

HERESY AND HEROICS 1912-1918

IN 1912, the dragon's teeth were sown. As the Theiler family landed in Europe, the 'Balkan War' flared violently and was quickly extinguished. Thereafter every European nation increased its martial manpower, the naval race between Britain and Germany accelerated and the possibility of conflict hardened into inevitability. The 'Great Powers' still strode the stage, brutally suppressing the stirrings of their peoples, were they nationalist or socialist. Their whole energies were bent on the forthcoming trial of strength to determine whose should be the greatest Colonial Empire of the future. The aim was clear and the stirrings among peoples were world-wide in many shapes and forms. In little countries, self-determination persistently raised its head.

1 It was said of Botha that he had abandoned his foundering Agricultural Department to Sauer for six months the better to campaign in the open field against the recalcitrant in his Cabinet. His Minister of Justice J. B. M. Hertzog had raised the standard of self-determinism and now exhorted the country at enthusiastic meetings to consider South Africa above the British Empire. The Afrikaner, said Hertzog, should be baas in his own land. The time was singularly propitious. 'Union' had shown little to commend itself, poverty and distress maintained, the lot of the loyal South African was in no way improved and his leaders continued the creatures of the hated British. On the 7th December 1912, Hertzog made an irreconcilable speech at de Wildt, a tiny dorp some miles north of Pretoria. Within a week, Botha had resigned. Gladstone called on him to form a Government and Botha reappointed his Cabinet but excluded Hertzog. It was the beginning of conflict, including other stirrings. 'Self-determination', 'Socialism', 'Syndicalism' and other movements were endemic among all humanity to greater or lesser degree. Before long Botha and, more closely, Smuts were in contention with all of them.

2 Of these and other matters nearer to his official position, Theiler in Europe was kept closely posted. He had seldom worked harder in his entire life and, he later said, was engaged on scientific research week in, week out excepting Sundays. It had been difficult to arrange his affairs.
3 Hans had declared his hand and said he wanted to train as a veterinary surgeon; but his father had firmly pronounced that 'there was no money in it' and had sent him to Rhodes University College at Graham's Town to take a B.A. in Physics, Chemistry, Mathematics and Applied
4 Mathematics. Hans was no fool but lacked application. He would take his holidays with an ostrich farmer whom Arnold had met. The girls, now 15 and 16, would have no difficulty at School in Switzerland as Schwizerdutch was their home language. Nor would the spindly Max, aged 13 and still diminutive, at the Gymnasium at Basle where they had taken lodgings and Emma had prepared herself as amanuensis and technical assistant to her exigent husband.
5 Winter had begun and the children, all of whom could ride and shoot and enjoy camping in the veld, now hoped to become proficient at winter sports; but in 1912/13, the snow was disappointing.

6 It was a measure of Theiler's integrity and vision that a man of his stature could sit in class with youthful students to broaden his already encyclopaedic knowledge. For his own staff, he had established certain didactic rules. Given an assignment, they were first to study the literature, international as well as local on the subject (Theiler had induced his Department to assemble an extensive library of books and periodicals at Onderstepoort to which he added his own collection), then they were clearly to state the aim of their work, describe the attack, list or tabulate the results with the fullest observations, and finally summarise their conclusions. He

himself usually devised the experiments that would reveal the end in view. But he was conscious that with recent advances in many branches of Science, his field was limited while the problems with which he was expected to cope were unlimited. There was no solution in the mere importation of highly-specialised experts. A governing mind must understand and direct their work.

7 The development of Science had in fact reached an important point. Its established sponsorship by universities had been diversified by the foundation of specialised institutes such as Pasteur's and Koch's for bacteriological research. Now a majestic concept on a far wider basis appeared in the Rockefeller Institute for Medical Research in the United States and others of similar ilk elsewhere. They dealt principally with human diseases. Problems of animal pathology remained the practical concern (with few special facilities or inclination for research) of certain universities and agricultural colleges. 'A true research institute' (wrote the Rockefeller Institute historian of this time) dealing with the whole field of animal diseases existed *only* in South Africa. Its unpronounceable name was synonymous with Arnold Theiler. Recognition of this phenomenon was world-wide. Its incumbent was determined to ensure that it retained its reputation.

8 Theiler explored routine academic fields in prescribed courses at Basle University but, consorting with associates, he was made acutely aware of advances in entirely new fields. He prided himself on keeping 'up-to-date' in South Africa through scientific literature; but much of his own work was determined by local conditions which appeared to bear little relation to what he read. The feeding experiments to find the cause of Lamziekte would, for instance, go on; but Theiler himself had lost faith in the toxic plant theory and its corollary of accumulated toxin in the body of the animal after constant grazing on something poisonous. He had brought Lamziekte material in his pathological collection and was asked by the Basle professor of pathology, E. Hedinger, to give a lecture on South African Stock Diseases which he illustrated fully with slides, including many demonstrating the contorted posture and other symptoms of Lamziekte victims. Hedinger then propounded a new aspect of the chemical deficiency view – the condition, he said, might be similar to Beri-beri (which had recently been revealed as resulting from the unrelieved eating of polished rice by the natives of the Dutch East Indies and was similar to Scurvy), caused by the absence of what came to be called 'vitamines'. The whole subject was then under scientific investigation and held promising prospect.

Unbeknown to Theiler, an alert chemist and bacteriologist, Arthur Stead employed by the Union Public Health Department in Bloemfontein, had also been studying the chemical deficiency hypothesis in relation to Lamziekte. Unlike Theiler, he had read all the latest literature – Ostertag and Zuntz on saltpetre, Funk in London on 'protective substances' or 'vitamines', the work of English chemists at Liverpool University, and others. Stead hotly propounded the view understood in translation to farmers as 'it is not what the cattle eat that gives them Lamziekte but what they don't eat'. In a closely-reasoned, well-documented article 'Some Chemical Reflections concerning Lamziekte', he surmised that the missing substance might be yeast. The article was published in the March issue of the *South African Agricultural Journal* appearing in the middle of the month and immediately attracted widespread interest. Theiler did not see it for several weeks. Meanwhile he constantly received out-dated reports of developments at home enlivened by local news. Little was cheering.

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10 The King, at the instigation of Lord Selborne prompted by Botha, had knighted 'a martyr to Science', his old friend George Turner, now an 'anaesthetic leper' whom he would see in England when returning to South Africa. To the joy of the veterinary world, Stewart Stockman had also been knighted in the 1913 New Year Honours. But there the joy ended. The whole world mourned the death of Captain Scott and his companions at the South Pole. Deputising

11 for the president Dr J. W. B. Gunning who was fatally ill, Pole Evans caused the Transvaal
12 Biological Society to open a fund in support of their dependents – as was done throughout
the world – but the £100 collected was subsequently devoted at the request of Scott's widow
to commemoration. There was great political bitterness in and out of Parliament, Theiler's
friends wrote him, and wholesale resignations from the Civil Service. The atmosphere through-
out the country was tense and unhappy.

For all of the European winter semester, Theiler attended his classes while his children climbed
the Alps and disported themselves in the meagre snow and Emma toiled at his pathological
work in their lodgings. Sometimes the family attended concerts and the theatre, both parents
believing in their children's developing fully-rounded personalities. At his Botany lectures,
13 Theiler sat next to a buxom Swiss student, Marguerite Henrici aged 22 who impressed him by
her assiduity and interest in the subject. As usual, he chatted expansively to the young lady (at
first abashed by the attention of her famous compatriot) and later invited her to join him on
excursions to study the inter-relation of plants and animals. He decided to watch her academic
progress with a view to possible future employment. For the moment, he was in search of 'a
14 pathologist of European repute to visit South Africa to investigate Lamziekte, a Physiological
Chemist and an additional Veterinary Bacteriologist' (according to his official instructions) and,
having £150 to spend on equipment, employed the short winter vacation in March/April in
15 Berlin, Dresden and Munich consulting his scientific colleagues and making his purchases.

While in Germany, Theiler received an urgent cable from his Prime Minister via Sir Richard
Solomon, the Union's High Commissioner in London. Stung beyond endurance after resuming
16 the Agricultural portfolio, Botha wanted action. He had been the victim of a two-pronged
attack in the House – from the farmer-members who wanted to know what was being done about
Lamziekte and from the Opposition whose leader, Sir Thomas Smartt, also a farmer, fiercely
17 exercised his duty to oppose. The woefully-inadequate Robertson acting for Theiler had mis-
guidedly believed he had isolated the 'causal microbe', prepared a vaccine and started inoculat-
ing animals while suspending the feeding experiments at Armoedsvlakte (made available by
18 McKee for a further year) owing to drought but continuing them elsewhere. The members for
Boshof (C. A. van Niekerk) and Bechuanaland (D. H. W. Wessels) wanted to know with what
19 result and got a dilatory answer.

The full wrath of the House was vented on Botha a fortnight later (17th March 1913) when
the Agriculture Vote under Estimates of Additional Expenditure was debated. Discussion
centred on Lamziekte and the lack of result from experiments while the disease spread ruinously
in areas where it had never been. The farmers, said Sir Edgar Walton (Port Elizabeth) of the
Eastern Province area, are having to abandon their land – 'at present the poor beggars are
sitting there in despair watching their cattle die.' Sir Percy Fitzpatrick said that Theiler was not
impeccable. Botha defended him and Burt-Davy; but the heresy had been uttered. Others took
it up. Sir Thomas Smartt introduced 'professional jealousy' and the Watkins-Pitchford im-
20 broglio. Botha began to lose his head and baselessly stated that 'Dr Theiler had undoubtedly
done excellent work for South Africa but his health had become so bad that he had to have a
holiday which should not be grudged him'. (He was in fact on 12 months fully-paid study-leave
as Botha was later forced to state). Smartt seized the opening and demanded that the Govern-
ment import experts. Had not the Mining Department imported the pathologist Sir Almroth
Wright? Had not the Government imported Koch for Rinderpest? He was acquainted with the
conditions in Bechuanaland and he knew the havoc that had been wrought there. Under these
conditions, the Government should have given more attention to the matter and have had more
help before Dr Theiler took a holiday. Of course he knew that it was very difficult for his right
honourable friend to cope with the business of his department when he had to cope with the

21 business of keeping his Cabinet together (a reference to the expulsion of Hertzog). There were
Cheers and Laughter. Botha cabled Theiler 'to get two more experts'. The instructions were no
22 different from his standing orders. He did not answer.

23 Locally and politically, the situation was serious. Straws were clutched. The Vryburg Farmers
resumed their request that the Government offer a £50,000 prize for a Lamziekte cure, feeling
that Theiler had misled them when he said that their Fund should be devoted to experiment.
(Commenting on the proposal, Gray had said that Hutcheon had done his work in the course
of duty, not in the pursuit of reward.) Smith replied that it would avail nothing and that valuable
24 time and expertise would be wasted on testing entries. They then drew his attention to Stead's
25 article, Robertson 'most heartily concurring'. Butler buttonholed Smith at an Agricultural
Congress in Port Elizabeth and was told that Stead was being transferred from Public Health
in Bloemfontein to the Grootfontein Agricultural College at Middelburg, Cape to conduct
26 experiments testing his theory. Wisely the Agriculture Department allowed Stead to go to
Vryburg to address the farmers in August. The cattlemen came from as far as 60 miles. Stead
told them yeast would solve the deficiency problem and eliminate Lamziekte. Sadly Butler
27 remembered all the other theories and wrote - 'We are left with practically only the views of
Dr Theiler that the disease is taken by mouth and is probably a cumulative poison.' Theiler's
time was running out. He would soon be back. Over larger and larger areas, the cattle continued
dying.

28 Basically the economy was approaching crisis. Agriculture, still enhanced by ostrich feathers,
lurches on, bedevilled by a tottering Department (there were 46 resignations including Shilston,
Elphick and other veterinarians, of top staff in one year) against which every Farmers Association
29 protested. Mining, the mainstay, was seriously menaced. The stirrings in Europe of oppressed
peoples began to be reflected in 'labour unrest' on the gold mines. 'Capitalism and Labour'
stood in classic opposition and no effective media for negotiation, let alone conciliation, existed
between the miners and their employers. Friction arose in May 1913 (ably stoked by men and
the famous 'Pickhandle Mary' Fitzgerald dedicated to obtaining basic rights) and escalated
into armed insurrection. Early in June, with 63 of the Rand's mines strikebound, a 'Reign of
Terror' erupted in Johannesburg. While Parliament, sitting in Cape Town, looked the other way,
the strikers turned arsonist and dynamitard. Many buildings including newspaper offices were
destroyed or damaged, the police and inadequate local militia were unable to control the situation,
Gladstone authorised the use of Imperial troops quartered at Potchefstroom (his life
promptly being threatened) and Botha and Smuts hurriedly took train to the north. They were
forced to sign an humiliating agreement with the strikers for the sake of maintaining the
essential mining industry. By the same token, they were forced to put up with Theiler whatever
he might demand for the sake of maintaining and developing agricultural production. Neither
source was amenable.

Theiler knew his power and exploited it in his own and the country's interest. Despite all the
difficulties of 'Union', he still commanded what he hoped would be 'The Theiler Institute' -
unique in the world in purpose, equipment and now, in versatile staff. He had persuaded Professor
Hedinger to come to South Africa early in 1914 on a six-month tour pathologically to
investigate Lamziekte. In August, as his leave ended, he crossed the Channel to recruit his
physiological chemist and additional assistants. Few of his friends were available in the summer
holiday season but he achieved his purposes while the family explored the sights of London.
Apprised by letter, the aged Sir George Turner promised to come up from Colyton in Devon-
shire to see them before they sailed.

30 Seeking help, Theiler made his routine calls on the High Commissioner and his learned
colleagues. Burt-Davy was also in London on leave, some of it paid, with an additional allow-

31 ance of £100 to investigate maize and experimental stations in the United States. He called one night and told Theiler he had resigned but would return to the Transvaal to his farm at Vereeniging, continuing his interest in Science. All his expertise in Lamziekte would be lost. Theiler considered the possibility of appointing a Swiss botanist. His letters of enquiry now brought for
32 an interview a tall clear-sighted young scientist, Henry Hamilton Green whom he immediately engaged as physiological chemist. There came also a mild little man, E. M. Robinson, son of a Cape veterinarian who now lectured in veterinary science at the Grootfontein Agricultural College. Young Robinson had heard Theiler thundering around Robertson's laboratory at Graham's Town after receiving the Science Association medal in 1908 and, encouraged by his father, had gone to England and qualified at the R.C.V.S.. Theiler was glad to engage him and another South African, Gilles de Kock as veterinary bacteriologists to fill vacancies due to resignations.

M'Fadyean, Stockman and all the veterinary luminaries were already planning the agenda of the 10th International Conference to be held in London on the 3rd August 1914 to which
33 South African vets were already subscribing. Section V dealt again with Tropical Diseases and gave great scope to Theiler. He had less than a year to prepare. Now, surrounded by his family, he sat in his hotel, waiting for George Turner to keep his appointment. They waited all morning
34 but their 65-year old friend failed to appear. He was afraid, he later wrote, that he might communicate his leprosy to the children. He died 18 months later, his work in South Africa soon forgotten.

Stimulated and excited by his new state of preparedness and the heady experience of consorting with European experts in his field, seeing and hearing the latest developments in Art, Culture and Music, Theiler longed to resume his own action. The 17-day voyage by mailship was too long and he was irritated by the delay. On the 29th September 1913, the family returned to Onderstepoort, eagerly awaited by a number of persons for a variety of reasons.

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36 Great changes were visible in Pretoria, now assuming its rôle as administrative capital of the Union. Conspicuous in Princes Park stood Anton van Wouw's statue of Paul Kruger donated to the City five months earlier by his friend Samuel Marks. On Meintjes' Kop, Baker's magnificently-conceived Union Building, still surrounded by rubble, dominated the metropolitan scene. All the Union Government departments had already moved into it including Agriculture. Theiler would regularly have to visit it. Its small army of civil servants (who called it 'The
37 Acropolis') complained about its isolation, inaccessibility and lack of creature comfort. Trams staggered up the steep hill which some motor cars failed to climb. Those who worked there had a lurking feeling of existing in vacuo. It was all of a piece with the prevailing administrative chaos.

Eager to put his new policies into practice, Theiler surveyed the Onderstepoort scene directed by the limited Robertson who, originally hipped at being supplanted by Gray for appointment as Principal Veterinary Officer for the Union, now realised that even Assistant Director of Veterinary Research was beyond his capacities. Everything at the Laboratory, said Theiler
38 charitably at first sight, had been done to his satisfaction. The illusion was evanescent. 'It was
39 high time he came back', Emma wrote Alfred, 'things were already amiss and his deputy seemed to have dragged the place well into the mud.' It was now a moot point whether any single man could command the empire which Theiler had constructed. Robertson, upon medical advice, immediately threw in his hand and returned with his aged mother to his old fief to direct the
40 Graham's Town Laboratory. For Theiler, the loss of a deputy was a bitter blow. He had hoped

to devote himself exclusively to research along stimulating new lines. So far from going forward he had retrogressed to an overburdened bureaucrat.

