

THE SOUTH AUSTRALIAN

DAIRYMEN'S . . .

# Journal

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—Photo by courtesy "The Chronicle"

#### VYNETTE FRIESIAN STUD GROUP

Winners of Herdsman's Trophy—Adelaide Royal Show, 1959

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# 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

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## MR. H. E. LOECHEL IS NEW GENERAL PRESIDENT

Mr. Harold Loechel of Eden Valley, was elected unopposed as General President of the South Australian Dairymen's Association Incorporated at the Central Council meeting on February 6th, 1964, in succession to the late Mr. Ivan Elliott.

As a delegate to the Central Council, Mr. Loechel has represented the Upper Torrens Valley since 1944, and has been a member of the Executive Committee since 1954. In 1960 he was elected Junior Vice President, a post which he occupied until his appointment to the General Presidency.

Mr. Loechel was also elected to the positions of Director and Chairman of Directors of the Metropolitan Milk Equalisation Committee Limited, delegate to the Governing Council of the National Farmers' Union of South Australia, member of the Council of the Australian Dairy Farmers' Federation, and member of the Committee for Liaison with the Australian Primary Producers' Union.

The Central Council also elected the following persons to fill vacancies arising from Mr. Elliott's death.

### **Junior Vice President:**

Mr. D. W. Turner (South Coast)

### **Member—Executive Committee:**

Mr. C. C. Easton (Clarendon)

## NEW MEMBER OF A.B. BOARD

The new member of the Artificial Breeding Board, replacing the late Mr. Elliott, is Mr. Garth Temby, President of the Jervois District of the S.A. Dairymen's Association.

## GROUP OF VYNETTE FRIESIANS

*Winners of the Herdsman's Trophy, Adelaide Royal Show 1959 and representative of the stock to be offered at the Vynette Dispersal Sale, comprises BILLABONG TATARA KING, winner of 19 Championships, with 10 descendants in the sale, ANDERVALE MERCEDES ROYAL, 37 times Champion, with 24 descendants in the sale, and VYNETTE VELVET MERCEDES and V. VELVET HEATHER who have done well in recent Shows and will be offered at the sale.*

# CENTRAL COUNCIL PROCEEDINGS

## TRIBUTE TO THE LATE PRESIDENT

Delegates noted with deep regret the accidental death on 16th December, 1963, of the General President, Mr. I. R. Elliott, O.B.E.

Mr. Easton paid a moving tribute to the personal attributes of the late Mr. Elliott and to his work on behalf of the Association during the last 29 years. Mr. Easton said that in that period Mr. Elliott had made all else, even his business and personal life, subservient to the welfare of the Association, and had thereby enabled the Association to achieve the unity of purpose for which it was formed. He asked that the Association place on record its appreciation of the sterling service of the late President.

Mr. Green supported Mr. Easton's remarks and moved that as a token of the service of the late President a suitable memorial be placed in the Conference Room.

This motion was seconded by Mr. Boehm and carried.

Delegates then stood in silence as a mark of respect.

## GRADING OF CHEESE

The Secretary reported that it was expected that the Australian Dairy Produce Board's Survey on the grading of dairy produce will be available in February.

The Secretary had conferred with Mr. G. Itzerott and with Mr. C. L. MacDonald on the practicability of determining cheese types and taste in a meaningful way as a means of identification and recognition by the consumer and of predetermining output by the manufacturer. Mr. Itzerott believed that such a type of "grading" (which would be very different in technique and purpose from the normal practice of "grading" for export) was possible, although much research would have to be undertaken.

Mr. MacDonald believed that if identifiable market demand were possible to determine, it might be difficult to fulfil by present techniques, and that research into blending could be undertaken towards this end. Mr. MacDonald added the following comments:—

1. Is it known for certain what the consumer does want in the way of cheese, and how was this preference determined?
2. There is no guarantee that a Factory can always re-produce the same type of cheese, especially at matured ages.
3. I feel that the whole of the contents of your letter could be linked up with the survey now being made on cheese by the D.P. Board, and which should bring forth information which is at present unavailable.
4. I feel that public tastes are being catered for more today than ever before with the greatly improved displays of cheese and cheese bars in so many stores and shops. Also hotels have taken to serving cheese boards at meal time, and these usually contain a fair number of varieties.
5. If the supply of cheese to the public is made too difficult and tough for the manufacturer to comply with I feel that some Factories would drop out of local trade, as even today many do not participate in this market.
6. Grading or any other form of classification must, by selection for individual tastes, cause rejection from lines of cheese, and thus bring about an increase in prices. The query of the manufacturer would be "what do I do with the cheese which has been prepared for the local market, but is not acceptable to same".
7. Uniformity of quality and type has been maintained with butter (in S.A.), honey, wine, brandy, whisky and processed cheese by blending,



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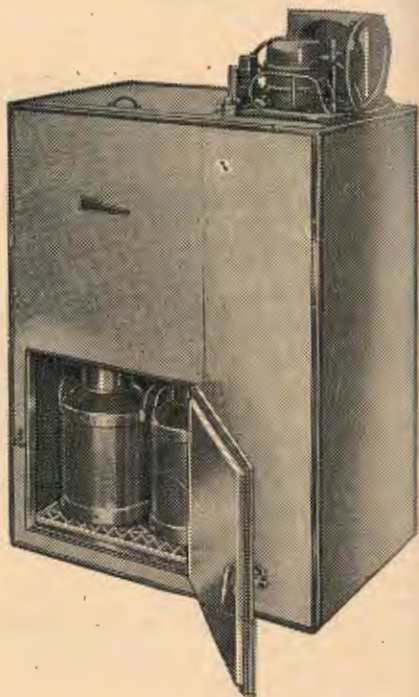
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and is in my opinion about the only answer to uniformity of type and quality. This, I feel, has been the secret of success of sales of processed cheese which occupy such a high percentage of the local market at the present time.

8. The tea referred to in Mr. Higbed's letter as being of uniform quality and type would almost certainly be a blended product, plus the fact that it is not nearly so perishable as cheese.
9. As the Retailer will buy to suit public tastes and purchases regardless of grading, I believe that this section of the trade should have quite a large say in quality matters.

A letter had also been received from the General Secretary of the A.D.P.B. in which he states:—

"As you have rightly pointed out in your earlier letter, your Association realises the complexity of the problem. Because it is a very complex problem, we have been discussing it for some time with the Cheese Manufacturers' Federation. Up to the present, we have reached no satisfactory conclusion but, as indicated in Mr. Singh's letter of the 8th October, we are at present conducting a full-scale survey on cheese and the report on that survey could have some relevance to your request.

"You may rest assured that the Board is doing everything it can in conjunction with the cheese industry to raise cheese standards which ultimately must have some effect with good marketing by the Companies within the industry on improving the cheese consumption."

The Executive Committee had agreed that action on this matter be deferred until the results of the A.D.P.B. survey were obtained, but that in the meantime the Secretary should write to Mr. Czulak of C.S.I.R.O. who had first suggested this as a solution towards the problem of low domestic consumption.

The Secretary added that at the Combined Dairy Industry Conference and the Executive meeting of the A.D.F.F. held in Sydney on 4th and 5th February, 1964, the whole question of cheese had been raised, although the discussion was inhibited by the fact that the A.D.P.B. report on grading had not yet been released. Nevertheless the opportunity had been taken to impress on the Chairman of the A.D.P.B. (Mr. E. G. Roberts) that the Australian cheese industry was not supplying the domestic market with adequate stocks of matured cheese, and it was for this reason that Woolworths were importing large quantities of matured cheese from New Zealand, which, at 4/3d. lb. (including tariff) was underselling the local cheese, when available, at 4/11d. Mr. Roberts had been reluctant to believe this, but it was clear that until there was some form of type-selection for domestic sales, it was impossible to produce quantitative evidence of disparity between market demand and supply.

Mr. Easton said that it was vital for the industry to realise that the Retailer played at least as important a part as the manufacturer, and if, as stated in Mr. MacDonald's letter, the retailer was alive to the problem, then cheese was already being subjected to some form of grading, and the necessity of a big chain grocer to buy from N.Z. indicated that there were insufficient supplies of some grades in high demand.

Mr. Parik said that the shortage of good Australian Cheese was due to the shortage of good cheesemakers.

Mr. Temby asked whether we were pioneering the grading of cheese for local consumption? Surely by now the U.K. or the U.S. had already done some work on this, and the fact that the consumption of cheese in U.S. had been rising could derive either from market research or from a fulfilling of demand. If the U.S. had carried out market research and consequently adapted their manufacturing techniques to the results of this research, it would be far cheaper to learn from their results than to try in Australia to duplicate their work.

## IMPORTATION OF CHEESE

It was noted that, as directed, the material which had been gathered during the last six months concerning the danger of the introduction of exotic diseases into Australia per medium of imported cheese had been placed before Mr. C. R. Kelly, M.H.R. Mr. Kelly had advised that he had written to the Minister for Trade and Customs asking for a reassurance that he was as confident now as he was on 25th October (the date of his reply to A.D.F.F.) particularly in view of the opinion expressed by Mr. Loftus Hills. Mr. Kelly had not yet received a reply from the Minister.

The Secretary had also, as directed, obtained from officers of the Department of Agriculture their views on the possibility of the introduction via imported cheeses, of exotic stock diseases that may affect animals other than dairy cattle. It was the opinion of the Departmental officers that such possibility existed. This opinion had been communicated to A.D.F.F. for submission to the N.F.U. for Federal action.

The Secretary reported the matter had also been discussed by the A.D.F.F. Executive Committee, who had felt that as no progress appeared to have been made, it should be referred back to the constituent organisations for further study and such action as might seem appropriate.

Mr. Goodrich suggested that the Institute of Medical and Veterinary Science be asked to undertake continual sampling of imported cheese, to determine whether disease producing organisms could be cultured, which would be clear proof of the danger.

Mr. Parik said that the diseases which could be introduced in imported cheese were not only those which could endanger dairy cattle, and we should seek the support of all livestock owners through the N.F.U.S.A., as the onus should not be on the shoulders of the dairying industry alone.

Mr. Spicer said that we could not expect the N.F.U.S.A. organisations to act without any authoritative backing and the Secretary should obtain from the Department of Agriculture a statement of the problem which could then be sent to all constituent organisations before the next N.F.U.S.A. meeting.

The Secretary said that A.D.F.F. Executive members had stated that an approach from N.F.U. to Federal authorities would receive no more sympathy than at present unless there was more professional opinion backing it, and he suggested that this Association try to get Mr. Strickland, supported by the opinions of his veterinary officers, to have the matter placed on the Agenda of the Standing Committee of Agriculture.

Mr. Temby moved: "That the Secretary be instructed to proceed with the proposal concerning the placing of this matter on the agenda of the Standing Committee of Agriculture, and that each constituent organisation of the N.F.U.S.A. be immediately and fully informed of the progress of the matter so far, in order that the subject be considered at the next N.F.U.S.A. meeting." Seconded by Mr. Turner and Carried.

## NOXIOUS WEEDS

It was noted that the resolution concerning the control of roadside weeds had been referred to N.F.U.S.A., and had been considered at the meeting of N.F.U.S.A. Executive on 5th February.

N.F.U.S.A. had received from the Minister of Agriculture a reply to earlier representations on this matter, but it appeared that the urgency of our request

had not been reflected in the subsequent amendments to the Weeds Act, and consequently a deputation from N.F.U.S.A. would shortly be conferring with the Chairman of the Weeds Advisory Council.

Mr. Turner suggested that the role of road transport in the spread of noxious weeds should be recognised, and some contribution should be made from registration fees.

Mr. Ballard stated that one of the greatest problems in Weed Control was the failure of Councils to clear noxious weeds off roadsides which did not abut private land, and the failure of authorities to keep Crown land clean of weeds. The common boundaries between Council roads and the railway line at Balhannah were glaring examples of this.

Mr. Boehm agreed with Mr. Ballard that the noxious weeds on railway property were a grave danger to adjoining landholders.

It was agreed that the Secretary should acquaint the members of the N.F.U.S.A. deputation with these opinions in order that they might be brought to the notice of the Weeds Advisory Council.

#### **MILEAGE ALLOWANCE—DEPT. OF AGRICULTURE**

The Secretary reported that he had contacted the Chief Accountant of the Dept. of Agriculture concerning this matter which had been raised by Mr. Harper. Mr. Denman had said that there had been no change in departmental practice in recent years, and that no officer should be in a position to refuse a request for a visit on the score of mileage allowance, although a too liberal mileage early in the year might make an officer reluctant to seek a further allowance.

Mr. Hannam said that this statement was contrary to his information, which was that there had been some alteration or curtailment in the amount of money provided for transport in recent years.

Mr. Spicer said that he, too, had on occasions been informed by a departmental officer that his "mileage allotment had just about cut out".

The Secretary stated that he would further enquiries.

#### **WEIGHING OF MILK**

Mr. Parik said that consideration should be given to requiring milk weighers to be sworn in, in front of a Justice of the Peace, the same as was required for wool weighers. The practice would cost very little and would have advantages to the dairyfarmer in that it would prevent unskilled and junior employees from weighing the milk.

Mr. Humphris said that the purpose of the suggestion was to eliminate irresponsible persons from weighing the milk.

Mr. Spicer asked whether the Secretary could look into the rules governing the wool weighers and report back.

The Secretary said that he would undertake to do this.

### **NEW MEMBER FOR MILK BOARD**

Mr. John C. Langley has been appointed to the vacancy on the Metropolitan Milk Board created by the retirement of Mr. Beddome. Mr. Langley, who is a chartered accountant, is Secretary of the S.A. Brewers Association.

## Statistics

### ADELAIDE METROPOLITAN MILK SUPPLY AREA

#### PRODUCTION (000 gallons)

	For Month		Total since July 1		Total since Jan. 1	
	1962	1963	1962/63	1963/64	1962	1963
December ... ..	4,036	4,272	24,044	25,555	39,906	42,550
	1963	1964	1962/63	1963/64		
January ... ..	3,537	3,761	27,581	29,316		

#### SALES (000 gallons)

	For Month		Total since July 1		Quota %		C.M.B.	
	1962	1963	1962/63	1963/64	1962	1963	1962	1963
December ... ..	1,551	1,607	9,375	9,693	38.0	38.0	1/11	1/10 $\frac{1}{2}$
	1963	1964	1962/63	1963/64	1963	1964	1963	1964
January ... ..	1,548	1,576	10,923	11,269	43.8	41.9	2/2 $\frac{1}{2}$	2/1 $\frac{1}{2}$

Moving Average Quota for 12 months ended 31/12/63, 45.22%; 31/1/64, 45.02%

#### INTERIM PRICES TO LICENSED SUPPLIERS

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

	Basic C.M.B. Total			3%	3.5%	4%	4.5%	5%
	(per lb. butterfat)							
December, 1963	3/3 $\frac{1}{4}$	1/10 $\frac{1}{2}$	5/1 $\frac{1}{2}$	1/7 $\frac{1}{4}$	1/10 $\frac{1}{4}$	2/1 $\frac{1}{2}$	2/4 $\frac{1}{4}$	2/8
January, 1963 ...	3/3 $\frac{1}{4}$	2/1 $\frac{1}{2}$	5/4 $\frac{1}{2}$	1/8	1/11 $\frac{1}{4}$	2/2 $\frac{1}{2}$	2/5 $\frac{1}{4}$	2/9 $\frac{1}{4}$

#### LONDON PROVISION EXCHANGE QUOTATIONS — DECEMBER

	1962	1963
Butter—Choicest Australian .....	314/-	334/-
Cheese—First Grade Australian .....	215/-	226/-
Rindless Australian .....	227/-	234/-

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## NO MATURED CHEESE IN S.E.?

In view of the opinions expressed by delegates to Central Council from time to time, and by members of the Executive Committee of A.D.F.F. on 5/2/64, the following report from the South Eastern Dairymen's Association is of interest.

**Why can't we buy cheese with a 'bite' any more?** was a question asked by delegates at the annual conference of the S.E. Dairymen's Association in Mount Gambier.

Mr. P. Siggers asked Mr. R. C. Davis, the Association's co-operative factories' representative, why cheese manufacturers were not making the more matured cheeses which used to be available.

He had been asked by an Italian why a certain type of Australian cheese which he was able to obtain in Italy was not obtainable in Australia.

Mr. Davis said that manufacturers provided what retailers ordered from them. Nine out of ten people got the sort of cheese they wanted.

"As far as the manufacturers are concerned, it is not a paying proposition to keep cheese for a long period. It is very difficult to persuade the factory manager to put away cheese to justify a few palates," he said.

Other delegates said they preferred the stronger type of cheese, but they could not buy it.

Mr. E. L. Gaffney suggested a poll to see what sort of cheese people really wanted to buy.

Mr. David said local consumption figures showed that people were buying more cheese than ever before. They would not buy it if they did not like it.

He said that, with pasteurisation, the type of cheese available now was much different from what it was years ago.

One speaker said, "It has never been the same since they took the wogs out".

Mr. Davis said there was no justification for saying that manufacturers were neglecting the wishes of the public for more matured and semi-matured cheeses.



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**HI-PROTEIN DAIRY MEAL**—a high protein and high energy feed for top producing cows and when a pasture is poor. 18 per cent. min. protein.

