



**AUSTRALIAN NUFFIELD FARMING SCHOLARS
ASSOCIATION**

**REPORT OF VISIT TO THE
UNITED KINGDOM**

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(Tasmanian 1982 Award)

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A C K N O W L E D G E M E N T S

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A.

INTRODUCTION

The concept of farming deer for the production of venison and by-products is little more than ten years old in Australia. This interest coincides with similar developments in New Zealand, Europe and the United States.

It is hard to pinpoint any particular reason for this sudden international interest in the deer as a farm animal. After all, deer have been farmed for hundreds of years in China and Scandinavia; and venison has been a traditional European dish for just as long.

Falling prices for traditional rural products, oversupply in others, and a general desire for diversification are all contributing factors. However, I believe the single most important influence has been the West German market which is the largest game meat importer in the world, and it is here that the world price is set.

The 1939 - 45 War left Germany impoverished, but after the 1950's industry had generated a new wealth allowing people to purchase a wider variety of foods. With Germany's long hunting traditions, venison was a natural choice and became popular as a luxury item in hotels and restaurants. During the 1960's and early 1970's, the price and consumption of venison in West Germany rose; while output from traditional sources remained constant. (See Fig. I)

FIGURE I

	1973	1974	1975	1976	1977	1978	1979
Per Capita Consumption (kg)	.26	.28	.26	.31	.32	.32	.34
Prices \$/kg Ex Scottish Estates	.91	.72	.72	1.29	2.45	2.31	?

It was in this environment that New Zealand stepped in to fill the deficit with venison from their huge feral herds.

But as the New Zealand feral herd diminished (See Fig. II), under an onslaught of aerial and ground attack, farmers and those who had invested in processing saw the possibility of maintaining supply with farm bred venison.

FIGURE II

NEW ZEALAND IMPORTS INTO WEST GERMANY

1960.....123 tonnes	1976.....2361 tonnes
1965.....1150 tonnes	1978.....2041 tonnes
1970.....2644 tonnes	1980.....899 tonnes
1973.....3144 tonnes	1981.....1233 tonnes

At the same time, farmers around the world seemed to have seen a similar potential; paralleled by the development of markets for velvet antlers and other by-products in Asian countries.

I think it is fair to say that deer farming developed in Australia due to the "bandwagon" influence rather than any planned approach.

Despite the tremendous advantage New Zealanders had in the form of government aid to utilize huge feral herds; Australian deer farming is as advanced as that in New Zealand albeit on a much smaller scale, and we have achieved a number of firsts in handling, slaughter and by-products marketing.

We now have between 10,000 and 20,000 deer on farms in Australia, with several herds in excess of 1,000 head. Stags are being slaughtered through conventional abattoirs and the meat sold to local outlets at a most satisfactory price.

Deer farming in Australia has now reached a crucial crossroad. Can it consolidate on the last ten years work to become a viable livestock industry; or is it to fade into history as another exotic agricultural fad?

Venison is a luxury food, and so to sell it, you need lots of people with lots of money. Europe will be a major influence on the long term success of deer farming.

1. OBJECTIVES OF THE STUDY

- (i) To gain an insight into the traditional production and consumption patterns for venison in Europe; with particular reference to West Germany;
- (ii) To ascertain the "state of the art" of deer farming in Europe; the acceptability of farm bred venison and the potential of European farmers to supply any potential market;
- (iii) To evaluate any production and handling techniques developed on European deer farms and research establishments;
- (iv) To tie together points (i), (ii), (iii) to provide some sort of guideline as to the direction Australian deer farming should take; both at home and in the European market.

2. METHODOLOGY

(i) Data for inclusion in this report was collected over a four month period from April to August 1982 from the following sources in the United Kingdom, West Germany and Austria:

- a. Firsthand visits to deer farms, research stations, English and Scottish estates, game dealers and game processors.
- b. Secondary data sources were used for some of the information on food consumption, research findings and the structure of the West German market.

B. UNITED KINGDOM

Britain has a long history of deer hunting and venison consumption. Apart from providing sport for the wealthy, as far back as the Romans, deer also contributed much of the animal protein consumed prior to the domestication of sheep and cattle.

1. MODERN SOURCES OF VENISON

Despite its small size and large human population, a surprisingly large number of native and introduced species of deer survive on the British Isles.

Although deer are protected wildlife, it is legal for hunters to sell their kill for personal financial gain. As such, there are numerous sources of venison.

(i) Wild Herds: These are usually under the control of a game warden / keeper who may carry out the necessary culling himself or else allocate it to hunt clubs, stalkers, paying guests or a game dealer. Any meat not consumed by the hunters would be sold to a game dealer.

(ii) Forestry Commission Land: A large number of deer is run in the native and exotic forests and all culling is carried out by Forestry Commission officers and the meat sold through game dealers.

(iii) Estates: Most traditional English estates or manor houses with enclosed or free ranging deer employ one or more game keepers.

(iv) Modern Estates: A few of the more enlightened estates or those facing financial pressure, are adopting more productive management of their deer under the control of a farm manger rather than a gamekeeper. But selection and culling is still carried out with the rifle and the meat going to game dealers.

(v) Deer Farms: Like Australia and New Zealand, these have tended to be established by a handfull of enthusiasts prompted by overseas developments and the rising price for venison in West Germany. Almost without exception, the venison is disposed of through farm gate sales or direct delivery to local retail outlets.

(vi) Scottish Deer Forests: These provide the largest proportion of the United Kingdom's venison production, predominantly from Red Deer.

The Red Deer Commission now has records of over five hundred estates. Fifty five of these have over 1,000 deer, and ten have more than 2,000 heads.

Red Deer numbers in Scotland have increased over recent years and are now estimated to be about 270,000. Forty two thousand carcasses are produced annually, and at an average carcass weight of 45 kg; annual production is estimated at 1,900 tonnes. Of the 42,000 culled annually, 33,000 come from estates, 5,000 from farmers and crofters on enclosed land, and 4,000 from the Forestry Commission.

A large number of stags is shot by sportsmen who often pay A\$175 for the privilege. For this he usually gets only the head and the estate retains the carcass. The remainder of the stags and the majority of hinds are culled by estate stalkers or owners and their families and guests.

There are approximately 150 registered venison dealers in Scotland of whom six main dealers account for 90% of sales by estates.

2. THE U.K. DOMESTIC MARKET - For Wild Shot Venison

Until recently, venison was looked upon as inexpensive meat, often used for dog food. However, over the past few years local prices have risen in response to rising export prices and venison has gathered a certain cachet as a traditional dish, becoming more popular in hotels and restaurants.

Only a relatively small amount of venison is sold on the U.K. market. Taking U.K. production at 2,000 tonnes, it is estimated that 200 tonnes is consumed privately and that 400 tonnes is sold onto the U.K. market through game dealers. The small game dealers are often better equipped to deal with these smaller consignments required by the local trade.

The only requirements at present for anyone who trades in venison is that they should be registered with the local council and that premises should comply with the Food and Hygiene Act, in the same way as farm dairies. As such, many estates and deer farms are game dealers. The British seem more enlightened than Australians in this area because farm gate sales of dairy products is also legal.

The U.K. market outlets and requirements are as follows:

<u>OUTLET</u>	<u>SUPPLYING</u>	<u>REQUIREMENTS</u>
Local trade - butchers, restaurants, hotels	The public	Fresh or frozen carcasses frozen cuts and packs of stewing meat.
Wholesalers	Butchers, restaurants and hotels away from areas of production.	Frozen carcasses, cuts & packs of stewing meat.
Smithfield whole-sale market	Secondary wholesalers	Fresh, chilled or frozen carcasses.
Direct sales	The public	Frozen cuts, retail packs or prepared dishes eg. "venison in red wine."

The largest section of the home market is the catering trade. Sales through butcher shops remain low because of :-

- Irregular supply - housewives are unable to build up a regular buying pattern.
- High price - the housewife is prepared to pay the same for venison as for sheep meat, but not the same as for the best beef.
- Strong flavour - there is little demand for game meats in Britain.
- Dark appearance - venison looks dark and unappetising when displayed next to other meats such as beef or lamb.
- Lack of knowledge on preparation and cooking - the younger housewife may experiment with new and exciting dishes. However, the average housewife with children looks for something familiar and easily cooked.

- Variation - the quality, texture and flavour of venison vary considerably, depending on the age and condition of the deer when shot.
- The small quantity produced - home produced venison could only provide 30g (1 oz.) of meat per head of population. Advertising could create a demand which could not be fulfilled.

At present, there is little incentive to market U.K. venison locally because the West German market is more lucrative.

3. THE U.K. EXPORT MARKET - For Wild Shot Venison

Although Germany purchases the majority of exported venison, sales are made to most European countries and, interestingly, small quantities to the Middle East, Hong Kong and the United States.

Venison is exported in three ways:

- (i) Whole carcasses in-skin, gutted but less head and feet.
- (ii) As cuts, usually two haunches, saddle, two shoulders and goulash from neck, ribs, flank.
- (iii) Retail packs to go straight into the trade.

Apart from the price advantage in exporting to West Germany, another advantage is that the dealers are able to send large consignments to one buyer. With nett returns of only about A\$1.70 - A\$3.45 on each carcass, this is a very important consideration.

In order to export venison, meat processing plants must conform to the hygiene regulations set by the importing country. These regulations are particularly stringent in the case of West Germany and Sweden, and only the larger dealers have been able to afford the investment required.

During the hunting season, carcasses are transported to central larders by pony or vehicle and hung to cool before collection. Refrigerated vans travel daily to collect in-skin carcasses from estates. On arrival at the factory, carcasses are hung at 7°C where they await vet inspection. Those suitable for export are stamped, tagged and blast frozen to -20°C. Before leaving for the Continent, refrigerated containers have to be inspected by a vet and the load has to be accompanied by a certificate of origin issued by the Department of Agriculture. Interestingly, there is nothing to prevent a carcass condemned for export being re-directed onto the local market.

4. DEER FARMING IN THE UNITED KINGDOM

There is considerable archeological evidence to suggest that the early Britons practised some form of deer husbandry and management.

Deer bones and antlers excavated from ancient sites show a high proportion of young males. This is what you would expect if the consumers were interested in both the quality of their meal and the long term viability of their food supply. It is not what you would expect though if they were simply medieval hunters using primitive weapons. There are also well documented remains of what appear to be stone fence raceways and handling facilities.

Unfortunately there are no written records to support this hypothesis or to explain methods to the modern British deer farmer who has had to start from scratch like the rest of us. Like their New Zealand counterparts of the early '70's farmers soon realized the fallacy of high cost fences on low production land.

There are however, several major differences between deer farming in the United Kingdom, Australia and New Zealand. In the U.K. deer are regarded as game animals, enabling the farmer to slaughter, butcher and sell the animal on the farm.

The ability to process and market their won animals is the most important factor required to make deer farming competitive with beef and lamb. It is not so much that venison returns are low, rather that beef and lamb prices are so high due to the various E.E.C. price support mechanisms. (A Two Tooth ewe is worth \$100).

