

'VENI, VIDI, VICI!' 1918-1920

1 'IT WENT', he said, 'more hardly with me to leave the Laboratory than I ever imagined but it
 2 happened and we have left Onderstepoort forever.' The amputation was radical, the veins still
 3 bleeding. Even alone, severed from his beloved Institute, stripped of his august title and authority,
 4 aloof in Cape Town, Theiler remained a commanding personality locally and abroad. His
 5 men would never forget him nor could he cancel the living connection with the staff he had
 trained. He wrote Viljoen (employing his last days at Armoedsvlakte preparing his paper on the
 relation of sarcosporidia with Lamziekte) and Viljoen replied emotionally, thanking his 'old
 chief' for commending him for appointment as Professor of Veterinary Science at the Transvaal
 University College. Nor did he lose liaison with his local scientific colleagues such as Pole Evans
 and A. J. Orenstein, now Deputy-Director of Medical Services and promoted to Lieutenant-
 Colonel. He kept in communication with his colleagues throughout the world, particularly
 Australia where lively interest in his Lamziekte work had arisen in Tasmania, stricken by a
 similar 'Midlands Disease'. Theiler had associated it with drought which was now corroborated
 there. The 'frightful drought' which he had feared for South Africa was taking terrible toll,
 begging thousands of black and white stockmen beyond hope of recovery. When it ended in
 1919, 5½ million animals, large and small (excluding the Transkei) had died. Worse, the progeny
 of the living had failed to survive. The meat industry that was to save South Africa came near
 to annihilation.

Upon arrival, Theiler had taken two weeks leave to accommodate himself to the felicitous
 conditions which his children, his Department and the Cape had contrived. The 'Old Colony'
 and its capital differed in every way from the Transvaal and Arnold and Emma delighted in all
 of it, even their lodgings in Wilton House in Union Street which was close to the University
 buildings in The Gardens and its hostels where Margaret, Gertrud and Max boarded. Behind
 them rose the majestic bulk of Table Mountain; before them, the shambling sun-bleached
 town; and beyond, the shimmering sea of Table Bay. It amazed them that there were two Art
 Galleries (the Michaelis Collection in the Old Town House and the National Gallery in The
 Gardens) and a City Orchestra giving concerts twice a week which they enthusiastically attended.
 There were historical buildings and the excellent South African Museum close at hand. Every-
 thing was older, more settled and mature despite the seething activity of the harbour town in
 wartime with thousands of sailors and soldiers thronging the streets when troopships docked.

6 There were many compatriots in industrial and commercial pursuits notably the Bothner
 7 family of Lausanne, purveyors of musical instruments who became close friends. To the intelli-
 gentsia of the University were added leading exponents of Arnold's first love - Rudolph Marloth,
 the chemist turned botanist and Harry Bolus, the businessman-botanist whose daughter-in-law
 Louisa Bolus had already attained high stature in the botanical field. Arnold had no defence
 against the distractions they encouraged him to seek and, inevitably, Emma began an Herbarium.
 He rejoiced when in July, Pole Evans finally succeeded in persuading Botha to appoint an Ad-
 visory Committee for a National Botanical Survey. It was composed of Louisa Bolus, Rudolph
 Marloth and Selmar Schonland for the Cape; J. W. Bews for Natal; and G. Potts for the Free
 State. The Director of Veterinary Research was appointed to serve on it.

8 Always, even in English, an able hand at expressing himself, Arnold grew lyrical in Spring
 when the Cape flora revealed itself in all its wonder and diversity - 'This country is a floral
 magnificence that smiles one's heart into bondage and makes one feel in Paradise', he wrote

in German, 'especially now in Spring when all the wild plants unfold and everywhere there are lilies and irises and amaryllis and orchids in unbounded number and beauty, and with them Compositae, the ericas, the proteas, all growing together in bright profusion.' At weekends, the whole family went 'botanising' even in winter and Arnold forgot his official duties, transacted daily in the office provided for him by his Department in Cape Town. The Fifth and Sixth Reports on which he had long been working, were soon on their way to the Government Printer; but the Seventh and Eighth, including the long and complicated epic of Horse Sickness, entailed much more work. He realised that his estimated six months to reach the Tenth would be totally inadequate and he would have to use some of his leave.

9 Life became idyllic. During the mid-year University vacation, Arnold took the whole family on the long train journey to Rhodesia, visiting Bulawayo, the Matoppos and the Khami Ruins, the Victoria Falls (which deeply impressed him), Fort Victoria and the Zimbabwe Ruins. When they returned, the Spring was beginning. All three children were doing well at the University and the news of Hans, intermittently hampered by attacks of fever, was good. Sooner or later, the War must end, possibly sooner. No one had paid much attention to a newspaper paragraph published inconspicuously late in May - 'Mysterious Epidemic in Spain - 30% of the Population Stricken' or to the subsequent spread of the disease through Europe.

10 Theiler knew that Montgomery was in difficulty. The number of his trained men was dwindling steadily and Onderstepoort already limped. The senior research officer, James Walker, had gone to the Kabete Veterinary Station outside Nairobi as Veterinary Pathologist. Mitchell was brought from Allerton to replace him (though covertly hoping for Colonial appointment in the newly-conquered Tanganyika) and Andrews, recently returned from long sick leave, went to Pietermaritzburg in his place. Viljoen would soon leave Armoedsvlakte to join the staff of the Transvaal University College, creating a serious situation - there was no one to replace him to continue the Lamziekte research. Young Daniel Kehoe who had some experience in it, was on the point of leaving for Ireland to become Professor of Pathology at his alma mater, the Royal Dublin Veterinary College. (On the 30th September 1918, he wrote in the Onderstepoort Visitors Book - 'One who, leaving South Africa, will ever look back with affectionate memories upon his association with the country, his colleagues and his friends there.' He kept in correspondence with 'his old chief'.) Gilles de Kock who might have served, had declared his intention of leaving to study Medicine overseas. Veglia was still on active service in Italy and, so far from the War being virtually over, the mailship *Galway Castle*, packed with notabilities including a Union Cabinet Minister, was torpedoed and sunk on its way to the Cape with the loss of mail and much else. Theiler went on with his Reports while Montgomery travelled ceaselessly between his experimental stations, realising that the Lamziekte situation, still devoid of its promised laboratory, was drifting beyond his control. He conceived a radical solution and in September 1918, arrived in Cape Town to see his Minister.

12 Theiler had seldom been happier. He was doing the 'literary' work that he had longed for years to complete. Cape Town and its people were exceptionally congenial. The country was ablaze with wild flowers, the oaks in The Garden came into leaf and the whole family rejoiced in its work, its sport and its 'botanising'. Through his friends and children, Theiler also walked in the groves of academe and beyond. He attended with mystification and admiration the annual Inter-Varsity Rugby Football Match between Cape Town and Stellenbosch, marvelling that so much verve, bonhomie and noise could be created without the stimulus of beer as in his own student days. The Cape Town students' Engineering and Scientific Society invited him to address them with heady result. 'I had a tremendous reception', he wrote Alfred, 'and a grateful audience such as one seldom finds. I feel myself still young when I come among youthful people and I very much like to lecture receptive young people.' Even more amiable, he was wanted outside his

familiar circle. British East Africa asked him to interrupt his proposed journey to India and the Far East by a professional paid visit to reorganise its Veterinary Research services, now in Walker's charge as Montgomery's successor. Australia continued clamant. Queensland wanted him for a few months to advise on Animal Diseases and Tasmania assured him of its Government's assistance in continuing his researches there. He could accept no proposals until he had discharged his duties to his own Government which would take at least a year. In the middle of September, his Minister sent for him. Absorbed in Smuts' despatches from London and impending high affairs of State, Botha had left a matter of moment to his minion.

14 Theiler found van Heerden in his office with Montgomery who had persuaded the Minister to arrange the interview and primed him with inducements. He asked Theiler to re-enter active Government service on an entirely new basis – he should devote himself solely and exclusively to the solution of the Lamziekte problem as a special expert with all facilities provided. As he would certainly succeed, great credit would redound to him. Theiler, always mourning a job half-done as in the case of Horse Sickness and his unfinished Reports, did not decline. Typically he made conditions. They were exigent. He must have an entirely free hand and be answerable to no one. He must have trained and lay staff, a laboratory fully equipped to deal with the disease, unlimited funds for the purchase of stores, fodder, experimental animals, etc and complete freedom from administrative responsibilities. Van Heerden agreed to everything. Theiler estimated that the defeat of the disease would take about two years all of which he would have to spend in isolation on the arid 'farm' of Armoedsvlakte. Until the laboratory was completed (Montgomery, returning north, forthwith told the Vryburg Farmers that it would be 'in a few months time'), no date of departure could be fixed.

15 Rationalising as usual, Theiler explained it all to Emma and the family. His proposal to travel in the East was not really feasible. With the War still on, he would be 'a suspicious foreign neutral' with unpleasant implications. He might even be taken as a spy. Secondly, his famous zest for work had been rekindled and he was ready and anxious for scientific research. Thirdly, two or three years at top-notch salary would be adequate to seeing his children through college and to assisting Klärli, Marie's daughter, whose luckless father continued an inadequate provider. Fourthly, the challenge of an implacable enemy was irresistible and all the charms and comforts of the Cape could not dissuade him. As Emma and the children considered Arnold's sudden readiness to exchange Elysium for two years as a hermit in the horrid wastes of Armoedsvlakte, the Spanish Flu with paralysing speed took the whole of South Africa in murderous grip.

16 Decent well-to-do people died in the streets. The poor perished in hovels and holes, their stinking corpses declaring themselves when no one remained to deal with them. Young robust individuals of all races were particularly susceptible and died in large number. Whole families in the platteland were found dead, their untended cattle mad with thirst and hunger. In the towns, the hospitals were immediately full. The Health Department called on anyone to serve as nurses. Max Theiler as a medical student was enrolled for service in the notorious District
17 Six jammed with Cape Coloured and emerged unscathed. Arnold and Emma escaped but Gertrud was severely stricken and Margaret lightly. People were forbidden to congregate. All places of entertainment were closed. The postal service ceased. Transport in all forms became irregular. The supply of coffins was quickly exhausted. Corpses were hurriedly buried as soon as they were found. The baboons came down from the Magaliesberg in the Transvaal and the mountains of the Cape to die in hundreds in common with dogs, cats, pigs and other small stock. A huge mortality was general throughout South Africa and no one knew how many natives had died.

