

## THE VANE CHANGES 1901-1902

THE RAPACITY of the British Army aided by the South African Constabulary was now in full spate and even Milner deplored its activities. Kitchener's excoriating policy, designed to deprive the guerillas of support, supplies and domestic comfort, entailed the collection in 'Cattle Preservation Stations' or 'Protection Camps' of everything on four feet. These concentrations were also intended to supply remounts, transport oxen and slaughter stock; but, on land grazed flat, they died in thousands of starvation and disease. Writing from Johannesburg before his departure, Milner confided in Fiddes: 'I am very anxious about the stock question; but I can assure you that the difficulty which we have here, great as it is, is small compared with the colossal disaster which threatens us in the Orange River Colony unless we can either induce the Military to temper their zeal for capturing cattle and sheep with a little discretion, or else push out our Constabulary posts so fast as to increase enormously the area of protected grazing before the winter.' Kitchener invited an equally 'colossal disaster' with the 'Protection Camps' (later known as Refugee or Concentration Camps) wished upon him by Botha for the dispossessed human inhabitants. The despoliation countrywide of human and natural resources was approaching completion. In 1901, the ultimate disaster appeared.

Wide though the waste and disorganisation, the South African scene presented prospects for opportunists. The rag, tag and bobtail joined the Constabulary or became civil inspectors of one sort or another. Some of the burghers joined the 'National Scouts' and were reviled by their countrymen. Some of their women became prostitutes in Pretoria, Theiler several times noted. Many men of all nations made fortunes out of supplying produce and commodities of all kinds. Some, of better intent, struggled to restore the livestock industry. Joseph Baynes, a progressive Natal farmer, specially imported cattle from Queensland, Australia at the end of 1900 because they were supposed to be free of Redwater. Most of them died after infecting his own cattle with Lung Sickness. The Natal Government tried the same experiment with similar result. Baynes was undaunted and early in 1901, built his first dipping tank, using a difficult formula from Queensland successfully to protect his cattle against ticks. Hutcheon was sent to England in June 1901 by the Cape Government to buy stud stock and thence to the United States to study agricultural departments and veterinary laboratories, J. D. Borthwick taking charge of his department. Farmers who could produce any kind of food or fodder did well. Over all the dismaying scene hung the magic word 'reconstruction'. Milner was going to England to arrange its reality.

It was common property that the first steps had been taken in the Orange River Colony and Transvaal. Soon 'Repatriation Departments' would be started for destitute burghers who had taken the oath of neutrality. Veterinary services would be needed. The Transvaal had only a 'bacteriologist' at Daspoort. Watkins-Pitchford who had returned on the 2nd January 1901 to Natal, caught the opportunist fever. He had heard of Turner's appointment as Transvaal M.O.H. and concluded that a similar veterinary appointment would be made.

Early in March, he wrote directly to Milner, enclosing testimonials and offering his services, wildly claiming to have 'probably a more extensive experience of animal diseases in South Africa than any other worker' (Hutcheon, Edington and Theiler were vastly his superior). Fiddes' publicised activities then struck him and on the 22nd March, he presumed on their shipboard acquaintance to write directly to him with the same intent, modestly averring that he merely wished to be on all fours with other competitors. Fiddes answered that he must make



7 formal application and on the 4th April, Pitchford duly requested the 'Imperial Government of the Transvaal' to appoint him 'Director of the Veterinary Department' at a salary of about £1,000 per annum. He was indeed a good shot and good horseman and had had a few weeks' Transvaal experience in the Waterberg and Rustenburg districts but was principally motivated by 'statements that the Civil Veterinary and Stock Administration would be undertaken by the Veterinary Officer (Sanderson) on General Baden-Powell's staff in addition to his regimental duties' which, Pitchford declared, was impossible.

8 Fiddes consulted George Turner who, in a memo of the 14th April made two familiar points: a general Bacteriological Institute serving both the Transvaal and Orange River Colony was essential and should come under the *Health* Department. 'I know Mr Watkins-Pitchford who is a good man and I would also like to draw your attention to Mr Theiler who I know personally to be a most highly qualified veterinary surgeon and bacteriologist.' Pitchford remained at his Natal post and Theiler at his. They maintained close correspondence as previously, Pitchford having succeeded in his campaign to get the Natal Government to appoint a Commission to examine the claim made at the 1897 Rinderpest Conference that he and Theiler were the joint discoverers of the immunising serum. At the moment when he was applying for the Transvaal appointment, he was writing to Theiler to ask him to give evidence and also to contribute an article on Horse Sickness to the *Natal Agricultural Journal*.

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10 Theiler had been enduring endless frustration and vexation. His father's letters and the supplies he ordered reached him either within a month or not at all. He was in urgent need of specialised glassware (flasks, verres protectifs, etc) for vaccine and lymph production and his experiments in general; but neither Cogit in Paris nor German suppliers promptly delivered. When consignments came, they were either broken or the wrong type or in short supply. He was irritated by emotional criticism of his campaign articles in the Pro-Boer Swiss Press (Kipling too was blackguarded by the *Tribunal de Genève* on the 11th January 1901 for fictitiously attending and describing the murder of a civilian). He resented uninformed comment on his eye-witness accounts and his specialised knowledge of 'the Boers'.

