A HISTORY OF EARLY SOUTH AUSTRALIAN LIVESTOCK INTRODUCTIONS

STOCK DISEASES AND ASSOCIATED SUBJECTS

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INTRODUCTION:

The early settlers who introduced their sheep, cattle, horses and other domestic animals into the province of South Australia faced a maze of problems. Virtually nothing was known of the nutritive value of the pastures or the toxicity of the strange plants or the possibility of the local waters or the vagaries of the seasons. The only knowledge available was that gained by extrapolation of experience in New South Wales and this of course was of limited value. Most of the early settlers were direct from Britian where a vastly different environment prevailed. Only the experience, often gained at the cost of severe losses did these early stockowners learn how to manage their flocks successfully.

The reports of stockowners, agents, inspectors of sheep and stock and other observers and the accounts of their experiences reveal the problems they encountered, the shrewdness and accuracy of their observations and their ingenuity in dealing with the environment. Time and time again the relationship between stock illness and deaths is correlated to certain types of pasture or soil or other factors even though the actual reasons why the losses occurred was not known. Even when the cause of the many infectious and non-infectious diseases was recognised, what to do about them remained unsolved in many cases. The treatments available were primitive in most cases and those adopted often depended on the coincidence of some chance recovery following some line of treatment or the standing of the local know-all in the community. Treatment and often prevention depended largely on what was available, hence the popularity of kerosene, phenyle, oil of turpentine, tar, lime and similar farm or household items of the day. Kerosene was a standard remedy. It was used for lice and for fleas on dogs; for distemper and as one wit remarked, if it did not cure the dog it was only necessary to put a match to the rear end of the carcase to dispose of it. It was used for vaginitis in cows often of course resulting in permanent sterility; and for disinfecting wounds. Copper filings were a standard treatment for distemper; tobacco or Condy's crystals rubbed into snake bites were strongly recommended. An early specific for pleuro-pneumonia of cattle was the insertion of a bulb of garlic into the dewlap. This at least had the advantage that if the animal recovered the meat may have already been garnished for those who like garlic flavouring. Garlic was also flavoured for the "blockage of the water"

in horses where those affected with colic appeared to be straining to pass urine. Unthrifty cattle often had the end of the tail cut off to let out the "bad blood". The list of such beliefs is endless, but the examples given serve to exemplify the knowledge of the times and underline the difficulties which faced the early settlers. They also act as a background to this history of the stock diseases which affected the flocks and herds of South Australia in the years between 1836 and 1900.

Unfortunately the early introductions of livestock both from other colonies and overseas were not free of infectious diseases. No quarantine restrictions were in force to ensure that only disease-free animals were introduced and even if there had been such protection the available knowledge was too primitive to have been of much use. In this day and age we tend to forget that it was not until over 30 years after South Australia was settled that Pasteur demonstrated the role of living agents such as bacteria and fungi in causing disease. This is amply demonstrated in reviewing the history of sheep scab and pleuro-pneumonia which have been written elsewhere.

In an attempt to bring together as much of the early history of the stock problems which beset the early settlers in the province of South Australia as is readily available, a search was made of the early newspapers such as 'The Adelaide Chronicle (not to be confused with the 'South Australian Weekly Chronicle' and 'Mail' which commenced publication much later), 'The Adelaide Observer, 'The Examiner', 'The South Australian, 'The Register', the South Australian Weekly Chronicle, of the annual reports of the Chief Inspector of Sheep (after 1888 he was Chief Inspector of Stock) and of various other reports and publications. In addition to diseases other interesting associated subjects such as brands, slaughtering for human consumption, sheep washing and other sidelights have been included in this history. As stated earlier the stories of sheep scab and of pleuro-pneumonia of cattle have been written in detail and are available separately.

LIVESTOCK IMPORTATIONS

The first stock recorded to have been landed in the Province were 6 merino and leicester rams, 2 cows and a few goats in 1836 ex the "John Pirie". In the same year 70 sheep were landed from Tasmania. Some of the subsequent importations make interesting reading and raises the queries of where did they go and why did some disappear without trace. The South Australian of 14th July, 1840 records the importation per the "New Holland" of one Extramadura boar and sow and one Alderney bull and cow. It also lists two hares, but their destiny is no mystery. The Adelaide Observer of 11th April, 1857 refers to an extract from the Melbourne Argus stating that four alpacas had arrived in Adelaide and that they would cut 7½ lbs of wool per head at 2/9 to 3/- per lb. In its issue of 9th May, 1857 the same paper in its Port Lincoln news advised of the arrival of the alpacas and of Angora goats at Mr. Hughes property at Taitaka. The Weekly Chronicle of 18th July, 1863 referred to the importation of 20 Negretti rams from Hamburg by B. Armstrong and Company for sale.

In a further reference to Negretti sheep the Chronicle of 17th October, 1863 in an abridged article from the Border Watch of 7th October, 1863 reports that 36 ewes and 35 rams both 18 months old half-bred Negretti sheep owned by H. Jones of Binnum Binnum after being washed, clipped 4½ and 5 lbs 1 oz. respectively. The sire, a Negretti ram of Herr Hoffschlaeger's breed, clipped 20 lbs of wool in the grease and his daughter aged 18 months out of a pure Negretti ewe clipped 6 lbs of wool after being washed. All sheep had been freshly shorn in September, 1862. The chronicle of 25th May, 1861 reported the introduction of Chinese sheep into New South Wales from Schangtung province to the north of Shanghai. The importer was Messrs. Dalmahoy, Campbell and Company. Fifteen were shipped to Melbourne and five were purchased by T. Graves of Adelaide arriving per the "Oscar".

The history of camels in Australia has been well documented elsewhere, but it is of interest to record that the Adelaide Chronicle of 14th October, 1840 reported : *"On board the "Appoline" which arrived from London on Monday there is a camel being all that remains out of half-a-dozen shipped from Teneriffe."*

Quarantine Controls:

From the first settlement of South Australia stock flooded in not only from the other Australian colonies, but also from many other parts of the world. The earliest inspection requirements were under the Scab Act, 1840 which gave the inspector with the quaint title of Inspector of Diseases in sheep power to inspect sheep introduced into South Australia which were reported to be diseased and to report to the Commissioner of Police who could require the owner to pay 10/- per head on all sheep and lambs in addition to the normal import duty. As the position of Inspector was abandoned after six months because of financial problems, it would appear that there was little if any inspection done. By proclamation under the Stock Act of 1861, the introduction of sheep from New South Wales and Victoria was prohibited unless authorised in writing by the Commissioner of Crown Lands. In 1863, by amendment to the Scab Act of 1859, the issue of permits was transferred to the inspectors who had been appointed under this Act. The conditions to be satisfied for the issue of a permit were such that the introduction of sheep from Victoria and to a less extent New South Wales was virtually prohibited. In 1866, the conditions were extended to include Queensland, Western Australia, Tasmania and New Zealand.

The occurence of contagious bovine pleuro-pneumonia in Victoria in 1858 led to placing restrictions on cattle from that colony in 1861.

The earliest reference to action in respect to diseased stock from over-seas is the destruction under the powers of the Scab Act of seven scab infected rams from England in 1858 and a further consignment in 1870 was held on board and then on a launch for two months for treatment before release. Rams imported from Germany in 1861 were found to be scab infected and were stopped from landing.

By Gazette notice published in the Chronicle of 24th February, 1866 the importation of cattle sheep, horses and pigs from the United Kingdom or continent of Europe was prohibited unless the importer produced to the Collector of Customs a certificate by Thomas Chalwyn, M.R.C.V.S. veterinary surgeon to the Police Force, that they were free of disease.