18 At Onderstepoort, the whole black staff and 75% of the white were afflicted. Montgomery, travelling about Bechuanaland with Viljoen and intending to attend an Agricultural Congress

19 in Cape Town, got back to Pretoria and took to his bed. Viljoen reached Armoedsvlakte and was totally incapacitated with the severe low-temperature variety of the epidemic. Alone on the station and herself unaffected, Mrs Viljoen nursed him. There was no known antidote except whisky. The native staff lay in rows in the makeshift laboratory building in the charge of a foreman who drank the whisky issued to save them and became completely incompetent. On the farm tracks outside, the bodies of black victims lay putrefying and the Divisional Council sent
20 carts to collect them. In Vryburg, the organisation of the community virtually ceased. The Mayor, Crosbie, lost his second son and then his wife. The Deputy-Mayor Max Sonnenberg (later a member of Parliament) took his place and with his wife, rendered heroic service. A handful of others helped. Butler took charge of Native and Coloured welfare in the locations and managed to keep his paper going, sometimes with large blank areas through the machine operators succumbing. For weeks, only odd members of his staff could help him. The cattlemen and their wives on distant ranches died with the rest. Hundreds of notabilities – Mrs Mentz, wife of the Minister of Lands; Long Piet Marais whose family had founded Les Marais; and untold others – disappeared from the South African scene when nothing but rejoicing at the forthcoming Peace
21 should have characterised it. Theiler took his family to Smith's Farm at Cape Point, a wind-swept wilderness of botanical richness at the southernmost tip of the Peninsula, to recuperate from the epidemic. Gertrud's attack had been all but fatal.

22 The temper of the survivors became exasperated. A deputation of Pretoria citizens visited Sir Thomas Watts, Minister of the Interior and Health, and accused the Government of apathy and inefficiency. Shutting the door after the steed had fled, Sir Thomas cast about for men to
23 form a Commission of Investigation. He had the utmost difficulty in finding them owing to the dislocation of the War (25% of the Union's medical men were actively involved), the effects of the Flu, the preoccupations of men of standing, and the fact that 'there was no money in it'. The country grew increasingly restive while overtures were made.

Theiler had remained at work in his office in Cape Town. On the 30th October when the town had almost returned to normal, he and Emma went down to the Docks to bid farewell to Kehoe as he sailed hopefully home (via Sierra Leone, Lisbon, Madrid, the Pyrenees, Paris and Le Havre). A. E. Mettam, the principal of the Royal Dublin Veterinary College, had died and Kehoe, only 30 but glorified by the lustre of Onderstepoort, expected to be in the running to
24 succeed him. Typically Theiler loaded him with duties – to continue his South African work in Dublin, to see Hans in London, convey greetings to M'Fadyean, Stockman and others, buy books and send them out, and numerous other requests. The isolation which the War had imposed on South Africa had been hard to bear. On the 11th November, the whole family joined
25 the crowds in Adderley Street celebrating the Armistice. (Kehoe's ship reached Sierra Leone on that day and, hearing the news, sailed on without the awaiting convoy.)

The news of Theiler's assignment to Armoedsvlakte leaked out in the *Johannesburg Star* and
26 the exhausted Butler published it joyously in his *Northern News*. Conditions on the ghastly farm had somewhat improved and the Viljoens no longer depended on assistance from Vryburg. No one knew when Sir Arnold would come. His own plans had been knocked away. Sir Thomas
27 Watts had made the obvious choice of 'the distinguished bacteriologist than whom there was no greater authority in the country' and invited him to join the 'Influenza Commission'. It became his first duty but when Montgomery came down to the Cape on the 21st November to
28 finalise the details of the Lamziekte assignment, it proved possible conveniently to dovetail the two.

Theiler's demands for the operation of Armoedsvlakte were of an expansiveness accorded only to a privileged man authorised to cope with a national emergency. His white staff would number twelve – himself, two research officers, one scientific assistant, one clerical officer, two laboratory

assistants, one stockyard assistant and four yard-foremen and animal-attendants. All required housing as the station would become a permanent Research Laboratory. In Montgomery's situation of steadily dwindling staff with no hope of replacement, this planning was laughable; but Theiler assured him that he would get assistants from Switzerland where alone they were available, both for his own purposes and to restaff Onderstepoort. Theiler forthwith wrote to Professor Zschokke's qualified son Walter at Zurich, offering immediate appointment and enquiring about other candidates while Montgomery went back to Pretoria to write his monstrous requisitioning minute to Smith (shortly due to retire and harassed by his crippled Department), demanding the immediate building of housing at Armoedsvlakte. Smith endorsed it with a query about the necessary financial authority and £25,000 was duly placed on the Estimates 'for special investigation into Lamziekte'.

There ensued for Theiler a period of frenetic activity fulfilling his recaptured 'zest for work' and surpassing the worst exigencies of the Rinderpest epidemic. Gazetted on the 6th December 1918, the 'Influenza Epidemic Commission' appointed on the 3rd, had met beforehand and thrown him into strange company. Its chairman was Paul Cluver, ex-mayor of Stellenbosch and, renowned for community consciousness, chairman of the Cape Municipal Association. In an effort to cover town and country, Sir Thomas had included Senator E. R. Grobler, Commandant J. L. Hamman M.L.A., Mr M. G. Nicholson and J. H. Nicholson. Because of his scientific interest in bringing out Surgeon-General Gorgas, Samuel Evans of the Corner House was added together with Alpheus Williams of diamond mining fame who had fought the disease in Kimberley. The sole medical men were Dr Hugh Smith and Colonel A. J. Orenstein, now Director of Medical Services of the Union Defence Force in Pretoria. (An esteemed figure at Onderstepoort where he had made many friendships, he had stood up as bestman to Henry Green when he had married an English teacher. The Greens were widely cultured and Orenstein enjoyed their books and conversation.) The members of the Commission moved like a whirlwind. No Government Commission was ever known to have worked so hard and so fast.

Theiler arrived in Pretoria on Thursday the 5th December and sentimentally put up at the Grand Hotel. The Commission began its work on the same day and from the 6th to the 11th interviewed dorp doctors (including the pioneering Dr Jane Ruthven of Middelburg), Drs Frederick Lister and Wilfred Watkins-Pitchford of the Medical Research Institute, the Administrator of the Transvaal A. G. Robertson, and many others. On its first free day - Sunday the 8th December - Theiler took some of the members to Onderstepoort. He described the visit as 'a happy reunion with my old friends and assistants. The place looks the same as before but the people have suffered severely from Flu'. By then the death-roll in the Union had reached 150,000 and cases still occurred but not 'explosively' as at the outset. The sophisticated methods by which Onderstepoort combatted disease were an object lesson to a Commission virtually instructed to ascertain why the Public Health Department had failed to halt the Flu. Theiler wrote his name in an unduly large hand in the Visitors Book as coming from Cape Town, followed by Cluver of Stellenbosch, J. H. Nicholson of Durban and H. Smith of Cape Town.

Three days were spent in Johannesburg and, by overnight train, the Commission reached Durban on the 16th for two days' interrogation followed by a further two days at Pietermaritzburg where Theiler confronted his old rival, Dr Alexander Edington, now giving evidence as director of Grey's Hospital. On the 21st, they adjourned for the festive season and Theiler briefly returned to Cape Town to take leave of Max who was to sail for England on the 31st December to continue his medical studies at St Thomas' Hospital in London. During the short Christmas relaxation with his family (Gertrud had obtained her B.A. and now wished to qualify as a teacher), Theiler was shocked to hear of the sudden death on Christmas Eve in Graham's Town of W. Robertson, recently at Onderstepoort for consultation with Montgomery. Another of the



'The Old Man' outside his headquarters – a rare snapshot of Theiler on his way to his house for lunch.

At Home – Sir Arnold and Lady Theiler with a guest in the garden of their house at Onderstepoort.





Routine work at Armoedsvlakte – cattle approaching a prophylactic dip to guard against insect pests.

Taking the plunge at Armoedsvlakte.



old vanguard had gone and, with no replacement possible, Montgomery would be hard put to maintain the Eastern Province Research Station.

39 Time was now of the essence for all purposes. Leaving Emma to see Max safely on his ship, Theiler and his two daughter took train to Vryburg where Montgomery was waiting (with Butler hovering in the background). On the 30th and 31st December, long discussions were held at Armoedsvlakte between Theiler, Montgomery and the departing Viljoen whose patient experiments in feeding carcase material to animals had resulted in reproducing Lamziekte artificially. In his customary manner, Theiler had made detailed plans for the grand assault. It fell to the over-burdened Montgomery to ensure their implementation by the provision of housing, local labour, laboratory equipment and everything else he might need. They graciously gave an interview to the ubiquitous Butler, emphasising that it was useless for the cattlemen and the Press to clamour for constant progress reports. They departed for Pretoria for consultation with F. B. 40 Smith (who had lost 28 of his staff from the Flu) and then Onderstepoort where Theiler left his 41 daughters to spend their University vacation with friends. Then he caught a train to East London to resume his place on the Influenza Commission sitting on the 7th and 8th January 1919.

By hectic car and train travelling, the Commission then spent two days each at Bloemfontein and Kimberley, arriving in Cape Town for its final sittings from the 17th to the 30th January. Montgomery came down from Pretoria to join a number of expert witnesses on bacteriology and research. By the 28th, the members were considering the terms of their report and by the 8th 42 February, it was written and signed. Theiler, true to his Swiss heritage of the liberty of the individual, was joined by Dr Hugh Smith and Nicolson in dissenting from the Commission's proposal that the Government be empowered to commandeer private persons in an emergency. They said it was unnecessary, the public had already shown the utmost willingness to coöperate, commandeering was destructive of good spirit, compulsory labour was inefficient and it were better to devise efficient methods of operation than to tinker with the liberties of private persons. The past master of extracting maximum work from willing victims gladly set his hand to the minority statement. In its indictment of the negligence and inefficiency of the Union Department of Health, the Commission's Report shocked the general public and compelled its legislators and administrators to take urgent action. Theiler, still busy with his own Reports, was now free to plan his entry into his small kingdom at Armoedsvlakte.

