not immediately seem beneficial approach of or research for this thesis, these texts were supportive by granting the reader a general understanding and made very explicit what was not mentioned. The social aspects of disease were often kept quiet or in some cases, entirely denied.

One of the first books concentrating on horse diseases, and republished for years to come, was *Veterinary Notes for Horse Owners: a Manual of Horse Medicine and Surgery, written in Popular Language* (1877) by M. Horace Hayes. It is still today a very popular book used by horse owners and is taught from in horse-related training. Although the first edition only contained a few detailed accounts of horse diseases and disorders, later editions were soon expanded and included a wide range of diseases and illness complaints concerning horses. In the early editions, horsesickness was still identified as South African horsesickness and was supported on Hayes personal encounters with the disease in 1891 and 1892⁴⁵ and did not follow or include popular research outcomes. Some editions were slightly outdated as he claimed in the twelfth edition, published in 1934, that ‘there is no doubt that the virus of this disease is transmitted to the horse almost always by means of damp grass’.⁴⁶ The book, *Animal Diseases in South Africa* (1932), written two years earlier by Henning, however, does include the possibility of insect bites as the cause of transmitting the virus into the equines.⁴⁷ Hayes did not limit himself to horse diseases as he wrote a number of books concerning the care of horses such as *Points of the Horse, Riding and Hunting, Stable Management and Exercise*, and *Illustrated Horse-breaking*.

History of the Surveillance and Control of Transmissible Animal Diseases (2003) written by Jean Blancou,⁴⁸ describes the earliest recorded animal diseases, ranging from glanders in horses to tick diseases in chickens, and included all possible treatments imaginable.

⁴⁵ Hayes, M.H. ‘*Veterinary Notes for Horse Owners: a Manual of Horse Medicine and Surgery*’, London: 1934, p.464.

⁴⁶ *Ibid.*, p.468.

⁴⁷ Henning, M.W. ‘*Animal Diseases in South Africa, Vol. II, Virus and Deficiency Diseases, Plant Poisons*’, 1932, pp. 516-517.

⁴⁸ Jean Blancou was general director of World Organisation for Animal Health (OIE) from 1991 to 2000 and is Honorary Director General of the Office International des Epizooties, Paris, France.

Although focusing on diseases, Blancou's work is comprehensive as it also includes early regulations to restrict disease transmissions.

According to Blancou, the earliest documents describing a disease of horses that can be reasonably be considered to be African horsesickness was *Kitab al-Akand el Kafiah wa el Fouçoul el Chafiah*, written by Al Malek al Modjahed Ali Ibn Davoud, king of Yemen and Arabia, around the year 728 of the Muslim calendar (corresponds with AD 1327 or AD 1328).⁴⁹ He describes at that time a major epizootic which killed an incalculable number of horses and a lesser number of mules in Yemen. According to the document, the disease occurred without herald signs, and was characterised by mucus discharge, weakness of the cervical muscles and sudden death. The author also stated that the disease was contagious and linked to the movement of horses from one area of land to another. He, therefore, describes the early sanitary regulations, early systems for notification and alert, ban on sales and import restrictions such as the *Code of Hammurabi* (mentioned in chapter 2), written in Mesopotamia nearly 3800 years ago. Article 267, fixed the amount of the fine imposed on shepherds whose negligence allowed an epizootic of mange to spread.

The possible presence of numerous insect vectors around the Mediterranean and the links between the local inhabitants and Arab countries could explain the movement of the horsesickness virus from the fourteenth century onwards, between southern Europe, Africa and the Middle East. Import restrictions were set in place quite early and one of the most impressive instructions was published on 15 July 1560 by the sons and uncle of Philip I, and since it was read to the public out loud every three months, it was one of the most imperative mandates.⁵⁰

African horsesickness was reported in the Zambezi in 1569, which was followed by the importation of horses from South Africa by the Dutch East Indian Company. The disease did not spread to West Africa until 1882. A deadly epizootic in Europe was reported in different regions of Italy in 1712 with recommended methods as those advocated for rinderpest.

⁴⁹ Blancou, J. *History of the Surveillance and Control of Transmissible Animal Diseases*, Paris, 2003, p.244.

⁵⁰ *Ibid.*, p.284.

Although Blancou's work briefly sketches the history of African horsesickness, he examines and discusses the surrounding theories and ideas about the disease in its timeframe. He was aware that there have been so many different and even conflicting theories and claims at various times in history which can result in confusion. However, there was a logical sequence in the reasoning throughout these periods and this was in itself a reflection of the development of human thought which was impregnated with magic, religious, philosophic and scientific principles. The earliest Antiquity was marked by the belief that the stars determined the fate of all living creatures. The causes of diseases were attributed to the position of the stars or to heavenly beings. In later Antiquity, climatic variations, which were still under the influence of stars or gods, were blamed for the development of diseases. In the first centuries AD the corruption of the air was regarded as the cause of illnesses. In the centuries that followed, corrupted humours of the body, which resulted from the corruption of the air or food, led to the physical imbalance. The writers of the Middle Ages imagined that the spontaneous generation of animalcules caused disease and at the same time, the circulation of these animalcules were regarded as being responsible for the transmission of diseases through contact between subjects. Only with the discoveries of Louis Pasteur (mentioned in chapter 2) and his contemporaries, these animalcules were observed under the microscope and theories were formulated that explained the true nature of contagious diseases referred to in the seventeenth century.⁵¹

This above mentioned chronological sequence was not as upfront and clear-cut as illustrated above, nor did it develop at the same rate everywhere in the world. Still, there are no parallel routes used today as some authors still deny the transmissibility of diseases that have been correctly recognised as contagious centuries ago or some people believe that the positioning of the stars provide explanations for illnesses and diseases affecting the world. Nevertheless, 'progress in mankind's knowledge of animal diseases has followed an upward curve, mirroring the development of ideas through the centuries'.⁵² Although the book *'History of the Surveillance and Control of Transmissible Animal Diseases'* is one of his most notable works, he also co-wrote articles about human and animal disease such as *Emerging or Re-emerging Bacterial*

⁵¹ Blancou, J. *'History of the Surveillance and Control of Transmissible Animal Diseases'*, Paris, 2003 p.294.

⁵² *Ibid.*, p.332.

Zoonoses: Factors of Emergence, Surveillance and Control (2005) in which he discusses the main factors for the emergence or re-emergence of zoonoses⁵³ while reviewing the main components of detection and surveillance of such zoonoses. He also describes the systems of control and the main obstacles to their success.⁵⁴

3.3. Animal disease in southern Africa

Having discussed disease and animals in general, it is necessary to take a closer look at specific animal diseases in southern Africa. Many authors writing in detail about diseases in southern Africa focus on the role of the mosquito as this little insect is one of the major causes for illness in this geographical region. However, an early book concentrating on animal diseases in South Africa, not specifically focussing on horses or mosquitoes, although it mentions many horse related illnesses, was done by M.W. Henning, professor of veterinary science in the Faculty of Agriculture, University of Pretoria. His *Animal Diseases in South Africa* (1932) presented an extensive account of major animal diseases encountered in South Africa, including African horsesickness. Giving a brief historical review, he discusses extensively the different aspects of the disease, illustrated with the necessary pictures. As one of the early public reading works, his book acknowledged the different strains of horsesickness. Due to the fact that Theiler was very much active in the research of the disease during the time Henning's book was written and published, much of his research receives a prominent position.

As mentioned earlier, most of the writings on African diseases include the story of the mosquito as this insect is responsible as the source for the majority of the diseases. One of the first people to take in account African experimental methods of tsetse control via bush burning was done by Charles Swynnerton when he undertook a study of the tsetse problem in North Mossurise.⁵⁵ The organized studies of the tsetse fly species began only in the twentieth century's second decade in association with the third Sleeping Sickness Commission of the Royal Society.⁵⁶ Swynnerton later appointed a South African, Dr.

⁵³ Zoonose is any infectious disease that is able to be transmitted by a vector from other animals, both wild and domestic, to humans or from humans to animals. It comes from the Greek word Zòon (animal) and Nosos (ill).

⁵⁴ Blancou, J., Chomel, B., Belotto, A. Meslin, F. Emerging or re-emerging Bacterial Zoonoses: Factors of Emergence, Surveillance and Control', *Veterinary Research*, Vol. 36, 2005, p.507.

⁵⁵ Swynnerton, C.F. 'An Examination of the Tsetse Problem in North Mossurise, Portugese East Africa', *Bulletin of Entomological Research*, Vol.11, 1921, pp.315-325.

⁵⁶ Tilley, H. 'Ecologies of Complexity: Tropical Environments, African Trypanosomiasis, and the Science of Disease Control in British Colonial Africa, 1900-1940', *Osiris*, Vol.19, 2004, p.29.

John Phillips, as deputy director and ecologist. He was convinced that ecological science could help untangle the problem of African trypanosomiasis⁵⁷ which was a problem considered to be ‘as bewildering in its complexity, as comprehensive in its interrelations’.⁵⁸

One of the initial works concerning the impact of the tsetse fly and an early example of South African environmental history is Dicke’s article: ‘The tsetse-fly’s influence on South African History’ (1932).

Based on his own observations, he made an interesting statement, which was quite new and daring at the time, namely that the tsetse fly was responsible for the loss of the Van Rensburg trek.⁵⁹ The whole group was killed by the Amatongas due to their loss of animals, from the tsetse fly. The Voortrekkers were therefore unable to use their tactic of forming a wagon laager as protection. For the first time, an important piece of South African history such as the Great Trek was seen from an environmental perspective as an environmental paradigm was moved to the foreground instead of reducing the event to being a result of merely the decisions of different trek routes and settlement patterns followed by the Voortrekkers.⁶⁰

Another author much involved in mosquito-related animal diseases was Kenneth Morris. He was a young entomologist, employed in Britain’s Gold Coast medical department, undertaking systematic field investigations of the various tsetse flies in West Africa since the late 1920’s. His perception of mosquitoes was the following:

‘This small grey insect...which dominates so much of Africa’s most fertile land, is an aristocrat of the insect world. He is quick and sly in his habits and is remarkable among insects in possessing so few natural enemies. And in the wild untouched bush of his natural home he exists in millions.’⁶¹

His hope for the future progress of Africa was in the quiet persistence of science in discovering and exploiting the mosquito’s weaknesses. According to him, a

⁵⁷ This disease is spread by insects such as the tsetse fly and can cause serious illnesses such as sleeping sickness.

⁵⁸ Phillips, J. ‘The Application of Ecological Research Methods to the Tsetse Problem in Tanganyika Territory: a Preliminary Account’ *Ecology*, Vol.11, 1930, p.713.

⁵⁹ Dicke, B.H. ‘The tsetse-fly’s Influence on South African History’, *South African Journal of Science*, Vol.29, October 1932, pp.792-795.

⁶⁰ Steyn, P. ‘The Greening of our Past? An Assessment of South African Environmental Historiography’, *Historia*, Vol.49, No.2, November 2004, p.2.

⁶¹ Morris, K. ‘Fighting a Fly: The Pest of the Tsetse, I. Its Meaning to Africa’, *Times*, 7 August, 1939.

comprehensive approach which combined the forces of entomology and medicine, veterinarians and agricultural experts were necessary to reclaim land where humans, animals and mosquito's came into contact.⁶² In this context of insects and diseases, Karen Brown's article 'Political Entomology: the Insectile Challenge to Agricultural Development in the Cape Colony, 1895-1910'⁶³ tracks the development of entomology in South Africa, and contributes to the emergence of interest in this subject.

Although many texts written about diseases in Africa were very expressive on the subject of the tsetse fly and the accompanied malaria, another disease put in the spotlight by mosquitoes in Africa was trypanosomiasis. British academics, colonial officials, and technical research officers often tended to organize their observations of trypanosomiasis under the heading of 'the tsetse fly'. It is correct on one level however, this was less of an abstraction than a shorthand designation to represent the full spectrum of issues related to the disease they wanted to stem. By pursuing the fly, they could consider the specific dynamics in isolation and in relation to one another: fly to climate, fly to fauna, fly to flora, fly to parasite and fly to human.⁶⁴ Yet in such studies, the fly was never the sole point of departure. Even though these studies seem only relevant to researchers and scientists limiting themselves to mosquito diseases, they were the perfect operating base to explore the dynamic interplay between ontology and epistemology, tropical and temperature environments and colonies with their metropolises. This is also demonstrated in Crosby's article 'The Past and Present of Environmental History' (1995) where the author explains the effects past and future diseases had and can have on society while elaborating on the development of environmental history. He accurately states:

'Environmental historians have discovered that the physical and life sciences can provide quantities of information and theory useful, even vital, to historical investigation and that scientists try and often succeed in expressing themselves clearly'.⁶⁵

⁶² Tilley, H. 'Ecologies of Complexity: Tropical Environments, African Trypanosomiasis, and the Science of Disease Control in British Colonial Africa, 1900-1940', *Osiris*, Vol.19, 2004, p.22.

⁶³ Brown, K. 'Political Entomology: the Insectile Challenge to Agricultural Development in the Cape Colony, 1895-1910', *Journal of Southern African Studies*, Vol.29, No.2, 2003, pp.529-549.

⁶⁴ Tilley, H. 'Ecologies of Complexity: Tropical Environments, African Trypanosomiasis, and the Science of Disease Control in British Colonial Africa, 1900-1940', *Osiris*, Vol.19, 2004, p.23.

⁶⁵ Crosby, A.W. 'The Past and Present of Environmental History', *The American Historical Review*, Vol.100, No.4, 1995, p.1189.

Another author interested in environmental history and the influence of disease on society, more specific trypanosomiasis in Africa, was James Giblin. He drew on John Ford's article 'The Role of Trypanosomiasis in African Ecology' (1971) where he traced human and bovine trypanosomiasis in the territory of human history. The disease was considered to coexist successfully with the pre-colonial African societies. These societies attained protection from the disease due to the modification of their environment which affected the sizes of and interaction among the five populations involved in the transmission of trypanosomiasis: humans, their livestock, wild fauna, tsetse flies and the trypanosome parasites.⁶⁶ Due to the fact that Africans lost control of the interaction among the various populations, epidemics and epizootics of trypanosomiasis occurred during the colonial period.

This theory was difficult for Gibbs to grasp as Ford implies the belief that natural history could not be isolated from human history. However, it was an improvement to earlier work written on trypanosomiasis by A.J. Duggan. In his 'The Role of the Trypanosomiasis' (1970), he depicted the evolutionary process outside human history and beyond the control of societies. Another interesting work on trypanosomiasis and pre-colonial African history was done by John Iliffe in 'Ecology Control and Economic Developments in East African History' (1977)⁶⁷ who, as the majority of historians writing about the disease, seldom deviated from Ford's theory. Ford's study still remains the point of departure for historical studies on trypanosomiasis, although his work did not meet with evaluation or engagement in historical or scientific literature.

Taking earlier literature and the analytical approach by Ford into consideration, Giblin concludes that the evidence from north-east Tanzania indicates that the disease environment of the 1940's was the product of a process which weakened social control of vegetation communities, wildlife, vectors and trypanosomiasis.⁶⁸ It is not enough to reject or modify the theories developed by Ford, as it must not only challenge the problems of natural science, it must also confront historical evidence and advance an alternative historical explanation. It must be kept in mind that the development of a

⁶⁶ Giblin, J. 'Trypanosomiasis Control in African History: An Evaded Issue?', *Journal of African History*, Vol.31, No.1, 1990, p.59.

⁶⁷ Iliffe, J. 'Ecology Control and Economic Developments in East African History', *Journal of African History*, Vol.19, 1978, 1990, p.139.

⁶⁸ Giblin, J. 'Trypanosomiasis Control in African History: An Evaded Issue?', *The Journal of African History*, Vol.31, No.1, 1990, p.79.

historical perspective is not a purely academic exercise. It would be incorrect to deny a fuller and more sensitive understanding of pre-colonial human and bovine trypanosomiasis.⁶⁹ This idea can be expanded to any historical survey and analysis of African diseases. An epidemiological and epizootiological perspective informed by history can indicate that there exists a wider choice of strategies in disease control than what is usually considered.

After having discussed the above mentioned insect-related animal diseases, it should be stressed that there are other animal diseases with the same devastating effects. Charles van Onselen was very much active in the social history of Africa. He wrote many articles containing the social aspects of certain time periods in the country and was involved in combining such social features in 'Reactions to Rinderpest in Southern Africa 1896-97' (1972). He gave a detailed account of the highly contagious cattle disease, rinderpest, that swept through southern Africa in 1896-97 while using this specific disease as to examine the context of an industrializing economy, which helps to illuminate some of the socio-economic and political forces that were operative in the 1890's. The disease was accepted with fatalism and resignation while it was accompanied by suspicion and rumour.⁷⁰ Van Onselen argues that rinderpest caused a serious decline in the quality of people's daily way of life and that the disease contributed to the growing proletarianization of Africans and the process of labour migration. Although inhibiting some fundamental changes in southern Africa, rinderpest did emphasize the character of the process of industrialising South Africa in the twentieth century.

Kirk Arden Hoppe is another author who concerned himself with African insect-related diseases and made an interesting comparison between the African sleeping sickness and the availability of African labour before it could be used by the British to their advantage.⁷¹ He examines the relationship between colonially designated Infected Areas and fly-free areas, both in terms of the production of new spatial arrangements in Uganda

⁶⁹ Giblin, J. 'Trypanosomiasis Control in African History: An Evaded Issue?', *The Journal of African History*, Vol.31, No.1, 1990, p.79.

⁷⁰ Van Onselen, C. 'Reactions to Rinderpest in Southern Africa 1896-97', *Journal of African History*, Vol.13, No.3, 1972, p.488.

⁷¹ Hoppe, K.A. 'Lords of the Fly: Colonial Visions and Revisions of African Sleeping Sickness Environments on Ugandan Lake Victoria, 1906-61', *Africa: Journal of the International African Institute*, Vol.67, No.1, 1997, p.86.

with a focus on the Lake Victoria Infected Area in 'Lords of the Fly: Colonial Visions and Revisions of African Sleeping Sickness Environments on Ugandan Lake Victoria, 1906-61' (1997). The Lake Victoria area was the first and most virulent infected sleeping sickness area in Uganda, including the kingdoms of Buganda and Busoga and all Ugandan islands on the lake. The disease control policies and the historical consequences of resettlement patterns, he reveals the manifestations of colonial ideology. Various colonial constituencies, such as medical, economic and military, were served by different visions. It received different responses from Ugandans who where confronted, avoided or navigated between such different visions.

Hoppe saw this African sleeping sickness disease African as a perfect medium to study the possible opportunities for the colonial state, to express and enact visions in African environments. It became clear that British scientists would never completely control sleeping sickness, tsetse flies or African behaviour and Africans tried to manipulate diverse colonial visions to create opportunities for them in order to avoid the colonial environmental interventions attempted by the British. Both parties had different views concerning, and attached different meanings to the sleeping sickness control schemes. This resulted in different constructions of nature and colonial order in Uganda at the beginning of the twentieth century. Hoppe divides the British sleeping sickness control methods into three groups: mass population removals, bush clearing schemes, and resettlement.⁷²

The sleeping sickness in Uganda created ideological openings for the articulation of colonial visions of African environments through its control schemes. The outcome of such schemes depended on the resistance and response to the colonial systems and the position of the Ugandan inhabitants to their own environment. Hoppe states: 'The emerging power of colonial science played an important role in colonial attempts at constructing nature and defining African's relationship with their environment through disease control'. This is an interesting point in dealing with disease in Africa and should be kept in mind when reading literature concerning disease control which was in many cases was controlled by colonial powers. The effects of such disease control measures

⁷² Hoppe, K.A. 'Lords of the Fly: Colonial Visions and Revisions of African Sleeping Sickness Environments on Ugandan Lake Victoria, 1906-61', *Africa: Journal of the International African Institute*, Vol.67, No.1, 1997, p.88.

are often still felt by generations to come. The control measures taken for African sleeping sickness left a cycle of long-term land alienation from 1906-1962 through the combination of forced depopulations, strategic clearings and planned resettlements. This was reflected in the particular relations that existed between British science, environmental intervention and colonisation.

William Beinart is one of the most influential authors on African environmentalism and animal diseases. In his 'Vets, Viruses and Environmentalism: the Cape in 1870's and 1880's' (1997), he combines these two elements in an interesting article concerning the early decades of twentieth century South Africa when government officials of the Departments of Agriculture and Native Affairs became anxious about the state of the natural pastures which covers the majority of South Africa's surface areas. In this specific paper, Beinart explores the early veterinary contribution to the critique and transformation of Cape pastoral practices. Officials supported the idea that pastoral farming practices should be modernised, putting an end to the kraaling⁷³ and trekking⁷⁴ which should be replaced by fencing, separate water provisions and the rotation of grazing camps.⁷⁵ These measures as well as the extermination of predators such as jackals which hampered these modernised improvements in agriculture, was encouraged by the state who gave the necessary financial backup. He demonstrates that these developments had important implications for the physical, as well as the social landscape of the Colony and that consideration of veterinary prescriptions at the Cape also reveals fascinating examples of conflict, in a colonial context between scientific and local knowledge which connects to parts of the arguments in the chapters of this thesis.

His book *The Rise of Conservation in South Africa: Settlers, Livestock and the Environment 1770-1950*, written six years later is also a unique work dealing with environmentalism in South Africa. As one of the first books written about environmentalism in the Cape, he offers an exceptional tome including a chapter where he examines the relationship between 'Vets, Viruses and Environmentalism in the 1870's

⁷³ Kraaling is an old agricultural practice where the farm animals are grouped tighter every night and returned to the farmstead.

⁷⁴ Trekking is another old practice where the animals are moved from one pasture to another, often travelling great distances.

⁷⁵ Beinart, W. 'Vets, Viruses and Environmentalism; the Cape in the 1870's and 1880's', paper was published in a slightly different and edited form in a German journal on Africa: *Paideuma*, Vol.43, 1997, p.1.

and 1880's' in great detail. In this book, Gilfoyle focused more on detailed accounts of the development of the knowledge networks between veterinarians and farmers with specific reference to the Cape's livestock.

Another author very much involved in southern African diseases is Karen Brown who offers, as a historian, a unique social aspect to her work which is rarely done when dealing with such specific issues. In her article 'Frontiers of Disease: Human Desire and Environmental Realities in the Rearing of Horses in Nineteenth and Twentieth Century South Africa' (in press), she explores the important economic, military and cultural roles of horses in South Africa. In this particular paper, Brown focuses on three different types of diseases which affected horse breeding in the country: African horsesickness, nagana and the problems around toxic vegetation which is ingested by horses. She uses the horse as a medium to discuss the environmental constraints on animal husbandry and the manner in which people conceptualised equine infections and the methods used to avoid such infections.

The breeding of horses is often impeded by endemic distributions of diseases such as horsesickness and it often forced farmers to shift from the breeding of horses to other pastoral activities. 'Tropical Medicine and Animal Diseases: Onderstepoort and the Development of Veterinary Science in South Africa 1908-1950', (2005) discusses the development of the agricultural science at Onderstepoort. Onderstepoort, founded in 1908 (see chapter 2), made it possible for many enzootic and epizootic diseases to be eradicated or controlled through various forms of preventive treatments. This article makes it clear that the nature of the investigation done by Onderstepoort scientists involved more than just a progress in biomedical processes. It also gives a unique view on the contributions made by African communities, specifically in the identification of toxic plants, and settler farmers to the institutionalisation of veterinary knowledge as well as the role South African researchers played in the evolution of a colonial scientific culture.⁷⁶

⁷⁶ Brown, K. 'Tropical Medicine and Animal Diseases: Onderstepoort and the Development of Veterinary Science in South Africa 1908-1950', *Journal of Southern African Studies*, Vol.31, No.3, September 2005, p.513.

Onderstepoort Veterinary Institute was significant to the country's economic development and its scientific research. In this article Brown demonstrates that the government used scientific knowledge in order to create a greater state intervention into the lives of rural communities and it sometimes even outdated animal agriculture as a method of controlling diseases. The veterinary development encouraged an increasing belief in science. Veterinarians necessitated scientific applications and legislative interventions to enable modernisation of the state as it was able to resolve its own epidemiological and environmental problems.⁷⁷

Karen Brown also co-wrote 'Veterinary Science, Environment and the State in South Africa c1900-1950' with Daniel Gilfoyle. This book includes the research and experiments carried out at Onderstepoort during the first forty to fifty years of its existence, followed by a discussion of the expansion of veterinary institutions in South Africa. This allows a unification of environmental and biomedical themes and an overview of how scientific priorities and practices changed and developed over that period. The processes by which veterinary scientists applied western science to the problems of disease and health, associated with the southern African communities, and the ways in which veterinary science was transformed by this interaction is the focus of this book.⁷⁸ It provides an inside look into the course veterinary science has followed within the political setting of a self-governed, colonial 'settler' state.

When considering southern Africa and animal diseases, it is hard to ignore the amount of literature written about rinderpest. There were several epizootics of this disease which had devastating effects for years to come.

Pule Phoofolo did some recent research on diseases, focusing himself on the rinderpest⁷⁹ disease in 'Epidemics and Revolutions: the Rinderpest Epidemic in late Nineteenth-Century Southern Africa' (1993) and 'Face to Face with Famine: the Basotho and the Rinderpest, 1897-1899' (2003). He claimed in 'Epidemics and Revolutions: the

⁷⁷ Brown, K. 'Tropical Medicine and Animal Diseases: Onderstepoort and the Development of Veterinary Science in South Africa 1908-1950', *Journal of Southern African Studies*, Vol.31, No.3, September 2005, p.528.

⁷⁸ Brown, K. & Gilfoyle, D. 'Veterinary Science, Environment and the State in South Africa c1900-1950', unpublished manuscript, p.11.

⁷⁹ Rinderpest is a viral disease affecting cattle and sometimes other ruminants. It can be responsible for enormous losses in areas where the cattle are not immune to the virus. Today it is only occurring in local Africa and Asia as preventative vaccination is successful.

Rinderpest Epidemic in late Nineteenth-Century Southern Africa' that the most devastating epidemic, namely rinderpest, to hit southern Africa in the late nineteenth century failed to accelerate rebellions, or revolutions, although it occurred in the most turbulent region of the continent during a stormy period of its history.⁸⁰ He gives a short description and history of the rinderpest epizootic of 1896-1898. According to his article, rinderpest was brought to Africa by infected Indian cattle imported by Italians who wanted to provide for their campaign in Somalia in 1887. From there on, it reached Limpopo by an extensive network of ox-wagon transport which linked the northern and southern trade centres. Eventually it reached the Cape Colony in May 1897. Rinderpest was portentous as the people were spared (although many died from starvation), they had to watch their cattle, which were their most-valued livelihood, perish.

Phoofolo argues that the rinderpest epizootic was responsible, however, for the exposure of the underlying tensions which included hysteria and mismanagement on the part of the authorities. His article is also a response to the current methodological desire of reintegrating an increasingly fragmented professional community by unifying historians who study geographical, national and temporal boundaries which are necessary parts of examining the very nature of an epidemic. Phoofolo observed striking similarities as well as differences emerging from non-western societies confronting a devastating epidemic and the apparently universal political turmoil it generated. However, it also demonstrates the varied responses and reactions of contemporary European observers, who were themselves inheritors of the frantic tumult to which nineteenth century European epidemics seem to have given rise.⁸¹ Cattle played a dominant role in the lives of African societies whereas epidemics play a minimal role in directly generating social and political upheavals. It is universally acknowledged by contemporaries, that rinderpest had the potential of becoming a powerful trigger to rebellion.

Historical parallels with societies separated by space and time are striking as the striking feature of the rinderpest is that very little of the prevailing social and political tension was transformed into open rebellion. Instead, the compelling trend was towards passive fatalism which manifested itself in alcoholism, licentiousness and conviviality. Phoofolo

⁸⁰ Phoofolo, P. 'Epidemics and Revolutions: the Rinderpest Epidemic in Late Nineteenth-Century Southern Africa', *Past and Present*, No.138, 1993, p.112.

⁸¹ *Ibid.*, p.113.

stresses the fact that the complex impact of colonialism should not be overlooked when examining the impact of rinderpest. One of the main reasons why a rebellion had not been triggered by this disease can be ascribed to the fact that colonialism destroyed the community and therefore undermined its capacity to form groups which would have co-operated in collective action. This epidemic succeeded in claiming its rightful historical significance by highlighting and compounding contemporary tensions, and pointing towards the causes. His other article dealing with Rinderpest and the Basotho community in 'Face to Face with Famine: the Basotho and the Rinderpest, 1897-1899', compares this epizootic to the Great Wall Street Crash as they both had the same effects of threatening to wipe out the only capital of the people and restricting future capital accumulation.⁸² This article focuses on the history of the disease and the examination of the responses of the victims in their attempts to survive the catastrophe.

Contrary to belief, the disease did not cause a major famine and was resolved before it created a critical food shortage. It basically created a temporary setback from which societies quickly recovered, even though the crash happened at a time when people needed their cattle as security to mitigate the effects of other contemporary ecological disasters. The best way to gather precise and definitive evidence on where a food crisis might take place, according to Phoofolo, is to examine the responses of the victims in their attempts to survive the catastrophe. Interestingly enough Phoofolo acknowledges the fact that Great Britain lacked the veterinary expertise from which the South African peripheral colonies might have benefited during the rinderpest epizootic.⁸³ This was also the case with horsesickness as there was a lack of veterinary experience and knowledge from Britain during the outbreak of 1854-55 which is discussed in chapter 3.

Closely linked to the works of William Beinart and Karen Brown is Daniel Gilfoyle, who is also very much concerned with the socio-environmental history of southern Africa, specifically in the research of veterinary development and disease in South Africa. In 'Veterinary Research and the African Rinderpest Epizootic: the Cape Colony, 1896-1898' (2003), Gilfoyle examined the veterinary policy and research into rinderpest at the Cape. He argues that the Cape's policy was initially based on the British model of

⁸² Phoofolo, P. 'Face to Face with Famine: the Basotho and the Rinderpest, 1897-1899', *Journal of Southern African Studies*, Vol.29, No.2, June 2003, p.503.

⁸³ *Ibid.*, p.524.

import control and destruction of infected animals, however, these methods proved politically controversial and expensive. Preventative treatments and techniques were developed by researchers working in the scientific field combining their knowledge with local erudition. Inoculation became the means of dealing with an epizootic. Rinderpest produced political tension although it spread scientific ideas and techniques across the colony and enabled the government to abandon its politically confrontational policies of veterinary policing.⁸⁴ The process of preventative inoculation did not work smoothly from the beginning as it embodied the rivalry between scientists and the necessary accompanied errors. Gilfoyle states that the Cape dealt effectively, relatively speaking, with the rinderpest outbreak, which strengthened the position of the vets within the Cape's Department of Agriculture and facilitated increasingly expensive experimentation. In short, the rinderpest epizootic helped to strengthen the veterinary service in South Africa. Gilfoyle was not only interested in rinderpest, he also wrote an article concerning horsesickness. 'Veterinary Immunology as Colonial Science: Method and Quantification in the Investigation of Horsesickness in South Africa, c1905-1945' (2005) explores the practice of veterinary immunology in the country during the first half of the twentieth century through an analysis of research into horsesickness vaccination at Onderstepoort. Theiler was a renowned individual when dealing with this disease in that specific timeframe. Although this article is much more scientifically written than the previously mentioned article, it is highly interesting as Gilfoyle tracks down the process of immunisation in this article. This specific period in the veterinary research on horsesickness demonstrates the relative freedom of laboratory practice at Onderstepoort from immunological theory.⁸⁵

Another method of retrieving social information for the study of animal diseases, other than looking at the specific diseases itself, is by examining the methods used to limit or eradicate the disease such as vaccination programmes or dippings. Tim Gibbs took a closer look at the politics surrounding cattle dipping and unrest in eastern Pondoland (East Coast, Transkei) in 'From Popular Struggles to Populist Politics: Cattle Dipping and Rural Unrest in Eastern Pondoland' (paper given to HASA, 2008). Cattle dipping

⁸⁴ Gilfoyle, D. 'Veterinary Research and the African Rinderpest Epizootic: the Cape Colony, 1896-1898', *Journal of Southern African Studies*, Vol.29, No.1, March 2003, p.133.

⁸⁵ Gilfoyle, D. 'Veterinary Immunology as Colonial Science: Method and Quantification in the Investigation of Horsesickness in South Africa c1905-1945', *Journal of the History of Medicine and Allied Science*, Vol.61, No.1, p.64, 2003.

does not only interest historians from an economic point of view. This practice gives a unique view on and can be used as a reference in the rural struggles against state intervention. Gibbs used cattle dipping in a comparison with the 1960 Pondoland revolt as it represented key component of the political unrest. The rejection of cattle dipping was one of the key complaints of an independent peasantry against state intrusion.⁸⁶ Cattle dipping was crucial in Pondoland as this area lies in the middle of the geographical range of some of the worst tickborne diseases in South Africa. The study of animal diseases in history opens a wide range of different aspects to the interest of a range of disciplines, even in history. It indicates several features within the history discipline and uncovers much more than the mere fact of disease and death.

Rabies⁸⁷ is another disease that had an impact on South Africa. This disease is interesting as historians concentrating on southern Africa recognised the value of epidemic diseases in social and mental landscapes of the past, according to Van Sittert in 'Class and Canicide in Little Bess: the 1893 Port Elizabeth Rabies Epidemic' (2003). This subject has also been explored in an honours dissertation by N. Madida 'Dogs, Class and Culture: the Outbreak of Rabies in Port Elizabeth in 1893' (BA Hons dissertation, University of Cape Town, 2000).

The rabies epidemic provided a unique opportunity for the ruling class and state to represent suppressed visions of extermination and social engineering which are normally repressed by the requirements of appropriate processes and individual rights. The situation after an epidemic is always changed. The ruling class was never threatened during animal epizootics despite the oratory of emergency and public safety evoked by the epidemic. The countryside and the lower class areas in towns had always been the areas where animal diseases had the greatest impact. Forced modernisation of farming practices of farmers and natives as well as the hygiene habits of the urban proletariat were the first requirements for safeguarding the public. However, rabies was a different disease, according to Van Sittert, as it was once an epidemic of urban animals and one incubated by the middle class. Due to this fact, this disease can offer a historian an

⁸⁶ Gibbs, T. 'From Popular Struggles to Populist Politics: Cattle Dipping and Rural Unrest in Eastern Pondoland, 1959-1999', *paper given to HASA 5th July 2008*.

⁸⁷ Rabies is a disease characterised by dogs, however, every mammal can be infected by the virus which attacks the nervous system and especially the brain. The virus is transmissible by the bite of a virus carrying animal as the saliva contains the virus.

exclusive view on the conflicts and contradictions inherent in the bourgeois mentality.⁸⁸ Van Sittert made an interesting point which supports one of the arguments made in chapter 2, that there existed a state of denial which made the people dispute the claims of veterinary science and, therefore, repelled the responsibility of proof onto its practitioners.⁸⁹ This was probably conventional during the end of the nineteenth century and beginning of the twentieth century as science and this new authority needed time to be accepted and convince people of its advantages. In the case of rabies, it was again necessary for the Department of Lands, Mines and Agriculture to back the scientists by commissioning and publishing an account of the outbreak.

African horsesickness is a topic that, although attracting a lot of attention, has not been extensively written about from outside the perspective of the natural sciences. It has been mentioned when dealing with affects of diseases in animals, however, a broad history dealing with the social impacts of the disease, has not been adequately addressed. J.J. Nel wrote an interesting M.A. thesis at the University of Stellenbosch about horse breeding in South Africa, 1652-1752, in 1930 and concentrated mainly on the role of the horse in South African society while addressing the economical and social aspects of the development of horse breeding in the country. These aspects were only briefly mentioned in previous literature by Schreuder (*The Cape Horse*, PhD thesis at Cornell University, 1915) and Wyndham (*History of the Thoroughbred Horse in South Africa*, 1924). In chapter 5, Nel focused on the factors influencing horse breeding which includes a few pages on horsesickness episodes and its economical implications during the middle of the eighteenth century. He makes a link between the high death rate of horses, during horsesickness epizootics and a high mortality among cattle. Interestingly enough, the repercussions that he mentions are in theory not much different than the ones encountered a century later during the 1854-1955 outbreak (see chapter 2).

African horsesickness is attracting much more attention today as people start to realise the many serious implications of the disease. It became clear that this disease has not only an impact on the general number of horses but has complications which are far-reaching. Horsesickness was a disease that had been ignored from outside a scientific

⁸⁸ Van Sittert, L. 'Class and Canicide in Little Bess: the 1893 Port Elizabeth Rabies Epidemic', *South African Historical Journal*, Vol.48, May 2003, p.208.

⁸⁹ *Ibid.*, p.233.

perspective. Many articles were written regarding every scientific detail about the disease, however, comprehensive and accessible information for everyone outside the scientific discipline was not attended to. This has changed a little today as books or articles published about horses in South Africa do not ignore the impacting factor of horsesickness and often mention this disease in separate columns or headings. However, the internet makes such subjects much more accessible today as this has been a proven effective method of communication within the equine community. Infected and risk areas are efficiently corresponded and proficiently dealt with.

Aware of the importance and major effect of the disease, Daphne Child reserved a whole chapter on the topic of horsesickness in her *Saga of the South African Horse* (1967). She states: ‘The story of horses in South Africa cannot be told without frequent mention of the much dreaded horsesickness’.⁹⁰ Although scientifically vague, this short chapter gives a clear idea about the seriousness of the disease and its many implications, written in a popular and understandable language which makes it easily accessible. Jose Burnman (1993) conserved an entire chapter on horsesickness in his *To Horse and Away* as well. However, this chapter is very vague in the description of the disease as no specific features are given.

Chris Andreas is very actively involved in writing about animal disease. His writings about rinderpest draw upon the works of earlier authors. ‘African Horsesickness in the Cape-a Recurring Ecological Crisis, C.1653-2007’, is one of Andreas’ most recent works and although it is not a social history as such about horsesickness, it describes the ecological problems of widely occurring seasonal diseases. By progressive local extermination of the reservoir hosts such as the zebra and the quagga, the regions affected by horsesickness shrank in the eighteenth and nineteenth century, however, this increased again due to intensified horse travel and agriculture. This was a major problem and threatened the military security, administrative communication and economic development of the colony. Due to an effective vaccine and motorisation, the disease seemed to be eradicated from the Cape, although it reappeared in a number of epizootic episodes over the last decade. Even though these epizootics did not constitute the same

⁹⁰ Child, D. ‘*Saga of the South African Horse*’, Cape Town: 1967, p.192.

kind of crisis similar to earlier ones, they can be regarded as a warning bell for a possible impact of global warming.

This thesis draws upon many scientific articles written about the disease, ranging from contemporary to 'historical'. Theiler and Edington were some of the first researchers to record their many scientific experiments and investigations. However, one must engage with other disciplines, even outside the humanities, to acquire social features for a subject which is largely embedded in a scientific field of study. However, such scientific work provides certain knowledge on the subject and although it may lie outside the scope of this particular thesis, it is helpful in presenting a certain insight into the role of the researchers and scientists in South Africa. Besides the scientific publications, archival research in Pretoria, Bloemfontein and Cape Town, included many technical accounts although offering more conventional sources. Pretoria acquired an enormous amount of official correspondence between the researchers and the Agricultural Department while Bloemfontein possessed many correspondence files which presented an insight in the more communal aspects of the disease. Cape Town was compromised out of a mixture of the latter two, concerning largely the municipal records of the Western Cape regions. Press publications from the Department of Agriculture and popular periodicals of the time period specified by the thesis title, were used as an account of the ins and outs of the development and social implications of African horsesickness. These accounts were often verified by the archival correspondence and vice versa.

4. A New Dialogue Through African Horsesickness

As mentioned before, African horsesickness in its social context was a silent subject. Many scientific articles depict the technical and scientific factors of the disease and give it the necessary proclamation in this specific discipline. However, derived from the referenced editorials, it is clear that disease can uncover and reveal so much more than the mere scientific details. This thesis is not merely about a disease. It also demonstrates how a disease can influence society and have serious implications. A study about African horsesickness is not only about sick or dead horses, it goes beyond the obvious and uncovers the many social implications that an animal disease can bring about. Horsesickness has been encountered in South Africa since the first horses arrived in the Cape with the disembarking of Jan van Riebeeck and is still occurring today. Due to its

active presence, horsesickness had an impact on much more than the economic development of the country. This thesis provides a detailed account of the social implications of horsesickness and will demonstrate the many different features of this disease. It integrates different factors, such as the development of veterinary science in South Africa, and draws upon various sources to reveal the many faces and complications of African horsesickness.

Although concentrating on only seventy years of horsesickness, it represents the most influential years of the disease in South African history.

It must be kept in mind that some of the information used in this thesis came from sources that could not necessarily be called socio-environmental by nature, although they provided some influential work regarding disease histories. Therefore, they sometimes included the environment as a comprehensive factor. It is impossible to draw definitive conclusions just by the mere fact of including or excluding social features as an active player in many of such exertions. It is often the case that these social features did not fall within the scope of the specific text used. However, it is possible to sometimes assume in which way these social implications have been included or excluded.

Having illustrated the background that this thesis draws upon, the different sections of this thesis will be described shortly. African horsesickness was co-responsible for the veterinary development in the country as animals were economically important to the country (see chapter 2). There was room for improvement such as the kraaling of livestock at night to keep them safe from predators and theft. This was a commonly used method. The animals had to be driven to and from the pastures every day, often over long distances. This practice, however, caused environmental problems. Veterinary scientists reformed livestock management in the late nineteenth century.⁹¹ Veterinary medicine produced a lot of literature, often in the form of government publications, stating the importance of animal disease to the state. However, combining different sources, it becomes apparent that much more can be examined and discovered from such publications.

⁹¹ Beinart, W. *The Rise of Conservation in South Africa. Settlers, Livestock, and the Environment: 1770-1950*. Oxford, 2003, p. 128.

The first colonial veterinarians established close connections between the health of animals, agriculture productivity and environmental conditions. The veterinary developments had important implications, not only for the physical, but also for the social landscape of the country. Although the conflict between scientists and settler farmers has been broadly explored in this chapter, it should be kept in mind that it is impossible to draw simple lines of division between scientific specialists and traditionalists in possession of local knowledge. As mentioned before, the farmers were not unified. They were not united socially amongst each other, nor in their approach to stock management. As Beinart mentioned: ‘many of the most ardent improvers, who helped set the modernising political and even technical agenda of the colonial state, came from their ranks: they included both English and Afrikaans speakers’.⁹² Their urgent strivings towards colonial and capitalist development often incorporated new scientific approaches and the technical imagination of specialists. Scientific ideas and technical ideas are never stable and predictable. The specialists, concerned with the above mentioned, discovered a great deal from the people living on the land and this led to a veterinary approach framed by metropolitan and scientific knowledge. Examining the above mentioned phenomena using African horsesickness as the focalising agent provides a unique view and sheds light on certain aspects of veterinary development which are interesting and new. It illustrates and elucidates among other things the intent and specific relationship between the first scientists and livestock holder as well as the necessary improvement in veterinary science due to the disease. African horsesickness did not only impact on horses or horse owners as such, but created a type of chain reaction which is still felt today.

The 1854-55 outbreak has been focused on because this was the first African horsesickness outbreak of which the impact had been felt nationwide. It received a lot of attention outside its scientific scope as it not only affected the country economically (see chapter 3). This epizootic greatly influenced the development of the Cape.. It demonstrates the various impacts this disease has had, not merely as a disease but as an interfering factor in everyday life during the time. Furthermore, it influenced and revealed the knowledge networks of that time. As the country’s main resource was

⁹² Beinart, W. ‘Vets, Viruses and Environmentalism; the Cape in the 1870’s and 1880’s’, paper was published in a slightly different and edited form in a German journal on Africa: *Paideuma*, Vol.43, 1997, p.2.

agriculture, it was in the best interest of the government to minimise the death rate of its animals and to invest in a specialised body that could deal with specific diseases of the country. The procedures that were used in the veterinary service were of a practical and sound nature. This was based for many years on a wide range of experience with many animals in different conditions. The affairs of humans in connection with the animal empire provides an interesting field of study during times of constant tensions, consequent human incomprehension and confusion. However, academics remained selective in the studying of animals towards human relationships. This is especially visible when studying the measurements taken in order to reduce mortality and improve the general health of the animals by reproduction control, improvement of nutrition and identification of individuals.⁹³

The South African War, 1899-1902 was also indirectly affected by this disease (see chapter 4). Due to the many facets of war, it becomes clear that horses had a major role to fulfil during wartime, going beyond its task as a mere warhorse. African horsesickness was only one of the many components influencing the decline in horse supplies and it will be demonstrated how many errors were made due to the inexperience and ill-management when dealing with animals in such situations. A certain veterinary progress occurred during that time and much was learned from trial and error. This disease opened a broad new spectrum from which certain aspects of the South African War could be studied. It provides one with an opportunity to obtain a unique view on the less obvious features and sufferers of war.

Conclusions

Mullin says: 'The controversial aspects of human-animal relationships are likely to encourage greater interest in socio-cultural analysis of these relationships'.⁹⁴ Relationships between humans and animals can be used as an opportunity to examine many aspects of human societies.

⁹³ Mohler, J.R. 'Relationships of Veterinary Science to Animal Breeding and Public Health-Legal Protection of the Practice of Veterinary Science'. *Science, New Series*, Vol. 80, No. 2074, September 28, 1934. p. 277.

⁹⁴ Mullin, M.H. 'Mirrors and windows: Sociocultural Studies of Human-Animal Relationships'. *Annual Review of Anthropology*, Vol. 28, 1999, p. 217.