In June 1866 (1) a question was asked in Parliament as to whether a site for a quarantine station had been selected. In February 1872 (2) this matter was again raised in Parliament and reference was made to the importation into New South Wales of cattle with foot-and-mouth disease. In reply the Commissioner of Crown Lands advised that the Chief Inspector of Sheep had been instructed to report on a suitable site for a quarantine station. The necessity for a quarantine and for a qualified veterinary surgeon to carry out the duties of inspection of imported stock was raised in March 1872 by Joseph W. Horton M.R. C.V.S. (3) and by Mr. Angas (4) in Parliament. By proclamation the importation of cattle from Victoria was prohibited for one month as from II June 1872 (5). This action followed reports of foot-and-mouth disease in that colony. At the same a Bill was introduced providing powers to proclaim quarantine grounds, prohibiting the landing stock, fodder or fittings until inspected and a licence issued; landed stock to be held in a quarantine station at owner's expense until free of disease; prohibiting the importation of stock from any country where disease is known or suspected to exist. The Bill also contained amendments to the Scab Act and in the subsequent debate (7) there was more emphasis on that disease than on any other aspect. This Bill was later amended and all reference to Scab ommitted (8). It was then passed to the Legislative Council and after much debate between the two Houses was finally passed. In the meantime a committee comprising the Commissioner of Crown Lands, the Surveyor General, the Chief Inspector of Sheep and others had visited Torrens Island to select the site for the station (9). In July 1873 the importation of horned cattle, sheep, pigs or goats from New Zealand was prohibited (10). In his report for the half year ending 30 June 1873 Valentine referred to the importation of sheep, cattle and goats and stated that several small lots of sheep were expected from England which would then finish the importation of stock except from the Australian colonies for two years because of foot-and-mouth disease in Europe. All stock were placed in quarantine "as well as my means will allow" for 60 days. Sheep were dressed twice in hot medicants. Cattle and horses were disinfected with carbolic acid; boxes fittings etc. were cleansed and disinfected; litter was destroyed and no fodder landed. Where the stock were quarantined; is not known. Torrens Island was used for the first time in 1879 when 23 Shorthorn cattle, 4 Lincoln sheep and 4 Berkshire pigs were quarantined for 90 days (11). This followed the lifting of restrictions by all colonies. Sheep from other colonies continued to be suspect because of scab but in 1881 revised orders under the Public Health Act were gazetted to reduce the period of quarantine for sheep by sea from

Queensland, New South Wales Victoria and Tasmania to six days with one dressing. Sheep from New Zealand and Western Australia were subject to 14 days quarantine and two dressings (12). Prohibition of imports of horned cattle, sheep and swine from Great Britian was re-imposed in 1882 because of foot-and-mouth disease in that country and this continued until after the Conference of C.I.S., veterinary surgeons and stock breeders of the Australian colonies held in Melbourne in 1889 (13), Western Australia had not imposed any restrictions on stock from Britain and Valentine in his report for 1889 states that 7 horses, 11 sheep, 4 cattle and 5 pigs "from beyond the colonies were admitted through Western Australia after performing quarantine in that colony (13)" This loophole in respect to sheep was then closed by prohibiting the entry of sheep including sheep skins from New Zealand and Western Australia because of the continued presence of scab (14). In 1890 the entry of all stock from Western Australia was prohibited because that colony had not joined with the other colonies in the prohibition and quarantine of foreign stock.

The periods for which stock were quarantined varied considerably over the years. The conference of 1874[15] agreed to a period of 50 days at least with the proviso "that on the expiry of the existing prohibition (on the importation of sheep, cattle and pigs) it be again renewed and maintained until it is ascertained that no foot-and-mouth disease, rinderpest nor sheep pox, nor any other infectious or contagious disease in stock not known to exist in Australia, exists in Great Britain and Ireland". Those animals which arrived in 1879 were quarantined for 90 days. The 1886 conference[16] in Sydney which agreed to remove the prohibition on imports of sheep and cattle following separate action by Queensland, N.S.W. and South Australia, also agreed to quarantine periods of 120 days for cattle, 90 days for sheep and six months for dogs. All sheep and cattle had to be shipped from the Port of London. The Melbourne conference of 1889[17] recommended that "the quarantine for the several animals shall date from the date of landing and shall be as follows:- horses 14 days; Cattle including buffaloes 60 days; sheep 90 days; camels 90 days; goats, deer, llamas, antelopes and any other ruminants 60 days; dogs 6 months. Swine were prohibited. All foreign sheep were to receive two or more dressings with tobacco and sulphur or lime and sulphur. That conference also resolved that all animals and things should be prohibited except cattle and sheep from Great Britain and Ireland unless they had been 14 days in those countries; Swine from all countries, ruminants such as goats, deer etc. from all countries unless for a zoological society; and all fodder and litter with which foreign

animals had been in contact and from any foreign vessel. Horses, camels, and dogs were permitted from any country. Glasgow was included as a port for shipment.

The 1892 conference in Wellington N.Z.[18] repeated the above resolutions but reduced the period of Quarantine for sheep to 60 days and included swine which were also to be quarantined for 60 days. In 1889[19] it was reported that the term of quarantine for sheep and swine from Great Britain had been reduced to 30 days but "special introduction of stock from beyond Great Britain is allowed with a quarantine of 60 days." In 1909 conditions for the importation of stock became the responsibility of the Commonwealth although the supervision and actual carrying out of those conditions was deputed to the Chief Veterinary Officers of the States as Chief Quarantine Officer (Animals).

Probably as a result of Pasteur's work on the epidemiology of rabies, the need to control the importation of dogs was raised in 1883 when Valentine[20] reported as follows:- "In consequence of representatives from the N.S.W. Government suggesting that united action might be taken in prohibiting the importation of dogs into the Australian colonies to prevent the introduction of hydrophobia, enquiries were made and it was considered advisable to join with the other colonies in prohibiting dogs, except under quarantine, from all places beyond the Australian colonies and New Zealand, and action was taken to frame regulations under the Public Health Act. The orders provide for notice, on arrival of a vessel with dogs in a South Australian port, being given to inspectors and all dogs required to be examined by a veterinary surgeon; if healthy they may be removed into quarantine at Torrens Island for a term of six months; ship's dogs are allowed to remain on board the vessel but must be carefully secured and no dogs allowed on board any vessel from land except under the liability of being destroyed. All dogs arriving diseased well be destroyed; the term and expense of quarantine being long and heavy none but valuable dogs are likely to be imported.... The master of one vessel was fined £10 for not giving notice as required." In 1884 Valentine[21] reported that 67 dogs were examined at Port Adelaide, four were destroyed by owners rather than pay the examination fee and one was placed in quarantine. He goes on to say "Not having an inspector constantly attending to duties in Port Adelaide the regulations regarding dogs allowed to be kept on vessels whilst staying in port are not, I am afraid, strictly carried out and the question arises whether it would not

be better to destroy all dogs arriving in Port Adelaide unless they are removed into quarantine". In 1889 he again refers to dogs on ships and states "The arrangements for dogs arriving in port and not intended to be landed are not altogether satisfactory as they are only noted by Customs officers who have other duties to perform. The system of requiring a bond from the captain as at present in force in Victoria will, if adopted here, be of considerable advantage and give a little more protection. The absence of rabies in the colonies has a tendency to cause people to think the restrictions uncalled for and too strict."

The early newspapers and reports of the Chief Inspector of Sheep contain many interesting references to the importation of camels but that for 1884 is most intriguing in view of the prohibition on the importation of cattle, sheep and pigs from England because of the risk of introducing foot-and-mouth disease. In that year 661 camels were imported from India and Valentine writes "the fact however that great losses have been sustained in India from foot-and-mouth disease and from tuberculosis has rendered it necessary, as a protection to the now very important interest, that the importation should be regulated to prevent any being landed suffering from either of these diseases.... and that any suffering from foot-and-mouth disease or tuberculosis should be destroyed at the port". Regulations to this effect were published in the Govt. Gazette on 18 Dec. 1883. Later reports refer to a 90 day quarantine period for camels.

After checking the early records of the animals imported into South Australia (and Australia generally) the reaction can only be one of sheer amazement at the freedom of our domestic animals from so many of the serious diseases present elsewhere in the world. In addition to the domestic stock from the British Isles, our early importations made without worthwhile inspection or any quarantine procedures on or before arrival, include various species from South Africa, India, Asia, Europe and South America (llamas). No doubt the long periods at sea helped considerably but that still does not adequately cover such diseases as rabies and many others. Some such as pleuro-pheumonia and foot-and-mouth disease did enter Australia but fortunately were eradicated. In the case of pleuro-pheumonia eradication occurred a century later and in the meantime the disease had cost the cattle industry untold millions of dollars.

