CHAPTER ONE

BACKGROUND: SETTING THE SCENE

Introduction

1.1 Ovine Johne's Disease is a bacterial disease of sheep that attacks the intestinal tract causing a serious wasting condition. The bacterium Mycobacterium paratuberculosis causes the disease.[1]

1.2 In Australia there are two strains of the disease, a bovine strain that infects cattle, goats, deer and alpacas and an ovine strain that infects sheep.[2]

1.3 Ovine Johne's Disease is not considered to be a highly infectious disease. However, once a flock becomes infected it remains infected indefinitely, although not all sheep in a flock exposed to the bacteria from contaminated pasture go on to develop OJD.[3] Mortality resulting from the disease ranges from one per cent to 15 per cent with losses of more than five per cent a year being common.[4]

1.4 Once an animal has reached the clinical phase of the disease it gradually loses the ability to absorb protein through its gut wall. The animal then begins to display symptoms of the disease, such as weight loss and scouring. Infected

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1 Mr D. Hussey and Dr R. Morris, *Ovine Johne's Disease: A Report to the Hon. John Anderson MP Minister for Primary Industries and Energy Canberra,* 31 January 1998, p. 1 and "Uncertainy Hampers Push for National OJD Eradication", *The Land*, 15 January 1998, p. 11. See also *Black's Veterinary Dictionary,* 17th edition (Barnes & Noble Books, Latham, Maryland, 1988), p. 324.

2 *Ovine Johne's Disease: Evaluation of control and Eradication Strategies: ABARE Report to the Australian Animal Health Council* (ABARE, Canberra, November 1997), p. 6. For more information on the difference between the cattle and sheep strain of the disease see *Johne's Disease: the Market Assurance Program,* (Meat Research Corporation and Dairy Research and Development Corporation, July 1996), p. 2 and *National Johne's Disease Program: the Australian Sheep Johne's Disease Market Assurance Program: Rules and Guidelines, May 1997* (n.p. May 1997), p. 1.

3 *Submission*, the Government of New South Wales, pp. 19-20.

4 "Uncertainty Hampers Push for National OJD Eradication", *The Land*, 15 January 1998, p. 11.

animals demonstrate symptoms of the disease towards the end of their reproductive life or when they are severely stressed. A number of years may pass following initial contact with the bacerterium before an animal demonstrates clinical symptoms of the disease. However, an infected sheep may begin to spread the bacterium up to 12 months before it displays clinical signs. [5]

1.5 Since there is no established treatment or cure for infected animals they face certain death once clinical signs are evident. The New South Wales Government told the Committee; "No effective or economic antibacterial therapies are available for treatment of the disease in farm animals."[6]

How OJD is transmitted

1.6 Sheep contract OJD by consuming feed or water contaminated with the faeces of infected animals. Lambs are usually infected when they first suckle the faecal contaminated udders of their mothers.[7]

1.7 The movement of stock is viewed as the major cause of the spread of the disease. It has been alleged that the disease typically appears in a new area as a result of the movement of infected stock and "… then seems to disseminate within the area to form clusters of infected farms in particular localities."[8]

1.8 It is believed that the disease can exist on contaminated pasture for at most one year. Dry conditions appear to inhibit the survival of the bacteria. Various authorities have therefore recommended that infected properties should

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5 *Ovine Johne's Disease: Evaluation of control and Eradication Strategies: ABARE Report to the Australian Animal Health Council* (ABARE, Canberra, November 1997), p. 6.

6 *Submission,* the Government of New South Wales, p. 19.

7 *Submission*, the Government of New South Wales, pp. 19.

8 Mr D. Hussey and Dr R. Morris, *Ovine Johne's Disease: A Report to the Hon. John Anderson MP Minister for Primary Industries and Energy Canberra,* 31 January 1998, p. 1.

be de-stocked for a period that includes two summers in order to remove all traces of the bacteria from the soil .[9]

Extent of the disease

1.9 Ovine Johne's Disease in Australia was first recorded on the edge of the Bathurst and Carcoar districts in New South Wales. Samples confirmed the disease in 1980. It is believed that OJD was in the area from the early 1970s.[10]

New South Wales

1.10 The occurrences of OJD are concentrated in the States of New South Wales and Victoria. Both these States have implemented disease control and eradication schemes that are examined later in this report.