41 Disenchantment possessed him. The whole country needed him but Africa, he said, 'no longer pleases me'. 'This monkey country', he later called it in mounting disillusion. There had been welcoming letters including one from Vryburg's Butler. Theiler had replied appreciatively and expansively, promising an early visit. Butler then proudly claimed that his *Northern News* was the first newspaper in the Union to report the forthcoming arrival of Professor E. Hedinger of Basle University to investigate Lamziekte for six months at the huge fee of £4,000, the appointment of 'Professor' H. H. Green and the two South African 'students'. Salvation for Bechuanaland was on the way.

42 The reality was very different. The Miners' Strike had crippled the economy and worse depression ensued. Hertzog, banished to the political wilderness, had not faded but was gaining support and challenging Botha's control. Turbulence belonged to every phase of life. Resignations continued, many of South Africa's best men enriching the Colonial Service in Africa and abroad. Theiler caught the infection. He made his disquiet known. Ostensibly Onderstepoort went on as usual. The whole staff was very active in their prescribed work; but Theiler soon cancelled the issue of Horse Sickness serum. Owners clamoured to send their horses for treatment, gladly paying a considerable fee; but the mortality rose to 12% despite allowance for different strains of the virus and Theiler surmised that some factor was intervening. Back barely a few days, he outlined for Kehoe a series of elaborate experiments which ultimately identified a disease - Infectious or Pernicious Anaemia differing from Horse Sickness and Biliary (Equine Piroplasmosis). Horses by the hundred were immolated in the process.

43 In his soured world of constant absence, endless administrative duties, maintaining maximum vaccine production, countering departmental difficulties, longing for research and lacking sufficient assistants, Theiler had one unexpected relief. A few days before his return, Botha had reconstituted his Cabinet and allocated Agriculture to a single Minister H. C. van Heerden, a dyed-in-the-wool farmer of Tarkastad in the Eastern Cape and a staunch Party patriot who was well versed in Parliamentary procedures and department red-tape. When he paid his first official visit to Onderstepoort on the 22nd October 1913, Theiler was astonished to meet both an amiable and friendly man and a highly-professional and progressive farmer. Contrary to his expectation, the neatly-bearded knowledgeable Afrikaner was sympathetic and understanding. In other circumstances, Theiler's spirits might have risen (they had been cheered the following day by the visit of members of the British Parliamentary Association escorted by Mrs Louis Botha); but events proved overwhelming.

44 Locals returning from Europe invariably suffered acute fastidium rerum domesticarum and found South Africa second-rate and unattractive for a considerable period. Typically Theiler yearned for his learned circle in Switzerland, the sophistication and the cultural amenities, even the snow and stimulating low temperatures (for the first time, he complained about the heat in Pretoria which even stopped him working - 'the perpetual sunshine has got on my nerves', he said). He might have emerged in due course, as others did, into a state of acceptance but his exacerbations were too great. Now he was merely a routine work-horse, seldom at home and always en route in stifling dirty trains to the institutions he was supposed to direct.

45 Within a month of his return (during which he had discussions with Stead), he arrived at Vryburg via inspection of the farm Kaffraria near Christiana where Andrews was still conducting feeding experiments. Butler and his colleagues were delighted to see him but Theiler's view was jaundiced. He proposed closing the drought-stricken Armoedsvlakte where Sharpe watched over empty paddocks; but changed his mind after visiting it and (probably egged on by the eager Butler) decided to use it for inoculation experiments on cattle lent by local farmers, Mr McKee

being agreeable to making the place available for a further 18 months. Theiler had found that coarsely-ground visceral material from East Coast Fever victims could transmit the disease when injected into the jugular vein. He wanted to determine whether the same technique would obtain for Lamziekte. If inoculation were successful and the disease artificially transmissible, a solution of the problem would be in sight. On the same night, he returned by train to Pretoria via Mafeking and a deeply-disturbed Johannesburg. Under depressed conditions, 'labour unrest' was being rapidly fomented. Then he was off to a steamy Natal to look at Allerton.

Theiler had not tried to contain his disgruntlement. He had complained acidly to F. B. Smith who conveyed his feelings to his superiors. Whether as *douceur* or otherwise, Botha may have made representations to Gladstone and, hardly more than a few weeks back at work, Theiler received official intimation that the King intended elevating him to K.C.M.G.. He was not averse despite having drafted a letter to Smith advising him of his intention to apply for the position of Professor of Pathology and Dean of the Faculty of Veterinary Science at the University of Melbourne which his colleague of The Hague Conference, Professor J. A. Gilruth had vacated to become Administrator of the Australian Northern Territories. There would be other such sticks with which to beat the Government – now, Theiler admitted, confronted by calamitous difficulties. Hertzog and his new party had become a real threat; the bottom had fallen out of the ostrich feather market with enormous loss of revenue; the railwaymen, inspired by the miners, planned to strike; and the seasonal rains failed to fall with consequent loss of agricultural production.

Struggling to initiate experimentation when overwhelmed by administrative obligations, Theiler was forced to write to Butler in the candid manner of their friendship that he had been unable to commence the Lamziekte inoculation at Armoedsvlakte for which the local cattlemen had provided animals owing to shortage of staff (Robertson had not been replaced), illness among available members and compulsory military service among others (Smuts was mobilising the Defence Force against coming troubles). Further, the sterilisation plant had broken down. 'Meanwhile', wrote Butler soberly in a leader, 'the disease is making rapid strides through the whole of the Union.'

Theiler's frustration and humiliation were momentarily mollified by the visit of men whose company he coveted. On the 13th December 1913, Samuel Evans of the Corner House, the Rand's most powerful mining group, brought to Onderstepoort Surgeon-General William C. Gorgas of the U.S.A. who had enabled the building of the Panama Canal by eliminating the mosquitoes which infected the labour force with deadly diseases. The Corner House had persuaded the Chamber of Mines to commission him to advise on the high mortality rate from pneumonia of mine native labour recruited from sub-tropical territories and other health problems. He brought with him Dr Samuel Darling, a distinguished pathologist and chief of the Board of Health Laboratory in Panama, and Major E. Noble of the U.S.A. Army Medical Corps. Absent from his successful entourage was Dr A. J. Orenstein who, since the completion of their task, had taken employment in German East Africa. These were men on Theiler's level to whom he was proud to show his Institute and who, in their talk, could reanimate his own aims. Their visit had important sequelae.

Further inflation of his ego followed almost immediately and to him, unexpectedly soon. His knighthood was announced in the 1914 New Year Honours and, Theiler wrote Alfred, 'this exceptional distinction has been received in South Africa with great satisfaction and for years, no Sir has been as popular as mine.' Even Selborne wrote him 'a really warm congratulation' and letters came en masse, including one from the Vryburg farmers. While Theiler wrote of being 'personally ennobled', the Swiss Press, unsympathetic to royal favour, treated it coolly with half-inch mention. The veterinary world rejoiced. It was believed that Theiler was the first

Colonial veterinary official to be thus honoured. Jealousy sprouted in the bosom of those who resented 'the foreigner'; but the impact of this strange award was largely lost in public pre-occupation with expected calamities.

59 In its economic straits, the Government intended summarily retrenching a large number of railwaymen at the end of 1913. Their Union invoked aid from its colleagues in protest. In the first week in January 1914, a Railway Strike was declared which developed into a General Strike throughout the country. In the second week, Martial Law was imposed and the prescient Smuts brought the Defence Force and Burgher Commandos into repressive action in support of the Police. All leaders were corralled and some summarily deported before order was restored but the effect on the economy and the temper of the country was disastrous. Parliament met on the 31st January to deal with the disreputable aspects of the affair, Gladstone resigned soon after (he had done so a year before but was compelled to continue) and 'Union' lurched further into insecurity. Sir Arnold Theiler had a specific rôle to play in restoring its economy.

60 His plans were approaching realisation. The lanky pale-faced H. H. Green had landed in Cape Town and taken the train directly to Vryburg. He was met by an over-worked Kehoe, first deputising for Andrews at Kaffraria and now standing in for Sharpe at Armoedsvlakte while he went on leave. Kehoe had addressed the Farmers Association and told them of local experiments with inoculation material. He also explained Theiler's new enthusiasm for the deficiency theory resulting in local cattle being doctored with Stead's yeast and put on special additional diets of treacle, linseed oil, rice, beans, etc. Hedinger, he said, would soon be there. In baking summer heat, Kehoe took the unacclimatised Green to 'Proverty Flats' on the 4th February 1914, explained its ghastly appearance as due to severe drought and outlined the experiments in progress in the neatly-fenced paddocks and stables now completed under Theiler's control. Losses from Lamziekte, the farmers had been told at the Annual General Meeting of their Association a few days earlier, 'had been enormous during the last few months'. Hope now rose anew. Theiler's letter thanking for their congratulation, was read at the next meeting. 'I am sure', he wrote, 'that no one can be more thankful than I am for all the assistance that I have received from your Association in the past and I sincerely trust that our very friendly relationship will continue.' Their Fund stood at £432 (including £156 from Gray's Veterinary Division) and Butler wanted to spend £200 of it on a car for Theiler's local use but was repressed. The Fund was for research, his colleagues forcefully pronounced. Green went on to Pretoria to begin his chemical investigations and Kehoe continued the nutrition experiments until Sharpe returned.

61 For Theiler, a change at least seemed to have come. He had been harassed by domestic troubles in Switzerland and at home. Hans had idled at college and, bearer of a famous name, had disappointed his professors. His father had written harshly and Hans had managed to pass his examinations. During the vacation, he had been remote and unapproachable but still talked about becoming a veterinary surgeon. Emma grieved that Arnold's fixed ideas and strict discipline had alienated his elder son. Within two years, the girls would matriculate. Max, spindly and agile, was entered at the Pretoria Boys High School and seemed to be broadening. He was a disturbing little boy, given to agonising bouts of abdominal pain which interrupted his schooling. Doctors failed to diagnose the cause and both his parents grieved, Arnold believing that the mysterious attacks which the otherwise lively child bore with fortitude, were stunting his growth. Like his sisters, Max never surpassed 5 foot 2 in height. Hans alone was taller than Emma by half an inch at 5 foot 4; but Arnold himself, thickset and burly, seemed hardly higher than his diminutive but determined family. 'Lady Theiler' sat strangely on Emma who, dutifully attending banquets at Government House and other official occasions, tended to withdraw more into her house and garden and the study of Arnold's scientific journals.

64 He was frequently away from home but it would have good purpose when Hedinger came. His staff at least was approximating to his needs. Henry Green, keen, clear-thinking and able, immediately grasped the Lamziekte syndrome and applied himself to the bio-chemical experiments that Theiler devised to establish this or that point or eliminate this or that supposed factor.

65 Gilles de Kock and E. M. Robinson would cut their teeth on other research problems, joining another compatriot Philip Rudolph Viljoen whom Theiler had posted to Allerton where he promptly and surprisingly had fallen in love with a patrician English-speaking young lady and become engaged for the customary two years. Theiler had plans for the able and thoroughly Afrikaner Viljoen but they must wait until Hedinger came.

66 Even in Parliament, his fortunes improved. Van Heerden, briefed with highly technical information, answered the inevitable questions on the spreading Lamziekte, new outbreaks of Horse Sickness and further quackery, with firmness and authority. His new Minister seemed a true ally. It was a hectic time of development under ominous political and economic clouds. Theiler's urge to have a hand in the growth of a new country rose again to the surface.

67 On the 26th March 1914, his chance came to prosper a special aim in his field. A further State Commission on Higher Education (known as the 'Universities Commission') arrived in Pretoria to take evidence. It was curiously constituted of Sir Perceval Laurence, recently retired from serving as a scholarly judge in South Africa, as chairman; John Perry, Professor of Mechanics and Mathematics of the South Kensington Royal College of Science; Melius de Villiers, previously Chief Justice of the Orange Free State; the patriarchal Ds H. S. Bosman of the Dutch Reformed Church in Pretoria whom Theiler had known for many years; and Wilfred Murray, secretary (later registrar) of the University of Cape Town. Apparently completely ignorant of Theiler's field, they asked fatuous questions but finally allowed him to speak his mind. He referred with pride to his three new South African veterinarians, trained in England, and hammered his point of a South African Veterinary College at University level as in Switzerland and newly, Germany. They let him expand it into a practical plan to which Theiler had for years given much thought by which veterinary students would study Chemistry, Physics, Botany and Zoology for two years at an established university and complete their specialised training at Onderstepoort.

The Commission was impressed. There might, it later reported, be some difficulty 'in linking up the work of a University with that of a Research Institute such as that which, under the direction of Sir Arnold Theiler, has acquired so high a reputation as Onderstepoort'. But they endorsed his plan, recording that 'the evidence of Sir Arnold Theiler deserves careful consideration'. Then they pontificated about the close connection between animal and human diseases, citing Sir Ronald Ross and Sir David Bruce, and suggested 'that in view of the high importance of the matter, the whole question of the correlation of University work with the higher branches of agricultural, veterinary and bacteriological research might be referred for special investigation and report to a small committee of experts'. It was hardly progress but Theiler had made his proposal in the proper place. Local and global events inhibited further advance.

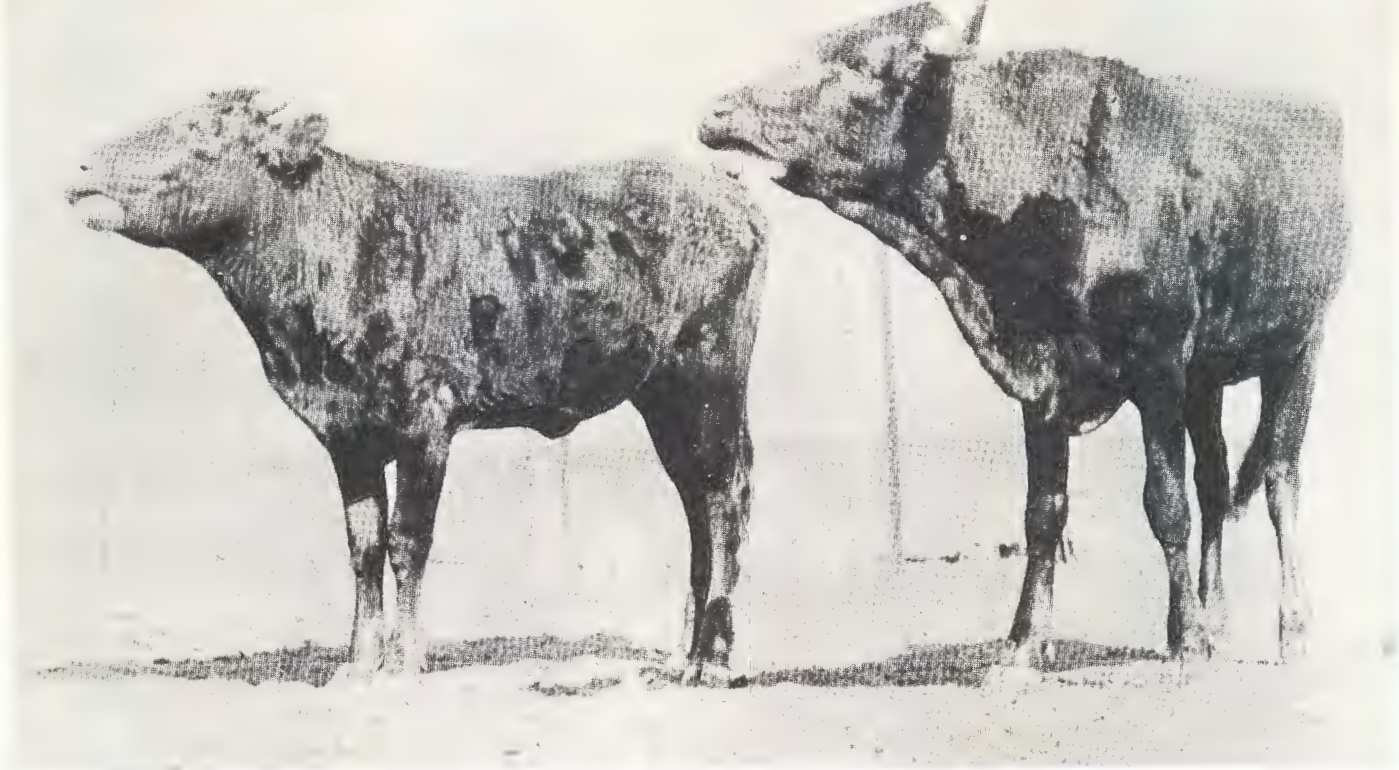
68 Almost immediately he left for Cape Town to meet Professor Hedinger, arriving by ship on the 31st March. Formally attired in frock coat and top hat, he warmly welcomed his friend from whom he expected wide enlightenment, if not solution of his pressing problems. Leaving him in the hands of friends and departmental officials (themselves agog at the arrival of the great and expensive man), he presented himself at Government House where the surly Gladstone invested him with the order of Knight Commander of St Michael and St George, and Theiler duly returned to his secretary, Herbert Stanley, the insignia of Companionship. For Hedinger's first day in South Africa, the aura was impressive but rivalled by the next. Theiler took him to the



The Vice-Regal visit of October 1910 – H.R.H. the Duke of Connaught being conducted over Onderstepoort by frock-coated Arnold Theiler with the Duchess and Lord Bingham in the background.