11 All at once early in March, letters, books and journals posted months before reached him from Europe. He was astonished and gratified to find that Zschokke had considered his paper on Malaria in Horses suitable for submission to the University of Berne as a dissertation for a doctorate in Veterinary Medicine. (The Berne and Zurich Veterinary Schools had been elevated only the year before to faculties competent to award degrees.) Theiler had intended it only as an article for a veterinary journal; but his father's and Zschokke's fortuitous enthusiasm might well prosper his cause. When it came to confirming his appointment or qualifying for another, a doctorate would be very valuable. His happy thoughts dwindled into abject despair and finally disgust. There followed academic quibbles amounting to criticism that he had not presented his thesis in optima forma - its language and syntax were defective and he had omitted references.  
12 It had been intended merely as an article and Emma defended him furiously. After weeks of vituperation during which he urgently hoped that he might 'graduate' in time to influence permanent appointment, Theiler was taken away and Emma was left to level the last of his difficulties.  
13 In the meantime, his father did everything possible, Alfred copied the article in a beautiful hand and Zschokke of Zurich coöperated with Quillebeau of Berne to ensure its award.

14 On the 3rd March 1901, dread word came from German South West Africa that Rinderpest  
15 (which Turner had known to hover as early as June 1900) had become epidemic. British soldiers guarded the drifts across the Orange River. The local veterans knew that nothing would stop its course. Edington, returning at that moment from his six-month furlough, could speculate on again becoming a glycerinated-bile factory, his Horse Sickness and other work in abeyance



16 through lack of experimental animals. Hutcheon's department would be hamstrung – after  
17 supplying improved serum to Egypt (which Phillips had administered in loco), the Kimberley  
Experimental Station had been closed. Foresightedly, Turner had secured the return of Phillips  
who had arrived in Cape Town but had not yet assumed his intended appointment to the Pre-  
toria Leprosarium where Turner himself spent all of his free time.

18 Towards the end of May, Kitchener sent for Turner. A disease had broken out among cattle  
19 near Maseru in Basutoland whose nature he wished him to ascertain. Turner said he was not a  
veterinarian though familiar with Rinderpest but would be unable to diagnose anything other.  
He must therefore take Theiler. Kitchener agreed and facilitated the issue of a host of permits  
to enable their journey by train to Bloemfontein, by coach to Maseru and thereafter by Cape-  
cart and four mules, all under the Army's surveillance and reporting at all outposts for searching.

20 Nobody doubted that the cases were Rinderpest. Turner went at once to Fiddes and told him  
to write to Phillips in Cape Town, appointing him lay-assistant at the Pretoria Leper Hospital  
at £500 a year. It was duly gazetted as operative from 1st June. Phillips left almost immediately  
and had an adventurous four-day train journey harassed by de Wet and his commando and  
21 passing 'miles of sheep and cattle' being herded into the 'Preservation Camps'. One flock of  
sheep, he wrote, was 10 miles long. Other travellers at the time had the same experience. J. A.  
van der Byl, returning to his Irene Estate from the Cape, also taking four days and nights  
owing to 'very active Boers', wrote his daughter – 'It was distressing to see the numbers of dead  
horses, cattle and sheep on the way. They could be counted in tens of thousands and those still  
alive are kept close to the railway line in order to be guarded by the soldiers and they too are  
in such miserable condition that I feel certain more than half will join the Majority before the  
winter is over.' The village of Irene was 'a tented field' and about 6,000 women and children  
lived in squalor in a 'Refugee Camp' while their marauding men brazenly swept off cattle,  
sheep and donkeys belonging to it.

22 Turner and Theiler left for Maseru on the 17th May 1901, Theiler rejoicing in his first ex-  
23 cursión from Pretoria in exactly a year of confinement and frustration. He was happy too to  
24 have modern equipment with him. The lost case of microscopes had at last been found a month  
before with its contents 'in the best condition'. Immersed in misery and disgust over the  
quibbling and criticism of his 'thesis' (he had threatened to cable renouncing the doctorate –  
'I have regarded it as a bauble (klimbimb). A bauble it will remain to me.'), he had 'still lacked  
the true wish to work'. Now he was wanted, in the company of a distinguished colleague,  
travelling to a new and fascinating land. Hardly had he left than Emma received a cable from  
his father confirming the award by the Faculty of Veterinary Medicine of the University of  
25 Berne of the degree of Doctor of Veterinary Medicine on Arnold Theiler for his dissertation on  
'The Malaria of Horses'. (It had been published in Zurich on the 24th May.) The message came  
on the 29th May and Emma got it to him with all despatch. Theiler was elated. At least he need  
no longer be embarrassed by being called 'doctor'. At best it might profit his future. Remem-  
26 bering 1897/98, Emma foresaw starvation for South Africa but, writing home, could not men-  
tion the menace of Rinderpest to the British military effort.