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# Heavier Seeding Helps Weed Control And Increases Production

By M. SCOTT HODGE,  
joint managing director of M. F. HODGE & SONS

"Where do you start with this heavier seeding business on old pasture country?"

"... Cultivate my country and you get all the weeds and rubbish in the world" . . .

"One year's seeding, seven years' weeding."

These are some of the comments which have been raised when the subject of heavier seeding rates and cultivation of South Australian pastures has been discussed.

Investigations which indicate that seeding rates of 20 lb. of legumes per acre produce sufficient soil nitrogen in one year to grow several successive crops are being much talked about.

There is nothing much new in this, and undoubtedly there are some problems. But on the other hand the rewards are great.

Years ago, some wise old German farmers in the Adelaide Hills used to sow a kerosene tin full of clover seed per acre on potato land and harvest clover seed in the first season. This would be followed by a highly productive crop of "shandy hay."

The weed population in these areas may have increased in the years since. But easy-to-apply selective weed killers which can greatly reduce the problem are now available. And the problem would gradually cease to exist anyway after a few years of the recommended quick build-up and steady use of soil nitrogen.

Let's be frank about it. The build-up of the soil seed population of such species as geranium, cape weed, silver grass, brome grass, barley grass, etc., is largely a reflection of mis-management and failure to seed a worthwhile pasture species before these inferior types move in to take over.

It has been estimated that 50-200 lb. of so-called "natural" seed is deposited every year on each acre of pasture land.

This great volume of weed seed is a problem we know. But rather than being an argument against reploughing, cropping and reseedling, it highlights the inadequacy of common seeding rates in which **one or two pounds of the chosen species** is often asked to compete against this large quantity of undesirables.

Selective weedicides are now readily available. So if a cereal crop is used first to tap the built-up soil fertility on existing pastures before the very heavy seeding of legume, a selective weedicide can be applied to catch the undesirable broad-leaf weeds which may have germinated with the first cultivation.

With each successive cultivation and crop, the level of weed seeds in the soil will be lowered.

When the stored nitrogen has been used in this way, a heavy legume seeding will replenish it in one season, and allow the succeeding cash

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crops to be quickly taken off before weed seed population has a chance to build up again.

It has never been suggested that the change-over from so-called "permanent" pasture to the quick build-up quick usage system, should take place over a whole farm in one year.

The real basis of the argument—and this applies in other countries where such a system has been in use for many years—is that first-year pastures must provide sufficient grazing to more than pay for themselves in the first year and, at the same time, build up enough soil nitrogen for several successive crops.

Perhaps it is because of cheaper land values, but we in South Australia have gone along on the quite different system of light seeding and then allowing several years to lapse before pasture builds up maximum soil fertility.

And, even then, we often stand by without doing anything about the "rubbish" which moves in because we have made no deliberate attempt to provide anything worthwhile in the way of a pasture grass. In fact we accept the influx of this rubbish as "natural."

Some authorities believe that the **productivity of much of our better type land could be more than doubled** by the introduction of much heavier seeding rates. And with little increase in cost other than the cost of the extra seed.

It is certainly something worth thinking about and trying.

We have weeds, but they can be largely eliminated by mowing at the appropriate time, by cultivation, by the use of strong growing cereals, and by heavier seedings of desirable pasture plants.

## N.S.W. and Milk Quotas

In the September-October issue of this Journal we reported Mr. Ferguson, Chairman of the N.S.W. Milk Board as being dissatisfied with the way individual milk quotas were working.

There has been considerable criticism of the quota scheme by dairy-farmers, and although the purpose of the quota is to bind a farmer to supply a certain quantity of milk at all times, the Board has been continually faced with demands from farmers seeking the amelioration of the penal restrictions in their own individual cases on the grounds of disease, drought, flood and the like.

It was decided to hold a ballot among dairy farmers participating in the individual quota scheme, asking the simple question: "Are you in favour of individual quotas?" to be answered "Yes" or "No."

Of the valid votes received 2,319 were for "Yes", 1,501 for "No", and it has been acceded by the Board that the decision is unequivocally in favour of a continuation of quotas.

Opponents of the quota scheme, however, point out that as 4,733 ballot papers were issued, the 2,319 favourable ballots were less than a 50% vote, arguing that the reason for the high non-return rate was that farmers were unwilling to record a "No" vote for the present quota system when they had absolutely no knowledge of what might be the alternative.

### YOU MAY NOT BELIEVE THIS, BUT — WE ALSO HAVE OUR PROBLEMS!

*Not with meth. blues and bloat and mastitis and things like that but in writing advertising copy for a Journal that only comes out six times a year.*

*This means that very often what looks like a touch of genius when we think of it is as dead as mutton by the time the Journal is published.*

*Like the idea we had about those two Foreign Office chaps that defected to Russia—Burgess and MacLean. The theme was going to be a pun on the "clean" bit, but before we could get into print one of them died, and the bottom dropped out of the joke.*

*It was the same with a story about the Weeds Inspector and Christine Keeler's poodle. "Who's Christine Keeler?" did you say? See what we mean!*

*Some people ask us why we go to all this trouble. They say, "Why don't you just advertise how good your products are?" Well, we thank them for their helpful suggestions, but it seems to us that this sort of approach is like saying "The horseless carriage is here to stay." After all, it's obvious.*

*Unfortunately, in explaining all this, we don't appear to have enough space left to tell you the story about the Australian workman, the Russian workman, and the definition of "democracy", and we will, after all, have to fall back on a selection of immutable truths, so here they are—*

*"Father, I cannot tell a lie"—George Washington (and us).*

*"You can fool some of the people all the time,  
and all the people some of the time,  
but you cannot fool all the people all the time."*

*—Abraham Lincoln (and us).*

*"For South Australian conditions you can't beat GAIMA  
dairy cleaners and sanitisers"—Dairyfarmers everywhere (and us).*

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Food Industry Suppliers

## A.B. BOARD NEWSLETTER

## N.Z. Artificial Breeding Service

The major objective of the New Zealand Artificial Breeding Service is to improve the productive ability of the Dominion's dairy cattle by the extensive use of the best possible proven bulls.

Sire survey has shown that only a small proportion of bulls is able to lift production substantially, and artificial breeding enables the influence of such bulls to be greatly increased.

The N.Z. Service safeguards the future supply of proven bulls by buying a large team of well-bred young (mainly yearling) bulls annually with the object of proving them at five to six years of age on the production of their artificially bred daughters.

Farmers have undertaken to use, for a specified period, mainly unproven bull semen on the cows they are offering and to test under the monthly system when the daughters come into milk. In return for this they receive free insemination and a payment of £4/10/- or £5 (depending on the district concerned) for each daughter tested as a two-year-old. Under this scheme bulls with the highest ratings will be selected for use as proven bulls.

Semen is distributed by road, rail and air freight, through herd improvement associations and veterinary clubs operating an A.B. service. The service is available all the year but the greater output occurs during the spring and early summer months.

The Awahuri centre is staffed by a veterinary surgeon and a team of 15 technicians although extra staff is recruited each spring. About 200 bulls are kept at the centre and 40 per cent of these used in any one season. Breeds represented include Jersey, Friesian, Ayrshire, Milking Shorthorn and Poll Hereford.

The simple objective is improvement of the productivity of the national herd, just as the A.B. Board of S.A. aims at similar uplift in production of the State herds.

The N.Z. growth in artificial breeding is shown by the increase from 1950 when 2,400 cows, representing one-tenth per cent of all dairy cows, were inseminated, to 1956, when the totals had risen to 190,000 cows and ten per cent, and finally to 1962 with 570,000 cows inseminated, representing 30 per cent of the national total. As farmers are mating only about 75 per cent of their herd by A.B. to obtain replacement stock, this figure indicates that about 40 per cent of herds are using this system.

In 1953, only 48 per cent of cows held in calf following their first service with A.B. semen but in 1962 the rate had improved to 66 per cent, which means that about 80 per cent of cows mated are in calf at the end of a seven-week mating period.

The average number of inseminations being obtained from a sire used as extensively as possible is 7,000 a year, and it is this extensive cover by A.B. that is the key to increasing the genetic merit of the national dairy herd at a faster rate.

The N.Z. plan offers three types of service:

- (i) standard—using material from proven sires of high standard and nominated breed;
- (ii) the sire proving scheme for limited herd, designed for progeny testing of young bulls;
- (iii) the nominated service offered from top proven bulls, using deep-frozen semen.

This third section is more costly but caters for the pedigree breeder wishing to use a specified sire. It is significant that in this scheme it has been found that some bulls have very low conception rates with deep-frozen semen, for reasons which are at present unknown.

In the sire proving section, once the young bulls have 180 cows in calf, they are withdrawn from service until progeny come into production and are assessed

on the basis of progeny. If up to standard, they join the proven bull team.  
How do the N.Z. centres sum up A.B.'s value?

- Extensive use of sires for breeding replacement stock of known high quality at reasonable cost.
- Freedom from the worry of reproductive diseases occurring during the mating period. A.B. with disease-tested bulls is universally recognised as a means of controlling venereal disease in cattle.
- Removal of the potentially dangerous adult bull from the farm. Only young bulls for heifers and tail-end cows need be kept, if at all, thereby reducing the danger element, lowering fence costs, and allowing another milking cow to be carried.
- Insurance against the disastrous failure which can occur under natural mating conditions when a "dud" bull is used in the herd before corrective action can be taken.

**FOR SALE—Ferguson 9 tyne cultivator, hardly used.  
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## International Dairy Council to be Formed

At the last Conference of the International Federation of Agricultural Producers in Dublin, an Organizing Committee was established to form an International Dairy Council.

This International Dairy Council, in which governments and producers would co-operate, would have these functions:

- (1) To introduce practical measures to secure the widest possible degree of equilibrium and stability in the world dairy products market, resulting in a fair return to producers. This includes:—
  - developing new markets;
  - organizing the utilization of surpluses through multilateral action;
  - taking steps to increase consumption of dairy products throughout the world.
- (2) To discuss all problems relating to the equilibrium between production and the possible consumption of dairy products, taking account of consumption of other edible fats and working through international consultations to the solution of specific problems affecting the dairy industry.

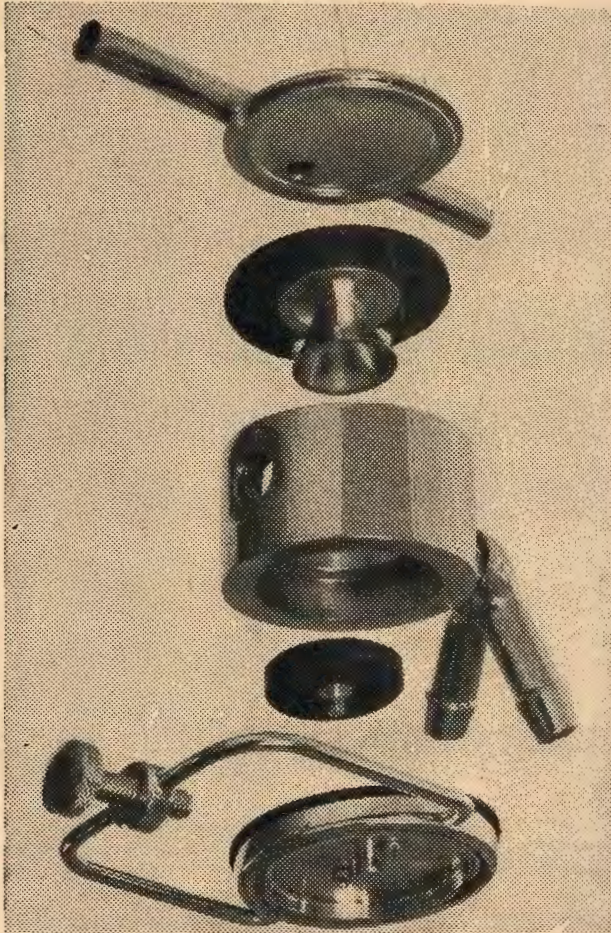
The I.F.A.P. Executive has now ratified this proposal and **asks each I.F.A.P. member organization (including the National Farmers' Union of Australia) to approach its government and to undertake the enlisting of its support** for action along these lines.

As the co-operation of governments will take some time to obtain, it is proposed to form an interim International Dairy Committee whose function will be:—

- (1) To bridge the gap between the work of the organizing committee set up by the Dublin I.F.A.P. Conference, and the coming into operation of the joint government and producer Dairy Council, and to press forward the I.F.A.P. policy of achieving such a Council.
- (2) To review the world market and outlook for dairy products, discuss problems of holding supply and demand in equilibrium, propose solutions to trade difficulties and promote schemes to build up demand.

Australia's attitude to the proposal will be discussed by the Australian Dairy Farmers' Federation at its February meeting.

# DAIRYMASTER



exclusive

The

- ★ NO
- ★ NO
- ★ NO
- ★ NO
- ★ NO
- ★ NO
- ★ NO
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## IN 1964 . . .

As we cross the threshold of yet another year, we face with anticipation the days that lie ahead.

In a quickly changing world it may be opportune to view in retrospect the passage of the past year — the successes and failures, the progress and frustrations, all of which constitute the pattern of living.

Let us gain from such experiences, so that the forthcoming year will produce the harmony and prosperity we all so earnestly desire. Let mutual respect and confidence permeate every action in our domestic and business dealings, thereby achieving a measure of that peace and security for which we are constantly striving.

In Australia we possess a heritage and prosperity unique in a troubled world — to perpetuate this happy state is an individual and collective responsibility, and we are proud to record that our Company has endeavoured to play its part. Though young in years, we have constantly endeavoured to fulfil a pledge of service to our many clients, based on ideals of the highest integrity. The Federation Insurance Limited and its officials and staff all over Australia, will continue to give of their best to assist you.

We re-affirm this pledge and extend our sincerest good wishes to all, trusting that the New Year will usher in a further period of prosperity and happiness.

## C.S.I.R.O. FINDS ADVANTAGES IN GRANULAR PESTICIDES

Experiments now being carried out by CSIRO show that granulated insecticides are well suited for use on pastures because:

- ★ they are less susceptible to wind drift than either sprays or dusts
- ★ hazard to stock is low, since most of the granules settle on the soil surface
- ★ out of reach of the grazing animal
- ★ existing farm machinery can readily be adapted to handle them.

In earlier experiments in Western Australia, Mr. M. M. H. Wallace of the CSIRO Division of Entomology, had found that DDT gave poor control of the red-legged earth mite when applied to pasture in granules. However, Mr. Wallace considered that the systemic action and pronounced fumigant effect of the relatively new insecticide phorate ("Thimet") might ensure its effectiveness in a granulated form against lucerne flea and red-legged earth mite.

During 1960 and 1961 four trials of the formulation against these two pasture pests were carried out at three different localities in Western Australia. Ten per cent phorate granules were applied, either with superphosphate or mixed with inert attaclay granules, at rates ranging from  $\frac{1}{4}$  oz. to 4 lb, phorate active ingredient per acre. At least 1 oz. per acre was required to achieve an adequate initial kill, and this rate appears to be about the optimum in the circumstances.

The experiments demonstrated that granular formulations of insecticides with a fumigating capacity are valuable for controlling the red-legged earth mite and lucerne flea, but further field experiments are needed before their full potential can be assessed.

—Rural Research in CSIRO, December, 1963.

## BETTER MILK STANDS SOUGHT

The Wholesale Milk Buyers and Distributors Association is seeking the co-operation of licensed producers in cutting transport costs and time by the provision of better milk stands. The merchants point out that a properly designed, well-built stand can speed-up loading, and by getting the milk to the factories faster and sooner, help to maintain milk quality, thus lessening the chances of a low meth. blue test whilst ensuring better grade (and hence higher-priced) dairy produce.

Producers are also asked to note that unsafe stands make them liable at law for injuries caused by such conditions. On the other hand complete absence of a stand introduces the possibility of injury to the lorry-driver (and the possible spillage of 10 gallons of milk).

Because of these factors the South Australian Dairymen's Association and the Metropolitan Milk Board are supporting this appeal.

Concurrently with the appeal we are able to announce that, at our request Structures Ltd., have designed a stand, which can be purchased in multiple units according to the number of cans to be handled, ready for assembly and installation by the farmer himself. These stands are now available, and prices and details will be published in our next issue.

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## STOCK DISEASES AND IMPORTED CHEESE

Although considerable support has been received from both the dairying industry and the Veterinary profession for the view that the importation of cheese from certain European countries carries with it grave dangers of introducing stock diseases not at present endemic to Australia (and not necessarily confined to dairy cattle), Federal authorities claimed that present precautions were adequate to control such a possibility.

The Central Council eventually instructed the Secretary to refer the matter to Federal members, and Mr. C. R. Kelly, M.H.R. for Wakefield, was asked to present our case to the Commonwealth Minister for Health.

The following letter has now been passed to us by Mr. Kelly.

12th February, 1964.

Dear Mr. Kelly,

I refer to your personal representations of the 17th January, 1964, on behalf of the Secretary of the South Australian Dairymen's Association, concerning the possible risk of the introduction of livestock diseases into this country through imported cheese.

