

REPORT

OF

RAYMOND JOHN WARD

TO

NUFFIELD FOUNDATION

ON

STUDY OF FARMING

IN UNITED KINGDOM

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As my personal policy towards farming has always been to develop and maintain a system of mixed farming it follows that my interest of farming in the United Kingdom would be ranging over a number of inter-relating subjects. Perhaps the simplest way of recording my experience is to divide it into sub-sections on specific activities. This simplifies the task of recording and allows the reader to look at an area of interest without having to be concerned with activities outside his own sphere of interest. However I would emphasise that my belief in maintaining a variety of interests has been reinforced by my overall experience. I believe we must analyse what we are doing very closely and make sure that we adopt a specialised approach to each and every enterprise in which we are engaged. Our ultimate level of success then depends on the skill with which we can balance our activities; this is what vertical integration is all about.

PIG RAISING:

I certainly concentrated a lot of time on this industry because it obviously has so much to offer. I think I should draw attention to the relative position which the pig holds in relation to other animals as a converter of grain based foods to meat. The broiler chicken with a conversion ratio of around 1:1 holds pride of place: many United Kingdom pigs units are achieving a figure of 3:2 to 1 across the whole unit, with individual pigs doing 2:1 while lot fed cattle are doing around 12:1. If the consumer wants value for money it is obvious that the pig industry has an important competitive advantage over the beef industry while at the same time not being disgraced by the broiler industry. I acknowledge that not many of us would want a straight diet of either chicken, pork or beef, but I think it is well worth remembering the relative converting ability of our animals.

While our Queensland pig industry does not have the percentage of big units which the United Kingdom industry contains it is certainly true that we are developing on somewhat similar lines. One factor which has undoubtedly contributed to the development of very large units in the United Kingdom has been the system of grants which Government has made to the farming community over recent years. Until

fairly recently it has been possible to obtain up to forty percent of the cost of farm building as a direct grant. While this sort of incentive sounds attractive at first mention it is fraught with dangers of Government control and intervention and I would personally not wish to see such a system here. During the period of my visit the pig industry was in very serious financial trouble. It is perhaps over simplifying when I say that returns on pig meat had dropped, while feed costs had risen very sharply. There were of course many inter-related reasons for this situation but they tend to be unimportant. The important fact was that each and every pig was incurring a loss. This demonstrated a classic example of the stupidity of considering "bigness" to be the "greatness". Certainly volume of turnover contributes to total profit when the individual article sells at a profit but do not let us forget that if that same article sells at a loss then volume only contributes to greater total loss. I am not inferring that a unit should be of any specific size; rather I am hoping to point out that each and every one of us should consider what is right for ourselves on a personal level, having regard to our resources, our degree of specialisation or our degree of integration with other farming activities. I realise that some pigs are still produced on an extensive system in the United Kingdom but I tend to disregard this system. It is wasteful of manpower and while the temperate climate of Britian may lend itself to such a system (at least in the summer-time) we know from past experience that our climatic conditions are too harsh for such a system in Queensland. I therefore concentrated my study on the straw and slurry systems. While straw is indeed very good and obviously has much to commend it in respect to their winter conditions, I keep rejecting it on the grounds of labour wastage. The prospect of carting in and stacking perhaps 10,000 bales of straw, mucking out daily and then carting the muck back to the fields and later again spreading it is just too daunting for me! We in Queensland have already accepted the slurry system to avoid this sort of labour input and I see no reason to question that past decision.

However, the slurry system, whilst fairly widely adopted is causing real concern among many sectors of the society. In a small country with very near neighbours and in most cases non-farming neighbours the disposal of slurry is proving a great problem.

This problem is of course aggravated by the larger sized units. The authorities who control water usage are very concerned indeed and planning authorities are starting to tighten controls. In general there are two methods of

disposal being used; pumping into ponds (where it can be proved to the satisfaction of the various authorities that it won't discharge or seep from) or spreading back to the arable land. A useful idea being incorporated in the spreading system is to provide a storage area into which the piggery units discharge and out of which the spreader units draw the slurry. These storage tanks may be concreted below ground level or they may be of heavy steel fabrication above ground. They would have a capacity to store the slurry from the units which they service for periods of up to six months. This allows spreading to proceed when the weather or ground conditions are more favourable; allows it to be done in a concentrated period of time and so allow the ground to be reworked after spreading so as to overcome the smell problem to neighbours. Considered in the light of rapidly rising fertilizer costs the practise is gaining fairly widespread support and seems a most sensible answer at the moment. It does require a fairly high capital expenditure on storage tank and spreader tanks but is being justified on economic grounds by people engaged in potato growing and other high yielding crops. We would have to examine this system in the light of our own circumstances, but it can be done..