27 Army veterinary surgeons were detailed to assist Turner and Theiler as they left Bloemfontein  
by coach on their way to Basutoland in the keen cold of mid-winter. A mere 38 miles further at  
Thaba Nchu in the old Free State, they found cases of Rinderpest. Proceeding to Maseru  
(capital of 'the Switzerland of South Africa' where, at 5,000 feet, snow on the Drakensberg  
produced bitter cold), they conferred in the British Residency (Lagden was away) with Lieu-  
tenant-Colonel Thomas Flintoff A.V.S. who had served in the war with the 2nd Life Guards.  
There was no mistaking the prevalence of Rinderpest in the Orange River Colony and Basuto-  
land.



The P.V.O. Colonel Matthews had told Turner that it had been introduced by refugee Boer women, a view Turner derided, believing from its simultaneous appearance at Mafeking that it had spread eastward from German South West Africa. They all knew what should be done but there was no means of doing it. When the Kimberley Station closed in 1898, Turner had taken to Cape Town a small supply of serum. He now sent for it but the immediate need was urgent. There was no alternative but to revert to Koch's quick original method of injecting bile from a diseased ox into a healthy animal temporarily to immunise it. Theiler, Turner and Flintoff laboured 28 urgently to initiate the method and to teach the Basuto to use it. Demeaning work though it were to the new Doctor of Veterinary Medicine, it taught Theiler much, particularly in plumbing 29 the singular character of George Turner.

After about ten days, Turner returned to Pretoria to report to Fiddes and Kitchener, leaving Theiler (living in the Residency) in charge of both tuition and inoculation. Kitchener instructed Turner immediately to establish a serum station in Pretoria – a process that technically could not take less than three months during which the old Koch method would have to be continued. Facilities were available at Theiler's Daspoort Laboratory and Turner immediately arranged 30 for the appointment to it at an increment of £100 a year of J. W. Phillips, now officiating at the Leper Hospital. He was to be officer-in-charge of the new Rinderpest Station under the Department of Health headed by Turner. None knew nor practised better than he the processes of production.

Turner then dashed to Cape Town to obtain equipment and serum from Hutcheon's department. At that moment, Rinderpest appeared at Hanover in the Cape and, so far from gaining material to start his Station at Daspoort, Turner had great difficulty in obtaining 500 doses and only on promise of return when it reached production. He had himself produced this serum in Kimberley in 1898 and was consequently delighted by its continued potency when, sending some to Maseru, Theiler successfully immunised 1,400 Army oxen with it. Turner then 31 returned to Pretoria to engage manifold difficulties, principally the impossibility under current conditions of obtaining able-bodied oxen to serve as factories. He had also to arrange the building of sheds and a destructor at Daspoort as well as fencing where, surprisingly, he had willing 32 and rapid coöperation from the Public Works Department. More extensions would soon be needed.

Theiler, involuntarily, was enjoying the recruitment of his resources and purging from his mind the hurt and hate of the doctorate contretemps. He had written Emma the required references (one from the veteran military bacteriologist Alphonse Laveran and others from German, French and Italian sources) and she forwarded them to his father who continued to rejoice in arranging his son's supplies – anthrax vaccine from the Institut Pasteur, despatches from the Swiss Serum Institute, more flasks from Cogit, journals, books. Emma had received a letter from Amsterdam from Arnold's early lay-assistant Schroeder who had read of his doctorate in a Dutch newspaper. His 'Horse Death' was appearing in two parts in the *Deutsche Tierärztliche Wochenschrift*. Zschokke would probably publish 'The Tsetse Disease – Nagana' in the 33 *Schweizer Archiv für Tierheilkunde*. Printed copies of his Dissertation were being sent to scientists and influential persons in Switzerland and beyond. His name would soon be widespread 34 in Europe and he would reap some compensation for the lack of a professional journal locally which he could have sent overseas.

Never out of saddle or cart, stimulated by the crisp frigid air and heroic scenery, Theiler worked with Flintoff and others to save Basutoland and the Orange River Colony from the Cattle Plague. He and his pupils, black and white, inoculated 3,000 cattle around Maseru and carried the gospel to the British Army and wherever burghers were back on their farms. It was all interim activity until Turner could get the laboratory going and produce refined serum.



35 Turner wrote him repeatedly for samples of virulent Rinderpest blood but it deteriorated on the long cart-coach-train journey lasting as much as 8 days. In July, Turner told Theiler to return, bringing live virus with him.

36 Refreshed though he were in mind and body, Theiler had certain arrières pensées. Pitchford had written him again, asking him personally to give evidence to the Commission appointed by the Natal Government on the 25th June. Under orders in Basutoland, he could not go to Pietermaritzburg. He surmised that Turner felt he was making common cause with Pitchford and that he was losing his urge for research. He wondered too why he was kept so long away from Pretoria when he had not been engaged to deal with either Basutoland or the Orange River Colony. He began to have doubts. He was afraid that his authority at the new Serum Station at Daspoort would be restricted. Phillips had once operated the Kimberley Station for three months without supervision and might have developed authoritarian ideas. He rejoiced when, after nearly two months in the field, he was required to return. Emma must make him a special dinner and invite half a dozen of the leading local Swiss. The Boers blew up a bridge in front of his train which entailed only a short delay and on the 17th July, he was back with his family at Daspoort.