It is fair to say that deer farming is not viable in the U.K. because the farmer needs to carry out the jobs of slaughterman, butcher and shopkeeper to come up to the levels of returns from conventional livestock farming. But at least this value adding work is not legally possible with conventional livestock. Slaughter is also legal at the slaughterhouse operated by a local authority, and licensing is again controlled by the Environmental Health Department and the District Council.

A typical deer farm has a fairly rudimentary butchering premises, with freezer and counter for door sales. Some have regular catering outlets. Prices obtainable for farm bred venison are considerably higher than that for wild shot venison and so far the market has proved insatiable from the present small output. Apart from the usual roasts and goulash, there is a good demand for steaks, chops, sausages and "Veniburgers."

The deer farmers main marketing thrust is that they can guarantee regular and consistent supplies from young animals handled correctly both ante and post mortem.

Red Deer is the predominant breed on U.K. deer farms although Fallow, Sika and Pere David are represented. The Roe Deer is apparently quite unsuitable, not because of its small size, but because of its very territorial and solitary habits. They also seem very susceptible to lung worm, which proves fatal without treatment.

Grants are available for capital expenditure on deer farms run in a similar way to other livestock businesses and cover items like fencing, drainage, buildings and foundation stock. As is the case in New Zealand, a large proportion of capital expenditure is totally tax deductible in the first year.

(i) Animal Welfare: The issues of animal welfare and countryside preservation keep every British farmer on his toes. The British Bird Society for example, has one million members eaching paying 4 pound/year subscription. You almost need approval to prune your roses these days.

Matters relating to deer seem to arouse unprecedented emotions from all sectors of the community. When the amendments to the Deer Bill were being debated last year, the normally poorly patronised House of Lords was bulging at the seams. Although designed to lessen poaching of wild herds, one of the amendments caused considerable consternation to deer farmers. Had they not been successful with their well presented lobbying, the new law would have prevented farmers slaughtering their stock outside the designated hunting season.

Velvetting is now banned in the United Kingdom unless carried out by a vet using the approved techniques when the well being of the animal is at stake.

It is not true to say the law was rushed through Parliament after some emotional lobbying from placard waving "do-gooders." Following several questions in the House of Lords, the "Farm Animal Welfare Council" was established and comprised a very impressive list of professional men and women. They heard well prepared submissions from numerous interested parties.

The outcome of their lengthy study was that although they had no doubt the operation could be performed with no more pain and stress than cattle dehorning; there was no guarantee that correct procedures would be followed or that a vet would even be present. The deer farmers' case did not "cut much ice" because they do not have our management problems or yarding hard antlered, aggressive stags.

Consideration was also taken of the rather "woolly" claim that the removal of antlers created psychological stress in stags. For many, the idea of amputating a living part of an animal for financial gain and the undocumented benefit of wealthy Asians, is repugnant. I find the Farm Animal Welfare Council's case very difficult to refute, and I think we can expect to have velvetting eventually banned here in Australia.

Should deer farming in Britain ever become much more than a backyard operation, requiring such procedures as centralised slaughter; then I feel the Animal Libbers will come out in force. There are also those lobbying that deer are a wild animal and should not be confined in any way.

The British Deer Society with Prince Charles as Patron, represents a wide cross section of this potential opposition. Membership of the B.D.S. ranges from animal lovers whose impression of deer is confined to visions of deer skipping across the meadow; to ardent deer watchers and researchers through to sport hunters, and finally, professional deer stalkers and game keepers. There is a great deal of folklore, tradition and points scoring in that lot, and, generally, they tolerate deer farming. But given reasonable cause, they would quickly join forces as a single, powerful opponent to deer farming.

(ii) Deer Farming Research in Scotland: Sheep and deer have long shared the Scottish Hills. In the late 1960's it was providing rather difficult to farm sheep on the hill, however, the price of venison was rising. Although it was known that Red Deer were hardy, healthy, readily tamed and marketable; it was clear more research was needed to see if they were suited for domestication as a meat producing animal. With this end in view, an experimental deer farm was established in 1970 on the heather dominant hill land at Clensaugh, 18 kilometers south west of Aberdeen.

This is a joint venture by the Rowett Research Institute and the Hill Farming Research Organisation, and, not excepting Rahana Station in New Zealand which was more of a game ranching exercise; represents the first attempt to intensively farm Red Deer in the world.

In the twelve years since its establishment, much has been learned of the management and health of the deer, and of their physiology and nutrition. Their value as a new domesticated animal has been established clearly enough for this addition to the animal industry to be promoted with confidence.

Glensaugh is situated in an area where there is a marked difference between comparatively highly productive enclosed ground and the associated heather dominant hill grazings. Effective utilization of the hill proper is one of the major problems of land use in this region.

The major trial at Glensaugh was to assess the viability of deer farming on these varying land types and management levels. The three systems under investigation were:

- i. Pure heather runs, requiring heavy winter feeding;
- ii. A combination of heather and pasture;
- iii. Pure pasture with a rough patch of ground for intensive hand feeding.

System (i.) was ruled out as requiring too much supplementary feed. Number (ii.) was best because the heather was able to replace a lot of the winter feed required in (iii.).

Summary of Experiments carried out at Glensaugh and Rowett

i. Carcass Composition:

a. Meat:- The dressed carcass weight of deer reared on hill pasture at Glensaugh and slaughtered at 15 or 27 months old was between 49% and 52% of live weight. Gut contents account for about 12% and offal weight for 36%. Edible offal accounts for only 10% of total offal weight. The haunch, the most highly prized cut, formed 40% of the total carcass and had the highest proportion of muscle tissue.

b. Fat:- Yearling stags of hinds slaughtered before the rut had almost no visible adipose tissue and their solvent extractable fat amounted to no more than 5% of empty carcass weight. Stags reared on concentrated diets did not start to accumulate substantial amounts of fat until they exceeded half of their expected mature weight - a stage at which lambs have become quite fat. However, by the time they are two or three years old, such deer slaughtered in prime condition have become nearly as fat as intensively reared sheep and cattle.

c. Castration:- Castrated stags lose little weight during the rut and it used to be common practice to keep a few castrates on some highland estates to provide choice carcasses during the winter months.

Castrated and intact stag s off the hill pastures of Glensauigh were similar to each other in size and composition both at 15 and 27 months of age.

It was only in the older stags on high levels of nutrition that the slower growth rates and overfatness associated with castration became apparent.

d. Meat Quality:- The ph value of the meat of farm slaughtered deer thirty six hours post mortem was often found to be higher than the mean value of the ph found in wild shot stags. A series of experiments was carried out in an attempt to isolate the causes.

In brief, pre-slaughter treatment to groups of mixed sex deer was varied from a. Head shooting 6 of a group of 27 deer as they stood in their paddock;
b. Vigorous exertion during yarding followed by immediate slaughter in a crush with a captive bolt pistol;
c. Holding animals overnight individually in darkened pens or as a group in a larger unfamiliar enclosure prior to slaughter - again with the captive bolt.

The findings showed that the deer shot free in the paddock gave a significantly lower mean value ph (5.70) than those penned overnight. Animals slaughtered immediately after gathering produced a mean ph value (5.79) only slightly higher than those shot free, and significantly less than those penned together overnight.

The effect of short term stress before slaughter influenced by the sequence in which the animals are taken from the group awaiting slaughter was also assessed. The co-relation co-efficient was usually weak, and usually negative.

The conclusion from the series of experiments was that the treatment of the deer up to two hours and immediately prior to slaughter was

far less significant than an extended time interval and conditions associated with holding deer prior to slaughter. The relatively low pH values found in stags held in darkened pens corresponded with Australian and New Zealand experiments, and was found to be a useful procedure if the animals are transported or held in pens for a prolonged period.

On-going, more technical research at Rowett Research Institute, The Moredun Institute in Edinburgh and the Hill Farming Research Organisation centre at Bush Estate in Edinburgh, and the Glasgow University Veterinary School cover such areas as : Photoperiodic control of breeding and food intake; absorption and metabolism of minerals and nitrogenous nutrients and the nature of the neuro-endocrine mechanisms controlling these responses.

Parasites and disease problems such as M.C.F.*are also under scrutiny. A recent discovery (I think from Glasgow University) sheds some unusual light on the often heard advice of not risking infection of your deer with sheep and cattle worms. When cattle and Red Deer were cross infected with each other's specific Ostertagia worm, no significant problems arose. However, when both groups were given a mixture of the two worm types, the cattle developed severe and fatal buildup of Ostertagia, literally dying like flies. Although the reasons are still being studied, the hybridization or catalyst effects of the worm mix does show an alarming potential hazard for future mixed livestock producers.

Both Rowett and Glensaugh have groups of housed weaners being over-wintered on various planes of nutrition to assess winter in-appetence and compensatory growth. Diets range from ad-lib silage and concentrates to nothing but Ammonia treated straw; and as expected, body weights range from 60+ Kg to 30 Kg.

An interesting aspect of the Rowett work involves Soay Sheep. These are one of Britain's native sheep breeds from the island of Soay. A scruffy looking little beast which annually sheds its inch or so of black wool, they also exhibit the winter in-appetence and short intense rut as seen in deer. The fact that varying degrees of these characteristics can be seen in modern sheep breeds indicates a potential to genetically alter undesirable aspects of a deer's annual cycle. I refer here to calving dates being out of phase with feed production in most temperate climates.

A mob of Soay sheep being run as a tourist attraction along with Red Deer on a large estate, were considerably more wild than the deer. This suggests again that we may have plenty of room for selection for temperament in our deer, when you see what sheep once were.

Veterinary Deer Society

The Veterinary Deer Society was established two years ago with the purpose of bringing together all those vets dealing with deer on farms and estates to exchange ideas and techniques. It has already gained a considerable following.

iii. Deer Farming Research in England

a. National Agriculture Centre (N.A.C.):— This centre is situated Stoneleigh in the Midlands of England, just south of Coventry. Apart from being the permanent site of the Royal Show, the centre also provides a series of permanent displays and trials into most forms of lowland farming. In most cases capital facilities are provided by commercial firms interested in having their product displayed and independently assessed.

The Deer Unit at the N.A.C. was planned in 1979, originally to be in the form of a demonstration for the 1979 Royal Show. However, after its resounding success the unit was established on a more permanent basis.

To achieve the same gross margin / Ha as the Sheep Unit stocked at 15 ewes/Ha on good perennial rye-grass, it was necessary to produce about 1000 Kg of live weight per hectare per annum.

A stocking rate of 10 hinds per hectare is necessary to produce this.

The Deer Unit was founded on 12 hinds, 4 calves and 2 stags purchased from Whipsnade Zoo. The area fenced for the deer consisted of three paddocks on 1½ Ha of arable land using various types of fencing.

Although no major problems in management and animal health have arisen, the aim of 1000 kg live weight has not been fully realized. The pasture damage over winter at ten hinds plus followers per hectare has meant it has not been possible to take conservation for the herd's winter requirements. This reflects in the gross margin compared with sheep.