Testing the effect of snake venom – a deadly puff-adder being applied to the shaven neck of a mule.





Pica – the dread symptom of Phosphorus Deficiency – cattle laboriously but determinedly chewing old bones.

Feeding experiments – Muzzled cattle, fed only on fodder from Lamziekte-free areas and prevented from grazing locally, at a water trough where they could drink.



Houses of Parliament and presented him to the Prime Minister in his office. Botha's political position would be greatly improved if this foreign magician could lift the scourge of Lamziekte from the land. He took his guests to lunch in the House, accompanied by van Heerden and other Agriculture officials. There could be no doubt in Hedinger's mind that a wizard's wave of the wand was expected of him.

69 Theiler expected a great deal more. 'Our programme is widely comprehensive', he had told
70 Alfred, 'and of the four weeks of April, we shall spend as much as half travelling because we
71 want to make a whole series of pathological studies anatomically which do not necessarily
refer to the study of Lamziekte.' (Alfred had already fulfilled a request for experimental snails
which had arrived in torrid Pretoria dead and stinking). Theiler found Hedinger pleasantly
congenial and mercilessly picked his brains. They occupied the early days of April in surveying
the wide range of experiments in process at Onderstepoort. 'Professor Hedinger is very hard-
working', Theiler noted approvingly, 'but I doubt whether we shall be able to undertake all
that we plan to do. Still the presence of a *medical pathologist* is for us a great advantage and
very exciting. I personally profit very much. The professor is very good company and we have
much to tell each other.' During those days, they had significant visitors.

72 Surgeon-General Gorgas' impending report to the Chamber of Mines would forcefully re-
commend the urgent instigation of health measures. Privily alarmed, the Corner House asked
him to suggest a suitably-qualified medical officer to initiate them on its own mines. Gorgas
suggested his previous assistant, Dr A. J. Orenstein and the mining house immediately wrote him
in German East Africa in February 1914. Orenstein at once accepted and shortly after, came to
the Transvaal. On the 11th April, accompanied by Professor A. Zupitza of Lomé, Tanga with
whom he had been working on malarial mosquitoes and other tropical menaces to the labour
building a railway in Tanganyika, Orenstein arrived at Onderstepoort on his first visit. The
rencontrement with Theiler was almost comic. Tall, rangy and dynamic, Orenstein spoke in the
same guttural Germanic tones and exhibited the same passionate dedication to the application
of Pure Science to practical matters for economic purposes. He shared with his stocky host, 12
years his senior, the same devotion to the endless study of scientific literature 'to keep up to
date' and the same width of cultural interest. Of German origin but a citizen of the United
States where he had qualified in medicine, Orenstein was later embarrassed in the pronouncedly
British and stand-offish mining community and in 1915, went to England to obtain speedy
British qualification. Thereafter he and Theiler saw much of each other and a fruitful relation-
ship developed between them and the Onderstepoort staff.

73 In dwindling summer heat, Hedinger - astounded as most Europeans were by the conditions
of farming and the profusion of diseases combatted by Theiler's men - was rushed through
Middelburg in the Transvaal to the vastly different Natal where Theiler proudly exhibited
further problems, particularly Stijfziekte, and collected pathological specimens (Hedinger
subsequently confirmed his view that Stijfziekte was Laminitis and not connected with Lam-
ziekte). Theiler had written Butler in Vryburg that after a brief interval on their return, they
would visit Bechuanaland. New hopes had been engendered there by the local Government
veterinary surgeon, a Hollander Goemans, announcing a 'cure' for Lamziekte for which he
claimed £25,000. Stigmatised as 'a foreigner', he was unpopular among the cattlemen, now
74 bitter about the lack of progress in solving their problem. Theiler's dilatoriness seemed accen-
75 tuated by a Dr Mathias in the Western Transvaal who claimed that inoculation with the blood
of Lamziekte victims conferred a certain immunity - a point pursued by Robertson with his
inoculations with *Pasteurella bovis*, Redwater etc. The procedure involved great danger in
conveying other diseases and the immunity was transient. Ranchers facing ruin nonetheless
76 resorted to it. It was widely bruited that 'professional jealousy' was suppressing the emergence

of treatment or a 'cure' but Butler was at pains to deny that Theiler would be party to such a situation.

77 Hedinger and his host, accompanied by P. R. Viljoen who had been detached from Allerton for re-posting, began their tour of the Lamziekte area at Mafeking early in May, killing and dissecting afflicted cows on various ranches and arriving in Vryburg on the 12th. They attended the meeting of the Farmers Association on the following day and all were made heartily welcome. Viljoen, erroneously introduced by Theiler as 'the first South African to qualify as a veterinary surgeon' (he either ignored or forgot Jotello Festiri Soga who had qualified even before himself) was made an honorary member and Theiler informed the eager audience that he would now be in charge at Armoedsvlakte. With the appearance of a true son of the soil, thick-set and square-headed, the Dutch-speaking Viljoen seemed the ideal subject for Theiler's homily to the farmers to send their sons abroad to qualify in veterinary science. He went on to tell them frankly of the progress of his investigations, what Hedinger would do with his microscope and how Stead's theory was being tested at Grootfontein. So far, all approaches to the disease had failed. They quizzed him heavily. Finally the chair proposed a hearty vote of thanks to Sir Arnold and 'congratulated him on the manner in which he had withstood the bombardment'. The great men returned briefly to the district in June and Hedinger (who performed his own postmortems at Armoedsvlakte) at last could devote himself to his analysis. Things were not going well in Basle and he wanted to return by the end of September. His work was briefly interrupted in June when the leader of the Opposition, Sir Thomas Smartt visited Onderstepoort and complimented Theiler and Hedinger on their activities.

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79 Confident that his exhaustive attack on Lamziekte would at some point succeed, Theiler reconciled himself to the fact that the demands of his family now curtailed his freedom to walk out if he wished. None of his children could yet earn a living and Hans had entered a further phase of non-compliance and negligence of which his lecturers continued to complain. 'Hans seems to be the cross we bear', Arnold wrote Alfred on the 1st July 1914, 'Emma grieves greatly. My hope to be able to leave in three years' time when I am 50 years old will not be realised. Nolens volens I must now stay until I am 55 - still a long time if one has had too much of Africa as I have. It will probably follow that I shall not be able to come home. The children are getting older and costing more. One notices it.'

80 On that day, a strained and exhausted House of Assembly debated the Agriculture Vote. Niceties of speech were ignored. The Veterinary Service was heavily attacked for failing to curb recrudescing East Coast Fever with mindless regulations. Then Theiler's turn came. The members for Lamziekte areas had an obligation and brutally discharged it. Dr A. H. Watkins for Barkly in the Northern Cape uttered the ultimate heresy. 'In Sir Arnold Theiler', he said, 'they had one of the best experts in the world but the time had come for them to consider whether they should not put the Lamziekte investigation into other hands . . . Sometimes a man got lost in the mass of his own material. They should get a man who would be placed quite outside Dr Theiler.' His speech was featured in most of the following morning's papers. D. H. W. Wessels of Bechuanaland would not go quite as far but urged that 'the Government should get out two experts who could start in their own way to investigate the disease.' He implied that because Dr Mathias' method of conferring immunity for five months was in conflict with Dr Theiler's views, it was ignored. H. de Waal of Wolmaransstad (Mathias' constituency) came out with it - 'He feared that there was a good deal of professional jealousy about and whilst the experiments were going on, all the cattle were dying.' Van Heerden temporised and offered to extend Hedinger's contract while paying tribute to the valuable services Sir Arnold Theiler had rendered South Africa. No expense would be spared, he said. When Sir Thomas Smartt entered the debate, he endorsed all that had been stated with honeyed

words in no way lubricating his insistence that an overseas expert be imported to work exclusively on Lamziekte. The Vote was passed.

81 When Theiler read the Press reports, he reached for his pen in passionate indignation. Arnold Theiler, Director of Veterinary Research, recently knighted by His Majesty the King, and his distinguished compatriot Professor Hedinger had been humiliated and insulted in the very place where, a few weeks before, the Prime Minister himself had done them honour. Furthermore the whole country had read about it, including his staff. Three times he drafted an official letter to Smith in Cape Town. He was disgusted and downright discouraged, he said. Smartt's recommendation was an accusation of incompetency against his Division. His staff resented it as reflecting on their personal honour. What was its point anyway with Hedinger already in the country? What had imported experts done to commend themselves? The Minister had neither defended his staff nor agreed they were incompetent entailing sacking their Director. Sir Thomas, a scientifically-trained man, had visited Onderstepoort and, instead of criticising, had expressed appreciation of their endeavours. Why should he attack them when and where they were unable to reply and their Minister failed to defend them? The Government must either support the Director or get rid of him. And Theiler turned again to his explosion in 1911 – he had become Director of Veterinary Research against his wish and was now only too glad to vacate the position. If his Minister were willing to consider his retrenchment, he was willing to remain during the present crisis. He left that chink in the door – but the third draft, scribbled and amended like the others, was never sent. Smith had telegraphed, requesting a confidential report on the whole Lamziekte situation.

82 Theiler sent it on the 17th July and still fuming, composed another letter, first in his own angled hand which King, it was said, alone could read, then in a typed version further amended and finally on the 20th July, it was sent privately and confidentially to Smith. He asked for his Minister's consideration of the fact that his position had become untenable, Parliament had virtually passed a vote of 'no-confidence' in him, allocation of the Lamziekte work to someone outside his Division would cast a stigma on his reputation and he could never look the farmers in the face again nor confront his staff, his hands had been tied by lack of specialised assistants and now that he had them, no chance had been given him to make use of their work. In the eyes of Parliament, he had failed. 'As I have pointed out to you in previous years', wrote a combative and embittered man, 'the only course honourable to both parties is for me to be retired on pension with the thanks of the Government and not to wait until further developments in Parliament force the Government to dispense with my services.' He knew his power. Botha knew it too but his interpretation differed.

As a new but vitally important member of the British Empire, South Africa had contracted to fulfil wide obligations in a war, now inevitable, in which hostile forces stood on both its eastern and western borders. There would be armed conflict but, more important, there would be economic stress both for Britain and for South Africa with the possibility of blockade. When he returned at the end of July from a routine tour of his experimental stations in the Free State and Armoedsvlakte, Theiler was told.

* * *

In South Africa, the immediate effect of Britain's formal declaration of war on the 4th August 1914 was a rush to enlist. The enthusiasm and loyalty of the 'colonials', many of direct British origin (including some of Theiler's staff) did not conceal from Botha and Smuts the possible reaction in some of their own compatriots, stirred and strengthened in their sentiments by Hertzog's successful campaigning. Momentarily nothing was overt; but prominent figures

flitted about the Transvaal and Free State and to those with a trained ear, a powerful susurrations was evident. Despite his vaunted knowledge of the Afrikaner, Theiler lacked that ear. 'It seems', he wrote Alfred on the 12th August, 'that for the moment, Race Hatred is buried and Boer and Briton are again united.'

The brute facts of the war situation had been made clear to him. Shipping, menaced by the German Navy, would be entirely devoted to war purposes. There would be no exports and with the disappearance of vital overseas trade, the country's revenue would dangerously dwindle. He had been told immediately to reduce his budget. The *Agricultural Journal* at once ceased publication and there was no outlet for his advice to farmers. His enormously-detailed Annual Reports would not be published. It was rumoured that all civil servants' salaries would be reduced. The innovative Income Tax that had come with Union would certainly be increased and living, let alone educating his children, would become extremely expensive. In the inevitable absence of imports from overseas, the South African agricultural industry would have to support the country and its newly-constituted armed forces. The remaining British troops were withdrawn for re-posting elsewhere. Theiler's task was clear. For South Africa to stand alone and assume military activities across its borders, his work and his Institute were essential.

For his difficulties, there could be little sympathy. He feared for his family lest Switzerland be involved but was soon reassured. In time, he feared for the continuance of his Institute. His staff was reduced to the minimum, research was with difficulty continued, supplies of vaccines (such as contra-Anthrax from the Pasteur Institute in Paris) would certainly cease, vital equipment – even bottles for providing sera and antidotes – were utterly unobtainable locally. He was cut off from his colleagues in Europe and their advanced scientific literature when he most needed their aid.

83 Theiler had embarked on a massive investigation using cattle, horses, sheep, goats, pigs and dogs and pigeons fed on a monodiet of polished rice which produced avitaminosis (or beri-beri in the East) to establish whether deprivation of vitamins resulted in the symptoms of Lam-ziekte. He needed to maintain close communication with overseas workers in this new and popular field. His isolation would be a serious disadvantage. There was now rigorous censoring. Anything written in German, even his own family letters, would be opened and read and at best delayed, at worst suppressed. Similarly the newspapers purveyed no real news – only hard facts like the landing of the British Expeditionary Force at Boulogne under the command of Sir John French whom Theiler remembered as a fellow-passenger when returning to South Africa in September 1899. The Defence Force had been mobilised principally, it was said, in case of native uprising. Rumours abounded. Hedinger became agitated about the feasibility of his return to Switzerland.

84 To coincide with the arrival of the new Governor-General Viscount Buxton, Parliament met in Cape Town on the 9th September 1914 for a week's essential business. Support of the British Empire was formally agreed. The signal had been given. Major J. C. G. Kemp resigned his commission in the Defence Force on the 13th. Two days later, Commandant-General C. F. Beyers resigned and rebellion began actively to be fomented. On the same day, in his company in a motor car, the volksheld General Koos de la Rey who had supported Theiler in the Volksraad, was accidentally shot dead by the Police when travelling to the military centre at Potchefstroom to intercede. Botha and Smuts were confronted by manifold new troubles including active insurrection in the Western Transvaal and Free State. 'Opsaal!' (Saddle up!), the rebels exhorted – why should they fight for a Britain which had beaten and humiliated them and still held them in bondage? Hertzog who had lit the fuse kept discreetly aloof, publicly stating that a Republic must be gained by other means. The 'Rebellion' gathered strength and Botha faced the prospect of shooting his friends and comrades-in-arms. His tactic was to reason with them.

For hundreds of hotheads, reason had no force. Beyers, General de Wet and Kemp met at Lichtenburg in the neighbourhood of Vryburg and issued a document demanding the cessation of hostilities and the withdrawal of Union troops from the German colonial borders. Rebel commandos were already being formed. Smuts moved to eliminate them with the mobilised Defence Force which, proudly disdaining British aid, was already in possession of the port of Luderitzbucht in German South West Africa.

85 Enlisting was lively. Eight of Theiler's men had gone. P. R. Viljoen in Vryburg had received his papers and was commissioned Veterinary Captain in the force preparing to invade South West Africa. Hans in Graham's Town had been called up. Hedinger had left, travelling from Cape Town to Madeira and thence to neutral Italy and Switzerland. With diminishing staff, Theiler had to plan for war conditions; the special demands of the military, still relying largely on horses, mules and oxen; and the possible consequences of the campaigns now being mounted in both east and west. There was Rinderpest in German East Africa which was likely to come to South Africa via Nyasaland. In the west was the eternal Lamziekte cancelling the cattle country and reducing the plains to a wilderness.

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87 Theiler wrote to Butler. He would come in November to tell the Farmers Association what progress had been made and how Hedinger had reported. Without word appearing, Vryburg, a mere 80 miles from Upington, the nearest railhead to the German colony, had become the agitated centre of opposing movements, its constant traffic containing both rebels and loyalists. General Manie Maritz had already crossed the border with 500 U.D.F. men to join the Germans and Kemp was planning a more arduous feat. Smuts proclaimed Martial Law throughout the country. Small commandos continued to assemble in the Free State and Transvaal. With remarkable audacity, two stood within striking distance of Pretoria - General Chris Muller at Bronkhorstspuit and Major Jacques Pienaar of the U.D.F. nearer the Capital. Theiler watched an armoured train rush northward through his Onderstepoort siding and imposed such security measures as he could to safeguard his vulnerable Institute. At Steenbokfontein near Rustenburg, Kemp and his 600 rebels began on the 2nd November 1914 an epic trek across the waterless Kalahari to join Maritz. Vryburg and its environs had become the enfevered centre of espionage, treachery and military activity. A Town Guard maintained order, all business ceased, the *Northern News*, much diminished through lack of advertising, carried blank spaces for censored items and Butler struggled to keep it going.