37 Official courtesies were exchanged. 'I cannot allow Dr Theiler to leave Basutoland', wrote  
38 H. C. Sloley, the Acting Resident Commissioner to the Transvaal Secretary Fiddes, 'without placing on record my appreciation of the courtesy with which he ever has been ready to assist us with his advice during his stay though he has, in accordance with his instructions, been principally occupied with the experimental treatment of cattle in the neighbouring district (sic) of the Orange River Colony. Dr Theiler has given zealous and skilful attention to the outbreak of Rinderpest in Basutoland and his services have been most valuable to this Government.' Fiddes sent the letter to Turner, requesting that he communicate it to Theiler. As M.O.H.,  
39 Turner had the right to reply directly. Doubtless impressed by Theiler's new academic distinction, he did so in kind - and revealingly. 'It is with great pleasure that I am forwarding to my colleague Dr Theiler your very courteous appreciation of his services. Allow me to thank you for having so promptly recognised the work of my colleague. I am exceedingly fortunate in being associated with a man so thoroughly well grounded in his profession who has received a scientific education and who does not spare himself in carrying out his duty.' Theiler was pleased. He was sickening for one of his habitual states of euphoria.

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40 His laboratory was at last coming into its own. Veterinary duties still fell to him but diminished after the 20th July when Captain J. M. Christy M.R.C.V.S. was appointed to Turner's staff.  
41 From his carefully-accumulated store of cultures, Theiler was able to deal with a wide variety of human and animal diseases. In August, Kitchener had to cope with threatened Smallpox and enacted compulsory vaccination for native labour. Theiler was ready for it. He also began the production of diphtheria serum and foresaw involvement in Turner's dedicated investigation of Leprosy. Serum for Bovine Pleuro-Pneumonia (Lung Sickness) and Mallein for Glanders (the main scourges of the British Army) were in constant production while Theiler supervised  
42 Phillips' expert manipulation of Rinderspest serum to ensure its quality. (Phillips' diary of the time records the bravado of the Boers who hovered fearlessly in the vicinity of Pretoria and occasionally sniped at him or threatened to steal his horse as he rode into town). Daspoort had become a busy immunisation factory with too few buildings and assistants; but, overloaded by work and eagerly supported by Turner, Theiler continued his tantalising Horse Sickness experiments and 'all kinds of other investigations'.  
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44 'Now I have more opportunity to achieve something scientific than ever before', he wrote and burdened his father with more requests. Some – textbooks, journals and apparatus – were for his own edification but others were in the general interest. Production of Rinderpest serum depended on the blood standing for 48 hours in a special glass vessel to allow the serum to separate. The number of these fragile flasks which Theiler had ordered, inevitably diminished and he besought his father to expedite more from Cogit. At one stage, only nine remained with no sign, under war conditions, of others arriving. Both Turner and Theiler, already exacerbated by the Army's refusal to provide oxen, were distraught.

45 Since transference as 'Bacteriologist' to the Health Department, Theiler's salary had risen to £900 and he was at last able to discharge his accounts overseas. Much was facilitated by his paying money into the Welfare Fund of the Schweizerverein Alpina in Pretoria equalling amounts collected by Kollmann in Switzerland who then paid them in francs to his father. He intended discharging his obligations to Professors Zschokke, Quillebeau and Kitt in typically esoteric manner but it was not until December 1901 that he was able to send them 'interesting pathological specimens' including Rinderpest and part of the lung of a horse dead from the Sickness. They were taken by a friend in bottles without labels lest the Customs impound them as 'pestilences'.

46 'The will to work' was now back in full force with a mounting sense of accomplishment verging on ecstasy. His articles were appearing in journals of the highest repute in Europe, Pitchford would shortly publish his contribution on 'Horse Sickness' in the *Natal Agricultural Journal*. He was doing what he wanted to do with his superior's full support and understanding. There was indeed a small disappointment – his Dissertation on Horse Malaria describing the causative trypanosome had been anticipated by Laveran to whom he had sent smears through his friend Nocard. Laveran had published a work on trypanosomes and had called the Equine Malaria variety 'piroplasma equi'. Theiler noted keenly that Laveran had worked with frogs.

47 Otherwise all marched excellently. His staff was augmented by his ex-orderly D. T. Botha as Lymph Packer and by his previous lay-assistant Alfred von Bergen as Lymph Maker. In the grip of euphoria, he wrote a long letter to Alfred, then 19 and a scholar at the Aarau High School with leanings towards Natural Science as became a son of Franz Theiler. Arnold implored him to get on with his studies (which they had discussed in 1899), take a degree at the University of Zurich and then work with Nocard in Paris and John M'Fadyean in London (to learn English) so that he could join him for a trial year in his laboratory. Alfred tended toward zoology and Arnold tempted him with wonderful opportunities and a great future in South Africa. He also asked Alfred to send his school books on Mathematics, Chemistry, Physics and Natural Science as he himself had forgotten so much. Obsessed with the shining future, he wrote with convincing persuasiveness; but events and Alfred's inclinations nullified his plan.

