

RECOGNITION 1907-1909

1 THIS WAS THE TIME the Kindergarten had long been awaiting. Lionel Curtis, Patrick Duncan, Richard Feetham and their colleagues now applied themselves privately to the study of South African political problems in terms of the current climate of 'Closer Union', 'Federation', 'Centralisation' or 'Unification'. They were thought substantially to have influenced the men who might determine the country's future and in turn were influenced by the trends of the times. There was not an Agricultural Union in the sub-continent that did not advocate a Central Research Laboratory for animal and other diseases and when Curtis' 'The Government of South Africa' was published in 1908, it included the recommendation.

2 The tendency of thinking men was toward a future unified in some form; but the present reality was bitterly dissuasive. While Selborne had squabbled with the Colonial Office on the possible outcome of the forthcoming Transvaal election based on a problematic census (compiled under the direction of George Turner), the whole country had sunk deeper into deathly depression. Heavy Government and private retrenchment of staff was imposed. Unemployment escalated. Suicides abounded – some in despair through destitution, others in fear of prosecution for fraud, theft and other charges. Many of all races died of starvation or exhaustion. Smuts who had said in electioneering speeches that destitute servants of the Old Republic then walking the streets would be re-employed if Het Volk were returned, now told starving deputations that he could offer only temporary relief in pick-and-shovel work on roads. Thousands asked him for work in the Government service, he said, but there were no openings. They must go back to the land and help to stop the drain of millions of pounds in imported goods.

3 On the land itself, aid failed. The Cape Government reduced its grants to Agricultural Societies from £13,000 in 1906/07 to £3,000 in 1907/08. When the Cape Central Farmers Association asked for Refrigeration Trucks, the Government replied – no funds available; for imported Stud Stock – no funds; for more Veterinary Surgeons – no money; and so on. The ranks of the Veterinary Medical Associations throughout the country thinned as, unpaid by their clients, their members failed to find the small annual subscription. The longest drought in history produced desert conditions and where verdure appeared, the locusts ate it. For trifling jobs in any capacity, hundreds of men applied. Ruin seemed endless. Only the natives profited by calamity by roasting and eating the locusts. A year later, Botha would say – 'We have struggled through a depression unprecedented in the history of this sub-continent but once we have accomplished this great feat, we shall get fresh courage . . .' The feat took long to accomplish and the tottering economy gave witness to the force of man-made disaster.

4 As if vengeful of the manipulative progress of Science, Nature struck back in a dozen unmanageable forms. Droughts and locusts were commonplace though unusually severe in 1907 which also marked the worst season for Horse Sickness. In Pretoria (where a 'galloping ambulance' was sent to urgent cases), horses died in scores and the Municipal Tramways were forced to limit their services to half-hour intervals. In Natal, using Theiler's serum, Woollatt lost 3 mules out of 800 immunised. Watkins-Pitchford, like Theiler, struggled to find a formula applicable to horses. It was suggested in the Transvaal Parliament that the South African Constabulary be mounted on mules and Botha replied that the experiment was already being tried. East Coast Fever hovered on the border while ravaging Natal and far to the west in the Northern Cape, the Vryburg Farmers Association became increasingly apprehensive that it would travel across the Transvaal and provide the final fatal factor in their stock-raising industry. Lamziekte,

long the principal scourge of Bechuanaland, was now rendering the country unfit for cattle-raising.

Hutcheon had engaged this disease shortly after his arrival at the Cape in 1880. Despite continuous study and observation, it had remained inscrutable and, apart from the beneficial administration of bone-meal and dosing with Stockholm Tar, no means had been found of preventing or curing it. It was the most enigmatic of diseases – neither contagious nor infectious, neither caused by insects nor toxic plants nor contaminated water, neither regional nor epizootic though the Northern Cape was particularly prone. A large body of information had been accumulated, some from native and some from qualified veterinary sources; but nothing useful could be deduced from it.

13 After the administrative convulsion in the Cape Agricultural Department in 1905 when Edington resigned, Hutcheon was appointed Acting Director of Agriculture from the 1st January 1906 and confirmed in the post in July when his previous assistant, J. D. Borthwick became the head of the Cape Veterinary Services and W. Robertson the Director of the Veterinary Research Laboratory at Graham's Town. In the meantime, Thomas Bowhill, continuing
14 Edington's bacteriological work at Graham's Town, had been directed to examine Lamziekte (historically endemic in the Eastern Cape) and had pronounced that it was a form of poisoning caused by *Pasteurella bovis*, a well known syndrome. Many scoffed at his hypothesis including Hutcheon who, in the light of continuous outcries from stock farmers and members of Parliament owing to the increasing heavy mortality determined to make a systematic attack on the disease. He sent one of his best veterinarians, J. Spreull to Koopmansfontein in an afflicted area near Kimberley to make a series of lengthy and heavily-controlled experiments to which the local ranchers gladly contributed animals.

Spreull began his work in October 1906 in specially-fenced camps with crushes for the individual administration of bone-meal, Stockholm Tar, ash and other specifics. Hutcheon visited the Station in November. Both were fully familiar with the strange spectacle of cattle scavenging even in native kraals and huts for putrefying carcasses of veld and other animals, live tortoises, old bones, stones, manure, tins, even the horns of their fellows, and refuse generally as a sign of phosphate deficiency which diminished with dosage of bone-meal. But neither of them could identify the cause of the various forms of the disease – Lamziekte, Gall-Sickness, Stijfziekte, etc – which crippled animals, most of which expired eventually with agonising groans.

15 Hutcheon returned to the Cape confident that Spreull's carefully mounted experiments of at least a year's duration would produce reliable results and give authoritative judgment on the hypothesis which Bowhill, an original and assertive character, now stated as fact and resigned
16 in pique when it was not accepted. If there were a micro-organism, it might be *Pasteurella bovis* or something else. In the then economic situation of the whole country, some definitive conclusion was essential to the reopening of vast tracts of land to stock-breeding. During the Rinderpest, Hutcheon had travelled over all of it, often in the company of J. F. Soga, South Africa's first qualified veterinary surgeon who at that moment, broken by his earlier exertions, died in East London of an alleged over-dose of laudanum on the 6th December 1906. Hutcheon publicly mourned a worthy colleague and foundation member of the Cape Veterinary Medical Association. Five months later he himself was dead.

17 From the Cape to the Zambesi, the whole sub-continent grieved. Hutcheon had been the pioneer of veterinary science and practice and a father-figure to all who followed him. His meticulous observations and descriptions of known and unknown animals diseases, often illustrated by his wife, his tireless work in the field, his urbane and persuasive manner endearing him to farmers of all races, his palpable integrity and love of his metier had established standards in a novel field which his assistants and colleagues strove to emulate. The devotion to his duty

18 entailing strenuous outdoor activity, microscopic and other laboratory work, and endless writing, mostly at night, all barely leavened by church, club and Scottish allegiances, finally killed him. In 1902 the Royal College of Veterinary Surgeons had elected him an Honorary Associate – its highest honour. Now a host of Members of Parliament and high civil servants saw him to his grave where a mound of wreaths topped by one from the Cabinet already awaited him. The force of the blow was reflected in the proceedings of every farmers' organisation throughout the land. A friend and leader had gone. Funds were opened to provide for his widow and two daughters left 'in straitened circumstances' through niggardly pension (£100 per annum). Monuments and bursaries were contemplated. F. B. Smith in the Transvaal circulated a plea for contributions headed by Merriman and all Colonial Directors and/or Secretaries for Agriculture. Owing to the depression, the results was painfully poor.

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20 In Johannesburg in August 1905, Bruce had said – 'It is to Mr Hutcheon that South Africa owes its knowledge of many stock diseases. For the last 22 years, he had laboured with the utmost earnestness in Cape Colony, often under trying conditions, and his description of the various diseases formed the basis of all the modern work done on the subject.' Theiler had never failed to acknowledge it from his earliest study of the Volksraad's copies of Hutcheon's Annual Reports and articles in the *Cape Agricultural Journal* to the end of his days. 'His name', he said, addressing the Third Inter-Colonial Agricultural Congress in September 1907, 'will be handed down to posterity; but I am afraid those living have hardly rendered him the thanks he was entitled to by his imperishable work. We will always look upon him as the pioneer of Veterinary Science in South Africa who, by his hard work and splendid services, has created an ideal for the members of his profession to emulate.' It was no perfunctory praise. Until his own death, Theiler would begin a paper on his latest research with reference to Hutcheon's original work describing the disease in question.

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22 All was already changing – terminology, techniques, attack. The germ, bacillus, bacterium, microbe, micro-organism, trypanosome, piroplasma, even protozoa were fading in favour of the 'virus' and various 'strains' with novel classifications, the 'antigen' and suchlike. The microscope in the hands of bacteriologists and bio-chemists was no longer focussed only on the structure and activity of causative organisms but on relative viscosities, surface tensions, volumes of blood corpuscles, polyvalent potentialities and other ancillary features. Of his work with Theiler in 1907, Walter Frei recorded – 'Many nights we were studying physical and chemical sciences together and of course immunological problems but always also pathological anatomy and physiology of actual disease.' They were following the ignis fatuus of a polyvalent serum that would overcome haemolysis in horses and abolish the dreaded seasonal Sickness. It was now obvious to Theiler that the new multi-disciplined approach demanded by investigation into animal disease was almost beyond his reach. When the new laboratory was ready, it would be easier.