1.11 It is estimated at present that there may be between 500 and 899 properties in NSW infected with Ovine Johne's Disease.[11] At the end of 1997 there were 181 flocks in NSW classified as infected, mainly in the Central and Southern Tablelands.[12] NSW Agriculture stated that it "… considers that the Central and Southern Tablelands is the only long standing focus of infection in the state …"[13]

1.12 NSW Agriculture advised in its submission to the inquiry that as of 30 December 1997 OJD had been confirmed on 229 properties in New South Wales. More than 60 of these properties had lodged property disease

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9 *Ovine Johne's Disease: Evaluation of control and Eradication Strategies: ABARE Report to the Australian Animal Health Council* (ABARE, Canberra, November 1997), p. 6. It has been reported in England that the bacteria can live in faeces for 246 days, see T G Hungerford, *Diseases of Livestock, Ninth Edition,* (McGraw-Hill, New York, 1990), p, 170.

10 *Evidence*, NSW Agriculture, p. 248; see also *Submission,* the Government of New South Wales, p. 5.

11 *Submission*, the Government of New South Wales, p. 5.

12 Mr D. Hussey and Dr R. Morris, *Ovine Johne's Disease: A Report to the Hon. John Anderson MP Minister for Primary Industries and Energy Canberra,* 31 January 1998, p. 2.

13 *Submission,* the Government of New South Wales, p. 6; see also *Submission*, NSW Farmers' Association.

eradication programs for approval and 11 had de-stocked. An additional 189 properties were considered "suspect" with another 860 properties under investigation.[14]

1.13 Dr Greg Simpson, District Veterinarian, with the NSW Central Tablelands Rural Lands Protection Board, stated in his submission to the inquiry that; "The important fact is that OJD is still only present in less than 2 per cent of NSW sheep properties."[15]

Victoria

1.14 In Victoria OJD was notified officially in late December 1996.[16] As of February 1998, 552 properties had been tested for OJD in the State with 11 per cent found to be positive.[17] In late December 1997 sixty-six Victorian flocks had been detected and identified as having OJD. These flocks were principally located in Gippsland and the Western District of the State.[18] The Victorian Farmers' Federation (VFF) told the Committee:

> The expert epidemiologist have stated that they believe the true number of infected properties will be somewhere between the figure of three and 10 times the currently known number of infected properties. In Victoria with something over 70 infected properties at the present time, we are looking at somewhere between 200 and 700 properties infected.[19]

14 *Submission*, the Government of New South Wales, p. 3.

15 *Submission*, Dr Greg Simpson, p. 2.

16 *Submission,* Dr David Obendorf, p. 1.

17 *Evidence*, Pastoral Group, Victorian Farmers' Federation, p. 74.

18 Mr D. Hussey and Dr R. Morris, *Ovine Johne's Disease: A Report to the Hon. John Anderson MP Minister for Primary Industries and Energy Canberra,* 31 January 1998, p. 2.

19 *Evidence,* Australian Veterinary Association, Victorian Division, p. 93.

Tasmania

1.15 There are currently eight known OJD properties in Tasmania, all on Flinders Island. There is a total of 24 050 sheep on these properties out of a total sheep population of 175 000 on the island.[20]

Western Australia

1.16 Western Australia claimed that it is free of Ovine Johne's Disease. However, Mr Wally Merriman President of the NSW Stud Merino Breeders Association advised the Committee in evidence on 24 February 1998 that he knew of a sheep from an infected flock that had been sent to a stud in WA about four years ago. According to Mr Merriman this stud, as of October 1997, had not been tested for OJD. Mr Merriman went on to state:

> It makes me wonder about the reasons why Western Australia continually put up different health reasons to keep eastern states sheep out.[21]

1.17 In a letter to the Chairman of the Committee dated 9 March 1998, Western Australia's Chief Veterinary Officer, Dr John Edwards, refuted Mr Merriman statements. Dr Edwards told the Chairman that his State has a surveillance strategy in place to ensure the early detection of OJD and that all cases of suspicion of the disease are investigated thoroughly. Dr Edwards stressed that Western Australia has found no evidence of the disease in that State.[22]

1.18 In relation to the specific incident Mr Merriman mentioned in his evidence, Dr Edwards stated:

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20 *Submission*, Tasmanian Farmers and Graziers Association, p. 3.

