

# AUSTRALIAN VETERINARY HISTORY RECORD



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## **Presidents Report**

### **Another venture in online cooperation**

All issues of this periodical, as readers know from information on the inside front cover, are archived in perpetuity by the University of Sydney. Other material published online by the AVHS has not been similarly archived – until now.

The National Library of Australia aims to build a comprehensive collection of Australian publications to ensure that Australians have access to their documentary heritage now and in the future. The Library has traditionally collected items in print, but it is also committed to preserving electronic publications of lasting cultural value. PANDORA, Australia's Web Archive, was set up by the Library in 1996 to enable the archiving and provision of long-term access to online Australian publications. Since then the Library has been identifying online publications and archiving those that they consider have national significance.

(Information about PANDORA can be found at:  
<http://pandora.nla.gov.au/index.html>)

Last month, the National Library asked the AVHS for permission to include Eminent Australian Veterinarians and Milestones in Australian Veterinary History, which are published on our web page, into the selective PANDORA Archive. In response, the AVHS licensed the Library, under the Copyright Act 1968, to copy these publications into the Archive. This means that the Library will retain both publications in the Archive and to provide public online access to them in perpetuity.

There are some benefits in having these publications archived by the Library. The Library will take the necessary preservation action to keep them accessible as hardware and software changes over time. The Library will catalogue these publications and add the record to the National Bibliographic Database (a database of catalogue records shared by over 1,100 Australian libraries), as well as to the Library's own online catalogue. This will increase awareness of our publications among people using libraries.

The titles are available at:

<http://nla.gov.au/nla.arc-63330>  
(Eminent Australian Veterinarians) and

<http://nla.gov.au/nla.arc-63217>  
(Milestones in Australian Veterinary History).

The AVHS, having enjoyed and benefited from cooperation in online ventures with the University of Sydney, is very pleased to now extend cooperation to the National Library of Australia.

Trevor Faragher

**Australian Veterinary History society**

**Our next meeting will be held on Monday 14 May 2007 in Melbourne at the Annual conference of the A VA.**

**We are arranging a program of speakers on topics that will be of interest to members. After an annual general meeting, we will hold our traditional convivial dinner.**

**Mark your diary now. We look forward to seeing you there.**

**STOP PRESS**

**The Max Henry Memorial Library has arrived in the Gilruth Library at the Veterinary School of the University of Melbourne.**

**More information in the next issue.**

## THE MARATHON MIGRATIONS OF SOOTY SHEARWATERS

Every summer, millions of sooty shearwaters arrive off the coast of California, their huge flocks astonishing visitors who may have trouble grasping that the dark swirling clouds over the water consist of seabirds. Scientists have long known that sooty shearwaters breed in New Zealand and Chile and migrate to feeding grounds in the Northern Hemisphere. But the details of this remarkable transequatorial migration are only now emerging from a study using electronic tracking tags to follow individual birds.

The flights of sooty shearwaters documented in this new study represent the longest animal migration routes ever recorded using electronic tracking technology: around 65,000 kilometers (39,000 miles). Taking advantage of prevailing winds along different parts of the migration route, the birds trace giant figure eights over the Pacific Basin.

"The only other bird species known that could rival the migrations of the sooty shearwater would be the arctic tern, which breeds in the Arctic and migrates to Antarctica. But we don't know if they do that in a single season, because nobody's ever tracked them," said Scott Shaffer, a research biologist at the University of California, Santa Cruz, and first author of a paper describing the new findings, published in the online early edition of Proceedings of the National Academy of Sciences (PNAS).

Shaffer worked with an international team of scientists from UCSC and other institutions in the United States, New Zealand, and France. The researchers found that the migratory cycle of sooty shearwaters encompasses the entire Pacific Basin, focusing on the richest feeding grounds in both hemispheres--from Antarctic waters in the south during the breeding season to bountiful coastal currents off California, Alaska, and Japan in the north. These small seabirds cross the equator twice a year in pursuit of an endless summer in which their feeding areas are always at or near the period of peak productivity.

Diving patterns recorded by the tags indicate the birds stop little if at all to feed as they pass through the equatorial regions on their journey between the Southern and Northern Hemispheres.

"When they cross the equator, they're traveling fast and not stopping much to feed. They feed near Antarctica during the austral summer, then zip north to feed in one of three areas of the North Pacific, taking advantage of high productivity throughout the year," Shaffer said.

Sooty shearwaters are one of the most abundant bird species in the world, with a total population estimated at about 20 million. Nevertheless, they are potentially vulnerable to changes in their food supply, Shaffer said. Scientists have reported recent population declines at breeding colonies in New Zealand and in the eastern North Pacific. The shearwaters feed on fish, squid, and shrimplike krill, which they take from the surface or pursue underwater. The electronic tags recorded birds diving to depths as great as 68 meters (225 feet) to capture their prey. Average dive depth was about 14 meters (46 feet).

The new study shows that, contrary to previous assumptions, sooty shearwaters do not make a big pan-Pacific sweep to cover all of their feeding areas in the Northern Hemisphere. Instead, individual birds went to just one of the three major hot spots and stayed there until it was time to return south to breed. But Shaffer said the birds that travel to different regions do not represent distinct populations of shearwaters. "Birds that came to California stayed in California, and if they went to Japan they stayed there and then returned to New Zealand. But two birds from the same nest can end up going to opposite sides of the Pacific, and birds from different breeding colonies can end up in the same place," he said.

The timing and route of the northward migration was somewhat variable, with birds crossing the equator at various locations over a period of about a month. But the return trip was remarkably synchronous, Shaffer said. All of the tagged birds funneled through a narrow corridor and crossed the equator within a ten-day period in October. Ongoing research using tags redeployed on the same birds will show whether or not individual birds have preferred feeding areas that they travel to each year.