South African historiography has, until recently, not explicitly focused on the environmental terrain of the past. Yet, history has shown that people live in a microbial world, a world that will continue to produce infectious disease surprises. Both parties, people and the world, are engaged in an amoral, self-interested, co-evolutionary struggle. It is necessary to gain a better understanding and be able to anticipate, the dynamics of that process by drawing on the narratives of epidemics of the past.⁹⁵ A considerable amount of literature is available on the history of disease in general and a smaller body of work exists on animal disease. An even smaller body of work is available on animal disease in southern Africa with regards to the socio-environmental aspects of diseases, almost forming a series of historiographic matryoshka dolls.

In discussing the available literature on disease and environment-related issues, it becomes clear that there is a lacuna when dealing with African horsesickness – as most of the southern African disease literature concerns mainly cattle diseases and mosquito related illnesses. So this area is still relatively new in South Africa, offering a fresh window into the social ramifications of a historiographically ‘under-discussed’ and historically significant disease.

⁹⁵ McMichael, A.J. ‘Environmental and Social Influences on Emerging Infectious Diseases: Past, Present and Future’, *Philosophical Transactions: Biological Sciences*, Vol.359, No.1447, 29 July, 2004, p.1057.

CHAPTER 2:
‘THUS QUICKLY IS A HORSE FINISHED IN AFRICA’¹
AFRICAN HORSESICKNESS AND VETERINARY DEVELOPMENT
IN SOUTH AFRICA AND THE EFFECTS ON AFRICAN HORSESICKNESS
C. 1890’S-1920’S

1. Introduction

This chapter will position the African horsesickness disease within the broader development of veterinary science in South Africa. It will begin with a short description of the beginning of veterinary science and the growing social perception of a general need for veterinarians. This chapter will show how developments in both society and science led to a change in how the diseases of domesticated animals were treated. It will begin with an analysis of early observations from travellers about animal diseases and briefly review the beginning of veterinary science to demonstrate the particular politics driving veterinary development. The need for specific knowledge on combating African horsesickness was necessary to understand and deal with the disease encountered in the country. This requirement for knowledge and research created a need and prospect for the establishment of an institute such as Onderstepoort. South Africa, having tropical diseases not familiar to western scientists required an institution with its own veterinarians that were able to deal with growing expectations and the needs and expectations of the farmers. Furthermore this chapter will explore the obstacles veterinarians had to overcome in order to receive recognition and cooperation from the government and the farmers. This chapter will show that it was in the government’s best interest to minimise the death rate of its animals and to invest in a specialised body that could deal with the disease specific to the country.

2. The Beginning of Veterinary Science and Consciousness in South Africa

Although rapid developments in veterinary medicine in Britain were highly influenced by major changes in attitudes from society, this was hardly the case in early veterinary medicine in Southern Africa.

¹ Gutsche, T. *There was a man. The Life and Times of Sir Arnold Theiler, K.C.M.G. of Onderstepoort*. Howard Timmins: Cape Town, 1979, p.6.

When the Cape of Good Hope was just a half-way provision station for the trading route to India, there were no medical practitioners present, let alone any person that could deal with animal diseases. This was a problem as ships returning from the East brought along smallpox that greatly diminished the numbers of indigenous Khoi-khoi that normally provided a practical source of labour, except from the imported slaves. One of the first notes on animal diseases in South Africa was done by Father Monclaro. He made the first reference to a disease that may be interpreted as horsesickness.² In his account of the journey of Franciso Baro in 1569 to East Africa, it was mentioned that horses brought from India died and the death was thought to be on account of poisoning by the natives. He tells of a stallion which was led to the water but fell and cast up 'yellow matter'. Theiler³ recorded that this yellow matter from the stallion must be considered to be the path gnomonic symptom of horsesickness and the experience of the early Portuguese pioneers may be interpreted as the first record about the presence of this disease in the Zambezi estuary.

The Cape prospered agriculturally, and very soon overseas educated farmers at the Cape formed agricultural societies. Many members of these societies were French, English and Dutch but had spent time in the East and were unable to travel back to Europe. As the health conditions in the East were poor, these foreigners brought with them knowledge from their training in Europe but also the practical experience from the East. The Cape of Good Hope, as a developing colony, welcomed this knowledge, particularly the breeding of horses. The country was filled with naturalists of every kind ranging from plain hunter-adventurers and traders and often even military men and officials interested in other business and recorded their observations and collected specimen. What they wrote was of great importance not only to commercial men but also to scientists.

Members of scientific societies eventually did travel to the Cape Colony and discovered this unknown world. One of the major outcomes from this travelling came from François le Vaillant, a French student of natural history, that travelled for three years extensively

² Theiler, A. 'African Horse Sickness (Pestis Equorum)' *Department of Agriculture, Science Bulletin* No. 19, 1921, p.1.

³ Theiler wrote one of his major published articles about horsesickness in 1921. *African Horse Sickness (Pestis Equorum)* is still regarded today as one of the most complete and comprehensive pieces written about the disease.

in the Cape (1781-1784) and published his observations in five illustrated volumes that were soon translated into seven languages.⁴ He was one the first to record the animal diseases such as blue tongue in sheep, foot and mouth disease in cattle, black quarter and lame sickness that hampered the development of the Cape. A decade later came Martin Hinrich Karl Lichtenstein who qualified as doctor of medicine in Germany. He came to the Cape where he made the first inoculations against smallpox. He left instructions for missionaries in remote and isolated areas to carry out smallpox inoculations should an outbreak of smallpox occur amongst local inhabitants. Army doctors and farrier surgeons (which was a type of ‘horse doctor’) were expected to maintain colonial control of human and animal welfare especially the latter as the economy of the Cape depended largely on animals for export products and transport necessities. Farmers doctored their own animals often with extracts made from indigenous plants and some from Khoi-khoi knowledge. Missionaries (many were medically trained and observant) realised that no new land could have a future with illness flourishing, especially among domestic animals as they were necessary for trading and daily activities. The most important export of the Cape during this period was wool and in 1865, the colony produced almost 33 million pounds of wool with an estimated value of £1 700 000 with a peak export in 1872 of £3 300 000.⁵

There was growing knowledge of diseases in Europe and the Middle East but the endemic ‘African horse disease’ that appeared seasonal was regarded a mystery. Horsesickness had such a devastating mortality rate that no traveller failed to make notes from the earliest of times. Not only was ‘horsesickness’ devastating for the progress of the Cape but also lame sickness as this not only affected transport but also the food supply. James Backhouse, a Quaker evangelist, wrote down in 1838:

‘One of our horses exhibited symptoms of a fatal disease called in this Colony, The Sickness. His eyelids were swollen and the blood-vessels of his mouth and tongue were in a state of congestion. He appeared to be in perfect health last night when tied to the wagon wheel to secure him from Hyenas which are numerous here. This disease usually comes on suddenly and runs its course quickly....He was bled without delay and dosed with Calomel and Tartarised Antimony...He soon rose again and began to eat but quickly lay down and then

⁴ Gutsche, T. *There was a man. The Life and Times of Sir Arnold Theiler, K.C.M.G. of Onderstepoort*. Howard Timmins: Cape Town, 1979, p.4.

⁵ Beinart, W. *The Rise of Conservation in South Africa. Settlers, Livestock, and the Environment: 1770-1950*. Oxford, 2003, p. 131.

struggled and died. His death took place about an hour after the symptoms of 'The Sickness' were first noticed. Before night, his carcass was nearly consumed by vultures and by the dogs of the Hottentots. Thus quickly is a horse finished in Africa!'⁶

Stock diseases such as lame sickness, rinderpest and horsesickness were regarded as a threat to the country as these diseases killed most of the horses and oxen. The colony was heading for a standstill. Rinderpest made headlines in the first International Convention of Veterinarians⁷ held in 1863 at Hamburg⁸ resulting in the first vague legislations around animal diseases. The death of stock animals was a serious problem as they continued to be an important source of transport and means of traction. By 1870's many farmers had difficulty in increasing or even maintaining livestock numbers. Stock diseases had a major impact on the growth of animal populations and prevented an increase in production.

South Africa was searching to apply modern veterinary science to solve the stock disease problems. This was further motivated by the various successfully controlled infectious and contagious diseases. In the meantime the Cape government strived to develop its economic resources further by appointing scientists and experts ranging from entomology to bacteriology. Basically, the development of veterinary services in the country can be traced back to the Cape's economic and social needs at that time. After a few decades of rapid growth, by 1870's, the perceptions of health of the pastoral economy became uncertain and there was a need for specialised knowledge and help.

3. Development of Veterinary Science in South Africa

3.1. The first steps in colonial veterinarian science and politics

While Europe was already stable and established, South Africa was a new territory that needed to be transformed and developed in several regards in order to become a successful colony. Veterinary medicine was not always on top of the inventory, especially in the beginning of the development process. However, it was soon realised

⁶ Gutsche, T. *There was a man. The Life and Times of Sir Arnold Theiler, K.C.M.G. of Onderstepoort*. Howard Timmins: Cape Town, 1979, p.6.

⁷ This Congress has since met every four or five years, except for interruptions caused by the two world wars, and has been a forum of discussion of veterinary problems.

⁸ Ritchie, J., Crawford, M., Curtis, P.E. (ea) *Animal Health, a Centenary, 1865-1965.* Ministry of Agriculture, Fisheries and Food, London, 1965, p.335.

that disease in South Africa was regarded as a problem that had to be dealt with due to the rapid growth of the colony. The outbreak of diseases put stress on the agricultural production and the coinciding of living areas.

The roots and foundation of South African veterinary knowledge came from western tradition. Most South African animal diseases were unknown to British veterinary science. The first vets employed from Britain were only familiar with British veterinary science and only brought their knowledge familiar to them and their surroundings. They were able to deal with familiar diseases; however they were powerless when it came to the many stock diseases indigenous to the country. This formed a problem in formulating and executing an effective veterinary policy. The veterinarians were required to investigate illnesses unknown to them making them dependent on the knowledge and experience of stockowners. They basically worked on a trail and error basis. A dramatic drop in sheep stock after a drought in 1873 made it clear to the farmers that it was time for a reaction from the government regarding animal diseases.⁹ It was obvious for the farmers that their sheep died of disease rather than just being victims of the weather as the Cape climate was always unpredictable with unusually cold weather, rains, locusts and floods.

Not only had the lack of specific knowledge made it difficult to fight stock disease but professional rivalry and the superstitious treatment of the farmers and stockowners made it no easier. Veterinary policies at the Cape were based on the British model of quarantine and slaughter.¹⁰ This method was not endurable as it was politically controversial and unaffordable. This situation was not aided by the fact that there was no existing communication platform between farmers and scientists even though the veterinarians needed the farmers to gather knowledge and participate in experiments. This non existing communication platform was however not the only cause for ignoring scientist. In the beginning scientists lacked the support from the stockowners as they held a lot of political power.

⁹ Beinart, W. *The Rise of Conservation in South Africa. Settlers, Livestock, and the Environment: 1770-1950*. Oxford, 2003, p. 132.

¹⁰ Gilfoyle, D. 'Veterinary Research and the African Rinderpest Epizootic: The Cape Colony, 1896-1898'. *Journal of Southern African Studies*, Vol. 29, No. 1, March 2003, p.133.

Researchers started using science based on immunology, basing their research on local knowledge in order to develop techniques of preventative inoculation. Legislation was passed for the isolation of infected cattle during the lungsickness epidemic in the 1860's and lines were drawn in the battle over scab control. The Cape government passed a Scab Act in 1874 to advise farmers to control the disease by limiting animal movement.¹¹ This Act was not received well as farmers resented any external interference. The Rinderpest epizootic of 1896-1898 had some major consequences. Although this epizootic was responsible for the death of many animals, it disabled the government to continue its politically confrontational regulations of veterinary policies. It still produced political tensions nevertheless, it aided in spreading scientific ideas and techniques across the colony as the government policy was built around voluntary programmes to deal with the rinderpest disease.¹² Although the efforts to control the disease were directed primarily at European farmers, veterinary science was not regarded as an instrument of the colonist. This Rinderpest epizootic learned the Cape to deal effectively with a serious disease outbreak since more money was made available for extensive research and experiments, and in the meantime reinforcing the veterinary positions in the Department of Agriculture. However, legislations were not yet uniformed, making it more difficult to deal with stock diseases.

Due to the progression in laws that govern the health of animals and the control and prevention manners of stock diseases, it has been easier to determine more precisely the nature of the diseases. Consequently, the specific duties the government and individuals had to start employing to promote and protect the health of their animals became clearer as well as the areas in which the government lacked guidance. Stock owners started to become more aware of their responsibilities and began to work together as well. However, there was still a major need for uniform stock regulations and legislation for the suppression of stock diseases as the districts used different methods. For example, when a stock owner suspected an outbreak of a scheduled disease, he should have

¹¹ Beinart, W. *The Rise of Conservation in South Africa. Settlers, Livestock, and the Environment: 1770-1950*. Oxford, 2003, p. 135.

¹² Gilfoyle, D. 'Veterinary Research and the African Rinderpest Epizootic: The Cape Colony, 1896-1898'. *Journal of Southern African Studies*, Vol. 29, No. 1, March 2003, p.133.

isolated the animal and reported to the Magistrate or other authorised persons who arranged an examination:¹³

In the Orange River Colony: by a veterinary surgeon and two landed proprietors
In Natal: by three landed proprietors if no veterinary surgeon is available
In Cape Colony: by the magistrate or other authorised person and two landowners
In Rhodesia: by a government veterinary surgeon and two other authorised person
and two persons qualified to serve as juniors
In Transvaal: by the government veterinary surgeon

The sick animal was only dealt with in the way the majority of the board in Natal, the Orange River Colony and Cape Colony seemed customary. If a veterinary surgeon was on the board in Rhodesia, he was able to overrule the recommendations of the non professional members. The Transvaal had a different legislation, putting the authority entirely in the hands of the veterinary surgeon that had the right to slaughter the animal for the purpose of diagnosis. He could issue such instructions to the owner with regard to the treatment of the animal as he considered it necessary to prevent the disease from spreading. These general rules made it very confusing, not only for the farmers but also for the veterinarians. It was not always clear with the outbreak of a disease what should be done or who should do what. This was especially the case when landowners were on the board and had to wait for a colonial veterinarian. They were not always up to date with peculiarities of diseases and would order measures to be carried out before the arrival of the veterinarian, thus preventing the veterinarian from coming to a definite conclusion regarding the nature of the disease. The rules were probably well meant but were incorporated for dealing with outbreaks in a time when the importance of maintaining an efficient veterinary staff was not realised making them highly ineffective.

The first colonial veterinarians arrived at a time when the colony was busy expanding. Rules and regulations were very confusing and not everyone was always aware of them due to a lack of distribution and a lack of literacy amongst many people. These rules and regulations did not contribute or facilitate the work of the colonial veterinarians in the colony as these measurements made it hard to communicate and educate farmers and livestock owners about veterinary medicine. This demonstrates one of the many complications the first veterinarians had to overcome.

¹³ Theiler, A. 'Veterinary Hygienic Principles applicable to Stock in South Africa'. *Transvaal Agricultural Journal*, Vol. 5, 1906, p. 568.

3.2. The first colonial veterinarians

Understanding the process of veterinary development in the country is important to realise the impact it had. Discussing the first colonial veterinarians illustrates the struggles and the preconceived knowledge that came with them and which was unsuitable for the peculiar South African conditions. William Branford qualified in London in 1857 and was a professor at the Royal Veterinary College before he was appointed by the government in 1876 to become the first Colonial Veterinarian Surgeon.¹⁴ His original task was to attend the Stock Diseases Commission which required him to travel all over the Midlands and eastern districts.¹⁵ It was shocking for him to see the high occurrence of disease in the stock and the superseded farming methods. He encountered flocks and herds crowded with disease. He did not believe in the methods used by the farmers such as overstocking and kraaling. This caused deterioration of pastures as plants favoured by animals were heavily grazed making it easy for the seeds of those disliked to spread. Overstocking and kraaling also made an excellent breeding place for internal parasites because of the amount of dung that was never removed. Branford was astonished and stated publicly: 'How in the name of goodness can health be expected in animals exposed to such influences.'¹⁶ The excess of manure from the kraaling did not help pastures because it deprived the veldt of fertilization. He wanted to change the farming methods by enclosing the pastures, replacing kraals with fenced paddocks, rotating grazing grounds, promoting proper irrigation, encouraging the use of fertiliser and additional feeding when there was drought.¹⁷

Branford was very open and communicated his concerns with the farmers in a robust language. He was very self-confident in his role as an outside expert convinced that he was the only person having any knowledge of diseases in the country. This was not always well received by elite farmers, however the Stock Disease Commissioners were impressed with his ideas and wanted to make them applicable. In his initial research, he tried to identify diseases which were known under Dutch names and which described their symptoms or parts affected by it such as brandziekte (scab), longsiekte

¹⁴ Beinart, W. *The Rise of Conservation in South Africa. Settlers, Livestock, and the Environment: 1770-1950*. Oxford, 2003, p. 133-134.

¹⁵ Cape Parliamentary Papers [G.3-1877]

¹⁶ Cape Parliamentary Papers [G.8-1877]

¹⁷ *Ibid.*

(lungsickness or pleuropneumonia), stijfziekte (stiffness or paralysis) and dunsiekte (emaciation). The names reflected a concept of medicine which was widely spread amongst rural Afrikaners, that diseases were definable by their symptoms and to some extent curable by treating those symptoms.¹⁸ He recognised some disease already known in the Victorian veterinary science such as scab and lungsickness.¹⁹ These two diseases were well known in Europe and were already identified in the Cape. However, these discoveries of diseases similar to the ones encountered in Europe made him a bit naïve to the situation in South Africa. He believed that the diseases contracted by sheep and cattle in the Cape were not that different from the diseases encountered in Europe and if he was able to establish this, the relevance of advances in European veterinary science and the application of scientific solutions would be clear.

Farmers often disagreed with Brandford's convictions and this made the application of his services complicated. Farmers saw the intervention of outside experts as a threat to their beliefs about stock keeping. He suggested that farmers should stop using their old techniques. Such old techniques consisted of kraaling which contributed to the health deterioration of the animals, use of ticks (for bleeding), shearing the fleece twice a year and the burning of the grass. This did not promote the animal health as overstocking and poor animal husbandry methods were the order of the day.²⁰

Farmers resented any interference that put a strain on their seasonal movements of animals although the idea of fenced paddocks was well received. Farmers could increase their number of animals, their stock would grow fatter as they walked less, the animals would produce more wool and the manure would fertilize the fields. Conversely, the majority of the farmers did not believe that some diseases, such as scab, were contagious from one animal to another. Farmers still relied heavily on their own observations, not yet taking scientists seriously as they, the scientists, had no practical experience as a farmer or livestock holder and therefore were not aware of what was really going on. Livestock holders had more trust in their practical experience than in a foreigner with no practical experience. However, Brandford was not alone in his stride as he received

¹⁸ Beinart, W. 'Vets, Viruses and Environmentalism: the Cape in 1870s and 1880s', *Paideuma*, Vol. 43, 1997, p.6.

¹⁹ Beinart, W. *The Rise of Conservation in South Africa. Settlers, Livestock, and the Environment: 1770-1950*. Oxford, 2003, p. 135.

²⁰ Gilfoyle, D. *Veterinary Science and Public Policy at the Cape Colony, 1877-1910*. Thesis at University of Oxford, p.46.

support from politicians, officials, and a few farmers. He was the first to emphasise the necessity of government involvement. Diseases needed to be addressed throughout the whole colony to prevent reinfection. Branford searched for answers in environmental conditions rather than in microscopic bacteria and viruses. This can be explained by the fact that he studied before the revelation of Pasteur²¹ and Koch's germ theories and practices.²² However, he made enemies as an outspoken 'British expert' and his career in the country ended with a bad aftertaste. Although his term of office ended in 1879, after a struggle with the government over his payments, he stayed in the Cape in hope to get the money he believed he had the right to receive. In spite of this negative publicity, some of his policy recommendations were followed through. The first experimental farm called Leeuwfontein, near Fort Beaufort, established in 1880, examined particular problems of disease in the Eastern Cape.²³ A new Contagious Disease Act was passed a year later, giving the government additional powers to restrict the movement of animals in order to control epizootics. Although the farmers were not supportive of veterinarian medicine, the government was well aware of its necessity, following the example of overseas activity. In other European countries, veterinarians and researchers were trusted and supported as their positive impact on the health of the animals and therefore people, was obvious, however, this was not yet the case in South Africa. The scientists needed support from the government who was willing to give it to them as they were certain of their constructive work already seen overseas.

The need for veterinarians in South Africa became apparent by the end of the 19th century; realizing that one expert on animal diseases was not enough in a country that was dependent on livestock. When Europe was rapidly expanding in veterinarian medicine, South Africa appointed its second veterinarian surgeon, Duncan Hutcheon, another Scot who graduated from the Royal Veterinary College in Edinburgh in 1871 and was appointed after Brandford left his Colonial Veterinary Surgeon position in the same year. Hutcheon received a remarkably high salary of £700 a year.²⁴ This sudden

²¹ Louis Pasteur (1822-1895) who by thought, investigation and experiment, established that many diseases of animals and people are caused by microscopic organisms.

²² Robert Koch (1843-1910), the physician who developed important techniques in microbiology that are still in use today for the isolation of organisms in pure culture. He was also the first to demonstrate and culture the agent that causes tuberculosis.

²³ Beinart, W. *The Rise of Conservation in South Africa. Settlers, Livestock, and the Environment: 1770-1950*. Oxford, 2003, p. 144.

²⁴ Bigalke, R.D. 'Onderstepoort today yesterday and tomorrow'. Commemorative lecture. *Onderstepoort Journal of Veterinary Research*. Vol. 52, No. 3, 1985, p. 126.

increase in salary for a veterinarian position was necessary to attract qualified scientists to a remote and developing colony whereas had he stayed in his home country, he would earn even more. Hutcheon's main duty was to investigate heartwater using the experimental farm of Leeuwfontein for most of his research. He did accomplish the extermination of pleuro-pneumonia which was highly contagious and was also implicated in the circulation of the Contagious Disease Act in 1881 when there was an outbreak of redwater,²⁵ advocating the farmers to fence in their animals to prevent the disease from spreading by other animals in search of grazing.²⁶ He approached his research differently to what Branford did, partly because the new and innovating bacteriological techniques of Pasteur were reaching the Cape and because Branford was proved incorrect in some of his diagnoses. He discovered that heartwater was a blood disease caused by a specific virus and was not caused primarily by environmental management as believed by Branford who attributed the disease to parasites. Although Branford knew much more about the disease, he was still unable to find the cause and therefore a vaccine. Hutcheon was, more so than Branford, critical of farmers and when he wanted to implement the Contagious Disease Act to control lungsickness among goats by slaughtering the infected animals, the farmers were furious. Farmers were against slaughtering sick animals and when Hutcheon wanted to cull sick animals to control the rinderpest in 1896,²⁷ the farmers replied: 'Indiscriminate shooting is monstrous and the Almighty will visit the land with an even worse visitation. They (the farmers) will be shot before they will allow their cattle to be shot'.²⁸ The idea of malnutrition in animals was difficult to convey to the farmers. Jointly responsible for this malnutrition was kraaling but Hutcheon had a hard time conveying to the farmers the negative consequences of this method.

'if farms were fenced and wild animals destroyed, so that goats could graze at leisure, and be relieved from the journeys to and from the kraals, the percentage of deaths from this disease (heartwater) would be very small.'²⁹

Not all livestock holders read agricultural publications and were therefore not aware of the research being carried out. For farmers, kraaling was the most cost effective method

²⁵ Later known as East Coast Fever.

²⁶ Cape Parliamentary Papers [G.3-1877]

²⁷ Gilfoyle, D. 'Veterinary Research and the African Rinderpest Epizootic: The Cape Colony, 1896-1898'. *Journal of Southern African Studies*, Vol. 29, No. 1, March 2003, p.135.

²⁸ *Diamond Field Advertiser*, 12 September, 1896.

²⁹ Cape Parliamentary Papers [G.31-1885]

of keeping their animals together. Fencing was too expensive and they would rather use a small enclosure to retain the livestock. This sensitive subject did not help in building trust and communication between farmers and veterinarians. Livestock holders accused the scientists of lacking empathy for the farmers as it was easy for them to proclaim such expensive methods for disease control.

In addition, the above quote shows that Hutcheon was much more diplomatic in conveying his ideas than Branford. Therefore Hutcheon was able to slowly win the respect of the farmers, making them listen to what he had to say. Still, he was unable to implement the Contagious Disease Act in 1883 as 'the Colony settled down in perfect contentment, preferring, as was loudly expressed, to have the disease rather than submit to the restrictions'.³⁰ Farmers wanted an immediate cure for diseases instead of restrictions. This was probably reinforced by the many alleged cures for horsesickness conveyed by many horse owners who could cure horses in a few hours.³¹ However, these suggested cures confused the farmers and made them believe in a quick fix which was unrealistic at that time. Hutcheon struggled though to convince all farmers of his methods in preventing horsesickness. Some farmers did not want to execute Hutcheon's constraints as they were regarded as too much of an effort and too expensive.

Hutcheon became in 1906 the Director of Agriculture at the Cape. Still, the Colonial Veterinary Surgeon was not assisted by other veterinary surgeons even though the commission recommended the appointment of two more. The Sprigg government of 1878 put an end to the policy of intervention in the problems of animal disease during Molteno's government (1872-1878).³² Only by the end of the 1880's was there an agricultural bureaucracy in the form of a Department of Agriculture with Fisher as Secretary. The majority of the Department's money went to the control of disease and as the awareness of the necessity grew, so did the budget.

There was money made available for two additional veterinary surgeons being James Borthwick, a Scot and Jotello Soga, the first African vet. Jotello Soga trained in

³⁰ Cape Parliamentary Papers [G.26-1886]

³¹ KAB AGR 252 [105], letter to Secretary of the Colony of the Cape of Good Hope, 4 April 1894, from E.V. Horskinky, Free State.

³² Gilfoyle, D. *Veterinary Science and Public Policy at the Cape Colony, 1877-1910*. Thesis at University of Oxford, p.48.

Edinburgh and was appointed by the Cape government in 1889, making him the most senior black official in the Cape government service at the time.³³ Hutcheon hoped that Soga would have more influence on the African cattle owners.³⁴ He appealed to the government to see the necessity of detailing one of the Veterinary Surgeons with the special duty of superintending the care and management of horses infected with horsesickness and to increase the amount of veterinary staff.³⁵ If the duties of each veterinarian surgeon was clearly stated and stipulated, a lot of satisfactory work would be done, especially if more staff were to be employed. Moreover, Hutcheon wanted to have diseases investigated by one scientist at a time who would be able to devote all his attention to his research without the liability of being called to attend to other duties. Fisher replied that in the past, there had been veterinary staff, proposed by Hutcheon, detached for special investigational work. However, with the small amount of staff Hutcheon had, it was impossible for him to leave one of his officers for too long in one location which was required for the complete scientific investigation of a disease.³⁶ The agricultural department was soon in trouble due to bad management. It had made very little practical impact on the situation and Fisher was dismissed. At that time, the department was represented in parliament by the Minister for Land, Mines and Agriculture.

Hutcheon threatened to leave his position, as the officials were debating and not concurring with his task list, but was mildly soothed with the appointment of two additional veterinarians giving him time to devote himself to special experiments only. However, he was not totally satisfied with the governmental contributions and recommended the employment of fourteen qualified veterinarians, ten of which to give practical advice to stock owners and four to be dedicated to experiments. The government only agreed to this during the Rinderpest Epizootic 1896-1898. A compulsory scab control act was passed in 1894 and this was the beginning of the official governmental support to the veterinarians. However, it can be said that the government became supportive of the veterinarians because they had export interests.

³³ Beinart, W. *The Rise of Conservation in South Africa. Settlers, Livestock, and the Environment: 1770-1950*. Oxford, 2003, p. 148.

³⁴ Cape Parliamentary Papers [G. 37-1890]

³⁵ Hutcheon, D. 'Horse-sickness' *Agricultural Journal*, 8 September, 1892, p.146.

³⁶ *Ibid.*

During the colonial period, white settlers wanted to compete in European markets with other beef producers such as Argentina and Uruguay, by improving the quality of their herds and controlling disease through veterinary regulations.³⁷ The absence of foot and mouth disease was essential to obtain access to European markets.

Hutcheon received assistance from the Afrikaner Bond and their political allies.³⁸ This reinforced the slow changes in pastoral practices. The Union government followed a similar strategy and made a strong commitment after 1910. The four provinces, i.e. Transvaal, Natal, the Cape Province and the Orange Free State united to form the Union of South Africa in 1910 and Onderstepoort became the headquarters of veterinary research for the whole country, falling under the control of the Union Department of Agriculture.³⁹ After the Union the whole country was treated as one for veterinary purposes and the restrictions that formerly existed on the movement of stock from one colony to another were abolished⁴⁰. There were however, reinforced controls on movement to prevent the spreading of diseases as well as forced dippings, which proved to be the most effective remedy against scab and tick borne diseases. This resulted in great expense savings due to the abolition of quarantine stations at the port of entry between inter colonial borders and the ending of extra expenses and delays due to compelled examinations between the ports.

Local work was conducted in the same manner as before the Union, each Province was treated as a veterinary area or circle with a Senior Veterinary Surgeon, who presented the late Colonial Principal Veterinary Surgeon in charge.⁴¹ District Veterinary Surgeons remained unchanged except that their numbers had been increased in East Coast Fever areas such as Natal. The formation of a division dealing both with investigation and control was carefully considered. However, in view of the immense amount of work that needed to be performed and of the fact that the type of men required for research, administration and control differ considerably. If investigations were to be successful,

³⁷ Brown, K. & Gilfoyle, D. 'Introduction: Livestock Diseases and Veterinary Science in Southern Africa'. *South African Historical Journal*, Vol. 58, 2007, p. 8.

³⁸ Beinart, W. *The Rise of Conservation in South Africa. Settlers, Livestock, and the Environment: 1770-1950*. Oxford, 2003, p. 156.

³⁹ Unknown, 'The Onderstepoort Veterinary Research Laboratory, 1908-1958.' *Onderstepoort Journal of Veterinary Research*, Vol. 28, No. 4, p.577.

⁴⁰ Union of South Africa department of agriculture, *Report with appendices for the period 31st May, 1910 to 31st December, 1911*. [U.G. 54-1912]

⁴¹ *Ibid*.

the persons engaging therein must be allowed to devote their undivided attention to the investigations and not be liable for other duties. This dual system had worked well in other colonies in the past.

William Branford and Duncan Hutcheon were called the Nestors of South African Veterinary Science by Theiler.⁴² They had different interpretations of disease which reflected the rapidly changing science of time. Branford and Hutcheon were the first officials appointed by the government to deal with specifically agricultural questions and devoted a lot of attention to their annual reports as this was their only means of publicizing their work and ideas. They experienced a lot of opposition but the increase of veterinary services proved to be a powerful platform for their views amongst farmers and the government willing to improve the situation. The changes in the physical and social landscapes of rural districts, according to the veterinary interventions and prescriptions, were due to the medical advances in sanitation and contagion made in the late 19th century. The development of veterinary services did not change much in the following years. Other institutions got priority and because the development of veterinary science was dependent on the money the government could spare, there was no extra money put into the veterinary division.

3.3. The growing need for more substantial research and uniformity

The first veterinarians at the Cape did not have the resources to conduct more profound research. The 'laboratories' used by the first scientists were very primitive and small and the amount of personnel was hardly capable of coping with the many demands and examinations. However, the veterinary services received more attention when one of the worst pandemics of animal disease hit the country in 1896, namely the rinderpest outbreak. The country had to face again the need for a proper veterinary service and the necessity of a proper investment in it. The Cape Colony realised they needed urgent help and elected Robert Koch whereas Natal employed Watkins-Pitchford⁴³ in 1897, who founded the Allerton Laboratory a year later.⁴⁴ Two years later the government

⁴² Theiler, A. 'The Advance of our Knowledge Respecting the Stock Disease of South Africa'. *Transvaal Agricultural Journal*, Vol. 4, No. 1, 1905, p.70.

⁴³ Herbert Watkins-Pitchford MRCVS, was selected in England in May 1896 by the belatedly Natal government as Principal Veterinary Surgeon.

⁴⁴ Verwoerd, D.W. 'A brief historical review of research achievements by the OVI during the 20th century against the background of socioeconomic and political developments in South Africa'. *Journal of the South African Veterinary Association*. Vol. 71, No. 4, 2000, p. 210.

established the first bacteriological institute in Grahamstown, under the professional eye of Alexander Edington, who had already started a laboratory for applying modern methods of bacteriological investigation to the most destructive stock diseases of South Africa.⁴⁵ Intensive research was done in this new institute on diseases common in that area, including horsesickness. As there was no uniform institution or legislations in the country to which scientists had report , it created some problems. In a recording in the minutes from the prime ministers office, there was support for Hutcheon's investigation into horsesickness and Koch's preventive inoculation trials, but it was pointed out that several experts were engaging in similar studies in different colonies.⁴⁶ It was difficult when scientists were working in similar lines and this was a possible cause for friction, added to the amount of stress they were under to find cures for all these 'new' encountered tropical diseases. Scientists were often too early in proclaiming to have found a cure. They often had to contradict themselves and one another, which did not reassure the public.

Edington found himself cornered when an assistant of his, Purvis wrote in the Cape Times that he found a method of treatment for horsesickness.⁴⁷ Edington was quick to reply that Purvis transgressed the terms of his agreement as what he stated was untrue and breached professional etiquette. In a long letter written to the agricultural department, Edington explained that Purvis was a resigned medical assistant and Edington was only made aware of Purvis' work by late communications to the branch of the British Medical Association. Edington concluded that a form of agreement needs to be sign by every assistant in this institute.⁴⁸

It is interesting to realise that even though there were only a few scientists in an isolated country, they were in communication with the British Medical Association conveying their findings. The government rarely granted excellent scientists such as Edington and Koch to travel to foreign institutes to keep themselves up to date as the few accounts appearing in French, English and German journals were short, incomplete and often

⁴⁵ Notes of the department, *Agricultural Journal*, 11th February, 1892, p.1.

⁴⁶ KAB GH 35/125 [96], minute from Prime Minister Office, Cape Town, 30 May 1905.

⁴⁷ KAB CO 7273 [46], letter to the Colonial Secretary, Cape Town Government, Mashonaland 18 July 1899, from N.K. Steen.

⁴⁸ KAB CO 7273 [46], letter from Bacteriological Institute Dr. Edington, Grahamstown, 30 April 1900.

useless making the scientists absolute in their ideas.⁴⁹ Although most of the expenses were paid for by the government, it was still expensive for them to travel. Edington issued a request to the under secretary of agriculture, asking if he would be allowed 'to a share in the profits derivable from my vaccines. I feel that such a suggestion might be more satisfactory than an increased salary on account of the fact that the latter bulks largely in a calculation for pension'.⁵⁰ Although he made the 'business' more than profitable, the reply was negative as any discoveries made in investigating a disease, were property of the government. The communication between the South African scientists and the British Medical Association and the rare travels to foreign institutes, would eventually help them to receive international attention when further research was conducted with the establishment of Onderstepoort years later.

The colony later appointed Arnold Theiler,⁵¹ a Swiss veterinarian who immigrated to South Africa in 1891. As its first state veterinarian, Theiler was given the specific task of combating rinderpest in 1902.⁵² Theiler took this responsibility serious and established a field laboratory in Marico which was later moved to Waterval, north of Pretoria.

In six weeks, Theiler and Watkins-Pitchford were able to develop in this laboratory the essentials of what proved to be the first effective immunisation against rinderpest, a serum-virus type of vaccine. In 1897 he founded Daspoort, which was originally an ex-military barrack,⁵³ and turned it into the first permanent laboratory. The selection of such scientists was highly successful as rinderpest was eradicated a year later and never returned to the country. This rather slow progress did not relieve the situation as almost half of the total livestock population and wildlife were wiped out. South Africa comprehended the need for veterinary research and was highly supportive of the activities at Daspoort and other laboratories. Although researchers seemed to struggle to find causes and cures for certain diseases, it was successful for some. In 1895 various

⁴⁹ KAB CCP 1/2/1/91 [A.13-'95], correspondence application made by Dr. Edington, colonial bacteriologist, 1895 & KAB AGR 252 [A.13-'95], correspondence relation to the investigations by Dr. Edington, director of the Bacteriological Institute, into the nature and causes of Horsesickness, June 1895.

⁵⁰ *Ibid.*

⁵¹ For more information on Arnold Theiler, please read '*There was a man. The Life and Times of Sir Arnold Theiler, K.C.M.G. of Onderstepoort*'. By Thelma Gutsche, Cape Town, 1979.

⁵² Du Toit, P.J. & Jackson, C. 'The Life and Work of Sir Arnold Theiler'. *Journal of South African veterinarian medical association*, Vol. 7. No. 4, 1936, p. 136.

⁵³ Bigalke, R.D. 'Onderstepoort today yesterday and tomorrow'. Commemorative lecture. *Onderstepoort Journal of Veterinary Research*. Vol. 52, No. 3, 1985, p. 126.

major discoveries were made such as the identification of the trypanosome which causes nagana and the tsetse fly as its vector. Five years later, a specific tick was identified as being responsible for causing heartwater.⁵⁴ These discoveries strengthened the belief and the trust of the government in the need for well qualified researchers and scientists and for the expansion of laboratories.

These developments came to a stand still after the outbreak of the Anglo Boer War or South African War from 1899 to 1902. The destruction of farms and livestock and the aftermath of the war made the development of veterinary services extremely difficult. The post-war years made improvement almost impossible as the previous Boer republics were characterised by extreme poverty and an unstable military. The situation was worsened by the outbreak of new diseases brought forth by the importation of horses for the British army. One of the most serious new diseases introduced into the country, by the importation of livestock from East Africa in order to restock, was East Coast Fever. Theiler addressed the British Association for the Advancement of Science in Johannesburg on 29 August, 1905 with these words:

‘The history of stockbreeding in South Africa is interwoven with many sad tale of the occurrence of plagues and pests amongst all classes of domesticated animals. Indeed, appearing at intervals, these plagues threatened more than once to ruin the various branches of stockbreeding. Some of the diseases must be considered to have been indigenous to the country before even the white man appeared. Others have since been introduced, and, having become firmly established, are not likely to disappear. As the colonisation of the various parts of South Africa advanced, the most devastating scourges make their appearance, and there seem to be no end to them.’⁵⁵

Theiler realised that many of the diseases were indigenous however; some of them had been introduced by the necessary importation and transportation of animals. Added to the indigenous diseases were the imported diseases. The country was still unaware of a number of indigenous diseases but soon encountered them when colonisation expanded to parts of the country not yet claimed. The spread of animal diseases, indigenous or imported, was thus made easier by further colonisation.

⁵⁴ Verwoerd, D.W. ‘A brief historical review of research achievements by the OVI during the 20th century against the background of socioeconomic and political developments in South Africa’. *Journal of the South African Veterinary Association*. Vol. 71, No. 4, 2000, p. 210.

⁵⁵ Theiler, A. ‘The Advance of our Knowledge Respecting the Stock Disease of South Africa’. *Transvaal Agricultural Journal*, Vol. 4, No. 1, 1905, p.69.

The imported diseases were regarded as serious as it had a major influence on the development of the country because development was dependent on the use of animals. The government was in desperate need to find solutions to cure and curb animal diseases and in 1903 issued a resolution to convey its negotiation with the governments of Cape Colony, Natal, Orange River Colony and Rhodesia. An adequate prize or bonus was to be offered for the discovery of practical preventions or cures for horsesickness, Rhodesian redwater and tick fever.⁵⁶

Hutcheon and Theiler realised that a lot of diseases in the country shared similarities, while others did not have any specific symptoms, making the diseases unrecognisable in some instances, or they were only known under local names. For example, lungsickness and redwater in cattle have similar characteristics. Both diseases are caused by living organisms and in the case of both lungsickness and redwater, there is a window period after infection has occurred, during which animal shows no outward symptoms of the disease.⁵⁷ Horsesickness resembled these diseases in that it too had a period of latency or hatching. These similarities made curing some diseases difficult. Although scientists were well aware of their existence, they did not realise immediately that they were dealing with a known disease having only a different name given by the locals.

The Cape's Department of Agriculture was the most important generator of knowledge on animal diseases and the prevention of animal diseases in Southern Africa up until about 1902.⁵⁸ However, knowledge was now increasingly produced in the Transvaal, particularly by the work of Arnold Theiler.

Veterinarians and entomologists gained experience of East Coast Fever in the Transvaal and Rhodesia. It was not only South Africa that expanded the interest in animal diseases at that time, but countries over the world started to become more interested in tropical diseases of animals giving Southern Africa international veterinary attention. The founding of new journals, nationally and internationally increased the flow of information and the generation of knowledge became less autochthonous. Horsesickness

⁵⁶ VAB CO 189 [4972/03], letter from Colonial Secretary, Pretoria 9 July 1903, to the Colonial Secretary Orange River Colony.

⁵⁷ KAB AGR 252 [193], letter from Department of Foreign Affairs, Pretoria 3 September 1895, to the under Secretary for Agriculture.

⁵⁸ Gilfoyle, D. *Veterinary Science and Public Policy at the Cape Colony, 1877-1910*. Phd thesis, University of Oxford, 2002, p.293.

was closely followed by the 'Central Veterinary Medical Society' in Paris and the preliminary findings were communicated in the 'Veterinary Record'.⁵⁹ Professor John MacFadyean, principal of the Royal Veterinary College in London, experimented with infected blood from South Africa and used the blood to repeat Edington's experiments in Britain.⁶⁰ He communicated his findings in 'Journal of Comparative Pathology and Therapeutics' which were also read by researchers in South Africa. The International Convention of Veterinarians held at Budapest in 1905 created public interest in South African matters concerning veterinary hygiene.⁶¹ Daspoort became unsuitable for Theiler's increasing activities. It was too small to cater for the growing demand for vaccines.⁶² Besides the laboratory was unhygienic which made it a dangerous threat for human health. Theiler lost several assistants to typhoid fever.⁶³



Figure 1: (from left) General Louis Botha, Transvaal Prime Minister and Minister for Agriculture; Dr. Arnold Theiler C.M.G., Government Veterinary Bacteriologist; and F.B. Smith, Director of Agriculture. This picture was taken for the Souvenir publication intended for the opening of

Louis Botha was also a farmer and Theiler and Botha became well acquainted when both served during the Anglo Boer War. Theiler benefited greatly from this relationship⁶⁴ as Botha, who became prime minister and minister of agriculture, attended urgent requests from Theiler and was able to convince the parliament to invest £80 000 to modify De Onderstepoort farm into Onderstepoort Laboratory in 1908, only seven years after the conclusion of a devastating war.⁶⁵

⁵⁹ Nocard, M. 'Horsesickness in South Africa'. *Veterinary Record*, 16th February, 1901, p. 435.

⁶⁰ Gilfoyle, D. 'Veterinary Immunology as Colonial Science: Method and Quantification in the Investigation of Horsesickness in South Africa, c. 1905-1945'. *Journal of the History of Medicine*, Vol. 61, January 2006, p. 35.

⁶¹ Theiler, A. 'Veterinary Hygienic Principles applicable to Stock in South Africa'. *Transvaal Agricultural Journal*, Vol. 5, 1906, p. 567.

⁶² Theiler, G. 'Arnold Theiler 1867-1936, His Life and Times.' Pretoria, 1971, p. 8.

⁶³ Bigalke, R.D. 'Onderstepoort today yesterday and tomorrow'. Commemorative lecture. *Onderstepoort Journal of Veterinary Research*. Vol. 52, No. 3, 1985, p. 126.

⁶⁴ Bigalke, R. D. & Verwoerd, D. W. 'A Century of Research Achievements by the Onderstepoort Veterinary Institute'. *Transactions of the Royal Society of South Africa*, Vol. 63, No. 2, p. 32.

⁶⁵ Unknown, 'The Onderstepoort Veterinary Research Laboratory, 1908-1958.' *Onderstepoort Journal of Veterinary Research*, Vol. 28, No. 4, p.573.

Figure 1: Gutsche, T. 'There was a man. The Life and Times of Sir Arnold Theiler, K.C.M.G. of Onderstepoort'. Howard Timmins: Cape Town, 1979.

3.4. Research and findings on African horsesickness before Onderstepoort

As African horsesickness is the main disease discussed in this chapter, it is of importance to consider the disease specifications known at that time before the start of a new scientific era in the country with the establishment of Onderstepoort. This will give a clear view of the actual developments in veterinary medicine and the accomplishments of the institute.

Due to the Rinderpest epizootic in the last decade of the 19th century, research and laboratories were highly valued. Research work was done in a more scientific manner, using the input of various investigators and the work was largely subsidised by the government. This led to more successful findings of various methods of inoculation.⁶⁶ It was the first time that the study of and experimentation with South African diseases had been undertaken on such a scale. Valuable work had been done before but it was met with little support, enthusiasm and a lot of prejudice. Preconceptions still existed although it was obvious that times had changed.

There were already excellent horsesickness descriptions done by Hutcheon, although the experimental investigations of later years gave a more clear insight into the nature of diseases.

Researchers soon dropped the idea that horsesickness was not anthrax.⁶⁷ Theiler (calling the disease on some occasions 'South African horsesickness')⁶⁸ made a considerable effort in researching horsesickness by protecting equines for exploitation in places where the oxen could not be moved due to East Coast Fever.⁶⁹ Cattle of infected areas were restricted in their movement and the use of horses and mules was the only alternative for ploughing and transport placing them at a higher risk of contracting horsesickness.

⁶⁶ Edington, A. 'South African Horse Sickness: its Pathology and Methods of Protective Inoculation.' *Agricultural Journal*, Vol. 18, 1902, p.142.