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50 Lord Milner landed in Cape Town on the 27th August 1901 and, staying briefly with the new Cape Governor, Sir Walter Hely-Hutchinson, traversed the ravaged land to establish his headquarters at an American mining engineer's manor 'Sunnyside' in Johannesburg with a direct telephone line to Pretoria. His 'Kindergarten' was already gathering around him – the Honourable Hugh A. Wyndham and John Buchan as private secretaries (Buchan was later allocated Refugee Camps and Agricultural Resettlement); Patrick Duncan, Milner's previous secretary in the English Department of Inland Revenue, as Treasurer for the Transvaal; Lionel Hitchens, Geoffrey Robinson, Lord Basil Blackwood and many other eager high-spirited young men knowing no language but their own and some Latin and Greek with perhaps a smattering of French. To them was entrusted the hydra-headed problem of a despoiled land and a demoralised people.

There was still no sign of peace; but to some, like Theiler, the future held infinite promise. To



51 others, like Emma who had lived restrictedly and tediously for more than a year under Martial Law, hope was less feasible than despair. To the ruined local inhabitants, there was not even hope, only sullen resignation in a land drifting beyond the brutal usages of war into the chaos created by Nature.

52 By October, the Rinderpest had reached Pretoria. Theiler was desperately trying – as he and others has so futilely done before – to isolate the causative bacillus. He was using a new method of intraperitoneal culture and was at first optimistic. But for the serum poured out by Borthwick (acting for Hutcheon, absent overseas) at the new Cape stations at Aliwal North and Kimberley, and by Turner, Theiler and Phillips at Daspoort, the British Army's drive to corner the guerillas might have been halted. Its transport oxen were essential. Rinderpest (which had reached no  
53 further than the Northern Cape) first seriously affected them in August 1901. Of a strength of 95,700 oxen in that month, 16,200 or 17% died. In September, of 86,700, 16,300 or roughly 18%; in October, 17%; and in November and December, about 12%. During those five months, 65,700 Army oxen died. No one could calculate the loss in beasts equally essential to agriculture practised by whites and blacks whose remaining animals had been commandeered. Only a  
54 bucolic story survives to illustrate the exigency of the times in the most favoured area of Southern Africa.

At the Cape, Sir Walter Hely-Hutchinson liked to hunt small game on nearby farms, his party generally being accompanied by one or more of the local Afrikaner farmers. On one such occasion at precisely this period, he was joined by Fanie Cilliers at Hermon beyond Paarl and as they rode to the hunting ground, enquired about farming conditions after recent good rains. Fanie hedged and when pushed, spoke his mind in English about the military commandeering almost all their mules and horses so that they could not plough. 'Not at all?' exclaimed Sir Walter.

'Well, no, Guv'nor – 'n boer maak 'n plan – a farmer makes a plan, as we say. I have managed to put in about a third of my usual crop by training and inspanning six of my dry cows and six young heifers before one double-furrow plough.'

'But can such a ragged team effectively pull a heavy plough, Cilliers?'

'Well Guv'nor, hardly. But I have also got two big bulls, Blouberg and Tafelberg and I have trained them under the yoke too.'

'But surely, Cilliers, two bulls can't pull a plough by themselves, can they?'

'That's right, Guv'nor. But here again is a case where a farmer makes a plan. I put the two bulls at the rear of the team with the cows and heifers in front and by God, Guv'nor, you should have seen how that plough turned up the soil!'

Delighted, Sir Walter reined his horse, collected his party of A.D.C.'s, officers and guests and made Cilliers repeat the earthy story. It became a standing joke on subsequent expeditions. (When the war was over, Sir Walter saw to it that Cilliers had special pick at the sale of military mules and horses.)

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55 The Cape suffered least; but progressively northward, conditions worsened to utter penury. On his way to Johannesburg, Milner had examined an incipient Department of Agriculture at Bloemfontein, carefully nurtured by the horse-loving Gool-Adams. Trees had been planted, a Land Board for repatriated burghers formed, 150 British farmers settled and other steps taken. The Transvaal was in far worse pass but Milner had already made his plans in England. Little could be done until Kitchener could conclude the war. There was as yet no sign, no chance to institute 'reconstruction'.





*Surgeon-Major David Bruce R.A.M.C. before acquiring the Ladysmith medal with seven bars for his services during the Siege and numerous other distinctions.*



*Mrs Bruce whose work in the besieged Ladysmith was acknowledged by the award of the R.R.C. and service medals.*



*Butchering horses for food, their selection being one of the duties of H. Watkins-Pitchford who may have figured in this scene drawn by Melton Prior.*





Disfigured and bloated bodies seen and described by Theiler some days after the Battle of Spionkop.

Slaughter of Cavalry horses was compelled by Lord Roberts' drive to capture Bloemfontein. Over-loaded, exhausted and starving, they were beyond the point of recovery and were shot by the Army - in this instance at Winburg in the Orange Free State, 1,500 cavalry mounts being killed.



Herabgegeben vom Hilliskomite Basel zu Gunsten des Schweizer Vereins „Alpina“ in Pretoria.



Postcard of a Boer Commando issued for sale by a committee in Basle, Switzerland with the help of Theiler's friend Kollmann to raise money for the Schweizerverein Alpina in Pretoria which he had founded and which assisted distressed Swiss during the Boer War. Kollmann signed and sent the card to Theiler.