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Peace brought a great movement among the people of South Africa. Botha had left immediately for London to join Smuts at the forthcoming Peace Conference. Those on active service and seconded to war activity returned in due course to their regular occupations and tried to rebuild the country's economy. Smith, who had been vilified and abused for the inefficiency of his Department regardless of his superhuman difficulties, at last had hope of restoring it before his departure on retirement. Lack of staff would bedevil the Government for many months to come. South Africa had lost the elite of its youth and the men who came back, many severely mutilated or malaria-stricken, were poor material with which to embark on reconstruction. The pressing need for education and training became acute. Little was to be had locally.

43 In the general adjustment to a new and crippled world, Theiler put his domestic affairs in order. Kehoe had written him at great length and reassured him that Hans was getting on well at College, was liked by his professors and had called on Sir Stewart Stockman and Sir David Bruce. Kehoe had also delivered messages to Sir John M'Fadyean, Stockman and others, all of whom hoped soon to see Theiler, and conveyed a good deal of professional news. Max had not 44 yet arrived but Hans was looking forward to meeting him. The Theiler daughters had disposed

45 themselves. Margaret would temporarily teach 'gymnastics' in Pretoria pending passage to England in August and Gertrud would start the two-year course at the Cape to gain an M.Sc. in Zoology and to qualify as a teacher. Emma, docile collaborator in all he did, would come to Vryburg which the Viljoens would leave on the 1st February. The problem now was staff.

46 Montgomery's situation was pitiable. In 8 months, he had lost Walker, Kehoe, Viljoen,
47 Robertson and now Gilles de Kock. His research staff consisted only of Mitchell, Andrews (at
48 Pietermaritzburg), Robinson, Green, Bedford and Mogg, the last three effective only in special-
ised fields. He was short of an Assistant Director and seven research officers. The Graham's
Town Laboratory (where the yard-foreman J. A. Dickason had died of the Flu) would have to
be closed, Armoedsvlakte also – were it not for Sir Arnold whose 'public-spiritedness', according
to Smith, ensured its retention as a research centre. With his erstwhile empire tottering before
him, Arnold did more. On Smith's authority, he wrote Zschokke in Zurich offering appointment
to four or five young Swiss veterinarians and to Alfred in Lucerne asking him to ascertain from
Professor Knuth in Berlin what had happened to the brilliant young P. J. du Toit and whether
he was returning to South Africa – 'he is one of the people whom I have nominated as in prospect
for my work in Vryburg', he wrote, 'but we know nothing of him.'

49 Sir Thomas Smartt did know something. In a vitriolic speech in the House on the Vote for
Agricultural Education, he revealed (without mentioning his name) that since achieving his
doctorate in Veterinary Medical Science in Berlin in 1916 (with a thesis on leucaemia in cattle),
du Toit had received an allowance of £20 a quarter from the Union Government to continue his
studies and do veterinary research. He had accepted official German appointment, relieving a
German for active service while being paid by South Africa and had worked for the enemy.
The information came from the Netherlands Consul. It was, said Sir Thomas, 'a scandalous
state of affairs' and remained mysterious. This petard notwithstanding, Theiler trudged along
his newly-appointed paths with unwavering determination and surprising vigour in a man past
retiring age with an exacting career behind him.

50 The Theilers arrived in Vryburg on the 24th February 1919 and drove to Armoedsvlakte.
Emma had never seen the featureless place nor imagined how she would live in a small brick
house, forebodingly protected by mosquito-netting, distant 7 miles from the dorp, through ex-
tremes of heat and cold. There was no electric light, only paraffin lamps but hot water was
available. Surface soil barely covered the dolomitic rock but Mrs Viljoen had pioneered a
'garden', even growing sweetpeas. Arnold would have unusual difficulties with his single hand
51 but Emma resolutely refused to shave him, thus ensuring that at least once a week, she would
be taken to the dorp by Laboratory horse-and-trap when he visited his barber. He went the next
day (25th) to attend the monthly meeting of the Vryburg Farmers Association when a new presi-
dent, Fincham, took the chair.

52 Reverently welcomed and elected an honorary member, Theiler then made a speech typical
of the ambivalence which his emotions imposed. Parliament had heard a few days before that
53 'in the Western Transvaal, Bechuanaland and other parts, cattle farming in a thing of the past
as a result of Lamziekte'. Fincham hoped he would be with them for a long time. Theiler said
he hoped not (laughter). He had always been greatly struck by the district which he considered
the best in the world for cattle. For years he had wanted to study Lamziekte personally but had
not been able to do so. Thanks to Mr Montgomery who six months previously had approached
him, his scientific curiosity could not resist trying to solve this mysterious riddle which had so
far baffled everybody. He looked upon it as a duty which he had to perform for South Africa.
Both English and Dutch had been extremely kind to him during his many years in the country
and he was proud to call himself a South African. In the old Transvaal Republican days and later
under Crown Colony and still later under Union, he had been treated very well and he recognised

it was a duty he owed South Africa that he should not give up this investigation until he had either discovered the cause of Lamziekte or was fully convinced that the problem was insoluble. He then repeated his speech in Dutch and was enthusiastically applauded. The cattlemen still trusted him.

With Emma settled into the rudimentary P.W.D. house, Arnold set out to survey his dismal domain and to muse on all that was known of Lamziekte. He remained on the land until night fell, never returning to the house in daylight. The flat dispiriting area tuftily covered in coarse grass and contorted bushes had been fenced and re-fenced into experimental plots in the hope of identifying the particular pasturage and its plants responsible for the disease. Theiler wandered with the grazing animals – an expert became a cattle herd. A vast mass of knowledge occupied his mind – disparate and diffuse in the recorded views of the early travellers and cattlemen, precise and exhaustive in the detailed observations of Hutcheon and the tedious negative experiments of Walker, Mitchell, Andrews and Viljoen. ‘Each experiment is a question and every answer is some contribution to the problem’, he had said; but all the answers had added up to nothing.

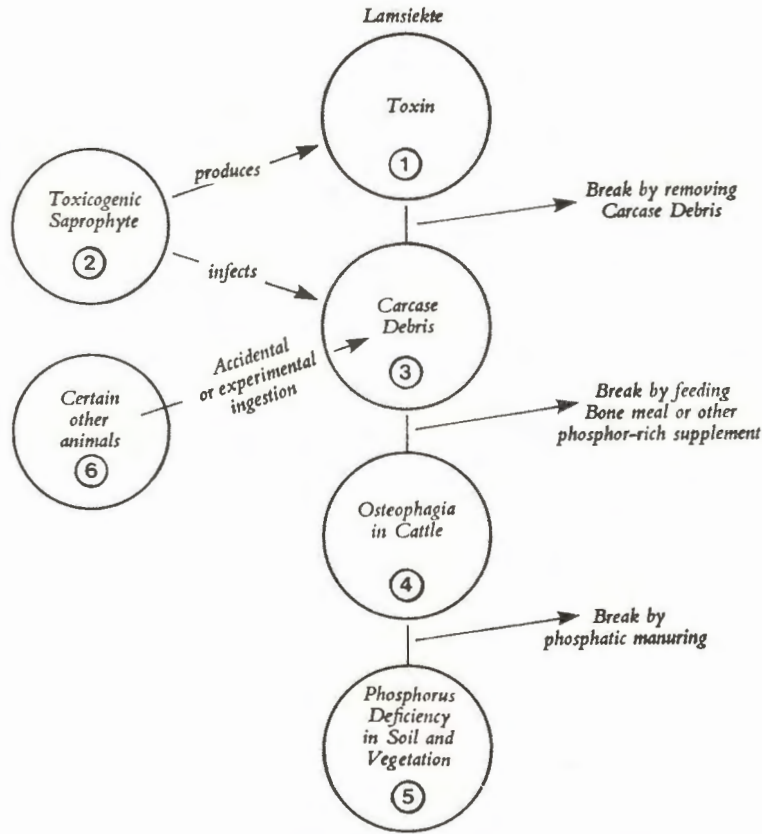
54 In his four years at Armoedsvlakte, Viljoen had done admirable work (embodied in his ‘Investigations into Lamziekte in Cattle’ published that year in Theiler’s 5th and 6th Reports). He had sought the cause in plant toxins, mineral deficiencies, physiological peculiarities (active oxen seemed less prone than those not working), soil poison, Hedinger’s sarcosporidiosis and a dozen different hypotheses all painstakingly tested and negatively recorded. ‘The writer cannot agree with other observers that signs of Pica, craving for bones, etc can be included in the premonitory symptoms of Lamziekte’, he reported, ‘On Armoedsvlakte, an excessive craving for bones has not been noticed and in fact, in one small paddock where carcasses were strewn broadcast, we had great difficulty in getting the animals to chew the bones.’

55 Strolling among the cattle, keenly observing every movement and idiosyncrasy, Theiler noticed exactly the opposite. ‘I was so forcibly struck’, he said, ‘by the abnormal craving of which farmers had spoken to me but which I had never seen in such an extraordinary manner that I could not help but attach importance to it.’ Within less than a week of his arrival, he mounted experiments to record and observe it. Cows ravenous for rotten bones were fed carcase material. Others were 56 drenched with crushed carrion. Lamziekte declared itself within 4 to 10 days. ‘Veni, Vidi, Vici!’ carolled Theiler and telegraphed for Montgomery. In one stroke, like Sir David Bruce’s ‘flash of lightning’, all the elements of the Lamziekte syndrome had fallen into place.