Some very good work has been done at the North of Scotland College of Agriculture, near Aberdeen on the problems of slurry and these people have solved most, if not all, of the problems associated with below house oxidation ditches, surface aerotor systems and anaerobic lagoon systems. They are currently working with an anaerobic digester and whilst this unit is indeed disposing of slurry and producing usable by-products I would think a fair amount of time is yet needed to reach commercial production. One of the big problems here is to find a use for the methane gas so produced. I seem to believe that the only reason that aerobic systems are not widely installed is because of a natural reluctance of the producer to invest more capital and incur the extra electricity charges associated with driving the equipment. It certainly can be argued that there is no point in doing something for nothing. While an anaerobic lagoon is acceptable this is undoubtedly the cheapest way out. When artificial fertilizer prices were lower this also affected the overall consideration. It could be that recent rises and further predicted rises of artificial fertilizer values will cause a reappraisal of this whole question.

If we are to rely on pondage system I would urge every pig producer to act in a responsible manner and make sure we do not pollute our waterways or underground streams. It is

much more sensible to plan now of our own free will to avert a problem, rather than cause one and then perhaps suffer under harsh Government controls which may be introduced to deal with it. Building design is perhaps more sophisticated than ours. Bearing in mind the different climatic conditions insulation assumes a very prominent place in design. With this requirement for very efficient insulation on the one hand and controlled environment on the other, the concept of prefabricated panel construction has been developed by a number of manufacturers. Briefly this type of building has an outer skin of plywood about two inches of fibre glass insulation and a compressed asbestos skin inside. Likewise the ceiling is well insulated while the roofing material is again asbestos. It is unfortunate that our different weather conditions prevent us from copying this design as it exists, but nevertheless I am fairly confident we can adapt some of these techniques to suit our needs. I will be perusing the costings of these systems in an effort to draw an economic comparison with our current approach to building in Queensland. Environment control was the area of my greatest interest and though I think I have learned a lot about the aspect of building design I do not think I should say too much until I have the opportunity of putting some of my ideas to the test. Again we have to adapt thinking to suit different needs and it is possible that mistakes can be made. I would rather say too little than perhaps encourage someone to waste money by following what may inadvertently be wrong information. It is a fact however, that many of the British units are operated with a totally controlled environment. I think this is quite justified in their country, but have some reservations about going this far in Queensland conditions. I am fairly sure that it will be justified for certain specific stages of production; for example farrowing houses and weaner houses where three-week weaning is to be practised. This is going to require testing on a pilot scheme before any blanket recommendations can be made. A further point worth mentioning is that shed design is specific for the needs of a stage of production: example being sow house, farrowing house, weaner house, fattening house.

Husbandry standards vary from place to place, but we always have the universal common denominator dictating the various levels of success: stockmanship. All efficient units have a good stockman, who may be the manager. The big units must have a good business manager and if this man is also a good stockman the unit is very efficient.

Three week weaning is fairly common and even eight to ten day weaning is practised a little, but the ultimate success

lies with management and specific building design. Very few people would wean later than five weeks and again very few would have bothers with this age of weaner. Our feed system could perhaps be reappraised. Research workers have shown in the United Kingdom that food in pellet form has a .2% greater efficiency than feed in dry mash form, while wet mash has a further .2% advantage over pellets. Since size of unit, source of food and willingness to invest more capital all affect these considerations, it tends to be a case of individual consideration.

The type of pig varies according to its ultimate end usage. There are well defined markets for porker, baconer and heavy hog. Porkers seem to be drawn from the lower weight range of most types whereas bacon pigs must reach very exacting specifications of length, meat content, fat cover and weight, while the heavy hog is used as a manufacturing carcass. Fat is acceptable on this carcass so long as it also has good meat content. I am sure that British farmers turn out higher percentages of pigs at more standard specifications than we do, so I have no hesitation in saying that we can and must be prepared to meet the specifications of our respective markets. Our processor must play his part by maintaining his standard and paying the very best possible price when he asks for more exacting standards. This co-operative attitude between producer and processor is vital for the long term success of both, for we are ultimately both dependent on the consumer. Let me remind you of my opening remarks on pigs. We don't have the most efficient animal converter. We could still be put out of business with second best if we are careless.

