HE SOUTH AUSTRALIAN
AIRYMEN'S . . .
Journal
Official Publication of the — *Published Bi-monthly*
7, No. 4 — Adelaide, JANUARY-FEBRUARY, 1968

VYNETTE DANDY CHER
State Junior Two Record — 11,100 lbs milk
d owned by M. R. & J. E. McKENZIE—VYNETTE—TOOPERANG

PRICE
20c

ter at G.P.O. Adelaide
mission by post as a periodical.

$1.20 per Year, Post-Paid

THE SOUTH AUSTRALIAN DAIRYMEN'S JOURNAL

Published by
THE SOUTH AUSTRALIAN DAIRYMEN'S ASSOCIATION INCORPORATED
Aston House, 13 Leigh Street, Adelaide. 51 3034
President: H. E. LOECHEL
General Secretary: DAVID J. HIGBED
Advertising Rates on application

EFFICIENCY !

How "efficient" is the dairy industry in Australia — what is "efficiency" anyway? . . . How is it measured? . . . and against what standard? . . . Are Australia's secondary industries "efficient" or not? . . . and if they are not, are they even less "efficient", or rather more efficient, than Australia's dairy industry?

The Metropolitan Milk Board, in its latest Annual Report has stated: **"The claim from uninformed sources that the dairyfarmer is inefficient certainly does not apply to producers licensed by the Board"**, and for this assessment we can be grateful to the Board, whose Cost Officer is able, from first-hand knowledge, to make an informed assessment.

But it takes more than a statement like this, with its limited circulation, to counteract the general impression created in the public mind over many years by critics of the industry.

Most of these statements are no more than that; few, if any, set out to prove the case. In the following closely-reasoned article (and readers should not avoid studying it merely because of its length; even the tables and equations can be readily understood after a few minutes' study), Dr. Davidson does state the reasons for the academic viewpoint, namely that the measure of efficiency is, simply, "what would the resources employed earn in some other use?" . . . and by this measure the dairy industry occupies a middle position in the scale of economic efficiency of primary production, a position that lends support to some of the criticism.

But nothing has been said of the part played by high input prices which result from the high level of protection (a disguised form of subsidy) granted to secondary industry and the high level of wages which is a direct result of protection.

It is impossible to make an analysis such as this in a vacuum. The effect of protection and wage levels on the industry's efficiency, and the economic efficiency of secondary industry itself must be taken into account.

VYNETTE DANDY CHER

holder of the State's Junior 2 Record of 11,100 lbs. milk at 6.1% test, 678 lbs. butterfat, has not been beaten in Type and Production Classes during two years of showing. VYNETTE DANDY CHER, by DUNDEE DANDY, comes from high-producing, long-lived stock. Her dam, V. PREMIER CHER, well known for her successes in country shows, has completed her first test as a Matron Cow, with 754 lbs. fat, after producing 736 lbs. as a JA.

THE ECONOMIC EFFICIENCY OF THE AUSTRALIAN DAIRY INDUSTRY

By B. R. DAVIDSON, Department of Agricultural Economics, University of Sydney

No Australian primary industry has been so widely discussed in recent years as the dairy industry. On the one hand it is said to be inefficient because it receives a subsidy in the form of a direct government grant of $27m. and is further protected by selling butter on the Australian market at above import parity price. At the same time it has been suggested that the efficiency of the industry is increasing. Output of milk per cow and per acre have both increased as dairy farmers have adopted new techniques and the same number of dairy cows are handled by fewer men.

This confusion arises because the word efficiency is being used in two different ways. Technical efficiency refers to the level of physical output obtained from physical resources, that is the milk produced per cow or per acre or per unit of some other physical factor. Economic efficiency refers to the value of the commodity produced from physical resources when they are valued at the price which would be paid for them in some other use. That is at their opportunity cost. Thus technical and economic efficiency may be moving in opposite directions. Technical efficiency may be increasing because output per cow has increased, while more cows are being carried on fewer acres and are being milked by fewer men. Economic efficiency may be declining because the price of produce is falling and the price that resources can command in some alternative use is increasing. Thus a decline in the price of butter because of larger supplies and a rise in the price of labour because secondary industry is prepared to pay higher wages may cancel out any technical advances made by dairy farmers.

THE MEASUREMENT OF ECONOMIC EFFICIENCY

In measuring the economic efficiency of the dairy industry it is not sufficient to simply show the ratio of the value of total output at free market prices and of resources at their market price. The dairy industry is located along 2,000 miles of the coastal fringe of Australia and in some parts of Australia's irrigated areas. The climatic conditions over this wide range of country vary from cool temperate in Tasmania and Victoria to tropical in Queensland. The industry also produces two main commodities, milk for human consumption and butter, and several other products including cheese and preserved milk.

In many parts of Australia whole milk production is limited by institutional arrangements to specific geographical areas, in others it is limited to specific farms. In most States farmers receive twice the price for whole milk that they receive for milk for manufacturing purposes (See Table 1). Under these widely differing environmental and marketing conditions a wide range in the level of economic efficiency can be expected and any measurement of conomic efficiency must be made on a regional basis.

An economic survey of the Australian dairying industry was carried out by the Commonwealth Bureau of Agricultural Economics for the period 1960-61 to 1963-64. In this investigation, revenue, farm costs and capital invested in farms, were recorded in the following 16 dairying regions throughout Australia:

N.S.W.	North Coast. Hunter and Manning. Cumberland, South Coast and Southern Tableland.
Victoria	Western and Wimmera. Central and North Central. North Eastern. Gippsland.
Queensland	Cairns, Townsville and Mackay. Rockhampton and Maryborough. Moreton. Downs and Roma.

South Australia	Central and Lower North. South Eastern and Murray Mallee.
Western Australia	Swan, South West, Central Agricultural and Southern Agricultural.
Tasmania	North Western, North Eastern, North Midland, Midland, South Eastern and Southern.

The farms in each sample were selected in such a way that the distribution of herd size in the sample was typical of the herd size in the region. As returns and costs on farms and the capital invested in farms varies with herd size the average of these items in each sample can be taken as being typical of the average for the region which the sample represents. This data can be used to measure the economic efficiency of dairying in each particular region.

As economic efficiency is equal to the ratio between the value of production at free market prices and the value of resources used when these are charged at their opportunity cost all subsidies must be removed before the ratio is calculated. Without subsidies or protection dairy produce sold in Australia would be disposed of at import parity prices and produce exported would be sold at export parity prices. Harris has calculated that the price Australian farmers receive for butterfat is 31 per cent higher than would be received if export parity prices were paid for butter sold abroad and import parity price paid for butter consumed in Australia. Revenue received from sales of milk for manufacture most of which are used for butter production must be reduced if revenue is to be estimated at free market prices.

It can be argued that such an adjustment is inaccurate as it assumes that export and import prices would not change if supplies of Australian butter were withdrawn from the world market. At present Australian exports of butter are 14 per cent of total world trade. It is unlikely that the withdrawal of this proportion of butter would have any long term effect on world trade as most exporting countries are seeking larger markets. In 1964 Cuba, which produced 25 per cent of the suger entering the world trade, ceased exporting. The price of sugar was only affected for one year. In any case as will be shown later it is unlikely that Australia's production of butterfat would decline greatly even if all subsidies and protection were withdrawn.

One form of protection which cannot be accounted for in calculating the economic efficiency of the dairy industry is the protection enjoyed by whole milk producers, being protected from competition from producers of manufacturing milk. If the two groups were allowed to compete freely in the whole milk market there is little doubt that the net returns of existing whole milk producers would decline and the returns to producers of manufacturing milk would increase but the exact increase or decline cannot be calculated.

Cost subsidies are uncommon in Australia. During the last year of the Dairy Industry Survey farmers received a subsidy on superphosphate and this must be added to their costs. It is equally important that all costs are included. Some resources such as fuel and feedingstuffs are purchased and totally used during any one year. Others such as buildings and machinery last over a period of years and the proportion of the value of these resources used in any one year, that is their depreciation, must be charged during the production period studied. Some resources such as the labour of the farmer and his own family are not paid for but they must be charged at what they could earn in an alternative form of employment. Similarly the capital invested in buildings, machinery and livestock and in clearing land for dairying could have been put to some other use and this must be charged at what it would earn in some other use; that is at the interest rate this capital would earn in alternative uses. One cost which is not included is the unimproved value of the land. Although this is a charge the farmer has to meet it costs the nation nothing. Conversely interest should be charged on any capital invested by the state even though this costs the farmer nothing. In theory the cost of roads, railways, schools and research services should be included. As these services are common to all types of farming they can be neglected when comparing the efficiency of one farming region with another.

However, irrigation works are state works which only supply a service to irrigation farmers. The water rate paid by farmers for irrigation water is only sufficient to cover the maintenance of the scheme and not to pay interest on the state capital invested in reservoirs and channels. The total interest charge on irrigation works can be distributed among farms using water in proportion to the amount of irrigation water they receive. Taking all of these factors into consideration economic efficiency from the nation's point of view can be defined as follows in equation (1)—

$$\text{Economic efficiency} = \frac{\text{A.C.} + \text{D} + \text{C.S.} + 7/100\ (\text{F.C.} + \text{S.C.} - \text{U.C.V.})}{\text{T.R.} - (\text{P.S.} + \text{P})}$$

T.R. = Total Revenue
P.S. = Price Subsidies
P. = Protection
A.C. = Annual Costs
D. = Depreciation
C.S. = Cost Subsidies
F.C. = Farm Capital
S.C. = State Capital
U.C.V. = Unimproved Capital Value of Land.

TABLE 1

Average Prices Paid for Milk for Human Consumption and Manufacturing 1961-2 to 1963-4 (Cents per gallon)

	Human Consumption	Manufacturing
Queensland	35	17
New South Wales	40	17
Victoria	33	17
Tasmania	40	17
South Australia	23	18
Western Australia	38	17

THE ECONOMIC EFFICIENCY OF DAIRYING AND OF OTHER TYPES OF FARMING

The economic efficiency of the average farm in the dairying zone and for other farming zones are shown in Table 2. The levels of efficiency for other farming zones have been calculated on the same basis from other economic surveys carried out by the Bureau of Agricultural Economics between 1957 and 1963. To make the zones comparable each item of revenue cost and capital has been indexed by individual years to the common financial year 1964-65 using the index of prices received and paid by farmers for each state prepared by the Bureau of Agricultural Economics. Table 2 indicates that dairying as a whole is far less efficient than the other major types of dry-land farming practiced in Australia. Similarly dairying is less efficient than most other types of farming practiced under irrigation. It is interesting to note that farming efficiency is highest in the dry pastoral and wheat and sheep zones and lowest in the high rainfall sheep zone, the dairying zones and under irrigation. Resources are used more efficiently in the drier areas than in high rainfall regions or where irrigation is available.

VARIATIONS IN ECONOMIC EFFICIENCY BETWEEN DAIRYING REGIONS

The economic efficiency of dairying in the sixteen regions calculated as the ratio between net return to total capital and as a benefit cost ratio using equation (1), together with some of the technical factors affecting efficiency are shown in Table 3. There is a wide range in economic efficiency between the various regions. Three of the regions have a benefit cost ratio of higher than ninety and are more efficient than the high rainfall sheep zone. Efficiency appears to be related to:

(i) A favourable environment which is reflected in a high output per cow which is probably dependent on the ease with which fodder can be provided by improved pastures.

(ii) Large milking herds.

(iii) A high proportion of milk for human consumption.

The three most efficient regions, Hunter and Manning (N.S.W.), South Coast and Cumberland (N.S.W.) and Central and Lower North (S.A.) sell a high proportion of their produce as whole milk. However, the large herds in Gippsland with a high proportion of sown pasture and a high output per cow are almost as efficient even though only 13 per cent of milk is sold for human consumption. The unsuitable environment is Northern Queensland with a low output per cow and small herds leads to inefficient farming even though the proportion of milk sold for human consumption is higher than in any other Australian dairying region. On the North Coast of N.S.W. the high proportion of milk sold for manufacturing and the unsuitable environment combine to give the lowest level of economic efficiency of any dairying region in Australia. In Tasmania and Western Australia it is not possible to separate whole milk producing farms from those producing butter fat and the average result shown for these states is not a true reflection of the efficiency of either type of farming.

It should not be forgotten that the levels of economic efficiency shown in Tables 2 and 3 are for the years of the surveys indexed to 1964-65 costs and prices. Changes in prices or in seasons could affect the level of economic efficiency. The period covered by the surveys did not include a major drought: a drought would adversely affect all farming regions except the irrigated regions but it could affect some regions more than others. Similarly any changes in product or resource prices could alter the level of economic efficiency of a particular zone or region. A decline in the price of dairy products caused by the United Kingdom joining the European Common Market would decrease the economic efficiency of dairying.

TABLE 2

The average Economic Efficiency of the Major Types of Farming in Australia

Farming type	Subsidized net return to farm capital	Unsubsidized net return to total capital less the unimproved value of land	Ratio of unsubsidized revenue to annual cost (incl. interest)
	%	%	%
Pastoral zone	5.3	6.7	99
Wheat & sheep zone	4.2	8.0	103
High rainfall sheep zone	3.0	4.5	85
Dairying zone	2.9	0.5	85
Irrigation areas:			
Rice and sheep (M.I.A.)	7.9	2.6	64
Sheep (M.I.A.)	4.9	2.3	59
Large-scale citrus (M.I.A. and Murray)	6.5	4.5	91
Small-scale citrus (Murray)	—1.7	—1.4	72
Dairying (Victoria)	5.2	1.0	70

TABLE 3

Profitability of Different Regions within the Dairying Zone†

REGION‡	Net return to capital	Average area of farm	Average size of herd	Acres per cow	Milk per cow	Improved pastures as percentage of farm area	Per cent produce sold as whole milk	Revenue from dairying per cow	Indexed revenue per $100 Labour	Indexed revenue per $100 Capital	Indexed revenue per $100 Costs—Labour	Subsidized net return to farmers capital	Unsubsidized net return to total capital—U.C.V. of land*	Ratio of unsubsidized revenue to annual cost including interest on total capital
	%	acres	no. of cows		galls.	%	%	$	$	$	$	$	%	
QUEENSLAND														
Cairns Townsvillel Mackay Rockhampton	0.9	320	47	6.8	330	29	55	124	308	24	156	0.9	—0.5	78
Maryborough	3.5	652	59	11.1	365	9	10	147	295	26	191	3.5	1.6	86
Moreton	—1.2	497	54	9.2	331	7	21	106	193	21	185	—1.2	—5.5	73
Downs & Roma	1.9	507	52	9.2	420	14	4	152	254	21	194	1.9	—1.1	76
N.S.W.														
North Coast	—3.3	279	53	5.3	323	8	nil	93	164	21	182	—3.3	—10.4	64
Hunter & Manning	3.5	347	60	5.8	440	16	49	143	271	27	198	3.5	3.2	93
Cumberland, South Coast & Southern Tableland	3.6	307	59	5.2	560	41	53	188	298	27	187	3.6	4.3	95
VICTORIA														
Western & Wimmera	1.9	207	46	4.5	611	63	6	142	257	23	188	1.9	—3.5	76
Central & North Central	2.4	202	53	3.8	549	64	22	144	290	20	185	2.4	0.0	84
North Eastern	2.8	504	56	9.0	561	38	5	178	278	21	197	2.8	0.8	85
Gippsland	4.2	205	61	3.4	641	68	13	150	316	23	198	4.2	1.7	89
SOUTH AUST.														
Central & Lower North South East & Murray	4.3	279	34	8.2	569	55	97	293	269	20	241	4.3	5.8	96
Mallee	1.0	360	40	9.0	524	69	nil	188	286	15	168	1.0	—0.9	70
WESTERN AUST.	2.0	483	49	9.9	455	54	22	142	342	18	165	2.4	0.1	73
TASMANIA	3.3	398	44	9.0	526	37	24	204	306	21	193	3.3	2.2	85

†Based on the Dairy Survey from 1960-61 to 1963-64 with individual items of capital revenue and cost indexed by individual years to 1964-65.

‡Samples of dairy farms on the Northern and Central Tablelands and on the South Western Slopes and in the Riverina are excluded as these areas only contain a small proportion of Australia's dairy cattle.

*As the Valuer General's estimation of unimproved land in many dairy regions exceeded the total improved value of farm land, the value based on shire rating is used in this Table.

New Machines Reduce Feeding Costs

Rising production costs and a demand for better feeding techniques has resulted in a dramatic increase in the number of Grinder Mixers being used in the U.K.

The practice of using these portable machines for conveying grain and concentrates from bulk storage hoppers to the stock is already fairly common practice in the U.S.A.

U.K. feed experts say that this trend iis also taking place in the U.K. They say that the method lends itself to joint or syndicate operations and could appeal to a group of small farmers as well as fitting into larger units where cattle are dispersed around the farm.

This method of handling stock fodder is already being widely used in Australia and its popularity is growing. Farmers are becoming increasingly aware of the need for greater efficiency in feed rations and feeding methods. Many say the days of hit and miss feeding have gone and can no longer be afforded by a dairy farmer who wants to make a respectable living.

One of these mills which has been introduced to the Australian market is the Wetmore Grinder Mixer. Using the principle of hammer and cutter type mills, Wetmore engineers have developed the Grinder Mixer so that farmers can grind hay and green feed plus grain and at the same time add minerals to any consistency they require. If necessary molasses can also be added to the mixture to stop dust and increase the feed-value. The Grinder Mixer has been designed for one man operation and it only takes a few minutes to mix two tons of food and deliver it to the stock without the operator really having to leave the tractor seat. There is no limitations to the types of rations that can be mixed in the machine and if required it can also be used to handle damp hay. Some interesting figures have been provided by farmers who are using the Grinder Mixer in S.A.

We place you under no obligation to come and have a chat with us about these figures and what local farmers are achieving. You will find us at our Head Office, 118 Glen Osmond Road, Parkside, or if you would like to go direct to our drive-in show rooms, turn right into Davey Street, corner 118 Glen Osmond Road, Parkside, then first turn right. Primary Implements is our name and we shall be very pleased to see you.

TABLE 4

Unsubsidized Farm Incomes

A Percentage of farmers in each group		B Unsubsidized net income = receipts — (cash costs, depreciation and family labour)	C Unsubsidized net family income = receipts — (cash costs and depreciation)	D Net family income + allowance for housing and motor vehicle	E Net farmer's income = receipts — (cash costs, depreciation and family labour + allowance for car and housing and farm produce)	F Basic wage + interest on farmer's capital at 5%
	%	$	$	$	$	$
WHOLE MILK						
20-39	18	1789	2565	4640	3864	2756
40-59	25	1291	2245	4320	3366	2924
60-79	21	2374	3265	5340	4449	3463
80-99	9	2748	3843	5918	4823	3812
100-149	9	4275	5318	7393	6350	4082
150 +	18	7133	8809	10884	9208	6259
MANUFACTURING						
20-39	16	128	717	2792	2203	2533
40-59	23	444	1004	3079	2519	2776
60-79	22	1190	2029	4104	3265	3208
80-99	16	1276	2129	4204	3351	3361
100-149	9	1932	3317	5392	4007	3924
150 +	14	4434	6010	8085	6509	5089

THE EFFECT OF THE SUBSIDY

It is sometimes suggested that the elimination of the price subsidy and the home support price for butter would force the smaller dairy farmers to leave the industry. This hypothesis can be examined by comparing the incomes that dairy farmers in different size groups would receive without the subsidy or protection, with the incomes they would receive if they were employed in the city.

In addition to o monetary income the dairy farmer has the use of a house free of rent, a motor vehicle charged as part of farm costs and he also obtains some of his food from the farm. It is unlikely that the farmer could rent a house in the city for less than $1,000. The average cost of operating a motor vehicle is $800 per annum. Normally a dairy farmer would obtain all his milk, eggs and butter from the farm, and possibly half his fruit and vegetables. The value of these perquisites assuming average consumption per head and average family size are as follows:

			$
House			1000
Use of motor vehicle			800
Milk 29.1 gals. per head @ 88 cents	=	$25.61	
Eggs 16.8 doz. per head @ 56 cents	=	$9.41	
Butter 22.5 lbs. per head @ 50 cents	=	$11.25	
½ fruit 92 lbs. per head @ 10 cents	=	$9.20	
½ vegetables 122 lbs. per head @ 8 cents	=	$9.72	
Food per family = (4.24 persons)	x	$65.19	276
		Total perquisites	2076

If the dairy farmer moved to the city he would receive the basic wage plus the interest on the capital sum he would obtain by selling the farm which could probably be invested at five per cent.

The unsubsidized farmer's net income defined as unsubsidized gross returns less cash costs, depreciation and an allowance for family labour is shown in column B, Table 4. The perquisites valued at approximately $2075 must be added to this sum to obtain the dairy farmer's real unsubsidized income (column E, Table 4). This can then be compared with the income the farmer would receive in the city consisting of the basic wage of $1540 plus interest on his capital (column F, Table 4). A comparison of farmer's real unsubsidized net income and the income he would receive in the city shown in columns E and F of Table 4, indicates that whole milk producers on all sizes of farms receive a higher income as dairy farmers than they would as city workers. In the manufacturing sector the unsubsidized real net farmer's income on farms with less than 60 dairy cattle is lower than the calculated city income. For farms with 60 to 150 dairy cattle the two incomes are similar and for farms with more than 150 dairy cattle net unsubsidized farm income is higher than the expected city income.

The comparison of real net unsubsidized net farm income with estimated city incomes assumes that the farmer's family would obtain the same income in the city as they have been credited with on a dairy farm. On small dairy farms the family labour normally consists of the farmer's wife and it is doubtful if she would obtain work if the family moved to the city. In these circumstances the more accurate comparison is unsubsidized net family income, where unsubsidized family income is defined as unsubsidized gross returns minus cash costs and depreciation (column C, Table 4). This amount plus farm perquisites is shown in column D, Table 4, and can be compared with the estimated city income shown in column F. Unsubsidized family income plus perquisites obtained on the farm is larger than the estimated city income in the manufacturing sector of the dairy industry as well as in the whole milk sector. Under these circumstances it is unlikely that small farmers would leave their farms even if the subsidy were withdrawn.

Although dairy farmers would remain on their farms if the subsidy and protection from imports of cheap butter from New Zealand were withdrawn it is possible that they would rapidly turn to other and more profitable forms of production and so reduce the amount of butterfat produced.

Bird and Marriott discovered that farmers were changing from dairying to other types of farming at the rate of 3 per cent of farms per annum. They also discovered that practically all of the farms (92 per cent) leaving dairying were farms producing less than 6000 lbs of butterfat per annum. This is less than the average amount of butterfat produced by farmers with 40 to 59 dairy cattle but more than that produced by those farms with less than 40 dairy cattle. If the subsidy and protection were withdrawn the average family income of farms with 40 to 59 dairy cattle would decline to less than the subsidized family income of those with less than 20 to 39 dairy cattle. On the other hand farms with 60 to 79 dairy cattle would still have an unsubsidized family income greater than the unsubsidized family income of herds with 40 to 59 dairy cattle (See Table 5). Thus if the subsidy and protection were withdrawn one would expect farms with 40-59 dairy cattle to leave the industry at the same rate as farmers with less than 40 cattle are already leaving it. Farmers with less than 60 dairy cattle produce 23 per cent of Australia's butterfat. A decline of 3 per cent of these farms would cause a decline in butter fat of only 0.99 per cent per annum (3% of 23%). This is only twice the present decrease of 0.42 per cent caused by farms with less than 40 dairy cattle leaving the industry. Australian butterfat production increased at a rate of 2.8 per cent per annum during the period 1950-1963 and by 4.7% during the period 1960 to 1963. Because of these rates of growth, the increase in the reduction in the production of butterfat caused by farmers leaving the industry from 0.42 to 0.99 per cent, which should occur if the subsidy and protection were withdrawn, would simply serve to slow the rate of increase in butterfat production from approximately 3.0 to 2.5 per cent per annum rather than cause a decline in the total production of butterfat in Australia.

TABLE 5

The Effect of the Withdrawal of Subsidy and Protection on Farm Incomes in the Manufacturing Sector of the Dairy Industry

Herd size	Subsidized family income	Unsubsidized family income	Value of subsidy and protection per farm	Proportion of Australia's butterfat produced*	Average lbs. of butterfat produced per farm
	$	$	$	%	lbs.
20-39	1211	717	494	14	4566
40-59	1760	1004	756	19	6797
60-79	3060	2029	1031	18	9516
80-99	3566	2129	1437	13	13267
100-149	4981	3317	1664	23	15368
150 +	8542	6010	2532		23381

*13 per cent of Australia's butterfat is produced on whole milk farms.

It is unfortunate that the effect of the subsidy on the net incomes of dairy farmers of different sizes cannot be made on a regional basis. It is probable that the effect of withdrawing the subsidy would be more drastic in some regions than in others. Even if the subsidy is needed to maintain an adequate standard of living in some regions it is obvious that it is not required in all regions even on small farms and that most of the large dairy farmers would receive a satisfactory income without the subsidy. It is obvious that the social welfare of dairy farmers could be maintained at much lower cost by paying a direct subsidy to small farmers in problem areas than by paying an overall price support and by giving protection to all dairy farmers.

The subsidy is sometimes justified as a means of maintaining Australia's exports. The results shown in Table 5 suggest that production would not decline very much without the subsidy unless the larger farmers turned to more profitable forms of production. If this production change occurred it would either add directly to the exports of some other commodity or replace production in some other region which would then be exported. Even if Australia's dairy exports were not replaced by some other product the effect on total exports would be small as dairy products are only four per cent of Australia's total exports. A seven per cent increase in Australia's wool, wheat and meat exports would equal Australia's present exports of dairy produce.

METHODS OF INCREASING THE EFFICIENCY OF DAIRYING

As the withdrawal of the subsidy is unlikely to cause many of the smaller and less efficient farmers to leave dairying, more positive steps are required if the economic efficiency of the industry is to be improved. Technical improvements within the dairy industry itself involving a higher output per unit of resources used might achieve this purpose, but in view of the oversupplied markets for dairy products, such a solution is more likely to benefit the larger producer where the environment is favourable for dairying than the small producer in an unfavourable environment. The solution for the inefficient producer in an unfavourable environment is more likely to lie in changing to alternative products. The alternatives available will vary with the environment. In the northern dairying areas beef cattle, or summer cash crops such as maize and sorghum are possible alternatives. Fat lambs have been shown to be a possible alternative in parts of the Western Australian dairying region and are possibly the best alternative in other southern dairying regions.

It is probable that most alternatives would require larger farms than the existing dairy farms. Little detailed economic research work has been carried out to indicate which alternatives would be more efficient than dairying in each region or the size of farm which would be required if the alternative form of land use is to be successful. Similarly if farm amalgamation is an essential prerequisite for increased economic efficiency studies of how this can be achieved with the minimum amount of social hardship are essential. It is only when definite plans for alternative forms of land use are available that it will be politically and socially possible to switch inefficient dairy farms to some other types of production.

DISCUSSIONS FOLLOWING DR. DAVIDSON'S ADDRESS

Mr. A. Miller: In the amalgamation of farms, supposing three or four farms are joined, there will be two or three families displaced. What do you suggest should be done with them?

Dr. Davidson: They must be employed elsewhere. If there were general unemployment this could be catastrophic, but we have had for some time what seems to be a continuing labour shortage. Of course some retraining may be needed—I do not suggest that these readjustments can be made easily. They call for a major effort.

Mr. J. Tarrant: Figures can lie, and in my quick impression some of those you have presented seem to do just that. How can you net $2517-odd from a 20-39 cow farm when the gross cannot exceed $2500 for the butterfat produced?

Dr. Davidson: What we worked out was not net farm income but the net difference between staying on the farm if subsidy were removed and moving to a job in Sydney. Hence the allowance for a house and car, at Sydney rates, which must be brought into the sum.

Mr. B. Hannaford: May I check the adjustments you made: allowances for family labour, interest, and the house and car?

Dr. Davidson: Yes, that is correct.

A member: But take a local mill worker. He will have a house, perhaps at $6 a week, and a car, even if only on the basic wage, and he won't be losing. Why should the dairy farmer not move to such a local job?

Dr. Davidson: Experience suggests that if the dairy farmer is going to up-root himself, he will look for a city job. He may enjoy drinking in the local pub with the mill worker, but he doesn't want his job.

Mr. J. H. Bryant: Would you explain how, in view of what you have said, there can exist in the "depressed" dairy districts such prosperous towns as Lismore or Murwillumbah? They are full of cars and poker machines and splendid shops. The only real source of income to the district is dairying, which must therefore support all this.

Dr. Davidson: Indeed it does. However poor the country, the farmers must buy their goods somewhere. And if you have enough of them, you can have a very prosperous town. There are some very prosperous towns in Africa, supported by many very poor people.

Mr. A. W. Walker: I have three questions to ask. First, is it fair to compare areas where there have been very different expenditures of government capital? The irrigation districts are based on schemes paid for by the taxpayer.

Dr. Davidson: Such government expenditures as irrigation has been duly allowed for in the calculations. We have not allowed for more general government capital outlays, on such things as roads, railways, schools, hospitals, etc., but these may well be taken as spread pretty evenly over all sections of the community.

Mr. A. W. Walker: If families move from farms to the city will not the local town suffer severely?

Dr. Davidson: Yes. The income per farm family will increase, but there will be fewer families and at their higher income level a greater proportion will go in luxury spending to the city and elsewhere and not to the local town. Many years ago, in the days of the horse, there were pubs every ten miles. Now they are every 30 miles. Should we have subsidised the horse to keep the motor cars off the roads and so keep our pubs every 10 miles?

Mr. Walker: Thank you. If we increase wool production by 5%, what will this mean in increased returns for wool? Many wool men believe that increasing production only lowers the price and leaves the total return the same.

Dr. Davidson: I remind you that I said 5% increase in meat, wheat and wool. Wool itself is rather a tricky subject. Wool prices are dropping and costs are up. The real measure must be in terms of wool prices against the prices of overseas products we must buy. If you look at wool prices since 1930 or so you see a very high peak in 1951 (accepted ever since by woolgrowers as the standard wool price). But looking at the steady trend of the other years we see a line a little better than horizontal but in this period wool production has doubled. The profitability behind this increased production has not therefore come from higher prices, it must have come from lower costs. And indeed we know that scientific advance allows the grazier to handle more sheep with the same resources doubling the carrying capacity in thirty years. Top dressing and improved pastures, as well as the elimination of the rabbit, allow us to reconcile the length of car with the increased costs of labour and many other things.

It is worth noting that our Government looks at things differently. It is apparently prepared to support our subsidised tobacco industry, gross product $37 million p.a. at the expense of tariff concessions in the U.S. to our wool industry, gross product $1000 million p.a.

To return to your question, one can never state definitely that prices won't decline, but demand for meat is likely to remain high.

Mr. J. Pascoe: You gave as average income of farms with 20-39 cows minus $621 p.a. Was this without subsidy?

Dr. Davidson: Yes, without subsidies of all types, including those on fertilizer.

Mr. R. D. Andrews: Have you any index figures for the Darling Downs?

Dr. Davidson: Yes, it was 76.

Mr. D. I. Shaw: I assume your figures for the zones around Sydney were high because of the relatively rewarding market milk price?

Dr. Davidson: Yes. There was no means of taking the particular subsidy to each area out of the figures. We just don't know the effect of eliminating a milk zone, but it would certainly to some degree lower the income for that area and raise it elsewhere.

Mr. Hannaford: Could you define more precisely your use of the word efficiency in terms of annual income over annual cost?

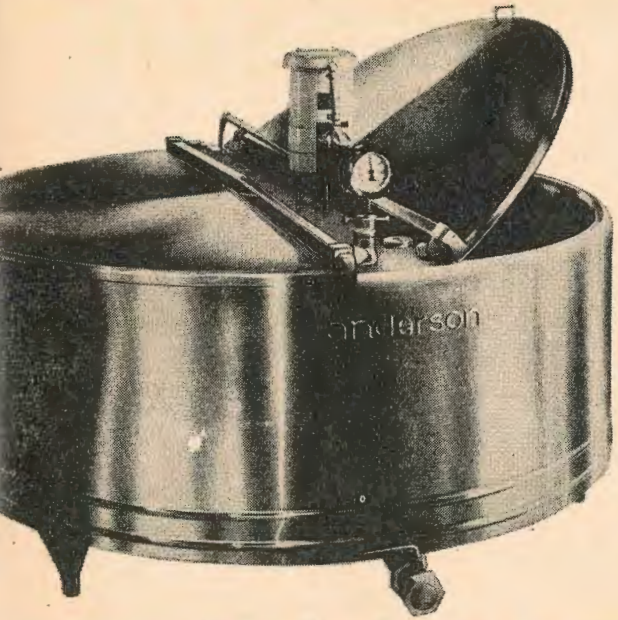
Dr. Davidson: Yes. It is in fact annual income minus subsidy, over annual cost, plus interest on capital (including the relevant government irrigation capital) plus depreciation.

Mr. L. L. Muller: Over the last fifteen years in Queensland the number of dairy farms has dropped from 25,000 to about 12,000 (?). Output of milk is still the same. There has been a similar drop in New South Wales. This accords with the trend you consider economically sound. Do we then just need more of the same? Have economists studied these trends?

Dr. Davidson: There have been some studies on movement from the farms, but none which show the effect on the ratios I have been talking about. It is clear however that with less labour, costs must drop and the ratio must improve. Unless of course a drop in the overseas return from dairy products has cancelled it out. It could be rewarding to study these changes.

Mr. A. W. Walker: Do your figures take account of sales of livestock, yearling animals and so on?

Dr. Davidson: Yes, they include not only all farm products—pigs, beef, fruit, vegetables and so on—but off-farm income as well.



tank units tested by the State Electricity Commission of
by the Australian Standing Committee on Agriculture)
alian Standard N46-1963.

OF PERFORMANCE

L250	**R300**	**R400**	**R500**
C.P.66C10	**C.P.66C8**	**C.P.66C13**	**C.P.66C9**

NSC No. 8/4 Complies with Milk Board and Department ents in every State.

round design for minimum space requirements • All am insulation • Low height for easy cleaning.

er information contact

equipment

co-operative ltd.

l & Egerton Sts., Lidcombe, N.S.W. 648-1084.
Charles St., North Coburg, Victoria. 35-2347.
tanley St., South Brisbane, Qld. 4-5452.
CO-OPERATIVE LTD.)

Mr. B. Calder: How realistic is it to talk of moving people off farms? Great Britain in its attempts to deal with its internal economic readjustments has been trying to move people out of depressed areas into districts where employment is offering, but there is strong resistance in many cases.

Dr. Davidson: Yes, it may be hard to make people move. But people do keep on moving from farms to the city. In the U.S. the change has been spectacular—only 6% work on the farms there now, and they produce a surplus. In Australia the trend is only a little less—I think our figure is 10%. So what we want to do is in the direction of the natural trend.

Mr. G. Loftus Hills: I have always felt that the heart of the problem you have described tonight is the question of the alternative use of the land. You have given figures to compare dairying with other forms of agriculture in other areas. What we need is figures to compare it with other forms of agriculture on the same high quality land.

Dr. Davidson: There are possibilities of course, sorghum, maize, and beef. No two regions are alike. Schapper's plan for fat lamb production has had some success in Western Australia. But the agricultural economists have fallen down on the job here—there is no clear or easy answer. Farmers do not in any case always adjust well to another form of agriculture.

Mr. Hannaford: Is an allowance made in your costing for the enterprise or managerial skill of the farmer?

Dr. Davidson: No, the figure for farmers labour is at the rate of a leading hand plus overtime. If we allowed for management the ratios would be worse. Farmers do differ enormously of course, a clever man can make a very good living out of what may, in someone else's hands, appear a hopeless farm.

Mr. A. W. Walker: The production problems on the North Coast are severe—several research teams are grappling with them—and include pasture weevils and lack of Rhizobia. The pastoral conditions are difficult, but that does not say that the farmers are not just as good.

Dr. Davidson: Yes, I agree, there is no difference in the farmers. But if you insisted in dairying on the Nullarbor Plains you would get some pretty low figures!

Mr. Potter: While the farmer may pay $800 a year for a car and $1000 for a house if he moves to Sydney or Newcastle, he does not pay this on the North Coast, so your calculations seem to have in them something of an economic trick.

Dr. Davidson: Is the difference merely what he would have to pay or the real value? Is his house or car in fact worse? How do you value it? He can get along quite well with an unsewered lavatory in the country, but it would be horrible in a city bathroom. An unpainted house has quite a different impact in the city to the country. In addition, the McCarthy survey for instance did not allow enough for what you get free on the farm. Some adjustment is needed in these things. The question is is how to adjust.

Mr. S. Moore: Do you assess the skills of the farmer at the basic wage level?

Dr. Davidson: He certainly needs more skills on the farm, but how far can he use them in the city? One thing he has is a sense of responsibility. What does in fact happen to dairy farmers who go to the city? A surprising proportion of them are warders or watchmen or something of that sort—a job calling for a sense of responsibility. They get low wages, but above the basic wage.

Mr. Potter: Faulding contended that many dairy farmers who wanted to leave the country did not do so for lack of confidence. If they left the land they tended to go to a country town. Lismore for instance has a high level of unemployment.

Dr. Davidson: Yes, I'm sure that many who do go to the city do so for the sake

of the children. At a recent agricultural seminar in Sydney, four professors claimed particular knowledge of agriculture because "they had spent their childhood in poor agricultural areas." The children win hands down in the move to the city.

Mr. K. Thorne: What will be the effect of a continued drift to the cities? In Queensland 1000 dairy farmers go off the land each year. Even in Victoria farms amalgamate and farmers go off the land. The cities are already too big, traffic problems become worse, decentralization is more and more necessary. Would not a subsidy on agricultural production be worthwhile just to keep people out of the cities?

Dr. Davidson: I would want a subsidy to live in the city! But your question raises a number of issues. The percentage of population which lives on the land does not worry me at all. In Australia it was 25%, it is now 10%. In the U.S.A. it is down to 6%, and they feed the population and produce a surplus for export. In U.K. 3% on the land supply 65% of the food needs.

Most people seem to prefer city life. Politicians talk decentralization, but if elected do nothing about it. A pickle factory in Dubbo is just not as profitable as one in Sydney. The one activity that can be just as efficient in the country is administration. Look at Canberra and Darwin. Why not use this—it is better than subsidising small farms.

City and country also conflict on water usage, and probably the city usage is more efficient in increasing national productivity.

There are rational solutions to the traffic problems as well, including better public transport.

Mr. G. Loftus Hills: Is there not a broader issue which overrides many of the points you have made so clearly. In a world which faces a horrifying level of protein-calorie malnutrition within 30 years, is it right to be suggesting putting dairy land under timber, or even under beef, which produces so much less protein per unit of farm resources?

Dr. Davidson: This is a big question. Means must be found to translate the real needs of world hunger into economic pressures. It is worth remembering that there is great agricultural potential in some of the developing countries, such as Burma.

Dr. A. Lloyd: If the subsidy is removed the value of dairying land will drop. If it goes to beef production its value may be halved. Is it correct though to suggest that the subsidy should not be removed until alternative uses are found for the land? The Tariff Board makes changes vitally affecting industries without providing for those who suffer as a result.

We must agree I suppose that Government subsidy policy has encouraged the investment by the farmer in the first place, and removal of the subsidy is best done with warning, and gradually.

Dr. Davidson: The point about land values is double edged—if the farmer gets less for the land because it is going to an alternative use, the part of his city income we have derived from re-investment becomes less, and so he is less well off if he leaves the land.

Perhaps only 5% of farms were actually bought at the values shown in Bureau of Agricultural Economics surveys. These surveys in fact support a welfare subsidy scheme. We know from income tax returns that in fact it is the big farmers who benefit. After all they control the farmers organizations which demand continuance of the subsidy. The little farmers just continue to survive. Why not devote the subsidy to direct support to compensate the hard cases—this would be an effective welfare scheme, unlike the one we have at present.

THE TRUTH WILL OUT

"Dubious Claims" Disproved

During the margarine quota controversy which raged bitterly and fiercely up until a year ago all kinds of claims and counterclaims were made regarding the vegetable oilseeds prospects and the adverse effects that table margarine quotas were having on this "newly bourgening primary industry."

A welter of figures were put forward and the Marrickville Margarine Pty. Ltd. brought in some heavy artillery in the form of a report by well known management consultants, W. D. Scott and Co. Pty. Ltd.

During the argument all claims and counter-claims were based on suppositions and forecasts. Now time has proved which arguments were sound and which were exaggerated. The following story from "The Bulletin", January 20, 1968, pages 16-17 is reproduced without further comment.

. . . . .

Safflower Industry

SEEDY PROSPECTS

"At the moment the dairying-margarine row is dormant, overshadowed by the effects of sterling devaluation on the butter industry. In this period of lull, two recent developments in the oilseeds industry make interesting reading.

In 1966 and early last year, when the butter-margarine debate was at its height, the margarine interests made great play of the growth they were supposedly inducing in local oilseeds production. In their famous Mrs. Jones propaganda, Marrickville said it had created "a great new primary industry." Excellently laid out full-page advertisements brought the public the message that a "small yellow flower, not unlike a thistle, is creating a quiet revolution . . . " The safflower was introduced in dramatic photographs. Sharply rising graphs demonstrated how "a dynamic new primary industry was born." It was dependent for its continued prosperity on the abandonment of margarine quotas.

With Marrickville promising to buy only Australian oils for its margarine, it joined with a major oilseed miller and contract purchaser, Pacific Safflower, in a big publicity campaign against the quotas.

The Bulletin pointed out at the time that in their publicity these companies were making some very dubious claims about the importance of quotas to the producers of oilseeds.