57 Barely returned from closing the Graham’s Town Laboratory, Montgomery took the first train to Vryburg, arriving on the 14th March. Theiler met him with an analysis of the syndrome which indicated the means by which the whole problem could be solved. He had reduced it to the simplest logical sequence, demonstrable as a diagram, which any stock-owner could understand:

1. Soil and vegetation deficient in phosphorus (remediable with phosphatic manuring) produced Pica or Osteophagia in cattle compelling them to find phosphorus in putrid bones and carcase material (remediable by feeding bonemeal and other phosphor-rich material);
2. The poison in carrion of all sorts (dead meerkats, spring-hares, ostriches, tortoises, household refuse, etc) – a ‘toxiogenic Saprophyte’ (later identified as the cause of a form of botulism) could be eliminated by clearing pasturage of all such material.

(Viljoen’s cattle had shown no enthusiasm for putrid bones because at that time, their grazing was not phosphorus-deficient.) Much experimental work over a very wide field would be necessary; but the holy grail of a ‘preventive’ had at last been found. (No one remembered ‘the old



man' who had written in 1912, clearly describing it – Page 278.) Theiler and Montgomery telegraphed Pole Evans and Green in Pretoria to come at once.

On the 16th March, Montgomery caught the de luxe (always late) train to Cape Town and rushed to van Heerden's office on the 18th. When the House of Assembly met the following day, the Minister of Agriculture interrupted its business to make a dramatic announcement – 'The Division of Veterinary Research is confident that the cause of Gal-Lamziekte has been discovered. Suggestions as to methods of prevention will be available shortly. A report on the investigations will be issued probably within a few weeks as soon as the experiments have reached a stage that the evidence is incontrovertible.'

58 The news was telegraphed throughout the Union. It reached Butler in Vryburg on Thursday the 20th March. He rushed out to the nearest official of the Farmers Association, the immediate past president P. H. de Kock sitting in his lawyer's office. They went posthaste to Armoedsvlakte to find an exuberant Theiler. Butler took down ipsissima verba what he said and published it on the 23rd March 1919 under a banner headline

CAUSE OF GAL-LAMZIEKTE DISCOVERED

It was the first published authentic account of a discovery that affected the economic productivity of the world.

Justice was also done and seen to be done. 'It was most gratifying during the course of our interview', Butler wrote, 'to hear Sir Arnold admit that Mr de Kock was right in his contention that individual animals must be followed up.' Theiler had been in the veld at dawn and stayed day after day following the cattle and watching their habits, returning at night too tired to work

59 on his beloved Reports. Theo Meyer had helped him test his hypothesis experimentally and now a vast field of investigation clamoured for qualified men. In his first exposition of the situation, Theiler was emphatic in acknowledging the contribution of Pole Evans, Walker, Mitchell, Andrews and Viljoen, sustained after his departure by Montgomery. Butler could not refrain from mentioning the Vryburg Farmers Association. It met in large numbers on the 25th March, expecting Theiler to attend to receive its congratulations; but he was too busy. The whole district palpitated with excitement. Endless prospects revealed themselves. Theiler put on a show. Butler
6061 whose paper had come to be called 'The Gal-Lamziekte News' was there to record it.

62 Theiler always had a fine sense of drama. Some of the cattlemen had gone home after the previous day's meeting but at least 50 townsmen and stock-raisers journeyed to Armoedsvlakte on Wednesday the 26th March to hear him expound his discovery. He awaited them on the steps of the newly-completed laboratory dressed, not as Sir Arnold Theiler K.C.M.G. but as a working scientist – tieless, collarless, in shirt-sleeves and wearing his famous white apron. Before he could begin, Fincham asked Butler, the Association's secretary, to read its congratulatory resolution to him. In reply, Theiler disclaimed personal credit, ascribing the advance to the work of the whole Veterinary Research Division. Then he took them among the kraals and paddocks where, helped by Theo Meyer, he had dosed cattle with putrid carcase material and watched them contract the disease. Dramatically some of the beasts were at various stages which the cattlemen immediately recognised. All of them remembered facts that fitted the picture. One of the white overseers, forced to drive the herds when the whole black staff was sick with Flu, remembered seeing an ox chewing up a rotted spring-hare and dying 8 days later of Lamziekte. Theiler himself told how he had immediately banished all 'Kaffir dogs' from the Armoedsvlakte area as they found and distributed bones and carrion. He reminded them that Man had deprived Nature of salutary forces, exterminating as vermin natural scavengers such as jackals, vultures and other animals. The future of animal husbandry now lay in their own hands – they must clean their lands, vast though they might be.

63 Both business- and stock-men plied him with questions. If what he said were true, the realms of economic exploitation which he had reopened, were waiting and boundless. Theiler answered them all. Fincham who came as a sceptic, pronounced himself a convert. When the gathering departed, a fuse had been lit and the whole area exploded into speculative life. Farms which had long been offered for sale were hurriedly withdrawn. The value of properties shot up. Dairy
64 farmers within a limited radius of miles, came together and planned a cheese factory. Cattle breeders throughout the country rejoiced. 'At the moment, I am the most praised man', Arnold
65 wrote to Alfred. Butler's account of the demonstration which Theiler himself checked, was published in the *Northern News* on the 29th March 1919 and was sent all over the world. Theiler sent it the next day to Alfred and to such of his professional colleagues as remained in communication with him, including, he told the proud editor, Tasmania whence he had that week received
66 a cable asking when he was coming. New Zealand too was afflicted by the disease. Weeks later the first ripples lapped his shore and soon became demanding waves.

67 The claque that had remained in the background suddenly became vociferous and embarrassed Butler with a stream of letters to his paper. 'Butler's Battles for Bechuanaland' were widely vaunted. Theiler was asked to name some feature of his work as 'the Butler cure'. Armoedsvlakte must be re-named 'Battling Butler'. Nothing would have been done without Butler's starting the Experiment Fund and over many years, never wavering in his advocacy. But the little man persisted in his resignation as secretary of the Farmers Association on the grounds that 'a younger man is needed'. He stayed on until one could be found; but overpowering Depression lamed the Association.

Regardless of his 'discovery', the moment marked a watershed in Theiler's life. On the day

68 after his demonstration, Pole Evans (shortly to be the second recipient of the Scott Medal) and Henry Green arrived to discuss the implications of the new situation. Why was the pasturage periodically phosphorus-deficient and productive of Pica? Was it due only to drought conditions or some metamorphosis in the soil or the plants themselves? And how could it be compensated? Must cattle constantly be dosed with bonemeal or phosphorus itself in palatable form? Whence would such vast quantities come? Who could survey the multi-faceted features of the syndrome now revealed? – Plant Physiology? Soil and Animal Chemistry? Relative productivity of treated animals? How should the whole attack be planned? The answer was expert staff and the coöperation of industry. They were wanted *now* and one – long-term and closest to Theiler's heart – was nearest.

The clamour for veterinary training that had found fertile field in the Transvaal University College in Pretoria had reached the point when Theiler received an invitation to inaugurate a
69 Faculty and become its Dean. It was commonly known and widely published. The move was nationwide. Stellenbosch appeared temporarily to have fallen by the wayside (the University later made an approach to P. J. du Toit when he reached London) but Johannesburg, struggling
70 to establish its University of the Witwatersrand, buttonholed Theiler in the middle of April as he passed through during a visit to Pretoria, and offered him appointment as Dean of the Veterinary School which it was proposed to found under the Faculty of Medicine. He refused it, having already committed himself to Pretoria (with usual category of stipulations) and knowing that other influences were at work.

It was common cause that the country's agricultural economy could be rehabilitated and stimulated only by scientific research and practice. Chemistry lagged but Pole Evans had gone far with his Botanical Division and the new national survey. The concept of 'The Theiler Institute' had been frustrated and had gone into decline through lack of staff in common with the whole Department of Agriculture where F. B. Smith bemoaned the unfulfilled need of trained assistants (his best men were lured away by higher salaries elsewhere). Now the Minister
71 of Education F. S. Malan, bowing to heavy pressure in the House and from his Agricultural colleague van Heerden appointed a departmental committee to inform the Government on the advisability of a School of Veterinary Science. It consisted of the Under-Secretary of Education G. Hofmeyr; Sir Arnold Theiler; the Director of Veterinary Research R. E. Montgomery; and a
72 distinguished luminary of Stellenbosch University, A. I. Perold, Professor of Viticulture and Oenology but also a renowned proponent of higher education. With Zschokke's cable in his pocket advising the selection of five Swiss veterinarians willing to come to South Africa and the
73 High Commissioner in London instructed to facilitate their passage, Theiler could perhaps devote attention to grand future plans. The committee would not meet until July.

His dream was evanescent, his difficulties too great. With no one but the versatile Meyer to
74 help him, he set about organising Armoedsvlakte for new extensive experimentation, ordering more fencing, more cattle, more supplies of suspected poisonous plants. He was out all day watching his experiments in the sharp autumn air, returning 'in the evening so tired that the writing progresses slowly'. He worried about Zschokke's choice of Swiss – would they present
75 problems like Frei and Meyer? He had been reluctant to send for them and, officially pressed in time of need, had done so unwillingly. Week followed week and there was no sign of their coming. There were 10,000 awaiting passengers including returning troops who made transit from England impossible. They would have to come via Lisbon, some with wives. Little could be done without their help. His real hope lay with P. J. du Toit who had apparently reached London but was stranded without money. Later he heard that the High Commissioner had given him funds 'to complete his work' but no one knew when he would be returning. By July, du Toit
76 was still completely incommunicado but Theiler doggedly continued in his pursuit. 'He is not

only very industrious', he claimed, 'but also very intelligent and I hope that he will become the Director of the future Veterinary Faculty, if not of my old institute. He has the knowledge for both posts.'

77 The farmers were doing as they were told and cleaning their lands. Some of them clamoured for a 'cure' as well as a 'preventive'. Silent wastes populated by wild animals suddenly became delectable cattle country. Theiler recorded with pride that 'the price of farms in Bechuanaland has already risen 50-100% and even more. The people who previously abandoned it are now coming back and companies for cattle products are now envisaged on a grand scale. The last hindrance to cattle farming in South Africa has now been cleared up and this country will become one of the biggest producers of meat.' Until assistance came, he could do little; but other men, equally visionary, were busy about the future he had unfolded.