The research on sooty shearwaters is part of a Census of Marine Life project called Tagging Of Pacific Pelagics (TOPP), which is deploying electronic tags on 23 species of top predators in the North Pacific Ocean. Daniel Costa, a professor of ecology and evolutionary biology at UCSC who oversees TOPP studies of marine mammals and seabirds, said the shearwater study was only possible because of the increasing miniaturization of electronic tags.

"When we first got together to plan the TOPP program, we didn't know if the technology was available to tag a bird that small," Costa said.

"Sooty shearwaters were a species that we knew came here from the

Southern Hemisphere, but we knew very little about its migratory patterns. Now we know this is an organism that integrates resources across the entire Pacific, which is quite a feat when you think about it." The tag used on the sooty shearwaters, made by a Canadian company called Lotek Wireless, weighs about 12 grams (less than half an ounce). The researchers recaptured 20 tagged birds at two breeding colonies in New Zealand. The tags recorded the daily activities of each bird during part of the breeding season and throughout the migration to the Northern Hemisphere and back. In addition to geographic locations, the tags recorded pressure and temperature data, providing information about the birds' diving behavior and the temperatures they encountered at sea.

The temperature data helped Shaffer's team ensure the accuracy of the location data, using a technique that integrates temperature readings from the animals with those obtained by orbiting satellites. This method was developed in the lab of TOPP principal investigator Barbara Block of Stanford University and validated by Shaffer's team in studies of albatrosses.

Collaborators on the project also included seabird expert and TOPP investigator Henri Weimerskirch of the French National Center for Scientific Research (CNRS). He persuaded researchers in New Zealand who have been studying the shearwater breeding colonies to join forces with the TOPP researchers.

"One of the nice things about TOPP is that we have a consortium of some of the top scientists in the world, which makes it easy to make those kinds of connections," Costa said.

In addition to Shaffer, Costa, Block, and Weimerskirch, the coauthors on the PNAS paper include Yann Tremblay, a postdoctoral researcher at UCSC; Darren Scott and Henrik Moller of the University of Otago, New Zealand; David Thompson and Paul Sagar of the National Institute of Water and Atmospheric Research, New Zealand; Graeme Taylor of the Department of Conservation, New Zealand; and David Foley of the University of Hawaii.

Support for the sooty shearwater study was provided by the Gordon and Betty Moore Foundation, the David and Lucile Packard Foundation, and the National Science Foundation.

More information about the study, including multimedia content, will be available at the TOPP program's award-winning web site at <http://www.topp census.org>.

**Press release from U niversity of California, Santa Cruz**

**This paper was presented to the H istory SIG at the AVA Annual General Meeting, Hobart May 2006.**

### **THE TASMANIAN CONTINGENTS TO THE BOER WAR**

**IM Parsonson  
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Cheltenham VIC. 3192**

It is little wonder that few in the present generation have any idea of the role and sacrifices of their ancestors in a war that occurred over 100 years ago. When one begins to talk about the War in South Africa – better known as the Boer War of 1899-1902, there is a need to fill in the historical background that led up to the war. As this paper deals specifically with Tasmanian colonists who volunteered to serve in the South African War. For this information we have to rely on the written records of historians and the letters and newspaper articles of veterans long since gone.

The war commenced on 11 October 1899 near the turn of the Century as Queen Victoria was in the last period of her reign in 1899/1900 (Victoria died on 22 January 1901).

The war was very relevant to colonial Australians as part of the British Empire. Australia was in the process of taking the final steps from individual, separate States to becoming a Federation. Australians knew their military security depended on the strength and support of the British Empire. The British Navy dominated the sea-lanes to Europe and trade between Britain and Australia depended on access through the Indian Ocean and to the ports of Cape Town and Durban.

The mines and goldfields of Southern Africa and Australia provided an exchange of people, ideas and technologies between the countries.

The Australian colonies offered troops to Britain during the lead up to the war. In September 1899 during a meeting of Colonial Commandants

in Melbourne it was proposed to send a unified force of troops 2123 strong from Australia. The British War Office cable of 3 October 1899 replied to the offer of support by NSW, Victoria and South Australia, but accepted units of only 125 men that were to be attached to British units. The deliberations and suggestions of the Colonial Commandants were put aside although it turned out in hindsight, that their recommendations for the Australian force may have been better than attaching the troops to British regiments.

The Secretary of State for War, Lord Lansdowne, and the Commander-in-Chief Lord Wolseley, expressed their "high appreciation of the patriotic spirit of the people of Australia and provided the following information:

The units should consist of 125 men

Units could be infantry, mounted infantry or cavalry with preference for infantry.

Troops should be armed with .303 rifles or carbines.

All troops were to provide their own equipment and mounted troops their horses.

There must not be more than one captain and three subalterns with each unit.

An officer not higher than a major may command the force where there is more than one unit from a single colony.

Later when a complete Australian Brigade was considered at Bloemfontein, there were no officers of sufficient rank to take command and the Imperial Government could not make promotions without the approval of Colonial Governments.

Two units were accepted from NSW and Victoria and one from South Australia and later from the other colonies except Queensland whose offer of help as early as July 1899 resulted in the provision of two companies of mounted infantry.

The conditions were: - Troops to be landed in South Africa fully equipped at the cost of the Colonial Government or volunteers.

From the date of disembarkation the Imperial Government would pay at Imperial rates, provide supplies and ammunition and defray the expenses of transport, wounded and compassionate allowances were to be at Imperial rates. The troops were to embark before 31 October 1899.

