



Australian Nuffield Farming Scholars Association

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**Report of the Study Tour to the
United Kingdom and Europe & United States**

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**SUBJECT:
Apple and Cherry Growing**

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1. Introduction

Before you read my report I would like to thank a number of people.

Firstly, thank you to the Australian Nuffield Farming Scholarship for making this trip possible. To my major sponsors HIFERT and QANTAS who have so generously helped in many ways, thank you. To my father Bruce and brothers Peter and Simon who carried the extra work load for seven months, thanks. To my inlaws, Don and Fay an extreme gratitude for their minding our three girls, Jessica, Olivia and Sarah for the three months when Jane joined me. I had lots of friends that helped along the way with support, contacts or just letter writing, you all helped to make my trips more enjoyable, thanks. To my wife Jane, who so ably looked after the girls and our home in my absence, thank, you did a great job!

On February 19th, after having a hectic few weeks getting organised I was suddenly off on my Nuffield Scholarship. Leaving my family and friends at Adelaide airport with the temperature at 36 degrees C, I really wondered what was in store for me. I soon found out! After 26 hours of travelling, I found myself in the heart of London with the temperature a chilly 4 degrees C! Both the weather and scenery was very much an experience. The history and grandeur of London was truly fantastic.

Meeting up with the other seven Nuffield Scholars - (two Australians, two New Zealanders, two Zimbabweans and a Frenchman) and a briefing by Steven Bullock (Nuffield Director), we were thrust into a series of meetings. These involved the E.C., GATT and CAP, all

of which were new to me. In agriculture there were a few points that seemed to stand out. Most of the European countries have been involved in the World Wars, with many of the older residents still having strong emotions towards their fellow EC members. They remember what it was like to be hungry, this fact having a big bearing on many people wanting to be self sufficient in food. With some countries the land has been divided amongst family members through the generations, with many people still having ownership of small parcels of land even though they no longer work the land. There is a bond or feeling with the land and its farmers. Both the EC leaders and the EC people want the land to remain as it is or improve on it. There exists a strong feeling that the farmers are caretakers of the land, and that the EC should support them to continue farming.

With these three points in mind it was easier to see why some of the farming subsidies were put in place. The trouble is that some bigger landowners are taking advantage of the system through clever accounting, whilst some of the smaller landowner/farmers that the subsidies are trying to help are missing out. We met one English farmer who received half his income from the EC, this amounted to 160,000 per year. The EC didn't want farmers to leave the land - who would feed them all? We noticed that some of the subsidies have encouraged farmers to produce quantity rather than quality, this has led to large oversupply of some products. Meat in particular had 1.1 million tonnes held in Intervention storage! A base price was set on some lines of produce and if that price wasn't met at market then the EC would pay to put it into "Intervention" storage. Some prices were set too high above the market resulting in the storage of excessive amounts. The producers weren't getting a true market value prospective, not like in Australia where we try to produce what the market demands and will pay, without outside interference.

The problems associated with the EC are very complicated. The differences in history, traditions, lifestyles, language, resources and wealth are but a few of the problems that have to be addressed whilst working out solutions that are equitable and practicable for all countries. Much of the bureaucracy based in Brussels seemed to be far removed from the real problems facing the man on the land, even though they make crucial decisions affecting their livelihoods.

After a few hectic weeks examining political issues, our Nuffield group visited Paris, another great and exciting city. Here we visited the huge Runges Produce Market. From a horticulturist's view the range and quality of

produce was excellent. Presentation of all items including cheese, game and poultry, fruit and vegetables, meat and fish through to flowers was outstanding. The packaging seemed to outshine the produce they were holding in some cases.

The huge Paris Machinery Show was well worth seeing, if only to see other farming industries' equipment.

Meeting up with the past French Nuffield Scholars, we started visiting farms. Now we really started to understand how the CAP was affecting the smaller farmers, especially French farmers! One of the CAP practices was that it was compulsory to put a percentage of land used for cereal growing into a scheme called "Setaside". This land couldn't be used for twelve months for the growing of crops or grazing of animals but they were paid a nominal monetary amount for it. This scheme was one way to reduce the amount of grain produced in the EC much to the distaste of all farmers. In France in the Picard province, the soil used for cereal growing was quite different to that used in South Australia. Being a heavy friable clay, the soil is continuously cultivated and worked up to reasonable depth with in most cases a five furrow mallboard plough. Most strange! The soil and climate suit not only cereal growing but also potatoes, sugar beet, peas and in some cases fruit and vegetable growing, something I found hard to comprehend. The French hospitality was great and they make us feel very welcome, and they gave us an indepth look at their way of life.