78 One was K. B. Quinan, manager of Rhodes' Cape Explosives Works, a self-taught engineer of American origin whose drive, technical skill and lively imagination had caused his seconding to the British Government at the outset of the war to advise on munitions production. A voracious worker, he had rendered such distinguished service that Britain, unable to reward a foreigner with the customary accolade or peerage, conferred on him the rare award of Companion of Honour. Quinan returned to his dynamite factory at Somerset West, Cape in February 1919 with his resignation in his pocket and an inflammatory idea in his mind. His directors allowed him to expound it. In brief, he proposed that his factory, serving mostly the mining industry, should diversify into the production of super-phosphate artificial fertilisers and other agricultural chemical products. (In 1912, Quinan had contributed articles to the *Union Agricultural Journal* on 'The Use of Dynamite in Agriculture'.) His directors agreed and construction began on a vast works at Firgrove near Somerset West whose products would be precisely what Theiler needed to rehabilitate both pasturage and animals. The paths of two dynamic men crossed eighteen months later.

79 While the Union wanly contemplated celebrating the Peace which Botha and Smuts were helping to conclude at Versailles, and the erection of monuments to the fallen, Theiler's life oscillated between the isolation of Armoedsvlakte and the activity of Pretoria. His mood flitted over many peaks and hollows. Enormous fields of work lay to hand and abroad (Tasmania pursued him ardently); but 'the old man' sometimes grew tired and hankered again after his 'homeland'. He was trying to induce Lamziekte artificially by injection of bacteria from the carcase of a victim having failed with the toxin itself. His Reports moved slowly until King came to call, professing unhappiness at Onderstepoort. Theiler took the hint and arranged his secondment from September whereafter all was much easier. Every other facility was likewise given - a motor car, electric light and an excellent stove for Emma which also heated bath-water. 82 A freezing winter was upon them but neither minded 'living in loneliness in first-class comfort'. 83 It evoked from Arnold one of his graphic passages - 'Despite its name, Armoedsvlakte has its charms. It is a huge plain bounded almost everywhere by the horizon. To the north, a hill rises and to the east is the Marikani Ridge, a flat range of hills. When the air is still, we have almost every morning the most beautiful appearance of Fata Morgana. Our farm is then an island surrounded by reflecting lakes with numerous trees on the banks, all reflected in the water. Or the water is absent and everywhere stand trees and woods and bushes all of which have the peculiarity of being of equal height and cut off flat on top. Or the whole landscape is lifted up, the mountains disappear and next to them, new ones which at other times, one does not see. There are all kinds of variations of these optical illusions which give a different character to the country at different times.'

He was occupied with the isolation and identification of the bacterium causing Lamziekte which he could soon readily produce with a culture. A bacteriologist could get on with it when

84 one became available. In the meantime he was closely studying Pica by observing the onset and degree of craving for carrion in a large herd of cattle. 'A "mild craver" is fastidious in its selection of clean weathered skeletal debris', he later reported, 'but "an extreme craver" has even been seen crunching a living tortoise with the blood dripping from its jaws, or eating pieces of hide with adhering putrefying flesh.' In the end, he could draw a curve correlating its highest point with the absence of grass during winter and its lowest in spring when the young grass was luxuriant. Pica or Osteophagia as such was curable with phosphate-rich foods such as bonemeal but the cost was initially high. Further research over a year-long period was necessary. It was a long laborious process and Theiler was frequently away.

86 In the middle of July he was for a week in Pretoria and Johannesburg 'visiting all my old friends' and fighting a hard battle on the departmental committee considering the Veterinary School. He insisted on basic courses in Botany, Chemistry, Anatomy and Physiology at a University and specialised courses at Onderstepoort whose Director would have to reorganise the work of his senior staff and himself accept the duties of Dean of the T.U.C. Faculty of Veterinary Science. Theiler, himself disinclined and longing for 'a quiet life in Switzerland', had loyally told the College earlier that he would accept the post of Dean if he were first allowed to go overseas. Now his attitude hardened and he decided to decline it, finish his Government work and return to Switzerland. The Committee was not wholeheartedly in favour of the dual rôle of the Director of Veterinary Research entailed by his plan. 'In my opinion', he wrote, 'it is the best for the interests of Onderstepoort and the Faculty. It only begs the question whether my successor is the man for it and there, I am afraid, this is unfortunately not so. I hope however that by no means in the far future, Dr du Toit will come to this post and then, I think the man will be found. General Botha arrived yesterday (24th July 1919 in Cape Town) and I think he will be first asked, before the design or rough plan as we have outlined it, will be accepted.' Montgomery's aversion to wildly extended responsibilities had been palpable.

Countrywide rejoicing over Peace and the return of the Generals whose arrival in Pretoria was planned as a triumph, had an extension in Theiler who at last heard that three of his five Swiss veterinarians had sailed from Lisbon and were due in Cape Town at the time that Margaret would leave. He had been excited to find that his friend Percy Horsfall, now secretary to the High Commissioner in London, had visited Alfred in Lucerne and had written a long well-informed letter to the *Cape Times* on the international political situation (he later contributed numerous articles). Max had steadily passed his examinations and was already visiting hospital clinics but Hans had been prevented from writing his by recurrent fever. Impressed by Gertrud's enthusiasm for teaching and love of Science, Theiler offered her a seminar in Switzerland. The future as a whole seemed more promising and must improve now that the Generals were back.

92 They came from the Cape by train on the 8th August 1919, dismounting at Fountains to enter horse-drawn carriages which bore them in triumph through the decorated streets of Pretoria to the Amphitheatre of the Union Building on Meintjes Kop. A large assemblage awaited them and 'a royal reception' was given South Africa's two helmsmen. Smuts went straight to his office in the Department of Defence but Botha, looking strained and worn from severe influenza in Europe whose effects the voyage had not cured, left for his farm Rusthof at Standerton. The Cape, Free State and Transvaal had saluted Smuts and him - now Natal impatiently awaited them. The biting winter weather of the Highveld afflicted him and, weakened by a chill, he would have to forego the Natal journey. Smuts would do duty for both of them while Botha returned to the warmer climate of Pretoria.

93 Arnold, Emma and Margaret left Vryburg on the 14th August for Cape Town. The Portuguese ship duly arrived but there were no Swiss veterinarians on board. Communication with Europe was still bad and transport chaotic. Margaret safely embarked on the *Edinburgh Castle* to meet

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het brothers in London and begin her training at the Anstey College of Physical Education at Sutton Coldfields in Warwickshire. Like Hans, Gertrud and Max, she received £20 a month from her father whose heavy financial burden was only fractionally lightened by his hermitic life in Bechuanaland. Arnold resumed acquaintance with all his Cape Town friends and arrived back in Vryburg on the 28th August. Shock and gloom possessed the dorp. Louis Botha had died in his sleep the night before. None – his wife, his doctor, his family nor visiting friends – had anticipated it. An overtaxed heart had simply ceased to function. For Theiler it was an emotional shock and a bitter blow – ‘A great loss to us all and also to me. He was a good friend to me and his death is perhaps not without consequence for my future. When there was disagreement, I always had his help and now I have lost it.’

Buxton immediately sent for Smuts and the previous Cabinet was sworn in with Smuts as Prime Minister. There was absolutely no similarity between Botha and Smuts except love of their country. Theiler knew that he would now confront a diamond-hard man impervious to melodramatic tactics and prone to draconian decisions. Smuts’ approach to affairs was fundamentally dissimilar from his predecessor’s.

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Botha, equally preoccupied with affairs of State, would spend unlimited time with any old Boer who was free to walk into his office for a chat. Smuts would stare steely-eyed at interlopers or officials wishing to discuss trivia and coldly dismiss them. Orenstein who knew them both, relished describing the difference by an incident of the early days of the 1914 Rebellion. With Kemp in open revolt, Botha and Smuts were conferring in a rebel farmhouse with a guard outside. The boy came in with his rifle in the middle of the night to say that despite extreme cold, the wife of the rebel farmer had refused to give him some coffee. Smuts leapt white-faced with rage to his feet but Botha pulled him down and told the boy to fetch the woman. She came truculently and Botha asked her whether she had any sons. She said Yes. He then asked her whether she would allow them to stand outside in the bitter cold without coffee. She said No. The boy got his coffee.

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Botha had temporised with Theiler in the same manner, emphasising that he ‘must not leave the country in the lurch’; but now it would be different. ‘General Smuts, the new premier, is likewise well known to me’, he wrote Alfred forebodingly, ‘but the friendly relationship which existed between me and General Botha has never existed with him. Still I know he holds me in very high esteem and greatly values my work. He himself once told me so and in a great speech in Parliament, he quite recently made an allusion to my discovery which showed that he is now fully au courant. Still, my future is still somewhat uncertain.’ Reassuringly Tasmania kept writing. His ‘discovery’ had now been applied to the local ‘Midlands Disease’ which had been found to be similarly caused through Pica and cattle eating dead rabbits, and was in fact identical with Lamziekte. The Australian farmers had resolved to invite Theiler to advise them. ‘Perhaps the journey will eventuate sooner than I myself imagine’, he wrote.

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The disaffected Montgomery had gone to F. B. Smith (recently awarded a niggardly C.M.G.) to demand six months leave. He left in September for British East Africa and England. D. T. Mitchell was gazetted as Acting Director of Veterinary Research in his place. It was an open question whether Montgomery would return. Widespread change was in the air.

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Smuts had a farm at the picturesque and historic Barberspan (Barber’s Lake, converted many years later into a Wild Life Reserve) in the Lichtenburg district of the Western Transvaal bordering on Bechuanaland and not far from Vryburg. He took his family there on the rare long weekends and other holidays permitted him, camping in the open, tramping the veld among his

cattle, watching the rich bird life and botanising. Popularly known as a 'dorpsboer' or 'town farmer', he had a real knowledge of stock-raising on the farms which Mrs Smuts managed in his frequent absences abroad, and a close consciousness of the importance of Theiler's work both at Onderstepoort and now at Armoedsvlakte, a few miles south of his Barberspan property. Personally enamoured of and academically trained in the Humanities, Smuts was tending toward a livelier appreciation of Science and the contemplation of Metaphysics. He now accepted that Theiler and Theiler alone (since Montgomery had openly expressed his aversion and was now unavailable) could develop the country's animal husbandry and provide the men to do it.