23 Work had begun in June 1907 on the massive main building of the huge complex. It would house many laboratories, postmortem facilities and main services. A family of smaller installations would later sprout on the lush grassveld and would continue sprouting as the Institute developed. Jameson who had put teeth into Smith's original outrageous proposals, would never see it. He had been killed when the train taking him to Lourenço Marques in March on his way to Australia had been derailed in the night. (His funeral, attended by Selborne, Botha and his Cabinet, and notabilities of all persuasions, was the biggest seen in Pretoria other than Kruger's.)
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25 Nor would George Turner, also a fervent proponent who in October left for final retirement in

England. Theiler attended a farewell dinner at the Leper Asylum where the faithful J. W. Phillips spoke at length on Turner's 12½ years in the service of the Cape and Transvaal Governments as Medical Officer of Health and of his unswerving devotion to the lepers among whom he lived, giving them all his free time and conducting important research into Leprosy. Theiler would miss his friend and supporter but they would maintain communication. Now he had new collaborators in the reconstituted Government. Under the Minister of Lands, Johann Rissik and the Minister of Public Works, E. P. Solomon, there was Colonel G. H. Fowke as Director of Public Works and the immovable Charles Murray as Secretary who watched every penny that the Chief Architect, Patrick Eagle spent on the expanding complex. None, instructed from on high, put impediment in Theiler's way.

26 The interim period between Daspoort and Onderstepoort was hard to bear. A gracious mansion would replace the little stone house that Theiler had hardily built in 1898 where Emma still bore the demanding burden of raising and cherishing the rats, mice, guinea-pigs and rabbits used for his experiments. It was too confined for four exceptionally energetic children – Hans aged 13, Margaret 11, Gertrud 10 and the tiny Max 8. They were strictly raised in accordance with their parents' opinionated principles. Prudence dictated that they should sit at the dinner table with all their fingers on the edge until a plate was set before them and speak only when spoken to; but Arnold and Emma's convictions ordained that Natural Science should be their God. A disdain for social convention particularly in clothes and manner early distinguished them. They were naturmenschen from the beginning. Relations with Uncle Alfred had deteriorated. In Switzerland in 1905, Arnold had found his younger brother an ardent Catholic and determined to become a teacher and not a Man of Science. Never taking kindly to being thwarted, Arnold resented the frustration of his plans to make Alfred his resident zoologist and a lamentable coolness developed. For nearly four years, no letters passed between them.

28 As much as he fell out with his family, Theiler fell in with the high and the mighty. He was as familiar with Government House as with Botha's home in Pretoria, at both of which garden parties and receptions were held. Emma, versed in haute couture, dressed for the occasion, garbing her diminutive frame in the feathers and furbelows of the time. Arnold, par contre, dressed specially for every occasion and spent much of his limited salary on an impressive wardrobe varying from frock coat and top hat and full evening dress with white waistcoat and tie, to tweed suits and wide-brimmed trilbys rakishly tilted, tropical whites and helmets, various working clothes, all with collars, shirts, ties, socks and boots to match. He had a strong sense of what was fitting to the status of a Senior Civil Servant and was always dressed in a manner upholding the dignity of his position and of his Government. In later life when neither obtained, he took the habit to the point of foppishness on his own account.

30 Strung like Mahomet's coffin between the heaven of Onderstepoort and the grubby earth of Daspoort (where at least the massive production of Smallpox lymph had ceased in July 1907), Theiler had somehow to deal with ever-increasing obligations. His research staff laboured under deplorable conditions on the tasks that he set them while he himself fulfilled a multiplicity of rôles. Government Veterinary Bacteriologist though he were, it was his duty to coöperate with Gray in framing and issuing 'Veterinary Hygienic Principles applicable to Stock in South Africa' and otherwise practically to assist farmers. He addressed their meetings and received them in number at Daspoort. By choice, he gave his support to the Transvaal Veterinary Medical Association (though he could not attend its meetings in Johannesburg), particularly in regularising the status of veterinary surgeons who sent a deputation to Botha in 1907. Gray's officers throughout the Transvaal were in constant communication with him, sending specimens and smears, reporting new diseases, offering theories on causes and treatments. The farmers were less forthcoming and preferred to talk to him personally.

Since the contretemps with Koch over Rinderpest, Theiler had made irrevocable policy of publishing the results of his investigations even at inconclusive stages and without being able to announce the solution of a disease problem. After Buda-Pesth and the catapulted prominence of 'tropical diseases', he was welcome in any professional journal overseas and contributed articles to M'Fadyean's *Journal of Comparative Pathology and Therapeutics*, the *Journal of Tropical Medical Science*, the *Veterinary Journal*, *Der Tierärztliche Wochenschrift*, *Monatschrift des Praktische Tierheilkunde*, *Revue Generale de Medicine Veterinaire*, Laveran's *Bulletin de la Societ  de Pathologie Exotique*, *Bulletin de l'Institut Pasteur* and others. Every issue of the *Transvaal Agricultural Journal* (which was sent to appropriate institutes overseas) included his work and his annual reports containing the results of his own and his staff's researches became massive volumes. His output, despite distracting conditions, was enormous. In addition, he was called upon to compose lengthy lectures for annual agricultural conferences and, in July 1907, a series of three on Horse Sickness for a Vacation Course at Rhodes University College in Graham's Town attended by distinguished colleagues. Published as a whole in the *Cape Agricultural Journal*, they were Theiler at his best.

The stream of visitors to Daspoort (where his administrative staff had been increased in June by C. F. Hinds and T. Mauchl  as clerks) continued and widened. Its fame, proudly publicised by Selborne, was well known to the Colonial Office and, deplorable though its appearance, it steadily moved toward Theiler's ideal of a Colonial Veterinary College. In May 1907, he received R. E. Montgomery of the Indian Colonial Veterinary Department at Lahore and Dr Allan Kinghorn of the Liverpool School of Tropical Medicine which had commissioned them to investigate fly-borne diseases in Northern Rhodesia. A few weeks later, the Principal Veterinary Officer of British East Africa based at Nairobi, the later Colonel Robert J. Stordy C.B.E., D.S.O., called on Theiler. A darkly-bearded impressive figure like his host and renowned for great resource and scientific knowledge, Stordy found much of interest to see and hear – a facility which he was later to reciprocate.

All these activities and particularly the prophylactic measures against East Coast Fever, the success of the immunisation of mules and the inoculation of sheep against Blue Tongue, were closely watched by Selborne and Botha, both anxious to restore the economy of the country. At its first hurried session in March 1907, the new Transvaal Government had no Estimates of Revenue and Expenditure to consider. When Botha returned from England at the end of May, he had immediately to address himself to the drafts which Smuts, Hull and others had prepared. In August at the Second Session, the Appropriation Bill was discussed and under Agriculture, A. G. Robertson (president-elect of the Transvaal Agricultural Union) delivered a polemic against 'one of the most unpopular departments in the country'. Gray and his men were fiercely attacked but, said Robertson, 'we are to be congratulated on having such a man at the head of affairs as the present bacteriologist'. Others deplored the lack of rapport between the department and the farmers. Botha said nothing. It was his first appearance in the Transvaal Parliament as Premier and Minister of Agriculture. On the 12th August he spoke for the first time – in Dutch – defending his 'new department' and justifying his large Vote. It could produce no 'returns' in the usual sense but was worth every penny. 'If there is one man who has done much to assist the farming population', he said, 'it is certainly Dr Theiler and I hope the time is not far distant when some substantial recognition of his services will be made . . . We have not yet had time to go into the question of salaries but we shall go into it thoroughly and regulate them according to the work the officials perform.' (Theiler's salary continued to remain at £1,200 per annum).

Botha deplored the lack of agriculturally-trained South Africans and the need to import overseas experts, announcing a plan to subsidise six young men yearly to study abroad. He made the speech of a leader and loyal Minister. Members felt contrite and tried to explain the

41 attacks on his department (it was the high-handed actions of the mostly English-speaking Constabulary and veterinary surgeons in enforcing the East Coast Fever regulations that everyone resented). Heavy subsidisation of agriculture was agreed. 'I am glad to say', Theiler recorded in his official report, 'that the late Government decided to move our quarters to a fresh site and the present Government carried on the scheme, voting an additional sum for the purpose.' Little more than the foundations had been dug but Botha had shown a forceful hand and continued to do so.

42 The Parliamentary Session closed on the 20th August and on the 26th, Botha found time to deliver a rousing address (translated by F. T. Nicholson) to the annual conference of the Transvaal Agricultural Union. No politician or administrator could now afford to ignore such bodies throughout the land. Paying tribute to the Union's longstanding drive toward coöperation, Botha harangued his influential audience on the need for greater production. 'At the present time, we are importing articles into the Transvaal at a yearly value of some five or six million pounds. This vast sum of money must be kept within our own borders and in addition, we must export our surplus products. We are sending vast quantities of raw products out of the country to be returned to us as manufactured articles. This is specially true of woollen goods and articles manufactured from leather.' His plea was that 'large areas of land now locked up' be developed for production. 'I expect more from you', he told the Union, 'than I do from the Agricultural Department'. On that day, representatives of destitute unemployed whites begged the Government to provide more relief road-work.