⁶⁷ Hutcheon, D. 'Horse-sickness', *Agricultural Journal*, 28 January, 1892, p.173 & 'Diseases of Animals, review: Horses and Cattle Diseases in the Colony.' *Agricultural Journal*, 16 November, 1893, p.446.

⁶⁸ Theiler, A. 'South African Horse Sickness: History, Geographic and Telluric Conditions'. *Transvaal Agricultural Journal*, Vol. 1, No. 1, 1902, p.27 & 'South African Horse-sickness'. *Agricultural Journal*, 30 May, 1895, p.274.

⁶⁹ Gilfoyle, D. 'Veterinary Immunology as Colonial Science: Method and Quantification in the Investigation of Horsesickness in South Africa, c. 1905-1945'. *Journal of the History of Medicine*, Vol. 61, January 2006, p.34.

Although showing some general symptoms such as an incubation period of five to seven days and a temperature, horsesickness was regarded to have two different forms: dunkop and dikkop. Dunkop was perceived as the ‘pulmonary form’, affecting the lungs gravely. The horse showed signs of suffocation; sweating anxiously while having an extended neck, taught forelegs and flared nostrils through which a yellow frothy mucus was discharged. The horse did not live for much longer after having displayed such symptoms. The dikkop form was called the ‘cardiac form’ affecting mostly the heart. It began in the same way as dunkop although the lung problems were less severe. There was congestion of the mucous membranes of the eyes while the heart rate became irregular. The first external noticeable sign was swelling above the eye, making the eyeballs protrude in the sockets. The whole head and neck might also have appeared swollen. The horse died after these severe symptoms. Between these two forms, many diagnoses were possible.⁷⁰ Horsesickness showed similar *post mortem* signs as ‘Veldsickness’.⁷¹ The lungs showed an exceedingly well marked yellow exudation, some emphysema of the apices and free edges of the lungs and the pericardium contained an excessive amount of yellow serous fluid.

It was apparent that horsesickness was prevalent in the lower lying parts of the country and that the horses stayed relatively disease free on higher grounds. The sub form of dikkop was usually described as blue tongue and the farmers started to be able to identify diseases and realised that the symptoms of horsesickness and blue tongue were identical. Around the end of the 19th century, Hutcheon was of the opinion that horses became infected with horsesickness during breathing, as the lungs were the only organs affected; through the mouth along with the food, as in many cases the digestive organs were the principal organs involved and by inoculation through an abrasion of the mucous membrane lining the mouth where the effusion took place in the cellular tissue about the head and neck.⁷²

Researchers moved away from this theory as investigation into the symptoms and conditions of the disease had little to do with these early conceptions of infection. The

⁷⁰ Theiler, A. ‘South African Horse Sickness: History, Geographic and Telluric Conditions’. *Transvaal Agricultural Journal*, Vol. 1, No. 1, 1902, p.30-31.

⁷¹ Edington, A. ‘Note on the co-relation of several Diseases occurring among Animals in South Africa.’ *The Journal of Hygiene*, Vol. 3, No. 2, 1903, p.141.

⁷² Hutcheon, D. ‘Horse-sickness’ *Agricultural Journal*, 5 May, 1892, p.1. & ‘South African Horse Sickness.’ *Agricultural Journal*, 30 May, 1895, p.274.

diseased flourished best in moist environments, where there were rivers and low lying damp areas. The two diseases, namely blue tongue and horsesickness were present after heavy rains and were experienced during the latter half of the rainy season. What was also common between blue tongue and horsesickness is that both diseases were contracted during the night. The animals were perfectly healthy during the day and after the night; they became very sick in the morning. Theiler recommended the farmers keep their animals in the stables or on high land, away from moist locations. Precautionary measures were published as soon as an outbreak was suspected. It was recommended to keep the horses stabled as much as possible and not allow them to remain outside at night or to let them graze before eleven in the morning or until the moisture was off the grass.⁷³ Hutcheon was not certain that dew was necessarily a contributing factor, or a trigger for the development of the infective agent of horsesickness.⁷⁴ This demonstrates that scientists were still very much in the research process on diseases and were far away from any conclusive answers as they still differed in their theories. However, it was still commonly believed that dew was a possible cause of horsesickness, but according to Theiler, dew was not considered the cause as some horses kept indoors for the whole day also died.⁷⁵ It was also noticed that both horsesickness and blue tongue disappeared from the moment the frost sets in. This is where the comparison between horsesickness and blue tongue stopped.

Dr. Edington, from the bacteriological institute, stated that he found the microbe causing horsesickness⁷⁶ and that cattle, sheep and goats could be inoculated against it.⁷⁷ Theiler experimented with inoculating sheep with virulent horsesickness blood and observed that it did not produce catarrhal fever.⁷⁸ Reversing the experiment proved to be unsuccessful as well. It was however established that horsesickness could be transmitted into dogs

⁷³ Fisher, A. 'Notice No. 28, Horsesickness, Precautionary measures advised.' *Agricultural Journal*, 24 March, 1892, p.231.

⁷⁴ Hutcheon, D. 'Horse-sickness' *Agricultural Journal*, 5 May, 1892, p.2.

⁷⁵ Theiler, A. 'South African Horse Sickness: History, Geographic and Telluric Conditions'. *Transvaal Agricultural Journal*, Vol. 1, No. 1, 1902, p.27.

⁷⁶ KAB AGR 252 [6], letter from director of bacteriological branch of Department of Agriculture Dr. Edington, Grahamstown 25 June 1895, to under Secretary for Agriculture Cape Town.

⁷⁷ 'Transmission of horse sickness into dogs', *Report of the Government Veterinary Bacteriologist, 1905-1906*, Transvaal department of Agriculture, p.67.

⁷⁸ Theiler, A. 'The Advance of our Knowledge Respecting the Stock Disease of South Africa'. *Transvaal Agricultural Journal*, Vol. 4, No. 1, 1905, p.70.

and from one dog to another.⁷⁹ Edington already demonstrated that horsesickness could be transmitted from one horse to another by blood inoculation.⁸⁰ The disease was easily made into an inoculation with the blood of a sick animal when given to the same species however, the disease was not perceived as contagious.⁸¹ Primary inoculation tests proved to be unsuccessful.⁸²

Researchers working in South Africa were not only building on their educated knowledge from practical experience, they communicated with colleagues from other countries and disciplines. Science was rapidly broadening out and expanding making it easier to exchange (new) knowledge and ideas with other countries. Additional foreign journals were published and ordered in South Africa bringing in new ideas of approaching animal disease research. According to professor Woodworth of the Sate University at Sacramento, it was no new information that insects were subject to contagious diseases.⁸³ Although this information was not yet widely spread and only a few researchers considered it in their bearings to practical knowledge. Researchers in South Africa started to realise that blue tongue and horsesickness were possibly transmitted by 'winged night insects'.⁸⁴ Insects were long suspected of being responsible for the transmission of serious diseases but it was only in the last few years that practical knowledge was acquired of insects in that role.⁸⁵ However, the public was not entirely convinced. After Walker published a letter to the editor of the *Agricultural Journal* confirming out of practical experience that it was very much possible that insects were responsible for the transmission of horsesickness, many readers reacted in disbelief.⁸⁶ Readers were not convinced that bites of a fly or any other flying insect could be accountable for the discharge of bile from the mouth and nostrils.⁸⁷ However,

⁷⁹ 'Transmission of horse sickness into dogs', *Report of the Government Veterinary Bacteriologist, 1905-1906*, Transvaal department of Agriculture, 1906, p.160.

⁸⁰ Hutcheon, D. 'Horse-sickness' *Agricultural Journal*, 5 May, 1892, p.2.

⁸¹ 'Appendix I', *Report of the Director of the Colonial Bacteriological Institute*, 1899, p.16. [G.27-'99]

⁸² Koch, 'Horse Sickness and its prevention.' *Agricultural Journal of the Cape of Good Hope*, Vol. 24, No. 4, 1904, p.506-508.

⁸³ Woodworth, C.W. 'Insect Pests: Contagious Diseases of Insects'. *Agricultural Journal*, 16 May 1895, p.251.

⁸⁴ Watkins Pitchford, H. 'Investigation into the Nature and Cause of Horse Sickness.' *Agricultural Journal of the Cape of Good Hope*, Vol. 23, 1903, p.153.

⁸⁵ MacGregor, M.E. 'Insects as Carriers of Disease', *Transactions of the American Microscopical Society*, Vol.37, No.1, 1918, p.7.

⁸⁶ Walker, P.N., 'Horsesickness', *Agricultural Journal*, Vol. 30, 1907, p.565-567.

⁸⁷ Letter written to *Agricultural Journal* by J.S. de Villiers, translated from Dutch, Grasvlei district Beaufort West, 25 April 1907 and letter written to *Agricultural Journal* by A.R. Van der Walt, Vlakkfontein district Aberdeen, 31 May 1907.

researchers became more convinced that it was the mosquito which transmitted the ultra microscopic virus from one animal to another.⁸⁸

However, observations made it clear that two distinct species were responsible for the transmission of horsesickness and blue tongue: *stegomyia* and *anopheles* for horsesickness and *culex* for blue tongue.⁸⁹ This was verified through experimentation although the infectivity of certain species of flying insects was not revealed until mid-twentieth century although veterinarians generally accepted horsesickness to be an insect born disease. The mosquito theory explained all the facts which would otherwise be shrouded in conjecture. It explained why the disease occurred in a good or a bad constructed stable, why horsesickness was not frequently observed on high altitudes and why the disease disappeared after a heavy frost.⁹⁰

Further experiments based on the outcomes of researcher Watkins-Pitchford, attested the fact that horses kept out in the night air died of horsesickness and the ones staying in the mosquito-proof cages survived. Earlier observations confirmed that smoking the stables, with substances or horse manure, safeguarded the horses from horsesickness as winged insects do not tolerate smoke.⁹¹ When smoking was not possible, horses were still regarded as safer from mosquitoes in stables as there is an active agent of the ammonia by the decomposing urine in stables that kept them away.⁹²

Both diseases, horsesickness and blue tongue, are destroyed when dried but can be preserved in liquid blood for years. This lead Theiler to conclude that the virus could not be contracted through the mouth or through the nose, and that the disease could not exist for longer than a day in a dry atmosphere and could not be carried through the air in food.⁹³ There needed to be an intermediate carrier.

⁸⁸ KAB CVS 1/34 [111], letter 'Diseases of Horses in Namaqualand' from Veterinary Branch, Department of Agriculture D. Hutcheon, Cape Town 30 April 1904 to the under Secretary.

⁸⁹ Theiler, A. 'The Advance of our Knowledge Respecting the Stock Disease of South Africa'. *Transvaal Agricultural Journal*, Vol. 4, No. 1, 1905, p.70.

⁹⁰ Theiler, A. 'Horsesickness, lecture No. III' *Agricultural Journal*, Vol. 31, 1907, p.185.

⁹¹ D.H. 'Horsesickness', *Agricultural Journal*, Vol. 30, 1907, p.146.

⁹² Theiler, A. 'Horsesickness, lecture No. III' *Agricultural Journal*, Vol. 31, 1907, p.186.

⁹³ Theiler, A. 'The Advance of our Knowledge Respecting the Stock Disease of South Africa'. *Transvaal Agricultural Journal*, Vol. 4, No. 1, 1905, p.71.

When researchers accepted the flying intermediate nocturnal host, they were able to explain the conditions that determined the appearance and disappearance of the diseases, and the reason why they are dependent on telluric, climatic and meteorological conditions and influences. When these conditions were favourable for the development of insect life, especially mosquitoes, the diseases were much more prevalent. Change in environmental conditions was already noted in early observations where the beginning of frost meant the disappearing of night insects and horsesickness.⁹⁴

Theiler detected already in 1901 from experiments concerning the frequency of mosquitoes that the anopheles and stegomyia appeared long after and disappeared before the ordinary culex, leading him to conclude that only a certain specie of nocturnal insect was responsible for carrying the disease.

It was difficult to explain and understand the exacerbation of horsesickness after an interval of a few years at the beginning of the twentieth century. This aggravation was still regarded a mystery as the horses did not retain the virus in their blood and could not act as a propagator of the disease. Scientists supposed that the micro-organism was retained in the body of the insect and remained there whilst the micro-organism underwent the evolution of its life cycle. The infected insects hibernated in some seasons which explains why some seasons were more serious than others.

In 1902, Theiler believed that horsesickness must have originated in South Africa with the importation of the first horses.⁹⁵ Although Hutcheon published that horsesickness was an indigenous disease, arising 'from a micro-organism or ineffective agent, multiplying and developing under certain atmospheric conditions outside the animal's body'.⁹⁶ Two years later however, Theiler suspected the existence of a host in which the micro-organism may live without causing them any harm and from which the micro-organisms are transmitted through the bites of insects.⁹⁷ This explained why the disease occurred in countries where susceptible animals to the disease were rarely brought from

⁹⁴ Theiler, A. 'South African Horse Sickness: History, Geographic and Telluric Conditions'. *Transvaal Agricultural Journal*, Vol. 1, No. 1, 1902, p.27.

⁹⁵ *Ibid.*

⁹⁶ Hutcheon, D. 'Diseases of Animals, review: Horses and Cattle Diseases in the Colony.' *Agricultural Journal*, 16 November, 1893, p.447.

⁹⁷ Theiler, A. 'The Advance of our Knowledge Respecting the Stock Disease of South Africa'. *Transvaal Agricultural Journal*, Vol. 4, No. 1, 1905, p.71.

southern Africa which proved that these animals were not responsible for the spreading of the disease. Theiler believed it would have been an aquatic animal. Many cures had been advertised in the colonial papers from time to time but Hutcheon was not satisfied with their suggestions.

‘I am not aware that any of these have proved satisfactory on extensive trail. It is hardly to be expected, therefore, that I would have the temerity to publish a remedy for the cure of this rapidly fatal malady...I have no intention, however, of prescribing a remedy for the cure of horsesickness...’⁹⁸

Drugs were used as a preventative measure against disease and also were administered when a horse had contracted a disease. The ‘drugs’ used were mostly arsenic and tar preparations.⁹⁹ Over and above the use of drugs, there were practical methods put in place to prevent the spread of diseases, for example horses were stabled and made to work only during the day and grazing was only allowed when the sun had dried the veldt.¹⁰⁰

Theiler himself was later not convinced by these methods although he never discouraged the usage of it as it did not harm the animals if not constantly used.¹⁰¹ Other remedies were also regarded as useful. The dunkop variant remedies were to prevent further oozing of serous fluid in the chest. Some of these remedies included the infliction of blisters, acetate, ergot (which can be injected), carbolic acid and lysol mixed with water. Methylated spirits of wine, Cape brandy¹⁰² and strong coffee needed to be given repeatedly. The dikkop variant remedies focused on the heart and consisted of brandy and whisky, subcutaneous injections of camphor diluted in spirits of wine, ether, or ergotine.¹⁰³

The results of certain experiments resulted in the production of a serum that was used to increase immunity¹⁰⁴ And after many years of investigation, Theiler was very pleased to

⁹⁸ Hutcheon, D. ‘Horse-sickness (republished)’ *Agricultural Journal*, 28 January, 1892, p.174.

⁹⁹ D.M. Worcester, P.J. ‘The New Disease among horses’. *Agricultural Journal*, 6 December 1888, p. 129.

¹⁰⁰ Theiler, A. ‘South African Horse Sickness.’ *Agricultural Journal*, 30 May, 1895, p.275.

¹⁰¹ Theiler, A. ‘South African Horse Sickness: History, Geographic and Telluric Conditions’. *Transvaal Agricultural Journal*, Vol. 1, No. 1, 1902, p.33.

¹⁰² De Villiers, P.J. ‘Brandy as Cure for Horse-sickness’. *Agricultural Journal*, 10 March, 1892, p. 207.

¹⁰³ Theiler, A. ‘South African Horse Sickness: History, Geographic and Telluric Conditions’. *Transvaal Agricultural Journal*, Vol. 1, No. 1, 1902, p.34.

¹⁰⁴ Theiler, A. ‘The Advance of our Knowledge Respecting the Stock Disease of South Africa’. *Transvaal Agricultural Journal*, Vol. 4, No. 1, 1905, p.72.

announce that a serum had been obtained. This serum against horsesickness was produced in a similar way to the first practical anti-microbe serum for rinderpest. The development of a horsesickness serum was very necessary as the mortality of horses and mules was ninety-five percent and the disease was able to wipe out the entire horse population in certain districts during a bad year. The proportions of the serum and virus had to be right as it proved to be deadly when the wrong quantities were, injected in the jugular vein. The death rate in mules, after inoculation, was five percent and was slightly higher in horses. Trials however did show that immunised animals, when exposed to natural infection, stood a chance of contracting the disease again.

Theiler was aware of the fact that horses bred in horsesickness areas were much more resistant to the disease than imported horses.¹⁰⁵ Horses and mules that survived an attack, therefore becoming 'salted', increased in value and, because it was accepted that these animals were immune against the disease, they could be used in low lying warm districts, although there was much discussion on this topic. Some farmers maintained that a horse, which survived a horsesickness attack, does not exist, others say that they do exist and some believed that a salted horse was still able to contract a form of the disease.¹⁰⁶ Theiler, still not aware of the different strains of horsesickness, did believe in the concept of a salted horse, if kept at the same location. Although some horses were still susceptible to the disease.

The control of horsesickness was difficult as the legislations and methods normally used for contagious diseases were inappropriate. Quarantine policing and slaughter used by veterinary regimes against horsesickness were pointless since the disease was not contagious and there was a possibility that the disease infected a resistant intermediary host. Slaughter was regarded quite early on as useless as Hutcheon stated: 'You may kill every horse and mule in the Colony, and introduce an entirely new race, but the wholesale slaughter would not affect the prevalence of horsesickness one bit'.¹⁰⁷ It remained impossible to attack the insect vector as it was still unknown which specific specie was responsible for the transmission of the disease. Veterinarians were only able

¹⁰⁵ Theiler, A. 'South African Horse Sickness: History, Geographic and Telluric Conditions'. *Transvaal Agricultural Journal*, Vol. 1, No. 1, 1902, p.32.

¹⁰⁶ *Ibid.*

¹⁰⁷ Hutcheon, D. 'Diseases of Animals, review: Horses and Cattle Diseases in the Colony.' *Agricultural Journal*, 16 November, 1893, p.447.

to recommend horse owners to stable their horses, keep their animals away from low lying areas and humid territories and to limit grazing after sunrise and before sunset.¹⁰⁸ Although there was substantial research being done on horsesickness, not much advancement was being made. Basically, farmers relied on their old protection and healing methods to safeguard the health of their horses. Farmers were aware of inoculations being developed, however, they were still in a trial stage and therefore not produced on a large scale or readily available. National veterinarians were aware of the international advancements in science and hoped for the discovery of vaccines to deal with horsesickness.

4. Establishing Onderstepoort Veterinary Laboratory

4.1. The beginning and early years

Onderstepoort Veterinary Laboratory officially opened on 8 October 1908 and became an important centre in the international network of veterinary science in South Africa (today called Onderstepoort Veterinary Institute). The Transvaal Government bought the land, chosen by Theiler, north at Pretoria, for its location and large acreage. The land was bought for £1500.¹⁰⁹ It can be suggested that decisions regarding Onderstepoort were facilitated by the personal relationship between Botha and Theiler. Theiler was therefore quite 'free' in deciding the location of this new laboratory.

Onderstepoort was perfectly situated as it was close to the capital Pretoria, in the middle of the bushveld yet had good access to rail networks. Having a railway siding at the laboratory made it possible for animals from infected areas to be sent through in quarantine with the least possible delay.¹¹⁰ The laboratory was also connected with a telephone line to Pretoria Central Exchange making communication possible with Johannesburg and the whole of the Rand as well as Pietersburg, Klerksdorp, Potchefstroom and Zeerust.

¹⁰⁸ Edington, A. 'South African horse-sickness: its Pathology and Methods of Protective Inoculation'. *Proceedings of the Royal Society of London*, Vol. 67, 1900, p.292.

¹⁰⁹ Brown, K. 'Tropical Medicine and Animal Disease: Onderstepoort and the Development of Veterinary Science in South Africa, 1908-1950'. *Journal of Southern Studies*, Vol. 31, No. 3, September 2005, p. 518.

¹¹⁰ [T.G. 35-'09] 'The Veterinary Bacteriological Laboratories', *Transvaal Department of Agriculture*, 1909, p.1

It was an ideal study field as horsesickness and poisonous plants were very prevalent in the Transvaal. The chief architect of the Public Works Department, Patrick Eagle, drew up the plans for the institute according to Theiler's suggestions he acquired in Europe.¹¹¹ He planned to make Onderstepoort the best bacteriological institute and his plans included creating laboratory buildings and stabling for a variety of animal species, farm services, staff quarters and transport. Onderstepoort was so revolutionary that it got the name 'Extravagant Palace of Science'. The white locals and black workers called it the 'Sick Line' as horses were often lined up for experiments.¹¹² This 'Palace of Science', as it was called, included small animal facilities such as dog kennels, piggery, and an isolation stable. There was also room for forage stores, workshops, farrier, saddler and sheds for buggies, wagons and farm implements. Hygienically it was an improvement from Daspoort as all the rooms were planned with a flue and a large incinerator was built for the disposal of refuse and carcasses.¹¹³

All these buildings, which are still remaining, are proof of the serious intentions Onderstepoort had as a veterinary research centre. In addition, these buildings demonstrate the lack of previous research centres as these centres were not as extensive and comprehensive and did not facilitate particular fields of research. It was for the first time, at Onderstepoort, that the veterinary research was centralised around these comprehensive buildings containing all the necessary facilities to aid human and animal health.

Starting with an equivalent of a total budget of R17 294 and a staff consisting of six professionals, five technicians and twelve auxiliary personnel, the laboratory was still able to make some ground breaking discoveries.¹¹⁴ Theiler found the East Coast Fever organism (later named *Theileria parva*), its vector and Watkins Pitchford developed the dipping routines which eradicated the disease. Theiler also discovered the causal organism of gallsickness with blue tick as its vector. He identified *Trypanosoma Congolense* as the main cause of nagana and by means of filtration experiments; he was

¹¹¹ Bigalke, R. D. & Verwoerd, D. W. 'A Century of Research Achievements by the Onderstepoort Veterinary Institute'. *Transactions of the Royal Society of South Africa*, Vol. 63, No. 2, p. 32.

¹¹² Bigalke, R. D. & Verwoerd, D. W. 'A Century of Research Achievements by the Onderstepoort Veterinary Institute'. *Transactions of the Royal Society of South Africa*, Vol. 63, No. 2, p. 33.

¹¹³ Theiler, G. 'Arnold Theiler 1867-1936, His Life and Times.' Pretoria, 1971, p.10.

¹¹⁴ Verwoerd, D.W. 'A brief historical review of research achievements by the OVI during the 20th century against the background of socioeconomic and political developments in South Africa'. *Journal of the South African Veterinary Association*. Vol. 71, No. 4, 2000, p. 210.

able to prove the viral nature of African horsesickness and blue tongue. The first steps towards a vaccine for African horsesickness were prepared.

Onderstepoort was extremely successful as an organisation, especially during the interwar years and probably at least until the 1960's, producing many important research papers on plant toxicology, immunology, nutrition and increasingly effective vaccines.¹¹⁵ Disease prevention and control in South Africa achieved ascendancy and the need to control and prevent disease became more accepted by livestock farmers. This was helped by the services provided by the Veterinary Department as they made dipping and vaccination widely available, even though they were often compulsory. Although the focus of this chapter is African horsesickness, it must be kept in mind that this was not the only and main concern of Onderstepoort. The scientists were not entirely successful in their horsesickness research, however the laboratory was successful in the research of other diseases demonstrating that it was not out of incompetence or lack of qualified personnel that the findings in the horsesickness research were not victorious. Theiler proclaimed:

‘Everybody now realizes that the future of South Africa lies in the development of agriculture, particularly in stock raising from the production of food and cloth to relieve the shortage of these commodities throughout the whole world. Improvement in the breed of cattle and sheep will come as a consequence of the increased demand, and of necessity the higher value of such stock will call for better care and attention as regards both the prevention and cure of disease.’¹¹⁶

Theiler comprehended that the positive prospect of South Africa was dependent on the developments in veterinary science and the collaboration between veterinarian and farmer.

The country was still greatly dependant on agriculture and, because it was expanding, there was a major need for livestock. However, growing livestock meant also escalating the risk of (spreading) diseases. Theiler wanted to reduce the risk of diseases within the growing stock. The early struggles he experienced when coming to South Africa to get acquainted with the country's specific veterinary conditions, made him very aware of the

¹¹⁵ Brown, K. & Gilfoyle, D. ‘Introduction: Livestock Diseases and Veterinary Science in Southern Africa’. South African Historical Journal, Vol. 58, 2007, p. 4.

¹¹⁶ ‘Addressed by Sir Arnold Theiler’, K.C.M.G., director of Veterinary Education and Research, on Degree Day, Pretoria, 9 April, 1920. p.3.

inadequacy of overseas training for the task coping with conditions in South Africa. Theiler could not help but mention after a visit of a European colleague:

‘I realised once again how much the overseas veterinarian is out of touch with our problems, and although they may have a thorough grip of veterinary science as applicable to their own country, it sometimes seems to me almost hopeless when I realise how little they know of our own conditions. There is no doubt about it that we have our own veterinary science, and in this respect South Africa is undoubtedly unique.’¹¹⁷

Together with a vision of the possibility of the full potential of the country with healthy animals, he believed it was time for South Africa to have its own School of Veterinary Science. The government realised that, concerning stock diseases, South Africa had its own unique conditions in comparison with other parts of the world where veterinary science was already taught.

4.2. The first South African veterinary college

No school in Europe could afford or offer South African students all the facilities required to make them acquainted with their future work in the country. The students needed not only to know the general western medical tradition of animal science, but they also needed the specific practical experience that was relevant to southern Africa and which was impossible to learn overseas. Stellenbosch University College offered Theiler a chair in Veterinary Science but this was countered by Professor Bosman, who offered him a chair in Veterinary Science in the Agricultural Faculty of the Transvaal University College.¹¹⁸ The Transvaal University College (University of Pretoria) made some proposals but Theiler turned it down. A meeting was convened, attended by persons ranging from veterinary science, pure science, agriculture and education to discuss the need for a veterinary school. They concluded that South Africa had a shortage of veterinarians (as did the rest of the world) and that the need for veterinarians would only increase in the future as the stock industry was inevitably also going to expand and the farming methods would become more intensive. Eventually they came to the decision that there should be a teaching establishment in the country with particular

¹¹⁷ Du Toit P.J. & Jackson, C. ‘The Life and Work of Sir Arnold Theiler’. *Journal of South African Veterinary Medicine Association*, Vol. 7, No. 4, 1936, p.159.

¹¹⁸ Bertschinger, H.J. ‘*The Onderstepoort Faculty of Veterinary Science: Past, Present and Future*’. University of Pretoria, 1990, pp.12-13.

advantages. When the need for an independent Veterinary Faculty was acceded, Theiler accepted the appointment as Director of Veterinary Education and Research.¹¹⁹

The constitution of the Faculty of Veterinary Science was something entirely new in the history of university institutions. Theiler decided that he would make use of the existing staff of the Onderstepoort Veterinary Research Institute for teaching purposes. By dividing the work between his staff, they would not be overburdened with lectures and still have time for research. In the meantime, the students would have the advantage of being taught by specialists for each subject.¹²⁰

The training would be made specific for the needs of this country's stock raising, with a consideration of important diseases occurring in South African conditions. Poor South Africans would be able to study the veterinary profession as it is important to have citizens study in this specific field because they have knowledge of the South African social and economic climate. The School would fulfil the national and international aspirations and obligations of the country, having an adequate share in the study and investigation of stock diseases claiming an international character, and the training would make the students eligible for veterinary appointments throughout the continent.¹²¹

The most suitable establishment was regarded the Research Institute at Onderstepoort. However, it was to remain under the administration of the Department of Agriculture instead of the University of South Africa which was originally considered. The training entailed a five year course, two years of which could be taken at any university or university college with the appropriate staff and facilities and a Bachelor of Science degree in veterinary subjects which was possible to complete at a university or university college before entering the final three years of more specialised professional training. The last few years must be taken at Onderstepoort in conjunction with Veterinary Research. These regulations show that the veterinary education was taken very seriously and was nothing less than training in an overseas institution. Onderstepoort had a major

¹¹⁹ Bertschinger, H.J. *The Onderstepoort Faculty of Veterinary Science: Past, Present and Future*. University of Pretoria, 1990, p.13.

¹²⁰ Theiler, A. 'Veterinary Education and Research in South Africa', *Department of Agriculture*, 1920, p.3.

¹²¹ 'Addressed by Sir Arnold Theiler', K.C.M.G., director of Veterinary Education and Research, on Degree Day, Pretoria, 9th April, 1920. p.4.

say in the schooling of future veterinarians although it stayed under the control of the Department of Agriculture.

Although Theiler was ready to leave the service of the department, he found himself pleasantly challenged with this new undertaking and the Ministers' high aim at the standard of training as he believed that the training period in overseas schools was insufficient especially with the specific requirements for the country. It was believed that especially the South African farmers would notice the difference and the benefit of the extension of the activities of the Research Institute. In addition it was comprehended that there were going to be a minimum of students. These changes were necessary as the veterinarians no longer completed the requirements for routine and research in the Union. The outcome of this was that effective research was not going to be compensated as the teaching staff were not exclusively paid for teaching but mainly employed as research officers. He concluded his oration with these words:

‘I appeal to the young South African as the future veterinarian who above everything else has the welfare of the country at heart; to the young man who has the altruistic desire to be useful to his fellow citizens; and to the man who loves science for science's sake, who will be satisfied with a decent living, and will labour to elucidate the problems which are as yet unsolved....Whilst our science does not lend itself to the accumulation of wealth, it offers all prospects for distinction not only in your own country but in the scientific world at large....It is to the student with high ideals that I appeal, and I feel sure that he is to be found in the young South African.’¹²²

Theiler believed in the potential of South African students. The curriculum was not that popular in the beginning as the positive factors of veterinary medicine and the job itself was not generally well known. People were uninformed of the major improvements done by veterinarians as well oblivious to the many tasks fulfilled by them. Although this was a totally new career choice for young people, the first students arrived at Onderstepoort in 1921 and had to be fluent in French and/or German, English and Afrikaans as most of veterinary and science literature was written in French and German although the classes were in Afrikaans or English.¹²³ The unrespectable status of veterinarians with the public, owed simply to a lack of awareness, made Onderstepoort very proud of their students and published the results of their final exams in ‘Boerdery in Suid-Afrika’

¹²² ‘Addressed by Sir Arnold Theiler’, K.C.M.G., director of Veterinary Education and Research, on Degree Day, Pretoria, 9th April, 1920. p.6.

¹²³ Brown, K. ‘Tropical Medicine and Animal Disease: Onderstepoort and the Development of Veterinary Science in South Africa, 1908-1950’. *Journal of Southern Studies*, Vol. 31, No. 3, September 2005, p. 524.

stating the positions of the graduates. All eleven students passed in 1926, five of them became part of the permanent staff and the rest were employed as government veterinarians in Namibia.¹²⁴

All graduated students enrolled in a position with the government as this was basically their only option. They would not be able to survive starting a private practice. Even Theiler tried private practice when arriving in South Africa but was soon in financial trouble and had to work for the government. Farmers did not trust the veterinarians or were not willing to spend their money on alleged cures and animal medicine. They still relied on their vernacular knowledge and previous experiences. Private practice was profitable in Europe due to the amount of small domesticated companion animals and a totally different attitude towards society. This was hardly the case in South Africa where the small group of white inhabitants, even the elite, were preoccupied with more significant matters such as the full blown development of a country. It was expected that private veterinarian services would only become necessary and required when the country would become more closely populated.¹²⁵ Since the education was (South) African related, researchers at Onderstepoort gradually started to publish standardised textbooks and started to rely less on publications from overseas. The South African veterinarians began to develop an independent relationship from foreign veterinary knowledge and established their own books of local and South African related animal diseases.

4.3. The purpose of veterinary services and Onderstepoort

A lot of people were unaware of the (other) functions of the Department of Agriculture, especially when it came to the Division of Veterinary Services. Doctor P.J. du Toit, Director of Veterinary Services, proclaimed that the chief aim of the division was to maintain the health of South African livestock and not only to focus on the diseases of animals.¹²⁶ Their endeavour was to prevent disease and help the farmers keep their animals in good condition and health. However, the relationship between farmers and veterinarians was still a sensitive issue. There was still a need for close cooperation between the two groups. Theiler wanted to share his knowledge because this could be

¹²⁴ Theiler, A. 'Hoe Wetenskap die Veeboer kan help: Ondersoek en Onderwys op Onderstepoort'. *Boerdery in Suid-Afrika*, December 1926.

¹²⁵ Veearts Vulletjie, 'Die Veearts en die Boer', *Die Landbouweekblad*, 21 March 1923, p.1095.

¹²⁶ Du Toit, P.J., 'The Division of Veterinary Services'. *Farming in South Africa*, April, 1935, p. 143.

very helpful to the farmers, but at the same time he emphasised to the farmers that veterinarians could not do 'magic'. He stressed:

'You can help a lot by informing us of your experiences. Let us work together. There were we where successful, do not forget that you were the ones that helped us; there were we haven not succeeded yet, give us another chance. Grant us your trust in the future, because, in the past, you have always been entitled to trust this Department of Agriculture.'¹²⁷

Although a lot of improvements were made between farmers and researchers, it was clear that there was still room for improvement. The veterinary science was in a way dependent on the farmers to inform them about diseases but the farmers also gave them the opportunity to test their theories.

Since disease was the main factor for the deterioration of the condition of animals, the division did a lot of research occurring in the country, devising ways and means of protecting the stock. This was done with some success, especially through Onderstepoort. This institute was known throughout the world. South African farmers benefited from the institute's research as many diseases could be controlled effectively by the vaccines which were issued by the institute for free or at cost price. The Division also had a Field Service which was responsible for the prevention of diseases spreading as well as securing means to avoid introducing further diseases into the country.¹²⁸

As the country was still busy restocking, the Division took note of nutritional problems as correct feeding is necessary to create a healthy livestock. Intensive research was done concerning minerals in animal feed and sex physiology of animals was important to be researched in order to benefit and control animal breeding. The more successful South African farmers became in breeding their animals, the less the country was forced to import livestock from other countries, bringing with them (new) diseases. The country wanted to limit the import of animals from other countries as this was always a serious threat to the health of the local animals, therefore the Division supported the farmers with breeding programmes. The more successful the farmers were in breeding, fewer animals were needed to be imported and the spreading of disease was limited.

¹²⁷ Theiler, A. 'n Boodskap aan die Boer'. *Boerdery in Suid-Afrika*, Vol. 3, No. 1, June 1926.

¹²⁸ Du Toit, P.J., 'The Division of Veterinary Services'. *Farming in South Africa*, April, 1935, p. 143.

Malan wanted a South African approach to the nutritional research and stated: ‘The problems of animal nutrition must be considered as national problems and we must not be content to look to other countries for help and solution’.¹²⁹ Researchers were not satisfied in finding answers from foreign researchers; they wanted to find exclusive solutions for the country’s specific problems. They started to investigate in other sciences that could be useful in comprehending the South African diseases such as ecology. Plants and soils were investigated as animal species had different grazing habits and the vegetation could provide a necessary clue in the search for answers. Veldt research and grazing practices confirmed that flora could be poisonous on some farms as different soils affected chemical compositions of plants. A ‘balance of nature’ needed to be found to enable a healthy environment for the different animals on the land.

4.4. Research difficulties and expanding of Onderstepoort

Although the development of Onderstepoort sounded like a positive growth for science, it was however difficult for the scientists to articulate their ideas and receive the support of the livestock holders. Taking a closer look at the relations between the researchers and the farmers is interesting as this demonstrates the public opinion about veterinary medicine and how fragile such a relationship was in the beginning.

It was clear that the veterinarian and the farmer were not friends as one of the articles in *Die Landbouweekblad* was titled: ‘Die Boer en die Veearts in Suid-Afrika, nie erken as vriend nie’ (translated: ‘The farmer and the veterinarian in South Africa, not recognised as friend’).¹³⁰ According to this article, this problem had two causes. Firstly there was the ignorance of the farmer as he rejected everything that was of a scientific nature. The farmer was determined that the only way to learn something from an animal was to basically work with it in the field. Farmers were also convinced that the scientists wanted to confound them by using specific scientific jargon which they did not understand and demonstrated that the veterinarians did not know themselves what was wrong with a sick animal. Secondly, the government transformed the veterinarian into a police officer as he was responsible to contain and exterminate contagious diseases. It

¹²⁹ Brown, K. ‘Tropical Medicine and Animal Disease: Onderstepoort and the Development of Veterinary Science in South Africa, 1908-1950’. *Journal of Southern Studies*, Vol. 31, No. 3, September 2005, p. 527.

¹³⁰ Wetenskaplike, ‘Die Boer en die Veearts in Suid-Afrika, nie erken als vriend nie’, *Die Landbouweekblad*, 10 July 1929, p.392.

was difficult for the farmers to accept directions and guidelines from people outside the farming community.

The dependency of veterinary science on farmers made the relationship between researchers and horse/livestock owners a very unstable one. Researchers needed the cooperation of farmers to test their theories and remedies. Onderstepoort often summoned farmers to send research material from sick animals for diagnosis.¹³¹ Often they worked on a trial and error basis and because the farmers did not have faith in science and were economically affected by the death of their animals, it only took a few errors to lose their trust in Onderstepoort and the research scientists. To restore the trust it took months of positive publicity in governmental gazettes and agricultural publications about some scarce scientific breakthroughs which increased the pressure on Onderstepoort and its small number of staff. However, positive publications were not always helpful as not all the farmers read agricultural publications or subscribed to agricultural journals. Public mistrust about Onderstepoort did not make collaboration and assistance easier. Readers of agricultural publications were very sceptical as one wrote:

‘I don’t believe in medicine in this disease [horsesickness] not a scrap. And I should just like to meet the man brave enough, or foolish enough, to inject real horse sickness blood into his best horse and then proceed to save it with any cure or preventive under the sun.’¹³²

These kind of attitudes made it very difficult for the researchers at Onderstepoort to test their medicine or even sell ‘proven’ remedies. Throughout the breeding programmes, it became clear that the science specifically relating to South Africa involved much more than knowledge and (practical) training. It included interaction with farming communities as well since the veterinarians needed this close contact for their research and for keeping an eye on developments. The farmers were the first ones to encounter the diseases, therefore collecting already a lot of information and knowledge about disease’s characteristics specifically when it came to the environmental factors undermining the health of their livestock.

¹³¹ Theiler, A. ‘Hoe Wetenskap die Veeboer Help.’ *Boerdery in Suid-Afrika*, December, 1926, p.316.

¹³² Walker, P.H. ‘Horsesickness’ *Agricultural Journal*, Vol. 31, 1907, p.204.

However, this communication was not merely a simple division between scientific specialists on the one hand and traditionalists with 'local knowledge' on the other. Settler farmers were not socially unified nor were they unified in their approach to stock management. Therefore Theiler stressed 'the necessity of cooperation between farmer and veterinarian'.¹³³ He believed that it was because of the farmers that veterinarian medicine was able to make such extensive and valuable discoveries in the last thirty-five years. The farmers were regarded as the foundation upon which veterinarian science was built. Theiler did openly acknowledge the fact that farmers did have trouble in trusting the researchers, disdained some attempts or requested impracticable demands.¹³⁴ This situation was not aided by the offended feelings of the farmers as they felt that the scientists remained deaf against their suggested means of animal treatment. Farmers felt that although they were supposed to support and follow the guidance of the veterinarians and scientists, the veterinarians and scientists themselves remained unresponsive towards the advice of farmers who remained reliant on themselves and their experiences due to their isolated existence even though some of their actions towards curing sick animals were effective.¹³⁵

The government aided Onderstepoort to gain the trust of the farmers by issuing an insurance outline. Farmers had the possibility of insuring their animals with the government and were paid out if an animal died.¹³⁶ It demonstrated a great trust in Onderstepoort by the government and the inoculations from the government sent a positive attitude to the farmers. However, the principal veterinary officers were not convinced that this conveyed trust in the scientists as such compensation can be regarded either as an act of grace or to avoid the owners having just cause for complaint if compensation was not being paid out.¹³⁷ Many farmers started using this compensation possibility making it expensive for the government who was obliged to make compensation payouts regulations stricter.¹³⁸ Eventually, farmers preferred to inoculate

¹³³ Theiler, A. 'n Boodskap aan die Boer'. *Boerdery in Suid-Afrika*, Vol. 3, No. 1, June 1926.

¹³⁴ *Ibid.*

¹³⁵ J.H. Gouws, 'die Veeartse en die Boere', *Die Landbouweekblad*, 21 February 1923, p.1010.

¹³⁶ KAB CVS 1/34 [218], letter from Department of Agriculture, Pretoria 11 November 1910, to the under Secretary for Agriculture of Cape Town.

¹³⁷ KAB CVS 1/34 [111], letter 'Diseases of Horses in Namaqualand' from Veterinary Branch, Department of Agriculture D. Hutcheon, Cape Town 30 April 1904 to the under Secretary.

¹³⁸ KAB CVS 1/34 government notice no. 1728 & KAB AMPT PUBS CCP1/2/1/3 [A11] circular no 42, Pretoria 8 November 1915.

their animals without making use of the insurance possibility of the government.¹³⁹ This was a clear sign of the trust the farmers started to have in the inoculation programme of the laboratory.

The farmers started to become reluctantly helpful in providing the researchers with vital information of diseases they have encountered. They could contribute with ideas about possible lines of research which were necessary to explore. Veterinary science began to develop not just from the top-down, it became a two way communication process. The farmers listened to the researchers as well. This was aided by positive publications in popular agricultural magazines stating the several duties veterinarians had to fulfil.¹⁴⁰ They gave the farmers advice on improving agricultural practices. Farmers received practical means of combating animal diseases while in the meantime they helped in expanding South Africa's veterinary knowledge. Although the unknown diseases, typical and unique to South Africa, made it difficult for the veterinarians and scientists. They were proud of the fact that they were able to work in South Africa and were pleased with the research opportunities. The work in the country was much more challenging and the field work had expanded a great deal more than what they had encountered overseas. Scientists realised that, although the South African environment was harsh, it was not inferior and was able to be managed by careful organization.

The preparation of horsesickness and blue tongue vaccines was a never ending job and at times it was impossible to meet unexpectedly heavy demands from the farmers. A safe margin would be aimed at without having the sufficient storage capability at the laboratory.¹⁴¹

Onderstepoort was in need of expansion with the arrival of the Union of South Africa in 1910 as it became the central veterinary laboratory for the whole country. An administration block was built in 1912, a post-mortem in 1918 and the staff (excluding labourers) increased from twenty-four to thirty-six.¹⁴² The Union did not only create a

¹³⁹ Theiler, A. 'Hoe Wetenskap die Veeboer help.' *Boerdery in Suid Afrika*, December, 1926, p.317.

¹⁴⁰ Veearts Vulletjie, 'Die Veearts en die Boer', *Die Landbouweekblad*, 21 March 1923, p.1095.

¹⁴¹ Du Toit P.J. & Jackson, C. 'The Life and Work of Sir Arnold Theiler'. *Journal of South African Veterinary Medicine Association*, Vol. 7, No. 4, 1936, p.163.

¹⁴² Verwoerd, D.W. 'A brief historical review of research achievements by the OVI during the 20th century against the background of socioeconomic and political developments in South Africa'. *Journal of the South African Veterinary Association*. Vol. 71, No. 4, 2000, p. 210.

positive development for enlarged laboratory facilities, it also improved library facilities. Theiler received consent to extend the library at Onderstepoort ordering more journals as many were published after his arrival in the country. New editions of old standard textbooks as well as new text books appeared on the library shelves together with a selection of private books on ancillary subjects.¹⁴³ These upgrades created a better platform for the researchers to create an understanding of how veterinary medicine was developing in the rest of the world and which discoveries were new and helpful for them. It increased the accessibility of the institute and decreased the sense of isolation.

However, Onderstepoort was affected by the First World War and activities were disrupted by the high number of staff members enlisted in the army. Theiler gave his resignation in 1918 owing to the pressures and frustrations caused by the war. After the departure of his successor Montgomery and a tremendous amount of public pressure, Theiler was reinstated two years later as Director of Veterinary Research and as the first dean of the newly established Faculty of Veterinary Science.

Although he was well aware of the political struggles in the country, he sometimes had difficulties in coming to terms with them. Regarding an application by the Transkeian Native Council for the permission of two natives to be trained as veterinarians for their own territory he stated:

‘The resolution is interesting from the point of view of the present trend of ideas, and South Africa will have to face the problem sooner or later, since by law all races are equal, and I do not see how the native can be rightfully prevented from qualifying. If he should go overseas, there would be no difficulty in obtaining his diploma, and it would not seem just to prevent his practising on his return to the Union. Anyway, it is a problem for the politicians to solve.’¹⁴⁴

Onderstepoort received support in 1927 from an unexpected corner. The A. S. & T. Broadcasting Co. Ltd., in Johannesburg which was an African Broadcasting Company in Cape Town. This company was interested in broadcasting popular lectures on agricultural subjects.¹⁴⁵ They were convinced that farmers would be interested in Dutch and English lectures given by agricultural experts as this would deal with diseases of

¹⁴³ Theiler, G. ‘*Arnold Theiler 1867-1936, His Life and Times.*’ Pretoria, 1971, p.12.

¹⁴⁴ Du Toit, P.J. & Jackson, C. ‘The Life and Work of Sir Arnold Theiler.’ *Journal of South African Veterinary Medicine Association*, Vol. 7, No. 4, 1936, p.161.