101 In the middle of October 1919, he wrote him at Armoedsvlakte, ingratiatingly applauding his
102 feats and suggesting an interview in Pretoria to discuss Veterinary Education and Research. At the same time, F. B. Smith who had been considering prestigious offers from England, was persuaded to continue in office for an additional year. He would devote himself to extricating his Agricultural Department from the chaos which had long characterised it and to implementing the grand visions which Smuts and Theiler now shared.

In his remote command post which he now frequently left, Theiler at last felt that he was going forward. King was with him and lightening the burden of the Reports which weighed on him as his first and heaviest obligation. The proofs of Nos 7 and 8 had come and work was proceeding on their successors. Infinitely better was the arrival at Armoedsvlakte of the first three Swiss veterinarians - Drs H. Meier, Marcus Zschokke and J. R. Scheuber. They stayed a week and Theiler scanned them keenly, selecting Meier to remain with him on Lamziekte work and sending his two colleagues to Onderstepoort for investigations under Mitchell's direction. (Their arrival was not welcomed by some of the local staff who resented the intrusion of German-speaking foreigners.) Best of all was a letter from P. J. du Toit as he left England on his return to South Africa to visit his alma mater, now the University of Stellenbosch which had written to offer him the professorship of Veterinary Science that had earlier come near to acceptance by Theiler himself. Du Toit, responding to Theiler's persistent pursuit, wanted to visit him before committing himself and Theiler, contemplating the possibility of his long-laid plans materialising, was much exhilarated.

103 Even his paternal troubles were allayed. Among his usual massive mail was a letter from Sir
104 John M'Fadyean warmly defending Hans whose malarial attacks had prevented his writing his R.C.V.S. examinations but who had successfully sat London University examinations for the first part of a B.Sc. degree of which Arnold knew nothing. Hans had wanted to surprise his father who now ate humble pie and deeply regretted having done his son 'a downright injustice'.

106 At the end of October, Theiler met Smuts in Pretoria. Their talk was straightly to the point. They were dealing with grand matters in the grand manner regardless of trivia such as Montgomery's disinclination and unsuitability for participation. Smuts offered Theiler joint appointment as Dean of the Faculty of Veterinary Science of the Transvaal University College and Director of Veterinary Research at the Onderstepoort Laboratory. It would not be re-instatement but a kind of promotion in a dual rôle with extended responsibilities. As the architect of the scheme and with the majority of the Veterinary Education Committee in support, Theiler could not affect surprise. As usual, he made his conditions.

He was 'an old man', past pensionable age and already postponing retirement at Government request. He would accept the offer with three basic stipulations - he would fill the dual rôle only until the first students qualified in four or five years time; during the preliminary two years while they completed their basic courses at established colleges, he must be allowed a full year for study overseas to prepare himself for academic duties, together with such members of his staff, notably Viljoen, Andrews and Robinson who would serve as specialised lecturers; and he must be allowed to employ and train P. J. du Toit as his successor. Smuts, virtually in a cleft stick,

agreed to these and other minor conditions, asking only that Theiler immediately prepare a memorandum outlining the proposed inter-organisation of Veterinary Education and Research with estimates of costs in buildings, salaries, equipment, etc, and at the same time draft curricula for veterinary courses.

107 It was a heady experience for them both. In his various capacities from 1907 onward, Smuts had worked toward establishing a University of Pretoria separate from Johannesburg. After Union, he had introduced legislation enabling the foundation of the Transvaal University College which in time would become a full University of which he would justly be called 'the original creator'. When T.U.C., became a State-subsidised institution in 1917, its development continued his personal concern and now, through Theiler, he was extending and enhancing it in the most meritorious manner.

For Theiler, it was the consummation of a life's ambition, the negation of the lurking feeling (so frankly stated by Mrs Smuts) that his work was 'unappreciated' and the fulfilment of the Theiler teaching tradition, long suppressed and emerging only vicariously in Gertrud. If visions of an ultimate 'Theiler Institute' still haunted his mind, there was now little time for them. Practical arrangements had immediately to be made with his Minister H. C. van Heerden and the Minister of Education F. S. Malan and his subordinates, as well as the providentially-retained F. B. Smith whose knowledge and ability to cut endless red tape would be stretched to the full. Looking down the dark tunnel of time to 1902, Smith too knew that a feature of his own life's ambition was being fulfilled. Theiler telegraphed P. J. du Toit in Stellenbosch to come at once and returned to Armoedsvlakte. He had attention for nothing but the drafting of the enabling memorandum.

108 Du Toit arrived at Armoedsvlakte early in November for a day and a night before going on to Pretoria to meet the Ministers of Agriculture and Education and their officials. He was warmly welcomed by Arnold and Emma with whom he stayed. Torrential discussion occupied almost the entire time. Arnold had long looked forward to hearing his War experiences in the enemy country; but du Toit was reticent except in regard to his scientific work with Knuth in Berlin. He had been almost exclusively engaged in the study of Tropical Animal Diseases (which in a sense liberated Knuth for fieldwork on Horse Sickness and other diseases with the active forces 109 at the behest of the German Army) and together they had compiled the 869-page 'Tropenkrankheiten der Haustiere' ultimately published in 1921. Apart from his work on Leucaemia and Rinderpest, he had published many papers on animal parasites, the combatting of tick infestation and equine diseases. His range was wide and his methods sound and thorough. Theiler faced a mature research scientist, eager and anxious to sit at his feet and to make his way in his own country. Neither, despite having met only once seven years previously, was disappointed in the other. Theiler also faced a married man of 31 spurred by family obligations. While studying in Germany, du Toit had met an English tourist Dorothy Jakeman and declared his feelings. 110 They were married in London as soon as he reached it in 1919. Now his wife waited at Stellenbosch while he determined which should be their future home.

Theiler explained how he had prepared the ground for du Toit's appointment as a veterinary assistant and sent him on his way with every hope that it would soon be confirmed. Then he returned to the all-important memorandum. Smuts had ensured that by Cabinet decision, a College of Veterinary Education would be established. The speedy submission of the enabling 111 measures was vital. When du Toit reached Pretoria, van Heerden was away but he had satisfactory discussions with F. B. Smith and with Malan who agreed that he should begin work at Armoedsvlakte on the 1st December, it being generally understood that the new Faculty would be administered by Agriculture and not Education. By the 10th November, du Toit had returned to Stellenbosch and, following the advice of Smith and Malan, informed the University that he

would not be accepting its offer of appointment. The effect was painful but he was somewhat consoled by the sympathetic understanding of Theiler's colleague on the proponent committee, Professor A. I. Perold. Then he waited for the expected telegram from Pretoria.

112 Theiler's memorandum reached van Heerden on the 13th November but silence continued. By then, news of the Cabinet decision had been published and electrified the Vryburg Farmers who, already cock-a-hoop about their part in the Lamziekte 'discovery', now developed a bad case of folie de grandeur. No less a personage than the Minister of Education F. S. Malan (duly lunched by the Mayor, Max Sonnenberg) attended their meeting on the 19th November, vaunting his part in the miracle and announcing the academic appointment of Theiler who was present and unamused at the Minister's credit-snatching. Replying to Malan, he announced in his peculiar and gutteral English that 'he had always had a heart favourable to the South African boy. He was worth lifting up. The South African youth had brains equal to or better than boys in any other part of the world. He was born amongst Nature and was therefore the very best material for training in Veterinary Science. He considered it a great honour to have been asked to do so.' Malan dashed off to a series of meetings including a visit to Armoedsvlakte where Mitchell and Viljoen were conferring with Theiler. Exalted by the current highmindedness, the Vryburg Farmers resolved to ask the Minister of Agriculture to establish the new College of Veterinary Education at Armoedsvlakte where appropriate buildings and other facilities already existed. Greater glory might yet be theirs. In time van Heerden replied that he considered Onderstepoort preferable.

113 As November ended without word from Pretoria, du Toit grew desperate. He had telegraphed Smith who had replied reassuringly but inconclusively. Now he appealed to Theiler to intervene. Not until the 2nd December did he receive a telegram: 'Offer you post as assistant to Theiler £700 per annum plus free quarters.' He accepted. On the same day the news that Theiler had been appointed Dean of the new Faculty and would resume control of Onderstepoort became known through the Minister formally advising the Transvaal Veterinary Medical Association whose secretary was Mitchell – and 'the bombshell exploded!'

114 The anti-alien feeling generated by the Lusitania Riots throughout the Union four years before was still latent. Aversion to 'foreigners' had been further stimulated by the fierce campaign, accentuated by Hertzog and his following for the employment of South Africans in Government posts. 'Jobs for Pals' had long been a political scandal and those already occupying them felt confident that their future was assured with better prospects than before. Notch by notch, they could attain the heights of the Civil Service. Now suddenly, foreign and German-speaking Theiler was promoted above the hierarchy of the Onderstepoort staff when the way had seemed clear for their own advancement. Mitchell, Acting Director of Veterinary Research and already irked by the importation of Swiss assistants, felt it keenly. He had had every reason to suppose that in the obvious circumstance of Montgomery's defection, he would be appointed in his place. Some of the staff were also unhappy but Theiler's cronies rejoiced. Some wondered how Montgomery, still in Government service, would be affected.

115 His mind buzzing with plans and figures, Theiler now travelled constantly between Armoedsvlakte and Pretoria. For the building of accommodation for the first enrolment of students, two years was hardly time enough. He was in consultation with Cleland of the Public Works Department in Pretoria when du Toit and his wife arrived at Vryburg on the 11th December 1919 – the first overt step in his desired direction. Cleland agreed that land adjacent to and leased by Onderstepoort should be bought albeit at the high cost of £5,000, for the new buildings. Theiler 116 accordingly wrote to Smith for his Minister's sanction and hastened back to Armoedsvlakte 117 for a weekend's discussion with du Toit before he officially commenced his duties on the 15th December 1919. It was an historic moment in his visionary planning and in the development

118 of Veterinary Science. Smuts, contemplating his strategies for the forthcoming General Election, intended forgetting them at Barberspan over the Christmas holidays.