43 Under the chairmanship of Smuts, Theiler addressed the congress on 'Recent Researches into Tropical Diseases', telling his audience of the catalytic effect of the Buda-Pesth Conference in promoting study and the creation of appropriate chairs at Veterinary Colleges, and mentioning the continuing stay at Daspoort of Dr Knuth. He reserved his personal inspirational message for the Third Annual Congress of the Inter-Colonial Agricultural Union (with the Cape's C. G. Lee as president) a month later. Smuts opened it on the 30th September 1907 in his usual rôle of substitute to Botha, a prey to influenza and other ills. Smuts, inclining toward Federation, poured cold water on the cherished project of a Central Research Institute, believing that each Colony should carry on its own work. Dr Theiler, he said, had assured him that all diseases could be stamped out when his new Laboratory came into operation. (During the Conference, 44 all the distinguished delegates visited Daspoort - P. J. du Toit, Cape Secretary for Agriculture; J. D. Borthwick, Hutcheon's veterinary successor; Charles Lounsbury; W. Robertson of Graham's Town; Claude Fuller of Pietermaritzburg; James Butler of Cradock, editor of the *Midland News and Karroo Farmer* and brother of Charles, editor of the *Vryburg Northern News*; and numerous others.)

45 Always speaking to 'loud applause', Theiler delivered a masterly review of 'The Prevention and Eradication of Stock Diseases' in which he asked the farmers to have faith in the scientists whom the Government provided and equipped. He concluded with a purple passage expressing his own convictions - 'The various South African Colonies possess establishments for the purpose of investigation on the lines indicated. The Cape Colony was the first in the field and Natal followed. The Transvaal has in the past supported scientific work to a great extent although till now the buildings were not equal to our needs. However the late Crown Colony Government of this State saw the necessity of enlarging the premises of our Veterinary Bacteriological Laboratory and Responsible Government, being also in keen sympathy with the idea, accorded their hearty support - sanctioning the expenditure of over £50,000 for the purpose - and at the present time, the work is progressing so well that in a few months we hope to take up our abode at Onderstepoort, a few miles outside the Capital. We are building a laboratory sufficiently large, not only for the requirements of this Colony but also for the study of these great problems 47

of South Africa, not only for the present time but also with a view to the requirements of the future. And, being convinced that the salvation of South Africa in eliminating disease will ultimately remain with the sons of the present generation, we have made provision to educate them, hoping that in the near future, the new Government Institution will train our sons in Veterinary Science and they in turn will be sent forth to assist you in the prevention and eradication of all South African stock diseases.'

- 48 Three weeks later, he received a CONFIDENTIAL letter from Government House in Selborne's own exceptionally large hand: 'Dear Dr Theiler - I have reason to know that His Majesty the King is contemplating bestowing on you the honour of Companionship of St Michael and St George in recognition of your great contribution to veterinary science. Let me say what pleasure this news has given me and how abundantly in my opinion you have earned the honour. I wish however to ask you confidentially whether I may assure His Majesty that this honour will be agreeable to you.' Selborne would have secured Botha's assent (or vice versa) before approaching Theiler (Botha himself had accepted only non-official tributes in England) and the way was clear for him to accept. Selborne at once cabled the Colonial Office and when, weeks later, Theiler received the formal intimation of the Earl of Elgin and Kincardine, Secretary of State for the Colonies ('it has given me much satisfaction to submit your name to the King in recognition of your services in the Transvaal and of your distinction in the sphere of practical and useful science which is, I am assured, acknowledged far beyond the borders of the Transvaal itself'), his acceptance was carefully phrased - 'I can assure you that I esteem this honour greatly and look upon it as an encouragement to all who try to do their duty in whatever capacity under the Crown they are employed.'

In the eyes of some, Theiler was now 'verengelsed' ('Englished') in the same sense as Botha who trying to hold himself aloof, had been lionised by the British, their King and parliamentarians. Theiler's adherents paid little regard (he was, after all, the servant of a British Colony); but Botha, leader of Het Volk, was to suffer all his political life from the captivating admiration of the English.

- 52 Selborne's secretary immediately requested a list of Theiler's degrees for gazetting which was cabled to London early in November. The news broke in South Africa on the 6th when King Edward's Birthday Honours were announced. They were singular in the absence of peerages but included a knighthood for the politically-luckless Richard Solomon who that day had presented the Cullinan Diamond to the King on behalf of the Transvaal Government. There were only two South African C.M.G.'s - Theiler and Major Timothy Marcus McInerney, a giant Australian whose cold grey eyes had roved over Daspoort in December 1906 but whose formidable appearance had belied a congenial nature (he was now serving as a Transvaal magistrate).
- 53 The London *Times* in a leading article remarked: 'Among the Companions of the Order of St Michael and St George, we note with pleasure Dr Theiler whose work in eradicating plagues of animals is known to every South African farmer; Major McInerney, fittingly rewarded for his thankless and laborious task as Chairman of the Compensation Commission in the Transvaal; Sir Isidore Spileman and public servants in Australia and Canada.'

It was indeed a remarkable honour for the Swiss veterinary bacteriologist. It was also preposterous. When it came to rewards for contributing to Colonial economy, none deserved it more than Hutcheon who died virtually penniless and unrecognized by any body than the Royal College of Veterinary Surgeons, his own Government proving both ungrateful and ungenerous. As for the Transvaal no one had laboured harder or more loyally and doggedly at achieving 'reconstruction' than the unimposing F. B. Smith whose favoured subordinate had now been distinguished above his head. It was even more preposterous that the King should have honoured not only a foreigner and previous enemy alien but a quasi-belligerent for Theiler had written

55 in his published letters how, as a member (allegedly non-combatant) of the Staatsartillerie, he had drawn Major Wolmarans' attention to an undetected advance of British troops who had then been shelled. With good cause, Watkins-Pitchford, then struggling to keep East Coast Fever at bay with new dipping techniques and still combatting Horse Sickness, burned with indignation. Both as veterinarian and as military officer, he had served his country well, suffering much in Ladysmith and saving Natal from Rinderpest and other diseases. It was not in Selborne's mind to consider such issues. He had plans to make the fullest use of Theiler as one of the most potent forces in stimulating the agricultural economy.

56 Normally he would have invested Theiler with the insignia at Government House in Pretoria but he stage-managed a more effective scene. The award had been warmly welcomed in South Africa and in overseas and local professional journals. Theiler went dutifully about his daily business, perhaps with slight additional authority and swagger as photographs portray but retaining the common touch. The walls of the great building at Onderstepoort were rising and contracts were being allocated for its ancillaries (the well-known Johannesburg firm James Thompson received one in December for £17,295 for 'certain buildings') Theiler's preoccupations were prodigious. The atmospheric character of the times had changed from deep depression to tension and excitement. A new future was opening and the whole public seemed involved in hot controversy as to whether it should be determined by Federation or Union of the Colonies, any man feeling competent to express his views. Of all the inherent issues – race, suffrage, transport, health, communication – the agricultural economy was basic. If he took no part in political discussion, Theiler knew that he was an essential cog in the wheels then beginning to turn.

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58 Selborne made his dramatic *démarche* early in 1908. He had planned a tour of the Eastern Transvaal (which had particularly benefitted from Theiler's East Coast Fever work), beginning with the opening of the first agricultural show at Middelburg since the war. For what he proposed, he persuaded the Minister (Botha) and Secretary for Agriculture (F. B. Smith) attended by Theiler to accompany him and Lady Selborne as far as the dorp which had always been an important farming centre, largely English-speaking. Much of the district came to town on the 5th February when the Mayor H. Laver welcomed the distinguished party, addresses were presented to both leaders and the Show was formally opened by Selborne in the presence of a crowd of about 1,200. A ceremonial luncheon was then held in a large marquee where, replying to the toast of His Majesty the King, Selborne unburdened himself of his usual homily about increasing agricultural production. They had amongst them, he said, one man, not a farmer, who had done more for the farmers than any man he knew in the Transvaal. That was Dr Theiler and he went on about the mules and the East Coast Fever and the Blue Tongue.

Selborne then waxed lyrical about unsuspected virtues in his sovereign. There was no more enthusiastic farmer in the world than King Edward and it did not matter whether the farmer was in the Transvaal or in England – his whole hope and interest was in the welfare of the farmers. His Majesty had followed with intense sympathy the great sufferings and difficulties of the farmers in the Transvaal and also the work that Dr Theiler had done. Turning toward him, Selborne dramatically declaimed – 'King Edward has ordered me, as a mark of his Imperial approval and respect for the work which you have done in the cause of science throughout the world but more especially for the work you have done for the farmers of the Transvaal, to confer upon you the Companionship of the most distinguished Order of St Michael and St George' (of which he himself held the Grand Cross). Theiler stepped forward and Selborne pinned the seven-pointed gold and enamel star on his coat amid loud applause. Its motto was *Auspicium Melioris Aevi* – Augury of a better age.

59 Responding to the toast of the Minister of Agriculture, Botha spoke in wide terms sensitive to current feeling. He plainly advocated Closer Union and the absolute necessity to produce and

export. Drily he remarked – ‘The Government has now built a laboratory for Dr Theiler and from this I expect good results’. He was giving Theiler everything and every man he needed.