As our group made its way from France up to Scotland for our farm tour, we visited many different farming operations. This was an excellent way to meet farmers and to see how they managed their operations. Briefly we saw:-

2. Group Tour

Indoor Pigs

With the high consumption of pork throughout Europe, pig raising was a common business. Pollution of the water table from the disposal of waste was becoming an increasing problem for producers. Some producers were getting into outdoor pigs. Paddocks were fenced off in wagon wheel fashion with electric wires to contain the pigs. Paddocks were rotated yearly. This system was more hygienic and more environmentally sound. Many producers grew their own grain and bedding for the pigs.

Fish Farming

Farming trout for the table was very popular. Some operations used small enclosed streams whilst others opted for inland lochs. Here sport fishing was also incorporated into the business.

Game Hunting

Shooting and hunting was a great business. Hunters paid big money for the privilege to hunt deer, grouse and pheasant.

High Country Sheep Grazing

The resilience of the Scottish black-faced sheep to withstand the harshness of the Scottish weather is amazing. The sheep have strong family bonds, and graze the same heath covered sloped in family groups for generations.

Dairying

The Holstein cow is very popular in Europe. I was surprised to see such large dairy operations, with up to 1,000 head all kept under shelter throughout the year, because of the severity of the weather. This caused quite a few problems with feeding and effluent removal. Silage was a major source of food for the herd. Muck scrapers were used to clean the effluent from the stalls. After storage in big tanks the liquid is drained off and irrigated onto pasture land when weather permits.

Golf Course

Golf courses are treated as farming enterprises in Scotland. Some farmers have turned part of their land into golf courses, and this idea was very appealing considering the wonderful country and views.

3. Farm Industries

Some farmers were turning unwanted farming buildings e.g. Hop drying houses, into houses, or cottage industries. Stock agistment for horses, etc, was also becoming popular. Weekend accommodation and Bed and Breakfast were quite common in farming areas.

I had heard of many of these operations before but never had the opportunity to see and experience first hand. It had given me a new understanding and appreciation of different farmers, of their operations and their management skills and problems. I thank you Nuffield for giving me this opportunity.

After spending some five weeks with the other Nuffield Scholars, it was time to leave the security of their company and head off to study my topic of apple and

cherry growing. I chose to spend some three months in Europe and a further three months in the United States and Canada.

The Kent area in the South East of England was my first contact with orchardists. The farm advisory team called F.A.S.T. based in Faversham was leaving a revival in apple and cherry growing in England. Originally set up by Eric Gunn and the East Kent Packers, this consultancy group collects information from around the world and put into practice on grower properties. They seemed to have taken over from the Government bodies which have been shackled through lack of finances. I was most impressed with grower co-operative participation.

4. European Farming

To give a bit of background the UK market is truly international. I saw in a Tesco supermarket this range of top quality apples:- Jonagold from Belgium, Golden Delicious from South Africa, Empire from USA, Royal Gala from New Zealand and Granny Smith from France with Cox and Brambley from England. Also bananas from the Ivory Coast, grapefruit from Israel and Red seedless grapes from Chile. What an area to bring produce from.

Over the past decade English apple and cherry growers have been overrun by imported produce. Now they are concentrating on "niche" markets with selected lines of fruit, Cox apple for example. Apple production costs have risen sharply over the last few years, now new ways have been sought to increase both YIELD AND QUALITY per hectare. The FAST groups have initiated multi-row beds for both apple and cherry. Instead of planting trees at 20 feet apart, waiting a long time to fill space with a large tree, apples are planted in 3 and 4 row beds on the dwarfing stock M9. This small tree doesn't have to fill a very big area so it can be fruited in its 1st or 2nd year. Fruiting helps to maintain a small tree. The cherry tree, which is a very strong grower, is also being planted in 3 and 4 rows on the semi-dwarfing stock COLT. A growth retardant 'CULTAR' is being trailed as a collar drench to reduce vegetation and improve fruit set - this looked very promising.

The F.A.S.T. group is also monitoring orchards and berry crops for pest and diseases. Pest mites that attack leaves are regularly monitored and predatory mites are encouraged to fight the pest mites - as the balancing act.