The Australian authorities assembled the units from trained military

personnel and the first contingent sailed on the Medic from Port Melbourne on 28 October 1899 arriving at Cape Town on 25 November. A squadron of NSW Lancers commanded by Captain C. Cox, that had undergone training in England had embarked in England on 9 October on the Nineveh and arrived at Cape Town on 2 November. Cavalry were the least serviceable troops requested by the War Office and when later controversy arose about this comment from the War Office an insult to the Australians was suspected. Combined with limiting colonial units to 125 (ie total from Australia 1080) and restriction of officers to no higher rank than major, the Imperial Government was seen as showing reluctance to accept troops they considered may have been a hindrance to the British Army in the field. This controversy continued to rankle in Australian Army ranks until the 1930s.

Max Chamberlain's publications on the South African War 1899-1902 have provided a large part of this paper on the Tasmanian Contingents. Chamberlain set out to try and establish the facts about the Australian service in the South African War from the mass of confusing material available and employed simple methodologies by concentrating on unit movements rather than individual stories, political controversies, moral dilemmas, newspaper reports etc. By grouping the units into four main waves using recruitment times and areas of service that were similar, it is possible to present their experience separately and chronologically.

#### **Australian Contribution**

The four groups comprising the waves of troops suggested by Chamberlain are: -

The Colonial Units of 1899

The Bushmen of 1900

The Imperial Drafts of 1901

The Australian Commonwealth Horse of 1902.

**Each group except for the last, served for at least 12 months in South Africa.**

#### **Major Events by each quarter year**

1899 December quarter, Events to "Black Week"

1900 March quarter: Relief of Kimberly and Ladysmith, occupation of Bloemfontein.

1900 June quarter: Relief of Mafeking and occupation of Pretoria

September quarter: Advance to Portuguese East African Border  
December quarter: Departure of President Kruger, guerrilla warfare  
1901 March quarter: Invasion of Cape Colony, Great De Wet hunt  
June quarter: Advance to Pietersburg  
September quarter: Botha's attempted invasion of Natal. Smuts invasion of Cape Colony  
December quarter: Raids and drives in Eastern theatres  
1902 March quarter: new model drives  
June quarter: large scale drives in East and West up to the End of hostilities and Peace.

Army service for the Australians ranged over the wide field of South Africa and is often characterised by small detachments trekking across mountains and across the veldt in a complex network of marches and counter marches. Their service can be summarised as follows:

The Colonial units entered Africa through the Port of Cape Town and were sent by the Western Railway. The Victorian, South Australian and Tasmanian troops operating under General French and Clements were on the Central Front preventing the invasion of Cape Midlands. After the occupation of Bloemfontein the Australians were reorganised and took part in the advance to capture Pretoria and east toward the Portuguese East African border.

The Bushmen contingents mostly joined the war from the North arriving at Beira in Portuguese East Africa and travelling through Rhodesia. They were in operations with the Rhodesian Field Force under General Carrington, and later General Plummer. The Bushmen were at the relief of Mafeking and in the siege and relief of Elands River, also taking part in the Great De Wet Hunt and capture of the last Boer capital, Pietersburg.

The Imperial Drafts were mainly landed at Port Elizabeth and trekked north. They served in the innumerable columns to be scouring the areas and driving the enemy in on the wire and blockhouse lines from the Southern Cape to Zululand, suffering in isolated actions like Brakpan, Wilmansrust and Onverwacht, which were less predictable and therefore possibly more terrifying than the more regular battles.

The Australian Commonwealth Horse arrived in Durban in 1902 to assist in the striking force maintaining pressure on the desperate Boer

commandos in large scale drives in Western Transvaal.

Because the Australian units were mostly comparatively small and attached to British commands their deeds are subsumed in the whole and although there were dozens of operations for which the Australians deserve the credit, they were rarely given any credit.

The Bushmen units were raised partly by public subscriptions and explain why the NSW unit was referred to as Citizen's Bushmen. Imperial Bushmen were raised at Imperial expense. Federation of the Australian Colonies placed the responsibility for defence onto the Federal Parliament. Section 114 of the Commonwealth Constitution states – "A State shall not, without consent of the Parliament of the Commonwealth, raise or maintain any naval or military force". So in the first days of the new Parliament it was faced with a dilemma – a task it was unable to do and had to call on the States to perform. This meant that for the only time in Australia's history, states raised armed forces even though they were only acting as agents for the Imperial Government that bore all the costs. The Premiers met on 7 January 1901 and sent a cable to the Secretary of State for War in Britain expressing agreement to send the drafts but requiring the Imperial Government to supply transport to South Africa.

#### **The Tasmanian Contingents in the South African War 1899-1902.**

Tasmania deserves a special comment about the draft of 45 men that was sent to raise the numbers of the first Tasmanian Unit to company strength joining it at Bloemfontein. This draft is sometimes described as the second Tasmanian contingent causing the Tasmanian Imperial Bushmen to be referred to as the 3rd Contingent whereas the 47 Bushmen were part of the 2nd Contingent.

**Unit.** The term unit is reserved for military forces based on formations of a strict size or composition, e.g. company,<sup>2</sup> squadron, battalion etc.

During the war some fifty units were sent overseas from Australia and there were in addition, units of scouts, some privately raised. Each colony/state contributed 6 units except for Tasmania's contribution of five units. Other units were formed in South Africa.

The Commonwealth sent eight battalions of Australian Commonwealth horse (ACH) and the States each contributed to three of these.

