CHAPTER FIVE

An Era of Specialisation

By 1960 all forms of farming in South Australia were undergoing vast changes. New technology had revolutionised agriculture, and the Bureau had an important role to play in disseminating the information. Farmers needed some mediator to explain the scientific research so that they could use it on their own land. The Agricultural Bureau was a ready-made network for the Department of Agriculture's extension programme. By this time members rarely gave papers at branch meetings. Guest speakers were frequently invited to attend, often officers of the Department of Agriculture. Competitions, field days and various schools took over from the old-fashioned formal meetings. The '60s would be a period of specialisation, the '70s a decade of critical appraisal of the changes implemented.

As far back as 1950, the gradual move away from mixed farming had begun. Mr L. H. G. Baumgurtel of the Hartley Branch pointed out the disadvantages of too many farm sidelines. If the farmer does not depend on the sideline for his living, he will not bother to put too much time into producing top quality bacon, butter, etc. This example of pigs shows the situation that may result:

> With pigs you will often notice that the farmer who keeps a few as a side-line, will tend to overfeed, particularly if he has plenty of grain and separated milk. He feels that he would be wasting good milk by throwing it away – it may as well go to the pigs. Then he wonders why his pigs bring a lower price than those marketed by the man who has bred and fed his pigs on the correct lines. The answer is they are over fat and, of course, will not make first-grade hams and bacon. Here again if a check of feeding expenses had been carefully kept it would have been seen as in the case of poultry-keeping, that it was costing more to produce the inferior article, and the farmer was thereby incurring a double loss. (*JASA*, February 1950, p. 318.)

He recommended two sidelines as enough for extra income while not providing too much extra work. This will allow the farmer to get the best out of the sideline by ensuring it is economical.

In 1951 Mr R. A. Cramond of the Lenswood Branch had spoken on specialisation in horticulture at the Hills Conference. Taking apples as an example, he showed how growers could limit the varieties, growing only those best suited to their soil and climate. Thus, he suggested Jonathan, Rome Beauty and Delicious for their area, with a few Democrats grown on land too rich or shady for the others. Granny Smith, for example, should be left to the drier areas. In order to get the most out of a piece of land, the farmer should use it for whatever it is best suited. It took several years for this attitude to become accepted, several more before orchards modified production. By the 1960s, however, evidence of this new trend was appearing.

No doubt some of this move towards streamlining farming practices could be put down to the introduction of bulk handling. By 1960 everything was done on a larger scale, and expensive machinery was required. It was easier to deal with large quantities of one product rather than switching systems frequently to handle different sidelines. If the fruitgrower had to have large bins, and tractors and forklift trucks to move them, he would want to make it worthwhile. Once a grower had committed himself to the financial outlay necessary to buy bulk handling equipment, he might as well get as much use as possible out of it. The increasingly urban population of Australia demanded larger scale marketing structures, and in turn this required more uniform produce.

Labour had become more expensive, and not so readily available. Farmers found it was a better

Hartley Branch Committee, 1987. Back L-R: Messrs T Frayne, L Symonds, R Nitshke, D Symonds, E Cross, L Jaensch, R Karger, H Philbey. Front L-R: Messrs A Graetz (Pres), E Yeates (Sec), NL Jaensch, M Ielasi (Treas).

proposition to invest in big machinery and do the work themselves. This resulted in a greater demand on their time and meant there was even less to devote to the sidelines such as pigs, poultry or cows. With the advent of supermarkets in country centres, it became much easier, and not much more expensive, to simply buy goods supplied by large producers.

Even during these prosperous times, farmers experienced setbacks. 1957 and '59 had been drought years and in December 1960, an horrific fire raged through 50,000 acres of farm land on the top of Yorke Peninsula. Starting at Kadina, it travelled as far north as the Bute railway line and south to Agery. Damage to the cost of £1.5 million was sustained, individual farmers losing as much as 5,000 bags of grain each. Baled hay was almost entirely lost, so much of the stock in the area had to be agisted in the aftermath. Although no lives were lost, several fire fighters were severely burned, including a member of the Boors Plain Branch, Mr B. Fuss.

The *Journal Of Agriculture* printed very little of the Bureau activities by this stage. Only the ABA minutes were published on a regular basis, and even then only an extract from the official record appeared. Bureau members felt this lack, and some branches took measures to advertise their regular activities. The Naracoorte Branch, for example, reported its branch meetings in the local paper, the *Naracoorte Herald*. The Kybybolite Branch had requested some sort of Bureau newsletter in 1948. However, it was not until 1961 that the ABA decided to print a quarterly called the *Bureau News*. The first edition came out in February 1961. It contained suggestions about how to run an interesting Bureau meeting and ideas for planning the year's programme. The One Tree Hill Branch agenda was published to show how the meetings could cover a range of subjects

Bute Branch Committee, 1987. L-R: Messrs A Axford (Vice Pres), K Paterson, A Hewett (Pres), CM Green (Sec), G Daniel (Asst Sec).

Kybybolite Branch Committee, 1987. Back L-R: Messrs Peter Schinckel, John Kester, Peter Flavel. Front L-R: Messrs Ken Schuster (Vice Pres), Stuart McLean (Sec), Alan Davies (Pres).

Whitwarta Branch Committee, 1987.Back L-R: Messrs Dean Hill (Treas), Peter Burford, David Shepherd.Front L-R: Messrs Adrian Tiller (Pres), Michael Tiller (Sec).

relating to all aspects of farming in the area, and be of interest to all members. They included a film for one meeting and a mixture of departmental officers speaking and members participating in discussions. Later issues of *Bureau News* encouraged inter-branch meetings in the Adelaide Hills area. Not all branches were close enough to do this, but much could be gained from such meetings where this was possible. The Whitwarta Branch was commended for its programme using a balance of addresses and discussions with a field day, a film and a demonstration (in this case, a welding school organised by Elder Smiths) to provide some variety. The South Kilkerran Branch was also held up as an example of a branch injecting some variety into their activities by including a demonstration of how to dress and prepare sheep and poultry for the table. When the local butcher had completed his part in the proceedings, members barbecued the meat, combining an educational evening with a social occaision. Unfortunately only four issues of this useful newsletter were published. After December 1961 it lapsed, and no publication for the whole Bureau has been introduced since. Some branches continue to print their own newsletter for circulation amongst members. The Waikerie Branch is an excellent example of the value of such a communication. A regular pamphlet advertising the agenda for the next meeting includes a section on horticultural notes supplied by the Department of Agriculture Extension Officers for the following month. If members are unable to attend the meeting, they still receive this vital information.

By this time graziers in the South-East were very interested in irrigated pastures. They realised that by improving the fodder for their stock they could produce much better animals. Lucerne in particular responded well to irrigation. The Keppoch and Padthaway area had huge supplies of underground water, and many farmers tapped these reserves. On 10 March 1960, the Keppoch Branch (which had replaced the Padthaway Branch in 1946) held an irrigation field day. Two hundred and fifty people attended, eager to learn as much as possible about this important new development in their area.

Synthetic clothing materials were widely available by this time, causing great concern to the wool industry. It looked as though the man-made fibres would replace natural wool; the cheaper price was very attractive to consumers. As well as promoting the advantages of wool, growers had to take all measures possible to reduce the costs of production. It was decided that sheep should be branded only with Si-Ro-Mark fluids. Although in some cases the brand would wear off in less than a year, it was important to use branding fluids that could be easily removed in the woollen mills. This could significantly reduce the cost of treating wool, and therefore result in a more competitive product. Despite the opposition of growers (who thought they might incur the extra expense of branding twice a year instead of once), this regulation remains in force.

In an effort to promote wool, and celebrate the significance of wool growing in the South-East, a wool festival was held in Mount Gambier. A procession of floats along the main street was included in the programme. In 1961 Mr L. Docking,

Keppoch Branch Committee, 1987.L-R: Messrs L Blucher, C Lindsay, N Schubert (Pres), D Burge (Sec), G Dinham.

Mt Bryan Branch Committee, 1987.L-R: Messrs AA McInnes, HI Price (Pres), GW Gare, BJ Pohlner (Sec/Treas), HB Tiver.

Chairman of the Mil-Lel Branch of the Agricultural Bureau, organised the branch members to enter the procession. Their float subsequently won first prize, much to the members' pleasure.

Hogget competitions continued to be very popular through the 1960s. To compete on the world market, and to compete against synthetic fibres, South Australian sheep owners needed to maintain very high standards in both meat and wool production. Competitions helped to improve the standard of sheep in general and raised producers' awareness of the qualities necessary in their animals. Hogget competitions were usually held by individual branches, though sometimes two or more combined to make the competition fiercer. Mr G. C. Clunies Ross offered a trophy for the Mt Bryan Hogget competition, stipulating that the first member to win the competition three times could keep it permanently. Shearing and crutching schools, mulesing and culling demonstrations were also held by Agricultural Bureau branches in efforts to improve the level of sheep husbandry in South Australia.

Cyclone fencing had been in use for some time, providing a very effective barrier to stock. It was first made with vertical wires placed at 12 in intervals. The Butler Branch on Eyre Peninsula suggested that the fence would be just as useful with the wires placed at 3 ft intervals. The result would be a much cheaper fence, and the idea was successfully taken up by a fencing material company. It became known as station cyclone and is still a popular choice today.

Cereal growing had come a long way from the slow dusty days of horse teams. Tractors simplified the process of cropping considerably, but brought with them their own problems. The excessive noise of their engines was of concern to many people. In 1961 the Kelly Branch records its anxiety about machinery noise levels. Hearing trouble may have been an occupational hazard for cereal croppers, but it was not something they could readily accept. The manufacturers were encouraged to fit cabs on tractors to minimise noise (and dust). Today this is the standard practice on all big tractors.

Big changes were occurring in horticulture during this period. The value of ploughing between trees was seriously questioned. On reassessment, this practice was seen to be an unnecessary expense. Permanent grassing of orchards (sod culture) gradually took over. In irrigated areas, the practice of flooding was also

The members of the Butler Branch.

rejected as wasteful, and sprinkler systems were installed. Drip systems would later become popular as an even more economical method of irrigation.

Ever subject to the whims of fickle consumers, the grape industry went through many changes in the '60s in an effort to keep up with the demands of fashion. As Australians began to consume more and more wine (no doubt encouraged by the immigration of Europeans during the post-war era), the minutes of the Greenock Branch reflect the growers' response. Acres of apricot trees were grubbed out and replanted with vines in the early '60s. Unfortunately, the following years saw a decline in demand, but growers were now committed to grapes for wine production. Towards the end of that decade consumers favoured dry red table wines, so producers grew black grapes. By the time these vines were producing at full capacity, public taste had swung back to lighter white wines. The surplus was absorbed by various pools organised to help the grape growers, but producers were forced to accept low prices.

Not all of the changes were bad though. At their 1961 conference, the Riverland Branches passed a resolution that "the Department of Agriculture should be congratulated on the fact that it has not been possible to find fruitfly in Adelaide during the past two seasons". (ABA Minutes, 16 May 1961.) The ABA endorsed the resolution, passing it on to the Director of Agriculture. It was an encouraging example of the results achieved by concerted action against a destructive pest.

Poultry keeping was becoming a much more specialised industry by the early 1960s. In March 1961 a discussion of the advantages of electric lighting to increase egg production appeared in the *Journal of Agriculture*. Mr R. B. Fuge, the Poultry Adviser based at Murray Bridge, explained that lengthening the hours of light in autumn and winter would be useful for increasing egg production at a time when prices were highest (due to the normal scarcity of eggs at this time of year). Producers could expect an average of two dozen more eggs per bird if lights were installed and used to ensure at least 14 hours of light per day.

The following year an article debating the pros and cons of intensive and free range poultry farming was printed in the *Journal of Agriculture*. At a time when poultry farmers had to rear a greater number of birds than ever before in order to create a profitable industry, these issues must be confronted. Intensive rearing was one answer to the problem:

much less land is needed than with range rearing. This makes it especially suited to localities where land is expensive or where the farm area is small. Bearing in mind that birds need more area as they grow, intensive rearing requires from 2 to 2½ square feet per bird to the point of lay.

Secondly, confining birds to small areas saves labour. Using self-feeders and automatic waterers, the time taken to attend to the birds is greatly reduced. Moreover, birds do not have to be caught and moved to new quarters as is the case with free range rearing. This avoids the risk of a setback in growth or losses of birds.

With intensive rearing the birds are much easier to control. Losses from dogs, cats, foxes and possible theft are less.