Because most European orchards are so far North of the Equator, light penetration into the tree canopy is of the utmost importance. Different systems of training the tree

to utilise the available light have evolved from Europe. The English 3 and 4 row bed system have to maintain small trees around seven feet to use the available light without affecting quality (pale fruit). These small trees also help reduce the expense of ladders, with everything done from the ground - hence Pedestrian Orchards.

In France I met Jean Marie Lesprinas, the Godfather in modern tree training. He has developed two modern systems:- the French Axis and the Solen. The French Axis is used as a standard system throughout the world for growing central leader trees. Simply, the tree has a central pole with lateral branches radiating from it. The tree is allowed to grow upwards until fruiting of the leader bends is over like a fishing rod. Jean Marie showed me GDel/MM106 7m high on this system, far too high for modern day orchards. That is why he has developed the Solen system. Here two main limbs are grown up to form an umbrella shaped tree 2m high and 2m apart. Maximum light penetration and excellent quality fruit can be achieved whilst all work is done from the ground.

The French have some very good apple and cherry breeding programs.

In apples they are breeding for black spot and powdery mildew resistant varieties. Most apple varieties grown in Europe are suited to their cool growing conditions, they may not do all that well under the tough Australian conditions.

In Germany many of the progressive growers are planting new orchards to the Super Spindle. With this system M9 trees are placed 30cm apart in the row with a 2.1m tractor row resulting in 15000+/ha. Trees costing \$5 are grown a metre wide and 2m high on light trellis. Growers are able to harvest fruit in the 1st season, they would need to so they can start covering the very high establishment costs. Many growers are now propagating their own trees to reduce the cost of trees using Polish labourers. Mechanical pruning (hedging) is carried out in early Autumn after harvest, which fertigation is done through the irrigation water, both vital ingredients to the success of this system.

I visited the apple growing districts in Belgium, Holland, Switzerland and Italy. I saw many fine examples of European horticulture e.g. smaller holdings of well maintained trees, modern systems and varieties. The Palmette and North Holland spindle in 3 and 4 row beds were well established systems.

The high cost of labour and land had a big influence on the way things were done in Europe. Good workers are

hard to retain to work the orchards with many farms worked by the owners or tenant farmers. Prime horticultural land in Switzerland was selling for Aust \$7000 per ha for vineyards and Aust \$5000 for orchard land! Much of the land was sold by the square metre.

Use of chemicals was a very big concern in Europe. In Germany, consumers and conservation groups are very conscious and outspoken about what is sprayed on their fruit and vegetables. This is being backed up by tough Government laws. The irony was that fruit etc is imported into Germany from neighbouring countries that haven't banned certain chemicals, so they are consuming these chemicals after all. A common law throughout the EC would make sense but in the meantime some growers are being severely disadvantaged. But some good has risen out of debate. Softer chemical spray programs have been developed with good success. A list of chemicals indicating that they either harm or help the environment including the insects is circulated to growers, so they can act with more knowledge and responsibility. Many insect growth retardants are now being used in conjunction with monitoring systems, a path that Australian growers are starting to follow.

Varieties are constantly changing in Europe. This allows the grower to update his orchard to better training systems and distances as he changes to more profitable varieties. Orchard life is about 15 to 20 years. We seem to be a bit slower in Australia, we hold on to 50 or 60 year old trees, old systems and varieties - we have to change!

Cherry growing in Europe was mostly contained in small family holdings of very tall trees. 45 foot ladders were being used in many of these orchards. New dwarfing rootstocks have just been developed and released in Belgium and Germany. Many trial blocks have gone in, with mixed results being achieved, unfortunately, thus showing us the need to test these stocks under our conditions before widespread plantings.

A week spent in Hungary at the International Cherry Symposium was quite a learning experience. Many of the leaders in the cherry world were there and some delivered papers. Hungary is slowly rebuilding itself after many years under Communist rule. Land and labour are very cheap here but they have no markets in which to sell their produce, no foreign capital to help them rebuild. Russia has no money and enough of its own problems whilst the EC doesn't want cheap imports to destabilise their markets. These problems are ever present in Europe - West versus the East, neither will go away.

I saw many farmers in the Hungarian countryside still using horses to work their land and for carting work, while the women pumped water from ground wells by hand pump! Farm labour costs were about Aust. \$300 to \$400 per month with as much as half going in taxes.