21 *Evidence*, NSW Stud Merino Breeders Association, pp. 232,331-333, 337, 338,339.

22 Letter to the Chairman of the Committee dated 9 March 1998 from Dr Edwards, Western Australia's Chief Veterinary Officer.

> I can advise the Committee that there has never been a confirmed case of OJD in Western Australia. I have discussed this with Mr Merriman and he agreed that the wording is ambiguous and he did not imply that a sheep moved to Western was later found to be infected. [23]

Queensland and South Australia

1.19 There is no evidence at this stage that Queensland has the disease. One flock has been detected with OJD in South Australia. [24]

Reliability of estimates of the extent of the disease

1.20 It was submitted to the Committee during the inquiry that the extent of OJD in Australia has been significantly underestimated. The Committee was informed that "… the limited specific testing for OJD to date has resulted in the estimated prevalence of the disease being a serious underestimate of the true prevalence."[25]The Australian Veterinary Association took the view that the prevalence and distribution of the disease is not accurately known and that the current estimates could be "substantially underestimated."[26]

1.21 In their report to the Commonwealth Minister for Primary Industries and Energy, the Hon. John Anderson, in January 1998, Mr Denis Hussey and Dr Roger Morris claimed that the actual number of infected flocks in Australia

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23 Letter to the Chairman of the Committee dated 9 March 1998 from Dr Edwards, Western Australia's Chief Veterinary Officer. This issue was discussed during a public hearing held in Canberra on 3 April 1998, see *Evidence*, AAHC, p. 467.

24 *Ovine Johne's Disease: Evaluation of control and Eradication Strategies: ABARE Report to the Australian Animal Health Council* (ABARE, Canberra, November 1997), p. 7 and *Evidence,* NSW Johne's Disease Sheep, Industry Steering Committee, p. 218.

25 *Submission*, Tasmanian Department of Primary Industry and Fisheries, Tasmanian Ovine Johne's Disease Steering Committee, p. 2.

26 *Submission*, Australian Veterinary Association Ltd., p. 2.

was "… between 3 and 6 times the known number, and may be even higher if some foci of infection remain to be discovered."[27]

1.22 NSW Agriculture considered that improving the reliability of estimates of the number of infected properties is primarily an issue of making resources available for surveillance, developing improved flock diagnostic techniques and the effective control of suspect sheep flocks until their status is resolved. This Department was of the view that:

> Totally reliable information will never be available prior to commencement of a control/eradication program … To significantly increase the reliability of estimates of the number of infected properties will require a major increase in surveillance resources.[28]

Cost of Ovine Johne's Disease

1.23 There are difficulties estimating the economic cost of OJD to Australia. The Australian Bureau of Agricultural and Resource Economics (ABARE) stated in November 1997 that in relation to NSW:

> … without further information on the prevalence of the disease, the speed at which the disease spreads in a flock, and some knowledge of the behaviour of producers towards risk it is not possible to quantify costs currently being borne by producers with disease free flocks.[29]

1.24 In relation to future economic costs ABARE calculated in November 1997 that for NSW "… the value of the total economic losses arising from the

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27 Mr D. Hussey and Dr R. Morris, *Ovine Johne's Disease: A Report to the Hon. John Anderson MP Minister for Primary Industries and Energy Canberra,* 31 January 1998, p. 3.

28 *Submission*, the Government of New South Wales, p.7.