When not in use for rearing the sheds can be used as laying sheds. Alternatively they can be used to house broilers for raising in the off-season. These alternative uses can help to offset the higher cost of intensive rearing as compared with range rearing. (*JASA*, August 1962, p. 35)

But free range rearing had its own advantages.

The main advantage of free range rearing is its simplicity. Where a big enough area is available and the layout is satisfactory free range is ideal for rearing small numbers, particularly sideline units on grain-sheep properties.

The 8 ft x 6 ft rearing sheds with wirenetting floors are sometimes built on a sledge and pulled around to new areas when needed. Range rearing has also been used quite successfully in orchards. (*JASA*, August 1962, p. 36)

In March 1962 a sub-committee of the ABA reported on the future development of the Agricultural Bureau in South Australia. Membership had gradually been dropping off after the post-war boom and the ABA was seriously concerned. The

Strathalbyn Branch Committee, 1987. L-R: Messrs ACK Beviss (Pres), RJ Rankine (Sec), DJ Deans, RJ Michelmore (Vice Pres).

Bureau movement was an important link between the Department of Agriculture and the farmers. District Conferences and the Annual Congress did not establish the link between the Board and branches in the way that had been anticipated. Although the ABA was the governing body of the Bureau movement, there was little contact between the members of each. Some form of intermediate grouping was necessary. This soon took the form of regional executive committees, created from 1965 onwards. The Board agreed that the Bureau did not enjoy a high status amongst the rural populations. A publicity programme should be introduced to rectify this. The ABA also objected to the title of "Organiser" and suggested it be altered to "Senior Adviser of the Agricultural Bureau". Two advisers ought to be appointed to work among the branches.

In August 1962 Collin Wood left his job as Organiser and the position was advertised as "Senior Adviser of the Agricultural Bureau". Mr Geoff K. Robinson was appointed as the Senior Advisory Officer, Agricultural Bureau. After his education at Roseworthy Agricultural College, Geoff Robinson had entered the Department of Agriculture. For several years he worked in the Soil Conservation Branch, then transferred to the position of district agronomist. After almost 10 years as Senior Advisory Officer, he would take time off to complete a Masters Degree in Agricultural Extension at the University of Reading, England, in 1971-1972. On his return to Australia, he would be involved in more extensive management of the Agricultural Bureau, rather than working at individual branch level. In 1962 another Senior Advisory Officer was also appointed, Mr David Spurling, to work alongside Geoff Robinson.

Sheep husbandry was undergoing many changes at this time. Since the First World War, consumers had demanded leaner meat of all sorts; "fat lambs" were not to be too fat. Crutching became an annual event when it was realised that jetting was insufficient. The battle against fly strike would only be won by regular crutching between full shearings of wool. Mycotic dermatitis (fleece rot) was reported in the Upper South-East in 1963. However, there was some good news on the horizon – a new, more effective vaccine against entero-toxaemia (pulpy kidney) became available commercially.

The Parndana Branch held both a Shearing Shed Management School and a Crutching School in 1963. The Shearing Shed Management School was intended to promote the smoother running

Milang Branch Field Day 1962.

of this busiest time of the sheep owner's year. A Crutching School was also held in Angaston that year. The sheep owners realised they must incorporate crutching into their husbandry programme, and were determined to make it as effective as possible.

The 1963 Oration was taped and sent to 60 branches of the Agricultural Bureau. Originally the suggestion had been to have it broadcast over the ABC, but the possibility of getting an hour of air time was very slim. The Oration that year was given by Sir John Crawford who took as his subject, *Australian Agriculture: Market Forces and Prospects in Asia*. Fewer and fewer members had been attending the Annual Congress of Branches and it was hoped that hearing the tape would renew their interest. Unfortunately, this was not

Penneshaw Branch Committee, 1987.Back L-R: Messrs Mostyn Howard, Terry Howard, Tony Trethewey.Front L-R: Messrs Barry Howard (Pres), Glen Willson (Sec).

enough to save it. It had outlived its usefulness by this stage and was no longer necessary as an instrument to provide farmers with a sense of the national and international community to which they belonged. The media had taken over this role, with radio, newspaper, magazines, (and later television) raising issues related to rural matters. Farmers were no longer isolated from the outside world.

Subterranean clover was very widely used in improved pastures in Australia by this time. In fact, the ABA recorded that 28 million acres of pasture land were under subterranean clover in 1963. It had first been discovered in 1889 by Amos William Howard. A memorial was erected for him on 3 October 1963 on the Princes Highway at Blakiston. The inscription read:

> In 1889 Amos William Howard found subterranean clover growing at the foot of the slope below this memorial. He recognised its great promise and was the pioneer of its use in sown pastures. He harvested the first seed and distributed it widely throughout Australia.
>
> Through Howard's foresight, devotion and tireless effort, the value of subterranean clover was firmly established and it has become the most important pasture plant in Australia.
>
> By transforming millions of acres of infertile soils into productive pasture lands it has multiplied our flocks and herds.
>
> By restoring the fertility of large tracts of worn-out wheat land it has increased our harvests.
>
> The work of this man has contributed in generous measure to Australia's progress and prosperity. (*JASA*, January 1964, p. 176.)

The plaque was unveiled by the Premier, Sir Thomas Playford, the ceremony marking the launching of an appeal to establish the A. W. Howard Memorial Trust to promote pasture research and development in Australia. Members of the Agricultural Bureau responded generously to the appeal and over £13,000 was collected.

In reply to a request from the ABA, Mr J. R. Ford of the Wangary Branch supplied details of the P. L. Puckridge Shield. Mr P. L. Puckridge had formerly been a land holder in the area, and was now the Mayor of Pt Lincoln. It was presented annually to the Agricultural Bureau member "who makes the most outstanding contribution to agriculture during the current 12 months" (*ABA Minutes*, 4 August 1964). A panel of three judges consisting of one member of the branch, one from a neighbouring branch, and one officer of the Department of Agriculture, chose the most

The Premier, Sir Thomas Playford, and Prof C M Donald (Chairman of the Appeal Committee) unveiling the A W Howard memorial.

deserving farmer. All three would visit farms in the area, attend field days and observe hogget competitions. Finally, the award would be presented at the annual social evening after the October Field Day. Mr Ford briefly outlined the achievements of those who had won the shield in previous years.

R. C. Wagner, 1956.	A Quick Build-up of Fertility by Heavy Clover Seeding – 8-10 lb per acre following cereal crops. First in aerial spraying crops to combat insects.
M. Andrews,	Maintenance of soil fertility through contour banks over the whole of the farm. Sub clover pasture showed good response.
L. Puckridge	Fodder conservation and economically handling surplus pasture by use of buck rake and loose stacking of cereals. High standard of workman's homes and single men's quarters. An excellent employer/employee relationship.

Each of the above received a £20 trophy.

The following members, were awarded a shield on which their names are inscribed, and which is displayed in either the Wangary or Coulta halls, being the hall nearest the successful recipient of the award.

R. Ford	Assisted the Department of Agriculture Officers, J. Fern & D. Habel in copper research for approximately two years, providing sheep and generally assisting with time and paddocks and shed facilities. Conducted three shearing schools.
H. Broad	Introduction of Red Poll stud cattle. Outstanding success in hogget competitions. First to handle oats and super in bulk. Was instrumental in reviving the Wangary Bureau and played a leading part in Rural Youth.
C. Foster	The first farmer to use the heavy roller on limestone land and break it down to allow rough country to produce up to 16 bags to the acre of barley. Tree planting and exceptional efficiency on all farming projects.
Ernest *(father)* and Roger *(son)* Shepherd	Introduced high quality and high price rams into the district for stud breeding. Outstanding cereal grower, consistent high yield. Valuable work carried out by Roger in propagating and selecting salt resistant plants and reclaiming swamp areas.

Wangary Branch Committee, 1987. Back L-R: Messrs Peter Puckridge (Pres), John Myers, Gerald Shepperd (Sec). Front L-R: Messrs John Giddings, Peter Broad (Vice Pres).

Reg Shepherd, wife and son	Outstanding work in reclaiming salt and magnesia land by the use of cattle, top dressing, and keeping all tillage instruments from the land. Sowing of burr clover on the salt affected land with startling results. High carrying capacity farm with well established pastures.

(J. R. Ford, quoted in ABA Minutes, 4 August 1964.)

The potential of the Keppoch and Padthaway districts as a wine producing area was recognised in the early '60s. In an attempt to develop this industry in the area, Mr M. Seppelt addressed the Keppoch Branch in 1964. He took as his subject *The Vineyard from Planning to Production*. His enthusiasm and encouragement was well rewarded, and today the area produces some of South Australia's finest wines.

Research from 1961 to '64 had provided a breakthrough for orchardists troubled by apricot

Light Pass Branch Committee, 1987. L-R: Messrs M Schiller (Treas), J Kurtz, W Plush (Sec), R Hahn (Publicity Officer), M John (Chairman), N Groves (Vice Chairman), J Ahrens.

gummosis. More than 25% of apricot trees in the non-irrigated areas had suffered from gummosis. The new slogan was "Prune in June", for this appeared to be the time when airborne spores of the gummosis fungus were least abundant. Experiments conducted over 2½ years in the orchard of Messrs L. S. Plush and Sons at Light Pass indicated that by pruning earlier than usual, in June rather than July or September, cuts were much less likely to become infected. In 1964 the annual production of apricots (canned, dried and fresh) exceeded £1 million so it was an industry well worth maintaining.

The Soil Schools introduced in the 1950s became very popular again in 1965. Other schools also became popular, and some conferences were turned over to a particular theme. Instead of having speakers on a wide range of topics, one issue alone would be examined. This way Bureau members could leave at the end of the day having achieved a real understanding of a particular problem or innovation.

Stockport Branch held a two day Sheep Husbandry School on 3-4 August 1965. It was held in Mr Branson's shed with Messrs John Potter, Jack Messenger and Richard Scott-Young supervising. As all aspects of primary production became more and more technical during the '60s, it was necessary to spend longer learning about new methods and techniques. There was so much to cover in any subject that farmers found they needed special schools devoted to intensive teaching and discussion to come to terms with the constantly growing pool of information.

The ABA first mentioned zoning the State in 1963. The idea was discussed at their July meeting. The reason for this zoning would be so that each Board member could be responsible for an area, seeing that each group of branches was adequately catered for by the ABA, their interests considered and problems represented. Later these zones would choose their own members for the ABA, someone who would be intimately connected with the problems of particular districts. When the Department of Agriculture reorganised its regional boundaries in 1974, the Agricultural Bureau rearranged its own regions to match the new regional offices.

The following year, Geoff Robinson, the Senior Advisory Officer, introduced "Regional Meetings". The idea was for several branches in an area to send three delegates to meet at a central place and discuss the Bureau's activities for the coming year. The Regional Executive Committees were established throughout the State by the end of 1966. The first of these was in the Barossa Valley in December 1965. Branches in the Naracoorte district had initiated a similar group several years earlier. When Regional Committees became Bureau policy, they used the existing framework to fall in line with other areas.

The aims of these committees were:

1. To assess and discuss problems and the need for information in a region and to develop a co-ordinated policy for the benefit of individual branches and the region as a whole.
2. To provide the Department of Agriculture with a focal point representing groups of branches.
3. To provide a forum whereby Branch Committees can liaise with each other to enable them to more effectively serve their branches.
4. To strengthen the Agricultural Bureau by developing higher levels of education. (Constitution of Agricultural Bureau Executive Committee)

Delegates at these meetings, held once or twice a year, compared their programmes for the following year. It provided an opportunity to exchange new ideas on the subject matter and methods. This also made it possible to co-ordinate consecutive meetings at various branches in the area to use speakers visiting the district. Common problems in the region could also be defined and discussed. Any trials or demonstrations required by farmers in the region could also be organised through the central body. The value of Regional Executive Committees soon became apparent. Mr John Hill of the ABA cited the example of skeleton weed when he opened the Mid-North Conference in 1966.

> In December last year a farmer at Arthurton on Yorke Peninsula, found skeleton weed growing ... The outbreak was found and verified on a Friday.
>
> The plants were flowering and had to be destroyed fairly quickly.
>
> At the same time, it was realised that this was an invaluable opportunity for other Y.P. farmers to see the weed so they could recognise it should further outbreaks occur.
>
> The urgency of treating the outbreak left no time to advertise a field day in the conventional manner.
>
> However, there is a regional executive committee operating in the area.