60 In January, James Walker who had done promising work as a district veterinary surgeon, joined
61 Walter Frei as Assistant Veterinary Bacteriologist. In August, ‘because of the ravages caused by
internal parasites in domestic stock and the impossibility of this work being thoroughly studied
before’, Theiler caused Dr L. H. Gough, a zoologist trained at Basle, to be transferred tempo-
62 rarily from the Transvaal Museum under the Agricultural Department, to Daspoort. The post
would in due course be gazetted and he still hoped Alfred might fill it. In September, Dr K. F.
63 Meyer of Zurich was appointed Pathologist and in October, a number of lay laboratory assist-
ants including the first woman, Miss L. Basson. King would head a growing clerical staff. As
the great building neared completion, engineers, an electrician, a storekeeper, caretaker, yard
foreman, farrier and others swelled the staff while Parkes who ruled the whole domain of farm
64 and installations, was assisted by W. B. Beeton as farm foreman, Otto Meyer as stockman and
K. Pietersen as gardener. Few outside Theiler’s immediate circle had any concept of the extra-
vagant Palace of Science which was being constructed in the thick yellow grass north of Pre-
toria at a time of excruciating distress and depression.

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The excitement of phenomenal times and activities failed to take Theiler’s feet off the ground. He was always conscious of his lack of academic training in the many sciences which now clamantly demanded his attention if he were to solve the animal disease problems so confidently referred to him. He maintained his interest in the local Ornithological Society (of which he later became president) and in the Pretoria Branch of the South African Association for the Advancement of Science whose annual conference in Durban and Pietermaritzburg in July 1907 he had been unable to attend (Watkins-Pitchford had taken the delegates over his Allerton Laboratory and demonstrated his work on cattle diseases and Horse Sickness). The Association had then recorded receipt from its British colleague of the die and twelve medals struck from it and resolved to award the first ‘South African Medal’ at its next annual meeting in Graham’s Town. Theiler had also retained a close personal interest in the Transvaal Veterinary Medical Association and went with Gray to persuade the Prime Minister to enact an ordinance giving its members status and rights.

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The dynamic presence of Science was heartening but Theiler and others felt that it was compartmentalised and that a common forum should be provided for specialists for their mutual advantage. He himself particularly wished to sit at the feet of zoologists, botanists and chemists. He had talked about it to his colleagues in various fields and on the 9th December 1907, pre-
66 sided over a meeting convened by the entomologist C. W. Howard (who had taken C. B. Simp-
son’s place) at the Old Volksstem Building when it was agreed to form the Transvaal Biological Society. The founders were the botanists J. Burtt-Davy, I. B. Pole Evans and Miss Leendertz; the zoologist Dr J. W. B. Gunning, director of the Transvaal Museum of whose supervisory committee Theiler was a member; the bacteriologist Walter Frei; the biologist A. J. T. Janse and one or two representatives of other disciplines. At a second meeting on the 12th January 1908, a constitution was accepted, Theiler was elected president and C. E. Gray, the bacteriologist J. Walker, the chemist H. Ingle and others were added to the foundation members. All were expected to read at least one paper at a monthly meeting and the results were various. At the
67 February meeting, extremely indigestible fare was provided for the few lay members who
timorously attended – Howard on Ticks, Frei on the Viscosity of the Blood, Gunning on Osteoporosis in a baboon’s skull, Gough on Wireworm in Sheep, Theiler on East Coast Fever

68 transmitted by various kinds of ticks, and Burt-Davy on Transvaal exotic plants, Dribok poisoning and Mendelian characteristics in cross-breeding maize. The general public recoiled from these lengthy and prolix displays of preciosity. Later some of the papers were unworthy of the occasion.

69 The number of members increased very slowly but Theiler's idea of a concert of scientific minds and a sharing of scientific knowledge gradually developed. He pursued it with ardour (never missing a monthly meeting and frequently contributing esoteric papers) and with customary demands on Emma. 'I have a vivid recollection', Janse wrote 30 years later, 'of a very happy dinner given to a small group of members by Dr Theiler at his house in Pretoria West (Daspoort). We also visited his then rather primitive establishment near his house and he was anticipating the erection of a new place. We all were, as we were at the meetings, like a happy family with the pleasant personal touch of a small gathering of people who have the same interests.' For Theiler, the disadvantage was that, through private study and the zealous reading of scientific journals, he knew almost as much as they. He hankered always after an opportunity to make a deeper study of the disciplines which most closely affected him, notably Botany and Helminthology (worms as parasites). They were increasingly featuring in the diseases with which he had to deal.

70 While Spreull grappled with Lamziekte at Koopmansfontein on the Kaap Plateau and convinced himself that Bowhill and Robertson had been right in ascribing it to *Pasteurella bovis* or some new *cocco-bacillus* which he had been able to isolate and reproduce, Stijfziekte or Stiff Sickness which was believed to be another form, appeared at Zeerust in the Western Transvaal. Theiler and Gray hurried there in March 1908 and watched a scene long familiar to them both - strong beasts so stiff in the legs and discomfited by inflamed hooves that they stood awkwardly with their front feet advanced and their backs arched to avoid pressure. Pain caused them to try to stand on the heel of the hoof so that the two toes separated and, lacking wear, grew in upturning curves. Ultimately they could not stand, lay down and died of starvation on the open veld. Hutcheon had thought that like Lamziekte, the conditions was due to phosphate deficiency and was remediable with bone-meal. Theiler and Gray, looking at acute cases, believed it was the same Laminitis that afflicted horses. The Transvaal farmers had long ascribed it to the stijfziekte bosje, a tough little plant with hard bean-pods. Theiler consulted Burt-Davy and in a long series of experiments, drenching cows with gallons of infusions from the culpable *Crotalaria Burkeana*, finally established in 1910 that Stijfziekte was Laminitis in cattle caused by the plant. The chemist Ingle had helped in analysing the bones of victims.

72 Much wider fields of research than those revealed by the mere microscope now confronted the Government Veterinary Bacteriologist and with them, more varied experiments and investigations. The earlier emphasis on sera-therapeutics in a laboratory was tending to drift toward more field work at experimental stations in situ. Frei was sent to the Western Transvaal to investigate cases of Lamziekte which he reported in the fullest detail without discovering a suspected infectious organism; but the disease died out and his station was closed, later being reopened at Christiana further south. Carefully specifying the experimental attack, Theiler sent Walker to a farm near Lake Chrissie in the Ermelo district to identify the cause of Gouwziekte in a long series of feeding tests with muzzled sheep and others running free. In the best Theiler tradition, Walker meticulously chronicled every aspect of the disease without divining the 'unknown toxin' that caused it.

75 It was hardly possible for Theiler to grasp these nettles at this time. His attention was divided between his over-crowded, over-burdened and over-worked Daspoort and the rapidly advancing building at Onderstepoort with its complicated installation of every known modern equipment. Visitors continued to plague Daspoort and to bring him news of the outside world.

76 For the whole of his career, Theiler never failed to pay close attention to public affairs. At this time, they affected him personally. The urge to congregate or move toward 'Closer Union' was now evident at every level, including the normally torpid farmers, downcast by depression, drought and the hovering menace of East Coast Fever still ravaging Natal and menacing the Transvaal and Northern Cape. In March 1908, representatives of the Cape Agricultural Union, the Central Farmers Association and the Eastern and Western Boards of Horticulture met specially at Port Elizabeth to unite their voices in the creation of a 'Chamber of Agriculture of the Cape Colony'. If the concept were stillborn, it nonetheless betokened a general trend operative at all levels and rapidly becoming overt in the political field. For Theiler, it could mean a change of course.

77 Early in May a crucial Inter-Colonial Conference of leading personalities took place in Pretoria to consider the practical implications of 'Closer Union'. It allegedly boggled the issue but made a significant recommendation. On the following day, Selborne opened the first Show organised by the Pretoria Agricultural Society since the war. At the luncheon (where Jakob de Villiers as Attorney-General announced the dissolution of the hated Constabulary), he made one of his dramatic announcements when replying to the toast of Agriculture - 'I cannot for-
78 bear to remind you that yesterday was an historic day in the history of South Africa. Yesterday, for the first time, statesmen representing the people in all the four great white Colonies of South Africa decided that the time had come when a National Convention should be summoned to consider the question of Closer Union (applause)'.

79 For Theiler, everything concatenated. 'In 1908', wrote Frei picturesquely, 'the new laboratories at Onderstepoort were built and we dislocated.' Their full operation and formal opening were five months distant and the intervening dislocation at Daspoort required constant control. Selborne selected the 14th May to bring two of his most distinguished house-guests to visit it -
80 Sir Walter Hely-Hutchinson, Governor of the Cape Colony and president of the South African Association for the Advancement of Science, and Robert Coryndon, Resident Commissioner in Swaziland and later Governor of Kenya. Theiler well knew of Sir Walter's close connection with David Bruce and his deep interest in Science. Two weeks later, the Association's offices
81 in Cape Town announced that the South Africa Medal and £50 prize presented by the British Association had for the first time been awarded to Dr Arnold Theiler C.M.G.. He would receive it at the meeting in Graham's Town in July.

Apart from the dislocation and the host of problems involved in setting Onderstepoort in motion, he had two other matters on his mind - the building had been designed to include a lecture room which could serve as a small Conference Hall. If he could persuade the Transvaal
82 Veterinary Medical Association to transfer to Pretoria the venue of its meetings in Johannesburg, he could vitalise the vets by discussing their affairs at the new Laboratory and giving demon-
83 strations in situ. Secondly he was already planning for the Ninth International Veterinary Conference to be held at The Hague in September 1909. If the last had been catalytic, the next might be even more significant. He had so far failed to persuade his Government to send him as a delegate but would go on his own account, urging the local practitioners to become members of the Conference so that they might benefit from its papers. Theiler's mind ranged far and wide while constantly applied to the thousand vexatious matters still impeding the running order of the new Laboratory and its equally exigent estate.