With the small herd on such a small area, literally surrounded by people the deer became exceptionally tame and were able to be handled in very

primitive facilities. However, I felt greater benefit could have been gained from the Unit had they taken the opportunity to demonstrate the handling facilities required for large scale deer management. With a few exceptions, deer farmers and estate owners are surprisingly ignorant of the developments in deer handling that have taken place in the Antipodes.

However, to an Antipodean farmer, the deer unit does demonstrate how the British manage to achieve such high meat and cereal production per hectare. Nitrogenous fertilizers were applied at monthly intervals to the entire grazing area, with the highest level being 5 bags per hectare in March. The total for the year is $17\frac{1}{2}$ bags of nitrogen plus 4 bags of N.P.K. per hectare.

The conclusions of the Deer Unit can best be summarised by quoting from the "Red Deer Unit Progress Report 1981".

Detailed financial analysis "indicates that a unit established on borrowed capital would be hard pressed to repay interest from earned income, especially a unit with low productivity. Thus it can be seen that deer farming might well be suited to marginal lowland areas where the deer are not in competition with high income arable or livestock enterprises. Where capital is available to invest in fencing and stocking previously under used areas, it produces a return and makes a very attractive amenity feature requiring very low labour inputs to produce a retail product." In other words, deer farming does not pay in England.

As a result, came the news during the 1982 Royal Show that the deer unit was to be disbanded. Sir Kenneth Blaxter, director of the Rowett Research Institute who has pioneered deer farming was quoted as saying the decision to close was "a great pity", but small scale farm gate sales were an insufficient platform on which to found an industry. The marketeers want an assured supply and commercial deer farming production is in a vicious circle at the moment.

iv. Description of Two U.K. Deer Farms

Wadhurst Park Estate in East Sussex is a very good example of an old estate deer park being upgraded into a commercially viable deer herd.

The estate is owned by the Rausing family of the Swedish Tetra Pak milk carton empire, and is under the management of David Fox.

Wadhurst Park, comprising 400 Ha, represents everything one imagines of an English estate. The house overlooks rolling grassland, interspersed with groves of native trees and rhododendrons with a large man-made lake as a backdrop.

Stock comprises 800 Menil Fallow Deer, several hundred Manchurian Sika and about 80 Pere David Deer. The latter are a very impressive beast; larger than a Red Deer with heavy muscling like a Charolais bull. Apart from their rarity and associated high price, they would make an ideal farm animal; being far more docile than the other two species being run.

For those not familiar with the Pere David Deer; this Chinese species was saved from extinction by the Duke of Bedford who imported a handful of the animals from China. The World Wildlife Trust now maintains a register of all animals in the world, and with the total Pere David population at less than 1000; you wouldn't be too popular if you started running them through abattoirs.

The whole Estate is fenced with a small meshed "weldmesh" which is an indication of the availability of cash for improvements. Only one subdivisional fence is present to permit hay cutting, and David stresses the importance of moderate stocking and good supplements to maintain animal health. As a result, the Estate produces some of the largest Fallow carcasses in the country. Feed supplements include ad-lib hay from roofed, rack feeders around the park, and salt blocks. These contain the usual vitamins and nutrients as well as worm drench.

Pasture renovation without subdivision is achieved by spraying out small areas before drilling in new species. The local seed merchant has set up trials to assess the palatability and production of various seed mixes, including various herbs such as Chicory, Sheep Parsley, Yarrow and Burnett. Pasture maintenance similarly presents problems and necessitated much annual topping in early summer. To avoid running over squatting fawns, David has rigged up a cunning device to flush the fawns ahead of the tractor. The device resembles a boom sprayer mounted out front of the tractor, but has lengths of chain dangling into the grass in place of the usual spray nozzles.

All herd management is carried out with the rifle, with the majority of yearling bucks being removed along with aged or inferior looking animals. Any non Menil (spotted) Fallow are automatically culled. Carcasses are dressed in the Estate facilities and either retailed as such by David, or sold in carcass form to the highest bidding game dealer. Additional income is earned by charging German and Belgium hunters about A\$200 to shoot Fallow bucks from high chairs. This practice is frowned upon by many Englishmen but is accepted as a necessary evil to help finance many of the ailing estates.

To date, live female deer can only be caught for sale by darting, but a "catch-up" was under construction during my visit. As the name suggests, this will be used only once or twice a year to allow live sales rather than day to day management. With no subdivision, it is intended to use a line of people to drive the deer into a funnel and holding yard. From here they will go into smaller pens for sorting and loading-out. One can envisage a few problems when several hundred mixed species deer are trapped in the funnel, but there is very little that cannot be solved with money and enthusiasm. Neither commodity is lacking at Wadhurst Park, and together they have combined to create a very impressive set-up.

Martha and Archie Crawford originally began breeding deer on a hobby farm in southern England. Such was their enthusiasm for the potential of deer farming that they sold up and moved to a commercially sized farm in Scotland. The English deer were all moved to their new home south of Inverness. Natural increase and further purchases has now brought stock numbers to several hundred.

The hinds and calves were run on improved pasture and were notable for the variation in shapes and sizes - a legacy of their differing ancestry. All deer were very quiet and no doubt easy to handle. They run Red Deer along with a handful of Fallow.

First impression of the extensive handling facilities was of the royal stables, with dozens of small pens in a double row, built inside a long traditional byre made of stone. This complex was the site of the country's first live deer auction which went smoothly due to the obvious attention paid to details of design and building materials.

The on-farm processing and retailing facilities were very modern and no expense had been spared - in fact, this was the impression over the entire farm, especially on the rough hill block where 400 Ha of undeveloped heather hills had been ring fenced with high cost New Zealand deer netting, and treated pine posts. This block will be used to "Winter" the deer and so save fodder. The harsh winters will make mustering a simple procedure.

On a nearby Scottish estate, the game keeper was establishing a deer farm on improved ground. I was intrigued that he intended to bale and feed Heather to his deer to maintain the true game flavour!

C. WEST GERMANY

The Germans are by tradition a nation of hunters and venison has always been a popular dish. It is regarded as a privilege to consume the flesh of a hunted animal, and hunting is a much sought after sport surrounded by ritual and romance. To some extent this may explain the popularity of venison.

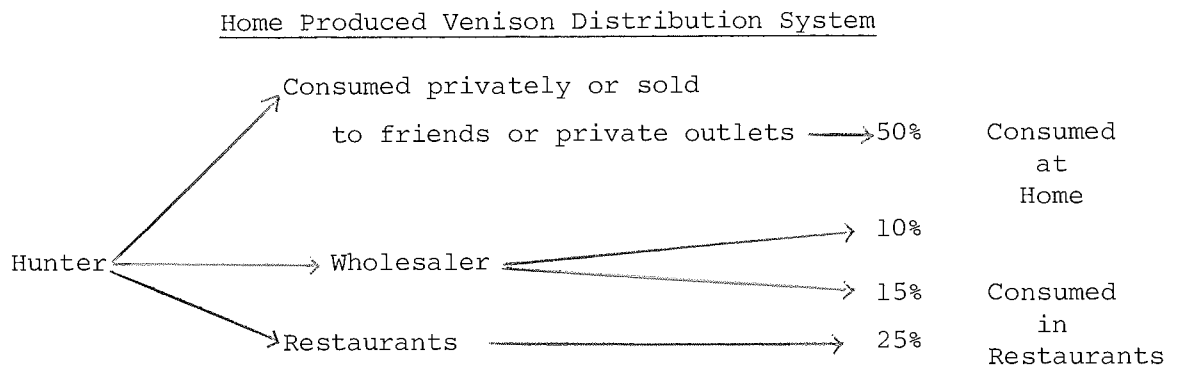
Nearly 30% of West Germany is covered by forests which provide an excellent habitat for a wide variety of game. The Interior Hunting Authority issue a quota of each sex and species of animal to be culled. The principal purpose of the hunting list is the production of "Trophies of the Hunt". The majority of shooting in West Germany is carried out by sportsmen, as opposed to professional hunters.

1. THE WEST GERMAN VENISON MARKET

Although West Germany is the world's major consumer of venison, and so represents an important market for most venison producing countries; due to the relative unimportance of venison as a component of total meat consumption (less than .5%), little statistical data is collected by the authorities. Many figures are based on estimates, including the total annual consumption of all game meats at 40,000 tonnes.

i. Domestic Production and Distribution:- About 21,000 tonnes of deer venison is consumed annually in West Germany. Of the 12,000 tonnes of domestic production (predominantly from Roe Deer) possibly half is never marketed, but consumed by the hunter, his family and friends or sold privately. Perhaps half of the remainder is sold fresh to local hotels or restaurants that may well offer venison as a speciality.

The West Germans also consume a further 12,000 tonnes of domestically produced game meats from wild boar, moufflon (wild sheep), hare and game birds.



ii. Imported Supplies and Distribution:- Probably only one third (or 6-9000 tonnes) of imported game meats are derived from deer. The rest is made up of antelope, buffalo, kangaroo, hare, wild boar and of course, game birds. Imports are usually frozen, although fresh chilled supplies do arrive during peak demand.

The principle venison exporters to West Germany are South Africa (23%), Great Britain (15%), Austria (10%), New Zealand (10%), Hungary (10%), Yugoslavia (8%), Spain (5%), Czechoslovakia (4%), Poland (4%), and Roumania (3%).

South African supplies include Sprinbok, Impala and Kudu, and although they have problems with disease and hygiene requirements; the South Africans now have West German financed processing works and the supplies can be expected to increase.

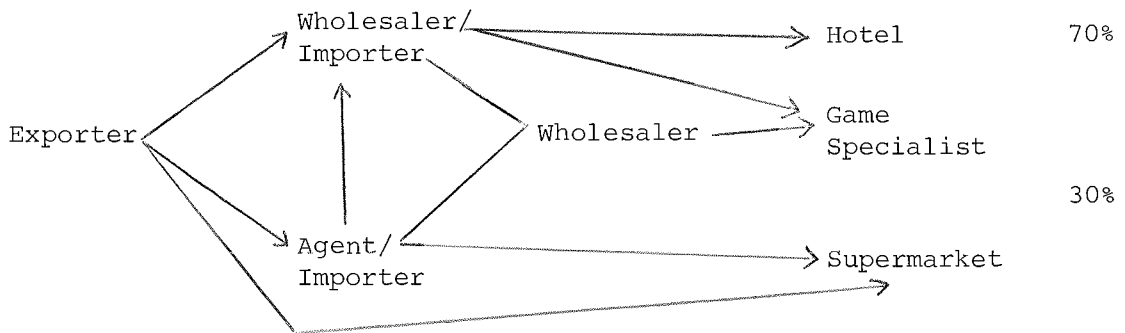
Spain has large game resources, predominantly Red Deer, and exported 255 tonnes of venison in 1979, although supplies were of variable quality.

Russia and Canada have the largest game supplies in the world and must have a big potential to increase supplies.

Imports are handled by wholesalers generally; though a few supermarkets send buyers to exporting countries to purchase retail packs to go direct to the supermarket shelves. Supplies are often imported either by an agent who sells into the German trade on behalf of the exporter, or by one of the larger wholesalers. These large wholesalers often have the facilities to cut carcasses and to produce retail packs subsequently sold through supermarkets.