La Guerre Anglo Boer

How do you do my boy, how do you do?  
 Gausend Dank für Ihren Brief  
 Ich danke Ihnen sehr  
 Un Commando  
 Oupa Jan



56 It was part of this policy that Theiler was now encouraged to devote himself to purely scientific investigation. He mounted a battery of different experiments, his staff was progressively increased (in October, B. Porta as Laboratory Superintendent and later specially in charge of Horse Sickness experiments; in November, P. R. Ferreira as Inoculatory Assistant), his access to overseas sources was facilitated. Turner knew of what he was capable – he knew his past record, particularly with Rinderpest, and he had read his last three papers which consolidated his ten years' experience and work on Horse Sickness and Malaria, and Nagana. 'The Tsetse Fly Sickness' was indeed almost autobiographical. Theiler began it with a study of early sources including Livingstone's 'Missionary Travels' which he had read as a boy and the 'Fly Belt' map published by Fred Jeppe in 1877 at which he had marvelled when first in Pretoria. He owed his interest in the subject, he wrote, to David Bruce whose infinitely thorough investigations he described. He himself had repeated and extended them, subjecting the easily-stained trypanosome to every kind of test, consulting all the current published works, writing to the leading investigators overseas some of whom he had met in 1899, describing in terse muscular terms every aspect of the disease and incidence in various animals, leaving no detail unexplained or unaccounted for. Turner, like everyone else who later read Theiler's reports, wondered at their exhaustiveness and the thoroughness with which he devised experiments of wide variety to test every possible contingency in the subject he was studying. He marvelled too at the simplicity of his language and the directness of his attack, so different from the wordy effusions of Edington and the thin content of Pitchford's accounts written principally for farmers.

57 Given free rein, Theiler explored many blind alleys and recorded many inconclusive results, notably with the elusive Rinderpest 'microbe' and the cause of the Horse Death. 'I apparently spend much time on negative results', he wrote, 'but the enterprises on which I am now engaged are the most delicate which I have ever undertaken and require much patience and endurance.' Emma shared in them. She was more than his left hand. He taught von Bergen to cut 58 fine sections for microscopic work with the Microtome that his father had obtained for him but Emma was his expert laboratory assistant.

Arnold was collecting mosquitoes to breed for experiment – '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 59 eating organ.' He sent a collection of mosquitoes to the British Museum for checking and later another, being gratified to receive a reply from the appropriate officer, Theobald saying that they 60 included three new varieties of Anopheles and Culex. He was also finely examining the activity of a bacillus in the intestines of the louse-fly associated with pigeons. Emma dissected them for him. The onset of the summer rains and the proliferation of flies meant further disaster to the 61 British Army – the Horse Death would hamper it again. Daspoort could hardly meet its demands for Rinderpest serum.

Theiler's appetite for more textbooks, more laboratory equipment, more esoteric apparatus, more chemicals became insatiable. He wrote his father weekly with exigent demands. During the long hot summer nights, he and Emma varied their activities by studying Italian for future use on their travels, Algebra, Logarithms and elementary mathematics which they felt they ought to know, and Chemistry, Physics, Geology and any science which might relate to their work. Martial Law was ineffably irksome but compulsory leisure could at least be made profitable.

62 Theiler's stature stood high. The Natal Government Commission on the source of the Rinderpest serum treatment now completed its report. The fire in the Pietermaritzburg Town Hall had destroyed all Pitchford's papers but in evidence, he had produced his letters to his wife at the time. They proved that Theiler and he had 'produced a curative serum' in December 1896



and that he had written to Lloyd, Commissioner for Agriculture, on the 19th that they had 'discovered a process by which undoubted immunity could be conferred'. Lloyd gave supporting evidence. Koch had pulled the bile rabbit out of his hat only in February 1897. He had reported his findings but Theiler and Pitchford had not. The Commission nonetheless found in their favour and recommended that its Report be laid on the table of the Natal Parliament and that copies be sent to the Royal College of Veterinary Surgeons in London. It ended with highly laudatory comment on Pitchford's services (see Appendix A).

63 The implication of a suitable award was never accepted either by Natal or the R.C.V.S. which vacuously acknowledged the Report with the comment that 'the Council has no knowledge of the matter referred to'. Pitchford had cause to be bitter. His philosophy in the face of  
64 injustice or reverse was to forget it - 'the more you stir it, the more it stinks', he often said; but the memory of being unjustly deprived of recognition stayed with him. For the moment, it  
65 was blurred by his appointment at the same time (October 1901) as Government Bacteriologist and Director of the Veterinary Department of Natal, S. B. Woollatt being appointed Principal Veterinary Officer. Like Theiler, he could now concentrate on research but, unlike him, had the status and dignity of a Director of a Government Department.