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(3)	South Australian Weekly Chronicle	2nd March, 1872	Page 6
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(5)	South Australian Weekly Chronicle	15th June, 1872	page 10 & 1
(6)	South Australian Weekly Chronicle	15th June, 1872	page 15
(7)	South Australian Weekly Chronicle	22nd June, 1872	page 4
(8)	South Australian Weekly Chronicle	27th July, 1872	page 12 & 1
(9)	Advertiser	14th August, 1872	
(10)	South Australain Weekly Chronicle	12th July, 1873	page 9
(11)	South Australian Weekly Chronicle	9th August, 1873	page 9
(12)	Report Chief Inspector - Sheep	1879	
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(16)	Report Chief Inspector - Stock	1886	
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(18)	Report Chief Inspector - Stock	1892	
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(20)	Report Chief Inspector - Stock	1883	
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(22)	Report Chief Inspector - Stock	1889	
(23)	Report Chief Inspector - Stock	1884	

ANTHRAX

Although anthrax was diagnosed as the cause of death in pigs, cattle, and horses possible as early as 1902 but certainly between 1906 and 1914 it is strange that it did not become established in this State and why it has never been positively identified since 1914.

Anthrax was first diagnosed in Australia in New South Wales in 1847 and subsequently in Victoria and occasionally in Tasmania up to 1933 and rarely in Queensland but not since 1877. (1) As the herds and flocks of this State were built up largely from cattle and sheep brought overland from New South Wales and Victoria it would have been expected that anthrax would have been introduced with them in the early days of settlement.

There is some doubt as to when anthrax was in fact first recognised in South Australia. There are references to an outbreak at Eudunda diagnosed by Desmond in 1902. (2) & (3) This supported by the proclamation of special regulations in that year. (4) Desmond G.M.V.C. who was then Government Veterinary Pathologist, in an article in the Journal of Agriculture 1906 (5) states:- "In this State three outbreaks are recorded - the first in horses; the second in pigs where a human being was affected in handling the carcases and his life dispaired of; the third in dairy cattle where also a human being became inoculated through skinning the dead animals. In the first and third outbreaks the diagnosis was proved up to the hilt". The third outbreak referred to the death of 23 cattle at the sewerage farm at Islington in 1906 by John M. Morris M.R.C.V.S. Veterinary Officer with the Metropolitan Board of Health. (6) & (7) The manager of the farm also contracted the disease but fortunately recovered. The story is told that while the manager was in the laboratory watching the examination by Desmond of the material he had brought in from the dead cattle the latter noticed a lesions which looked like a malignant pustule on the managers arm. Without warning he took a scraping whereon the Manager fainted and when he came to he was in the Adelaide hospital under treatment for anthrax. The diagnosis had been confirmed by Dr. Angas Johnson, Medical Officer with the Board of Health. Angas Johnson also stated that he had seen two previous cases - the first in 1904. The next report of anthrax in South Australia is in the report of the Chief Inspector of Stock for the year ending 30 June 1909 (8) when he states:- "Two outbreaks of anthrax (horses) occurred on two farms near Wallaroo. Quarantine was declared and the stock from both farms vaccinated

with anthrax vaccine. This outbreak there is little doubt, was caused by the illegal introduction into the State of unsterilised blood and bone manure."

The next occurrence was in 1912 (9) with the death and destruction of pigs in the metropolitan area. The source of the infection was thought to have been two horses which had died and the carcases fed to the pigs. Old manure bags (bonemeal) were the probable source of the infection of the horses. The last outbreak was in 1914 when four horses in a stable of fifty head died. Following vaccination with Parke, Davis and Co. anthracoids no further cases occurred. (10)

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(6) Morris (1906): South Australian Journal of Agriculture 9 488.

(7) Needham, (1906): Annual Report Chief Inspector of Stock.

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(9) Williams, (1912): Annual Report Chief Inspector of Stock.

(10) Williams, (1914): Annual Report Chief Inspector of Stock.

SWINE ERYSIPELAS

This disease was recognised as such in South Australia in 1939 and indeed for the first time in Australia in 1938[1] but there is no doubt that it had been present since at least 1901. A condition known as "spots" with an accompanying photograph was noted by Desmond[2] in that year. In fact the picture in a Dept. of Agric. leaflet describing erysipelas written c. 1950 and illustrating the disease is a reproduction of that early photograph showing almost perfect "diamonds".

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(2) *Desmond, (1901) Rpt. of Chief Vet. Surg. and Vet Path. Central Board of Health*

FASCIOLIASIS (LIVER FLUKE)

The early papers and reports refer to sheep losses associated with liver fluke soon after the first settlement. In an article in The Examiner of 25 March 1843 headed "Diseases of Sheep" it states:- "Rot is a rare disease in the colony and has been indeed hitherto only known in a few isolated moist places during a very wet season." It is not possible to determine from the early reports whether acute or chronic fluke infestation or black disease were responsible for the losses reported.

In 1872 Mr. Hughes(1) raised the matter in the House of Assembly referring to the prevalence of the disease in Victoria and asking whether the Government intended to take any action. The Commissioner of Crown Lands advised that he knew the disease had been in Victoria since 1846 and that it was not confined to sheep but extended to cattle, possums, kangaroos and other animals. He also stated that sheep had been imported from Victoria up to 1869* with no evidence of spread reported into South Australia and provided that sheep were grazed on pasture dressed with salt or iron provided in certain quantities, fluke would not cause any trouble.

In 1873 Valentine(2) Chief Inspector of Sheep reported that many sheep were dying from fluke in Victoria and that Inspector Wells (Mount Gambier district?) had advised that many thousands had died in the Western Districts. Valentine then suggested that fluke disease could be more serious than scab unless efforts were made to check it.

Valentine(3) further reported in 1874 that fluke existed on some coast stations but was not serious and mostly confined to old sheep. However in this report he includes a long letter from J.B. Hughes in which he refers to the destruction by the Government of South Australia of 7000 sheep on the Coorong owned by Messrs. Austin and Cole. In the proceedings of the Conference of Chief Inspectors of all colonies (except Western Australia) held in Sydney in 1874 Valentine also refers to this destruction but gave no details although he is stated to have presented a paper to the conference on the matter. In 1895(4) it was recorded

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*Importation of sheep from Victoria had then been prohibited because of sheep scab.

that 4000 sheep had died from fluke. Horehound and podophyllum drenches were recommended.

Subsequent reports refer to fluke losses being heavy mainly near the coast but extending as far away as Naracoorte. It has not been possible to ascertain when the disease was first reported from the lower Adelaide Hills area but it was diagnosed there between 1920 and 1930.

There is an interesting addendum to the liver fluke problem in this State. Following two very serious mortalities from black disease in 1949 - one in the south-east and the other in the Myponga area - and also deaths from acute fluke infestations around Lakes Alexandrina and Albert a survey of the higher rainfall areas showed S. subaquatilis to be present from Tantanoola to Earthquake Springs in the South-east; around the Lakes; from Eudunda to Victor Harbour in the Hills and on lower Eyre Peninsula around Wanilla, Big Swamp and the Hills behind Port Lincoln.

REFERENCES

(1) S.A. Chronicle and Weekly Mail 28th Sept. 1872 P. 12

(2) S.A. Chronicle and Weekly Mail 9th Aug. 1873 P. 9

(3) Valentine, 1974; Half-yearly Rept. of Chief Insp. Sheep 31/12/1874

(4) Valentine, 1875; Half-yearly Rept. of Chief Insp. Sheep 31/12/1874

"STURDY" OR "GID"

Seddon refers to the possibility of Multiceps multicepts having been present in South Australia prior to 1865 but dismisses the record as doubtful. Pullar[2] in an article in the A.V.J. states: "Dixon in a letter to the Royal Society of South Australia in 1883 wrote - "Some years ago before fencing in and sheep were shepherded it was no uncommon thing for as much as 2% of the hoggets or year old sheep to die of "crankiness" or "turnsick". The symptoms were dullness, ceasing to feed or to follow the flock and then sudden paroxysms of turning rapidly round and round until the unfortunate animal fell, or else after standing motionless for a long time make a sudden rush straight ahead as if blind, would be followed by another fall and in time the poor brute would become too emaciated to feed and die (unless killed by dogs) of pure starvation. On dissecting the head a cyst would be found occupying almost the whole of the right or left lobe of the brain and on the opposite to that to which the sheep turned or in other cases where the sheep would stand stock still, nearly the whole of the cerebellum would be replaced by a cyst. After reaching two years few died and old sheep were almost free of it. Dixon thought the cyst to be hydatids but two medical members who were present (Drs. Whittell and Gardener) thought it may Coenurus cerebralis." Dixon was described Dr. Perkins, Director of Agriculture in S.A. as a shrewd practical man of affairs and a keen observer.