The Arthurton Branch Committee, 1987. L-R: Messrs Barry Koch (Asst Sec), Gary Colliver (Sec), Gavin Adams (Snr Vice Pres), Greg Allen (Pres), Graham Colliver, Graham Bagshaw (Jnr Vice Pres), Absent: Bradley Hicks.

> The secretary of the executive was contacted that same night, and asked to publicise the fact that a field day would be held the following Tuesday morning.
>
> He, in turn, contacted the various branch representatives on the executive committee, and asked them to inform as many of their members and others as possible.
>
> The end result was that over 100 farmers were on hand at 8.30 a.m. the following Tuesday morning to see the weed growing and to hear about control measures from Department of Agriculture advisers. (Jim McCarter, *Self-Help Principle Is Paying Off, The Chronicle*, 21 April 1966, p. 13.)

Surveys were carried out to establish subjects which concerned a majority of the branch members and those of interest to only a minority. In situations where only a few members of each branch were interested in a particular issue, they could band together to arrange a worthwhile meeting between them, rather than each branch organising their own meetings, only to be disappointed by a small attendance. Most farmers were not prepared to spend an evening at a meeting that was of no interest to them.

Geoff Robinson promoted the self-help principle of the Agricultural Bureaux. He recognised the wealth of knowledge amongst members and encouraged them to take advantage of it. Many of the issues raised as possible subjects for meetings related to practical farming problems of which the members themselves had experience. They were themselves the best people to know how to deal with such problems, and individual members could begin discussions by explaining how they had coped when faced with them. On the other hand, the Agricultural Bureau as an educational institution should be a place where new technology was introduced to the farming community from outside sources. A balance should be struck between the two.

The windrowing of barley to prevent loss sustained in heavy winds had been used as a solution to wind damage since 1961. The Yeelanna Branch on Eyre Peninsula held a barley rolling field day in 1966. By now it had become accepted practice, and barley croppers were keen to implement this technique on their own farms. One hundred and thirty people turned out to see three different makes of barley roller demonstrated. Mr G. Hancock made a crop available to the branch for the display. Later Mr K. Bignall addressed the group on the success of barley rolling on Yorke Peninsula. For many farmers, these opportunities to see new technology in action were an essential element in their decisions to accept or reject the innovations

Several years previously, the suggestion of some sort of identification badge for all members of the Agricultural Bureau was made. The matter had been raised at the Upper-North Conference in 1960. A badge was designed and finally became available to members in 1966 at a cost of 30c each (note the change to decimal currency which also occurred that year).

The South-East had become a well-established grazing area by the mid '60s. With the swampy land drained and superphosphate (and in some cases trace elements) added to increase the fertility of the soil, it had become valuable land. The Kalangadoo Branch of the Agricultural Bureau sponsored a Pastoral School for the Lower South-East region on 17-18 August 1966. Five officers of the Department of Agriculture lectured the assembled group over two days, covering the whole range of activities involved in improving pastures. They began by discussing the pastures suitable for the district taking into account the rainfall, climate, drainage and fertility of the soil. The recommended pastures must then be sown, fertilised, insects and weeds controlled, and then grazed effectively. Finally, information was provided for the time when pastures needed renovation after several years of use.

The following year a Pasture School was held by the Boors Plain Branch. This time it took the form of a series of three lectures by Mr G. D. Webber and concluded with a field inspection. In this area, legume pastures were most beneficial. The soil needed nitrogen to maintain its fertility, and clovers and medics provided it. Local farmers were also taught how to manage legume pastures in order to get the most out of them.

The annual fat lamb competition was cancelled in 1967. In its place, a Lamb Symposium was arranged. Eight speakers lectured on different aspects of the industry. Butchers, Department of Agriculture Officers and a vet provided a wealth of information. During this period, all branches of agriculture were rapidly changing. Competitions were not enough to keep farmers up to date, and more intensive education was required.

An Agronomy School was arranged by the Petersville and Arthurton Branches in July 1967. Three lectures dealt with different groups of cereal diseases. The first looked at the parasitic diseases, fungi, viruses, nematodes and bacteria. Then in the second lecture, root-rot diseases, such as haydie and eelworm were discussed. The third lecture examined above ground diseases, such as smut, rust, bacterial blight and barley yellow dwarf. Finally, the group went out to inspect crops in the district, identifying diseases and observing the results of measures taken to rectify various problems.

A school for poultry farmers was held over six sessions in October and November at Murray Bridge. Every element of poultry keeping was discussed, from planning the farm through housing and controlled environments, to feeding and marketing the final product. Alternative sessions were held for egg producers and broiler growers. Poultry production was carried out on a large scale by this stage, and had become very specialised. It was now a far cry from the days of keeping a few hens as a sideline in the pre-war era.

Improved pastures had included rye grasses for many years. In the mid-sixties, however, farmers who had introduced this species realised they had made a disastrous mistake. Annual Rye Grass Toxicity (ARGT) was first identified in 1956 in the Mid-North. The bacteria takes 10-15 years to build up to toxic levels, so it spread slowly at first. The toxins are produced by a nematode/bacterium disease complex, and are produced when the rye grass matures and dies off in the summer. ARGT causes neurological disorders which can be observed when the poisoned animals become stressed or excited. *(Department of Agriculture Annual Ryegrass Toxicity, Fact Sheet No. 91/77, revised November 1981.)* The Waterloo Branch is situated at the centre of the area in the Mid-North where a major outbreak of ARGT occurred in 1967, so it was obviously of major importance to many of its members. The branch actively supported the trials conducted at Manoora in 1967. They generously donated fencing materials, sheep and

Some of the Mid-North Branches involved in the ARGT problem:
1. Saddleworth Branch Committee, 1987.
Back L-R: Messrs Rodney Videon (Jr Vice Pres), Graham Wurst (Vice Pres).
Front L-R: Messrs Michael Miller (Pres), Colin Adams (Sec).

Hanson Branch Committee, 1987.
L-R: Messrs Peter Mengersen, Clyde Atkins, Rodney Bailey (Vice Pres), Murray Tiver (Pres), Ken Phillips (Sec).

money to assist the Department of Agriculture Officers supervising experiments there. This rapid response to the situation aided the officers in establishing experiments, so that, ultimately, causes and possible cures were available sooner than would otherwise have been expected.

Stock fodders were an important concern of many Bureau branches during this period. In 1967 the Halbury Branch sent samples of the hay made and used by members to the Northfield Research Station. The hay was tested for its nutritional value, the first of such tests performed. This

Riverton Branch Committee, 1987.Back L-R: Messrs Leon Schwarz, Neil Crouch, Ian Uppill (Vice Pres),Chris Glynn (Treas).
Front L-R: Messrs Richard Smyth (Sec), Adrian Behrt (Pres), Ken Thomas (Publicity Officer).

Point Pass Branch Committee, 1987.
L-R: Messrs Eric Schutz, John Pfitzner (Vice Chairman), Ross Schutz (Chairman), Geoff Schutz, Des Schulz (Treas), Malcolm Schutz (Sec).

Neales Flat Branch Committee, 1987.
Back L-R: Messrs Brenton Diener, Des Twartz, Andrew Heidrich, Ted Schiller (Jr Vice Pres).
Front L-R: Messrs Jim Fahlbusch (Sec/Treas), Luke Saegenschnitter (Pres), Brenton Schiller (Jr Pres).

information was extremely useful for producers growing meat and wool for specific markets. Adjustments could be made to ensure that stock received exactly what was necessary to create a first class animal. The Frances Branch also conducted a survey of the hay made by its members. Samples of hay made at the end of 1966 were forwarded to the Northfield Research Station Laboratories for analysis. On arrival the samples were oven-dried to ensure that all moisture had been removed. They were then ground to a fine powder and digested by rumen bacteria from a fistulated sheep with the addition of hydrochloric acid-enzyme to aid digestion. The amount of digestion which had taken place after one week was then measured and expressed as a percentage of the dry weight. Kjeldahl crude protein analysis was also made, using the Technicon auto-analyser. These were also expressed as a percentage of the dry weight. The following observations were made when the results were finally tabled.

Protein	Cereal hays have lower protein values than pasture hays. Compare samples 31 and 32 with the others.
Digestibility	Cereal hays in this survey also have lower digestibility although this is not always the case.
Mouldy Hay	Sample No. 1 had the very high digestibility of 74%. Sample No. 15 came from the same paddock, but was mouldy when received, and had a digestibility of only 59%, indicating the quality decline which can take place after the hay gets wet and overheated.
Legumes	The better quality pasture hays generally had a high legume content. Compare samples 1-5, which had 50 to 80% subterranean clover with samples 27-30 and 33, which had much smaller amounts of legumes.
Sampling	It must be emphasised that the analysis is only as good as the sampling procedure used. If the sample of hay sent for analysis was picked from a better area of the paddock, the results will only apply to bales in the better area. Alternatively, if the sample was taken from a wet and mouldy bale on top of the stack, they will not be representative of the rest of the stack.

(Dr John C. Radcliffe, *Frances Hay Survey 1967.*)

In 1968 a new variety of barley was released. "Clipper" had been bred by the Waite Institute

assisted by the Department of Agriculture in testing its qualities. Prior, the variety previously grown in South Australia was to be replaced by Clipper over the next few years. The advantages of Clipper were described at the March meeting of the ABA, and the arrangements for the changeover from Prior explained.

1. It outyielded Prior, was of better malting quality, especially on soils of high nitrogen content.
2. Because Clipper behaved differently from Prior in the malthouse – and in particular it had a shorter steeping time – it was essential that malting grade barley of the two varieties be segregated. To minimise the problems associated with segregation and storage of two varieties the multiplication of the new variety was planned so that it would be possible to make a complete changeover from Prior to Clipper in 1970 in the following areas: Yorke Peninsula, Lower Eyre Peninsula and Southern Adelaide Plains. Bulk deliveries of Prior would not be accepted in these areas after 1969.

   In the remaining Prior growing areas of the State bulk deliveries of Clipper would not be accepted until 1971.
3. The basis for selecting registered growers who would be supplied with Clipper seed for sowing in 1968 was that preference was given to farmers who had been co-operating with the Department or the Waite Institute in barley field trials and to farmers who had previously produced registered seed of barley. (ABA Minutes, March 1968.)

Unfortunately, it was a drought that year, so cereal growers had to wait until the following year to get a fair idea of its potential.

Wool was still a good proposition at this time. Prices were holding up and the demand for synthetics had not entirely replaced natural fibres. However, wool growers needed to keep up with the times like other primary producers. The Mil-Lel Branch held the first of three Wool Schools in 1968, and the Finniss Branch held a very successful Wool Classing School on the property of Mr W. Hunt. The Boors Plain Branch co-operated with the Kadina Rotary Club in organising a fleece competition. Local farmers donated a fleece each. These were then displayed and judged by knowledgeable employees of stock firms. Local traders were also invited to display woollen goods and donate trophies. After the winners had been decided, the fleeces were sold and the proceeds donated to charities in the district.

The Koonunga Branch Committee, 1987
Back row L-R: Messrs Marcus Schulz, Jeffrey Hoffmann, Philip Nietschke, Murray Andretzke, Leon Nietschke.
Front row L-R: Messrs Frank Gallasch, K Kleinig (Sec), Des Nietschke (Pres), Peter Kleinig.

The Koonunga Branch held an interesting Field Day on 1 May 1968. The programme was printed as a supplement to the Angaston *Leader* thus the programme itself was the advertisement. It was the branch's fortieth anniversary that year, so a well-organised field day was to be part of the celebrations. In a short article, Mr Des Nietschke, the branch President, described the importance of field days.

> In this modern age, the man on the land is today, more than ever before, confronted with the problem of rising cost of production and yet at the same time is forced, due to circumstances, to accept a falling price for his own products . . . In spite of these facts, part of the primary producers' duty is to help feed the starving millions in the world today. How can he best handle the situation?
>
> One avenue is with the Agricultural Bureau system, whereby he can keep abreast of [the] latest techniques besides promoting good-will.
>
> Koonunga Bureau has ever stressed member participation and it i[s] perhaps this which has produced the desire to hold Field Days, to see the latest equipment in actual use.
>
> Such field days provide a unique opportunity for men on the land to meet and talk over problems both among themselves and with the local machinery dealers. (Des Nietschke, *Rising Costs are a problem for Farmers and Test Efficiency*, supplement to *The Leader*, Angaston, Thursday 25 April 1968)

The day began at 9.00 a.m. with a demonstration of mechanical vine dodgers and shredders. Displays of equipment were on show all morning, and in the afternoon several local agencies for

machinery manufacturers demonstrated their machines.