It was good to see an Eastern European country as compared to the West and Australia. One can appreciate what we have and how lucky we are.

My wife Jane met up with me back in England where we toured both central London and the South coast. The wonderful diversity of the English countryside was great, from narrow hedgerow byways to massive 5 lane motorways. To see farmland that was still fertile and healthy after hundreds of years toil was great. Ancient castles and churches that dominated small villages hundreds of years old brought home the age of man in Europe and how life must have been. Also how young Australia is and how we must protect our land. Also the pressure of people stood out, many areas of England and the continent seemed to be just massive suburbs, town joining town with people everywhere!

5. North America

The North American part of our trip took in the apple and cherry districts of Washington State, New York State, Oregon, California and British Columbia. Jane and I also visited Iowa, Louisiana and Florida.

The American growers operated some very big holdings quite a contrast to Europe. One orcharding family in Oregon grew 1000 acres of cherries which produced about 3000 tons of fruit plus large acreage of apples! Generally land is more available and cheaper in the US with some good orchard land selling for \$4000 per acre in Washington State. Labour is also plentiful with Espanics being the main source, they get about US\$4.50 to \$5.50/Hr.

North America is a very big producer of apples and cherries as well as other crops. Red delicious have been the main stay to the industry for many years until the "Alar" chemical scare. Growers took heavy losses and were forced to change varieties and adopt different growing techniques. Granny Smith has become very popular and profitable in the last 10 years. Now Gala, Braekburn and Fuji are taking over in popularity. Some premium Fuji apples have been exported to South East Asia and have returned US\$2/apple. This has prompted growers to frantically plant new varieties. Many of the European practices have been trialled, modified or adopted to suit American conditions. The wider 20 feet

x 20 feet plantings are being replaced by closer 12 feet x 5 feet trees on dwarfing stocks M9, M26 and M7. Tree training has changed as well from free standing big vase shaped trees to supported systems like the French Axis, Spindle Bush, Hytec and the V Trellis. Many of the big orcharding operators are opting for the V trellis for its optimum light penetration and ease of handling and understanding by the Espanic labour force.

Integrated pest management programs were being widely practised in the US with regular mite monitoring forming a firm base. Some mating disruptions using pheromones for codling moth were being trialled on grower properties.

Surprisingly with the large apple industry that the US has, apple breeding programs were very small, the industry relying on other countries for new varieties. Summerland in Canada had a very successful cherry breeding program with many new releases in the past few years - many of which are in Australia. The cherry industry is huge in Oregon, Washington State and California. Most plantings are based on large trees that are pruned and picked annually by Espanic labour. I saw a very good system in Yakima, Washington where a closed planted orchard was covered with clear woven polypropylene.

These covers formed an inverted V over the tree shedding the rain down into the tractor space. The covers were supported by cables and were retractable in fine weather. These could be very handy and practicable for the wetter cherry districts in Australia.

California's Central Valley was a quite interesting farming area. Growing conditions allowed the cultivation of a range of crops ranging from fruit and nut trees, grapes, vegetables to corn and cotton. Weather conditions were similar to the South Australian Riverland, i.e. fairly hot and dry with irrigation water coming from the snow melt in the Cascade Mountains.

Farmers that once grew acreages of wheat and cotton were now turning tree crops. Large plantings of Granny Smith, Fuji and Gala have taken place, optimising California's earliness into the market. Fruit is sold fresh to market in the early part of the season both in America and in South East Asia. This removes the need for expensive long term storage facilities.

While in the US Jane and I visited the cord and hog belt in Iowa which was under flood waters from the Mississippi River system. Larger areas are planted to corn, like

Australian wheat fields. We visited some fertiliser plants near New Orleans and in Florida. We were treated to an inspection and ride in a massive drag line that operated in the open cut phosphate mines in central Florida. The phosphate rock is crushed and purified before being shipped throughout the States and across the world to Australia.

The American people were extremely friendly and hospitable, we made lots of good friends and contacts. Although the trip started as a fact finding mission it turned into a people tour. Without them the trip wouldn't have meant a thing.

6. Conclusion

I thank Nuffield again for giving me this opportunity. Particularly I want to thank Steven Bullock and all my farmer and business hosts in the UK, France and USA. I'll endeavour to spread the findings of my trip to other Australian growers.

Thank you.

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