In a letter to the Editor of the South Australian of 10 Nov. 1838 Dr. T.Y. Cotter Colonial Surgeon wrote:- "Sturdy or staggers is one of the few maladies with which sheep are affected in this region. About 2% of the flocks here have been sacrificed by it. The disease makes its appearance in the early part of the lambing season. The shepherd notes that several of his sheep are dull, scarcely graze, ruminate in the most languid and listless manner and separate themselves from the rest of the flock. As the disease goes on they walk in a peculiar staggering manner and seem unconscious of where they are. In the midst of their grazing they stop all at once look wildley around as if frightended by some imagary object and start away at full speed, they lose flesh, the countenance becomes haggard, the eye wanders and assumes a singular blue colour. The animals then begin to carry their heads on one side and almost always on the same side. It is with great difficulty they can straighten their necks to graze and there is a peculiar undecided motion in the act of grazing; the fits of wandering

become more frequent and they are often frightened without apparent cause. By and by the sturdied sheep commences a rotary motion even when grazing and always in the one way. With the head turned on the same side he almost ceases to eat or ruminate; he begins to be inattentive of surrounding objects and moves among them as if unconscious of their existence. The habit of turning around increases and he continues to form concentric circles until he falls and then he scrambles up again and recommences the strange motion. At length he becomes exhausted and dies. (Note - then follows a description of sturdy as seen in England). But judging from the few cases studied here it attacks sheep of all ages whether suckling or not although a larger proportion of young has suffered rather than old. There is a chronic inflammation of the pica matter or internal lining membrane of the brain which destroys life by the growth of tumours or the effusion of fluid, encysted or otherwise into the ventricles or upon the surface of the brain."

In view of the reports by Cotter and Dixon there seems little doubt M. multiceps was present in the early years of settlement in South Australia. At that time all sheep were shepherded and yarded at night to protect them from dingoes and dogs and there must have been very close contact with the shepherds dogs which would have been fed sheep offal including brains.

REFERENCE

(1) Pullar, (1946): A.V.J. 22. 12

COAST DISEASE

The earliest reference to the existence of coast disease in South Australia appears to be recorded by Murnane[1] when he states that it had been a constant source of trouble in the Rivoli Bay and Rendesham districts since 1946. In reviewing the early reports it seems that coast disease was held responsible for many and varied losses. If the cause of any illness or deaths were unknown or an explanation for any losses was needed then coast disease was blamed.

In a letter to the South Australian Weekly Chronicle[2] in 1862 signed "One who has suffered from it" written in the hope that the letter may bring forward some scientific person able to discover the cause and remedy he states that it occurs along the coast from Tilley's Swamp to Rivoli Bay but was worst about Lacepede Bay. He wrote that in horses it usually appears by taking the hair and skin off the legs up to the knees and causes shedding of the hooves. Sometimes it goes to the head causing a kind of rabies or madness and certain death. Some seasons are worse than others and it was very bad in 1861. Deaths occurred overnight and heavy losses were suffered by several owners. It was seen in foals that lost the use of their joints and looked like walking skeletons on stilts. He stated that cattle dwindle away but in sheep it acts instantaneously and progressively and 500-600 head had died in an incredibly short time. He referred to a gentleman in Tatiara county who purchased some Lacepede Bay sheep and said that once it got incorporated in their system they scarcely ever recover and rarely carry lambs after the first season.

Mr. David Wylie Scott[3] in his letter to the Editor the same year suggested that coast disease was due to tested and referred readers to Dr. Livingstone's "Travels in South Africa". In an editorial the Weekly Chronicle[4] in 1863 said the disease was prevalent in the South-east and that horses were in a pitiable condition with hooves only half normal size and bodies denuded of hair. The cause of the disease was attributed by the lcoals to eating a plant "between a reed and a sedge" which grows in marshy places and possesses a pungent odour. The editorial went on to point out, however, that sheep grazing on the same plant elsewhere remained healthy. Francis of the Botanic Gardens named the plant Restro of which there were 20-30 species and thought that it was harmless. Dr. Mueller of Victoria also agreed that

Restro was harmless but thought that coast disease arose from malaria engendered by swampy pastures.

Coast disease was blamed for some of the early outbreaks of pleuro-pneumonia both in the Millicent district and as far north as Nuccaleena in the Flinders ranges. It was in effect the barrel into which any otherwise unexplainable losses were tossed.

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(3) *S.A. Weekly Chronicle 31 May 1862*

(4) *S.A. Weekly Chronicle 23 March 1863*

(5) *S.A. Weekly Chronicle 30 July 1864*

SHEEP BODY LICE

The first report of sheep lice Damalinia ovis in South Australia is contained in the annual report of the Chief Inspector of Stock for 1889 when he states that lice had become more prevalent in southern districts and had been present in Lincoln sheep taken to Kangaroo Island and that several owners had had to dip. In 1890 he reported that lice had been shown to be more prevalent than anticipated and that both lice and ticks (ked) had been added to the list of diseases scheduled under the Stock Diseases Act 1888. From 1890 onwards every annual report of the V.I.S. referred to the lice problem as an ever increasing one in respect to severity and districts infected e.g. 1891 very prevalent in southern and Mt. Pleasant areas and in 1895 in the northern areas and Port Lincoln.

The compulsory dipping regulations were progressively extended from the original southern areas to embrace the northern eastern and Yorke Peninsula districts in 1919; counties Dalhousie, Kimberly and Burra in 1925; all of the State within counties in 1928 and the entire State in 1958.

Although lice were undoubtedly present in S.A. prior to 1889 the query that arises is why their presence had not been recorded earlier. Ked had been referred to as early as 1855. It is possible that the dipping which had been widely practiced to control scab up until almost 1860 had also controlled lice but as S.A. had been proclaimed free of scab in 1862 (there was an outbreak in the Wellington district in 1867) there had been ample time between then and 1889 for the spread and increase of body lice. It is difficult to accept that lice were prevalent but not reported or detected because every itchy sheep was suspected to have scab until proved otherwise by careful inspection.

The history of the legislation to control lice is set out briefly below:-

(1) Made notifiable in 1890

(2) Dipping of infected flocks made compulsory in 1891 but as there were apparently no inspectors in the affected areas this was ineffective.

(3) In 1916 there is reference to compulsory dipping in specified areas with arsenical powder dips between 1 Sept. and 31 Jan.

(4) The compulsory dipping areas were extended in 1919 to include north, east and Yorke Peninsula districts.

(5) These areas were extended in 1925 to include counties Dalhousie, Kimberly and Burra.

(6) By 1928 all of S.A. within counties were included in the compulsory dipping zone.

(7) In 1934 it became compulsory to notify the C.I.S. within 14 days of dipping that the sheep had been dipped as required by law.

(8) In c. 1948 dipping of all sheep within the prescribed dipping area i.e. within counties, within 42 days of shearing or before sale if sold within 42 days of shearing was prescribed.

(9) With the introduction of high concentration low volume dieldrin based spray race dips, compulsory dipping was extended to include all sheep in S.A. in c. 1958, but because of the hydrocarbon residue problem this legislation became unenforceable.

DISEASES OF HORSES

The welfare of the Province of South Australia was dependent very largely on its horses for all purposes including mustering, haulage and rapid transport. It is only to be expected therefore that any widespread disease affecting their welfare would cause considerable concern. The epidemic which, according to Stanley (see later), started in 1887 resulting in widespread illness and many deaths became a major problem. Just which virus was responsible will probably never be known. The disease was variously referred to as malignant catarrh, equine fever, equine influenza, pink eye, and opthalmia and the picture is further confused by references to strangles and pyaemic jaundice.