The dairy industry was undergoing rapid changes during this time too. The Agricultural Bureau sponsored a Dairy School at Birdwood in June 1969, mainly for members of the Gumeracha, Mt Pleasant and Birdwood Branches. Four sessions were held during the month with members of each branch taking a turn to chair the proceedings. The first lecture was by Dr D. N. Mackie, a veterinary surgeon from Murray Bridge, who dealt with the three main problems in dairy cow health: infertility, acetonaemia and mastitis. The diagnosis, treatment and economic effects were explained. Mr G. S. Pickhaver, the Senior Dairy Officer of the Department of Agriculture, led the next two sessions, the first dealing with feeding requirements for maximum production and the second, a milking demonstration at the dairy belonging to Mr Peter Ancell at Birdwood. The final lecture described ways of raising farm income. This covered four main areas:

1. Time of calving.
2. Stocking rates.
3. Feeding management.
4. Irrigation.

A partial budget was developed to show the effects these elements might have.

Towards the end of the decade, the Bureau membership was seriously declining. Although attendance at conferences and specialised schools was good, the ordinary branch meetings were getting fewer and fewer turning up. Interest in regular Bureau business was dwindling, and, unless branches were lucky enough to have particularly energetic secretaries, interest faded away. The Secretary of the Bordertown Branch explained some of the reasons for his own branch's inactivity in a letter to the Senior Advisory Officer, dated 29 December 1969:

> the demand for technical information is fairly specialised in this area and this is being met by speakers at specific producers' organisations and by the growing number of consultants. This makes it difficult to organise Bureau meetings of universal interest.

The One Tree Hill Branch records in its minutes that poor attendances at agricultural meetings might be because "all branches were trying to compete with television and a warm fire". This may well have been the reason for the apathy of former members.

The new decade opened on a less than positive note for the Agricultural Bureau and primary production at large. In the early '70s wool prices plummetted, putting many pastoralists in a very serious position. Beef cattle still offered good returns, however, and many sheep owners looked to beef as an alternative. In response to this shifting interest, several Beef Schools were held by branches of the Agricultural Bureau. The schools were aimed at producers new to the enterprise, so basic information was necessary. Without this background knowledge, producers would not be capable of embarking on more complex management and breeding programmes as the herd became established. The schools were designed as two-day events. The following description comes from a pamphlet put out by the Department of Agriculture.

> The school starts with a discussion of the outlook for beef production plus the outlook for the various rural enterprises which are alternatives to beef production. Consideration is then given to the economics of beef cattle on the farm in relation to the main grazing alternative – which is sheep production.
>
> A talk and demonstration follow which cover basic beef industry information and aspects of management and handling of cattle, and the facilities necessary for a beef enterprise . . . The first day of the school concludes with a brief discussion of common disease problems of beef cattle.
>
> The first two talks of the second day of the school deal with nutrition of the beef herd in relation to reproduction, calf growth, and fattening. These two sessions also deal with management programmes which enable the owner to produce beef efficiently and cheaply by fitting the feed requirements of the breeding herd in with the seasonal growth of pasture.
>
> Selection and culling of animals in commercial and bull-producing herds, and the use of cross-breeding, are discussed in two sessions. These sessions cover various types of breeding programmes which the owner can use to improve production once his management is sufficiently advanced.
>
> The school concludes with a demonstration of carcase break-up into commercial cuts. This enables the producer to see how the butcher handles the carcase for eventual sale to the consumer. (A Brief Description of the Aims and Contents of Beef Cattle Husbandry Schools.)

The Kelly Branch sponsored a Beef School in 1970. It obviously answered a need in the community – 200 people attended. In the search for a

suitable alternative to use their land profitably, local producers were keen to learn all they could. The following year, another Beef School was held for the Eastern Eyre Peninsula district. Experts came from Naracoorte, Port Lincoln, Struan Research Centre and Adelaide to offer their knowledge and experience.

The Lower North Branches held an interesting conference at Tarlee on 25 February 1970. Instead of the usual format of several speakers discussing various subjects, the day was devoted to the theme *Maintaining farm income in the light of changing market requirements*. The delegates split up into smaller groups to discuss the topic. Suggestions for groups to examine included:–

a) How to go about increasing stock production (meat or wool).
b) Scope for sideline or alternative crop production.
c) Minimising investment in machinery.

The whole morning was spent in this manner and after lunch the group reassembled for the presentation of life memberships, and nominated group leaders reported on the morning's proceedings. A panel of experts consisting of Messrs J. B. Evans, R. J. Gilfillan, G. C. Trengove (Agricultural Economist), J. D. McAuliffe (Senior Agricultural Adviser), J. C. Potter (Principal Livestock Officer) and W. E. Matheson (Senior Soils Officer) discussed the findings. The conference programme included notes on the physical and financial details of the Gilbert Valley Property. This provided some figures for discussion and an example of what could be done in the area under the present circumstances.

A Pig Symposium was organised by the Agricultural Bureau members of the Kapunda Branch. Over 120 pig-producers, representing 30 Bureau branches, attended the Symposium on 6 July 1970.

Tarlee Branch Committee 1987.L-R: Messrs D Molineux (descendant of Albert Molineux, founder of the Agricultural Bureau), T Clarke, K Stevens, M Hill.

Kapunda Branch Committee, 1987
Back row L-R: Messrs M F Ryan, Sec; R M Ryan, Committee; E C Nietschke, Committee, R L Holding, Assistant Sec
Front row L-R: Messrs V I Hombsch, Vice President; A R Wilson, Press Reporter; C M Videon, Treasurer; J Lewis, Committee. Absent: D R Shannon, President.

Mr C. E. Lienert, President of the South Australian branch of the Australian Pig Society opened the proceedings. The first paper was given by Mr J. F. McAuliffe, of Saddleworth who spoke on *Open Range v. Intensive Housing*. This was followed by a discussion on *Feeding and Nutrition*, by Mr L. E. Mosel of Virginia. As the owner of a 150-sow piggery, he had learnt that 75% of the costs involved went on feed bills. Several more talks were given after a pork barbecue lunch – *Mange, worms, etc.* by Dr K. Dobson (Senior Veterinary Research officer [Pigs], SA Department of Agriculture), *Breeding & Selection*, by Mr C. E. Lienert, *Market Presentations and Requirements*, by Mr P. Conroy of Conroy's Smallgoods Pty Ltd, *Carcase Presentation and Demonstrations*, by Mr C. Wurst (breeder and former butcher). A discussion was held before the final address on the *UF & G Pig Promotion Fund* by Mr Lance Dawkins, President of the UF & G Pig Section. The Symposium was a great success, providing an immense amount of useful information for pig producers.

The Advisory Board was involved in the formation of Research Liaison Committees in rural areas. The first was formed in the South-East. Meetings to be composed of the Director of Agriculture, two representatives of the Stockowners' Association, two representatives of United Farmers and Graziers, one representative of the ABA (in this case, Mr G. S. Wheal of Keith), the Chief Extension Officer (Mr P. C. Angove in this area), and the Superintendent of Research Centres (Dr H. V. Chaimberlain). The first meeting was held at Struan Research Centre on 7-8 October 1970. Both

Kybybolite and Struan Research Centres were to be inspected. The purpose of the Regional Research Liaison Committees was to establish a strong link between the Department of Agriculture and producer organisations in order to maximise the usefulness of the Department's resources. The Department needed to know what research, demonstrations and extension projects producers felt were necessary in their area. Although the scientific experts had their own research programmes in mind, their role was to improve existing industries. Producers themselves could identify problems faced in practical situations which might not occur to theorists. This co-operation between producers and scientists would ensure the research centres maintained a valuable level of input in the districts. The following year, the River Murray Regional Research Centre was established, and in 1972, committees were formed on Kangaroo Island and Eyre Peninsula.

In 1971 a leaf analysis service for citrus growers in the Riverlands was introduced by Adelaide and Wallaroo Fertilisers Ltd. The ABA discussed the announcement of the service in the *Murray Pioneer* at their February meeting. Computerised soil testing was available to farmers and graziers, but leaf analysis was a better means of determining the needs of citrus trees. The most important tests were the levels of nitrogen, phosphorus, potassium and chloride. An analysis of these four elements would be provided at a cost of $10. On an increasingly competitive market, fruit growers were obliged to produce the best quality citrus possible, and the identification of soil deficiencies or excesses was important. If the grower could rectify these problems, significant improvements could be accomplished.

Day trips continued to be an important part of Bureau life during the 1970s. Members visited centres directly related to agriculture – Roseworthy College, Research Stations, Waite Institute – and also places of general interest. The Boors Plains Branch, for example, visited the Tip Top Bakery, General Motors Holden and Bolivar Treatment Works. In March 1971 they ventured further afield on a five day trip to Victoria. Wives of the Bureau members were invited to accompany their husbands. Two days were spent at the Wimmera Field Days where members were particularly interested in tillage equipment and harvesting trials. They also visited the Swan Hill Folk Museum and the Co-operative Dried Fruit Sales packing sheds.

The following year 25 members of the Boors Plain Branch visited the Lower North to learn about methods of agriculture in that area.

Mr Wigney, an advisor of the Lower North Advisory Service, was the guide for the day. First visited was a property at Marrabel where lucerne and kale were seen as well as a lucerne cubing machine. A syndicate property was next to be seen with 2800 acres and running 4000 grown sheep. A crop of lentils seen during the drive held a great deal of interest. After lunch a family unit property between Tarlee and Balaklava was inspected. This was in very hilly, stony country with 2800 acres and carrying 3200 sheep and 140 cattle. The last place to be visited was a property at Bowmans where, in an 11 inch rainfall area, averages of 21 bushels per acre a

Past Presidents and Secretaries at the 75th Anniversary Meeting of the Waikerie Branch in February 1972.
Standing L-R: Messrs Brian Fulwood, Max Redman, Peter Halstead, Geoff Jones, Bill Brock, Richard Hall.
Seated L-R: Messrs Leo Lehmann, Ken Andrew, Mike Arnold, Kevin Tungden, Neil Andrew.

Boors Plains Branch Committee, 1987.
Back L-R: Messrs Don Westbrook, Colin Newbold, Rod Davies (Asst sec), Lindsay Barker.
Front L-R: Messrs Dean Bensen (Sec), Don Knight (Pres), Frank Westbrook (Vice Pres).

Crystal Brook Branch Committee, 1987.
Back L-R: Messrs Ivan Venning (ABA), Trevor Greig (Treas), Richard Venning (Past Pres).
Front L-R: Messrs Ian Crouch (Pres), John Kirchner (Sec).

year were gained from the 1000 acres cropped. (C. Rust, *Boors Plains Agricultural Bureau: The First 50 years* 1929-1979 p. 27.)

Other branches visited each other to inspect agricultural techniques in different areas of the State. In September 1971, three car loads of Bureau members from the Kelly Branch visited the Nelshaby Branch in the Upper North for two field days. It was reported as an "electrifying experience" by one Kelly member who managed to sit on a bared wire from a spark plug in his car on the way home. In 1974 the Nelshaby Branch visited the Kelly Branch on a reciprocal trip to learn about farming on Eyre Peninsula. The members of both branches enjoyed these exchange visits so much that they repeated the trips, Kelly returning to Nelshaby in 1979 and Nelshaby visiting again in 1981. This provided an opportunity to inspect the progress in each district during the interval.

Insects and weeds continued to be a worry to farmers, just as they always had been. In October 1971, the ABA discussed a letter received from the Crystal Brook Branch on soursob control. The same problem had been discussed at a Central Bureau meeting in 1898. In all those years no satisfactory method of dealing with soursob had been developed. The Crystal Brook Branch in 1971 felt something must be done to contain this weed before it ruined their land.

Since 1966 we have carried out programmes of "timely" cultivations and bulb counts etc and although the reduction of bulbs was significant after a timely early fallow no lasting results are apparent – indeed sour-sobs are still spreading

Nelshaby Branch Field Day in conjunction with Pt Germein Branch, October 1979. Inspecting the Pea patch on Peter Dennis' property at Baroota.

rapidly and we feel with disastrous results to the valuable agricultural lands of South Australia. (ABA Minutes, 26 October 1971.)