I note that you have seen the letter which I wrote last October to Mr. A. Baird, the Secretary of the Australian Dairy Farmers' Federation, informing him that my departmental advisers are of the opinion that there is no risk of introducing foot and mouth disease into Australia through the medium of imported cheese. I can assure you that this opinion was reached after full consideration of Mr. Loftus Hills' contentions and following consultation with overseas veterinary authorities.

I am, however, aware, from the advice of my departmental officers, that *Brucella* and certain other micro-organisms could conceivably be conveyed in some types of cheese, and while this may not be a very great risk, I am considering having amendments made to the requirements to guard against any possible hazard from this source. In this event the amendments would, amongst other things, require evidence of pasteurization, but would not be in the nature of a prohibition on the importation of cheese.

I appreciate your interest in this matter and trust that the above information will set your mind at rest.

Yours faithfully,

HARRIE W. WADE,

Minister for Health.

It is heartening to learn that action along these lines will shortly be taken, and although there is no guarantee that this will completely eliminate all risk, it is up to the industry to ensure that the new legislation is as adequate as possible.

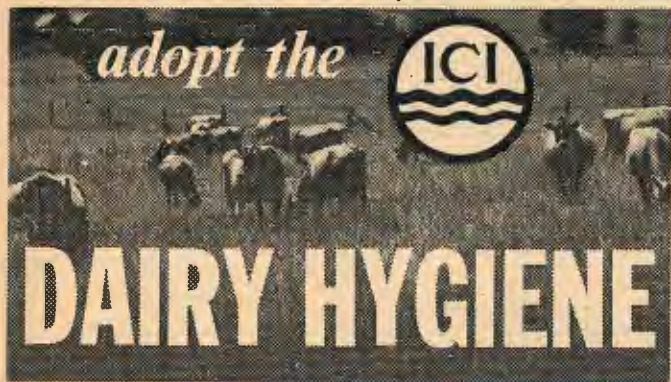
## AUTUMN JERSEY FAIR DATE ANNOUNCED

The President of the South Australian Branch of the Australian Jersey Herd Society, Hon. G. O'H. Giles, M.L.C., announced recently that the Annual Autumn Jersey Fair and Sale would be held at the Showgrounds, Wayville, on the 12th March, 1964.

Prize money and trophies are expected to be of a greater value than previously. The value of prize money in the past is one of the highest for any Show conducted in Australia, and as usual is expected to attract approximately 200 entries from all over the State.

Entry schedules have been prepared and the information concerning classes and conditions are now available to members of the Society.

ICI R.M.T. KIT, 'DISPEN' AND 'HIBITANE' DAIRY PRODUCTS



**BEAT  
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MONEY**

**PLAN**

... the simple, inexpensive three-step plan for SURE control of Mastitis.

Costs only pence per head, yet saves you pounds.

<p><b>1. DETECTION</b> R.M.T. KIT</p>  <p>ICI's revolutionary new Rapid Mastitis Test Kit gives early and reliable detection of infection, even before visual or strip-cup detection is possible. It's so simple yet so positive.</p>	<p><b>2. TREATMENT</b> ICI 'DISPEN'</p>  <p>A Penicillin formulation that acts quickly and, more importantly, is rapidly eliminated from the udder, giving saleable milk 24 hours earlier.</p>	<p><b>3. CONTROL</b> 'HIBITANE' PRODUCTS</p>  <p>'Hibitane' Udder Wash, the effective all-purpose disinfectant, gives protection against both 'Staph' and 'Strep' infections. 'Hibitane' Ointment rapidly destroys mastitis germs, which harbour in cracks and sores on teats of cows.</p>
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## REPORT OF MEETINGS—EXECUTIVE COMMITTEE A.D.F.F., 5/2/64 and COMBINED DAIRY INDUSTRY CONFERENCE, 4/2/64

The Secretary reported that he had been very disappointed by the lack of progress made at these two meetings. The first meeting, which was of representatives of all bodies connected with the dairying industry, occupied only one hour, and absolutely nothing worthwhile was achieved.

At the A.D.F.F. meeting the following business was discussed:

### WHOLEMILK SECTIONAL COMMITTEE

Arising from the V.D.A. suggestion for a Wholemilk Sectional Committee within the A.D.F.F., this Association had submitted—

"That Milk Producer Sections of the Constituent Organisations of the Federation affiliate with the Milk Producers' Association of Australia and New Zealand with the intention of making it an effective organisation, by strengthening the M.P.A. both as regards its representation and its prestige."

It was finally resolved by the A.D.F.F.—

"That a Special Wholemilk Conference be convened in July 1964 and that two wholemilk producers representatives from each State be invited to the Conference to consider wholemilk matters of common interest, to exchange information and ideas, to consider the desirability of further action in relation to Wholemilk Organisation, and to report back to A.D.F.F."

Naturally at this meeting in July the S.A.D.A. delegates would move the resolution from this Association.

### CHEESE IMPORT CONTROL

It had been decided to form a committee to keep a constant watch on the matter of cheese imports, comprising Mr. MacDonald (Cheese Manufacturers' Federation), Mr. T. Easton (A.D.P.B.), Mr. T. Phillips (staff of A.D.P.B.) and Mr. Conroy (A.D.F.F.).

In addition to keeping a watch on the matter, it had been decided to seek an increase in tariff on imported cheese, the present tariff of approximately 6d. lb. having been set in 1927 at a time when price levels were such that a tariff of this amount could be considered a prohibitive tariff. However the preparation of a case for increase in tariff was a matter for the manufacturers concerned, not the producers, and although a good deal of work had been done in this matter, by Mr. Phillips and Mr. Trenery, at present only two worthwhile submissions had been made by cheese manufacturers. (We had asked our own Cheese Manufacturers Association in S.A. to support the case, and they replied that they would support the case, but that they had received questionnaires on which many of the questions were impossible to answer.) It appeared that the cheese manufacturers had let the producers down badly because they were in a position where they could always recover their costs, whatever they might be, from the producers, and consequently as the tariff was really being sought to protect the producers, the A.D.F.F. had resolved—

"That the Minister for Primary Industry, Mr. C. F. Adermann, be advised that it is the opinion of the Federation that the Commonwealth Government's normal procedure for protecting manufacturing industries by way of import duties through the Tariff Board are not effective as a means of protecting the cheese industry, and that he be requested to take special action to protect dairy farmers against cheese imports."

It had been stated in defence of the manufacturers' lack of cooperation, that no case for higher tariff could be made out if Australian costs were in fact lower than the landed costs of imports, but the fact that the Woolworth chain was able to sell matured N.Z. cheese at 4/3d. lb. (including 6d. tariff) against 4/11d. for Australian seemed to indicate that this was not so.

### ANTIBIOTICS FOR DAIRY CATTLE

The V.D.A. had submitted to the A.D.F.F. a motion—

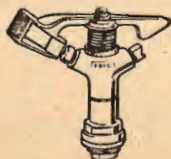
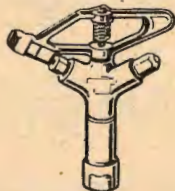
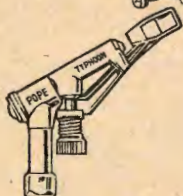
"That it be a recommendation to constituent bodies of the Federation that they endeavour to obtain similar legislation in their own States as that recently enacted in Victoria, which provides that no person shall sell any preparation containing penicillin prepared for bovine intra-mammary infusion unless such preparation contains the brilliant blue marker dye."

This resolution was carried by the A.D.F.F., with the South Australian delegate voting against the motion.

### ARBITRATION COURT CASES

The S.A.D.A. motion that primary producer interests should be represented before the Court of Conciliation and Arbitration by N.F.U. was supported by A.D.F.F. delegates, but it was pointed out that the Australian Woolgrowers and Graziers Council was opposed to this move and so there was no chance of getting it agreed to. The S.A. delegate had asked why the A.W.G.C. should carry so much weight in N.F.U. and it was pointed out that their financial contribution was so great that they should not be offended.

The S.A.D.A. motion was consequently "received", which meant that nothing would be done. However the S.A. delegate had stated that we would be forced to put our resolution through N.F.U.S.A.



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## C.S.I.R.O. IS LEARNING HOW TO PICK A GOOD PRODUCER AT BIRTH

The tests are still in their infancy but it appears that a single blood test may reveal hidden differences concerning milk production, fertility and climatic adaptation.

Begun as an academic study early this century, animal blood grouping has recently been used for several practical ends: to check the parentage of pedigree stock; to aid the diagnosis of identical twins; to show if a heifer is a freemartin; and to help unravel how our various breeds of livestock have evolved. As late as 1957, however, a reviewer of this field concluded that it 'seems pointless' to search for a connection between blood genes and quantitative characters like milk and fat production.

But long odds did not deter several scientists from attempting the search, among them Dr. G. C. Ashton, then of the British Animal Health Trust and now of C.S.I.R.O. The prize was high: a genetic marker, indicating milk-producing ability, that works for bulls and calves as well as cows; something to reduce the guess-work involved in deciding whether a cow's merit is determined by breeding or feeding (see *Rural Research* 25).

Most previous workers had grouped blood according to the properties of the red cells, but Dr. Ashton was interested in the properties of the serum—the watery fluid (containing salts, albumins, globulins, etc.) that the red cells are suspended in. He had previously discovered that only three genes determined the serum *beta*-globulin type of British cattle; that these three genes possess no dominance; and that they occupy one locus on each chromosome.

### Simple Inheritance.

This means that six types exist (designated AA, AD, AE, DD, DE, and EE), and that blood analysis reflects genetic make-up for this character—i.e., phenotype and genotype are identical. The simplicity of this mechanism prompted him to investigate whether the genes governing this particular constituent of the serum were linked with any of those affecting milk production.

He typed the blood of 141 progeny-recorded bulls in British artificial insemination centres. All but 11 of the bulls were of types AA, AD, or DD. The results are shown at the top of the next page.

Daughters of DD bulls therefore produced 26 gallons more milk per lactation than daughters of AA bulls. Because only half their inheritance comes from the male side it was predicted that, other things being equal, DD cows would produce about 50 gallons more than AA cows.

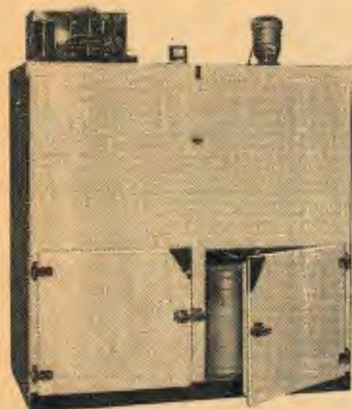
After joining C.S.I.R.O.'s Cattle Research Laboratory at Rockhampton, Queensland, Dr. Ashton decided to assess the accuracy of this prediction by direct tests on the female side. Mr. G. R. Fallon of the University of Queensland and Mr. D. N. Sutherland of the Department of Agriculture and Stock co-operated in this work. They determined *beta*-globulin types of 225 cows in 13 Jersey herds and of 433 in 24 A.I.S. herds. All herds were tested under the Grade Herd Recording Scheme.

### Prediction Confirmed

Both the Jersey and the A.I.S. cows gave essentially the same results, which confirmed the prediction made in a very different environment. On an average, DD cows lactated 15 days longer than AA cows and yielded 403 lb. more milk and 18 lb. more butterfat. Results of AD cows were intermediate. No effect on butterfat percentage was found.

The E gene was not present in any of the Jersey cows. Though found in 64 of the A.I.S. cows, this was not sufficient to enable reliable comparisons to be made.

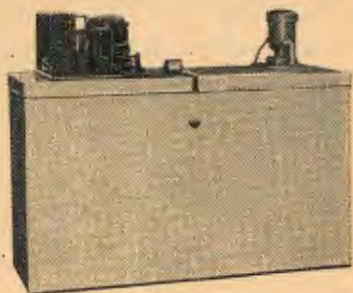
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## What are the Chances of Vaccination Against Mastitis?

In the June, 1963 issue of the Journal we reported that the Dairy Husbandry Research Foundation had begun research into the possibility of vaccination against mastitis, under the leadership of Dr. A. K. Lascelles.

Up to date there has been no worthwhile break-through in research on this problem here or overseas, but Dr. Lascelles has now reported that his work so far encourages him to believe that it may be possible to develop an effective vaccine against certain forms of mastitis. He states that the basic idea of the present research is to develop a protective immunity system in the udder itself, rather than in the whole body.

Most attempts at vaccination against mastitis in the past had been based on using the protective mechanism of the body as a whole, the way most vaccines were used to produce an antibody response in the bloodstream to combat future infections by disease.

He now had evidence that the tissue in the udder was capable of producing its own antibodies, so that the udder at times had its own separate protective immunity system.

Previous attempts at effective vaccination had involved injecting the vaccine into the bloodstream, under the skin, or into muscle.

This was a roundabout method of trying to trigger off protection in the udder, where mastitis causes trouble and had proved disappointing as a technique.

He was aiming to produce antibodies against mastitis organisms right where they were needed—in the udder—by using the udder's own protective mechanism.

Dr. Lascelles explained that in the research at Camden, killed mastitis bacteria were introduced as a vaccine into the udder.

At the same time, the research workers sidetracked lymph fluid surrounding the milk producing cells, from returning to the general body system where it could trigger off a general antibody response.

This meant that antibodies appearing in the udder would be coming from the udder itself and not from the protective system in the rest of the body.

Early results had shown that the udder was capable of manufacturing large quantities of antibody in late lactation and during the dry period, although the response was almost negligible during early lactation.

It is on the basis of these results that he was making further attempts to control mastitis by the use of vaccines injected into the udder itself.

## Legume Seeds in Pods Give Better Germination and Survival

Field tests carried out by C.S.I.R.O. indicate that in some problem areas the use of legume seeds still in their protective pods is superior to using threshed seed. In locations where the use of clean seed, even when softened or scarified, had resulted in persistent failure, the protection provided by the pod appeared to allow the seed to germinate only when conditions were optimum.

An added advantage lies in the fact that the pods are naturally impregnated with dust carrying root module bacteria. The organisms are able to withstand considerable drying-out in this form, whereas inoculum on naked seed must be protected against drying out by special techniques of varying effectiveness, and of short life.

## NOT ONLY FOR FLY CONTROL IN THE DAIRY BUT ALSO FOR—

- *Aphis and 'Moth Control for Rape and Chou Moellier*
- *Spot Spraying for Red Mite in Hard-to-get-at Corners*
- *Weed Control with Systemics in New Pasture*
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FARMERS, GARDENERS**

There's  
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Plenty  
of Work  
for Your  
**TUDOR**



**TUDOR**

### **PRESSURISED INSECTICIDE SPRAYER**

**1 GALLON CAPACITY**

Leaf-green plastic pressure container—with matching harness and hose—is fully primed by 30 strokes on the built-in pump. An adjustable head at the tip of a vietum covered brass lance varies spray from coarse to fine.

**RETAIL PRICE £4'7'6**

---

### **Quarter Milkers To Have Larger Bottles**

Although the Tiki Quarter Milkers have proved generally satisfactory in cases of mastitis when only one quarter has been treated with penicillin, there have been complaints from some dairyfarmers that the capacity of the containers is insufficient for the larger breeds of dairy cattle.

We referred this complaint to the manufacturers who have replied that unfortunately the present container is about the biggest blow moulding that can be made in Australia.

In the next production run, they hope to change the material and so be able to increase the size of the bottle. In the meantime it is possible for people with Friesians who find the capacity of one unit insufficient, to couple two quarter milkers together.

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**ANY MILK COOLER**  
**Till you see the huge**  
**range offered by**



RESCO offers you far more! The largest range . . . 3, 4, 6, 8, 10 and 12 can Coolers . . . 100, 180, 280, 300 and 350 gallon Bulk Coolers. Greatest running economy and efficiency! Longest life! And, RESCO back every sale with prompt, reliable After-Sales-Service. Why not find out how much more you benefit from RESCO. Contact RESCO now!

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**REFRIGERATION ELECTRICAL SALES CORPORATION  
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## More About the "30 Second Wash"

*There has been considerable comment concerning the "30 Second Wash", described in the June issue of the Journal, from readers who have tried it out, and found some gain, but feel that they would like to know more about the reasons behind this technique. Dr. Murnane has now supplied the following description of the effect on let-down and the results that have been obtained experimentally.*

The practice of stimulating the udder to produce "let down" is a phase of milking operations which is often omitted, or at best only partially carried out.

Its value is not fully appreciated by many farmers for the reason that they have no means of comparing the output of stimulated cows with the output of non-stimulated ones.

Individual cows in the herd vary and for that reason it is not sound to draw conclusions from unmatched animals.

The only reliable data is that obtained from identical twins, one of each pair being stimulated and the other not.

Hand milking called for no pre-milking stimulation, because the act of hand manipulation of the teats provided the required stimulation.

The pre-milking wash therefore was only for the purpose of cleaning the teats and udder.

With its relatively high vacuum operating immediately the cups are put on, the machines are "in action at full speed" before the milk flow becomes fully established; hence the necessity for pre-stimulation by hand before applying the machine.

### EXPERIMENTS IN NEW ZEALAND

A considerable amount of research on stimulation and "let down" has been carried out in New Zealand over recent years and some of the findings are most interesting.

Workers there (notably Phillips and Whittlestone) delved deeply into the "let down" phenomenon and proved the value of vigorous udder washing and hand massage.