New and heavy responsibilities and constant train travel began to tell on Theiler. He was no longer able to sustain the intense summer heat and desiccation of Armoedsvlakte to which the tropic torridness of Pretoria provided no relief. 'It is almost impossible for me to display my usual zest for work', he wrote Alfred (now meeting Max for the first time as an adult in Switzerland), 'and much time is thereby lost which, under more favourable climatic circumstances, would be completely filled.' His estimates for the new Veterinary College were enormous – £175,000 for the buildings and research facilities at Onderstepoort, £7,000 for equipment and about £8,000 for staff salaries. Maddeningly no authority had been given for the purchase of the land and he wrote repeatedly to Smith begging that Smuts' personal intervention be sought to finalise the matter. The Prime Minister, facing a crucial post-war election – the first after Botha's death – had no attention for trifles.

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124 In the meantime, Theiler laboured with du Toit and Viljoen (specially seconded from Pretoria) to outline the first courses of study. There were endless distractions. A German chemist, Dr R. E. Hartig operating from the Cape, claimed to have invented a 'cure' for Lamziekte (regarded with outspoken suspicion by Butler). Van Heerden summoned Theiler to meet him in the ministerial office in Pretoria and upon his advice, counselled Hartig to patent his 'cure'. (Highly vociferous and commercially inspired, Hartig long remained an irritant until disillusion drove him back to Germany.) Theiler returned to Armoedsvlakte with J. M. Sinclair, Rhodesia's Principal Veterinary Officer. The dispiriting place with its interesting experimentation was beginning to prove a magnet.

The organisation of the new Faculty was a long and involved affair. In March 1920, Theiler took du Toit to Pretoria to arrange procedures with the Transvaal University College and organise services at Onderstepoort (where the remaining two Swiss veterinarians, G. G. Kind and R. Sharrer, had arrived). Du Toit would act for him when he went overseas, hopefully in September. They were in the Capital when the General Election was held. Smuts himself was handsomely returned but his South African Party gained only 40 seats while Hertzog's Nationalists held 43. There was an ominous post-war swing from Empire idealism to local patriotism. Smuts could govern only with willing outside support and Buxton sent for him. Among the fallen was Theiler's Minister, H. C. van Heerden. Parliament met on the 19th March with otherwise the same Cabinet and on the 14th April, F. S. Malan was formally appointed to the Agriculture portfolio. Malan had held the post in the old Cape Government but had none of van Heerden's practical experience.

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126 The climactic point had now come. On the 1st April 1920, Theiler formally assumed office as Director of Veterinary Education and Research, having fixed the future preliminary teaching staff of the new Faculty:

Dean – Sir Arnold Theiler K.C.M.G., Director of Veterinary Research

Acting Dean – Dr P. J. du Toit, Sub-Director of Veterinary Research

Professor of Bio-Chemistry – Dr H. H. Green, Sub-Director of Veterinary Research

Professor of Veterinary Anatomy – Dr Gilles de Kock

Professor of Physiology – Dr W. H. Andrews

Elementary Veterinary Science – C. P. Nesor (seconded from an Agricultural College)

127 On the 9th April at the annual Graduation Ceremony of the Transvaal University College under the aegis of the maternal University of South Africa, Theiler made his debut in mortar board and gown as Dean of the Faculty and delivered an address on 'Veterinary Education and Research in South Africa' detailing the steps by which the Faculty had been founded. A pioneering

seven students subsequently enrolled and began their basic studies while the Dean pursued their advanced courses overseas in company with Andrews, Viljoen and Robinson.

128 An anomalous witness of these epic events was R. E. Montgomery who, returning to Pretoria at the expiration of his six months' leave at the end of March, formally resigned from the Service. He spent some days settling his affairs and then left for East Africa to become Director of Veterinary Services for Kenya, Uganda and Tanganyika, his path again crossing Theiler's some years later. It was commonly supposed at the time that he neither wished nor was able to step into the seven-league boots with which his predecessor had made such impressive strides.

129 The forward movement which seemed at last to be prospering Theiler's hard-won aims was at the same time supported by the re-appearance after six years of the *Journal of the Department of Agriculture*. He could at last communicate some of his work to his colleagues overseas. Its first issue carried his account of 'The Causes and Prevention of Lamziekte' which aroused widespread interest and was widely reprinted. Butler published it in the *Northern News* and in his leader, urged his dorp and district fearlessly to develop.

130 While Mitchell reconciled himself to the humiliation of posting to Armoedsvlakte and the Director's house at Onderstepoort was readied for its original occupant, Theiler shouldered his grotesque double duties. He went down to Natal to see what Andrews was doing at Allerton and what Professor J. W. Bews, the Pietermaritzburg botanist had meant by causing Mitchell to telegraph early in December 'Bews had identified plant causing Staggers in Cattle'. Andrews, Mogg and Bews had long been working on Bovine Staggers, ultimately inculcating *Matricaria nigellaefolia* (Stootziektebossie or Staggers Weed). They were now using it to experiment on other animals. In this dearly-beloved field of toxic plants, Theiler with his associates, particularly Pole Evans, had rendered distinguished services to the world at large.

131 In Pietermaritzburg he met the Natal Farmers who eagerly questioned him about the serious recrudescence of East Coast Fever. For Theiler, the research problem had been solved by eliminating the carrier-ticks with dipping and quarantine, and had become an administrative matter for the Veterinary Department. The farmers were insistent. 'Is it possible', they asked, 'that owing to constant dipping for the last ten years, we have been breeding a tick that is arsenic-resistant? Is it possible that the disease as such has changed and become chronic?' It was indeed possible (as Bruce had found with trypanosomiasis) and Theiler would mount experiments to test the hypotheses and generally reopen research, dormant for 8 years.

132 While in Natal he continued to grapple with the Lamziekte problem. Word reached him that the Cape Explosives Works' sister dynamite factory at Umbogintwini on the coast was about to convert to fertiliser production (the factory at Firgrove near Somerset West was under construction but not in production). Its representatives told him that in the near future, the Natal factory would undertake the manufacture of phosphates at a cheap rate which would result in great saving to farmers in the prevention of Lamziekte. Butler recorded it gleefully after Theiler had told him on his return to Armoedsvlakte in the middle of April. He had also told the *Pretoria News* that the cost of accommodating the new Faculty at Onderstepoort would not be as high as he had at first supposed.

133 Emma had been packing their few possessions, leaving the P.W.D. furniture and equipment for Mitchell's occupation. The Vryburg farmers were desolate. For more than a year, the great man had been among them, visible in his motor car in the dorp and glad to greet visitors at the experimental station. The sceptic J. F. Pentz had recently inspected the work - 'an eye-opener', he said and urged his brethren to see for themselves how Theiler had solved the Lamziekte problem. They had wanted to give him a farewell dinner but were too poor to afford it. Instead they passed post hoc a touching resolution of congratulation on his two appointments and thanks for the work he had done.

137 On the 21st April 1920, Sir Arnold and Lady Theiler left Armoedsvlakte to resume their residence and duties at Onderstepoort.

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138 Only a man of Theiler's vision and attainments could have grasped and commanded a situation demanding academic scientific instruction and research, bio-economic as much as veterinary. He had done his best to prepare for both by ordering through the unprotesting Alfred and his Berlin bookseller a large number of scientific textbooks but time for study grew progressively less. In the isolation of Armoedsvlakte, it had been easier and he had left the uningratiating place with genuine regret but 'prepared to carry the new yoke without rancour'. He faced its enormous stresses and tensions, its wide and endless demands, with calm courage in that they were part of exalting his own persona (then enhanced by his promotion by the Société Centrale de Médecine Veterinaire of Paris from corresponding member since 1906 to full membership, and the seat on the National Botanic Survey Advisory Committee vacated by Montgomery). His thoughts still flickered toward peaceful retirement but with the great guerdon of national and international acclaim before him, were wistfully extinguished by fanciful projects. 'I cannot complain about my stay in Bechuanaland', he wrote, 'a year of farming with 600 head of cattle has awakened a great desire for this profession. Perhaps I may still farm at the close of my life in South Africa.'

141 Mitchell, banished in his place to the outer marches, had maintained Onderstepoort as best he might with miserably reduced staff (Veglia was still on active service in Italy) and Swiss acquisitions who took long to adapt themselves to local conditions. Sharrer and Kind had been joined by R. W. M. Mettam from Ireland and Dr Gill who was employed at Allerton. It was still a great factory for 'preventives' but in decreasing number, only an anti-anthrax vaccine showing a sizeable increase. Routine research, notably with Pole Evans on Gouwziekte in sheep, had been maintained and Bedford still searched among his ticks, flies and mosquitoes for the carrier of Horse Sickness. Theiler came now with a whole new field and Nature added some staples of her own.

142 Owing to flagrant neglect of Theiler's injunctions (according to enlightened farmers), East Coast Fever flared uncontrollably in Natal and the Eastern Transvaal while Nagana seized Natal and Zululand. Both should have moved from research into the realm of regulation and veterinary care; but, mindful of the Natal Farmers' representations to him, Theiler had reopened investigation into East Coast Fever in a possibly chronic form conveyed by arsenic-resistant ticks. All his regulations had been stringently imposed in the Transvaal under C. E. Gray's exacerbated aegis; but the farmers' reaction became so ugly that the Government was forced to appoint a Select Committee to investigate and report. F. S. Malan and F. B. Smith left the Parliamentary session to join Gray in trying to placate angry stock-raisers in the Transvaal while Theiler went down to the Cape to give evidence to the Committee. They heard him at his best - simple, straightforward, ranging over history, paying handsome tribute to Watkins-Pitchford's forceful pioneering of dipping, emphasising the need for constant alertness to Nature's vitality and endless mutations.

143 Theiler had a more pressing problem on his mind. He gave his evidence in Cape Town on the 18th June 1920 and returned to Pretoria a week later. During that time, he came to grips with one of the practical aspects of the Lamziekte syndrome whose multifarious ramifications were to absorb him until the end of his life. His main purpose, he always said in later years, was to improve economic conditions in South Africa and, by implication, not just to deal with disease.