GRASSLAND FARMING:

Where grass is grown as a lay of a rotation is it treated as any other agricultural crop would be. Fertilizer needs are considered and met. Since solid nitrogeous fertilizer has rocketed in price there is some reappraisal of usage, but as much as six hundred units of nitrogen have been applied annually on some of the better land. This same land would also be receiving some eighty or ninety units of both Phosphorus and P tassium. Production is high. Surplus growth is conserved first as silage and then later in the season as hay. This conserved feed is of course basic to survival in the winter, where most cattle are housed indoors. Considering the total year a stocking rate of two beasts to the acre is achieved with this high usage of fertilizer. When fertilizer is being applied in such quantities to grass it must of course be all harvested just as with any other crop. This

is where conservation forms the backstop.

I was most impressed with the dedication the British farmer shows to conservation and at the same time very conscious of our short-sighted approach to this activity in Queensland. Again it does require capital but it is not a difficult job to make silage and modern equipment enables feed back with a minimum of labour. I think it is time we in Queensland did more in this respect.

DAIRY BEEF:

When considering total beef production in the United Kingdom it must be realised that a very high percentage of the animals come from the dairy herds. This is indeed one of the reasons why the Fresian cross animal is such a success as a beef animal; it is available. Realising that the dairy cow must fill this dual role there has obviously been quite a deal of emphasis placed on beef characteristics in selecting the Fresian animal and to-day the cow is a very large animal with many of the traditional confirmation characteristics of the British beef animal - Milking capacity has been retained and herd production figures of one thousand two hundred gallons per lactation is common. Calf rearing skill has been highly developed; the calf is allowed at least one good suckle to get its colostrum requirements and is then taken and placed in a specially constructed crib. The calf is fed replacement milk and calf nuts (grain based pellets) to about six weeks of age and then weaned off milk on to a diet of nuts plus silage or hay. With careful management, paying strict attention to warmth and hygiene these animals are reared very well indeed. I consider that we could do more with the calves from our dairy herds if the demand for beef warrants such effort.

BEEF: SINGLE SUCKLE HERDS

Only a small percentage of beef comes from what are known as single suckle herds. These herds are depastured on the poorer quality land which will not of course be receiving such high amounts of fertilizer as the better quality grass land. An interesting feature of these commercial herds is the fact that the saleable progeny is the three way cross; for example the dam may be a Galloway/White Shorthorn cross, which will give a "Scottish Blue" over which a Hereford may be used, This is purely an example of a principal; any combination of three breeds may be used, the ultimate choice being governed by availability of the animal within an area. This controlled crossing is obtained the maximum benefit from hybridisation. The offspring are all sold.

PEDIGREE BEEF:

The pedigree herds tend to be rather smaller in size than we are accustomed to in Queensland. Many herds would only

contain thirty to forty breeders, though there are some larger herds. As a Poll Hereford fancier my investigation of these beef herds naturally concentrated on this breed, though I did see occasional examples of other breeds. One can argue for a long time without really reaching any finality as to what are the more desirable characteristics in a breed. Fashions change, so perhaps the most important point about any breed is that it have enough variance of type to allow a change in type as fashion dictates. The Hereford breed certainly has this depth of variety and I saw plenty of animals that would please the modern Queensland breeders. With respect I think I can also say that we in Australia need not make any excuses for our animals. I think we have the genetic material here which will allow the stockman to meet the demand of changing fashions. Perhaps this is an appropriate place to make mention of a fact emerging from the experiments being conducted with the European breeds in Great Britain. Some of these animals do indeed have very great weight gaining abilities provided they are fed very high levels of nutrition. When placed on reduced planes of nutrition these same animals are comparing very poorly with the traditional British breeds. It is becoming apparent that where nutrition can at times be limited (do I need to remind you that this certainly applies to us in Queensland) it may be wise to seek a more "middle of the road" type of animal which can maintain reasonable weight gain rather than look to the very large animal which may be very good in times of plenty, but conversely be quite disappointing in times of stress.