They found that many farmers adopted the practice of "hand starting" cows that were slow to let down, or slow milkers, and investigation of such practice has indicated its value in speeding up the milking time and producing more complete milking out.

To prove the beneficial effect of pre-milking stimulation, the N.Z. workers carried out a full lactation experiment using sets of identical twins and assessing results on total production.

### STIMULATION GAVE 71 LB. MORE FAT

Twelve sets of identical twins were used. One of each set was stimulated by udder washing and massage of the teats and udder by hand, prior to application of the teat cups, for a period of 30 seconds, and followed by drawing a few jets of milk from each quarter.

The other twin of each set was given no udder stimulation whatever prior to the application of the machines.

All cows were milked in the same shed, with the same machine, under the same conditions.

The yield of each cow at each milking was recorded and fat tests were made weekly.

Over the whole lactation period the stimulated cows averaged 71 lb. of fat more than the unstimulated.

Further, the non-stimulated group milked 47 fewer days than their stimulated sisters.

The fat test was the same for both groups.

### SAVING IN MILKING TIME

A very practical finding was the effect of stimulation on milking rates and times.

The rate of milking in terms of pounds of milk per minute was much higher in the stimulated cows, and actual milking time was correspondingly shorter.

The milking time for stimulated cows averaged 3.9 minutes; that for non-stimulated sisters averaged 5.1 minutes, a difference of  $1\frac{1}{4}$  minutes.

Hence it is obvious that the expenditure of 30 seconds in stimulation and a saving of  $1\frac{1}{4}$  minutes in milking time yields a net gain of three-quarters of a minutes apart from greater yield.

### SUMMARY OF N.Z. RESULTS

The N.Z. workers sum up the results of their trials as follows:

1. The use of a pre-milking hand stimulus of 30 seconds duration can result in a substantial increase in production as against a system where the machine is relied upon to produce the let down stimulus. The increase in production in the experiment amounted to 32 per cent for the stimulated group.
2. It was clear that some cows are much reduced in production by lack of stimulation while others are not significantly affected.
3. Cows with poor let down response appear to be the most affected in production by lack of stimulus.
4. The reduction in milking time for the well stimulated cows will more than compensate for the extra time spent on the udder wash and massage.

There can be little doubt that the increased production resulting from the use of adequate pre-milking stimulus, with reduction in milking time, will make the practice a worthwhile proposition.

*The proof of the Pudding is in the eating*

BUT . . .

The proof of "TRIPLE M" is in your Factory Returns and the Health of your Stock.

**Give "TRIPLE M" a fair trial in YOUR Herd.**

**£1/17/6 per 56 lb. Bag from your local Factory or Stock Agent.**

## MORE ABOUT OVERCOMING THE FLY PROBLEM

Despite his best efforts to control flies in and around the dairy, the farmer will still note a few isolated specimens, and despite their fewness, he cannot relax his vigilance if he is to prevent contamination.

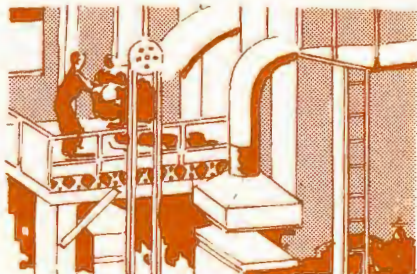
When, therefore, on warm and humid nights, the farmer feels that it would be desirable to leave the cans partly uncovered, there is every chance that even the two or three flies that are in the dairy will find their way into the open cans.

To overcome this problem it is possible to buy gauze covered can lids which can be used overnight, in place of the ordinary lid, giving complete protection against flies and other insects, and even dust, whilst at the same time allowing the surface of the milk to have maximum contact with the night air.

These covers, which are strongly made of rustproofed metal, with a fine brass gauze, are obtainable from Dairymaster Milking Machines Pty. Ltd., Edwardstown, for 18/- each.

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WE ENSURE TESTING — DELIVERY IS IMMEDIATE

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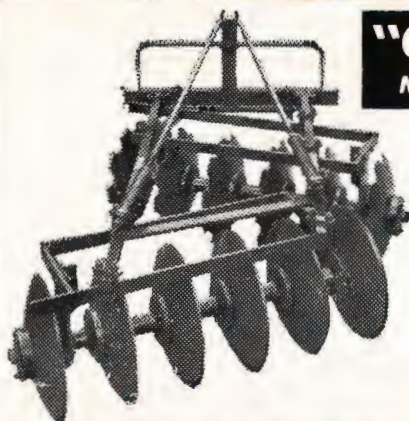
Why take chances? Your purchase of Hodge's Seeds is protected by close personal supervision and strict Quality Control. Every sample of seeds is as free from weed seeds and other rubbish as possible, and the finest type available for the money. Every penny you spend brings you full seed value—a true investment in Quality!

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THE SOUTH AUSTRALIAN

DAIRYMEN'S . . .

# Journal



Official Publication of the

Published Bi-monthly

Vol. 3, No. 5

Adelaide, MARCH-APRIL, 1964



—Photo by courtesy "The Chronicle"

#### GLENJOY SERENADE BUTTERGIRL

Champion Cow—First Autumn Friesian Fair—Adelaide, 1964  
Owned by K. C. & R. J. KRAUSE, STRATHAVEN, BIRDWOOD

PRICE

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12/- per Year, Post Paid

# "TOPS OF THE POPS" FOR TEENAGERS But DAIRYFARMERS Prefer THESE RECORDS

GREYLANDS GALENA ALINE (*imp.* N.Z.)

... by producing 25,770 lbs. milk; 1168 lbs. butterfat; 4.5% test in 300 days, and 29,445; 1,340; 4.6% in 365 days, has achieved the highest production of any cow of any breed in Australia since 1924.

ELLEN GOWAN MAYBELLE with 202,822; 7148; 3.5%, becomes the first officially recorded N.S.W. cow to pass the 200,000 mark, and top N.S.W. figure for butterfat.

MYALL MARSH TULIP, whose 201,437 makes her the first cow in Victoria to break the 200,000 barrier, and who has twice topped the Victorian all-breeds 300-day test.

## ALL FRIESIANS OF COURSE

AND JUST LOOK AT THESE 300 DAY BREED RECORDS:

ANAMA GRISELDA LUTZIE (S.A.)—S4—1,014 lbs. b.f.

ANAMA GRISELDA TOPSY (S.A.)—J4—922 lbs. b.f.

GLENJOY SERENADE RAELENE (S.A.)—S3—782 lbs. b.f.

PARINGA SUNFLOWER (Vic.)—J3—885 lbs. b.f.

GLENJOY DUKE TULIP (S.A.)—S2—663 lbs. b.f.

GALAVIEW ROYAL APPLE (N.S.W.)—J2—675 lbs. b.f.

### The Fresian Cattle Club of Australia

R. H. SEDSMAN, Secretary.

Box 646 F, G.P.O., Adelaide. 51 4951

#### — GLENJOY SERENADE BUTTERGIRL —

Champion Cow at the First Autumn Friesian Fair, 1964, and winner of the Aged Cow in Milk and Best-Uddered classes, by G. NETHERLANDS SERENADE (*imp.*) out of G. SOUTHERN BUTTERGIRL, produced 60+ pounds butterfat from 13,530 pounds milk at 4.5% as a J+. To a fine record of country show successes, BUTTERGIRL in 1964 has added that of three Championships for three times shown.



# 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

## Science Defends Dairy Produce

The Australian Dairy Produce Board has issued a statement which reports that German scientists who have been studying cholesterol and atherosclerosis for many years have rejected the theory that there is a connection between the two and animal fats in human diet.

The statement points out that the German scientists admit that at the beginning of their work they thought they saw causative connections between animal fat consumption and atherosclerotic cholesterol deposits.

**This theory, however is now a thing of the past.**

The official organ of the West German Medical Association has stated that, in blaming atherocholesterol deposits on the consumption of animal fats " . . . we must confess that we were about to commit a miscarriage of justice."

Another research worker, Professor Aebi, of Bern, Switzerland, said:

"From the point of view of nutritional physiology, a complete switch to vegetable fats cannot be recommended.

"Animal fats not only contain fats which the body needs, but also other protective substances essential for the human organism.

"For the healthy individual the most reasonable approach to the problem appears to be a balanced diet, even if divided between both vegetable, milk and animal fats."

In America a similar viewpoint is being expressed by medical practitioners as a counter to the cholesterol scare. Dr. Bernhard Knoche asks:

"Are Americans the victims of pseudo scientific information? Or is it possible that they have failed to keep up in recent developments in modern fats research

**"Everybody needs cholesterol even the atherosclerotic and the best way to get it in the right form is by drinking milk.**

"Milk," said Dr. Knoche, "should be the basis of all nutrition because it has just the right amount of fats, saturated and unsaturated; vegetable fats; fats with a low melting point; natural, cold-flowing oils, etc.

"In fact, milk probably is the last food item available to us in a complete unadulterated state.

"It contains all of the elements, including vitamins, all blended in harmoniously, which are needed for human health and as a prevention against many diseases."

## U.K. Imports and Quotas

The stability of the United Kingdom market for dairy produce over the last three years has been due almost certainly to the imposition by Britain of import quotas on butter and to the agreement between Britain, Australia and N.Z. concerning cheese imports.

Before the quota system was applied, prices had fluctuated violently; for example, the U.K. price for Australian choicest butter rose from 205/- cwt. in May, 1958, to 409/- in January, 1960, only to decline again to 247/- in September, 1961. The cheese position was even worse; from 124/- cwt. in January, 1958, the price rose to 291/- by December of that year, falling again to 201/- in October, 1960, and recovering only to 227/- during the last quarter of 1961. With a controlled market the butter price stabilised at 314/- and has now improved to 334/-, while cheese stabilised at 216/- now stands at 227/-.

However, the "quota" system has not meant that import quantities are completely fixed; the quotas are adjusted in accordance with market trends, and Australia's position is extremely heartening, as shown by the following tables.

### IMPORTS INTO UNITED KINGDOM

#### Butter (tons)

	1961		1962/3		1963/4		1964/5
	Pre-quota Imports	Import Quota	Basic Quota	Adjustment	Total Quota	New Quota	
Australia .....	59,078	62,000	65,100	10,000	75,100	66,700	
New Zealand .....	156,214	156,000	163,800	2,000	165,800	168,000	
Irish Republic .....	14,965	12,000	12,600	5,400	18,000	12,905	
Argentina .....	11,229	9,500	9,975	1,600	11,575	10,220	
Denmark .....	93,890	91,500	96,075	—	96,075	98,420	
Finland .....	13,289	11,500	12,075	3,800	15,875	12,370	
France .....	15,676	2,400	2,520	2,830	5,350	2,580	
Netherlands .....	15,820	14,000	14,700	400	15,100	15,060	
Poland .....	20,066	16,000	16,800	1,200	18,000	17,210	
South Africa .....	11,905	2,000	2,100	—	2,100	2,150	
Other .....	11,089	13,100	14,255	8,950	23,205	14,385	
<b>Totals .....</b>	<b>423,221</b>	<b>390,000</b>	<b>410,000</b>	<b>36,180</b>	<b>446,180</b>	<b>420,000</b>	
<b>U.K. Production .....</b>	<b>50,000</b>	<b>55,400</b>	<b>40,000</b>	<b>—</b>	<b>40,000</b>	<b>40,000</b>	
	<b>473,221</b>	<b>445,400</b>	<b>450,000</b>	<b>36,180</b>	<b>486,180</b>	<b>460,000</b>	

#### Cheese (tons)

	1961	1962	1963
Australia .....	14,877	15,167	15,508
New Zealand .....	79,653	79,265	73,972
Canada .....	7,706	11,474	10,820
Other C'wealth, and Irish .....	2,275	3,731	6,267
Norway .....	3,096	2,765	3,357
Denmark .....	10,013	9,179	10,204
Netherlands .....	7,638	8,821	11,441
France .....	1,402	1,649	1,681
Switzerland .....	1,025	988	976
Italy .....	1,385	1,442	1,431
Other Foreign .....	13,030	13,032	13,218
<b>Totals .....</b>	<b>134,462</b>	<b>138,692</b>	<b>137,434</b>

## IT SEEMED SUCH A BRIGHT IDEA AT THE TIME!



All we had to do was to get hold of a photo of a film star named Jean, attired, more or less, but preferably less, in the sort of costume that would help to take the dairy-farmer's mind off basic prices, quotas, and meth-blue tests, and then print the caption—"If you think that HYGIENE is just another way of saying Hello. to Miss . . ., it's time you heard about—" and then, we would introduce our advertising plug.

It seemed pretty smart to us; you know, that bit about "Hygiene", "Hi, Jean!", but the trouble was getting that photo. All we could get were Gene Autry and Gene Kelly, and neither of them looked all that good in a bathing costume.

And then we heard about Jean Seberg, who's starring in the film "IN THE FRENCH STYLE" now showing in Adelaide. The title of the film sounded just right for the sort of picture we wanted,

but somehow there just wasn't one to be had. We did get this one, and as you can see, Miss Seberg is a very attractive young lady. But we were sorry about the bathing costume; after that disappointment we just couldn't get enthusiastic about that "Hygiene", "Hi, Jean!" business.

Sorry, fellows, if we've let you down.

But there's still one bright idea left, and it's this—IF YOU WANT THE BEST DAIRY CLEANERS AND SANITISERS, GET GAIMA. They're made in South Australia for South Australian conditions, and if your factory manager doesn't stock them, tell him to start now, and get them from Gaima Industries Limited, 188 Main North Road, Prospect.

### Milk By The Half-Gallon

A Hunter Valley, New South Wales, dairy company has introduced a half-gallon milk bottle designed to ease the housewife's burden.

The bottles are Australian-made with screw-on plastic tops fitted with handles.

The general manager of the Hunter Valley Co-operative Dairy Company Ltd., Mr. J. Scarr, said that the bulk bottling of homogenised milk was popular in the United States.

The half-gallon bottles were much easier to handle than four single pint bottles, especially while shopping.



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## Statistics

### ADELAIDE METROPOLITAN MILK SUPPLY AREA

#### PRODUCTION (000 gallons)

	For Month		Total since July 1		Total since Jan. 1	
	1963	1964	1962/63	1963/64	1963	1964
February .....	2,296	3,076*	30,507	32,392	6,463	6,837
March .....	2,736	2,874	33,243	35,266	9,199	9,711

#### SALES (000 gallons)

	For Month		Total since July 1		Quota %		C.M.B.	
	1963	1964	1962/63	1963/64	1963	1964	1963	1964
February .....	1,503	1,639*	12,426	12,908	51.4	53.3	2/6½	2/7½
March .....	1,700	1,736	14,126	14,644	62.1	60.4	2/11½	2/10½

Moving Average Quota for 12 months ended 29/2/64, 45.18%; 31/3/64, 45.12%

\* 29 days

### INTERIM PRICES TO LICENSED SUPPLIERS

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

1964	Basic C.M.B. Total			3% 3.5% 4% 4.5% 5%				
	(per lb. butterfat)			(per gallon)				
February .....	3/3½	2/7½	5/10½	1/9½	2/1½	2/5	2/8½	3/0½
March .....	3/3½	2/10½	6/1½	1/10½	2/2½	2/6½	2/10½	3/2

### LONDON PROVISION EXCHANGE QUOTATIONS

	February		March	
	1963	1964	1963	1964
Butter—Choicest Australian .....	314/-	334/-	314/-	334/-
Cheese—First Grade Australian .....	215/-	226/-	215/-	236/-
Rindless Australian .....	227/-	234/-	227/-	244/-

# TUBE BILT

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● All-steel construction ● Fire and white ant proof ● Yard layouts to your requirements ● Free plans and quotes ● Available through your local Stock Agent

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## IDENTIFYING TREATED COWS

The adhesive labels which the AMPOL Company developed at the request of the South Australian Dairymen's Association for identifying cows treated with penicillin for bovine mastitis have now been in use for several months in the Eastern States and have proved to be effective in preventing the accidental contamination of milk.

Here in the Adelaide area several milk producers' licences have been suspended in circumstances which indicate that milk from a cow treated for mastitis by one milking shed operator has unknowingly been allowed by another operator to contaminate milk for the city.

The use of the adhesive labels not only overcomes this problem but provides a better guide than memory to when the milk from a treated cow should again be used.

Following field tests carried out by AMPOL'S Research Section in N.S.W. the labels have been improved by an alteration to the wording and by using material of a brilliant iridescent pink color which cannot possibly be overlooked even under dim artificial light. The revision requested by this Association, that provision be made for indicating which quarter has been treated, particularly where more than one quarter is treated, has not been adopted, the research officers considering that the farmer can indicate the quarter concerned by the location of the label, and that one label should be used for **each** treated quarter, particularly as treatment may not be simultaneous in each case.

Tests carried out by our own members confirm the Eastern States' findings that the labels will stay on in all weathers, and can readily be marked with crayon or ball-point pen.

AMPOL is now preparing to distribute the new design labels in South Australia, initially through AMPOL Country Agents and representatives, in order to learn at first-hand the farmers' reactions to their use, and eventually supplying through milk factories.

The dairy industry's gratitude is due to AMPOL for this work which they have undertaken as a service to the industry.