For cotton-growers the sale of fibre would always determine the economics of production. The sale of cottonseed for oils was only a marginal source of revenue and so the market for oil was not of importance to cotton-growers. The same was true of peanuts. It would never pay peanut-growers to produce for crushing for oil. Their staple market would always have to be to supply peanuts as food in cellophane packets. The sale of peanuts for oil-crushing would never be more than a way of cutting losses on a few spoiled or broken nuts.

Only the safflower industry was directly dependent on margarine manufacturers.

Anyway, the advertisements told us there was an "explosive growth" of safflower farming, and a tremendous future in store for this dramatic thistle. Pacific Safflower was quoted as having plans to expand the acreage from 80,000 to 150,000 and 250,000 in a short span of years. Only the quotas put this expansion in jeopardy.

Recent developments have confirmed the view that the margarine campaign was based on quite false propositions. The first was the proposition that saf-

flower production was a sound industry, not needing more than average protection. It was portrayed as an industry which, unlike dairying, could stand on its own feet. The management consultants firm of W. D. Scott was quoted in a survey it prepared for Marrickville in February, 1967, as concluding that the local industry could claim to be efficient and that it "does not demand undue protection to permit growth in production."

This has turned out to be almost the complete opposite of the truth.

Just before Christmas the special advisory authority heard an urgent appeal from the safflower growers for protection in excess of the 30 per cent they were already receiving.

They asked for a sliding-scale form of tariff protection, the sort of variable duty which provides maximum protection. And they got it. They now have the sort of open-ended tariff protection which the European Common Market countries apply to protect their inefficient peasant farmers. At current prices it appears that Australian safflower growers, far from being the efficient modern industry of the margarine propoganda campaign, are sheltering behind a tariff wall of about 60 or 70 per cent and there is no limit to the height of the wall given the sliding-scale or support-price system in force. Since most calculations of the protection given dairy farmers arrive ot a figure of around 40 per cent, the tables have been turned. Safflower is the more propped-up subsidised industry.

A second point in the propaganda campaign was that there was a threat of an imminent glut of safflower oil. Again W. D. Scott was brought into the PR offensive, predicting a big over-supply—unless quotas on table margarine were lifted. This, too, has been proved quite false.

There has been no over-supply. On the contrary, imports have continued at a high rate despite the tariff barriers.

Local production has got nowhere near local demand, even though that demand remains curbed to some extent by quotas on the sale of table margarine. In 1966-67 imports were 5,200 tons against a production of 8,000 tons.

Despite the sliding-scale tariff, local production continues to run far short of local needs. This year's crop is estimated at round 6,000 tons, assuming a local market this year of 13,000 tons, this amounts to a shortfall of 7,000 tons.

The "glut" so often spoken of in the margarine propaganda has not eventuated and the "explosive growth" has, despite increased tariff protection of the most generous kind, failed to be achieved.

Finally, it appears that the local oilseeds producers are being dumped by the margarine manufacturers. With the local producers failing to deliver the goods in the form of the safflower oil needed, imports are rising steeply. In the July-October quarter they were running at a rate close to 10,000 tons a year. Evidently now the margarine manufacturers are applying to the Government to get duty-free imports of safflower oilseed—to the extent of 18,000 tons. This will crush into about 6,000 tons of oil, almost the equal of local output.

PRODUCERS' PRICE MAY FALL IN N.S.W.!

Following the receipt of urgent submissions from the major agent companies, and from vendors' organizations, for a review of margin, the N.S.W. Milk Board has forwarded to the Minister for Agriculture a recommendation for increases of one cent each in the margins for processing factories and retail vendors, WITH NO ALTERATION to RETAIL PRICES, by a reduction of 1.6 cent in the price paid to licensed producers and a 0.4 cent adjustment in the Board's appropriation.

The Minister has indicated that he is not yet in a position to make a quick decision on the matter.

Statistics

ADELAIDE METROPOLITAN MILK SUPPLY AREA

PRODUCTION (000 gallons)

	For Month		Total since July 1		Total since Jan. 1	
	1966	1967	1965/66	1966/67	1966	1967
Nov.	5,567	5,090	25,264	22,706	45,498	43,386
Dec.	4,943	4,764	30,207	27,470	50,441	48,150

SALES (000 gallons) C.M.B. (cents)

	For Month		Total since July 1		Quota %		C.M.B.	
	1966	1967	1965/66	1966/67	1966	1967	1966	1967
Nov.	1,758	1,812	8,720	9,038	31.6	35.6	17.05	19.26
Dec.	1,702	1,744	10,422	10,782	34.4	36.6	18.56	*22.04

Moving average quota for 12 months ended 30/11/67, 44.27%; 31/12/67, 44.52%

INTERIM PRICES TO LICENSED SUPPLIERS

(All prices are interim only and subject to adjustment by retrospective payment)

1967	Basic (cents per lb. butterfat)	C.M.B.	Total	3%	3.5% (cents per gallon)	4%	4.5%	5%
Nov.	37.95	19.26	57.21	17.71	20.66	23.62	26.57	29.52
Dec.	37.95	22.04*	59.99	18.57	21.67	24.77	27.86	30.96

* includes 21 days at new Milk Board rate.

LONDON PROVISION EXCHANGE QUOTATIONS

(Sterling Currency per cwt.)

	Oct.		Nov.	
	1966	1967	1966	1967
Butter—Choicest Australian	300/–	300/–	300/–	300/–
Cheese—First Grade Australian	240/–	240/–	240/–	240/–
Rindless Australian	265/–	270/–	265/–	270/–

New Milk Meter on Market Here

A new milk meter, which has gone on the market in Australia, was developed at the Ruakura Animal Research Station in New Zealand and tested in major dairying countries throughout the world.

The tests indicated that substantially higher yields can be achieved by giving each cow correct stimulation before milking. The meter enables the farmer to judge correctly the stimulation required for each cow through knowing the speed of "let-down."

The meter uses the principle of proportional division and sampling to give high accuracy, even with a relatively small quantity of milk.

The non-linear scale used provides a proportional sample for butter fat evaluation as well as a measure of total yield.

The meter combines the following features:

- Measure of total yield in pounds from each cow in the milking line.
- Shows at a glance, from any part of the shed, the rate of milking and the precise moment when milk flow ceases.
- No delay in the milking routine; simple to reset after reading the yield.
- Self-cleans, simply by placing the cups in normal cleaning solution.
- Supersedes herd testing buckets which tend to interfere with normal milking routine.

It is claimed that in addition to helping farmers to gain maximum yield from every cow, it can also improve long term breeding plans and reduce the incidence of mastitis by enabling farmers to avoid under and over milking.

DEATH BENEFITS UNDER FEDERATION RETIREMENT LIMITED CONTRACTS:

The Secretary,
South Australian Dairymen's Assoc.,
Aston House,
13 Leigh St.,
ADELAIDE.

25th January, 1968.

Dear Sir,

Since the inception of the Retirement Company we have consistently presented the view that the benefits available under F.R.L. Programmes are superior to those offered by our competitors and that the contracts themselves are first rate value.

We are now in a position to point to an actual case where a client chose to accept our recommendation and effect a three point plan instead of the endowment assurance funded retirement programme which he was offered in competition with our original presentation.

An annual contribution of $200 was under consideration. For this sum, the three point plan conferred an immediate death benefit of $8,956.00 and an estimated retirement benefit of $10,508. The difference between the immediate death cover and the estimated retirement benefit was represented by the bonuses which were estimated on the $2,000 endowment assurance. As was pointed out to the client, our plan guaranteed that in the event of his death even in the first year of the contract, he would receive a death benefit of approximately $9,000 against the opposition quote of $5,640 immediate death cover plus bonuses to the date of death.

Our client elected to proceed with the three point plan programme and he entered Federation Retirement Fund (Aust.) on the 1st December, 1965, with the intention of retiring in 1994. He was, at that time, a married man of 36 years of age and, to complete the picture, without children. We regret to record that our Fund member died unexpectedly early in October last year, at the age of 38 years. We are in the process of paying a death claim of the following value:—

Value of investment accumulation - -	$198.34
Endowment assurance with bonuses - -	$2070.60
Decreasing term assurance sum assured -	$6856.00
	$9124.94

At the date of his death, our client had paid $400 to Federation Retirement Limited as a contributor to Federation Retirement Fund (Aust.). His three point plan thus provides his widow with the full value of his anticipated investment accumulation through the term assurance plus the endowment assurance sum assured and bonuses, together with his interest in the Fund.

It is with a great deal of pride that we quote the result of this contract because it is a complete vindication of everything that we have maintained about our concept and it demonstrates the soundness of Federation Retirement Limited programmes generally.

Let us now examine the position which would have prevailed had our client accepted the alternative quotation. His widow would have received the following benefits:—

Endowment assurance sum assured - -	$5640.00
Bonuses on the sum assured - - -	$315.00
	$5955.00

We have obtained a great deal of satisfaction from the quality of our retirement-superannuation programmes which have now stood the test of practice.

Yours faithfully,
G. R. SCHLANK,
Manager for South Australia.

Here's How Temperature affects the growth of bacteria in milk—

Remember the old nursery rhyme you learned as a child, ". . . some like it hot; some like it cold; some like it in the pot nine days old?" Well, the same can be said about the temperature preferences of various kinds of bacteria found in milk.

In fact, bacteria have an even wider range. Some can grow when milk is just above the freezing point. Others can tolerate heat up to the scalding point of milk. This is a very wide temperature range . . . from about 32° to 150°.

Rates at which they grow will depend upon the kinds of bacteria present because all types of bacteria do not grow throughout this wide range. Bacteria that grow below 50° are not the same kind as those that grow above 100°. Each kind has a low-minimum, a high-maximum, and an optimum temperature for growth.

The milk-souring organism is one of the most rapidly-growing types. But its growth rate at 50° is much slower than at 86°, which is its optimum temperature. At 50° this organism may take 12 **hours** to double in numbers. while at 86° it may double in just 20 **minutes.**

Increase in bacterial population is logarithmic; that is, in a given unit of time one bacterium becomes two, then four, then eight then 16, and so on. Using the milk-souring organisms as an illustration . . . in a 12-hour period at 50° one organism would become two, but at 86° one organism would become over 250,000.

The bacterial population can continue only to increase at this rate under favourable conditions. And, in milk, conditions eventually become unfavourable because of the lactic acid and other by-products that are produced.

There is a group of bacteria which grows at temperatures ranging from 80° to 140°. They are known as thermophiles (from the Greek words "therme," meaning heat, and "philos," meaning loving or fond of).

These are of little importance to the dairyman unless he wishes to explain why hot milk will sour in a thermos bottle in 12 hours. (This condition may have been experienced, too, when hot milk cocoa has been prepared the day before using.) The thermophiles, however, are of concern in small milk pasteurising plants where hot milk is held for several hours before cooling, as in the vat pasteurising process.

"Cold-loving" Bacteria . . .

In contrast to the thermophiles, there is a group of cold-loving bacteria, organisms that grow rapidly at temperatures between 55° and 45°, but more slowly at temperatures below 45°. They are termed psychrophilic (from the Greek word "psychros," meaning cold).

As you would expect, they grow on surfaces that remain cold, such as walls of a milk cooling tank. They are found in cold water and improperly cleaned milking machines.

This group of organisms the dairyman can control only in part with temperature. Control must be gained by reducing their contamination to a minimum. High count milk that has been cooled rapidly to a temperature below 50° is due to contamination by the psychrophiles.

Cooling retards bacterial growth and, though the rate of growth may be slow, significant populations can develop over long periods of time, such as three to five days.

Way back in 1918, a U.S.D.A. bulletin reported an experiment conducted on the effect of temperature on the growth of bacteria produced under various conditions.

The table below shows that low temperature retards the rate of bacterial growth. Rate of growth, however, increases when initial contamination is higher. In the table the increased growth rate is due to types of bacteria associated with the contamination.

In milk produced by dirty cows, the lower bacterial count at 96 hours is due to the fact that the count at 72 hours was sufficiently high of specific types

to retard bacterial growth because of the by-products, such as acids and alcohols produced by the contaminating bacteria.

Temperature is important in controlling bacteria. But also important are the bacteria introduced by inadequate cleaning of the surfaces that milk contacts.

Bacteria in milk cooled immediately to 40 and held at this temperature					
Production conditions	**fresh**	**24 hrs.**	**48 hrs.**	**72 hrs.**	**96 hrs.**
	Number of bacteria per milliliter				
Clean cows, clean environment, clean utensils	4,295	4,138	4,566	8,427	19,693
Clean cows, dirty environment, clean utensils	39,082	88,028	121,864	186,245	1,057,000
Dirty cows, dirty environment, unclean utensils	136,533	281,646	538,775	749,030	852,835

New Mastitis Drying-Off Treatment

The National Institute for Research in Dairying in Britain has announced a new anti-biotic treatment for mastitis which they have developed for use during the drying-off period. It estimates that in any herd this could reduce clinical cases by at least 50 per cent during the first year with progressive reductions to follow.

The treatment has been developed in conjunction with Beecham Research Laboratories and is based on the use of the Beecham semi-synthetic penicillin "Cloxacillin". It will be marketed as "Orbenin Dry Cow", and in South Australia will be available only by prescription given by a veterinarian.

Work on this anti-biotic treatment followed on the N.I.R.D.'s ten year programme of developing hygienic control systems. The latter have proved capable of preventing 50 per cent of all sub-clinical infections but they cannot help with cows infected before the hygienic system is introduced for a herd. Also it is estimated that stockmen generally diagnose only half of the current infections during lactation.

Work on this anti-biotic measure started when the drying-out period was chosen as the base for an all-out attack which in conjunction with hygienic systems could provide a total mastitis cure and prevention practice.

One Application Only

Cloxacillin was selected because it is effective with all strains of staphylococci, and its production with a slow release base or as a less soluble salt, mean it will persist in the udder for four to five weeks. Treatment during drying-off can deal with all persisting infections and takes only one application as the anti-biotic is not milked out.

It is suggested that the anti-biotic should be given during the first day of drying-off. Cows that are still giving more than 10 lb. daily should first be cut down by rationing food and water. Quarters should be infused with the anti-biotic after the last milking and teats disinfected by a teat dip. The estimated cost of the treatment (in Britain) is £1 ($2.14) per cow.

The system has already been tested on 1,730 cows in 47 different commercial herds with excellent results. Many farmers reported a reduction of 90 per cent in clinical cases in the first week of lactation following a drying-off period. Now a contral scheme using 2,000 cows in 32 herds is being tested by the N.I.R.D. and the Ministry of Agriculture's veterinary laboratory at Weybridge.

Release in South Australia

Details of the release of this treatment in South Australia have not yet been finalized, but further information is available at the Association's office.

HE SOUTH AUSTRALIAN AIRYMEN'S . . . Journal

The Official Publication of the SOUTH AUSTRALIAN DAIRYMEN'S ASSOCIATION INCORPORATED *Published Bi-monthly*

ol. 7, No. 5 Adelaide, MARCH–APRIL, 1968

SUNNYVIEW LITTLE PRINCESS 30TH A.R.
"Livestock Bulletin" Cow-of-the-Year for 6 Years
Owned and Bred by J. PHILLIPS & SONS—KINGAROY—Q'LD.

PRICE
20c

stered at G.P.O., Adelaide
transmission by post as a periodical.

$1.20 per Year, Post-Paid

THE SOUTH AUSTRALIAN DAIRYMEN'S JOURNAL

Published by
THE SOUTH AUSTRALIAN DAIRYMEN'S ASSOCIATION INCORPORATED
Aston House, 13 Leigh Street, Adelaide. 51 3034
President: H. E. LOECHEL
General Secretary: DAVID J. HIGBED
Advertising Rates on application

The Scheme For Reconstruction

Undoubtedly the most important question facing the dairying industry today is that of ensuring a fair return for the dairyfarmer's output, but only a little way behind this comes the problem of the "too small" farm.

This problem has always been a part of the dairying scene, and is almost certainly due to ease of entry into the industry, "ease of entry" being, unfortunately, a door that slams shut behind the unfortunate operator who, having perhaps sold his suburban home and given up his city job, finds himself stuck with a round-the-clock job, and a net return less than he was getting for working 40 hours a week, and a lot less than he was told when he bought the place. Often he sees only one solution, to increase production by further capitalization, buying more equipment, getting in contractors, installing irrigation, and so on, finding in the end that his net reurn has not increased, yet his investment is so great that he cannot find a buyer at a price that will reimburse him.

It is impossible to say how many farmers are in this position. Certainly we know that, in 1960, 800 licensed producers in the Adelaide milk supply area (one-third of the total producers) had less than 15 head of stock per farm, but we do not know how many of these were sideline producers only. Nevertheless we do know, from personal observation, that there is a stratum of bona fide full-time

— SUNNYVIEW LITTLE PRINCESS 30TH —

has again been selected Cow of the Year by the "Livestock Bulletin", making six times in all. By TABBAGONG ROYAL STANDARD out of the holder of the all-Australian record for a 4-year-old of 1,035 lbs. b.f., SUNNYVIEW LITTLE PRINCESS 20TH, this cow has combined an outstanding show record, being several times Champion at the Brisbane Royal, and in 1967 Champion Milk Producer (197 lbs.) and Champion Butterfat Producer (8.51 lbs. in 48 hours), with high production, her lifetime production at present, after 7 lactations plus 120 days, being 7,118 lbs. b.f.

A son of this cow, S.V. PRINCESS PROMISE, has gained the highest preliminary Sire Survey rating, 149+, ever achieved.

Another son, S.V. PRINCESS HOPE, is now stationed at the N.S.W. Milk Board's Artificial Insemination Centre at Berry. Semen from this bull is available to South Australian breeders from the Northfield Centre.

dairyfarmers scratching for a living on properties that are too small and can never be developed to the point where they will provide a fair return for the farmer's work or the money he has invested.

This problem cannot be cured by economic measures. It would be impractical to increase the prices of milk, butter and cheese to levels which would give these people a reasonable return, nor can we envisage the provision of a subsidy of sufficient magnitude to have any worthwhile effect.

And unfortunately, even if such action were feasible, the raising of returns to the necessary level would encourage people to come into the industry on an even smaller scale, so generating another problem group to take the place of those whose problems had been solved.

So we face the necessity for a social, rather than an economic, solution, and such a solution has been put forward by the Federal Government in a proposition recently submitted to State Ministers of Agriculture.

The broad principles of the scheme (which resembles that recommended by the Dairy Industry Committee of Enquiry in 1960) have been the subject of discussion between the Australian Dairy Farmers Federation and the Department of Primary Industry and from these discussions have come the proposals now presented. There is, as yet, no finality. Details will vary from State to State, as the implementation of the Scheme depends on State legislation, and the place for dairyfarmer organizations to negotiate is at State level.

But, broadly, the basis of the proposal is a grant by the Federal Government of $25 million, over the next four years, to assist those farmers wishing to leave the industry to do so without crippling loss by writing-off the value of the unwanted improvements, and to provide loans to the State Governments to purchase the abandoned farms, either to be retained for reserves, afforestation, or the like, or be added, through sale or lease, to existing farming properties.

The preliminary details of the proposal were released by the Minister for Primary Industry (the Hon. J. D. Anthony) at the meeting of the Q.D.O. recently. Those present at the meeting expressed keen disappointment at the scheme, and passed the following resolutions, to be forwarded to the Australian Dairy Farmers Federation.

. . . *"We consider that, in the absence of an increase in returns through additional subsidy or higher prices for dairy products, a basic requirement in any farm—quite apart from any finance needed under an amalgamation scheme—is the provision of finance on terms more liberal than those available through normal banking channels for the reconstructions and development of farms, which are of sufficient size, but which are not able, under normal circumstances, to become payable propositions with today's production methods and today's markets. This requirement was recognised by the Commonwealth Government in the second reading speech of the then Minister for Primary Industry, Mr. C. F. Adermann, to Parliament on April 5th, 1967."*

. . . *"We call for full compensation by the Commonwealth Government on a continuing basis for the direct and indirect effects of the devaluation actions taken by the United Kingdom and Australian Governments. Because of inability to meet rising costs with diminishing returns, dairyfarmers are not in an economic position to absorb the effect on their incomes of sterling devaluation and maintenance of the Australian dollar at its existing level."*

There is no doubt that the second resolution deserves support, but the desirability of providing liberal finance for the further development of farms is debatable.

There are many reasons why we should seek to reduce, not increase, the output of dairy produce, and if finance is to be provided it should surely be a condition that it be used for diversification rather than to aggravate the present position.

GOVT. PLAN FOR MARGINAL LOW - INCOME FARMERS

Minister Explains Proposal

The Commonwealth Government is prepared to spend $25 million over the next four years in a major effort to overcome the ever present problem of the marginal and low-income farmer.

Minister for Primary Industry, Mr. Anthony, speaking at a meeting of dairy farmers in Ipswich, Queensland, said relative to the size of the industry in the respective State, this problem is most pronounced in Southern Queensland, the North Coast of New South Wales and in the thick timber country in the South-west of Western Australia.

It is expected the great bulk of this money will be allocated to Queensland and New South Wales, then to Western Australia with proportionate amounts to the other States where the problem is not so acute.

Mr. Anthony said fundamentally, our objective is threefold:

- To assist the low income farmer to leave the industry if he wants to.
- By increasing the size of existing holdings, to make them more profitable.
- To encourage diversification away from butterfat production.

It is clear that the successful application of the marginal farm proposal rests largely in your hands, so I ask you not to jump to conclusions and think that a lot of people are going to be turned off their farms, said the Minister.

No one is saying you have to go, but let us face the truth that there are many farmers who sincerely want to leave the industry.

For these people I want to set up conditions that would make it possible for them to leave, suffering minimum loss, and pave the way for others to consolidate.

I am not setting out to kill industry and initiative in anybody, least of all dairy farmers. But I am relying on the inborn commonsense of dairy farmers to take a good close look at themselves and their industry in the light of the proposals the Commonwealth Government has agreed to for their aid.

MOVING OUT

In recent years something like three per cent of our dairy farmers have been moving out of the industry each year.

Many of them suffered real hardship while they were in the industry, and in the process of getting out of it. What we want to do is assist this process, make it possible for those who want to get out to do so without loss or too much loss.

What I am doing is looking to the initiative and enterprise of dairy farmers to make full use of the opportunity we are offering for them to improve the dairying industry and their own individual well-being.

The proposed scheme, which would be conducted in conjunction with the State Governments, is designed to operate in two distinctly different ways.

One is to give assistance to the farmer who wants to leave the land altogether, but cannot do so because his farm will not bring a price on the market. The other is to give financial assistance to the neighbour who wants to buy the other farm; the man who wants to stay in dairying, who has experience, knows the game, but does not have enough resources—particularly the land—required to develop a profitable farm which can keep ahead of the cost-price squeeze.

LOANS

In the first case, the Commonwealth Government would provide a grant to enable all the unwanted assets on the farm to be written off. By this I mean the two lots of cowbails, two barns and two houses would not be needed on one amalgamated farm.

So we would make it possible for this impediment between the seller and the buyer—the problem of unwanted improvements—to be removed.

A Commonwealth loan would then be provided to enable the State Government to buy the land from the old owner and lease or sell it to a neighbouring farmer who wants to improve his holding.

Whether it is to be leased or sold will depend on the policy of the State Government concerned.

The amalgamated farms would then offer the opportunity for improving management, whether it be in dairying or other kinds of farming.

I said earlier something like three per cent of dairy farms have been going out of the industry on an Australian-wide basis over recent years, and I think we can expect this rate of leaving the industry to continue.

Additionally, something like three per cent of farms change hands every year, a proportion going to the city people with very little knowledge of dairy farming and often not much capital to back them up.

What is proposed is that the Commonwealth should make the funds available to permit the State to purchase a proportion of this number of three per cent to six per cent of farms which either leave the industry or change hands each year, to be built up into larger and profitable units.

Preferably, diversified, so as to reduce their dependence on income from butter and milk products.

What I expect is that throughout Queensland, for example, there would be amalgamation or improvement activity, or both, going on in about 300 farms a year over the next four years, or in total between 1,000 and 1,200 farms.

Obviously this is not going to cause a serious upheaval in the dairy industry, although it is going to have a significant impact on the general prosperity of the industry in Queensland and in Australia generally.

It is not going to remove all the problem farms, because some people will choose to stay outside the scheme. What it is going to do is to make a significant impact on the number of farms which, because of their size, soil type and capitalisation, just have no chance of providing a decent living run as dairy farms in the future—unless there is some help of the sort, we envisage, provided to the owners.

On the basis of the information collected by my department, it looks as if there are in total about 7,000 farms in Australia, out of a total of 42,000 in the manufacturing sector, that are too small, even allowed free access to credit and using appropriate scientifc methods, to produce sufficient milk to provide an adequate living for a farm family.

This then is the kind of marginal farm proposal we think should best serve the interests of the dairying industry, the Minister said.

I think we, and the State Governments, have done our fair share in getting this scheme going this far. Now it is up to you to make sure that it eventuates.

The necessary legislation has to pass through Parliament. Then it is up to you to get the machinery working—and I mean working for the good of the whole of the Australian dairying industry.

My hand will be strengthened if I can go to the Government and say: "this is what the dairy industry of Australia wants." Therefore, I look to your enterprise and initiative to see this scheme through.

But there are constitutional limits on just what the Commonwealth can do to intervene in the affairs of an industry in matters which lie within the province of the States.

So far as Commonwealth participation in this proposed reconstruction scheme is concerned, I think we are going to provide a pretty good deal.

Subject to negotiations with the Queensland State Government, what I expect is that the experienced farmer who successfully seeks additional land to build up and diversify his farm holding will be provided with the additional acreage on a leasehold basis and with the superfluous assets written off.

So far as building up farms is concerned, I am satisfied that it would be hard to get a better deal.

The rental terms are not 4%—and lending people land on perpetual lease is the same thing as lending the money without any obligation ever to pay it back.

If, as I expect, the Commonwealth and Queensland Governments agree to these leases being on the same basis as the present Perpetual Lease Selection tenure in Queensland, the rental will be 2½% a year.

As a Government, we can be proud of our record in the field of credit for primary industry.

In an endeavour to ensure that money for farm development got into the hands of as many farmers as possible, and on the best possible terms, we have progressively introduced a number of measures which ensure that agriculture gets the fairest possible deal in loans from the banking system.

But I won't deny that a proportion of primary producers are unable to borrow as much as they would like. Some small proportion have a bad borrowing record with the banks, and are unable to secure credit.

Others are judged by their bank to have insufficient equity and repayment capacity to service further debt.

There are people in the industry who are in trouble because they went into dairying with far to little capital—and often with very little experience or they would have known that what they were doing was not the prudent thing to do. This happens in other industries.

Mr. Anthony said he had deliberately refrained from asking any suggestion of concessional credit for a farm reconstruction scheme following the amalgamation of small dairy properties.

The reasons for this were consistent with what he had said earlier. What he wanted was **a dairy industry that could look any bank manager in the eye.**

AUSTRALIA'S LARGEST VAT INSTALLED AT MENINGIE

A refrigerated farm milk vat weighing just under a ton, and capable of holding 11,000 lbs. of milk has been manufactured to special order by "Dairy Kold" for Mr. G. Cooper, of Meningie.

This vat, which is the largest in Australia is powered by two 10 horsepower Tecumseh refrigerating units in parallel, and, in keeping with its size, is equipped with twin agitators.

Although the vat is, at present, a "one-off" model, special approval has been obtained for it to be certified as conforming to the A.S.N.-46 Standard.

NEW U.K. BUTTER QUOTAS

U.K. BUTTER MARKETING ARRANGEMENTS FOR 1968/69

(Statement by Mr. J. McEwen, Deputy Prime Minister and Minister for Trade and Industry).

Australian butter producers are assured of access to the British market for 73,500 tons of butter in the quota year beginning 1st April, with 72,200 tons as an initial allocation.

Imports from Australia in the year just ending would be only about 63,000 tons due to the effect of the drought on production.

Mr. J. McEwen, Deputy Prime Minister and Minister for Trade and Industry, said this today in commenting on the British announcement that imports totalling 462,000 tons would be authorised in the 1968/69 quota year. The comparable figure for 1967/68 was 470,000 tons.

Last year Australia had sought the introduction of controls on imports into Britain of "near butters" which were threatening to undermine the butter quota arrangements with adverse effects on prices. British imports of "near butters" and butter mixtures, which had also been brought under control, would be limited to 9,000 tons in the new quota year compared with actual imports of more than 20,000 tons in 1967/68.

Mr. McEwen said that the small reduction in the butter quota together with the control on imports of "near butters" and mixtures should ensure that the present price of Australian butter of 300/- stg. per cwt. ex store London was at least maintained.

Mr. McEwen said that the Australian Dairy Produce Board has been closely consulted at all stages of the negotiations with the British Government.

COMMENT BY THE CHAIRMAN OF THE AUSTRALIAN DAIRY PRODUCE BOARD, MR. E. G. ROBERTS, O.B.E.

Commenting on the announcement of the renewed United Kingdom butter quotas the Chairman of the Australian Dairy Produce Board, Mr. E. G. Roberts, O.B.E., said that he was happy with the decision to continue the quota system for a further twelve month period.

Mr. Roberts said that all things considered the position as it affected Australia was satisfactory. He commended measures designed to hold the position of "near butters" saying that in view of the present world surplus of fats, unless "near butters" were kept under control their entry into the United Kingdom could prejudice attempts to stabilise prices under the quota system.

He felt that the continuance of the control of entry of "near butters" to the level of present quotas could help in ensuring that prices might at least be kept at present levels.

BACKGROUND NOTES TO THE UNITED KINGDOM BUTTER QUOTA SYSTEM

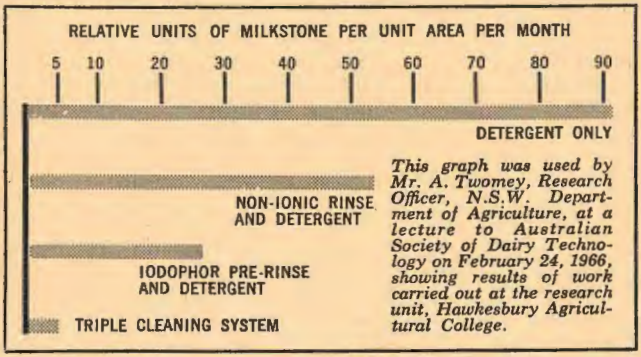
The present system for controlling imports of butter by annual quota was introduced in April 1962 following applications by New Zealand ond Denmark for the imposition of antidumping duties against subsidised imports from other countries and has been continued each year since then.

Last year's arrangements fixed basic import quotas of 440,030 tons. Supplementary imports of 29,970 tons were also authorised (these were for delivery

Research Proves Triple Cleaning System

The Triple Cleaning System is a revolutionary new method for cleaning milking equipment. It was first developed by the research unit of the N.S.W. Department of Agriculture and approved by Dr. Whittlestone of Ruakura Agriculture Research Centre. This system reduces milkstone deposits, thereby minimising contamination. (See graph.)

Cooper's are happy to be associated with the extension of this information to the dairy farmer, as their range of dairy products is especially developed for this cleaning system.



This graph was used by Mr. A. Twomey, Research Officer, N.S.W. Department of Agriculture, at a lecture to Australian Society of Dairy Technology on February 24, 1966, showing results of work carried out at the research unit, Hawkesbury Agricultural College.

- *LESS MILKSTONE, BETTER "BLUE" TIME*
- *LOWER BACTERIAL COUNTS*
- *CLEAN FASTER, MORE EFFICIENTLY WITH—*

THE COOPER TRIPLE CLEANING SYSTEM

1. **ANABAC** (IODOPHOR) PRE-MILKING RINSE
2. **COOPASOL-D** NON IONIC POST-MILKING RINSE
3. **BACTERGENT** LOW FOAM ALKALI DETERGENT

ALWAYS USE A FINAL RINSE OF BOILING WATER

Other Dairy Products in the Cooper range are

Cooper's **COOMAC** Acid Milkstone Remover, Cooper's **UDDER SOAP** and Udder Soap Dispenser, **MIN-A-VIT ORANGE BAND** Mineralised Vitamin Supplements for cattle.

AVAILABLE FROM YOUR LOCAL COOPER AGENT OR DAIRY FACTORY

WC438

before the end of November) from most countries holding basic quotas. Despite the London and Liverpool dock strikes last year and shortfalls in supplies from Australia and Denmark, there was not a general shortage of butter over the year as a whole. The Australian shortfall was made good in part by the issue of additional authorisations to New Zealand and the Irish Republic.

The firsthand price of New Zealand and Australian butter has remained steady during the 1967/68 quota year at 300/- per cwt. The Danish price was increased by 15/- per cwt. to 377/- on May 2, 1967.

Retail prices of butter remained steady during the year. According to the National Food Survey the average price paid by the housewives for butter in each of the last three calendar years has been:—

1965 — 3/8½d. per lb.
1966 — 3/6d. per lb.
1967 — 3/5½d. per lb. (provisional)

The coming year will start with large stocks. At April 1, 1968, they are expected to be around 87,000 tons compared with 69,000 tons at April 1, 1967. Given normal weather conditions and taking account of the aftermath of the foot and mouth epidemic it is estimated that United Kingdom production of butter in 1968/69 will be about 40,000 tons. This compares with a recent estimate of 38,000 tons for 1967/68—somewhat above the original estimate because of favourable weather and despite the foot and mouth epidemic.

The initial import programme is slightly smaller than last year. This is due to a number of factors including the high level of end-year stocks which resulted in part from the substantial imports of "near butter" in substitution for straight butter in 1967/68.

The allocation of import quotas for straight butter follows broadly the same pattern as last year. Quotas totalling 444,075 tons are being allocated for import during the period April 1, 1968, to March 31, 1969 with supplementary quotas totalling 17,925 tons for delivery between April 1, 1968 and November 30, 1968, i.e. the period when Northern Hemisphere supplies are plentiful.

During the first three quarters of 1967 imports of butter were reaching such levels as to threaten the objectives of the butter quota scheme. These products comprise such items as butterfat, butteroil, re-solidfied butter and dehydrated butter. In the four quarters of 1966 imports were respectively 1,940, 2,300, 2,400 and 3,500 tons. In 1967 the quarterly figures were 11,600, 3,200, 8,500 and 8,400 tons. Substantial quantities were used not in traditional manufacturing processes (chocolate, confectionery, cakes, biscuits and ice-cream) but in substitution for ordinary butter, heavy stocks of which will have built up by the end of the current quota period (latest estimate 87,000 tons in April 1, 1968). Consequently, the United Kingdom Government announced on November 6. 1967 that the open individual licences covering "near butter" imports were cancelled and that until the end of the butter quota year on March 31, 1968 imports would only be permitted under specific licences to be granted in exceptional cases.

During consultation about the 1968/69 butter quota arrangements overseas representatives drew attention to a new threat which seemed to be emerging. This arose from abnormally high imports during the past month or two of butterfat mixtures specially sweetened butterfat. The Government has decided to revoke the open general licences covering such imports, and is announcing the establishment of a global quota or 9,000 tons to cover imports of "near butters" and butterfat mixtures for the year beginning April 1, 1968.

Subject to this ceiling and to the limits of their individual licences, importers will be free to obtain their supplies from the country of their choice. Allocations will be made on the basis of applications from manufacturers of food products who need "near butters" and butterfat mixtures.

HOW THIS YEAR'S QUOTAS ARE ALLOCATED

The table below shows how the basic quotas plus extra shipments of butter to the United Kingdom will be allocated throughout the year. It will be noted that Australia's share of the initial quantities which include the basic quota amounts to 72,200 tons. The total authorised United Kingdom butter imports for the coming year amount to 462,000 tons of which Australia remains entitled to 15.9%.

	Initial Quantities Including Basic Quotas (tons)	Basic Quantities for Delivery Apr.—Nov. (tons)	Additional Quantities for Delivery Apr.—Nov. (tons)
Argentina	8,000	—	—
Australia	72,000*	—	—
Austria	1,830	1,000	680
Belgium	215	—	165
Bulgaria	805	405	420
Denmark	98,420	66,000	—
Finland	12,370	7,570	4,820
France	3,000	1,980	3,000
Hungary	1,720	1,050	580
I. Republic	26,000	—	—
Kenya	500	—	—
Netherlands	15,060	9,500	3,500
New Zealand	176,000	—	—
Norway	1,830	1,000	680
Poland	17,210	14,000	1,125
Rumania	2,000	1,600	2,275
S. Africa	5,750	—	—
Sweden	4,950	3,500	680
Uruquay	215	—	—
TOTAL	444,075	—	17,925

*Australia remains entitled to 15.9% of total authorised imports.

Statistics

ADELAIDE METROPOLITAN MILK SUPPLY AREA

PRODUCTION (000 gallons)

	For Month		Total since July 1		Total since Jan. 1	
	1967	1968	1966/67	1967/68	1967	1968
Jan.	4,514	4,177	34,721	31,647	4,514	4,177
Feb.	3,446	3,419	38,167	35,066	7,960	7,596
Mch.	3,387	3,186	41,554	38,252	11,347	10,782

SALES (000 gallons)

	For Month		Total since July 1		QUOTA per cent		C.M.B. cents	
	1967	1968	1966/67	1967/68	1967	1968	1967	1968
Jan.	1,645	1,776	12,067	12,558	36.4	42.5	19.73	26.60
Feb.	1,720	1,899	13,787	14,457	49.9	55.6	25.31	33.82
Mch.	1,866	1,991	15,653	16,448	55.1	62.5	27.25	36.74

Moving average quota for 12 months ended 31/1/68, 45.11%; 29/2/68, 45.51%; 31/3/68, 45.97%

INTERIM PRICES TO LICENSED SUPPLIERS

(All prices are interim only and subject to adjustment by retrospective payment)

1968	Basic	C.M.B.	Total	3%	3.5%	4%	4.5%	5%
	(cents per lb. butterfat)			(cents per gallon)				
Jan.	37.95	26.60	64.55	19.98	23.32	26.65	29.98	33.31
Feb.	37.95	33.82	71.77	22.22	25.92	29.63	33.33	37.03
Mch.	37.95	36.74	74.69	23.12	26.98	30.83	34.67	38.54

LONDON PROVISION EXCHANGE QUOTATIONS

(Sterling Currency per cwt.)

	February		March	
	1967	1968	1967	1968
Butter—Choicest Australian	300/–	300/–	300/–	300/–
Cheese—Rindless Australian	265/–	270/–	265/–	255/–

FALL IN U.K. PRICE FOR AUSTRALIAN CHEESE

Rindless Australian cheese fell 15/- cwt. to 255/- on the United Kingdom market early in March, following disappointing sales at the earlier price of 270/- (see above). New Zealand prices remain unchanged.

IFAP PRESIDENT ATTENDS CENTRAL COUNCIL

Delegates to last month's meeting of the Central Council had the rare privilege of meeting and hearing Mr. Eric McCallum, O.B.E., of New Zealand, the President of IFAP, the International Federation of Agricultural Producers, and Immediate Past President of Federated Farmers of New Zealand.

Mr. McCallum, who was enroute to a meeting of IFAP in Tunis, used the opportunity of a short stay in Adelaide to attend a meeting of the Central Council, to hear some of our problems, which, he assured us, were almost identical with those of New Zealand's dairyfarmers, and, at the unanimous request of the delegates, gave us a brief diagnosis of the troubles plaguing world dairy produce trade.

Surpluses and Subsidies

As President of the International Federation of Agricultural Producers, I am very much involved with the international problems of primary producers, and I, and those who are associated with me in IFAP are very disturbed about the international trade in primary products and the possibility of bringing some sort of order into international trade. That is why we had a meeting recently in Honolulu with representatives of the main farm organisations, from Canada, the United States, Japan, Australia and New Zealand.

It was a very well attended conference and we came unanimously to a number of decisions which we regard as important and which will again be debated in Tunis at the end of April, when we hope to get them established as international policy.

These five countries did agree that, where unwanted surpluses are being produced, the people or the countries producing them should take steps to control production in a way that will prevent the accumulation of unwanted surpluses which otherwise become an embarrassment not only to the contries concerned but to everybody else. I could enlarge very much on all these points but this is the important principle agreed to.

Secondly we agreed that countries producing unwanted surpluses should take steps to increase local consumption as a means of overcoming the problem they have created, and thirdly, we agreed that there should be an orderly channelling of surpluses into non-commercial markets rather than dumping them all around the world, at give-away prices.

One obvious non-commercial use is to help in overcoming the problem of the world's starving millions. It has been found from experience that where we do this sort of thing it ultimately produces commercial markets by lifting the standard of living of people, to the ultimate benefit of all.

The question of some sort of minimum price in international markets below which we should all strive not to price our products is tied up with the problem of surpluses, as is the avoidance of dumping. We have this problem in some European countries, where the local price may be as high as 700/- cwt., yet they are offering butter for sale on export markets at 130/-, so ruining any workable chance of stability.

We do know, of course, that there is a world market for some of this dairy produce, perhaps around 80,000 tons, but we are only too well aware that there is a stock of 200,000 to 300,000 tons in the Common Market countries alone, so, unless the whole subject is handled very carefully, we could have a catastrophe in the world dairy market. This I really believe, and this belief was confirmed not very many months ago in the U.S.A. where I had discussions with leaders in the field of primary produce marketing who had only just come back from the G.A.T.T. negotiations in Geneva, and who fully endorsed this view.

I was in Finland last year and they told me they were getting out of the export business in dairy products. We know that they have done that in Sweden, and some observers in the U.S.A. told me that they believed the same would happen with the Common Market countries. There the consumer is paying through the nose for dairy produce and the Treasuries of the Common Market countries sooner or later ore going to object to such enormous amounts being paid to their dairy industries in order to produce surpluses which they have to give away, or nearly give away, and, in so doing, disrupt the markets all around the world for those countries which must live by dairy exports.