¹⁴⁵ Onderstepoort archives, 99 [14/1/1], circular No. 47 of 1924, from Department of Agriculture, Pretoria 1 August 1924 to all reads of divisions and principals, schools of Agriculture.

plants and animals. The minister of agriculture was very delighted with this idea as it aided in keeping the public informed of the general activities of his department. These lectures would not only be for the sole benefit of the agricultural department or Onderstepoort, but it was a clever move of the broadcasting companies. The majority of the farmers lived in isolated areas and started to install wireless radio sets in their houses to keep themselves informed on topics ranging from market price listing, to talks on how to keep a farm dog, to how to deal with epizootic diseases such as horsesickness.¹⁴⁶

These early morning radio lectures became so popular that they soon spread to other broadcasting firms and radio stations throughout the whole country. This gave Onderstepoort a major popularity boost as farmers were now given weekly updates on certain animal diseases and corresponding areas in the country. These helpful lectures also aided in informing the farmers about Onderstepoort's recent developments, activities and positive progress. It gave the farmers the sense of uniformity and trust in the agricultural department as well as the people working under them, such as Onderstepoort, which was absent earlier. The scientists findings were now not only written in agricultural journals but even broadcasted throughout the country making advertisements and creating credibility. Many talks were done on horsesickness. Listeners were supplied with information on where recent outbreaks were happening or expected to happen, methods to prevent transmission, and the necessity of inoculations.¹⁴⁷ Needless to say that this definitely increased the sales of vaccinations. It can be considered that this source of communication was easily manipulated as the agricultural department had the last say in what was to be broadcasted preventing negative publicity in such a way.

During that time, some major scientific advantages occurred such as the discovery of A.centrale and its use for a anaplasmosis vaccine, the development of a blood vaccine for babesiosis and the elucidation of the nature of botulism. In the years to come, Onderstepoort kept on expanding to accommodate its increasing number of students. Again, the staff and buildings increased and Theiler finally retired in 1927. He was then succeeded by P.J. du Toit. This was not the end of disease research and discoveries.

¹⁴⁶ Onderstepoort archives, 99 [14/1/1], letter from the Director of Veterinary Services and Animal Industry, Onderstepoort 14 March 1930 to chief division of Agriculture and Education and Extension.

¹⁴⁷ Onderstepoort archives, 99 [14/1/2/1], letter from Veterinary Services, 7 June 1937 to the Editor of Publications in Pretoria.

4.5. Research and findings in African horsesickness

Having discussed the early findings and research in African horsesickness before the establishment of Onderstepoort, this section will now show how scientists developed their research with the help of a totally new laboratory.

Early research already demonstrated that horsesickness was caused by a filterable virus and the presence of immunologically strains of the virus in the natural environment. This meant that horses infected by one strain of the virus were not protected against another strain of the same virus. As research developed into a new stage, the terms and conditions to keep their animals healthy became a lot more complicated and were not always understood by farmers. The earliest reasonable successful horsesickness vaccine developed by Theiler, consisted out of simultaneous inoculation with virus and polyvalent immune serum, the so called serum-virus method of immunisation.¹⁴⁸ This was a technique already used earlier by Watkins-Pitchford and Theiler for rinderpest. The public expected a lot of inoculations and regarded it as a hundred percent bullet proof method. However, this was hardly the reality. Onderstepoort lost the trust of many of the farmers as animals often still died after inoculation. The method was entirely new for (new) livestock diseases, not perfected yet and research was still ongoing and Theiler openly expressed this concern. He mentioned at the Witwatersrand agricultural show:

‘...it [reading a paper on the occasion of the annual Witwatersrand Agricultural Society show] offered me an opportunity to explain once more the principles, the applications, the results and the limitations of such inoculations which are so much used in this country and which form almost part of a farmer’s routine in his stock-breeding occupation. Many years’ experience on a vast scale, increasing correspondence, and regularly accumulating complaints about the inefficiency of one or the other vaccines, have brought it home to me many times that the fundamental principles on which these inoculations are based are not understood at all, hence it is comprehensible that the value of one or the other method is frequently much disputed, considered worthless by some, and infallible by others, all according to the experience the men have met with in their own particular practice. Generally speaking, too much is expected from a preventive inoculation, and very little is understood about its limitations.’¹⁴⁹

¹⁴⁸ Bigalke, R. D. & Verwoerd, D. W. ‘A Century of Research Achievements by the Onderstepoort Veterinary Institute’. *Transactions of the Royal Society of South Africa*, Vol 63, No. 2, p. 33.

¹⁴⁹ Theiler, A. ‘Immunization against Animal Diseases.’ *Union of South Africa, department of Agriculture*, local series no. 15, 1917, p.3.

This was not entirely spoken out of concern for the health of the animals. The threat of losing the trust of the farmers and their belief in the inoculation of their animals, could have a major impact on the resources of Onderstepoort. Although partly supported by the government,, Onderstepoort and their researchers' income and research resources were partly dependable on the profits Onderstepoort generated, which came mostly from selling inoculations and medicine. Indeed, a lot of the farmers did not entirely understand these newly used medicines and regarded it to be a magic potion safeguarding all the livestock and horses which was hardly the case in reality. The concept of immunity was not completely comprehended as well as the definitions of certain terms such as inoculation, vaccines and infection. In that particular speech, Theiler tried to convey to the farmers, in laymans' terms, the differences between the scientific meanings of these terms and procedures in an attempt to clear up possible uncertainties and any misconceptions or unrealistic expectations farmers might have of veterinary medicine. A lot of effort was done by Theiler and his assistants, when publishing articles, to explain medical terms in easy language and to cover their tracks if the expectations of the farmers were not met.

The micro-organism of horsesickness was still impossible to see with the microscopes used at Onderstepoort. It was still impossible to deliberately cultivate this organism responsible for the disease and because it was impossible to discover the shape and form of this organism, it was called an infective agent.¹⁵⁰ All horses infected with horsesickness were supposed to have this agent in their blood if it was dikkop or dunkop. Although it was still impossible to cultivate the disease, it was however possible to infect other horses with an injection of infected blood of other horses carrying that agent. There were still some unanswered questions when it came to the transmission of the disease. Researchers were only sure of one thing, that the disease was transmitted by flying insects. This conjecture was developed by the fact that malaria and horsesickness occurred under the same climate and atmospheric conditions. It was soon realised that these similarities between the two diseases were only coincidental but that they must be transmitted in the same way. Malaria was spread by a mosquito of the *Anopheles* sex

¹⁵⁰ Theiler, A. 'Het Paardenziektevraagstuk' *Unie van Zuid Afrika, departement van landbouw*, No. 17 van 1916, p.3.

although it was believed that this mosquito was also responsible for the transmission of horsesickness.¹⁵¹

The fact that horsesickness was conveyed by flying insects had already successfully been proven in early experiments in keeping insects out of stables. The stables at Onderstepoort were built in such a way that they could prevent any insects entering. Since 1908, researches devoted a lot of their attention to finding the particular insect responsible for the transmission of horsesickness. Horse owners were also convinced by this theory and were helpful in trying to find the specific winged insect that was responsible spreading and transmitting the disease. Often letters were written by cooperative farmers who wanted to catch the flying insects at their stables which they thought were responsible. 'You may probably know the fly I mean, but in order to make my contention clear I shall try and catch one or two of them and send them up to you. They are a bit scarce to find when one particularly wants one'.¹⁵² These efforts were highly appreciated although there were often replies from Onderstepoort that researchers were already examining the farmer's theory. Insects were captured in so called 'mosquito trap houses' where they were given the opportunity to feed on a horse. After a night, the insects that were then full, were collected and studied. Still, the tests turned out negative. The failures of these kind of tests were attributed to the fact that it was impossible to keep a mosquito alive long enough in a insect free stable with a horse, let alone in a glass cylinder.

Research was not only done to find the specific mosquito transmitter but also to find the reservoir where the mosquito got its infective agent. It was experientially proven that not only horses and mules could contract horsesickness but also donkeys and dogs. The disease had a very rapid course in incubation and temperature reaction and *post mortem* lesions found in dogs were identical to those of a horse which had died from horsesickness. Donkeys did not die that easily from the disease and dogs became infected by injection with the infected agent or by eating a horse that died from horsesickness. From an enzootological point of view together with the analogy of other

¹⁵¹ Theiler, A. 'Het Paardenziektevraagstuk' *Unie van Zuid Afrika, departement van landbouw*, No. 17 van 1916, p.4.

¹⁵² Read, R.C. 'Horsesickness, to the editor of the Agricultural Journal' *South African Agricultural Journal*, Vol. 7, 1917, p.962.

diseases, it was necessary to look towards other animals to find the source of the infective agent.

Horsesickness occurred in places where there were no breeds of horses or any other domestic animals and it also occurred in places where horsesickness was contractible in any season. Still the reservoir for horsesickness was not known. Theiler believed in the possibility of a bird reservoir and shot a few birds at the Aapiesrivier as well as some of the wild mammals. Jackals, porcupines, badgers, (field) bats, (striped/grey) mice, zebras, yellow guenons, iguanas, water tortoises, frogs, cattle, buck, sheep and goats, were all tested and their blood was injected with African horsesickness.¹⁵³ Surprisingly, the first results came back negative as well as those taken from the zebra. This was however not the first time that a zebra was examined. Theiler already questioned the relation between the disease and the zebra, especially when looking at the donkey which was considered immune and did not die even if it was artificially infected. He wondered if the zebra had a similar relationship to the infective agent of horsesickness and if it remained in the blood of different species of the genus equus in a latent form ready to assume its virulent character when transferred to a horse or mule.¹⁵⁴ This shows that Onderstepoort gave researchers the opportunity to engage in more aggressive research which was previously not available. The establishment of Onderstepoort was big enough to allow such research measures to be taken. The more research was done, the closer the researchers got to finding the answers to the numerous unanswered questions about the horsesickness disease.

Although tests came out negative, this was not the end of the search of the reservoir. Theiler realised that geographical divisions of disease and animals could be used as a guideline for further experiments. West Africa, from the north of Angola until north east Africa was regarded as horsesickness free. Central and east Africa until the shores of the Red Sea were not that lucky. Theiler distinguished between four forms of horsesickness instead of two. The pulmonary and the cardiac form of the disease was accompanied by

¹⁵³ Theiler, A. 'Het Paardenziektevraagstuk' *Departement van landbouw*, No. 17 van 1916, p.8.

¹⁵⁴ Watkins Pitchford, H. 'Investigation into the Nature and Cause of Horse Sickness.' *Agricultural Journal of the Cape of Good Hope*, Vol. 23, 1903, p.155.

‘horsesickness fever’ and a ‘mixed form’.¹⁵⁵ The dunkop and dikkop are the only two variants which are addressed in detail this thesis.

Horsesickness fever was one that was difficult to diagnose. It has no symptoms which made it able to differentiate itself from any other fever and was regularly noted in horses and mules that have been administered the horsesickness immunisation. This fever was the only form of horsesickness found in donkeys. Sixty percent of the animals that underwent immunisation showed this fever reaction. The incubation period depended upon two conditions: the virus and susceptibility of the animal injected. The average incubation period was five to seven days. The fever is typical and of a remittent type, morning remissions and evening exacerbations differing about one to three degrees. The course of the fever lasts five to eight days and is rarely protracted. In general, this horsesickness fever was not accompanied by any other symptoms. The pulse may be a bit above average and no changes were noted in the respiration of the animal.

The mixed form of the disease appeared rarely in comparison with dikkop and dunkop. It could be found in an animal suffering first from a distinct pulmonary form although the symptoms were not yet displaced graphically. The horse died within two or three days after the fever had reached its acme and after sudden swelling of the eyelids had occurred. These swellings were moderate and showed rarely any marked extensions. It could also be found in animal showing all the signs of dikkop although not in a severe case. It was suddenly carried off by an acute attack of the pulmonary form and the animal died after the descending portion of the fever cure. This mixed form was frequently the expression of a double infection and has been brought out in experiments although it is also possible for horses to be contaminated with this mixed form under natural infection.

Although Onderstepoort remained unsuccessful in finding a remedy for African horsesickness, the staff worked conscientious in search for a cure. To cure a disease, one must remove the cause and none of the remedies used at that time could help Theiler in developing a remedy. Stimulated by a serious horsesickness season in 1916, Theiler developed an improved sero-vaccination for horsesickness. Two substances were

¹⁵⁵ Theiler, A. ‘African Horse Sickness (Pestis Equorum)’ *Department of Agriculture, Science Bulletin No. 19, 1921, p.9.*

injected: a serum and a virus. It was easily explained: 'the virus produces the disease, the serum cures it, hence the animal recovers and immunity is established'.¹⁵⁶ In the case of mules, inoculation of the virulent virus was used. With the inoculation of horses, two strains of viruses were employed: a virulent one and a less virulent one. The serum was obtained from salted horses and the horses passed through two attacks of horsesickness when inoculated. However, Theiler was very clear that inoculation, using the virus obtained from sick horses in Onderstepoort, was not a guarantee of the protection of all the animals, although he expected an immunity to protect ninety-five percent of the horses. Making the horses immune against horsesickness was only a temporary solution and had a downside. Farmers with immunised, salted horses, were confident and were less sensible about the disease doing things he would otherwise never do. This resulted in the breaking of the immunity.

After incredible mortality numbers as a result of horsesickness which occurred from 1922 to 1923, it became clear that donkeys were not as safeguarded against the disease as initially assumed. This time was preceded by heavy rains and not long after, newspaper articles were writing about the heavy losses. Due to heavy losses, farmers expressed their concerns about the effectiveness of inoculations. Farmers reported on the heavy losses of inoculated horses. In the agricultural press one farmer wrote:

'I saw in the Farmers Weekly of a few issues back a statement made by Dr. du Toit of the Onderstepoort laboratory to the effect that the horse sickness inoculation had not proved altogether a failure, as not more than from ten to fifteen percent of the horses inoculated died. Is Dr. du Toit able to show any statistics of the inoculated horses that have died during last summer?...For all practical purposes horse sickness inoculation has proved a dismal failure. Personally I should not waste ten shillings on having a horse inoculated, unless something better can be offered than in the past.'¹⁵⁷

The scale of fees at that time depended on the value of the horse. For a horse valued at £10, the fees were £1,10s; for a horse valued at £11, the fees were £1,12s; and so on up to the maximum for a horse valued at £30, for which the fees were £3,10s.¹⁵⁸ This scale was based on the assumption that the mortality expected during immunization was ten

¹⁵⁶ Theiler, A. 'Immunization against Animal Diseases.' *Department of Agriculture*, local series no. 15, 1917, p.6.

¹⁵⁷ Du Toit, P.J. 'Horsesickness in 1923' *Department of Agriculture*, Reprint No. 13, 1924, p.13.

¹⁵⁸ Editorial notes. 'Inoculation against horsesickness' *South African Agricultural Journal*, Vol. 6, 1923, p. 585.

percent and the difference between ten percent and the actual fee chargeable for a horse represented the approximate cost to the government of preparing the serum. These prices were high for small farmers as well as for livestock owners with an extensive stock. The chief magistrate of Transkei complained about the cost of the inoculation and said that the authorities should be approached and asked for a reduction as vaccines were considerably high for the 'ordinary peasant native means'.¹⁵⁹ Therefore, inoculations were not practical for the majority of the animal owners. Veterinarians were willing to help the farmers by inoculating collected horses on a specific day and place but it was impossible for them to reduce the inoculation price as this was established by the government.¹⁶⁰

Du Toit wrote his '*Horsesickness in 1923*' article as a reaction to such criticisms and reported that such high percentages, as stated above, of dead inoculated horses were exaggerated. He, in return, criticised the farmers of being jointly responsible of the high death rate in horses during that season. Du Toit accused them of not devoting the right amount of care to their horses when showing the first signs of the disease, therefore, a lot of horses did die although they could have been saved. It was important to realise that the 1923 season was exceptionally bad and showed a severity that was only encountered at very rare intervals. Still, du Toit had a hard time to convince the farmers to inoculate their horses and claimed publicly that 95 percent of the farmers using inoculation were convinced of its effectiveness and was worth the money.¹⁶¹

Nevertheless, there were enough farmers who supported Onderstepoort and their inoculation process. Their horses were extremely important and they would rather inoculate their horses, even if it only saved one, instead of risking losing them all. The preventive measures did not change much. Horses were advised to be kept in mosquito free stables or moved onto higher situated farms, on top of hills or plateaux or into districts known to be horsesickness free.¹⁶² Smoking stables was one of the most effective precautionary measures expressed to the public. It was a lot more practical and cost effective and was a compulsory measure adopted by the Natal Mounted Militia

¹⁵⁹ KAB AMPT PUBS CCP/1/2/1/3 [A11], circular No. 42 of 1915, Union of South Africa, Treasury, Pretoria 8 November 1915.

¹⁶⁰ *Ibid.*

¹⁶¹ Du Toit, P.J. 'Horsesickness in 1923' *Department of Agriculture*, Reprint No. 13, 1924, p.13.

¹⁶² Theiler, A. 'African Horse Sickness (Pestis Equorum)' *Department of Agriculture*, Science Bulletin No. 19, 1921, p.24.

Regiments. However, it was clear that this was not the ultimate preventative method or the best means of protecting horses as there were numerous other factors determining the presence of flying insects.¹⁶³ When the horses needed to be used at night, their skin was smeared with some deterrent drugs which were recommended to keep them safe from any biting insects. This ‘deterrent drug’ was commonly paraffin mixed with oil. Dipping was another method that was tried but it proved unsuccessful in many cases. However, if a successful dipping solution was to be found, it was believed that all farms would be able to stay unaffected by horsesickness. During the horsesickness season of 1917 an experiment was conducted at Onderstepoort and was intended to examine the usefulness of dipping.¹⁶⁴ A mixture of different deterrents was used such as arsenate of soda solution containing soft soap and aloes with a surface layer of paraffin, oil, crude fish oil, codliver oil, tar oil, foetid animal oil, crude pyridine and nitrobenzol. Dipping came with a warning as some of the ingredients could have caustic effects. Of the ten horses that were dipped, three died against six of ten control horses. Protection from dipping proved to be not entirely full proof, although in a way it did protect the horses to some degree and was method which farmers were happy to test. Some farmers reported in the *South African Agricultural Journal* that dipping was helpful and cost effective. One reader lost only five percent of his animals after dipping while another horse owner living in the same area lost over forty percent.¹⁶⁵

Theiler realised that the immunisation of African horsesickness was such a difficult and delicate operation and an expensive one that it was impossible for this practice to become widespread among the horse breeders. This was impossible from a practical point of view.¹⁶⁶ The solution to the horsesickness problem was provisional in the protection of the animals against infection. Theiler was very optimistic claiming: ‘De eindoplossing van het vraagstuk is uitroeijing van de ziekte in Zuid Afrika. Dat dit mogelijk is en ook wel zal gebeuren...’¹⁶⁷ (translation: The end solution of this problem is the extermination of this disease in South Africa. That this will be possible and will probably happen...) Although Onderstepoort discovered an immense amount of information about

¹⁶³ Watkins-Pitchford, H. ‘Horsesickness and its prevention’. *Agricultural Journal*, Vol. 34, 1909, p.345.

¹⁶⁴ Theiler, A. ‘African Horse Sickness (Pestis Equorum)’ *Department of Agriculture*, Science Bulletin No. 19, 1921, p.25.

¹⁶⁵ Auxilium, ‘Dipping for Horse Sickness’ *Agricultural Journal of the Union of South Africa*, Vol. 5, 1913, p.473.

¹⁶⁶ Theiler, A. ‘Immunization against Animal Diseases.’ *Department of Agriculture*, local series No. 15, 1917, p.13.

¹⁶⁷ Theiler, A. ‘Het Paardenziektevraagstuk’ *Departement van landbouw*, No. 17 van 1916, p.19.

horsesickness, they were not closer in finding means to exterminate the disease until the next major advance in 1931 when it was found that the horsesickness virus could be transmitted to mice by intracerebral injection. This specific serial passage produced a neurotropic virus which was attenuated but fully antigenic when given to horses subcutaneously.¹⁶⁸ This discovery not only led to the production of an effective, safe and convenient vaccine, but also made detailed studies of the virus possible.

4.6. Onderstepoort became internationally acclaimed

In the general meeting of the South African Veterinary Medical Association held in 1927, at the Union buildings in Pretoria and at the Veterinary Research Laboratory in Onderstepoort, du Toit made clear as to where South African veterinarians stood on a world wide scale:

‘I had occasion last year...to compare the status of the veterinary profession in our country with that in other European countries. We in South Africa are today enjoying the respect of the entire population to a greater extent than is the case in most European countries. I do not say that we enjoy the undivided affection of every individual in the country, but certainly we are not regarded, as in many other countries, as belonging to a profession which is inferior to the medical or other professions. In South Africa we are regarded with respect...by many people with whom we come into contact, and that position we owe to some of the great men we have had in the past, who have been the pioneers of veterinary science in South Africa...’¹⁶⁹

Onderstepoort developed from a small research laboratory to a major groundbreaking and internationally recognised research and veterinary centre. Veterinarians delivered by this institution were regarded as competent as any other European schooled scientist, having the benefits of additional and extensive knowledge about tropical diseases.

It is striking that a laboratory such as Onderstepoort became a big name in the scientific world. The institute was situated in a remote country which was still busy expanding and scientific manpower was in short supply. There were a few reasons for this development. The founder of Onderstepoort, Arnold Theiler, was not short of scientific drive or enthusiasm. He had clear leadership qualities making it possible for Onderstepoort to

¹⁶⁸ Unknown, ‘The Onderstepoort Veterinary Research Laboratory, 1908-1958.’ *Onderstepoort Journal of Veterinary Research*, Vol. 28, No. 4, p.611.

¹⁶⁹ Du Toit, P.J., ‘The Veterinary Services of the Union of South Africa’. *Journal of the South African Veterinary Medical Association*, Vol. 1, No. 2, 1928, p. 5.

grow beyond anyone's expectations. Theiler arrived in South Africa at the right time as two of the worst scourges of rinderpest and East Coast Fever flooded the country and the surrounding territories.¹⁷⁰ This was a way for him to show the government not only his research talents but his motivation which impressed the latter. The government itself played its role very well as politicians and people placed in observing positions realised the immensity of stock diseases and its consequences. They saw the necessity of a person such as Theiler and gave him the support he needed. When Onderstepoort was already well established, Theiler often travelled overseas to exchange knowledge with colleagues worldwide and therefore giving positive exposure to the institute.

Another factor was that Theiler and his successors had a high quality of scientific research and expertise at their disposal and they delivered nothing less. This was decidedly recognised internationally. Theiler made a name for himself and attracted therefore the right kind of scientists to Onderstepoort and he only appointed the best. Private practice at that time was also in its beginning stages and government service was the only practical way for veterinarians to be employed. Therefore Theiler could dispose of the most talented researchers available.

Also important was the fact that Onderstepoort was one of the first institutions devoting its attention to tropical diseases therefore the scientists did not have to deal with competition from elsewhere. Innovative discoveries were made a lot 'easier' and were basically apparent. Diseases caused by viruses and parasitic protozoa were unknown to many developed western countries.¹⁷¹ Onderstepoort was working on its own as no other institutions had the facilities to work on tropical diseases. Onderstepoort was situated in an area where tropical diseases occurred on a regular basis which made the research in many areas a lot easier. There were no shortages of research specimens or diseases. This lack of competition in the field of tropical diseases was short lived and a lot of other research laboratories now challenging Onderstepoort in its tropical disease research.

The development of Onderstepoort and its research was also facilitated by the exploitation of the mineral wealth of the country. It created opportunities for scientific

¹⁷⁰ Bigalke, R.D. 'Onderstepoort today yesterday and tomorrow'. Commemorative lecture. *Onderstepoort Journal of Veterinary Research*, Vol. 52, No. 3, 1985, p. 127.

¹⁷¹ *Ibid.*

research and its progress was unequalled in the rest of Africa. The government had the necessary resources to support veterinary research and was well aware of the necessity of a development of veterinary medicine.

The increased knowledge of the South African veterinarians and researchers resulted in an extensive field of skills available for foreign trained scientists. Prior to the founding of Onderstepoort, some colonial veterinarians did approach Theiler and other scientists for information. However, since the 1920's onwards, South African scientists provided the expertise instead of foreign qualified and educated scientists.¹⁷² Scientists trained at Onderstepoort received a great deal of recognition from Britain as they were successful in eradicating some major diseases such as nagana, rinderpest and East Coast Fever. Britain provided different additional opportunities for the practitioners since the British colonial veterinary service in Africa was small. Onderstepoort veterinarians were sent to other parts of the colonies, such as Nigeria, to investigate and eliminate animal diseases in the same successful manner.

When Onderstepoort became internationally known for its pioneering and successful work in tropical diseases, it often received communications from colleagues in foreign countries ranging from Uruguay to Russia, begging to send them information or printouts from finished or uncompleted works or annual reports.¹⁷³ Veterinarians in Europe were very eager to share their work with South Africa and frequently asked the director of veterinary services to contribute articles to overseas journals. Rome wanted to have a short description of the Onderstepoort Laboratories for insertion in their year book of the International Institute of Agriculture and even a Dutch nutritional periodical 'Voeding' published in 1954 an article dedicated to Arnold Theiler.¹⁷⁴

Conclusions

Prevention of animal diseases through veterinary controls and international cooperation has proven to be successful and useful. Animal owners were reliant on themselves to

¹⁷² Brown, K. 'Tropical Medicine and Animal Disease: Onderstepoort and the Development of Veterinary Science in South Africa, 1908-1950'. *Journal of Southern Studies*, Vol. 31, No. 3, September 2005, p. 527.

¹⁷³ Onderstepoort archives, 102 [14/4/4], publications and correspondence foreign countries.

¹⁷⁴ Onderstepoort archives, 102 [14/4/4], letter from editor in chief of 'Voeding', 's Gravenhage 8 April 1954, to the Director of Veterinary Services.

ensure the health of their animals and it was difficult to make a transition towards trusting veterinarians who, in the beginning, did not have a better success rate than the animal owners. It is necessary to look at the paucity of knowledge and the quality of equipment veterinarians had to use during those early years to fully understand the magnitude of their contributions and fully appreciate them. They created the building blocks for South African scientists. With the expansion of knowledge in human health and therefore concurring in animal health, the farmers and livestock holders grew more familiar with veterinary medicine, becoming more aware of its necessity. It is easily forgotten that veterinary medicine played a critical role in protecting human health, the economy and at the same time an improvement to animal well-being.¹⁷⁵ Ironically, the major social and environmental interventions made by the early veterinarians have contributed in the longer term to overstocking and soil erosion.

The first colonial veterinarians in South Africa came to the country with western knowledge about animal health and disease. They soon realised this was hardly adequate to improve the general health of animals in South Africa. However, their western knowledge was a building block helping them, through practical experience, to effectively come to a better understanding on tropical diseases distinctive to South Africa. Veterinary authorities were very strict as the absence of foot and mouth disease was essential for continued access to European markets and even enabled imports from infected areas in the 1920's and 1930's.

Veterinary policies in southern Africa were in favour and defence of the colonists and supported the white farmers as they were more export oriented which was necessary for a developing country. Farmers found it difficult to become dependent on veterinarians when it came to the health of their animals. They were very sceptical about science and its conveyed knowledge. The fact that the first scientists did not have a uniform policy, that clearly stipulated and specified areas of research, did not make it easy for the veterinarians or the farmers as they both were confused with expectations and realisations, and caused internal struggle which portrayed a negative image towards the public. Although experiencing opposition, the first veterinarians did their best to convince farmers of their views by circulating official reports and pamphlets, addressing

¹⁷⁵ Swabe, J. *'Dieren als een Natuurlijke Hulbron: Ambivalentie in de Relatie tussen Mens en Dier, binnen en buiten de Veterinaire Praktijk'*. 1996. pp.12-37.

public meetings which were often reported in the press, attending commissions and committees, and travelling to meet the farmers. Building a relationship of trust between livestock holder and scientist was difficult but the establishment of Onderstepoort aided in creating a powerful platform.

Horsesickness presented the country with considerable difficulties for horse breeding and farming in South Africa. Arnold Theiler, the founder of Onderstepoort and head of veterinary research, was extremely driven to find a remedy against the disease. The outcome of his research was a method of inoculating horses with an infected blood injection and immune serum. This method worked in principle but the results were too unpredictable, and therefore not useful for large scale consumption. Onderstepoort was extremely practical in the advancement of veterinary medicine. It was the first institution in the world dedicating research to tropical diseases and offering researchers the structures and opportunities to dedicate themselves to veterinary science making groundbreaking discoveries and producing vaccines on large scale but it also presented South Africans with the occasion to be qualified as fully trained veterinarians. It aided to standardise the veterinarians who worked on common goals and increased their possibilities.

To really understand and grasp the development of veterinary medicine in southern Africa, it is not only necessary to look at the growth of veterinary science by foreign scientists but also to realise the impact of the first South African veterinary college. Developing a veterinary college did not only demonstrate state support for scientists but conveyed an optimistic and confident attitude towards animal health to the livestock holders. It reflected the notion that African horsesickness research and, indeed, other disease investigations could be done on a bigger scale in a better environment. Theiler made peace with the fact that if he was not able to find a vaccine for horsesickness, researchers in Onderstepoort made major contributions to veterinary medicine. Theiler was satisfied with the fact that he helped more scientists with his previous efforts and attempts, towards the goal of success 'which would mean so much to the prosperity of the horse breeder, the welfare of South African agriculture, and last but not least, the

mitigation of a great mass of animal suffering annually sustained by man's patient friend and servant - the horse'.¹⁷⁶

Onderstepoort Veterinary Institute is one hundred years old this year and is still a significant centre producing ground breaking research and having a strong effect on veterinary policy throughout southern Africa. However, the importance of Onderstepoort in history should not be overstated as scientists found most of the important vaccines for serious diseases obscure and intangible therefore, they still relied on older methods of disease control such as slaying sick or suspecting animals, dipping, bleeding and restrictions in movements. These old methods were still key elements in veterinary science during the twentieth century although they were already in use at the end of the nineteenth century. However, Onderstepoort and its veterinarians made a major contribution to South Africa's scientific developments and economic growth. Taking a closer look at the veterinary development in South Africa, it is not sufficient to only consider the contributions from foreign scientists but also the developments in attitude towards veterinary medicine. It was the first time in history that farmers and scientists worked together to contribute towards a common goal.

¹⁷⁶ Watkins-Pitchford, H. 'Horsesickness and its prevention.' *Agricultural Journal*, Vol. 34, 1909, p.236.

CHAPTER 3:
‘THE HORSE SICKNESS IS SO TERRIBLE’¹
THE 1854-55 AFRICAN HORSESICKNESS EPIDEMIC²

1. Introduction

The African horsesickness outbreak of 1854-55 was one of the most severe animal epidemics ever encountered in South Africa and had a serious impact on the Cape Colony. It seriously hampered the development of the colony and changed everyday life as horses were indispensable. This chapter explores the trajectory of the disease and starts drawing together the fragments of the social implications of one of the worst African horsesickness outbreaks. It begins with a description of the 1854-55 outbreak followed by the responses towards the disease. This illustrates firstly how knowledge of the disease was circumscribed due to geographic isolation and secondly displays the lack of concrete facts scientists and farmers had to work with. This chapter demonstrates and discusses the serial ramifications of the disease revealing the limited knowledge networks horse owners and farmers had to deal with. The chapter closes by discussing the existing policies used to safeguard the Colony from diseases and examines the policy changes that followed the 1854-55 outbreak.

2. The story of a disease

The horsesickness outbreak came at a time when the Colony had established a positive growth rate in the number of horses. The number of horses increased from 122 740 in 1849 to 160 704 in 1854³. That was an increase of 37 964 or nearly one third in only five years. The increase in the horse population was due to local breeding programmes which became more successful, an increase in the importation of horses, more people actively involved in breeding horses as well as the acquisition of new pastures. However, this increase was greatly affected by the horsesickness outbreak of 1854-55. The official number of mortalities came close to 65 000⁴ which was, at that time a staggering 40% of

¹ VAB G.S. 641 [74], letter from Palie, Jacobsdal 8 May 1865, to Staats President van den Oranje Vrystaat

² Presented at Southern African Historical Society Conference 2007, University of Johannesburg, 25-27 June 2007.

³ *Commercial Advertiser*, 20 July, 1856.

⁴ See *figure 1* for the official death rates

the entire horse population of the Cape of Good Hope.⁵ The civil commissioner of Uitenhage estimated their value at £10 on average and the civil commissioner of Caledon at £7 and 10 shillings. From these averages it is fair to say that South Africa lost £525 000, at that time, as a direct result of the outbreak.

The disease followed a westwards course starting at the Eastern Province moving as far as Clanwilliam while it affected the whole Cape except the Cape Peninsula. The spread of the disease presented the Cape Colony with major problems because horses were indispensable and vital for the economy. Horses were not only used for transport and recreation but were also necessary for the development of the Cape. Timber had to be moved from inland as most of the wood supply was already exhausted in the Cape for the construction of houses and harbour industry. Fewer horses to use meant a decline in the growth and expansion rate of the Cape putting a higher burden on the few surviving horses. The horses were overworked and compelled to transport more load than what they were able to carry.

Before 1854, the Cape was fairly free from any serious epidemics affecting animals. In that year Dutch bulls were imported, bringing with them a contagious disease called pleura-pneumonia (lung sickness) setting off an outbreak. However, this disease was controllable as it was traceable to a specific cause, which made it easier to suppress. This was not the case with African horsesickness. Horsesickness was a fairly 'new' disease making it difficult to eradicate as veterinary knowledge was not yet able to discover the source of the disease as well as the method of transmission (see chapter 2). There was only a limited amount of knowledge known about this disease.

As discussed in chapter 2, horsesickness was already known in the Cape since 1719 when 1 700 horses died.⁶ Today, African horsesickness is regarded as endemic as it reoccurs almost every year.⁷ However every twenty years the disease becomes epidemic

⁵ 'African horse sickness (*perdesiekte*)' www.nda.agric.za

⁶ *Ibid.*

⁷ Endemism is the continuous presence of a disease within a certain geographical region and affecting a certain group of people or specie. It is not a sudden outbreak of a disease but a situation that exists for years with a constant number of infections. A sudden outbreak of a disease on a bigger scale and with higher numbers of infection is called an epidemic.

having a high mortality rate⁸ such as in 1854-1855. The following was stated in *The Veterinary Journal*:

‘The visitations of this malady are by no means of late introduction, but hitherto they had made their appearance as such long intervals that but little attention was paid to them, and people regarded their return without much alarm. This disease of the horse, usually endemic in Cape Colony, assumed every twenty years, owing to some inexplicable causes, and epidemic character and on those occasions extended over an extensive area as happened with extraordinary regularity in the years 1780, 1801, 1819, 1839 and 1854.’⁹

The reoccurrence of the disease could be explained by the fact that when horses survived an epidemic, they became more or less immune to the disease and horse owners were much more aware of the diseases present, and measures were put in place, such as stabling or kraaling, to confine and limit the spread of diseases. Through the implementation of these measures, the disease was brought under control. Due to the positive results, over time the regulations were softened, but horse breeders and owners failed to realize that the disease had not been fully eradicated. The lack of expose to the disease whilst it was kept under control meant that the horses were no longer sufficiently immune to the disease. Consequently, when the disease surfaced again a lot more horses were affected.

Figure 1 below reflects how gravely the Cape Colony was affected by this outbreak. All regions were affected and no village was spared. The death rates vastly exceeded that which farmers and horse owners had experienced in the past and it would take them many years to rebuild the horse stock.

WESTERN DIVISION

NAME OF DIVISION	WORKING HORSES	BREEDING MARES	FOALS	TOTAL
Beaufort	726	119	30	875
Caledon	2 044	3 389	1 117	6 550
Cape	64	66	36	166
Clanwilliam	348	787	181	1 316
George	5 155	7602	1 135	13 892
Malmesbury	835	1 432	247	2 514
Paarl	271	65	12	348
Stellenbosch	150	100	36	286
Swellendam	2 729	6 493	2 276	11 498
Worcester	1 525	1 731	1 152	4 408
TOTAL	13 847	21 784	6 222	41 853

⁸ ‘Statement of losses in horses and cattle sustained in each division of the colony by the horse and lung sickness.’ Printed by order of the *House of Assembly*, Cape Town: May 1856, [H.A.11-’56].

⁹ Anon, C. ‘The Horse-Sickness of South Africa’, *The Veterinary Journal*, August 1878, Vol.7, p.101.

NAME OF DIVISION	WORKING HORSES	BREEDING MARES	FOALS	TOTAL
Albert	749	586	177	1 512
Colesberg	216	235	10	461
Cradock	525	494	379	1 398
Fort Beaufort	800	711	305	1 816
Graaf-Reinet	640	457	164	1 201
Port Elizabeth	422	339	214	975
Somerset	1 640	1 817	472	3 929
Uitenhage	2 373	4 724	972	8 069
Victoria	716	592	290	1 598
TOTAL	9 220	10 539	3 238	22 997
GRAND TOTAL	23 067	32 323	9 460	64 850

Figure 1: The official disease rates of the 1854-55 epidemic, published in 1856.¹⁰

3. Previous Reactions towards the Disease

The disease captured the imagination of early commentators. One described as a scourge akin to the Biblical plague suffered by the Egyptians for their detention of the Israelites.¹¹ Certainly, during the Egyptian war of 1882, the imported horses from England, Syrian and other Eastern countries were greatly affected by this disease as they were imported which made them weaker and not used to the environment. They had the disadvantage of having no resistance to the disease which local horses had. Veterinarians realised, more than ten years later, that the disease was not as widespread as originally thought but claimed that it was a disease peculiar to South Africa,¹² although erring on the side of geographical insularity this time and calling it South-African horsesickness.¹³

At first, breeders were not really interested in the avoidance or prevention of the illness as the disease was endemic, affecting only a limited number of horses. It was only after the 1854-1855 outbreak and the great losses, that the disease caused more alarm. According to the *Graaff Reinet Herald*: ‘The horse sickness of 1854-55 devastated the Cape Colony to such an extent that every one felt interested in the discovery of its cause, with a view to its prevention and cure.’¹⁴ Horse breeders did their best to curb falling horse stocks. The Cape of Good Hope Agricultural Society issued an application to

¹⁰ Figure 1: [H.A.11-’56] ‘Statement of losses in horses and cattle sustained in each division of the colony by the horse and lung sickness.’ Printed by order of the *House of Assembly*, Cape Town: May 1856.

¹¹ Rutherford, C.: *Horse Sickness of South Africa*. Reprinted from *Cape Times*, August 1885. p.1.

¹² Edington, A. ‘South African Horse Sickness: Its Pathology and Methods of Protective Inoculation’. *Proceedings of the Royal Society of London*. Vol. 67, 1900, p.292.

¹³ Watkins-Pitchford H. *Colony of Natal: Horse sickness investigation, Introductory*. 1903. p.2.

¹⁴ *The Graaff Reinet Herald*, 11 October 1856.

ascertain 'the nature of the complaint, its stimulating cause, most successful treatment, and the possibility of arresting its progress, or mitigating its ravages on any future occasion'.¹⁵ Civil commissioners were appointed to answer the printed circulars from the Colonial Office asking twenty-one questions that could provide the government and aid researchers to create a full picture of the disease.¹⁶ Numerous questions had to be answered by each division ranging from a description of the weather three to four weeks prior to the outbreak, symptoms of the sick horses and the way in which the horses were stabled. Unfortunately interest was still quite low as many farmers and horse owners underestimated the seriousness of the disease and did not respond to the Colonial Office. Also during that time, the country was busy expanding and developing causing other problems which were of greater importance and required immediate attention.

Taking a closer look at the history of the development of veterinary services in South Africa, as delineated in chapter 2, it becomes clear that no specificities were known about horsesickness. Horse owners and farmers who encountered the disease in earlier years did not make any notations or did not follow regularities concerning horsesickness. Researchers and scientists were practically non-existent in the country as the first colonial veterinarian was only appointed in 1876, as discussed in chapter 2.¹⁷ Even the causes of babesiosis, anthrax,¹⁸ blackquarter and African horsesickness were unknown and were regarded as the same disease that manifested itself in different forms.

As noted, the Cape of Good Hope appointed William Branford, the first colonial veterinarian in 1876, who was successfully able to differentiate between lung sickness, tuberculosis, glanders, sheep-scab and mange. Still, he was not entirely helpful regarding the African horsesickness as numerous other diseases were unknown to him such as gall sickness, vomiting sickness, botulism, 'dikkop' and heartwater. Horsesickness was not regarded as very threatening as there were numerous other diseases affecting animals every day. Diseases which were dependent on the weather and only encountered during

¹⁵ Bayley, T.B. *Notes on the horsesickness at the Cape of Good Hope, in 1854-'55*. p.5.

¹⁶ *Government Circular*, No.42, 1855.

¹⁷ Gilfoyle, D. *Veterinary Science and Public Policy at the Cape Colony, 1877-1910*. Thesis at University of Oxford, p.43.

¹⁸ Babesiosis or piroplasmiasis is a collective term used for animal diseases caused by Protozoa and affects cattle, horses, dogs, sheep, goats and pigs. Anthrax or splenic fever caused by the *Bacillus anthracis*. It is a very acute disease for ruminants. Local splenic fever occurs in pigs, horses, dogs and cats affecting their throat and intestines.

certain times of the year were regarded (perhaps understandably) as less urgent than diseases killing animals the whole year around.

Duncan Hutcheon, veterinary surgeon for the Cape Colony in 1885, and Wiltshire, veterinary surgeon of Natal, demonstrated by a series of experiments that the horsesickness was anthrax.¹⁹ However, they did already realise that frost tends to lessen an outbreak of horsesickness and that it is not directly contagious from one horse to another.²⁰ It still remained unclear if the disease could be produced through intentional transmission.²¹ Although Hutcheon reported every single case of horsesickness in an extensive report,²² his views were not always shared by other people and researchers. T. B. Bayley, an Anglo-Indian who moved to South Africa becoming a well known farmer and author of “*Notes on the Horse Sickness at the Cape of Good Hope, in 1854-’55*”, and another farmer Way, observed and agreed that once a horse recovered from the horsesickness, it is not subject to a second attack. This was proven wrong during an experiment when salted horses²³ from the Cape were sent to Mashonaland and died of horsesickness.²⁴ Since the researchers were not aware of the different strains of horsesickness, they explained the death of these horses on account of the ‘Mashonaland disease’. Edington agreed and proved with some experiments that ‘true immunity in horses against this disease is never acquired’.²⁵ However, it is known today that different strains of horsesickness exists and although a horse may recover from a particular strain, it is not safeguarded from another and could easily fall ill again with horsesickness. Their knowledge of the disease was not that far developed yet but they were right about the fact that once a horse was infected and recovered, it would not fall ill so easily, but this will only occur if that the horse will be infected with the same strain.

¹⁹ Rutherford, C.: Horse Sickness of South Africa. Reprinted from *Cape Times*, August 1885. p.1.

²⁰ Lambert, J. *Government Notice No. 448*, 1881, p.6 & ‘*Observations on the horse sickness of 1854-55, by the committee of the Cape of Good Hope Agricultural Society*’.

²¹ Wiltshire, S. *Government Notice No. 192*, 1878, p.2.

²² [A.73.-’81.] Hutcheon, D. ‘*Report of the Colonial Veterinary Surgeon on Horse Sickness*’

²³ Salted horses are horses which were previously infected and survived, therefore they are less susceptible to the disease.

²⁴ [G.73-’96] May, F. ‘*Reports in regard to Horses sent to Mashonaland, after experimental Treatment against Horse Sickness at the Colonial Bacteriological Institute, Graham’s Town*’, 1896, p.7.

²⁵ Edington, A. ‘South African Horse Sickness: Its Pathology and Methods of Protective Inoculation’, *Proceedings of the Royal Society of London*, Vol.67, 1900, p. 305.

Way stated:

‘I have alluded to a curious fact in the history of the complaint, namely, that horses which have had the disease and recovered, are, as a general rule not subject to it a second time. In the colony, where horses are plentiful, and the disease occasional, this fact is, I believe, little known, and still less appreciated; but among the boers over the Vaal it becomes an essential consideration in the purchase of a horse. Is he “gesout” (salted): has he had the disease? Is the first question; the value of the animal being increased double or treble his natural value by the circumstance.’²⁶

Thus, if a horse was fortunate enough to outlive a horsesickness epidemic during that time, his value increased and if he recovered from the disease during an epidemic, his value would increase even more.

4. Initial awareness of African horsesickness

4.1. Establishing causes of infection before and during the outbreak

During the nineteenth century, many causes of infection were proposed, investigated and disseminated. Green food was considered to cause horsesickness as well as dew on the grass,²⁷ the grass itself containing poison,²⁸ or germs from the ground.²⁹ People had the general belief that the bitter tasting dew, having a brownish colour, poisoned the blood of the horses so the sun needed to warm the air thoroughly, dispelling the exhalations of previous nights. As soon as the dew was dried, horses were allowed to go outside and graze.³⁰ Bayley did not agree with this suspicious view on dew as he never encountered brownish dew except the ‘mountain dew’ of Scotland. Blaming dew as the cause of the horsesickness was not really far fetched as during the outbreak of 1854-55, dew was remarkably prevalent. The weather was calm with a clear sky at night followed by a hot day³¹ and the casualties of the disease were mostly the horses that were kept outside for the whole day and night. According to Way, dew was regarded as a predisposing factor of the disease. When rain and heat were delayed during the seasons in the year, so was the appearance of the disease.³² Hutcheon believed strongly in the presence of heavy

²⁶ Maclear, T: Horse sickness in South Africa. *Cape Monthly Magazine*, Vol. I., Feb. 1857, p.70.