**Tasmanian Infantry.** Captain C.St.C Cameraon. 80 men, 4 horses.  
Medic 28.10.1899. Port Melbourne.

**Tasmanian reinforcements** 47 Moravian 23.1.1900 Port Melbourne.

**Tasmanian Bushmen.** Captain AH Riggall. 52 men, 58 horses Atlantian  
5.3.1900. Hobart.

**Tasmanian Imperial Bushmen.** Captain CR Lewis 122 men, 153 horses  
26.4.1900 Manhattan Hobart

**Tasmanian** 2 Imperial Bushmen. Lt Col. ET Watchorn 253 men, 239  
horses Chicago 27.3.1901 Hobart

**1 Australian Commonwealth Horse.** Lt.Col. JS Lyster 62 men, 63 horses  
Manchester Merchant 16.2.1902. Hobart

**3 Australian Commonwealth Horse** Lt.Col.R. Wallace 121 men 121  
horses. Englishman 8.4.1902 Hobart

**8 Australian Commonwealth Horse.** Lt.Col. HG Le Mesurier 120 men,  
121 horses St. Andrew 21.5.02 Hobart.

**Total Men 857. Total Horses 759.**

#### **First Tasmanian Contingent**

Tasmanian Infantry Company/Tasmanian Mounted Infantry. Original  
strength 84 increased by 47 reinforcements. Submits one infantry  
company/later one mounted rifle squadron. C.O. Major C.St.C.  
Cameron. Left for South African 18 October 1899 on Medic, 23 January  
1900 on Moravian.

Service Nov 1899 – Nov 1900 in Northern Cape Colony, Free State and  
Transvaal: Part of Australia Regiment November 1899-April 1900  
converted to a mounted rifle unit.

December 1899 reinforcements from Tasmania sent to North-west Cape  
Colony where some remained while others jointed the Contingent in  
April 1900.

Fatal casualties: four killed or died of wounds, five died of disease.

Decorations one Commander Bath (Cameron) one Distinguished  
Conduct Medal (J Costello)

Returned 7 December 1900 on Harlech Castle

#### **Second Tasmanian Contingent**

Tasmanian (Citizen) Bushmen

Original strength 52

Sub units half a mounted rifle squadron only.

CO Lt.-Colonel E.T. Wallack then Capt. A.H. Riggall then Lt. W.H. Lowther  
Left for South Africa. 5 March on Atlantian  
Service April 1900 – April 1901 in Rhodesia under Carrington and west Transvaal under Methuen; part composite Bushmen Regiment August 1900 – April 1901  
Fatal Casualties: one killed, none died of disease.  
Decorations Distinguished Service Order (Riggall) Distinguished Conduct Medal (G.W. Kemsley)  
Returned to Australia: 14 June 1901 Aberdeen

### **Third Tasmanian Contingent**

Tasmanian Imperial Bushmen/1st Tasmanian Imperial Bushmen.  
Original strength 122  
Sub units one mounted rifle squadron only  
CO Major R.C. Lewis, then Captain A.A. Sale, Major Lewis again.  
Left for South Africa 26 April 1900 Manhattan  
Service June 1900-June 1901 in Free State and Northern Transvaal including ambush at Zwartkoof 1 Sept 1900 and under Plumer as part of the 4th Imperial Bushmen Regiment at battle of Rhenoster Kop (29 November 1900). In great De War Hunt in advance on Pietersburg including ambush outside the town where Captain Sale was killed (8 April 1901) and on advance into east Transvaal.  
Casualties. 4 killed or died of wounds, two died of disease.  
Decorations. 2 Victoria Crosses (J.H. Bisbee and G.G.E. Wylly) for rescuing comrades: 1 September 1900 (Commander Bath Wallack) 2 Distinguished Service Orders Lewis, R.Perkins, three Distinguished Conduct Medals R. Clark, F.A. Groom, A. Stocker (the most highly decorated Australian unit in the war)  
Returned to Australia 5 August 1901 on Britannia

### **Fourth Tasmanian Contingent**

2nd Tasmanian Imperial Bushmen.  
Original strength 253  
Sub units two mounted rifle squadrons  
CO Lt.-Colonel E.T. Watchorn  
Left for South Africa 27 March 1901 on Chicago.

## TASMANIAN CONTINGENTS Casualty by type - all ranks

	Mounted infantry	Bushmen 1Imp	Bushmen 2 Imp	Bushmen	Total
Killed	4	1	2	1	8
Died wounds		2	1	11	14
Died disease	5		2	4	6
Wounded	5	4	8	4	21
Prisoner	8		3		11
Missing	1	1			2

## AWARDS and DECORATIONS

Northern Transvaal – September 1900.

Warmbaths (Warmbad) 1 September 1900

This was the most highly decorated action of the war for an Australian Unit. Captain R.C. Lewis, the commander of the Tasmanian Imperial Bushmen, wrote to his brother explaining what this small unit was doing at some distance from the rest of the contingent.

Source, The Mercury Hobart,  
13 October 1900.

“At 11.30 am I received an order to provide 20 men with an officer to go with Captain EW Brooke of the Army Service Department to protect his men in rounding up some cattle. Lieutenant Wylly and his men started off at noon. Later in the evening news came that the patrol had been badly cut up. They had been taken through a pass into the hills. After returning I reported it unsafe for small patrols to proceed through it, or go further without strongly supported with artillery.” Captain R.C. Lewis was awarded the Distinguished Service Order for his role in the action.

Lieutenant G.G.E. Wylly awarded the Victoria Cross

Trooper J.H. Bisbee awarded the Victoria Cross

Captain R.C. Lewis awarded Distinguished Service Order

Lieutenant R. Perkins awarded Distinguished Service Order

Sergeant A. Stocker awarded Distinguished Conduct Medal

Trooper F.A. Groom awarded Distinguished Conduct Medal

Trooper R. Clarke awarded Distinguished Conduct Medal.

## **Conclusion The Forerunners of The Diggers**

Many Australians could see little relevance in fighting a war in South Africa against South African farmers – (the word Boer means farmer). Over the three years of the war the British Empire, including 15,000 Australians fought against these small Boer Republics. Men and horses that served in South Africa from Tasmania were in five contingents.