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91 On the 6th November, Theiler left Pretoria by train to keep his appointment with the Vryburg farmers on the 11th. At Mafeking, he sent a postcard to Alfred recording his 'journey of investigating research in Bechuanaland'. He got no further. The 'unsettled state of the country' drove him back to Pretoria with his carefully-prepared speech in his pocket. South of Vryburg, General de Wet was campaigning in the Free State amid high local tension. All the men in the dorp were mobilised and guards set to waylay him if he came. Botha in the field with a loyal force disposed of his commando and immediately travelled via Kimberley and Upington to catch Kemp. Motor cars were concentrated in Vryburg to help him pursue de Wet but Kemp eluded him, reaching German territory late in November. De Wet was captured. The tension in Vryburg somewhat subsided. Theiler sent his speech to Butler who published it serially in the *Northern News*. It was outside the comprehension of ordinary persons, let alone ruined and agitated cattlemen.

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94 Hedinger had worked in close coöperation with Theiler. As a pathologist, it was his business microscopically to examine the muscle tissue whose failure through some cause resulted in stiffness or lameness and ultimately paralysis. Under Theiler's tutelage, he had done extensive fieldwork and had considered all the current theories of the ingestion of toxic material through pasture-feeding. He examined the muscle tissue of both normal and afflicted cattle. In both he

95 found a well-known parasite, 'Miescher's Tubes' or sarcosporidia; but, he claimed, they were much more numerous in Lamziekte victims. Little was known of these parasites and he recommended a close study of them. The Government published his 'Pathological Investigation into Lamziekte' as a departmental paper with a foreword by F. B. Smith who had read it in manuscript before departing in August 1914 on leave to England (returning only in January 1916 but employing his time usefully there). The tone of his comment reflected Theiler's deep disappointment. Hedinger had in fact batted the ball back into his court and there then devolved on him the unhappy task of further disillusioning the Vryburg farmers and himself continuing the investigation under the most adverse conditions. Theiler's facility for lucid explanation 96 deserted him and his speech, also published as a Government paper entitled 'The Results of Recent Investigations into Lamziekte', required considerable knowledge of scientific terms. He described Hedinger's work as only one of many 'working theories' needing more laborious and complex investigations than ever. His own tests had shown that the vitamin deficiency theory had not worked - cattle fed with appropriate diets had not resisted Lamziekte. In essence no progress had been made. From time to time, word reached him from his colleagues in England of Smith's pilgrimage from laboratory to laboratory - Stockman's institute at Weybridge, Oxford, Cambridge, Rothamstead Agricultural Experimentation Station and others - looking for veterinary research officers and, they said, some specialist to deal with Lamziekte.

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97 It was not in Theiler's combative nature to take kindly to frustration and he tilted at all wind-
98 mills, particularly the Censor who read family letters to a neutral country and sometimes
99 mutilated the newspapers which Alfred sent. In anger, he refused to write anything but post-
cards which all could read. At the end of November, he wrote on one: 'The Rebellion is a big
fiasco!' and a day or two later, rebels raided the Onderstepoort veld and stole some of his mules.
Early in 1915, many restrictions were relaxed and he was officially informed that German
scientific publications might be sent him through Switzerland. His case was cogent and the
Government arranged that such material should be sent to the High Commissioner (W. P.
Schreiner) in London who would forward it under official aegis to Theiler. Alfred was instructed
to order lavishly from his Berlin bookseller and in due course, both books and periodicals in-
cluding the *Berliner Tierartzliche Wochenschrift* erratically arrived. Following the line of his
Lamziekte work, Theiler demanded Durck's 'Researches into the Pathological Anatomy of
Beri-Beri', 'Research into Osteomalachitis and Rachitis' and many other text books. It then
became possible to correspond with enemy countries via a neutral. Theiler began sending letters
100 to Knuth and his many other colleagues through Alfred and similarly receiving replies, some
101 informing him of the progress of his protégé P. J. du Toit and others studying veterinary science
102 in Germany. The Agricultural Department also maintained communication with du Toit
through the Arnold/Alfred liaison and in time arranged for him to be supplied with money.

The consequences of the collapse of the Rebellion were almost more painful than the event. Commandant-General C. F. Beyers was drowned when trying to escape across the Vaal River. General de Wet and other patriots were in prison awaiting trial while Botha, assisted by the seizure of the enemy ports, girded himself to defeat the Germans in South West Africa and capture Kemp, Maritz and other South Africans who had joined them. The country was drained of horses, draught animals, foodstuffs, petrol and other commodities to mount the desert campaign. It was in no position to afford them. 'In the matter of Finances', the venerable Merriman wrote to Smuts, left in charge in Pretoria, 'what I can do to help, I will do cheerfully. I know what a position you are in. Huge deficiency, enormous war expenditure. Half the

producing population running about with guns in their hands destroying and not producing. The whole population in semi-hysterics calling on you to do some great thing instead of setting to work themselves. And the worst of all is the certainty that when the war stops, you will have to face a general impoverishment and a reduction of our purchasing power in both diamonds and ostrich feathers.'

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105 It was equally the background of Theiler's activities. Following his own earlier work in association with Robertson, Veglia ironically had completed his classic study of 'The Anatomy and Life History of the Haemonchus Contortus (Rud)', the wire-worm that had bedevilled the ostrich feather industry, now no longer a revenue-producer. It represented pioneering work in Helminthology which Theiler ardently pursued in relation to similar parasites in sheep, horses and cattle. He began a collection of Nematoda, a type of parasitic worm infesting mostly horses but also mules and zebras. Agricultural production, both for food and transport animals, had at all costs to be maintained and increased while pests and diseases were held at bay. Nature smartly riposted. Unprecedented rains descended upon South Africa, producing ideal conditions for a phenomenal recrudescence of Horse Sickness, Blue Tongue in sheep and other stock-destructive diseases. It was a time, not for creative veterinary research, but for factory production of sera and vaccines.

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107 Theiler's staff had long been occupied with prophylaxis - Green had investigated Sulphur Dips for Sheep and similar subjects including work on an Arsenical Dip Tester (the solution in a dip-tank progressively weakened in proportion to the number of animals that plunged through it and had constantly to be tested and strengthened to maintain its effectiveness). Bedford had made a comparative study of commercial brands and other types of dips. Now
108 Joseph Baynes in a sarcastic letter denigrating the work done at Onderstepoort and the attitude of its staff, trumpeted that Horse Sickness could be prevented, like East Coast Fever, with regular arsenical dipping. His lengthy polemic was widely published in the Press. Over-worked as they were, Theiler was forced to detail men to test his assertion. At the same time, attempts were made
109 to improve the Horse Sickness serum. Theiler experimented with inoculating two viruses, hoping for at most 5% mortality from the artificial infection. He achieved 3.5% though 'aanmaning' or recurrence of the disease in immunised animals continued. The baffling problem was now of highest importance.

110 While Smuts entered the conflict in South West Africa, embarrassed by Horse Sickness in his aim of joining Botha's forces, and the trial of the Rebels painfully continued in Pretoria, Theiler
111 took time off to organise the 13th Meeting of the South African Association for the Advancement of Science in July in Pretoria. It was important that the delegates, representing the best
112 scientific brains in the Union, should see his Institute. He himself gave a paper on 'The Problem
113 of Horse Sickness' and was elected one of six vice-presidents. On the 7th July 1915, he welcomed a great contingent of his scientific friends including the botanists (Rudolph Marloth, C. W. Mally, Ethel M. Doidge, A. Bottomley etc) led by I. B. Pole Evans, now head of the Botanical Division; the chemist Charles Juritz; the Port Elizabeth herpetologist, F. W. Fitzsimons; and,
114 significantly for the Theiler family, Dr Bertha Stoneman, botanist, lecturer and later principal of the Huguenot University College at Wellington in the Cape. The visit was a great success
115 (with a special vote of thanks at the concluding meeting) but Theiler lamented - 'I was very occupied but now, thank God, this excitement is also over.' The Germans formally surrendered to Botha two days later in South West Africa and there was widespread jubilation. P. R. Viljoen would be demobilised and Theiler would see that he was returned to Armoedsvlakte and not swept up in the current urge to join the war in Europe or the forthcoming campaign in German
116 East Africa. Sad lessons had been learnt in the West. Glanders, absent during the campaign, had suddenly broken out subsequently at Swakopmund and thousands of horses had had to be

116 destroyed owing to the wrecking of the ship *British Prince* bringing a veterinary officer with
117 supplies of Mallein produced in vast quantities at Onderstepoort. Rinderpest also became rampant and threatened the Union, being kept at bay by rushed supplies of the Laboratory's reserves of serum. With the new campaign in view, Theiler's serum-vaccine factory would move into even higher production.

118 He could not ignore the local scene nor push research into the background of the colossal
119 laboratory production of specifics. Three of his men had joined the overseas contingent destined for the Western Front. Willing workers remained, rendering faithful service 'during a period of constant disorganisation and at a time when routine duties were exceptionally heavy', he wrote appreciatively; but it devolved on Theiler personally 'to keep up to date' with developments in overseas research and to apply them to his mordant problems, especially Lamziekte. He received an astonishing number of German scientific journals including the *Zeitschrift für Infektionskrankheiten, parasitäre Krankheiten und Hygiene der Haustiere* published by his bookseller Richard Schoetz in Berlin and edited jointly by Dr E. Joest of Dresden, Dr Robert Ostertag of Berlin, Dr K. Wolfkugel of Montevideo and Theiler himself. As associate editor, 120 he was paid 200 marks a year and spent it on books and periodicals which irregularly reached
121 him through the Union High Commissioner in London. When it came to considering Hedinger's hypothesis of Lamziekte's being caused by sarcosporidia, Theiler could state that other investigators had failed to elucidate the life history of the prolific parasite. He staged sufficient experiments to prove that 'they may be the cause of an illness or anyway a cause of poverty in animals but not a cause of Lamziekte with which the parasites have no connection'.

122 He therefore returned to his plant toxin theory and with the assistance of Pole Evans, began a series of herculean experiments involving the wholesale transportation of 'lamziekte soil' to
123 Onderstepoort, the minute examination of plants growing in camps notorious for producing the disease and other exhaustive investigations. P. R. Viljoen whose ability had impressed him, was allocated Armoedsvlakte and skipped down to Pietermaritzburg to marry his briefly-affianced bride. There was no accommodation for them on the farm and the 20-year old Mrs Viljoen set up home in a rented house in the dusty dorp which, by a phenomenal feat of adaptation, she found lively and diverting, returning formal calls by Government horse-and-trap. Two years later, they moved into the house built for them on grim Armoedsvlakte. Viljoen worked late into the nights by the light of paraffin lamps, tabulating the complicated data of numerous experiments for his reports.

The prevailing war-time spirit of 'see it through' was punctuated by ugly dissidence. Before Botha and Smuts returned in ceremonial triumph from South West Africa, the trial of the Rebels ended on an iconoclastic note shocking to a large proportion of the population. General Christiaan de Wet was sentenced to 6 years imprisonment and a fine of £2,000 (he was released within six months). J. C. G. Kemp was fined £1,000 and sentenced to 7 years (serving only 17 months). The old hates simmered on, strengthening Hertzog's hand in the coming election. 124 Theiler noted the seething under-current and, perhaps worse, the onset of a disastrous drought.
125 On the 23rd September 1915, Smuts, electioneering in Johannesburg a month before the event, barely escaped three revolver shots aimed at him at a riotous meeting inflamed by propaganda against his repressive tactics and Imperialism. Other mobs produced unpleasant scenes. Tempers were short and violent incidents commonplace. Theiler found them 'uncongenial' but was confident that there would be no change of Government. The election in fact was profoundly disturbing. In 1910, every seat but one in the Free State had gone to Botha. In October 1915, every seat but one went to Hertzog. Botha's party with 54 seats could not command a majority over all other parties and must rely on the support of some.

South Africa had now to fulfil its war commitments. Troops had already been sent to England

for the European front. Recruiting entered a frenetic stage. Thousands of men left their rural and urban occupations for service abroad and in East Africa where, based on Nairobi, Britain was containing the German forces (consisting largely of trained Askaris) in Tanganyika with Indian, Belgian Congo and other ill-spared troops. South Africa had undertaken to deal with German East Africa – a fiercely tropical region, luxuriant in disease for man and beast and subject to intolerable humid heat varied by torrential rain which acted as an incubus for every conceivable affliction and impediment. The terrain was such that the few tracks in the wilderness were negotiable only, at best, by horses, mules and oxen and, at worst, by recalcitrant bearers.

126 Theiler had been warned of his duty well in advance and had already inoculated 2,000 Defence Force mules while preparing massive amounts of Horse Sickness serum and Mallein, and interminable antidotes for Redwater, Gall Sickness, Blue Tongue and other local cattle diseases. His mind was almost totally diverted from research to the industry of prophylaxis and as time went on, his disgruntlement grew. Woefully diminished in staff, stores, glassware, equipment and facilities, he envisaged himself as merely a foreman in a mass-production factory. 'It is really repulsive', he wrote Alfred in November 1915, 'how the commercial conversion marches and how Science becomes a cow which has to be milked at the right time! Our annual report will soon appear. It contains various interesting subjects but one must not talk about them.'

127

128 Three days before Christmas, the Governor-General Viscount Buxton, Viscountess Buxton and their eldest son Denis (who was killed two years later on the Western Front) came to Onderstepoort. They were escorted by an official of the Department of External Affairs, P. Horsfall who, married to a Swiss, became Theiler's lifelong friend. Buxton saw an unusual and meritorious feature of the South African war effort. Sadly, Theiler's annual report reflecting two years' research was not yet printed and he was compelled to state – 'Unfortunately our researches have been pushed into the background by routine. Serum and Vaccine rule the roost. The Laboratory now is just a factory and I am the factory manager – uncongenial and ungladdening.' At least Pole Evans was being an active collaborator. Confronted by a mysterious sheep disease, Theiler had gone with him to a local scene of incidence, a farm Witfontein 20

129 miles south of Pretoria and had asked him to examine its plants. Pole Evans ultimately produced ' "Gouwziecte" (Quick Sickness) Veld – Its Vegetation and Flora' while Theiler conducting endless eliminating experiments, was finally able to inculcate *Vangueria pygmaea* or 'sand apple' as the cause.

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131 Simultaneously in December 1915, 'Geel Dikkop' (Yellow Thick Head) in sheep of which Theiler had been aware since his early days but never investigated because of its rare incidence in the Transvaal, suddenly became epizootic and threatened the whole mutton, wool and hide industry. There sprang to his mind his botanical studies in Switzerland but they had been inadequate to covering parasitic diseases through plants. Alfred must at once send him relevant

132 books. In the meantime he began his own study, as he always did, with recourse to Hutcheon and found that as early as 1886, his great predecessor had been told by farmers that a plant with a yellow flower was probably the cause of Geeldikkop. Hutcheon's men had later identified it with the *Dobbeltjiedoorn* (little double-thorn) or *Tribulus terrestris*. But Theiler's perennial enthusiasm for animal diseases caused by plants sank again before his current obligations.

133 'Our Factory goes at full tilt', he wrote, 'The production of vaccine exceeds hundreds of thousands into millions, and we make serum at the rate of hectolitres. And that is in spite of the war and with reduced staff as several have left for Europe and East Africa. We have heard that our Afrikaners do not go to Flanders but to East Africa.' Soon their difficulties and the appalling drought at home would threaten the economy even further.

134 In time of war, leave was a luxury afforded to few. Absences from the Agricultural De-

partment were almost invariably owing only to illness and Smith, recently returned from England, paid high tribute to his staff. It might have been better if he had appealed to his Minister to force his over-worked and over-wrought Director of Veterinary Research to take recuperative leave. Too much piled upon Theiler and, given to emotional flights under stress, his resolution wavered. 'In the laboratory, still always over-work and no end in sight', he reported, 'regrettably research must suffer. Production comes first. As discouraging as the one side is, the other is urgent. One is still just a manufacturer.' He was making enormous quantities of serum for the horses necessary to the East African Campaign (to which the British Government had appointed Smuts, promoted to Lieutenant-General, as Commander-in-Chief) and telling the Vryburg farmers that he could therefore supply none to them. The problems of Armoedsvlakte were increased when its custodian, now Captain R. R. Sharpe, went to war and Theiler had to detail Gilles de Kock to take charge of it. P. R. Viljoen, frequently at Onderstepoort to discuss disappointing results, came back to tell the farmers that in addition to the shortage of bottles delaying the supply of urgently-needed Blue Tongue antidote of which Theiler himself had written them, there was a shortage of transport to bring the sheep to the Laboratory to make it. But for a lack of pathologists, the Lamziekte investigation would have got much further. As much as Theiler's mind seethed with work waiting to be done, his hands were tied by factors outside his control.