I know that in New Zealand, and I expect the same applies in Australia to some extent, we have gone to great pains to develop new markets on every continent—little markets here, there and everywhere—not very big in themselves but in the aggregate they amount to a substantial total. We no sooner go to all that trouble to build up a small market outlet than some European country comes along, dumps its surplus at about a quarter of its comestic price, and ruins our market overnight.

Now this is the "law of the jungle" in international trade and it is one of our jobs in IFAP to try to restore some sort of order in this field. We are very anxious to establish an International Dairy Council, consisting of major farm organisations, Produce Boards and Marketing Organisations, and Governments, who will assume, in some degree, the responsibility for solving the problems created by these embarrassing surpluses, and for getting rid of them in a way that does not litter up the market for everybody else around the world.

This is, you will realise, only a simple statement of the position, but it does illustrate the magnitude of the problem that we face, yet it is a problem, (and this was agreed by all the farm organisations represented in Honolulu, including Japan) which will not be cured by putting forward a plan to carve-up world markets. We don't want that; we want to retain an element of competition and efficiency and all that means, and we want the lowest-cost producers to have a fair go, but we do want to stop dumping, and to channel surpluses, as they arise, into areas where they will do most good and least harm.

Turning to our domestic position — in New Zealand, we, like you, are suffering a price squeeze, but I think we have one more favourable circumstance than you in that agriculture is still a very important part of our economy. We do have a big say and we can, perhaps, exert more pressure than you can because you represent a declining proportion of the community's economic force, (I think that is a fair statement to make) and therefore you are subject to greater pressure whilst at the same time you can exert less influence.

Politically, of course, we, too, in common with all primary producing countries, are becoming less powerful because of the diminishing number of people engaged on the land, and we are becoming a smaller proportion as a whole, but in New Zealand we can still exert a great deal of pressure because of our importance in the economy.

From time to time there are people in New Zealand, particularly in our industry, who say "Well, all the rest of the world's farming industries have been subsidised, so aren't we getting a raw deal? We are all subject to the cost price squeeze and we should be compensated in some way for the fact that our costs are high and still rising". Now, most of us have opposed this over the years and although this is a very debatable point, I think it is the best thing we ever did, because it has meant that the dairy industry in New Zealand has been compelled to be absolutely as efficient as possible, which, in the long run, I am sure, is going to pay dividends. I regard (and I am not having a "dig" at Australia, don't think that for a moment) subsidisation as it exists in many countries as ensuring inefficiency for all times as long as that subsidisation is there. In New Zealand we have had to become as completely efficient as we possibly can, and we are, as a result the lowest cost producers in the world. Although, as I have said, some of our people argue that we have a raw deal, I do know that if we

don't work along these lines we will be doing one thing for certain; we will be opening the door to substitutes and one of these days we are going to be under very great pressure from substitutes—we are now.

I certainly do not know how long we can resist this demand. I was in Denmark a couple of years ago, where I was told that they had opposed subsidisation of the industry for many years, but in the finish they were forced to ask for government assistance in the form of protection and subsidy, thus leaving New Zealand as practically the sole survivor.

But however long New Zealand survives without support it will be doing so because of its efficiency. In Europe, and other parts of the world, government assistance is used to bolster up an inefficient industry. In Finland, for instance, the average herd size is 4 or 5 cows—in the Winter time it is dark 24 hours a day and although I am not blaming them for what is inevitable, there is no doubt that dairying under those conditions is inefficient. A further siguificant factor, particularly in Southern Europe, is the smallness of the farms, which goes hand-in-hand with efficiency and which, in turn, leads to high costs and so to high prices. It is not possible to eliminate these producers overnight; it is a slow process. It is estimated that about 2% per year is as fact as elimination can proceed, because it is not solely a matter of economics, it is social, political and economic change. These farms in Europe and in many other places I have visited have been family farms for generations, and it is not politically possible to eliminate them in a hurry. It can be done gradually, and is being done gradually and, if the elimination of these farms can continue, it means that we can keep prices from rising any further. We may even be able to reduce them and by doing that we will become more competitive and we will have a much wider market.

Each time our cost factors rise we eliminate millions of customers around the world, so in the long term it is in our interests, even if we do have some painful experiences in the meantime, due to the fact that we are in a minority, competing with industry and commerce for labour and services.

But I am speaking now of eliminating inefficient producers. The trend in Europe, particularly in the Common Market, appears to be to retain them all, including the least efficient, which they do by actually building up surpluses at a price which will enable even the inefficient ones to exist, and even to increase production. It is here that I see the dairying industry's greatest problem in today's world.

. . . AND NOW COMPARING CITY MILK

NEW ZEALAND versus SOUTH AUSTRALIA

We have now received from New Zealand figures which enable us to add to the comparisons of butter and cheese costs and returns published in the November-December issue of this Journal. But first, a word of warning: Because of the differences in industry conditions, methods of payment and many other factors, exact comparisons are not always possible and although these figures are accurate they do not always cover exactly the same operations in each case. All values are in Australian currency.

Period 1966-67	**Adelaide Milk Area**	**New Zealand**
Retail per pint bottle	9.0 cents	4.9 cents
Consumption per head	26.3 gallons	30.7 gallons
Price to producer* ... ... (at farm gate)	38.79 cents	36.7 cents
Processor's margin* ... ... (including cartage inwards)	16.1 cents	9.8 cents
Vendor's margin	16.5 cents	12.4 cents
Government Subsidy	——	**24.9 cents**

The total subsidy paid on city milk in 1966-67 was $A18,537,000 of $A7.10 per head, compared with the subsidy of $A28,000,000 paid in Australia on butter and cheese, which represents $2.5 per head.

HOW THE INDUSTRY FUNCTIONS

The reprinting of Mr. Garrett's address on the function of Milk Equalisation has brought much favourable comment and many requests for further explanatory material.

From time to time brief articles are published but those who are deeply immersed in the affairs of the industry tend to overlook the fact that many people in the industry are not fully acquainted with the whole marketing process.

To provide this further information we publish this precis of Overseas Marketing of Australian Dairy Products and Functions of the Australian Dairy Produce Board and Commonwealth Dairy Produce Equalisation Committee Ltd., which has been prepared by the Australian Dairy Produce Board, to outline the system under which Australia markets her dairy products overseas.

No document of this nature can purport to be comprehensive in detail, but the detail set out will be of assistance to the inquirer and those interested in this subject who comes fore-armed with little or no previous knowledge.

DAIRY BOARD, EQUALISATION FUNCTIONS IN OVERSEAS MARKETING AUST. DAIRY PRODUCTS

As it would be difficult to appreciate the significance of the work of a marketing organisation without some knowledge of the important statistics concerned we shall begin by discussing production figures.

In the year July, 1964, to the end of June, 1965, total milk production in Australia amounted to 1,508,690 thousand gallons.

Of this, 62.4 per cent. (941,617 thousand gallons) was used in butter manufacture; 22.4 per cent. (338,400 thousand gallons) mainly for direct human consumption; 9.1 per cent. (136,891 thousand gallons) for cheese; and 6.1 per cent. (91,782 thousand gallons) for preserved milk products.

Processed milk products—216,500 tons—consisted of full cream sweetened condensed milk, full cream unsweetened evaporated milk, skim milk powder, casein, infants' and invalids' foods, full cream powder, skim condensed milk, buttermilk powder and whey powder.

Of the 203,464 tons of butter produced, 52.4 per cent. was consumed in Australia and 47.6 per cent. exported. 83.8 per cent. of butter exports went to the United Kingdom, the other 16.2 per cent. being diverted amongst 80 other countries.

In terms of value, butter is the most important dairy product and the United Kingdom is Australia's best customer taking 75,000 tons of butter and 16,000 tons of cheese.

As a safe generalisation, approximately 60 per cent. of Australia's dairy production is consumed on the home market, the remainder being exported.

Over the years, the value of exports has steadily risen and is now approximately $100 million a year—a sizeable sum of significance not only to the dairy industry, but to the Australian economy as a whole.

FARMERS PROVE CLAIMS OF FEEDMILL

Here is what they have to say—

After using other makes of hammermills and witnessing several demonstrations we decided that the Wetmore 350 Glutton Feedmill produced the best samples of feed. It also has the best capacity under our conditions.

Since the purchase of our Wetmore Feedmill in March, 1967, we have both on our own dairy, poultry and mixed farm, and also under contract work, milled between 5,000 and 6,000 bales of cereal and lucerne hay, 20 tons of sheaved hay, and 600 bags of grain.

After 12 months of operation, the hammers have been turned once, and one knife has been replaced, owing to a horse-shoe passing through the mill. This being the only damage caused to the mill. The horse-shoe emerged in 1½ inch lengths, but caused no damage to the 1½ inch round holed screen. With a 42 h.p. diesel tractor driving the mill we have milled 60 bags of oats, barley and wheat per hour.

On milling hay in good conditions, we have done (milled) up to 150 bales per hour. Under normal working we usually mill 120 bales per hour, 250 sheaves per 1½ hours. We have milled baled hay which has been severely weather damaged, where other mills were unable to handle it. Most hay has been put through a 1½ in. round holed screen and a knife screen with 10 blades on it, giving ¾ in. spacings. Most grain has been placed through a ½ or a ¾ in. screen. Lucerne meal we make with a ⅛ in. screen at the rate of 40 to 50 bales per hour.

Concluding, we would like to say hay wastage has been cut to a minimum, especially with weather damaged hay. Time saved in producing good quality feeds has been outstanding.

This testimonial which was made by R. A. and M. A. Krieg of Lyndoch, S.A., tells its own story and is only one of many cases of farmers who have had similar success with Wetmore Feedmills. If you are interested in having a look at one of these machines they are on display at Primary Implements Pty. Ltd show rooms at 118 Glen Osmond Road, Parkside. Parking is no problem if you turn off Glen Osmond Road into Davey Street and then take the first turn to the right.

THE AUSTRALIAN DAIRY PRODUCE BOARD

The Australian Dairy Produce Board is a statutory body formed in 1924 which operates under the Dairy Produce Export Control Act (1924-1965) and the Dairy Produce Research and Sales Promotion Act (1958-1965).

Its thirteen members are made up of the Chairman who is an appointee and representative of the Commonwealth Government; three elected representatives of dairy farmers; one member from each State to represent the co-operative butter and cheese factories in each of those States; two members to represent proprietary butter and cheese factories and one member to represent factory employees.

Its primary function is to control the export of all butter, cheese, butter oil, ghee, casein and dried skim milk.

Butter and cheese shipped to the United Kingdom are purchased by the Board in Australia and sold to Japan under similar conditions.

Nearly all the other exports are carried out on a trader to trader basis and the Board's role in these sales is to fix and enforce adherence to minimum prices.

For this purpose, the right to export is controlled by the Board, and every transaction is required to be covered by a Board export permit. By these means the Board can ensure that available supplies reach the right markets and yield a maximum return.

It should be noted here too that all dairy produce exported is subject to quality tests by the Department of Primary Industry.

DEVELOPING MARKETS

In addition to controlling exports, the Board is empowered to take action in developing new markets and to secure and expand existing markets both in Australia and overseas.

To this end it directs funds, deducted from account sales, to the Overseas Trade Publicity Committee, The Butter Information Council and the Cheese Information Bureau.

In the year 1964-65 £A264,842 was spent through these three organisatians to promote Australian butter and cheese in the U.K.

As we will discuss later the Board has also taken action to develop new markets in South-East Asia.

A further function of the Board under the Dairy Produce Research and Sales Promotion Act (1958-65) is to administer a programme of research and sales promotion within Australia.

This aspect of its activities is not however, covered in these notes. (Readers are referred to "Australian Dairy Produce Board Promotion Activities").

UNITED KINGDOM MARKET

As we have seen, the United Kingdom is the most important to Australia and indeed to many exporting countries.

Since the end of 1962, Britain has imposed restrictions on butter imports, each of the major suppliers being limited by a quota on the amount which they can send.

These quotas were introduced because, prior to their inception, butter prices had reached a drastically low level, (at this time Australian butter was selling at 240/- per cwt.)—and traditional suppliers were being undercut by heavily subsidised exports from other countries.

Prices immediately became much more stable although this was only partly due to the imposition of quotas. Another major contributing factor was a world-

PERU

Working in close co-operation with the Australian Trade Commissioner, the Board over the past two or three years, has constantly promoted Australian butter in Peru.

These efforts have had notable results, sales of butter to this country have risen from 100 tons in 1960-61 to 16,019 tons in 1964-65.

These sales, which are made on a trader to trader basis, could have been more, had regular shipping space been available to the industry.

OTHER MARKETS

Other good markets for butter are Ceylon, Hong Kong, Singapore and Malaysia; and the establishment by Kraft, of a new processing plant in the Philippines is helping to stimulate sales in this area.

Readers of the Board's annual report are referred to the interesting statistical tables contained therein. Of particular interest will be Tables II and 27.

ASIAN MILK PLANTS

At the time of Britain's proposed entry into the E.E.C. the Board intensified its efforts to develop alternative markets in South East Asia.

The main demand for dairy products in these areas is in the form of processed milks—either sweetened condensed milk, or evaporated milk.

To take advantage of this the Board formed, in association with Asian private enterprise, a company named Asia Dairy Industries.

The purpose of Asia Dairy Industries is to set up milk plants in the South East Asian area.

In the past three years four such outlets for Australian raw materials have been developed in Singapore and Bangkok. The Board and Asian interests have set up plants with designed production capacity of approximately one million cases of sweetened milk a year.

Both these plants are newly built and equipped and are in commercial production.

The Singapore plant enjoys pioneer status which means important tax concessions and assistance. During 1965 the Singapore Government cut down imports of sweetened condensed milk by 80 per cent., thereby creating a substantial market for the locally produced product.

(Also in Singapore is a sterilised milk plant with which the Australian industry is associated).

In Manila the Board has a major shareholding in a modern plant equipped to produce sweetened condensed and unsweetened evaporated milk.

The concept of financing and building milk plants throughout South East Asia is relatively new departure and is already providing a valuable new type of outlet for Australian butter oil and skim milk powder.

It is envisaged that these outlets will play an ever increasingly important role in future overseas marketing of Australian dairy produce.

THE COMMONWEALTH DAIRY PRODUCE EQUALISATION COMMITTEE LIMITED

The principles of Equalisation outlined as follows are comparatively simple.

Their actual implementation and administration are, however, extremely complex matters and they are handled by the Commonwealth Dairy Produce Equalisation Committee Limited, a company formed for this purpose.

The Equalisation scheme is entirely voluntary, but practically all manufacturers operate within it.

The retail price of butter in the United Kingdom—Australia's main export market—is considerably lower than the price in Australia.

Obviously, unless there existed machinery to prevent this, all butter manufacturers would wish to sell their production on the home market for the higher price.

These circumstances would naturally automatically bring down the home price to much the same as the export price.

This is prevented by the Equalisation system.

Under this system all proceeds from sales of butter, cheese and casein (irrespective of whether they are sold in Australia or overseas) go into "pools".

The contents of these pools are then shared out on a equitable basis to all sellers so that everyone receives a price in between that realised overseas and that realised on the home market.

Also into these pools goes the £13½ million subsidy granted to the dairy industry by the Commonwealth Government every year.

It can be seen that the effect of this subsidy is to raise the overall return to the farmer.

The Commonwealth Equalisation Committee is also responsible for establishing at the beginning of the season (i.e. a new financial year) an interim price which factories pay to the farmer for his product.

Obviously this cannot be payment of what the final equalised price for the product will be—that is dependent upon the state of the overseas market throughout the year—it is in fact a conservative estimate.

At the end of the season the final price is calculated from the total annual returns, and the producer is credited with the difference between the original interim price and the final price received.

FINANCE

The activities of the Board and their close link with those of the Dairy Produce Equalisation Committee are of tremendous financial benefit to the industry.

In discussing equalisation we saw that the producer and the manufacturer do not have to wait until their products are eventually sold overseas before receiving the bulk of their payment.

To enable these advance payments to be made to the Commonwealth Equalisation Committee for distribution to farmers, the Commonwealth Government guarantees the Board's account with the Commonwealth Bank to order the $A40-50 million, and to enable the Committee to pay reasonable returns to farmers as early in the season as possible the Government underwrites the return to dairy-farmers for commercial butter at 40d per lb.

If it were left to individual exporters to arrange their own guarantees for funds anticipated from future sales the cost to the industry would be very great indeed.

Because of the tremendous volumes of exports handled by it, the Australian Dairy Produce Board is in a position to arrange special insurance and shipping terms which would not be available to the industry if its efforts were not, to this extent, co-ordinated.

The cost of the Board's export activities were previously financed from levies paid by exporters of butter, butter oil, ghee, casein and dried skim milk.

Funds for the Board's research and promotion activities (which are not discussed in this publication) come from a levy paid by dairyfarmers on butter and cheese made from milk supplied by them.

In July 1965, this system of financing was replaced by o single levy on production of butter, cheese, butter oil and ghee. The levy is currently 5/- (50 cents) per cwt. of the butterfat content of the product.

Although the money now comes from one source, the funds available for the various aspects of the Board's activities are strictly proportioned and are not inter-changeable—this money contributed for research and promotion cannot be used for export activities or vice-versa.

It is interesting to note in looking at recent figures that the Board was spending slightly less than £A200,000 of the levy for its overseas activities, and the gross proceeds from the cheese and butter exports handled by it during the same period were approximately £A40.6 million.

Expressing £200,000 as a percentage of £40.6 million we get 0.49 per cent. a rate which compared most favourably with usual Australian Commercial export agency handling charges for large consignments.

Again, although this is not directly related to the subject under discussion, it is interesting to note that the Australian Dairy Produce Board is giving to the dairy industry for this levy, far more than the services we have so far been discussing.

It is also providing the combined experience and judgement of its Board Members and specialist staff officers to solve industry problems and to guide its progress.

It is providing industry representation at producer, trade and government levels through its activities in connection with such organisations as The Australian Overseas Transport Organisation, the National Farmers' Union of Australia, the Australian Overseas Trade Publicity Committee, the Australian Export Development Council, the International Federation of Agricultural Producers, The International Dairy Federation, the Secretariat to the General Agreement on Tariffs and Trade, and many more.

It can be seen then, that the overseas marketing of dairy products is a complex undertaking and that the present system in which the bodies we have discussed play so great a part, is a result of experiences gained and lessons learnt in the years since Australia's exports first started to contribute, in a substantial manner, to Australia's economy.

PLENTY OF MILK

World milk production in the past year reached more than 689,000 million pounds, two per cent more than in the previous year.

Milk output showed an increase in all but seven major milk producing nations. In Western Europe, which accounts for more than a third of the estimated world output, production was up by at least two per cent. Only Denmark, Finland, Italy, and Sweden saw falls in production. In Eastern Europe, the milk output was increased by about four per cent due to higher cow numbers and higher yields. Only in Hungary did production drop.

New Zealand production set a record high for the fifth year in a row and Australian output also was up.

The 1967 estimated milk production in the 35 countries which account for 85% of the world's cows' milk output, may be as much as 20% over the average 1956-60 level.

Russia remains the world's biggest producer with an estimated 1967 output of 154,000 million pounds. United States is second with 120,000 million pounds, followed by France 64,000 million pounds; West Germany, 48,000 million pounds; Poland, 31,000 million; United Kingdom, 25,000 million; Italy, 21,000 million; Canada, 18,000 million; Brazil, 17,000 million; Australia, 16,000 million; East Germany, 15,000 million; and New Zealand, 14,000 million.

THE SOUTH AUSTRALIAN DAIRYMEN'S . . .

Journal

The Official Publication of the SOUTH AUSTRALIAN DAIRYMEN'S ASSOCIATION INCORPORATED

Published Bi-monthly

Vol. 7, No. 6 Adelaide, MAY-JUNE, 196

MACDONNELL NOVELITE 7TH V.H.C.
CHAMPION JERSEY FEMALE—ADELAIDE ROYAL, 1965, 1967
Owned and Exhibited by R. B. & K. S. COWPER—GLENFERRIE—WILLUNGA

PRICE
20c

Registered at G.P.O., Adelaide
for transmission by post as a periodical.

$1.20 per Year, Post-Paid

THE SOUTH AUSTRALIAN DAIRYMEN'S JOURNAL

Published by
THE SOUTH AUSTRALIAN DAIRYMEN'S ASSOCIATION INCORPORATED
Aston House, 13 Leigh Street, Adelaide. 51 3034
President: H. E. LOECHEL
General Secretary: DAVID J. HIGBED
Advertising Rates on application

ADVERSE PRICE MOVEMENTS AS NEW SEASON BEGINS

The world dairy produce marketing position is at a critical stage; the U.K. Government has asked for a 10 per cent cut in cheese exports, surpluses of butter and milk powder threaten to destroy what little equilibrium remains, and although consumption of butter and cheese on the domestic market remains fairly stable, the impact of overseas conditions has forced expectations for butter and cheese returns down to the lowest level in 16 years.

The Commonwealth Government has retained the underwriting of the opening value at the same level as for last year, so that the interim basic price for 1968-69 continues at the rate of 37.95 cents lb. b.f., but it is expected that the final basic price for this season will be **below 40 cents** compared with an average final of 45 cents during the previous four years.

DROP IN MILK PRICE, TOO!

Unfortunately the Metropolitan Milk Board has decided to reduce the price to producers for licensed milk by 1.9 cent per gallon, to 41.1 cents, and to increase the vendors' margin by 1.2 cent, and the factory margin by 0.7 cent, to take effect on August 11th.

The effect of this reduction will be to reduce producers' gross revenue by $420,000 in the coming year, with income from manufacturing milk less by $900,000 than if the earlier price had continued.

MACDONNELL NOVELITE 7th V.H.C.

judged Junior Champion Jersey Female in the 1965 Adelaide Royal Show and Senior Champion Jersey Female in 1967, under the judgeship of Jersey Island breeder, Mr. A. Mourant. Produced 340 lbs. butterfat as a J2, and 454 lbs. as J3, and recently finished the year as a J4 with a commendable total of 508 pounds.

WHERE DO WE GO FROM HERE?

After a period of stable overseas prices, a quota-maintained U.K. market level, increasing sales to Japan, and a widening by the continued efforts of the Australian Dairy Produce Board of overseas outlets for our dairy produce, we gained a foretaste of future conditions with the devaluation of sterling currency and the almost simultaneous reduction of 45 shillings per cwt in U.K. cheese prices.

At home the consumption and prices of dairy produce are being maintained but overseas (and a substantial portion of our produce is sold overseas) the outlook is far from satisfactory. Just how unsatisfactory can be seen in the text of an address given recently by Mr. Mohindra Singh, Director of Market Research with the Australian Dairy Produce Board.

THE DAIRY PRODUCE MARKET SITUATION

The international dairy products situation, after a period of an uneasy equilibrium between supply and demand in the years 1965 and 1966, took a turn for the worse since 1967. Moreover, since the devaluation of the sterling last January followed by the devaluation of a number of other currencies, the position regarding international trade in dairy products has become quite chaotic. Widespread price cutting is still prevalent in many markets other than the United Kingdom and the gains from years of efforts of the traditional exporters in having established their countries' dairy products in particular markets are at the moment, being seriously threatened.

Production:

Milk: World milk production based on main producing countries was estimated to have risen by 5 per cent in 1965, after an average annual increase of 1.5% in the previous 5 years; in the following 2 years of 1966 and 1967, production has been estimated to have risen in the vicinity of 2% per annum. Thus the 1967 total milk production in the 35 important producing countries stood 21% higher than the 1956-1960, 5-year average. As compared with this 35-country average increase of 21%; the corresponding expansion in the 6 Common Market countries was 25% while within the EEC, French production had risen by nearly 40%. The Soviet Union and 7 other East European countries had registered a rise of 36%; 7 countries in Latin America + 38%; Australia and New Zealand + 21%; 9 other West European countries including the United Kingdom + 9%; while the North American production (U.S.A. and Canada) declined by 2%. Production in Japan rose by 133%.

As a result of these changes, the production share of the 8 East European countries rose from 29.4% in 1956-60 to 33.2% in 1967; corresponding production share for other regions moved as follows: EEC countries from 22.4% to 23.1%; North America from 24.7% down to 20%; other West European countries from 12.7% down to 11.5%; Latin America from 5.7% to 6.6%; Oceania (ANZ) no change at 4.5% and Japan up from 0.6% to 1.1%.

Dairy Products Production:

In many countries milk production of recent years has been increasing faster than domestic consumption thus resulting in a rise in excess milk supplies. This surplus has been placed mainly into butter and dry skim milk making, much of which has been moved into storage, until it could be utilised. For example the EEC butter production rose by 7% in 1965, while the Soviet Union, Poland and East Germany have been estimated to have registered increases of 24%, 20% and 14% respectively. Notwithstanding such heavy increases in 1965, butter production in the East European countries and the EEC countries continued to rise in 1966 and again in 1967, though production in other European countries showed little change. In North America production fell heavily in 1965 and 1966, and there was some recovery in 1967.

A strong reason behind the rising butter production in these countries is the more effective support given to butter as the primary channel for absorption of milk surpluses. In the dairy policy of the Common Market, butter is given maximum support as a balancing item, in order to prevent the upset of markets in other dairy products. Since skim milk is the residual of butter making, both skim milk and skim milk powder are also receiving considerable support. It has been estimated by the EEC Commission that, for the 1968/69 season, the cost of supporting these products will be around $A700 million of which the export refunds may amount to $A230 million. While the EEC butter production was estimated at 1.33 million tons in 1967, the support estimate for butter was based on disposing of the excess of 140,000 tons of butter comprising 90,000 tons as excess for the season 1968/69 (i.e. production less domestic consumption and normal exports) and one-third of the 150,000 tons of estimated stock as at April 1, 1968.

In the case of skim milk powder, the EEC production had reached the level of 1 million tons in 1967 compored with only 250,000 tons in 1960. In France alone production of this product had climbed from 84,000 tons in 1960 to 421,000 tons in 1966.

Cheese: World cheese production, like that of butter has been expanding consistently over the decade. World production rose by 6% in 1965 and perhaps around 3% in 1966 and 1967 respectively. A notable exception in cheese production in the last three years has been that in Eastern Europe the absorption of additional milk supplies by butter prevented much rise in cheese output. Also Australian production was cut back in the 1965/1966 season due to drought. On the other hand, while butter production in North America has been falling due to declining milk supplies, cheese production has continued to expand due to the more attractive return on it.

International Trade

In terms of wholemilk equivalent at the average butterfat content af 3.7%, world trade in dairy products was estimated around 20,000,000 tons of wholemilk in 1965 and again in 1966. This level was below the level achieved in 1964.

Butter: Butter exports of the 14 major exporting countries excluding the U.S.S.R., declined sharply from 599 thousand tons in 1964 to 554 thousand tons in 1965 and then down to 539 thousand tons in 1966. According to preliminary estimates made by the Commonwealth Secretariat, London, the 1967 butter exports of those 14 countries rose to 622 thousand tons.

New Zealand, Denmork and Australia continued to be the three largest exporters af butter and in 1966 accounted for over 70% of world exports. However, French and Dutch exports have risen sharply in the last two seasons, reflecting large butter supplies and surplus disposal programs aimed at expanding overseas sales. On the import side, while the imports of West European countries are declining, other markets in South America and Asia, namely, Peru, Chile and Japan have imported considerably larger quantities in 1966 and 1967. Japan, for example, imported nearly 9,000 tons in 1966 compared with 1,000 tons in 1965. However, these emerging markets are still small when compared with the United Kingdom which accounts for over three-quarters for total world imports and over 90% of total West European imports.

Prices: The most frightening aspect of the world butter trade at present is the heavily subsidised prices of butter and butteroil, being offered by certain exporting countries. For example, against the internal average wholesale price of 72c per lb., France is reported to be exporting normal butter at 26.5c per lb. and stored butter at as low as 12c a lb. The Dutch exporters have been reported to be quoting as low as 22c per lb. for normal butter. More particularly since devaluation it would seem as if "all bets are off" and for markets other than the United Kingdom, New Zealand is following suit and Australia has been forced to adjust its prices against the threat of losing its traditional share of a number of small but valuable markets.

Cheese: World cheese trade has been expanding uninterruptedly during the last decade. Exports of 18 major countries rose from 539 thousand tons in 1964 to 605 thousand tons in 1966—thus bettering the amount of world butter trade for the first time. Cheese exports are estimated to hove further risen to 634 thousand tons in 1967. On the export side, the U.S. imports rose from 35 thousand tons in 1964 to 69 thousand tons in 1967 and of Japon from 8,000 tons to 25,000 tons. However, in spite of the increased turnover, conditions on the international cheese market started to deteriorate in 1967. There ore two major reasons for it. The U.S. imports fell sharply during the second half of 1967 as the new import restrictions came into operation. Secondly, the Common Market became self-sufficient in cheese in 1967 and brought down import restrictions to cut down imports from third countries, in particular by raising the E.E.C. threshold price for Cheddar.

Skim Milk Powder: World commercial exports of non fot dry milk totalled nearly 490 thousand tons in 1966. This was nearly 15% higher than the 1965 level. Nearly all of the gain wos due to increased exports from E.E.C. countries while U.S. exports had dropped considerably in the meantime. Production and trade have been shifting from North America to the E.E.C. The reason, once again, has been the E.E.C.'s policy of high domestic support prices, and payment of export subsidies. This has encouraged greatly expanded exports. The E.E.C.'s production is estimated to have been about 11% up on 1966 following a substantial rise in 1966 as compared with 1965. Stocks of non fat dried milk in the E.E.C. were at record levels at the end of 1967. Production in New Zealand and Australia has also been rising—in New Zealand it rose from 86 thousand tons in 1965 to 137.5 thousand tons in 1966. In Australia it rose from 50 thousand tons in 1965-66 to 83.5 thousand tons in 1966-67. The increase in demand of skim milk powder for the purposes of making recombined liquid and condensed milk started to lift the price for this product substantially as from the middle of 1964. However, the increased surpluses particularly from the E.E.C. countries, as noted above, have caused the prices to decline sharply in recent months. For example with an internal wholesale price of about 19 cents per lb., France is delivering non fat dried milk to Switzerland for 11 cents per lb. As a result our own Board has had to drop its supply price to its associated plants in South East Asia from **$A276** per ton in March, 1967 to **$A203** per ton currently. We hear, moreover, that the U.S. Government has been successful in offering an order for 25,000 tons to Mexico at less than **$175** per ton or less than 9 cents per lb.

While lengthy negotiations at the various international arenas such as the GATT and the Kennedy Round have failed to produce any constructive international agreements whatever on stabilising international trade in dairy products, there has been an increased desire on some countries to get something done on an international basis because of the deteriorating situation. Several members of the GATT Working Group on dairy products now recognise that in view of the widespread price cutting by various suppliers, a solution on a global basis needs to be found quickly. However, going from past experience one cannot be too hopeful. The line taken by the Australian authorities is a simple one, in that there should be an arrangement on prices at least for butter and skim milk powder at levels satisfactory to efficient low cost producers and those that will encourage an expansion of dairy products consumption.

The Australian Situation: The Australian wholemilk and dairy products production has been rising steadily at the average world production rate in recent years, mainly as a result of increasing productivity both in terms of production per man and production per cow. While the U.K. market has remained assured through the U.K. quotas, other markets have been expanded for butter, butteroil, cheese, and skim milk powder. Australian shipments of butter to Japan for example rose from 52 tons in 1964-65 to 5,152 tons in 1966-67. Our cheese shipments rose from 2,373 tons to 9,521 tons, and our skim milk powder exports to Japan expanded from 700 tons to 21,114 tons when the same two seasons are compared.

However, we have now reached the absurd situation that while we have the demand for our products we are not in a position to supply to the fullest extent (drought), nor can we obtain better prices as the demand for our product exceeds our supply. Our returns from the U.K. market have been hit by the equivalent of the devaluation. Our returns from other markets are being hit far more severely for reasons as have been outlined already.

So far the Australian dairy industry has been relatively more fortunate for o number of reasons, namely:

1. Efficiency of production;
2. U.K. butter quota, and
3. a sizeable home market.

When the Australian production costs and output per operator are compared with other overseas dairying industries, there is no doubt that Australia ranks as one of the most efficient producing countries. This has been an important reason in the Australian dairy industry's ability to accommodate the low overseas prices. The U.K butter market has been helpful in that it has offered a sure market for such a sizeable quantity as is exported. The certainty of the U.K. market and the reliability of return even if at low price basis have been useful. However, perhaps the most important feature of the strength of our dairy industry has been the home market. And it is felt that it is in this direction that a considerable effort must now be placed. The Australian Dairy Produce Board since the inception of research and promotion activities some seven years ago has been coming to grips with these matters. While the Board does not market nor has the authority to market dairy products in the domestic market, it has carried out the task of promoting butter and cheese and administered research in the fields of farm productian, manufacturing and marketing in order for the industry to achieve efficiency, both in production and in marketing. The Board's efforts have been paying dividends particularly with regards to cheese. The position regarding butter has been far more complicated with independent trends in the community, such as the eating of a higher protein diet and a lower calorie diet. The task is not a simple one. Nevertheless our enquiries to date do lead us to believe that an improvement in even this field is possible. Last year I conducted a survey personally, namely Butter Marketing: An "On Spot" Analysis of Certain Countries to Determine Possible Application in Australia. A number of oversea countries were visited when carrying out this study. This study has given us a number of constructive ideas in diversifying our quality and our prices and in improving our marketing and promotion.

At the same time the industry is slowly but surely working upon obtaining greater efficiency of production at the farm level and at the factory level. The Industry Stabilisation proposal on the amalgamation of marginal dairy farms has been extended by the Commonwealth Government for the five year period commencing 1st July, 1967. At the factory level, amalgamations are taking place which make it possible for the industry to use larger sized and latest plant and equipment. There have been considerable improvements in this direction with mechanising and automating cheese production. With regards to butter, commercial trials to use the automatic butter churn are now in progress. At the farm level there is an increasing concern to obtain a higher content of protein from the milk composition and to find ways which could offer prospects of obtaining higher side income from dairy beef.

There is no question the industry faces the greatest challenge today than ever before. If it could weather the storm which could last a decade, the future is hopeful. The under-developed countries now recognise their acute protein deficiency and in order to improve their production efficiency, they have to improve the health of their people, as workers and as nations. The crucial factor is their ability to pay and any global agreements in that direction will be the key to the present predicament.

Statistics

ADELAIDE METROPOLITAN MILK SUPPLY AREA

PRODUCTION (000 gallons)

	For Month		Total since July 1		Total since Jan. 1	
	1967	1968	1966/67	1967/68	1967	1968
Apr.	3,068	2,985	44,622	41,237	14,415	13,767
May	3,135	3,352	47,757	44,589	17,550	17,119
June	3,130	3,505	50,887	48,094	20,680	20,624

	SALES (000 gallons)				QUOTA per cent		C.M.B. cents	
	For Month		Total since July 1					
	1967	1968	1966/67	1967/68	1967	1968	1967	1968
Apr.	1,828	1,860	17,481	18,308	59.6	62.3	28.96	36.08
May	1,858	1,873	19,339	20,181	59.3	55.9	27.41	31.94
June	1,817	1,793	21,156	21,974	58.1	51.2	27.25	29.64

Moving average quota for 12 months ended 30/4/68, 46.43%; 31/5/68, 46.44%; 30/6/68, 45.93%

INTERIM PRICES TO LICENSED SUPPLIERS

(All prices are interim only and subject to adjustment by retrospective payment)

1968	Basic (cents per lb. butterfat)	C.M.B.	Total	3%	3.5% (cents per gallon)	4%	4.5%	5%
Apr.	37.95	36.08	74.03	22.92	26.74	30.56	34.38	38.20
May	37.95	31.94	69.89	21.64	25.24	28.85	32.46	36.06
Jun.	37.95	29.64	67.59	20.93	24.41	27.90	31.39	34.88

LONDON PROVISION EXCHANGE QUOTATIONS

(Sterling Currency per cwt.)

	April		May	
	1967	1968	1967	1968
Butter—Choicest Australian	300/–	300/–	300/–	300/–
Cheese—Rindless Australian	265/–	255/–	265/–	225/–

FALL IN U.K. PRICE FOR AUSTRALIAN CHEESE

Rindless Australian cheese fell by a further 30/- cwt. to 225/- on the United Kingdom market early in May.

No Production Cut in Victoria

"One thing that the Victorian Government has done in the past and will continue to do in the future, is to resist any demands made by the Federal Government that we should reduce dairy production in this State," declared the Premier (Sir Henry Bolte) when officially opening the Gilbert Chandler Institute of Dairy Technology.

The Premier said that while the Government might be able to go along with the Federal Government in some of its proposals under its plans to remedy some of the things in the industry, the Government would always resist any demands that the State should curtail or reduce its dairy production.

Is it an Australian record?

What is considered could possibly be an Australian record has been achieved by the Jacobs Dairy Produce Co., Macclesford factory in the cheese continuous grading competiition in South Australia.

Mr. B. Kellett, Dairy Exports Standards Officer (S.A.), believes that the average secured has not been exceeded in South Australia or interstate.

The grading was 98.093 per cent choice; 1.907 per cent first grade, with an average grading of 93.069 points.

Manager of the factory is Mr. H. Gallasch, and the assistant manager, Mr. Len Pridham.

THE BIGGEST CHEESE PROMOTION EVER!

By September 20th the dairy industry will be set to launch the first-ever Australian Cheese Carnival, an event of unprecedented scope, designed to create wider public interest in the variety and quality of Australian cheese.

Retails stores will feature special displays to demonstrate the virtues of Australian cheese, highlighted by dairymaids, well-known personalities, wine and cheese tastings, and competitions. Simultaneously an extensive consumer advertising campaign will be conducted through the "Australian Women's Weekly" and in our daily peak-hour television commercials on metropolitan and country programs, featuring the well-known personality, Graham Kerr with suggestions for "Choosing and Using Australian Cheese."

Consumption of cheese in Australia stands at the all-time high level of 8.6 pounds per head, but even this figure is well below that in many other Western countries where the people have similar eating habits.

The range of cheese varieties now made in Australia is so wide that practically any demand can be met by a home-produced cheese of a quality that can vie with the world's best, and at a price that is equal to the world's lowest.

The eminence of South Australia as a cheese-producing State demands full co-operation from the local industry if the importance of the industry and the superiority of its produce is to be given adequate recognition, and it is to be hoped that a Regional Officer for this State may by then have been appointed by the Australian Dairy Produce Board.

NEW MILK METER RELEASED IN S.A.

A new milk meter, designed and manufactured in New Zealand and being rapidly adopted by dairy farmers in the Eastern States, has now been released in South Australia by the Australia agents.

The meter, which employs the now widely-accepted principle of proportional sampling with an extremely high degree of accuracy is operated by a single valve for metering, sampling and cleaning. When in use it is mounted in the milking circuit and can be used as a permanent fitting for continuous recording or used for periodic testing of individual cows.

Fitting the meter has no deleterious effect on the operation or the efficiency of the milking-machine and, when installed, can be used as an indicator of milk let-down or milking end-point.

As well as being suited for continual farm use a special model is available for herd-recording purposes, and the meter in this form has been approved for official herd-recording by the Victorian Herd Improvement Association and by the New Zealand Dairy Board.

Eighteen of the units have also been purchased by the South Australian Department of Agriculture for the use of herd recorders.

The use of the meter for herd-recording replaces the old system of test buckets and permits the almost complete abolition of any interruption to the normal milking routine, avoiding the disturbance that is sometimes coused among restive cows by the presence of the herd-recorder.

When shown at the Royal Agricultural Show at Smithfield, England recently, the meter received a Silver Medal Award, and a demonstration model will be on view at the Royal Adelaide Show in September.

With increasing costs for purchased fodder, and decreasing returns for milk and cream the use of the meter is essential for farmers who wish to keep only those cows which are paying their way.

MILKING MACHINE SERVICING

Comes to South Australia

Although scheduled testing and servicing of milking machines is a regular feature in other States (Victoria has 12 independent operators carrying out this work) it is new to South Australia, where, until the present, dairyfarmers have operated either by rule-of-thumb or with the guidance of a testing service such as that provided by the Milk Board.

There can be no argument that in all the equipment used by the dairyfarmer, his milking machine is paramount, as it provides the last, and hence the most important, in the long sequence of operations necessary to convert air, water and soil nutrients into milk for sale, but the symptoms of its malfunctioning are less readily observed, and probably less easily corrected without a full range of testing instruments. The farmer can see whether his plough is fully inverting the sod, whether his superspreader is clogging-up, or his baler tying too loose, and can generally make adjustments immediately, on the spot, and continue to adjust until the operation is being performed to his satisfaction. With the milking machine this is not so. Unless the fault is of major dimensions, such as cups falling off, the malfunctioning may not show up for some time, and perhaps, if, as so often happens, the evidence is provided not in the milking process but in the health or behaviour of the herd or in a fall in milk production, not recognised even then for what it is.

The occurrence of faults in other farm equipment is not only more readily observed and corrected, it is also far less likely to result in such lasting and expensive damage. At worst the farmer will have an untidy furrow, an unsupered strip (which can be run over again) or some loose bales, but a faulty milking machine can result in massive mastitic infection, bad milking shed behaviour of the cows (and often of the milker, too), excessive time spent in the milking shed, the loss of valuable stock, and ultimately a decrease in milk output.

Because of the secondary problems that arise from the faulty operation of milking machines, and because of the difficulty and expense of correcting these problems after the machine itself has been corrected, the maxim "Prevention is better than cure" provides the best basis for a milking machine maintenance programme. By the time the farmer recognises, through the health of his cows, or his monthly cheque, that he has a problem, much time has elapsed, and even when the problem is diagnosed and corrected, the road to recovery is long. A regular schedule of testing by instruments, with immediate rectification before either stock or output have been affected, is certainly a worthwhile investment.