²⁷ *Commercial Advertiser*, 20 July, 1856.

²⁸ Wiltshire, S. *Government Notice No. 192*, 1878, p.2.

²⁹ Lambert, J. *Government Notice No. 448*, 1881, p.3.

³⁰ *Commercial Advertiser*, 24 July, 1856.

³¹ Maclear, T. ‘Horse sickness in South Africa’, *Cape Monthly Magazine*, Vol. I., Feb. 1857, p.71.

³² *Ibid.*, p.73.

dew during horsesickness outbreaks.³³ Wiltshire also noticed that horsesickness was more prevalent when rainfall was higher than usual.³⁴ Researchers became aware of the fact that their understanding of horsesickness needed to be improved if they were willing to search for preventative methods or even a cure so they gradually began to search for less obvious factors which influenced the disease.

Hutcheon was sceptical about the dew as an infective agent as the disease only came about in 'certain localities and in these localities, only during certain seasons, although the dews, and other atmospheric conditions appear very similar during the years that it does not prevail.'³⁵ He did acknowledge that the disease rarely occurred on high mountains but described this development based on the fact that there is hardly dew on the mountains, although he warned against deep crevices and valleys situated on lower levels.³⁶ Most horses situated on the mountains during outbreaks remained free from infection except the horses that were not prevented from going in valleys. Not only did he describe dew as a possible infector, but also the dewy atmosphere that could only be evaporated by the sun because he claimed that horses not only had the disease transmitted via their mouths, but also through their nostrils during breathing.

Not only grass and dew were treated suspiciously but also herbs and cobwebs. Hart of Somerset stated: 'the cause of the horsesickness is occasioned by a very minute insect of the spider tribe, either the insect itself, or web, or both, and is dependent on the atmosphere'.³⁷

Not only Hart was convinced that the disease came from spiders, Hartman of Victoria and C. Penny agreed with his proposed source of illness. Hartman stated:

'when the horse sickness broke out in January last, there had been for some time before much rain, heavy fogs, clammy dews, and the grass and trees were covered with filaments resembling cobwebs.'³⁸

C. Penny stated that he was led to observe 'an extensive and sudden rise of a great quantity of cobwebs from the grass and bushes.'

³³ Hutcheon, D. *'Horse Sickness'*, 1892, p.6.

³⁴ Wiltshire, S. *Government Notice No. 192*, 1878, p.2.

³⁵ Hutcheon, D. *'Diseases of the horse and their treatment'*. 1899. p.7.

³⁶ *Ibid.*

³⁷ Bayley, T.B. *Notes on the horse sickness at the Cape of Good Hope, in 1854-'55*. p.90.

³⁸ *Ibid.*, p.93.

Foss and White of Swellendam thought that the disease was contagious under certain circumstances as well as epidemic. Foss stated:

‘The disease appears to me, without doubt, to be epidemic, and for this reason I have applied the above name (Epidemic Catarrh). I also am of opinion that it is contagious, and I think many circumstances tend to induce this idea and to prove it.’³⁹

However, the researchers failed to reason their conclusion and did not agree with Way and Bayley who stated that horsesickness was not contagious as kraaling was a widely used preventive measure. If the disease was indeed contagious, there would not have been as many survivors of the disease as kraaling entailed restriction of movement for the horses by putting them in a small enclosure. This close contact between the animals would have been the ideal breeding space for the disease. However, this was not the case as there was no obvious increase between the death rate of horses in kraals or horses roaming free on the veldt.

Some farmers believed that the affected horses, that eventually died, were left untouched by raptors although others believed that pigs, vultures and dogs ate from the dead horses and did not have any consequences from doing so. Bayley did not agree with them as he lost three dogs out of the four who fed on the meat of the dead horses. However, Hutcheon proclaimed that no other animals were susceptible for the disease except horses even when deliberately exposed or injected with the disease.⁴⁰ They did discover that the activity of the disease increased when the seasons were warm and moist preceded by a dormant winter.⁴¹ These conditions were not only dangerous for horsesickness in South Africa but also for intermitting fever in the fens of Lincolnshire, the jungle fever between the tropics, the cholera in Bengal and the plague on the banks of the Nile.⁴²

During the African horsesickness outbreak of 1854-1855, medical men such as Hutton compared the disease with cholera as they both have ‘a poisonous atmospheric agency’.⁴³ The ideas about changes in the atmosphere such as cold and moisture, suggests that there was still an unclear and vague understanding of the disease. These environmentally

³⁹ Bayley, T.B. *Notes on the horse sickness at the Cape of Good Hope, in 1854-'55*. p.23.

⁴⁰ KAB AGR 252 Hutcheon, D. ‘Paardenziekte’ *Gouvernementsbericht*, No.41, 1892, p.1.

⁴¹ Maclear, T. ‘Horse sickness in South Africa’, *Cape Monthly Magazine*, Vol. I., Feb. 1857, p.71.

⁴² *Ibid.*

⁴³ Bayley, T.B. *Notes on the horse sickness at the Cape of Good Hope, in 1854-'55*. p.34.

entrenched representations of disease had a lot of supporters during the Victorian Era (1837-1901) and were not immediately washed away when the concept of germ theories emerged.⁴⁴ This in addition to the fact that experimental treatment was not possible because of a bill ‘to prevent cruel and improper treatment of cattle’ of 1822,⁴⁵ outlawing cruelty to larger domestic animals such as cattle, horses, sheep, asses, cows and steers (however still excluding bulls, dogs, cats, pigs, goats, birds and wild animals) and the following ‘Cruelty to Animals Act’ and the ‘Antivivisection act’ in 1876, regulating the use of experimental animals in British biological and medical research and teaching.⁴⁶ These acts did not allow any experiment on a dog, cat, horse, ass or mule under any circumstances except under complete anaesthesia.⁴⁷ The ‘Act to Amend the Law Relating to Cruelty to Animals’ of 1822 was even reinforced by a new ‘Cruelty to Animals Act’ in 1876 received the royal assent and support of the editor of the *British Medical Journal*.⁴⁸ This was of great importance as it had an impact on the research and study of horsesickness in South Africa as some of the veterinary research was done in Britain due to a lack of (specialised researching) veterinarians in the country. South Africa passed its own ‘Cruelty to Animals Act’ in 1888,⁴⁹ limiting the research methods of the few scientists researching horsesickness in the country.⁵⁰

Some of the research and testing of cures was not entirely painless for the horses as scientists tried many remedies in order to assess their methods. However, Victorian scientific culture was marked by change. Discoveries in medicine, mathematics and physical science modified the way people understood life. There was a shift from a focus on theory to a focus on basic observation.⁵¹ The humane movement and the anti-vivisection movement was not always identical although their concerns were

⁴⁴ Brown, K. *Frontiers of the Disease: Human desire and environmental realities in the rearing of horses in 19th and 20th century South Africa*. (unpublished paper) p.8.

⁴⁵ Ritvo, H. ‘Plus ça Change: Anti-Vivisection Then and Now’, *Science, Technology, & Human Values*. Vol.9, No.2, 1984, p.58.

⁴⁶ French, R. ‘Antivivisection and Medical Science in Victorian Society’, *Isis*, Vol. 69, no. 2, Jun. 1978, p.306.

⁴⁷ Ryder, R.D. *Animal Revolution, changing Attitudes towards Speciesism*. 2000, p.110.

⁴⁸ *Ibid.*, p.111.

⁴⁹ This Act was preceded by a previous Act No. 3 ‘Cruelty to Animals Act’ of 1875 but was later replaced by the Act from 1888 to include all domesticated animals and birds and all animals or birds not domesticated when captured.

⁵⁰ Act No. 18-1888 *Acts of Parliament, session of 1889*. Cape of Good Hope, 1889, p.2573.

⁵¹ Lightman, B. (ed.): *Victorian Science in Context*. 1997. p.180.

overlapping.⁵² The Society for the Prevention of Cruelty to Animals⁵³ (SPCA) was more inclined to acknowledge the demands of science than other organizations who were exclusively concerned with animal experimentations. British government recommendations, and which was later passed to South Africa, were issued to prevent painful experimentations, but the public was aware of the value of scientific research and relied on the humanitarian concern of the majority of the experimenters. All these elements influenced the research on African horsesickness and manipulated the slow investigation of the cure and transmission of the disease.

Very much a product of this confident Victorian age science, Hutton claimed that the horsesickness spread through the air which affects the blood. He acknowledged, however, the fact that he could only speak from one case-study where he could witness the commencement of the disease until the termination. However, Hutton was not the only one seeing similarities between cholera and African horsesickness. Bayley devoted a whole section in his book about the strong analogy between the epidemic character of the African horsesickness and cholera. He quoted the work of Dr. Jameson ‘Cholera Morbus’. In his work, Jameson studied the course of the cholera disease in India and he saw continuity between the course of cholera and the weather which was also the case with the African horsesickness. He stated:

‘From knowing that during the existence of the former pestilences, the diffusion of the virus could be frequently traced to the motion of particular currents of air, it was natural to look for an explanation of this extraordinary regularity of progression in the prevailing course of the winds during this period. Accordingly, upon reference to the various reports of the rise of the disorder in different parts of the country, it was discovered that, in a vast majority of instances, the wind was blowing from the east or south east quarter, at the time of its breaking out.’⁵⁴

Bayley was interested in the effect the wind had on the course of the horsesickness. He discovered that, in many cases and in different parts of the country, the wind was blowing from the east or south-east quarter at the time of an outbreak and that the disease went into an epidemic phase after a rainy winter. The meteorological information stated in the Government Circular No. 42 of 1855 illustrates the fact that in some of the eastern

⁵² Ritvo, H. ‘Plus ça Change: Anti-Vivisection Then and Now’, *Science, Technology, & Human Values*. Vol.9, No.2, 1984, p.58.

⁵³ Founded in 1824 as a control group for the reinforcement of the cruelty acts, received the prefix ‘Royal’ a year later from Queen Victoria.

⁵⁴ Maclear, T. ‘Horse sickness in South Africa’, *Cape Monthly Magazine*, Vol. I., Feb. 1857, p.74.

districts and along the southern sea board of the Western Province, there had been more rain than usual in the early part of the summer and that the spring had been dry and the summer hot. In addition there was the prevalence of a southerly or south east wind.⁵⁵ R. Roser, of the Caledon division, also made comparisons between the African horsesickness and cholera claiming that the atmosphere remaining behind the earth in its rotation is an explanation why cholera spreads from east to west and is a hypothesis why the disease took its way generally from east to west. Still Bayley was not quite sure what the exact result was from an eastern wind. Jameson was also unable to tell if the currents were acting as a vehicle of the cholera or if it just elicited the disease from places where the virus had been before. Still Bayley was not quite sure what the exact result was from a wind blowing constantly from the east. Jameson was also unable to tell if the currents were acting as a vehicle of the cholera or if it just elicited the disease from places where the virus had been before. However, *'Alison's History of Europe'*, volume V, did pose a strong counter argument for Jameson's wind hypothesis. Claiming that the wind spreads the disease in the air was not accommodated by the fact that the disease travelled from east to west which is in opposition to the wind and which blows often in all western European countries from west to east.

Despite the counter-evidence provided by Alison's work, Bayley remained convinced that the African horsesickness had many similarities with cholera as the horsesickness epidemic of 1854-1855 started in the region of Victoria in November 1854 and progressed from the east to the west having the same occasionally unconventional and unaccountable movements as cholera. The similarity between cholera and horsesickness was explored further during that time as the researchers were basing themselves mostly on the outward similarities between the two diseases as the rest of their experimental research was not that advanced yet.

Another similarity between horsesickness and cholera, according to Bayley, was the fact that the earliest victims were apparently the healthiest. Thom expressed this fact about cholera in the *'Report of the Board of Health on the epidemic cholera of 1848-1849'*.⁵⁶ Still Bayley was very much focused on the influence of air. He believed that there was a deleterious influence of night air and ascribed the deaths of stabled horses to incautious

⁵⁵ *Government Circular*, No. 42, 1855.

⁵⁶ Bayley, T.B. *Notes on the horse sickness at the Cape of Good Hope, in 1854-* '55. p.21.

or accidental exposure of the animal to the external atmosphere at an improper time. During the time Bayley wrote his notes, people were unaware of the different strains of African horsesickness. He therefore made a difference between the horses that died suddenly (by a poisonous current of air) and the ones that gradually sicken, recognizing the fact that both cases had the same extreme symptoms. He also acknowledged the fact that night air alone does not necessarily mean death as from the ‘hundred and twenty-eight mile horses’ used night and day between Cape Town and George and Cape Town and Beaufort West, only eight died. Gradually, there was a change in scientific ideas. Researchers and scientists needed the help of the farmers and horse owners (see chapter 2) in order to obtain a full picture of the disease, using information of the daily use of horses. The more research was conducted, the better the researchers and farmers started to comprehend the disease and were able to draw certain theories and conclusions.

4.2. Early experimental treatment of horsesickness

As horsesickness was a disease which impaired the daily routine of horse users and affected a lot of people, many individuals were involved in finding a cure and many proclaimed to have found cures for it even though not having any background in science whatsoever relying only on ‘practical experience’.⁵⁷ This was triggered and stimulated by the government’s attitude as they offered prizes for the finding of cures for diseases. A cure for Redwater was rewarded with £25 000 and ‘a similar sum for the cure of horsesickness’.⁵⁸ The colonial secretary wrote: ‘...regarding the offer of rewards for the discovery of a practical preventative or cure of Horse Sickness and of Rhodesian Redwater or Tick Fever...’,⁵⁹ which was later accepted by the legislative council.

In that way, the government was not granting the appointed researchers the necessary time to find cures as time was a luxury they did not have. The longer the farmers had to wait for remedies, the more animals died which increased the loss for the country. It was a sensitive topic for the scientists appointed by the government as often the money challenged a lot of people to find any cures and sometimes these less scholastic remedies

⁵⁷ KAB AGR 252, letter to Secretary of Agriculture, 27 July 1892, & TAB LTG 54, [4066], letter from High Commissioner Johannesburg, 10 November 1903, to Lieutenant Governor of the Transvaal and letter from the director of Agriculture, Pretoria 29 September 1903, to the private Secretary to Lieutenant Governor of Pretoria.

⁵⁸ TAB CS 424 [785], letter from John Turton, Pretoria 29 January 1904, to the colonial secretary.

⁵⁹ TAB LC 129 [567/03], letter from the under secretary, Pretoria 18 September 1903, to the clerk of the legislative council.

were published and bought without guaranteeing its effectiveness by scientists and researchers which undergounded their authority. Horsesickness and the quest to find a cure attracted attention overseas and people started writing from Britain, Australia and New-Zealand professing cures.⁶⁰ Another problem concerning the offer of prize money for a cure was the enormous amount of letters, which needed to be investigated, from people proclaiming to have found cures and demanding money before revealing their cure.⁶¹ Hutcheon warned against the published remedies of quacks and expected a better attitude from the government with respect to their work and proposed medicine.⁶²

Researchers often tried to inoculate horses with the disease in order to receive a better understanding of the disease and the possible treatments. It is interesting to note when they received permission from the government to buy horses for experiments, they specified that high bred horses were not applicable as these breeds were more severely affected by disease than veldt horses.⁶³ This is a theory still exististing today. A hardened South African breed such as the Boerperd for example is less inclined to get ill during a horsesickness outbreak than a Dutch imported Friesian.

Another remedy demonstrating the lack of specific knowledge of the disease and revealing a hint of desperateness came from a certain Cooper of Somerset. He published a remarkable treatment method stating that a sick horse should be ‘hung up by his hind legs from the beam of the stable, three or four times a day for a few minutes, so that the discharge from his lungs may run out mechanically’.⁶⁴ W.K. Steen wrote to the colonial secretary to distribute as soon as possible in all government gazettes and all local papers the following cure:

‘as soon as the animal is attacked with sickness, saturate sponge with pure ether, place sponge in (nose) bag, in one pint of water, put half the six oz bottle of ether quantity drench and then put nose bag on horse. Two days after drench the horse with 3 oz glycerine and one pinch water’.⁶⁵

⁶⁰ TAB CS 351 [7713], letter from Mackinnon, London 8 July 1903, to Colonial Secretary and TAB CS 351 [7722], letter from John Mc Mahon, Wellington, 30 June 1903, to Transvaal Government and TAB CS 351 [7738], letter from Colonial Secretary, 12 August 1903, to Prime Minister for external affairs of Commonwealth of Australia.

⁶¹ KAB AGR 252 [105], letter from Korinsky E., 4 April 1894, to Secretary of the Colony.

⁶² KAB AGR 252 [455], letter from Hutcheon D, 17 January 1898, to Secretary of the Colony.

⁶³ [A.12-‘95] Edington, A. *‘Correspondence relating to the Investigations by Dr. A. Edington, Director of the Bacteriological Institute into the Nature and Causes of Horse Sickness’*, 1895, p.5.

⁶⁴ Bayley, T.B. *Notes on the horse sickness at the Cape of Good Hope, in 1854-’55*. p. 30.

⁶⁵ KAB CO 7273 [46], Correspondence letters 2 August 1899.

Lambert was cautious in the use of nose bags. This method was used during the 'Zulu war' to filter the night air and stopped the horses from eating the dewy grass but it remained unclear if that method made the horses less reliable to contract horsesickness than the horses not wearing a nose bag.⁶⁶ P.J. Van der Merwe from Worcester, encountered horsesickness on his farm and found the following treatment very effective 'out of experience'. He used to draw a line with a paintbrush soaked in tar about two inches wide over the length of the stable so that the sick horse constantly inhales the smell of the tar.⁶⁷ He found that when he employed this method on infected horses, it drove away the disease quickly. Hutcheon had his doubts whether the tar had an arresting effect on the spread of the disease among horses standing in stables or if it cured the disease.⁶⁸ Although warning horse keepers about the dangers of using tar for a prolonged period of time, he did recognize the disinfectant character of tar in such circumstances but only helping to prevent the spreading of certain germs. However, he was hesitant to believe that such a small line of tar could prevent the spread of the disease in stables full of infected horses. The preventative method of P. J. v.d. M. was simple and inexpensive but his personal experience was insufficient to appoint tar as the preventative method for disease such as horsesickness and strangles.⁶⁹

Hutcheon recommended arsenic and sulphur as the only two remedies that can be constantly used during horsesickness outbreaks without impairing the general health of the horse.⁷⁰ Giving sulphur in small quantities was regarded safe as only a little is converted into sulphides and sulphured hydrogen, which is very destructive to plant life. Arsenic can also be given in small doses without causing bad side effects. His recommendations were liquor arsenicals, one fluid ounce daily, together with a teaspoonful of flowers of sulphur mixed with some bran or spread over the forage. One of the most effective cures Hutcheon kept by was the use of repeated stimulants, hot blankets and fresh air. Mustard was used as a counter irritant.⁷¹ It is interesting to note that Hutcheon was very explicit when it came to the method of administering medicine to

⁶⁶ Lambert, J. *Government Notice No. 448*, 1881, p.3.

⁶⁷ P.J.v.d.M. 'The new disease among horses'. Correspondence. *Agricultural Journal*, Vol. I, nr. 15, 1888, p.129.

⁶⁸ Hutcheon, D. 'Diseases of the horse'. *Agricultural Journal*, vol. II, nr.1, 1889, p.154.

⁶⁹ Strangles is a critical infectious disease caused by the *Streptococcus equi* bacterium. It produces abscess of the lymph glands in horses.

⁷⁰ Hutcheon D. *Diseases of the horse and their treatment*. 1899. p.9 & Wallace, R. 'Farming Industries of Cape Colony', 1896, p.322.

⁷¹ Wiltshire, S. *Government Notice No. 192*, 1878, p.2.

a horse. He regarded it cruel and unnatural to pour medicine directly into a horse's nostril as this is extremely irritating for the animal especially irritating substances and stimulants often used in experimental horsesickness treatments. He stated: 'The unfortunate animal cannot, however, help swallowing the medicine when it is poured down his nostril; hence it is the attendant's ease and comfort which is studied, not that of the horse.'⁷²

Marshall Campbell of Natal used a totally different approach in the cure of horsesickness. He claimed to have cured twenty cases out of twenty one with the treatment of intoxicating doses of alcohol. 'Brandy, cheap quality used in doses of half a bottle with a wine glassful of water added; this dose is repeated every quarter of an hour, until the animal becomes intoxicated. From two to three bottles are sufficient to produce the desired effect.'⁷³

Hutcheon expressed his hesitation in accepting this treatment. Alcohol's first action stimulates the heart, exciting the cerebral circulation while the secondary effect paralyzes different parts of the brain. He only recommended the first action of alcohol and administering alcohol to the horses to the verge of paralysis. Although he thought it was a possibility that the alcohol could slow down the germs causing horsesickness. Korsensky also believed in the curing qualities of alcohol as his remedy was a mixture of half a pint of brandy or wine and a teaspoon full of ground black pepper.⁷⁴ Bleeding was another method often used and Hutcheon was in favour of bleeding sick horses under the condition that it had to be done in the early stages of showing horsesickness symptoms.⁷⁵ This method can be ascribed to the everyday customs during the Victorian Era when this was also done for curing human diseases. However, Wiltshire proclaimed years earlier that bleeding could only be used as a last resource as it was often carried too far impairing the recovering process of the horse later on or even killing it instantly.⁷⁶

⁷² Hutcheon, D. 'Horse Sickness', 1892, p. 13 & KAB AGR 252 Hutcheon, D. 'Paardenziekte' *Gouvernementsbericht*, No.41, 1892, p.5.

⁷³ Hutcheon, D. *Diseases of the horse and their treatment*. 1899. p.9.

⁷⁴ KAB AGR 252 [105], letter from Hutcheon D, 16 September 1892, to Minister of Agriculture.

⁷⁵ Hutcheon, D. 'Horse Sickness', 1892, p.11.

⁷⁶ Wiltshire, S. *Government Notice No. 192*, 1878, p.2.

Rutherford did not insist on medical treatment for horsesickness as the disease progressed to fast.⁷⁷ The most useful treatment he found from experience was the administration of a pint of raw linseed oil followed by a powerful stimulant such as brandy or whisky given in a frequent dose. The horse's chest, liver and any swellings needed to be kept warm using hot blankets but keeping the head and nape of the neck cool with a cold wet cloth. The food must be soft, palatable and nutritious completed with a quarter-ounce dose of nitre and some carbonate of ammonia in his drinking water. Rutherford also believed in the beneficial remedial factors of carbolic acid, given the amount of sixty drops three or four times a day with a pint of water and one or two wineglassfuls of oil to prevent it from burning the throat. He did not believe in curing horsesickness by bleeding or blistering sick horses.⁷⁸

The above mentioned experimental treatments of horsesickness demonstrates the under developed methods of veterinary science and the desperateness of farmers and horse owners to treat their horses from horsesickness. Although most of the treatments discussed here seem absurd today but it must be kept in mind that horse owners were dealing with a disease from which they had incomplete knowledge. They could also count on only partial support from the scientific world as a limited amount of researchers were busy investigating the disease. The preventative methods used during that time tends to demonstrate this lack of practical knowledge and inadequacy of science in the same line.

4.3. Preventative methods in mid nineteenth century

The most certain way of preventing horsesickness was not ointments, medicines or infusions but simply stabling. This was discovered experientially relatively early on by horse owners and farmers and encouraged by researchers busy investigating the disease. Lambert was more cautious: proclaiming that stabling would protect the horses but not entirely safeguard them from the disease.⁷⁹ Breeders started to work their horses only during the day and stable them early although this was only useful to a certain extent as there was a scarcity of forage and a great demand for buildings. Kraaling was used when breeders had insufficient or no stables. Although this may have helped against the

⁷⁷ Rutherford, C. 'Horse Sickness of South Africa', Reprinted from *Cape Times*, August 1885. p.6.

⁷⁸ *Ibid.*

⁷⁹ Lambert, J. *Government Notice No. 448*, 1881, p.3.

spreading of the disease, horses suffered from starvation as the pasturage was at its minimum during mid summer point in 1855. Kraaling was especially bad for pregnant or feeding mares and young foals as they were chased into the kraal every day. It did help when the kraals were situated on elevated places where the night air temperature is warmer after extreme evaporation and where the body temperature of the horses helps against the change of temperature after sunset.

Bayley did mention in his notes some precautionary measures such as converting buildings into stables, renovating kraals built out of stone or brick into sheds or stables, roofing the buildings where the horses are kept, one needed to provide adequate ventilation and the door should be positioned where it is least exposed to the prevailing winds. It was already noticed, out of practical experience by farmers, that horses grazing on higher lands stayed horsesickness free so mountain ranges were reserved by the government of the local authorities as sanctuaries for the horses of the surrounding country. However, this sometimes caused friction with livestock holders as they did not always understand this preferential treatment of horse owners by the field cornets.⁸⁰ A livestock holder, Lodewyk Wiese, wrote to the Civil Commissioner of Clan William that his cattle should also have the right be allowed to graze on higher grounds, however, he was denied that right to send his cattle to the higher grounds as these pastures were reserved for the horses during the horsesickness seasons.⁸¹ Although horsesickness was a disease having a serious impact on horses and the revolving industry, it was not that well understood by farmers or people having no horses or no knowledge about the importance of horses. This again demonstrates the lack of knowledge about the disease and affecting therefore indirectly the seriousness of the 1854-55 outbreak due to the lack of practical measurements taken to prevent friction with farmers.

Many researchers, and therefore also the farmers, believed that grazing was the main factor in the causation of horsesickness. Rutherford expressed his concern in letting horses graze where there were very slow running streams or stagnant pools, or soil which has been polluted by dead or buried carcasses.⁸² These were all regarded as high risk areas which could infect horses. Keeping them away of such grazing areas and putting

⁸⁰ KAB CO 4015 [657], letter from memorialist C Holtman concerning Lodewyk Wiese, to Major General Sir George Thomas, 10 October 1842.

⁸¹ KAB CO 4015 [657], report from Field Cornet A. Van Zyl, 29 November 1842

⁸² Rutherford, C. 'Horse Sickness of South Africa', Reprinted from *Cape Times*, August 1885. p.7.

them in paddocks was already a great step in the prevention of horsesickness. Protecting the horses on high ground away from valleys or soil on which the grass is always more or less wet was regarded as one of the major preventative methods.⁸³ It related to the ‘dew theory’ and the theory of the poisonous soils. Dew is not that prevalent on higher grounds, and the poisonous air from the ground was only able to rise a certain distance from where they were produced.⁸⁴

Hutcheon had a similar preventative measure similar to W.K. Steen’s treatment and recommended properly constructed nose bags made of very porous cloth and kept moist with carbolic acid solution or similar disinfectants and placed on the horses’ heads when exposed to the night air.⁸⁵ However, he did warn against the continuous use of carbolic acid and tar derivatives as this could impair the health of the animal. Although they are excellent disinfectants, it can be dangerous if used for a lengthy period.

Bleeding was another method thought the help prevent the disease. Breeders used bleeding as a treatment or a preventative method and called upon a veterinarian when they suspected an infected horse (dull animal, disinclined to feed) to give the horse some ‘medical treatment’. It was not uncommon that a horse was bled more than once. Some animals did survive after the bleeding but again it was unsatisfactory to appoint a certain cure to bleeding because the first signs of sickness could have been any disease. It soon became clear that this did not help.

The horses that died from horsesickness were recommended by veterinarians to be buried six feet deep in a poor and dry soil together with all the debris (froth, manure, excrement) and set apart, confined by bush or rails.⁸⁶ Cremation was regarded as an even better method against the spreading of the disease as it was still a common belief that horsesickness was highly contagious. Rutherford even warns against handling carcasses as it is possible to contract blood poisoning by becoming inoculated with the blood of the dead horse.⁸⁷ Drainage of swamps was also an effective preventative method and is one still today. In those years it was believed that swamps contained the deadly disease

⁸³ Hutcheon, D. *Horse Sickness*, 1892, p.5.

⁸⁴ Lambert, J. *Government Notice No. 448*, 1881, p.5.

⁸⁵ Hutcheon D. *Diseases of the horse and their treatment*. 1899. p.9.

⁸⁶ Rutherford, C. ‘Horse Sickness of South Africa’, Reprinted from *Cape Times*, August 1885, p.7.

⁸⁷ *Ibid.*, p.8.

germ. They did not make the connection yet with mosquitoes and midges which are very prevalent around swamps and ponds.

The preventive measures also revealed the premature state of affairs regarding the data and scientific progress during that time. Most of them were developed out of practical knowledge from the farmers and adopted by the scientists who did more research around it. This had an influence on the high death rates caused by the outbreak as many insisted on these defensive measurements or treatments which were as later discovered, ineffective. It indirectly slowed down the scientific research and progress as most of the researchers' attention was fixated on the practical knowledge they already accumulated from horse owners and farmers.

The mortality rate of the outbreak in 1854-1855 was so great that horses died at a high rate, making no difference if the horses were stabled or left in the field. However this can be explained since horses were only stabled when stables became available from other horses that died making it a great possibility that the horses were already infected in the field and then died in the stables. In addition, sheds used stables offered little protection and either had too much or too little ventilation.

5. Social Ramifications with the 1854-1855 epidemic

Having discussed some main aspects about the disease in the nineteenth century, some practical case studies will be discussed to explore the social implications to enlighten the importance of the disease and its many complications that it can produce. This outbreak had serious ramifications and had an impact on several events, affecting the life of many people. The below mentioned incidents will demonstrate these ramifications.

5.1. Impact on the military

November 1854 was not only marked by the African horsesickness epidemic but also by the violent clash between Boer commandos and the Kekana clan of the Ndebele that eventually led to the slaughter of an entire tribe. It took refuge from the commandos and their Kgatla allies in caves north of Potgietersrust. Boer commandos surrounded the cave for three weeks and thousands lost their lives. This incident did not happen suddenly but was the eventual outcome of increased Boer raids into the north western Transvaal

between the 1840's and 1860's.⁸⁸ Boer settlers tried rigorously to enforce their authority over African communities and their game and ivory resources. The settlers used punitive raid methods such as cattle plunders, and the abduction of women and children. Two communities of the Ndebele tribe were most subject to the pillage of the Boers. Langa and Kekana bestridden the routes often used by Boers causing a lot of extra tension. The two leaders of these communities; Mankopane, known as 'the castrator of the white man's cattle',⁸⁹ and started to respond with military mutilation on Boers and cattle. Eventually twenty eight Boers were mutilated and murdered in three separate incidents.⁹⁰ One of the incidents included Hermanus Potgieter, known for his rough behaviour, violent temper and ruthless slaving of children, who acted in such a way that gave offence to Makapan's people.⁹¹ Planning to trade some ivory, he went to Mankopane's capital with a group of men. The negotiations took a turn for the worse and Potgieter was whipped and skinned. This was followed by an attack on the Boer settlements by Mankopane's forces. The Boers reacted with a commando against Mokopane and the Kekana. They fled to the caves situated 16km north of where they lived.⁹² They failed to smoke the enemy out and eventually blocked the cave with brushwood and stones. Some of Mankopane's people tried to escape, as the group was in need of water, but were immediately killed outside the cave. After twenty five days the Boers besieged the cave with little resistance.

Almost 2700 Africans were killed inside and outside the cave but it was eventually African horsesickness that made an accelerated end to the campaign as it ended quicker than anticipated.⁹³ The Boers were in great need of horses they did not have. It was impossible for the commando to keep the field any longer due to this acute shortage of horses. Other clans that rebelled could not be attacked.⁹⁴ However, when seeing the result of the siege, the clans were chased away and frightened off. Boers relied heavily on their horses. They were necessary and indispensable in the followed fighting

⁸⁸ Hofmeyr, I. 'Popularizing history the case of Gustav Preller', *The Journal of African History*, Vol.29, nr.3, 1988, p.531.

⁸⁹ *Ibid.*, p.532.

⁹⁰ Naidoo, J. 'The Siege of Makapansgat: A Massacre? And a Trekker Victory?', *History in Africa*. Vol.14, 1987 p.173.

⁹¹ Theal, G. *History of South Africa*. Vol.3, p.416.

⁹² Hofmeyr, I. 'Popularizing history the case of Gustav Preller', *The Journal of African History*. Vol.29, nr.3, 1988, p.532.

⁹³ Naidoo, J. 'The Siege of Makapansgat: A Massacre? And a Trekker Victory?', *History in Africa*. Vol.14, 1987; p.174.

⁹⁴ Theal, G. *History of South Africa*. Vol.3, p.420.

strategies. Without horses, they were unable to catch fleeing Ndebele from the cave. They felt a great deal about their horses and African horsesickness made them detached from the fighting purpose, losing motivation and soon the camp was broken up and they returned to their farms.

The siege of Makapansgat was significantly affected by the outbreak. Interesting enough, this siege hypothesis is similar to the hypothesis stated in chapter 1 where B.H. Dicke introduced a rather radical environmental argument stating that it was the tsetse fly, rather than the Amatongas, who vanquished the trekkers. However, in this specific historical moment, it was African horsesickness that made an end to the siege of Makapansgat. It directly affected the mounted regiments as they were unable to acquire the much needed horses and it indirectly affected the Boers as they were affected by the death of their horses. This demonstrates how serious this outbreak was as it even changed and impinged on the fighting strategies of mounted regiments.

The military always felt the effect of horsesickness and had problems commanding troops during outbreaks (see chapter 4). Horsesickness had an impact on troop formations as without the horses, they were unable to communicate between troops. Many of the Boers in commandos relied on their own horses and when these horses died, they could not obey the order as the horses were needed for transport, to exchange orders and to patrol around the borders. A letter to the 'Staats President van den Oranje Vrystaat' in 1865 complained: 'hoe moeilijk het is, om hier van dit (Jacobsdal) district menschen op te commanderen naar de grenzen....daar de paarden ziekte zoo erg is'⁹⁵. Translated: 'how difficult it is to command people from the district (Jacobsdal) to the borders...as the horse sickness is so terrible'. A later letter from the Landdrost kantoor explained that the veldt commandant was unable to join due to high death rates of horses and illness amongst the mules.⁹⁶

Not only people in high command struggled during horsesickness outbreaks. Boers were unable to join and needed to ask the government for horses as they had lost theirs and had no resources to obtain new ones. A landdrost office from another district

⁹⁵ VAB G.S. 641 [74], letter from Palie, Jacobsdal 8 May 1865, to Staats President van den Oranje Vrystaat.

⁹⁶ VAB G.S. 641 [75], letter from Landdrost Jacobsdal, Jacobsdal 8 May 1865, to Veldcornet of Jacobsdal.

proclaimed: ‘...dat de gecommandeerde Burghers niet allen te paard kan zijn van wegens de laatste sterfte onder de paarden’⁹⁷ (translated: that not all the commandeered burghers can be on horses due to the latest death rate among the horses) and asked if the government was able to provide them with the necessary horses.

African horsesickness affected the military for a great deal due to their heavy reliance on horses. The 1854-55 outbreak was so serious, their only resource to obtain horses was through the government as they had the power to commandeer horses and pay the high prices for the few horses that were left. However, it was not only the military which were affected by horsesickness outbreaks. People involved in the breeding of horses were seriously affected by the 1854-55 epidemic.

5.2. Impact on Anglo-Indian breeders

Anglo-Indian is the collective noun for permanent immigrants and their offspring who came from Britain to India. The immigration flow started with the settlement of the British civil and military men serving in the Rai, Bengal, Madras and Bombay. In response to changing national policies on immigration in the West, and against a background of worldwide population movements, Anglo-Indians began to settle outside India and many of them immigrated later to Australia and New-Zealand as Britain had an ‘open door’ immigration policy.⁹⁸ Some of these men spent their sick leave in the Cape from 1819 onwards and never left.

Most of them in the Cape Colony stayed around Wynberg. Major Samuel Parlby was the first Anglo-Indian to settle at Overberg. He purchased the ‘Lustplaats’ in 1831 from the Colony’s chief justice, Sir John Truter which was situated in the Kleijne River valley.⁹⁹ Lustplaats included a number of farms such as De Kleijne River. Parlby stocked his farm with fine cattle, merino sheep and stud horses for racing, riding and for remounts for the British Army in India. Setbacks such as the financial strain of slave emancipation, unprofitable farming and the death of his wife, made him sell his farms to Captain Robert Stanford in 1838. The successor of his farm did not run better luck as he had to sell the land after a major financial

⁹⁷ VAB G.S. 231 [30], letter from Landdros, Bushof, 28 September 1865, to Secretary of Oranje Vrystaat.

⁹⁸ Caplan, L. *Children of Colonialism: Anglo-Indians in a Postcolonial World*. p.129

⁹⁹ Burrows, E.H. *Overberg Odyssey, People, Roads and Early Days*. 1994, p.113.

crisis from the Anti-Convict Agitation¹⁰⁰ combined with the death of almost all his horses during the horsesickness outbreak in 1854-1855.

Thomas Butterworth Charles Bayley was the most notable Anglo-Indian as he contributed so much to the Colony without entering into the political life. Bayley was born in England in 1810 and bought Hartebeeste Kraal in 1844 from Coenraad Nelson and renamed it The Oaks after the classic English horse racing event¹⁰¹ making it a successful stud farm which housed the premier Colonial stud. He imported thoroughbred stallions and mares, Cleveland carriage horses, Yorkshire half breed horses, cattle and sheep. Bayley was the first Cape farmer to import iron ploughs, water pumps, seed drills and other farming tools as he came from the middle of the Industrial Revolution in England. Bayley was the first person who tried to write a colonial Stud Book as he wanted to update and improve horse breeding in South Africa, bringing it to Britain's level and quality.¹⁰²

However, he never succeeded in doing this as he soon found out that it was impossible. Horses were too scattered. Owners often did not have the complete breeding background and stud records in South Africa were not kept up to date, especially for working horses used for stud breeding. Bayley's stud farm contained around one hundred animals and he was well known in the racing industry as his horses were of top imported quality. His stud farm often sold horses during race weeks¹⁰³ and when the horsesickness appeared in the western districts, Bayley was not greatly alarmed as the disease never went further than Uitenhage. Only when horses started to die at George he knew what to expect as his predecessor lost all his horses except one in 1839.¹⁰⁴

Bayley did state that in his district, nothing extraordinary happened regarding the weather except for the heavy dew, thicker cobwebs and staff suffering from influenza.¹⁰⁵

¹⁰⁰ The Anti-Convict Agitation of 1849 was a bitter dispute between government and colonists when farmers destroyed their produce rather than selling it to the government. The government exerting pressure on vulnerable individuals in desperation to feed the garrison and the surrender of Stanford had serious consequences as angry farmers wrecked his home. No one would buy his produce and no one would sell him livestock.

¹⁰¹ *The Anglo Indians at the Cape* <http://archiver.rootsweb.com>

¹⁰² Wyndham, H.A. *The early history of the thoroughbred horses in South Africa*. p.3.

¹⁰³ *Cape of Good Hope Government Gazette*, 2 February 1854.

¹⁰⁴ Bayley, T.B. *Notes on the horse sickness at the Cape of Good Hope, in 1854-'55*. p.7.

¹⁰⁵ *Ibid.*, p. 26.

Bayley tried to accommodate as many horses as possible and therefore he send some of his horses to Cape Town. He was able to cure three animals, all the other horses staying on the farm died while his horses in Cape Town survived. A purchaser that bought thirty mares from Bayley in 1854 was less fortunate as all his horses died except three. Bayley's total amount of casualties was forty three, nearly one half of his stud farm.¹⁰⁶ His neighbour lost three hundred horses out of the three hundred and fifteen.

Although Bayley managed to save a small percentage of his horses during the outbreak, he never fully recovered from the devastation and sold his farm and stock in 1856 to Michael Van Breda.¹⁰⁷ Although he lost most of his horses, he was not financially ruined as he sold his estate for £62 000 and moved to a large house in Wynberg. He occupied himself with philanthropy, committees as he actively promoted the Cape of Good Hope Agricultural Society, and he wrote.¹⁰⁸ Bayley stayed involved with horses as he rode with the Cape Hunt and served as a steward of the South African Turf Club. Although he had the money to rebuild his breeding stock, he never did. This was in sharp contrast to what was expected from him, however, the outbreak left him emotionally affected and although he fully enjoyed horse breeding at his farm, he was never again involved in actively breeding horses and farming.¹⁰⁹

He was the first person to publish a detailed account of the disease and the 1854-55 outbreak distributing '*Notes on the Horse Sickness at the Cape of Good Hope, 1854-55*' in 1856 where he included his personal encounter with the disease and its impact. Bayley's only object, with this profit free publication,¹¹⁰ was to disseminate information and to inform everyone about the devastation and serious consequences of the disease and the necessity to find a cure and manageable preventative methods. This publication was different from the few notes researchers and scientists published. Scientists were cautious when publishing information about horsesickness as most of their research was in a developing stage. For the first time, with Bayley's notes, there was a collection of information about horsesickness written from a farmer's point of view and especially designed to address horse breeders and horse owners, therefore not using the difficult

¹⁰⁶ Burrows, E.H. *Overberg Odyssey, People, Roads and Early Days*. 1994, p.135.

¹⁰⁷ *The Anglo Indians at the Cape* <http://archiver.rootsweb.com>

¹⁰⁸ Burrows, E.H. *Overberg Odyssey, People, Roads and Early Days*. 1994, p.102.

¹⁰⁹ Wyndham, H.A. *The early history of the thoroughbred horses in South Africa*. p.105.

¹¹⁰ Bayley, T.B. *Notes on the horse sickness at the Cape of Good Hope, in 1854-'55*. p.iv.

terminology which made the conclusions written by scientists hard to grasp and understand. He collected data coming from the practical experience from farmers, horse owners and himself, in order to provide as much of a complete picture as possible about the disease. With collecting the practical materials known by people dealing and having horses, he basically provided them with remedies, preventative methods and supposed causations known and used by other farmers and horse owners. Farmers were very pleased with this publication and newspapers praised Bayley for his notes urging the public to read it. The *Graaff Reinet Herald* mentioned that:

‘this pamphlet is one of that useful class of publications which, in the present age of enlightenment, is sure to be produced when circumstances of an extraordinary character occur, threatening the interests of the many, or the well being of all in the community.’¹¹¹

The South African Commercial Advertiser and Cape Town Mail published: ‘We conclude at present by recommending a careful perusal of this pamphlet [...].’¹¹² The Grahamstown Journal also praised Bayley with his publication and published a dense summary of Bayley’s findings.¹¹³ The *Zuid-Afrikaan* stated: ‘Mr. Bayley’s notes on the horsesickness contain some valuable information in a form necessarily diffuse’.¹¹⁴ It was also the first time that someone looked and included in his research astronomical reports and tables of temperature, humidity and the directions of winds.

The weekly mail transport from Cape Town to other places was impaired by horsesickness. Mail was conveyed both to and from Cape Town with great regularity, except during heavy rains, until the horsesickness greatly delayed dispatches. The post horses died easily from the disease as the horses had to work day and night and could not be stabled, nor was there a fresh supply of horses. During horsesickness outbreaks, districts had to transport the post on their own expense using privately owned horses.¹¹⁵

¹¹¹ *The Graaff Reinet Herald*, 11 October 1856.

¹¹² *The South African Commercial Advertiser and Cape Town Mail*, 23 September 1856.

¹¹³ *The Grahamstown Journal*, 7 October 1856.

¹¹⁴ *The Zuid-Afrikaan*, 25 September 1856.

¹¹⁵ KAB CO 4003 [64], letter from general post office, Cape Town 30 March 1839, to General George Thomas Napier.

5.3. Other encounters

The horsesickness of 1854-55 disrupted the Western province Agricultural Society Show years later as it destroyed almost every breeding stud in the District. Every year they organised a show giving four prizes for blood horses: £10 for the best imported sire, £10 for the best three and two year old colt, and £7, 10c for the best filly. However, in 1862 when George (town) was the host for the annual show, it was clear they had a problem with the attendance of horses and owners. Only a very limited number of horses were involved and their quality was still not in comparison with the horses from earlier shows before the outbreak. Therefore the organisers decided for the first time to change their set-up for the show and concentrate instead on a £50 Champion Cup to be raced for over two miles at welter weights.¹¹⁶

Even years later after the outbreak, the effects were still very clear and apparent and people were still scared of losing their horses. The British Army was still afraid of losing their war horses in 1880 so their regulations advised the soldiers to restrict their horses from feeding on the veldt at certain times when they felt horsesickness was more prevalent.¹¹⁷ To the men that loved their horses it was a joke because thousands died of slow starvation against a minimum saved from contracting horsesickness. Scherzer, in his narrative of the voyage of the Austrian frigate *Novara*, published a good description of the horsesickness epidemic of 1854-55. He wrote:

‘During our residence in the Cape Colony (in 1857) severe depression existed among the agricultural inhabitants of the western and eastern districts, in consequence of an epidemic which, within two years, had carried off 64 850 horses (draught horses, mares and foals), of the value of £525 000 sterling. Many landowners, in consequence, entirely gave up rearing horses, and turned their attention exclusively to the breeding of sheep.’¹¹⁸

6. Initial Policies and Reactions

The horsesickness outbreak was an eye opener for the government. It became clear that some policies needed to be changed, developed or adapted in order to better protect the Colony against diseases. Since the Colony became more progressive and better developed, more transport for import and export was done, putting the Colony at risk of

¹¹⁶ *The Agricultural News and Farmers Journal*. p.100.

¹¹⁷ Steele, N. *Take a horse to the wilderness*. p.72.