The hotel and restaurant trade accounts for 70% of imported supplied of venison. Supermarkets are occupying an increasing share of the retail market, replacing the old style specialist game shops which have difficulty in accommodating the low turn-over and seasonal throughput of venison. Supermarkets are better equipped for this trade, purchasing bulk consignments and distributing to branches where a small section of the shop's freezer space is allocated to the sale of game meats.

Imported Venison Distribution System



A large proportion of German venison imports come either directly from Eastern Europe or indirectly via Australia. Although trading with Eastern Europe has its problems, traders are prepared to tolerate this situation in order to obtain large quantities of game at fixed prices. These fixed prices in turn influence wholesale prices for domestic and other imported supplies. The volume of exports from Eastern Europe is controlled by hunting quotas, and as such, are unlikely to change. If a shortfall in exports from Eastern Europe does occur, supplies are encouraged from other sources, often at substantially higher prices.

The severity of the European winter plays a role in determining the output from the wild herds. With a reasonably stable demand for

for venison, and domestic production levels independent of price, supply will affect the price to a greater extent than demand.

iii. Product Requirements and Marketing:- There is very little interest or awareness of the country of origin of venison bought at the catering, retail and final consumer levels. There is very little specific promotion of venison in West Germany.

Wholesalers however have a much higher degree of product knowledge and nearly all wholesalers associate each exporting country and often individual exporters with particular quality and reliability standards. Polish and Hungarian venison is considered to be of the highest quality.

The majority of retail packs is produced within West Germany and since German venison is considered to have a premium image, no attempt is made to disclose the country of origin.

The strong demand for venison in restaurants and hotels can largely be explained as the high cost of the meat is disguised in the overall cost of the meal. The town housewife who purchases frozen packs in the Supermarket is often unsure of cooking methods, and so, is very conscious of the high retail price.

iv. Seasonal Demand Patterns:- There is a seasonal component in demand following the seasonal supply factor and demand is strongest between September and January with a peak in December. Prices fall off after Christmas to a minimum in the summer months. Prices again rise at around Easter time.

In addition to the simple explanations of high consumption on feast days and low consumption during the Summer vacation period; there are several other factors determining this seasonal demand.

(a) Tradition: It has become a habit formed over decades to eat venison during the hunting season. The real connoiseur will only eat venison during the season.

(b) Quality and Freshness: The hunting season is from June to February and occurs during the period of peak condition in the deer. Possibly the consumer also has the impression that meat bought during the hunting season will not be frozen meat thawed out.

(c) Weather: Temperature and rainfall have a surprising influence on demand levels. If weather is bad in the autumn, consumption levels rise toward those seen in winter.

However, each successive season tends to establish game trading on a more all-year-round basis. This can probably be attributed to the increase in frozen food sales, coupled with an increase in consumption by a wider circle of people accustomed to frozen foods and less concerned with traditions.

v . Consumer Preferences:- The most popular venison cut is the Roe Deer Saddle, which is traditionally served as a roast on festive occasions.

Most end users are unaware of the effects of age and species on meat quality and rely on the experience of their supplier to meet their specific requirements. However, there is a suggestion of preference for smaller cuts because these are associated with younger animals considered to produce "better quality" in terms of taste, texture and juiciness. As well, many families and smaller restaurants do not need and find too expensive, the cuts from larger species or strains of deer.

2. DEER FARMING IN WEST GERMANY

Within the Federal Republic of West Germany there are some 300,000 Ha of agriculturally marginal land which cannot be farmed in a profitable way without Government support.

The problem is a combination of terrain and the size of the average holding. The majority of the landowners now have part or full time jobs away from the farm. In the last ten years experiments have been carried out to assess the potential of Fallow Deer farming to reduce the amount of subsidy required to care for these marginal areas.

(i) Administration:- It was quickly recognised that the practice of keeping, for economic purposes, animals which otherwise live in the wild, might very well have conflicted with legislation relating to nature conservation, hunting, forestry, slaughtering, meat inspection, disease control and perhaps most importantly animal welfare. Germany was therefore like Scotland in that official trials and research was undertaken before the practice of deer farming

was recommended to farmers.

Agriculture in the Federal Republic of West Germany is administered by a self-governing chamber, the Landwirtschaftskammer (Ag. Dept.), whose governing council is a general assembly of elected farmers and agricultural worker representatives, and appointed representatives from scientific institutions.

The leading exponent and expert on Fallow Deer farming in West Germany is Professor Reinken, Director of Research for the Landwirtschaftskammer. The President of the Fallow Deer Farmers' Association, Dr. Brune, is a colleague of Professor Reinken; and I am indebted to these two gentlemen for much of the information on deer farming in West Germany.

The idea of the Fallow Deer as an alternative grazing animal for these marginal farms was based on:

- (a) Low labour requirements;
- (b) No winter housing required as with sheep and cattle;
- (c) No calving supervision required;
- (d) Disease resistance;
- (e) High value product.

The first experiments in deer farming were carried out in Northern Rhineland at the Animal Husbandry Teaching and Experiment Station, Haus Riswick in 1973-1974. Several farm based operations were begun soon after under the guidance of Professor Reinken.

(ii) Numbers:- There are about 10,000 units with 5 or 6 deer kept for amenity purposes. However, there are now about 1000 genuine deer farms throughout the Federal Republic of West Germany. The F.R.D. is made up of 7 states and 4 city states. One working group follows deer farming at the national level; while each state has its own association with a total of 1,000 members. Throughout the country there are now 25,000 head on deer farms with the average herd size between 15 and 20 head per farm per member. In Rheinland there are 150 deer farms with the biggest herd having 230 does.

(iii) Farming Guidelines:- The image of Red Deer as King of the Forest amongst the German public, particularly the wealthy and influential landowners, is so great that research agriculturalists know any attempts to have it regarded as a farm animal would be met with considerable hostility. However, Professor Reinken believes the Fallow Deer have several other advantages over Red Deer:

- (a) Better quality venison;
- (b) More suited to the small intensive grazing situations than the Red Deer which have a habit of walking fences;
- (c) Hardiness - During the record cold winter of 1939-40, when temperatures dropped to -26°C , far fewer wild Fallow died than Red and Roe Deer.

Red Deer farming may eventually be permitted if satisfactory results are first obtained with the Fallow Deer.

From the outset, it has been felt that deer should be run on land close to the homestead to develop a degree of familiarity and confidence between man and animal. If the animals are to be run a considerable distance from the homestead, then the fences must be so high and secure as to make them uneconomical. With such a policy, most deer farmers find 1.5 - 1.7m fences with 15m post spacings quite adequate. With the average deer farm size only 6-8Ha; it would seem rather difficult to get very far from the homestead anyway!

German forests are rigorously protected for their timber, recreational, amenity and air filtering qualities. As such, it is illegal to deer farm in forests. There are also legal complications with the potential of high deer fences to obstruct views and public access to the forest and countryside. I believe the matter of ownership or liability for escaped deer is still to be resolved.

As is the case in the United Kingdom, there is an inconsistency in trying to have farmed deer regarded as livestock while slaughtering and selling the meat as "game".

(iv). Slaughter and Marketing:- A most important aspect of the European venison trade is that the word "venison" does not solely refer to the meat of deer, but embraces the "flesh of all animals of the chase", or simply game meat. As such, buffalo, antelope and even kangaroos can legally be sold as venison.

Professor Reinken felt there is no basis for the concern over consumer preference for wild deer venison and as such, they were deliberately marketing their meat as "high quality, farm reared Fallow Deer calf meat"; or "Damkalbfleisch" (deer veal) as opposed to "Damwildfleisch" (deer venison). Under existing foodstuff regulations within the E.E.C., it is felt that farmed deer will soon be officially classified as "Damtier" (deer livestock) as is already the case with Reindeer. The degree of domestication seems to be the determining factor.

All slaughter of farmed deer is carried out on the farms and the carcasses retailed directly to local hotels and restaurants. The price received for whole carcasses is A\$6-7.20 / Kg compared with A 4.80 /Kg from a game dealer.

Here-in lies the major legislative problem facing deer farmers, and it would appear the authorities have so far turned a blind eye to slaughter and food hygiene requirements.

Officially the practice of "domestic slaughter" can only be carried out on animals intended solely for the farmer's own use. Once classified as Stock, deer would be subject to the strict controls placed on conventional livestock slaughtering. Yet the German veterinary profession is opposed to abattoir slaughter of deer for reasons of animal welfare and meat quality.

At the same time, head shooting in the paddock is illegal in most states - not because of any humanitarian or hygiene problems, but because of the danger of shooting your neighbour or a tourist.

(v). The Future:- German deer farmers clearly have their sights set on replacing the 12,000 tonnes of imported deer venison. However, the European game meat trade is relatively free and for deer farmers to compete they would need to drop their prices to an uneconomical level; or else persuade their government to restrict imports or

subsidize their farming operation. Of course, the latter option then defeats the original purpose of deer farming.

With the annual meat consumption in West Germany stabilized around 84 Kg / head, any new product would need to replace an existing meat. The closest substitute in terms of end use and quality is veal, and so it would be expected that the producers of this meat would quickly take action if markets were lost.

Professor Reinken believes the long term future of deer farming (both viability and developments) will be very dependent on future milk prices. These of course, are artificially supported by the Common Agricultural Policy of the E.E.C. for political, social and economic reasons.

Present prices for a breeding doe is around A\$600 which is about the same as a milking cow and four times the price of a sheep. As the price of a doe inevitably drops to the value of its production (A\$200-400), then interest in deer as an alternative to dairying will increase. With the majority of European beef produced from dairy breeds then any decrease in dairying would leave the way open for increased venison production.

It would be foolish to dismiss German deer farming as limited by available land and farm size. 75% of E.E.C. farms are less than 20 Ha, and yet the E.E.C. is the world's largest agricultural producing nation.

Last year 4 - 5,000 stags were slaughtered in Rheinland alone and the number is rising annually. Within ten years there will probably be 3-4,000 farms with 30-40 animals each. However, if dairying profitability falls, then the national herd could rapidly reach 1000,000 females producing 40,000 stag carcasses per year. Once the demand for breeding females is saturated, then the annual slaughter could reach 85,000 head or about 2,500 tonnes.

On-farm slaughter in simple facilities followed by collection and processing in central co-operative works would overcome most legal problems and is much the same procedure as used in the production of the huge mountains of dairy products in Europe. The German Government may well decide to subsidize venison as a product which is otherwise imported instead of subsidizing dairy products which are already surplus,

requiring additional subsidy to sell them on the world market.

(vi). The Work at Haus Riswick:- Haus Riswick Animal Husbandry Teaching and Experiment Station is situated at Kleve, some 25 km from the Dutch border town of Arnhem. The station consists of 205 Ha of flat plain at an elevation of only 15m A.S.L. with annual rainfall of 784mm. It is situated in one of the most fertile areas of Germany and stock includes sheep, cattle, deer and pigs.

