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NOTES ON THE A.M.P. SOCIETY'S LAND DEVELOPMENT SCHEME IN SOUTH AUSTRALIA *

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Land development in the so-called "Ninety-Mile Desert" area of South Australia can now be regarded as having passed the experimental stage. This, of course, is not to infer that the land brought into production by the A.M.P. Society, or by others undertaking development in this region, is insulated against all likely risks, nor that all land in the area is suitable for and capable of development. Like other components of the rural sector this area can be expected to experience from time to time climatic variations, stock and plant diseases, and product price fluctuations which may materially affect its well-being. But, subject to this reservation, it can fairly be claimed that the A.M.P. Society's work has substantially vindicated on a wide front the findings made in recent years by scientists working on necessarily small-scale experiments. In this transition from experiment to accomplishment the main barriers which had long inhibited the development of much of this area have been demolished and this successful example is now being emulated independently by many private individuals.

The basic features of the A.M.P. Society's Scheme have already been described elsewhere¹ and no useful purpose would be served by going over these general data again here. However, there are many other interesting questions, historical, sociological, economic, etc., which are sure to occur to the inquiring social scientist. This paper sets out in note form some information on a selection of these questions.

Genesis of the Scheme

To understand the background to the launching of the scheme, one must have an indication of the trends in the Society's investment policy which were emerging when World War II ended. Prior to World War II, the Society's investments had been virtually confined to fixed-interest securities, including governmental and semi-governmental securities and advances on first mortgage of real estate, including a substantial portfolio of mortgage investments in good-quality rural securities. During World War II, funds coming into the hands of the Society were almost exclusively invested in government loans. But, whilst recognising the need for all-out support for the national finances in the period of emergency, the Society's administration was taking the necessary legal steps to broaden the Society's investment powers to bring them more into line with the changing pattern in the demand for investible funds associated with an economy rapidly becoming industrialised. However,

* These notes were originally prepared for discussion by the Wool Seminar at the Australian National University on 20th November, 1957.

¹ Australian Mutual Provident Society: *Land Development Scheme in the Ninety Mile Desert* (an illustrated booklet issued by the Society); W. F. Edgerley: "Thoughts on the A.M.P. Land Development Project," *Australian Quarterly*, December, 1953.

in the immediate post-war period, a peculiar investment situation developed. The national emergency had ceased; many sectors of the economy were extremely liquid and, whilst there were, in other sectors, great backlogs of development and investment to be undertaken, these needs did not provoke the effective demand for finance expected, because there was simultaneously a shortage of physical supplies of materials and labour.

In preparing for the resumption of more flexible investment activities in the post-war period, the Society's Board regarded it as of major importance that a strong staff of rural valuers be maintained in accordance with the pre-war practice, since it was felt that, as in pre-war days, the demand on the Society's investible funds for mortgage finance of rural securities would be heavy. In the event, because of the liquidity of the economy and shortage of supplies already mentioned and, later, because of the favourable trend in primary product prices, this expected demand did not eventuate.

The suggestion was then made that the Society, faced with a dearth of suitable rural securities, might well seek to create its own securities by acquiring one or two run-down properties and developing them to a point where approved farmer-mortgagors could be financed on to them. About this time, the results of some important research work by C.S.I.R.O. scientist, D. S. Riceman, were emerging to show that trial plots in the Ninety-Mile Desert of South Australia, an area hitherto regarded as virtually useless, were showing promising responses to the application of various trace elements. Attention was then switched from the possibility of acquiring a few run-down properties to the possibility of acquiring and developing virgin scrub, taking advantage of the new discoveries to create one or two new farms. Whilst, initially, this shift of emphasis was largely dictated by the apparently more attractive economics of the amended proposition, its potential importance to the nation, if successful, was also beginning to be comprehended. As this comprehension grew, so the scope of the project rapidly widened from a concept of one or two farms to the possibility of development on a broad face over a much wider area.

What had started out as an ingenious, but limited, device to remedy the lack of investment outlets had very rapidly grown into a project in which a no less dominant motive had become the desire to push forward with a developmental project which, if successful, could prove to be of great social and economic value to Australia.

Scientific Papers

For those interested in studying in more detail the principal scientific work which made the project feasible, the following references to papers by D. S. Riceman may be helpful:

- (a) "Preliminary Investigations on the Laffer Sand, near Keith" in *Journal of C.S.I.R.*, Vol. 18, 1945.