84 On the 29th July 1908, the Transvaal Legislative Council received the historic message from the lower house recording its resolution that a National Convention be called to determine the means of uniting the several self-governing Colonies into a body under the Crown and that Rhodesia be offered admission. Botha spoke to it on the following day. There were too many countries in South Africa, he said. Action taken by one was being nullified by action taken by

others. 'No doubt we shall all hail with delight that bright day which will bring to South Africa the sublime message "One God, one land and one people".' He moved concurrence in the resolution. Henceforward and especially when the National Convention began its sittings in Durban in October, no notability was available for any purpose, even his own official duties. All were delegates or advisers.

85 Three days later, Theiler left for Graham's Town to receive his medal and £50 prize. Sir Walter, entangled in the historic moment at Cape Town, was unable to preside and his cognisant speech was read for him by Judge T. L. Graham. The Acting President of the Association, Professor Selmar Schonland, made the award in felicitous terms. 'Your work', he told Theiler, 'illustrates in a particular happy manner the fact that progress in applied science must go hand in hand with progress in pure science . . . The Council is confident that with your knowledge and enthusiasm and with the splendid resources placed at your disposal by your Government, we may look forward to continued important results of your researches which will to an enormous extent benefit our country.' It was an occasion after Theiler's own heart - colloquy with varied scientists, many already friends, and the chance to expound his own field in a lecture on 'Tropical and Sub-Tropical Diseases in South Africa'. Plaudits were pleasant but the appreciative approval of his own kind was warming and encouraging indeed. On his way back 86 he delivered at his Department's request the same lecture to the Bloemfontein Philosophical Society.

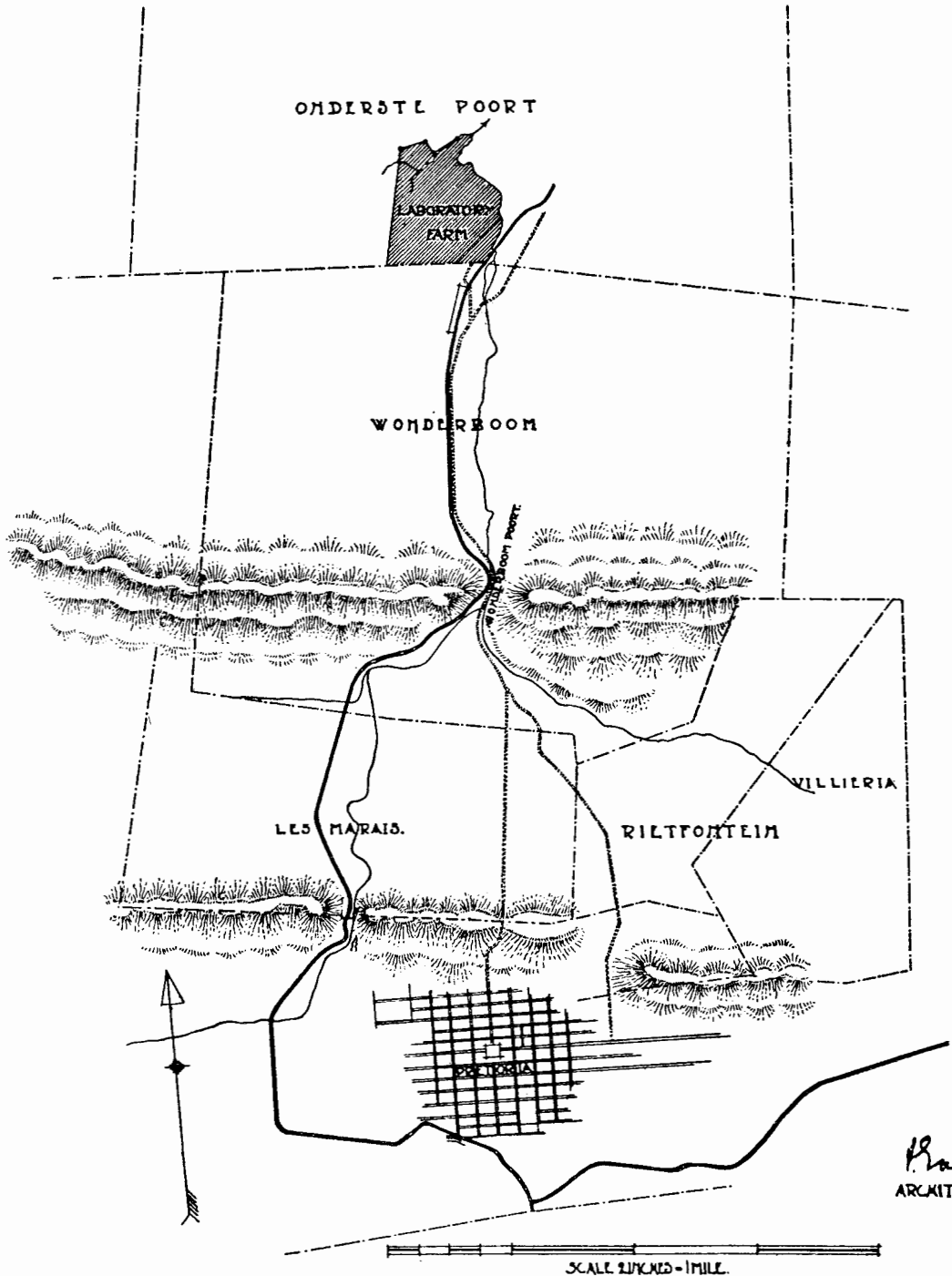
87 Barely had he returned to Pretoria than the Royal College of Veterinary Surgeons elected him an Honorary Associate and there were further floods of congratulation. He had already 88 been awarded a similar honour by the Société Centrale de Médecine Veterinaire of Paris. He 89 knew too that it was largely through his efforts that the organisers of the Ninth International Veterinary Conference had already constituted a 'National Committee for South Africa' consisting of himself, Gray and Christy for the Transvaal; Watkins-Pitchford for Natal; Borthwick of Cape Town and Robertson of Graham's Town for the Cape; and, illogically, J. M. Sinclair for Rhodesia and Robert Stordy for British East Africa.

90 Theiler hoped that Onderstepoort would be in running order in October 1908. F. B. Smith, so largely its originator and so enthusiastically implicated in its development, would not be there. Botha was sending him in August on a six-month tour of England and the United States to study advances applicable to the new South Africa. When 'Closer Union' came, there would be very great organisational difficulties. Advised in time, Theiler secured authority for Smith (staying at the Savile Club in London) to request Stockman to buy 20 pure-bred but inexpensive heifers for experiments in Redwater and Gall Sickness. Stockman duly selected Sussex heifers at £20 each and Smith sent them to Theiler who received them in January 1909. He would be able to discuss his results with Stockman when he 'came over' later in the year, Smith would have told him of the wonders of the new Laboratory which, during his absence, would be cherished by C. E. Gray as Acting Director of Agriculture.

91 As far as it was possible at a time of ferment and conflicting views (Curtis' 'The Government of South Africa' was then meaningfully published), Botha devoted himself to the affairs of his Agricultural Department. Speaking to the Diseases of Stock Amendment Bill in the Legislative Council, he revealed the failure of Theiler's stringent regulations. Natives had gained the support of the Courts in demanding full compensation for tens of thousands of cattle due for slaughter. The cost would have bankrupted the Government. Other means would have to be found. Persons posing as veterinary surgeons carrying infected ticks were suspected of vengeful spreading of East Coast Fever in the same manner as the earlier Rinderpest. There were other difficulties. Nature would not succumb to Science without stubborn resistance. Theiler had had to draft new measures for his Minister.

The farm that Theiler wanted.

- BACTERIOLOGICAL LABORATORY •
- ADMINISTRATION BLOCK •
- AT ONDERSTE POORT •



Boyer
ARCHITECT

CHURCHAS •
CHIEF ENGINEER •
PROVIDORIAL •



The Colonial Governors – (left): Sir Hamilton Goold Adams – Orange River Colony; Sir Walter Hely-Hutchinson – Cape Colony; Lord Selborne – Transvaal Colony and High Commissioner for South Africa; and Sir Henry McCallum – Natal Colony.



Lord Selborne opens the Standerton Agricultural Show in 1907. (Extreme right to left): F.B. Smith, Secretary for Agriculture; Lord Selborne, I. B. Pole Evans and Arnold Theiler. A mounted detachment of the South African Constabulary forms a guard of honour beyond the crowd.

92 Botha even managed to open the 8th Annual Congress of the Transvaal Agricultural Union in September and was reminded by its president A. G. Robertson (prompted by F. T. Nicholson, the original and enduring secretary) how the Union had briefed him in 1897 to fight in the Volksraad for an Agricultural Department with reliable statistics, an Agricultural College, experimental farms, meteorological statistics, a Government Chemist, a Forestry Department, a Bacteriological Department, an Agricultural Journal, a Veterinary Department, the import of pure-bred stock and the federation of agricultural interests, all of which had been accomplished in the last eleven years (he did not say – by the British). Then Botha went away on National Convention business and his Department attained its highest moment without him.

* * *

93 In September 1908, the 'dislocation' from Daspoort to Onderstepoort took place. Since it was a serum factory as much as a research laboratory, the move was a major feat accomplished by the over-worked staff under the stimulus of transference from a slum to a palace. In fact Onderstepoort was at that time one of the wonders of the world, a reputation which it retained. With Theiler constantly looking over his shoulder to assure attention to essential detail, Patrick Eagle had designed a T-shaped building with a lengthy frontage of 303 feet and a 51-foot depth surmounted by a second storey 77 feet in length whose gabled roof terminated in a tall clock tower. The stem of the T extended behind to a length of 80 feet with various installations around it including an adjacent quadrangle surrounded by stables. Dwellings, staff quarters and a hostel for students would be built at a distance on a novel 'garden city' plan.