¹¹⁸ Anon, C. ‘The Horse-Sickness of South Africa’, *The Veterinary Journal*, August 1878, Vol.7, p.101.

importing diseases. The outbreak was a lesson for the government and the agricultural department as a lot of casualties could have been prevented if some preventative methods were issued immediately. There was no risk of infecting Britain with horsesickness as they already installed since 1848 ‘an Act to prohibit the Importation of Sheep, Cattle, or other animals, for the Purpose of preventing the Introduction of contagious, or infectious Disorders’ (4th September 1848)¹¹⁹ which prevented the introduction of contagious or infectious disorders among sheep, cattle, horses and other animals and the took measures when necessary ‘for preventing or regulating the importation of animals from parts beyond the seas where such infectious or contagious disorders prevail’.¹²⁰ The chance of importing horses from South Africa to Britain was at any rate very small as the country was still in need of horses. South Africa was at its height of importing horses and was unable to afford exporting them to a country with an abundance of horses and a wide availability of countries from which to import horses.¹²¹ Although Britain had regulations concerning the movement of animals, South Africa was in need of some specific guidelines. Therefore the government publicised an ‘Animals Diseases Act’ in 1881¹²² and brought to the public’s attention what their duties were if they encountered infectious cattle and horse diseases. Some of the preventative methods were the following:

‘Every infected animal must be isolated, and the person in charge must at once report the fact of infection to either the Resident Magistrate, the Field-cornet, the nearest Justice of the Peace, or the Inspector of the Native Location; and to all the occupiers of all contiguous lands, where such lands are not in any Town or Village.’

However, this Act was not regarded as useful by the colonial veterinary surgeon as it was practically useless when it had to deal with contagious diseases such as lung sickness of cattle. The Act did not allow compensation to be given for the compulsory slaughter of any animals affected with a contagious disease. Consequently, it was very rare that a board composed of farmers did order to slaughter their affected animals even when it was

¹¹⁹ Ritchie, J., Crawford, M., Curtis, P.E. (ea) ‘*Animal Health, a Centenary, 1865-1965.*’ Ministry of Agriculture, Fisheries and Food, London, 1965, p.9.

¹²⁰ *Ibid.*

¹²¹ Great Britain only issued a total importation embargo from countries such as Asia, Middle East and Africa, by the present Importation Order of 1957 because of the emergence of horsesickness.

¹²² Fischer, A. ‘Infectious Cattle and Horse Diseases’, *Agricultural Journal*, vol.2, nr.23, 1889, p.1. & *Statutes of the Cape of Good Hope, 1652-1895*. Vol.III, 1887-1895, p.3260.

apparent that perfect isolation was practically impossible.¹²³ In other words, this Act was not received well by scientists and farmers. Scientists were not convinced of its effectiveness and farmers were discontented with the lack of compensation. However, these provisions of the Act were very strict and for the first time it was clearly stipulated what to do when there was reason to suspect an infection and what to do with the dead animals.

Owners of infected cattle which are destroyed on account of the disease must at once bury or burn the carcasses. When an area is quarantined by Proclamation, no cattle, whether infected or not, may be brought into or removed from such area, excepting in certain special cases regarding the former, under conditions particularized by Proclamation. No cattle known to be infected with the disease may be brought into the Colony, nor may they be moved about from place to place within the Colony. Any person convicted of contravening any of the provisions of the Act, or of any Proclamation issued under it, or of wilfully obstructing the carrying out of any of its provisions, renders himself liable to a fine not exceeding £50, or in default to imprisonment, with or without hard labour, for a period not exceeding three months.

Quarantine was one of the major preventive measures expressed in the Animals Diseases Act as it was the only solution to prevent the spreading of the disease. A lack of quarantine was a major problem during the 1854-55 epidemic as this caused a massive geographical distribution of the disease. These provisions were binding by law. Failure to comply with these provisions was punishable by fines or as clearly stated in the Act.

Conclusions

During the nineteenth century, not much was known about African horsesickness. This disease was still regarded as ‘mysterious and unfathomable’¹²⁴ during the late nineteenth century. Many different views and visions about the disease were published and communicated without veterinary background or knowledge. It was, for example, still commonly believed that this disease occurred not only in Africa but the entire world¹²⁵ therefore naming the disease horsesickness instead of African horsesickness, the term which is used today. Due to a lack of knowledge and experienced veterinarians, it became clear that farmers were unaware of the causes of the disease. Their isolated

¹²³ [G.24b-‘93] Hutcheon, D. ‘Reports of the Colonial Veterinary Surgeon and the Assistant Veterinary Surgeon for the Year 1892.’ *Department of Lands, Mines and Agriculture*, p.8.

¹²⁴ Rutherford, C. ‘Horse Sickness of South Africa’. Reprinted from *Cape Times*, August 1885. p.1.

¹²⁵ *Ibid.*, p.2.

status and scientific inexperience of that time made it extremely difficult to acquire exact knowledge on disease causing such traumatic impact. Livestock holders started to rely on their own remedies or any kind of treatment that reduced the symptoms of the disease or that was acclaimed to have cured horses in the past. Preventative methods were developed by farmers without any scientific grounding but proved to be successful on a trail and error bases. This chapter discussed some encounters of this epidemic demonstrating the enormity of the social and economical impact of this outbreak as well as having some historical implications such as the siege at Makapansgat.

After the 1854-1855 outbreak, African horsesickness got much more attention from the government and big investments were made possible to update and modernise veterinary services. Much effort by the government was put into finding the cause and preventative measures of the disease as the casualties were high and the consequences far reaching. Keeping in mind that veterinarians were not widely represented mid nineteenth century in South Africa and that not much energy was given to the research of African horsesickness during that time, horse owners were forced to rely on their observations and worked on a trail and error basis. It is understandable that they sought similarities between other diseases such as cholera in their struggle to find the cause of African horsesickness. Although some preventative measures seem absurd today, with the knowledge they had and the observations they made, their conclusions were justifiable. It is worth noting that observational techniques to find prophylactic methods could prove helpful and some of them are still used today such as the stabling before sunset and after sunrise and kraaling the horses on higher ground.

The outbreak of 1854-1855 was a pivotal turning-point for farmers and scientists. Horsesickness was responsible for massive mortality and it seriously weakened the trade in horses. The breeding and racing industry was to recover but it had an enormous effect on the horse industry in the Western Cape. Many stud farms had to sell everything as they lost almost all their horses. The immediate sufferers were the small farmers as they had a bitter financial pill to take which many of them were unable to do. Many of them went bankrupt and some were marred by this dreadful experience therefore selling their surviving horses without giving the 'horse business' a second thought. Due to the outbreak and its heavy losses, Cape Town was replaced by Port Elizabeth as the headquarters of the racing industry in the country as the Karoo and Eastern Province

were opened up for the breeding of mules and merino sheep which superseded the horse. The Cape lost its pre-eminence due to the many horses this province lost and the shortage of money because of the economical impact of this African horsesickness outbreak.

It is fair to say that, although the disease had a devastating result on many small and inferior stud farms, it had indirectly a positive effect on the horse breeding industry as the country was left with only top high bred horses to breed with, as only the expensive and high bred horses were protected from the disease and put into stables. Pleasure horses or horses of low breeding quality stayed outside, exposed to the disease. As a result, the weak ones eventually died, while the strong bred horses were protected and survived. The surviving horses left to breed with, were solid and resilient, of good blood lines and inoculated, making them more valuable and produced strong foals the following years. At the time, the result of the outbreak was also viewed as beneficial regarding the depletion of horses owned by Africans ‘which have become so numerous in some parts that the idle Kaffirs cantering about on horseback have become a public nuisance.’¹²⁶ This outbreak of African horsesickness was a revelation for the government who had previously played a less interventionist role. Now that the government could feel the direct results of the disease and the accompanied serious losses that demanded their attention, they started to support scientific research more and began to stimulate veterinarian medicine.

¹²⁶ Wallace, R. *Farming Industries of Cape Colony*, 1896, p.315.

CHAPTER 4:
‘THE GALLANT SOLDIER DIED’¹
HORSESICKNESS DURING THE SOUTH AFRICAN WAR, 1899-1902

1. Introduction

In war, mortality among horses has been greater than that among men. Certainly, in the South African War, without their horses, burghers were unable to fight the war, mainly because the tactics followed revolved around the deployment of highly mobile mounted commandos. Similarly, without the horses, the British were powerless to win the war. In the meantime, the true victims of the war were the horses. This chapter will explore the use of horses in the war and the impact that African horsesickness had on the South African War. Although there were many other diseases which occurred during the war, which also had an impact, the focus of this chapter will be horsesickness and its many factors affecting the conflict. From the burghers in their guerrilla warfare, to the English in their pursuit and surrounding of the mobile commandos: soldiers were utterly reliant on strong and reliable horses. It will demonstrate the strifes imported horses had to endure, causing exhaustion and weakening of their condition which rendered them much more susceptible to diseases such as African horsesickness. The majority of the horses did not die from bullets and fatigue, but a large number died from several illnesses, such as horsesickness. Further causes of a large number of deaths were the lack of proper treatment by their handlers and a shortage of properly trained veterinarians.

As previously mentioned, African horsesickness had a certain impact on the war and its warfare. In this chapter the indirect impact of African horsesickness and the many complications and implications this disease entailed will be discussed. The many different aspects influencing the susceptibility of horses to the disease, demonstrating its effects and impacts, will be examined. A short description will be given from both a veterinary and a research point of view. It will also examine whether certain developments and measures were able to make a considerable difference in the restraining of the disease, while exploring the direct influence on the burghers and British armies. Considering the connection between the war and horsesickness, a brief

¹ National Library, special collection, MSB 518 (10826): Sgd ‘A.M.I.F.’, *‘The Dead Warrior watched by the Faithful Charger’*. Incident in Anglo-Boer War, 1900?, p.27.

demonstration will be given of the close relationship between soldiers and their horses as this close conditional affiliation also had an impact on the war. This chapter will end with an investigation of the aftermath of the war and the subsequent changes made as a result of the war.

2. Increased Susceptibility to Diseases

2.1. General care of animals

As the progress of the war is of no relevance and not applicable to this particular chapter, the course of the South African war will not be discussed here in detail. In order to fully grasp the involvement of horses in the war, it is required to look at certain aspects of the war which affected the horses² and their health.

Using horses in war was difficult. Although they were necessary and useful during the war, horses require specialised care and attention especially when sick or wounded. They are not the easiest animals to handle and it essential to have a certain amount of knowledge in horsemanship as horses are vulnerable. Horses easily overeat, overheat and are incapable of vomiting as their breathing and digestive system are linked together. Horses require a structured routine and when confronted with a situation different from their daily routine and habits, which was exactly what happened during wartime, they can contract colic or have their entire immune system impeded. Horses tend to show signs of illness at a very late stage.³ They only reveal their weakness when they can no longer avoid it. Therefore, because they communicate pain in a different way than other animals do, it is difficult to observe signs of illness at an early stage. This made it difficult for the men, who had only a limited amount of experience and knowledge about horses, to pick up the initial signs of illness when their horses were ill - thus often resulting in treatment that was given too late. This demonstrates why so many animals died of diseases. In the case of horsesickness, picking up early signs of the illness can make the difference between life and death.

² Although horses are emphasised in this chapter, it must be kept in mind that a large number of other equines were used during the war, such as mules and donkeys

³ Swart, S., "Last of the old campaigners", equine mortality in the South African War, c.1899-1902', Chapter 6 from draft manuscript 'Riding High-essays on horses and history in southern Africa', p.5.

The English had an unfitting approach to the war as they were convinced the war would soon be over, underestimating the capability of the burghers. The cost of the war was assessed to be no more than ten million pounds and was presumed to be over in four months. However, the cost exceeded £222 974 000 and the war lasted three years. Another miscalculation on the part of the English was the use of imported horses. The Remount Department was plunged into chaos as it had been accustomed to supply 2 500 horses each year during peacetime and suddenly had to find 217 000 horses and 94 000 mules during the South African conflict.⁴ The reserve contained a mere 14 500 horses and it became necessary for the Remount Department to enter the open market. It was impossible to obtain sufficient animals from the British Isles. Therefore missions for purchasing animals abroad were sent to the United States, Canada, Australia, Argentine, Spain and Austria-Hungary. Only later did the English start using locally adapted horses.

When the war was almost over, 75 000 horses from the Cape Colony and 125 000 from the Orange-Free State and Transvaal were commandeered.⁵ If the English had used, from the beginning, the same horses used by the burghers which were horses who lived their entire life in the country, they would have been more mobile and in a better logistical position to administer defeat. The English fought with weapons, ammunition and horses provided by the British government. The burghers had to provide their own guns, bullets and transport. They joined the commando's on their home-bred horses. The majority of the horses were descendants of the famous Cape horses of the eighteenth and nineteenth centuries.⁶ The consequence of this was that the burghers had a good sense of how to handle and care for horses while the English had only a limited amount of knowledge when it came to horsemanship. The English won the war although they lost morally while the Boers won the battle on their horses but lost the war.

The horse disaster can be divided into two periods. The first period extended from October 1899 to December 1900, the second from January 1901 to May 1902.⁷ In the first period the English were responsible for their losses as the ration scale for the animals was too low. Captain R. Pott of the 36th West Kent Squadron wrote in his diary:

⁴ Singleton, J. 'Britain's Military Use of Horses, 1914-1918, *Past and Present*, No.139, May 1993, p.180.

⁵ Van der Merwe, F. 'Horses in the Anglo Boer War, unsung heroes-the British army horses', part II', *Farmer's Weekly*, 17 September, 1999, p.21.

⁶ *Ibid.*, p.20.

⁷ Smith, F. '*A Veterinary History of the War in South Africa, 1899-1902.*' 1919, p.V.

‘Our horses are only getting ten lbs of mealies in cob per diem. English horses cannot eat this and it is no wonder that our horses cannot do the work when they are fed in this way’.⁸ In a later entry he wrote: ‘Men had no sheets or blankets or rations; horses no forage. Mills had gone four miles further on but men and horses were too done to go further tonight’.⁹ Horses lost condition and were ill-prepared for the conditions they had to work under in the Orange Free State. The trained horses soon died and needed to be replaced with unfit, unconditioned, untrained, leg-weary horses that were taken straight from the ship and sent into the Field under the same conditions as the previous horses. Captain Pott recorded:

‘Did usual camp work in the morning and at midday was detailed by Col. Mitford to disembark [from the ship he came to South Africa] with other officers and men, 750 horses from the ‘Monarch’ [vessel] from England. The horses were a badish lot, very badly done and in a shocking condition. Two men were kicked in the head and one on the knee.’¹⁰

And on a later account, after shooting his pony and getting a new horse: ‘Rode the new black gelding found him awfully green, he would not leave camp for a long time and had absolutely no mouth’.¹¹

The horses had to get used to the British manner of bridling a horse. Not all the imported horses were, for example, accustomed to the different bits used by the British and some of the horses were not trained in the usage of equipment particular to the British cavalry, having come from a variety of countries in which very different systems of control were deployed. Moreover, regional varieties in training and horsemanship had a damaging effect.¹² Every horse that died during battles was replaced with an equally unfit and untrained horse. Horses were scattered around the country. Dying, exhausted and sick horses were spread far and there was no one to collect and look after them. They were often shot to relieve them from their misery. Captain Pott lost several horses and recalled: ‘I had to shoot my pony Long Tail as he fell on the march and was unable to get

⁸ Pott, R.B. ‘With the 36th West Kent Squadron Imperial Yeomanry in South Africa’ January 9 1900-July 19 1901, diary: entry Monday 24 September, 1900, p.158.

⁹ *Ibid.*, p.109.

¹⁰ *Ibid.*, p.24.

¹¹ *Ibid.*, p.127.

¹² Swart, S. ‘Last of the old campaigns, equine mortality in the South African War, c.1899-1902’, Chapter 6 from draft manuscript ‘Riding High-essays on horses and history in southern Africa’, p.9.

up again. This is a great loss as he has done me well'¹³ and in a later entry: 'All mounted troops except my half Squadron out for fifteen hours, with one hours rest. Several of our horses had to be shot today owing to their exhausted condition'.¹⁴ Watkins-Pitchford also wrote in one of his letters: 'It was easy with the horses to put the poor brutes out of their pain, shooting them where they stood, or lay, with a revolver...'.¹⁵ A lot of horses needed to be put down, especially during the beginning of the war, whereas the year before the war in South Africa, an edition of *War Establishments* published that there were 'no provision of any kind existed for the care of sick animals in the Field'.¹⁶ This only changed much later when the effects of specialised care became more obvious and cost effective.

The guerrilla stage of the war was affected by the employment of untrained and unconditioned horses for the hardest work which army animals can be called upon to perform. This was aggravated by insufficient rations and the employment of men for mounted duties who were completely inexperienced when it came to the care of animals. The cavalry often overestimated the available energy in unfit and underfed horses and underestimated the length of time necessary for conditioning the horses. Motorised vehicles were considered, but the English were practically ignorant of the employment of this type of transport across the trackless wastelands found in the Karoo.

The care of animals when dead or ill was not regarded the duty of the Remount Services. Their functions were limited to horses and mules in perfect health and fit for duty. The seriousness of some diseases such as glanders and mange was disregarded or not recognised and the infected horses were returned to Remount Depots and farms to recuperate, therefore facilitating the spread of such diseases. As mentioned before, when horses were seriously ill, they were put down in order to save forage. However, it was not realised that once these horses recovered, they were stronger and less likely to get sick again.

¹³ Pott, R.B. 'With the 36th West Kent Squadron Imperial Yeomanry in South Africa' January 9 1900-July 19 1901, diary entry: Monday, 6 August, 1900, p.125.

¹⁴ Pott, R.B. 'With the 36th West Kent Squadron Imperial Yeomanry in South Africa' January 9 1900-July 19 1901, diary entry: Wednesday 20 February, 1901, p.251.

¹⁵ Watkins-Pichtford, H. '*Besieged at Ladysmith, a letter to his wife, written in Ladysmith during the siege*', 13 December 1899, p.41

¹⁶ Smith, F. '*A History of the Royal Army Veterinary Corps, 1796-1919*', London, 1927, p.203.

The staff of the Remount Service consisted mainly of inexperienced, untrained and sometimes unsatisfactory officers.¹⁷ A radical change was necessary and only carried out in the middle of 1900 when a veterinary officer was placed in charge of a Remount Depot. This brought about a revolution in management. Generally, not much effort was made regarding the maintenance of horses as this was regarded as being unnecessary. The war was thought to end soon.

2.2. South African warhorses

Although having a considerable advantage to the imported horses used by the British regiments, the South African warhorses had a lot to endure. There were a lot of aspects influencing their care and, therefore, their health. It becomes clear that although African horsesickness prevailed during the second summer of the war, other issues made it difficult for the horses to withstand diseases in general.

The South African War was one of the last wars where horses played such a vital role before the application of the internal combustion engine for military purposes.¹⁸ Horses and mules were still used in World War I but to a very limited extent. The importance of the horse declined in a post-war Britain as both transport and machinery became increasingly mechanised.¹⁹ The last time that horses were effectively used and seen in modern warfare was during the Polish cavalry's suicidal charge against German tanks in World War II.²⁰ War was no longer conducted by the ancient principle of the 'bare breast to the cold steel',²¹ and the South African War was carried out by vastly improving methods of explosives, with consequent firing at long ranges; by hurriedly constructed trenches, and by the maximum of mobility which alone can be secured by a mounted or rather a dismounting infantry. This necessitates a very much enlarged supply of horses. Obviously, horses during the South African War were absolutely essential.

To really understand the difference between the horses used in South Africa and the horses imported by the English, it is necessary to shortly illustrate from where the South

¹⁷ Smith, F. *'A Veterinary History of the War in South Africa, 1899-1902.'* 1919, p.vii.

¹⁸ Van der Merwe, F. 'Horses in the Anglo Boer War, the last of the warhorses', part I, *Farmer's Weekly*, 10 September, 1999, p.24.

¹⁹ Hunter, P. *'Veterinary Medicine, a guide to Historical Sources'*, 2004, p.23.

²⁰ Van der Merwe, F. 'Horses in the Anglo Boer War, the last of the warhorses', part I, *Farmer's Weekly*, 10 September, 1999, p.24.

²¹ Unknown, 'The Future of Horses', *Agricultural Journal*, Vol.16, 1900, p.540.

African horses came. As the country did not have any indigenous equines, it needed to import horses from the moment Van Riebeeck came ashore at the Cape. These imported horses were bred with other horses coming from different parts of the world. The Javanese pony changed considerably during the almost two-hundred and fifty years between 1652 and 1899. Significant improvements had been conducted by the import of Persian stallions by Simon van der Stel in 1689 and a later introduction of Andalusian horses from Spain, Arabs from the Middle East, English thoroughbred, Hackney and Cleveland Bay from Britain and in some cases even stallions from Boston.²² This mixture of imported breeds produced a unique product in the eighteenth and nineteenth century, known as the Cape horse. This horse was entirely adjusted to the changing quality of pastures and hard work under the saddle and harness. The colonial veterinarian, Hutcheon, had the following to say about the Cape horse:

‘The Colonial horse is in my opinion well suited for military purposes. He can stand all weathers, heat, cold or rain; he is active and courageous, and can travel long distances day after day on a limited allowance of grain and what he can pick up in the veldt.’²³

This significant improvement in the breeding of the horses and the fact that they were bred and born on South African soil, making them fully accustomed for generations to the harsh conditions of nature and diseases such as horsesickness, gave them a considerable advantage over the imported warhorses that did not adapt to the harsh environment. The Cape horses enjoyed a further advantage over the imported English horses when it came to shoeing. Most of the burgher’s horses did not need horse shoes, whereas it was necessary for the English horses as they were only used to soft grassy soils from their homeland. This increased the war costs and had an impact on the speed of the guerrilla warfare. Farriers needed to be appointed, shoes were costly and it was time consuming to shoe the horses in all the regiments on a regular basis. Commandant G. Vilonel had the following to say about the English horses in a conversation with the *St. James Gazette*:

‘I am of opinion that you made a mistake in bringing English horses [by which he meant the English thoroughbred] to this country; it would have been both better and more economical to have procured your horses out here. The English horse does not understand grazing; if he does graze the veldt grass does not nourish

²² Van der Merwe, F. *Horses of the Anglo Boer War*, 2000, p.8.

²³ Hutcheon, D. ‘Cape horses’, *Agricultural Journal*, July 12, 1888, p. 65.

him. Mealies does not suit him because they are too binding. If he does not actually fall sick he soon becomes very poor. I am not for one moment condemning the English horse. I consider him the finest of this kind. I simply wish to point out that he is altogether unsuitable for campaigning on the veldt.²⁴

The British remounts struggled with their horses in the veldt. It soon became clear that the English horses were not suitable and adapted poorly to local conditions. They were easily exhausted and, therefore, much more susceptible to diseases such as horsesickness. Most of the horses from the burghers spent most of their lives in the veldt and developed a certain immunity towards the disease.

The conduct of the war was dependent on riding and drafting horses and mules as the armies needed to travel over vast and inhospitable territories. Although the journeys were hard and extremely long for the horses, nothing was done to provide for the care and feeding of animals with an army in the Field of Britain from 1856 to 1900.²⁵ Most of the horses died from insufficient feeding and overwork. The nature of the terrain, the distances that needed to be covered, the extreme climate and the armies the horses had to fight against produced an enormous loss in animals. The British losses were high: 326 000 horses, 51 000 mules and 195 000 oxen with an estimated value of twenty pounds on average.²⁶ However, these are not complete figures as thousands of animals were taken from the burghers and used in the English army. It can be stated in terms of average daily loss that this amounted to 336 horses, fifty three mules and two hundred oxen dying daily throughout the thirty-two months the war lasted. Many officers did not have any knowledge regarding stable management and it was only after the South African War that this topic roused more interest and was considered in the Cavalry Regiments training programme.

²⁴ Vilonel, G. 'The Boers and their Horses', *The Agricultural Journal and Mining Record*, Vol.3, 1898-1899, p.551.

²⁵ Smith, F. 'A Veterinary History of the War in South Africa, 1899-1902.' 1919, p.IV.

²⁶ *Ibid.*



Figure 1: A fully equipped British soldier and his horse

Army horses can be divided into three classes: cavalry horses, infantry horses and artillery horses.²⁷ Cavalry horses were the most difficult to obtain. These horses needed to have stamina, speed, power and a good temperament and be able to handle heavy equipment. The cavalry saddle with a full equipment

weighted about seven stone²⁸ (44,8 kg) and including the weight of a soldier, the horses needed to carry twenty stone (128 kg) walking distances from eighty kilometres a day on an average speed of 14 ½ km.²⁹ This overloading of horses had a serious impact on them. Not only causing back problems, the horses were overworked and tired and without getting the time to recuperate, the horses were very susceptible to diseases. Captain Pott wrote down on 12 January 1900:

‘All the oxen were dead beat and we did not arrive in camp until 6.30 pm that is fourteen hours under saddle, men and horses being without food while the continuous strain all day long was very trying.’³⁰

The only possible way to lighten the load of the horses was to reduce the size of the cavalry soldiers and adapt the bridles and saddles.

The stamina of the horses played an important role since the cavalry soldiers needed to run towards the enemy and shoot at him from the saddle. As mentioned before, the cavalry saddle with full equipment weighs about seven stone, so that an average man, say twelve stone in weight, rode his horse at the cruel weight of nineteen stone. With this weight on their backs, the cavalry horses were expected to be able to move from place to

²⁷ Van der Merwe, F. ‘Horses in the Anglo Boer War, unsung heroes-the British army horses’, part II, *Farmer’s Weekly*, 17 September, 1999, p.20.

²⁸ 1 stone = 14lb. = 6.4 kg

²⁹ Du Toit, K. *‘Boerperd, die Geskiedenis van die S.A. Boerperd’*, draft manuscript, 2007, chapter 4, p.5.

³⁰ Pott, R.B. ‘With the 36th West Kent Squadron Imperial Yeomanry in South Africa’ January 9 1900-July 19 1901, diary entry: Saturday 12 January, 1901, p.226.

Figure 1: Pott, R.B. ‘With the 36th West Kent Squadron Imperial Yeomanry in South Africa’ January 9 1900-July 19 1901, diary entry: Saturday 12 January, 1901.

place at the rate of nine miles (14,5 km)³¹ an hour; they were expected to be able to charge at a retreating enemy at the end of a long day.. They had to be prepared to do scouting work, crossing hilly terrain all day, varied by hurried retreats at full gallop under fire.

Saddle, wallets, carbine bucket	31 lb 6 oz
Bridle	7 lb
Shoes and nails	2 lb
Lance	4 lb 8 oz
Carbine	8 lb
Sword	3 lb 14 oz
Ammunition carbine (150 rounds)	9 lb 6 oz
Bandolier, mess tin, full water bottle	7 lb 4 oz
Knife, towel, etc.	8 oz
Food (groceries 2 days, meat 1 day)	10 lb
Great coat, forage nets, saddle blanket and mimnah	27 lb
Emergency ration	1 lb
Total	115 lb 2 oz
Average weight man	166 lb
GRAND TOTAL	281 lb 2 oz

The burghers did not receive horses from the government and the burghers on commando used their everyday horses which were born and bred in the country. These horses were not taken seriously by the British as they were regarded as being too small and unsuitable for the British cavalry and artillery. Hutcheon said the following about the English horse: ‘I do not consider the English troop horse is adapted for South Africa, he requires so much food and care’.³³ These well-groomed horses made a dashing appearance and were in sharp contrast with the smaller South African counterparts.³⁴ However, it soon became clear that their exceptional performance in the field, compared to that of the imported horses, was outstanding. None of the imported horses could compare with the South African home product with regards to efficiency and every British soldier who could, got hold by hook or by crook, of what he called a Boer pony.³⁵ The answer to the question on ‘how do the merits and demerits of animals compare’ to South Africa in a questionnaire with regard to Remounts addressed by the Quartermaster-general to

³¹ 1 mile = 1.6 km

³² Figure 2: Du Toit, K. ‘Boerperd, die Geskiedenis van die S.A. Boerperd’, draft manuscript, 2007, chapter 4, p.6.

³³ Hutcheon, D. ‘Cape horses’, *Agricultural Journal*, July 12, 1888, p. 65.

³⁴ Van der Merwe, F. ‘Horses in the Anglo Boer War, unsung heroes-the British army horses’, part II, *Farmer’s Weekly*, 17 September, 1999, p.20.

³⁵ Tydlen, G. ‘Ponies in Warfare, with especial reference to South Africa’, *Military History Journal*, Vol.1, No.3, December 1968, p.35.

Officers employed in South Africa, was apparent. Lieut-Colonel W. Birbeck, assistant Inspector of Remounts answered:

‘There are very few South Africans [horses] that can be called horses, except from Natal, but whenever we have got one he has been quite the best. A hard, wiry, well-bred animal, he is very quiet, and able to take care of himself on the veldt, and live on the worst of forage and water.’³⁶

Veterinarian Major A.H. Lane was even more articulate and said:

‘This was the fatal mistake we made in South Africa in 1899. Thousands of hard little horses could have been procured. But these were allowed to be taken by the enemy, and we imported a comparatively useless animal at about double the cost. Had the War Office listened to advice from South Africa, 1899-99, our columns during the first part of the war could have been well mounted on local horses. But the enemy (the burghers) got these and we tried to get near them with men mounted on soft, unseasoned animals.’³⁷

This was not the only problem. The British experienced difficulties even when buying locally bred horses and were unable and untrained to make a distinction between the horses which were available and the specific task they could be useful for in the army.

‘To buy a horse in one’s own country is quite difficult enough, and requires no little tact, patience, knowledge and confidence. But it is infinitely more difficult to buy many thousands in a hurry in a strange country’³⁸ L.S. Amery

When they started to buy South African horses, they were unaware of the fact that their saddles were not adapted for usage with a smaller type of horse. African horses used in the South African War were small and required a small saddle. The enormous saddles brought out by the first lot of Yeomanry smothered the small ponies and added unnecessarily to the burden they had to carry.³⁹ This quote demonstrates that although the British army had spent money to buy the horses, it was very doubtful that they made the right decisions concerning the purchase of South African horses. The total cost of acquiring the horses was £15 339 142, which was no less than almost seven percent of the total cost of the war which was £222 974 000.⁴⁰ This percentage does not include the logistical costs such as the veterinarians, feed, saddles and farrier costs. Since 1888 a

³⁶ Army remounts, ‘*Reports, statistical tables and telegrams received from South Africa*’, June 1899 to January 22, 1902, p.19.

³⁷ Lane, A.H. ‘*Horses for War Purposes*’, no publisher, no date.

³⁸ Du Toit, K. ‘*Boerperd, die Geskiedenis van die S.A. Boerperd*’, draft manuscript, 2007, chapter 4, p.4.

³⁹ Unknown, ‘African Horses’ *The Agricultural Journal and Mining Record*, Vol.4, 1901-1902, p.126.

⁴⁰ Du Toit, K. ‘*Boerperd, die Geskiedenis van die S.A. Boerperd*’, draft manuscript, 2007, chapter 4, p.4.

voluntary registration arrangement existed with horse owners owning more than twenty horses, to make a proportion of their horses available to the army. The owners were paid ten shillings per horse a year. Section 115 from the Act of the Cape Armed Services was revised as from 1897 in order to include the right of the army to buy any horse in the country if there was a raid in the Colony from the Boer republics.⁴¹ There were 14 105 horses made available and the British only bought 10 000 for an average price of £52/10 a horse. The exchange value of a horse was four to five cows and during 1901, 60 000 captured or confiscated animals were traded for horses.

2.3. Imported horses

Horses used in the South African War consisted of more than just locally bred horses. Keeping up the supply of horses was difficult. The selection in the case of horses was normally done more strictly than in the case of men. It is marvellous what a small percentage of the horses of any country were suitable for military purposes. From three million horses available, only a hundred thousand were suitable with regards to age, size, muscular development and other qualities for the work of a campaign. In ordinary military campaigns, about twenty thousand horses are required for each army corps.⁴² The great distances and difficult conditions in South Africa, however, necessitated a much larger supply.

The British forces imported more than 400 000 horses from various parts of the world. This was problematic as many of the imported horses simply served as channels for the introduction of diseases such as strangles, mange, equine influenza and glanders.⁴³ Thousands of animals were to be passing through the ports of the Colony and no early arrangements were made for the inspection on the

arrival of the first imported horses.⁴⁴ There was no reception of sick horses or measurements in place for



Figure 3: Off-loading of imported horses from the ship when arrived in Cape Town

⁴¹ Live Stock Journal, 'The Horse Supply of the Empire', *Agricultural Journal*, Vol.16, 1900, p.3.

⁴² Unknown, 'Horse Waste in War', *Journal of the Cape of Good Hope*, 1901, Vol.19, p.297.

⁴³ Knesl, O. '*Veterinary Surgeons*', no publisher, no date, p.66.

⁴⁴ Smith, F. '*A Veterinary History of the War in South Africa, 1899-1902.*' 1919, p.12.

Figure 3: Pott, R.B. 'With the 36th West Kent Squadron Imperial Yeomanry in South Africa' January 9 1900-July 19 1901, diary entry: Saturday 12 January, 1901.

isolating sick animals, no storage accommodation was yet provided and no clerical staff. Basically nothing was done in order to prepare for what promised to be a big war. There were no veterinary stores available on the arrival and it was only later remount ships that brought medical supplies in bulk. The Field Army did bring veterinary equipment lacking reserves to replenish them and no material could meet the demand being put forward. Many of them were offloaded in Table Bay.⁴⁵ After the offloading, the horses were dispatched along the railway line passing through the Karoo. The majority of the horses came from the United States and England. It was a good time to buy horses from England as the horse tram was replaced by an electrical one. This made the price of the horses drop to £55 a horse. The safest countries to buy horses from were India, South Africa, New Zealand, Australia and Canada. They were aware of the fact that horse and mule breeding in India was maintained out of love of the animal having a positive impact on the quality of the horses. Only the best horses from good blood lines were used for breeding while minimising inbreeding. A focus on a small number of high quality horses was possible because it became unnecessary to keep up large forces of cavalry as was the case during the ascendancy of the Mahrattas and later of the Sikhs.⁴⁶ Railways made the transport of grain convenient and profitable, and it was no longer necessary to turn the grain into horseflesh, which could be walked to the nearest market. The Commission that was directed to make enquiries about horse breeding in India, in order to explore the opportunity of horse export from there, concluded that the horse breeding carried out the past twenty four years, failed to answer the expectations it was intended to fulfil. There was almost no supply of horses fit for the Indian Army remounts, let alone to export to South Africa. The Australian and New Zealand horses were strong but lacked the recuperative power of the English horses.⁴⁷ The French government, thus also Morocco and Algeria, did not allow the export of horses. The horses from the Scandinavian countries were too expensive and the horses from Poland and Italy were not suitable for war. Horses from Mexico were too small, finely built and limited while the shipment of horses from Chile was too expensive and took too long.

⁴⁵ Van der Merwe, F. 'Horses in the Anglo Boer War, the last of the warhorses', part I, *Farmer's Weekly*, 10 September, 1999, p.24.

⁴⁶ VAB CO 77 [2110/02]' Report of the Horse and Mule Breeding Commission assembled under the Orders of the Government of India', 1900-01, p.61.

⁴⁷ Army remounts, 'Reports, statistical tables and telegrams received from South Africa', June 1899 to January 22, 1902, p.6.

During wartime, every continental country had its agents scouring the British Isles bent on securing the very pick of the British three year olds, generally young mares.⁴⁸ The natural consequence of course, is that both in quality and number, the supply of four year olds obtainable by the authorities was being steadily reduced. There were no long term contracts given to the British appointed agents who bought horses for the army in different countries because they thought the war would be of a short nature and they were often accused of incompetence and corruption.⁴⁹ Traders did not want to keep horses over a long period of time and four weeks was too short to give decent training to a horse. Depots were necessary to process and resting the animals before they were shipped off. Horses coming from the United States needed to travel three thousands miles before being shipped to South Africa. The average price a horse in Canada was \$140 and \$150 Canadian dollar, Argentina £8, Australia £16, England £40 and Lesotho £15.

One of the lessons that the British military authorities took home with them during the South African War was the lamentable lack of horses suitable for the purpose required. This was due to the inexperience of the agents buying the animals and the mere fact that the horses were bred in a different country, having distinctive habits, eating dissimilar food and accustomed to other environments and weather. In a manner of speaking, the whole world was acquired to keep the army fed with remounts and the consequences were that (having to buy under the urgent necessities of the case, which precluded delay, and in which even the price was a secondary consideration) a large number of unsuitable horses were imported from Argentine, Brazil and elsewhere.⁵⁰ The serious shortage in horses was also responsible for the unmeasured importation.

Imported horses had a much higher probability of dying. If they did not die from diseases already contracted and were able to survive the transportation without convalescence, they were likely to die from exhaustion, as they were insufficiently fed, or diseases as they were much more vulnerable to illnesses because of their poor condition and conditions of pitiable hygiene. Two and a half percent of the horses died at sea.⁵¹ When Captain Pott came to South Africa by ship, he gave a clear description of his sea voyage in his diary. He wrote: ‘This is a fine vessel. We are about 1450

⁴⁸ ‘Horses for the Army’, *The Friend*, 30 July, 1909.

⁴⁹ Singleton, J. ‘Britain’s Military Use of Horses, 1914-1918’, *Past and Present*, No.139, May 1993, p.181.

⁵⁰ ‘Horses for the Army’, *The Friend*, 30 July, 1909.

⁵¹ Du Toit, K. ‘*Boerperd, die Geskiedenis van die S.A. Boerperd*’, draft manuscript, 2007, chapter 4, p.10.

passengers aboard, 480 horses, 10 000 ton of coal and six dogs. Stables well ventilated but they naturally smell a good deal'⁵² and two weeks later he recorded: 'A mare usually ridden by Trooper Hutchence died today about 6.30 pm from internal inflammation and was thrown overboard'⁵³ which was not an isolated case and depicts rather well the situation on many ships transporting horses.

One of the major problems was the insufficient supervision by officers and crew. The majority of these supervisors had no previous experience in handling horses. Eventually private veterinarians were appointed to accompany the horses during those long sea voyages and they were motivated to keep those horses alive by a bonus paid out to them from the army if they had a mortality percentage lower than seven percent.⁵⁴ The subordinate staff for veterinary duties was a matter of difficulty: 'Men do not volunteer at a crisis of this kind in order to find themselves looking after sick horses!'⁵⁵



Figure 4: Horses in cattle trucks

Trains were also used as the railway line from Cape Town to Johannesburg was finished in 1892. It was possible during the war to transport horses from Cape Town harbour to Pretoria. A lot of horses died because of the weak railway networks.⁵⁶

The floors in the trucks were unsuitable for the transportation of horses. The floors were too slippery, the walls and partitions of the trucks were unfinished and injured the horses during the travelling, not to mention that the horses were still exhausted and weakened from the sea passage. Pott mentioned: 'All day in the train, country curious, big sandy plains and high mountains. Three times a day horses are watered and fed and difficult and dangerous job it is, to take some out to get one up that

⁵² Pott, R.B. 'With the 36th West Kent Squadron Imperial Yeomanry in South Africa' January 9 1900-July 19 1901, diary entry: Thursday 1 March, 1900, p.3.

⁵³ *Ibid.*, p.19.

⁵⁴ Knesl, O. 'Veterinary Surgeons', no publisher, no date, p.66.

⁵⁵ Smith, F. 'A Veterinary History of the War in South Africa, 1899-1902.' 1919, p.21.

⁵⁶ Du Toit, K. 'Boerperd, die Geskiedenis van die S.A. Boerperd', draft manuscript, 2007, chapter 4, p.17.

Figure 4: Pott, R.B. 'With the 36th West Kent Squadron Imperial Yeomanry in South Africa' January 9 1900-July 19 1901, diary entry: Saturday 21 April, 1900, p.38 and Monday 23 April, 1900.

had fallen and was being badly mauled' and two days later he entered: 'Quiet day in camp after long railway journey, horses badly knocked about'.⁵⁷ It was impossible to water the animals in the cattle trucks and the exigencies of train service did not permit horses being taken out of the trucks more than at most once every twelve hours.⁵⁸ It was regarded dangerous to feed and water the horses in the trucks, thus most of the horses were not fed or watered during the entire train voyage, arriving exhausted and starved which rendered them susceptible to illness. Cleaning out and sanding of the trucks and their periodical disinfection was a matter of great importance but it was rarely attended to. Only later, when lessons were derived from the South African War, importation of horses was not made easy and had to comply with strict regulations.⁵⁹ If the imported horses were able to survive the sea journey and the long train voyage under these strained conditions without any recuperation time, they had the problem of dealing with the local weather conditions.

Horses coming from the northern hemisphere arrived in South Africa with a thick winter coat. After a few weeks they started to adapt to the warm weather but were unable to grow a new winter coat when winter arrived. It was only later that they realised it was much better for the horse to clip their winter coat and embark rugged for the voyage.⁶⁰ Horses needed a lot of energy to keep themselves warm without proper and sufficient feeds. This weakened the horses even more and some of them were unable to cope and died while others were in such a weak condition, they got ill very easily. The main cause for the weak condition of horses was the insufficient feeding and the lack of recuperation time. The English were aware of the scarce feeding allowance, but were convinced that the field pastures would complete their dietary requirements without considering the maladjusted digestive systems of the horses. The British troopers were not aware of the different dietary requirements and did not understand them.⁶¹ Droughts, locusts plagues and the Scorched Earth Policy⁶² employed by the English left behind a minimum of

⁵⁷ Pott, R.B. 'With the 36th West Kent Squadron Imperial Yeomanry in South Africa' January 9 1900-July 19 1901, diary entry: Saturday 21 April, 1900, p.38 and Monday 23 April, 1900, p.39.

⁵⁸ Army remounts, 'Reports, statistical tables and telegrams received from South Africa', June 1899 to January 22, 1902, p.6.

⁵⁹ TAB TAD 209 [A.4672], letter from Private Secretary, 25 March 1909, to Louw, G.

⁶⁰ Army remounts, 'Reports, statistical tables and telegrams received from South Africa', June 1899 to January 22, 1902, p.18.

⁶¹ Head, A. 'The Wear and Tear of Horses during the South African War', *Comparative Pathology and Therapeutics*, Vol.16, 1903, p.301.

⁶² Scorched earth policy entailed destroying farms and acres of cultivated land to deny grain and other cultivations to the burghers

grazing paddocks. Plant poisoning was another factor influencing the health of the horses. There are a number of poisonous plants in the region such as tulips, ink-braches and oleanders. Some of them can cause digestive irritations, instigating colic, gastro-intestinal irritation, nervous convulsions, giddiness and symptoms resembling alcoholic poisoning.⁶³ Captain Bertram recalled in his diary: 'Many horses dying of colic, it is feared they are eating a poisonous grass of some sort'.⁶⁴ Publications aiding the regiments with their lack of horsemanship, made them aware of the tulips which grow on the borders of rivers and in marshy places.⁶⁵ It was not uncommon for horses to eat plants and grasses they should not. In general horses were starving and would eat poisonous plants and the imported horses were not aware of the existence of these plants. Without a scavenger corps to bury the dead animals, the water and air got contaminated by rotting horsemeat. Dead horses were lying in the streams, used for drinking by other horses and troops, and thus polluted whole areas with diseases.

Major-General Sir Frederick Smith (author of *A Veterinary History of the War in South Africa, 1899-1902* and *A history of the Royal Army Veterinary Corps, 1796-1919*) noted:

'The British Forces were tied down to certain localities beyond which they could not move; not only did local grazing rapidly become exhausted, but English horses, used to manger feeding, were as helpless on the veldt as the townbred soldier. They did not know what was expected from them; when they had purchased a little experience, the grazing had been eaten up by mules and herds of oxen. It seems to have been forgotten that the English troop horse was not a Boer pony. He was a newly arrived foreigner, unacclimatised, ignorant of the country, weak from a long voyage – having had no rest, and had recently left a comfortable stable where he had always been hand fed and kept tied up. He had no experience of hot dusty days and tropical deluges by night, yet he was expected to behave as if immediate adaption to the methods of the animal of the country were possible.'⁶⁶

The burghers' horses relied on hay and no regular hay ration existed as there was no necessity for rations at that point. The hay was supplied, without keeping in mind factors such as draught, the number of imported horses and other animals grazing their pastures

⁶³ Swart, S. 'Last of the old campaigners', equine mortality in the South African War, c.1899-1902', Chapter 6 from draft manuscript 'Riding High-essays on horses and history in southern Africa', p.11.

⁶⁴ Pott, R.B. 'With the 36th West Kent Squadron Imperial Yeomanry in South Africa' January 9 1900-July 19 1901, diary: entry Wednesday 24 October, 1900, p.178.

⁶⁵ Unknown, 'The Management of Horses, Mules and Oxen while on Field Service in South Africa', *The Agricultural Journal and Mining Record*, Vol.2, 1899-1900, p.704.

⁶⁶ Knesl, O. *Veterinary Surgeons*, no publisher, no date, p.67.

would consume. Under ordinary peaceful conditions the excellent grazing available during the summer on non-Karoo veldt rendered a hay ration unnecessary. British forces were tied down to certain localities beyond which they could not move, causing the grazing land to become rapidly exhausted. But the English horses, that were used to manger feeding, were just as helpless in the veldt. Not knowing what was expected from them and having no or little experience, they could not graze as they were unfamiliar with the pastures or it was eaten up by mules and herds of oxen.