The service now offered to dairyfarmers in South Australia guarantees to keep milking machines in top working condition, with an annual routine inspection and immediate 24-hour emergency service on all makes and types. The annual fee is $16 plus the cost of spares.

PROTEIN OFF 200 ACRES

A remarkable feat of experimental endeavour seems to have been accomplished at Rothamsted, Herts, according to the "Farmers Weekly." The discovery is the more important since it is primarily designed for use in under-developed countries.

Crop experts have worked out how to by-pass livestock and produce protein from green crops as cheaply and almost as good as the protein in meat and milk. The scientists at Rothamsted have built a prototype plant which would allow a 200-acre farm growing intensively fertilized cereal and fodder crops to produce the supplementary protein requirements of 20,000 people living on a predominantly vegetable diet.

And the by-product could be 400 tons a year of animal feed equal to dried grass.

The protein extraction equipment has now reached the stage where it could be manufactured. Stepping up the usable protein food value of green crops by at least 50 per cent, it produces a protein supplement which is as good as fish meal or soya bean meal for stock feeding.

Although it is only possible for animals to obtain 2 cwt. to 3 cwt. of protein an acre from a crop of maize or cereals, the Rothamsted process would allow the extraction of 10 cwt. in a temperate climate and more than a ton in the tropics and yet still leave a by-product containing 10 to 12 per cent protein for processing into animal feed.

The direct process is even more startling in terms of feeding value as a protein supplement for people when the waste involved in feeding green crops to cattle and then consuming the beef and milk produced is considered.

The basic idea of extracting protein from plant leaves is not new—it was first discovered in 1773—but serious practical study of the idea has been carried out only since the 1930's.

It received considerable government encouragement during the war, but no economical methad was worked out and the idea was dropped with the beginning of Lend-Lease.

Fresh work on the development of cheap and efficient equipment was restarted in 1950. The man responsible for most of the research from the 1930's to the present doy is Mr. N. W. Pirie.

"By harvesting leaves rather than following the techniques of conventional agriculture," he said, "a greater yield of nutritionally valuable material can be won in a given time."

At Rothamsted an engineer, Mr. Glyn Davys, is working on the design of the protein extractor, and an agronomist, Mr. David Arkcoll, is investigating cropping programs and methods to feed the machine.

Since it is primarily for use in developing countries it is a great advantage tha the machine is extremely simple. There are no electronics or chemical processes and it could be worked by a diesel engine 100 miles from a railhead, says Mr. Davys.

Green material is pulped by a powerful hammermill and is fed through a continuous belt press which squeezes out most of the liquid.

The liquid is then curdled by being heated with steam—and the resulting protein containing curd is then dried.

"With green material taken into the plant costed at around £3 to £4 a ton," said Mr. Davys, "it should be possible to produce a protein feed for stock equal in feeding value and at a competitive price to fish meal or soya bean meal —provided that the by-products are fully exploited.

"The process is primarily aimed at producing a human protein food, 15 grams—a tablespoonful—of which would provide the supplementary 30 per cent of protein required by people living on a protein-deficient vegetable diet. It has been used successfully in a feeding trial for children in a hospital in Jamaica where it has proved nearly as good as skim milk in treating kwashiokor.

"We have also eaten protein extracted from various craps in our own plant here; an its own it doesn't taste very exciting—much the same as the leaf itself —but maize protein for example, remixed with the corn and fried is delicious."

The Rothamsted machine can now handle up to 1.5 tons of green material an hour. The extraction plant alone without the ancillary equipment, it is estimated, could be manufactured for about £6,000. A complete plant with buildings, access roads, and equipment for drying the residue for stock feed would cost up to $40,000.

It can extract 25 to 35 pounds of pure protein from each ton of wet crop working out at 2 to 2.5 cwt. of dry protein from each ton of dry matter.

Fed direct to humans this is nine times more efficient than feeding the crop to cattle and then consuming the meat produced. Ninety per cent of the protein fed to cattle is wasted.

"This type of plant," said Mr. Davys, "set up on a farm of 200 acres with properly managed successional green crops could produce enough supplementary protein for 20,000 people."

To produce this amount of protein—as well as 400 tons of dried grass-like stock feed—the farm would have to be very intensively cropped and fertilized, says Mr. Arkcoll.

of tank units tested by the State Electricity Commission of its by the Australian Standing Committee on Agriculture) ustralian Standard N46-1963.

ST OF PERFORMANCE

	RL250	**R300**	**R400**	**R500**
	C.P.66C10	**C.P.66C8**	**C.P.66C13**	**C.P.66C9**

te NSC No. 8/4 Complies with Milk Board and Department rements in every State.

lew round design for minimum space requirements • All e foam insulation • Low height for easy cleaning.

further information contact

n equipment

co-operative ltd.

herill & Egerton Sts., Lidcombe, N.S.W. 648-1084.
63 Charles St., North Coburg, Victoria. 35-2347.
9B Stanley St., South Brisbane, Qld. 4-5452.
ERS' CO-OPERATIVE LTD.)

Greater Production From Advanced Feeding

The drought is over, but what happens now? This is a major question facing many at present, but not three dairy farmers who have swung over to advanced drought feeding to increase their production.

All three farmers maintained their production during the recent drought by feeding their cows on pellets. While the pellets lifted production, their cost actually lowered net income. With this production lift in mind the three farmers have decided to continue their high quality feeding during a good season, but without the high costs.

How? . . . by mixing their own concentrate feed. They have each bought a Wetmore, Dilly Model, Feedmill. The results: greater independence and reduced feeding costs. Two of the farmers grow their own grain while the third buys his in from outside. One claims he is getting the same production as before with a sample equal if not better than the pellets. He said he will save $15 a ton by utilising his own feed and not having to buy pellets in.

His ration includes four bales of oaten hay; one bag of oats; half a bag of barley mixed with the equivalent of one bale of green feed.

Milling and mixing up to three times a week at an hour at a time he has found a new approach to scientific feeding for economy and reliability. For a total outlay of $456, the price of a Dilly Feedmill, any farmer can reduce seasonal hazards and in turn increase production and returns through better concentrated farming methods.

Wetmore Feedmills combine the principles of a chaff cutter, hammermill, chopper, crusher and blower. These features ensure high quality feed at an optimum production rate. The mills will handle anything from green fodder to poultry litter to any consistency the farmer wants.

In the next issue of the Darymen's Journal we will give you more details on exactly how one of these farmers is lifting production on a very economical level. This farmer's figures are very interesting and are sure to raise comment.

We have many other cases where dairy farmers have lifted their production simply by taking a second look at their rations. We place you under no obligation to come and have a chat with us. You will find us at our Head Office, 118 Glen Osmond Road, Parkside, or if you would like to go direct to our drive-in show room, turn right into Davey Street, corner 118 Glen Osmond Road, Parkside, then first turn right. Primary Implements Pty. Ltd. is our name and we shall be very pleased to see you.

EXOTIC DISEASES

A Perpetual Problem

An outbreak in New Zealand of what at first was thought could be foot-and-mouth disease, at a time when the disastrous United Kingdom epidemic was being successfully combated by a campaign of compulsory slaughter of frightening magnitude, was followed by the news of a resurgence of the U.K. epidemic in a region where it was thought that successful eradication had been achieved.

Although the New Zealand scare was proved not to be foot-and-mouth disease, the uncertainty of the diagnosis illustrated how hazardous is our position now that we are no longer protected by the natural quarantine period provided by a long sea voyage.

Almost half-a-million head of stock were slaughtered in the campaign against the recent British outbreak, and although these numbers constitute only about one per cent of the total United Kingdom cattle, sheep and pig population, the slaughter figures have had a disastrous impact on certain areas, as more than 30 per cent of the total livestock was slaughtered in three countries. The effect on individual farmers was even more crippling, and although total compensation to farmers reached $(A) 70 million, the resultant loss of 60,000 tons of meat and 80 million gallons of milk will never be reimbursed, nor can theer be any recompense for the years spent in breeding up highly-productive herds.

The Association is seeking, through the Australian Dairy Farmers Federation and the Minister of Agriculture, to have reimbursement of lost income incorporated in the compensation clauses of the legislation, and, although it is too early to report progress, we are hopeful that the impact of the U.K. outbreak will enable the Parliamentary representatives of rural areas to elicit sufficient support to have this put into effect.

But we must not imagine that the danger from foot-and-mouth disease has abated with the cessation of the recent eradication program in Britain. In some parts of the World at this moment the disease is continuing to take its toll, not as spectacularly as in Britain, but effectively nonetheless. And not only foot-and-mouth but other stock diseases of comparable virulence, the ravages of which we have, fortunately, not experienced in this country, are continuing to deplete the supply of animal protein so desperately needed in today's starving world.

A recent survey made by a group of nutrition and animal health and husbandry experts into the food needs of the world's expanding population demonstrates that the prime requirement is a dramatic increase in the production of animal protein, and the following article, from the group's findings, published under the title of "World Protein Hunger: The Role for Animals," illustrates the urgency of first winning the war against stock diseases.

LIVESTOCK DISEASE IS COSTLY WEAKNESS

Disease is a weakness which the world's livestock industry cannot afford. It not only costs countless millions of dollars, but it impedes progress in that essential industry to a degree which is often poorly appreciated even by specialists.

It is a salutary experience for a group of research workers to witness an experimental herd of cattle, whose output is being carefully boosted and minutely recorded, going down with foot-and-mouth disease. "Going down" is a good colloquialism. The animals go down rapidly in condition, their milk yield goes down spectacularly overnight, and they themselves go down in the physical sense. The tender, raw patches on their feet make moving and even standing still extremely painful.

Foot-and-mouth disease is usually spectacular. You can see it. Blisters on and under the tongue and round the palate leave raw slough areas which make mastication agany. The affected animal is lame, and all four feet are acutely sore. The temperature soars. The coat looks as if it had been brushed the wrong way. The results of the disease can be equally spectacular. It may upset months of carefully prepared experimental work, which is excessively annoying to the scientist. It can effectively prevent the preparation of padi land by incapacitating draft animals for a few vital weeks, which can be a major tragedy for the peasant. The incidence of foot-and-mouth disease is spectacular. If, at the present time, you were to dip a brush in red ink and, on a world map, you shaded in those areas in which this disease is widespread, you would have a chart in which a wider area would leap to the eye than used to be covered by the imperial red of the British Empire—or indeed, of any other empire.

Unfortunately, the only thing which is not spectacular about foot-and-mouth disease is its death rate. Unfortunate? Yes, in the sense that if the percentage of affected animals that died was substantially higher than the customary average of 5 or 6 per cent, something very drastic would have to be done to control the disease.

It is certainly one of the diseases of greatest economic importance in the world, but the loss in milk, in meat, in draft power, in abortion and reduced reproductivity is not always immediately apparent. This is especially true in countries where the disease has always existed and where people have apathetically accepted it as they accept floods and earthquakes and other manifestations of the unpredictable malice of the gods.

Rinderpest is quite another matter. It kills and therefore it **must** be fought. It is being fought in every land where it occurs. Its importance can be assessed by the fact that in Vietnam, which has suffered for more than 20 years a bloody and devastating war, nothing has been allowed to check the vaccination campaign —not the disruption of agriculture, not the destroyed padi areas, not the many veterinarians and vaccinators killed or reported missing. It is not inappropriate to commend here the dedicated livestock and veterinary services of that war-torn country for their courageous devotion to duty—and the support which they have been receiving from USAID. Some day, when peace comes, there will be something on which to rebuild.

India, which surely has much more than her fair share of troubles, threats, hunger and poverty has an appalling problem in livestock disease. Foot-and-mouth has been on many occasions and for quite long periods a major preoccupation of my professional life. I have had to deal with it in many countries and under many different conditions, and I have seen many animals affected, many vaccinated, and many slaughtered. In India, slaughter and vaccination are not, as yet, possible. In three weeks in that troubled land early in 1966 I saw more foot-and-mouth disease than in my entire career to date. I believe that it must be numbered among the greatest of India's many great problems.

And not only India. The direct effects of the seven recognised virus types and of the strains within these types are bad enough. The indirect effects have an extremely costly impact on those advanced countries such as the United States of America and Australia, which are spending enormous sums of money on quarantine and related services in a determined effort to keep the disease away from their livestock, or if the worst happens, to be in a position to contain and eradicate the disease as soon as it appears.

In Europe, which for many years has harboured foot-and-mouth disease in widely scattered areas and which has experienced fairly regular epizootic cycles every seven to ten years, the post-war period has been a concerted and highly successful control campaign. This has been based upon the general application of sanitary measures—which again come under the all-embracing heading of quarantine—and a wide extension of vaccination. In several countries the concept of vaccination till the incidence has been reduced sufficiently to render compulsory

SAVE YOUR FENCES

With the coming of winter and the colder weather, cattle lice will become an increasing problem.

The principal symptom is irritation, and this is seen most commonly in winter and early spring. Affected cattle constantly rub themselves, causing patches of hair to fall out, giving a shaggy appearance to the rest of the coat, and the skin becomes extremely scurfy.

COOPER'S

BERCOTOX

CATTLE SPRAY

ENSURES THRIFTINESS • HIGHEST MILK YIELD • TOP DRESSED WEIGHT AT MARKET-TIME

Available in 1-gallon and 1-pint tins.

COOPER PRODUCT

Obtainable from:

Elders - GM and DALGETY-N.Z.I.

WC/489

slaughter and stamping-out economically practicable has been achieved. Great Britain, which rightly has restricted its control measures to a stamping-out policy, has reaped a considerable bonus from the new continental policies. Foot-and-mouth disease, which used to be an annual purgatory for farmers and veterinary officers, has only occurred once in a four-year period. The single outbreak occurred in the south of England in April, 1965. It was successfully stamped out. This extraordinary degree of freedom in an island country which has to import great quantities of livestock products has been due to the general reduction of incidence in Europe, a ban on the importation of pig meats from South America, and unremitting vigilance in quarantine.

Now the fat is in the fire again—not an inapt image! Denmark, Sweden, France, Netherlands, Germany (East and West), Belgium, Poland, Czechoslovakia, Hungary, Austria, Switzerland, Spain and Yugoslavia have all reported an increased incidence of varying degrees from minor occurrences to major catastrophes.

A variant of Type A virus has become superimposed on those constituting the costly epizootic in Turkey and has stepped up the threat in Europe. It swept through Turkey in 1965, complicating immeasurably the control measures which have been applied unremittingly since 1962. The buffer zone—the glass wall of vaccination separating Turkey from Europe—required as a minimum one million doses of trivalent (O/SAT 1/A) vaccine during the first half of 1966. In Europe we are not unaccustomed to walls of various types. This is one which we watch more anxiously, with hopes for its continued efficacy. It has been erected and is being maintained by a remarkable example of international co-operation. It is protecting the countries of Europe, and also those countries far removed from the immediate red-shaded zones, from a spill-over of virus which could be disastrous to livestock industries everywhere.

In the autumn and winter of 1965 wide areas of the U.S.S.R. were affected with this "new" variant, further complicating a situation which was already complicated by the presence of the virus types A and O.

Just how complicated the pattern of control is can be appreciated when we consider that vaccine against one type of the virus does not protect against any of the other types. There are even immunological differences between strains of the same virus type.

And what of rinderpest, the ancient bogey of livestock, the "black-death" of cattle? There are widespread and continuing and costly campaigns against this scourge in Africa and India and the Far East. Whenever it occurs it is being fought—and it still fights back with much of its old ferocity. Setbacks, such as that experienced in India early in 1965, are not uncommon, but the disease is slowly and painfully being controlled in a long-term, far-sighted series of campaigns which, when looked at collectively, hold some hope for the eventual eradication of the disease. Not, perhaps, in our time but quite possibly within the next century or so—which will still be a noteable if long-postponed success.

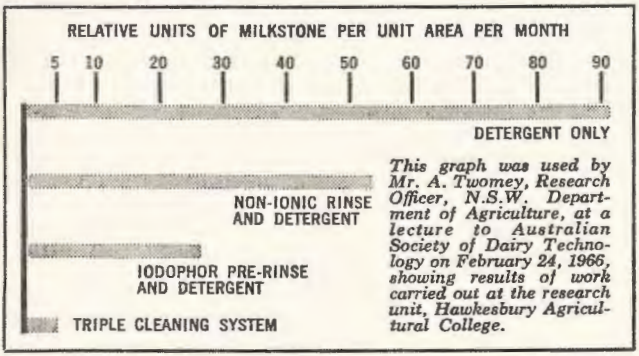
The disease of man and his animals and those that are common to both animals and man form a serious impediment to the increases in production which are so vitally necessary to the world of today and of tommorrow. Any consideration of husbandry and health must have regard to the positive increases in output which can only result from better nutrition, better breeding practices, better management—and a decisive reduction in the enormous losses caused by disease. Animal husbandry after all, means simply the care and use of livestock.

Disease is not always spectacular, is not even invariably obvious. Many millions of animals—and many millions of human beings—go through life in a state of sub-health with inapparent illnesses which shorten existence and make it miserable but which are so common, so widespread and so historical that they are accepted as the norm.

Research Proves Triple Cleaning System

The Triple Cleaning System is a revolutionary new method for cleaning milking equipment. It was first developed by the research unit of the N.S.W. Department of Agriculture and approved by Dr. Whittlestone of Ruakura Agriculture Research Centre. This system reduces milkstone deposits, thereby minimising contamination. (See graph.)

Cooper's are happy to be associated with the extension of this information to the dairy farmer, as their range of dairy products is especially developed for this cleaning system.



This graph was used by Mr. A. Twomey, Research Officer, N.S.W. Department of Agriculture, at a lecture to Australian Society of Dairy Technology on February 24, 1966, showing results of work carried out at the research unit, Hawkesbury Agricultural College.

- *LESS MILKSTONE, BETTER "BLUE" TIME*
- *LOWER BACTERIAL COUNTS*
- *CLEAN FASTER, MORE EFFICIENTLY WITH—*

THE COOPER TRIPLE CLEANING SYSTEM

1. **ANABAC** (IODOPHOR) PRE-MILKING RINSE
2. **COOPASOL-D** NON IONIC POST-MILKING RINSE
3. **BACTERGENT** LOW FOAM ALKALI DETERGENT

ALWAYS USE A FINAL RINSE OF BOILING WATER

Other Dairy Products in the Cooper range are

Cooper's **COOMAC** Acid Milkstone Remover, Cooper's **UDDER SOAP** and Udder Soap Dispenser, **MIN-A-VIT ORANGE BAND** Mineralised Vitamin Supplements for cattle.

AVAILABLE FROM YOUR LOCAL COOPER AGENT OR DAIRY FACTORY

WC438

The universal insidiousness of the infections and infestations in the wide and sombre spectrum of parasitism alone constitutes a picture of despair and a challenge to modern technology. We know how to control many of the worst and most damaging of them: we have the knowledge but lack the logistics, we know the strategy but lack the tacticians.

We estimate that there are about 1,000 million cattle and buffaloes in the world, almost the same number of sheep, 551 million pigs, and inumerable goats and poultry. There are not more than 200,000 qualified veterinarians to cope with this vast general practice and many fewer specialists in husbandry and nutrition. A large part of this small cadre of skilled men is concentrated in the richer countries. They are helping those countries to grow richer, while the gap between the haves and the have-nots of the world grows irreparably wide.

The picture is grim but not hopeless. There is an increasing trend for the governments of the wealthy, advanced countries—the terms are not always synonymous!—to make available ever more of their specialists for work in the international field. There are indications, fostered by such movements as the Freedom from Hunger Campaign, of an awakening world conscience, of an acceptance of the fact that this is one world, that it is our world and our responsibility. There are signs that industry is joining science in helping not only to make the living standards in wealthy countries better but also to raise the standards in great areas of the earth's surface.

The underdeveloped countries of today are the developing countries of tomorrow or the day after tomorrow. The needs are immense and urgent. Will the challenge be accepted with sufficient force to make an impact on progress, or is the world, with all its resources, its vast potentials, and its high hopes, to accept the fact forever that hunger and poverty cannot be defeated?

TRAGEDY ON THE FARM

"When Foot and Mouth Disease strikes it's the farmer's wife who often bears the greatest burden.

"With the policeman standing at the main farm entrance, and the sound of the humane killer relentlessly destroying the animals, she has to sustain her husband and family.

"Somehow she has to go mechanically through the daily routine of running the home, caring for the children who are probably crying and frustrated at not being allowed to see their small friends, and cooking meals which no one except the children has the heart to eat.

"Once the Ministry vets have confirmed Foot and Mouth Disease in your animals your farm becomes an island from which you can't get away, and your only contact with the outside world is by telephone.

"Gates and entrances are locked, while red notices are nailed to posts warning everyone to keep out. Until the animals have been slaughtered and the farm has been disinfected, the only people allowed in are the vets, the slaughter men and the army of men who afterwards come to disinfect the farm.

"All of these people must be carefully disinfected. There is a spray of disinfectant to hose down waterproof clothing and a large bowl of it into which you step with Wellington boots on.

"Across the main gateway there is a wide pool of disinfectant or a straw mat which is saturated in it. Over this all the vehicles must pass on either entering or leaving the farm.

"So for six weeks, which is also the time that must elapse before you are allowed to re-stock, no one comes near you. And if, for any reason of emergency, you have to leave the farm, you must undergo an elaborate process of disinfection.

"You feel as though you are living in a vacuum. You can see life going on round about you, but because you can no longer influence it, because the very foundations of your existence are being taken away and destroyed, and there is nothing you can do to prevent it, you feel numbed and detached, and nothing seems real any more."

—**Meriall McPherson** (in a B.B.C. broadcast).

REFRIGERATED FARM MILK TANKS

Although the Metropolitan Milk Board's revised "Conditions of Approval" (dated 4/10/65) provide that if "one unit of each brand of tank (has been) tested by an authority set up in Australia for the purpose, and a certificate that the unit complies in full with ASN 46—1963 and any amendments thereto . . . other units of the same make but of varying sizes will then be acceptable to the Board," a greater degree of assurance is given to a purchaser if an exact counter part of the tank that he intends to buy has also been tested and certified.

The Board's original "Conditions" in fact granted approval only to such tanks, but at that stage so few tanks had been certified that exact compliance with those "Conditions" would have severely hampered the inauguration of any bulk milk schemes, and the Board consequently found it necessary to modify its conditions of approval in order to widen the range of tanks available.

Now many more tanks have been tested and certified, extending the range both as to volumetric capacities and makers, and even allowing choices in the types of units and the icing controls, and we print on the following pages a complete list of the tanks certified up to the time of publication, set out in order of volumetric capacity, which will be supplemented in subsequent issues as further tanks are passed.

We offer no apologies for the fact that a similar list, in a different arrangement, was published in the September-October, 1967 issue of the Journal. The number of certified tanks is now twice that which existed at that time, and the need to make a wise and informed decision in the purchase of a tank is so great that it is undoubtedly better to be over-supplied with information than to be unaware of the extent of the market.

Refrigerated Farm Milk Tank Units

Tested by the State Electricity Commission of Victoria and certified as complying with ASN46 to 30th June, 1968

Supplier	Compressor Motor h.p.	Condensing Unit Supplier	Control over icing	Certificate Number
150 gallon nominal				
Anderson	3	Kelvinator	Bypass of solenoid valve	CP 65 C9
Anderson	3	Terry	Bypass of solenoid valve	CP 65 C9A
Dairy Kold	3	Ellis & Judges	Compressor bypass	CP 67 C6
200 gallon nominal				
Alfa Laval	5	Amatice	Compressor bypass	CP 64 C2
Anderson	5	Kelvinator Y490	Bypass of solenoid valve	CP 66 C4
Anderson	5	Kelvinator Y370	Bypass of solenoid valve	CP 66 C3A
Anderson	5	Terry	Bypass of solenoid valve	CP 66 C4A
Anderson	5	Terry	Bypass of solenoid valve	CP 66 C3
Brambles	4	Terry	Compressor bypass	CP 67 C6
Dairy Kold	5	Ellis & Judges	Compressor bypass	CP 67 C2
250 gallon nominal				
Anderson	5	Kelvinator	Bypass of solenoid valve	CP 66 C10
Anderson	5	Kelvinator	Bypass of solenoid valve	CP 66 C11
Anderson	5	Terry	Bypass of solenoid valve	CP 66 C10 AT
Anderson	5	Terry	Bypass of solenoid valve	CP 66 C11 A
Dairy Kold	5	Ellis & Judges	Compressor bypass	CP 67 C3
Frigrite	5	Kelvinator	Warm gas injection with solenoid	CP 66 C1
Milkwell	2x1	Tecumseh	Cycling one compressor	CP 65 C6

(MILK IS WATER-COOLED FROM 95° F TO 70° F WITH REFRIGERATION FROM 70° F TO 40° F)

Supplier	Compressor Motor h.p.	Condensing Unit Supplier	Control over icing	Certificate Number
250 gallon nominal (continued)				
Mobile	5 (modified)	Terry (modified)	Compressor bypass	CP 67 C19
Pioneer (Mirra)	5	Kelvinator	Bypass of solenoid valve	CP 66 C6
Way	3.5	Terry	Constant pressure valve	CP 65 C7
	(WATER ASSISTANCE REQUIRED WITH REFRIGERATION)			
Way	5	Terry J-12-500-H	Bypass, solenoid and L.P. switch	CP 68 C4
300 gallon nominal				
Alfa Laval	5	Kelvinator	Bypass, solenoid valve and L.P. switch	CP 68 C/5
Anderson	7½	Kelvinator	Bypass of solenoid valve	CP 66 C8
Anderson	7½	Terry	Bypass of solenoid valve	CP 66 C8A
Dairy Kold	7½	Terry	Compressor bypass	CP 67 C9
Milkwell	7½	Tecumseh	Bypass, solenoid valve and L.P. switch. Cycling one condenser fan	CP 68 C/11
Nizer	Sealed unit	Tecumseh	Compressor bypass	CP 67 C/21
Truscott	7½	Terry	Constant pressure valve	CP 65 C8
350 gallon nominal				
Dairy Kold	7½	Terry	Compressor bypass	CP 67 C15
Frigrite	7½	Kelvinator	Compressor bypass, TX valve	CP 67 C5
400 gallon nominal				
Alfa Laval	7½	Kelvinator	Compressor bypass solenoid valve L.P. switch	CP 67 C12
Anderson	7½	Kelvinator	Bypass of solenoid valve	CP66 C13
Anderson	7½	Terry	Bypass of solenoid valve	CP 66 C13 AT
Dairy Kold	7½	Tecumseh Type P	Compressor bypass	CP 68 C1
Frigrite	7½	Kelvinator	(modified) bypass of solenoid valve and press switch	CP 68 C3
Truscott	7½	Terry	Accumulator & Float valve	CP 67 C17
500 gallon nominal				
Anderson	10	Kelvinator	Bypass of solenoid valve	CP 66 C9
Anderson	10	Terry	Bypass of solenoid valve	CP 66 C9A
Dairy Kold	10	Tecumseh Type RA	Bypass	CP 68 C2
Frigrite	10	Kelvinator	Bypass of solenoid valve	CP 67 C22
Truscott (840y)	10	Terry P-1000-H	Accumlator & Float valve	CP 68 C6

(**Suffixes:** A—supplementary certificate issued without additional test; AT—supplementary certificate issued after testing.)

HOW MUCH DOES A BULK TANK COST TO RUN?

ETSA recently completed power consumption tests on a sample of refrigerated farm milk tanks in the Jervois and Myponga districts, covering three different makes of tanks (the only three makes available at the time the tests were commenced). The results of the tests are shown below.

It is interesting to note (and we are pleased to draw our readers' attention to this) that with the exception of No. 1, the results accord very closely to the estimated power costs shown on p. 17 of the Refrigerated Bulk Milk Handbook which was published by this Association in September, 1965.

TABLE

BULK MILK COOLERS (AS N46 STANDARD)
UNIT PERFORMANCE TESTS — 1967-68

18/6/68

Farm No. & Vat Capacity	Make	Motor H.P.	Location	Period	Milk Production (lbs.)	Utilization Factor	KWH Consumption High	KWH Consumption Low	KWH Consumption Total	KWH Consumption per: 100 lbs.	KWH Consumption per: 100 galls.	Cents Cost per: 100 lbs.	Cents Cost per: 100 galls.
1	A	7.5	JERVOIS	Autumn	155,625	.42	1,121	37	1,158	.74	7.64	1.84	18.98
				Winter	81,080	.22	508	13	521	.64	6.60	1.59	16.41
				Spring	171,430	.47	1,314	143	1,457	.85	8.77	2.04	21.05
4,000 lbs.				Summer	185,775	.51	2,109	363	2,472	1.33	13.72	3.19	32.92
				ANNUAL	593,910	.40	5,052	556	5,608	.94	9.70	2.27	23.42
2	A	5	MONTEITH	Autumn	77,715	.28	270	269	539	.69	7.12	1.40	14.46
				Winter	28,630	.10	102	92	194	.67	6.91	1.39	14.34
				Spring	94,625	.35	309	295	604	.64	6.60	1.29	13.31
3,000 lbs.				Summer	122,685	.45	679	213	892	.73	7.53	1.65	17.03
				ANNUAL	323,655	.29	1,360	869	2,229	.69	7.12	1.46	15.06
3	B	7.5	JERVOIS	Autumn	151,005	.40	968	231	1,199	.79	8.15	1.84	18.99
				Winter	88,455	.23	583	81	664	.75	7.74	1.79	18.47
				Spring	144,330	.38	832	240	1,072	.74	7.64	1.69	17.44
4,100 lbs.				Summer	193,775	.52	1,211	301	1,512	.78	8.04	1.80	18.58
				ANNUAL	577,565	.38	3,594	853	4,447	.77	7.94	1.78	18.37
4	B	7.5	THE POINT	Autumn	182,395	.38	912	242	1,154	.63	6.49	1.45	14.96
				Winter	144,955	.30	670	131	801	.55	5.67	1.29	13.31
				Spring	186,815	.39	929	256	1,185	.64	6.60	1.45	14.96
5,200 lbs.				Summer	229,860	.48	1,270	403	1,673	.73	7.53	1.65	17.01
				ANNUAL	744,025	.39	3,781	1,032	4,813	.65	6.70	1.48	15.27
5	C	3	WATTLE FLAT	Autumn	4,450	.07	57	29	86	1.93	19.91	4.20	43.34
				Winter	41,975	.23	252	140	392	.93	9.59	2.01	20.74
				Spring	59,705	.33	429	167	596	.99	10.21	2.23	23.01
2,000 lbs.				Summer	15,139	.08	181	107	288	1.90	19.60	4.08	42.10
				ANNUAL	121,269	.19	919	443	1,362	1.12	11.55	2.45	25.28

Continued—

UNIT PERFORMANCE TESTS — 1967-68 (Continued)

Farm No. & Vat Capacity	Make	Motor H.P.	Location	Period	Milk Production (lbs.)	Utilization Factor	KWH Consumption High	KWH Consumption Low	KWH Consumption Total	KWH Consumption per: 100 lbs.	KWH Consumption per: 100 gals.	Cents Cost per: 100 lbs.	Cents Cost per: 100 gals.
6	C	7.5	MYPONGA	Autumn	94,115	.34	821	53	874	.93	9.59	2.27	23.43
				Winter	63,730	.23	578	3	581	.91	9.39	2.27	23.42
				Spring	149,845	.55	1,015	61	1,076	.72	7.43	1.76	18.16
3,000 lbs.				Summer	136,655	.50	1,061	100	1,161	.85	8.77	2.06	21.25
				ANNUAL	444,345	.40	3,475	217	3,692	.83	8.56	2.03	20.95
ALL FARMS AVERAGES				Autumn	665,305	.32	4,149	861	5,010	.75	7.74	1.76	18.16
				Winter	448,825	.22	2,693	460	3,153	.70	7.22	1.66	17.13
				Spring	806,750	.41	4,828	1,162	5,990	.74	7.63	1.72	17.75
				Summer	883,889	.45	6,511	1,487	7,998	.90	9.28	2.11	21.77
				ANNUAL	2,804,769	.36	18,181	3,970	22,151	.79	8.15	1.84	18.99

Fahrenheit Dry Bulb Temperatures in Adelaide during Tests

(Bureau of Meteorology)

	Autumn	Winter	Spring	Summer	Year
Average Temp.	74	61.5	70.7	83.9	72.5
Peak Temp.				109.5 (30/1/68)	
Days over 95	—	—	—	19	19
Days over 90	1	—	6	28	35

* Average temperatures at the Tailem Bend Centre were 2 to 3 degrees above Adelaide.

COMMENTS:

1. Weight of 1 gallon of milk is taken as 10.32 lbs.
2. All electric motors are 3 ϕ.
3. All refrigerator units were of the direct expansion type with no precooling.
4. Three makes of machine were tested and shown in the table as A, B, and C.
5. Cost per unit at the high tariff is taken from the 2nd step of the Rural Tariff. i.e. 2.5 cents.
6. Cost per unit at the low tariff is taken from the Night Rate of the Rural Tariff. i.e. 1.54 cents.
7. The proportion of power consumption at the low tariff to the high tariff varies considerably, due to many factors such as time of milking, etc.
8. The time of pick up would have some influence on the power consumption.
9. On farm 5 during autumn and summer when the tank contained very small amounts of milk the thermostat did not function correctly under these conditions and consequently the power consumption per gallon was excessive.

A.I. NON-RETURN RATES IMPROVE

A small improvement in the 30-60 day non-return rate for first inseminations, 67.1 per cent, compared with 66.3 per cent for the previous year, is shown in the Annual Report of the Artificial Breeding Board for 1966-67.

The Report states that the average non-return rate for chilled semen at 68 per cent was again better than that for deep-frozen semen, 63 per cent.

Non-return rates for sub-centres ranged from a low of 54.4 to a high of 80.0.

	per cent
Northfield (Govt. farms)	80.0
Myponga	71.8
Meningie	71.6
Mount Barker	71.4
Murray Bridge	63.3
Eden Valley	62.5
Mount Gambier	57.0
Strathalbyn	54.4

SEASON HITS DEMAND

The total number of first inseminations for the year just ended was 22,775, this being an increase of 751 on the total for the previous year. But for the dry conditions existing around all sub-centres, this total would have been appreciably higher as the increase at 11 months of the year was 1,100. Whilst Premium bull semen from N.S.W. was available it proved popular and many customers have been disappointed since supplies were cut off due to shortages of supply in that State. It now appears that no more will be available for use outside N.S.W.

BREED DEMAND

	Per Cent	(Per Cent Fluctuation)
Friesian	58.0	(+0.5)
Jersey	33.3	(+0.3)
Hereford	4.8	(+0.1)
Guernsey	2.2	(—0.6)
A.I.S.	1.2	(—0.1)
Ayrshire	0.5	(—0.2)

DISTRICT STATISTICS

Area	First Inseminations	Active Farms	Cows Per Farm	Miles per First Insemination
Mount Barker	7,761	617	12.6	9.8
Myponga	4,648	247	18.8	13.0
Murray Bridge	4,670	156	29.9	8.7
Mount Gambier	1,772	142	12.5	12.6
Meningie	1,080	45	24.0	24.2
Strathalbyn	1,547	116	13.3	11.2
Eden Valley	1,172	132	8.9	15.0
Northfield	125	—	—	—

The total number of miles travelled by country based insemination was 259,963.

CHANGES IN BULL TEAM

One bull has been lost from last year's team: Hampden Illuminators Finest. It is greatly regretted that this bull, of great promise, has gone from the team before an assessment of his heifers could be made.

Three new bulls have been purchased and these will come into use in either 1967 or 1968.

THE SOUTH AUSTRALIAN DAIRYMEN'S . . . Journal

The Official Publication of the South Australian Dairymen's Association Incorporated

Published Bi-monthly

Vol. 8, No. 1

Adelaide, JULY–AUGUST, 19

BELLWOOD GEISHA

OUTSTANDING AYRSHIRE PRODUCER

[illegible] owned by G. V. BINGHAM—LARDNER via WARRAGUL, Vic.

PRICE

20c

[illegible] at G.P.O. Adelaide
[illegible] post as a periodical.

$1.20 per Year, Post-Paid

THE SOUTH AUSTRALIAN DAIRYMEN'S JOURNAL

Published by
THE SOUTH AUSTRALIAN DAIRYMEN'S ASSOCIATION INCORPORATED
Aston House, 13 Leigh Street, Adelaide. 51 3034
President: N. M. GREEN
General Secretary: DAVID J. HIGBED
Advertising Rates on application

GENERAL PRESIDENT'S ANNUAL REPORT FOR THE YEAR ENDED 30th JUNE, 1968

THE DROUGHT AND ITS AFTERMATH

A year ago I referred to the drought conditions that had already, in the middle of winter, reversed the seasonal pattern of milk output and threatened to halt the increasing productivity with which, in recent years, the dairyfarmers in the milk supply area had countered continually rising costs.

That the decline in production did not eventually match the severity of the drought, the worst in the recorded history of the State, was due to two factors—the decision of the producers to employ, almost regardless of cost, a very high level of supplementary feeding, and a combined campaign, by the Government, the Department of Agriculture, and the Association, to ensure that growing crops, which promised no more than a poor grain harvest, were converted into much more urgently needed hay.

The paucity of the spring pastures and the certain shortage of farm-cut hay were countered by heavy culling to make the most effective use of expenditure on fodder, expenditure that was unprecedentedly high because of the quantities involved and because of the drought-induced price levels.

The producers, by these methods, checked the down-turn in productivity, and, with Government assistance for the purchase of fodder (a most timely, practical and generous scheme), and an increase of 4 cents per gallon in the return for liquid milk, were able to dispel the earlier fears of an autumn crisis in the milk supply, although the cost of the campaign may well have exceeded $2,000 for an average producer, and will, in many cases, continue as a burden of debt for years to come.

So the herds, though depleted, were adequately, if expensively, fed, and were

BELLWOOD GEISHA

Despite extremely adverse seasonal conditions, this outstanding Ayrshire cow completed her fourth lactation with 16,910 pounds of milk at 4.6 per cent test, yielding 831 pounds butterfat. Production in previous lactations was: J2—527 lbs. b.f.; J3—722 lbs. b.f.; J4—756 lbs. b.f., giving a total over four lactations of 2,845 lbs. butterfat.

able to respond immediately to the satisfactory rains which opened the new season and rapidly regained the previous level of productivity by producing, in a year that was unprecendentedly difficult for all dairyfarmers, a total output for the area of 48,094,000 gallons, a figure only 6 per cent below that of the previous year.

Considering this achievement, at great cost in money and in mental strain, it was unfortunate that the Milk Board withdrew, after only 8 months, almost half the increase which it had granted in December, and we are grateful to the members of Parliament who, on our behalf, were able to restore the price to its previous level, and to the Government for not opposing this action of the members. For, although the drought is over, the fodder bills have not been paid, and most of those producers who obtained Government help in the purchase of hay have not yet paid even the first of their many monthly instalments.

THE PRESENT CRISIS:

But the Association had occasion to deplore the Board's action not only because the economic, if not the physical, effects of the drought are still being felt, but, even more, because the industry is now entering a period of crisis that, with all factors considered, is without parallel.

There have been other periods when the dairying industry has been depressed, but never one in which the contrast with the community's general prosperity has been so marked.

In a world where millions face the certainty of starvation, the dairyfarmer has shown that food production can be increased, and, by so doing, has threatened his own existence. In our own small area we have demonstrated that total production can be almost doubled in 10 years, that productivity per cow and per acre can be continually increased and the limit still not be in sight, and that, in this way, we were able to absorb continually increasing costs. In a nation notorious for its high costs, its high wage levels, and its high tariff protection our dairyfarmers receive for their produce the third lowest return in the world, sell their produce at prices below those of any country except New Zealand and Great Britain, and retain the home market with a level of tariff protection that was no more than adequate when first established 40 years ago.

Yet in demonstrating our ability to produce, in setting an example to the rest of the economy, we have made ourselves the butt of the economists.

THE CHALLENGE OF MARKETING:

Have we kept our domestic prices too low, for too long? Whether we compare our prices against those of other foodstuffs, against national wage levels, or against the price of dairy produce elsewhere in the world; there is no doubt that our milk, butter, and cheese, are cheap, and this would be to our advantage, and to the advantage of the all, if our domestic sales were correspondingly high.

But a high level of market demand needs more than a low price; it needs quality, and presentation, and expertise in marketing, and there is no doubt that the dairyfarmer has not always been well served by the manufacturers and the distributors. A reluctance to progress, to diversify, to promote, to do all the things that are accepted as essential for its existence by any other industry of comparable size, is almost the hallmark of the other sectors of the dairying industry. The advice of marketing experts, the criticism of the Committee of Enquiry, and the examples of the makers of competing substitutes do not seem to engender the desire to do better, and the outstanding performances of enterprising companies make the apathy of the remainder all the more marked.

THE IMMEDIATE FUTURE:

So, with a home market that, despite a growing population, is almost static at prices little more than half those paid by the consumers in those dairying countries that are in active competition with us, and an export market in which returns already depreciated by the devaluation of sterling currency are further eroded by the existence of vast stocks of surplus dairy produce, our dairyfarmers face a troubled future. Although the Federal Government, by maintaining its level of underwriting at 34 cents per pound commercial butter, has enabled us to continue the interim basic price unchanged at 37.95 cents per pound butterfat, the final price for manufacturing milk in this coming year may not be above 40 cents, a price which, seen against a background of continuing inflationary movement, of increased taxation resulting from the new Federal budget (offset only slightly by the increased fertilizer bounties) and of renewed demands for higher wages, compares most unfavourably with the figure of 45.5 cents which prevailed from 1963 to 1967 and which was itself far less, in real and money terms, than the prices received during the 1950's which reached as high as 53 cents.