". . . an investigation into the mineral nutrition of plants grown on the poor soils of the Ninety-Mile Desert has been undertaken. . . . it is evident that the trace elements zinc and copper will play an important part in the development of the vast area of this and related soils."

- (b) "Effect of Zinc, Copper, and Phosphate on Subterranean Clover

and Lucerne Grown on Laffer Sand, near Keith" in *Bulletin No. 234 of C.S.I.R.O.*, 1948.

"... investigation into the mineral nutrition of plants grown on the poor, sandy soils of the Ninety-Mile Plain in South Australia have been continued. This Bulletin describes the effects, observed over a period of three years, of the addition of zinc sulphate and different quantities of copper sulphate and superphosphate to a mixed pasture sown without a cover crop on recently cleared Laffer sand. . . . the results of the experiment confirm the contention expressed in an earlier paper, namely, that the Laffer sand and probably the extensive areas of other types of poor, sandy soils in the Ninety-Mile Plain in South Australia will prove highly productive when given suitable dressings of superphosphate, to which the required trace elements have been added. Treatment of Laffer sand is economic, and only superphosphate must be applied annually."

- (c) "Differences in the Behaviour of the Dwalganup and Later-Flowering Varieties of Subterranean Clover" in *Journal of C.S.I.R.*, Vols. 13-14, 1947-48.
- (d) "Effect of Cover Crops and Phosphate on Subterranean Clover, Lucerne, and Phalaris Sown with Zinc and Copper on Laffer Sand, near Keith" in *C.S.I.R.O. Bulletin No. 249*, 1949.
- (e) "Effect of Growth and Removal of a Crop Treated with Zinc and Copper upon Pasture Established subsequently on Laffer Sand, near Keith" in *Journal of C.S.I.R.*, Vol. 21, 1948.
- (f) "Comparison of Methods of Establishment of Mixed Pasture Sown with Zinc and Copper on Laffer Sand, near Keith" in *Journal of C.S.I.R.*, Vol. 21, 1948.

Earlier History of the Area

For a comprehensive description of the environmental factors and their influence on earlier attempts at settlement a valuable reference is a paper entitled "The Climate, Geology, Soils, and Plant Ecology of Portion of the County of Buckingham (Ninety-Mile Plain), South Australia" in *C.S.I.R.O. Bulletin No. 266*, 1951, by J. E. Coaldrake.

The following extracts from Coaldrake's paper give a useful summary of the historical aspects:

"For nearly a century after the settlement of South Australia this region was regarded chiefly as a barrier to transport between the more fertile areas flanking it. Originally called the Ninety-Mile Desert, it first became partially known when the fertile Tatiara country (Bordertown district) was settled in 1845. Prior to this, several unsuccessful efforts had been made to cross it, including one by Eyre, who in 1838 attempted to penetrate westward from Lake Hindmarsh in Victoria. There was no fixed route across 'The Desert' from Bordertown to the Murray and Adelaide until 1852, when Deputy Surveyor-General MacLaren established a chain of wells between Lake Alexandrina and Bordertown. This was done to facilitate travel between Adelaide and the Victorian Goldfields. By 1869, there were 'Sheep-farmers' at Coonalpyn and Tintinara, and a 'Mail Contractor' at 'Emu Flat' (east of Keith). Keith Township was surveyed in 1885, and a 'Government Farm' was established at 'Emu Flat' before 1887. A railway line through the Ninety-Mile Plain connecting Adelaide with Bordertown was opened in 1886."

"Except for pockets of better country, such as those at Keith and Coonalpyn, the Ninety-Mile Plain supported only a sparse population until quite recently. The chief industry was the raising of sheep, which were depastured primarily on the ephemeral herbage that follows burning of the scrub. On this basis, the country carried approximately one sheep to 40 acres. This practice was supplemented with limited areas of sown pasture, in which *Oenothera odorata* (evening primrose) was the principal species. Cereal cropping was attempted but it was unusual to harvest more than two crops before the soil was exhausted. In places, even the first attempt to crop failed."