A press release from the Department dated 24 June 1971 updated the information on dealing with this weed. Senior Weeds Officer, Mr G. D. Baldwin said, "Our trials would seem to indicate that on the worst soursob paddocks, there are virtually no worthwhile legume or grass species to take over once the sour-sob has been controlled." (*Sour-sob Research Results Encouraging*, Department of Agriculture Press Release, 24 June 1971.) This meant that it may be possible to control soursob by sowing a recommended pasture mix on stubble before the weed had a chance to take over. Research into chemical weedkillers was also under way.

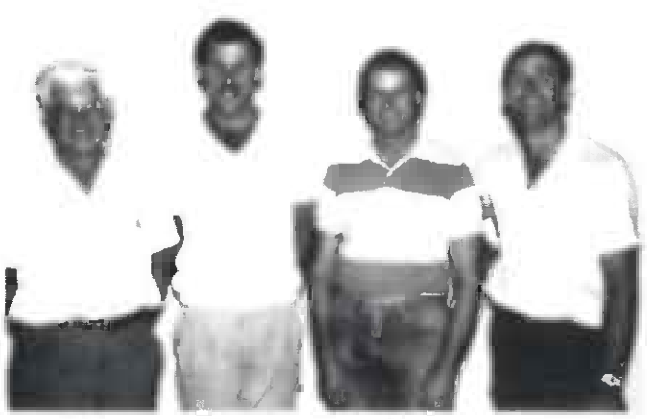
Another problem facing many farmers at this time was sitona weevil. A report on this pest was received by the ABA at their March meeting in 1971. Sitona weevil had been discovered in South Australia in November 1966 and had gradually spread across the State since then. Originally considered a pest of lucerne, research disclosed that sitona weevil was also very closely associated with medics, possibly affecting their nitrogen fixing properties by attacking the nodules. Subterranean clover did not appear to be affected in the same way. Sitona weevil did not respond to azinphos ethyl, which was the most persistent insecticide available at the time that did not cause residue problems of its own. Some parasite must be found to control this pest. It was not until 1976 that such a parasite was released. The first, in the winter of '76, was an egg parasite, *Patasson lameerei*. Later, a parasite of adult sitona weevil was introduced in South Australia.

A wide variety of chemical insecticides and herbicides were freely available by the early '70s. DDT, which had been so popular in the 1950s and '60s was losing favour. Scientists were beginning to realise just how dangerous this chemical might be, and the Department of Agriculture policy was to encourage farmers to use substitutes wherever possible. The main reason for their suspicions was that DDT did not break down on entering the food chain. Some animals and birds lived on insects and organisms which absorbed DDT and could thus accumulate large quantities of DDT in their systems. This in turn could be consumed by humans, further concentrating the chemical. The accumulation of this chemical in the environment could become dangerous. Today its use is banned in most States of Australia, including South Australia.

Chemical weed and insect killers were a boon to farmers overall. The horticultural industry is a good example of the way they contributed to provide a lower cost product. The practice of ploughing between trees was abandoned when flood irrigation was replaced by more efficient watering systems. By the 1970s drip systems were in general use, limiting the area of topsoil watered. This in turn meant that fewer weeds grew in between, and the few that did manage to come up were easily dealt with by applications of herbicide. A move away from ploughing to spraying for weeds meant that labour costs were greatly reduced, which in turn was reflected in the final cost of the product. Selective herbicides could be sprayed on cereal crops. Only certain plants would be destroyed, leaving a cleaner crop. A cleaner sample at harvest was a much more marketable product than one contaminated by weed seeds.

Field days continued to be very popular throughout this period. The Geranium Branch used their 1971 field day to compare two different methods of pig raising. First they visited Pocock's open range piggery at Lameroo. Here a 70 acre site had been set up. In contrast, the group then went to Mr L. Cayward's piggery in which the animals remained in housing from the time of weaning to the marketing stage. It was useful to examine both forms of pig management in the same day when the differences were still fresh in their minds.

In August 1972 the Murdinga Branch held a meeting to discuss their views on the work done for farmers by the Department of Agriculture. The result was a paper entitled *A Critical Appreciation of SA's Department of Agriculture Extension Services*. This was subsequently passed on to the Director of Agriculture and members of the ABA. Many positive suggestions for change came out of the open discussion. One of the first points to



Geranium Branch Committee, 1987. L-R: Messrs Bob Finn, Secretary; Michael Jacob, President; Trevor Pfeiffer, Committee; Bill Small, Committee.

emerge was the lack of communication between farmers and the Department of Agriculture. Many of the farmers present were unaware of some of the services offered by the Department, and were surprised to learn of the number of research projects in progress. They then went on to discuss the ways in which information from the Department reached farmers. There appeared to be three groups of farmers, those who contacted the Department regularly, as a last resort, or never. The Department often reached this last group by way of the media (press, radio or television) and through their neighbours discussing new ideas or remedies to problems. When farmers did invite Department officers onto their properties they sometimes felt the advice given was not entirely practical for their particular circumstances. In other cases, farmers were reluctant to invite advisers to see the mistakes the farmer had made in the past. The members also felt there were other services the Department could provide that would be extremely useful, for example, a reliable market survey and prediction of future market demands. Suggestions for trial work by the Department and Bureau members were put forward. Under the supervision of Departmental Officers, farmers could conduct very useful trials for the benefit of their neighbours as well as themselves. Such trials could examine the effects of burning stubble, suitable cereal varieties for the area, the optimum rate and the time of application of fertilisers. Several criticisms of the publications put out by the Department were offered. These were mainly aimed at the bulletins, pointing out gaps in the information presented. For example, the mouse control recipe contained strichnine without advice about how to obtain this ingredient. Another subject discussed was the problem of farmer training. Some felt that the Roseworthy course was not suitable for practical farming. A better alternative might be to work for a good farmer before beginning on the family property. Meantime, farmers relied on their own experience, their father's methods, and the Agricultural Bureau. Finally, the members conceded that some of the criticisms were actually due to the behaviour of farmers themselves; the Department was not always entirely to blame.

A surprising aspect of the Bureau's assignment was that so often the criticism of the Department was in fact a criticism of Bureau members. It was even suggested that farmers are the main problem!

1. Many farmers are self conscious of their ignorance or bad management and are reluctant to invite a Departmental Officer onto their farm for a close inspection. They are not even willing to invite their fellow farmers.
2. There is a tendency where a problem arises to say, "Oh well, that's how it goes", and concede defeat instead of asking for advice.
3. We tend to expect the Department to have every minute detail at its fingertips, without doing anything ourselves.
4. There is a breakdown of communication from the farmer to the Department of Agriculture. If more contact could be made personally, by phone or by letter, the Department would have a better opportunity to keep its ear to the ground. How can the Department expect to have the answer to the problem, if no one has ever told it of its existence.
5. Bureau meetings are sometimes enough to turn anyone off ... It was agreed that more effort be made to reduce the time taken to deal with general business, correspondence, etc. so that we can get into the "meat" of the night as quickly as possible while concentration is still good.

(G. Polkinghorn and J. Miles, *A Critical Appreciation of SA Department of Agriculture's Extension Services by the Murdinga Agricultural Bureau 1972, No. 11.)*

The general opinion was that the Department provided a good service. This could become even better if a few small changes were implemented.

The annual Oration and Congress had not been well attended in recent years, so in 1973 the ABA decided to hold a Meat Marketing Symposium instead, hoping this would attract more support. The programme was divided into four segments

A Problems of beef cattle production with specific reference to artificial breeding, feeding, finishing and beef from dairy stock. Mr R. W. McNeil, Officer in Charge, Struan Research Centre.

B The influence of breeding on carcass characteristics and their significance in meat marketing. Professor R. M. Butterfield, Faculty of Veterinary Science, University of Sydney, NSW.

C Overseas marketing of Australian beef and mutton from the point of view of the Australian Meat Board. Mr P. D. A. Wright, Deputy Chairman, Australian Meat Board.

D Processing and marketing of beef and mutton for local and overseas markets. Mr R. G. Jones, Director, F. J. Walker & Co. Milsons Point, NSW. (ABA Minutes, 16 April 1973)

Monarto Branch Committee, 1987.L-R: Messrs John Talbot (Sec), Robert Thiele, Trevor Paech, Ian Hay, Rod Burford, Geoff Gale (Chairman).

Mr R. G. Jones was unable to present the final paper, so this section was led by Mr P. Bartlett. One hundred and ninety-five people attended the symposium on 27 July at the Castle Motor Hotel at Edwardstown. About half of them were farmers, representing every area of the State. Ninety per cent of those present agreed it had been a useful exercise when they filled in a questionnaire at the end of the proceedings. The ABA decided to adopt the symposium for the following year. In 1974 the symposium took as its subject *The Energy Crisis and its Effect on Agriculture*. However, the annual meeting of all branches had outlived its purpose, and this was the last of such meetings.

In 1973 a proposal to combine the Department of Agriculture Headquarters and the Northfield Research Centre at Monarto was considered by the Government. The suggestion was met with strong opposition. The Department was much more accessible in the city and Northfield was conveniently placed for farmers. The Greenock Branch was particularly vocal in its criticism of the move, sending a letter listing reasons for their antagonism to the proposal.

At a meeting of the Greenock Branch of the Agricultural Bureau of SA, it was unanimously decided to oppose the proposed transfer of the Northfield Research Centre from Northfield to the proposed site at the city of Monarto, for the following reasons:–

1. The money spent on the establishment of the present centre, including that which was subsidised by the various producer organisations such as the dairy, pig and grape industries (the latter through the Phylloxera Board). Possibly other sections will be wanted and it is doubtful if producer bodies would continue to provide further capital.
2. Worktime and money spent would be wasted; time and effort being the most important as projects in progress at the time of transfer will be interrupted and much research and possible results placed in jeopardy. Many years could be lost in finalising research and getting the results to the producer.
3. Distance from other existing research centres such as the Waite Research, Universities, Roseworthy College and computer establishments will be a disadvantage.
4. Loss of services of scientists and research workers because of residential reasons as families having established homes at considerable cost will be disinclined to move and re-establish a new home in the area. They will be inclined to seek new employment possibly in private enterprise and could be irreplaceable.
5. As approximately 70% or more of the primary producers live north of Adelaide and have found the Northfield site convenient, they will be disadvantaged by the proposed move.
6. The environmental situation of the proposed site at Monarto is unsuited to much of the research work being undertaken, because of low rainfall (approximately 13 to 14 inches per year), higher temperature and higher evaporation rate. This would mean a different result. It would not be applicable to most of the areas in South Australia. Costs would be greater and there would be a greater strain made on water resources. Monarto being in a semi-arid area and on the eastern side of the ranges the mean temperature is higher

Greenock Branch Committee, 1987.Back L-R: Messrs John Nelder, Barry Linke (Treas), Neil Zimmermann, Malcolm Materne.Front L-R: Messrs Ian Geier (Chairman), Philip Georg (Sec), Peter Houghton (Vice Chairman), Lance Kallaske.

A depreciation and running cost of $1120 per year should be taken into account, and feed was calculated at $37.25 for a 100 day period. Thus, in order to make a profit, the farmer must buy at 28c per pound for a 300 lb beast and be able to sell a 450 lb beast at 34c per pound after 100 days.

The costs of cereal cropping continued to soar throughout this period. In 1973 the Government agreed to subsidise fertilisers at a rate of $12 per ton for superphosphate and $80 per ton for nitrogen. This was a considerable help at the time. Unfortunately, there has been no adjustment over the years to compensate for inflation, and the same subsidies still apply today.

Agricultural Bureau branches everywhere continued to be a source of useful, practical information for farmers. Meetings provided an opportunity to discuss mutual problems and offer advice from experience. The Roberts-Verran Branch raised the question of how farmers could best avoid over-tiredness when spending long hours on tractors, particularly at seeding time. The answer? Sleep.

The results of the Murdinga Branch fertiliser experiments from 1971 to 1974 were written up by Mr R. Wood, the Senior Soils Officer at Cleve. These trials had developed out of a series of lectures given by Mr P. Bennett on Eyre Peninsula in 1970. His topic, *Natural Mineral Fertilisers*, aroused much controversy, especially amongst the farmers in the Murdinga area. In March 1971 the branch decided to run a series of experiments comparing natural mineral fertilisers with conventional fertilisers. These were conducted on the property of Mr Trevor Pearce under the supervision of the Department of Agriculture staff stationed at Cleve. Over the next few years the site provided a focus for several branch field days. The final conclusions were reported by Mr R. Wood in 1974.