EXTENSION WORK:

The British farmer is offered professional help in business management from a number of quarters. The Meat and Livestock Commission (M.L.C.) which is a body sponsored by producer, processor and government, the Agricultural Development and Advisory Service (ADAS) which is an arm of the Ministry of Agriculture Fisheries and Food, and private enterprise such as the fertilizer companies, feed compounders etc. all provide extension services. Some of these compliment each other, while others overlap. Some are bought and quite expensive; some incur a nominal charge, while others may be free, if you buy x amount of goods from the Company concerned. In general they are very helpful to the farmer whom I acknowledge to be more attuned to the needs of business principals than we in Queensland. I think this is perhaps because he has been exposed to this type of service for a greater period of time and I would hope that our Queensland Farmers avail themselves of the services now offered by the Department of Primary Industries. I don't

think our present Department of Primary Industries service is quite as highly developed as it might be, but I do believe they will do their best to meet our needs. If private business desires to enter the field so much the better. Our ultimate rate of progress will undoubtedly depend on our enthusiasm for such development, but it is certainly a pleasure to talk with a farmer who knows exactly how his business is going. When a farmer is armed with this sort of factual information he has a very real chance of influencing his destiny; likewise the destiny of the industry in which he operates.

MERCHANDISING AND MARKETING:

The co-operative movement has a history of some sixty-five odd years and has apparently gone through periods of good and bad fortune. There seem to be a general feeling prevailing at the moment that the co-operative movement needs revitalising. This would I feel, be fair comment of our Queensland co-operatives also. Perhaps the main points of view on how this should be done are:

- (a) The co-operative must operate as a commercial business. It must be capable of making a profit for the sake of morale of its staff and also to reward and justify the capital which shareholders have invested in it.
- (b) It must be large enough to exert a continuing force in the market place. If it can do this it will justify its very existence.
- (c) Farmers must take a long term view as major shareholders if they are to achieve the forgoing and so must not expect to see things done "on the cheap" for the sake of expedience.

In general, I think a great deal of the thinking associated with changes needed in the co-operatives management has a relevance to our state.

There is a relatively recent adaption of the idea and ideals of the co-operative movement towards marketing which in many respects is running somewhat parallel to our tried and proven concept of orderly marketing. It differs in that it is quite voluntary and the "groups" as they are known, are usually trying to write forward contracts with their buyers which specify quantities of specific quality produce, for delivery at a specific time. To allow some flexibility they would usually only commit around eighty percent of their output in this way, with perhaps options on the balance of their output. The aim of the group is to tie up a certain outlet and dominate it while the benefit to the

buyer is a reliable supply of a known quality article. The principal has much to commend it and could quite well compliment our orderly marketing by bringing more order to the marketing arrangements of our smaller industries which cannot support a State system of orderly marketing.

I consider that I must make reference in this report to a private addition to my experience, gained by returning home via United States of America. In an effort to see something of peanut growing I determined to make a quick visit to the South East peanut region and so flew from London to Atlanta, Georgia, from where I moved both south to Albany and north to Raleigh, North Carolina and Suffolk, Virginia. Although I could only spare three weeks I was able to see the harvest period in the southern region and pre harvest conditions in the north. This short experience was gained at modest personal cost because the Nuffield Foundation had sponsored me to London and I acknowledge their contribution to it. Perhaps the most noticeable difference between the American industry and our Queensland industry is the yield difference. Many top American growers are achieving 5,000 lbs to the acre and whole counties (Shires) are averaging around 3,700 lb/acre. Given that these areas enjoy a more equatable rainfall pattern, I think that their overall farming technique is contributing quite a deal to this rising average yield. My personal impression is that their more positive approach to farming is paying dividends. The crops are planned in meticulous detail; availability of finance, land, machinery, labour, chemicals and other physical inputs is considered before the crop is planted and so the grower knows his limitations and can take steps to correct any apparent weakness. He is then able to stay very close to his prescribed plan and with the fairly certain weather pattern he can expect a fairly constant result. His system is a high cost one, but this is offset by constant volume production. While our erratic rainfall pattern is going to make dryland peanut production somewhat uncertain in terms of production I think we can learn from the Americans by adapting those methods and ideas which suit our environment. Indeed, this has and is being done. We have the technology to now control almost all weeds and attention is turning to disease control. While all this is going on we should be always aware that any change we make may influence other phases of crop production and so we must make sure that the whole "package deal" is as complete as we can make it. If this positive approach can be adopted by more of our farmers then I am sure we can expect to see our average yields increase too.

In conclusion I acknowledge the great privilege the Nuffield Foundation extended to me and trust that the whole "mind broadening" experience will ultimately lead to a higher standard of achievement from Queensland farmers.

Raymond J. Ward.