29 *Ovine Johne's Disease: Evaluation of control and Eradication Strategies: ABARE Report to the Australian Animal Health Council* (ABARE, Canberra, November 1997), p. 10. Mr William Curran of ABARE in evidence to the Committee on 3 April 1998 in Canberra provided additional information on the methods used by ABARE to calculate the economic looses

increased mortality rates over the next 20 years, is $13 million and $30 million for the low and high growth rate assumptions respectively." [30] In Victoria it is calculated that present value costs due to OJD over the next 20 years will range between $1.6 million and $2.6 million. Looking at a 100 year time frame the economic cost is estimated to range between $43 million and $219 million for New South Wales. However, ABARE pointed out that "… there are many difficulties in considering estimates over such a long time frame.[31]

1.25 Production costs linked to OJD are generally characterised by increased mortality rates.[32] Mortality in OJD infected flocks vary greatly between farms with rates reaching levels of 10 to 15 per cent although 5 per cent is more typical. Mortality can fluctuate between years depending on the type of season and the level and quality of management put in place. The Committee was told that levels of contamination and the stress to which the flock is exposed affect the mortality rates. [33] The mortality rate in merino sheep is higher than found in crossbreeds.[34]

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resulting from OJD and its examination of the various options involved in dealing with the disease, see *Evidence*, ABARE, pp. 491-495.

30 *Ovine Johne's Disease: Evaluation of control and Eradication Strategies: ABARE Report to the Australian Animal Health Council* (ABARE, Canberra, November 1997), p. 23.

31 *Ovine Johne's Disease: Evaluation of control and Eradication Strategies: ABARE Report to the Australian Animal Health Council* (ABARE, Canberra, November 1997), p. 23, see also p. 22. Other estimates have put the cost of OJD to the national economy as high as $212 million However, this estimate included on farm loses that were not included in the ABARE analysis. This figure appears to be for a 20 year period. See *Submission*, the Government of New South Wales, p. 15.

32 *Ovine Johne's Disease: Evaluation of control and Eradication Strategies: ABARE Report to the Australian Animal Health Council* (ABARE, Canberra, November 1997), p. 14; for a detailed analysis of economic costs related to mortality rates in sheep flocks see ibid, pp. 20-22.

33 *Submission*, the Government of New South Wales, p. 20.

34 *Evidence,* Dr David Hucker, p. 143; see also *Submission*, the Government of New South Wales, p. 20 and *Evidence*, Australian Veterinary Association, p. 412.

1.26 ABARE pointed out that the link between the prevalence of OJD and mortality in sheep is indirect and the "… relationship between prevalence of the disease and the increase in mortality is yet to be fully understood."[35]

Export markets and trade

1.27 Since OJD is endemic in all other countries supplying live sheep for export, elimination of the disease in Australia would have the potential to be a valuable marketing tool for Australia's export of live sheep.[36]

1.28 Ovine Johne's Disease is considered to be an important disease of farm livestock and is the subject of statutory controls in most developed countries. The Committee was told that; "Ovine Johne's disease in the Australian situation is a much more serious disease than probably anywhere else in the world."[37]

1.29 The Organisation Internationale Epizaooties (OIE) classified OJD as a List B animal disease, that is a disease which causes significant economic loss and has trade or public health implications. A List B disease is considered less serious than a List A disease, such as foot and mouth disease.[38]

1.30 Because there is no established link between human health and OJD it appears unlikely that the disease will have a significant impact on sheep meat exports although the export of live sheep could be affected. In 1995-96 Australia's live sheep export trade contributed $214 million to Australia's

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35 *Ovine Johne's Disease: Evaluation of control and Eradication Strategies: ABARE Report to the Australian Animal Health Council* (ABARE, Canberra, November 1997), p. 15.

36 Ovine Johne's Disease: Evaluation of Control and Eradication Strategies: ABARE Report to the Australian Animal Health Council (ABARE, Canberra, November 1997), p. 2.

37 *Evidence*, Riverina Rural Lands Protection Board, p. 394. It is of interest to note that although OJD is considered to be endemic in many countries eradication does not appear to be pursued by governments in these countries. See *Ovine Johne's Disease: Evaluation of Control and Eradication Strategies: ABARE Report to the Australian Animal Health Council* (ABARE, Canberra, November 1997), p. 1.

38 *Submission*, NSW Johne's Disease Sheep Industry Steering Committee, p. 19; see also *Ovine Johne's Disease: Evaluation of control and Eradication Strategies: ABARE Report to the Australian Animal Health Council* (ABARE, Canberra, November 1997), pp.12-13.

export income.[39]NSW Agriculture observed that; "The potential impact of the spread of OJD in the Australian sheep flock on exports of live sheep and sheepmeat products is difficult to estimate."[40]

1.31 Jordan, which takes about 30 per cent of Australia's live sheep exports, requires all live sheep for their market to be sourced from regions free of OJD. It has been suggested that there is a risk that other major export market countries in the Middle-East could impose similar requirements.[41]

Social costs of the disease

1.32 Ovine Johne's Disease has had a devastating effect upon a large number of sheep producers, financially, psychologically and socially. It has not only been the primary producers and their families that the disease has impacted on but the communities in which they live.