Worse, his emotions were assaulted and his pride humiliated by family affairs. His luckless and beloved sister Marie had lost her daughter Margaret after a long and distressing illness. All his own children were now home from school and College. Hans wanted to enlist in the Artillery for overseas service and re-kindled Arnold's own martial ardour. Without opposing him, he waited to hear how his children had maintained their illustrious name. When the examination results came in February/March, the blow to his amour propre was grievous. Hans' results were insufficiently high to compensate for his previous low levels and he had failed to gain his B.A.. Margaret had come down in one subject (Dutch) in matriculating which Gertrud (possibly similarly handicapped by their distracting year overseas) had attained only third-class, a pass which Max had managed. The glorious achievement which most fathers envisage for their children, the coaching, the encouragement, the sedulous training in natural sciences and academic matters of interest, the confidence and hopes were now dust and ashes in the mouth of a proud parent. In fairness, he understood that the examination system was notoriously bad but other children had passed. There were scenes and tears and Emma was hard put to maintain balance and reason. Her husband was a hurt and angry man, exhausted by his own exertions and frustrated by their limitation. Tout d'un coup, his pride was restored.

At that moment early in March 1916, Theiler received from the Imperial Indian Government a letter offering him appointment as 'Imperial Bacteriologist' or Director of Veterinary Research in India. It seemed like escape from the net about his feet - an end to the pettiness and disloyalty of political and Parliamentary manoeuvring. He discussed it openly with Emma and the children. He wanted to go, he said, and they agreed. In honour, he told Smith of his intention. Smith telegraphed van Heerden, his Minister in Cape Town for the Parliamentary session. Van Heerden went to the Prime Minister. Botha sent for Theiler.

At that time of anxiety and stress with great issues hanging perilously unsolved, Botha must bitterly have resented the stocky stubborn little man whose contrariness and combativeness again converted him into a blackmailer. Theiler poured out his case, harping on his enforced rôle as factory manager instead of research scientist and on his need for an administrative assistant. There was no gainsaying his integrity. He had worked like a thousand demons at his appointed tasks and produced both results of manifest value and a constant service of treatment and prophylaxis which now were indispensable. He had his difficulties of course like all the

Divisional and Departmental heads; but what seemed to rankle with this self-important scientist was lack of confidence. He minded that his Minister had not defended him in the House; he minded that there was always talk of 'importing experts' as if he were no good; he minded that Smith in England had 'hawked the job of someone to investigate Lamziekte' and thus blemished his own work and good name; he minded most of all that his own Government was not loyal to him and constantly hinted at superseding him with someone better. In such circumstances he preferred to go to India. Botha bought him off.

143 In his own words (written with an eye on the Censor), Theiler later stated 'General Botha begged me in the most impressive manner not to leave South Africa in the lurch and promised me a series of concessions to lighten my labours. The most important concession that I obtained is that I can withdraw from the Service at the age of 50 in 1917 or at any time thereafter with the promise of a pension due at the age of 55. It is actually very possible that I shall withdraw from the Service before I attain the specified age of 55 . . .' his pride was restored and his persona flourished anew. Shortly after, he went to Pietermaritzburg to attend the Annual Conference of the Natal Agricultural Union with his old colleague S. B. Woollatt in the chair. Theiler gave an address on his work, particularly Horse Sickness, and begged the farmers to have equal confidence in his finding a solution to Lamziekte. From the chair, Woollatt announced to applause that Sir Arnold Theiler had been offered a high appointment in the Imperial Indian Service but had preferred to remain in the Union and, seeing Sir Arnold acted loyally, it was incumbent on the farmers to act loyally toward him. On that day, the East London Farmers Association was told that Lamziekte was spreading throughout the Union and that losses were rising. The cloud still loomed.

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Theiler was doing important and innovative work in a wide variety of fields. His small but expert and enthusiastic staff pursued the lines of investigation which he ordained while he himself, in close alliance with Pole Evans, developed his plant toxin theories and prepared (largely through the amassing of collections of specimens) for an attack on the diseases caused by parasites. It was as if his attention had moved from the microscopic examination of bacteria, protozoa, trypanosomes and viruses to the more palpable bodies infesting animals' entrails. In concert Onderstepoort engaged the whole gamut of stock diseases on a far wider front than ever before. Its isolation was crippling. For the first quarter of 1916 (when Theiler agreed to remain in South Africa), the losses in British merchant shipping totalled 325,236 tons and by the end of the year, 1,497,848 tons. There was no hope of his receiving the sophisticated apparatus he required nor the scientific coöperation he had always enjoyed. Some of the equipment he needed had not yet been manufactured. In 1917, merchant shipping losses reached the highest total of 4,009,529 tons. Weeks went by without ships arriving. Improvisation had become the order of the day at Theiler's laboratory. Nothing it required for either research or the 'vaccine factory' was manufactured locally.

The research staff consisted of:

- | | | |
|--|---|--------------------------------------|
| <i>Director of Veterinary Research</i> | - | Sir Arnold Theiler K.C.M.G. |
| <i>Veterinary Research Officers</i> | - | Graham's Town - Mr William Robertson |
| | - | Pietermaritzburg - Dr D. T. Mitchell |
| | - | Onderstepoort - Mr J. Walker |
| | | - Mr W. H. Andrews |
| | | - Mr D. Kehoe |

Bio-Chemist

Economic Entomologist

- Armoedsvlakte
- Onderstepoort
- Onderstepoort

- Dr F. Veglia
- Mr E. M. Robinson
- Mr G. de Kock
- Mr P. R. Viljoen
- Dr H. H. Green
- Mr G. A. H. Bedford

147 One of the terms of Theiler's agreement with Botha had been that he should be liberated from administrative duties as soon as possible by the appointment of an Assistant Director. He considered the most appropriate to be R. Eustace Montgomery in Nairobi – a man versed in African conditions and with high scientific qualifications. Smith began the formal inter-departmental pourparlers. Meanwhile Theiler rued the decline in research through lack of 'professional staff' and the distraction of his attention by extraneous matters such as the building of a laboratory to manufacture Anthrax vaccine. The import from the Paris Pasteur Institute was reduced to a minimum. Its quality had not proved altogether satisfactory at a time when it was most needed. During 1916/17 Anthrax accounted for a greater mortality amongst livestock than the whole of the other contagious diseases combined. There was also need for a capacious Postmortem Hall but Treasury, overwhelmed by war expenditure balked at authorising it.

148 On the outbreak of war, the printing of Divisional Annual Reports was cancelled which, with the disappearance of the *Union Agricultural Journal*, was particularly grievous to Theiler who customarily informed his colleagues overseas of the activities of his Institute by circulating copies. An attenuated Annual Report was permitted for March 1915/April 1916 and continued on that basis. It had no scientific standing in that it reproduced no 'papers' or 'notes' or 'observations' or comprehensive accounts of investigations. Theiler struggled to resume the 'Reports of the Director of Veterinary Research' of which the First and Second had been published in 1911 and 1912. The Third and Fourth reflecting the greatly widened scope of the Institute's work, edited and approved by him, were printed at the end of 1915 and impressed those worldwide colleagues whom it reached. (The contents were totally unintelligible to the Parliamentarians who commented on his affairs.) It became an abiding passion with Theiler to record his work in this manner for present and future reference; but the next sequence of beautifully organised and comprehensive material with graphs, statistics and illustrations, was not printed until 1918 in his Fifth and Sixth Reports. The frustration of a bushel of obstruction hiding his candle constantly irked him.

149 Revived in spirit by Botha's promises, Theiler undertook the work of ten men. Noting the 25th anniversary of his arrival in South Africa, he had set his own house in order as best he might. Scholarship was not for Margaret who lacked the courage to show her true hand to an angry father. He set her to learning shorthand and typing with French as an auxiliary subject at the hands of Emma (Alfred had suddenly to send French grammars). Margaret was destined to become her father's secretary at Onderstepoort and dutifully plodded her way through hateful office tuition. Max was a different problem. A resolute character, he clearly stated that he wished to study Medicine but continued periodically to be tortured by mysterious agonising pains. Gertrud, equally robust in stating her aims, declared for the study of Biology. Theiler sent them both to Rhodes University College at Graham's Town where Gertrud could keep a careful eye on Max taking virtually the same course for his first year in Medicine. They enjoyed their studies and the venue but Max was not free from his affliction. It was a constant sorrow to his family. 'One is never sure with him', Arnold wrote Alfred, 'His suffering suddenly comes upon him. He bears it with great courage but suffers terribly under it. He remains so small; but his spirit remains vital and his joy in living very great.' In Graham's Town, Gertrud was often

distracted by Max's attacks. When they came home for the mid-year vacation, Arnold took him to Johannesburg to consult a Swiss surgeon, Dr Pettavel who diagnosed kidney damage but could neither surmise the cause nor prescribe treatment. Back at college, Max was so frequently
153 incapacitated that his father brought him home without writing his final examinations. Gertrud successfully sat them.

154 Hans, with quiet obstinacy in the face of his father's constant disparagement of the profession of veterinary surgeon, had altered his intention of enlisting for overseas service and joined up as a 'veterinary dresser' in the South African forces setting forth to conquer German East Africa. First coming to light in Kenya, he was frequently incommunicado for months on end; but Arnold, knowing his commanding officer and now speaking proudly of 'our soldier son', tried not to worry about his first-born. There was good cause for concern. The popular view that 'the Boer fighters' (particularly the mounted regiments under Generals van Deventer and Coen Brits with their mule-drawn batteries, led by that wily tactician of guerilla warfare, General J. C. Smuts) would soon put an end to a 'jungle campaign' conducted by Askaris and a few Germans, was speedily dissipated. Animals died in droves and men went down with fever by the hundred, Hans included and possibly similarly falling into the capable hands of his father's old enemy, Dr Alexander Edington, now administering with distinction the Military Hospital at Dar-es-Salaam.

The East African campaign marked the doom of veterinary and medical reputations. Theiler's specifics were useless. Oxen, mules and horses had an effective life limited sometimes to days.

155 Francis Brett Young, a medical doctor and himself the victim of fever, watched the immobilisation of his ambulance as its mules succumbed - 'Already more than one of them showed the slight puffiness beneath the chest which is one of the first signs of trypanosomiasis. The very road on which we left the ambulance swarmed with biting tsetse flies.' The South African
156 mounted regiments soon became infantry. On Christmas Day 1916, Colonel Hartigan confronted a German force with the 1st, 4th, 7th and 9th South African Horse, dismounted to a man as all their horses had died. The task of the Remount Department was hopeless. Toward
157 the end of 1917, 10,000 horses, 10,000 mules, 11,000 oxen and 2,500 donkeys died during only two months of the dwindling campaign. Aeroplanes, motor cars and wireless were used and Smuts himself careered about the terrain in a trusty Vauxhall; but Hans, labouring in an Augean stable and making useful veterinary notes of his experiences as Theiler had taught him, declined into a broken man, riddled with fever.

The unremitting strain on Theiler, already emotioné by the scene with Botha, domestic troubles and mounting restrictions on money, staff and facilities, expressed itself in recurrent disenchantment with Africa, a hankering after 'the homeland' and a readiness to take offence where Botha had hoped to mollify him. Always touchy, his pride now reacted ridiculously to supposed gibes. On the 18th April 1916, at Question Time in the House, Sir Abe Bailey asked
158 the Minister of Agriculture whether he would put a sum on Additional Estimates to investigate and find a cure for Lamziekte. Van Heerden, confined to a direct answer, replied - 'I am quite
159-nd prepared to find the money but the difficulty is to find men qualified to undertake the work . . .
160 a veterinary pathologist and other assistance for Sir Arnold Theiler. Owing to the dislocation caused by the war, our efforts have been fruitless.' Smith and Theiler met shortly after attending the Royal Natal Agricultural Show at Pietermaritzburg. The newspapers had reported the question under the headline - MINISTER CATECHISED - THE CURE OF GALLAMZIEK-
161 TE and Theiler told Smith how much he and 'several of his officers felt aggrieved at the Minister's statement'. Then Viljoen at Vryburg added fuel to the flames by sending the newspaper report to Theiler protesting at its reflection on his work. There ensued an acid correspondence between Theiler and an increasingly-nettled Smith on the much-laboured point that Theiler

162 did not mind being 'assisted' in work which, had he time, he could do himself but strongly objected to being 'superseded'.

He was in fact firmly grasping his nettle. Feeling among the ranchers in the Northern Cape (many had enlisted) and elsewhere had become further jaundiced. Theiler frequently visited Vryburg with Pole Evans and, in addition to the herculean and expensive experiments of transporting 100 tons of local 'infected' soil to Onderstepoort (where cattle grazing on it failed to contract Lamziekte), he decided to build a laboratory, stables, houses for staff and other necessary amenities at Armoedsvlakte. During May, June and July 1916, always with Pole Evans and once with Harry Green (to study the chemical composition of the Lamziekte veld), he devised on the unprepossessing property (still rented from McKee at £50 a year paid by the Vryburg Farmers Association) a comprehensive attack on the baffling disease. The confidence of the cattle-owners, even Butler, was wearing thin and dissident voices soon arose. Parliament heard them too. Sir Abe Bailey, Sir Thomas Smartt, even Danie Wessels speaking for the ruined Bechuanaland, urged the Minister to do something. A lone voice (J. Joubert, member for Pretoria North where Theiler was registered) praised him, feared that he was leaving and asked the Minister to give him such a salary as would induce him to stay. Van Heerden now knew his prickly man. They were all agreed as to the good work being done by Sir Arnold Theiler, he said. The Government was fully alive to the Gal-Lamziekte position and was in communication with Mr Montgomery of British East Africa to get him to visit the Union to carry out investigations. Theiler met the Executive Committee of the Vryburg Farmers Association a few days later but desperation had sapped its faith.

Major R. E. Montgomery on active service in East Africa was given permission very briefly to visit Pretoria early in July. Theiler had known him and the quality of his work since May 1907 and had personally selected him as suitable to relieving him of administrative and other duties – 'my work at the Institute will be sizeably lightened and I shall be able to devote myself to my own researches', he confided to Alfred. Montgomery was offered appointment as an Assistant Director and accepted subject to release from his military duties (Botha himself had gone to Tanganyika to join Smuts owing, it was alleged, to the appalling 'wastage' of men and animals). Long casualty lists were now appearing in the newspapers, covering the Western Front (where the British alone lost nearly half a million men on the Somme) and Central Africa. No word had been heard of Hans for two months and Theiler was grateful to Montgomery for offering to seek him out. Many months passed before he could keep his word.

While the Government was considering Theiler's plan to buy Armoedsvlakte and convert it into a minor Onderstepoort, the patience of the cattlemen ran out. The Vryburg Farmers instructed their chairman G. D. Smith to present at the Annual Congress of the Cape Agricultural Union at Kimberley a resolution that 'whereas the discovery of the cause of the disease Gal-Lamziekte has so far baffled all the powers of research by scientists in the Union, and as the disease is apparently spreading all over the Union and the losses of stock and consequent impoverishment of the cattle industry in South Africa is increasing, this Congress respectfully requests the Government to consider the desirability of offering a substantial reward (say, £20,000) to any qualified scientist who can (say, within 5 years) discover the cause of the disease and produce an effective (and cheap) preventive, subject to such tests and experiments as the Government may see fit to impose'. Theiler was told. The whole country was told. It was common cause that Vryburg in spirit and deed had led the battle against Lamziekte. Danie Wessels came to the next meeting to hear what further they were doing and told them what the Government planned for Armoedsvlakte but they repented not of their resolution.

172 The Congress at Kimberley early in September 1916 was an important occasion. It was opened by the Minister of Agriculture with F. B. Smith and Theiler in attendance. G. D. Smith moved

the Vryburg Farmers' resolution and spoke to it. The Congress boomed. Speakers stated that he was casting a slight on Sir Arnold Theiler, 'a slur on our experts' and 'indirect censure of the Department of Agriculture'. Smith manfully replied that no one had done more in the matter than the Vryburg farmers. Sir Arnold rose to his feet to reply. Of his finest hours, this was certainly one. He told them how P. R. Viljoen at Armoedsvlakte used 254 head of cattle on the experiments he devised. 'Each experiment is a question and every answer is some contribution to the problem.' Lamziekte was non-contagious, non-inoculable, non-communicable and capricious in its appearance even on the notorious Armoedsvlakte. The cause existed either in the pasture or the soil. Pole Evans did the botanical research and Green the chemical. Experiments were similarly made at Besterput in the Free State and on farms near Graham's Town by W. Robertson, a total of 438 cattle being used which was beyond the resources of any single scientist. The theory of deficiency in vitamins and other dietary factors had failed. He had discussed the problem in London, Paris, Berlin, Vienna, Budapest and 'with my old professors at Zurich and Berne. Nobody was able to make any suggestions except what we were carrying out'. He went on to tell them what he had proposed to 'a sympathetic Government'. 'Gal-Lamziekte', he concluded, 'will be solved one day but not by the offer of bonuses.' (Applause) F. B. Smith gilded the lily - 'When I was in Europe', he said, 'I was told that we could not do better than to support Sir Arnold Theiler.' G. D. Smith withdrew the Vryburg resolution (it should never have been brought, he later said) 'having every confidence in Sir Arnold and his staff'. Caught in the same wave, van Heerden assured the Congress that 'what the Government could do to assist Dr Theiler, they would do'. The purple passage came near to lacking substance.