1. The mineral fertiliser recommended by Parafield Laboratories for the site was of no value for cereal production, as assessed by four years' trial work at Tooligie. Yields were within 10% of the Nil treatment (i.e. the untreated control plot) on each occasion, and pasture production in 1972 was noticeably less than the conventional fertiliser treatments.
2. Useful responses were obtained with superphosphate by itself, ammonium nitrate, and superphosphate + ammonium nitrate. In 1971, the wheat yielded quite well, even on the Nil treatment but there was an average yield increase of 16% with the superphosphate, 30% with ammonium nitrate by itself and 41% with super and ammonium nitrate together.
   In 1973, the wheat yields were half, or less, of those in 1971; however, superphosphate gave a 73% yield increase, ammonium nitrate 104% and super + ammonium nitrate 110% increase.
   The barley in 1974 responded well to superphosphate (145% increase) and super + ammonium nitrate (220% increase). These responses to nitrogen occurred although the site has had Harbinger medic well established for several years.
3. Burning the heavy wheat stubble remaining from the 1971 trial gave a pasture response that year, particularly on the super + ammonium nitrate treatments (i.e. where stubble was heaviest). The effect of burning was less on the Nil, dolomite and prescription mix plots.
   This response to burning was carried through into 1973 and the total yield of grain from the burnt half of the trial was 38% greater than on the unburnt area. This response could be attributed to:–
   (a) Control of cereal diseases (e.g. haydie and rhizoctonia) by destroying the carry-over host material.
   (b) Better pasture on the burnt area in 1972.
4. The effect of superphosphate placement was quite pronounced as would be expected on a site of relatively short superphosphate application. A perusal of Table 10 shows that in 1973 there was a 53% yield advantage in putting the superphosphate with the seed. The following year this effect was observed in barley where there was a 39% advantage in putting the superphosphate with the seed.

(R. McR. Wood, *The Murdinga Fertiliser Experiment [1971-1974]*, Department of Agriculture, South Australia, Ref S3/75, pp.5-6.)

Similar trials were carried out by four branches in the other districts. Pasture sites at Greenways, Western Flat and Mundalla were compared and a cereal site set up at Wirrega. At Greenways the best response was the application of superphosphate, copper and zinc. As expected, phosphorus was the main deficiency in a traditionally low phosphate area. At Western Flat a marked improvement occurred on the pastures dressed with nitrogen. The Mundalla plot was left untouched in 1972, and the residual effects of previous fertilising examined. No visual differences were apparent on inspection at a field day,

Mundalla Branch Committee, 1987.
Back row L-R: Messrs A Finlayson (Vice Pres), J Arney (ABA), R Liddel (Past Pres).
Front row L-R: Messrs J Wiese (Jnr Vice Pres), T Knowling (Pres), P Salmon (Sec).

and the dry weight of pasture produced confirmed this. The Wirrega cereal site was sown with Halberd wheat. The sections fertilised with superphosphate showed consistently better yields than the untreated areas. Nitrogen also appeared to make an improvement. In general, the prescription mixes, suggested by the mineral fertiliser companies on analysis of soil samples, provided no better results than the conventional fertilisers.

A public meeting was organised by the Millicent Branch, in conjunction with the UF&G and the Stockowners' Association on 16 October 1974 in response to the Whitlam Government's Green Paper, *Rural Policy in Australia*. A Working Party met beforehand to read the paper in detail and prepare questions to be raised at the public meeting. This group consisted of eight primary producers, five industry leaders and eleven service personnel from the South-East area. The public meeting, entitled *Government Intervention in Australian Agriculture – Less or More?*, was chaired by Gladys Smith, Mayor of Millicent. Two hundred and fifty people attended from a hundred mile radius around the town. A panel of six addressed the assembled group, including Ian McLachlan representing Stockowners, J. H. Heffernan of the UF&G, and Colin Hunt, an economist with the Department of Agriculture. Resolutions from this meeting included support for a system of income tax indexation, opposition to capital gains tax and probate duties, endorsement of the principle of prosperity bonds to provide income stability, and a demand for the immediate re-introduction of the full superphosphate subsidy. The Working Party delivered these resolutions to Canberra, commending the Government for presenting a broad document on rural policy which allowed for wide-ranging discussions.

1974 saw a severe attack of Downy Mildew on vines in the Barossa Valley. More intense growing of grapes was suggested by the Greenock Branch as a reason for the appearance of more pests and diseases. Consequently, vine growers found themselves in a position where they had to treat their vines with a wider and wider range of chemicals at an ever increasing cost.

During the early 1970s more and more farmers had been obliged to sell off blocks of land. The small acreages were often bought by "hobby farmers" many of them professional people working in the city and looking for a quiet country retreat. Gradually the number of permanent rural workers reduced, and many farmers moved off the land. This change in the rural population was reflected in the Agricultural Bureau statistics, particularly in the Adelaide Hills and the Fleurieu Peninsula. The Cherry Gardens Branch decided to encourage the new farm owners to attend their meetings, uniting the two groups of farmers rather than maintaining the division. An article in the local paper publicised this move on their part.

> The bureau is keen to contact small farmers who would be interested in joining the group. Cherry Gardens Bureau Secretary Mr Arthur Soady said he felt it was important to unite the area's new farmers with experienced men of the

Wirrega-Lowan Vale Branch Committee, 1987.
Back row L-R: Messrs Roger Excell, John Fry, Roger Groocock.
Front row L-R: Messrs Ross Lulf (Pres), Philip Cornish (Sec), David Altus. Absent: Glen Cowley.

A depreciation and running cost of $1120 per year should be taken into account, and feed was calculated at $37.25 for a 100 day period. Thus, in order to make a profit, the farmer must buy at 28c per pound for a 300 lb beast and be able to sell a 450 lb beast at 34c per pound after 100 days.

The costs of cereal cropping continued to soar throughout this period. In 1973 the Government agreed to subsidise fertilisers at a rate of $12 per ton for superphosphate and $80 per ton for nitrogen. This was a considerable help at the time. Unfortunately, there has been no adjustment over the years to compensate for inflation, and the same subsidies still apply today.

Agricultural Bureau branches everywhere continued to be a source of useful, practical information for farmers. Meetings provided an opportunity to discuss mutual problems and offer advice from experience. The Roberts-Verran Branch raised the question of how farmers could best avoid over-tiredness when spending long hours on tractors, particularly at seeding time. The answer? Sleep.

The results of the Murdinga Branch fertiliser experiments from 1971 to 1974 were written up by Mr R. Wood, the Senior Soils Officer at Cleve. These trials had developed out of a series of lectures given by Mr P. Bennett on Eyre Peninsula in 1970. His topic, *Natural Mineral Fertilisers*, aroused much controversy, especially amongst the farmers in the Murdinga area. In March 1971 the branch decided to run a series of experiments comparing natural mineral fertilisers with conventional fertilisers. These were conducted on the property of Mr Trevor Pearce under the supervision of the Department of Agriculture staff stationed at Cleve. Over the next few years the site provided a focus for several branch field days. The final conclusions were reported by Mr R. Wood in 1974.

1. The mineral fertiliser recommended by Parafield Laboratories for the site was of no value for cereal production, as assessed by four years' trial work at Tooligie. Yields were within 10% of the Nil treatment [i.e. the untreated control plot] on each occasion, and pasture production in 1972 was noticeably less than the conventional fertiliser treatments.
2. Useful responses were obtained with superphosphate by itself, ammonium nitrate, and superphosphate + ammonium nitrate. In 1971, the wheat yielded quite well, even on the Nil treatment but there was an average yield increase of 16% with the superphosphate, 30% with ammonium nitrate by itself and 41% with super and ammonium nitrate together.
   In 1973, the wheat yields were half, or less, of those in 1971; however, superphosphate gave a 73% yield increase, ammonium nitrate 104% and super + ammonium nitrate 110% increase.
   The barley in 1974 responded well to superphosphate (145% increase) and super + ammonium nitrate (220% increase). These responses to nitrogen occurred although the site has had Harbinger medic well established for several years.
3. Burning the heavy wheat stubble remaining from the 1971 trial gave a pasture response that year, particularly on the super + ammonium nitrate treatments (i.e. where stubble was heaviest). The effect of burning was less on the Nil, dolomite and prescription mix plots.
   This response to burning was carried through into 1973 and the total yield of grain from the burnt half of the trial was 38% greater than on the unburnt area. This response could be attributed to:–
   (a) Control of cereal diseases (e.g. haydie and rhizoctonia) by destroying the carry-over host material.
   (b) Better pasture on the burnt area in 1972.
4. The effect of superphosphate placement was quite pronounced as would be expected on a site of relatively short superphosphate application. A perusal of Table 10 shows that in 1973 there was a 53% yield advantage in putting the superphosphate with the seed. The following year this effect was observed in barley where there was a 39% advantage in putting the superphosphate with the seed.

(R. McR. Wood, *The Murdinga Fertiliser Experiment [1971-1974]*, Department of Agriculture, South Australia, Ref S3/75, pp. 5-6.)

Similar trials were carried out by four branches in the other districts. Pasture sites at Greenways, Western Flat and Mundalla were compared and a cereal site set up at Wirrega. At Greenways the best response was the application of superphosphate, copper and zinc. As expected, phosphorus was the main deficiency in a traditionally low phosphate area. At Western Flat a marked improvement occurred on the pastures dressed with nitrogen. The Mundalla plot was left untouched in 1972, and the residual effects of previous fertilising examined. No visual differences were apparent on inspection at a field day,

Meadows Branch Committee, 1987.
L-R: Doug Hampton, Vida Diener, Jean Page, Allen Meissner, Rodney Meissner, John Bosisto, John Diener.

Mt Barker Committee, 1987.
Back row L-R: J Rowe, T Neumann, A Crompton, A Sargent.
Front Row: D D'angelo, P Giffen, P Fry.

land. "There has been a great influx in the numbers of professional people who have bought property in the hills," he said. "We call them Rundle Street farmers because they've usually got enough money to support the land but in many cases are uncertain of the best farming methods to use. The smaller farmers might buy 20 or 30 acres to grow crops or graze cattle and eventually run into problems. That's where the experienced farmer can be a great help," said Mr Soady. Agricultural bureaus were once the only form of farmer communication. Farmers would meet monthly, discuss problems, suggest ideas and generally help each other where they could. Over the years the bureaus' traditions have stuck with the experienced farmers, but the influx of small farmers has thinned the ranks. "That's why we are trying to unite the two groups of farmers," said Mr Soady. "In many cases they need our help as much as we need their numbers. The Agricultural Bureau would be beneficial socially and commercially," he added. "All horticultural problems could be discussed while new farmers would have the opportunity to meet other farmers in the district." (*Bureau Keen to Help Small Farmer, Hills Gazette*, 10 March 1974.)

The Coonalpyn Study Group was formed in April 1975 to look into the matter of water repellent sands in the Coonalpyn area. It was made up of local farmers and research officers of the Department of Agriculture. Mr Peter M. King of the Department of Agriculture co-ordinated the group's activities. Meetings, trials and field days were held under the auspices of the Coonalpyn Branch of the Agricultural Bureau. However, interest soon spread to the Upper South-East, enlarging the area beyond the Coonalpyn district. The group's concern was "the increase of profitable farming through co-operative learning, experimentation and application of new ideas". (P. M. King, *Coonalpyn Study Group on Water Repellent Sands: Second Report*, August 1976.) The first year, experiments were carried out on the properties of Messrs Glen Hartman, Gil Zacker, Heinrich, Kernick, Mickan and Schmidt. All examined the effects of different treatments on wheat and barley crops. The first three mentioned put in trial plots fumigated with chloropicrin at a rate of 220 kg per hectare and observed its effect on water repellence of the soil, and plant and tiller number and on grain yields. The others conducted experiments to discover the effects of nitrogen fertilisers and seed placement and germination on yields. They also observed the effects of tillage treatment and nitrogen fertilisers on emergence and grain yield in cereals grown on water repellent sand. The general conclusions were summarised in Peter King's second report.

1. Fumigation of both loam and sand soil resulted in large increases in root and vegetative growth and grain yields of wheat and barley. The response appeared largely due to the control of haydie and the release of readily utilized nitrogen.
2. Water repellence in the soil was not affected by fumigation with chloropicrin. This shows that growth and yield can be increased without alteration of the repellence factor. However water repellence may still be a growth limiting factor and attempts to reduce it may still be rewarding.
3. Responses to 30 kg per hectare of N supplied in ammonium sulphate, urea, and sulphur-coated urea were similar, showing that there was little advantage of one source of nitrogen over another. The yields obtained after

nitrogen was applied, were still very low indicating that other factors were limiting yield.