Total Men 857. Total Horses 759.

In the Queen's Domain, Hobart a statue of a helmeted soldier with a reversed rifle stands on a plinth that bears 32 names of Tasmanians who fell, five in non-Australian units.

As Max Chamberlain has written: "The Australian soldiers of the Boer War were the forerunners of the AIFs of the two world wars and their numerous examples of courage and mateship suggest that the Digger spirit pre-dated the Digger. Their stories deserve to be preserved and handed on as inspiring tales of Australian sacrifice.

The soldiers served in dangerous places and under trying conditions, performed their duties well as the awards make clear, and suffered much as the long casualty lists testify. They deserve to be remembered as the first of the many Australians who, across the 20th century, undertook for their people and the Nation the disagreeable task of war, and helped to forge an enviable reputation."

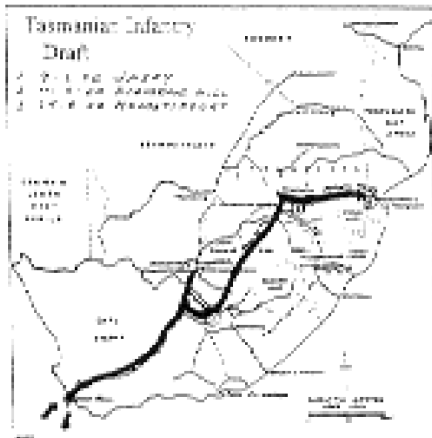
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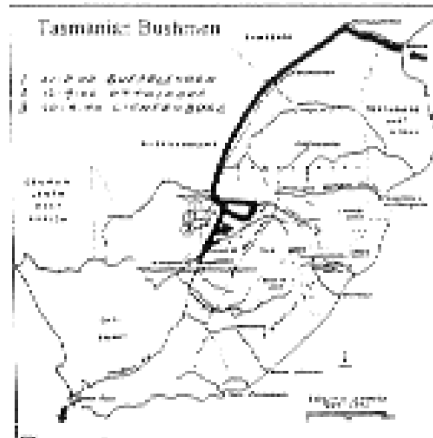
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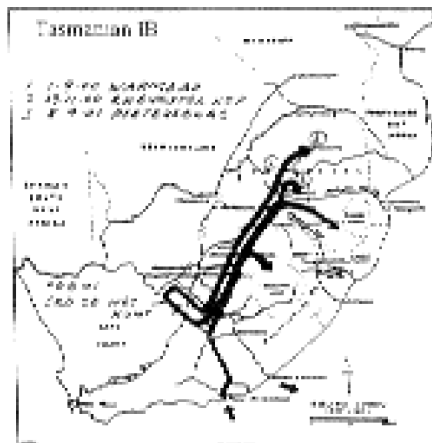
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Map 47



Map 48



Map 49



Map 50

Maps of the movements of the Tasmanian Contingents in South Africa during the South African War of 1899-1902. Reference Chamberlain M (1999) *The Australians in the South African War 1899-1902*, Canberra, Australian Army History Publication.

**From the La Fleche Military School, 1779.**

“The theory was that the best pupils would be selected for the artillery, the engineers, and the navy, and the mediocre for the infantry; only those too stupid even for the cavalry would be sent back in disgrace to their families.”

**BOVINE MEDICINE (CATTLE PRACTICE) in SOUTHERN AUSTRALIA**

**Reminiscences of the formative years 1947-1957 with reflections on the present**

**DC Blood  
209 Watton Street  
Werribee Vic 3030.**

**Beginnings.**

The situation in the period before development of large animal clinical teaching commenced in Australia.

When I reached fourth-year of the course in veterinary science at the University of Sydney in 1940, the lecture course in medicine was taught over two years, general medicine in the fourth-year, special medicine in the fifth year. Up until this time, in both human and veterinary medicine, the teaching in clinical medicine had been entirely anecdotal. For its time, it was adequate, but it was based only on the personal experience of the lecturer, supplemented by the written accounts of other lecturers. There was no attempt to make the subject science-based, statistics-based, or on the basic sciences of physiology or biochemistry, and especially not on pathology. The pathology of individual diseases was well identified, the physiology and biochemistry much less so, but there was no attempt to relate the fields to each other.

Practical clinical work in small animals and a very limited number of horses was carried out in primitive hospital facilities in the grounds of the Veterinary School in Glebe, Sydney. Students were required to undertake six months of practical experience in practitioner's facilities and government premises. No attempts were made to teach the practical aspects of medicine and surgery in large animals in university facilities and there were no country practices anywhere in Australia where such

experience could be gained. The exceptions were those of Dr. Malmo at Maffra and Doug Sefton at Geelong in Victoria. Other practitioners with practices based in a city who did three or four forays into the country each year to do a round of colt castrations and TB testing, were Roy Stewart and Bruce Pottie in Sydney, and Geoff Fethers and Len McManamny in Melbourne.

Prior to 1947 the only practical experience in large animal medicine was with government veterinary officers doing the sort of tasks that such work entails. There was no individual cow service, only herd problems usually of an infectious nature; tuberculosis, brucellosis, vibriosis, trichomoniasis, contagious bovine pleuropneumonia, ringworm, the tick fevers and large scale poisonings, especially arsenic, lead, ergot, cyanide and such. As a government cadet I filled all of my vacations in this way. Militia camps also occupied some time and provided experience in horse management, riding and common ailments. In the last two years, the time spent in camp was greatly increased because of the war and the apparent imminence of invasion by the Japanese army.

At that time Sydney University provided the only university level training in Veterinary Science in Australia and all the above comments refer to that school.