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Expenditure on the buildings Theiler required could not be incurred until formally approved by Parliament in the new year. The delay was maddening but the Vryburg Farmers rose to the occasion. With their 'Lamziekte Experimental Fund', they had built the galvanised-iron sheds and stables at Armoedsvlakte in 1914. Now they gave them to Theiler. His own staff managed to put up rondavels for the labour and more stables without benefit of Public Works. He might not have authority to build but the Minister of Lands had authority and funds to buy farms. Theiler immediately told him to buy Armoedsvlakte. The Minister was a limited Afrikaner, Hendrik Mentz, practising as a lawyer in Pietersburg. As a Transvaal burgher, he had fought for the Republic in the Jameson Raid and in the War where he had served as a guerilla under Botha whom he deeply admired. A member of the Transvaal Legislative Council and later of the Union Parliament, he enlisted in the Defence Force in 1914, helped to quell the Rebellion and again served under Botha in South West Africa, attaining his colonelcy. Botha rewarded him in 1916 with Cabinet appointment. What happened between Colonel Mentz, the tentative and unimaginative new Minister of Lands, and Sir Arnold Theiler, the Director of Veterinary Research became local legend awesomely repeated long after both were dead. Theiler asked that Armoedsvlakte be urgently bought from the McKee brothers. Mentz said Nonsense, he could buy much better farms more cheaply in current depressed times. Theiler said there was nothing better for his purposes than Armoedsvlakte because of its susceptibility to Lamziekte. Mentz refused to understand. Using his usual weapon, Theiler immediately resigned. Armoedsvlakte was quickly bought at a high cost from the canny McKees at the end of September 1916. Much development could now begin.

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Theiler was now doing the work of more than ten men. With his Kimberley triumph behind him, he had gone straight off on a long motor tour of the Kaap Plateau (Griqualand West) to investigate a new disease 'Slapziekte' in horses which he identified as Dourine. Returning via Bloemfontein, he had delivered an address on 'Unsolved Stock Diseases in South Africa'. Lecturing in his guttural tones from carefully-prepared texts, all taking time and buoyancy of

180 mind to compose, had become second nature. For recreation, he lectured the Biological Society
 181 on extraneous subjects that interested him. (The original Transvaal body had now been merged
 in the South African Biological Society whose foundation members recorded their particular
 interests. Theiler wrote HELMINTHOLOGY.) He talked freely to everybody, particularly to
 182 farmers, Pole Evans with his flaming red hair and treble voice, and other scientific colleagues.
 He read assiduously. In due course, he perceived with pride in the *Zeitschrift für Infektions-*
krankheiten with his own name on the cover as associate editor, the paper submitted on the
 15th September 1916 by his protégé P. J. du Toit under the aegis of Professor P. Knuth of the
 Tropical Division of the Health Institute of the Royal Veterinary School in Berlin on 'Con-
 tagious Rinderpest'. Marooned in Germany, du Toit was doing valuable work on tropical
 diseases.

As factory-manager, Theiler dealt in new dimensions of production and difficulty. From April
 1916 to March 1917, he was responsible for the production inter alia and the issue of doses of
 vaccine for

Blue Tongue	–	1,240,050
Redwater and Gallsickness	–	18,069
Anthrax	–	696,850
Black Quarter Evil	–	223,896

183 and thereby safeguarded and developed the livestock industry in time of war and, he reported,
 'frightful drought'. His 'factory' staff was minimal but efficient, zealous and loyal. Theiler
 could almost unexceptionally command such qualities from his men; but he could not dragoon
 184 the farmers into helping. Time and again, Butler in his *Northern News* begged for the return
 of vaccine bottles and wire-worm tins, and other newspapers likewise but carelessly, the farmers
 threw them away and ignored instructions. An admonitory *Agricultural Journal* would have
 helped; but the war still prevented its issue. The time came when the supply of vaccines was
 curtailed through lack of receptacles.

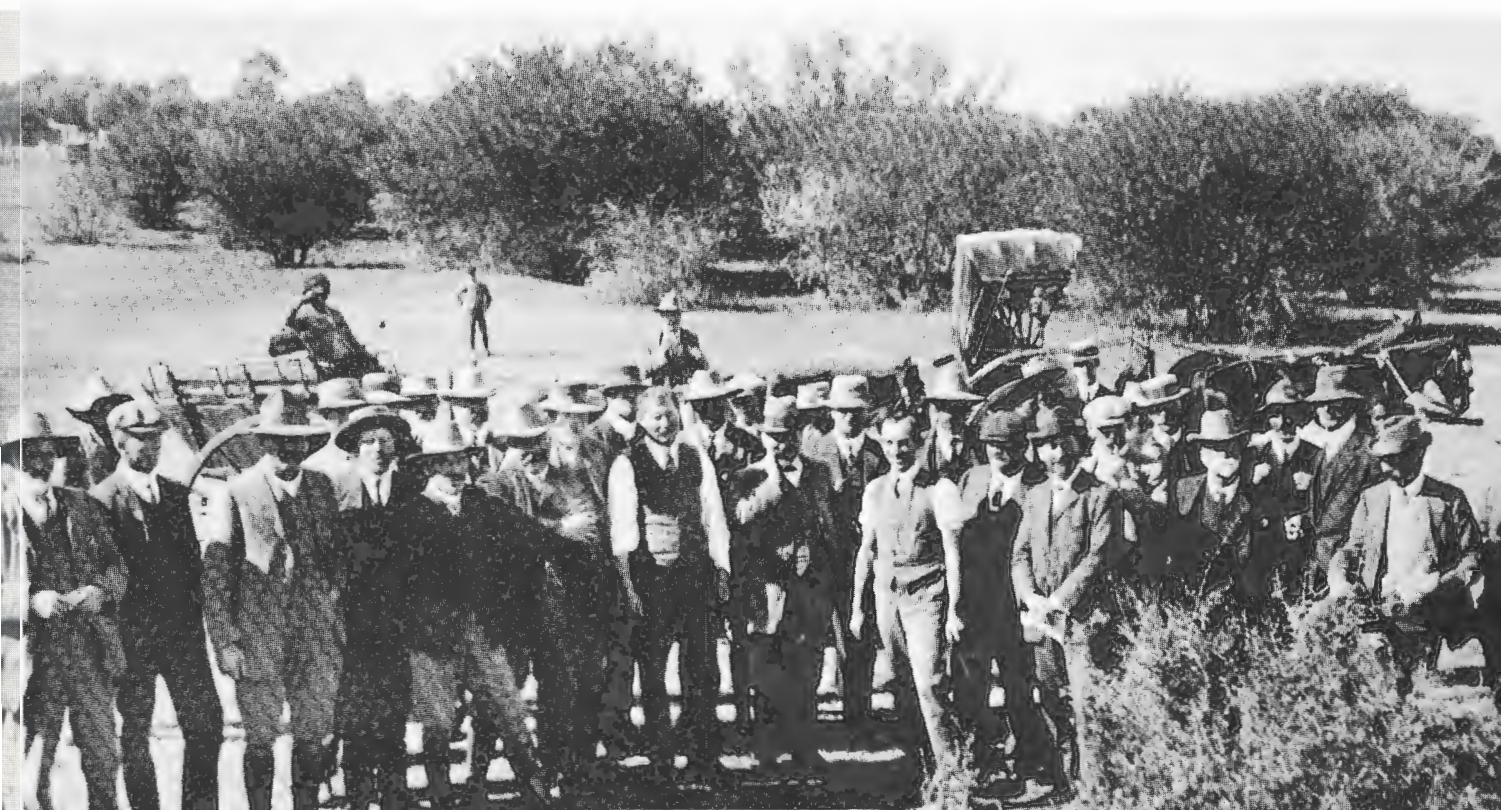
185 Sir Arnold Theiler as a public figure had perforce to continue his rôle and sit on platforms
 and attend banquets, meetings, agricultural congresses and funerals. Concerned at the expense
 of educating his children, he was also specially exposed to public donation. When the Governor-
 General's War Fund came to Onderstepoort for instance, five guineas was expected of him but
 only two each from his research staff, dwindling to half a crown from others. A month later, the
 186 South Africans were immolated at Delville Wood. He worried about Hans who had lapsed
 into one of his long periods of silence after writing that the Imperial Commander in East
 Africa was General A. R. Hoskins who, as a major on Maxwell's staff in 1902, had given the
 Theiler children a pony.

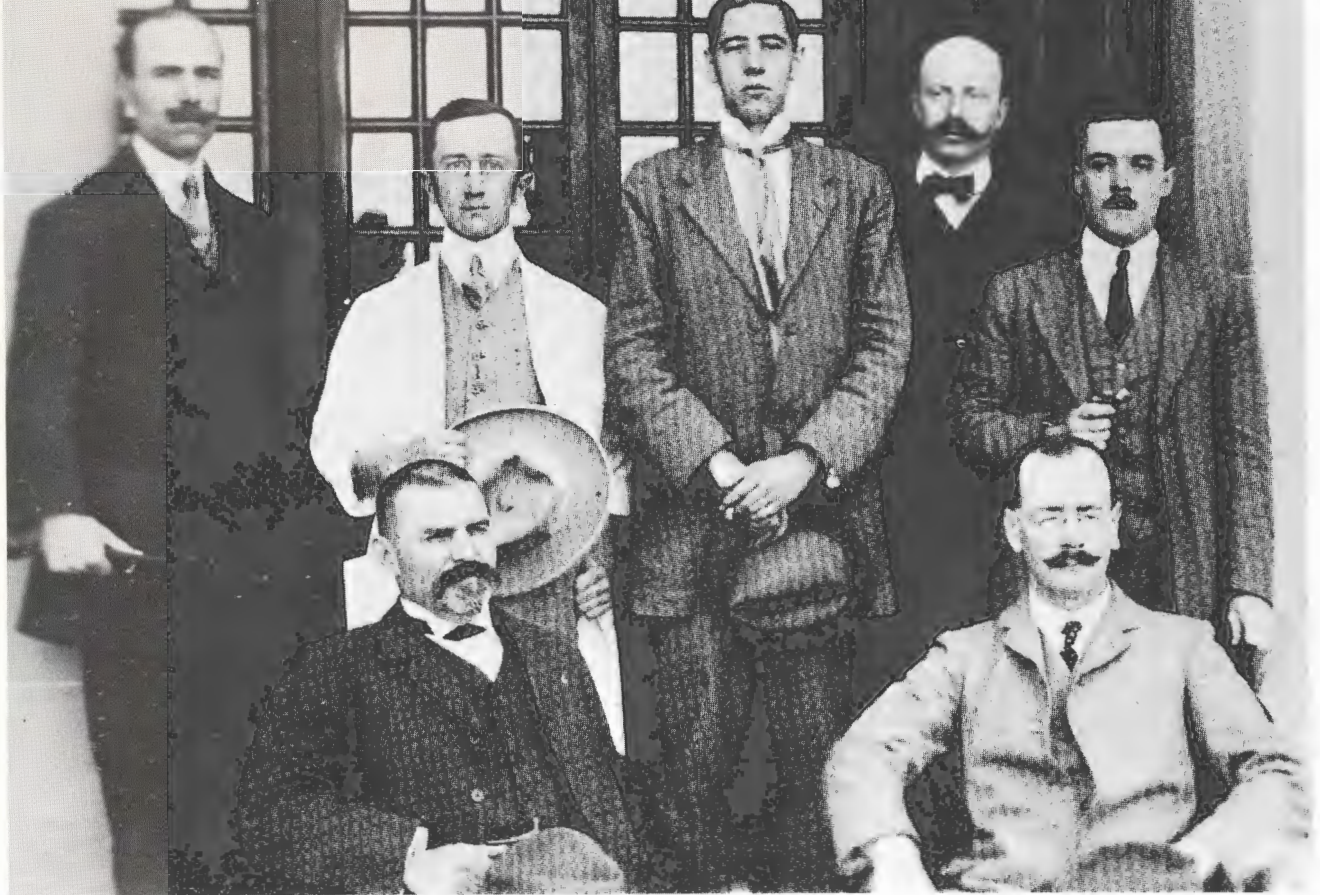
187 Botha had returned from East Africa. Smuts' pursuit of his elusive foe – 'that brave German
 Commander', as he then publicly described von Lettow Vorbeck – would soon succeed and he
 could leave the conclusion of the campaign to others. Theiler had done his best for it and failed
 calamitously. He had successfully inoculated thousands of Defence Force horses against the
 Sickness. There had been none of the dreaded 'aanmaning' but, suddenly and unexpectedly
 after an interval, all the horses had been incapacitated by Staggers. It was a public humilia-
 tion and, according to F. B. Smith, 'a great disappointment to Sir Arnold'. Theiler surmised
 188 that the virus was not the cause; but the fever produced by the inoculation conduced to the
 development of Staggers which otherwise might have remained dormant. 'The outbreak of this
 new disease was a very severe blow to me and is, in fact, the most disheartening incident that
 has occurred in the whole of my investigation into Horse Sickness,' he reported and forth-
 with took steps to combat it.

Charles Butler whose persistent efforts to bring the fight against Lamziekte to Vryburg finally persuaded Theiler to establish the crucial experiment station at Armoedsvlakte.



The historical moment in June 1911 – Theiler conducts a postmortem for the benefit of Vryburg stockmen and townsmen. Left to right: centre in shirt sleeves, Ted Pavitt who despatched the cow; Theiler with his hand to his face; Elphick in short sleeves who dissected the cow; and Charles Butler in Homburg hat holding papers.





Some of the senior staff at O.P. in 1913 – seated: Theiler (left) obviously disgruntled after his return from Europe, and W. Robertson who directed Onderstepoort during his absence. Standing (left to right) – Frank Veglia, parasitologist; Daniel Kehoe, pathologist; G.A.H. Bedford, entomologist; and two others.



Modern Equipment at Onderstepoort when it opened in 1908 and continuously in use thereafter – a turntable to which animals were strapped when standing and then tipped over to permit horizontal examination.

There were other fields in which, with his limited research staff, he could report success. The work on plant toxins was progressing favourably. Pole Evans travelled hundreds of miles with him to all parts of the country examining possible causes of stock diseases. Veglia, agitated by Italy's declaration of war on Germany on the 28th August 1916, was finding a chemical solution capable of killing wire-worm in sheep. Henry Green was still busy with arsenic and dipping, Viljoen with Lamziekte, Kehoe with Anthrax, Bedford with Bot Flies, and other workers covering a wide field from Contagious Abortion to Dourine. Their meticulous papers with several of Theiler's would ultimately constitute his Fifth and Sixth Reports.

189 Onderstepoort was now a sprawling complex of many buildings designed for different duties. Hampered in every way, the staff at least enjoyed comparative freedom from visitors. The place had perennial fascination for farmers but few were not involved in the war. Consular parties continued to come and occasionally special visitors such as the horse-loving Colonel C. Gutsche, 190 Officer Commanding the Cape Garrison Artillery and Table Bay Defence, with Major P. L. Lovelace. On the 11th December 1916, Sir Abe Bailey who had stated in Parliament that he was 'going to try to ginger up the Government' about Lamziekte, came to see for himself what Theiler did.

191 'The old man' as he was beginning to be called, was planning for his retirement. He would soon be 50. One by one he was losing his early friends and supporters – his first patron D. J. E. Erasmus in 1914, Melt Marais, Veldcornet for Pretoria during the terrible Rinderpest days, in 192 May 1916; his first 'boss' the Landdrost C. E. Schutte in October 1916; and in March 1917, the 193 Scots lawyer Mark Greenlees who had twitted Milner in 1902 and whose funeral Theiler attended as a chief mourner. It made him feel his age and the need to rest. He was collecting his unpublished work at Onderstepoort for final preparation and contemplating a happy relaxed life in 'the old homeland'. Would the Basle Natural History Society accept him as an outside 194 member? he asked Alfred (now a man of scientific stature with the opening of his hydro-biological laboratory under Professor Bachmann). He was greatly gratified when they later 195 made him a corresponding member – 'an honour from home and for me, one of exceptional 196 value'. 197

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In momentous times, the old dichotomy still possessed him. Smuts returned from East Africa in January 1917 and left almost immediately for England to join the Imperial War Cabinet. Milner would be his colleague as Minister without Portfolio (later Secretary of War). Theiler 198 went to the banquets féteing the commanders returning from East Africa. Hans, silent for three 199 months, had been in hospital with fever. Montgomery had seen him and reported favourably. With his eyes longingly on Switzerland for a winter holiday visit during the Peace that never came, Theiler had asked his Minister for £50,000 for administration and £20,000 for buildings in projects which captivated his interest and enthusiasm. 'I shall probably myself head the re- 200 search and then terminate my South African career', he wrote. (He had been so sure that Peace 201 was imminent toward the end of 1916 that when Max came home and disagreed he bet him a hat that the war would be over when 1917 began. Max made the most of it and selected 'a first-class hat' costing an extortionate thirty shillings.)