4. Harrowing the soil resulted in reduced numbers of plants emerging only when nitrogen fertilizers were applied. Press wheels prevented this reduction.
5. The impractibility [sic] of fumigation on broad acres has led to the testing of rotational methods of reducing root disease and increasing soil nitrogen. The next section includes an experiment to test this method.

(P. M. King, *Coonalpyn Study Group on Water Repellent Sands: Second Report*, August 1976, p. 10.)

The results of the 1975 experiments were discussed at the August meeting of the Coonalpyn Branch the following year, and the 1976 experiment grew out of their new knowledge. Glen Hartman and Gil Zacker again offered plots for use and, together with Dean Elliott, conducted further experiments on the effects of nitrogen fertilisers, fumigation and seed placement on the germination and yield of barley. Jonathan Roberts agreed to test the response of lupins and cereals to both soil and foliar applied manganese. Manganese deficiency was widespread in the area, and he was able to experiment on both sandy soil and calcareous lime with limestone gravel and rock on the surface. Two other problems faced by farmers in the area were nitrogen deficiency and the prevalence of root diseases. Three courses of action could provide some relief from the problems.

1. *Control of grasses*
   Pasture grasses in the district (barley grass, brome, Wimmera ryegrass, silver grass) are hosts to haydie and eelworm and allow the infecting organisms to multiply.
2. *Increased use of legumes, oats*
   Pasture and grain legumes are not hosts of haydie or eelworm and increase soil nitrogen levels. Oats actively suppress haydie and stimulate suppressant organisms.
3. *Fallow and rapeseed*
   Spring fallowing provides a method of reducing grasses and increasing soil water and mineralized nitrogen. Rape is a non-host of haydie and eelworm and may be beneficial in cereal disease control.

(*P. M. King*, p. 19.)

Glen Hartman and Dean Elliott conducted tests using different rotations of crops to establish the effects on cereal root diseases.

Coonalpyn Branch Committee 1987
L-R: Messrs Ross Elliot, Errol Strong, Ray Kernick, Lindley Camac (Chairman), Jonathon Roberts, Geoff Kuehne, Peter Callery (Sec). Absent: Geoff Zacker.

In October the Annual Field Day was devoted to an inspection of the trial plot. After a barbecue tea in the evening, a discussion was held to talk over the progress of the plots. The branch invited Dr Albert Rovira, a microbiologist with the CSIRO to attend. He provided some very useful information on diseases which increased the study group's understanding of their experiments.

The same format was implemented in 1977, when members inspected the next set of trials during their October Field Day. The focus was on:

> Production of cereals and grain legumes in various rotations. Disease control and nitrogen build up in various rotations. Effect of fumigation and deep ripping of soil on growth of cereals and grain legumes. Cereal eelworm control using Nemagon and Temik. (*Coonalpyn Study Group on Water Repellent Sands*, 1977-78 Programme.)

They also mounted an exhibition explaining their work at the Coonalpyn Agricultural Show. Another field day was organised in November in conjunction with the Oil and Protein Crops Committee on different aspects of the trials. This time the focus was on:

> Reduction of water repellence by deep ploughing. Reduction of sand blasting by spray seeding. Establishment and growth of lucerne, lupins and barley on water repellent sands. Rotations of lupins, wheat and barley, fertilizers, weeds. Grazing management of lucerne on water repellent sands. (*Coonalpyn Study Group on Water Repellent Sands*, 1977-78 Programme.)

Plots on the properties of John Boundy, Martin Klitscher and Bob Zippell were inspected.

Those involved in the study group learnt a great deal about farming efficiently in their area. The study group provided a focus for the Agricultural

Netherton Branch Committee, 1987.L-R: Messrs Ross Lauterbach, Bob Tapscott, Jim Cattle (Sec), Peter Piggott (Vice Chairman), Peter Barney. Absent: Bill Ware (Chairman), Neil Sommerville.

Cummins Branch Committee, 1987.
L-R: Messrs R W Mickan (Sec/Treas), G W Hayman (Chairman), C J Hill (Vice Chairman).

Bureau branch and the continuity thus created meant that members could see the progress they were making. The study group stimulated discussion and action; local farmers took responsibility for their specific problems into their own hands. The Bureau's activities were directly relevant to its members' concerns and attracted the interest of other farmers in the district. Organised, methodical self-help such as the Coonalpyn programme shows the Agricultural Bureau functioning at its best, to the mutual benefit of all concerned.

The *Journal of Agriculture* published by the Department was finally abandoned in 1976. It had gradually diminished in size, due to the expense of production. Eventually the Department decided to issue only fact sheets and bulletins. In 1975 *The Chronicle*, a newspaper reporting on rural matters, had also ceased publication. Radio and television supplied farmers with an abundance of information by this time and smaller magazines came into existence to fill many of the gaps. None of them, however, provide the sort of overview the *Journal of Agriculture* did with its link to the Department of Agriculture.

A seminar on machinery economics was held by the Cummins Branch in 1976. It was very well attended; approximately 100 people came from all over Eyre Peninsula. Its success may have been partly due to good advertising over the ABC and in local papers. Also, it was a topic of interest to many farmers in the constant struggle to make a profit from farming.

Mr B. A. Simmonds of Kadina sent a letter to the ABA in 1977 outlining his suggestion to breach the communication gap between city and country folk in South Australia. He intended to contact all sorts of rural organisations to arrange groups to escort city people around the show grounds during the annual Royal Adelaide Show. It was an ideal opportunity to bring these two groups of people together to "exchange and explain". The message from the farmers is embodied in the poem Mr Simmonds enclosed with his letter.

Coomandook Branch Committee, 1987.L-R: Messrs John Paige, Garry Hansen, Steve Murray (Chairman), Ian Fox, Malcolm Day, Barry Goodall (Sec), Roger Bahr.

THE FARMER FEEDS THEM ALL

The politician talks and talks
The actor plays his part
The soldier glitters on parade
The scientist pursues his germs
O'er this terrestrial ball
The sailor navigates the ship
But the farmer feeds them all

The teacher trains the youthful mind
The broker reads the tape
The tailor cuts and sews the cloth
To fit the human shape
The dame of fashion dressed in silk
Comes forth to drive or call
To ride or dance or promenade
But the farmer feeds them all

The workman wields his shining tools
The merchant shows his wares
The astronaut above the clouds
A dizzy journey dares
BUT ART AND SCIENCE SOON WOULD FADE
AND COMMERCE DEAD WOULD FALL
IF THE FARMER CEASED TO REAP AND SOW
FOR THE FARMER FEEDS THEM ALL.

(B. A. Simmonds, 1 February 1977, quoted in ABA Minutes, 7 April 1977.)

Large areas of the State had been affected by drought in 1976/77. The Government finally agreed to provide drought assistance, and a sub-committee of the ABA drafted a report to be considered in establishing the scheme. Loans were repayable over seven years (with a maximum of 10 years) at an interest rate of 4%. For many farmers severely affected by the drought, the financial aid provided by the scheme could make the difference between bankruptcy and survival.

Although the State-subsidised Wheat Crop Competitions had been abandoned in the early '60s, many branches were still interested in holding smaller crop competitions of their own. In 1977 the Adelaide and Wallaroo Fertiliser Company donated a shield to the Mt Hope Branch for a barley crop competition. The crop was to be judged allowing a maximum of 80 points for yield and 20 points for trueness to type. The competition continues today, with the shield being held by each year's winner for the duration of that year.

The Mallala Agricultural Bureau ran a stocking rate trial from 1975-77. The trial was initiated and managed by the members themselves with limited help from Department of Agriculture Staff. In an effort to gain useful information relevant to the conditions prevailing in their area, the aim of the trial was "to observe and measure the effect of three stocking rates on Merino wethers, their wool, the pasture and gross margin profit; and to evaluate the impact of the trial on local farmer opinion". (D.W. Russell & J. Sharpe, *A Stocking Rate Trial Run by the Members of the Mallala Agricultural Bureau 1975-1977*, p. 1.)

The last point was important; the trial might be able to give some indication of the value to farmers of information discovered by themselves rather than information from an unfamiliar source.

In previous trials held in other areas, well defined trends had appeared when the stocking rate of wethers is increased above the normal level without a corresponding increase in the amount of feed available. These are:

(a) Sheep lose weight over the lean period but regain it as the feed position improves.

Mt Hope Branch Committee, 1987.
L-R: Messrs G Mahoney, A Ness, P Meaney, M Dovelle, D Roberts.

(b) Grown sheep are not permanently affected by losing weight except under extreme starvation.
(c) Wool per head falls off slightly but more wool is produced per hectare.
(d) Fibre diameter decreases.
(e) Dental wear increases.
(f) Marked changes take place in the composition of the pasture. The proportion of clover usually increases at the expense of grasses. At extremely high stocking rates weeds tend to increase.
(g) The most profitable level of stocking rate is usually reached before the maximum wool production per acre is achieved.

A site of medic pasture was chosen about 1 km north of Two Wells (40 km north of Adelaide and approximately 8 km in from the coast) on the property of Messrs Sharpe Bros. The area has an annual rainfall of 400 mm on average, falling between mid-April and mid-October. Unfortunately, the period of the trial included the dry season of 1976, followed by the drought of 1977. The hard-setting red-brown soil of the site was highly resistant to erosion. Of 191 2½ year old wethers, five groups of 10 were chosen for the trial on the basis of body and fleece weight. One group was returned to the main mob and held as spares. On 2 March 1975, 15 kg of Jemalong medic per hectare was sown on two year old pastures consisting of medic rye grass, barley grass, wild oats, dry residues and soursobs. The plot was subdivided and allocated as follows:

No. of wethers	Paddock size (ha)	Stocking rate per ha	Superphosphate kg/ha/year
10	2.0	5	80
10	1.0	10	80
10	1.35	7.5	80
10	2.0	5.0	NIL
10			Spares

(Russell & Sharpe, p. 2)

Sheep were put on the trial area on 15 May 1975.

After three years the anticipated results were recorded. More useful information was also deducted from the trials:

to preserve medics in this environment, grazing pressure should be heavy during the winter, eased during seeding of the medics and lightened considerably during the dry period by making full use of cereal stubbles for grazing. For this purpose sheep can be regarded as "tools" to suppress weed growth and encourage medics for the benefit of future cereal crops which provide the main farm income. Another benefit of sheep is to reduce the amount of tillage necessary for cropping. Thus, while returns from sheep are important, they are secondary to the main enterprise of cropping.

It was evident in 1975, a good rainfall year, that the highest stocking rate (10 per hectare) was the most productive and promoted the best medic pasture. This pasture remained green for two weeks longer at the end of spring than the low stocking rate plots (5 per hectare). This implies that ideally stocking rate should be manipulated according to the rainfall season. This is possible either by altering the number of sheep on the property or by keeping sheep numbers constant and varying the hectarage used for cropping. In dry years the stocking rate can be reduced on pastures by seeding less area to cereals; or in wet years an additional area can be sown with a legume crop thus increasing the stocking rate on the pasture area . . . Attention was drawn through the trial to the value of set-stocking sheep at optimum stocking rates as opposed to moving sheep around. Messrs Sharpe Brothers, on whose property the trial was conducted are convinced that set-stocking decreases the problems of running sheep. They supported their views through the following factors:

a) Despite the stress on the sheep during the trough periods there was no tender wool because the stress was imposed gradually rather than suddenly.

b) The only three sheep that died in the trial due to stress were in the low stocking rate groups which had higher body weights than those at the higher stocking rates. But they lost 13 kilograms of weight per head in two months on over-rated dry barley grass residues. It is probable that this stress was the cause of their death.

c) At the low stocking rates the pasture composition went to grasses and soursob growth was unchecked. At the high stocking rates soursobs were not a problem, whereas when sheep are moved around, pastures are spelled allowing excessive soursob growth to occur.

d) No scouring occurred in any of the trial sheep and crutching, although done, was virtually unnecessary. The main operation was wigging and ringing. (*Russell & Sharpe*, p. 13.)

Alford Branch Committee, 1987
L-R: Messrs J Snodgrass (Pres), N Rodda (Sec), B Price, J Mats, E Philbey. Absent: Q Rodda.

Several other points were brought up during the discussion of the results at a meeting of the Mallala Branch in February 1978:

the most common sheep enterprise in the area was breeding prime lambs from merino ewes. This enterprise adapted well to the grazing management of medic pastures because prime lamb breeders naturally have double the stocking rate during the winter to that over the summer months.