Certainly this reduction has been partly offset by the granting, in response to submissions made by the Association, of increases in the price for liquid milk, a price which, being under the effect of these increases is limited to a small, and diminishing, fraction of our production, and the main factor allowing producers to continue their operations has been the increasing output by which they have been able to maintain a stable revenue in money terms.

But productivity cannot be increased infinitely; even before the intervention of last season's drought the rate of increase had been abruptly checked, and we can, consequently, no longer regard greater output as a counter to rising costs.

So we enter a new season in which gross revenues will be depleted, and the average producer's net income, from which he must recompense all labor, including his own, make repayments of interest and principal on all borrowing, and provide a return on his investment, may be less than 2,500 dollars.

CHANGES IN MILK MARKETING:

This situation has been caused by world-wide factors beyond our control, which have brought about instability and a breakdown of regulatory processes. It cannot be corrected by adding to these conditions, yet at this time, when stability is vital, it is disturbing to see destabilizing forces acting in areas which are in our power to control. I refer to the possibility of action by the processors to change the marketing system under which we operate, action in which the Milk Board, despite its power to do so, has not seen fit to intervene.

It is obvious that, in any marketing system, a change in structure which does not increase the total volume of sales cannot benefit all participants; any gain to one section, whether of producers or processors, must be at the expense of others, and the withdrawal of processors from the milk equalization scheme would add nothing to the overall well-being of the industry; instead the questionable benefits that a minority might receive by such action would be completely eliminated in the painful reconstruction that would follow.

The interests, now and in the long run, of producers and processors will be best served by continuing with such adjustments as may be needed to meet changing circumstances, the milk equalization scheme.

In asserting this we do not turn our backs on change; change will be welcomed provided it can be shown to yield a certain and worthwhile advantage to all, or at least to the majority, but the two alternatives that are at present being offered, namely a contract scheme, or a restrictive quota within an equalization

scheme, would each require more administration, intervention, and adjudication than the present scheme, which is administered within the industry, with the minimum of decisions and arbitration. The adoption of a contract system, requiring the maximum control, direction and manipulation, would replace maximum freedom with maximum regulation, and, while engendering considerable friction between producers themselves as well as between producers, the Board and the processors, would not bring a single cent more into the industry. Nor would the industry as a whole benefit from the adoption of a quota within equalization; some producers would gain but whether they are in the majority is doubtful, and it is also doubtful whether even this gain would be enough to compensate for the considerably greater control and regulation that would be required.

PROMOTION OF DAIRY PRODUCE:

There is one change, however, that would be of benefit to all, that would require virtually no more control, that has already been recommended by an expert committee, and that would have the support of the whole community, namely a genuine and constructive program of promotion and diversification; a program that would bring to the customer a wider range of dairy products, wider in type, grade, package, size, price and availability, and of better quality, better presented, better promoted, and better marketed. The potential of the new domestic markets has been barely touched; the industry generally is still content to market one grade of milk, cream, or butter, to offer its produce in one type of pack, to maintain its quality at the acceptable minimum. The industry bemoans the fact that it is losing out to other products of an affluent society which make greater claims on the consumer's purse, yet it fails to adopt the techniques of diversification and promotion that have given its rivals the greater claim. The means to achieve these are readily available from scientists and expert consultants; to put them into effect requires initiative and money. The initiative must come from the manufacturing sector, perhaps with some prodding, but the money must come from the producers, for, by the peculiar economics of the dairying industry, we are the ones who stand to gain or lose. We have seen how effective such action can be in the successes obtained in the wise use of the producer-contributed Butter Incentive Fund, and we are prepared to apply similar schemes to other dairy produce. But we have seen, too, how ineffective such funds can be when their spending is not matched by improved performances in presentation and marketing, and we offer such funds only if their application is under our control. If our domestic consumption is low, so, too, are our marketing standards, and our salvation may yet depend on the quality of our selling.

THE BASIS OF ASSOCIATION POLICY:

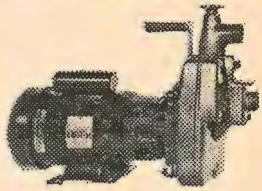
It is not likely that our colleagues of the United Farmers' and Graziers' Association would disagree in this matter, but there is disagreement concerning the administration of the milk marketing system, and it is unfortunate that this difference should exist.

For some years the membership of the South Australian Dairymen's Association has remained fairly stable at a little below 1,700, and the declining numbers of producers has now resulted in a position where more than 80 per cent of producers are members of the Association. The membership of the UFGA is drawn from substantially the same source, yet its official policy (as was the policy of its predecessor, the A.P.P.U.), is completely different from that of the Association.

We believe that our policy is formed from the opinions of our rank-and-file members, expressed at District and Branch meetings and communicated, through the delegates, to the Central Council, and the many resolutions we have received from those sources supports that belief. Because the two channels of producer opinion yield different answers our ability to negotiate with authorities and Government is diluted when contrary views are expressed, and it would appear to

don't miss
DAIRY DOUSER DAYS
AT YOUR DAVEY DEALER

ORIGINAL DAIRY DOUSER



SUPER DAIRY DOUSER

Thousands of farmers have been getting the fast, convenient, effortless dairy wash-down with one of these ever-reliable Davey Dairy Dousers.
And see how little it costs to have many years of high-pressure washing!
Choose either the original best-selling model at $120, or the Super Dairy Douser with the mighty 40 psi discharge pressure and self-priming performance.
Your Davey Dealer is displaying this equipment now.
Check with him about the ease of installation and the time and effort a Dairy Douser will save you.

Rush this coupon

DAVEY
Registered trade mark

F. W. DAVEY & CO. PTY. LTD.
211 FLINDERS STREET, ADELAIDE. 5000
TELEPHONE 23 3979

Please send me full details on Dairy Douser

NAME.....

ADDRESS.....

.....Postcode.....S.A.D.J.

be in the best interests of the producers if a single voice were heard on their behalf, a voice that was the direct echo of the grass-roots opinion that we claim for this Association. Should we, then, seek formal affiliation with the UFGA to eliminate the dual voices and the divergent opinions?

In the wider fields of matters that affect dairyfarmers as members of a rural industry or of a rural community there is value in weight of numbers and support from others similarly affected, but in our own province, as specialists with over sixty years of experience to guide us, during which we have obtained the respect and recognition of governmental and statutory authorities, and in which we represent dairyfarmers on the relevant industry organizations, any form of organization that did not retain the Association as a completely self-governing, representative, recognizable identity could serve our members less effectively. However, we must examine the matter with the interests of the members as our sole criterion.

VALEDICTION:

This will be the last annual report that I make to this Association as your General President. I have served in this office for five years, during which I have gained a knowledge of the problems that face the industry and an appreciation of the means by which these problems may be met. In fulfilling the position I have had the help and support of the Executive Committee and the Association's staff, and, in the field of milk marketing, of my fellow directors on the Board of the Equalization Committee. For this, and for the helpful and friendly co-operation of the members and staff of the Metropolitan Milk Board and of the officers of the Department of Agriculture, I am most grateful.

I express my appreciation also of the contribution of Mr. Bywaters, the previous Minister of Agriculture, and I extend my congratulations and good wishes to his successor, the Honourable C. Ross Story, M.L.C.

To the incoming General President, whoever he may be, I offer every possible assistance in a task that will be made less onerous with the wholehearted support of the Central Council.

The industry at this moment faces an uncertain future, but I believe this uncertainty can best be resolved by constructive and co-operative effort within the framework that we know and that is of our making, rather than by abandoning the tried in favour of the untried.

H. E. LOECHEL,

General President.

Tractor Frame "Must" in 1970

Legislation is being prepared by the New Zealand Government to make safety frames on tractors compulsory for all new wheeled tractors purchased after September 1, 1970.

Tractors exceeding four tons weight and tractors used in orchards and on other work where the use of tractors fitted with safety frames is impractical will be exempted.

Notice of intention to introduce the legislation was announced recently by the New Zealand Minister of Labour on behalf of himself and the N.Z. Minister of Agriculture.

Efficiency!

In general efficiency, in terms of costs, goes hand-in-hand with the size of operations, yet we find that in the latest available statistics the average herd size on Netherland's dairy farms is 7.9 cows, and Germany 5.7 cows.

"HOLD TO WHAT YOU HAVE—GET OUT AND SELL" .... advises Minister

"Today all sections of primary production were faced with problems and were trying to devise ways of protecting their position. The dairying industry, particularly in this State was well organised, and should turn its attention to increasing the sales of its products rather than to reshaping its marketing administration", was the advice given by the Minister of Agriculture, the Honorable C. R. Story M.L.C. when he opened the Annual Meeting of the Central Council on Tuesday, 27th August.

The Minister said that in spite of world-wide malnutrition, primary producers were unable to sell the foodstuffs that they grew. He said that there must surely be an answer to this problem in the not too distant future, but in the meantime the dairy industry should try to obtain greater sales for its output, which in the form of milk, butter or cheese, or its other by-products, was one of the most nutritious and cheapest foodstuffs, and was particularly high in protein, which was in greatest demand.

Australian dairy produce could equal the world's best, but we had a job to do in getting this message over, not only to the world, but here in Australia. This was the biggest job we had to tackle, and we would have to tackle it on a big scale.

The Minister cited a case where one wine making firm had recently spent $\$1\frac{1}{2}$ million to advertise a single brand in the United States, and although advertising, once begun, could not be stopped without great risk, the industry had to weigh the possible gains from advertising against the certainty of not being able to sell our produce if we did not.

The industry had suffered considerably during the drought, but the grass was growing again, and within a few months, although many farmers would not be out of the wood, the industry would be returning to near normal conditions. There was even the possibility of a record output, with more milk going into cheese production. As so much of this cheese would be sold to export markets it was essential to see that it conformed to the rigid standards demanded by those countries. Emphasis was now being put on the elimination of pesticides, particularly DDT, from milk to ensure that the cheese was acceptable to other countries and research organisations were working on the development of acceptable, economical alternatives.

The dairy industry had made significant contributions to research; the Department of Agriculture was doing a very good job on practical research and extension work at Northfield, and he hoped that this arrangement between the researchers and the advertising would continue, as it was often possible to get matching funds from the Commonwealth Government, which was always prepared to give financial support to any program of "self help" which had the backing of the industry.

In South Australia, the industry has had its ups-and-downs, and although there were some producers who could be helped by the Federal proposals for marginal dairyfarmers, in general production was increasing. Dairyfarmers in this State exhibited a high degree of efficiency, and were well organised. It is through the producers' efforts that the Milk Board was established, after many years of struggle and conflict, and although there were occasions, such as recently, when the Board and the producers did have a slight difference, the Board had functioned extremely well, and he hoped, would continue to function well. Producers would be well advised not to be hasty to pull down what they had; minor changes could be made, but the industry was well served by the form of organisation that it had when compared with producers of many other commodities who were, at this late stage, trying to set up such a system.

NEW GENERAL PRESIDENT ELECTED

Central Council Appoints New Officers

At the Annual Meeting of the Central Council on 27th August, 1968, Mr. N. M. Green, of Monteith, was elected General President, in place of Mr. H. E. Loechel, who declined re-nomination after occupying the position for five years.

The delegates expressed their appreciation of the way in which the duties of the General President's position had been carried out by Mr. Loechel, who will continue as Chairman of Directors of the Metropolitan Milk Equalization Committee Limited. Mr. D. W. Turner, of Inman Valley, was elected Senior Vice-President with Mr. A. A. Kenny, of Ponde, as Junior Vice-President.

Members of the Executive Committee, in addition to the General President and the Vice-Presidents, are—

Messrs. H. E. Loechel, Eden Valley; C. G. Easton, Clarendon;
V. K. Warwick, South Coast: K. J. Turvey, Milang.

Delegates also spoke warmly of the part played in the formation and the administration of the Association by Mr. J. Gormlie, of Pompoota, who ceased to be a member of the Executive Committee after 33 continuous years in that position.

EIGHT DIFFERENT TYPES OF CREAM

U.K.'s Example Should Be Followed

In the General President's annual report a plea was made for "a genuine and constructive program of promotion **and diversification;** a program that would bring to the customer a wider range of dairy products—wider in type, grade, package, size, price and availability . . . The potential of the new domestic markets has been barely touched, the industry generally is still content to market one grade of milk, cream or butter, to offer its produce in one type of pack . . ."

We offer no apologies for printing these words twice in one issue of this Journal, as they form a message which cannot be repeated too often, and echoes the advice given to the dairy industry by Dr. Candler when giving evidence before the 1960 Dairy Industry Committee of Enquiry. The Committee subsequently reported:—

"Price is not the only handicap to increased domestic consumption. There is wide scope for an increase in the variety of milk products. For example, Australian consumers of liquid milk have few opportunities of purchasing milk with a high butter fat content, even though they may be prepared to pay higher prices for it. Neither is homogenized milk available in any quantity. Dr. Candler produced in evidence a list of milk products (excluding cheese but including ice cream) available in one of four super-markets in Ames—a town of 20,000 people in Iowa, United States of America (Appendix 31). Referring to expenditure on research he added:—

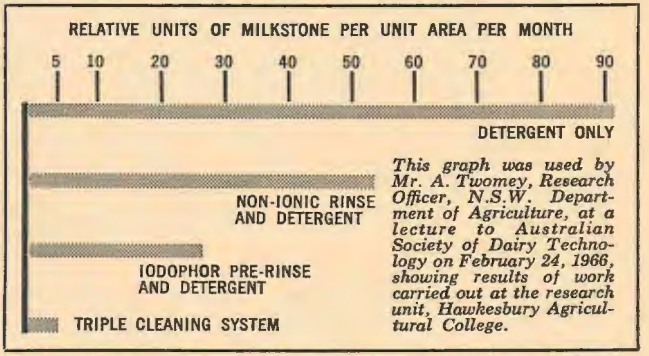
> **"These products don't need research; they need introducing to the Australian Market!"**

The Ministry of Agriculture and Fisheries in Britain has paved the way for the dairy industry in that country by submitting proposals for eight different grades of cream, based on the recommendation of the Food Standards Committee.

Research Proves Triple Cleaning System

The Triple Cleaning System is a revolutionary new method for cleaning milking equipment. It was first developed by the research unit of the N.S.W. Department of Agriculture and approved by Dr. Whittlestone of Ruakura Agriculture Research Centre. This system reduces milkstone deposits, thereby minimising contamination. (See graph.)

Cooper's are happy to be associated with the extension of this information to the dairy farmer, as their range of dairy products is especially developed for this cleaning system.



This graph was used by Mr. A. Twomey, Research Officer, N.S.W. Department of Agriculture, at a lecture to Australian Society of Dairy Technology on February 24, 1966, showing results of work carried out at the research unit, Hawkesbury Agricultural College.

- *LESS MILKSTONE, BETTER "BLUE" TIME*
- *LOWER BACTERIAL COUNTS*
- *CLEAN FASTER, MORE EFFICIENTLY WITH—*

THE COOPER TRIPLE CLEANING SYSTEM

1. **ANABAC** (IODOPHOR) PRE-MILKING RINSE
2. **COOPASOL-D** NON IONIC POST-MILKING RINSE
3. **BACTERGENT** LOW FOAM ALKALI DETERGENT

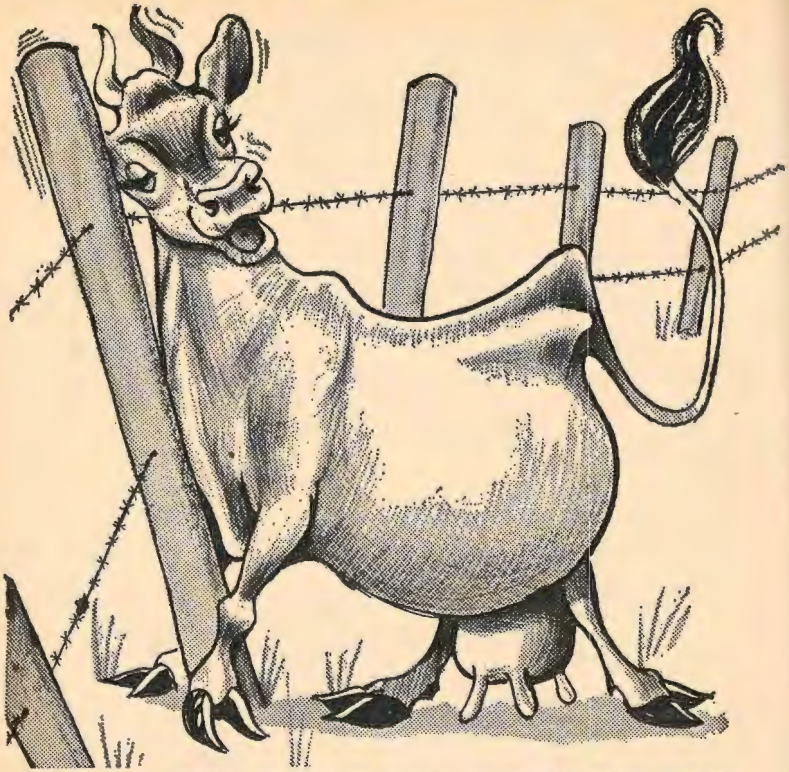
ALWAYS USE A FINAL RINSE OF BOILING WATER

Other Dairy Products in the Cooper range are

Cooper's **COOMAC** Acid Milkstone Remover, Cooper's **UDDER SOAP** and Udder Soap Dispenser, **MIN-A-VIT ORANGE BAND** Mineralised Vitamin Supplements for cattle.

AVAILABLE FROM YOUR LOCAL COOPER AGENT OR DAIRY FACTORY

WC438



SAVE YOUR FENCES

With the coming of winter and the colder weather, cattle lice will become an increasing problem.

The principal symptom is irritation, and this is seen most commonly in winter and early spring. Affected cattle constantly rub themselves, causing patches of hair to fall out, giving a shaggy appearance to the rest of the coat, and the skin becomes extremely scurfy.

COOPER'S
BERCOTOX
CATTLE SPRAY

ENSURES THRIFTINESS • HIGHEST MILK YIELD • TOP DRESSED WEIGHT AT MARKET-TIME

Available in 1-gallon and 1-pint tins.

COOPER PRODUCT

Obtainable from:

Elders - GM and DALGETY-N.Z.L.

WC/489

The proposals define the eight types of cream as follows:—

1. **Clotted Cream:** Containing not less than 55 per cent. milk fat, and produced and separated by the scalding, cooling and skimming of milk or cream.

2. **Double Cream:** Containing not less than 48 per cent. milk fat.

3. **Whipped Cream:** Containing not less than 35 per cent. fat, and whipped.

5. **Sterilised Cream:** Containing not less than 23 per cent. milk fat and given an appropriate heat treatment in the container in which it is sold so as to render it sterile.

6. **Cream or Single Cream:** Containing not less than 18 per cent. milk fat.

7. **Sterilised half-cream:** Containing not less than 12 per cent. milk fat treated as (5).

8. **Half-cream:** Containing not less than 12 per cent. milk fat.

With the exception of clotted cream, all these products must be designated pasteurised, ultra heat treated, UHT or untreated.

In South Australia the Metropolitan Milk Board has similarly, though to a lesser extent, opened the door by setting prices and standards for four types of cream:—

Scalded: (heat treated, 52 per cent. fat minimum);

Rich: (45 per cent.);

Standard: (35 per cent., may be artificially thickened) and

Reduced: (25 per cent.).

But despte the opportunities now pravided by these expanded regulations, the processors have not yet made any effective,concerted attack on the market and most of the suburban shops still stock only cream from Victorian sources.

The scope for diversification of dairy products is wide and the market waiting: Is it too much to hope that one day we, too, can have a 4-page newspaper feature for a "gold-crown" new-type milk, with congratulatory messages from the Premier and leading citizens. The average consumption per head of beer is still less that that of milk, yet the brewing industry does not claim that, "the market is too small for multiple types," "the publid don't want any other than the standard product" and so on. The increasing consumption of beer is not due to its cheapness, and the gap between the annual consumption of 24.3 gallons of beer and 28.5 gallons of milk is closing. Is anyone prepared to say that the promotion of beer through diversification (one company alone produces **nine** variations of type or presentation) does not contribute to its success?

Prices and Statistics

ADELAIDE METROPOLITAN MILK SUPPLY AREA

PRODUCTION (000 gallons)

	For month		Total since July 1		Total since Jan. 1	
	1967	1968	1967/68	1968/69	1967	1968
July	3,451	3,948	3,451	3,948	24,131	24,572
August	3,951	4,402	7,402	8,350	28,082	28,974

SALES (000 gallons)

	For month		Total since July 1		QUOTA per cent		C.M.B. cents	
	1967	1968	1967/68	1968/69	1967	1968	1967	1968
July	1,865	1,861	1,865	1,861	54.0	57.1	27.29	27.80
Aug.	1,826	1,815	3,691	3,676	46.2	41.2	23.91	24.16

Moving average quota for 12 months ended 31/7/68, 45.45%; 31/8/68, 45.01%

INTERIM PRICES TO LICENSED SUPPLIERS

(All prices are interim only and subject to adjustment by retrospective payment)

1968	Basic (cents per lb. butterfat)	C.M.B. (cents per lb. butterfat)	Total (cents per lb. butterfat)	3.5% (cents per gallon)	4% (cents per gallon)	4.5% (cents per gallon)	5% (cents per gallon)
July	37.95	27.80	65.75	23.75	27.14	30.53	33.93
August	37.95	24.16	61.11	22.43	25.64	28.84	32.05

LONDON PROVISION EXCHANGE QUOTATIONS

(Sterling Currency per cwt.)

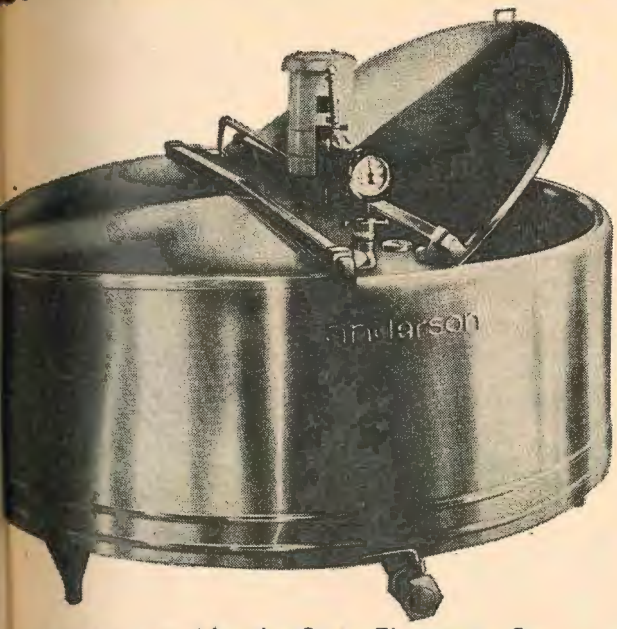
	June		July	
	1967	1968	1967	1968
Butter—Choicest Australian	300/–	300/–	300/–	300/–
Cheese—Rindless Australian	265/–	225/–	265/–	225/–

RETROSPECTIVE PAYMENT—1967-68 SEASON

Following a step-up of 59 cents cwt. cheese and final bounty of $1.22 cwt. butterfat in cheese for all production in the 1967-68 season, a retrospective payment of 0.95 cent per lb. butterfat (equalized) will be paid to licensed producers in the Adelaide milk supply area early in October on all milk supplied during the period July, 1967 to June, 1968.

CITY MILK PRICE RESTORED TO 43 CENTS

The price to producers for city milk, which had been reduced by the Metropolitan Milk Board to 41.1 cents, wos restored to 43 cents on 22nd August, the reduced price having been in operation for 11 days only.



tank units tested by the State Electricity Commission of
by the Australian Standing Committee on Agriculture)
alian Standard N46-1963.

OF PERFORMANCE

RL250	R300	R400	R500
C.P.66C10	C.P.66C8	C.P.66C13	C.P.66C9

NSC No. 8/4 Complies with Milk Board and Department ents in every State.

round design for minimum space requirements • All am insulation • Low height for easy cleaning.

er information contact

n equipment

co-operative ltd.

ll & Egerton Sts., Lidcombe, N.S.W. 648-1084.
Charles St., North Coburg, Victoria. 35-2347.
Stanley St., South Brisbane, Qld. 4-5452.
CO-OPERATIVE LTD.)

DAIRYING IN A CRAZY WORLD

"The 'crazy' world marketing situation for dairy products will not be solved by curtailing dairy production in Australia—one of the more efficient producing countries."

Mr. E. B. Gilbert, General Manager of the Australian Dairy Produce Board, recently used these words to refute a claim that the dairy industry in Australia was "an uneconomic primary pursuit", and that if Australia progressively restricted the dairy industry she would be in a better position to level out the imbalance of trade between Australia and New Zealand by buying more New Zealand dairy products.

STRONGLY REFUTED

The idea that the dairy industry as a whole is inefficient has also been contradicted by the Hon. J. D.Anthony, M.H.R., Minister for Primary Industry.

Mr. Anthony stated that Australian butter producers were able to operate, expand production and compete in export markets on the third lowest return (including bounty) in the world. (See following pages.)

In 1952/53 the average annual production of milk per cow was 398 gallons; in 1966/67 it was up 29 per cent, to 514 gallons per cow. Average yield of butter an acre in 1953 was 28.8 lb., and the average production per farm was 8,468 lb. A 1964 survey showed that the average between 1961 and 1964 was 31.5 lb. per acre (up nearly 10 per cent), and 12,021 lb. per farm (up 42 per cent).

"These figures", Mr. Anthony said, "showed that the Australian dairy industry was generally an efficient industry, but that it was faced by intolerable marketing problems". He illustrated this by saying that some Common Market countries offered butter for export at less than a third of the price they paid their producers.

HIGH SUBSIDIES IN EUROPE

European dairy production in the past few years has been stimulated by very high price supports, and at the end of last December there were approximately 216,000 tons of butter in stock in the Common Market countries. This compares with 154,000 tons at the same time two years ago.

"When they get the chance", Mr. Anthony said, "these countries unload their surplus butter at what seems to be whatever price they can get for it. They make up the difference—in some sases 40 cents (Australian) a pound or more—by subsidy".

HIGHEST FARM PRICES

In this context it is worth quoting "The Economist" of March 30th, 1968—"So the Six (Common Market countries) have voted themselves the highest set of farm prices in the developed world; but even with these prices, average farm incomes are a quarter or a third less than non-farm incomes."

According to the same source price support in these countries in 1967-68 alone totalled a fantastic $A342 million. A warning is issued by Common Market statisticians that butter stocks could reach the fantastic level of 750,000 tons by the end of March, 1972. Supporting the milk price alone in 1968/69 is expected to cost $A709 million, and the common milk price will not be in effect until later this year.

The implication here is that were it not for the totally unreasonable level of subsidy prevailing in Common Market countries, both the New Zealand and Australian dairy industries would be able to export dairy products on a competitive commercial basis to any part of the world. It does not make sense to curtail one of the world's efficient dairy industries simply because the market is swamped by dairy products from countries with a much higher price structure from which export supplies could disappear overnight with the removal of the unrealistic high level of support.

TREMENDOUS CRITICISM

"It seems ironical", said Mr. Gilbert, "that the dairy industry should be singled out for tremendous criticism, merely because of a well publicised direct subsidy, when just about every other industry in Australia is subsidised either by import duty or by a direct subsidy. One hesitates to conjecture about the effect upon many of the manufactring industries of the removal of import duties on foreign goods."

"Indeed if the proposals set out in the Australian Tariff Board Annual Report for 1966/67 to classify Australian industries into those enjoying a high, medium or low level of protection is successful, it could well be that the imbalance of trode between New Zealand and Australia would be significantly reduced without sacrificing or curtailing the Australian dairy industry.

THE EFFICIENCY OF THE AUSTRALIAN DAIRY INDUSTRY — 1

INTERNATIONAL COMPARISON ON MINUTES WORKED TO EARN 1 GALLON OF MILK, 1 lb. OF BUTTER, 1 lb. OF CHEESE IN 1963, 1964 and 1965

(Source: I.D.F. — 1967 Annual Bulletin Part II—pages 16 to 23)

	Aus-tria	Aust-ralia	Bel-gium	Switz-erland	Fed. Germ.	Den-mark	France	U.K.	Luxem-bourg	Nor-way	Neth-erlands	Swe-den	Fin-land
Approximate Minutes worked to earn 1 gall. of **milk**													
1963	64	35	50	41	32	32	41	46	30	25	52	33	45
1964	59	33	50	36	35	27	41	44	28	27	49	30	45
1965	55	30	49	36	32	27	65	28	29	34	43	24	46
Approximate Minutes worked to earn 1 lb. of **cheese**													
1963	72	24	71	71	56	30	62	31	33	36	43	24	45
1964	66	24	69	72	53	28	57	30	29	34	44	26	46
1965	50	16	48	45	50	21	53	27	34	23	33	28	37
Approximate Minutes worked to earn 1 lb. of **cheese** (Main type of country)													
1963	54	17	50	45	56	24	41	30	39	27	35	29	37
1964	50	17	50	45	54	23	41	29	34	30	34	29	38
1965	50	16	48	45	50	21	53	27	34	23	33	28	37

NOTE: In comparing these figures, it is dangerous to draw conclusions regarding the efficiency of the dairy industry in the different countries. Part of the differences shown are due to—

(1) National policies in form of substantial consumer price subsidies and/or subsidies to the dairy industry.
(2) The usage of different sources of "available" or "disposable" income and estimates of average hours worked to earn this income.
(3) Currency exchange rates and their fluctuations.
(4) Rounding off.

THE EFFICIENCY OF THE AUSTRALIAN DAIRY INDUSTRY — 2

INTERNATIONAL COMPARISON: RETAIL PRICES OF MILK, BUTTER AND CHEESE CONVERTED AND EXPRESSED IN AUSTRALIAN CURRENCY AND WEIGHT FOR 1963, 1964 AND 1965

(Source: I.D.F. — 1967 Annual Bulletin Part II, pages 16 to 23)

Retail Price * (Approx.)	Aus-tria	Aust-ralia	Bel-gium	Switz-erland	Fed. Germ.	Den-mark	Ire-land	France	U.K.	Luxem-bourg	Nor-way	Neth-erlands	Swe-den	Fin-land
MILK, in cents per gallon														
1963	51	70	58	76	41	53	53	59	69	66	40	56	72	58
1964	51	70	64	76	52	53	57	59	70	66	46	62	72	67
1965	54	70	68	86	52	53	59	59	74	66	52	63	72	72
BUTTER, in cents per lb.														
1963	59	48	82	108	74	54	57	83	45	70	60	46	57	62
1964	59	49	89	108	78	53	59	83	46	78	60	55	63	71
1965	64	50	90	109	81	57	59	86	46	78	59	59	65	77
CHEESE (main type) in cents per lb.														
1963	45	37	58	67	75	42	41	48	44	66	45	34	68	66
1964	45	39	64	67	78	43	42	46	46	70	54	40	70	76
1965	51	40	66	68	81	45	43	64	44	70	44	40	76	80

NOTE: Looking at eoch country separately we can see changes in the average retail price level of each product. It is also of some interest to compare the price relationship of milk to cheese to butetr in each country. Beyond this, no conclusions should be drawn. The differences shown between the countries are due to numerous factors such as—

1. Subsidies—Dairy policy.
2. General price level of the economy, incomes available.
3. External Trade—currency exchange rates.
4. Strength of manufacturing sector.
5. General Government policy.

Imports of Dairy Produce Continue to Rise

Imports of cheese into Australia during the year ended 30.6.68 **were 10 per cent above the previous year in quantity,** although value increased by only 5 per cent, the total quantity being 4,330 tons, valued at $3,712,420.

The biggest increase **was in imports of Provoline, up 54 per cent** to 183 tons, valued at $233,000, followed by "Unspecified", up 26 per cent to 2,180 tons ($1,776,000) Edam and Gouda, up 19 per cent to 807 tons ($583,000), Blue, up 15 per cent to 295 tons ($292,000) and Cheddar and Epicure, up 12 per cent to 348 tons ($279,000).

The only other dairy produce to show an increase was Powdered Milk (full cream, skim, and whey powder), imports of which more than doubled to 159 tons (of which 128 tons came from USA), valued at $102,000. Imports of butter fell from 73 lbs. to nil, imports of condensed milk from 2 tons to 153 lbs., imports of casein, of which the quantity is not shown, **fell** in value by 16 per cent to $82,000.

There are a number of reasons why Australia imports (and increases the imports of) so much dairy produce when we cannot find ready markets for our own output, but we can be excused if we doubt whether there are any **good** reasons why we should continue to do so.

A.I. PROGENY DO WELL AT SHOW

First prizes in their sections were won at the Royal Adelaide Show, 1968, by these artificially bred cows.

FRIESIAN.

1. **Watsonia Irene** (W. S. & Mrs. J. Polkinghorne) sired—**Frasea Lord Jewel**
   First in:
   Class 2 — Cow over 6 years — Dry.
   Class 11 — Cow and Heifer — (Dam of Clair Roy Fond Irene).
   Class 14 — Cow any age.
2. **Clair Roy Fond Irene** (W. S. & Mrs. J. Polkinghorne) sired — **Sniders Fond Hope King.**
   First in:
   Class 11 — Cow and Heifer.
   Class 15 — 2 year old cow in milk.
   Junior Champion.

GUERNSEY.

1. **Tolunga Royalist** (F. & O. S. Ibbott & Son) sired — **Wollongbar Veras Royolist.**
   Class 69 — Bull — 3 years old.
   Reserve Champion.

AYRSHIRE.

1. **Joylinda Mignonette** (C. C. S. & J. V. Davis) sire — **Glencorren Vanitys Lad.**
   Class 98 — Cow, 3-4 years.
2. **Joylinda Princess Jacinda** (C. C. S. Davis) sire — **Roland Park Lucy's Baron.**
   Class 99 — Cow, 2 years, in milk.
   1st and Junior Champion and Reserve Champion.
3. **Joylinda Gay Dianne** (C. C. S. Davis) sire — **Woodside Park Nolas Crown**
   Class 100 — Cow, 2 years, Dry.

WORLD DAIRY OUTLOOK FOR 1975

Projections by the Food and Agriculture Organisation indicate that **the demand for milk, and milk products in developing countries will rise faster than production during the next decade. But the** increase in effective import demand of these countries will be seriously limited by a shortage of foreign currency.

In developed countries, on the other hand, production is indicated to exceed demand and commercial export outlets. As a result, prices will tend to rise in low income, deficit countries; simultaneously, a downward pressure would be felt on prices in exporting countries and on the world market.

The deficit anticipated for 1975, indicated at 19 million tons in milk equivalent, reflects a projected world production of 447 million tons against a projected demand of more than 466 millions. These projections prepared by the Commodities Division of FAO, are based on a set of assumptions on population and income growth, using prices based on constant 1961-63 levels.

Reviewing the situation in the world's four major dairying regions—North America, the EEC, Northern Europe and Oceania—the article says that production as a whole had risen in the past mainly as a result of increased milk yields per cow. Price support measures adopted to maintain or improve farm level incomes in most dairying countries stimulated production, but also discouraged consumption.

The result was a tendency toward surplus accumulation, especially in butter and skim milk powder. While such stocks have declined in North America, there is a considerable butter surplus in Europe. Annual consumption in developed regions is close to saturation point, ranging from 700 kilograms per person in Finland to 300 kilograms in the United States. A small increase per person is projected for Western Europe in 1975, according to the articles, but a decline is anticipated in the United States, Canada, Australia and Sweden, where a further shift of consumer preference to other products is assumed.

In the U.S.S.R. production has increased at a rate of about five per cent annually between 1955 and 1965 and in Poland by three per cent. Nearly all of the increase was absorbed by their domestic and other Eastern European markets.

According to the article, Eastern Europe's total production for 1975 is projected at 122 million tons and demand at approximately 103 million tons of milk equivalent. This would bring the average annual consumption in that area to 174 kilograms per person, or 50 kilograms more than in 1963.

In "other developed countries", says the article, referring to Japan, Southern Europe and South Africa, demand is expected to increase by 17 million tons above the base-year level, reflecting relatively sharp rises, particularly in Japan where annual consumption per person is anticipated to jump from 26 kilograms in 1962 to 90 kilograms in 1975. Production for this group of countries would total slightly over 25 million tons and consumption 31 million tons.

Milk output has scarcely kept pace with population increase in many developing countries during the past decade, despite efforts to raise production through international and bilateral aid progress.

Demand for milk products for developing countries is projected to rise from 71 to 120 million tons, more as a consequence of rapid growth in population than in income. Consumption levels per person in this group ranged from 11 kilograms in South East Asia to 91 kilograms in Latin America in 1962, and are projected at 15 to 105 kilograms respectively for 1975. This represents a very small improvement, with levels still very low compared with those of the more advanced countries.

Production is estimated to rise at a relatively fast rate—provided the necessary technical and industrial improvements are introduced—attaining 91½ million tons in 1975, still not enough to meet the needs of a rapidly growing population.

(F.A.O. Monthly Bulletin of Agricultural Economics and Statistics).

SOUND BUTTER SECTION VITAL TO INDUSTRY

——Federal Minister Told

Returns for butter and the soundness of the butter industry were vital to the whole economy of the Australian dairy industry, the Federal Primary Industry Minister, Mr. Anthony, was told by an industry deputation in Canberra last month.

The Australian Dairy Farmers' Federation-Dairy Industry Council deputation discussed with the Minister the serious economic position of the industry and submitted recommendations designed to help solve the more pressing problems.

In its approach to Mr. Anthony, the deputation submitted three recommendations which it considered would provide dairyfarmers with a reasonable return:—

- Payment of a bounty on all dairy products exported at a level which would enable Australian exporters to compete on overseas markets and provide an adequate return to producers.

- Announcement of a policy to provide compensation on a continuing basis to cover unavoidable and demonstrable losses caused by devaluation of sterling.

- Introduction of effective protection for Australian cheese producers against cheese imports, including imports of cheddar cheese under the New Zealand Free Trade Agreement; such protection to be sufficient to encourage the production of all varieties of cheese and not curtail the expanded production of varieties already being manufactured.

Many Problems to be Faced

The deputation pointed out that, while decreasing returns and increasing costs were of serious concern to the industry, many more difficult problems, particularly in relation to production surpluses and marketing, would have to be faced in the future.

These included:—

1. Serious competition on the home market for butter, not only from table margarine but also from cooking margarine advertised as equal to butter as a spread.

2. Competition on the United Kingdom market from other countries exporting butter and butter-oil in quantities which make it impossible for Australia to sell its butter quota allocation fully without drastic reductions in price.

3. Competition on markets other than the U.K. (in some cases at almost "give-away" prices) from dairy-producing countries whose Governments heavily subsidise dairy produce exports.

4. Increasing cheese production without any known markets being available at economic values for the surplus.

5. Increasing quantities of cheese being imported into Australia. 1968 imports of 4,330 tons were more than 10% of total Australian cheese consumption.

6. Limitations on the quantity of cheese that can be sold in the U.K.

Carry-over of Milk Powder

7. Large carry-over stocks of dried skim milk powder which cannot be sold at economic prices.

8. A serious threat to the whole milk price structure in every State from ultra-high-temperature processed milk purchased from farmers at prices substantially below the price paid for milk for sale as pasteurised milk.

9. The uncertain feeling in the industry at the absence of a clear-cut Federal Government statement on its compensation policy to cover unavoidable and demonstrable devaluation losses in 1968-69 and subsequent years.

In addition to these problems, the industry would face a disastrous position if imitation milk was ever allowed to be introduced in Australia as it had been in some other countries.

The submission pointed out that, more than 60% of total Australian milk production was used in the manufacture of butter, returns to dairy farmers for milk and cream supplied for butter, formed the basis for poyment to producers of milk purchased, on a butterfat basis, for manufacture into other dairy products.

Figures covering overall equalisation values and the amount available to an average factory to pay to dairy farmers for butterfat in cream for manufacture into butter, were lower in 1966-67 (43.33 cents a lb.), than for any year since 1951-52 (42.63 cents).

With a decreasing income, dairyfarmers' costs of production were of major importance and had increased steadily during the same period.

Recent figures of the Bureau of Agriculture Economics showed net farm cost increases in the manufacturing sector of the industry of 4.41% in 1966, 2.15% in 1967 and 3.15% in 1968.

"There is no doubt that dairyfarmers' economic position and future prospects have deteriorated considerably since the start of the current Stabilisation Plan, and the Federation is of the opinion that positive Federal Government action to prevent a collapse in the economic structure of the industry is imperative", the submission stated.

The Federation expressed disappointment at the apparent lack of progress in dairy farm reconstruction, which formed an important part of the Plan.

It was firmly of the opinion that finance should be allocated at a maximum rate of interest of 4% with repayment over 10 years, after a rest period of four years, for the reconstruction and development of both amalgamated farms and farms which, while having sufficient area, required special financial assistance to enable them to be developed into sound, economic farm units.

Minister's Reply

In replying to the deputation, Mr. Anthony said that he did not advocate decreasing Australian dairy production but firmly believes that a brake should be applied to new State-developed areas for dairy production.

Mr. Anthony commented on the new large-scale land development scheme in Victoria involving millions of acres, of which a proportion was intended for dairying purposes.

He said that, fundamentally, there was too much production for local requirements and no economic price for the surplus. The trend was to produce more, even though dairying throughout the world faced surplus problems, decreasing consumption, increasing costs and competition from substitutes. This situation could not be blamed upon the Australian Government.