The dead animals lay everywhere. There were no means of coping with their disposal as there was no labour force for burials and no fuel for burning. A solution was presented by the carcasses themselves which was an economical means of rapidly disposing of the dead animals. The fine dry air of the country rapidly desiccated the remains. Therefore, Lieut.-Colonel Flintoff introduced the South American method of using dried animal material as fuel.⁶⁷ The dried mummified remains were easily ignited and one carcass served as fuel to consume another. However, this method was only applicable for some months until the carcasses were dry, in the meantime, the air remained poisoned. Burial was not that straightforward as digging a pit for one horse is already a big undertaking. A pit to hold fifty or a hundred bodies was an immense task, requiring a small army of labourers. Finding a suitable site for such a burial was another task. One citizen was very upset as he wrote to the Deputy Administrator:

‘...my house has barely been habitable of late, especially on the last two Sundays, owing to dead horses being allowed to lie unburied on a portion of Mr. Deale’s veldt. Already I believe have 9000 horses been buried in this one spot during the last 9 months, but are not sufficiently covered to avoid very bad smells, causing all of us living near much discomfort.’⁶⁸

Burying the dead animals was not that easy. The pit needed to be deep enough and covered sufficiently. Horses needed to be dragged by hand for considerable distances when buried in a pit. However, complaints, such as the above quoted, were inadequately responded to, as the only recommendation was to discontinue the practice of burying horses so close to private dwellings.⁶⁹ No proper solutions were brought forward to

⁶⁷ Smith, F. *A Veterinary History of the War in South Africa, 1899-1902.* 1919, p.296.

⁶⁸ VAB CO 9 [685/01], letter from Sheppy E., Bloemfontein 1 April 1901, to the Deputy Administrator.

⁶⁹ VAB CO 9 [685/01], letter from the secretary of government offices, Bloemfontein 6 April 1901, to the O.R.C. Administration.

attend to the ineffective covering of the rotting carcasses which had serious obvious implications.

On the scale with which destruction had to be carried out in South Africa, there was practically no method of rapidly dealing with the dead.⁷⁰ The Secretary of State of War was addressed in Parliament on the question of cremation being a solution for dealing with the carcasses. The suggestion was made without taking into account the fact that the country did not possess any fuel to burn carcasses with. However, early in 1902, an incinerator was erected in connection with the veterinary hospital of Pretoria having a capacity of fifteen horses a day costing 150 lb of coals per head. Practice found, though, that no more than ten carcasses a day could be handled and the fuel consumption was much higher than originally expected.⁷¹ Basically, the dead horses were free to spread diseases and contaminate air and water.

As the war progressed and the dependency on horses became very clear, the general army command and the officers started to take the problems of handling horses in transit very seriously although it can be difficult to know how much of their concern was directed towards the horses and how much was prompted by the loss of government property and the taxpayer's money. Efforts were made to tighten control measures. Veterinary care of horses, mules and oxen were improved by control measures. Infrastructure was developed to improve the care and handling of the horses. The British army encompassed depots for receiving and dispatching horses, hospital camps, rail transport inland, shoeing at depots and in the field, fodder provisions, and provisions and repair of tack.⁷² Some of the hospital camps were transformed after the South African War for police purposes or the segregation of lunatics and lepers.⁷³

In short, British remounts and their imported horses suffered from overloading, physical maladaptation, underfeeding, sore backs, glanders, mange, African horsesickness, biliary fever and other tick borne afflictions to which imported horses were particularly susceptible to. When the war was over, the British army had 131 000 horses, 76 000

⁷⁰ Smith, F. 'A Veterinary History of the War in South Africa, 1899-1902.' 1919, p.296.

⁷¹ *Ibid.*

⁷² Van der Merwe, F. 'Horses in the Anglo Boer War, unsung heroes-the British army horses', part II', *Farmer's Weekly*, 17 September, 1999, p.22.

⁷³ VAB CO 605 [678/01], letter from the Public Health Department, Bloemfontein, 14 April 1909, to the Under Colonial Secretary, Bloemfontein.

mules, 12 800 donkeys and 7 400 oxen in the country. The majority of these animals were issued to farmers or previous owners by the Repatriation Department or sold to private individuals in the Cape and Natal.⁷⁴ However, many of these horses were unsuitable for local conditions. They were imported into the country but were not appropriate for South Africa.

3. The Impact of the War

3.1. Veterinarian care of animals

Difficulties in the care for the animals impeded on their health but it is important to take note of the intended help for the animals from the two armies. Due to the fact that the British side was not involved in the problem of horsesickness, it will not be discussed here in great detail. However, this does not imply that the British army did not have veterinarians in their remounts as Captain Pott marked: ‘The march was without incident except that Vet. Lt. Wallis, Scott and I were instrumental in saving the life of a newly born foal’.⁷⁵ The British Army Veterinary Department consisted of sixty-three veterinary officers, five short of peace strength, and possessed no reserve of officers at the outbreak of the war in 1899.⁷⁶ The already diminutive veterinary establishment in India was reduced, leaving no one in England except the War Office and Educational Staff. A total of sixty-one veterinary officers could be gathered for the war. It consisted of a loose bundle of units, with no veterinarians or farriers of its own, stretched beyond their capacity having no executive control.⁷⁷ The Army Veterinary Department needed to create a Civil Veterinary Service in order to supply additional numbers. There was no single veterinary service under a central administration, only several small groups of veterinary officers working independently of each other. There were various administrations including the Army Veterinary Department which employed civil veterinary surgeons, the Imperial Yeomanry which operated on a regimental basis, the Natal Volunteer Veterinary Corps and the Canadian, Australian and New Zealand Veterinary contingents. Most of the men employed by the Army Veterinary Department

⁷⁴ Van der Merwe, F. ‘Horses in the Anglo Boer War, unsung heroes-the British army horses’, part II’, *Farmer’s Weekly*, 17 September, 1999, p.22.

⁷⁵ Pott, R.B. ‘With the 36th West Kent Squadron Imperial Yeomanry in South Africa’ January 9 1900-July 19 1901, diary entry: Wednesday 22 August, 1900, p.135.

⁷⁶ Knesl, O. *Veterinary Surgeons*, no publisher, no date, p.64

⁷⁷ Swart, S. ‘Last of the old campaigners’, equine mortality in the South African War, c.1899-1902’, Chapter 6 from draft manuscript ‘Riding High-essays on horses and history in southern Africa’, p.14.

were untrained and uneducated in terms of horsemanship skills.⁷⁸ This was a difficult situation and hampered the treatment of the animals. The treatment of sick animals in the Districts was often performed almost exclusively by Farrier Sergeants who were ‘quite qualified to treat simple cases, but in obscure cases and in urgent surgical operations the work is quite beyond their skill’.⁷⁹ It was comprehended that many animals might have been saved if they could have been treated by a veterinary surgeon. However, there were only two veterinarians appointed on the burghers’ side.

On the day peace was proclaimed there were 28 700 sick horses and mules in South Africa. Of these 19 500 were in fifty hospitals. The bulk of the cases admitted to the veterinary hospitals and debility farms in the later part of the war consisted of debility and mange cases although it must be noted that the class of cases admitted to the hospitals and that occurring in the field was different, with many horses succumbing to horsesickness, tulip poisoning and other rapid infections, never surviving long enough to be hospitalized.⁸⁰

UNITS	NUMBER
Veterinary Officers	63
Civil veterinary surgeons	113
European dressers	79
Indian dressers	528
Civil farriers, conductors and clerks	217
South African natives	3547

Figure 5: The Veterinary Service with Units, of which remounts and hospitals consisted⁸¹

These numbers demonstrate that although veterinary service was not really regarded necessary for the army in the beginning, the organised care for the animals was soon put into action to address the problems caused by the terrible state of the animals. The increase in staff for veterinary care was probably done more out of an economical point of view, as it was cheaper to care for animal than to let it die,⁸² as the treasury

⁷⁸ Swart, S. draft manuscript, ‘Last of the old campaigners’, equine mortality in the South African War, c.1899-1902’, Chapter 6 from unpublished manuscript ‘Riding High-essays on horses and history in southern Africa’, p.14.

⁷⁹ VAB CO 336 [7709/04], letter from the Inspector General, Johannesburg 7 October 1904, to the Lieut-Governor of Bloemfontein.

⁸⁰ Knesl, O. ‘The Boer War, a veterinary perspective’, *Historia Medicinae Veterinariae*, Vol. 25, 2000, p.12.

⁸¹ Figure 5: Smith, F. ‘*A Veterinary History of the War in South Africa, 1899-1902.*’ 1919, p.224.

⁸² See Smith, F. ‘*A Veterinary History of the War in South Africa, 1899-1902.*’ 1919, p.224.

compensated the army when a horse died from diseases in a remount,⁸³ it did make a difference. For the horses, however, this was probably too late.

3.2. Problems on the veterinarian front

Veterinary services were seriously affected by the war. This was a serious problem as there was a great need for veterinary medicine during the South African War due to the many animal casualties and the impacts of diseases such as African horsesickness. A considerable amount of functionaries, professionals and others presented themselves for military services causing an acute shortage of an already limited number of people skilled in veterinary medicine.⁸⁴ Edington, Cape bacteriologist, went to Rhodesia to conduct research as that area was not particularly affected by the South African War.⁸⁵ The fact that horses and other animals would play an important role in the war, created a necessity for a specific organisation that would take care of these animals. The Boer republics had two veterinarians in service, Arnold Theiler (see chapter 2) and Otto Henning, while the British forces used 224 veterinarians on their fronts.⁸⁶ Theiler (see chapter 2) worked in the Zuid Afrikaansche Republiek (Transvaal) and Otto Henning worked in the Republiek van de Oranje Vrijstaat (Orange Free State).⁸⁷ Not much was noted of Otto Hennings' activities at that time other than that he was also besieging Ladysmith as part of the Orange Free State Commando.⁸⁸ Theiler was eventually commissioned to report to the Boer forces besieging Ladysmith in November 1899 as an Officer in the ZAR Staatsartillerie, he offered his services to the Commandant-General on previous occasions but was ignored.⁸⁹ He had to inspect and maintain the health of the horses of the Boer forces besieging the town while the Daspoort threatened to close as Theiler's assistants were commandeered and experimentation became almost impossible. His wife was afraid that if the English won, Theiler would lose his job but she wrote: 'they have certainly chosen a bad time as summer is now coming with its

⁸³ TAB PSY 28 [532], letter from secretary of the Transvaal Administration, Pretoria 9 March 1901, to Vaughan Esqre. And TAB TES 6227 [42/176], Compensation for loss of horses hired by the government and taken to horse sickness area.

⁸⁴ Du Toit, P.J 'Veeartsendien Tydens die Oorlog', *Boerders in Suid-Afrika*, August 1941, p.263.

⁸⁵ Unknown, 'Horsesickness', *The Agricultural Journal and Mining Record*, Vol.2, 1899-1900, p.594.

⁸⁶ Du Toit, K. 'Boerperd, die Geskiedenis van die S.A. Boerperd', draft manuscript, 2007, chapter 4, p.22.

⁸⁷ Knesl, O. 'Veterinary Surgeons', no publisher, no date, p.64.

⁸⁸ Knesl, O. 'The Boer War, a veterinary perspective', *Historia Medicinae Veterinariae*, Vol. 25, 2000, p.8.

⁸⁹ Gutsche, T. 'There was a man. The Life and Times of Sir Arnold Theiler, K.C.M.G. of Onderstepoort'. Howard Timmins: Cape Town, 1979, pp.144-146.

terrible storms and flooded rivers, together with malaria and horse sickness'.⁹⁰ As 'horse doctors' to the artillery, veterinarians or other people issued with the care of animals, did not receive immunity like doctors working with the Red Cross so Theiler and his men had to travel armed. Researchers and scientists were very critical about the politics concerning the handling and treatment of the horses. Theiler was convinced that there was not enough effort from the government to acquire descent and suitable horses for artillery and no sufficient training and schooling was given to the men riding the horses for the treatment and handling of their horses.⁹¹

After a few weeks of being active in his regiment, Theiler saw the moral and physical deterioration of the burghers through years of ruination by rinderpest, drought, locusts and pestilences which had degraded the economy.⁹² Researchers employed as caretakers for animals, working together with the burghers, were provided with an opportunity to fully investigate the diseases and their causes responsible for the death of many horses from both sides. Horsesickness was a very important area of investigation although the causes and inoculation methods against horsesickness were virtually unknown. African horsesickness was feared, however it never occurred at the beginning of the war. Theiler rode to several positions to inspect horses but rarely found one in need of his care. The season for horsesickness had not yet started and he rather hoped for interesting war wounds on which he could practise his surgery skills. This was seldom possible as most of the horses were dispatched with a coup de grace. Stable diseases such as glanders were not present, however, the flies feeding on detritus and dead animals presented a dangerous situation for human health. People were afraid that a horsesickness epidemic would strike in the first months of the summer at the commencement of the war, however, regiments struggled more with eye problems among the horses, caused by fly swarms and ticks.⁹³

The British regiments struggled to cope with South Africa's weather conditions and the accompanied insects. Due to the European and British Island's weather, the English traditional grooming included a docked tail. Keeping the tail clean was time consuming.

⁹⁰ Gutsche, T. *There was a man. The Life and Times of Sir Arnold Theiler, K.C.M.G. of Onderstepoort*. Howard Timmins: Cape Town, 1979, p.143.

⁹¹ Van der Merwe, F. *Horses of the Anglo Boer War*, 2000, p.13.

⁹² Gutsche, T. *There was a man. The Life and Times of Sir Arnold Theiler, K.C.M.G. of Onderstepoort*. Howard Timmins: Cape Town, 1979, p.148.

⁹³ Van der Merwe, F. *Horses of the Anglo Boer War*, 2000, p.14.

In South Africa, the practice of docked tails was surpassed as these horses needed their tail to fight off flies and other insects. Imported horses therefore struggled much more with flying insects. According to Theiler, saddle soreness was another major discomfort for horses. A number of, at that time unknown, diseases and skin problems were imported with the hundreds of horses coming from different places around the world. These new diseases influenced the fitness of the burghers' horses and resulted in a weaker immune status. The British War Office bought horses without making sure they were in perfect health due to time constraints. The health conditions of the horses became chaotic. Mange, strangles and glanders was widespread and extensively present. Not only diseases and disorders were imported but a number of foreign weeds and plants as well. Some seeds in foreign forage degenerated South African pastures when they started to grow from the manure. Due to overgrazing, these foreign plants had enough room to grow, taking the place of the local overgrowth. This seriously affected the pastures, affecting the available grazing areas and therefore the condition of the horses. Horses were very much dependent on grazing pastures and due to the diminishing of such pastures, their condition became weaker, subjecting them to several diseases. These were all problems which affected the conditions of the horses in a negative way.

Theiler was later equipped with a mobile field hospital drawn by mules since cattle were still repopulating after the rinderpest epizootic. Much of the transport for both armies was done with horses and mules. When the horsesickness season arrived, Theiler's wife was afraid the Boers would mock her husband for not having a magic potion for the disease.⁹⁴ He was heavily occupied during the early 1900's as many wounded animals from the front arrived with raging horsesickness and lung diseases. Therefore, Theiler did not have much time for experimental research. It cannot be presumed that the full number of African horsesickness cases were recorded but after a mild horsesickness season at the beginning of the war, a total of 5700 horses and 2000 mules died during two subsequent years as a toll paid for operations in deadly areas.⁹⁵ As discussed in chapter 2, contact between veterinarians and farmers was problematic. During the war, interaction between the burghers and Theiler was not an easy matter. It was difficult for him to communicate his technical and methodical visions to the burghers in order to help

⁹⁴ Gutsche, T. *There was a man. The Life and Times of Sir Arnold Theiler, K.C.M.G. of Onderstepoort*. Howard Timmins: Cape Town, 1979, p.152.

⁹⁵ Smith, F. *A Veterinary History of the War in South Africa, 1899-1902.* 1919, p.277.

their horses. He recalled more than once that when he tried to help a burgher: ‘it was not easy to communicate scientific veterinary views to him who had all his life farmed cattle and horses and who considered his opinion to rate equally with that of a diplomaed Swiss veterinary surgeon!’.⁹⁶

After describing the above-mentioned situation, one should think Theiler was a busy man. However, G. Theiler suggested that her father had little to do as a veterinarian⁹⁷ and was therefore released by General Botha from his military obligations, allowing him to return to Daspoort for the preparation of smallpox and lungsickness vaccine while continuing his horsesickness investigations.⁹⁸ It can be suggested that his discharge was made possible because of the personal relationship between Theiler and Botha (see chapter 2) which was strengthened by the time they spent together during the war. Theiler’s time in the army confined his research and although he could help many animals, he still wanted to continue researching the many diseases impending on the health of animals. When the war went on, the situation for researchers got increasingly difficult as well. Soon after the occupation of Pretoria, Daspoort laboratory became inactive as there was no available money for assistants and experimental animals were commandeered without any compensation. The stables were used for army quarter horses and the remaining staff could only guard the laboratory against looters.

The English were very much aware of Theiler’s research skills and he made no secret of his pre-war activities. His longstanding experimentation with stock diseases was regarded as being helpful with the army’s problems of mange and glanders among horses and the mounting losses of unknown diseases. He was later appointed as bacteriologist to the Transvaal Constabulary from 1 July 1900 and was given instructions to investigate horse diseases.⁹⁹ At his disposal were all possible facilities, hence he could reopen the laboratory. The enormous demands for lungsickness vaccines and glanders made it difficult for Theiler to concentrate on other research areas. An additional problem he was confronted with, was the complete unavailability of horses for experiments which made the research and experiments of other scientists difficult. One such scientist was the

⁹⁶ Gutsche, T. *‘There was a man. The Life and Times of Sir Arnold Theiler, K.C.M.G. of Onderstepoort’*. Howard Timmins: Cape Town, 1979, p.156.

⁹⁷ Theiler, G. *‘Arnold Theiler 1867-1936, His Life and Times.’* Pretoria, 1971, p.6.

⁹⁸ *Ibid.*

⁹⁹ Gutsche, T. *‘There was a man. The Life and Times of Sir Arnold Theiler, K.C.M.G. of Onderstepoort’*. Howard Timmins: Cape Town, 1979, p.167.

bacteriologist Edington (see chapter 2). There were, however, enough horses in the sick lines of Daspoort and a growing number of oxen and other animals on suspicion of contagious diseases. Due to mail censorship during the war, scientists were unable to have contact with foreign scientists or receive journals. Contact was lost with leading foreign bacteriologists and scientists who stimulated them to do specific research in the country. Local scientists were unaware of the developments in science and the research areas other scientists were working on abroad. This made scientists in South Africa extremely isolated. Eventually, when there was a serious horsesickness outbreak around Pretoria, Theiler had renewed energy as ‘the study of this disease must again properly be taken in hand. It is urgently necessary to find something to combat it. That year, animals are dying in heaps’.¹⁰⁰ He did not want to leave his laboratory while the conditions for investigating horsesickness were so favourable and offered all possible cooperation. Eventually, in 1902, journals started to arrive as well as correspondence from other scientists. His laboratory was taking form and researchers were able to deal with various diseases and continue the horsesickness experiments. They could also start to publish overseas, making other scientists aware of the research progress in South Africa. Collecting mosquitoes to breed for experiments, Theiler explained:

‘I am preparing myself really actively to find the insect this year which, according to my hypothesis, is the carrier of the Horse Death. From now on, I will collect all possible insects which are equipped with a blood sucking eating organ.’¹⁰¹

Some of these mosquitoes were sent to the British Museum for examination from which he received the answer that his specimen included three new varieties of *Anopheles* and *Culex*, a that time an international ground breaking discovery. Research and examination during and after the war did eventually lead to an effective African horsesickness vaccine.

3.3. Fighting fondness for horses

The affection between soldier and steed has been noted for at least two thousands year as in the writings of Xenophon in 310 BC. Although some of the soldiers in both regiments lacked horsemanship, they tried their best to their capabilities to secure the health of their animals. As many men were away from home and moving consistently for considerable

¹⁰⁰ Gutsche, T. *There was a man. The Life and Times of Sir Arnold Theiler, K.C.M.G. of Onderstepoort*. Howard Timmins: Cape Town, 1979, p.173.

¹⁰¹ *Ibid.*, p.183.

amounts of time, they grew a special bond with their horses and were often distressed when his beloved horse died from diseases, bullets or exhaustion, impacting on the morale of the men. One burgher could recall when his horse died of horsesickness:

‘Teen ongeveer die middaguur eis die noodlot van my ‘n gyselaar in die vorm van my ou troue Ramkat, wat teen die genadelose behandeling protesteer deur te vrek. Kort nadat ek afgesaal het, het ek gevind dat hy perdesiekte het. Ek het nog altyd so gehoop dat ek eendag in staat sou wees om aan hierdie edele, moedige dier my skuld te betaal. En hier gaan hy dood. Ek het op ’n rotsblok tussen die suikerbos gesit en huil oor my jongste smart. Ek het dikwels gestaan tussen die wanorderlike verstrooide lyke van gesneuwelde mense, wie se oorlog dit is, sonder dat ek die knypende meegevoel ervaar het wat ek nou voel vir dierdie dier, wie se oorlog dit nie is nie’.¹⁰²

Translation: ‘Around the afternoon hour, destiny demanded a hostage in the shape of my old trustworthy Ramkat, who protested against the ruthless treatment by dying. Shortly after I unsaddled, I discovered he had horsesickness. I always hoped so that I would be able to repay my debt to this noble, brave animal. And there he dies. I sat on a boulder in the middle of suikerbos and cried about my youngest grief. I often stood between the disorderly scattered corpses of perished people, who’s war this is, without experiencing this squeezing sympathy which I feel now for this animal, who’s war this is not.’

This passage clearly indicates the relationship between horse and rider as well as the pain and suffering soldiers of regiments felt when their horses died. For them, it was painful to see how animals suffered and died due to a war unrelated to them.

Horses played an important role in the soldiers life and they were often honoured by their riders in poems.

O’er the lonely veldt, its sombre
Shades might had flung
When a faithful charger stood by
A fallen warrior’s side
Alone, unknown, unsung
The gallant soldier died¹⁰³

Horses were not merely important to the regiments in terms of transportation, moving from one front to another, but they were employed for recreational use as well, making their bond with their riders even stronger. The British regiments used their horses to play

¹⁰² Du Toit, K. ‘Boerperd, die Geskiedenis van die S.A. Boerperd.’ Unpublished, 2007, chapter 4, p.39.

¹⁰³ National Library, special collection, MSB 518, Unknown, ‘The Dead Warrior watched by the Faithful Charger’, p.27.

polo during non active days as Pott wrote in his diary: ‘In the afternoon at 2.30 pm, played polo, my pony Willow Grange, playing beautifully’.¹⁰⁴ This was a clear sign, that although many of the men in the regiments, lacked horsemanship, they came to appreciate and even enjoy it.

The above mentioned statements and examples are sound examples and instances demonstrating the close attachment existing between horse and rider. The bond between the two was to such an extent that when the horses died from exhaustion, diseases or malnutrition, it had a serious impact on the men. It directly impacted on the morale and confidence of the regiments, causing a significant decline in fighting spirit.

4. Disease in Times of War

4.1. Scientific progress at war

As previously stated, horsesickness was absent during the first few months of the South African war. Strangely enough, African horsesickness was still not seriously encountered at the end of the war. Watkins-Pitchford, who did a lot of research on the disease, experienced some trouble coming to final conclusions in his research about the role of insects in the disease and mentioned that these insects were ‘probably some species of mosquito’. He also stated:

‘The past six months has been marked, as you are aware, by a conspicuous absence of the disease, and this fact has prevented the elucidation of several of the more important points in connection with the theory, which must, before exact observations can be made, be postponed until more favourable disease conditions obtain.’¹⁰⁵

This idea that mosquitoes were responsible for transmitting horsesickness was established after the war as the Department of Public Works was aware of the dangers of having stables close to swamps or water reservoirs and asked permission for moving the stables of the transport horses to a higher location.¹⁰⁶ The Department of Public Works issued a circular to all the Heads of Departments who hired means of transportation from

¹⁰⁴ Pott, R.B. ‘With the 36th West Kent Squadron Imperial Yeomanry in South Africa’ January 9 1900-July 19 1901, diary entry: Wednesday 20 February, 1901, p.251.

¹⁰⁵ Watkins-Pitchford, H. ‘Partial Report upon the Investigation of Horsesickness’, *The Agricultural Journal and Mining Record*, Vol.5, No.13, p.398.

¹⁰⁶ TAB PWD 309 [1857], letter from the Department of Public Works, Ermelo 13 February 1905.

their respective departments. They were requested to assist in conforming as much as possible to certain guidelines such as: ‘no animal should be allowed in the neighbourhood of rivers, spruits, low-lying and marshy ground, before the dew on the grass is dry and mists have been dispersed, or after 4 pm’.¹⁰⁷ Animals were exposed to varying conditions of nutrition and surroundings for nearly four months but no instance of a naturally contracted form of the disease had been met with. That was disappointing as it impacted on the outcome of the observations.¹⁰⁸

Watkins-Pitchford’s research¹⁰⁹ was of great importance as the war stimulated scientists to increase their research due to the amount of horses that died. Although the majority could have been saved by better treatment, diseases were still regarded as one of the major factors impeding on the supply of horses. The economical loss in Natal during the past season of 1901 was at least £12 000, and £50 000 was a small estimate of the loss to South Africa. That was, however, not the main problem according to Watkins-Pitchford as he continued to say:

‘... apart from the economic considerations, the mass of animal suffering reflected in such figures is sufficient to render the hope of its alleviation a fortunate ambition for all workers at this disease who, though perhaps not successful in solving the main problem of entire prevention, at least enjoy the privilege of helping in some measure to advance the quest to a final and successful issue.’¹¹⁰

He was convinced that African horsesickness was spread by mosquitoes; however, he was not certain if these insects were the only agents of spreading the disease or which particular species was responsible.¹¹¹ He recorded: ‘It was not, however, until 1901 that I was able to put this theory to the test, for the visitation of rinderpest and the late Boer war prevented the carrying out of any adequate line of experimental work’.¹¹² Another factor in need of attention was the cause of African horsesickness. The recognition of the

¹⁰⁷ TAB PWD 357 [1403], letter from the chief engineer, roads and bridges, 29 September 1904, to the secretary for public works.

¹⁰⁸ *Ibid.*

¹⁰⁹ To read more scientific details about his research, see Watkins-Pitchford: ‘Horse Sickness Investigation, Introductory’ Colony of Natal, 1903.

¹¹⁰ Watkins-Pitchford, H. ‘Horsesickness’, *The Agricultural Journal and Mining Record*, Vol.2, 1899-1900, p.979.

¹¹¹ Watkins-Pitchford, H. ‘Horsesickness Investigation, Second Interim Report’, *Government Notice No.252*, April, 1903, p. 2. and *The Agricultural Journal and Mining Record*, Vol. 6, 1903, p.253.

¹¹² Watkins-Pitchford, H. ‘Horsesickness’, *The Agricultural Journal and Mining Record*, Vol.2, 1899-1900, p.974.

cause of horsesickness was very important as this was the first step into the direction of finding a method of effectively preventing infections. Edington already discovered the microbe causing horsesickness a few years before the war.¹¹³

Other difficulties in the investigations regarding horsesickness during the war included the fact that, because scientists were aware of the possibility of a feeding mosquito carrying the disease, they had trouble in reproducing them in captivity and forcing them to fill themselves with infected blood of a horse having horsesickness, due to the weather being so cold. The only time when this was possible was during the summer months when the weather was warmer. Another complication was the problem of obtaining horses suitable for the experiments, as most of them were dead and the rest of the horses were fighting at several fronts, which impeded on the time that was available and suitable for the breeding and feeding of these insects.

Horses were generally scarce and to find suitable horses to do research on or conduct experiments with, was even more difficult. However, some regiments were eager to help scientists in testing inoculation methods as this could save them more horses, as a good chance existed of losing most of them during an outbreak. For example, Watkins-Pitchford chose the Zululand Mounted Rifles for an inoculation test as this regiment was a better test as to the efficacy of the process than other mounted units situated in less risky parts of the country to contract the disease.¹¹⁴ The regiments were eager to help the researchers and were put responsible for keeping records of horse temperatures which were then sent back to the researchers. To every man, volunteering his horse for inoculation, a clinical thermometer was issued.¹¹⁵ However, such observation measurements were only possible when a regiment was not fighting and was immobilised for a certain amount of time as such observations was time constraining and the fact that some of the horses became ill due to the inoculations. However, field experiments conducted in 1901 resulted in enabling Watkins-Pitchford to demonstrate the agency of a flying insect in the production of the disease and to suggest a practical method of preventing the same by keeping stables, horse lines, etc. and their immediate surroundings enveloped from sunset to sunrise in a haze of smoke generated by

¹¹³ KAB AGR 252 [F252], letter from Alexander Edington, colonial bacteriologist, 3 August 1892, to the secretary for agriculture.

¹¹⁴ Unknown, 'Horsesickness Investigation', *Natal Agricultural Journal*, Vol.13, p.721.

¹¹⁵ Watkins-Pitchford, 'Horsesickness Investigation', *Natal Agricultural Journal*, Vol.13, p.721.

smouldering fires of damp hay and stable litter.¹¹⁶ Smoke was regarded essential when stabling the horses as stabling without the smoke, did not offer protection.¹¹⁷ Researches wanted to protect the most susceptible horses during the war while the less susceptible horses remained in normal conditions.

Investigations had suffered from the disconnected and erratic manner in which it had been conducted during the war. The recent campaign and the reappearance of rinderpest, besides the delay caused by a failure in health and condition, were factors which attributed to the slow progress of this research.¹¹⁸ However, a good deal of research was already done before the outbreak of the South African War (see chapter 2) and at the onset of it. The concept of ‘salted’ horses¹¹⁹ was important as this could have made a big difference for the remounts in the purchase of horses. The theory of salted horses and their capabilities was a stress point for the government and a lot of the preliminary research of African horsesickness revolved around that idea.¹²⁰ However, research was still unable to define the necessary conditions regulating the spread of the disease. Nor had they discovered the actual species of mosquito or the blood sucking fly concerned in the production of the disease, although the ideal climatic factors had already been identified.¹²¹ Investigations were pushed in another direction in the hope of being able to introduce a practical method of immunising horses against the disease. Koch announced a few years after the war that by a combination of injections of viruses and serums, it was possible to immunise horses against horsesickness without risk.¹²² However this was later refuted by Theiler (see chapter 2).

African Horsesickness did not play a direct role in the South African War although the poor condition of the horses made them a lot more susceptible to the disease.

¹¹⁶ Watkins-Pitchford, H. ‘Horsesickness’, *Agricultural Journal and Mining Record*, Vol.II,1899-1900, p.974.

¹¹⁷ Watkins-Pitchford, H. ‘Horsesickness Investigation, Second Interim Report’, *The Agricultural Journal and Mining Record*, Vol. 6, 1903, p.253.

¹¹⁸ Watkins-Pitchford, H. ‘Partial Report upon the Investigation of Horsesickness’, *The Agricultural Journal and Mining Record*, Vol. 5, No.13, p.398.

¹¹⁹ Horses surviving from horsesickness

¹²⁰ KAB CO 7273 [G. 27-‘99], ‘Report of the Director of the Colonial Bacteriological Institute for the year’ 1898, 1899, p.4.

¹²¹ Watkins-Pitchford, H. ‘Partial Report upon the Investigation of Horsesickness’, *The Agricultural Journal and Mining Record*, Vol. 5, No.13, p.400 and Watkins-Pitchford, H. ‘Horsesickness’, *The Agricultural Journal and Mining Record*, Vol.2, 1899-1900, p.974 and Watkins-Pitchford, H. ‘Horsesickness Investigation, Second Interim Report’, *The Agricultural Journal and Mining Record*, Vol. 6, 1903, p.253.

¹²² VAB CO 278 [2783/04], Second report on Horsesickness by Herr Professor Dr. Robert Koch, 1904, p.9.

Occurrences during the war rapidly increased the pace of experimentations and research after the war, putting a high strain on the available horses since the government struggled to adhere to the scientists' demands for horses for their experiments.¹²³ Furthermore, with the opening of Onderstepoort a few years after the war, scientists were on the verge of new discoveries.

4.2. Few resources aiding the animals

Research on African horsesickness was still far from over during the war however, there were certain methods brought forward to improve the health of the animals and even curb the spread of African horsesickness. There were measures taken to reduce the useless wear and tear on the horses which therefore increased their general health and decreased their susceptibility to diseases such as horsesickness. People realised that they were treating the horses badly and many complaints began to arise in (agricultural) publications such as: 'The attendants upon horses (at least a section of them) appear to have the idea that a horse is of iron construction, something in the nature of a machine'.¹²⁴ It was clear that many men serving in the regiments had no idea how to handle a horse or take care of it. Necessary improvements and actions needed to be taken in order to enhance horsemanship among the mounted remounts. Instead of publishing the ravages the horses and mules had to go through during the war, certain articles were issued at the request of the Army Veterinary Department in several agricultural journals. These articles contained suggestions for the general management of horses, mules and oxen while on field service in South Africa, with notes concerning the more common ailments to which animals in the country and during the war were subjected.¹²⁵ Lord Roberts issued a circular memorandum informing the artillery of the difficulty of replacing their horses in the campaign. If they suspected that their animals were being overworked with regards to pace or distance, it was their duty to bring the matter to the attention of the commander of the column. The same circular urged the men to protect their horses as much as possible. They should dismount whenever they could, giving the greatest care and attention when feeding the horses.

¹²³ TAB TAD 167 [21/48] Supply of horses for horse sickness experiments.

¹²⁴ Samson, 'The Utility of the Horse', *The Agricultural Journal and Mining Record*, Vol.2, No.4, 1899, p.96.

¹²⁵ Unknown, 'The Management of Horses, Mules and Oxen while on Field Service in South Africa', *The Agricultural Journal and Mining Record*, Vol.2, 1899-1900, p.704.

On 5 February, 1900, another important circular was issued to reduce the weight of the cavalry horses and raised questions concerning the feeding rations of the animals. Four days later, an Army Order was published which directed the pace at which transport with mules was to be conducted and was fixed not to exceed four miles an hour. It proclaimed that 'The efficiency of the Transport, which is of the greatest importance, depends on a strict observance of this rule'.¹²⁶ Marshals were directed to arrest and punish those who infringed this order. In the beginning of March 1900, another Army Order was published to draw attention to the inhumane practice of flogging mules and oxen used by native drivers and flogging became punishable. A month later attention was again drawn to the flogging and pace. It included restrictions on personal baggage as wagons were breaking down due to excessive loads. The baggage needed to be weighed in order to prevent the overloading of animals. Water and feeding times were also specified as well as the different types of forage to be fed according to the specific demands.¹²⁷ Prize money of £5 was given to the drivers of Mule Transport Companies for taking care of their animals and this became so popular, it soon extended to other Columns.¹²⁸

At the end of the year, other Orders were distributed to stress the matter of the wear and tear on the animals as most of these situations were perfectly avoidable by reducing reckless driving and aimless galloping. Steps were taken in order to decrease the heavy losses under the draught oxen. Most of the grazing and water rules were not obeyed. Eventually the loss of oxen occurred due to neglect of ordinary precautions and these oxen were no longer to be replaced at the public cost.

Although these Orders sounded promising for the animals, it is doubtful if they had any effect on the health of the animals. Many Orders were reissued, making their effectiveness questionable as well as the ability or willingness of the regiments to follow such Orders. It is unlikely that the mounted troops had the time and the resources to comply with the detailed orders. As mentioned before, grazing had been made almost impossible as the pastures were at their minimum and most of the water was contaminated by rotting carcasses. Even if the horses had water and grazing, it is uncertain if the troops had the actual time to look after their animals in such a way to

¹²⁶ Smith, F. *'A Veterinary History of the War in South Africa, 1899-1902.'* 1919, p.144.

¹²⁷ Unknown, 'The Management of Horses, Mules and Oxen while on Field Service in South Africa', *The Agricultural Journal and Mining Record*, Vol.2, 1899-1900, p.704.

¹²⁸ Smith, F. *'A Veterinary History of the War in South Africa, 1899-1902.'* 1919, p.144.

allow enough time for grazing and authorize necessary stops for drinking. The pace regulations and weight guidelines were also not always very practical as troops had to comply with other orders forcing them to move to a certain point within a certain time. Therefore, the pace needed to be increased and there was limited time to look after the horses, mules and oxen. It is also debatable whether the personal luggage and baggage of each and every man was weighed in order to avoid overloading the animals. Again, time was a major constraint. However, if these regulations were followed by some of the troops and if they did have the time and resources to comply with them, it would have made a big difference to the general care and health of the animals and taught the troops something about horsemanship.

Stordy, who did veterinary work in the British East Africa and Uganda Protectorates from 1898 to 1900, was employed by the Foreign Office. After dealing with the occurrence of many deaths and diseases during the war, especially from African horsesickness in its various forms, he advised the use of zebra for purposes of transport, as it was ‘naturally immune against the ravages of the tsetse fly disease and horsesickness’¹²⁹ and existed in vast numbers. He stated:

‘I am convinced that, should the government enter upon a scheme for its domestication, it would prove one of great value, and that at no very distant date a supply of animals would be available, not only for African service, but also for Army transport work at home or in India.’¹³⁰

Of course he realised that the great difficulty was to domesticate the adult zebra. His solution to that problem was published in which he promulgated the kraaling of the animals. According to him by following his suggestion, the adult zebras would become domesticated through the influence of the already domesticated mules and horses around them, and the offspring of these zebras would also become tame. This plan may seem questionable, but people were trying everything possible to put an end to the horse ravages of the war which greatly diminished the amount of horses in the country.

Every man, not necessarily having any experience with horses, had a remedy for horsesickness which was ‘infallible’. Authorities were harassed by these people to give them an opportunity of treating horses with horsesickness with their supposed remedies. Several of these men had never seen or encountered the disease but had heard of

¹²⁹ Editor, ‘Domestication of the Zebra’, *Agricultural Journal*, Vol.18, 1901, p.817.

¹³⁰ *Ibid.*

someone who used a certain preparation and never had trouble with it again. An example of this was a gentleman in the Cape Peninsula (where the disease is practically never seen) who informed the authorities that a certain revered gentleman had been advised by General Joubert that a small piece of asafoetida,¹³¹ weighing about fifty grains, should be tied to the horse's bit and renewed every eight days.¹³² General Joubert had followed this practice and it was said that he never lost an animal although the quantity must never exceed fifty grains nor be used less frequently than once in every eight days.

Another method of treatment consisted of the administration of six grains of strychnia¹³³ which acted as an antidote provided the horse had the disease and if not, the prescriber acknowledged, killed it. Others gave their sick horses a full bottle of rum containing sixty drops of carbolic acid and twenty five drops of ether.¹³⁴ A very radical treatment was published in 1898-1899 and stated:

‘Have the horse's head slightly elevated...now , with a sharp penknife make a vertical incision through the skin over the seat of the trachea (windpipe) not quite half-way down the neck. Be careful to keep in the centre of the trachea, to avoid dividing the nerves and blood vessels on either side, now push your penknife sufficiently far to penetrate the cartilage of the windpipe and cut through three rings. This accomplished, and no tracheotomy tube being on hand the opening made must be expanded by the following means: Obtain a slightly curved needle and a couple yards of tape; thread the needle then pass the needle through the windpipe, between the rings of cartilage on one side from within outwards, pass the tape over the neck and repeat the operation on the other side from without inwards,, and tie the ends on top of the neck.’¹³⁵

It was believed that the animal would now breath through this aperture, offering relief while antiseptics and stimulants were injected into the windpipe. Some of such experimental remedies were used but in practice they relied on preventing early morning and late evening grazing where possible. Lieutenant-Colonel Apperly, after pointing out the great capabilities of the Cape as a horse country during the war, went on to say:

‘Every shoulder should be put to the wheel to improve such a wonderful and only half developed country. Horsesickness can be avoided by erecting proper sheds for the mares and foals, and growing fodder of some sort, roots or cereals, to feed

¹³¹ ‘devil's dirt’, gum resin from certain plants

¹³² Smith, F. *A Veterinary History of the War in South Africa, 1899-1902.* 1919, p.277.

¹³³ Strong poison from emetic nuts

¹³⁴ Unknown. ‘Discussion on Horsesickness’, *The Agricultural Journal and Mining Record*, Vol.2,1899-1900, p.57.

¹³⁵ Webb, J. ‘Horsesickness’, *The Agricultural Journal and Mining Record*, Vol.1, 1898-1899, p.712.

them on during the prevalence of the disease. If the farmers do not think their horse stock worth this little expense and trouble, they deserve to suffer and the Australians will ultimately deprive them of the Indian market.¹³⁶

It is doubtful that this officer had much practical experience and knowledge about the country to express such a strong statement. It was impossible to stable horses during the war. Not only were there insufficient stables for such a large amount of horses, but the regiments were constantly moving, often very sudden, giving them not much time and few resources to search for stables or to build them.

A more practical measure taken was the use of nosebags containing creosote¹³⁷ or other disinfectants, but this appeared worthless and the bag was soon rendered unfit for the purpose. Avoiding low lying ground as horse camps was not always practicable on service. The use of arsenic in the field was also not practicable as this would have led to some deplorable accidents. A reader from the *Agricultural Journal* was convinced of a treatment containing a concoction of garlic, two tablespoonfuls of aloes and one teaspoonful of turpentine thoroughly mixed.¹³⁸ The Militia Authorities issued a statement asserting the mounted troops to protect horses exposed to the night air in camps or bivouacs by light dressing down with a rag soaked in paraffin oil, particularly over the legs and belly.¹³⁹ Sulphur together with fat was another concoction which was rubbed thoroughly onto the animal.¹⁴⁰ If stabling was available, the memorandum recommended to fill the stable with smoke coming from smouldering fires burning stable litter or manure as burning hay would have been a waste because of the small amounts of rations the horses were allowed to eat. Sometimes, sulphur was another component used for smoking the stables.¹⁴¹ The smoke was to be dense but harmless for the horses, not causing coughing or sneezing.

¹³⁶ Rattray, G. 'Horse Breeding in South Africa, a voice from the past', *Agricultural Journal of the Union of South Africa*, Vol.3, p.209.

¹³⁷ Colourless, oil-like liquid, obtained from distillation from beech wood tar and often used as a constituent for cough mixture or as a sedation in dentistry

¹³⁸ Van der Walt, A.R. 'Horsesickness', *Agricultural Journal*, Vol.30, 1907, p.829.

¹³⁹ Unknown, 'Horsesickness', *Natal Agricultural Journal*, Vol.13, 1901, p.715.

¹⁴⁰ TAB PWD 191 [1238], Treatment for Horse sickness, letter from Department of Public Works, Pretoria 22 October 1903.

¹⁴¹ Unknown. 'Discussion on Horsesickness', *The Agricultural Journal and Mining Record*, Vol.2, 1899-1900, p.57 and Watkins-Pitchford, H. 'Horsesickness, suggestions', *The Agricultural and Mining Record*, Vol.6, 1903, p.324.

All the above mentioned methods were regarded helpful in preventing horsesickness, however, horse owners were aware of the fact that it did not safeguard their animals completely. Although a lot of methods were recommended, hygiene was stressed as an important point. The general recognition of hygiene formed a sensible basis of the route taken to prevent the incoming of any disease. Recognising the essentials of animal health and exposing the animals to as few bad elements as possible, were the two great factors in the prevention of disease.¹⁴²

5. Aftermath of the South African War

5.1. Horse leftover

The war had a major impact on the horses in South Africa. Due to the great losses, only a few horses were left unharmed. The country had a problem with available horses as the number of horses in the Colony declined from 444 147 in 1891 to 255 060 in 1904.¹⁴³ The mortality of the war was enormous. The Military Authorities were asking horse breeders for information regarding the number of horses available during the next four years that would be suitable for military purposes.¹⁴⁴ The merits of the Cape horse were basically discovered during the war and subsequently attracted a considerable amount of public notice. It was not that long ago that the country had supplied a large proportion of the military remounts for the Indian Service and this was greatly diminished as no horses were exported to India.¹⁴⁵ Australia took over the Indian market as South Africa had no (quality) horses to export. It was believed that, with care and attention to the breeding and rearing of the right stamp of animal, it was possible to re-establish that industry. Hundreds of finely bred mares and foals were destroyed during the war and farmers who were considered successful horse breeders had only a single mare left.¹⁴⁶ It was feared that South Africa would be unable to supply when a European war broke out, which would be an economical error as the war in Europe was to be believed to drain every

¹⁴² Unknown, 'Discussion on Horsesickness', *The Agricultural Journal and Mining Record*, Vol.II,1899-1900, p.58.

¹⁴³ Glanville, E. (ed.), 'Horses', *The South African Almanack and Reference Book, 1911-1912. The National South African chronicle, gazetteer and year book.* ' 1911, p.196.

¹⁴⁴ Unknown, 'Horses suitable for military requirements', *Agricultural Journal*, 1905, Vol.16, p.827.

¹⁴⁵ Rattray, G. 'Horse Breeding in South Africa, a voice from the past', *Agricultural Journal of the Union of South Africa*, Vol.3, p.213.

¹⁴⁶ Unknown, 'The South African Horse, by a South African breeder', *Agricultural Journal of Cape of Good Hope*, Vol.26, 1905, p.578.

country of its horses and the combatant paying the best price would have the best mounted cavalry.

The demands of the South African War played havoc with the best class of the general utility horse. The agricultural department did their best to encourage breeders to produce the same type again as the Cape horse established its virtues and stood alone as the most suitable animal for service in the country. Military authorities recognised this fact and were very much willing to increase the availability of the horses but needed the help of horse breeders.

However, this was not received well as many breeders complained about the fact that the military commandeered all the best horses during the war in the first place and that only a small amount of horses were able to return to their lawful owners.¹⁴⁷ It was regarded a pity that the military, now aware of the virtues of the Cape horse, did not try to preserve some valuable stock.