The Fallow Deer at Haus Riswick were obtained from wildlife parks in 1973-74 and now number about 200 head. The prime purpose of the exercise is to determine the Fallow Deer's ability to "convert grass to meat".

Deer research has involved; calculations of feed requirements; reproductive performance; experiments into handling and slaughter techniques; selection for twinning and de-antlering techniques.

(a) Feed:- Requirements are calculated as a Starch Equivalent (S.E.) type unit and a doe + fawn, and share of a stag requires 360 S.E. Feed production is calculated at 3,500 S.E. / Ha / Year and stocking rate set accordingly. Over the whole farm they run 14 deer, 10 sheep and 2 cows / Ha or 28 deer / Ha.

(b) Fawning:- During my visit, the main mob of 100 does was in the middle of fawning and two staff were weighing and tagging fawns. They weighed in a big plastic bucket and claimed no losses from mis-mothering. Of the 38 fawns born so far, there had been no deaths, with weights ranging from 5.5 kg down to 4 kg (average 4.5 kg).

Over the years, sexes born has equalled out, and although 90-95% of 2 Y.O. does fawn, only 70-75% survive to weaning. A major cause of death has been navel infection from the long wet grass - it even wears the hair off the fawns' legs. Another serious killer (20-30% death in fawns) was Necrobacillosis which infected the lips and tongues, leading to death when the livers become infected. A sheep footrot organism causes this disease but farms running only deer still had the problem, absolving the sheep of blame. The problem has been greatly reduced by feeding the does some sort of special vitamin brew. Copper toxicity is also a problem with high levels in the soil. Any food concentrates that include Copper will kill deer and sheep.

(c) Handling:- No attempt is made to hide the farmed deer with their paddocks clearly visible from the main road. Fences are only 1.7m high and only one case of poaching farmed deer has been reported in the whole country.

Apparently yarding and handling are the single most important problems facing deer farmers. The yards at Haus Riswick looked hopeless and apparently this was the case as weighing adults had been abandoned following deaths and injuries - to humans in the latter case. Now they are only yarded at weaning and for slaughter.

The yards I saw were Mk II, the predecessors having been some sort of wing and crush in a corner. The new yards were supposedly based on some English sheep yard plans and consisted of a large 6m diameter tank and a smaller one in the centre. Two large tracked doors moved around the space between. They must be extremely noisy and almost impossible to sort deer in. However this was only a minor problem compared with getting them into the yards - and not surprisingly. The yards had no permanent wings or lead-in race and looked very much as though they were intended for their original purpose - a water tank in the middle of the paddock. For yarding a temporary race is made of 1 metre hurdles (deer never jump them) and rubber conveyor belt used to black out the fences.

Professor Reinken and a group of local deer farmers were hoping to attend the 1983 Deerfarmers' Conference in New Zealand; so I'm sure they will quickly solve this yarding problem on their return.

(d) Slaughter:- was initially done by paddock shooting, but now a crush arrangement out of the yards permits the use of a captive bolt pistol. Carcasses are hung for several days "in-skin" to permit curing without drying out. They are then processed in the station facilities and retailed locally.

Stags are slaughtered around fifteen months of age during August and September - by October they are too fat. Stag carcasses average 30kg with the best 32kg. Doe carcasses average 28 kg.

(e) Twinning:- In an attempt to increase the fecundity of the Fallow Deer, animals with a history of multiple births were

collected from all over the country. The main mob consisted of does that were twins or had produced twins and were mated to a twin stag. To date not one set had been produced.

At an earlier stage, Whitetail Deer were obtained as these are known for producing twins. But as the New Zealanders have found, they seem to die for no apparent reason. Advice from the United States was that the species required 20-25% browse in their diet; so it was felt this may have been the cause of death.

(f) De-antlering:- German deer farmers do not even contemplate velvetting, knowing they would probably be hung-drawn and quartered by the hunting fraternity.

Instead, all stags at Haus Riswick are permanently polled with a hot iron as used for the same purpose on calves. With the fawns born in June, they can be treated in November just as a bump can be felt. A local anaesthetic is used and the business end of the electrically heated iron is about the size of a one cent piece. The operation is 100% effective, with mature breeding stags having heads like does.

The Director of Haus Riswick is Dr. Coenen, and his opinion after nine years was that deer farming was really only viable when the farmer is able to slaughter and retail his own animals. Such a system is only practical with less than 100 animals. Any more than this would require production line techniques resulting in the middle man getting most of the profit; while the farmer did most of the work.

(vii). Description of Two West German Deer Farms:-

Herr and Frau Bommert farm 10 Ha at Marienheide-Loh in Bergischenland which is at an elevation of 480m with snow from December until March. Rainfall is 1250mm - 1500mm with at least 50mm each month.

Herr Bommert is President of the local Fallow Deer Farmers Association and farms 100 does + followers in conjunction with an outside job. The average farm size in the area is 6-8 Ha; necessitating an outside job in most cases, while traditional land use is the grazing of beef and dairy cattle and sheep.

The Bommerts were one of the first farmers to turn their hands to deer farming in 1974, and now produce about 40 carcasses per year. Although it is illegal to do so, the young bucks are shot in the paddock because of lack of any alternative. They process the carcasses themselves and retail direct to local hotels.

Demand is good because the area is obviously a very popular holiday and day tripping area from the industrial Ruhr. Slaughtering is carried out from the end of September into October and weights vary from 25-30 kg from a 45-48kg live animal. I was told some farmers slaughter all winter to stagger supplies to a regular client.

To date 90 does had fawned with 3% deaths compared with the usual 5%. 2 Y.O. fawning averages were around 70%.

Feed supplements include hay, silage, Fodder Beet and Ammonia treated straw. The latter was said to be as good as medium quality hay while the Fodder Beet was the most popular with the deer apart from concentrates. 200g/head/day of concentrates is fed during winter and is regarded as a better way to administer mineral supplements than salt licks.

The deer were in good condition on rolling grassland and well sheltered with a patch of forest. Some sort of yard was seen in the distance, but by the surprise expressed at our handling techniques I do not think they would be very good. Herr Bommert is one of the group hoping to go to New Zealand with Professor Reinken.

The second farm visited was owned by Herr Rwessman who is a full time farmer on two separate blocks at 315m elevation. He has disbanded his wealer unit and converted completely to deer, now running 200 does with 350 head in total. This was a much more professional looking unit than most in Europe with better looking fences and facilities.

A legacy of the vealer unit is a large concreted yard 30m x 30m, surrounded by buildings including a large calf shed. Both have adapted well, the big yard being used to winter feed the deer; while deer move readily from the yard into the big shed.

Due to familiarity and confidence the deer learn over winter, they are relatively easy to yard from any part of the farm. The very scale of the yard and shed would undoubtedly be a great help also. Although the 15m x 15m shed contained no sub-division, I was told sorting was no problem. At one end is a smaller room with a tracked wall to compress the deer into one end. From here they can be loaded into trailers through a small door or else fed into a race and crush for captive bolt slaughter. The walls are all blackened and padded with used conveyor belt rubber purchased for about \$1.00 / m².

Although I was told this captive bolt slaughter method was quite satisfactory, Herr Rwessman was co-operating with Professor Reinken in an experiment to overcome the problems of farmers without yards and unable to paddock shoot. As such, a 5m high tower was built overlooking an outside yard, with three different heights from which the deer could be shot with a low powered rifle. The expectation being that any missed shots would go into the ground. The system must have proved unsatisfactory (probably because of bullets bouncing off the concrete floor) because now they shoot the deer standing in the shed! This also suggests the crush and captive bolt was not perfect either.

An interesting and potentially useful aspect of Fallow Deer behaviour was pointed out to me in the outside yard. A section of two metre high fencing of black conveyor belt rubber had been used to block a gap between two high buildings. As illustrated by the footprints, the deer will attempt to jump the two storey white brick walls, but make no attempt at the two metre black wall. It may well be worth experimenting with different coloured pens or even two-tone pens.

All the 110 yearling bucks for slaughter, plus the breeding bucks, were set stocked on the home farm. In a separate paddock were the yearling does awaiting shipment to Spain - I forgot to ask what their end use would be.

The home farm has public roads on three sides with the deer running right up to the roadside. No problems have been experienced with poaching or vandalism.

The breeding does are run on a separate block about 5 km away and were all wearing coloured and numbered plastic identity collars, as seen in Scotland.

These collars are designed for dairy calves but look excellent for deer with numbers stamped around the collar as well as on a vertical fin on the top of the neck. There are reports of deer getting a front leg through the collar, but it is not a significant problem.

Of interest were A - frame shelter huts for rough weather and protection of the feed supplements in winter. It was considered essential to install clear plastic roofing in the peak to give the deer more confidence to enter. However, these sheds will now be dismantled in favour of a large polythene tunnel. These are larger more robust versions of our vegetable poly houses, and are gaining wide acceptance as a cheap efficient form of winter housing for all types of livestock throughout Europe. They could well have a place on Southern Australian deer farms running tropical species such as Rusa and Chital. The insides of Herr Rwissman's tunnel were protected by a 1.5m high inward leaning paling fence. Down the middle were hay and concentrate feeders, and at one end a fairly basic catching pen.

Of interest was a shed full of beavers being farmed for their skins and meat. They were not the flat tailed American beaver and were being fed on grass. A pen of silver animals were supposedly the most valuable as is the case with mink and foxes.

D. AUSTRIA

The production and consumption of venison is controlled by similar laws and traditions as exist in West Germany. All culling on Crown Land is controlled by the Forest Department and numbers are fairly static with 350,000 Red Deer carcasses produced per annum.

Hunting is a very important part of Austrian life and is regarded as a status symbol. An individual can only go hunting if invited by a group and only when he has earned various licences based on his knowledge of hunting, wildlife and firearms.

The hunting rights on all areas greater than 190 Ha are leased on nine year terms at auction. Many wealthy business men and companies use hunting leases to entertain prospective clients. On a fenced commercial hunting estate, it can cost A\$9,000 to shoot a top Red stag, for which you only get the antlers and eye teeth. The extreme of this commercialization is the estates which maintain a dossier on each of their stags. A very wealthy customer thumbs through the register of "mug-shots" and vital statistics to select a stag to suit his aspirations and pocket before being led to poor old Fred's favourite hideout. As absurd as this may seem to Australians, these facts are an important influence on the development of deer farming in Austria.

1. DEER FARMING IN AUSTRIA

Over-production of dairy products and falling farm incomes led the Austrian Government to encourage farmers to try Fallow Deer as an alternative grazing animal on the rougher hill farms. There are now 15-20 deer farms with the largest having 80 Fallow.

Much of the foundation stock was purchased from Roumania at a cost of A\$400/head with a subsidy of A\$60/head. Prices for breeding stock have now risen to A\$570-630/head with bucks and does equally priced because of the trophy value of a buck. Hunters pay to shoot farm bucks!

Austria comprises nine counties all with different laws relating to deer. As such, Red Deer farming is illegal in all counties and even

Fallow Deer farming in some. This is reflected in prices for live Red Deer which are only half that for Fallow.