As the year neared its end, Kitchener's harsh measures slowly tortured the last evidence of defiance into extinction. Theiler saw old friends being brought in as prisoners, including his venerable 'baas', the landdrost Schutte who, driving top-hatted, silkily-bearded and immaculate behind his matching greys, had supported and helped him in his struggle as Gouvernements  
66 Veearts. The old man was now 'very depressed', Theiler said, though glad to be removed from the rigours of campaign life. He had failed to surrender before the prescribed date of the 15th September when amnesty was offered and would now be banished to a camp in the Bermudas or Ceylon or St Helena. Other servants of the Z.A.R. had fared better. Theiler's close colleague  
67 in Johannesburg, Sir Drummond Dunbar, was appointed 'Issuer of Liquor Permits' and early in 1902, issued one to him 'under authority of the Military Governor to purchase any liquors he may require - in reasonable quantities - against a written order without reference to this office'. In Johannesburg, the British had made their erstwhile servant, Captain Carl von Brandis who had married Arnold and Emma, a popular but failing Registrar of Births and Deaths (he died in June 1903). Of the enemy aliens, few were more favoured than Arnold Theiler.

68 His experiments on the etiology of Rinderpest were, as he had surmised, a failure and he now began 'a penetrating study of its pathological anatomy'. Phillips continued with the production of serum on a vast scale as the disease spread in the Transvaal. On the 3rd December 1901,  
69 to protect Bechuanaland, Milner prohibited the traffic of cattle across its border. Every day, Theiler's ex-orderly Botha wandered along the banks of the Aapies River and among stagnant  
70 pools, collecting the larvae of winged insects in glass jars. They were sorted and classified and clumsily mounted until Theiler père could send the 'insect pins' ordered many weeks before. Theiler found their investigation a fascinating and promising field.

\* \* \*

The mail due in the middle of December failed to arrive, the *Dunottar Castle* bringing it being greatly delayed by a broken propellor shaft. When it came, it brought a letter from Marie and her husband Carl Mettauier telling Theiler that his father had died on the 19th November. He had been writing weekly to and receiving letters from a dead man. They had not brusquely cabled, wishing to break the news gently.

The shock was great but not entirely unexpected. Franz had complained of headaches and dizziness. At 68, he was still officiating at the Frick School, resentful of the short breaks which



71 his condition imposed. His doctor had been reassuring. He still went willingly about Arnold's business, arranging his supplies, ordering his books, circulating his Dissertation. Less than a week before his death, he had written a long letter confirming many and complicated commissions. Denying cause for his family's concern, he had died suddenly in the night of a heart attack.

72 Arnold and Emma could take some comfort from the fact that six weeks before, photographs of their family had given him pleasure. He had been proud too of Arnold's doctorate.

Arnold's immediate thought was for his young brother. He wrote the Mettauers that he would pay for his education at the Aarau High School and at the University of Zurich where he wished to train as a teacher. Then he wrote a tender moving letter to Alfred saying inter alia that it was their father's one wish that he would live long enough to see Alfred established in his life's work. He, Arnold, wished to take their father's place and promised all help. In the event, it was Alfred who took Franz' place. His death would have meant the severing of an artery had not Arnold nolens volens visited upon Alfred the multitudinous requests which for ten years had efficiently been met by his father. Preoccupied though he were by his studies, Alfred tried to fulfil them.

73 His elder brother was a hero to him. (Fifty years later, with the assistance of the family, he caused all the letters written to his parents by Arnold – which were almost indecipherable – and Emma to be collected and typed for binding in two volumes, one publishable and the other 'unpublishable' domestic extracts, to record his brother's courageous struggle to make his way between 1891 and 1901. Later his son, Alfred II, collected those written by Arnold to his father which were zealously transcribed and typed by the family.)

Writing sometimes to his mother and sister Marie and desultorily to his brother who would soon enrol as a student at Zurich University, Theiler went on with his deep researches. Much more was possible with his new microscopes. Tirelessly examining blood smears from every kind of sick animal, his attention was arrested late in 1901 by the familiar trypanosome of Nagana with its oval body and single flailing tail. Others might have passed it as a known agent of the disease but typically, Theiler looked again at this specimen. There was something different about it, he observed – it was consistently larger than the Nagana trypanosome. Typically too, he injected it into horses, dogs, goats, rabbits, guinea pigs and calves. None reacted except the calves which became enfevered and revealed the trypanosome in their blood. It produced acute pernicious anaemia. He thought it might be Bovine Malaria. He sent a smear to his friend Lieutenant-Colonel David Bruce, now in England, and went on with similar researches.

74

75 The war dragged devastatingly on. The Queen had died and Theiler, in the annexed Transvaal, had legally become a British subject. Turner had been trying to clear the Augean stable of the Refugee Camps and Theiler saw little of him. A 'Women's Commission' had been appointed in England to investigate them and would soon arrive to begin their horrifying work. Milner sat in Sunnyside, planning the 'reconstruction' that must surely soon be needed. He had made many far-sighted preparations. During his nine-month service in Cairo in 1889/90, he had been impressed by the work of a civil engineer, William Willcocks. By 1899, Willcocks had published voluminous tomes on irrigation in Egypt and the utilisation of water in making a desert country agriculturally viable. Milner employed him to examine the same situation in South Africa.

76 Willcocks presented his report to him in Johannesburg on the 6th November 1901 and according to one Milner biographer (Wrench), it determined much of his agricultural policy.