Theiler's Minister was taking him very seriously and, upon the invitation of the Municipal Council (the first town to invite him, he said), paid a ceremonial visit to Vryburg. All the dignitaries – Danie Wessels M.L.A., D. G. Smith, the magistrate and leading farmers – accom- 202 panied him everywhere and Viljoen awaited them at Armoedsvlakte (where Lamziekte had perversely disappeared) to conduct them over the establishment. 'It is impossible', van Heerden

203 said in his luncheon speech, 'for the staff with the means at present at their disposal to get anything like adequate results.' Parliament had not yet met but in due course, it would fall to him to get the Vote passed for building. £11,644 was on the Supplementary Estimates. Vryburg grew restive. The galvanised-iron lean-tos and the primitive rondavels which Theiler's own men had built remained the sole equipment. The Viljoens continued to live in the dorp. At a Farmers' meeting at the end of March 1917, G. D. Smith announced that the Government, it was being said, intended only temporary structures. Incensed at this disparagement of their importance (they had spent years getting the farm bought), the farmers addressed a lengthy and fateful resolution to the Government concluding with 'this Association desires to point out that, considering the extensive area of Bechuanaland and the western portion of the Transvaal, it is in need of an experimental station for the scientific investigation of all and every disease affecting stock and considers that such a huge portion of the Union with its great livestock industry would be well served by the establishment of a permanent investigation establishment as was originally intended . . .' It was many months before the building of a permanent laboratory, dwellings, stables and a small-animal house began at Armoedsvlakte; but the Vryburg Farmers' dream was in the end realised and developed.

204 Theiler was in the Free State with Pole Evans trying to identify the precise circumstances in which *Tribulis Ovium* (dobbeltjiedoorn) caused Geeldikkop in sheep, now dying in large numbers in the Luckhof, Fauresmith and other districts. Hutcheon, the flock-owners and other sources had provided him with a wide variety of hard facts and hypotheses. Typically Theiler listed them all and devised experiments to test them. It was an extraordinarily complicated investigation concluding with qualified result – the plant caused the disease only in the flowering stage but sun and wind somehow played a part. Theiler could at least advise the farmers on preventive and curative measures. There were many other such quasi-botanical problems with which he and Pole Evans grappled – so many that Theiler secured the transference from the Botany to the Veterinary Research Division on the 1st April 1917 of A. O. D. Mogg as ecologist. 205 Then 32, Mogg long outlived his two proponents on his way to becoming a centenarian and his country's oldest practising botanist.

206 Theiler himself celebrated his 50th birthday on the 26th March 1917, a continuing prey to his dichotomy. His personal troubles were principally financial. As there was no Medical School at Graham's Town, Max had gone to Cape Town to attend the University of the Cape of Good Hope which offered courses. Gertrud perforce accompanied him as guardian, happy to pursue her passion for zoology in especially engaging conditions. They rowed and bathed and climbed Table Mountain and enjoyed themselves but it was all very expensive. Hans was still lost with his unit in Tanganyika; but Margaret, painstakingly equipped in uncongenial skills, was now a shorthand typiste employed as Librarian at Onderstepoort at £10 a month. She had finally asserted herself and persuaded her authoritarian father to allow her to train as a physical culturist as soon as passage could be obtained to England. The future academic education of 207 at least three children for several years would be a heavy burden if he went on pension now.

208 Other burdens were thrust on the portly and greying Director whose new enthusiasms for ecological and parasitological investigations were constantly frustrated by dutiful journeys to Armoedsvlakte and elsewhere, lectures to Agricultural Societies, attendances at Congresses and a dozen different distractions. His old enemy Rinderpest duly appeared on the Tanganyika border with terrifying implications for the Union. C. E. Gray, the Union's Veterinary Officer, went at once to Nyasaland with two veterinary surgeons to combat it with serum provided from stock by Onderstepoort. Slowly the effective production and research staff were being diminished. A lay assistant S. Howell was killed on active service. Then Frank Veglia, invaluable parasitologist, was compelled to go on leave through urgent private affairs, having every intention of

209 returning. The war was going ill for Italy, culminating in the rout at Caporetto on the 24th October 1917 and Veglia, conscripted into the forces, was lost to Theiler indefinitely. Worse followed in the deterioration in health of one of his best research assistants, W. H. Andrews who finally broke down in October 1917 and was sent to England for six months sick leave extended to eight.

210 As much as manpower declined and research was curtailed, demand increased. The usual clamour arose in Parliament with Danie Wessels bemoaning the ravages of Lamziekte and Abe Bailey again 'gingering up the Government'. Theiler's Vote, as always, was approved and at least his buildings at Armoedsvlakte and Onderstepoort, including the Postmortem Hall, could now go up; but there was little help in his fields of research. He had found a means of avoiding post-inoculation Staggers in horses by resting them for several weeks and reopened his immunisation service with that proviso. 'There was a very hearty response from the farmers in reply to my circular containing these conditions and I was unable to accommodate at the Laboratory all the horses that were offered for inoculation', he reported. A roster was opened and all proceeded successfully until a horse brought Strangles with it and infected all its fellow candidates. Theiler temporarily closed the service. Horse Sickness, his longest scourge, still belaboured him. Meanwhile progress was being made with the routine cattle diseases, particularly those due to suspected plant-poisoning. The new refrigerated ships opened untold opportunities to South African cattlemen and by the middle of 1917, export of meat to England had begun. Theiler's rôle in his country's economic development was heavily underlined.

212 It sat now too heavily on his shoulders. He had had no leave since 1912. His work was overpoweringly demanding and though he gave no sign, he was a tired and dispirited man. 'The enormous expansion of my job has spoilt my love of it', he wrote Alfred on the 15th July 1917, disclosing his intention soon to retire on pension and to capitalise the education of his children by finding a new appointment for four or five years until they were on their way and he could settle in Switzerland. Immediately at hand was the Faculty of Agriculture of the Transvaal University College (elevated to independent university status only in 1930) which had been inaugurated on the 17th January 1917. Its supporters in a land struggling for educational advancement and now deprived even of overseas experts to assist, regarded him with particular interest. The ideal of an Agricultural Faculty with associated Veterinary College had first been expounded by F. B. Smith in his report to Milner in 1902 and sedulously propagated by him subsequently. It was no coincidence that he should return to it at length in his Annual Report for 1917/18. Pretoria looked to Theiler but there were other eyes upon him. 'Something is in progress', he wrote guardedly, not wishing to reveal that pourparlers had been initiated by the Victoria College (elevated a few months later to the University of Stellenbosch) at the Cape, 'It still needs the agreement of the Government which I may not leave in the lurch.'

214 With the East African campaign virtually concluded, Montgomery now became available to assume appointment as Assistant Director of Veterinary Research. Correspondence passed between him and the Agriculture Department in the course of which Montgomery made a volte face and announced that he was not prepared to accept appointment as Assistant Director but only as Director. It was an unhappy time for Theiler. Alfred had written him of the death of his sister Marie, 'the comrade of my youth', and he was deeply distressed. It smote him that he had not been able to return to Switzerland in time to see her. Simultaneously the Department of Defence delivered to him the wreck of his son after a final three weeks' hospitalisation in Durban, with the endorsement 'unfit for further service'. Hans, his father noted with pride, had served for a year and 201 days. Now he was perpetually incapacitated by Malaria and Tick Fever but undaunted in his resolve to go to London to qualify at the Royal College of Veterinary Surgeons. Theiler, trying to dissuade him by advising concentration on the medical

217 aspect, had no alternative but to support him, characteristically organising his future by planning his first long vacation as a visit to Alfred to learn French. In his own trouble, precipitated by Montgomery's ultimatum, his hand was forced. If he did not create a vacancy to accommodate him by retiring from his post, the country would lose a valuable man and there was no other in prospect to continue the work at Onderstepoort. To a large extent, his decision was made for him. At the end of September 1917, he informed F. B. Smith of his intention to retire at the end of the year. He asked that Montgomery be appointed immediately and soon assume duty so that he might induct him in his work. Smith took action accordingly. Quickly the news seeped out.

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218 In common with most visionaries, Theiler gave the impression of organising everybody in accordance with ends which he clearly saw but which were not necessarily acceptable to those concerned. Oblivious of fallible human nature and physical frailty, he saw only the rightness of his purpose and was uncomprehending of anyone who didn't. By them he was therefore considered domineering, even a bully. The tale was recounted that when he fetched Andrews from Pretoria station in 1910, he employed the 10-mile drive to Onderstepoort in informing him of his duties which would take every hour of every day, concluding with '... and in your spare time, you will study snake-bite venom'.

219 By the same token, believing implicitly in the multi-disciplinary approach to problems, Theiler expected its varied exponents to be equally interested in his, and particularly the activities of Onderstepoort. (He was not disappointed in his new friend, now Major A. J. Orenstein serving in the Defence Force Medical Services who took the liveliest interest in all his affairs.) The meetings of the Biological Society palely served the same purpose by comparison with the active participation in each other's disciplines which he envisaged for his colleagues and their staffs. On the 3rd August 1917, he staged an occasion which he hoped would be constantly repeated. Led by Pole Evans, the entire staff of the Botany Division came in cars on a Sunday morning to the Theiler mansion where Emma had prepared tea. The customary jollity of the two heads was emulated by their respective assistants who willy nilly were then exposed to more serious claims on their attention before the rest of the day could be enjoyed. They were all directed to the lecture room in the main building where Theiler delivered himself of a peroration on the work of the Veterinary Research Division illustrated by slides with special reference to those aspects in which it depended on the coöperation of the Botany Division. The audience, duly released to tennis in the afternoon, promised to 'retaliate'. This heavy-handed mission-mongering had somewhat afflicted Pole Evans' staff which included as Keeper of the Herbarium Sydney M. Stent, the versatile niece of Vere Stent of the *Pretoria News* to whose columns she contributed.

220 The amiable occasion had been a relief to Theiler at a sad and troubled time, accentuated by the dilemma developing from Montgomery's attitude. Hans had relapsed into Malaria attacks and blood tests showed the 'tertiary parasites'. Early in September, he left for Cape Town to spend a week with Gertrud and Max (who had passed their mid-year tests) before embarking for England. Until the end, his father had tried to dissuade him. Now Theiler and Pole Evans set off again for the worst Lamziekte region, travelling south from Mafeking to Vryburg. They heard on the way that cattle grazing on brak (saline) soil were less liable to Lamziekte and a new field of enquiry opened. Theiler asked for soil samples for testing. He confided his troubles to Butler, now an old friend. If an Assistant Director had been appointed, he would have left Onderstepoort and come to live at Armoedsvlakte until the Lamziekte pro-

blem were solved. Now he had made up his mind to retire for the sake of Montgomery and was negotiating with Stellenbosch and Pretoria for academic appointment. Somehow he must complete his Fifth and Sixth Reports reflecting the Institute's important work during 1916/17 before he left at the end of the year. Butler was aghast and lent his ear to all the rumours that would be current when the event became known at the end of September. Theiler himself admitted to Alfred – 'I hope I shall never regret my decision though the giving up of my appointment and the going away from Onderstepoort will still fall a little heavily on me.' He had decided to accept appointment as Professor of Animal Health et al in the Agricultural Faculty of the University of Stellenbosch

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222 The news broke early in October. 'To South Africans, it came like a bolt from the blue', he wrote, 'particularly to the Pretoria people who wanted to keep me for the Pretoria University College.' Reaction was sharp and significant. It was supposed that Theiler had finally failed to 'get on' with F. B. Smith and was being 'axed' like Burt-Davy (who had in fact resigned), the Free State Director of Agriculture, Palmer and others. It was said that other officials were far more expendable. The Agricultural Societies and Unions were urged to take action 'to save Sir Arnold for the country'. Butler, knowing more than most, thundered on about Sir Arnold sacrificing himself for the sake of retaining Montgomery.

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Influential citizens called on the Mayor of Pretoria, C. W. Giovanetti (later a member of Parliament) to convene a meeting to frame resolutions to induce Sir Arnold to remain in the Transvaal. F. T. Nicholson, still secretary of the Transvaal Agricultural Union, summoned his Executive Committee to empower him to take action. Other agricultural organisations including the closely-implicated Vryburg Farmers, framed hotly-phrased resolutions. The whole country buzzed.

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Sir Arnold, relieved and relaxed after coming to his decision and perhaps enjoying the brouhaha, was diverting himself at the 'retaliatory' party given on the 13th October by the Botany Division in Vredehuis below the Union Building. Emma and he in evening dress were saluted by a welcoming chorus sung by the staff. Pole Evans in scarlet socks to match his hair, followed precedent and delivered a short lecture on Plant Geography with slides and the evening deteriorated into gaiety. There were songs and dances culminating in a dramatic sketch 'Who is to win Him?' written by Sydney Stent satirising Pole Evans' continuing bachelor state in which Mary Holder (of the staff but later a well-known actress) played the lead. Theiler guffawed so loudly that the voices of players were inaudible. Supper prepared by the culinary and botanical expert (also a notable singer), Dr Ethel Doidge followed. Pole Evans made a sad speech, referring to the shock of Sir Arnold's resignation and hoping he would be retained in some capacity having relation to the Botany Division. Theiler replied non-committally, saying his plans for the future were still undecided. J. A. L. Findlay, a prominent Pretoria citizen, hoped Sir Arnold would join the legislature.

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Two days later, the Mayor presided in his Parlour at 'an extremely representative gathering of citizens whose unanimous feeling was that a post be created for Sir Arnold Theiler at the Transvaal University College; but in view of the fact that detailed proposals would shortly be submitted to the Government by the College authorities themselves, it was decided to word a resolution in general terms'. Unprecedentedly proposed by Sir John Wessels, judge of the Transvaal Supreme Court, chairman of the Council of the T.U.C. and a member of the Council of the University of the Cape of Good Hope; seconded by Johann Rissik, Administrator of the Transvaal; and supported by Eddie Rooth, lawyer and local member of Parliament, the resolution was forthwith sent to the Prime Minister, all members of the Government and to Sir Arnold himself. It read:

'That this meeting of representative citizens of Pretoria, appreciating as it does the invaluable

services rendered to the country by Sir Arnold Theiler and the honour it has been to the Capital to be associated with scientific work of worldwide reputation and significance, expresses the earnest hope that the connection of so many years will not be broken but that Sir Arnold Theiler will see fit to complete his life's work amongst the conditions and surroundings which gave it birth.'

228 Botha received other such representations. The Transvaal Agricultural Union asked for 'your influence in retaining in the Transvaal Province the services of Sir Arnold Theiler. His valuable life work has been accomplished in our midst, the Transvaal has become his home and his departure would mean the severance of associations which make for the general good and the progress of the farming community of the Transvaal whose confidence in and respect for Sir Arnold are of the highest character.' The Prime Minister, van Heerden as Minister of Agriculture, F. B. Smith, Members of Parliament and other public figures were approached from all sides. 229 They were saved the earnest plea of Theiler's Vryburg aficionados that he be induced to withdraw his resignation, failing which a public enquiry be held. Hearing of the resolution to be moved at their meeting on the 29th October, Theiler telegraphed Viljoen to attend and to tell them the truth - he was retiring so that the country should not lose the services of Montgomery. The farmers were not consoled. They asked him to attend their next meeting. He replied that as he did now know when Montgomery would arrive, he could not accept.

While the buzz persisted, Theiler (still covertly hoping for some change in the situation) addressed himself to the herculean task of making his multi-faceted Institute intelligible to Montgomery and preparing his Reports for publication. It was difficult to push the enormity of his decision into the background of his mind and the emotional aspect of his tough constitution began to supervene. Further to distress a nature now taut with tension and strain, Onderstepoort was put on show at an event which Theiler himself had devised in the best spirit of his calling.

The splendid Postmortem Hall, palatial in its equipment and dimension, was at last complete and ceremony was organised to celebrate its opening. Theiler made it a grand occasion, inviting members of the Pretoria branches of the British Medical Association and South African Biological Society, the Transvaal Veterinary Medical Association and a host of notabilities including A. Macdonald, director of the British East Africa Agricultural Department; Colonel J. Irvine Smith of Johannesburg; the directors of the Transvaal Museum and Pretoria Zoo, Drs Breyer and Haagner; military officers and scientists, some with their wives. His purpose was to parade his Institute's work, heedless of the pain which the thought of his imminent withdrawal would bring. In concert with Emma and his men, he had organised it down to the last detail.