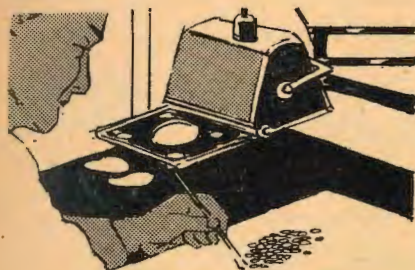
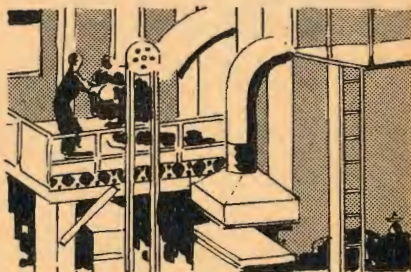
### TO STUD-BREEDERS AND OTHERS

considering Reduction or Dispersal Sales we offer attractive terms for a composite advertisement incorporating the Front cover illustration and inside Front cover, with additional illustrations if required. All blocks and type slugs used become the property of the advertiser without further charge.

# **HODGE'S** 35 years of practical experience ensures you a better seed buy!



**WE KNOW WHERE TO BUY BEST — EQUIPPED TO CLEAN BEST**



**WE ENSURE TESTING — DELIVERY IS IMMEDIATE**



## **WE OURSELVES ARE PRACTICAL FARMERS!**

When we talk about seed, it's on the basis of actual experience in the field. We've actually sown, grown, and fed most of the Pasture types we sell. You benefit by first-hand knowledge which we've gained the 'hard way'.

Why take chances? Your purchase of Hodge's Seeds is protected by close personal supervision and strict Quality Control. Every sample of seeds is as free from weed seeds and other rubbish as possible, and the finest type available for the money. Every penny you spend brings you full seed value — a true investment in Quality!

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**M. F. Hodge & Sons Ltd.**

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## A.B. BOARD NEWSLETTER

### HIGH SCORES FOR A.B. AT SYDNEY ROYAL

This year's Royal Easter Show saw a number of awards taken by artificially bred dairy cattle, and high commendation for these animals by Canadian judge, J. M. Fraser.

The list of awards to A.B. cattle included both the Reserve Champion Friesian Cow, *WYOMING SUPREME MOON*, by Canadian sire *Sheffield Royal Supreme*, and the Reserve Champion Senior Bull, *SUNSHINE SNIDER'S KING*, who was Champion Junior Bull in 1962, and is by *Snider's Fond Hope King*.

S. *Fond Hope King* also sired the Junior Champion Bull, *MEADOW GLEN SNIDER'S NOBLE*, which was described by the judge in superlative terms, and the Reserve Champion Junior Bull, *HAWKESBURY PRIDE. KING* (out of *Joselyn Echo Pride*).

The success story continued with the judge commending the young bull, *SUNSHINE SNIDER'S PRESIDENT*, which came close to the Champion, and a youngster, which pressed close to the Reserve Junior Champion, *MEADOW GLEN FRAZEA REG*, son of *Frazea Lord Jewel*.

Hawkesbury College won the Sire's Progeny class with a team of females by S. *Fond Hope King*.

A very successful showing was capped at the subsequent Sydney Show Sales by a price equal to the Australian breed record of 700 guineas, paid for *HAWKESBURY FOND BEVERLEY 2ND*, a daughter of S. *Fond Hope King*.

### BREEDING DAIRY CATTLE TO BEEF BULLS

It has been reported from N.S.W. that the Director-General of Agriculture said that apart from business considerations there is no reason why cattle bred by semen introduced from the United Kingdom should not be approved for registration in beef herd books.

He referred to a suggestion about importation of Charolais semen from U.K. artificial breeding centres and regretted that the breed had not been introduced before the ban on the importation of semen had been applied.

This comment has added interest to those S.A. owners of dairy cows who may be considering some beef production. In the United Kingdom 60,000 cross bred dairy beef calves were produced from 16 Charolais bulls maintained by the English Milk Marketing Board during last season, although this figure was greatly exceeded by the progeny bred from the 100 Hereford, 65 Angus and 21 Devon bulls also used in this form of beef production by artificial breeding.

The trend of this practice in England is highlighted by the announcement that production of calves for the home beef industry was one of the most dynamic features of the agricultural scene today.

World wide authority, Dr. Joseph Edwards of the English Milk Marketing Board, said: "Large feed-lots are very much in the news and the calves they need will come from our dairy herds."

Dr. Edwards spoke of the purely dairy point of view in these terms. "In our dairy breeding operations we have reached the stage on which the contract herd system in National Milk Records for young dairy bulls looks like setting a seal, when A.B. service entirely from tested dairy bulls will be available to all."

A giant beef unit is starting operations in Suffolk where the target output is 200 finished beasts a week. Most calves will come from the dairy farmer.

The chain of production is to be via the calf producer (normally the dairy

farmer), the calf rearer, and the feeder, which is British Beef with its £750,000 feed-lot.

Although we are unlikely at present to see production on this scale in Australia, the pattern is there for us to follow.

However, a word of caution has been voiced by Dr. I. D. Wardrop of the M. C. Franklin Laboratory, Sydney, who warned that the conventional methods of rearing for dairy herd replacements may not be good enough for the production of a well finished beef yearling. The solution could lie with multiple suckling on dairy cows as the best method of exploiting the inherent growth-rate and early maturity of dairy-beef cross calves.

This, of course, gives rise to a problem when the continuity of production of dairy cross calves and a guaranteed market are needed in this type of specialist business.

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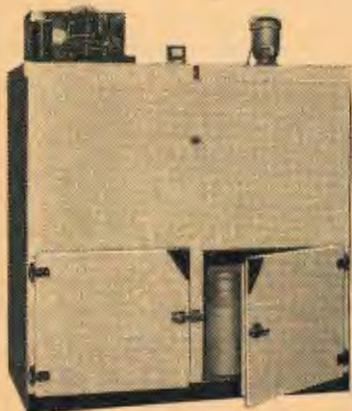
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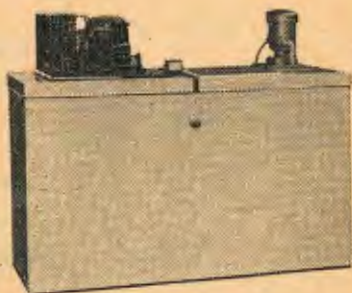
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## BUTTERFAT TEST DEMONSTRATION

The Australian Society of Dairy Technology (S.A. Branch) will conduct a Butterfat Test Demonstration in the Charleston Hall on Tuesday, 26th May, at 8 p.m.

The evening will be devoted to a practical demonstration of the methods used in sampling and the testing of milk for butterfat content by the Babcock method, with questions from the audience answered by a panel of experts.

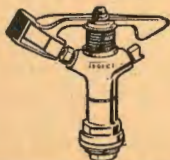
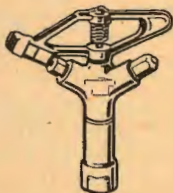
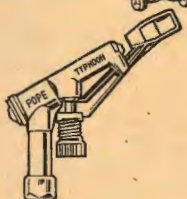
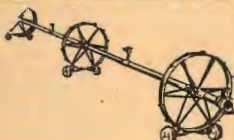
All members of the Association and their families and friends will be welcome.

Supper will be provided by the Charleston Hall Ladies' Auxiliary.

## 1962-63 PRICE STEP-UP ANNOUNCED

Interim Equalisation values of cheese for the 1962-63 season have been increased by 9/4d. cwt., resulting in an increase in the interim basic price for that year of 2.55d. to 48.65d. lb. butterfat and a retrospective payment to licensed producers of 1 3/4d. lb. butterfat (equalised). This amount will be included in the cheques received in early May.

Although the realisations for last year will not be completed for several months, it is estimated that the final basic price for 1962-63 will be approximately 49.7d., the adjustment being made by means of a final retrospective equalised payment of just over 1/4d. payable after September, to give a result very close to the final for 1961-62 of 50.28d.



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## CHEESE VARIETIES

A great deal has been said and written in the last few years concerning the great variety of cheeses that are now being imported into, or made in Australia, the quantity of which is increasing at a phenomenal rate.

The basic reason for the range of varieties and the growing volume is, clearly, the demand by our migrant population for the cheeses of their homeland. Nevertheless the display of these cheeses in retail stores, and their frequent mention in the housewives' sections of newspapers and periodicals are creating interest among Australians, who, from experiment, impulse buying, and the influence of New Australian friends are beginning to develop a liking for more exotic types of cheese than the traditional Cheddar stand-by.

Such a taste is, however, unlikely to extend beyond a few varieties in the absence of more knowledge about the types and particular uses of these cheeses, all of which deserve a place in the diet of even the most unsophisticated, to add tang, flavour and nutritive value to every meal, from a simple salad to a many-course banquet.

To fill this gap in the knowledge of the average Australian, to provide a guide to the housewife who is prepared to experiment, and to give the dairyfarmer some idea of the technological details of composition and manufacture, a guide, printed elsewhere in this Journal, has been prepared from information provided by the U.S. Department of Agriculture.

In considering the whole question of the importation of cheese, as to whether some form of protection should be given to the Australian cheese manufacturer, the suggestions for which have ranged from an increased tariff to total prohibition, it must be borne in mind that probably the great majority of these cheeses are **not** substitutes for Cheddar, so that even complete prohibition would not necessarily increase our domestic consumption of Cheddar.

Nor does the volume of imports threaten the Australian manufacturer of fancy cheeses for the export trade in Australian fancy cheeses is insignificant, and there is no indication of any marked surplus to domestic requirements: In fact there are good grounds for believing, as the Australian Dairy Produce Board does, that the quantities and varieties of fancy cheeses appearing in retail stores are playing their part in educating the tastes of native-born Australians to the point where the volume of demand can be increased to a level at which economic, large scale production can be carried out in Australia.

This is a process that could be accelerated if the Australian manufacturers were given, by means of additional tariff protection, a price advantage which would enable them both to manufacture at economical volume, and to promote sales of their particular varieties.

Yet the Australian Manufacturers have completely failed to support their own Federation in pressing for such tariff protection.

Certainly something must be done. Whilst imports of fancy cheeses have more than doubled since 1959 (Table 1), **Australian production of these types has declined** in the same period (Table 2).

To anyone who has sampled their products it is obvious that Australian cheese manufacturers can make cheeses that are the equal of imported varieties. The question is, **why don't they?**

TABLE 1

## Import of Cheese: By Main Types: Australia.

Type	1959-60 tons	1960-61 tons	1961-62 tons	1962-63 tons
Processed cheese, cheese pastes and spreads .....	151	198	194	234
Blue .....	186	332	234	267
Cheddar and Epicure Cheddar	94	121	178	148
Edam and Gouda .....	38	86	132	265
Parmesan, Reggiono and Provolone .....	231	283	310	291
Other .....	362	523	829	1,181
<b>Total .....</b>	<b>1,062</b>	<b>1,543</b>	<b>1,877</b>	<b>2,386</b>

Source: Bureau of Agricultural Economics.

TABLE 2.

## Cheese Production: By Varieties: Australia

Variety	1958-59 tons	1959-60 tons	1960-61 tons	1961-62 tons
Cheddar .....	39,801	41,626	43,455	51,938
Fetta .....	944	333	348	404
Cottage .....	21	108	118	148
Edam .....	13	102	174	170
Blue .....	138	78	60	49
Grating .....	1,020	890	1,181	1,448
Other .....	1,493	1,621	1,468	1,090
<b>Total Non-Cheddar .....</b>	<b>3,629</b>	<b>3,132</b>	<b>3,349</b>	<b>3,309</b>
Processed Cheese .....	14,367	16,531	16,901	17,803

Source: Bureau of Agricultural Economics.

## Melbourne's "House of Cheese"

"Perhaps the only one of its kind in the World" was the description used at the official opening in January of the "House of Cheese" restaurant in Melbourne.

Strategically situated in the busy Port Phillip Arcade, its menu features the widest range of Australian cheeses and specialises in cooked cheese dishes.

Patrons cannot have a meal there without tasting some type of Australian cheese, either cooked or uncooked.

Executives of the Australian Dairy Produce Board helped to launch the project.

Proprietor Jan Simat — a man who really knows his cheeses — said that the enterprise was meant to show the Australian public the fascinating food possibilities inherent in locally made cheese.

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## A GUIDE TO CHEESE VARIETIES

The major classification of cheese varieties is in the degree and method of ripening, and the varieties in the following tables (pages 18 to 25) are classed according to their ripening characteristics, which are:

### UNRIPENED . . .

The soft unripened varieties such as cottage cheese, contain relatively high moisture and do not undergo any curing or ripening. They are consumed fresh — soon after manufacture. The firm unripened cheeses such as Gjetost and Mysost also may be used soon after manufacture but because they contain very low moisture may be kept for several weeks or months.

### SOFT RIPENED . . .

In the soft ripened cheeses, curing progresses from the outside or rind of the cheese, towards the centre. Particular molds or culture of bacteria or both, which grow on the surface of the cheese aid in developing the characteristic flavour and body and texture during the curing process. Curing continues as long as the temperature is favourable. These cheeses usually contain more moisture than semi-soft ripened varieties.

### SEMI-SOFT RIPENED . . .

Unlike the soft ripened varieties, these cheeses ripen from the interior as well as from the surface. This ripening process begins soon after the cheese is formed, with the aid of a characteristic bacterial or mold culture or both. Curing continues as long as the temperature is favourable. These cheeses contain higher moisture than the firm ripened varieties.

### FIRM RIPENED . . .

These cheeses ripen with the aid of a bacterial culture, throughout the entire cheese. Ripening continues as long as the temperature is favourable. The rate and degree of curing is also clearly related to the moisture content, therefore, these cheeses, being lower in moisture than the softer varieties, usually require a long curing time.

### VERY HARD RIPENED . . .

These cheeses also are cured with the aid of a bacterial culture and enzymes. The rate of curing, however, is much slower because of the very low moisture and higher salt content.

### BLUE-VEIN MOLD RIPENED . . .

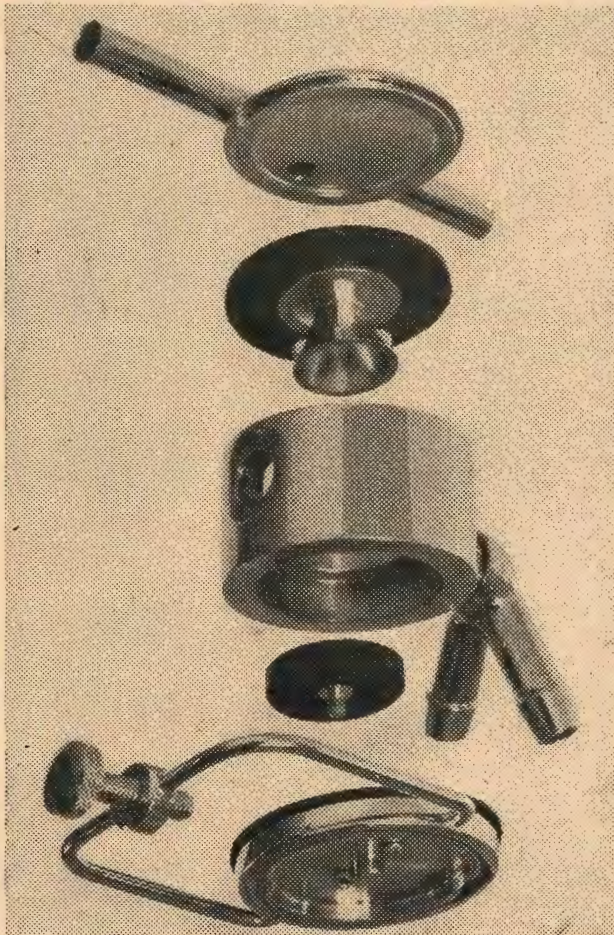
Curing is accomplished by the aid of bacteria but more particularly by the use of a characteristic mold culture that grows throughout the interior of the cheese to produce the familiar appearance and characteristic flavour.

### PROCESSED CHEESE . . .

In addition to the "natural" cheeses described in the accompanying chart, a large proportion of cheese now sold is classed as "processed" cheese.

Pasteurized processed cheese is a blend of fresh and aged natural cheeses which have been shredded, mixed and heated (pasteurized), after which no further ripening occurs. It melts easily when reheated. The blend may consist of one or two or more varieties of natural cheese and may contain pimentos, fruits, vegetables, or meats. Smoked cheese or smoke flavour may also be added.