Although the major epidemic may have started in 1887 there are earlier references to heavy losses, with respiratory complications in many instances. The South Australian Weekly Chronicle of 3 June 1865 in its Mount Gambier news states: ⊥ "The disease among horses which has been present for some time continues with considerable loss. The poorness of the feed for the past two months has doubtless a great deal to do with it as it exists chiefly among grass fed horses." In a supplement in the same paper of 9 September it states that deaths were continuing and the disease appears to be becoming worse. Those carcases opened up show disease of the lungs largely." An extract from the Gawler Times published in the Chronicle dated 9 July 1870 refers to heavy losses in horses in the Gawler district. Valentine Chief Inspector of Sheep in his half-yearly report to 30 June 1875 writes:- "A great number of horses have been imported since first of January from Victoria ... and so far they have shown nothing more than slight colds. An outbreak of influenza as it is considered, in horses at Mount Pyramid in Victoria from which over 100 died caused some uneasiness lest it might assume a virulent and contagious form." In his report for the second half of 1875 Valentine stated:- "The horse stock are remarkably healthy, also the imported stock with the exception of colds and one instance in the beginning of the year which from the description of the disease appears to have been malignant catarrh, by which the owner of the yard, where some horses introduced from Victoria were placed for one night only lost twelve valuable brood mares, he having used the yard shortly after for his own horses." Subsequent reports refer to the

healthy state of the horses until that for the year ending 31 Dec. 1887 which is as follows; - "The year has been a disastrous one for horseowners and the losses have been heavy. It commenced with a highly contagious equine fever which the Government Veterinarian reported as being of a typhoid character... Should the disease break out again which is quite possible as three months after all trace of it had disappeared it broke out on two different farms where the disease had previously existed but the owners had neglected to thoroughly disinfect their premises; a scientific enquiry should be made. The disease appeared at the time of the year when every horse would be required for ploughing and seeding. Starting in the north-east it spread rapidly into the farming districts being carried by teams travelling from the Teetulpa goldfields. Powers had to be obtained and the issuing of orders under the Public Health Act necessarily caused some delay in preventing legal action being taken to stop the movement of infected animals. Information on the symptoms of the disease was however forwarded... and the assistance of the police readily given to check the movement of diseased horses. As soon as the orders were issued, lands and premises were formed into quarantine districts and no diseased horses were allowed to travel out of the proclaimed area; but the nature of the disease was so searching that the contagium was conveyed from farm to farm by horses which were apparently not unwell... The disease appeared in twenty seven hundreds extending from Spalding.. as far north as Farina. The cause of the outbreaks ... has in nearly every instance been traced to the infection being carried by the movement of animals or individuals... The heavy losses which occurred in the north east were increased by heavy work and bad food... Several carriers lost nearly the whole of their teams.... The inspector at Yunta considers fully a 100 horses died in that district.. At Cockburn the inspector reported fully 140 horses affected and heavy losses .. around Quorn 386 horses were isolated, 375 diseased, 23 died and 352 recovered... around Georgetown 401 horses were under supervision, 261 diseased and 41 deaths occurred... in the farming districts 636 horses were affected and 64 died..." The disease spread into New South Wales and was carried to a number of stations causing heavy losses at Silverton and Broken Hill. It was taken to Western Australia ... Influenza appeared in several places but was of very mild character except in one instance when a farmer lost seven horses. Strangles were also very bad.. A number of horses died from what Mr. Chalwyn M.R.C.V.S. reported as pyaemic jaundice... ophthalmia

appeared in the north and several horses lost the sight of both eyes."

The annual reports covering the years 1888 onwards show that losses continued until at least 1911 and are quoted hereunder;-

1888 Contagious equine fever broke out in the second quarter of the year in the north central district on an old quarantine ground caused by the owner's failure to destroy an old box in use at the previous outbreak. This was used to feed some newly purchased horses out of and they became infected. In the last quarter the fever broke out again appearing in benign form. It was spread through the district by three travelling entire horses and up to the end of the year 486 horses had been attacked in twenty five hundreds- four died and two were destroyed. Latterly a number of pregnant mares were attacked and in every case abortion was the result. Influenza was prevalent for a short period in the south east district but no evil effects were reported.

1889 Equine fever. This disease which broke out in December 1888 spread over a wide district during the first three months of the year. Losses were only small with eight dying. Many valuable mares aborted.

1890 Equine fever continued through the first quarter. Twelve places were appointed quarantine grounds. 194 horses were affected and nine died. Influenza has been very prevalent during the year.

1891 Equine fever. Very few cases reported during the year. The disease appeared in mild form, although spread over a considerable area.

1895 There were numerous cases of ophthalmia and over eighty deaths reported from influenza etc.

1896 290 horses reported sick principally with influenza and strangles, there were 70 deaths from the former ailment.

Influenza continued to be reported each year up until 1911.

Note: Hindmarsh in a personal communication of Sept. 1965 refers to an investigation carried out by Edward Stanley F.R.C.V.S. (vide annual report 1887 Bruce, Chief Inspector of Stock, N.S.W.) in which he says the disease was first noticed at Mingary S.A. in Dec. 1886 and that from there the disease spread to Port Pirie, Western Australia and to Silverton N.S.W. He records that the disease was not spread without actual contact except through contaminated food and water. The post mortem picture showed haemorrhages and inflammatory areas on the serous and mucous surfaces, adhesive inflammation of the covering of the lungs heart, liver, spleen, and effusions into serous cavities.

FIRST REPORTS

It is of interest to record the first known mention of various diseases in South Australia (other than those dealt with in more detail elsewhere). Unfortunately all the reports of the Chief Inspector of Sheep prior to 1874 are not available. Although most were published in the S.A. Chronicle and Weekly Times they dealt almost exclusively with sheep and mainly with scab. Later the second major problem viz; pleuro-pneumonia was the main topic. In some cases the description of the losses points to diseases given specific names only many decades later e.g. entero-toxaemia.

Actinomycosis (1892)

"In one specimen submitted to Dr. Whittell he discovered the Ray fungus." The first reference to the use of potassium iodide was in 1896 when several cases were treated successfully.

Algae Poisoning (1878)

Losses of 16 horses, 51 cattle and 784 sheep from drinking scum laden water in Lake Alexandrina. A further 500 were lost in 1912.

Beef Measles (c. bovis) (1900)

The first case of beef measles not only in South Australia but apparently in Australia was found by Desmond[1] in October 1900 in a piece of beef submitted by a health inspector from Port Pirie. In 1902 he reported a further case from the Lakes district.[2]

(1) Reports of Chief Vet. Surg. and Chief Insp. of cattle, Central Board of Health 1900

(2) Reports of Chief Vet. Surg. and Chief Insp. of cattle, Central Board of Health 1902

Botulism (1875)

Described as para plegia or paralysis of the hindquarters.

Caseous Lymphadenitis (1898)

A condition described by Valentine as multiple abscesses in sheep appears

to be the first description of C.L.A. in S.A.

Reference: S.A. Jnl. of Agric. (1900) 3 509

Entero-toxaemia (1878)

The report refers to heavy losses in sheep feeding on grasses and weeds after heavy rains following the previous dry seasons.

Fly Strike (1901)

The first reference to fly strike is very casual indeed:-
"A number of sheep were again noted as being affected with 'fly' causing a few deaths. Sheep so attacked should be dressed with one of the many sheep dip preparations." However in 1904 when heavy rains followed the drought a great increase was reported. In 1907 over 1000 deaths on property alone were noted.

Keds (1855)

The earliest reference to ticks on sheep is in 1855 in the south east. There is no further report until Valentine's annual report for 1881 when they were reported to be spreading northwards. He recommended use of Cooper's sheep dip made up of two parts of sulphur to one lime in the proportion of 25 lbs. to 100 gallons of water and boiled until the sulphur was in solution. In 1884 it was reported that ticks were widespread and causing losses. His estimates of losses and costs of dipping are interesting - a flock of 28 000 sheep infested with ticks would show a loss of one penny in the pound and allowing four pounds of wool per sheep giving a total loss of over £330. The cost of dipping would be about one farthing per sheep with a total of £21.

Plant Poisoning

Euphorbia Drummondii 1881 and 1882
Lotus australis 1881
Stinkwort 1891
Yacka 1889 - loss of 300 sheep from a mob of 1500 on young yacka and cutting grass regrowth following burning off. In 1909 losses in cattle also occurred.

Colocynth or wild melon plant 1874 - loss of 200 sheep in a travelling mob on the Murray River and referred to as "hoove" to which there are a number of further references.

Swine Fever (1903)

Swine fever appeared in the south east and involved the three southern counties. In 1903 it spread to the central district. Another outbreak occurred in 1927 - 1928 in a piggery in the Kilburn area and then spread to the Adelaide plains and hills and then to Cowell, and Kimba on Eyre Peninsula. Vide reports of C.I.S. 1904 1927-8-9.

Tuberculosis (1883)

In 1883 Valentine reported that tuberculosis was present but rare and referred also to a Board of Enquiry then sitting in Melbourne. In 1884 one case was reported but "glandular tumors of the throat were becoming more marked, but it was thought there was no danger of infection but that there is little doubt it is heriditary". This opinion was based on a report by Chalwyn M.R.C.V.S. Govt. Vet. Surg. who however decided later the tumors were tuberculous in nature. Subsequent reports referred continually to this disease in cattle and stressed the need for meat inspection in slaughterhouses to protect the public.