To make matters worse, a number of new animal diseases appeared in the country. Most of them were introduced by the indiscriminate importation of horses for the British army from various parts of the world. One of the most serious new disease was East Coast Fever. This was imported into the country by the introduction of cattle from East Africa to help restock the depleted farms. Despite these problematic circumstances, some of the most significant developments in veterinary research took place during this decade. Louis Botha became Prime Minister and Minister of Agriculture when responsible government was instituted in the Transvaal in 1907.¹⁴⁸ As discussed in chapter 2, Botha followed the urgent request of Theiler, convincing the parliament to fund a new veterinary laboratory, and in 1908 the Onderstepoort Laboratory was completed. Theiler later identified the organism causing East Coast Fever and Watkins Pitchford developed the dipping routines that eventually led to its eradication.¹⁴⁹

¹⁴⁷ Karroo, 'Horses suitable for military requirements', letter to the editor, *Agricultural Journal*, 1905, Vol.17, p.116.

¹⁴⁸ Verwoerd, D.W. 'A brief historical review of research achievements by the OVI during the 20th century against the background of socioeconomic and political developments in South Africa'. *Journal of the South African Veterinary Association*. Vol. 71, No. 4, 2000, p. 210.

¹⁴⁹ Unknown, 'Herbert Watkins-Pitchford, 1865-1951', *Journal of the South African Veterinary Association*, October 1977, Vol 48, No.3, p.221.

It was not only the case of importing diseases in the country, the mounted troops exported diseases as well. Although horses that returned to England had to pass a veterinary test, it is doubtful that every single horse was subjected to a full and thorough examination before receiving the consent of boarding the ship. Captain Pott entered in the end of June 1901, when he boarded a ship to England to return home:

‘The horses were stopped and sent to Greenpoint and be mallined for glanders and could not come on board. This is the result of the non promulgation of the Army Orders. The horses could have been mallined a twelve times, but we were informed that the only thing necessary [to receive consent for the animals to board the ship] was a certificate, which I produced, but which was deemed useless, and to my great regret, we steamed into the Bay at five pm without Whisper and Willow Grange [his ponies], Mick [the dog] was however successfully smuggled on board.’¹⁵⁰

It is interesting to question what happened to the worn-out horses. The majority of the horses that did not die from disease, exhaustion or bullets, and survived, were worn out. Especially horses used in the harness as the bulk of the drivers spurred their horses when ten to fifteen meters from the top.¹⁵¹ The horses were exhausted and puffed by the ascent and the call upon exhausted energies was at the very worst moment often lead to ruptured bowels, broken windpipes, sprained tendons, worn out legs, etc. Horses suffering from such ailments were spoilt for life. The ones that were in such a bad condition were probably shot and some of them were eaten. A worn-out horse, or one unfit to work was worth only 15s in the country and the price increased to £4 on average.¹⁵²

¹⁵⁰ Pott, R.B. ‘With the 36th West Kent Squadron Imperial Yeomanry in South Africa’ January 9 1900-July 19 1901, diary entry: Wednesday, 26 June, 1901, p.310.

¹⁵¹ Samson, ‘The Utility of the Horse’, *The Agricultural Journal and Mining Record*, Vol.2, No.4, p.96.

¹⁵² Unknown, ‘Worn-out Horses’, *Agricultural Journal*, Vol.12, 1898, p.745.

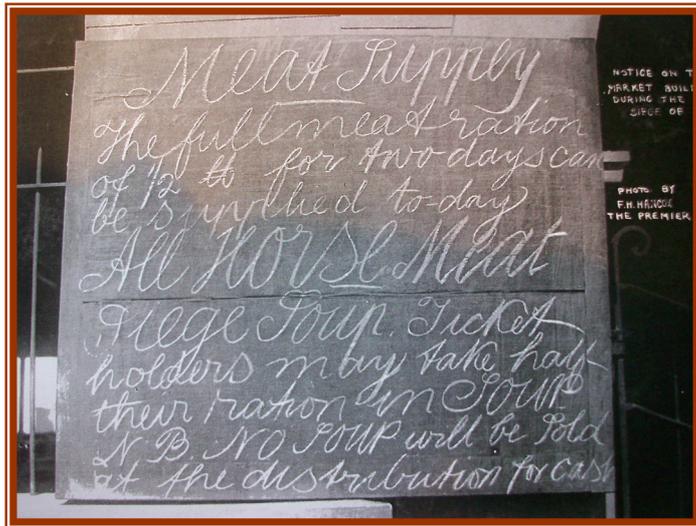


Figure 6: Notice on the market buildings during the siege of Kimberley

famous. The consumption of horseflesh in Paris became enormous. It started to gain popularity in 1866 but was viewed with extreme prejudice. It was not accepted until after the siege of Paris by the Prussians during which horsemeat was all the people could produce. The number of horses slaughtered for food in Paris was 5 034 in 1872 and was increased to 34 068 in 1898¹⁵³ not including the horses coming from abroad.

The eating of worn-out horses was nothing new in South Africa as well. The consumption of horsemeat became a regular practice during the war as horsemeat was regularly consumed due to irregular food rations. Watkins-Pitchford noted:

‘Indeed, so bad has the meat become that I suggested eating horseflesh in preference, and the idea being espoused in a sensible manner by our Colonel, I decided to slaughter from my sick lines my next incurable which seemed to be young and fit for food and to introduce the consumption of horseflesh to the garrison.’¹⁵⁴

However, he did not need to slaughter a horse as a bombshell fell on two horses which were later cooked and eaten. The men were quite happy with the meat and found it better tasting than ‘the meat from the dreadful flesh’ they have been eating of late. In a later letter he wrote: ‘At first we had horse sausages issued, but the skins have followed the

¹⁵³ Farm, ‘Horse-flesh in Paris’, *Agricultural Journal*, Vol.16, 1900, p.506.

Figure 6: Sessions, H. ‘Two years with Remount Commissions’, London: Chapman and Hall, 1903.

¹⁵⁴ Watkins-Pitchford, H. ‘Besieged at Ladysmith, a letter to his wife, written in Ladysmith during the siege’, 10 January 1900, p.47.

fashion and become exhausted, so that now we have our meat served out as sausage meat minus skins...'¹⁵⁵ Quarter Master Sergeant Potter recorded:

‘As the siege [Ladysmith] lengthened it was realized that it would be necessary to use horse flesh as a diet. The Natal Volunteer (Veterinary) Staff therefore set an example by partaking on 7/1/1900 for the first time, of the flesh of a horse killed by a piece of shrapnel. A few days later this article of food became a regular food ration.’¹⁵⁶

One of the most destructive weapons used during the war were the classic weapons of a siege: starvation and disease. One soldier noted:

‘...we have begun to feel the siege a little more actually. On Monday the people who went for meat were told that they could only take half their allowance in beef; the other half must be taken in horseflesh or else gone without. Lots of people went without...I brought my chunk of horse home, and that night we had it for dinner. If I had not known what it was, I am sure I should not have known it from beef. It was tender and good for anything, but all the same it took some pushing down...I guess I am not hungry enough yet.’¹⁵⁷

The scale of rations was the highest for the garrison and the lowest for Africans: a pound of bread per day, and half a pound of meat, for soldiers; twelve ounces and four ounces respectively for white civilians; barely a pound of ‘mealies’ (corn) for Africans. The white civilians soon lost their sense of delicacy with regards to the consumption of horseflesh, which made up more than a third of the available meat supplies which consisted out of 164 183 pounds of horsemeat, 269 455 pounds of ox meat and 45 653 pounds of mutton which was eaten in two months.¹⁵⁸ Watkins-Pitchford wrote:

‘A horse...had died on the veld, and as I rode in among the thorn trees I came across two poor Tommies hacking off pieces of its flesh with their clasp-knives. They looked very guilty and confused...but I had nothing but commiseration in my heart for poor fellows driven to such straits. That was some time ago but now, when horses drop dead in the streets, as they are continually doing from exhaustion, the soldiers are down on the carcass like crows...’¹⁵⁹

¹⁵⁵ Watkins-Pitchford, H. *Besieged at Ladysmith, a letter to his wife, written in Ladysmith during the siege*, 10 January 1900, p.97.

¹⁵⁶ Knesl, O. ‘The Boer War, a veterinary perspective’, *Historia Medicinae Veterinariae*, Vol. 25, 2000, p.9.

¹⁵⁷ Pakenham, T. *The Boer War* Johannesburg, 1979, p.324.

¹⁵⁸ *Ibid.*, p.325.

¹⁵⁹ Watkins-Pitchford, H. *Besieged at Ladysmith, a letter to his wife, written in Ladysmith during the siege*, 17 February 1900, p.107.

However, the decrease in rations during the persistence of the war, had an impact on the rations of the horses as well. Corn was often taken from the horses and given to the men of the regiments instead, impeding on the already small rations for horses and affecting their condition even more.

After the war, horses were regarded as valuable due to the limited amount of horses available as the number of losses was extremely high. The demand on military mares was high and the applications were restricted.¹⁶⁰ Not only were applications restricted, the army had to be satisfied with a poorer quality as well. There were general complaints about the value of mares as the better horses had all been used during the war.¹⁶¹ The government was urgently searching for breeding possibilities and places for increasing the horses of the army remounts.¹⁶² It was important to breed mares free from diseases. Regulations were issued, stipulating guidelines to secure a high quality breed as well as specifications that stressed several aspects when horses were being bought for military purposes.¹⁶³ One of the major directives was the appointment of a veterinary surgeon from the Agricultural Departments who was secured to advise the farmers and horse owners. All the horses that were left were to be used to their maximum capacity in order to compensate for the high losses during the war. Number four of the regulations stipulated: 'That any farmer who has received a mare shall not dispose of her in the ordinary way of business until he has proved that she is unsuitable for breeding purposes'.¹⁶⁴ The aid of the government was expected to assist farmers by showing them the proper class of horses to breed, which was the class which would pay the best.¹⁶⁵ Only farmers situated in a low risk area for diseases and who were successful in breeding horses received mares to breed with.¹⁶⁶

¹⁶⁰ VAB DA 50 [2080.11.1910], response letter from secretary O.F.S. Agricultural Union, 30 May 1911 to Garrett Paver.

¹⁶¹ VAB DA 50 [2080.11.1910], letter from Remount Department Pretoria in connection with the sale of cast army mares, 25 April 1911 to the secretary of Department of Agriculture.

¹⁶² VAB DA 50 [2080.11.1910], letter to 'The Star' from Nicholson, F., secretary of Transvaal Agricultural Union, 21 September 1910.

¹⁶³ TAB TAD 208 [4015], Specification of horses required for purchase by the military authorities, 1 April, 1909

¹⁶⁴ VAB DA 50 [2080.11.1910], Regulations

¹⁶⁵ 'Horses for the Army', *The Friend*, 30 July, 1909.

¹⁶⁶ VAB DA 50 [2080.11.1910], Transvaal Agricultural Union, Distribution of Military Mares, Nicholson, F., secretary of Transvaal Agricultural Union, 1 August 1909.

5.2. British veterinary developments after the South African War

The course and outcome of the South African War made clear it was time for change. The war had a major impact, not only on the South African side but also in Britain. Certain adjustments were considered in the Elgin Commission of 1903, also known as the Royal Commission, and the Norfolk Commission, also known as the Royal Commission¹⁶⁷ to look into the ‘many blunders we made in South Africa’¹⁶⁸. These Commissions examined all aspects of the South African War, ranging from military preparations to the organization of the War Office. As a witness testified: ‘When the Second Contingent of Yeomanry came out their riding was hopelessly bad; they had no knowledge of a horse, or how to ride’.¹⁶⁹

The British artillery and cavalry were merged together as a single unit in 1859. New grades were introduced equivalent to military ranks for the veterinary service: the grade for veterinary surgeons was equivalent to the rank of lieutenant, veterinary surgeon first class to captain and staff veterinary surgeon to major. These grades helped with recognition from a bureaucratic and managerial point of view and were necessary within the veterinary services if the needs of horse maintenance and medical care were to be met. The school continued to train army veterinary surgeons and farriers to become veterinary assistants and special attention was given to exotic and tropical diseases due to the exploring character of many military operations.

An Army Veterinary Department was formed to ensure efficient service by qualified veterinary officers and although sick depots for horses were formed years earlier, it was only during World War I that wounded and sick horses were evacuated to field and base hospitals where they could receive the proper treatment for their ailments. Veterinary surgeons played a prominent role in World War I, organising remounts and providing first aid for wounded horses and dogs before removing them to one of the eighteen veterinary field hospitals. It was clear that an animal disaster such as the South African War must be avoided at all cost. Large numbers of men were necessary. 1669 veterinary

¹⁶⁷ Miller, S. M. *Volunteers on the Veld, Britain's Citizen-Soldiers and the South African War 1899-1902*, p.165.

¹⁶⁸ Ropp, T. ‘Conscription in Great Britain, 1900-1914: A Failure in Civil-Military Communications?’ *Military Affairs*, Vol.20, No.2, 1956, p.73.

¹⁶⁹ Miller, S. M. *Volunteers on the Veld, Britain's Citizen-Soldiers and the South African War 1899-1902*, p.165.

officers and 41 755 men served with the Army Veterinary Corps since there were over a million animals on active duty across the various fronts at any given time.¹⁷⁰

A new edition of war establishments unintelligibly misplaced provisions for the care of the sick animals in the field just one year before the second of the South African Wars (1899-1902). The war began with no plan for veterinary services and improvisation on site became the order of the day. The authorities failed to provide animal care because of a lack in veterinary knowledge. A few field hospitals from India were used by the director general of the Army Veterinary Department.¹⁷¹ These hospitals brought spare field equipment which at the crises proved of great utility.¹⁷² There was extensive misuse and mismanagement which did aided in the distribution of widespread contagious diseases. This resulted in a predictably high mortality rate amongst horses. Sixty-seven percent (326 073) of the horses and thirty-five percent (51 399) of the mules died. A minority dying from bullets or shell fire. Most of the equine survivors were sold without veterinary examination despite widespread glanders and epizootic lymphangitis. These diseases were allowed to spread and even England felt the effects of the diseases years afterwards when the horses were returned, carrying with them such contagious diseases. However, these small changes were regarded as being insufficient as Major-General Sir Frederick Smith wrote: ‘...It is clear that the terrible waste of animal life in the War in South Africa, 1899-1902, had made little or no impression’.¹⁷³

During the 1930’s, cavalry units diminished gradually due to the growing firepower of many kinds of weapons, the development of mechanized transport and armoured vehicles and the enormous progress in military aviation. Cavalry became a high risk enterprise.

5.3. Policy changes

The large number of animal losses during the South African war was a turning point and an eye-opener. The incredibly high losses of horses and mules in South Africa attracted negative publicity and led to an investigation by a parliamentary committee in 1902. The result was a warrant signed by King Edward VII in 1903 which created the Army

¹⁷⁰ Hunter, P. *Veterinary Medicine, a guide to Historical Sources*, 2004, p.21.

¹⁷¹ Knesl, O. *Veterinary Surgeons*, no publisher, no date, p.70 & Dunlop, R.H. & Williams, D.J. *Veterinary Medicine, an Illustrated History.* 1996, p.472.

¹⁷² Smith, F. *A Veterinary History of the War in South Africa, 1899-1902*, 1919, p.13.

¹⁷³ Smith, F. *A history of the Royal Army Veterinary Corps, 1796-1919*, 1927, p.ix.

Veterinary Corps.¹⁷⁴ Major General Frederick Smith described South Africa as ‘a country of animal diseases’ and noted ‘never again, let us hope, will a veterinary service have such opportunities for seeing contagious and other diseases on a scale which baffles imagination’.¹⁷⁵ He was appointed director general in 1907 and wrote a critical veterinary history of the South African War, implementing his ideas for the reform of the corps, which led to effective, humane service in World War I: ‘*History of the Royal Army Veterinary Corps 1796-1919*’ in 1927 and ‘*A Veterinary History of the War in South Africa 1899-1902*’. He created a veterinary organization that could provide the necessary support for large, effective mobile field forces which resulted in a major improvement during World War I.

The veterinary corps performed well, despite one of the most terrible campaigns in the history of warfare when troops and horses sagged in the mud and trenches of Flanders. Improvement was made possible with the establishment of mobile veterinary sections to move sick and lame animals from the front to the veterinary hospitals. At the beginning of the war, Smith had 164 veterinary officers and 208 veterinary troops of other ranks and by the end of the war he had 1356 officers and 23 146 troops of other ranks.¹⁷⁶ The record of 39 400 admissions to Field Hospital show, in round numbers, the number of horses in every 1000 cases suffering from each cause:

CAUSES	HORSES
Debility	288
Mange	235
Wounds	190
Lameness	178
Various	109
TOTAL	1000

Figure 7: The admissions to the Field Hospitals¹⁷⁷

The proportion of debility appears lower than one would have imagined, but mange and debility were so commonly associated that many of such cases fell into the skin group. African horsesickness, tulip poisoning and other rapid affections would never see the hospital. Only those that had strength enough to leave the field and withstand a long

¹⁷⁴ Knesl, O. ‘*Veterinary Surgeons*’, no publisher, no date, p.70.

¹⁷⁵ Knesl, O. ‘The Boer War, a veterinary perspective’, *Historia Medicinae Veterinariae*, Vol. 25, 2000, p.10.

¹⁷⁶ Dunlop, R.H. & Williams, D.J. ‘*Veterinary Medicine, an Illustrated History.*’ 1996, p.472.

¹⁷⁷ Figure 7: Smith, F. ‘*A Veterinary History of the War in South Africa, 1899-1902.*’ 1919, p.275.

journey by train found their way to the hospital. Others were directed towards debility farms under the care of the Remount Department or where euthanized on the spot.¹⁷⁸ No horses with sore backs were sent to hospitals and the less severe cases, such as lameness, fractures and other injuries, were dealt with locally. The horses reaching the field hospital had a high percentage of recovery (sixty-one percent) as they passed through the pores of the filter.¹⁷⁹

The British Expeditionary Force began the war with 53 000 animals and six hospitals and by 1918 there were 450 000 animals and eighteen veterinary hospitals, each with a capacity of two thousand animals. Considering all fronts, the army had more than one million animals by 1917 and the average daily number of sick animals had been 110 000 of which seventy-eight returned to duty. The heaviest losses were amongst the light draft horses of the artillery that heaved ammunition by night through the watery, mud filled shell holes and due to the amount of horses pushed to exhaustion, the supply of remounts could not be replaced. Chemical warfare had also impacted on the horses. An effective antigas respirator for chlorine gas existed, however, it was impossible to safeguard the horses from mustard gas which made it necessary to avoid gas shelled areas with horses.

In Tanzania, a new strategy was used by the German campaign. Their commander in chief used his veterinary services to his advantage by having them completing tsetse fly surveys. He based his line of retreat on areas containing the worst forms of trypanosomiasis.¹⁸⁰ Although protecting their horses and soldiers with arsenic treatments, these tactics cost the Imperial Forces twelve thousand horses and mules in 1916 which made mounted attacks impossible. The efficiency of British horses, horsemen and the Army Veterinary Corps was credited with being far superior to their German counterparts which was a significant factor in the victory.

Not only the veterinary policy in Britain changed after the South African War but also the veterinary policy in South Africa. The Department of Agriculture closely followed the results and progresses of horsesickness in their annual reports which started from

¹⁷⁸ Army remounts, *'Reports, statistical tables and telegrams received from South Africa'*, June 1899 to January 22, 1902, p.8.

¹⁷⁹ Smith, F. *'A Veterinary History of the War in South Africa, 1899-1902.'* 1919, p.275.

¹⁸⁰ Sleeping sickness, see chapter 2 and 3.

1904.¹⁸¹ If there was nothing new to announce, they gave general information on the disease.¹⁸² A South African Veterinary Corps was established in 1910 which accompanied the regiments and their horses in future campaigns such as the German East African campaign and German South West African campaign¹⁸³ and better supervision was given to the treatment of animals used by the government. A close eye was kept on the correct and sufficient feeding of the animals.¹⁸⁴ Any complaints were reported and acted upon accordingly. Sergeant de Beer complained to the secretary of Pretoria about sergeant Major Crawford and his cruelty to animals as he worked his mules from 8 am until 4 pm without outspan and he loaded them heavily.¹⁸⁵ This matter was examined by the Colonel Inspector and although no direct action was taken against Sergeant Major Crawford, it was a clear sign that the care and usage of animals was being taken more seriously.

Veterinary science as a part of public policy at the Cape developed and changed in four distinct connected factors according to Daniel Gilfoyle.¹⁸⁶ The first was a continued and strengthened commitment to veterinary policing in order to prevent the importation of diseased animals. During the war, the Cape's importation controls broke down and this was followed by an influx of animals into the Colony from abroad and from other states in southern Africa. This resulted in the introduction or reintroduction and further spread of infectious and contagious diseases such as rinderpest, foot and mouth disease, pleuro-pneumonia and glanders. A second factor was an increased commitment to the eradication of contagious diseases and was manifested in the Animals Disease Act of 1906 which provided for compensation for the destruction of animals infected with pleuro-pneumonia and glanders. This helped the veterinarians, officials and lay inoculators to achieve greater success in the eradication of these diseases. The last two components of veterinary policy indicated a break with the pre-1902 regime. First, there was an effort to encourage the extermination of ticks which was partly made possible by

¹⁸¹ Department of Agriculture, Orange River Colony, *'First Annual Report'*, 1904-5.

¹⁸² Transvaal Department of Agriculture, *'Annual Report of The Government Veterinary Bacteriologist'*, [36-4/1/05-50], 1903-1904 and Transvaal Department of Agriculture, *'Annual Report'*, [T.G. 4], '091907-1908.

¹⁸³ Curson, H. 'History of the South African Veterinary Corps', *Journal of the South African Veterinary Medical Association*, December 1942-March 1944, p.90.

¹⁸⁴ TAB TAD 31 [A 156/5], letter from the Principal Veterinary Surgeon Webb, Lydensburg 25 August 1909, to Chief Commissioner of Police

¹⁸⁵ TAB TVO 14 [450], Complaints from PWD re illtreatment of mules by Q MS Crawford.

¹⁸⁶ Gilfoyle, D. *'Veterinary Science and Public Policy at the Cape Colony, 1877-1910'*. Phd thesis, Thesis University of Oxford, 2002, p.291.

the state action to accumulate funding for the voluntary construction of public and private dipping tanks. Eventually the Cape government proclaimed permissive legislation and dipping was soon to be compulsory in some of the Eastern Cape districts.

The last element of the post-1902 veterinary regime was a break with previous policy and an extension of veterinary services to the African occupied Transkei. Veterinary services had been described as a subsidy to European agriculture in the context of reconstruction. However the extension of veterinary services in the Transkei required a reinterpretation of the function of these services in the Cape Colony. Due to the decrease in the occurrence of infectious diseases in the Colony, veterinarians and Cape officials started to consider the African occupied territories of the Transkei as disease reservoirs. Their interventions were aimed to protect the European owned herds in the Eastern Cape and the direction of policy and the deployment of resources was determined by the (geographical) distribution of ticks in the case of East Coast Fever. The veterinary policy did more than just control and repress diseases, there were also attempts to eradicate disease supported by the professionalism of the veterinarians. The policy facilitated the information traffic between the southern African states and came to relate to wider objectives.

Conclusions

Although some of the horses died of African horsesickness, especially during specific seasons, there were more factors contributing to the deaths of the horses. Their poor condition was one of the major facts that made them so susceptible to diseases such as horsesickness. It impeded their immune systems and contributed to an already deficient immune system of imported horses. Lack of quarantine to stop the spreading or importation of diseases was another problematic factor that contributed to the high death tolls. The quick pace at which the war developed, impeded certain necessary measurements which were meant to ensure the safe importation of horses. Diseases were easily imported and threatened the health of horses which already had so much to endure. The regiments, having no sense of horsemanship, tried their best to keep their horses as healthy as possible but were often found with their hands tied as they had no participation or involvement in the rations, nor did they have proper access to veterinarians, especially on the side of the burghers. As many men were away from

home and moving consistently for considerable amounts of time, a special bond often developed between a horse and its owner and a horseman was often distressed when his beloved horse died from diseases, bullets or exhaustion. Such experiences impacted on the morale of the men.

African horsesickness was one of the diseases that seriously affected the animals but it did not play a direct role in the South African War. The seasons and outbreaks were mild and although some regiments experienced the disease, more horses died due to the above mentioned reasons. The British army was more affected by the disease than the burghers as the latter used the horses that were born and bred in the country, making their immune systems different from the imported horses, employed by the British army. Due to this fact, the scientific world was not standing still in their horsesickness research. However, their experiments were affected by the fact that horses were in short supply and had to rely on the horses used in regiments and were hindered by the mild horsesickness seasons during the war and the imported diseases that needed urgent attention as many horses were affected by it.

Still, horsesickness remained an important research area and although no major developments or discoveries were made during the war, it contributed to the development of Onderstepoort. The practical experience of the war made it clear that some existing policies needed to be changed and scientists needed to investigate other imported diseases threatening the health of the animals in the country.

CONCLUSION

Socio-environmental history, although a recent historiographic initiative, with regards to the country's history, offers a unique lens onto social change. Disease in history has generally been a scientific matter. However, disease can provide a much broader window into the historical discipline. This thesis employs African horsesickness to investigate the socio-environmental history of the country. Horsesickness had as many societal consequences as economic consequences from the importation of horses with the arrival of Jan van Riebeeck right up until the present day as horsesickness is still occurring today. This specific animal disease has influenced the development of the country and has dominated the horse industry and every related activity since the first horses disembarked in the Cape.

This thesis has investigated three main themes regarding African horsesickness. It has sought to demonstrate and explain the effects of the disease in the veterinary development of South Africa, it analyses the societal impact of the 1854-55 outbreak and assess the consequences of the disease during the South African War, 1899-1902. In addressing these themes, this thesis has been primarily concerned with the social implications of African horsesickness. Engaged with the veterinary development of South Africa, which was partially detached from the focus of the disease, and the imperatives of colonial veterinary science, this thesis also takes a closer look at the knowledge structures embedded in society (local knowledge) and its dependency upon such local knowledge while shifting away towards a more scientific approach.

The idea of history 'from below' and the many implications in the communications between farmers and scientists are also explored. Linked to this process is the creation of knowledge that was produced and moved away from the public sphere to the laboratory and then back, in an ongoing process. The communication between these two interest groups was a further research theme as this demonstrated the developments in veterinary science and the many effects it had on the management of horsesickness.

This chapter examines the conclusions of each chapter followed by a presentation of further possible research areas concerning African horsesickness with regards to South African history or even beyond.

Chapter 1 offered an introduction to the literary review and methodology used in this thesis. It explores a lacuna in the historical analysis of disease. There is only a limited amount of literature available concerning animal disease in South Africa which includes socio-environmental aspects of disease. Chapter 1 demonstrated the different sources used during the investigation of the social aspects of African horsesickness, while highlighting the absence of socio-environmental narratives which are suitable for Southern Africa. The available literature on environment related issues and on South African animal diseases reveals a lacuna in discussing African horsesickness as most of the related literature dealing with animal disease in Southern Africa, deals with mosquito related illnesses or cattle diseases. This is not surprising as the most serious diseases in Africa having extreme economic effects are mosquito and cattle related. The Rinderpest, for example, caused major economic problems. Discussing the socio-environmental aspects in southern Africa, is a fairly new subject and examining African horsesickness through this lens has rarely been done as the emphasis of this subject was on its scientific characteristics. This thesis explores some of the possibilities by analysing horsesickness through a socio-environmental lens.

Chapter 2 dealt with the prevention of animal diseases from a veterinary perspective. It explored the different facets as the development from local knowledge to a growing, if initially hesitant trust in scientists. This chapter explored the development from the earliest veterinarians to the first colonial veterinarians arriving in South Africa. The growth in scientific knowledge contributed to the increase of knowledge regarding animal health which therefore enhanced human health. The first colonial veterinarians arriving in South Africa brought with them their typical western ideas about animal health and disease without being informed or having any specific knowledge about diseases characteristic to southern Africa. It did not take the first scientists long to realize that a mere improvement of the general health of the animals needed more specific knowledge and that their western outlooks and beliefs were insufficient. However, they obtained information did help them expand their expertise and skills necessary to contribute to animal health in southern Africa.

The white farmers, out of economic interest, supported policies regarding veterinary science. Colonists were interested in developing the colony and were far more export orientated. However, farmers had difficulty in trusting the skills of the veterinarians as they were very sceptical about science in general and they, the farmers, still had faith in their old methods of disease control. The farmers scepticism was more out of ignorance than anything else. As most of the farmers lived in isolated areas, they were not in favour of, and found it problematic depending on someone else with regards to their animals. This situation was not made easier by the first veterinarians as they did not have a uniform policy stipulating the areas of research and other practical problems. This caused internal struggles which first of all conveyed the wrong message towards the people and farmers and secondly, it confused the farmers as it was unclear what the realisations and expectations were. The first veterinarians were exposed to fierce opposition in the beginning although they tried hard to convert their skills to the farmers by publishing official reports, pamphlets, addressing public meetings, attending commissions and committees and actually meeting with the farmers themselves. Onderstepoort Veterinary Institute aided in this area, not only because their expertise had grown considerably from when they arrival, but it created a platform that really aided and improved animal health in a practical manner.

African horsesickness impacted heavily and negatively on farming and horse breeding in South Africa. The country had a critical shortage of horses as these animals were not endemic in Africa. Horses were absolutely necessary for transport and farming and this disease did not help increase the already limited breeding stock. Arnold Theiler was very much aware of this fact and put a substantial amount of his research time, money and effort into establishing the nature of this disease. One of his major breakthroughs was the ability to intentionally inoculate horses with infected blood and discovering an initial immune serum. Onderstepoort was responsible for the major boost in veterinary medicine at the beginning of twentieth century, being one of the first institutions in the world that dedicated their research to tropical diseases while presenting researchers and scientists with the necessary instruments and features to make significant contributions to veterinary science in general. As Onderstepoort grew into a veterinary college, it gave South Africans for the first time the opportunity to become fully qualified as veterinarians. The development of such a college displayed the support scientists received from the government and expressed their constructive approach towards the

improvement of animal health towards the livestock holders. The government, as well as animal owners, started to realize that disease investigations and research could be done more intensively and therefore make a significant positive difference in animal health. Although Theiler was not able to find a cure for horsesickness, he was able to contribute to other scientists through his previous efforts and attempts and made a significant difference in veterinary medicine.

However, the importance of this institute should not be overvalued. Most of the important vaccines for diseases were regarded indistinct and indefinable by the scientists and livestock holders remained dependant on old disease control methods such as dipping and restrictions of movement. These old remedies and preventative measures from the nineteenth century continued to be strategic factors in veterinary science during the twentieth century. However, Onderstepoort did make a significant change and was responsible for significant contributions to the scientific developments and economic growth in South Africa. Contributions from foreign scientists and developing attitudes towards veterinary science should be kept in mind. After years of experience and a creation of mutual understanding, farmers and scientists worked on a certain correlation which benefited animal health.

Chapter 3 demonstrated the limited amount of knowledge horse owners and researchers had on African horsesickness. Several different outlooks on the disease were freely communicated and available without having any veterinary or scientifically proven background. African horsesickness was still believed to appear globally therefore naming it horsesickness instead of African horsesickness which is the term people use today.

Farmers were unaware of the causes that lead towards the sudden death of their horses. They lived in isolated areas and had no scientific experience which made it difficult for the first researchers and veterinarians to acquire exact information about the disease. Farmers were dependant on their own remedies or other methods that had seemingly helped other sick horses. Chapter 3 examined some encounters with this disease as this demonstrated the enormity of African horsesickness.

The 1854-55 outbreak raised awareness of African horsesickness as the disease had such considerable impact. After the outbreak, the government was much more involved and invested heavily in order to improve the country's veterinary services. The government emphasised the finding of a cure as the high casualties had far reaching economic effects. Horse owners were previously dependent on their own observations, working on a trial and error basis as veterinarians were not wide spread during the mid nineteenth century (see chapter 2) and therefore not much research was done on African horsesickness.

Similarities between other known and researched diseases were considered as this facilitated farmers and researchers in finding preventative methods or even cures. Although some of their methods vacillate between the eccentric and the frankly desperate in today's terms, with the knowledge and experience they had during that time, it was not that far fetched and some of these methods are still used today, such as the early and late stabling of horses.

The outbreak of 1854-55 was definitely a turning point for the government, scientists and horse owners. The disease was responsible for the death of forty percent of the horse population in the Cape and caused a serious economic loss, which not only weakened the trade in horses but caused a serious decrease in available horses. The breeding industry in the Western Cape was badly affected and many stud farms were compelled to sell everything as the majority of their breeding horses died. Small farmers suffered the most. They did not have the capital to rebound from this experience and many went bankrupt. Horse owners were not only affected economically but it was also a major emotional conflict some of them could not overcome and sold their few surviving horses without returning to horse breeding ever again.

Arguably, this outbreak had an indirect positive effect. The country was left with only the few surviving horses to breed with. These remaining horses were stronger and of good bloodlines. These horses were strong enough to resist the disease and, or had great monetary value, thus the horse owner would make the effort to protect them from the outbreak by stabling them. The weak and low quality horses died while the strong and protected ones survived, leaving excellent breeding possibilities.

The 1854-55 outbreak of African horsesickness was an eye opener for the government who previously was not that intensively involved with animal health. When they felt the immediate results of such a devastating epizootic, the government did put much more effort and attention into the improvement and development of animal health and therefore veterinary science.

Chapter 4 examined the features of animals and disease during wartime. It specifically handles the influence of African horsesickness during the South African War 1899-1902. This chapter demonstrates how the animals died during this war as the more obvious reasons such as bullets and grenades were not responsible for the majority of the deaths. Exhaustion, malnutrition and diseases were the reasons why animals used during wartime died in such large numbers. This was not different for the South African War.

African horsesickness was just one of the many factors responsible for the death rates of horses. Even though a lot of horses died of African horsesickness, there were many other factors contributing to the horses dying of this disease and making them susceptible to it. Due to the high work load and restricted forages, the horses were in poor condition. This had a major impact on the immune system of horses bred in South Africa. Imported horses were severely affected as they already had a deficient immune system due to the poor conditions there were exposed to whilst in transit.. Another problem with the imported horses and their immune systems was their lack of natural and inherited resistance against South African diseases such as African horsesickness. Diseases were easily spread and imported due to a lack of quarantine control. This lack of control existed because of the rapid onset of the war which therefore impacted on necessary methods and regulations normally responsible for the safe importation of horses. The fragile health of the horses was seriously threatened by imported diseases. Although most of the regiments had no background in horsemanship, they tried to secure the health of their animals to the best of their abilities but were often unable to improve the condition of their horses as the regiments had no control over the distribution of the forage rations.

African horsesickness only played an indirect role in the high death rates of equines during the South African War. More horses died from exhaustion, malnutrition and other diseases as the African horsesickness seasons were mild during the war. Boers had the

advantage of having South African bred horses, with their natural immunity to African horsesickness. The British army were at a disadvantage using the weaker imported horses. The scientific world was not standing still during this time and were and active research was being carried out in order to curb and cure African horsesickness. However, research was negatively affected by the mild horsesickness seasons during the war, the limited amount of horses that were available for research and experiments and the imported diseases that acquired extra attention. Although no major developments were made in the research of African horsesickness during the war, it remained an important research area and contributed to the establishment of Onderstepoort Veterinary Institute. It became clear that existing policies regarding animal health, the importation of animals and possible new diseases needed to be adjusted because of the practical experience acquired from the South African War.

Although this thesis is concentrating on the above mentioned themes, there are other interesting research areas concerning African horsesickness which can be further investigated.

The import and export of horses is a fascinating industry. Not only the mere transportation of these animals, but the surrounding policies and politics regarding the importation and exportation. For South Africa, import and export is a rather risky business. A lot depends on the presence of African horsesickness, especially for the Western Cape as this is the only import and export location in the country.¹ The regulations regarding the exportation of horses has been very strict since African horsesickness outbreaks occurred in Spain in 1987 to 1990. The African horsesickness was brought in by zebras imported from Namibia.² This was a serious problem as this threatened the Olympic Games in Barcelona held in 1992.

The South African Import and Export Council, together with the International Olympic Committee had to form a protocol acceptable for the exportation of horses to Europe. The European Union also established, together with the South African Import and Export Council and the Jockey Club, a protocol which allowed the importation of horses into Europe if certain regulations were followed and after the establishment of a quarantine station in an African horsesickness free area in the Western Cape. The quarantine station

¹ Interview Peter Gibson, CEO Racing Industries South Africa, 2 June 2008.

² Heming, D.J. 'Horsesickness and the export trade', *Farmer's Weekly*, 1 October, 1999, p.18.

is situated on Kenilworth Racecourse and the surrounding area is declared an African horsesickness free zone. The Western Cape is divided into two areas, an African horsesickness free area (area around Kenilworth Quarantine Station) and an African horsesickness surveillance zone (area from Cape Point in the south to the Berg River in the north and the Hottentots Holland Mountains in the east). The rest of the Western Cape, ranging from Overberg, Boland to Knysna, Laingsburg and Beaufort West is called a protected zone while the remainder of southern Africa is referred to as the 'infected zone'. Horses living in the free area and surveillance zone may not be vaccinated against the disease without permission of the state veterinarian.³ Such regulations have an impact on the horse industry in the country as horses moving from an infected area are allowed to enter the Western Cape only if there is a current vaccination certificate⁴ in their passport. Due to such regulations, horses are prohibited from entering certain zones and this can have serious consequences as Heming recalled:

‘The cancellation of the yearling sale at Spier and the sale’s relocation to Worcester meant the withdrawal of yearlings from other studs under quarantine. The brood-mare sale held at Robertson forced stud owners to sell their valuable mares in absentia. These economic disasters could not, however, be compared with the devastation of nursing and caring for a sick horse through the dreadful trauma of African horsesickness, watching helplessly as a very dear friend and companion died a very stressful and painful death. I felt great sympathy for those unfortunate owners who lost their horses during this recent outbreak of African horsesickness.’⁵

The latest restrictions on horse transportation occurred in March 2008 when horse movements into the Western Cape Province were halted following an outbreak of African horsesickness in Gauteng, KwaZulu-Natal and the Eastern Cape.⁶

Linked to this import and export industry, regarding African horsesickness, is another interesting possible research area for historians: the occurrence of the disease outside southern Africa. From the establishment of Onderstepoort Veterinary Institute in 1908 until today, this institute played a vital role in the diagnosis of the disease outside South Africa as samples were sent to the institute when suspicious deaths of equines occurred in other countries. Although the scientific details of African horsesickness episodes are

³ Interview Peter Gibson, CEO Racing Industries South Africa, 2 June 2008.

⁴ This means that vaccination must not have been done fewer than sixty days prior to transportation.

⁵ Heming, D.J. ‘Horsesickness and the export trade’, *Farmer’s Weekly*, 1 October, 1999, p.20.

⁶ ‘African Horse Sickness halts SA horse movements’, *Horsetalk*, 13 March, 2008

covered in many scientifically written papers,⁷ it should be interesting to examine and discuss the impact of this disease outside southern Africa. For example the implications of caravans covering deserts in eastern countries as the majority of these communities are heavily dependent on mules and horses.

The spread of the disease covered Egypt and Eritrea (1931),⁸ Senegal to the Cape Verde Islands (1943), Palestine (1944),⁹ Turkey and Cyprus (1960) and from Morocco to Spain (1966).¹⁰ This spread of African horsesickness was completed by the transportation of *Culicoides* midges by wind over sea. African horsesickness outside southern Africa has not been a problem over the last decades as Dr. Koch was already aware of the possibilities of disease spreading and therefore conducting African horsesickness research outside southern Africa such as Dar-es-Salaam.¹¹

Due to later research and scientific breakthroughs regarding this disease, some early epizootics outside southern Africa were not recorded as African horsesickness. As Binns, the acting chief veterinary officer of Jerusalem, stated:

‘During the Palestine epizootic the following interesting information was obtained which suggests that horsesickness may have spread from Africa on several occasions in the past without becoming established as an enzootic disease.’¹²

In 1912 horses suffered an outbreak within the Turkish cavalry in the region of Aleppo. These horses were not diagnosed as African horsesickness at that time but comparing it with the Palestine disease, the Director of Veterinary Services was convinced that this

⁷ For details about African horsesickness in the Middle East, see: Alexander, A. ‘The 1944 epizootic of Horsesickness in the Middle East’, *Onderstepoort Journal of Veterinary Science and Animal Industry*, Vol.23, No.1&2, March, 1948, pp.77-92 and Howell, P.G. ‘The 1960 epizootic in the Middle East and South West Asia’, *Journal of South African Veterinary Medical Association*, Vol.31, 1960, pp.329-334. For details about African horsesickness in Europe, see: Mellor, P.S., Boorman, J., Wilkinson, P.J. and Martinez-Gomez, F. ‘Potential vectors of bluetongue and African horsesickness viruses in Spain’, *The Veterinary Record*, 5 March, 1983, pp.229-230 and Mellor, P.S., Boned, J., Hamblin, C., Graham, S.D. ‘Isolations of African horsesickness virus from the insects made during the 1988 epizootic in Spain’, *Epidemiology and Infection*, Vol.105, No.2, October, 1990, pp.447-454.

⁸ Carpano, M. ‘African Horse Sickness as observed particularly in Egypt and Erithrea’, *Bulletin No.15*, Ministry of Agriculture, Cairo, 1931.

⁹ Binns, H.R., ‘The 1944 Epizootic of African Horse Sickness in Palestine’, report by Department of Agriculture and Fisheries, Jerusalem

¹⁰ Heming, D.J. ‘Horsesickness and the export trade’, *Farmer’s Weekly*, 1 October, 1999, p.20.

¹¹ TAB CO 245 [70/04], Telegram from Administrator Pietermaritzburg to High Commissioner Johannesburg, 9 January 1904.

¹² Binns, H.R., ‘The 1944 Epizootic of African Horse Sickness in Palestine’, report by Department of Agriculture and Fisheries, Jerusalem.

outbreak was horsesickness as well. However, one of the earliest records stating the occurrence of African horsesickness outside southern Africa was in 1876 when the disease was prevalent in Egypt and Syria.¹³ The specific reason for the occurrence of the disease so far north was never ascertained. It is only assumed that it must have come from the extended Canal area and was spread via camel caravans or even via mechanical transport.

A final addition to the contemporary discussion of African horsesickness that is proposed, is an investigation into the present and future course of the disease and the impacts an episode would have today in Europe or other continents. Due to changes in the climate, such as global warming among other things, and today's travel possibilities,¹⁴ it would be fascinating to examine the possible routes and paths followed by African horsesickness. Where the disease used to stay in southern Africa due to its specific climate and transport systems, Europe is definitely concerned about the spreading of the disease.¹⁵ Britain is especially alarmed by this current prediction as it could mean the end of a long tradition of equestrian sports such as horse racing and could have a serious impact on the country's £4 billion equine industry.¹⁶ European horse populations are still considered highly vulnerable as they do not have any immunity against African horsesickness. Not only is African horsesickness considered a possible threat but other disease have already been encountered due to climate change. Blue tongue has already seriously affected sheep and cattle in Europe and it is therefore only a matter of time before African horsesickness is going to influence the health of equines. In Britain, horse owners are prepared for a possible outbreak by the Horse Trust¹⁷ with the help of certain awareness programmes and campaigns. Europe is also aware of the possible spread of this disease. Australia has since 1996¹⁸ an existing veterinary emergency plan specifically designed for the occurrence of African horsesickness in the country.

¹³ Binns, H.R., 'The 1944 Epizootic of African Horse Sickness in Palestine', report by Department of Agriculture and Fisheries, Jerusalem.

¹⁴ Where horses only used to move forty kilometres a day, today they are transported in trucks and aeroplanes, making the spreading of the disease much easier and ranging over wider areas

¹⁵ Interview with Dr. Alan Guthrie, director of Equine Research Centre, 19 June 2008

¹⁶ 'Lethal horse disease knocking on Europe's door', *Horsetalk*, March 28, 2007.

¹⁷ The oldest horse charity in Britain.

¹⁸ 'Disease Strategy African horse sickness', *Ausvetplan*, 1996.

Although it is helpful to be aware of the possible spreading of the disease, there is a major predicament. The only vaccines that are available for vaccinating the equines against African horsesickness are made only in South Africa. They are not licensed for use in Europe. However, previous measures that also helped to eradicate African horsesickness during earlier episodes outside southern Africa, should still be used. These methods of eradication range from slaughter policies, movement restrictions, and vector eradication. Although the current prognosis for African horsesickness is not optimistic for countries previously unaffected by the disease, they have at their disposal modern methods and tools which were previously not available. The course African horsesickness is following is not exclusive or new to diseases. An interesting comparison between the course of African horsesickness and another major animal disease can be made as this will bring a unique insight in the effect of disease and their followed routes.

Today scientists are researching the role satellites could have in the control of the spread of disease. Danish researchers are examining the possibility of how satellite data can be used to predict where in a country the small insects responsible for the spread of a disease are likely to be in abundance.¹⁹ This would help in allowing ground based teams to focus their attack on vaccination efforts or midge populations. Satellites can measure certain conditions such as heat, humid soil and plant cover, which are also the necessary conditions for midges and other insects to flourish. The awareness of the spread of African horsesickness is not only positive for veterinary medicine, as research is now not only confined to South Africa, but the horse industry and owners are warned as well, and can act accordingly.

These trajectories all require analysis but this thesis offers a socio-environmental analysis of one of the most serious animal diseases on the African continent, African horsesickness.

¹⁹ 'Satellites could be weapons in fighting African Horse Sickness', *Horsetalk*, 28 February, 2008.

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5. ORAL EVIDENCE AND PERSONAL COMMUNICATION

Desmond Colborne: lecturer and author University of Cape Town, 5 May 2008.

Peter Gibson: CEO Racing South Africa, representing the South African Horseracing and Breeding Industry, 2 June 2008.

Alan Guthrie: Professor at Department of Veterinary Tropical Diseases, Faculty of Veterinary Science University of Pretoria, 19 June 2008.