77 In 'Irrigation in South Africa', Willcocks naturally posited that widespread irrigation would be the solution to all post-war regeneration problems. He recommended that the mining industry subsidise Agriculture and, conscious of the ethnic refusal of the burghers to engage in manual labour (by no means shared by the exemplary British settlers Milner intended importing), proposed that the 'poor white – arme burgher' problem be solved by a back-to-the-land non-pastoral agriculture in which they could retain their dignity. Generations came and went before



78 this proposal could be implemented; but Milner was determined to lay its foundations in every aspect. 'The farm is the fundamental fact of life', the British erroneously propounded (in fact, more food is produced per cultivated acre of water than of land) and the policy of 'reconstruction' was based on that premise. The extraordinary latitude shown to Theiler, happily occupied with pure research in his laboratory and only occasionally distracted by checking the quality of Phillips' Rinderpest serum, was proof of its sincerity.

He was pursuing his hypothesis that if blood-sucking insects were not the cause of various animal diseases, they might be the intermediary hosts as in the case of the tsetse fly and Nagana.

79 He longed for a zoologist to help him and wrote Alfred that his invitation to join him upon qualification was very real. Theiler surmised that some sort of mosquito or fly was the carrier of the Horse Death and that ticks were the carriers of Equine Malaria. He took ticks from an afflicted horse and bred them for testing on sound horses. It was only one of his manifold experiments on the scourges of South African agriculture and transport.

80 The confining strictures of Martial Law and the intransigent obstruction of the military in refusing to supply experimental and serum-productive animals (angrily reported by Turner to his superiors) affected Theiler less than the new climate of encouragement. The British had confidence in him. Overseas, his work were circulating among the scientific elect on the Continent. In England, Bruce provided a meritorious accolade. On the 27th February 1902, he read to a meeting of the Royal Society in London a 'Note on the Discovery of a New Trypanosome'. It was the unusually large one sent him by Theiler some weeks before which he suspected of being the cause of Bovine Malaria. Bruce described his work on it and concluded - 'As this discovery seems to me to be an interesting one and as Dr Theiler deserves great credit for the observation, I would propose that this trypanosoma be named after the discoverer *Trypanosoma Theileri*.'

81 Within hours, *The Veterinary Record* in London had published a translated digest of his  
82 'The Tsetse Sickness' taken from the *Schweizer Archiv für Tierheilkunde* and *The Lancet* had  
83 reproduced Bruce's 'Note'. On the 4th April, the Royal Society recorded it in its *Proceedings*.  
84 Theiler himself was now among the scientific elect in the land of his employers. He could not  
forbear from reporting his 'small success' to Alfred - 'You can read Bruce's communication',  
he wrote, 'in the *Proceedings of the Royal Society* which will certainly be in the Zurich University  
Library'. His triumph was only beginning. Others everywhere read the *Proceedings* which  
were reproduced in newspapers in England and abroad. He received congratulations from Eng-  
land and Germany. The great Laveran wrote him from Paris asking for further information  
on *Trypanosoma Theileri* and fresh specimens. John M'Fadyean translated his paper on Equine  
85 Malaria and published it in the *Journal of Comparative Pathology and Therapeutics* in two parts.  
It was all highly stimulating and he planned another paper on 'Equine Malaria and its Sequelae',  
a treatise on diseases produced by piroplasmas through ticks, another collection of mosquitoes  
86 for the British Museum. His euphoria for once was well founded.

Current circumstances supported it. Early in April, under British guarantee, Botha met his  
fighting colleagues at Klerksdorp to discuss an end to hostilities. They proceeded to Pretoria  
for further discussion. The whole world waited. England's anxiety was heightened by the hope  
of concluding one of the costliest conflicts in its history in time for the forthcoming coronation  
of King Edward VII. Botha and Kitchener greatly admired each other but neither could facilely  
arrange terms for capitulation. During April and May, negotiations continued. The end was  
inevitable and Milner accelerated his 'reconstruction' arrangements. On the 26th April 1902,  
87 Frank Braybrooke Smith was appointed by the Colonial Office in London as Agricultural Ad-  
viser to His Excellency Lord Milner at £1,500 per annum.

88 On the 16th May, sixty Boer delegates met as the guests of the British Government at Ver-



89 eeniging for discussion of the conditions under which they would surrender. While they were in  
session, F. B. Smith arrived in Pretoria and reported himself for duty to the Transvaal civil  
administration. He was instructed immediately to prepare a report on Agriculture in the  
90 Transvaal and Orange River Colony (of which he had no knowledge whatever). On the 28th  
91 May, Generals Botha, de la Rey, Hertzog and de Wet conferred with Milner and Kitchener in  
Pretoria where all the Coronation festivities had suddenly been suspended (except for children)  
by reports of King Edward's illness. On the 31st May, the Treaty of Vereeniging was signed  
in the afternoon by the Boer delegates and taken to Pretoria for signature by their leaders and  
Milner and Kitchener. The war was over. Reconstruction could begin. On the 5th June, Milner  
92 and members of his Kindergarten returned to Johannesburg – 'Not a human being in sight nine-  
tenths of the 35 miles – nothing but partridges, buck and burnt veldt.'