The only opposition to deer farming has come from hunters, and not on any humanitarian or ethical grounds. Fallow deer are regarded as vermin in a Red Deer forest and the hunters feared mass escapes of farm stock.

i. Slaughter and Marketing:- Like West Germany, the bucks are paddock shot, but here the similarity ends. The in-skin carcasses are then sold through the existing game trade alongside wild shot game. As such, the price is A\$2.60-2.90/Kg. Those farmers who do not slaughter are able to sell deer as pairs because of the high value of does.

ii. The Future:- One of the pioneers of deer farming in Austria, has been Dr. Walter Schuller from the University of Vienna Veterinary School. Dr. Schuller has set up a full scale Experimental Red Deer farm with the assistance of a grant from The Forestry and Lands Department. He is required to make a full report on the management requirements, production levels, costing etc. It is Dr. Schuller's hope that with sound results from his work, it will be possible to slip through the necessary legislation to allow Red Deer farming in his county.

Another vet from the Vienna University working on deer parasitism is Dr. Gottlieb Gattinger. With the co-operation of several deer farmers, animals are regularly darted to take dung and blood samples.

It is Dr. Gattinger's opinion that the Government was wrong in advocating Fallow Deer as an alternative farm animal. Generally, farmers have become disillusioned, having soon discovered that capital costs are high and that deer will not thrive on a bit of rough grazing and a few household scraps. Like their New Zealand and British counterparts, it was quickly learned that deer do best on the best farm land.

Fences only last about ten years because of the rigours of snow drifts on the thin soft steel hinge joint netting. Furthermore, farmers also have the common misconception that Fallow Deer are not as suitable as Red Deer simply because of their smaller size.

It would therefore seem that deer farming is unlikely to develop beyond this present stage,. Although the circumstances for introduction are very similar to West Germany; it seems the comparative lack of success can largely be attributed to a failure to develop on-farm slaughter and sales.

At the same time, it must be realized that although Austria is not a member of the E.E.C. the Government has a policy of maintaining farm prices above world prices to ensure self-sufficiency. As such, deer farming must compete with some very high paying alternatives. Good arable land with 1250mm rainfall sells for A\$1.20/square metre or A\$12,000 Ha.

Sixty percent of the country is forested and ninety percent of the farms average 15 Ha. Farmers are taxed on the size of their farm rather than income. These taxes are traditionally low compared with other workers who pay the more normal income tax. Any person with 80 Ha of cereals would be "living like a king" according to Dr. Schuller.

2. DESCRIPTION OF TWO AUSTRIAN DEER FARMS

Herr Lunzer farms 6 Ha in conjunction with a farm machinery business about three quarters of an hour's drive from Vienna. The farm is mostly beech and spruce forest. We only managed a fleeting glimpse of the forty rather wild deer, despite much sweating and crashing through the scrub by Herr Lunzer and his assistant.

A large high shed is used to winter feed the deer with hay stored in the loft or beets from a nearby storage pit. Dr. Schuller was critical of the nutritional value of beets. Scattered through the forest were hay feeders built onto the trunks of large trees. The shed also contained the catching facilities which simply entailed a high walled pen with a drop-door. The off-sider sits up in the loft and triggers the door when the required deer have entered. From here they are manded into useless looking open sided crates for live sale as pairs.

Although this farm may not be typical because it is still being developed, Dr. Schuller was of the opinion that there is little necessity to develop more intensive grazing and management systems while present circumstances persist. These are paddock shooting and a

regular demand for carcasses with no question as to their origin. He says it is nonsense to suggest farm deer would taste differently from wild because the wild deer eat predominantly grass for months prior to the hunting season. As well, many wild herds are given winter supplements to maintain herds and to lessen damage to the forests. A little sideline while discussing forests is that a hunter is fully entitled to shoot a stray dog in a forest, but a farmer has no similar rights on his own land, unless of course, he is a hunter!

The experimental Red Deer farm established by Dr. Schuller covers 20 Ha and presently runs 50-60 head with an aim of 100.

Fences were pre-fab high tensile hinge joint and of a much better quality than most.

Winter supplements were hay and nuts with Dr. Schuller making the one hour drive twice a week from Vienna in spring, summer and autumn. When the farm is snowbound during winter, a local farmer takes over the feeding and supervision.

Handling is still presenting problems such that Dr. Schuller is looking for a suitable sedative to administer in the feed prior to yarding. It would have been quite inappropriate for me to do so, but my suggestion would have been that the time and money would be better spent on a few large sheets of plywood. For although the yards were inside a shed, the lead-in race was only wire and the pens and races constructed with rails like cattle yards. The weighing crate was made from steel mesh completely uncovered in the middle of the room. As such, I think even a sheep would be terrified. Dr. Schuller subscribes to several New Zealand deer farming publications and hoped to attend the 1983 Conference.

Lung worm is the most serious parasite necessitating two or three drenchings with Valbazen administered in the feed. This is done twice within two weeks in the spring and autumn. Valbazen is A\$11.50 per litre which is about twice the Australian price.

The most notable aspect of the farm was the size of some of the hinds containing Hungarian blood. One particular hind was considerably bigger than a three year old stag beside her. The Red stags average 200 kg live weight with one big bloke of Hungarian ancestry weighing 350 kg.

Pastures had a typical alpine look, with red clover dominating but a profusion of flowers, including a poisonous yellow variety. The farm was very picturesque, set among the native forests with rolling hills and pasture in full growth prior to hay cutting.

E. SWITZERLAND

The problems of falling returns and population drift from marginal farm land is again the motivating force behind deer farming initiatives in Switzerland.

The problem is particularly acute in the high, remote mountain areas with small farms devoted to beef and dairying.

The Government has provided a grant to cover half the cost of establishing deer farms up to a total of A\$6000.

There are now eight organized deer farms with more being developed. A condition of the grant is that the farmer must provide the Government with five years of figures, including stock reconciliations and time and motion studies.

Typical of these farmers is Max Burgi whose small farm is at 1500m with the possibility of being completely isolated for six weeks during winter. Apart from a herd of bell-ringing Simmentals and Swiss Brown Cattle. He now has 18 Red Deer and 29 Fallow.

With the exception of a small area around the homestead, the rest of the farm is on a 45^o slope to the south. This provides panoramic views of the surrounding mountains and valleys below, but this creates serious problems with soil damage and land slip. Max feels the lighter bodied deer may do less damage than the cattle.

Fences are well constructed despite the difficult terrain; although snow damage is a problem - I saw photographs from mid-winter of the deer looking over the top of the two metre high fences. Of course, they do not stray because the only feed is in the barn. The tractor for hay making resembled a low slung army jeep with hydraulic drive to all four wheels. Three point linkages and power take-off were sited at the front and back, and the whole machine protected by a sturdy roll cage!

The Red Deer had recently been purchased from John Fletcher in Scotland and were calving during our visit. Calves were tagged and weighed at birth.

Fallow Deer breeding does were purchased locally for around A\$200-400 depending on the delivery condition. Stags in their third set of antlers are worth A\$500 to buy, indicating a value as hunting trophies as was the case in Austria.

Slaughter is again carried out by paddock shooting, but Max is required by law to employ a hunter to perform the task. The animals are then processed by the owners at a communal abattoir in the district and sold to hotels and restaurants. Alternatively, the in-skin carcasses from the 15 month old bucks can be sold into the game trade for A\$7-7.50/Kg. This compares with only A\$4.50 for wild shot Red Deer.

Lungworm is the main parasite problem, causing some deaths. Max has also lost two deer to Lynx. These native cats are being re-established in the wild in an attempt to provide natural selection in the wild herds of deer. The Government will pay compensation for lost domestic stock, but the problem has been proving it is the Lynx and not "Fido: from next door.

Besides hay and bought grain, Max also plants Artichokes and Sweet Potatoes as winter feed. These, I finally ascertained, are what we call artichokes.

The Fallow Deer were also fawning but I was intrigued to observe that the bucks had only just cast their antlers. By contract, Fallow bucks in southern Australia will have half-grown antlers by fawning. Max said the deer in the valleys below fawn at the same time as his does, which suggests that possibly altitude, but more likely temperature, affects antler growth, but now the reproductive cycle. The hay making season is apparently six weeks earlier in the valleys, but I was unable to see any deer to check the growth of the antlers.

No attempt had been made to construct handling facilities but the Fallow Deer were the quietest I had seen. This is clearly a result of the long, harsh winters when the deer will enter the cattle barn for warmth and feed. Max made an interesting comment having worked in Australia for several years. In his opinion, the Europeans had failed to make advances in deer husbandry that have been achieved in Australia and New Zealand, because European farmers have never had the necessity or opportunity to develop low labour input management and facilities based on animal psychology. The typical European farm

is so small by our standards that the animals are virtually all pets. Yarding deer presents much the same problems as a large mob of calves or lambs just weaned off the run.

The future of deer farming in Switzerland will very much depend on the Government's willingness to support it. Max freely admits that about half his income is derived directly from Government handouts, because the authorities would like him to stay on his farm.

His neighbour further along the ridge, ran a herd of Simmentals and milked the cows by hand, then fed the milk straight to the calves. I suspect he was then entitled to both a dairy and a beef subsidy. C'est la vie!

F. FRANCE, BELGIUM AND HOLLAND

FRANCE:- This is one of the few European countries that has not made any attempt to farm deer. France has wild herds of Red, Fallow and Roe deer, and besides stalking, they still maintain stag hunting with hounds and horses as in the United Kingdom. A hunt club with one hundred members can pay A\$1000,000 per annum for sole hunting rights to a forest. It is illegal to trade in venison outside the designated hunting season.

I happened to cross-paths with a group of French Agricultural students at Glensaugh. They were carrying out a study into the feasibility of deer farming, having already been told by one of their countries deer experts that the deer was a wild animal and quite unsuitable for breeding on farms. Imagine their amazement when surrounded by dozens of friendly old hand reared hinds!

John Fletcher from Scotland has sold a consignment of Red Deer to a Frenchman, supposedly for farming, but apart from this, I knew of no other interest in deer farming in France.

BELGIUM:- Surprisingly, Belgium is the second most densely populated country in the world. Deer farming has caught on in a limited way but must obviously be up against some stiff competition for land use. My impression was that hunting interests were the influence on prices and the type of person involved. Again, venison can only be sold during the hunting season.

HOLLAND:- Like Belgium, deer farming does exist but there is very little marginal unused land in the Netherlands; so deer farming does not look like becoming a big industry. A change in the E.E.C's policy could alter the situation in these three countries overnight.

G. AUSTRALIA1. DO WE EXPORT?

Although Australian deer farmers hope they have barely scratched the surface of the local market, I believe it is already time to turn our eyes to the export trade. International forces of supply and demand will quickly ensure that the local price will soon be brought down the world price.