"I do not advocate decreasing production, but believe we should put a brake on new State developed areas for dairy production," he stated.

"The industry just cannot come to the Government and say it must cover unlimited output and, in this connection, I have already told other primary industry leaders they must try to discourage further production."

He did not consider that payment of an export bounty on dairy products would be a wise step.

The Minister said he had been disappointed at the reception given by the industry and by State Governments to the Federal Government's farm amalgamation scheme.

The scheme was intended to help the smaller dairyfarmer and not to be a complete dairy farm reconstruction project.

He was hopeful that radical alterations to the original farm amalgamation proposals, which were being submitted to State Premiers, would be accepted.

"I had to work hard to achieve devaluation compensation for the industry and the 34c a lb. underwriting guarantee," he told the deputation. "Your industry is the only one which knows the return it will be getting for its butter and cheese.

"Should you receive compensation this year for devaluation losses, it could mean a couple of cents more than the 34c."

All rural industries at present were facing problems of obtaining finonce and it would be impossible to give the dairy industry preferential treatment, Mr. Anthony said.

He advised the deputation that the Australian Agricultural Council had set up a special committee to examine the question of ultra-heat-treated milk.

Referring to fancy cheese imports, he said that the industry could do nothing more than put up a case to the Tariff Board.

FEDERAL GOVERNMENT TO EXAMINE SIRE IMPROVEMENT AND GRADE HERD RECORDING

Mr. G. O'H. Giles, M.H.R. Angas, has been informed by the Minister for Primary Industry, that he has asked his Department to examine the implications of grade herd recording of dairy cattle, in relation to sire improvement statistics.

Mr. Giles said that he had written to the Minister on several occasions, requesting that the maximum of 40% of the annual allocations to the States under the Dairy Industry Extension Grant, which can be used for herd testing, be lifted. At the present time only 25% of the total costs of herd testing can be paid for by grants from this fund. Mr. Giles said that he hoped this enquiry by the Department of Primary Industry would make plain the necessity for additional funds available to State Governments from the Dairy Industry Extension Grant, or as an alternative, that more of these funds can be used for herd testing itself.

The full text of the answer to Mr. Giles' query is included below, from the Minister for Primary Industry:—

"I refer to your letter of 26th February, 1968 concerning the limitations placed on Commonwealth support for grade herd recording services.

I realise that this policy has resulted in the States and dairy farmers having to meet the rising costs of the testing services and that it may well have retricted the growth of the testing services. However, this decision took account of the limited improvement in production of many of the herds involved in testing and of the growing demand for sire testing and artificial insemination services. There was also some evidence to suggest that herd testing procedures might be varied to achieve economies in operation and, at the same time, maintain or improve its effectiveness for sire improvement purposes.

It was considered that Commonwealth support of these latter investigations was justified and expenditure on these has now reached the level where it amounts to approximately four-fifths of the Commonwealth contribution to herd recording. Together, these purposes absorb almost three-fifths of the $700,000 which was provided annually under the Commonwealth Dairy Industry Extension Grant.

I believe the stage is now approaching when there should be a critical review of grade herd recording to take account of testing procedures and of the level of testing required to meet the needs of sire testing and improvement. I have asked my Department to make an examination of grade herd recording and sire improvement. This will be done in co-operation with the State Departments of Agriculture as part of an evaluation of the use of Extension Grant funds.

I am hopeful that the information arising from this examination will enable more effective support being given to the dairying industry."

NEW MARGARINE MOVES

The margarine quota legislation applies only to "table margarine", limiting its production, in South Australia, to 528 tons annually, and although there was a time when "table margarine" was a lower-priced substitute for butter, nowadays the margarine manufacturers fulfil most, if not all, of their quota allowances with high-priced (up to 53 cents per pound), high quality, poly-unsaturated margarines, made entirely from vegetable oils, particularly safflower oil, although other poly-unsaturated oils are also used.

There is no restriction placed on the manufacture of "cooking margarine", and substantial quantities of this product are sold, to the detriment of butter sales.

But whereas the dairy industry is, perhaps, prepared to accept "table margarine", particularly the poly-unsaturated products, as worthy competitors in the "spread" market, no such honor can be paid to "cooking margarines", which are, by definition in the legislation, composed of at least 90 per cent beef-or-mutton-fat.

But, despite their humble origin, these products are capable of being dressed-up by food chemists, with the use of coloring and flavouring additives, until they look like butter and even taste like butter, and to avoid the deception being carried too far, legislation is sometimes used to prohibit any claim that "cooking margarine" is a substitute for butter.

The South Australian legislation states quite clearly that—

> "The label or advertisement for any margarine other than table margarine shall not contain any statement, claim, design, device, fancy name or abbreviation which directly or by implication suggests that such margarine is suitable for use as a spread . . ."

But one manufacturer has set out quite blatantly to demonstrate his contempt for this legislation, by calling the product "Super Spread", by advertising that its rightful place is on bread, and in numerous other ways defying a regulation that has been made for a very good reason, namely to protect the customer from deceptive labelling and advertising.

The manufacturer also defies the legislation by the form of labelling, as the description, printed in two places, is in one case yellow on a gold background, in the other case, black on a dark blue background.

Against such action the consumer needs the protection of legislation, but such protection is useless if the law is not invoked, and in any case the protection ceases once the margarine is removed from its container. No labelling provisions will have any effect if such margarine is used in the sandwich trade, for example.

The Victorian Government has now introduced a Bill prohibiting the coloring of cooking margarine to resemble butter. This is a worthwhile move, and one designed to prevent deceit. Although coloring may legally be added to some foodstuffs, its use is permitted only to enhance the existing color; there is no foodstuff which may legally be colored to resemble something quite different in origin.

The proposed Victorian legislation will not restrict the manufacture, sale, or use of cooking margarine. Persons who wish to buy it and use it as a spread may legally continue to do so, but they will be buying and using a substance that honestly declares, by its color, what it is, namely beef-and/or mutton-fat.

It is to be hoped that uniform action in all States will follow the Victorian move.

THE SOUTH AUSTRALIAN DAIRYMEN'S . . . Journal

The Official Publication of the SOUTH AUSTRALIAN DAIRYMEN'S ASSOCIATION INCORPORATED

Published Bi-monthly

Vol. 8, No. 2. Adelaide, SEPTEMBER–OCTOBER, 1968

THE MILK RECOMBINING FACTORY
THAI DAIRY INDUSTRY CO. LTD. — THAILAND

PRICE
20c

Registered at G.P.O., Adelaide
for transmission by post as a periodical.

$1.20 per Year, Post-Paid

THE SOUTH AUSTRALIAN DAIRYMEN'S JOURNAL

Published by
THE SOUTH AUSTRALIAN DAIRYMEN'S ASSOCIATION INCORPORATED

Aston House, 13 Leigh Street, Adelaide. 51 3034

President: N. M. GREEN
General Secretary: DAVID J. HIGBED

Advertising Rates on application

ADPB APPOINTS S.A. REGIONAL OFFICER

Since March 1967, when the President (Mr. Loechel) and the General Secretary visited the Brisbane headquarters of the then newly-appointed Queensland Regional Officer (Mr. Laurie Strange) and made an on-the-spot review of the work Mr. Strange was doing, the S.A. Dairymen's Association has been urging the appointment of a Regional Officer in this State.

The Australian Dairy Produce Board has now made the long-awaited appointment, closely following an appointment in N.S.W., and Mr. David Leicester now becomes the Board's third Regional Officer, with headquarters in Adelaide.

Mr. Leicester, who has had wide experience in the food processing industry, and a distinguished war record as a member of the Pathfinder Squadron, will

OUR COVER

The factory of Thai Dairy Industry Co. Ltd. was officially opened in 1964. It was designed with a product capacity of 50 million gallons of sweetened condensed milk per year. The plant is equipped to mix the ingredients of condensed milk, (skimmed milk powder, sugar, butter-oil, vitamins and water); to homogenise them; to pasteurise them; and can the final condensed milk. Can making is also carried out in the plant and this modern equipment can turn out as much as 500 cans a minute.

The Australian Dairy Produce Board has established milk recombining plants in Thailand, the Philippines and Singapore in conjunction with Asian partners.

Development of another plant in Indonesia is well advanced, and the possibility of opening other plants in South East Asia is being examined.

The first milk plants have already provided markets for Australian skim milk powder and butteroil worth more than $5 million per year.

In Thailand the factory has enabled condensed milk made from Australian raw materials to take its share of the market from 3% to 52% in three years.

establish a "Dairy Foods Information Centre", where the industry can offer free advisory services to the public and to government departments, schools, hospitals, clinics and other bodies on nutritional and allied subjects, and provide lecture services to interested groups on the use, preparation and value of dairy foods.

The Centre will be Mr. Leicester's headquarters, from which he will keep in constant touch with food wholesalers and retailers, and the users of dairy produce, to ensure that the industry's output is presented, handled, sold and used in the most effective way.

Of all the promotional techniques available, probably none is as effective as personal contact, and Mr. Leicester's appointment to this full-time position will lift South Australia from its relatively undistinguished position as a dairy-produce consuming State.

Mr. Leicester's activities will cover a wide range of which the following are only examples, but all will lead in the direction of the major objective, which is to project an acceptable image of the Dairying Industry to the public and to increase the consumption of all dairy foods.

1. General information to the public — phone and mail enquiries
2. Dairy foods project tours — school children
3. Dairy foods festivals
4. Dairy foods displays
5. Dairy industry displays — fetes, shows, etc.
6. Addresses and lectures to organisations (groups, clubs, associations, industry conferences, food stores staff, etc.)
7. Nutritional service and information
8. Dietetic service and information
9. Cheese and wine functions — (talks on cheese)
10. Check distribution and publicise Australian Dairy Produce Board advertising schedules and programmes
11. Liaison with—
    - (a) Food industry (chains, groups, associations)
    - (b) Domestic Science teachers, training colleges, students and schools
    - (c) Education Department (Primary and Secondary Schools)
    - (d) Adult Education organisations
    - (e) Home Economists associations
    - (f) Leading Women's groups and personalities
    - (g) All dairy industry organisations in State and Rural Youth
    - (h) Maternal and Child Welfare Departments
    - (i) Medical Fraternity
    - (j) Dental Fraternity
    - (k) Health Department — health lecturing Sisters
    - (l) Catering organisations
12. Public Relations—
    - (a) All media (Advertising, etc.)
    - (b) Release of news items and articles
    - (c) Promotions of dairy products
13. Help with planning displays at Royal Adelaide Show
14. Market advisory service to dairy food companies.

THE WORLD DAIRY CRISIS

An Examination of Alternative Solutions

THE NATURE OF THE PROBLEM

The world's dairying industry is facing a crisis of unparalleled severity. A combination of technological progress and national ambitions has resulted in record production in every major dairying country in the world, production that is so much in excess of each producing country's domestic demand that unprecedented surpluses have been thrown into the world's dairy trade, where, despite the catastrophic price reductions that have been brought about thereby, most of the surplus remains as a continuing threat to trade in the future. Europe alone holds butter stocks equivalent to the annual volume of the world's butter trade, and skim-milk powder stocks of only slightly less magnitude. So far in Australia's traditional markets prices have remained more stable than we dared hope, but there can be no answer to the question, "How long can these prices be maintained?" and, although we may hope that prices such as these may permit some of the poorer countries to obtain foodstuffs more cheaply, the terms of trade are too often such that even these "give-away" prices are of little help to the starving peoples of the world. Is it, then, reasonable, knowing how widespread are starvation and malnutrition in the developing countries, and even in many of the developed countries, to advocate, as is being increasingly done, that a curb should be placed on the continuing increase of dairy production?

POVERTY AMIDST PLENTY — A NEW PROBLEM

It is hardly more than a generation since the world encountered its first real food surplus. In the past the problem had always been to produce enough rather than to dispose of that which had been produced, and although there might, at times, have been temporary surpluses in localised regions, they were eventually absorbed by the commerce of the period aided by the natural processes of decay and the activities of the lower forms of life.

It was in the early 1930's that the world saw two systems moving on a collision course; agricultural science and the mechanised farming had produced in Brazil a record coffee crop but unfortunately the monetary system had failed to keep pace with technology and was unable to dispose of the new embarrassing bounty that Man and Nature had succeeded in producing.

So, while unemployed millions begged for the price of a cup of coffee, thousands of tons of coffee beans were burnt, to the accompaniment of the world's disapproval.

People felt that destruction in the face of widespread want was criminal, yet there were apparently few who could see that to shut down a factory or to seal-off a mine was just as wasteful and just as wicked as the actual destruction of physical products. So, seeing the reproach that had been heaped on the heads of the unfortunate coffee growers, and noting that the closing-down of factories and other productive sources was seen as the sensible decision of management and euphamised as "rationalisation", primary producers, at least in the U.S.A., adopted the effective, but less obnoxious, policy of restricting production.

Thus Ogden Nash could write that—

"Higgledy-piggeldy, my black hen, She lays eggs for gentlemen.
Gentlemen come every day To count what my black hen doth lay;
If, perchance, she lays too many, They fine my hen a pretty penny,
But if, instead, she fails to lay, The gentlemen a bonus pay.

"Mumbledy-pumbledy, my red cow, She's co-operating now.
At first she didn't understand That milk production must be planned;
She didn't understand at first, She either had to plan or burst;
But now the Government reports She's giving pints instead of quarts.

"Fiddle-dee-dee, my next door neighbours, They are giggling at their labors,
First they plant the tiny seed, Then they water, then they weed,
Then they hoe, and prune, and lop, Then they raise a second crop;
Then they laugh their sides asunder, And plow the whole kaboodle under."

But such puny forays into organised folly were soon rendered unnecessary by the gargantuan appetites of the warring nations, and in the period of reconstruction that followed the scientific advances that had made possible the unprecedented waste of war were turned from destruction to production, the result being again unprecedented, though in a less disastrous manner.

Once more the means of distribution failed to keep pace with the means of production, so that, no more than 10 years after the end of the greatest mass destruction the world had ever known, Man faced another threat, the problem of surplus foodstuffs.

THE "SOIL BANK" — AMERICA'S ANSWER

This time the U.S.A. at least, drawing on its experience of twenty years before, adopted a more subtle, more laudable method than the crude simplicity of the Brazilian coffee growers, and created the "Soil Bank" Scheme. The scheme involved nothing so primitive as the destruction of foodstuffs; its purpose was simply to prevent the produce from being grown. To an empty stomach the result is the same, but the title pretentiously gave the scheme a halo of good husbandry, with its overtones of conversation and frugality, and its implied contrast with the prodigality of earlier years that had created "dust-bowls" in many farming regions.

Under the "Soil Bank" Scheme farmers are encouraged to leave portions of their farm out of production, and for so doing are paid the value of the crops that they would otherwise have harvested. Unlike the farmers in Nash's poem they did not need to undertake all the hard work before plowing the crop under; they merely refrained from growing a crop and were paid for doing nothing.

The scheme has proved (at least for many of the farmers) to be highly successful. Farmers whose land was too poor to grow any crop other than oats have found that they can get a better return under the "Soil Bank" Scheme, by not growing wheat rather than not growing oats, as wheat is a more profitable crop, others who had never thought to use their pasture land for anything other than grazing have found that it pays handsomely not to put their pasture lands under crops that they did not intend to grow (though we are not told whether it is necessary to buy a plough before making application, in order to prove one's *bona fides*).

The ramifications of the scheme are endless, and we can only applaud the enterprise of one progressive farmer who wrote:

"Dear Mr. Senator,

My friend Bordeaux, over in Pima County received a 1000 dollar cheque from the Government this year for not raising hogs. So I am going into the not-raising-hog business next year. What I want to know is, in your opinion, what is the best kind of farm not to raise hogs on and the best kind of hogs not to raise? I would prefer not to raise razorbacks, but, if that is not a good breed not to raise, I will just as gladly not raise any Berkshires or Durocs.

The hardest work in this business is going to be in keeping an inventory of how many hogs I haven't raised. My friend Bordeaux is very joyful about the future of this business. He has been raising hogs for more than 20 years and best he ever made was 400 dollars until this year, when he got 1,000 dollars for not raising hogs. If I can get 1,000 for not raising 50 hogs then I will get 2,000 dollars for not raising 100 hogs.

I plan to operate on a small scale at first, holding myself down to about 4,000 hogs, which means I will have 80,000 dollars. Now another thing: These hogs I will not raise will not eat 100,000 bushels of corn. I understand that you also pay farmers for not raising corn. So will you pay me anything for not raising 100,000 bushels of corn not to feed the hogs I am not raising. I want to get started as soon as possible as this seems to be a good time of the year for not raising hogs.

(Signed) Octave Broussard.

P.S.: Can I raise 10 or 12 hogs on the side while I am in the not-raising-hog business—just enough to get a few sides of bacon to eat?"

Humorous? Perhaps it was intended to be so, but there is little humor in the fact that nine of America's richest farmers each receive more than 1 million dollars a year under the Soil Bank Scheme **for not planting crops,** whilst eighteen other lucky landholders look forward to receiving Federal Government cheques for $500,000 or more and another 276 receive annual sums of $100,000 for letting their land lie idle.

While Texas farmers in 1966 shared $446 million in Soil Bank handouts, and their nearest competitors in the State of Kansas received $225 million, the late Dr. Martin Luther King deplored the fact that children were actually starving in these Southern States where so much was being paid to producers not to produce, yet Congressmen and Senators such as Senator Eastland of Mississippi, who received $169,000 last year under the scheme, decreed that the nation could not afford the measures proposed by President Johnson for the "War on Poverty."

RESTRICTION IN OTHER COUNTRIES

But the inevitable excesses of the United States need not be blindly followed, and other countries are attempting to tackle the problem of their agricultural (and particularly their dairy) surpluses in other ways. The Canadian Government, for example, announced that, during 1968, in an effort to prevent its subsidy programme from increasing the quantity of surplus milk, dairyfarmers would receive the direct Government subsidy only on the same amount of manufacturing milk as was produced in the previous year (and so fallible are human calculations that the policy which the new ruling amends, was introduced only two years before, on 1st April, 1966, **"against a background of rising demand for dairy products, particularly butter, and the prospect of future shortages".)**

The practical Swiss have decided to meet the problem in quite a different way: simply by issuing orders to slaughter one third of the country's 950,000 cows in order to limit the production of milk, where the distortion induced by the price support policy has resulted in farmers importing milk to feed calves whilst Swiss dairy produce has been priced off the export markets.

For the other dairying countries there seems to be no change of heart in sight (although we have yet to hear whether there will be any revision to the French policy, following the franc crisis). All receive massive price support in one form or another, and Australia shares with New Zealand the unenviable place at the foot of the list, the average Australian producer receiving (1966 prices) 24 cents per gallon (N.Z. 22.6 cents) compared with 41.6 cents in the U.K., 44 cents in the U.S.A., and 49 cents in the Netherlands.

WHAT SHOULD AUSTRALIA DO?

What action, if any, should Australia take to reduce the output of milk?—What effect would such action have on the return to Australian producers?—And would such action, designed to improve the producers' position, bring a threat to our home markets from subsidized overseas production?

The problem can be stated simply enough:

Of all Australia's production of butter and cheese just over half is sold on the home market, and just under half sold abroad at various prices in other countries. The returns from home sales and export sales are lumped together (equalized) and distributed to the producers as a single amount—the "equalized return", which in the case of butter, for example, is about 36 cents per pound butterfat. But this "equalized return" comprises a return from domestic sales of 50 cents lb. butterfat and returns from the various export markets which range from 24 cents on the U.K. market to an **average** of 16 cents on other export markets.

Now, as domestic consumption tends to be almost static, every additional pound of butterfat earns for the Australian dairyfarming section **an average of 16 cents,** yet the farmer that produced that extra butterfat received the equalized price of 36 cents, the remaining 20 cents coming out of the pockets of all his fellow dairyfarmers through the reduction that such a sale causes in the "equalized return."

DOMESTIC MARKET PARTICIPATION SCHEMES—THE "GRUEN" PLAN

A solution to this problem was offered in evidence given to the Dairy Industry Committee of Enquiry in 1960, in the form of a "Domestic Market Participation Scheme" (the title which will be used throughout this study) but termed for simplicity the "Gruen Plan" after Professor F. H. Gruen, a member of a panel of economists who prepared and submitted the proposal.

The features of the plan were—

1. Each farmer selling milk or cream to a factory for dairy produce manufacture would be given a quota equal to approximately 60%* of his annual production during a base period of, say, the last three years. A city milk supplier would receive a quota equal to 60% of the average annual amount of milk supplied for manufacture and surplus to his milk contract quantity.

   (* 60% then representing the domestic sales fraction of total production.)

2. The quota certificates would be deposited with the factory supplied.

3. Quotas would be freely saleable from one farmer to any other.

4. The registration of a quota in an individual supplier's name would entitle him to payment for his milk or cream at a price fixed each year and approximately equivalent to the net return **from the home market.**

5. All milk or cream supplied above the farmer's quota would be paid for at the amount realized after sale on export markets, (equalized) over all export markets.

The advantages claimed for the "Gruen Plan" were that:

It could significantly raise the incomes of existing dairyfarmers, without imposing a corresponding burden on the consumer or the taxpayer through higher prices or higher subsidies, by allowing milk to be diverted to other uses (e.g.

raising vealers) returning more than would result from selling the milk as dairy produce on export markets but which are not more profitable to the individual when compared with the deceptive "equalized return".

It would accelerate the movement of high-cost producers out of dairying by giving them a saleable asset in the form of a quota certificate which could be sold at a quite high price to farmers in areas better suited to dairying, or operating on a more efficient scale.

It would slow down the expansion of dairying by inhibiting the entry of newcomers into dairying except where production costs were so low that a satisfactory return could be received from the manufacture of dairy produce for export markets only.

The Committee of Enquiry considered that there was—

> "much to be said for such a scheme, which leaves an incentive for the low-cost producer to produce maximum quantities but which does not depress overall prices to the disadvantage of the high-cost producer",

but added—

> "This also would need the introduction of controls. Where there are controls there will be law-breakers and the Committee sees no need to add to the number of either".

The Committee was critical, also, of the intention of the Gruen Plan, which was to limit production, and claimed that—

> "A planned reduction in total production would reduce or eliminate the embarrassing export surplus but it would be an admission of defeat; . . . it would reduce the total return available for distribution and . . . it would increase the costs of producing and manufacturing the smaller quantity; it would reduce the volume of by-products and the total amount of by-product income; it would cause unemployment in factories where production would be reduced by some 40 per cent if there were no export surplus and it would cause disruption in the industries transporting the raw and finished products! it would involve the introduction of a system of controls to assign quantities to each producer, and the establishment of authorities to police assignments. These are only a few of the disadvantages that would result from reduced production".

The "Gruen team" had not, however, put their proposal forward capriciously. They had sought to provide an economic solution to an economic problem; they were aware of the deleterious results that could follow their plan's adoption, and they believed that the economic and social gains would more than outweigh the losses in the same fields. They had diagnosed the disease and prescribed a medicine, and, if the medicine had an unpleasant taste, it was at least better to put up with that discomfort than to continue to suffer.

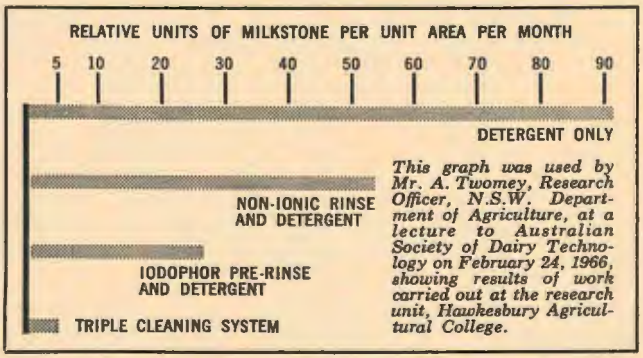
But although economic gains and losses can be measured (more or less) and social gains and losses guessed at, the Committee of Enquiry had at their disposal a final weapon with which they shattered the Gruen proposal, the weapon of political issues in the field of international relationships.

> "Australia," the Committee decided, "cannot ignore the fact that it is a near neighbour of countries with millions of undernourished inhabitants and that populations in these countries are increasing rapidly. There are forecasts of world shortages of food in the not distant future. Australia has the conditions for large production of milk and its derivatives, and has some moral obligation to use these resources to add to the world's supply of food. The fact that butter may not be sent to these countries does not dispense Australia from this obligation; the important need is to increase the total supply of food; people who consume butter will probably consume less of other foods and so increase the quantities of other foods available for under-privileged peoples".

Research Proves Triple Cleaning System

The Triple Cleaning System is a revolutionary new method for cleaning milking equipment. It was first developed by the research unit of the N.S.W. Department of Agriculture and approved by Dr. Whittlestone of Ruakura Agriculture Research Centre. This system reduces milkstone deposits, thereby minimising contamination. (See graph.)

Cooper's are happy to be associated with the extension of this information to the dairy farmer, as their range of dairy products is especially developed for this cleaning system.



This graph was used by Mr. A. Twomey, Research Officer, N.S.W. Department of Agriculture, at a lecture to Australian Society of Dairy Technology on February 24, 1966, showing results of work carried out at the research unit, Hawkesbury Agricultural College.

- *LESS MILKSTONE, BETTER "BLUE" TIME*
- *LOWER BACTERIAL COUNTS*
- *CLEAN FASTER, MORE EFFICIENTLY WITH—*

THE COOPER TRIPLE CLEANING SYSTEM

1. ANABAC (IODOPHOR) PRE-MILKING RINSE

2. COOPASOL-D NON IONIC POST-MILKING RINSE

3. BACTERGENT LOW FOAM ALKALI DETERGENT

ALWAYS USE A FINAL RINSE OF BOILING WATER

Other Dairy Products in the Cooper range are

Cooper's **COOMAC** Acid Milkstone Remover, Cooper's **UDDER SOAP** and Udder Soap Dispenser, **MIN-A-VIT ORANGE BAND** Mineralised Vitamin Supplements for cattle.

AVAILABLE FROM YOUR LOCAL COOPER AGENT OR DAIRY FACTORY

WC438

THE "SYDNEY GROUP'S" PLAN

Despite the Committee's harsh verdict, the "Gruen team" were not alone in advocating a domestic market participation scheme. Two other Sydney economists, N. T. Drane and H. R. Edwards, who had been requested by the Australian Dairy Farmers' Federation in 1958 (two years before the Dairy Industry Committee of Enquiry) to undertake an independent economic enquiry into the dairy industry, had, by the end of their investigations, arrived at a similar solution to the problem. The essential features of the Drane-Edward plan were:

1. Each butter producer is given a domestic market participation quota based on his total production. (i.e. a quota bearing the same relation to his average annual production as the total domestic sales of butter bear to the total Australian output).

2. His domestic market participation quota is paid for at a return calculated from the domestic market price; the remainder of his production is paid for at a return calculated from the export market price.

3. At regular intervals his domestic market participation quota comes up for revision in the light of:

   (a) growth of the domestic market, which determines by how much domestic market participation quotas may be increased;

   (b) change in the producer's total milk production over the period, which determine by how much his domestic market participation quota will be increased (or decreased in cases where he has failed to fill his existing quota).

Although the Gruen plan and the Drane-Edwards plan were closely similar in principle, a series of articles and counter-articles in "The Economic Record" from September 1961 to June 1962, emphasized the differences which, from the point of view of administration and economic effectiveness, were of great importance. Whereas Gruen and his colleagues proposed that quotas should be freely negotiable so that dairy production would be encouraged by market forces to move freely towards the economic use of resources, Drane and Edwards proposed a continuing administrative control over quotas, with periodic reassessment, so that "the scheme rewards the highly efficient producer with an enlarged quota from time to time, but not by so much that it would pay him to increase production just in order to get a large domestic participation quota."

In this way, its authors claimed, the scheme penolizes the grossly inefficient farmer by a quota reduction, while the farmer with constant, or slightly falling, production has an unchanged quota which in itself is a slight penalty in a growing economy (i.e. increasing domestic consumption).

Newcomers, too, were to be handled differently. Whereas Gruen proposed that a newcomer could enter the industry either by producing solely for the export market, at whatever price it would bring, with no domestic participation quota, or by purchosing a domestic participation quota (or several, or many, such quotas) from existing holders wishing to leave the industry or proposing to reduce their production below their full quota entitlement, Drane and Edwards proposed that newcomers entering the industry should produce for the export market only, **until they had qualified for a quota** (presumably when quota allocations are periodically reviewed) **on performance.**

THE INDUSTRY'S ATTITUDE IN 1963

The details of the "Gruen Plan" were included in the Report of the Dairy Industry Committee of Enquiry which was issued in August, 1960, and the

"Sydney Group's" scheme was published later in the same year. Apart from the academic controversy in "The Economic Record" to which reference has been made above, the dairying industry generally paid little attention to either proposal until early 1963 when the Australian Dairy Produce Board included the Gruen Plan in detail as an Appendix to a special report, "The Australian Dairy Industry—A Review of some Current Problems". This report, which was intended to bring the growing problems of world dairy surplus disposal to the attention of the Australian dairy industry, included a projection by the United Nations Food and Agricultural Organization (FAO) or production trends in major dairying countries, in which Australia's annual dairy production was predicted as rising to 1,631 million gallons by 1970. The Dairy Produce Board considered this forecast too high, submitting instead an adjusted figure of 1,519 million gallons, which would nevertheless yield an unsaleable surplus of 153 million gallons, equivalent to 36,000 long tons of butter.

The Board went on to say, "It is time now for the industry to decide whether it will pursue a 'let alone' policy of adjustment in which, without aid or interference, dairy production will eventually come into balance with available markets, or whether it will adopt a more positive approach and seek to understand and facilitate any necessary adjustments with a minimum of dislocation to individual dairyfarmers, manufacturers, distributors, dairy organizotions, and the industry structure as a whole.

> "The industry must share with Commonwealth and State Governments the broad responsibility of recognizing the short term repercussions on people who are adversely affected by developments arising from factors many of which are beyond their control, and . . . attempt to alleviate os much as possible human problems of readjustment."
>
> "One approach to the problem of maintaining dairy income in the face of increasing regional and new farm production is . . . the quota scheme prepared by Mr. F. H. Gruen of the Australian National University. It is, in effect, a domestic quota scheme and could be applied without affecting, in any way, the existing income structure of the industry."

A combined meeting of representatives of all sectors of the dairy industry subsequently examined in great detail the Dairy Board's review, and the Australian Dairy Farmers' Federation, having given earnest thought to the proposal, resolved—

> "that, after giving full consideration to the advantages and disadvantages of the domestic sales quota scheme suggested by Mr. F. H. Gruen and the constitutional and administrative difficulties associated with the implementation of such a scheme, . . . no action be taken to introduce a domestic sales quota scheme at present." . . .

add the comment—

> "Although many industry leaders and dairy farmers appreciate the possible advantages of a domestic sales quota scheme, because of constitutional and political difficulties its introduction would be unlikely, unless it had the almost unanimous support of the industry in every State of the Commonwealth. The Federation considers that this support would not be forthcoming at the present time.
> "However, it is of the opinion that further consideration should be given to the quota proposals in the light of production trends in the future, and that consideration should be given also, to the advantages and disadvantages of controlling the licensing of dairy farms, as an alternative."

The subject of domestic market participation schemes then remained in abeyance, apart from a brief reference in a paper delivered to the Second National Butter Conference in August, 1968 by Mr. Mohindra Singh, the Australian Dairy Produce Board's Director of Marketing Research, in which Mr. Singh stated

f tank units tested by the State Electricity Commission of
by the Australian Standing Committee on Agriculture)
tralian Standard N46-1963.

OF PERFORMANCE

RL250	R300	R400	R500
C.P.66C10	C.P.66C8	C.P.66C13	C.P.66C9

NSC No. 8/4 Complies with Milk Board and Department ments in every State.

round design for minimum space requirements • All foam insulation • Low height for easy cleaning.

ther information contact

n equipment

co-operative ltd.

rill & Egerton Sts., Lidcombe, N.S.W. 648-1084.
3 Charles St., North Coburg, Victoria. 35-2347.
Stanley St., South Brisbane, Qld. 4-5452.
CO-OPERATIVE LTD.)

that he felt "the principle of a quota scheme may still offer the best solution" until it reappeared on the basis for a "Reconstruction Plan for the Dairy Industry" submitted by the Australian Primary Producers' Union to the Federal Minister for Primary Industry in October, 1968.

THE A.P.P.U. PLAN — 1968

The APPU's Plan is in two sections, the first being a domestic market participation scheme which closely follows that of the "Sydney Group", the second being a proposal for a reconstituted Australian Dairy Produce Board to be given powers to administer all dairy produce manufacturing and marketing operations, both domestic and export, being vested with the ownership of all milk passing into manufacture and charged with the duty of setting ex-farm and ex-factory prices allocating manufacturing quotas, and co-ordinating manufacturing with market requirements.

The proposals concerning the composition and function of the Dairy Board are not appropriate to this study, but the quota scheme, being at present before the Minister requires re-examination, and although it follows closely the "Sydney Group's" plan, it is reprinted here in full for accuracy.

"Two Price System"

Approximately 60% of all dairy products manufactured and processed within Australia are sold on the Australian market. The other 40% is exported.

As total production rises, (and it has risen steadily with the exception of the drought year 1967-68), the extra production has been sold on overseas markets. The Australian market total offtake being relatively unchanged.

Thus, over the years, the proportion of total dairy production exported has risen steadily.

The Australian market is insulated from the erratic price fluctuations of world markets and is the stable element in the market mix notwithstanding intensive pressure from competitive products.

At the present time, the individual dairy farmer does not have a secured share in this Australian market. He receives an average "equalised" price for his product. This price bears no direct relation to any major market.

His share in the Australian market alters according to whether he increases or decreases his total milk production in step with the average change throughout the Australian dairying industry. If he decreases his production at a faster rate than average or increases his production at a slower rate than average, then his share in the Australian market will be reduced.

Since the overseas markets for the majority of dairy products are not profitable and can only be supplied in any large quantity through price assistance and a relatively economic Australian market, the benefits to accrue from a more secure share in the Australian market must not be under-estimated.

If each dairy farmer is to base his production decisions upon an analysis of real market returns relative to his farm cost structure, then the present form of payment to the farmer must be altered. If each farmer were paid one price for his share of the Australian market and another price for his proportion of production sold on the overseas market, the farmer would then be in a position to relate the cost of extra dairy production on his farm to the returns obtained on export markets.

Furthermore, the risk element in decision-making is reduced if the effect of overseas market fluctuations is restricted to a minor segment of the total dairy farm production.

It is submitted that a vital aspect of rationalising the Australian Dairying Industry is the allocation of quotas to dairy farmers and the introduction of a two price payment system. At the same time, retaining equalisation throughout the industry at the manufacturing and processing level.

The Australian Dairy Produce Board to be empowered to allocate quotas to dairy farms for the production of quota of milk for manufacturing and processing to meet the needs of the Australian market and a percentage above that market figure as a reserve.

(a) All dairy farmers in the industry at the commencement of the scheme to be allocated a **quota for a proportion** of the dairy produce sold from each farm for manufacturing and processing purposes (excluding milk for liquid consumption).

(b) The quota to be a percentage of each farm's total production of wilk for manufacturing during a base period of three average years.
Due consideration to ge biven to farms in unique circumstances, i.e., farms in early stages of development.

(c) The percentage of each farm's quota relative to total form production to be the same as the percentage of home consumption of manufactured dairy produce, plus a percentage above that figure, to total Australian production of manufactured dairy produce during the three year base period.

(d) Quotas to be reviewed **annually** and adjusted on a pro-rata basis according to movements in home consumption of Australian produced manufactured dairy produce.

(e) Of the increase in home consumption quantity, 50% to go towards increasing present quotas and 50% to be used for allocating new quotas to new farms. New quotas to be issued of a quantity equal to the average size of all quotas issued throughout Australia at the beginning of the scheme and in the first three yeors of that new farm's quota the average yearly production on these new farms **must be** such that the quota is the same percentage of total farm production as the sum of all quotas is to total dairying production for manufacturing.

(f) Quotas to remain with the property, and not to be saleable separate from the property.

(g) Where a farm ceases to be engaged in dairying then that farm's quota automatically to revert to the A.D.P.B. to be re-allocated as in (e) above.

(h) The dairy farmer to receive a guaranteed return based on home market prices for the full quota quantity.

(i) All dairy produce produced for manufacturing in excess of quota to be paid for at export prices.

(j) Quotas to be administered by the A.D.P.B."

ADMINISTRATIVE METHODS AND PROBLEMS

Superficially, the three schemes (Gruen, the "Sydney Group" and the A.P.-P.U) are almost identical except in the matter of the negotiability of the quotas, but this difference is of the utmost importance, because it affects both the administration and the eventual results of a scheme.

Compared with the administration of the industry as we know it at present, through the Commonwealth Dairy Produce Equalisation Committee, the administration of a domestic market participation scheme would be extremely complex. It must be realized that, if any form of equity is to be achieved, a quota must be given to every person who supplies milk or cream to a dairy produce factory,

regardless of the scale of operations, unless the industry is prepared to impose an arbitrary production qualification, whereby only producers whose output exceed this minimum qualify for a quota, all others being forced to receive the export price only for the milk or cream they supply.

The APPU plan, and its model, the "Sydney Group's" plan, then require that each quota **(and remember that there will be nearly 100,000 of them)** must be kept under surveillance, in order that quotas may be adjusted in accordance with performance (up or down), transferred from sellers to buyers, cancelled when producers leave the industry and issued to newcomers to the industry, whilst simultaneously being maintained in some sort of equality with domestic sales. So it is no wonder that Professors Downing and Karmel commented that such plans would be "difficult to administer and, for that reason, might have more disadvantages and less advantages than appear at first sight", and when one considers the very great difference there will be between the returns for quota milk and for non-quota milk it becomes obvious that the issuing and policing of the quota certificates must be done with scrupulous accuracy, honesty, fairness and firmness; legislation will be necessary and would no doubt be introduced but, even so, where the rewards are so great, the possibility of malpractices and dishonesty cannot be overlooked, and the warning of the Committee of Enquiry ". . . where there are controls there are lawbreakers, and the Committee sees no need to add to the number of each" is not lightly dismissed.

SHOULD QUOTAS BE SALEABLE?

The "Gruen Plan", and Mohindrah Singh's modification, to which reference has already been made, require quotas to be negotiable, i.e., saleable from one farmer to another, separately from the properties to which they were originally allotted, and Professor Gruen claims in support, that "all this (the administrative difficulties inherent in the "Sydney Group" Scheme) is unnecessary if quotas are allowed to be freely sold." Certainly negotiability would remove the administrative work of keeping track of quota certificates, including possibly the registration of certificate holders, and it would be more completely the necessity for any authority to make arbitrary decisions concerning either the allocation of quotas between existing farmers who are producing above quota (and, in the "Sydney Group's" scheme, qualify for an increase) and those who produce below quota, or the even more contentious matter of allotting quotas to newcomers into the industry.

With quotas freely negotiable the dairyfarming sector would tend to restructure itself by the flow of quotas from high-cost regions (or farms) to low-cost regions or farms, and although there would be no bar to entry into the industry for any person who was prepared to produce in return for export prices, a newcomer could obtain a quota only by purchase from an existing quota holder.

Neither Gruen nor Singh explain how they would maintain the total of quota production in step with domestic consumption, and a reasonable conclusion is that periodical re-assessments would be necessary, in which case there seems to be an argument in favour of allotting these increases in strict proportion to existing quota entitlements, with farmers who are unable to make use of the windfall being permitted to sell their new quota certificate immediately.

In terms of its effect on resource allocation there is no doubt of the superiority of the almost self-administering negotiable quota scheme over the extreme complexity of the APPU's proposal, with its annual review of quotas, and because of this, one may even be prepared to dismiss the APPU proposal entirely as requiring such a degree of administration as to make it almost certainly unacceptable to the industry or to the Federal and State Governments who would have the nearly impossible task of preparing and implementing the supporting legislation.

THE EFFECT OF SALEABLE QUOTAS ON FARM VALUES

But, perversely, a plan for negotiable quotas, whilst simple to administer, and so more acceptable to farmer and legislature, may introduce a greater de-stabilizing effect than it is designed to remove in the present equalisation scheme. The monetary value of a quota lies in the increased return that its possession brings to the holder, from the difference in value between quota production, based on home market prices, and non-quota production, based on export prices.

At present butter values, a producer supplying butterfat for the domestic market, in accordance with his quota entitlement, would receive approximately 50 cents per pound for this portion of his output. The remainder, supplied outside his quota, and sold on export markets with varying returns, would yield less than 24 cents per pound. Thus the possession of a quota has the effect of increasing the farmer's income by something like 26 cents per pound butterfat above that which he would otherwise receive, and as, to the individual farmer, the possession of a quota certificate in no way increases his production costs, the gain of 26 cents per pound may be regarded as clear profit, to gain which the farmer would be prepared to pay, for additional quota entitlements, a price based on the capitalization of this difference in return. The return is costless and almost free of risk, and a figure of 7% could be appropriate, but even Gruen's conservative figure of 10% gives o market value to quota entitlements of $2.60 per lb. butterfat.

Thus a farmer producing 8,000 pounds of butterfat (this figure being the Committee of Enquiry's economic minimum), with a quota entitlement of around 4,800 pounds, would probably find a buyer for his quota at over $12,000, and after selling the quota his farm could be reduced in value by that amount, thus allowing him to choose between disposing, without capital loss, of the now much more readily saleable property, due to its lower market price, or of continuing in some other primary industry on a property which is no longer overcapitalized in value. What is more likely (and this likelihood increoses in proportion to the productivity of the property) is that the residual value of the property, after the quota has been sold off, will be far less than the value of comparable non-dairying properties, and so the walk-in-walk-out value of dairying properties with quota entitlements will rise, **unless the Commonwealth Government sees the proposal as providing the opportunity to remove the dairy bounty, thereby reducing the difference between quota and non-quota prices by 25% and the capitalized value of a quota by the same proportion.**

CAN THE QUOTA PRINCIPLE APPLY TO ALL PRODUCTS?