Some Rainfall Statistics

Another useful piece of information recorded in Coaldrake's paper is the table reproduced below based on the rainfall records of Keith and

Bordertown. These, and other available data, indicate that the rainfall of the area is both adequate and normally assured. Thus the expression "desert" as applied to the area was attributable to the low fertility status of the soils rather than to the more orthodox use of the term which usually has relation to paucity of rainfall:

Station	Years of Record	Mean Monthly and Annual Rainfall (in.)												
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
Keith	43	.66	.96	.84	1.28	2.08	2.01	2.12	2.12	2.06	1.60	1.26	1.00	17.99
Bordertown	69	.82	.95	.86	1.56	2.00	2.39	2.29	2.21	2.13	1.77	1.30	1.11	19.41

The Area Today

Keith and Bordertown are the rural towns in closest proximity to the A.M.P. development; their progress during recent years is most interesting. Bordertown is an old established centre and has progressed rather slowly during the past decade compared with the rapid expansion of Keith. Some indications of their growth are given in the figures which follow:

Population	1933 census	Keith	Bordertown
	1947	366	1,230
	1954	519	1,396
	1954	1,126	1,847

(The population figures include persons residing in the towns and within about one mile of the townships.)

Children Attending School

	Keith	Bordertown
1947	64	201
1957	338	564

Keith has an area school and teaches in some cases to Intermediate standard, although the more common grade is that which leads to an area certificate and which embraces some agricultural subjects. The area school was established during the early 'fifties. Bordertown has what is known as a higher primary school and takes students to Intermediate standard.

As development proceeded and produce became available, the stock firms which negotiate most of the livestock and wool trading through selected centres commenced business in Keith and Bordertown. The commencement date of the various stock firms in these two centres is therefore of interest also:

	Keith	Bordertown
Goldsbrough Mort & Co. Ltd.	1949	1911
Dalgety & Co. Ltd.	1955	1954 (Agent before this time)
Bennett & Fisher Ltd.	1953	1947
Elder Smith & Co. Ltd.	1946	1900

Official figures of wool production, and sheep numbers, are available for the County of Buckingham (which includes Keith and Bordertown and is the area in which most of the development by the A.M.P. Society has taken place) and these give the following picture:

	Wool Production	Sheep Nos.
1954-55	4,214,452 lb.	378,320
1955-56	5,062,706 lb.	418,308
1956-57	6,160,455 lb.	507,507

(Note: Years ending 31st March.)

The dates on which various banks opened in these two towns are:

	Keith	Bordertown
Bank of New South Wales	1949	1947
A.N.Z. Bank Ltd.	1954	—
Commercial Bank Aust. Ltd.	1949	1915
Commonwealth Trading Bank of Australia	—	1947
Bank of Adelaide	—	1955
Savings Bank of S.A.	—	1948

The annual tonnages of superphosphate handled by the railways reflect the amount of pastoral development that has taken place in these districts during the past 10 years:

	<i>Keith</i>	<i>Bordertown</i>
1945-46	1,264	3,495
1949-50	3,510	5,604
1955-56	18,794	11,669
1956-57	20,837	12,297

Keith now handles more superphosphate each year than any other country railway station in South Australia.

Bordertown has had a district hospital for many years and one was opened in Keith during 1954. Electric light power (240-volt) is available in both towns. Bordertown has a water supply and there are also large fuel dumps at that centre.

Background of A.M.P. Settlers

The A.M.P. settlers have been recruited from those who worked in the developmental phases of the project for a qualifying period of about five years or less. They are being settled on completed blocks with liberal financial accommodation from the A.M.P.

No analysis has been made of the backgrounds of these settlers, but it can be said with reasonable certainty that most of them fall into the 25-35 age group. There are some older ones and some younger. About 50 per cent. of the settlers are returned servicemen—the other 50 per cent. were, in the main, too young for military service during World War II. With the exception of about four settlers all have had previous farming experience, some as children on parents' farms, some as employees on farms or stations and others as share farmers. A small percentage are agricultural college graduates. The basic educational standard of settlers is reasonably high. Of the 79 settled to date, only a small percentage are single. South Australians represent about 50 per cent. of the settlers, with the majority of the balance coming from New South Wales and Victoria.

Scientific Advice and Services

An Agricultural Adviser and Stock Inspector, both members of the State Department of Agriculture, are stationed in Keith. They are responsible for the extension services in the area and for supervision of various experimental works. A Government veterinary surgeon resides in Naracoorte. The A.M.P. Society has co-operated with Government Agencies (State and Commonwealth) and Universities in various experimental works during the years and currently an epidemiology trial is in progress with the Institute of Medical and Veterinary Science, Adelaide, providing the technicians and the Society the stock and paddock facilities.