There are many factors that will determine how soon we will be forced onto the world market, but when that time inevitably arrives, then we must ensure our management and legislation lend themselves to a smooth transition.

i. Factors Influencing the Australian Market:

(a) Local Production:- If we estimate the Australian deer breeding herd as comprising:

2000 Rusa Hinds	producing 40 Kg carcass weight offspring per year						
5000 Fallow Does	" 30 Kg	"	"	"	"	"	"
1000 Red Hinds	" 45 Kg	"	"	"	"	"	"
500 Chital Hinds	" 30 Kg	"	"	"	"	"	"

Taking a conservative fawning/calving percentage of 80% and the average Australian carcass weighing 34 Kg; then the present production must be around 230 tonnes. In five years time production will be 675 tonnes, and in ten years 2400 tonnes.

(b) Australian Consumption:- Let us put that into perspective by making a "guesstimate" of how many Australians that will feed. If we kid ourselves that we can persuade the locals to eat as much per head as the Germans (.36 Kg) then 16 million Australians will consume 5760 tonnes of meat or 8640 tonnes of carcasses. It will take us until 1995 to fulfill this production from the present breeding herd.

Unfortunately, the saturation figure for Australian consumption is more likely to lie somewhere between the German figure and the much loser British figure of 30 grammes or .03 Kg/head/year.

At 30g/head/year the annual consumption in Australia is now only 480 tonnes of 720 tonnes of carcasses. This production will be reached within five years. Of course wild trapping or imports from New Zealand of breeding stock would bring forward these estimates.

Although of little use, I include the latest consumption figures for meat in Australia. Probably the Molluscs and Crustaceans represent the nearest substitute for venison in terms of price and end use.

MEAT CONSUMPTION PER HEAD FOR 1981-82

Beef	63.6 Kg	Poultry	5.7 Kg
Veal	5.5 Kg	Offal & others	6.9 Kg
Lamb	13.3 Kg	Fish	2.3 Kg
Mutton	4.7 Kg	Molluscs & Crustaceans	9.1 Kg

* Total: Approx. 100 Kg

(c) New Zealand Production:- It is inevitable that the New Zealand deer industry will have a great influence on Australian prices by virtue of its scale and the Government support provided.

Although we seem to have gained a respite from the dumping of large quantities of New Zealand venison into Australia, I feel this is only temporary, now that the Closer Economic Relations Agreement has been signed, it will not be long before the New Zealanders get their act together and start making major inroads into the Australian domestic market. As yet there is no direct subsidy on venison, as is the case with most other agricultural products, but the favourable exchange rate and very generous indirect assistance to deer farming will allow the New Zealanders every opportunity to undercut us.

ii. Europe Europe has several major attractions as a market for Australian farmed venison.

(a) Population and Wealth:- By virtue of its huge population and comparative wealth, Europe would seem a natural market for a luxury food. The populations of West Germany and the United Kingdom alone total more than 100 million, and the E.E.C. represents 40% of total world trade in all commodities.

(b) Familiarity with the Product:- Despite its relative unimportance in total food consumption, venison is a well known dish in most European countries. It would seem much easier to market venison in this environment rather than the middle East for example.

(c) Existing Marketing Structures:- As can be seen from the West German situation, a well established marketing chain exists already for game products, and providing farmed venison is acceptable, then we have some very useful guidelines for marketing.

(d) Access:- Probably the biggest attraction of Europe as a market for our venison is the relatively free access given to game products compared with the meat from domestic animals.

As the following list indicates, the rates and conditions do vary between countries, but fortunately, those applying to the countries which I believe have the greatest potential for Australia, are amongst the lowest.

The Import Duty on game meats and offals into all E.E.C. countries is a flat 4% of the G.A.T.T. Customs Value. (This is roughly the C.I.F. price.) On top of this, each country imposes its own Value Added Tax (V.A.T.) on the Duty Paid Value.

These are:

Belgium	6%	Italy	15%
Denmark	22%	Luxemburg	10%
France	18.6%	Netherlands	4%
W. Germany	6.5%	U.K. & Ireland	0%

In some of the non E.E.C. countries the rates are:

Australia - Has a 5% Import Duty + 8% V.A.T. + .3% Export Promotional Tax.

Switzerland - A\$15 Duty + A\$2 V.A.T./100 kg.

Sweden - Duty free but imposes a 23.6% tax

Norway - Duty free with a 20% V.A.T.

iii. Potential Trading Problems with Europe:- The Common Agricultural Policy of the E.E.C. has the role of promoting self-sufficiency in agriculture. But of equal importance is the aim of maintaining rural employment, income and land use for social and political reasons - the agricultural production essentially constituting a by-product in this case.

As a general rule the E.E.C. and many other European countries will allow relatively free access for any goods it cannot produce locally. Such is the case with West Germany which imports about half of its annual venison requirements.

There are several situations which could alter these conditions.

(a) The only possible way Europe can significantly increase venison production is through intensive deer farming. Should this industry develop naturally or through government support, then it is reasonable to assume the authorities will move to protect their local producers from outside competition - and there's not much we can do about it.

(b) With total meat consumption at saturation level in most developed countries, any change in the figures is confined to relative changes between meats. If European producers of traditional livestock find their markets being lost to imported venison, then they too will seek protection. In this same category we can include the owners of the Scottish deer forest who are so dependent on the German game market. By tradition they have also tended to maintain an important lobby in Government.

If the New Zealanders start off-loading their farmed venison into Europe with the same lack of market research and promotion as exhibited in Australia, then the European market could be lost to all of us.

(c) The surest way import duties will suddenly be raised is if the E.E.C. sees fit to re-classify all farmed game as stock. While this would create many problems for the German and British deer farmers, it must be remembered that regulations relating to local produce are usually less stringent than those applying to imports. Hopefully European deer farmers and game traders will resist this change for as long as possible.

2. MARKETING IN WEST GERMANY

Despite the well established supply and demand pattern for game meat in West Germany, I believe this country still represents one of the best bets for selling Australian farmed deer venison in Europe.

As detailed earlier, Easter Europe has the greatest influence on West German prices because of the large shipments at relatively low contract prices. But when contracts are under supplied, then importers look elsewhere to fill the gap. As well, it has been suggested that the West German market could stand a 30% increase in supply without significant reduction in prices.

i. Acceptability of Farmed Game:- This dilemma has created a great deal of head scratching in New Zealand for the last ten years and was, I believe, fuelled by reports from West German importers.

The question is related to both tradition and taste. In the first instance there is no doubt a proportion of the German consumers will only eat wild shot game. But how significant is this preference? It has been suggested that if more people were aware of the unsavoury procedures involved in the procurement, transport and storage of venison, then demand could well drop. Professor Reinken stated that the only locally produced carcasses that reached the trade are those from badly shot, diseased or aged animals!

Differences in taste between wild and farmed deer are undetectable in young animals. Any difference in older animals can usually be attributed to age, reproductive activity or decomposition. A lot of the wild shot venison from England comes from estates such as Wadhurst Park which is far less natural than many deer farms.

If wild shot venison is such a popular meat in West Germany, why is it that annual consumption is only 21,000 tonnes compared with 1½ million tonnes of beef at only a slightly lower price?

The vast majority of European meat is now produced from housed, grain-fed livestock. One would expect that this would lead to a lack of interest in strong flavoured game meats. Perhaps this is the reason for the rapid acceptance of South African Impala venison. Although it has only been on the market a few years, it has already become very popular, and some wholesalers feel this may be due to its milder, sweeter flavour.

German deer farmers are having no trouble disposing of their produce, and intensively reared pheasants and ducks are already well accepted.

While it would be rash to suggest that the preference for wild game is a myth, I believe it is of no consequence to the majority of consumers.

ii. Advertising and Promotion:- Most recommendations for marketing any new product stress the importance of advertising. Fortunately, I believe this would be inappropriate for our venison in West Germany because of the lack of interest by the consumer in such matters as type of venison and country of origin. Australian farmed venison would need to go through the existing marketing channels. Any attempts to go it alone or promote our venison as superior to the wild product, would be doomed to failure and most likely quashed by the larger well-entrenched wholesalers.

The single most important form of promotion we can undertake is to supply only the type of venison that the importer-wholesaler requires. Apart from aspects such as cuts and packaging, the prime considerations of game dealers is fat. There is a common misconception among German and British game dealers that farmed venison automatically means fat venison. This shows a surprising ignorance of farming practices, and it will be up to us to correct this. The lack of opportunity for feed, management on many estates and parks has no doubt lead to the formulation of this impression. One German dealer, complaining of grossly overfat stags from an English park, suggested they had been fed on "sweeties"!

It is also important to market all Australian venison under one label and packed to identical standards. As has happened in Scotland, the poor quality standard of a minority of operators has tended to tarnish the image of all Scottish venison.

If we produce a product readily acceptable to the end user, then the middle man is not going to question the origin as long as he is "making a bob".

iii. Price and Timing of Delivery:- Both aspects are closely related as prices tend to fluctuate markedly with the erratic supplies. It is imperative that our supplies are timed to arrive at the peak demand and high price of winter. This may require a re-think of our current practice of slaughter at the end of our summer. Although exports would be frozen, the delay of six months between slaughter and sale would extract a high cost in storage and quality.

Prices vary considerably, but as a guide importers pay about \$2.40 - \$3.00/kg for frozen carcasses. Wholesale prices to supermarkets and restaurants vary from A\$3.00/kg for goulash, up to A\$5.60/kg for haunch and saddle roasts. Retail packs in supermarkets can be as high as \$A15.00 for a kilogram of boned haunch. By comparison, retail prices for best beef are about A\$10.00/kg; pork A\$5.50/kg and lamb A\$5.50/kg.

2. MARKETING IN THE UNITED KINGDOM

I believe this country represents the greatest untapped market for farmed venison.

i. Acceptibility of Farmed Game:- Although game meats are not popular in the United Kingdom, this is hardly surprising when one considers the methods used to procure it - they are much the same as we use to convert kangaroos to pet food. As well, most animals are culled for age or deformity during the Rut or winter when in worst condition. Such animals in a conventional livestock herd would only be used for cabana and saveloys.

The profusion of game recipes stipulating long hanging and marinating in wine to improve the taste and texture are a sad indictment of the product. As well, some of the game dealers I saw gave the impression of operating along similar lines to our roadside rabbit and mushroom vendors who advertise their wares on a piece of flattened corrugated iron - hardly encouraging. Although venison is known as "the Dish of Kings," I suspect this originated in the days when no other meat was available and the peasants ate black bread and potatoes.

ii. Advertising and Promotion:- Bearing in mind the above problems, it would seem a fairly straightforward operation to convince the British housewife that these problems do not exist in farmed venison. The success of the British deer farmers would tend to bear this out.

Apart from attractive, clearly labelled packaging, any promotion must include simple cooking instructions. These must remove the mystique that seems to surround venison cooking (no doubt originating from the variable quality) and stress that farmed venison can be roasted or grilled just like any other meat. Marinating certainly is not necessary with young well processed venison. Some German processors pre-lard the venison to ensure good cooking and also include a sachet of complementary herbs.

iii. Market Outlets:- It would seem preferable to avoid the established game trade as this seems rather pre-occupied with the German market and has shown little imagination in the local market. Perhaps they realize it would be like trying to "flog a dead horse" - literally.