William [1] reported tuberculosis in a horse in 1898 and the description given of the post-mortem lesions fits. Tuberculosis in pigs was reported in 1896[2]. However there seems to be no report of the disease in poultry until c. 1948 despite the widespread nature of the disease as revealed after this date.

The first tuberculin tests on cattle appear to have been done in 1899 when T.H. Williams[2] who later became C.I.S. and was then inspector of stock Mt. Gambier, stated that he had applied the test in his area. He also suggested a testing fee of 25/- per 20 head[3].

The first reference to compensation being paid to owners of cattle slaughtered because of tuberculosis was in 1899 when John Williams[5] of Meningie suggested that local owners pay an annual levy of sixpense per head and receive two-thirds value compensation for each animal slaughtered.

REFERENCES

(1) S.A. Jnl. of Agric. (1900) 3 509

(2) Annual Report. C.I.S. 1896

(3) S.A. Jnl. of Agric. 1899 3 401

(4) S.A. Jnl. of Agric. 1899 3 74

(5) S.A. Jnl. of Agric. 1899 2 530

General

Other important diseases reported for the first time are brucellosis (1910) Stichfast flea (1932) Johne's disease (1942).

One of the curiosities of disease incidence in S.A. is the absence of blackleg in cattle due to Cl.chauvoii particularly when it is remembered that bighead in rams associated with that organism was first recognised by Mckenna in this State in 1946 for the first time in Australia.

ODD ODDS AND ENDS

Catarrh of sheep

Early newspapers and reports up until at least 1892 include references to catarrh of sheep. At the conference of Chief Inspectors held in Melbourne in 1889 it was recommended that all sheep infected with catarrh be destroyed, owners compensated to two-thirds the value of the sound animals at the date of destruction and that the run or place on which the sheep were depasturing be strictly quarantined for six months. (item 33). This was repeated at the conference held in Wellington N.Z. in 1892 (item 32).

The earliest South Australian reference to catarrh is in an advertisement in the Adelaide Chronicle of 8 July 1840 offering for sale sheep of South Australian origin guaranteed free of catarrh and scab and also sheep ex Bathurst district N.S.W. guaranteed free of influenza or catarrh. The Adelaide Observer of 26 Aug. 1848 reproduced from the Port Phillip Patriot a letter from James M. Main in which he describes the symptoms of catarrh as dullness, watering eyes, head and mouth becoming swollen and offensive, matter running from the nose, severe purging and death in a few hours. The post mortem showed throat inflamed and glands ulcerated with considerable inflammation in the region of the brain and bowels also inflamed, greatly distended gall bladder with diffusion of bile. The death rate varied from 16-17% to 70%.

There is no evidence that catarrh was ever present in this state and all early references to the diseased expressed fears that it would be introduced and pleasure that it had not.

What was catarrh? In a personal letter from Hindmarsh in 1965 he wrote: "Catarrh or influenza of sheep was widespread in New South Wales and Queensland for many years. It is reported to have caused extensive losses up to 80% of an infected flock may die. It occurred from 1830's and probably before then until the 1860's. The cause of this complaint and its spontaneous disappearance are most intriguing. It cannot be identified with any known disease. The last cases recorded in N.S.W. were in 1870." He refers to a report printed in 1835 by George Bennett, Andrew Gibson and William Sherwin and also to a booklet

by Alexander Bruce in 1869. Hindmarsh said the disease appeared to be an infection of the upper respiratory tract with pneumonic complications. He also referred to the importation of sheep from India. Some of which arrived with a condition known as "broken-winded which was a marked involvement of the lungs". It is most intriguing that a disease which caused losses and so much public concern for at least 35 years throughout much of the eastern part of Australia should have disappeared and left no apparent trace of its presence. Why in a period of extensive movement of sheep throughout Australia and particularly into the recently settled colonies of South Australia, Western Australia and the western districts of Victoria did it appear in these areas.

Greathead

The South Australian of 15 Sept. 1840 contains an article by a Mr. Crawford in which he refers to "greathead". There was only one case and the description given tallies closely with bighead. There was only the one sheep in a mob in the Tiers (Adelaide Hills).

New Disease

In his report for 1876 Valentine refers to "New Disease" in Victoria as follows:- "The state of the flocks in the western districts of Victoria from what is termed New Disease is unfortunate. Reliable information of the losses is most difficult to obtain. No published record of the enormous losses sustained has been or is likely to be made public." There is no reference to this disease as such having occurred in S.A. Seddon refers to it as anthrax but the reports by Dr. Youl, Robert Kerr, inspector of sheep, and E.M. Curr C.I.S. Victoria attached to Valentine's report present a very confused picture with the emphasis on heavy fluke infestations. Curr in his report states:- "In view of these facts it seems to me what has been termed "new disease" is after all nothing more than fluke under an exceptional aspect. Valentine further stated that Kerr estimated a loss of 30 000 head in the western district and 1,400 had died in the Mansfield district.

The Pip

From the Observer 11 Nov. 1843: "There has been a great mortality among fowls both in town and country from a disease called the pip. Messrs. J. and T. Darby of Morphett Vale (who have lost upwards of 30 Minorca hens from pip) inform us that they have discovered a simple cure which has effectively stayed the disease and which they desire us to make public. It is peruvian bark, soot and flour in equal quantities made into pellets, three to be given to the fowls every other morning. Messrs. Darby state that three days after the pills (omitting a draught) all his hens were perfectly restored."

Sulphur Fumigation for Lungworm in Sheep

Extract from Valentine's report for 1891:- "Fumigation with sulphur can be done by erecting a closed room to hold 50 to 100 sheep. The sulphur can be placed on hot coals in one, two or three iron pots suspended from the roof or placed on a shelf beside an opening so that it could be withdrawn quickly. The effect on the sheep must be carefully watched and should it be found too strong the doors should at once be thrown open. By burning a small quantity first the proportion and time which the sheep should be kept in the room, would be easily ascertained. When the fumes appear to be plentiful enough the sulphur pots could be removed and the doors closed for 20 to 30 minutes. Two or three fumigations at intervals of seven days should be sufficient. The treatment is very inexpensive and can be done by anyone. That fumigation is the proper treatment for lungworms - being the most direct way to attack them - is indoubted..."

What Were They?

There are early references to conditions which now appear to be unrecognisable. Unfortunately there is no description to enable us to hazard a guess as to their correct names:- "asthenic apoplexy" vide report of C.I.S. 1892; "cuckoo scab" ibid 1908. In his report for 1878 Valentine refers to losses in working bullocks which he says resembles "skirt" in England. The post-mortem picture showed pleurisy and inflammation of the diaphragm. In 1879, 1881 and 1883 there are references to "severe sore throat" or "laryngitis" being prevalent in travelling mobs of cattle resulting in 13 deaths in one mob from

Queensland.

"Black muzzle" 1888 appeared in a flock of lambing ewes. In 1883 3000 head became blind in a travelling mob but most recovered after a short time.

Definition of Cattle

In the Weekly Chronicle of 21 April 1860 in an article on pastoral leases of waste lands included these definitions: Great cattle includes horned cattle and horses: Small cattle includes sheep, goats and swine. (Query - what happens to polled cattle?)

Where the Surplus Went

Valentine's report for 1875 states: "By courtesy of the proprietors I find that there were during the year 75,656 sheep boiled down and under 10 000 sheep and 100 cattle preserved, the preserving being a small supply to assist in meeting local demands only.

Sparrows and Blackbirds

The Weekly Chronicle 25 July 1863 reported a sale of birds at Parr and Luxmoore's which included one sparrow, the sole survivor of 100 shipped from England described as the "farmers friend" sold for 11/- and two blackbirds both males for 68/- and one goldfinch canary for 35/-.

Ostriches

The Weekly Chronicle of 5 Dec. 1863 reported that Mr. Francis, Director of the Botanic Gardens had advised that the two ostriches in the gardens had produced three eggs, the first produce of the birds in South Australia. In his report for 1883 Valentine states:- "it is only a short time since a few birds were imported into the Province but for some time they did not thrive.Mr. Malcolm after whom the ostrich farming company is named, succeeded in keeping some fine birds on a small farm near Gawler. This under liberal concessions from the Government has now become enlarged into Malcolm's Ostrich Farming Company and they have taken up two farms, one of 3967 acres near Port Augusta and another on the River Murray of 800 acres. The number of birds from the natural increase and from importations is now 335 besides which there are over 100 eggs on the

Gawler farm. Two shipments of feathers have already been made and realised a fair price; the future of ostrich farming bids fair to develop into a leading industry and one which will prove of great benefit to small landholders who can supplement their grain crops by a valuable crop of feathers. A second small establishment has been started by W.R. Cave near Port Adelaide in which there are 23 birds."