### **The Formative Years. A large animal clinical facility at the University of Sydney.**

About 1937 the University had purchased a farm with a grant from the McGarvie-Smith Trust for the express purpose of teaching animal husbandry, previously called Zootechny. Animal Husbandry was the exciting new subject being added to veterinary curricula at that time. The farm also had obvious potential as a place to establish a large animal clinic and hospital. No consideration was given to the suitability of the selected site for such a purpose. The land was originally a part of a research unit belonging to CSIRO and the two establishments continued in close company for many years.<sup>1</sup>

The addition of a clinic to the functions of the farm at Badgery's Creek, and its continuation at Camden, was an afterthought initially but has increased in importance over the years.<sup>2</sup> When the farm moved from Badgery's Creek to Camden in the mid-fifties of last century, I was

determined the location would be quite wrong for a clinical practice and wanted it to be separated from the farm and moved to Dapto on the South Coast of New South Wales, south of Wollongong. The Dean of the Faculty at that time, Professor Carne, moved unilaterally without faculty consent to move to Camden. A pitched battle in faculty resulted in a ruling by the Vice-Chancellor that the move to Camden was to continue. I immediately resigned and accepted an offer to move to Canada that I did in 1957. The Farm, and its attendant clinic and hospital, continue at Camden (Cobbitty) to the present day but it badly lacks the flow of clinical material with cattle needed to educate a class of veterinary students. The fault was in the location. It was where it was because of a large benefaction including two large functional dairy farms.

#### **Clinical work at the animal husbandry farm.**

Jim Steel and I had had very little experience in veterinary science, this was because I had spent two years with the mounted unit in the army and Jim had worked as a temporary lecturer in medicine in Sydney. Just before we began our teaching, it was arranged that we get some clinical experience in a hurry. Jim came to Victoria to visit Geoff Fethers in Melbourne and Doug Sefton in Geelong. In their private practices Jim saw mostly companion animals, but some cattle work with Doug Sefton.

<sup>1</sup> *The CSIRO field station was used for the study of genetics of the merino sheep, an activity of little interest to students. However, Dr RB Kelly, the Director, had a keen interest in the development of a breed of dairy cattle that could tolerate tropical conditions. His Zebu cattle provided some exciting clinical experiences for university staff.*

<sup>2</sup> *During the next few years, while I was running the clinic at Badger's Creek, I established a relationship with the dairy factory at Penrith. At the end of each month, I sent a list of accounts payable by the farmer the factory paid me and subtracted the amount from the farmer's monthly cheque. This was a direct copy of the club system as it was practiced in New Zealand. It became widely used in Australia, and many of the existing practices, especially in Victoria, commenced in this way.*

I went to New Zealand and visited a number of practices and other centres especially the club practices which the Dean foresaw as a way that Australia might go in the next few years.

When we returned from these excursions we began our lecture courses, started an ambulatory large animal clinic providing veterinary services to surrounding farms and, with a handsome laboratory already in existence at the Farm, began a clinical research unit.

We had little idea of how to run the clinic. It was only after I saw how it was done at Cornell University in the USA that we realised how poorly the clinic served our purpose. We acquired a panel van to take students to cases, and Len Larsen, a recent graduate, was appointed as clinical assistant. He saw the bulk of cases and I saw only those that I needed for teaching. We shared the emergency cases that occurred at nights and weekends. Larsen left to join the Surgery Department at the Veterinary School in the city and left after two years when David Hutchins joined me.

David ran the practice almost single-handed until 1951. I was away at Cornell University for almost two years, learning how to run a large animal teaching practice, especially the treatment of diseases of dairy cows. For the two years previous to that, I was also doing double duty by teaching the fourth year classes while Jim Steel was away at Cambridge in the UK studying equine cardiology. My time in the growing clinic at this time was minimal, but I remember filling for Dave on night and weekend-holiday work.

I returned from Cornell in 1951 full of confidence and some experience. We ran a full-time clinical service to farms between Camden and Penrith. Our clients were relatively few and were mostly poor quality dairy farms on very poor land and stall-feeding nondescript herds of 20 to 30 cows. We soon picked up a few very good herds in the Penrith area. There we had the competition of Tom Hungerford and we managed to take only a few herds from him. At the Camden end of that practice we made almost no inroads on the clients of Bill Sidman. Much of our work was income earning but of no real interest with house cows on farm plots at the edge of towns such as Liverpool and Cabramatta.

We also knew very little about the actual diseases we were setting out to diagnose and almost nothing about how to examine the patient to make the diagnosis in the first place. So we began the onerous tasks of

developing the necessary techniques to conduct these tasks.

We began with auscultation with a stethoscope of the rumen and defining what was normal and what was abnormal and how the abnormalities were detectable. We spent a lot of time on this and prayed for but never obtained a sound recording mechanism so that we could demonstrate and teach. Percussion to determine painful locations was another technique that we soon developed. Palpation of the pulse and cardiac auscultation were essential to identify pericarditis, endocarditis, pleurisy and pneumonia because of the high frequency of traumatic reticulitis and its sequelae. Accurate palpation of the coccygeal arterial pulse, rectal palpation of the reproductive tract and the caecum and small intestines needed a good deal of refinement. We established clinical routines to cover all of these contingencies and felt that we had the area covered in a practical way.

Because we needed the techniques developed by others we also introduced into our teaching the use of flutter valves, plastic syringes and disposable needles and scalpel blades, balling guns and boluses for the administration of such things as sulfonamides, blood sampling from the caudal vein, vacuum tubes for blood sampling, stomach tubes, pregnancy diagnosis by rectal examination, the use of rubber sleeves and cosmetic dehorning all arrived on the clinical scene at this time. The treatment of downer cows always defeated us but we had many attempts. Mastitis ointment in individual tubes made our daily chores almost bearable.