Scottish deer researchers have test marketed farmed venison, cut and sold through a supermarket in the same way as conventional meats. The trial was most successful but did bring home to the investigators that for them the changeover from game to stock regulations will be fraught with legal problems.

If we are to market our venison as a high quality product, then we must look to sell it through outlets with a reputation for high standards and quality.

I would suggest stores such as Marks and Spencers or Sainsbury's would be just such outlets.

At the same time, the catering trade is still the major outlet for venison and has the advantage of product knowledge and a much smaller advertising audience.

Quite obviously, we should concentrate sales in the urban centres where advertising would be more effective and the population generally more affluent.

iv. Influence of British Deer Farming:- Fortunately, I can see no clash of interest with our British counterparts. To the contrary, our individual marketing efforts will be to the other's benefit.

By their very nature, British deer farmers are unable to supply the big urban market but will certainly increase public awareness of the advantages of farmed venison.

v. Prices:- It is very difficult to estimate likely prices we could receive as exporters, as nothing like this has been done before. Obviously, we should export as pre-packed cuts to avoid shipping bone and waste and to keep the employment at home.

Meat prices are very high in the U.K. and, so long as we have free access and the present low tariffs persist, then the situation is very attractive.

Below is a list of prices from a typical deer farm, so one would expect a retailer to pay about 30% less than this.

Retail Prices from a Typical Deer Farm

Unjointed:

Whole carcasses or sides	A\$6.90/kg
Whole haunches	A\$8.80/kg
or saddles	
Whole forequarters	A\$4.25/kg

Retail Prices from a Typical Deer Farm cont....Jointed: (Bone in):

Haunch or saddle cuts	A\$9.58/kg
Shoulder cuts	A\$6.51/kg
Steak	A\$10.72/kg
Chops	A\$9.95/kg
Chopped casserole	A\$8.79/kg
Liver	A\$16.13/kg
Sausages	A\$5.36/kg
Venison Burgers	A\$0.68 cents each

Probably the most encouraging indication of the potential market for high quality venison in the U.K. came from the game keeper or a Devon estate. He had signed a contract to supply 500 yearling Fallow Deer carcasses for A\$3.80/kg (1 pound/lb), compared with the usual game dealer's price of A\$2.00/kg. The reason for the premium being that the meat was all destined for local restaurants requiring consistently high quality venison.

vi. Indirect Access to Europe:- An interesting possibility for marketing our venison into continental Europe is to direct it through a British game dealer. This may seem like adding another middleman, but there are several advantages worth considering.

Some of the larger dealers with a licence to produce retail packs for West Germany have the contacts and are in a position to send smaller consignments direct to the end users. As well, this may allow us to completely side step the "farmed or wild shot" issue as our venison would be mixed in with wild shot meat. A third advantage is that we may be able to avoid the higher import duties into continental Europe compared with the United Kingdom.

There are no duties operating between member countries of the E.E.C.; so it would seem sensible to export to the country with the lowest duties and taxes on third countries and leave it to them to re-export within the E.E.C.

An English game dealer who handles about 300 carcasses/week was very interested in the possibility of buying venison from Australia. For frozen Fallow Deer Haunches, he would pay A\$5.20/kg. For saddles, A\$6.00/kg; and shoulders A\$2.65/kg. For Red Deer haunches A\$2.70/kg; saddles A\$4.15/kg and shoulders A\$2.40/kg.

These prices could well look attractive in a few years time, but at the moment the main interest in the different prices between Red and Fallow Deer. The premium for Fallow venison has long been claimed but unsubstantiated. In this case, the reason is that the smaller Fallow carcasses are more suitable for cutting into retail packs for the Belgium trade. As such, hunters are paid A\$2.84/kg for in-skin Fallow Deer carcasses, but only A\$2.34/kg for Red Deer.

One final comment on "Access." The problems of selling lamb and beef in Europe are not so much related to high tariffs, but to quotas. While the British people may very well like to buy our lamb, their membership of the E.E.C. prevents this. However, in the case of venison, I see no reason for the French or Germans to object to the United Kingdom importing venison from a third country. Even if the tariffs are raised to 20%, as is the case with beef and lamb, I think we should still retain relatively free access. In fact, the British may well see this as an opportunity to make amends for their past treatment of Australian farmers.

4. WHERE TO IN AUSTRALIA

It has been suggested that deer farming in Australia has "come of age," and can now stand beside other livestock industries as an accepted part of rural Australia.

I would like to question this suggestion, and at the same time put forward some ideas for the future.

I think it is fair to say that not a single Australian investor is relying totally on deer farming for his income. At the same time, I know of no Australian farmer who is establishing a commercially sized deer unit on breeding stock purchased at current market value. The reason is simple - money; firstly for breeding stock, but also for fences and facilities.

As a producer of breeding stock, I have no intention of doing anything about the first problem until supply and demand forces it upon me. But on the second matter, it is up to all deer farmers to develop systems of management more suited to the Australian farming environment. Recommendations that deer fences need to be 2.5 metres high; that deer require abundant feed at all times, and that they need top quality lucerne hay and cereals are more suited to a zoo, and must fill the average farmer with horror. If deer farming is to shed its hobby farmer image, then it is imperative that we attract professional farmers with the capital and expertise to ensure deer farming does not stagnate.

There is no doubt that we are indebted to the New Zealanders for many of the developments in deer handling, and even more so for their willingness to pass those ideas onto us. But many Australians have been swept along in the excitement and failed to recognise the vastly different farming environment in that country.

The greatest single difference between the two countries relates to the taxation system. While we must invest capital in breeding stock and facilities, the New Zealanders are able to use untaxed income, which effectively means everything costs them about half. Do you realize a New Zealand school teacher could buy deer and have the cost deducted from his Education Department salary? The effect was that deer farming was more of a taxation industry than a livestock industry. Without going into details, the additional support in the form of grants or tax relief for land development, fill a book. Such schemes only exist in the Australian farmers "Dreamtime."

But as long as Australian deer farmers are aware of these differences, then there is no reason why we cannot compete effectively against New Zealand. Afterall, there is no such thing as a free lunch, and New Zealand farm land is about twice the price of its Australian equivalent, as a result of these handouts. I believe we have achieved an edge over the New Zealanders by utilizing existing slaughter facilities instead of opting for multi-million dollar expenditure on specific deer slaughter premises. They also appear to have wasted quite a few years trying to "have a bit each way" in the farmed versus wild shot dilemma.

Australian agriculture only survives in the international trade world of tariff protection, subsidies and quotas by virtue of our scale of operation and efficiency.

For the sake of testing the air rather than being too dogmatic, I would like to suggest a picture of Australian deer farming in the year 1990.

1. Venison:- If we accept that the market for venison is in the industrialized Western world, then I believe it will be necessary to produce venison as near possible to conventional red meats in presentation and taste. The majority of consumers are unfamiliar with the strong flavour of game meat and for those who find this hard to accept, they should consider the average Australian's lack of interest in kangaroo meat which is not unlike deer meat in appearance and taste.

A more appropriate guideline would be here in Tasmania where a high proportion of the population has had the opportunity to taste venison. My observation is that very few are ecstatic about venison, and I suspect the reason is that the majority of the meat comes from mature stags shot during the hunting season, just prior to the rut.

Having produced a meat just like fillet steak, then we will have to rely on the novelty value and mystique of venison to sell our product at a premium.

ii. Velvetting:- You cannot have your cake and eat it too; therefore farmers will have to decide between velvet or venison production. By the time a stag has reached a viable level of velvet production, he is long past his prime as a meat animal.

I do not believe velvetting is a legitimate or necessary part of deer farming, and it is associated with considerable cruelty in traditional producing countries. If we are to achieve respect for farmed venison in the Western world, then we should avoid any association with potentially suspect farming practices. The problems of handling hard antlered breeding stags can be solved very simply by budding before antler growth commences.

iii. Fencing and Handling:- While there will always be a place for high security enclosures for newly captured or purchased deer, the majority of deer fencing must come down in height and price. More consideration needs to be taken of the strong herd and territorial instincts of deer just as the Scottish and Welsh sheep farmer does when grazing their unfenced hills.

There are definite minimum requirements for deer handling sheds, but those who have invested tens of thousands of dollars on elaborate buildings for only a few hundred animals, will find their competitiveness lost as returns inevitably fall.

iv. Selection of Stocks:- I believe the single most important avenue for improving the viability of deer farming is through the selection of temperament.

No livestock industry can hope to survive in Australia or attract large scale investment if the animals take three days to move into a new paddock or require coaxing into yards. A large, heavily muscled stag with a wide muzzle and "legs on the corners" is not much use if he leaps into the fence and breaks his neck. too many people are pre-occupied with the importance of body weight. If a large animal is so important, why don't all Angus cattle breeders change over to Chianinas? A 50% increase in body size of farm animals only results in a 10% increase in efficiency, and far more would be achieved by concentrating on animal health, pasture production and so on. Or better still, increase the size of your deer farm.

The massive haunch muscles of deer represent a tremendous genetic asset, but extract a very high cost in fencing.

v. Castration:- Herein lies the quickest and simplest method of achieving many of the guidelines suggested in the preceding four points. We all know entire males grow larger than castrates, but the majority of farm stock are castrated for management purposes despite this knowledge. These management reasons are even more applicable to deer.

At the same time, much of the additional mature-weight of entire males is in the low priced neck and shoulder muscles used for fighting.

The most important effect of castrating stags pre-puberty is that they fail to grow any antlers. As well, they exhibit none of the aggression, weight loss, strong flavour meat associated with the breeding season. Even with antlers sawn off, the bruising and stress of closely confining stags will still be present. In beef cattle, the animals most prone to injury and stress when confined are yearling bulls. Unfortunately, the Victorians may have already burnt their bridges by laying down ridiculous guidelines for castration in the "Code of Practice for Deer Farming."

I believe castration will become standard practice on Australian deer farms for the following reasons:-

- (a) Yarding and handling of mixed sex deer is possible all year round;
- (b) Slaughter will similarly be possible all year round, with animals 'finished' to suit the market. This will be imperative if we are to meet the seasonal demand seen in Europe and already apparent locally;
- (c) Cost savings will also be possible by avoiding the necessity to de-antler yearling stags. Castration with an 'Elastrator' ring is much quicker and simpler than de-antlering. Fencing costs are also reduced if the animals no longer have any interest in reaching the opposite sex.

- (d) Labour for velvetting and slaughter of entire stags is required at a time of peak work load on most farms. Winter slaughtering will permit better labour utilization as well as spreading income;
- (e) Overall, farm management will be greatly enhanced with the flexibility available with castrates. Wethers provide the sheep farmer with a means to improve pasture management, fodder conservation in the form of fat and the ability to quickly alter stocking rates to suit the season.

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In conclusion, I would like to say I have tremendous confidence in the future of deer as a farm animal. Provided we do not delude ourselves and other that it is some sort of wonder animal immune to disease and hard work; then this confidence will spread and the industry burgeon.

The greatest attraction of deer farming is the opportunity to convert cheap grass into a high value meat similar to price and esteem to lobster or abalone.

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