1.33 The Committee was told in evidence that a total OJD eradication program would be "absolutely devastating for the economy" of Flinders Island. Furneaux Enterprise stated:

> Not only would it affect the viability of 85 sheep farmers we believe that it would have tremendous economic effects upon the stock firms, the shipping industry, the banks, the schools, the government services, the air services, and our local council … If you pull that full economic effect out of the core industries throughout the island, it would be quite devastating.[42]

1.34 Furneaux Enterprise went on to assert that the local council was making efforts to increase Flinders Island population from 900 to 1 500 but "…

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39 *Ovine Johne's Disease: Evaluation of control and Eradication Strategies: ABARE Report to the Australian Animal Health Council* (ABARE, Canberra, November 1997), p. 12.

40 *Submission*, the Government of New South Wales, p. 15.

41 *Submission*, NSW Johne's Disease Sheep Industry Steering Committee, p. 20.

42 *Evidence*, Furneaux Enterprise, p. 64.

if a total Johne's program came in and eradication to suit, we would see a significant drop in the 900 people perhaps down to half that figure …"[43]

1.35 Mr Christopher Commins raised a series of questions with the Committee:

> For farmers who are at retirement age and want to retire and who are under quarantine, how do they sell their property? How do they get a pension, because their assets are worth too much? The same can be said for those who have children who want Austudy. They cannot acquire it because they have an asset worth too much …[44]

1.36 During her evidence to the inquiry in Bairnsdale, Mrs Judith Henderson touched on the psychological effects of the disease on producers. She told the Committee:

> I believe that the sense of loss is overwhelming. People do not really come to terms with it for maybe 12 months. It is like a grief process that they are going through.[45]

1.37 In evidence to the Committee in Orange, Mr and Mrs Ostini presented a moving account of how OJD had impacted upon them and their family. At the beginning of his evidence Mr Brendan Ostini advised; "My job today is to get across to you Senators the devastation that people feel when they are told they have this disease."[46] Later Mr Ostini stated:

> The rug has been pulled out from underneath us. We are back where we started 33 years ago …[47]

1.38 Mrs Heather Gorham informed the Committee:

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43 *Evidence*, Furneaux Enterprise, p. 64.

44 *Evidence*, Mr Christopher Commins, p. 168.

45 *Evidence*, Mrs Judith Henderson, p. 184.

46 *Evidence*, Mr Brendan Ostini and Mrs Vicki Ostini, p. 290.

47 *Evidence*, Mr Brendan Ostini and Mrs Vicki Ostini, p. 291.

> I have never seen the likes. You meet somebody and within five minutes they are telling you about the level of their stress, the ill – health in their family, their suicidal tendencies and their murderous tendencies. There is a huge level of frustration and anger because there is no way out.[48]

1.39 Mr William Sweeting, a rural chaplain with the Salvation Army, told the Committee:

> I have seen this enormous emotional trauma that the disease has brought on families. It is like a sudden death in the family. But the trauma goes on and on because there is no easy answer to the problem … Many are locked into a numbing limbo that is how I describe their feeling.[49]

Stigma

1.40 There is concern in the farming community with the sigma that is attached to having the disease or even being in an area where the disease has been found. Mr Stephen Ridley of Goulburn, NSW, stated that it is unfair to brand everyone in an area with the stigma of OJD:

> For all the people affected by it, there are a lot of people out there unaffected by it. The financial loss to those people who are not affected by Johne's inside areas that are prospective zone areas for restricted movement is enormous. So virtually you are saying that people are guilty until proven innocent, which is a total reversal of the proper way of the law.[50]

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48 *Evidence*, Mrs Heather Gorham, p. 350.

49 *Evidence*, Mr William Sweeting, p. 371.

50 *Evidence*, NSW Stud Breeders Association, p. 324.