In his report for 1889 Valentine says: "The S.A. Ostrich Company which was the outcome of Malcolm's Ostrich Co. have now a thriving farm near Port Augusta. The company have over 7000 acres of rather dry country and the ostriches now number 715 the increase being over 200 during the past year. The improved prices for feathers has resulted in a return of over £1,100. Messrs. W.R. Cave and Co. kindly wrote that their birds are doing very well at a large farm near Dublin, at Albert Park the breeding pairs have not done so well. Mr. Bowman of Poltallch has a few birds, at thistle island, two pairs of birds have been located for the past two years". On that bright note the interest of the Chief Inspector of Stock in ostriches seems to have ended as there are no further reports.

Branding of Livestock

The first reference to branding appears to be a notice in the South Australian of 13 Oct. 1838 by J.W. Bull, Land and Stock agent notifying the public that he has adopted as his private brand for cattle a small cross on the off or right cheek and threatening that anyone who interferes with it or brands cattle bearing this brand will be proceeded against with the utmost severity of the law.

The cattle Slaughtering Act. No. 5 1840 provided inter alia for the appointment of an inspector of slaughterhouses, brands and skins; skins of all cattle slaughtered to be kept for 7 days; defacing of a brand on a skin i.e. cut out, burn etc. prohibited but owner of cattle could cancel brand of previous owner with a bar 6 inches by ¼ inch horizontally. A new Cattle slaughtering Act Ordinance No. 2 was passed in 1844. It provided for the appointment of an inspector of slaughterhouses and cattle brands who may require a return of brands and description of cattle slaughtered; the appointment of a Cattle Registry office to cover a district under an inspector of brands who may issue brands, keep a register and publish details in the Government Gazette. It also provided

penalties of up to £200 for the illegal use of a brand.

A cattle Branding Bill was introduced into the Legislative Council[1] in 1855 but there were strong objections to its provisions and it was apparently not proceeded with.

The provisions of the above Acts do not appear to have been enforced as an editorial in the Chronicle of 6 Aug. 1863 indicated that stealing was prevalent and suggested that an inspector and a register of brands be appointed. Reference was made to an onwer who had lost 600 sheep of which he thought 200 were in his neighbour's property but as both ears had been cut off and the brand covered over with pitch he could not prove ownership. A new Bill was introduced in July 1864 to provide for the branding of horses and cattle and sheep and for the registration of brands; branding was not to be compulsory but if a brand was used it must be registered. An office known as the Cattle and Sheep Brands Registry office to be established. This Bill also lapsed. A state of flux seems to have existed as by notice published in the Govt. Gazette[2] Sgt. William O'Shanahan was appointed to be inspector of slaughterhouses and of Brands and Skins of slaughtered cattle for the town and district of Port Augusta under the provisions of the Act of 1840. In 1872 a question was raised in Parliament [3] whether the Government intended to introduce a Bill for the compulsory registration of cattle brands. The Commissioner of Crown Lands advised that no such action was contemplated and referred to the Act of 1840.

A new Brands Act No. 111 of 1878 provided for the registration of brands for horses, cattle and sheep. This was repealed by Act No. 152 of 1879 which made other provisions for the registration of brands. This Act was amended in 1882, 1890 and 1905. In 1913 these Acts were repealed and a consolidating Act passed. The amending Act of 1905 provided for waybills for travelling stock but these provisions were repealed and contained in the Travelling Stock Waybills Act 1911. The Brands Act of 1913 was further amended in 1923 and 1927. A consolidating Act was gazetted in 1933 and remains with amendments still in force.

In his annual report for 1885 Valentine who was also Chief Inspector of Brands drew attention to the problems of manufacturers caused by branding with pitch not only in having to clip off the brand but also the damage to their machinery.

REFERENCES

(1) *Adelaide Observer* *7 June 1855*

(2) *S.A. Chronicle* *1 May 1869*

(3) *S.A. Chronicle* *13 April 1872*

SLAUGHTERING OF STOCK FOR HUMAN CONSUMPTION

The first attempt to regulate the slaughtering of stock for human consumption was the Cattle Slaughtering Act No. 5 1840 but one of its main functions seems to have been to prevent cattle stealing. (see section dealing with branding). This Act remained in force until 1908 in respect to the metropolitan area and to country abbatoirs until 1911 and was not fully repealed until 1934. Its main provisions were: slaughterhouses must be licensed and a penalty of £10 provided for each head slaughtered if not licensed; gave power to license one or more public slaughterhouses within three miles of exterior boundary of the parklands and all cattle to be slaughtered there; granted approval for temporary slaughterhouses for cattle arriving in any district but remaining valid only until next quarterly meeting of magistrates authorised to grant annual licenses; gave Governor power to appoint inspectors of slaughterhouses, brands and skins; inspectors had to keep registers of cattle slaughtered giving description, age, sex and brands and these registers were to be inspected by justices of the peace quarterly and weekly returns of cattle slaughtered were to be sent to the justices; the licencee was to give 12 hours notice of cattle to be slaughtered and skins were to be kept for 7 days; where there was no inspector the licensee had to keep a register and submit this monthly to the Bench of Justices. There was no restriction on slaughtering for own use. There was provision for a fee of threepence for every head inspected; a justice inspector or constable so authorised could inspect slaughterhouses for cleanliness and give directions for cleaning up where necessary; slaughtering could be carried out between 5-8 a.m. and 5-8 p.m. between November to March and between 6-9 a.m. and 3 - 6 p.m. in April to October and only on working days. The Act also gave the Governor power to declare districts in the interior and to require persons forming cattle stations in the interior to give notice and to give description of cattle taken on to their property and for additional cattle to be reported with their description to the inspector; the proprietor was to keep a register of cattle; gave power for the proprietor to be ordered to muster and produce his register. These latter provisions were repealed in 1878.

A Cattle Slaughtering Ordinance 1844 extended the provision of the 1840 Act to apply to any town. In 1864, a Bill was introduced to amend the Act of 1840 and 1844 by including "small cattle" i.e. sheep but apparently

was not passed. In late 1864 the City Council resolved[1] to ask the Government to appoint an inspector to examine all cattle coming into the Province and sold and to inspect all slaughterhouses with a view to preventing the slaughter of diseased beasts. The general opinion was expressed that diseased cattle were being killed for meat and many people were refraining from eating beef for this reason. (Note: This was probably related to the appearance of pleuro-pneumonia affected cattle in Adelaide market about this time.) In 1969 Sgt. O'Shanahan was appointed inspector of slaughterhouses for the town and district of Port Augusta[2]. There was also a similar appointment for Burra[3]. An Act relating to slaughtering in the metropolitan area was proclaimed in 1908 and for country areas in 1911.

REFERENCES

(1) S.A. Weekly Chronicle 5/11/1864

(2) S.A. Weekly Chronicle 1/5/1869

(3) S.A. Weekly Chronicle 15/5/1869

SHEEP WASHING

Washing of sheep before shearing appears to have been in fashion mainly between 1860 to 1870 although there is no doubt that it was practiced to some extent before and after these dates. The earliest reference found was in the Weekly Chronicle of 17 Oct. 1863 abridged from an article in the Border Watch of 7 Oct. 1863 dealing with the wool clip from Negretti sheep owned by H. Jones of Binnum Binnum. Each sheep was washed for 3 minutes in a tank of hot water at 112F. and then passed through a cold swim of 25 yards.

The Chronicle of 17 Oct. 1868 again quoting from its south-east news said: "A new improved sheep wash installed at Yallum station is now in operation and turning out beautiful work. There are several in Victoria but this is the first in South Australia. The process is known as hot water washing. The sheep have two preliminary soakings in hot water tanks and are passed under spouts of cold water which play on them with such force that every impurity is removed from the wool. Water for boilers and the cold water is supplied by a powerful centrifugal pump worked by a steam engine. The process is expected to considerably improve the value of the wool". The claim that the Yallum plant was the first was disputed in the Chronicle of 24 Oct. 1868 when it was said that John Robertson of Robertson's Plains also had a wash erected and also that it was larger having eight spouts instead of four. The Chronicle 18 Dec. 1868 carried an editorial on washing with particular reference to the plant at Wellington Lodge. This was apparently similar to Yallum and Robertson's. In its issue of 13 July 1869 the Chronicle devoted a long article to the Wellington Lodge wash.