The ultimate and insuperable obstacle that applies to all the quota plans, however, is not related to the inherent problems of quota allocating, administration, and revision, nor to the de-stabilizing effect of negotiability, but to the fact that the dairyfarmers' output does not go solely into butter; ti goes also into cheese, whole-milk powder, skim-milk powder, casein, and condensory products, as well as other minor uses, and each of these is produced in amounts that vary from year to year in accordance with season and demand, and each has a different and varying portion consumed at home or exported.

The authors of the various plans have, in every case, simplified the basis of quota allocation by saying, in effect, "Australia's home market accounts for approximately 60% of dairy production; therefore each farmer will be allotted a quota equal to 60% of his average annual production over the last x years." The economists may excuse themselves by saying, "It is the principle that we are trying to explain; if you accept the principle the details can be worked out later", but the APPU plan has been submitted to the Minister as a proposition, and the operational processes should have been spelled out in exact detail.

If we allot the quotas on the basis of total butterfat produced in Australia less the butterfat contained in dairy produce exported, we will exclude from the calculations all skim powder and all casein. If we bring about a revolution in factory practices and use the total solids produced and exported as the basis for quota allocations we will exchange one distortion for another, because of the varying composition of each product and the varying proportion of each product that is exported, which ranges from 20% of condensory products, to 90% of casein.

We should not doubt that, **if the industry does wish to adopt a quota scheme, it will not be impossible to include all these variants in the final calculations,** and it will not be impossible to take into account the multiplicity of changes that will occur in the status of each product from year to year, but the effort and cost will be such that, like the Apollo project to send men in orbit around the moon, one might well comment, "Certainly it is possible, but cannot similar results be obtained in a less expensive way?"

THE INDUSTRY'S OBJECTIVE

What are the results that are being sought?

There is really only one objective, namely to prevent the lowering of farm income caused by the expansion of export volume, by removing the artificial incentive to increased production that is provided by the present "equalized price".

The same results can be obtained in a more positive, less cumbersome, less restrictive, and certainly more acceptable way, **by increasing home consumption.** An outworn catch phrase, perhaps, but has it really been tried?

HOME CONSUMPTION SHOULD BE OUR AIM

We pride ourselves that we have "the second cheapest cheese and the third cheapest butter in the world"; but this is not matched by our consumption per head, which is lower for cheese, butter, milk and cream than many other countries in the Western world.

The reason is not hard to find. However efficient our factories may be in their production processes, and however often some manufacturers win prizes for their dairy produce in international contests, in presentation, promotion, and marketing the general scene is one of ineptitude and apathy. We have come to regard a low (and decreasing) consumption of dairy produce as inevitable, claiming in support that our products have a low priority in the claims on the consumer's purse, yet we fail to adopt the methods and the motives that put these other products ahead of ours. Butter, cheese, milk and cream are probably unique in that they combine extremely high value-for-money, in terms of nutrients per dollar (and natural nutrients at that, without the necessity for additives and supplements), with flavour, texture, and appearance that appeal to all tastes and to all social classes. Or would it be more accurate to say that our products **should have** the flavour, texture and appearance that appeal to all tastes and to all social classes? It is here that the industry falls down. **We do not exploit these attributes to the full.** Although the industry wins prizes **our butter is not the best that can be bought,** (particularly in South Australia, where "choice" and "choicest" grades are unobtainable); we can never guarantee that the next pound of cheese will be as good as the last (nor, fortunately, that it will be as bad). We do nothing to exploit flavour subtleties and nutritional range by providing milks of various fat contents, each having its special application and appealing to a peculiar palate; we prefer instead to supply only a standardized product of minimal quality. As for cream, the less said the better.

Credit must be given to those manufacturers who have attempted to get out of the rut, but it needs more than their marginal efforts. The whole industry must be geared to upgrading Australia's dairy products, setting as our target the highest consumption per head in any country of comporable living standard.

WE HAVE THE KNOW HOW, BUT IT IS NOT APPLIED

The discussions that took place at the Second National Butter Conference in Melbourne in August, 1968 revealed that the technologists and the marketing specialists possess the know-how that would increase butter acceptance and butter sales tremendously; but the one problem not solved was how to get manufacturers to adopt these methods. And what is true of butter is undoubtedly true of our other products; advanced techniques in processing, presentation, and marketing are at our fingertips; it remains only to grasp them.

When we have increased our butter consumption (now 22 lbs. per head) to near that of Eire (33 lbs.), cheese (now 7½ lbs.) to near that of the UK (10 lbs.), milk (now 28 gallons) to near that also of the UK (32 gallons), and cream (now 2 lbs.) to near that of New Zealand (7 lbs.), then will be time enough to turn our attention to the massive problems of quota administration.

THE DANGER OF OVER-PRODUCTION

The effects of such a campaign, however successful, would, nevertheless, be nullified by large scale increases in production. The Minister for Primary Industry has said, **"I do not advocate decreasing production but I think that a brake should be put on increasing production through the opening up of State developed dairy land."** In this matter the Minister deserves the full support of the industry, but it is pertinent to ask whether State development schemes are the only culprits. Private development, too, must be inhibited if the benefits of any positive action are to be retained, and the most effective way to do this would be by removing sub-Section 75 (1) (b) from the Income Tax Assessment Act. This sub-section, which allows as a tax deduction, expenditure on "the destruction and removal of timber, scrub or undergrowth indigenous to the land" has been responsible for much premature, unwise and unprofitable development, and has contributed to surplus problems in other primary industries than dairying. Its retention cannot be justified on economic grounds as the increase in value resulting from clearing is itself sufficient reward, but it is the chief attraction to the "Rundle Street farmer" and its overall effect has been to price undeveloped land out of the reach of primary producers who rely on their holdings for their livelihood.

THE PROBLEM OF LOW INCOME FARMERS

The quota plans so far discussed have been designed primarily to consolidate the position of the whole of the dairyfarming sector, and their effects on the low-income farmer would be incidental, as they would, if they were effective at all, have no more direct effect than to halt the reduction in his unit return and so stabilize his gross income. Admittedly a low-income farmer would, under a quota scheme, be able to divert his above-quota output to such possibly more profitable use as the raising of pigs or vealers, but the volume of such output would be too small to offer much relief.

Without a quota scheme the low-income farmer can look forward to assistance from the Commonwealth Government's "buying-out" scheme, but one wonders whether the relief available will be sufficiently attractive to be readily grasped.

THE SCHAPPER "ALTERNATIVE POLICY" PROPOSALS

Dr. Henry Schapper, Reader in Agricultural Economics in the University of W.A., has evolved alternative policy proposals which, with industry support, could be implemeted independently of any other industry re-structuring proposal. His scheme is startlingly novel but will repay study.

THE PROBLEM OF LOW-INCOME FARMERS

Alternative Policy Proposals

The problem of low-income farmers exists throughout the more developed countries of the world. In the absence of positive policies certain economic and technological forces make it almost inevitable that the problem will continue and worsen. The few choices open to these farmers involve often severe economic and social hardship. Policy should result in increase in the lowest farm incomes to a socially adequate level and avoid perpetuation of low farm incomes which is one of the worst aspects of the present situation.

Many policies have been suggested in the debate on the subject. Some are in themselves worthwhile, though alone they will not help low-income farmers. Many others revolve around farm price subsidies of one kind or another. This type of policy is an intrinsically expensive way of achieving adequate income because the largest proportion of subsidy accrues to farmers with highest incomes. If the problem is seen as one of low farm incomes, then a farm prices policy for this purpose should be specifically rejected because it is a prohibitively expensive method to raise all the lowest farm incomes to an adequate level.

A feasible low-income policy as suggested here involves:—

1. *Policy commitment to the concept of a viable farm unit and avoidance of perpetuation of those that are not viable.*
2. *Negative income tax payments by government to raise low farm incomes to socially adequate levels. These payments to be recoverable from proceeds of farm sale or from a farmer's estate.*
3. *Establishment of a permanent land authority to promote consolidation of uneconomic farms into viable units at a rate faster than by normal market processes.*
4. *Special viability loans to help farmers change their farms, by either amalgamation or development, into viable units.*
5. *Improved educational facilities for farmers and farm children to widen occupational opportunities.*

The Proposals

Low-income farmers are an economic and political problem in all the more developed countries of the world, including Australia. In these countries, such farmers have in common insufficient income to cope adequately as independent self-sustaining farm families. The choices before them usually are as follows:—

1. To stay on the farm endeavouring to cope on low and declining net real income.
2. To leave the farm for wage employment.
3. To supplement farm income by wages income.

COST-PRICE SQUEEZE

Downward pressure on the real net income of farmers is almost inevitable and nearly always continuous. This pressure is the outcome of two sets of circumstances. One is agricultural science, technology and engineering, which make two blades of grass grow where one grew before. They also enable fewer farmers to increase

production faster than increases in population. Secondly, in more developed countries, as average income rises, the market demand for farm production per person does not change much, whereas the demand increases for non-farm production and services.

As a result there is a continually strengthening demand from the non-farm sector for more labour and more capital. This affects the price of resources which are used directly in farming, and indirectly, to provide the services and make the plant, machinery and fertilizers for farmers. The competition for resources between the farm and non-farm sectors is decided in the market-place. The non-farm sector is at an advantage because consumers spend the increases in their incomes in this sector and not on more farm products. Thus, the farmer pays for his resources and calculates the costs for them at rates set by the farm and non-farm demands in competition.

Here are the two basic forces comprising the cost-price squeeze: one, the pressure of farm production on markets exerting a downward influence on the prices received by farmers; two, the upward influence of the non-farm sector on the prices paid by farmers.

Because of the ever-continuing nature of the cost-price squeeze, the low income farm problem cannot be solved on a once-and-for-all basis. Just as some of yesterday's adequate income farms are today's low income farms, so will today's marginal adequate income farms be tomorrow's low income farms. Rational policy would be concerned both to solve the present low income problem and to prevent ever-present marginal income farms from becoming future low income farms.

FARMER RESPONSE

Farmers may offset the effects of the cost-price squeeze, they may escape from them, or they may suffer them. Some farmers offset the depressive effects of the squeeze on net income by sufficiently increasing the physical volume of their production, by expansion or intensification. This choice is not possible for all farmers. Some escape the effects of the squeeze by selling out, leaving the ranks of the self-employed, and joining the ranks of those available for work on wages. And some farmers suffer the squeeze as a continuing decline in their level of living, to the point of poverty and hardship.

AGGRAVATING THE SQUEEZE

The influence of the cost-price squeeze may be aggravated or mitigated by government action or by non-governmental marketing and pricing arrangements. Whereas the forces comprising the cost-price squeeze are common to agriculture in all the more developed countries, the various additional influences are specific to each country.

In Australia, subsidies on farmers' prices for a time mitigate the effects of the squeeze. But they do it in a way that strengthens the hands of the largest income farmers in their competition for working capital.

The market protection afforded to farmers through two-price schemes which maintain domestic prices higher than export prices also mitigates the effects of the squeeze. However, this method raises the costs to purchasers and adversely affects farmers both as users and as sellers of production protected in this way from usually lower export prices. An alternative method of maintaining a higher home price which would not drive up costs to the same degree, would be through charging tax-payers rather than purchasers. The equalised price of two-price schemes calls forth increased production which has to be sold at the lower export price.

Australia's tariffs on imports also aggravate the cost-price squeeze on farmers by maintaining a level of costs (and of population and non-farm incomes) higher than otherwise. Subsidies and home consumption prices, despite some disadvantages, are offsetting influences to the squeeze. These influences may be only partial in the case of wheat, and are probably complete in the case of dairying. They are non-existent in the case of wool.

Marketing margins are not a cause of the cost-price squeeze. Vigilance by farmers' organisations is required continuously to maintain efficiency of farm produce marketing boards. For products such as meat and wool where marketing organisation is in the hands of private enterprise, vigilance by farmers should also be constant, and a threat of added competition should be ever-present through the possibility of another farmers' co-operative or statutory marketing board.

ALTERNATIVES FOR SOCIETY

To deal with the cost-price squeeze, choices facing society are: 1) to prevent it; 2) to completely offset its influences; 3) to offset its hardship effects; and 4) to merely not aggravate it or its influences.

To prevent the cost-price squeeze would require two measures. One, slowing down the rate of scientific and technological progress in agriculture. This is unrealistic if only because it would give Australia's competitors in agricultural production an advantage in foreign markets. They would be able to under-sell because Australia would have partly abondoned its cost-reducing technology. Two, by extending effective demand through faster increases in population. This, too, is unrealistic, because it is not sensible to have a population policy, even if it were possible, to maintain the incomes of farmers. Alternatively, effective demand may be extended by entering into competitors' markets or by creating and developing new markets. These measures warrant continuous and close scrutiny.

To completely offset the influence of the cost-price squeeze is another choice for society. This could be done by heavily subsidising the prices received and paid by farmers. This soon would lead to unsaleable surpluses, which in turn are likely to lead to production quotas. Whereas neither of these are the ultimate disasters for society, they both are inferior outcomes. Moreover, subsidies on prices favour larger income farmers, helping them to win the competition against smaller income farmers for working finance. Subsidies make it easier for the larger income farmers to develop still larger farm businesses and do not assist the small farm to grow in size. For the larger income farmer his share of subsidies, after tax, become savings available for expansion, whereas for the smaller farmer they become income available for consumption.

To offset the hardship effects of the cost-price squeeze requires assessments to be made of the adequacy of net farm income of those farmers suffering hardship because of inadequate income. For such farmers, income help would be required. How this may be effected is spelled out later.

Finally, society might prefer to not aggravate the cost-price squeeze or its influence, for instance, by reducing tariff protection on local secondary industries. This is unrealistic in the light of Australia's twin commitment to large-scale immigration and to full employment. Farming is not absorbing more labour; it is releasing it. Alternatively, by accelerating the transfer of selected resources out of farming (for instance, some younger farmers), into other occupations after retraining or with financial assistance, could help both the farmers who leave and those who stay on farms. The gross revenue from the same or a growing volume of production would be shared by fewer farmers. Again, small farms which are unlikely to become viable economic units could be prevented from being sold as separate units. Instead, they could be sold to other farm units.

LOW INCOME FARM POLICY

Given that the foregoing analysis is not too far wide of the realities of the Australian farming scene, it may be appropriate to spell out the elements of a national policy specifically designed to meet the income needs of inadequate income farmers. The major elements are as follows:

1. Recognition of, and provision for, a welfare need among inadequate income farmers for whom it is impracticable to leave their farm.
2. Specific rejection of farm price subsidies as a basis of solving the low income farm problem. In Australia, which has such a large farm sector, prohibitive transfers would be required from tax-payers to raise, by subsidies, the incomes of all low-income farmers to adequate levels. This is not to reject price subsidies as compensatory payments for example, for tariff-induced costs.
3. Special viability finance for farms with potential to become economic units, to be made available specifically for the purpose of becoming viable.
4. Provision for farmers who are able and willing to be re-trained for an off-farm occupation.
5. Provision for uneconomic farms, without potential for economic viability, to be purchased for consolidation into, or with, viable economic units faster than through normal market processes. These processes often perpetuate the small farm and low income farm problem.

The foregoing elements are directed only towards low income farmers. The following measures are directed toward improved educational facilities and marketing whereby all farmers may gain. These measures alone could not adequately help low income farmers.

1. Improved educational opportunities for farm children. It is recognised that secondary schooling for farm children is more expensive for parents and Education Departments than for city children. As a result, a higher proportion of farm children tend to be earlier drop-outs from poorer educational facilities, and many have no option but to return to an uneconomic farm.
2. More aggressive export salesmanship. The national export drive should not be confined to secondary industry. All farm produce marketing boards should consider doing their own wholesaling in foreign markets and not use agents who handle other countries produce.
3. Independent research into market handling and into the organisation of marketing processes of all farm production.
4. More help for poorer countries to become richer faster and to become better customers of Australia's farmers, sooner.

A final element is provision for practicing farmers to undergo refresher courses in farm management, to become more knowledgeable about the economics of the agriculture of their country, and better informed about occupational opportunities for themselves and their children outside of farming.

DETAIL OF SELECTED ELEMENTS

As an option, a negative income tax is proposed for farmers with inadequate income and for whom it is impracticable to leave a farm which cannot be seen to be capable of being developed into a viable unit. This would be a payment from the Treasury direct to the farmer to bring up his net income, as declared in an audited income return, to a stated minimum. A requirement would be for the farmer to give government the first refusal of the property in the event of sale, and the total negative tax payments would have to be repaid at this time or from his estate.

In effect, this negative income tax would be part-payment by government in advance of purchase at market rates. In this way the government would ameliorate the hardship of low-income farmers and at the same time acquire non-viable farms for their reconstruction into viable units. Moreover, people who have no real alternative would not be forced off their farms, nor would such farms continue as uneconomic units beyond the tenancy of the present farmer. Any dis-incentive tendency of this proposal could be minimised by establishing levels of production to be achieved before negative tax became payable.

Government would need to establish a permanent land acquiring and land-holding authority. It would purchase by outright payment or by exercising its option in the event of sale by or death of a farmer who had availed himself of the negative income tax. The authority would dispose of its land to enable farmers to become viable. The terms of disposal could be by lease, or by conditional or outright sale.

For farms and farmers capable of being developed into viable units, special viability loans are required. Funds for this purpose could be made available through the Commonwealth Development Bank.

For farmers who are capable of being retrained and established into another occupation, provision should be made for expenses of removal, re-housing and re-training.

Educational facilities, living away from home allowances, and educational bursaries and scholarships for country children, should be substantially upgraded and increased. These measures are necessary to give country children still better chances to move into occupational opportunities with potential greater than is evident on numerous uneconomic farms.

CAVEAT

Finally, policy-makers should be acutely aware that farmers' organisations, by their nature, tend to develop and present the points of view of larger and higher income farmers. This is not done purposely or in bad faith. It is almost inevitable because it is these farmers who have the time and ability to do the work of farmers' unions. Moreover, where these organisations do not undertake their own first-class professional research work, they tend more to the expression of leaders' opinions than to the presentation of well-informed and well-documented cases to government.

It is because of this situation that policy-makers should be on guard against the likelihood that the low-income farm problem will be confused and confounded with the current concern for wheat pricing formulae and for wool marketing methods.

Henry P. Schapper,
Reader in Agricultural Economics,
University of Western Australia.

Prices and Statistics

ADELAIDE METROPOLITAN MILK SUPPLY AREA

PRODUCTION (000 gallons)

	For month		Total since July 1		Total since Jan. 1	
	1967	1968	1967/68	1968/69	1967	1968
Sept.	4,718	5,148	12,120	13,498	32,800	34,122
Oct.	5,496	5,834	17,616	19,332	38,296	39,956

	SALES (000 gallons)				QUOTA per cent		C.M.B. cents	
	For month		Total since July 1					
	1967	1968	1967/68	1968/69	1967	1968	1967	1968
Sept.	1,729	1,701	5,420	5,377	36.7	33.1	19.90	20.54
Oct.	1,806	1,813	7,226	7,190	32.9	31.1	17.79	19.08

Moving average quota for 12 months ended 30/9/68, 44.56%; 31/10/68, 44.27%

INTERIM PRICES TO LICENSED SUPPLIERS

(All prices are interim only and subject to adjustment by retrospective payment)

1968	Basic (cents per lb. butterfat)	C.M.B.	Total	3.5% (cents per gallon)	4%	4.5%	5%
Sept.	37.95	20.54	58.49	21.13	24.14	27.16	30.18
Oct.	37.95	19.08	57.03	20.60	23.54	26.48	29.43

LONDON PROVISION EXCHANGE QUOTATIONS

(Sterling Currency per cwt.)

	August		September	
	1967	1968	1967	1968
Butter—Choicest Australian	300/–	300/–	300/–	300/–
Cheese—Rindless Australian	265/–	225/–	265/–	225/–

RETROSPECTIVE PAYMENT—1967/68 SEASON

Following a further step-up of 50 cents cwt. cheese for all production in the 1967-68 season, a retrospective payment of 0.59 per lb. butterfat (equalized) will be paid to licensed producers in the Adelaide milk supply area early in December on all milk supplied during the period July, 1967 to June, 1968.

Early Expectation Not Fulfilled

Although dairyfarmers culled heavily during the drought conditions last season, the reduction in dairy cattle numbers reaching as high as 19 per cent in County Gawler and 8 per cent in County Sturt, and a total of 4.75 per cent in the Central Division, good husbandry and a high level of feeding enabled productivity to be held within 10 per cent of the previous season's figures.

With the opening rains production rose rapidly, the output for May being the highest ever reached for that month in any year, but subsequent cold, wet, conditions with slow pasture growth slowed down the recovery rate, and production in the current season, dating from 1st July, is tending to be lower than that of the two years immediately preceding the drought, as shown below.

ADELAIDE METROPOLITAN MILK SUPPLY AREA
PRODUCTION (000 GALLONS)

	July	August	September	October	November
1965	3848	4434	5170	5716	5076
1966	4038	4589	5189	5881	5567
1967	3451	3951	4718	5496	5085
1968	3948	4402	5148	5834	5609

THE SOUTH AUSTRALIAN DAIRYMEN'S . . .

Journal

The Official Publication of the

INCORPORATED SOUTH AUSTRALIAN DAIRYMEN'S ASSOCIATION

Published Bi-monthly

Vol. 8, No. 3. Adelaide, NOVEMBER-DECEMBER, 1968

MR. DAVID LEICESTER
SOUTH AUSTRALIAN REGIONAL OFFICER
AUSTRALIAN DAIRY PRODUCE BOARD

PRICE
20c

Registered at G.P.O., Adelaide for transmission by post as a periodical.

$1.20 per Year, Post-Paid

THE SOUTH AUSTRALIAN DAIRYMEN'S JOURNAL

Published by
THE SOUTH AUSTRALIAN DAIRYMEN'S ASSOCIATION INCORPORATED
Aston House, 13 Leigh Street, Adelaide. 51 3034
President: N. M. GREEN
General Secretary: DAVID J. HIGBED
Advertising Rates on application

MILK MARKETING IN SOUTH AUSTRALIA

Its History — Its Principles — and Its Alternatives

The Milk Prices Equalization Scheme is unique to South Australia, unique not only in its application of equalization principles to town-milk supply, but in the simplicity, accuracy and equity of its operation and in the fact that the administration of the Scheme is vested in the industry with a minimum of external control. The Dairy Industry Committee of Enquiry, in its Report in 1960, referred to the scheme in complimentary terms, and N. T. Drane and H. R. Edwards, authors of "The Australian Dairy Industry—An Economic Study", stated that the scheme led to "less distortion of resource use than either New South Wales or Victorian regulations, (through) the elimination of excessive transportation of milk and a less direct stimulus for greater output to achieve greater quota or contract quantities."

The Association has, on many occasions, critically examined its attitude to the Scheme and has invariably decided in favour of its continuance.

But circumstances change, and although forebodings provide an almost uninterrupted theme through 35 years of press clippings in the Association's files, the conditions which the Australian dairy industry now faces may prove to be the final calamity.

A scheme which has proved adequate in the past may not be the best scheme for the future, and the very features that we applaud may be less desirable in a time of crisis.

The dairy industry's problems arise not from our own actions but from the extravagant, and seemingly irresponsible, policies employed by the governments of many of our competitor countries, in the pursuit of stabilized farm incomes and export earnings, and are manifested in unsaleable surpluses.

Other primary industries also have their surplus problems and, like the wheat industry, may find their solutions in policies designed to restrict output. The dairy industry, with a surplus problem of even longer standing than wheat's, has been offered similar medicine, and a review of alternative proposals, including the plan submitted by the Australian Primary Producers' Union to the Minister for Primary Industries, was published in the preceding issue of this Journal.

But, although the surplus products are butter, cheese and skim-milk powder, the problems are not confined to the suppliers of those products alone. Over half the output of the Adelaide town-milk supplier is also converted into those products, and although he may reasonably expect that the price he receives for town-milk will keep abreast of rising production costs, no such expectation can be applied to the prices he receives for the milk which is turned into dairy produce. For that portion of his output he will receive a price that is falling, despite his rising costs.

What action, if any, should be taken to slow down the growing disparity between unit prices and unit costs? What curbs, if any, should be placed on a producer's right to lift efficiency, by increasing productivity, to reduce his unit costs? What restrictions should be placed on entry into the town-milk industry to protect his livelihood?

Should we ,at this time, close our eyes to the simplicity, the equity, and the economy of the milk equalization scheme in favour of some other plan which, although restricting our freedom, may bring some financial improvement, or at least halt the decline? In the following article the present system is discussed and compared with alternatives that might be considered.

THE DEVELOPMENT OF THE MILK EQUALIZATION SCHEME

THE ASSOCIATION'S ROLE

The distinguishing features of town-milk marketing in South Australia are not only in the equalization system used, but also in the extent to which the industry, and particularly the dairy-farming sector, was responsible for introducing the administrative and legislative processes which now control town-milk marketing.

It is not known whether the principle of equalization was ever applied to the town-milk supply in other States, but in this State the maintaining of orderly marketing through equalization was the main reason for the amalgamation, in 1935, of the existing regional dairymen's groups then loosely organized into the Affiliated Dairymen's Association.

From the time of its formation the chief tasks of the Association, often against considerable opposition from other sectors of the industry, were to preserve the principle of equalization and to strengthen its application with legislation. This aim was finally achieved, after legislative proposals had been rejected in 1938, 1939 and 1942, with the passing, in 1946, of the Metropolitan Milk Supply Act, and the subsequent appointment of the Metropolitan Milk Board in August 1947.

METROPOLITAN MILK SUPPLY ACT

The Act did no more, in many respects, than to transfer to a single authority the powers that had previously been exercised by several instrumentalities, but to these powers were added the provisions that had been sought for so long, and which now gave legislative recognition and support to the milk equalization scheme that had been administered on a voluntary basis for the 10 preceding years.

Section 44 of the new Act gave the Milk Board the right to recognize the equalization scheme, and to ensure that all holders of milk treatment licenses were permitted to participate in the scheme, whilst Section 43 gave the Board disciplinary powers which could be used in the event of any breakaway from the scheme, or of its complete dissolution.

The first test of the legislation in this context occurred in 1950, when a wholesaler withdrew from the equalization scheme then operating, and was able to evade penalty by purporting to be the agent for the producers rather than the purchaser of their produce, claiming that he was processing and selling the milk on their behalf, and not on his own account.

This loophole in the Act was successfully repaired by the passing of legislation which amended the form of Section 43 to that in which it now appears, and there have, since that time, been no occasions when the power given to the Board by this Section has been used, although the threat to use it has, on at least one occasion, brought a recalcitrant merchant back into line.

LEAN-PERIOD PRODUCTION PROBLEMS

In the early years of the voluntary scheme, before the disruption which the outbreak of World War II brought to the dairying industry, sales of town-milk accounted for almost half of the total production collected by the merchants then engaged in the milk trade, but in the first full financial year under the new Act, from 1st July, 1948, to 30th June, 1949, sales of town-milk, although twice the pre-war figure, represented only 40 per cent of the licensed suppliers' total output which had, by then, increased to 34 million gallons.

There had, to that time, been no "lean period" problem of the type that the industry was to encounter in later years, but in 1950 seasonal conditions, and an unprecedentedly large reduction (229) in the number of licensed producers, resulted in an annual output of less than 27 million gallons, and the first of the "lean period crises", in which town-milk sales in April absorbed 92 per cent of the production in that month. Although autumn figures improved slightly in subsequent years, the flooding of the Murray Swamps in 1956 caused production in April, 1957 to fall to a point where almost 96 per cent was used for town milk, and at one stage daily production was actually lower than daily sales.

EQUALIZATION OR CONTRACTS?

But this situation was not unexpected; the progress of the crisis had been under constant watch. The Premier (Sir Thomas Playford) had expressed his concern at the position, and the possibility of its recurrence, and, at a meeting of the Association's Central Council on 15th January, 1957, the General Secretary (Col. A. H. Nelson) reported that the Premier **"was of the opinion that some sort of quota should be brought about during the leaner months of the year to compel licensed producers to produce milk every month of the year."**

The Milk Board also stated that "it is imperative that some long term decision must be made at an early date to guarantee adequate supplies for the future. The Board is firmly of this opinion and is consequently examining ways and means whereby supply can be ensured." (Annual Report, 1956-57.)

Numerous discussions took place in the months that followed, and several proposals, involving either differential price incentives or quota allotments (all described as being "within Equalization") were examined in detail, but no overwhelming support was given to any particular type of scheme. Eventually, in September, 1958, the Association's Central Council decided against supporting any alteration to the milk equalization scheme.

THE "PRODUCTION EXPLOSION"

By this time almost two years had elapsed since the first expressions of official concern, and the warnings of action that might be taken if the industry failed to cope with the problem of autumn production, (the Board having stated in its Annual Report, 1957-58, that ". . . it has been made clear . . . that additional milk must be provided during the lean period, either by introducing a scheme to

level out production over the year or by a licensing of producers outside the present production area"), and although no change in the system had actually been made, the warnings had been heeded. Producers had already embarked on the "production explosion" which would, in seven years, double the lean period production and lift total output, by 70 per cent, from 28.5 million to 48.5 million gallons.

But it was too late to rescind decisions already made, and in conformity with promises made earlier, the Milk Board, in January, 1962, extended the boundary of the milk production area to include the Meningie-Narrung region.

In terms of the now rapidly increasing output from the established production area, the effects of this action were probably not great, but it is unfortunate that the extension of the milk supply area occurred at a time when the world marketing position for dairy produce was approaching an apparent crisis. The imminence of this crisis led the Australian Dairy Produce Board to issue a warning and a plea in a report entitled "The Australian Dairy Industry—A Review of Some Current Problems," which included a restatement of the so-called "Gruen Plan", a plan offered in evidence given to the Dairy Industry Committee of Enquiry three years earlier by a panel of economists led by Professor F. H. Gruen (see Sept./Oct. 1968 issue of this Journal, page 9).

"QUOTA WITHIN EQUALISATION" — THE GRUEN PLAN

The "Gruen Plan" was intended to apply to manufactured dairy produce, but its principle was applicable to any equalization scheme, and the Association's Executive Committee instructed the Secretary to prepare a report on the application of a "Gruen-type" plan to town-milk equalization.

This plan was based on the allotting of an "equalization quota" calculated on past performance, by which the quantity of milk accepted into the milk equalization scheme from any producer would be limited to an amount calculated from average production over a base period, with the manufacturing price (basic price) only being paid for any excess above this quantity. The application of the plan could at that time (1965) have given to a producer whose output remained unchanged, an annual increase in income* **(if there were no changes in the basic price or the town-milk price) of 0.23 cent per gallon**** from the continuing growth of town-milk sales, and a total advantage over the equalized return of 0.42 cent per gallon*** by eliminating the depressing effect of the increased output from other producers.

The positive, measurable gain from the plan prepared by the Secretary was accepted by the Executive in its examination of the report, but the Executive was made aware also of the extremely complex system that would be needed to administer the plan, and of the increased accounting work that would have to be done by each factory, and, **most of all, of the apparent impossibility of deriving a method of quota calculation that would be workable, equitable, and acceptable.** The Executive therefore agreed that "in view of the relatively small gain, the fact that producers whose output remained constant were probably in a minority, and the disruption that would almost certainly occur in the Association, it would not recommend a city milk stabilization scheme of this nature."

This decision of the Executive Committee was later incorporated into the General President's Annual Report for 1964-65 in the following words:—

* True only of a scheme in which the quota was based on a large fraction of annual output with infrequent revisions. When the quota is based on town milk sales plus a margin, with frequent revisions this advantage is less marked.

** 1966-1969, growth in town milk sales has been irregular; this figure would now be approximately 0.03 cent per gallon per year.

*** 1966-1969, 0.20 cent per gallon per year.

"There is, however, the possibility that a plan similar to that submitted in 1959 to the Dairy Industry Committee of Enquiry by a group of agricultural economists for dairy produce generally, could be grafted into the present (Milk) Equalization Scheme in the hope of slowing down the decline in the liquid milk sales ration. Your Executive Committee, after making earnest and sympathetic examination of the effect of such a plan, believed that there was a strong probability that any benefits from the plan would apply only to sections of the industry, and there was no clear indication of any overall benefit to licensed producers as a whole, and that the introduction of such a plan be not recommended."

THE ADAMS PLAN

During 1966 the Chairman of the Dairy Committee of the South Australian Division of the APPU (Mr. J. S. Adams) devised a plan similar to that which had been examined by the Executive two years before. Although no active support for Mr. Adams' plan was indicated at the meetings of the Central Council, there was some discussion concerning the desirability of publishing in this Journal the details of the plan, and of another plan more nearly approaching a true "contract" scheme. The Council's eventual decision was "that Equalization has achieved a hightly satisfactory degree of stability for the dairy industry as a whole, and **this Council reaffirms its faith in, and support for, a continuation of Equalization in its present form"**, the resolution being passed without a dissentient voice.

In 1967 the Milk Board sought to ascertain from the Association its attitude to the Board's proposal (published in the Board's Annual Report for 1956-66) to introduce compulsory refrigeration, and the Association subsequently examined the conditions under which it might be prepared to accept such compulsion.

THE ASSOCIATION'S POLICY

In the course of correspondence on subsequential matters a letter from the Milk Board contained this request:

"Before reaching a final decision, the Boord would lige to receive from your Association its considered views on the implementation of a satisfactory contracts scheme to replace the existing Milk Prices Equalization Agreement."

The Central Council, in reply, reiterated its earlier opinion in favour of the retention of the Milk Prices Equalization Agreement, a decision that was endorsed many times, in the next few weeks, at district and branch annual meetings. This evidence of support from the Association's membership justified the inclusion, in the General President's Annual Report for 1967-68, of the following:

"It is obvious that, in any marketing scheme, a change in structure which does not increase the total volume of sales cannot benefit all participants; any gain to one section . . . must be at the expense of other . . . The interests, now and in the long run, of producers and processors, will be best served by continuing, with such adjustments as may be needed to meet changing circumstances, the milk equalization scheme.

In asserting this we do not turn our backs on change; change will be welcomed if it can be shown to yield a certain and worthwhile advantage to all, or at least to the majority, but the two alternatives that ore at present being offered, namely a contract system, or a restrictive quota within an equalization scheme, would each require more administration, intervention, and adjudication than the present scheme, which is administered within the industry, with the minimum of decisions and arbitration. The adoption of a contract system, requiring the maximum control, direction

NEW..

A revolutionary
Australian development

FERTILIZER BAGS which

- ARE ROT RESISTANT
- ARE CLEAN EMPTYING
- REQUIRE NO WASHING
- STRONGER & LIGHTER THAN JUTE
- ARE EASY TO HANDLE
- EXCELLENT AFTER USE VALUE
- ELIMINATE SWEATING PROBLEM

YOU TOO WILL BE ORDERING YOUR FERTILIZER SOON. WHEN YOU DO YOU'LL BE WISE TO SPECIFY "DELIVERY IN KOALA P.P. WOVEN BAGS."

FERTILIZER IN P.P. WOVEN BAGS IS AVAILABLE FROM ALL LEADING FERTILIZER COMPANIES IN VICTORIA & SOUTH AUSTRALIA.

An all-Australian Development. Made in Australia by:

A. Abrahams & Sons Pty. Ltd.

Operating Company for NATIONAL BAG COMPANY OF AUSTRALIA LIMITED

BRANCHES IN ALL STATES

and manipulation, would replace maximum freedom with maximum regulation, and while engendering considerable friction between producers themselves as well as between producers, the Board, and the processors, would not bring a single cent more into the industry. Nor would the industry, as a whole, benefit from the adoption of a quota within equalization; some producers would gain, but whether they are in the majority is doubtful, and it is also doubtful whether even this gain would be enough to compensate for the considerably greater control and regulation that would be required."

WHAT OF THE FUTURE?

Have conditions in the industry, either nationally or locally, changed to an extent that would make these opinions no longer acceptable? Would the producers, either all or a majority, derive positive, measurable gains from a change in the system?

A study of the alternatives may supply the answer.

ALTERNATIVE SYSTEMS OF MILK MARKETING ADMINISTRATION

CONTRACTS

Background — The "Producer - Vendor"

The "contract" system of milk marketing administration evolved naturally from the system of "producer-vending" which operated in urban areas before the advent of centralized milk-processing plants, and still survives on the metropolitan fringe and in country townships.

The "producer-vendor" needed no extra incentive to produce milk out-of-season; sufficient incentive was provided by the need to serve his customers, and he arranged his calving schedule in the same way as the "producer-vendors" in country townships still do, to produce as evenly as possible throughout the year.

The coming of centralized milk-processing plants, by removing the producer from direct contact with his customer, tended to insulate him from a recognition of the need for a non-fluctuating supply, and to make him more conscious of the greater economy (in terms of production volume for given cost) that results from following a natural schedule of calving related to seasonal pasture growth.

But as the producers from whom a centralized milk-processing plant drew its supplies shared the common seasonal pattern of the region, it was necessary for each plant to take steps, not so much to eliminate the seasonal fluctuation entirely but to ensure that its minimum supply was at least equal to demand, and this was achieved by replacing the direct incentive of the customer's cash with a combination of incentive and compulsion in the form of a contract, which bound the producer to supply, every day, a fixed quantity for which he would receive a price greater than he would otherwise receive, and which carried the threat of a penalty in the form of a reduction in the contract quantity (and hence in the amount of premium he would receive above "normal" prices) in the event of failure to supply the contract quantity at all times.

TYPES OF CONTRACTS

The simple contract described in the preceding paragraph is similar to that applying in many other commercial transactions—a reward for achieving an agreed result, and a penalty for failure—with the reward and the penalty reflecting (though not necessarily equalling) the gains accruing to the other party in the event of success, or suffered by it in the event of failure. But whilst rigid

adherence to this equation is necessary in the case of a two-party contract, greater flexibility can be given to the system, when many parties are involved in a milk marketing scheme administered by a single authority, by the substitution of factory contracts for individual contracts, so that one producer's failure to supply a minimum quantity at any one time may be offset by another producer's output in excess of his minimum requirement at that time, so that the aggregate factory supply is maintained, and no lasting penalty (beyond the loss of payment for the "short-fall" at the time of its occurrence) is incurred by the offending producers.

Alternatively, the existence of such counter-balancing surplus may permit the controlling authority to exercise a discretionary leniency in withholding the penalty (i.e. the reduction of the contract quantity in the future) for foilure to supply the contract quantity at all times, if the producer can adduce an acceptable excuse for his lapse.

Basically this is the system operating in all States other than South Australia and although there are differences in administration, such as whether the contracts are issued by, and the milk actually purchased by, the controlling authority, or whether the authority merely licences and supervises, leaving the allocation of contracts to the industry, or combinations of these variants, sometimes with other features, the principle, at least insofar as it affects the producer, is as set out here.

Advantages of Contracts

The advantage of such a scheme is that the producer knows beforehand that as, so long as he can maintain his contract quantity throughout the year, he will receive the town milk price for that quantity, and, to this extent, part of his gross return is guaranteed. The remainder of his output he may use for whatever purpose seems the most financially attractive. Whether he is prepared to risk the possibility of falling below his contract obligation by producing only the smallest surplus which his skill as a husbandman will allow, or whether he produces a substantial surplus, he may sell it all to the factory for dairy produce manufacture, or use it for pig-raising, or vealer production, or for raising his own replacement calves. Furthermore, if he chooses to produce a large surplus he does so without, in any way, affecting the price which his fellow producers will receive for their contract quantities.

Disadvantages of Contracts

The disadvantages to the producers are twofold. In the first place there is the undoubted difficulty of maintaining an even volume of output all the year round against the cow's natural, biological cycle and against the seasonal patterns of climate and fodder growth. It needs constant vigilance and skill to have portion of the herd permanently calving out-of-season, knowing that a cow's failure to breed may cause a permanent reduction in the contract quantity. It needs also a level of hand-feeding, during what would otherwise be the natural lean period, that may well absorb all the profits from milk production during that period, and only be worthwhile because it enables the contract quantity to be maintained during the portion of the year when it may return a profit.

When, despite both these precautions, it seems that output may still fall below the contract quantity, the producer's salvation lies in buying additional cows **at a time when many of his fellows are in a similar plight,** and as the only worthwhile cows (i.e. cows freshening, or in early lactation) will, most likely, be those of contract producers, the prices will be greatly inflated.

In the second place, with the growth of population, milk sales grow too, and contracts for the supply of town milk must be enlarged accordingly. The methods used by the authorities show minor differences, but in general the additional contract amounts are divided between persons seeking to enter the industry (and

don't miss
DAIRY DOUSER DAYS
AT YOUR DAVEY DEALER

ORIGINAL DAIRY DOUSER

SUPER DAIRY DOUSER

Thousands of farmers have been getting the fast, convenient, effortless dairy wash-down with one of these ever-reliable Davey Dairy Dousers.
And see how little it costs to have many years of high-pressure washing!
Choose either the original best-selling model at $120, or the Super Dairy Douser with the mighty 40 psi discharge pressure and self-priming performance.
Your Davey Dealer is displaying this equipment now.
Check with him about the ease of installation and the time and effort a Dairy Douser will save you.

Rush this coupon

DAVEY
Registered trade mark

F. W. DAVEY & CO. PTY. LTD.
211 FLINDERS STREET, ADELAIDE. 5000
TELEPHONE 23 3979

Please send me full details on Dairy Douser

NAME.....