Pattern of Activity of A.M.P. Settlers

Wool production is the main source of income, although on many farms sale of fat lambs produces nearly 50 per cent. of the gross income. A farm of 1,000 acres of pasture land could run, say, 800 merino ewes, 200 merino wethers and 30 breeding cows. This enterprise would produce each year in the vicinity of 11,000 lbs. of wool and, say, 750 cross-bred lambs and 30 vealers. About 50 per cent. of A.M.P.

settlers breed merinos instead of cross-breds. They have a higher wool income as their young stock are shorn, but their returns from stock sales are reduced as they keep their young replacements and sell only surplus numbers and culled stock. On the other hand, their annual expenditure for breeding ewes is much less than in the case of the fat lamb producers. Most of the fat lamb producers are not in a position to breed their own replacements.

During the last two years the cross-bred producer has found a ready market in the lower south-east and the western districts of Victoria for cross-bred ewe weaners. Merino wool cuts are high, but the fleeces are stronger than those from the pastoral areas. Stock fatten readily in this country and are well regarded in the meat trade. There are three alternative wool markets, Melbourne, Geelong and Adelaide, each of which sells regularly during the buying season. Adelaide and Melbourne are the main stock markets, but the local centres of Keith, Bordertown and Naracoorte are increasing in importance. Cattle from the Society's headquarters property, "Brecon," have also become well and favourably known in the important Ballarat market. There is a large killing works at Portland in the south-west of Victoria and many of the cross-bred lambs are bought in the paddock for treatment at these works. Wool and meat are the main produce of the area. On the old-established areas close to Keith and Bordertown some cereal crops are grown, but they are of comparatively little importance. Dairying is practised in some of the older areas, but in the case of A.M.P. settlers most have only one or two cows for household supplies.

The A.M.P. Society's Grazing Activities

The Society has in its own right been carrying on grazing operations both at the "Brecon" station headquarters of the project (about 10 miles from Keith) and also on partially developed pastures intended for settlement but not yet allotted.

The main activity here is in merino sheep. The flock currently consists of 13,387 sheep, but it had earlier been as high as 20,000, the numbers naturally diminishing as developed pastures were allocated to settlers. To give some indication of the results achieved here, two tables have been prepared. Interpretation of these figures is not easy and care should be taken not to read too much into them. For example, the A.M.P. wool has been sold in either Adelaide or Melbourne and at three or four sales in each season and the price obtained can therefore be influenced by market fluctuations as well as by quality. Similarly, the lambing percentages should be treated with due caution. The average for South Australia and Australia takes account, *inter alia*, of results from the pastoral areas where mating is fairly rough and lamb mortality is high. On improved pastures with smaller paddocks better mating should be ensured and more lambs should survive.

Wool Prices (in pence per lb. greasy basis)

	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57
A.M.P.	102	81	92	76	63	88
South Australia	64.5	75.0	75.2	65.6	56.4	73.8
Australia	72.4	81.8	81.5	70.9	61.5	79.7

Note: Figures for South Australia and Australia are average price for wool of all kinds and qualities on a greasy basis. Those for A.M.P. are for all wool (i.e. fleeces, pieces, bellies, locks, lambs' wool, etc.).

	<i>Lambing</i>				
	<i>Lambs Marked as % of Ewes Joined</i>				
	1952	1953	1954	1955	1956
A.M.P.	n/a	n/a	86	80	86
South Australia	76.3	69.4	76.6	78.5	79.9
Australia	69.8	67.7	69.9	72.0	72.0

Since 1953 the average wool cuts per head from mature stock on A.M.P. properties have been about 15 lb. for dry sheep and 12.5 lb. for ewes. This compares favourably with the district average of about 12.1 lb. per head. The 1955-56 average cuts for all grown stock were 10.9 lb. for South Australia and 9.2 lb. for Australia. The higher clip from the A.M.P. flock of course reflects in part the inability to maintain maximum grazing numbers on pastures which are in the transitional stage and awaiting allocation.

In addition to its merino flock, the Society is grazing cattle (the herd currently comprises 1,079). It may not be inappropriate to mention here that cattle (some purchased from the Northern Territory) fattened on the Society's pastures have sold extremely well and are highly regarded in such markets as Adelaide, Ballarat and Melbourne. The Society's experience would certainly indicate that the grazing of beef cattle should be regarded as a useful complementary function to wool production, and one that may not only be financially attractive but also beneficial to the pastures.²

Some Institutional Considerations

Students of comparative institutions will be interested to learn that this type of investment by the Society is believed to be without parallel in the experience of life offices throughout the world. It is true that life offices have been active in creating city properties (some of the slum clearance on New York's East Side, for example, was inspired by a great housing project undertaken by the Metropolitan Life Assurance Company of New York). But, although life offices in some countries have an interest in rural securities through mortgage advances, no other instance is known where they have undertaken the direct creation of the securities.