94 This monstrous complex now stood incongruously on a site bared by building activities in the Transvaal bushveld surrounded by tall grass and thorn trees. On the 8th October 1908, Theiler formally issued a circular advising all and sundry that the move had been completed and asking for note to be taken of the new address. He was sitting in his lordly office in the new building with his private laboratory for the study of protozoa at hand and King in charge of technical records next door. A house-telephone connected him with all the principal services and laboratories and they with each other. Huge windows adequate to maximum light for microscopic work and protected by insect-proof gauze (mosquitoes abounded) extended along the building whose ceiling were 13 feet high to promote airiness and coolness in the sometimes searing heat. The floors were granolithic and curved where they met the walls, eliminating corners that would harbour dust. Every device had been employed to ensure cleanliness and freedom from dirt.

When he walked down the long corridor extending to left and right of the entrance, Theiler would find each one of the many laboratories similar to his own, equipped with gas, steam, electric light and power, and hot and cold water. Each had heavy teak tables with sunken sinks and glass-fronted fume-cupboards whose independent flues disposed of noxious smells and gases from experimental work and sterilising. Each was furnished with solid cupboards and shelves and equipped with small incubators, vacuum pumps and electrically-powered centrifugal machines. There were also three fully-fitted sterilising rooms. In point of equipment alone, the place was a marvel.

A bacteriological laboratory produced mallein for Glanders, tuberculin and vaccines for Pleuro-pneumonia (Lung Sickness) and Quarter Evil (Sponsziekte). Adjoining rooms provided storage for glassware and laboratory apparatus. There was a pathological laboratory and other rooms for producing vaccine for Rabies and Blue Tongue, and Horse Sickness serum which in 1908/09 amounted to 3,341 doses supplied to the four Colonies and also Bechuanaland, Swazi-

95 land, Rhodesia and German South West Africa. (In the Transvaal, Theiler later reported proudly, 2,165 mules had been inoculated of which only 128 or 5.9% had died.) The Institute also made pathological examinations for its neighbours.

The large operating theatre and postmortem hall were fully equipped including the latest ingenious devices. Of particular interest to ingenuous visitors was the narrow-gauge rail-track with turn-table flat cars which brought sick or dead animals from the stables to either theatre or hall and carried them back, or by a branch line to a distant destructor (this consisted of two 'cremators' with a tall chimney in between and could incinerate five or six horses daily as well as all refuse). The track encircled the stables and had multiple uses including the delivery of forage. Also on the ground floor was a photographic laboratory including among its equipment a Zeiss micro-photographic apparatus and other cameras. Here Theo Meyer laboured to record Theiler's teeming protozoa, clinical cases and events at Onderstepoort and in the field.

The smaller second storey was devoted to academic ends and constituted a rudimentary Veterinary College. Its small raked lecture room was equipped with blackboards and a screen to receive the image of slides 'thrown by the microscopic projector'. There were several small laboratories for students and a Pathological Anatomic Museum where hideous specimens lurked in jars in huge glass-fronted cupboards and more hideous anatomical specimens were hidden in massive chests of drawers.

The main complex included an open quadrangle in the rear surrounded by stables variously housing sick and experimental animals or those under observation. All were gauzed and guttered, lit and ventilated, each stall labelled with its animal's recorded number sometimes running into several digits and letters. Theiler's phenomenal memory was already famed for its ability to recall precisely the number of an animal, perhaps long dead, which exhibited features to which he wished to refer.

A large number of ancillary buildings stood in the vicinity of the main complex. Despite the withdrawal of Cape custom, the production of calf lymph for Smallpox was still an essential activity for the benefit of the sub-continent including Mozambique. The output of the small building devoted to it touched 300,000 tubes in 1908/09. Each aspect of the Institute's vast range was separately housed in specially-designed accommodation - dog kennels; piggeries; a breeding station for rats, mice, guinea pigs, rabbits and other experimental small animals; a segregation stable for special cases; an isolation stable for infectious animals; and eight separate stables for non-experimental animals.

There were also - some combined, some separate and some brought from Daspoort - forage stores, a carpenter's workshop, a farrier, a saddler, a shed for wagons and farm implements, and a 'buggy house' which contained the carts and traps used when no convenient train could be stopped at the siding to take passengers to town. Pride of the place was the maintenance works for the most modern equipment astonishingly installed in a research institute far from established source. It had in fact to be entirely self-sufficient, relying on a power plant producing a considerable but not altogether adequate volume of electricity, a lighting plant, a boiler house and gas-production unit, a borehole and pumphouse, and an outstanding water tank 40 feet high to produce sufficient pressure to service the laboratories, stables and distant dwellings.

96 The animation of this vast and varied empire which included farming activities and the management of leased properties, entailed heroic demands on Theiler and his men. The 'dislocation' and its sequelae imposed new burdens on over-worked staff and, he reported, 'overtime became the order of the day'. Not only did farmers now reply in hundreds to questionnaires which he had sent them about various diseases but, inevitably, Onderstepoort became a magnet to all and sundry. Expecting to have all its wonders demonstrated to them, about 300 visitors made the journey from Pretoria to see the Institute in its first eight months. In his pride

and gratification at the realisation of his life's work and ideals, Theiler undoubtedly anticipated that in common with Pasteur and Koch, he would be honoured by his grateful Government in the naming of 'The Theiler Institute'.

97 In time, there were developments, alterations and extensions but from the outset, Theiler devised a regimen for himself which luckless assistants learnt to dread despite the equanimity of his manner and the rarity of his losing his temper. For the first time in her life, Emma had space and could organise her household in a capacious and elegant dwelling (designed by Eagle to conform with the overall Cape Dutch gabled pattern except that the roofs were not thatched but corrugated iron.) As always, the family rose at dawn, the children now having to travel to school in Pretoria North. Formally dressed, Theiler left the house at 6 a.m., walked the odd hundred yards to his office, discarded his coat and crossed the passage to the rear section where Avere awaited him, holding his famous white apron and tied it at his back. A native with a bucket of water and towel now joined the procession which progressed to the operating theatre where horses were to be bled and immunised blood simultaneously infused. If Theiler took a hand in the operations, it was washed by the native and dried on the towel. The procession then moved into the quadrangle where the various staff members responsible for the different cases led from the stables for inspection, awaiting him to answer any questions he might ask or receive his instructions. His hand might be washed many times. Finally, back in the building, Avere removed his apron, he returned to his office, re-assumed his coat and, walking back to his house, arrived for breakfast at 8 sharp. At 9, he returned to his office and laboratory where he worked until 1 p.m., having lunch at home and a 20-minute siesta from 1.30 until 1.50 when the Institute hooter roused him. From 2 to 5, he was in the main building or grounds, returning home for supper and the lifelong habit of reading scientific journals or studying until about 11 p.m.. Despite the distance from Pretoria and the inconvenience of traversing it by horse and trap at night, Theiler continued to attend the monthly meetings of the Biological Society and, now that they met alternately in Pretoria, those of the Veterinary Medical Association.

98 The initial aspect of his empire was not altogether prepossessing. The site of the great complex had been cleared of all vegetation and levelled. Dust flew in dense clouds from the uncovered soil. The surrounding veld with its high grass and thorn trees was green from the summer rains and Parkes and his gardeners sought to emulate it in laying out the Institute's grounds covering many acres. Formal gardens with shady trees were planned for the main building and dwellings. Theiler wanted it done quickly so that all would be shipshape and Bristol fashion when Botha came on the 11th January 1909 to open the new Bacteriological Institute and, on the 12th, a Pan-African Veterinary Conference, hastily convened on the Prime Minister's instruction in the spirit of 'Closer Union' and the knowledge that South Africa's defence against disease must operate far beyond its borders. Distinguished delegates would be coming from the Cape to the Congo and beyond. The whole organisation devolved on Theiler himself with some help from his Department. His cup would have been filled to overflowing if his friend, the newly-knighted 99 David Bruce, had been able to come. While in Uganda in 1903/04, Bruce had pursued a theory that some type of trypanosome carried by tsetse flies caused Sleeping Sickness. In 1908, the Royal Society's Commission on the disease again sent him to the area and he landed at Mombasa with Lady Bruce, Captains A. E. Hamerton D.S.O. and H. R. Bateman of the Royal Army Medical Corps, and Captain E. P. Mackie of the Indian Medical Service at the moment that Theiler took occupation of Onderstepoort. His experimental station was located in a remote and undeveloped area of Uganda whence it was inconceivable that he should travel to Pretoria. Letters however were exchanged.

Many of Theiler's enlarged staff – Dr K. F. Meyer, Miss Basson, Davies, Schultz and others – first assumed duty at the new building in October and had much to learn from the old hands

100 who had troubles of their own in adjusting themselves to new conditions, however superior.
101 All the vaunted facilities did not at first work perfectly and, hampered by constant visitors, Theiler was much occupied with solving technical and organisational difficulties, planning the grand opening, assisting in compiling the Commemorative Book which would follow it, and directing the complicated procedures and agenda for the forthcoming Conference whose delegates were to be honorary members of the Pretoria Club. His enthusiastic proposal that the South African veterinary surgeons should meet at the same time and form a National Association proved too ambitious for the harassed practitioners. The year ended in a frenzy of preparation and augury of disaster.