ADDRESS.....

.....Postcode.....S.A.D.J.

have, no doubt, placed their names on a waiting list) and existing contract producers wishing to enlarge their contracts. Now, as the basic reason for the contract system is to ensure adequate supply in the lean period, additional contract quantities tend to be (and probably are invariably) given to producers who have demonstrated by producing more than their contract quantity, their ability to produce in the lean period, and there is every possibility that the greater a producer's surplus in the lean period, the greater chance he will have of being allotted an increased contract. Consequently, at a time when the economics of production are lowest, and food costs, and cattle prices, highest, a producer will strive to over-produce in order to obtain the maximum qualification when (and if) there is a chance of further contracts being allotted.

Beyond this there is a further disadvantage, suffered by the industry as a whole. Although, in the lean period, it is probably necessary to pick up every gallon of contract milk from the furthest corner of the town milk supply region, in the flush season the whole of the town milk demand could be satisfied from that fraction of the producing area immediately adjacent to the market, leaving the remainder of the region's output to the nearest dairy factory for manufacture, with tremendous savings in cartage costs, when compared with the necessity to dispatch all contract milk to the town milk market, regardless of the availability of milk nearer at hand. A supreme example of this is in N.S.W. where a town milk supply region 400 miles long by 200 miles wide at its widest makes understandable the pleas of the North Coast dairyfarmers to be admitted to the Zone as their inclusion would add no more than 200 additional miles.

MILK EQUALIZATION

Background — The Seasonal Pattern

In South Australia, where, it appears, there is a wider range of climate and geographic characteristics, in the region surrounding the metropolitan area, than in other States, there seems to have been early recognition of the resultant out-of-phase seasonal fluctuations, and this feature has allowed very great variations in production cycles, not only for individual farms and factories, but for whole districts, so that, although producers have been able to manage their herds in conformity with natural reproduction and fodder growth cycles, even to the extent of drying-off completely, the aggregate seasonal fluctuations have tended to be moderate.

Advantages of Equalization

Because of this there seemed to be no real need to persevere with any of the embryo contract schemes of the late '20s and early '30s, and a system of orderly marketing through equalization evolved almost inevitably without the need for any form of contractual or other compulsion which would force each producer to produce, at all times, at exact proportion of the market's requirements in defiance of the natural production season of his locality and at the greater cost thot must follow a deviation from the optimal seasonal pattern. In fact an equalization scheme, such as that which evolved almost automatically, contained a compensating mechanism in a "city milk bonus" which increased as production declined, thus providing a variable incentive to produce more, but not too much more.

And for the industry as a whole (and the consumer, too) the South Australian Scheme possessed a transport advontage contrasting with the disadvantage attached to a contract system. Whereas, in the lean period, it might be necessary, as in other States, for transport to traverse the whole of the producing region to obtain sufficient milk, in the flush season the whole of the town milk market could be supplied from nearby districts, the remainder being transported to country dairy factories with considerable savings in cartage costs (and a better quality product in pre-refrigeration days).

Disadvantages of Equalization

The disadvantage of the South Australian system lies in the fact that, whereas, under a contract system, the controlling authority issues only sufficient contracts to meet the need of the market concerned (with some provision for a margin to cover eventualities), in the belief that the incentive, or penalty, will assure the supply of the full quantity required at all times, there is, in this scheme, no such assurance. The total supply at any time is fortuitous, depending on the individual farmers' unrelated decisions and the vagaries of the season, and on these grounds the Milk Board may claim to be justified in granting licences to a greater number of farms than is actually required to supply the market concerned.

Furthermore, because, under a contract system the producer knows that for milk produced in excess of his contract he will receive the considerably lower price paid for surplus milk, he has no incentive to produce more than the contract quantity unless he considers that his production cost is less than the return for milk for manufacture, and hence profitable to produce. (Here we disregard the incentive to produce surplus milk in order to qualify eventually for a higher contract quantity.)

Under the milk equalization scheme a producer receives the equalized price (i.e. the weighted average of the town milk price and the manufacturing price) for **all** his output, so that if he increases production he will receive for the additional output just as much as he received for the original quantity, **although for the producers in the aggregate all production in excess of town milk requirements brings only the lower price for manufacturing milk.**

Consequently, although expansion of output by a single producer will lower the return for the whole group by an imperceptible fraction, when expansion of output is widespread, as it has been in the Adelaide milk supply area during the last 10 years, the equalized price will fall considerably **even for those who have not contributed to the increase in production.** For this reason attempts to equate output decisions with production cost are made more difficult because no certainty* can be applied to the price to be received, as this price will depend on the unknown decisions of all producers.

Furthermore as there appears, to the individual producer, to be no penalty (i.e. he does not receive a measurably lower price) for increasing output, the fall in the equalized price which follows increased output by many producers leads to still greater production in the hope of maintaining a constant level of revenue, yet such action even further depresses the equalized price, leading to still greater production, and so *ad infinitum.*

SUMMARY

The advantages of a CONTRACT SYSTEM are that

(i) individual producers may decide their production and diversification programs in accordance with their cost estimates against known rates of return, and

(ii) individual decisions do not affect the receipts of other producers.

The disadvantages are that—

(i) to continue to qualify for a constant contract quantity, producers are forced to produce out-of-season at high cost, and

* This common criticism of the equalization system is not well supported by fact. Despite the "unknown decisions of all producers", the variation in the equalized price has never exceeded per cent of the previous year.

(ii) the granting of contracts to newcomers, and the increasing of the contracts to existing producers, tend to be arbitrary, and to cause dissension among producers.

The advantage of the EQUALIZATION SCHEME is that each producer may produce in accordance with his opitmal seasonal pattern for lowest costs; the disadvantage is that because of the absence of any certainty in the supply, there is an inbuilt tendency to produce excessive surplus, leading to lower equalized prices and still greater production.

In assessing the relative merits of the two schemes it can be fairly said that, in the States where contracts apply, there is considerable and continual criticism of the system, and interest in the equalization scheme is often expressed. It must not be assumed that the criticism voiced in this State of the equalization scheme is not echoed by producers in other States in relation to their own systems.

There is, in addition, an advantage in the South Australian equalization scheme which would not be shared by any scheme, whether contract or otherwise, administered by a controlling body such as the Milk Board. This advantage, which is due to the fact that the equalization scheme is administered by the industry itself, and is not restricted to areas defined by legislation, lies in the requirement that the price set by the Milk Board for milk and cream sold in the metropolitan area must also be paid by the wholesaler to the producers for all town milk and cream sold anywhere outside the metropolitan area (less any costs incurred in additional transport etc.).

These sales involve a considerable quantity of milk, sold over a wide area, including the growing residential areas along the Main South Road to Sellicks Beach (which are outside the defined metropolitan area), country townships ranging from Gawler and Nuriootpa in the north to Victor Harbour in the south, industrial centres such as Port Augusta and Broken Hill (in New South Wales), the Far North, including Alice Springs and Katherine, and even as far away as Kuwait on the shores of the Persian Gulf.

Sales to these areas add another ten per cent to the total of milk and cream sold in the metropolitan area make a substantial addition to the revenue received for town milk through the Milk Equalization Scheme.

EQUALIZATION QUOTA PLAN

STABLE v. EXPANDING PRODUCTION

The major shortcoming of any equalization system is the fall in unit revenue which is caused when producers expand output at a rate faster than it can be absorbed by the market for the higher-priced product, so increasing the proportion of surplus production for which a much lower price is received, and reducing the overall "equalized price", and the plan, proposed in 1960 by Professor Gruen, to prevent the effects of production increases from being passed on to producers whose output was stable or falling, was designed to remedy this fault in the Commonwealth equalization schemes for butter, cheese and casein.

The application of the "Gruen Plan" to town milk equalization, as examined in 1963 by the Executive Committee, and still forming the basis of the "Adams Plan", is, however, not as easy as the apparent similarity between the two schemes would imply, if, in fact, it is possible at all. In the case of manufactured dairy produce "seasonality" is not important, as equalization applies to the total output of a whole year regardless of when it was produced; in the case of town milk the market's demand for a regular daily supply throughout the year requires a more flexible system than one which needs only a yearly reckon-

tank units tested by the State Electricity Commission of
by the Australian Standing Committee on Agriculture)
alian Standard N46-1963.

T OF PERFORMANCE

RL250	R300	R400	R500
C.P.66C10	C.P.66C8	C.P.66C13	C.P.66C9

NSC No. 8/4 Complies with Milk Board and Department ents in every State.

round design for minimum space requirements • All oam insulation • Low height for easy cleaning.

her information contact

n equipment

co-operative ltd.

ill & Egerton Sts., Lidcombe, N.S.W. 648-1084.
Charles St., North Coburg, Victoria. 35-2347.
Stanley St., South Brisbane, Qld. 4-5452.
CO-OPERATIVE LTD.)

ing, and the methods by which the flexibility may be achieved affect sections of the producers in different ways, and could well cancel out the advantages claimed for the plan.

APPLICATION OF GRUEN'S PROPOSAL

In principle only, and overlooking, for the moment, the problem of flexibility referred to in the previous paragraph, the "Gruen Plan" could be applied to town milk equalization by allotting to each producer a "quota" related to some agreed base, such as "average annual output* during the last (or some other number of) years." The ratio of the allotted "quota" to the average annual production would be decided by the controlling authority, being calculated either to be equal to the average annual production over the base period, or to be some fraction or multiple of that amount. Each ratio would have differing results, and differing advantages and disadvantages.

The "quota" would then represent the maximum amount that a producer might contribute to the "equalization pool", and for which he would receive the equalized price. Any production above this quantity would bring the manufacturing price only, and a producer could retain his "non-quota" milk for such uses as calf-rearing where these uses appeared to yield a higher return than the manufacturing price, without sacrificing, as in the present scheme, some of his entitlement to the town milk price.

Thus there would be three classes of milk passing into the factory system—

(i) town milk;

(ii) milk for manufacturing, being milk within the "quota" but surplus to the town milk requirement, and included in the calculation of the equalized price;

(iii) milk for manufacturing, above the "quota" paid for at manufacturing price,

and one class of milk not passing into the factory system;

(iv) milk above the quota, used on the farm, valued (but not paid for) at manufacturing price.

Effects of the Scheme

The broad effects of such a scheme would be—

(i) for a producer whose output was not increasing, it would arrest the fall in the equalized price, and allow him to decide the uses to which he should put his above-quota surplus without affecting the price he receives for quota milk.

(ii) for a producer whose output was increasing, it would enable his decisions to be based on a known price for the "quota" quantity and a fairly accurately estimated price for his growing surplus, so that he could decide whether to retain the surplus milk on the farm, or to sell at manufacturing price. In the latter case, although his unit revenue (i.e. return per gallon) would fall, the effect on his net revenue would depend on whether the cost of producing additional milk was greater or less than the manufacturing price.

* A base of "average annual production" would be an essential requirement of a satisfactory plan. The calculation of the quota value from any such measure as "minimum monthly (or daily) production" or "lean period production" would cancel the equalization scheme's advantage in permitting the use of the optimal production season, and provide unwarranted support for a pure contract scheme.

Equalization Quota and Contract — The Difference

The initial advantage that an equalization quota hos over a contract scheme is that it removes the necessity to maintain, under fear of penalty, a minimum daily output, and allows the producer to produce according to his own assessment of an economic farm program.

There is, in addition, a refinement which could (and probably should) be applied to a equalization quota scheme which would differentiate it even further from a contract scheme, and remove one of the most contentious aspects of contracts, namely the method of allotting new contracts (the necessity for which arises from increases in the demands of the premium market, in this case town milk) between newcomers and existing contract holders, and/or between the existing contract holders as a group.

This problem can be obviated by expressing quota values in "points" rather than in gallons or pounds (whether butterfat or milk), the value of each "point" being calculated annually in terms of forecast town milk demand, so that, as sales increase, it is not necessary to allot further quotas, either to existing producers or to newcomers, but merely to proclaim a new value, in gallons or pounds, for each "point". There would thus be no need ever to issue new quotas as the quantitative value of existing quotas would always equal the market's estimated requirements plus the same ratio of safety margin as originally agreed. As quota "point" totals grew to greater than the producer's abiltiy (or desire) to produce, he could sell off his surplus "points" to other producers or to new entrants to the industry, and, similarly, producers wishing to leave the industry could sell their "points", in one or several parcels. Quotas would thus acquire (as contracts acquire in some States) a monetary value, and their sale would be permitted separately from the sale of the property to which they were originally allotted.

Disadvantages

The obvious disadvantage of the equalization quota scheme is the greot increase in the extent and the complexity of administration and in the bookkeeping required in each factory. Whereas the present equalization scheme requires only the collection of production and sales data and the calculation of a "city milk bonus" that is remitted to the producers through their factories, an equalization quota scheme would require constant attention to the status of each producer in relation to his quota and the status of aggregate quotas, periodically and annually, in relation to market demand.

The factories would need to maintain a cumulative total on each producer's output, segregate all output into "quota" and "non-quota" categories, and act as data collection centres for the controlling authority.

The controlling authority must also maintain a nice balance between aggregate quotas and market demands, and establish a period-base which is long enough to allow producers the maximum freedom of decision, short enough to avoid running out of miilk if producers' decisions tend away from town milk.

But beyond these, although it cannot truly be called a disadvantage, would be the objection that will be raised by producers who wish to continue increasing their output. Their incomes would suffer, as any scheme that improves the return to some (in this case the producers with stable production) must lower the return to others, and the acceptability of the scheme might almost depend on which group (i.e. the "output-increasers" or the "output-stabilizers") was able to present the stronger case or apply the more influence.

The Problem

An "equalization quota" scheme **could** be devised for town milk; its operation and administration **could** be worked out in detail, and on the form and detail of the scheme would depend which groups of the industry would be favourably or unfavourably affected. But the one aspect that has not been discussed is the period-base on which the quota shall be calculated and applied. For greatest freedom this base must be long; to ensure supply it must be short. Whether short or long, each period favours one group, and is to the disadvantage of another group. The examples that follow demonstrate the effects on producers' finances of the three schemes, Contract, Equalization, and Equalization Quota, and the difficulty, **or even the impossibility** of determining a satisfactory period-base.

HOW THE ALTERNATIVE METHODS ARE CALCULATED AND THE DIFFERENT RESULTS OF EACH SYSTEM

The examples which follow are used to demonstrate the "arithmetic" of the alternative systems, and to reveal the dfiferences that the adoption of each of the alternatives would make to the gross return of 3 classes of producer, namely **a producer whose output was stable, a producer whose output was increasing,** and **a producer whose output was falling** (or who was **diverting** some of his production to use on the farm).

With the exception of the EQUALIZATION SCHEME, the basis for each of the other two schemes is hypothetical in that it is not possible to say just what proportion of a producer's output would be selected by the controlling outhority for the purpose of allotting CONTRACTS or QUOTAS, but the figures used are realistic, and the examples do reveal the fundamental differences between the schemes and their effects on various classes of producers.

In the examples the following assumptions are made:

ANNUAL PRODUCTION will be 50,000,000 gallons in the /rst year, ond will increase by an amount equal to the average amount of increase during the last 5 years, namely 1,200,000 gallons per year. (In fact, despite the apparently favourable season, the 12 month moving average indicated that full recovery from the drought conditions had been achieved by October 1968, with production rising abcve the pre-drought maximum to December 1968, followed by an accelerating decline during Jonuary and February 1969. **It is possible that we are approaching, or have already reached, the end of the "production explosion" in the Adelaide supply area);**

TOWN MILK SALES will be 20,000,000* gallons in the first year and will increase by an amount equal to the average amount o fincrease during the last 5 years, namely 340,000 gallons per year.

* Metropolitan sales only. Sales outside the metropolitan area (additional 2,000,000 gallons) not included, as these sales might not come under the control of the administration authority if a contract system was introduced.

INDIVIDUAL PRODUCTION will be—

CASE A: a farmer producing 25,000 gallons per year (equal to the present average output per producer).

CASE B: a farmer producing 25,000 gallons in the first year and increasing by a further 1,400 gallons per year (equal to the average increase per producer during the last 5 years).

CASE C: a farmer producing 25,000 gallons in the first year and reducing his output (or diverting production to on-farm use) by 1,400 gallons per year.

PRICES are assumed to be 43 cents per gallon for town milk, 17 cents per gallon for milk for manufacture (equivalent to the current estimated final basic price of 41 cents per pound fat at 4.0 per cent);

INVESTMENT OPPORTUNITY

PARTNERSHIP (SLEEPING or ACTIVE) offered on partly developed property with very large potential. $20,000 needed initially to bring this proposition up to full production, by doubling present 100 cow herd plus beef, etc. Profits and tax savings can be ploughed back to give eventual half-share in conservatively valued $150,000 project. Enquiries in first instance 51 3034.

EQUALIZATION (Present Scheme)

CASE A. **Year 1.**

Total Production	50,000,000 gallons		
Town Milk Sales	20,000,000 gallons		
Town Milk Ratio	40.00 per cent		
Farmer's Production	25,000 gallons		
Town-Milk Quota (40%)	10,000 gallons @ 43c	=	$4,300
Remainder (Manufacture)	15,000 gallons @ 17c	=	2,550
Gross Income			$6,850

Year 2.

Total Production	51,200,000 gallons		
Town-Milk Sales	20,340,000 gallons		
Town-Milk Ratio	39.73 per cent		
Farmer's Production	25,000 gallons		
Town-Milk Quota (39.73%)	9,933 gallons @ 43c	=	$4,271
Remainder (Manufacture	15,067 gallons @ 17c	=	2,561
Gross Income			$6,832

CASE B. **Year 1.**

AS FOR CASE A.

Gross Income			$6,850

Year 2.

Farmer's Production	26,400 gallons		
Town-Milk Quota (39.73%)	10,489 gallons @ 43c	=	$4,510
Remainder (Manufacture)	15,911 gallons @ 17c	=	2,705
Gross Income			$7,215

CASE C. **Year 1.**

AS FOR CASES A AND B.

Gross Income			$6,850

Year 2.

Farmer's Production	23,600 gallons		
Town-Milk Quota (39.73%)	9,376 gallons @ 43c	=	$4,032
Remainder (Manufacture)	14,224 gallons @ 17c	=	2,418
Gross Income			$6,450

CONTRACT

It is assured that:

(i) contracts are awarded in accordance with minimum quantity produced over the last x years;

(ii) that Cases A, B and C had equal minimum production figures and so qualified for equal contract amounts;

(iii) that total contracts awarded were sufficient to cover town-milk requirements plus a safety margin. (If total contracts are only equal to or less than town-milk requirements Case A and Case C might not share in the increased sales in Year 2.)

CASE A. **Year 1.**

Total Production	50,000,000 gallons	
Town-Milk Sales	20,000,000 gallons	
Total Contracts	22,000,000 gallons	
Farmer's Production	25,000 gallons	
Contract (30.14* gallons daily)	11,000 gallons @ 40.64c** =	$4,470
Remainder (Manufacture)	14,000 gallons @ 17c =	2,380
Gross Income		$6,850

* Contract calculated to give same gross income as first example.
** Price for contract milk, when contracts issued are 10% above requirements.

Year 2.

Total Production	51,200,000 gallons	
Town-Milk Sales	20,340,000 gallons	
Total Contracts	22,000,000 gallons (unchanged)	
Farmer's Production	25,000 gallons	
Contract (30.14* gallons daily)	11,000 gallons @ 40.14c =	$4,514
Remainder (Manufacture)	14,000 gallons @ 17c =	2,380
Gross Income		$6,894

* Unchanged from previous year.

CASE B. **Year 1.**

SAME AS CASE A.

Gross Income $6,850

Year 2.

Farmer's Production	26,400 gallons	
Contract (30.14 gallons daily)	11,000 gallons @ 41.04c =	$4,514
Remainder (Manufacture	15,400 gallons @ 17c =	2,618
Gross Income		$7,132

CASE C. **Year 1.**

SAME AS CASES A AND B.

Gross Income $6,850

Year 2.

Farmer's Production	23,600 gallons	
Contract (30.14* gallons daily)	11,000 gallons @ 41.04c =	$4,514
Remainder (Manufacture)	12,600 gallons @ 17c =	2,142
Gross Income		$6,656

* Assuming that the reduced production does not reduce minimum daily output below the contract quantity.

EQUALIZATION QUOTA

In instituting a scheme of EQUALIZATION QUOTA of the Gruen type, the administering authority would decide the ratio between the total of quotas to be allotted, and total production. The avlue of this ratio could range from a minimum of "premium market requirements plus a margin", to give, in the case of town milk, a quota of say 45 per cent (on this minimal figure, adjustment upwards would be necessary after a few years), to a maximum of "present total production".

For the purpose of this example a quota of 60 per cent is used, being a value which would be suitable for an equalization quota scheme for butter or cheese, where the premium market is between 50 and 60 per cent of total. The short-term effects of the scheme are similar, whatever value is used.

CASE A. **Year 1.**

Total Production	50,000,000 gallons		
Town Milk Sales	20,000,000 gallons		
Total Quota Quantity*	30,000,000 gallons		
Farmer's Production	25,000 gallons		
Quota (60%**)	15,000 gallons @ 34.33c***	=	$5,150
Remainder (Manufacture)	10,000 gallons @ 17c	=	1,700
Gross Income			$6,850

* 60% of × base years, assumed to be 50,000,000 gallons **average.**
** Quota is fixed at 60% of base years, assumed to be 25,00 average.
*** equalized price (20,000,000 @ 43c, 10,000,000 @ 17c).

Year 2.

Total Production	51,200,000 gallons		
Town Milk Sales	20,340,000 gallons		
Total Quota Quantity*	30,000,000 gallons		
* still 60% of × **base** years, assumed to be 50,000,000 gallons average.			
Farmer's Production	25,000 gallons		
Quota (60%)	15,000 gallons @ 34.63c**	=	$5,194
Remainder (Manufacture)	10,000 gallons @ 17c	=	1,700
Gross Income			$6,894

** equalized price, 20,340,000 gallons @ 43c, 9,660,000 gallons @ 17c.

CASE B. **Year 1.**

SAME AS CASE A.

Gross Income			$6,850

Year 2.

Farmer's Production	26,400 gallons		
Quota (60%*)	15,000 gallons @ 34.63c	=	$5,194
Remainder (Manufacture)	11,400 gallons @ 17c	=	1,938
Gross Income			$7,132

CASE C. **Year 1.**

SAME AS CASES A AND B.

Gross Income			$6,850

Year 2.

Farmer's Production	23,600 gallons		
Quota (60%*)	15,000 gallons @ 34.63c	=	$5,194
Remainder (Manufacture)	8,600 gallons @ 17c	=	1,462
Gross Income			$6,656

* remains unchanged from yeor to year, until altered by reallocation.

CONTRACT versus EQUALIZATION QUOTA
and the effect of seasonality

It will be seen that in each case, whether output is stable, increasing, or decreasing, the results are identical for both a CONTRACT system and a QUOTA WITHIN EQUALIZATION. The difference in the two systems lies in the fact that in the first case the CONTRACT requires the farmer to produce a certain fixed minimum quantity each day (with, in some States, a provision for leniency in certain circumstances); in the second case there is no compulsion to supply every day, the flexibility of the system allowing one producer's short-fall to be balanced by another producer's surplus. **But it is in trying to retain the flexibility of pure EQUALIZATION whilst gaining the certainty of a CONTRACT system that the application of the Gruen Plan is difficult.**

Reiterating briefly, if, in a simple Gruen Plan applied to manufactured products, a producer was given an equalization quota of, say, 6,000 lbs. butterfat, we would be paid the interim equalized price for manufactured products (i.e. a price calculated on domestic price plus safety margin) from the first day of the financial year until his production totalled 6,000 lbs., after which he would receive export price only for the rest of his production until the end of the year. Certainly no one would pretend that butter for home consumption would be made only out of the first 6,000 lbs. delivered, with all subsequent output exported. The arrangement would be for the convenience of calculation only.

This would not prevent a producer from producing at existing level, or increasing, or reducing, but the same convention would apply in each circumstance, that is, the first 6,000 lbs. paid for at an interim price calculated from a conservative estimate of local sales plus a margin, (and subsequently adjusted upwards when actual local sales were assessed). In the case of town milk there is a requirement for **regular daily supply,** and the convention of regarding the first portion of a year's output (equivolent to his quota) as being for town-milk, and the remainder as going to manufacture, is no longer appropriate.

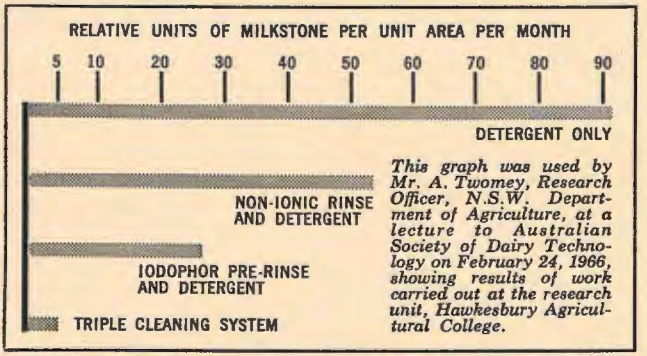
Nor are such subterfuges as monthly accounting, based on "annual quota ÷ 12" satisfactory, as we will encounter many cases when the producer's minimum monthly output will be less than "quota ÷ 12", so that he will probably increase his minimum output and destroy the claimed advantage of the system. A monthly quota, based on past monthly performances, is even less satisfactory.

There are numerous devices that can be used to overcome the problem, and **it must not be thought that it is impossible to apply a Gruen Plan to town milk equalization.** But what must be said is that of the various devices that may be used, some will favour producers of one sort, others will favour another group (as, for example, favouring River producers against Hills producers), **and any such device will greatly increase the complexity of the system, require far more adjudication by the inevitable "appeals tribunal", and give rise to even more doubts and uncertainties in the minds of producers.**

Research Proves Triple Cleaning System

The Triple Cleaning System is a revolutionary new method for cleaning milking equipment. It was first developed by the research unit of the N.S.W. Department of Agriculture and approved by Dr. Whittlestone of Ruakura Agriculture Research Centre. This system reduces milkstone deposits, thereby minimising contamination. (See graph.)

Cooper's are happy to be associated with the extension of this information to the dairy farmer, as their range of dairy products is especially developed for this cleaning system.



This graph was used by Mr. A. Twomey, Research Officer, N.S.W. Department of Agriculture, at a lecture to Australian Society of Dairy Technology on February 24, 1966, showing results of work carried out at the research unit, Hawkesbury Agricultural College.

- *LESS MILKSTONE, BETTER "BLUE" TIME*
- *LOWER BACTERIAL COUNTS*
- *CLEAN FASTER, MORE EFFICIENTLY WITH—*

THE COOPER TRIPLE CLEANING SYSTEM

1. **ANABAC** (IODOPHOR) PRE-MILKING RINSE
2. **COOPASOL-D** NON IONIC POST-MILKING RINSE
3. **BACTERGENT** LOW FOAM ALKALI DETERGENT

ALWAYS USE A FINAL RINSE OF BOILING WATER

Other Dairy Products in the Cooper range are

Cooper's **COOMAC** Acid Milkstone Remover, Cooper's **UDDER SOAP** and Udder Soap Dispenser, **MIN-A-VIT ORANGE BAND** Mineralised Vitamin Supplements for cattle.

AVAILABLE FROM YOUR LOCAL COOPER AGENT OR DAIRY FACTORY

WC438

Conventional Jute Fertiliser Sacks Face Competition from Bags made from a New Form of Synthetic Fibre

Fertilizers have become more and more chemically aggressive over the years and as jute fabrics generally have low resistance to both chemical attack and rotting there has been a very real need for a suitable Synthetic to take its place.

This factor, plus the natural progress and world wide interest in plastic materials have stimulated the development of a new form of synthetic fibre. The technique involves the conversion of polypropylene (PP) into film which, under closely controlled temperature and stretching is slit into narrow tapes with very considerate strength.

Fabrics woven from PP are now being extensively used for the manufacture of fabric which will be of great interest to the primary industries. These include the manufacture of sacks, woolpacks, onion bags, certified seed bags, fruit drying sheets, stock feed sacks and others.

In Australia the leaders in the field of production of woven plastics and the development of end uses are A. Abrahams & Sons Pty. Ltd. an all Australian company which is the operating company for National Bag Company of Australia Ltd. A spokesman for this company states that the Primary Producer will be seeing and handling many products packed in this new exciting woven plastic. All these being marketed under the "Koala" brand name.

Of prime importance at this stage of development in Australia is the monufacture of woven PP sacks for the replacement of the jute fertilizer sacks. Jute when used as packs for chemically aggressive fertilizers, deteriorates rapidly if not used quickly and then washed, whereas the chemical resistance of PP is completely adequate to withstand such attack.

Substantial quantities of "Koala" woven PP sacks are now being used in Victoria and South Australia where intensive tests are proving them to be ideally suited for packaging of these fertilizers.

Other virtues of "Koala" woven PP sacks are, light weight, high strength, rot resistance, low cost, no water absorption and the important reuse factor.

In Primary Industry, the reuse of fertilizer sacks is common, and tests in the field over more than twelve months have proved that the "Koala" PP sacks can be refilled many times without showing signs of deterioration other than normal wear and tear associated with the handling and transportation of heavy bags of fertilizer. Shed storage of highly corrosive fertilizers over many months has shown no deterioration of "Koala" PP sacks and no hardening of the contents.

Woven PP sacks are less susceptible to insect infestation and contamination of contents than jute sacks making them more readily acceptable for packaging stock fodder, seed and other products where contamination from loose fibre, dust etc. is of concern.

Another application with huge potential and particular interest to the Australian primary industries is a woven PP woolpack. The Australian Wool Board has been evaluating and testing various woven packs from initial laboratory testing through to final trials under all aspects of handling from the farm to the overseas mill. A "Koala" PP woven woolpack is currently under evaluation. Reports show very good prospects.

PROGRESS OR PERISH

At the Adelaide Royal Show official luncheon the Federal Minister for Primary Production, the Hon. J. D. Anthony repeated his forecast of the trend of farm development. He said that the survival of the primary producer as an individual depended upon his ability to increase the scale of his operation through growth and amalgamation, and that "corporate farming" would constitute a growing proposition of primary industry.

There is no doubt that in primary industry, as in every industry, cost per unit (and hence the price to be charged to the buyer) tends to decrease as output increases. Not only are the fixed costs spread over a greater output; large scale production can also justify the use of specialised equipment (the milking machine is a good, though outdated example); its use and where labor is employed, as it generally is in larger units, manpower can be used more effectively when applied to repetitive tasks of long duration.

But the pressures inducing these changes are not all external or inevitable. Admittedly, the primary producer is in a unique position in the present economic atmosphere; the fragmentary nature of farming, with so many independant (in every sense) operators; prevents any collective action to force realistic price levels on the home market or any restrictive action to reduce or eliminate the surplus which must be sold overseas at whatever price the buyer is prepared to pay. Apart from this, individual producers seek always to maximize their own output at a given cost level to improve their own economic positions, and the aggregate of their unrelated decisions is an increased volume of output which tends to depress the prices received. So each producer by his own decision, or by the decisions of others, is forced to run faster to stay in the same place.

Realising that, in this way, they cannot, in total win the war against costs, producers tend to look to negative ways of improving their financial position, by seeking concessions and other assistance for governments, either through such direct grants as subsidies or price support on production and on the factors of production (e.g. fertilizers) or through concessions in taxation.

These factors, as much as the profitability of large scale production have led to the participation of corporate organisations in primary industry, and unfortunately the process is irreversible. The farmer himself, as much as the corporation, is now dependant on government assistance in every farm. The clock cannot be turned back. But this does not mean that the trend cannot be slowed, and if farming is to survive as a way of life (and large scale farming is just as much a way of life; the major difference is in the ratio of time spent in the office to time spent in the paddock) and if the investment and the happiness of people now in primory industry are to be preserved, we must take positive, constructive steps.

If we can impart to our manufacturing/distributing marketing function the same sort of efficiency that we show in our farming (and is shown by those who compete with us for the consumer's dollar) we may be able to rely less on invention, concession and control, and perhaps there will still be room in primary industry for those who still want to pursue this as a way of life as well as for those corporations who want to make a profit.

But what we must do needs to be done with thought and foresight, and be done by those concerned, rather than forced upon us from outside.

Professor D. E. Tribe, in an address to the National Farmers' Union in Hobart, emphasized the necessity for a changed attitude if the farmer is to survive the effects of technological and economic change. A portion of Professor Tribe's address is printed in the following pages.

In the past 10 years the thing that has enabled livestock producers to face the increasing costprice squeeze, has been the research that made high stocking rates possible.

The next logical step in this story is going to be towards intensification.

To take advantage of technical changes we need a change in the structure and style of our farms. Certainly farmers are going to have to be increasingly well educated, and I don't mean in any academic sense; I mean partly in the scientific sense and partly in a business sense. The general level of agricultural education and business awareness, as you must all well know, is not yet high enough in this country for most farmers to take advantage of the new level of technology and the new level of economic sophistication which is going to be necessary for survival in Australia's agriculture of the future.

We're going to get a different type of farmers. We're also going to get a bigger farmer. We have seen the trend in agriculture throughout the world in the last 50 or 100 years, of a drift of people from the land, and a growing in the size of the properties of the people who remain on the land. I can see no reason why this trend won't continue. In 50 years time, we'll be producing much more from Australian agriculture, doing it more efficiently, but doing it with fewer people on bigger properties.

The position of the farmer in relation to the rest of the community is declining and has been for the last 50 years. I'm not just talking about Australia. Look at the figures published recently by the Bureau of Agricultural Economics in Canberra, comparing farmers with other self-employed people in the community. The position a few years ago was that if the income of the average self-employed person in the community was represented by 1.0, the farmer's was 1.46. That in fact was 10 years ago, and today the farmer is about 1.02, if I remember correctly. During the last 10 years the position of the farmer has gradually declined, the position of other self-employed people in the community has improved, and they're now about the same, in Australia. But look at what they are in other and, dare I say, more highly developed countries—countries like the United States and various European countries. If self-employed people in the community are at a level of 1, farmers range from 0.4 to 0.7.

Now if, your position is going to alter, if your profit per unit of production is going to continue to decline as it has done in the past, and as it is doing in every other similar country in the world, what have you got to do? You've either got to get out or to produce more.

Now this is the trend the world over, and if you want to read about this trend, and I think you all should, you can refer to a most sober report published by the United States Department of Agriculture in 1963 called "A Place to Live". In this are discussed the changes that are taking place, up to 1963, in the American countryside, where, "the countryside is being cleansed of clodhoppers and hayseeds". Now remember that these clodhoppers and hayseeds are men with wives and children. These are the farming communities, small men, under-capitalised, too little land, very often tenant farmers with an insecure tenancy or a bad system of land tenure. Men who for one reason or other cannot face the future problems of agriculture, and they are being weeded out, just as they are inevitably being weeded out in Australia today.

This problem of, "cleansing the coutryside of clodhoppers and hayseeds" is a human problem. We can see it in personal terms and we know what it means. You people, through your organisations, have a responsibility to protect their interests, and I don't think their interests are best served by a maintenance of the status quo. We're caught in forces which are international and enormous and we can't stop them. These changes in agriculture are with us for good or ill, and if

we stand up and try to stop them, they will overwhelm us. What we have to do is to try and understand these forces, and by understanding them try and control their speed and their direction in the best interests of the whole community. We've got to soften the economic blow in human and sociological terms. But in the next 20 to 50 years the inevitable result will be an increase in the size of farms and a decrease in the number of farmers.

The people who remain on farms are also going to undergo a change. In many cases they're not going to be individual, private farmers. They're going to be syndicates, corporations, companies, co-operatives or trusts. If you look again at what has happened in other countries, or look at what has happened already in certain Australian industries, I think you can see the picture. If you don't know what has happened in the Australian broiler industry, for example, I think you should all make it your business to find out. What has happened to the broiler industry in the last 10 years is creating a pattern for other industries. It is now happening in the Australian pig industry.

You are getting what is called by the economists, "vertical intergration". You've got an amalgamation in a single company of all the processes of production, processing and marketing. And the producers part in this is becoming less and less important. Many of the people who are today producing poultry do not own the houses in which they produce their broilers, they do not own the birds, they do not own the feed, they are virtually employed as caretakers. This has happened in many industries in America and Britain. Words like "factory farming", "agri-business", "vertically integrated industry" are bandied about increasingly in European and in American agriculture. Already, the writing is clear upon the wall that it's coming here.

There is a book called "Poultry—A Modern Agri-business which describes the development of the poultry industry the world over, and this book says the following things:

> The stud breeders of livestock in the world are a bunch of amateurs of historic interest only. In the future all animal improvement will be in the hands of a few large international animal feeding companies spending the equivalent of millions of pounds annually on research. They have already taken control of the poultry breeding industry. They're moving in now on the pig industry. And overseas, they're moving in on cattle and sheep. Clearly the only efficient method of making agriculture develop is to foster sizeable agri-business companies capable of the work. Usually such companies would consist of capital and management from the United States, Britain and Europe, and they will operate in partnership with the nationals of many countries. India, Japan, Australia and New Zealand are already for the business development, building completely new agricultural industries. American integration is likely to sew up the business wise the initially important segments of the poultry industries of a number of foreign countries, after which stage they will diversify into the integrated production of pig products, sheep and beef. In other words, we are in the early days of the construction of great international business empires carved out of the worlds biggest industry—Agriculture.

Those of you who have much more experience than I of American investments in Australia can see more clearly than I the writing on Australia's walls. This is a challenge for you people and your organisations.

Technological, economic and sociological change is going to occur during the next 10, 20 or 50 years and it's going to be more radical, more drastic than any-

thing that we've hitherto faced. We're faced with two alternatives. We can try and stop the change, set our face against change, and as I've already suggested, if we do this we will be overwhelmed. Change is inevitable.

Alternatively we can accept the principle of change, but we can do our best to govern its speed and direction, to soften the blow, to make it an improvement for the whole of the community. If we are to do this, we and our children have to understand the forces of change and the principles that are squeezing us now and are going to do so increasingly in the future. We have to make sure that our educational and scientific institutions, our industrial and political institutions, our rural organisations and political parties, are capable of understanding and of controlling.

This is a problem in which we are all involved, none of us can stand aside. The scientists, the economists and the academics have to come out of their ivory towers, off their perches, keep their feet on the ground, and do something useful. So too have you people got to lift your heads out of the sand. You have to make use of the economists and the scientists and the academics. We have to work together in this to understand the problems which are coming very close at the moment.

Automatic Calf-Feeder

A portable electrically-operated unit for feeding milk or milk substitutes to calves and lambs has been developed in Britain.

Devised by Ripper Robots Ltd., in collaboration with the Grassland Research Institute, it is fully automatic and can be used either in buildings or out of doors.

One feature is a new type of valve by which the pressure at the teat can be adjusted to the requirements of the animal. This, it is claimed, gives savings in both labour and capital costs.

Frequency and duration of feeding are pre-set on a central control panel and when they are out of use the teats, which are mounted on bars, are automatically withdrawn beyond the reach of the stock.

The milk is circulated on a ring system, which avoids precipitation of the fats and other solids, and after each feeding the whole network is cleansed by flushing it with cold water and a hypochlorite solution. The unit is described as simple to operate and inexpensive.

Accurate Fertiliser Distributor

A new British machine finely controls the spreading of fertilizer and is specially suitable for applying the more concentrated forms of prill and granulated chemical fertilizers.

It is a trailed implement when in work, but it is fitted with a three-point linkage frame behind the near side pneumatic land wheel so that it can be transported lengthways in a tractor mounted position.

The distributor has several features to ensure accuracy. The material is force fed by means of two rotors, each having four banks of polypropylene brushes. These push the fertilizer through outlets spaced at 3⅝ inch centres. When the machine is stationary, the brushes prevent the fertilizer from falling through the apertures, the shape of which also avoids clogging when in motion.

The application rate is set by a stop on a calibrated scale on the back of the hopper, and the only other control is the on/off handle accessible to the tractor driver's seat. Removable baffle plates can be fitted to maintain even distribution when working along the slope of a hill.

Statistics

ADELAIDE METROPOLITAN MILK SUPPLY AREA

PRODUCTION (000 gallons)

	For Month		Total since July 1		Total since Jan. 1	
	1967	1968	1967/68	1968/69	1967	1968
Nov.	5,085	5,609	22,701	24,941	43,381	45,565
Dec.	4,764	5,170	27,465	30,111	48,150	50,735

	SALES (000 gallons)				QUOTA		C.M.B.	
	For month		Total since July 1		per cent		cents	
	1967	1968	1967/68	1968/69	1967	1968	1967	1968
Nov.	1,812	1,766	9,038	8,956	35.6	31.5	19.26	19.41
Dec.	1,744	1,747	10,782	10,703	36.6	33.8	22.04	20.91

Moving average quota for 12 months ended 30/11/68, 43.72%; 31/12/68, 43.37%.

INTERIM PRICES TO LICENSED SUPPLIERS

(All prices are interim only and subject to adjustment by retrospective payment)

1968	Basic	C.M.B.	Total	3.5%	4%	4.5%	5%
	(cents per lb. butterfat)				(cents per gallon)		
Nov.	37.95	19.41	57.36	20.72	23.68	26.64	29.60
Dec.	37.95	20.91	58.86	21.26	24.30	27.33	30.37

LONDON PROVISION EXCHANGE QUOTATIONS

(Sterling Currency per cwt.)

	October		November	
	1967	1968	1967	1968
Butter —Choicest Australian	300/–	300/–	300/–	300/–
Cheese—Rindless Australian	270/–	225/–	270/–	225/–