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## CHARACTERISTICS OF POPULAR

Kind or name	Place of origin	Kind of milk used in manufacture	Ripening or curing time	Flavour
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## SOFT, UNRIPENED VARIETIES:

Cottage, plain or creamed	Unknown	Cow's milk skimmed; plain curd, or plain curd with cream added.	Unripened	Mild, acid
Cream, plain	U.S.A.	Cream from cow's milk	Unripened	Mild, acid
Neufchatel	France	Cow's milk	Unripened	Mild, acid
Ricotta	Italy	Cow's milk, whole or partly skimmed, or whey from cows milk with whole or skim milk added. In Italy, whey from sheep's milk.	Unripened	Sweet, nut-like

## FIRM, UNRIPENED VARIETIES:

Gjetost	Norway	Whey from goat's milk or a mixture of whey from goat's and cow's milk	Unripened	Sweetish, caramel
Mysost, also called Primost	Norway	Whey from cow's milk	Unripened	Sweetish, caramel
Mozzarella also called Scamorza	Italy	Whole or partly skimmed cow's milk. In Italy, originally made from buffalo's milk	Unripened	Delicate, mild

## VARIETIES OF NATURAL CHEESES

Body and texture	Colour	Traditional shape or Retail packaging	Uses
Soft, curd particles of varying size	White to creamy white	Cup-shaped containers, tumblers, dishes	Salads, with fruits, vegetables, sandwiches, dips, cheese cake
Soft and smooth	White	3- to 8-oz. packages	Salads, dips, sandwiches, snacks, cheese cake, desserts
Soft, smooth similar to cream cheese but lower in milkfat	White	4- to 8-oz. packages	Salads, dips, sandwiches, snacks, cheese cake, desserts
Soft, moist or dry.	White	Pint and quart paper and plastic containers. 3 lb. metal cans	Appetizers, salads, snacks, lasagne, ravioli, noodles and other cooked dishes, grating, desserts
Firm, buttery consistency	Golden brown	Cubical and rectangular	Snacks, desserts, served with dark breads, crackers, biscuits or muffins
Firm, buttery consistency	Light brown	Cubical, cylindrical, pie-shaped wedges	Snacks, desserts, served with dark breads
Slightly firm, plastic	Creamy white	Small round or braided form, shredded, sliced	Snacks, toasted sandwiches, cheeseburgers, cooking, as in meat loaf, or topping for lasagne, pizza, and casseroles

**CHARACTERISTICS OF POPULAR**

Kind or name	Place of origin	Kind of milk used in manufacture	Ripening or curing time	Flavour
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## SOFT, RIPENED VARIETIES:

Brie	France	Cow's milk	4 to 8 weeks	Mild to pungent
Camembert	France	Cow's milk	4 to 8 weeks	Mild to pungent
Limburger	Belgium	Cow's milk	4 to 8 weeks	Highly pungent, very strong

## SEMISOFT, RIPENED VARIETIES:

Bel Paese	Italy	Cow's milk	6 to 8 weeks	Mild to moderately robust
Brick	U.S.A.	Cow's milk.	2 to 4 months	Mild to moderately sharp
Muenster	Germany	Cow's milk.	1 to 8 weeks	Mild to mellow
Port du Salut	France	Cow's milk	6 to 8 weeks	Mellow to robust

## VARIETIES OF NATURAL CHEESES—Continued

Body and texture	Colour	Traditional shape or Retail packaging	Uses
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Soft, smooth when ripened	Creamy yellow interior; edible thin brown and white crust	Circular, pie-shaped wedges	Appetizers, sandwiches, snacks, good with crackers and fruit, dessert
Soft, smooth; very soft when fully ripened	Creamy yellow interior; edible thin white, or grey-white crust	Small circular cakes and pie-shaped portions	Appetizers, sandwiches, snacks, good with crackers, and fruit such as pears and apples, dessert
Soft, smooth when ripened; usually contains small irregular openings	Creamy white interior, reddish yellow surface	Cubical, rectangular	Appetizers, snacks, good with crackers, rye or other dark breads, dessert

Soft to medium firm, creamy	Creamy yellow interior; slightly grey or brownish surface sometimes covered with yellow wax coating	Small wheels, wedges, segments	Appetizers, good with crackers, snacks, sandwiches, dessert
Semisoft to medium firm, elastic, numerous small mechanical openings	Creamy yellow	Loaf, brick, slices, cut portions	Appetizers, sandwiches, snacks, dessert
Semisoft, numerous small mechanical openings. Contains more moisture than brick	Creamy white interior; yellow tan surface	Circular cake, blocks, wedges, segments, slices	Appetizers, sandwiches, snacks, dessert
Semisoft, smooth, buttery, small openings	Creamy yellow	Wheels and wedges	Appetizers, snacks, served with raw fruit, dessert

## CHARACTERISTICS OF POPULAR

Kind or name	Place of origin	Kind of milk used in manufacture	Ripening or curing time	Flavour
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## FIRM RIPENED VARIETIES:

Cheddar	England	Cow's milk	1 to 12 months or more	Mild to very sharp
Colby	U.S.A.	Cow's milk	1 to 3 months	Mild to mellow
Caciocavallo	Italy	Cow's milk. In Italy, cow's milk or mixtures of sheep's, goat's, and cow's milk	3 to 12 months	Piquant, similar to Provolone but not smoked
Edam	Holland	Cow's milk, partly skimmed	2 to 3 months	Mellow, nut-like
Gouda	Holland	Cow's milk, whole whole or partly skimmed	2 to 6 months	Mellow, nut-like
Provolone also smaller sizes and shapes called Provolette, Provoloncini	Italy	Cow's milk	2 to 12 months or more	Mellow to sharp, smoky, salty
Swiss, also called Emmentaler	Switzerland	Cow's milk	3 to 9 months	Sweet, nut-like

## VARIETIES OF NATURAL CHEESES—Continued

Body and texture	Colour	Traditional shape or Retail packaging	Uses
Firm, smooth, some mechanical openings	White to medium-yellow-orange	Circular, cylindrical loaf, pie-shaped wedges, oblongs, slices, cubes, shredded, grated	Appetizers, sandwiches, sauces, on vegetables, in hot dishes, toasted sandwiches, grating, cheeseburgers, dessert
Softer and more open than Cheddar	White to medium-yellow-orange	Cylindrical, pie-shaped wedges	Sandwiches, snacks, cheeseburgers
Firm, lower in milkfat and moisture than Provolone	Light or white interior; clay or tan colored surface	Spindle or ten-pin shaped, bound with cord, cut pieces	Snacks, sandwiches, cooking, dessert; suitable for grating after prolonged curing
Semisoft to firm, smooth; small irregularly shaped or round holes; lower milkfat than Gouda	Creamy yellow or medium yellow-orange interior surface coated with red wax	Cannon ball shaped loaf, cut pieces, oblongs	Appetizers, snacks, salads, sandwiches, seafood sauces, dessert
Semisoft to firm, smooth; small irregularly shaped or round holes; higher milk fat than Edam	Creamy yellow or medium yellow-orange interior; may or may not have red wax coating	Ball shaped with flattened top and bottom	Appetizers, snacks, salads, sandwiches, seafood, sauces, dessert
Firm, smooth	Light creamy interior. light brown or golden yellow surface	Pear shaped, sausage and salami shaped, wedges, slices	Appetizers, sandwiches, snacks, souffle, macaroni and spaghetti dishes, pizza, suitable for grating when fully cured and dried
Firm, smooth with large round eyes	Light yellow	Segments, pieces, slices	Sandwiches, snacks, sauces, fondue, cheeseburgers

## CHARACTERISTICS OF POPULAR

Kind or name	Place of origin	Kind of milk used in manufacture	Ripening or curing time	Flavour
--------------	-----------------	----------------------------------	-------------------------	---------

## VERY HARD, RIPENED VARIETIES:

Parmesan also called Reggiano	Italy	Partly skimmed cow's milk	14 months to 2 years	Sharp, piquant
Romano also called Sardo Romano, Pecorino Romano	Italy	Cow's milk. In Italy, sheep's milk (Itolian law)	5 to 12 months	Sharp, piquant
Sap Sago	Switzerland	Skimmed cow's milk	5 months or more	Sharp, pungent cloverlike

## BLUE-VEIN MOLD RIPENED VARIETIES:

Blue, spelled Bleu on imported cheese	France	Cow's milk	2 to 6 months	Tangy, peppery
Gorgonzola	Italy	Cow's milk. In Italy, cow's milk or goat's milk or mixtures of these	3 to 12 months	Tangy, peppery
Roquefort	France	Sheep's milk	2 to 5 months or more	Sharp, slightly peppery
Stilton	England	Cow's milk	2 to 6 months	Piquant, milder than Gorgonzola or Roquefort

## VARIETIES OF NATURAL CHEESES—Continued

Body and texture	Colour	Traditional shape or Retail packaging	Uses
Very hard, granular, lower moisture and milkfat than Romano	Creamy white	Cylindrical, wedges, shredded, grated	Grated for seasoning in soups, or vegetables, spaghetti, ravioli, breads, popcorn, used extensively in pizza and lasagne
Very hard granular	Yellowish-white interior, greenish-black surface	Round with flat ends, wedges, shredded, grated	Seasoning in soups, casserole dishes, ravioli, sauces, breads, suitable for grating when cured for about one year
Very hard	Light green by addition of dried, powdered clover leaves	Conical, shakers	Grated to flavor soups, meats, macaroni, spaghetti, hot vegetables; mixed with butter makes a good spread on crackers or bread
Semisoft, pasty, sometimes crumbly	White interior, marbled or streaked with blue veins of mold	Cylindrical, wedges, oblongs squares, cut portions	Appetizers, salads, dips, salad dressing, sandwich spreads, good with crackers, dessert
Semisoft, pasty, sometimes crumbly, lower moisture than Blue	Creamy white interior, mottled or streaked with blue-green veins of mold. Clay colored surface	Cylindrical, wedges, oblongs	Appetizers, snacks, salads, dips, sandwich spread, good with crackers, dessert
Semisoft, pasty, sometimes crumbly	White or creamy white interior, marbled or streaked with blue veins of mold	Cylindrical, wedges	Appetizers, snacks, salads, dips, sandwich spreads, good with crackers, dessert
Semisoft, flaky; slightly more crumbly than Blue	Creamy white interior, marbled or streaked with blue-green veins of mold	Circular, wedges oblongs	Appetizers, snacks, salads, dessert

## ADULTERATION OF MILK WITH WATER

The following letter has been received from the Metropolitan Milk Board:—

The Secretary,  
S.A. Dairymen's Association.

23rd April, 1964.

Dear Sir,

### Adulteration of Milk with Water

In recent months there has been a steep increase in the percentage of producer milk samples showing the presence of added water. Adulteration with water has followed a regular pattern for some year in that the incidence of adulteration is lowest during the months of high production and highest during the months of low production.

This year the incidence of added water has again increased as production levels have declined but a most disturbing aspect is that the percentage of samples showing adulteration is considerably higher than in any previous year.

Water used for the rinsing of milking machines at the completion of milking is by far the most frequent source of adulteration. Less frequent causes of adulteration are leaking coolers and cooler connections and failure to shut off the vacuum at the teat cups when they are dipped after the milking of each cow.

In effect, accidental adulteration such as leaking coolers is far less frequent than adulteration caused by carelessness with water in the rinsing of machines and equipment and the dipping of teat cups.

Under existing policy all producers who supply milk adulterated with water to factories or treatment plants are warned before suspension. However, the incidence of adulteration with water is far too prevalent and if the present trend continues, it will be necessary for the Board to give consideration to the elimination of all warnings.

Yours faithfully,

R. B. CANT,  
Secretary.

## DO YOUR BUCKETS FLOP AND SLOP?

A recent meeting of the Onkaparinga District complaints were made about the quality of the plastic buckets now available. It was stated that the materials used were such that, when used to carry hot water, the buckets became soft and pliable, and could lead to scalding while being carried.

The Secretary was asked to ascertain whether more satisfactory buckets were available, or could be made, perhaps with a metal reinforcement in the rim.

The answer to the second suggestion was not long in coming. There are several firms willing to make such buckets provided we could place an initial order for about half a million.

As this seemed most unlikely, a survey of available buckets was made, from which it appears that the two-gallon capacity "Capri" bucket at 9/11 retail, or the five-gallon capacity "Nally" at 29/3 should overcome the problem. Incidentally the large capacity of the "Nally," despite its relatively high price, appeared to make it adaptable to a number of jobs.



# INCREASE MILK YIELD & BUTTERFAT CONTENT

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## DR. WHITTLESTONE DEVELOPS REVOLUTIONARY MILKING MACHINE

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To overcome these two problems, Dr. Whittlestone has eliminated the need for air admission, and done away with vertical dropper tubes and thereby produced a high level of stability in the milk line, by using a milk pipe of large diameter situated at floor level.

The milk is pumped direct from the milk line by a diaphragm pump, thus eliminating the need for a mechanical releaser, the air being drawn from the line at the far end, so that the air travels in reverse direction to the milk.

With this system air admission is not required, so that the pipeline handles only air accidentally admitted during cup changing. The effect is as though each cow was coupled directly to a high capacity system, and isolated from fluctuations arising from the other sets of cups. With a milk pump and a pipeline large enough to absorb peak flow rates the system is inherently stable, and in the experimental machine, using first a conventional overhead line and releaser, and then the low level line only, vacuum stability was improved outstandingly by at least five times that for the conventional layout.

The elimination of air admission and milk droppers and the reduction of agitation by using a diaphragm pump has virtually removed the cause of lipolysis (rancidity).

The absence of air admission holes in the claws also enables liquid-soak cleaning and sanitising, although circulatory and foam cleaning methods are equally applicable.

We have not yet received advice as to whether these principles are being incorporated into commercial production, but further information will be published in the Journal as it is made available.

### MAKING UP YOUR OWN MIX

In an effort to keep costs down more and more farmers are buying grain and processing it themselves. Some use grinders or crushers but with an eye to reducing the time needed for this job many are now using Hammer-mills.

Some representatives of firms handling these machines have reported brisk sales over the past year or so, and it is known that there has been delivery delays on some makes.

But crushing the grain is only half the job! Many dairymen now realise the necessity of a balanced ration for their stock and are adding "Triple M" to ensure an adequate supply of minerals.

"Triple M" which is available from Factories or Stock Agents not only helps in milk and butter-fat production but will also combat infertility and provide calcium for healthier, stronger calves.

### PULSATOR CHOKES

Considerable interest has been raised by the recent article in this Journal on the improvement in milking machine performances brought about by the use of pulsator choke valves, particularly in mastitis control.

At present these "Visilon Choke Valves" are not being marketed in this State, but arrangements are being made to overcome this problem. In the meantime enquiries should be made direct to Patmar Pty. Ltd., 1st Floor, 48 York Street, Sydney.

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## New Dairy Surveys to be Made

It is now 11 years since the last Cost Survey was undertaken by the Bureau of Agricultural Economics and, although the costs as determined were annually brought up-to-date by price index movements, by 1962 the disparity between the assessed cost of 68.2d. lb. butterfat and the average return of 53.6d. had become so great as to make the situation somewhat ridiculous, and the continuation of the price index adjustment was abandoned.

A request has now been made by the Australian Dairy Farmers' Federation for a new Survey to be made, and the following statement was recently made in the Federal Parliament by the Minister of Primary Production (Mr. C. Adermann).

"The Australian Dairy Farmers Federation submitted to me for consideration a request that the Bureau of Agricultural Economics undertake a survey of certain aspects of the industry. That request was discussed by the State Ministers for Agriculture at Hobart quite recently. It was decided that an economic survey would be made as soon as personnel of the bureau were available."

At State level, also, there are pressures for enquiries, and in N.S.W. the Minister of Agriculture has ordered an enquiry into the dairying industry "to find out what can be done to provide a fair and equitable basis for the marketing of milk, butter, cheese and whole milk in N.S.W."

In Queensland also concern is felt over the steady decline in dairying in that State, and the Government has agreed to a request from the Queensland Dairymen's Organisation to set up a Committee to examine and report on the particular problems of Queensland dairy farmers and to recommend any action necessary to overcome these problems.

# BUYING or SELLING . . .

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## MASTITIS PREVENTION AIDED BY ANTIBIOTIC SPONGE

U.S. dairy farmers are now using an udder-washing sponge impregnated with the antibiotic "Neomycin" in the fight against mastitis. Tests carried out by the Wisconsin Research Foundation on milk drawn with and without udder-washing with the sponge showed an average bacterial count of under 4,000 when the sponge was used, and from 77,000 to 540,000 without the sponge.

Even with such effective results, as the application was entirely on the udder surface, no antibiotic residues could be detected in the low-count milk samples.

Although these sponges are not available in Australia, this Association is arranging for a supply of samples, and if there is sufficient demand we would consider importing a quantity. The price would be approximately 6/- per pair of sponges.

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## LIFT IN CURRENT BASIC PRICE

The Commonwealth Dairy Produce Equalisation Committee Limited has announced an increase of 11/8d. cwt cheese for the current (1963/64) season.

Although no further details have yet been received as we go to press it appears that an increase of approximately 3d. lb. butterfat is likely in the interim basic price for May and June, 1964, and a retrospective payment of approximately 1½d. lb. fat (equalised) for all production from 1st July, 1963 to 30th April, 1964, payable probably in early June.

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THE SOUTH AUSTRALIAN

AIRYMEN'S . . .

# Journal

The Official Publication of the



Published Bi-monthly

Vol. 3, No. 6

Adelaide, MAY-JUNE, 1964



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# THE SOUTH AUSTRALIAN DAIRYMEN'S JOURNAL



Published by  
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Aston House, 13 Leigh Street, Adelaide. 51 3034

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## THE RISE IN BUTTER AND CHEESE PRICES

Even among dairyfarmers there is no unanimity concerning the recent increases in butter and cheese prices, opinion varying from "It had to come" to "It was too dear before." However, it's done now and we can only wait and see, but already some prophets of doom are claiming that "the dairyfarmer is going to get less than half of the twopence rise."