* * *

102 The first meeting of the National Convention in Durban had been trying owing to the great heat and humidity which had affected many of the senescent delegates. It adjourned early in November for re-assembly in Cape Town at the beginning of January 1909 and there it stayed until February. By the end of December, it was known that Botha could not return to the Transvaal to open the Conference he himself had convened and that Onderstepoort would have ceremonially to be opened by someone else. On the 30th December, it was announced that 103 Johann Rissik, Minister of Lands, would take his place. Rissik proved unavailable. At the last moment, Jakob de Villiers, the Attorney-General and 'the only member of the Transvaal 104 Government at present in the Transvaal' as he himself said, was pressed into service. By then, the delegates were assembling in Pretoria in impressive array:

- J. Carougeau, Tananarive, Madagascar
- A. D. Bertolotti, P.V.O., Belgian Congo
- R. E. Montgomery, Liverpool School of Tropical Medicine Unit in the Congo
- J. M. Sinclair, P.V.O., Rhodesia
- P. Conacher and O. W. Barrett (who had inaugurated veterinary services in Portuguese East Africa only 7 months earlier)
- Otto Henning, P.V.O., German South West Africa
- W. H. Chase, Bechuanaland Protectorate
- F. A. Verney, Basutoland Protectorate
- W. A. Elder, Swaziland Protectorate
- Colonel L. J. Blenkinsop D.S.O., P.V.O. British Army in South Africa
- W. M. Power, P.V.O., Natal
- A. Grist, P.V.O., Orange River Colony
- J. D. Borthwick, P.V.O., Cape Colony
- W. Robertson, Director of Veterinary Bacteriological Institute, Cape
- C. E. Gray, P.V.O. and Acting Director of Agriculture, Transvaal
- A. Theiler C.M.G., Director of Veterinary Laboratory, Transvaal
- L. H. Gough, Zoologist, Veterinary Laboratory, Transvaal

Nigeria, Egypt and the Northern African Colonies had also been invited but the short notice and long voyages prevented their acceptance.

105 On the 10th/11th January 1909, the heavens opened on Pretoria and precipitated unprecedented volumes of rain, continuing almost uninterruptedly into March in the worst floods ever known. In January alone, double the usual quantity of rain fell. Beginning with five inches 106 in four hours, Onderstepoort and all its works were flooded. The Aapies River ran 100-yards wide and Beeton tried to salvage the bodies of a white man and woman which he saw tumbling past in the swirling flood. Hour upon hour on the 11th January, thousands of tons of water

poured upon the new institute, wrecking its more fragile installations and converting its unsettled grounds into an impassable quagmire littered with the debris of destruction. A washaway threatened the Onderstepoort railway bridge and all communication ceased. Theiler's plan to hold the Conference in the Laboratory was brutally annulled. Desperately he applied to the
107 Department of Prisons to send a party of convicts at the earliest feasible opportunity. They came during brief intervals in the downpours and cost him £53.

The delegates, huddled in their soggy quarters in Pretoria, emerged on the 12th January to pick their way to the Executive Council Chamber in the Government Building. The town was
108 in chaos. At the Lion Bridge, the Aapies in wide and furious spate had destroyed dwellings and warehouses. Several lives were lost. Gunning was washed out of his zoo and many of his valuable animals drowned and their cages destroyed. Louis Botha in Cape Town and Selborne in Pretoria sent messages of condolence to the Mayor. In the moist heat familiar to them all, interspersed with torrential downpours, the delegates assembled to hear de Villiers as Acting Prime
109 Minister make his usual perfunctory speech, scuttling off immediately thereafter. As Acting Director of Agriculture, C. E. Gray was elected to the chair and Dr Gough as secretary. Theo Mentzl, translator to the Department, interpreted for the foreign guests. Day by day, Theiler took those that he could to the ravaged Onderstepoort where most of them signed their names in the Visitors Book on later visits after the Conference. The great occasion had dwindled into a mudlark but the stately building with its manifold marvels still stood on the flooded veld and Theiler was determined that it should be seen.

The Conference sat, in token of his interest and regard, in the Prime Minister's own office and, veterinary rather than scientific, worked well and to the point in coming to practical conclusions. Head and shoulders above the others in knowledge of African stock diseases, Theiler dominated it. The agenda took the form of a list of scheduled diseases, each introduced by a delegate in whose territory it particularly figured except in the case of East Coast Fever which was of general concern. Appalled by Natal's inability to come to grips with its increasing incidence through lack of funds, the large amount of native-owned cattle and other factors, the Conference approved a resolution moved by Theiler that Natal be helped by the South African Colonies in their own interest. The principle obviously could be thorough-going and embrace all Africa in the spirit of Botha's (and/or Smuts' - it was never clear) vague concept of Pan-Africanism.

Montgomery introduced Trypanosomiasis (Sleeping Sickness in humans and Nagana in cattle) in an address suggesting the inculcation of flies additional to tsetse, paying tribute (as Theiler always did) to the pioneering discoveries of Bruce. He impressed Theiler who had received him at Daspoort 18 months previously on his way to Northern Rhodesia with Dr Kinghorn. Now Theiler found that during that time, they had been conducting precisely similar investigations as himself on various forms of trypanosomes conveyed by flies, both tsetse and others, with equally baffling results. The known trypanosomes - brucei, congolese, dimorphon etc - had habits and peculiarities demanding deep investigation. The blood of an apparently
(and enduringly) healthy horse, for instance, could kill another animal when injected, its resident
110 trypanosome becoming effective. Montgomery brought specimens and animals which, after the Conference, were most usefully discussed at Onderstepoort. Theiler, supported by the Belgian Congo and Portuguese East Africa, had approved Montgomery's resolution that 'an extended enquiry into trypanosomiasis' be made and had moved one of his own that all results be centralised, obviously at Onderstepoort.

The Conference moved on to the training of Colonial Veterinary Surgeons and the praises of the Palace of Science in the Transvaal were inevitably sung, Bertolotti regretting that 'under the restricted instructions of his (Belgian Congo) Government, he was unable to ask Dr Theiler

to allow him to remain for a month or two to follow the experiments being carried out there'. Theiler said that his Institute had been specifically designed for that purpose and offered it as a place for training Colonial Veterinary Surgeons. He caught a Tartar. Considering Bacteriological Research in general, the Conference with equal inevitability resolved that 'in Pretoria, the time would be most favourable for a meeting of the Chiefs on the various veterinary laboratories to discuss the question of the most economical distribution of routine and research work'. With dramatic speed, Smith's vision of 1902 inspired by Theiler and approved by Milner was coming to fruition.

111 Theiler went on to urge the publication of a continental scientific journal on work on tropical stock diseases. (In his need, he had used the *Transvaal Agricultural Journal* for the publication, in the fullest unintelligible detail of his complicated experiments, causing the *Pretoria News* to protest that it was becoming too technical and that '12 pages of quite incomprehensible tables would be as little understood by farmers as Greek verse'.) With many other active signs of Pan-Africanism, the Conference ended with resolutions proposed by Theiler to foregather again in about 3 or 4 years but at longer notice and with better planning. The committee appointed to organise it consisted of Sinclair, Power, Bertolotti, Carougeau, Theiler and Verney. Disastrous though its debut, the meeting had been a triumph for Theiler's visionary aims. It had brought men of like mind together and identified urgent common purposes, notably the consolidation of prophylactic measures in the subcontinent and the communication and sharing of research results. Its significance was widely noted locally and abroad.

112 Before departure, the delegates were fêted by the Transvaal Government at a banquet in the Pretoria Club attended by the Mayor, J. G. van Boeschoten, F. T. Nicholson and others at which they lavishly praised the new Institute and drank 'to the success of the Onderstepoort Laboratory'. Theiler replied with suitable distribution of credit. To the Press, the foreign delegates ('exceedingly popular socially') expressed themselves expansively. 'C'est magnifique!', exclaimed Bertolotti and Carougeau's admiration was unbounded. Less than a week later, the heavens again opened and Onderstepoort was swamped anew by another five-inch fall in four hours and continuing torrents. The damage was serious

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116 Botha and Smuts were back in their offices on the 10th February in an atmosphere of high excitement after the arrival of the first printed copy of the draft of 'The Great Act of Union'. (Pretoria was incensed at the 'ridiculous proposal' that Cape Town should be the legislative capital and Pretoria the administrative.) Botha was genuinely concerned with Theiler's affairs and when F. B. Smith returned from the U.S.A., sat for a formal photograph with him and Theiler for the publication commemorative of the opening of Onderstepoort. As Prime Minister, he asked the Governor Lord Selborne to perform the opening ceremony of 'Dr Theiler's Institute' on the 3rd April 1909 when the Transvaal Parliament met before the final meeting of the National Convention in Bloemfontein in May; but the incumbent could not manage it. 'A lot of repairs, alterations and cleaning required to be done', Theiler told his Minister who then asked Selborne to open it in June. Selborne agreed but stated that if still absent in Swaziland, Lord Methuen, Commander-in-Chief of the Imperial forces in South Africa, would deputise for him. In the tumult of the times with the whole country re-aligning itself for the forthcoming Union and himself incapacitated by heavy colds, Botha gave up and on the 9th June, advised Selborne that the official opening of Dr Theiler's Institute had been abandoned.