230 By comparison with its predecessors and ever after, the Postmortem Hall was a remarkable structure greatly redounding to the credit of Cleland and the Public Works Department during time of war. High, airy and full of light, it easily accommodated Theiler's guests. He told them that in the 9 years of his Institute's operation, 9,649 postmortems had been performed on 5,339 horses, mules and donkeys, 1,048 cattle, 3,030 sheep and 231 pigs and ostriches, or about 3 a day. He used as his theme Pernicious Anaemia in Horses on which he and Kehoe had worked in 1915, publishing a definitive paper in his Fifth and Sixth Reports. A horse which had died that morning of the disease lay on the autopsy table and to the horror of some of the guests, two assistants dissected it while Theiler described the difficulties of investigation - a causative ultra-visible virus beyond the magnification of any microscope and passing through the finest porcelain filter set to trap it. Organ by organ, he demonstrated its effect on the horse while Gilles de Kock displayed its anatomy on two models in the hall. Elsewhere Kehoe was showing lantern slides of pathological anatomy to another party; Henry Green was conducting tours of the buildings where the secretarial staff led by King and Hinds took other parties; E. M. Robin-

son (who later described the affair as 'almost a State occasion') demonstrated microscopic work; and Theo Meyer showed the marvels of the Photographic Room. A display of Agricultural Department publications on veterinary research and practice was mounted in the foyer.

The outside parties were beaten inside by heavy rain and 'pigeon's egg hail', finding Theiler in the lecture room upstairs speaking on the pathology of South African stock diseases illustrated by colour microscopic slides. It was all very advanced and impressive, indicating an unparalleled regimen and discipline in scientific research – the creation of one man whose example as yet had hardly been followed in the world at large. Between downpours, Theiler took his distinguished guests to tea with Emma at 'The Residency', soon to cease to be their home.

231 Two weeks later, Botha sent for him. With Smuts in England and only F. B. Smith (also retiring) and van Heerden to consult, he had decided to deal with the troublesome luminary of his Agriculture Department. Theiler, crushed like Smith by the weight of the war and its enormous demands and difficulties which had eliminated all chance of recuperative leave, was now in a highly emotional state. Botha expressed grief at his decision and Theiler blurted out that he wanted to go home. With an almost Freudian lust for 'the motherland', he wanted to leave. He could hardly explain himself even to Alfred – 'the reasons for my decision are for the most part psychological and are not rooted in the least in current events. Since the outbreak of the War, I have had a great longing for the old home. I always felt I should be there. The more the time went, the more I felt I was a stranger here and that I could not fully and completely accustom myself to local conditions. In short, I felt at times forsaken and unhappy and, be it understood, not because I was in any way or form put upon. I felt that I was not among like people. I felt a certain want which was not filled by all the friendliness and forthcomingness of my friends and acquaintances. In short, I felt that as a true Swiss, I belonged to the Swiss.' In later times, a psychiatrist might have told him that he was rationalising feelings of rejection and insufficient appreciation, even disguising folie de grandeur, and that all he really needed was a long holiday.

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233 Botha, in his infinite patience with humanity, listened to it and made his own deductions. The Transvaal was deeply hurt that Theiler was leaving it to accept appointment at the Cape. The old animus between north and south remained active, stoked at this time by jealousy in university development. The Transvaal felt ignored and disparaged, left on its own to struggle toward academic development. Theiler would have been a powerful pawn in the game but here he was, childishly saying that he wanted to go home but in fact was going to the University of Stellenbosch to pay for the education of his children. Somewhere there was affronted pride. Botha offered him vaguely a new appointment; but Theiler repeated his ultimate desire to 'go home'. In a difficult situation where money seemed cardinal, Botha negotiated a new agreement with his obstreperous servant which would obviate the accusation that the Prime Minister 'had let Theiler go'. It was altogether in his servant's favour.

234 So far from leaving at the end of 1917, he would remain Director of Veterinary Research until the 31st March 1918 or such time as Montgomery were successfully installed as Director. He would then be employed on full salary for six months (at Cape Town to be near his children or wherever suited him) to prepare his Reports for printing and put his Institute's records in order, all being the property of the Government (no doubt cannily insisted by Smith). Six months leave on full pay would then be allowed whereafter he would be granted an honorarium of £3,000 which Lady Theiler would inherit if he died interveningly. Theiler calculated that these arrangements plus his pension of £800 per annum which would fall due on his 55th birthday (the £3,000 bonus to serve as a salary during the intervening years) would meet his financial needs and that the Stellenbosch appointment could lapse. The Cape and the Transvaal would gladly wait for him. He went home and telegraphed Veterinary Surgeon Jones in Vryburg to tell his farmer friends that he would not be leaving until the end of March. Smith occupied

235 himself with persuading the Secretary for Finance to authorise the expenditure involved in the Prime Minister's proposals. On the 7th December 1917, he confirmed them in a letter to Theiler. Botha presently left for the Parliamentary session in Cape Town.

236 Theiler justifiably was a tired 'old man' whose zest for work now lurked in his mind in the form of plans for a future in Switzerland. His plans were always all-embracing, regardless of the wishes of those concerned. He would realise a lifelong ambition and write a definitive work on Stock Diseases in South Africa (or 'Colonial Animal Health' as he sometimes called it) and then devote himself to parasitology, particularly Nematoda especially (in horses) in which Emma would be his assistant and the two girls perhaps help. He tried to make these and other dreams (especially of Oriental travel) dispel the horror of leaving Onderstepoort but as it ate into his consciousness, his composure declined. Trying though the past, the present was worse and his over-strained stamina and morale could hardly sustain it.

237 Montgomery and his wife arrived on the 16th January 1918. Neither fish, flesh nor fowl till Theiler ceased to be Director, Montgomery was whipped off within three days on the first of a series of inspection tours which took them through the Cape. Theiler called on the Prime Minister in his Parliamentary office in Cape Town. Botha was nettled by the strong pressure 'to retain Theiler's services for the country' and by the reproaches that he had not done his utmost to persuade him to stay. He understood Theiler's desire to go back to being a Swiss but neither could make it public. They came to an agreement by which 'if I should again think of returning to South Africa, my services would at first be at the disposal of the Government and that I should again be appointed to a position which in status and salary would not be less than the present. I have therefore not burnt all my boats.' Meanwhile wishful thinking flourished in the Press and various newspapers published announcements that Theiler's services were being retained. 238 Butler in his *Northern News* openly stated in a leader that rumours long current affirmed that 'Sir Arnold Theiler is going to take up his residence at Armoedsvlakte shortly to devote his whole time to investigating Lamziekte'. Defending his friend's failure to find an immediate solution, he made an unusual point - 'Scientists the world over have been trying for centuries to solve the cancer problem but so far without success.'

240 Although he admitted that he had 'a consuming need for a change and once the Reports are finished, I must have a change of air in every direction', Theiler made insufficient allowance for the toll on his mental and emotional resources. He confessed that 'it goes hardly with me to leave Onderstepoort'. The strain of inducting Montgomery was heavy. There were also his private affairs. Gertrud and Max, on vacation from Cape Town, joined Margaret in helping Emma plan the dismantling of their home. Some of their things would be sold, some stored against future disposal, some 'bartered'. The children - Margaret was going to the Cape Town University as a 'listener' - would look for suitable lodgings for their parents in 'the mother city' when they returned. Arnold was concerned with what he considered his private possessions such as the specimens of Nematoda collected on his Institute's premises. His local investments were also a problem. As stress mounted, he became irritable. Innocuous occasion detonated an explosion symptomatic of his state of mind.

241 At its annual general meeting at the end of January 1918, the Vryburg Farmers Association (now including Dutch-speaking cattlemen) elected a new president, P. H. de Kock, a lawyer who also farmed. In his presidential address, he hazarded the view that the Lamziekte problem was not being properly approached. If the disease were a toxic poison, he said, they did not want a veterinary surgeon (Viljoen) to find it but a chemist. They ought to have a first-class chemist and botanist and it would do no harm if some of the experts became cattle-herds which would assist them in finding the cause of the disease.

242 Theiler conceived the view as a direct insult to himself and his staff, particularly Henry Green

243 and Mogg, and lost all self-control. In a sarcastic ill-tempered letter in the worst taste (possibly drafted by King) running to 1,000 words which Butler reprinted in full, he vented his rage in a personal attack on de Kock. 'There is an ancient adage', he concluded, 'concerning the shoemaker and his last. We do not suggest that it applies to the lawyer and his brief. Doubtless Lamziekte will in time yield its secret to patient experimental enquiry but if the forensic insight of our critic can guide us in a short cut to the solution of a problem which has so far baffled every veterinary surgeon and stock-owner in South Africa, which has so far baffled the Government botanist and chemists, entomologists and parasitologists, and which baffled the consulting pathologist (Hedinger) recently brought from Europe especially to investigate Lamziekte, he will earn the gratitude of the country, of the harassed scientific workers, of the Vryburg Farmers Association and of your sincerely - A. THEILER.' De Kock replied temperately and with dignity. His colleagues, shocked by Theiler's letter, supported him and formally resolved that his remarks had not reflected on Sir Arnold's work. But there remained in Theiler's mind the fateful phrase - 'it would do no harm if some of the experts became cattle-herds'.

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Of the little time left, much was spent in travelling with Montgomery to inspect Allerton, Graham's Town and Armoedsvlakte (where Theiler did not make his presence known and, lamented Butler, deprived the farmers of taking leave of him). The burden of organising their departure fell on Emma while Arnold made fanciful plans of taking her on a voyage to the East when he had completed his Reports, and occupying her in Switzerland in his work on Nematoda which he longed to attack.

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The emotional atmosphere being generated at Onderstepoort as the final day approached was reflected elsewhere, even in Parliament where, steadfastly hewing to his task of curbing Government expenditure, J. W. Jagger took exception in Committee of Supply to the amounts of £1,500 for 6 months' employment of Sir Arnold Theiler and £3,000 for a bonus. Botha let the debate run on. Sir Abe Bailey wanted to know who would replace Theiler. Van Heerden replied, supporting the bonus and emphasising what he had done for the country, particularly in his new remedy for wireworm in sheep. Jagger was not appeased. He formally moved the deletion of the £3,000 bonus from the Estimates - it was Theiler's business to discover cures and he was paid for that purpose. Botha was at once on his feet - 'I hope', he said, 'that nobody seconds the amendment' and launched into an historical panegyric - from Transvaal Republican days to the present - on Theiler's services, straightforwardness, sacrifice of lucrative overseas offers of employment, and success with many diseases. Members took fright. Sir Thomas Smartt wanted to know why Theiler was going. The Pretoria North and South members (L. Joubert and D. W. Drew) joined by Germiston's van der Walt, lauded him extravagantly. A heated atmosphere developed. Abashed by the Prime Minister's and other fervour, Jagger grudgingly stated that while he held that an extremely bad precedent was being set up, he would in all the circumstances withdraw his amendment. The House rejoiced. The debate was given wide prominence in all major newspapers in both languages with headlines:

FIGHTING THE PLAGUES OF SOUTH AFRICA
THE SERVICES OF SIR ARNOLD THEILER
THE ENCOURAGEMENT OF SCIENCE
SIR ARNOLD THEILER EULOGISED
SERVICES OF SIR A. THEILER
JAGGER WITHDRAWS AN AMENDMENT
etc. etc.

all very satisfying to Theiler's wounded pride but perilously stimulating to his emotions.

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He returned to Pretoria after his last exhausting tour with Montgomery and King – Port Elizabeth, Graham's Town, Bloemfontein, Vryburg – on the 8th April 1918, less than a week before Emma and he would take the train to Cape Town. The susurrations which for months had been heard among his friends now became articulate in a series of moving ceremonies. The South African Biological Society had decided to pay him its highest tribute at an occasion staged on the lawns of the Botany Division on the 11th April attended by Mrs J. C. Smuts, Mr and Mrs Montgomery, numerous departmental officials and Pretoria pioneers. The president, A. J. T. Jansen was, with Theiler, one of the founder members of the parent Transvaal Society in 1908. He explained how the award of their medal had evolved from the widow of Robert Scott asking that their contribution to the Memorial Fund be retained in South Africa to commemorate him in some form. Janse called on Pole Evans as chairman of the Scott Memorial Committee to make the first award to Sir Arnold Theiler which he did very formally with particular reference to Botany and Biology. No one, he said, 'could more fittingly be the first recipient of the Scott Medal which I now present to you in recognition of your valuable services to Veterinary Science and to our Society'.

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Forewarned, Theiler was nonetheless deeply moved. 'The Scott Memorial Medal for Science was founded in England', he exclaimed, 'and awarded to me! I am not an Englishman, nor a South African. I am a foreigner; but Science knows no boundaries, no countries, nothing but Science alone . . . Reading Livingstone's Travels made me long to live in this wonderful country and the dreams of my youth have been fulfilled and I have had complete satisfaction where my science has been concerned.' He thanked everybody with whom he had worked and in a sentimental gesture he presented to the Union Herbarium the collection of Swiss plants that he had made as a schoolboy in the neighbourhood of Frick, Aarau, Berne and the Bernese Oberland and Foralps. Mrs Smuts, herself a child of nature but wise with inside knowledge of the situation, thanked him with engaging simplicity, firstly for the Herbarium and then for his services. 'Now I am speaking for the farming community, myself being a farmer's daughter and a farmer's wife. I don't think we have always appreciated all Dr Theiler has done as we farmers usually think we know everything better than anyone else. I think Sir Arnold has often felt himself that we have not been very grateful. But we do appreciate what he has done and we do know what he has done for South Africa, how many cures he has found for diseases in cattle and how he has saved the Government the loss of thousands of pounds. And we hope that when he severs his connection with the Government in this, he will still go on with his research and help the Government in that way. And I feel sure that after living so long in Pretoria, he will never be happy anywhere else, not even at the Cape, and will spend the rest of his life among us.' Instinctively she had put her finger on the dichotomy that had racked the man all his life.

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He touched on it a day or two later when the Transvaal University College, a Dutch-speaking institution, assembled its staff and students to hear him lecture on his career. He ranged over his association with Kruger and Leyds and his participation in the Boer War. His audience would not lightly forget, it was reported, how he said quite simply – 'Ik deed mijn plicht jegens mijn aangenomen vaderland' (I did my duty toward my adopted fatherland). He did not continue the theme of doing his duty under its British rulers. In truth, Science was his God; but, like everyone who had set foot on the sub-continent, his heart remained in Africa.

Saturday the 13th April was the Theiler's last day at Onderstepoort and Pretoria. It demanded all their fortitude. The whole staff assembled in the Postmortem Hall and the senior research officer, James Walker stepped forward to speak on behalf of the scientific members. He was succinct but moving, hoping that the Institute would always be a worthy monument to its founder who had trained them all – they would maintain 'the Theilerian tradition'. Then he presented a view of the main building from a photograph taken by Theo Meyer, etched on gold

252 by a local artist Decker for Mappin & Webb and mounted on mahogany. Theiler took it wordlessly. Then Gilles de Kock advanced to represent the Dutch-speaking research workers, couching his praise in the taal in warmer, more appreciative terms in respect of the young Afrikaner veterinary surgeons and students who had benefitted and of the country and its people whose development had been promoted. Our folk are stubborn and stiff-necked, he said, but in the distant districts, the farmers talk of 'daardie ou kêrel Taylor' (that old chap Taylor) who had converted them with his work, his personality and his drive. To Lady Theiler too, the supporting pillar of the family circle, he offered praise and gratitude. The lay staff were not to be gainsaid and White spoke for them, twitting Theiler for driving his men to the limit. Sir Arnold, he said, had always succeeded in reconciling his interest in the personal welfare of his staff with his exacting demands as Chief, the staff silently conceding that he held place of honour as past master of a difficult art.

253 Theiler replied in the terms expected of him – his men had helped him develop a great Institute from small beginnings. They must support Montgomery. He and Lady Theiler were leaving Pretoria but wherever they went in the world, they would welcome the Onderstepoort men in friendship. He hoped only that they would be as loyal to his successor as they had been to him. He handed the master keys of the Institute to Montgomery and wept. The staff stood glumly and one by one, shook hands in farewell with Arnold and Emma as they circled the hall. As his last gesture, Theiler wrote in the Visitors Book in an unusually large hand:

On the day of my departure from Onderste Poort, I take the opportunity to place on record the loyalty and support shown me by my staffs during my tenure of office of Vet. Research.

God bless South Africa!

Onderstepoort 13 April 1918

A. THEILER

254 That night a great crowd of their friends and official associates assembled on the station platform to bid final farewell to Sir Arnold and Lady Theiler as they left for Cape Town. No one had thought to signalise his departure from Onderstepoort by re-naming it 'The Theiler Institute'.