The point was brought out that the body weight changes in the trial sheep showed that if wethers from a heavy stocking regime were to be fattened for sale to the Middle East, preparation for this should begin 6 to 12 months before selling. (Russell & Sharpe, p. 14)

The general opinion was that the trials had been well worthwhile. Some very useful knowledge had been obtained, and other information confirmed.

The Echunga Branch held a very interesting field day on 9 March 1977. Fourteen members visited five properties representing different industries in the area. A report of the proceedings was printed for the benefit of members unable to

attend, and to inform the departmental officers of the branch's activity.

The first stop was the property of Messrs O. & P. Kuchel at Flaxley. They had converted their dairy farm to gherkin growing and single-suckled beef steer production. One and a half acres of gherkins were grown under contract to Stephensons of Mt Barker. The land was prepared with a poultry manure top dressing and later side dressings of complete "E" fertiliser were applied during the growing season. Bordeaux mixture was sprayed on plants during humid conditions to prevent blight.

The previous Friesian herd was crossed with a Hereford bull to breed suitable calves. Mr Kuchel explained that Friesians had too much milk and would not foster a second calf. Calves were run with mothers until the age of 10 months, and then sold. At the time of the visit, all stock were being hand fed since there was no paddock feed. They supplied four bales of hay three times a week to 10 cows, each with a calf.

The next port of call was Gordon Kuchel's new herringbone dairy at Flaxley. Four years previously he had installed a new 10-unit "mid-line" Dairymaster Milking Machine at a cost of $15,000. The members were impressed by what they saw.

> Teat cups are suspended above the floor of the pit. Don't need to hang them up on the nib wall between each cow – this saves time with cup changing.
>
> Cows walk straight in, turning left or right to go out of individual exit for each side, and go back to the circular holding yard behind separate backing gates. Eighty-five cows milked in 75 minutes by one man.
>
> "Jadiem" feeders used with an open and shut pull cord to each feeder unit. David found that the feeder return springs were unreliable, causing feed wastage, so he fixed up the "shut-off" cords himself. Cords are threaded through pulleys in the ceiling to keep them out of the reach of the cows. The ceiling was painted pale blue, to act as a fly repellent and give the dairy a neat finish.
>
> The "Southern Cross" self-propelled rain gun attracted a lot of attention from the visitors. Operating close to the dairy, technical aspects of the operation of this type of irrigation system were described by David. Members agreed that, besides saving labour, the system used less power and enabled the ground to be watered more frequently. (F. D. Kaye, Acting Dairy Adviser, *Report on the Field Day organised by the Echunga Agricultural Bureau on Wednesday, March 9th, 1977*, p. 3)

Lunch was eaten at Darrol Magor's combined dairy and piggery. The group inspected the piggery operations. The 10 sty arrangement was designed to allow easy cleaning with a sloping concrete base. When sties were washed down with high power hoses, the area would drain effectively. Other features were explained, and the rearing practices described.

> The concrete floor in the sleeping area is raised 75 mm above the dunging area and insulation material under the concrete helps to control sleeping floor temperatures in winter and summer.
>
> The seven fattening pens are 610 cm long (20 ft) x 244 cm wide (8 ft) but the three farrowing pens are shorter.
>
> One fattening pen is occupied by the boar and dry breeding sows.
>
> The farrowing pens are not fitted with farrowing rails, but a creep arrangement at the back of the sleeping area has two electric heater lamps suspended from the roof, these attract piglets away from the sow after birth to protect them from crushing. No bedding is used.
>
> Two sows, due at the same time, can occupy each farrowing pen, a temporary partition separates them. After both sows have farrowed and the piglets are well mothered up, the partition is removed. This enables the two litters to mix well before being weaned, so avoiding fighting.
>
> Piglets are castrated at three weeks and weaned at 6-7 weeks.
>
> The breeding herd of 13 or 14 sows are Large White x Landrace, or, Large White x Berkshire, mated to a Large White boar. Replacement gilts are selected from the more prolific strains, depending on litter performance.
>
> The weaned litter average is 8.25 pigs per sow with just over two litters per year. (F. D. Kaye, p. 4.)

Floor feeding was the most efficient feeding method under the circumstances. Weaners grown for bacon were given two kilograms of feed in two batches per day. Sows got a little more, 2.5 kg per day when dry, which was increased to 5-6kg when suckling piglets.

The Eokomit trials on the property of Len and David Downing were next for inspection. The Alfa Laval Company were in the process of testing their bacteria soil additive on potatoes. It was expected

The Advisory Board of Agriculture 1977.
L-R Standing: Messrs Peter Dunn (Eastern Eyre), Bryan Vickers (Central), Noel Isaacson (Murraylands West), Cain Day (Upper South East), Neil Andrew (Riverland), Stan Fulton (Lower North) Mel Prior (Upper North), David Snook (Lower South East).
L-R Sitting: Messrs Graham Ashman (Lower Eyre), Cicely Bungey (Exec Secretary), Don Woods, Chairman (Far West Coast) Brian Rodda (Yorke Peninsula).

to contribute to a more rapid decomposition of compost and aid the conversion of atmospheric nitrogen into plant nutrient form. It was also thought to assist in developing humus in the soil. The powder is first mixed in a concentrate solution, then diluted 24 hours later. This can then be fed through the conventional sprinkler irrigation system. In previous experiments, trial plots using Eokomit flowered earlier and witheld flowers longer than conventional fertiliser. Crop work was also increased by 10%. In 1977 Eokomit "B" was tested for its pathogenic values. It was hoped that it might prevent viral diseases which could reduce yield by up to 5 tons per acre. Members were interested to notice the pasture which had already been treated with Eokomit. It had retained its healthy green colour when untreated pastures beside it had turned red from rust fungus attack.

The final stop of the day was to inspect the Bundaloo flower nursery at Mylor. The owner, Mrs Stephens, had established a cut flower industry here, specialising in carnations. Six tubular plastic tunnels had been erected on the four acre site, and a controlled environment maintained. Plants had a two year life-span. Disinfectant pads were provided at the entrance of each house for people to stand on before entering. This was to prevent contamination from house to house – one year 1600 plants in one house had been destroyed by Fusarium Wilt.

In 1978 Mrs Cicely Bungey became the new Executive Officer of the Agricultural Bureau, taking over Geoff Robinson's responsibilities. Her previous experience as a Nursing Sister and Staff Training Officer at David Jones' had fitted her admirably for the job. She was to retain the position until 1983, when she became Training and Development Officer – Bureaux. Her communication skills have been further put to work in 1987 when she took on the new responsibilities of Rural Crisis Counselling Co-ordinator.

The drought of 1977, caused a great deal of anguish. On 20 March 1978 the Wolseley Branch invited Mr Adrian Barber to speak on the subject of hand feeding sheep to get them through to the next rains. By this time, there was virtually no feed left in paddocks for the animals. He warned that rams would need a vitamin A injection before joining if they had been on continuous hand feeding for some time. The following quantities were considered sufficient to keep animals healthy if they relied solely on grains and hay.

Wolseley Branch Committee, 1987.
L-R: Messrs D Vanstone (Chairman), T Butler, (Sec/Treas), T Thomas, A Tink, E Ridgway, I Ridgway, T Kennett.

1. *Adult dry sheep and ewe hoggets*
   A *Grain and Hay*
   1 0.33 kg oats + 0.33 kg hay/head/day.
   2 0.25 kg barley + 0.33 kg hay/head/day.
   B *Grain only*
   1 0.45 kg oats/head/day.
   2 0.34 kg barley/head/day.
2. *Ewes in late pregnancy*
   A *Grain and Hay*
   1 0.45 kg oats + 0.33 kg hay/head/day.
   2 0.38 kg barley + 0.33 kg hay/head/day.
   B *Grain Only*
   1 0.65 kg oats/head/day.
   2 0.51 kg barley/head/day.
3. *Weaners*
   Same grain rates as dry sheep, but need twice as much hay.

It was clearly an expensive and time consuming proposition, but for many it was the only way to keep animals alive.

In 1979 the Nosworthy family donated a shield to the Mt Hope Branch. This was to be known as the "Lake Hamilton Shield" and was offered as the prize for a hogget competition. The first competition was held in July that year. Entries consisted of 20 ewe hoggets. The remainder of the mob could then be culled (the worst 10% of the sheep removed) and the rest also judged. This has since become an annual event, stimulating interest in maintaining the quality of breeding programmes each year.

The Yongala Branch held a Pastoral Field Day on the property of Mr Liam McKeough, 8 km north of the North Peterborough Saleyards, on 28 February 1979. Mr J. McColl, the Director of Agriculture, officially opened the proceedings. It was a day of practical demonstrations, covering every aspect of the day's theme. The activities began at 10 a.m. with a demonstration of welding, followed by mulesing and disc pitting. Before lunch a demonstration using a contour banking plough was performed by Mr B. Knauerhause. During the afternoon, the programme included a sheepdog demonstration, fence erection, and displays of a cattle immobiliser, wool presses, portable yards and meat saws. It was a great success, and those who attended felt it was a day well spent.

In 1979 white snails were discovered on Eyre Peninsula. Ten years previously they had been identified on Yorke Peninsula and were gradually spreading through the grain growing areas. Snails had in fact been a worry to grain growers for many years, as this letter dated 3 July 1947 from Mr D. C. Swan (Head of the Department of Entomology at the Waite Institute) clearly indicates:

> I have your enquiry of 13th June about snails in wheat at harvesting time at Point Turton, and copies of letters from Messrs John Darling & Son and E. D. Holmes of Warooka on the same subject.
>
> The snail in question is a native of Southern England and is known there as a *sheep snail*; in that region it is eaten by sheep while grazing and imparts a characteristic flavour to the mutton. Its scientific name is Helicedlla ericetorum.
>
> This snail has been known in the Warooka district for a good many years, and has been reported to cause the trouble at harvesting time

Mr Bill Nosworthy, snr (right) presenting the Lake Hamilton Shield to Mr Lloyd Mahoney, 1985.

Stockport Branch members at a meeting on 24 March 1987. Back L-R: Messrs Ian Fyfe, Syd Nairn, John Rohde, Pat Connell (visitor from Riverton Branch), Graham Smith. Front L-R: Messrs Ross Rohde, Murray Fidock (Pres), Ian Rohde (Sec), Mick Faulkner (Guest Speaker).

that you mention. I do not know the extent of its distribution on Yorke Peninsula nor how seriously it is regarded by agriculturists. So far as I know at present, no cheap and effective method of control on an agricultural scale is available for a problem of this kind. I am, however, making enquiries on some of these points and will write to you again when further information becomes available.

These snails caused havoc with crops and were a major problem.

The difficult years of the late '70s caused many women to become more concerned with the farms they lived on. When wages became too high, many farmers' wives found themselves helping out on the property, becoming involved in jobs ranging from taking care of the bookkeeping to driving tractors. As their interest grew, they wanted to learn more about every aspect of farming. Gradually the Bureau found women joining its branches. For example, in 1979, six women joined the Stockport Branch. South Australia had seen many social changes during the '60s and '70s, and the new attitudes affected rural people too. Women everywhere were encouraged to take up careers outside the home, some from financial necessity, others to make use of their talents. One result was that some women became experts in their field. Not only did women become more active in farming, but many Agricultural Bureau branches found they were inviting women speakers to address their meetings. This trend has continued through the 1980s, and to see women involved in the Agricultural Bureau has become increasingly common.

The period from 1960 to 1979 saw many changes in farming in South Australia. Mixed farming had virtually disappeared during this time. Each branch of animal husbandry, horticulture and agriculture developed into highly specialised industries. New technology in every area changed the face of farming. The introduction of many new chemicals to combat insects, pests and weeds, bulk handling mechanisms, and machinery on an ever increasing scale all contributed to the new style, and these changes are reflected in the life of the Agricultural Bureau. Members discussed the new methods at their meetings, and field days showed them in practice. Specialised schools were run for intensive training in new techniques to help farmers keep up with the rapid changes. Conferences provided the opportunity for broadening discussion. It was essential for farmers to keep up-to-date – escalating costs and decreasing prices for their produce led to an ever narrowing profit margin during the period. This situation combined with a drought or some other natural disaster could spell the end of operations. Farmers must use every innovation to reduce costs or boost production in order to stay afloat. Throughout the '60s and '70s the Agricultural Bureau existed as an important source of information on all these subjects, a place where farmers could learn about the best ways to make a living out of their properties.