117 Onderstepoort, the climax of Theiler's 17-year struggle, was never officially inaugurated and he was left with the empty souvenir of the splendid Commemorative Book, carefully planned

and executed, published in July 1909 by the Government Printer. It listed his major publications from the first days at Daspoort onward and those of his senior staff – Dodd, Walker, Frei, Gough and Meyer. The body of the book was intended to reflect their current work beginning with Theiler's 'Immunity in Tropical and Sub-Tropical Diseases' written in his exemplary lucid logical style; but the contributions of Walker ('The Diagnosis of Bacillary Plasmosis in Bovines'), Frei ('Haemolysis in Practical Veterinary Science'), Gough ('The Anatomy of *Stilesia Centripunctata*') and Meyer ('Pathological Anatomy of Pleuro-Pneumonia') were lost on the layman, however much they betokened the thorough and advanced work being pursued. The book, excellently illustrated, was useful to present to the distinguished guests who now thronged the Laboratory; but the guerdon that he had coveted had slipped through Theiler's hands. 'Onderstepoort' it remained and not 'The Theiler Institute'.

118 The burden he carried had been and continued immense. (In 1907/08, the Laboratory had received 661 letters and despatched 1,112 – in 1908/09, it received 5,815 and sent 5,666.) Two of his senior assistants, Walker and Frei, were in the field and precluded from helping in the daily routine. Theiler specially commended his over-worked clerical staff and demanded more. The width of his work in engaging the whole field of stock diseases made illimitable demands on men, experimental animals, time and energy. He looked forward to going on overseas leave in August. Even Bruce had turned to him for help. Confronted by an endemic disease in calves called by the natives 'Mkebe' in the depths of Uganda, he telegraphed Theiler early in February asking whether he could recommend a veterinary surgeon for the Protectorate. Theiler had telegraphed 'No' and followed with a letter of the 12th February saying that no vet would come at the offered salary of £400/500 when even their District Veterinary Surgeons got more than £500. He had added that he intended to travel to Europe via the East Coast in August and would like to discuss stock diseases with Bruce in Uganda but required every moment of his leave in Europe.

119 At the end of 1908, Arnold's mother had had a seizure which gave Alfred (now married and possessed of a daughter Klara) an opportunity to reopen communication with his brother. Arnold replied early in January 1909, enthusiastically offering Alfred appointment as zoologist at the Transvaal Museum, Gough having been transferred to his own staff. He had, he said, sufficient influence to ensure it, the cost of Alfred's and his wife's passages to be paid. Pleading a dislike of lecturing in English, Alfred declined; but the rift had been bridged and letters now passed regularly between them. In March, Arnold showed his hand. Describing the size and international character of his new Institute and the diversification of its work (Gough investigating intestinal worms in sheep, Frei facilitating immunology by physical chemistry, etc), he wrote – 'Now I feel as director that I ought to know a bit more about all these investigations than I in fact do so as to be in a better position to judge the work of a scientific nature which these people do. This is particularly the case with Zoology though not so much in other fields.' He suspected Frei of being as deficient in knowledge of Zoology as he himself was of Physics and Chemistry. His plan was to ask his Government for a two-month extension of his leave to study all three subjects for a whole semester at Zurich University while consulting appropriate colleagues. His aim was to qualify for a doctorate of philosophy by a particular work in Helminthology, bearing in mind the host of parasitic worms which infected South African stock. He would bring specimens which, typically of Theiler, he had long been collecting. He collected everything.

120 'As a one-hander, I have difficulty with the histological techniques', he continued, 'but I think Professor Lang will have no objection if I do this work at home with the help of my wife. By the aid of private tuition, I will compensate for the lectures which I shall not be able to hear during the semesters and shall offer a good salary to a zealous tutor.' He hoped his under-

graduate two years at Berne would count with Zurich. Would one winter semester qualify him for the doctorate? He needed it to convince his Government that 'I had really applied myself to study and further, I would give to my colleagues and assistants an example of my energy and love for work and Science.' Alfred must lay the matter before Professor Lang. Meanwhile

122 Theiler tenaciously pursued the problem of immunising horses by advertising, by cajoling the farmers and by invoking the help of the Police in obtaining large numbers of animals for experimentation at huge cost permissible only in a comparatively affluent Transvaal. His cry for 'en paar Paarden!' was now for troops of horses. The Sickness prospered after the rains, particularly in Bechuanaland where desperate farmers annually boarded their animals on high-level 'safe' properties during the season.

Theiler's energy, possibly stoked by success, was boundless and his leadership irresistible. He had harangued the Transvaal veterinary surgeons into subscribing to The Hague Conference to the number of 48. Now, still trying to see Smuts about the regularising ordinance, he besought them to form a National Association which could consort with its African fellows. He also demanded their support in founding a Veterinary Journal and otherwise implementing the recommendations of the Pan-African Conference. Like Hutcheon who had done the harder work, Theiler strove to enhance the reputation of the veterinary profession, particularly among the farmers who had made much mock of Smith's men. Many a bucolic jape testified to the ridicule initially heaped upon them. 'n Perd is 'n perd maar 'n hexperd is 'n verdomde esel!' (a horse is a horse but an expert is a damned ass!) exclaimed a Boer in the witness box when twitted by a veterinary surgeon's evidence. Now the wheel was turning full circle and country newspapers gleefully retailed a possibly apochryphal story:

124 'A Boer in the Transvaal resolved to take a rise out of the Agricultural Department. Having to send a blood-smear of a dead ox, he subtly prepared a second with his own gore and told his neighbours of the fool he was making of the "ingevoorde Engelschman" and his new fangled regulasies. Some weeks later when the long envelope brought the official report, he called his neighbours to rejoice with him over the jest and the schoolmaster was impressed to interpret the precious report which ran somewhat as follows - "To Johannes Hendrik Petrus Boonzaaier Esq. Vlakvarkfontein - Sir, With reference to the bloodsmears furnished by you on the 15th ult., I have the honour to inform you that the one - that of an ox - shows no trace of disease. The blood on the other side appears to be that of baboon in an advanced stage of senile decay. I have the honour to be, Sir, your obedient servant, etc."'

125 While Theiler tenaciously pursued his ends, Bruce equally tenaciously pursued his friend. After receiving Theiler's February letter at his camp at Mpumu, Bruce wrote on the 11th March 1909 to the Uganda Chief Secretary making a very plausible case for persuading the Transvaal Government to give Theiler two months special leave to act as consultant. Mkebe, Theiler had written, might very well be a form of East Coast Fever. 'I need hardly point out the extreme importance of this statement', Bruce wrote, 'as East Coast Fever is one of the most deadly of all cattle diseases.' The Governor concurred and a copy of Bruce's letter was sent to F. B. Smith under cover of a letter of the 1st April stating 'The possibility of consulting this distinguished scientist on the subject of the various diseases which are affecting cattle in Uganda would be of great advantage to this Administration and I am desired by the Governor to say that Dr Theiler would be cordially welcomed. This Government would gladly defray his expenses from Mombasa and back.' Smith sent the letter to Theiler 'for your information and reply'. Theiler was delighted - 'I grasped the invitation of my old friend, Sir David Bruce with both hands', he wrote Alfred - but with Swiss caution, insisted in discussion with Smith that he go only on special paid leave. He emphasised that his visit to Uganda would benefit the Transvaal in that his survey of stock diseases would determine any that might menace the south. The spectre of

128 Rinderpest coming from that area remained with him. He planned to leave in June, returning at the end of November. Smith endorsed his confirmatory memo with 'not more than one month'. The Transvaal might be richer than the other Colonies, still in the depth of depression, retrenchment and rigid curtailment of expenses; but the indulging of Bruce did not imply extravagance or the prolonged absence of Theiler's hand in controlling Onderstepoort.

129 Smith persuaded Treasury to recommend to the Public Service Board that Theiler receive one month's special leave on full pay non-deductible from his regular leave. With due formality, 130 the Prime Minister's Office requested the Governor Lord Selborne to sanction it, as well as 14 days from the 10th to the 23rd September for Theiler's attendance at The Hague Conference. This was the second time his Government had undertaken Theiler's overseas expenses; but ten years before, the Z.A.R. had failed to refund the £200 owed him. His prospects were better now.

131 Only a few days remained before his departure. Perversely East Coast Fever flared in the Eastern Transvaal, slaughter was ordered and the Government was expected to provide donkeys and mules to compensate for the killed and quarantined oxen. A painful dichotomy afflicted the Government Veterinary Bacteriologist (still earning only £1,200 a year despite his palatial premises and large staff). He longed to remain at his new Institute to control its huge activities and to be at hand when the political currents swirled into straight course and the detailed structure of 'Union' became a unanimous demand of critical importance to himself – so important that already he was being instructed to look for staff, additional equipment and all 132 facilities for converting Onderstepoort into a Central Laboratory for the new South Africa, if not for Africa itself. On the other hand, the lure of Bruce with its chance of visiting East and Central Africa, the International Conference which would 'bring him up to date', his family, his friends, the old familiar ambience of Europe, were powerful forces to take him away. The idea of studying at Zurich had gone by the board. The sooner he left, the sooner he would be back.

In the second week of June 1909, Theiler left by train for Lourenço Marques to board the Deutsche Ost-Afrika liner travelling east. Emma would follow a month later on the next ship, meeting him in Mombasa on his return from Uganda. The children would be put to boarding school. Onderstepoort would run along the lines clearly established, haunted by the rigid principles of meticulous observation, accuracy in recording and conscientious service which its originator had instilled.