Certainly the decision to increase these prices was not taken lightly by the Dairy Industry Council, as, although it recognised the continually increasing production costs which had been absorbed by the industry since the last general increase in 1960, it had also to take into consideration the possible effect that a price rise would have on consumption.

This effect was impossible to forecast with any accuracy, and although it could be shown that in the interval between 1952 and 1963 a price rise of about 32% had been accompanied by a fall in consumption of about 20% it was impossible, because of the length of the period, to say how much of this fall was due directly to price and how much to changing dietary habits, the increasing proportion of European migrants in the population, the effect of the "cholesterol scare", and other extraneous factors.

In this instance the ratio of fall in demand to rise in price was about .6, and although, because of the factors stated, this figure may be higher than the actual short term response to a price rise there is no doubt that a higher price, even if it does result in reduced consumption, will give a greater total revenue in the first instance.

Whether this gain will continue depends on many factors, such as price and availability of substitutes, but one vital factor is the effect of a price rise on living costs, which in turn will bring pressure for

### — VYNETTE FOND HOPE KING —

*is a son of SNIDER'S FOND HOPE KING (one of the New South Wales "premium bulls" whose services are still used in S.A. at an extra charge of £1). His dam, VYNETTE DIAMOND SEEGIS, Reserve Champion at the Adelaide Royal, and holder of 24 Country Show Championships and Reserve Championships in three lactations as a Mature Cow produced 587, 637, and 686 lbs. butterfat.*

increased wage levels, leading to further direct increases in farm operating costs, and the inevitable demands for increased tariff protection by secondary industries.

If the immediate and short term effect on consumption of a small price rise is assumed to be somewhat lower than .6 the rise in retail price which has now followed the Dairy Industry Council's increase of 1½d. lb. commercial butter (= 2½d. lb. butterfat) in the rate of overall return to the factory would result in a fall in domestic butter consumption of about 2,000 tons annually. Nevertheless there would be a gain in total revenue from domestic sales of £860,000. At the same time the industry would have this 2,000 tons now not required for domestic sales, for export, which, assuming that export outlets were available, would return somewhere around £600,000, to give a total increase in revenue of just under £1½ million.

This, in terms of total butter production, is not a large amount; nevertheless a domestic price rise is the only way in which the industry can bring home to the community the disastrous effects of spiralling production costs, and the fact that by not increasing the amount of the stabilisation subsidy, the Federal Government has failed to recognise its responsibility for the rising production costs, which it has brought about by its absurdly shortsighted policy of excessive tariff protection, its general feather-bedding of uneconomical secondary industries, and the absence of any curbs on monopolistic and near-monopolistic practices.

## Statistics

### ADELAIDE METROPOLITAN MILK SUPPLY AREA

#### PRODUCTION (000 gallons)

	For Month		Total since July 1		Total since Jan. 1	
	1963	1964	1962/63	1963/64	1963	1964
April .....	2,383	2,752	35,626	38,018	11,582	12,463
May .....	2,578	3,187	38,204	41,205	14,160	15,650

#### SALES (000 gallons)

	For Month		Total since July 1		Quota %		C.M.B.	
	1963	1964	1962/63	1963/64	1963	1964	1963	1964
April .....	1,602	1,694	15,728	16,338	67.2	61.6	3/2	2/10½
May .....	1,628	1,664	16,953	18,234	63.1	52.2	2/11½	2/4

Moving Average Quota for 12 months ended 30/4/64, 44.95%; 31/5/64, 44.41%.

### INTERIM PRICES TO LICENSED SUPPLIERS

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

1964	Basic C.M.B.		Total	3%	3.5%	4%	4.5%	5%
	(per lb. butterfat)							
April .....	3/3¼	2/10½	6/1½	1/10½	2/2½	2/6½	2/10½	3/2
May .....	3/6	2/4	5/10	1/9½	2/1¼	2/5	2/8½	3/0

### LONDON PROVISION EXCHANGE QUOTATIONS

	April		May	
	1963	1964	1963	1964
Butter—Choicest Australian .....	314/-	334/-	314/-	334/-
Cheese—First Grade Australian .....	215/-	238/-	215/-	238/-
Rindless Australian .....	227/-	247/-	227/-	247/-

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# Foot And Mouth Disease In Australia

## Inevitable or Preventable?

A study of the pages of this Journal during the last 12 months will show the great concern with which the dairying industry, together with other livestock producers, regards the threat of the introduction into Australia of foot and mouth disease, and considerable effort has been spent on trying to obtain tighter control in the importation of cheese from countries where foot and mouth outbreaks may occur.

The claim made by Federal authorities that the foot and mouth organism cannot survive at the level of acidity present in the cheese making process has at least one authoritative contradiction, and in addition there can never be an assurance that the exterior of cheeses, and the crates, cartons and wrapping materials have not been contaminated by the hands of a factory employee who has been handling dairy products and cans received directly from dairy farms where the organism is present in a dormant state.

Certainly Federal authorities have now agreed to tighten up the regulations relating to some specific classes of cheese, but, even assuming that the regulations are improved, there can be a big gap between the regulations and the way they are carried out. I have, myself, been given a piece of home cured bacon within three days of its leaving the farm in Yugoslavia. Naturally it went straight to the Department of Agriculture, but it is no exaggeration to say that this one piece of bacon could have cost Australia many millions of pounds. **Yet the regulations prohibit its importation.**

This is not to say that the Federal Government is not aware of the problem. It is, and within fairly narrow limits, and with many apparent inconsistencies, it attempts to carry out measures hopefully designed to keep F. & M. and other exotic diseases out of Australia.

**But just in case something should go wrong,** the Federal Government tries to keep itself, and us, up-to-date on the latest in diagnosis and control by such means as bringing to Australia Dr. E. A. Eichhorn, F.A.O. expert on F. & M.

There are those who claim that Dr. Eichhorn has been brought to Australia as part of a softening-up process against the inevitable day when F. & M. comes to Australia. Perhaps this is so; who can tell? But to make our members conscious of the magnitude of the problem we publish below some notes from an address given by Dr. Eichhorn.

## The Menace of Foot and Mouth Disease

Foot and Mouth Disease is caused by a very small virus about 1/1,000 of a micron (a micron is 1/1,000 of a millimeter). Although it is very small, it is very deadly, more deadly than any other virus. The estimated losses in endemic and enzootic areas where it exists, is put at 25 per cent of the stock population.

In South America, diseased beef cattle take four years to mature instead of three. The animal appears to take on an expression of melancholy and sadness and may be seen leaning against a tree in the field. With dairy cows, there is a drop in milk production and it is common to find that often the hoof is badly affected and is sloughed off. The losses through abortion in cows and in sheep are also high. Wool production declines about 25 per cent.

These are the direct economic losses, but there is also a world cost as 45 per cent of meat and milk production is lost in infected countries, and without this disease there would be a tremendous increase in world protein production.

It is worth noting what happens when Foot and Mouth Disease (F. & M.) enters a new country. If it were to enter Australia, there would be an immediate closure of your exports into the U.S. market and because of this loss of free inter-change between countries your trade, which I am told is worth £80 million, would cease to exist.

The eradication of this disease is also very expensive. In the Mexican campaign some years ago, the Government spent \$165 million in 2½ years and 8,000 people were involved. The U.S. Congress voted \$9 million to the campaign, but all that happened was that it made nine new Mexican millionaires. Nine million head were killed, with no progress being made; the disease was only being driven ahead. The Mexican Government was in political turmoil and the Communists began to spread rumours about false results of the new immunisation campaign which replaced the previous stamping out or killer campaign. One does not wish to be a calamity howler, but F. & M. is very very costly.

There is little which is dramatic about F. & M. since it is not a killer disease but an economic disease. In Germany much was achieved through an education programme and information service. School children were given comic books and the authorities found that when it was taken home, it aroused the interest of the parents more than that of the children.

The F. & M. virus has been distinguished into seven types (originally there were three), A, O, C (Original), 1, 2, 3 (South African), and a new virus named A1 (Asian). One type of virus will not immunise against another since there are certain strains in each virus. One strain immunisation is not good enough to prevent infection by another strain. Type "O" is no prevention in Greece and Turkey.

There is no such thing as a little F. & M., just as one cannot be a "little dead". The effects are always the same. It is either one or the other. Similarly with the cure; either you stomp it out completely or let it go "all over hell".

Control measures are:

1. Stamping out by killing all the beasts on a property found to be infected and all those properties which have contact with the infected property; or
2. Vaccination, which must continue for many years.

Many of the outbreaks of F. & M. in the U.K. have been traced to imports of Argentine beef. In 1923, large packing houses in Buenos Aires had special British observers appointed to watch the precautions taken against the disease. Argentine pork has also been partly to blame. However, there have been no outbreaks since 1962 (!!!)

A stamping out campaign is a calculated risk; however, the cost of this in one country recently was only £11 million and may be considered to be cheap against the costs of letting it go unchecked.

With regard to Australia, a unique situation exists, which almost leads one to despair. This is due to the large number of wild buffaloes, pigs and cattle which run wild in the Northern Territory and back country of Queensland. The disease could smoulder in these animals undetected for years and once discovered would be almost impossible to treat short of using a small atom bomb. What control can one use where a 60 per cent muster is regarded as good?

## A FEW RANDOM OBSERVATIONS

Foot and Mouth disease can only be contracted by animals which are cloven footed. Horses cannot contract it and this is often used as a test to distinguish it from other similar diseases where doubt exists.

A stamping out policy means slaughter of the animals on infected farms and all in-contact animals. It has been known to stay in hay for 340 days. This occurred when a farm hand stacked fresh hay on to infected hay and the animals concerned ate their way down to the infected portion. Transmission from country to country can be purely mechanical as in the case of the German migrant to the U.K. who happened to find a piece of sausage in a coat pocket. Unbeknown to him, it was infected and being too stale for human consumption, he threw it into a pig pen, which led to the slaughter of 3,000 animals.

In one country, the direct loss through slaughter was \$1 million, but the loss through reductions in export trade was \$200 million.

The virus is susceptible to high acid and high alkaline solutions; common washing soda is able to be used in treatment. Sunlight is able to kill the virus.

Where it is thought to be present in the soil, the practice is to turn susceptible pigs into the area and if they remain uninfected it is known to be clear.

Australia is known for its stringent quarantine regulations overseas. Its greatest asset is its animal population. Wool and meat are among the greatest export earners Australia has.

Birds are not susceptible to the disease, but have been shown on circumstantial evidence to lead to a focus of infection in some areas through transferring manure, etc, on their feet. Also air currents and winds have been known to play a part. A great deal of work has been done on fumigation of footwear. However, thousands of people travel by air from the Continent to the U.K. every year and there is no reason to suspect footwear as being a cause. Mats to combat infected footwear are of no scientific value—they only give peace of mind.

Stringent regulations applying to any New Zealand migrants and overseas visitors could hardly be applied elsewhere in the world since New Zealand receives only a trickle of such people. It is the practice for all migrants to Australia who come from rural areas and occupations to be obliged to travel by sea.

The world scene is improving slightly. The Pan American F. & M. Institute

*The proof of the Pudding is in the eating . . .*

BUT . . .

The proof of "TRIPLE M" is in your Factory Returns and the Health of your Stock.

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has been doing useful work.

The disease is found in both hot and cold countries and it has travelled as far east as the island of Bali. The Australian Government has held talks with Indonesia about trying to prevent further spread. It is known that West Irian has its own quarantine laws. On the Torres Strait Islands a number of people such as bank managers, school teachers, etc., are part time stock inspectors and are alert to detecting such diseases. Two veterinarians each year are sent to the U.S. to familiarise themselves at first hand with this disease. Films on the subject are screened to veterinarians.

Cooked meats and liver goods from infected areas are able to be regarded as safe.

Cheese is not capable of carrying F. & M. with the exception of one type produced in Europe, which involves burial in the ground for part of the process.\*

Pigs present problems since they require four times the strength of the dose given to cattle in vaccination campaigns.

Vaccination in Mexico was only undertaken because the country could no longer stand the cost of the stamping out campaign.

(\*We need to be convinced of this! If birds' feet and air currents can spread the disease, can we be complacent about dairy factory employees and transport vehicles in constant contact with farms and livestock?—Ed.)

## **Australia's Prosperity Would Disappear Overnight**

**said the Chief of the Division of Animal Industry (Mr. M. Irving), when we asked him for his comment. He continued:**

The dangers associated with an invasion of Foot and Mouth Disease are increasing continually. Despite the greater efforts being made to keep the disease out of Australia, the rapid increase in the speed and extent of overseas communications has greatly increased the risks.

Travellers are moving around the world in increasing numbers, and may arrive in Australia within 24 hours of leaving Europe, Asia or Africa. It is so easy for them to carry the virus of any one of several major diseases on their clothing, and in goods or souvenirs brought with them.

Food parcels are still perhaps the most dangerous items. Some people go to great lengths to conceal foodstuffs of animal origin which could very easily become a source of infection.

To meet these increased threats, Animal Quarantine authorities have tightened security measures in recent years. But nothing short of total isolation would completely remove the risks of introducing diseases. This is not feasible.

We have planned to meet any outbreaks which may result from the invasion of Foot and Mouth Disease or other exotic diseases.

Dr. Eichhorn's visit was sponsored by the Commonwealth to help to improve these defences. All States have passed legislation for handling outbreaks expeditiously, and for compensating owners whose stock may have to be destroyed.

The success or failure of any eradication campaign will depend on the speed with which the disease is first recognised, and the effectiveness of eradication procedures.

An outbreak of Foot and Mouth Disease would be disastrous to the economy of Australia. Until it was eradicated, our meat and wool exports would be suspect, and banned by some of our major customers. **The effect on meat and**



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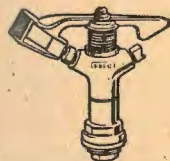
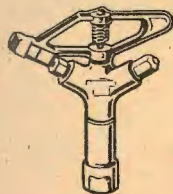
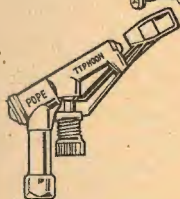
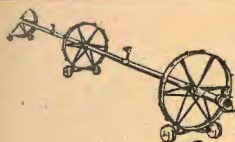
We must therefore continue to exercise great caution to prevent its introduction, and if it should get in, we should spare no effort to eradicate it as speedily as possible.

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# How Much Can Breeding Lift Herd Returns?

By Dr. J. E. F. Barker, B.Ag.Sc., Ph.D., Senior Lecturer in Animal Genetics,  
University of Sydney.

*Some controversial issues are raised by Dr. Barker in this article prepared specially for "The Victorian Dairyfarmer," and reprinted here by kind permission of the Victorian Dairy Farmers' Association and of Dr. Barker.*

Presumably all dairy farmers must at some time have considered the basic aim in their various farming activities.

I have no doubt that this aim would be to increase efficiency and economic return, whether this be in terms of production per cow, production per acre, or production per man hour of labour.

This increased production is, of course, relevant in a much wider context.

The most critical problem facing mankind today is probably not the threat of nuclear annihilation, but the so-called "population explosion."

## TWO WAYS TO EFFICIENCY

The present world population is estimated to be over 3,000 million, and is increasing at about 1.7 per cent per year; that is, at present about 50 million per year of 140,000 per day.

Not only must this increasing population be fed, but there is already a lag to be made good in that at least one half of the present population is undernourished, with many millions being on starvation levels.

Two approaches are available to achieve increased efficiency and higher production:

- (1) Through breeding to increase the inherent potential for milk and butterfat production in the cows of the herd.
- (2) Through attention to the environment in which the cows are to live and produce; that is, improving the management, feeding, and disease control of the herd.

Both of these approaches are desirable and necessary, but I can consider only the first—improvement through breeding.

Any cow has an inherent potential for milk and butterfat production, determined by the inheritance it has received from its sire and dam. This inherent potential we refer to as genetic merit or breeding value.

However, the amount of milk that a cow actually produces is also influenced by the environment to which it is subjected, that is, climatic factors, feeding, management, and so on.

Similarly, although a bull doesn't produce milk, it does have a certain breeding value for milk production, which determines in part the producing

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ability of his daughters. Thus the breeding value of a bull can be estimated from the production records of a large random sample of his daughters.

The aim of breeding then is genetic improvement or cumulative increase in the average breeding value of the herd in each generation. Animal breeders have undoubtedly made such improvement without knowledge of genetics and its applications in animal breeding. Further, the animal geneticists cannot yet answer all the breeders' questions.

### DIFFERENCES BETWEEN HERDS

They have, however, made great progress in determining what can reasonably be expected in improvement through the application of genetics, and in devising techniques whereby the breeder can be more certain of attaining the maximum rate of improvement.

This is a major contribution to the science of genetics; it allows us to make maximum improvement, as against the considerably lower rate of improvement achieved by breeding as it has been practised.

Genetic improvement depends on selection—that is, the choice of which animals are to be used for breeding herd replacements—the aim being to pick out as parents, animals that will have superior progeny.

Our first question then must be—"What characteristics of the dairy animal should be considered in making this selection?"