We began research work on predisposition of cattle to milk fever, the use of implant magnets to prevent traumatic reticulitis and the effect of all aspects of the climate of the occurrence rate of the common diseases. We encountered in cattle, a massive outbreak of curly calf diseases, developed a technique for dealing with it, and began an investigation of its cause. This took the form of injecting milking cows in the farm herd of the university farm with an intravenous injection of fowl pox virus. I left soon afterwards to migrate to Canada and waited with bated breath for the right results to reach me by mail. They were negative and soon afterwards, others proved that the cause was Akabane virus in published papers.

We were very active and published a number of papers; milk fever prevention, effect of climate on disease incidence, and magnets in the prevention of TRP amongst them, in the Australian Veterinary Journal, probably three or four papers a year.

David Hutchins stayed on at the Cobbitty farm, running the clinic and establishing a sizable hospital. The patients were almost completely equine. They were Dave's principal interest and surgery his principal activity. He ran the unit until he retired recently as an Associate Professor.

### **Development of modern medicine in large animals at the University of Sydney.**

With Jim Steel and about 20 others, I was fortunate enough to be taught medicine by an Englishman named Herbert Parry. He was by no means a skilled clinician, but he was enough of an experimentalist to realise that the relationship between the basic sciences and clinical manifestations was there and that to establish that relationship was the only way to develop a true understanding of the disease process. This was at a time when the textbook was published that made it possible to establish the relationship between lesion and clinical sign. It was *The Physiological Basis of Medical Practice* by Best and Taylor. Using this book as the basis, Parry conducted us into the beginnings of science based clinical medicine. We interpreted the word "clinical" to mean "in the individual animal". Our emphasis was on palpation, auscultation and percussion with great dependence on the stethoscope. From the beginning we also sought assistance from the clinical pathologists, a discipline that had assumed its own important place, together with the epidemiologist, whose knowledge of the pattern of development of the disease in the wider population provided ancillary support for the diagnostician. Until our time epidemiology was pretty much a tool used in the control of infectious disease.

It seems reasonable to claim that our development of clinical medicine played a large part in the sudden surge in large animal practice that occurred at this time. Other factors important in this increase were the coincidental and providential appearance of many medicines, especially phenothiazine, the organochlorine insecticides, antibacterials such as the sulphonamides and antibiotics, general and local anaesthetics and muscle relaxants. Plastic disposable syringes and needles, especially the vacuum containers that made tail bleeding so easy, contributed much to the eradication programs that depended on blood tests. The string of developments seemed self-perpetuating. All of these developments added something to the developing field of large animal medicine. Even more

overseas trips made by Jim Steel to Cambridge where he began his clinical research which developed in later years to his study of equine cardiology, and my two visits to New Zealand to see at first hand the development of club practice and to Cornell University to participate in their ambulatory clinic and the growth of their mastitis control program and fertility maintenance. Rectal pregnancy diagnosis in cattle became a practical reality, and the rubber, then plastic sleeve for rectal examination, a constant component of every veterinarian's equipment.

### **Shifting of the focus to preventive medicine.**

We realised about 1972 that we were approaching the limit of clinical investigation that a case of illness in a single cow or in a herd could support financially. Our examination technique of the ruminant digestive tract was now firmly established. To take it further into the fields of electronic imaging and saturation type clinical pathology appeared to be counter-productive. We turned our focus to that part of preventive medicine that appeared to need greater expertise. We called it Herd Health, the name coined by Professor J Cote at the University of Guelph in the 1960's.

The introduction of Herd Health into the curriculum required the addition, in minor roles, some learning in the realms of statistics and agricultural economics. Jim Steel and I, especially Jim, had devoted our intellectual endeavours for many years to establishing the relationship between basic sciences and clinical signs. For this next phase, we were fortunate to obtain the services of Roger Morris and Robert Cannon, and later Norman Williamson. The program which they developed was highly successful but was discontinued in my department when Morris and Cannon moved to other locations and continued their work elsewhere. It was essentially applied epidemiology. What one realist has called gumboots epidemiology.

The proposed development of Herd Health into a separate service provided by country practitioners, did not eventuate, rather its main contributions of computer-based databases that maintained awareness of fertility levels and made possible controlled mating for purposes of controlling herd numbers. It was a husbandry procedure, health problems were recognised incidentally. Mastitis control proved to be a more elusive goal achieved only in recent years when the recognition of mastitis as a

important was the appearance of Jubb and Kennedy's "Veterinary Pathology" and "Veterinary Pharmacology" by Jones.

The other factor in this development of large animal practice, was the Highly developed modern dairy cattle practices have developed a much more practicable and serviceable service which combines preventive medicine and management practices, especially nutrition, milking hygiene and controlled breeding, provided as individual services on a consultation basis by senior staff who specialise in their relevant disciplines. Clinical medicine delivered to individual cows is not as important as it was twenty years ago, especially in the very large herds where the cows are not longer treated as individuals but as parts of a production machine.

#### **Computer-Assisted Diagnosis.**

Having developed some skills in the techniques of "herd health" and with the advent of computers as everyday tools, for the veterinarian in the field it was more or less inevitable that we should pass into the third phase of clinical medicine, statistical medicine. This came in the form of a proposition from Pauline Brightling and Mike Larcombe that we attempt to write computer programs that established the probability occurrence of individual clinical signs in individual diseases and eventually make a computer-based diagnosis a possible final step. Our programs were eminently successful in the veterinary schools but never came near a workable take-up level by practising veterinarians.