Apart from their direct ownership of city properties, the investment functions of life offices can be described as being very similar to those of a pure investment intermediary, such as an investment trust. In the case of its land development scheme, however, students of the theory of the firm will recognise that the Society has assumed the role of entrepreneur as well as that of investor. This has necessarily created its own problems for management.

Publicity

Australian news media are, naturally enough, hungry for information regarding developmental projects, especially of a large-scale character. Frequently, however, enthusiasm runs ahead of reality and truth may be distorted, particularly in the direction of:

- (a) Exaggeration of the size of a projected scheme or of the capital outlay involved.

² This experience of joint grazing of sheep and beef cattle is of special interest in view of a recent study in this field by K. O. Campbell and Alison Kingsland: *Economic Aspects of the Association of Beef Cattle with Sheep Production—Part I, The New England Region of N.S.W.* University of Sydney, Faculty of Agriculture, 1957.

(b) Anticipation of success before a project is even effectively begun.

Recognising that, in undertaking land development in the Ninety-Mile Desert, it was entering upon an undertaking in which there were many unknowns, it has not been the policy of the Society actively to seek publicity for its operations. It has, of course, at all times been happy to supply factual material (other than of a confidential character) to interested inquirers, and the public interest in the scheme has been tremendous. Some reporting has been extravagant in the senses mentioned above, but many authentic and objective assessments have been made by independent observers.³

As indicated above, the Society has preferred to get on with the job in hand rather than become distracted by publicity which, if extravagant or premature, could subsequently, as is so often the case with developmental dreams, lead to disillusionment. Today, however, there are firm accomplishments to be reported and, in the belief that it is now proper, and indeed desirable, to acquaint the public more fully with the transformation that has been going on in the area developed by the A.M.P. Society, a documentary film has been commissioned. Naturally, it is hoped that this film, when available, will be widely utilised by universities and similar bodies.

National Benefits

It is the contribution which the A.M.P. Society's scheme is directly making to the nation's production of wool, and other rural commodities which is, at first glance, of most significance. As time goes by, however, it may well come to be recognised that, from a national viewpoint, the indirect benefits arising from the scheme are even more significant.

In particular, there is the fact that, stimulated by the A.M.P.'s initiative, and encouraged by what has been accomplished in a relatively short time, many private individuals (who are fortunate enough to have the further inducement of attractive taxation concessions in respect of land development) are taking up land in the area. Some details were given earlier of the tremendous growth of business and other activity in the Keith and Bordertown districts. It would be absurd to suggest that this advance is solely due to the Society's project, but the latter must certainly have had a profound influence in this direction.

And the influence of this particular undertaking has probably gone much further afield than this. The fact that throughout our history this area of reliable rainfall and excellent access to markets has hitherto gone undeveloped has undoubtedly inspired many interested parties to inquire if there are not other neglected areas in Australia which, with the adoption of modern techniques, could be brought into production on economic terms. (Obviously the factor most likely to provide a check to such development waves is the decline in the level of prices for wool and other rural commodities such as is now being experienced.)

The sphere of indirect influence can be stretched even wider; for the

³ Useful commentaries in this category include an article in *The Times* of 22nd November, 1954, written by the Agricultural Correspondent of that paper following a visit to Australia, and also an article in the Rural Bank of N.S.W. journal, *Trends*, March, 1957, entitled "Large-Scale Land Development."

scheme has attracted the keen and approving interest of important overseas visitors and has probably made a significant contribution to the creation of the climate of a "growth economy", which atmosphere is conducive to the attraction of overseas capital. For example, at the instigation of the Commonwealth Government, the A.M.P. project has been viewed by officials of the International Bank during their visits here:

Land development is a risky business and the land developer must be prepared for the unexpected, sometimes pleasant, sometimes not. The A.M.P.'s experience has been no different from this; some activities have succeeded beyond original expectations; in other phases there have been disappointments. But at this date the A.M.P.'s project appears to be the only instance in the history of this country where suitably equipped young Australians have been settled, and financed, on to good class properties of economic size, without involving huge governmental outlays.