In a letter to the Editor of the Chronicle of 22 May 1969 reference was made to a report from England that washed wool was not satisfactory but quoted the prices he had received for his washed wool and supported washing. The Chronicle of 5 June 1869 included an article from the Pastoral review throwing further doubt on washing because firstly it took all the yolk out of the wool and secondly how could the sheep be kept clean until shorn. The final available reference is from the Chronicle of 22 June 1872 in an editorial on the treatment of wool with particular reference to objections by the English mills to washed wool. It was said to discolour on the long voyage to England. Although the

article was referring particularly to washing after shearing it also included sheep washing as the hot water over IIOF takes out all the yolk and the fibres became matted.

Nancy Robertson in "Change on Change" refers to sheep washing in 1843 on a property in the mid north. There were five washers and two men at the spout, one man drafting plus shepherds and an overseer and two or three aborigines. Approximately 500 sheep were washed per day and the sheep were shorn seven days after shearing. Washing

DISEASE CONTROL PERSONNEL

The first person appointed for the control of stock disease was William Dumbleton who was nominated as Inspector of Disease in Sheep in 1841 under the provisions of the Scab Act of 1840 at a salary of £27 - 12- I per quarter. His appointment was not generally accepted and one report stated that he was disqualified for the office because of "his previous employment in Van Diemen's Land and his absolute ignorance of the diseases of sheep."The Adelaide Chronicle of 18 Jan. 1842 complained of the state of the sheep brought in for slaugher and stated "they are a mass of disease and yet this notwithstanding the appointment of an Inspector of Scab (who bye-the-bye does not know a scabby sheep from a clean one)" Dumbleton was soon replaced by Kenneth Campbell who was also Inspector of Cattle Brands under the Slaughtering of Cattle Act 1840. He also was in office for only a few months as he was dismissed because of the financial crisis and both positions were left vacant. No further appointments were made until after the gazettal of the Scab Act 1852 when John Hamilton was appointed Chief Inspector of Sheep on 23 Dec. 1852 at a salary of £350 p.a. At the same time W.R. Mortlock was appointed an inspector of sheep followed by George Field in Jan. 1853 both at a salary of £300 p.a. Mortlock resigned and was replaced by John S. Giles who also resigned soon afterwards. He was replaced by Henry Thomas Morris who became Chief Inspector in 1855 following Hamilton's death. Morris was to play a leading role in the eradication of sheep scab (for which see separate article). He came to South Australia with his uncle Governor Hindmarsh and took up land in the Guichen Bay (Robe) district. He went to the Californian gold diggings in 1850 but apparently without much success. He then joined the gold escorts bringing gold back from the Victorian diggings, Morris' appointment as Chief Inspector of sheep was at a salary of £ 600 p.a. plus horse allowance - a salary that was that paid to the Chief Inspector of Stock as late as 1940 and possibly later. Morris resigned in 1865 to become manager of Anlaby at Kapunda. In 1863 when scab had been eradicated from the province except for occasional introductions into the Mount Gambier district from Victoria he was given a purse of 600 sovereigns and a gold watch subscribed to by 82 land owners. In 1860 he was commissioned to estimate the carrying capacity of the northern runs and to value them. This task took him to all the settled parts of the Province and he visited 500 properties. For this work he was to receive an additional £100 plus travelling expenses. The

matter of this additional remuneration was raised in Parliament and resulted in both praise and criticism for his work as Estimator. In 1862 he wrote to the Commissioner of Crown Lands drawing attention to the spread of Bathurst Burr and the damage it did to wool. He drew attention to the action taken in Victoria where a Select Committee had recommended the provision of £55,000 for its eradication.

Following Morris's resignation John Charles Valentine was appointed Chief Inspector of Sheep in 1865 and became Chief Inspector of Stock in 1888 and did not retire until 1905. His salary however was reduced to £400 p.a. plus a forage allowance of £91-10-0. In addition to his duties as C.I. of Sheep he was also one of the three commissioners appointed to report on the northern leases. His co-commissioners were Charles Bonney M.L.C. and Wentworth Cavenagh M.P. In 1866 he was appointed Valuer of Runs under Act No. 20 of 1866. In 1888 he became C.I. of Stock under the Stock Diseases Act 1888 and C.I. of Brands under the Brands Act of 1879 and C.I. of Fisheries in 1893 under the Act for the Protection and Conservation of Fish 1878. Prior to a visit to Europe in 1885 he was presented with a gold watch by a group of graziers. At the time of his retirement in 1905 under the Septuagenerarians Act a petition was presented to the Government seeking approval for him to be retained in his position of C.I.S. His salary at the time of his retirement was £500. He was given £1200 compensation. Valentine came under very severe criticism for his failure to recognise sheep scab when that disease was reintroduced into the Wellington area in 1867 and there were demands for his dismissal. He was in office throughout the stormy period of the spread of pleuro-pneumonia of cattle through South Australia and was severely handicapped by the lack of adequate powers until the proclamation of the Stock Diseases Act in 1888. His annual reports were comprehensive and gave a very complete picture of the stock problems of the period.

Of the inspectors of sheep appointed for the control of sheep scab the stormiest by far was Henry L. Galbraith. He was appointed to the position in 1866 with headquarters at Penola. In the Parliamentary Reports vide Chronicle 29 Aug. 1868 Mr. Riddoch moved "that there be laid on the Table of this House copies of correspondence in the Crown Lands Office having reference to the neglect of duties, absence from the Province without leave, rendering fictitious accounts and refusing to send proper returns necessary to ensure efficient performance of his duties by Inspector Galbraith. He believed the correspondence would

prove the charges," The Commissioner of Crown Lands said the Government would not oppose production of the correspondence which however would not bear out all that had been said. In reply to later queries whether Galbraith had been suspended it was advised that he had been given three months leave of absence without pay. Despite complimentary testimonials from some south-east pastoralists Galbraith's services were dispensed with in Jan. 1869 in accordance with the policy of retrenchment and his services were no longer required. He did not go without a fight as he took court action against the Treasurer Mr. Kent Hughes and received £750 damages and against Mr. Riddoch and obtained £100 damages. He apparently still had friends in the right places as he was appointed Inspector of Police and of Licensed Places in 1870 but was dismissed from these positions in 1873 following an investigation by three magistrates of charges of corruption.

Another inspector who was prominent in the scab eradication work was Alan MacFarlane junior. He was stationed at Penola from 1855 to 1858 when he returned to Wellington Lodge. When scab re-occurred in the Wellington area in 1867 and was not recognised as such by the inspector then stationed there or by Valentine, the sheep owners sought Allan MacFarlane's assistance. He immediately recognised that the skin was in fact scab and immediately reported to the Chief Secretary.

Following Valentine's retirement in 1905 his position was filled by Needham until 1910 and then by T.H. Williams until 1923. Williams had been Inspector of Stock at Mount Gambier. He was followed as C.I.S. by C.A. Loxton B.V.Sc. who was the first veterinarian to be appointed to the position.

Among the other inspectors whose names appear in the early records are James S. Watson 1855 - 1870. He was originally in charge of the northern district and was transferred to Mount Gambier in 1861. Samuel Mason 1856-1857 see Glennie.

H.S. glennie 1857 - ? . He was initially appointed in charge of markets and parklands vice Mason. In 1963 he was appointed subinspector of sheep and located at Chowilla. He was also appointed an inspecting officer under Act No. 12 of 1861 to cover the importation of cattle from N.S.W. and Victoria.

J.M. Woolley 1958 ? vice MacFarlane.

Warriner 1963 - ? he was stationed at Wellington and having failed to recognise sheep scab when it recurred at Wellington in 1867 was severely reprimanded. As there had been no scab in South Australia since 1862 he had had no experience of the disease.

McLeod 1866 - ?

T.A. Wells 1869 - ? vice Watson Mount Gambier

Michael Morris 1884 - 1894 Stationed at Government Gums (Farina)

H.A. Dowdy 1902 Mount Barker

J.A. Pyne 1901 Renmark

Other inspectors referred to in the early records include Curnow, Winkler and White. There are references to inspectors of stock at Beltana, Innamincka, Fowler's Bay, Birdsville, Cockburn, Yunta and Serviceton but these may have been police officers appointed to check the movements of cattle entering South Australia. Similar appointments were later made at Marree and Oodnadatta.