146 Compensation for the phosphorus deficiency which caused Lamziekte by administering bone-

meal not only eliminated the chance of incurring the disease but also improved the physique and productivity of cattle. But bonemeal in necessary quantity was too expensive – outside the reach of impoverished stock-raisers. Theiler left Cape Town for Somerset West to consult with Quinan at the nearby Cape Explosives Works (still called ‘De Beers’ after Rhodes original dynamite factory). He asked Quinan whether his colossal new fertiliser factory could not produce cheap but effective phosphates (calcium, sodium, phosphoric acid, etc) to meet the need. Quinan thought it could and promised to engage in bonemeal production, the best means of administering phosphorus to cattle.

147 The time had come for Theiler to stand away from ten years’ fruitless work and 18 months of revealing observation and experimentation. In brief, the combatting of Lamziekte also indicated the most advantageous methods of stock-raising. He had now to plan and put into operation before he left, the investigations into climate, pasture, feeding, medication and generally treating cattle to attain maximum production. Mogg, for instance, must go immediately to Armoedsvlakte to study and analyse the veld plants for at least two years. What was further needed was a Plant Physiologist and one must be found. Green must investigate the optimum chemical diet. And so on. But even before launching this programme of work, he must carry the country with him – the farmers, the industrialists, the legislators and the general public. With his great gifts for simple explanation, Theiler was a born publicist and promoter. He set his mind to expounding, with the help of his leading lieutenants, the Lamziekte syndrome and what it implied. Loyally and with due notice though deeply preoccupied, he began his campaign at Vryburg (where he had recently sent P. J. du Toit and H. H. Green publicly to confront the assertive Hartig and witheringly to demolish his vaunted ‘cure’).

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150 On the 29th June 1920, about 300 cattle-raisers and townsmen assembled in the Vryburg Town Hall to witness what Theiler considered a proofing run for the exposition which F. B. Smith was organising for him in Cape Town on a far grander scale. His lecture was most meticulously prepared and supported by slides projected by Theo Meyer while P. J. du Toit repeated him in Dutch. He concluded to applause that De Beers Dynamite Factory was going to produce a cheap phosphate before long and that the gathering must next day go to Armoedsvlakte where Mitchell would demonstrate the administration of bonemeal. (Few did – the stockmen had left for their distant ranches to scan their cattle with new insight and to spread the good word while the frustrated Mitchell gave a detailed demonstration to a mere dozen.) The proofing run had been notably successful.

151 Parliament was in session in Cape Town and with some poignancy, F. B. Smith for the last time before his final departure, arranged a grand occasion for his colleague and collaborator of 18 years. He took the large hall of the Training College and issued invitations to members of both Houses. Led by the Speaker of the Assembly and the present and past Ministers of Agriculture, F. S. Malan and Senator H. C. van Heerden, they thronged the hall on the 21st July 1920 together with representative notabilities, farmers and reporters. The interest of any audience was transfixed by Meyer’s ‘magnificent slides’ showing Pica-ridden beasts with necks extended chewing putrid bones and garbage, then exhibiting the stiffness of gait, recumbency, inability to rise and, if lifted, to stand, declining into inertia with their heads alongside their bodies, and finally dying. But Theiler also spoke to slides showing graphs indicating the onset of Pica during dry months with diminution of phosphorus in herbage, and other results of his first experimentation. Large doses of bonemeal – as much as a costly lb a day – were necessary to prevent Pica and the ingestion of the disease-microbe; but much smaller – as little as 2 or 3 oz. daily – would keep it at bay. He stated fascinating facts. It cost £40 per annum to keep Armoedsvlakte clear of carrion. 600 beasts grazed on it and were thereby safeguarded at a cost of 1s.4d. each for a year. Their annual bonemeal ration to compensate for the seasonal diminished phosphate-content of



The cattle queue with each animal voluntarily positioned with its head turned toward the point where it will be given a spoonful of bonemeal.



Bonemeal Administration – cattle at Armoedsvlakte willingly entering a crush and queuing for dosage with their heads already turned to the right in anticipation of the desirable morsel.



The climactic moment when, with a farmhand holding its tongue, the beast receives its allotted dose on a long-handled spoon.

their grazing cost 5s.3d. per animal. For less than 7s. per head per year, cattle could be both protected from Lamziekte and improved in condition. He emphasised again the importance of bonemeal production at the Cape Explosives Works. Its application had been striking. In 1914, one third of Armoedsvlakte's cattle had died of Lamziekte. In 1919, after his coup de genie (in which Theiler always paid tribute to the work of Walker, Andrews, Mitchell and Viljoen – and Theo Meyer), when the lands had been cleaned and bonemeal feeding introduced, the mortality had fallen to 2%. In the seven months of 1920, not a single case of Lamziekte had occurred and othe stockmen had had the same good results.

Theiler, again translated into Dutch by P. J. du Toit, forthrightly admitted that as the causative bacterium had not yet been isolated and identified, no vaccine against it could be evolved. A recovered Lamziekte victim was not salted and could later die from a recurrence. Bacteriological investigation was continuing, he said; but similar work was urgently necessary in other aspects, including close collaboration with many disciplines. 'Lamziekte is only one of the many problems with which we are confronted', he concluded, 'The difficulty in the past has always been the lack of scientific collaborators. It is to be hoped that all these problems will be tackled and eventually settled when South Africa commences the training of her own veterinarians.' When Sir Arnold sat down after his 'very notable lecture', his audience was with him.

152 He gave it once more in Pretoria on the 24th August under the aegis of the South African Biological Society (of which he was Honorary President) with P. R. Viljoen, H. H. Green, D. T. Mitchell, P. J. du Toit, H. Meier and Theo Meyer in historic attendance. The Society recorded an illustrated summary in its Journal. (Even in abbreviated form, it remains a gem of Theiler's
153 lucidity and directness.) In between he had gone to a Nagana Conference in Pietermaritzburg with C. E. Gray, du Toit and Bedford and taken leave of F. B. Smith when he came to Pretoria
154 finally to clear his desk. No longer would the high squeaky voices of Smith and Pole Evans which Theiler's deep bass would rise to join, be heard in conclave at the Botany Division at Vrede House below the Union Building.

Parliament had paid tepid tribute to one of the architects and builders of Theiler's empire. Sir Thomas Smartt lamented that Smith had joined the procession of able men leaving the
155 Agricultural Department when most needed. His Minister, F. S. Malan made passing reference
156 to the transformation he had effected in '20 strenuous years'. (Numerous speakers inside and outside the House objected to Malan's holding the portfolios of Agriculture, Mines, Industries and Education and demanded a single Minister of Agriculture.) Smith, on the closest cordial
157 terms with Theiler had accepted a Readership (associate professor) in Estate Management at Cambridge. The ideal of an Imperial Veterinary College still lived in his mind and he promised Theiler to do all that he could to help. He sailed for England on the 27th August 1920, three weeks
158 before his friend. Confusingly he was succeeded by Mr P. J. du Toit (bearing no relation to Dr P. J. du Toit of Onderstepoort), a mild-mannered bureaucrat from the Cape Agricultural Department and long absent from departmental affairs as a member of the Public Services Commission.

Theiler had been dealing with the Acting Under-Secretary Colonel G. N. Williams D.S.O.
159 He wanted still more land – an adjacent farm belonging to Watson York who demanded £7,000 for it. Williams conferred with his colleague in the Department of Lands and both were persuaded by Theiler that the costly property was essential for 'extensions to Onderstepoort'. A few weeks later, he asked for six more erven at £1,650. On a batter's wicket, the old man was determined to prepare for the future.

With P. J. du Toit and W. H. R. King ever at his elbow, he had also to envisage the apparatus necessary to equip the laboratories for the new Faculty. Du Toit, freshly experienced in the latest European technical advances, had difficulty in compiling lists of the material required which

Theiler would buy overseas – different types of microscopes, incubators, sterilisers, Röntgen-ray apparatus, a gas cell for Glanders, centrifuges, specialised flasks, balances and the most modern equipment. They knew that many of the best European suppliers were not yet in full operation after the War and there would be difficulties, including monetary exchange. Unsettled conditions on the other hand, might make recruitment of staff easier.

160 Theiler took his lists with him together with much other material including his long-cherished collection of Nematoda which had never lost its fascination. Had he had time before or after his 'retirement', he would have worked on it. (On the 2nd August 1918, he had communicated to the Royal Society in London an astonishing paper on 'A new Nematode in Fowls, having a Termite as an Intermediary Host' which arose from a farmer some years before alleging that a certain white or 'Houtkapper' ant harboured a worm in its bloated body. Theiler duly made investigation, remarking primly that 'it is most surprising to see a worm two or three times the length of the ant wriggling out of its broken abdomen.' Chickens died from eating such ants.) His work on 'The Nodular Worm and the Lesions caused by it' was published in the *Journal of the Agricultural Department* in January 1921 and many other such subjects awaited investigation.

161 Now Gertrud would get on with an aspect of his precious collection – the Nematodes and Strongylids. He had made an arrangement by which the seminars he had promised her in Switzerland had expanded into research work under Professor Otto Fuhrmann of the University of Neuchâtel, the leading authority on Cestodes (another form of worm parasite). Gertrude, now fully qualified as a teacher of biology and zoology, had expressed herself 'open to suggestion' and gladly accepted her father's proposal that she explore a new field after which he had himself hankered.

162 On the 15th September 1920, Sir Arnold, Lady and Miss Gertrud Theiler accompanied by Mr and Mrs P. R. Viljoen left Pretoria for Cape Town and P. J. du Toit, technically superior to the local staff with his German degree of Doctor of Veterinary Medical Science, took office as

163 Acting Director of Veterinary Education and Research. (P. R. Viljoen with longer service and a distinguished record in military and research work, never forgave Theiler for promoting du Toit above his head.) The party embarked on the *Balmoral Castle* on the 17th for England, Vil-

164 joen intending furiously to learn German en route for his doctorate studies at the University of Berne and Gertrud equally furiously studying French for Neuchâtel. Depression was rapidly creeping over the land they were leaving.