#### **Derivative Publications.**

The first five years of development of science-based clinical medicine was marked by the production of the textbook, "Veterinary Medicine" by Blood and Henderson, in later editions led by Otto Radostits who was joined later by Clive Gay, Ken Hinchcliff and Peter Constable, all originating from the Sydney, Guelph and Melbourne group; and subsequently, the production of nine further editions. The second phase of herd health programs, was marked by a textbook "Herd Health" by Radostits and Blood and two subsequent editions and a computer program called Melbourne University by Morris and Cannon, which is no longer available but formed the basis of many subsequent programs. The statistical phase saw the production of three highly successful computer-assisted diagnosis programs, Bovid, Camid and Phyttox by Larcombe,

Brighting, Blood, Mitten and McKenzie. These programs were technically successful but failed to enlist support from the practicing profession that they were intended to service, and their production ceased about 1995. Many publications in scientific journals, especially the Australian Veterinary Journal, formed the basis for the books and computer programs and are to be found in the bibliographies of these publications.

**Clinical skill of average practitioner in bovine medical practice – accreditation.**

No measurement of the level of clinical proficiency of practitioners is available so that any assessment of the effect of improvements in the service provided to farmers could only ever be speculative. The same comment of course, applies to human health services. In our profession the Veterinary Boards are charged with that responsibility but are limited to ensuring that gross malpractice is penalised. Nowadays registration as a specialist is customary and indicates that some veterinarians have skills at levels superior to the average. Most such specialists are in companion animal and racehorse practice. There appear to be no specialists in bovine medicine. It is noted that there are no such specialists in North America. Any specialist service provided is from university personnel and it seems highly probable that such service is not financially viable in private practice.

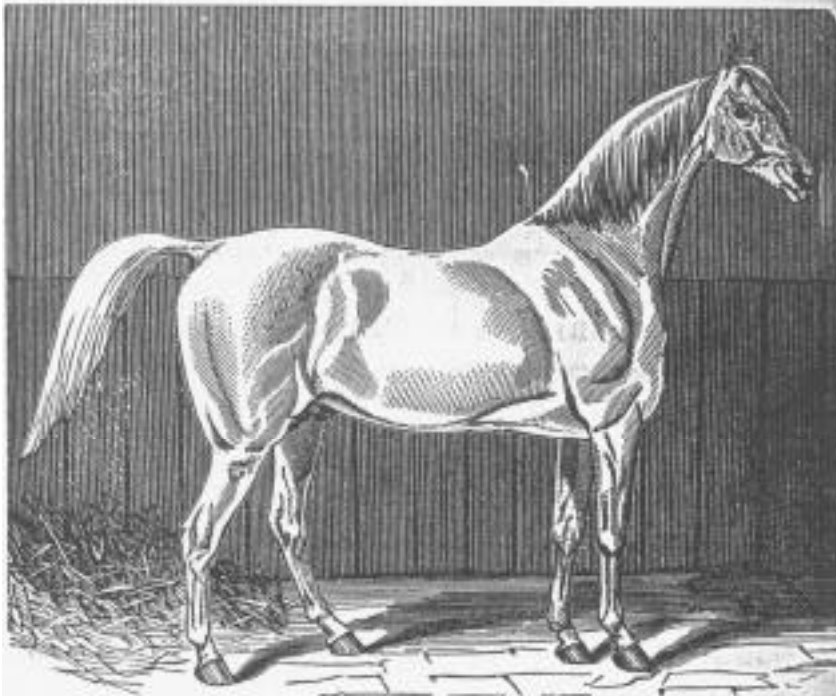
Although accreditation of practitioners is not done, accreditation of the institutions is carried out in the veterinary schools by visiting panels, e.g. from the USA and UK.

The fact that the profession now actively supports the Australian College of Veterinary Scientists is, at least, an assurance that members are prepared to spend time and money to improve their skills and knowledge. Fellowship in the College is accepted by some Veterinary Boards as a basis for registration as a specialist. Membership strength of the Large Animal Medicine chapter of the College, or some much nomenclature, would be some indication of the interest of the practitioner force in self-improvement.

Most of what veterinarians actually do consists of routine vaccinations, blood testing, milk testing, pregnancy testing, lameness prevention, and run-of-the-mill obstetric cases. These are repetitive physical tasks requiring little skilled intellectual input. It is work that could be reasonably effectively performed by a trained technician/nurse.

Perhaps this is at the back of the minds of the people supporting the development of the new, modified veterinary schools in Wagga, Townsville, and possibly Roseworthy.

Many years ago, try 60, at an AVA meeting where I was promoting the need for better clinical skills in the profession, I was challenged by a senior member of the profession to prove that what I was recommending would make any significant financial contribution to the dairy industry. I was so sure that it would. I wonder if it has made much difference and, in the highly industrialised culture of animal farming today, wonder if that significance is now on the decline.



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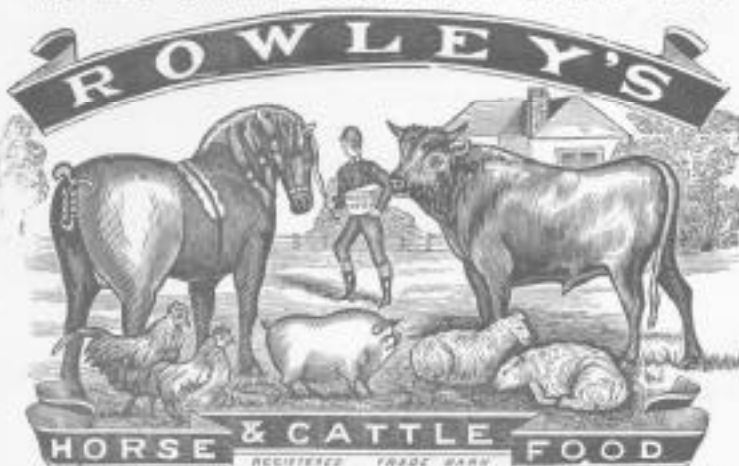
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