If the farmer is producing liquid milk for the urban market, then most emphasis must be placed on milk yield. If he is selling his product to butter factories, then emphasis would be on butterfat production.

Some other characters will be considered, but care is needed in deciding whether they really are of economic importance. Definition of these important economic characters is essential for two reasons.

First, the number of characters must be kept as small as possible because the greater the number, the slower will be the rate of improvement for each.

Second, collecting the information on which the selection is to be based costs money, and it will be no use collecting information on some characters if the returns through improvement are not going to outweigh the costs of collecting the information.

### HERD RECORDING ESSENTIAL

It should be obvious then that maximum improvement will only be achieved where selection is based on actual production records, and not just on some guess as to how good an animal might be because of its appearance or type.

Thus herd recording is an essential prerequisite to any breeding programme, and, as we will see, the greater the number of herds recorded, the higher is the possible rate of improvement in the total dairy population.

We all know of some cows and some herds that have put up consistently good production records. Are those to be regarded as the performance of exceptional animals or as the performance of exceptional cowmen?

In fact, both factors will be contributing.

For cows in the same herd, we can show that, on the average, about 75

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per cent of the difference between cows is environmental (feeding, management, etc.), and 25 per cent is genetic.

Say we select as parents from within a herd, cows whose average yield is 100 gallons more than the average yield of all the animals from which they were selected.

If these are mated to a random sample of bulls, we expect their offspring to produce about 12½ gallons (half of 25 per cent of 100 gallons) more than this average of the animals from which the parents were selected.

The half factor enters because a cow contributes only one half of the genetic makeup of her offspring.

The reasons for differences between herds are more difficult to assess. Here we need some comparison between cows of similar breeding, but in different herds. Fortunately, the use of A.B. has made it possible to compare the daughters of one bull in many herds having different average yields.

If inheritance were all-important, we would expect a very good bull to increase yields greatly in low-yielding herds, but only slightly in high-yielding herds.

Similarly, a poor bull would depress yields in high-yielding herds much more than in low-yielding herds. And a medium quality bull would depress yields in good herds, and increase them in poor herds.

However, this does not happen. Regardless of the breeding value of the bull, his offspring tend to yield at much the same level as the rest of the herd. This is because differences between herds are much more dependent on feeding and management than they are on breeding.

In the United Kingdom, about 10 per cent of the differences between herds in production are attributed to inheritance, and this proportion is probably even less than 10 per cent in Australia.

This result is not so surprising when one looks at current breeding practices.

The pedigree section of a breed can be divided into four or five levels, with a few top studs determining the genetic makeup of the whole breed.

These top studs sell to lower studs, which provide bulls for "multipliers' herds," which in turn supply bulls for use on grade cows.

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Thus, even the non-pedigree section of a breed is sired mostly by pedigree bulls or the sons of pedigree bulls.

With a breed structure of this kind, there cannot be much genetic difference even between the top stud herds of a breed and the grade herds.

### GENETIC DIFFERENCES

However, even though only a small fraction of the differences between herds is genetic, this does not mean that there are no genetic differences between animals that could be utilised in selection programmes to give improvement through breeding.

Under British conditions, about two-thirds of all bulls will have an average daughter production within 40 gallons of the breed mean. It is an outstanding bull that can raise the level of yield by 100 gallons where the average heifer yield is about 850 gallons.

However, such bulls have been found in the U.K. on the basis of the production records of their A.I. daughters. The best and worst bulls of the Friesian breed used in A.I. in the U.K. had daughter averages differing from the mean by about + 150 and - 150 gallons.

The practical point that follows from this argument is that we might expect to find an outstanding bull not only in the popular but small group of major studs, but in almost any herd.

This is very relevant to the question of purchase of bulls. Say one has to choose between two bulls, neither of which has production information available, or, in other words, we have no clue as to their breeding value.

One bull is available for £50 from a neighbouring herd; the other for £150 from one of the major studs. In both cases, the buyer is taking a chance on the breeding value of the bull, so why gamble with the extra £100 paid for fashion.

### THE SMALL HERD

With a herd of up to 50 cows, the breeder does not have much scope. Closing the herd is practically impossible because of the resultant inbreeding, so that a bull will have to be purchased every few years.

The breeder may occasionally use a bull of his own breeding, provided care is taken to avoid in-breeding. As far as purchase of bulls is concerned, the safest procedure would be to buy young bulls out of high-yielding cows, and consistently from one or two herds where the cattle are known.

### THE LARGE HERD

In this case, the breeder should be able to use more bulls of his own breeding, but in judging their breeding value, anything sophisticated such as progeny-testing is just not worthwhile.

Selection of bulls is best based on their dams' records.

In herds of all sizes, some improvement can be made by selection on the female side, selecting cows for further breeding on the basis of their first lactation records.

In this testing, the breeder should cull not only the poorer cows, but also their progeny.

### THE A.B. ORGANISATION

With A.B., progeny-testing can be carried out on a large scale under properly controlled conditions. But we must ask where the young bulls to be progeny-tested will be obtained?

There are two possibilities: they can either be purchased from stud herds carrying out their own breeding programmes, or they can be bred within the A.B. unit.

The relative merits of these possibilities are shown by results obtained in 1950 by workers at Edinburgh. They found that the possible rates of genetic improvement in milk yield were about 1 per cent per year in a herd of 100 cows, and 1.7 per cent per year in an A.B. unit of 2,000 cows.

Therefore, if the young bulls for testing are bought from stud herds, the rate of genetic improvement is tied to that possible in herds now producing bulls, which is considerably less than that possible within the A.B. unit.

Essentially, a bull breeding and progeny-testing scheme within the A.B. unit involves selecting for progeny-testing those young bulls that are the progeny of the best bulls in the A.B. centre out of the best cows in the unit.

A number of young bulls from such matings are obtained, and at as early an age as possible, are used to inseminate sufficient cows such that we might expect at least 25 to 30 daughters to complete a recorded first lactation.

These young bulls are laid off until their daughter production records are available, when the progeny tests can be assessed.

The best are selected to enter the proven bull stud, and the best of these proven bulls are used to breed the next generation of young bulls for testing, and so on.

However, you will realise that some cows in the unit are being mated to the young bulls being tested, and mating too many cows in this way would reduce the rate of genetic improvement.

To maximise the rate of improvement, we therefore have to determine the optimum usage for young and proven bulls.

This will depend on the number of young bulls being tested each year, the number of cows each must be mated with to provide an adequate progeny test, and the proportion of bulls tested which are selected for service.

### MANAGEMENT vs. BREEDING

Differences between herds in milk and butterfat production are mainly due to management and not breeding.

Therefore, improvement in yield, particularly in the lower-producing herds, could be achieved by attention to management. However, the realisation of this improvement may be simpler by breeding.

There is sufficient differences between animals in breeding value for this improvement to be achieved by breeding.

Because most of the differences between herds in average production are not genetic, these superior animals are almost equally likely to be found in any herd.

### PROGENY-TESTING

Such progeny-testing schemes have recently been started by the Victorian Artificial Breeders Co-operative and by the N.S.W. Milk Board.

Increase in the scope of these schemes, and determination of the optimum plan depends on the availability of production information to the research workers—information that can only come from expanded herd recording.

Also, we should note that studies on possible rates of genetic improvement by progeny-testing in A.B. have emphasised that increasing the percentage of cows recorded increases the rate of improvement.

In this progeny-testing scheme, the breeding value of the bulls is assessed on the basis of their daughters' first lactation production.

Breeders have expressed the fear that this might result in the selection of bulls whose daughters are early maturing and have high first lactation production, but who soon "wear out" and do not have a long productive life.

In 1961, at the Milk Marketing Board of England and Wales, I carried out an analysis to test this idea, and have shown that in general it does not hold.

Bulls with above average breeding value had a higher percentage of their daughters completing three lactations than did bulls with below average breeding value.

A related study by Dr. Alan Robertson on Scottish cows bears out this relationship for the percentage of daughters completing a fifth lactation.

This possible genetic improvement through A.B. may not seem very much. Say we take the figure of 1.7 per cent per year in a unit of 2,000 cows; remembering that it would be progressively greater in larger units.

For a herd averaging 600 gallons, this would mean an increase in the average of about 10 gallons per year, or 100 gallons per cow in 10 years.

As I have pointed out, more immediate and spectacular improvement would result from improved management, particularly in the lower producing herds. Both approaches are necessary.

However, improvement through breeding, or genetic improvement, is a cumulative increase, the application of compound interest to the genetic capital of our dairy cattle population.

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# Artificial Breeding Board Newsletter

## A.B. LIFTS PRODUCTION IN N.Z.

Each year in New Zealand's recorded herds, comparison is made between the production of cows bred by A.B. and those bred by natural service in the same herds.

These comparisons show, that on average, A.B. stock out-yield their naturally bred herd-mates by approximately 20 lb. of butterfat per cow which, for Jerseys at 5 per cent butterfat, means approximately 40 gallons of milk.

Further investigation has been made on the milk records for the 1962/63 season in which the average production of herds completely using A.B. is compared with the average production of all other herds in the same district. It appears that herds which used A.B. for six or seven consecutive seasons have a higher production per cow of 10 lb. butterfat; herds using A.B. for eight or nine consecutive seasons have 17 lb. higher, and herds which have used A.B. for ten or more consecutive seasons have 23 lb. of butterfat per lactation higher.

This interesting study shows the real value of a soundly based breeding programme making use of A.B. and there is no doubt that this is one of the reasons for the increase in popularity of this technique among dairy farmers in New Zealand.

In 1950, 2,400 cows were inseminated; by 1963 the total had risen to **560,000**.

## A.I.S. SIRE MAKES NEWS AT BERRY

Of particular interest to Australian Illawarra Shorthorn breeders is an item about the favourable progress being achieved by the A.B. sire FAIMOYE MAGISTRATE standing at Graham Park, Berry, N.S.W.

MAGISTRATE is a son of the great cow Faimoye Bangle 7th ERM named in 1961 as the highest producing cow in Australia for all breeds, having produced 1,158 lbs. butterfat in 390 days.

Again in 1962, F. Bangle 7th gained the honour with 1,001 lbs. b.f. in 300 days, and in nine lactations she has produced 138,063 lb. milk, 6,624 lb. butterfat at 4.8 per cent average.

Users of A.B. in South Australia will be on the watch for semen from MAGISTRATE who was used extensively in 1962/63 in the Bull Proving Scheme at Berry.

## MORE ABOUT VIBRIOSIS

From N.S.W. comes a report about vibriosis as the cause of 40 per cent of infertility in cattle and rife among beef cattle in N.S.W.

Dairymen know vibriosis is caused by infection with the germ vibriofaetus, which, like other venereal infections, has a pattern of not surviving long away from infected animals.

The report states that positive diagnosis may be made by a veterinarian who uses laboratory tests to confirm suspicions.

There are two main methods of control of vibriosis; the two-herd system and artificial breeding.

A.B. prevents the spread of the disease among the herd. If A.B. is adopted before the herd becomes resistant, return to service will be a problem for a time.

N.S.W. is fortunate in the strict safeguards that are made to ensure that A.B. centres are kept free of vibriosis. (The S.A. Centre at Northfield is similarly strict and extensive tests are made using semen on heifers and in the laboratory.)

The bull is the most serious source of infection, and the N.S.W. report emphasises that care must be taken in selecting bulls and proven sires should not be hired or borrowed unless they are known to be free of infection.

#### STRATHAVEN SERENADE MITCH READY SOON

This bull, purchased by the Artificial Breeding Board at the Friesian Fair in Adelaide this season, is being mated to heifers and he should be ready for use at the Centre in about six weeks.

#### CHANNEL ISLAND FARMERS EXPERIMENT WITH BEEF CROSSING

The growing demand for the high butterfat milk from the Channel Islands of Jersey, Guernsey and Alderney has led to a surplus of 100,000 Jersey and Guernsey calves being born each year in these Islands and it is estimated that the number of surplus calves could double in the next few years.

Authorities say that increased use of beef bulls over dairy cows could lead to a solution to the problem through veal production.

Individual farmers have had good results with crosses by Hereford, Charolais, South Devon and Sussex bulls. Next year, trials will provide more detail on a variety of crosses and the most profitable feeding methods so it is a matter of "wait and see".

#### NEW FREEZE TECHNIQUE SHOWS PROMISE

The deep freeze technique, originated at Cambridge, has been taken a stage further into the deeper freeze nitrogen system of the U.S.

Trials in the Gloucester area last year were treated as satisfactory with results very little different from those with fresh semen—even under difficult conditions. The new plan is ready to cope with a threat of foot and mouth disease as the inseminators may be "refuelled" in the field by a specialised vehicle delivery service after a required quarantine period.

All this points to the fact that A.B. is succeeding in fields other than the lifting of production and scientists keep on with new findings to speed up the services and lower costs.

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# Artificial Insemination of Dairy Cattle in Australia

By B. DOYLE, Director, Milk Board Artificial Breeding Centres, N.S.W.

## HISTORICAL

Although the first calf bred artificially in Australia was born at the Veterinary Research Station, Glenfield, in November, 1944, the development of A.I. has not been very rapid. Following a few early trials a small experimental station was started at Glenfield in N.S.W. in 1945 and later in the same year one at Werribee, Victoria. Understandably, private organisations were slow to develop, but the management of Camden Park Estate at Menangle near Sydney soon established a centre for use in its own large herd.

As the work at Glenfield proved successful, but the cow population in the area was declining with the expansion of Sydney, the N.S.W. Department of Agriculture established a small centre at Berry in 1952. Following this the Hunter Valley Dairy Company built a small centre at Aberdeen in 1953 to serve the Hunter Valley. As expansion began to occur the N.S.W. Department of Agriculture handed over the Berry centre to the N.S.W. Milk Board in 1956. Subsequently more rapid expansion occurred, a new centre was opened at Berry in 1958 and, on request, the Board also took over Aberdeen and Camden centres, closing the latter down as a semen producing centre.

In Victoria the Department of Agriculture expanded its Werribee centre, but in 1961 handed over its commercial activities to the Victorian Artificial Breeders' Co-operative Society which established a modern centre at Bacchus Marsh. Since then a small private centre has opened in that State.

Development has been somewhat slower in the other States as they initially relied on semen purchased from N.S.W. and Victoria to a large extent. The Departments of Agriculture have established centres at Wacol and in the Atherton Tablelands in Queensland, at Launceston in Tasmania, in Wokalup in Western Australia and at Northfield in South Australia. For the size of their dairy cattle populations, fairly large numbers are inseminated in Tasmania, South Australia and Western Australia and progress has been rapid in recent years.

## ORGANISATION

In contrast to other countries, there was very little interest by private or co-operative organisations in establishing bull centres. Consequently the initial developments were carried out by the State Departments of Agriculture. Gradually these activities have been handed over to other authorities, e.g., in N.S.W. to the Milk Board, in Victoria to the Victorian Artificial Breeders' Co-operative Society, in Tasmania and South Australia to Artificial Breeding Boards, but some of these are governmental authorities. Mostly the bull centres provide semen for their own State, but N.S.W. and Victoria do sell considerable amounts to other States, e.g., in 1961-62 N.S.W. sold nearly 70,000 doses, mostly to other States.

The actual inseminating units are in some cases governmental or semi-governmental, in others, local co-operatives or else organised or carried out by practising veterinarians. In some States the statistics quoted will not include inseminations carried out by private veterinarians. In N.S.W. all services are operated by the Milk Board, except those provided by practising veterinarians. In Victoria, apart from veterinarians, all the units are local co-operatives and are usually linked with the co-operative bull centre. In Queensland the bull centres are operated by the Department of Agriculture, with approximately half the inseminating units co-operative and half Departmental. A similar situation exists in Tasmania. In Western Australia all units are run by the Department of Agriculture and in South Australia the Artificial Breeding Board runs them.



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This governmental influence is probably due to the high capital cost involved in the bull centres, the initially high cost of carrying out inseminations and the original feeling that A.I. was not terribly practical in Australia where distances are great, farms and herds larger and more scattered than in Europe. Costs, however, are largely dependent on numbers of cows and as these can be increased and mileage and time decreased per cow, the charge for service to the farmer may be reduced.

Breeding seasons vary throughout Australia, but in general fall into two patterns:—

- (i) Where mating is fairly even throughout the whole year, in whole milk supply areas.
- (ii) Where mating is seasonal, e.g., spring and early summer, in areas where milk is used for manufacture of butter, cheese, etc., and calvings are arranged to work in with pasture growth. October and November appear to be the main mating months.

A very large part of Australia has this seasonal mating pattern, hence bull centres have the problem of supplying large quantities of semen for a few months only and inseminating units are very busy in the same period, cannot have full time permanent inseminators and therefore have difficulty in maintaining high conception rates.

Because of the distances of inseminating units from bull centres, the sometimes inadequate transport and the need to stockpile semen in the slack period, deep frozen semen has been widely used. This has meant that costs have been fairly high due to the lower conception rate with this type of semen and the high cost of dry ice and its transport. In Europe and the United Kingdom most insemination is carried out with chilled semen, but in the larger countries like U.S.A. and Canada frozen semen has been widely used. We appear to be following the trends in these latter countries, with a small number of bull centres supplying frozen semen to widely scattered inseminating units.

### CONTROL OF A.I.

In virtually all States there is now legislation controlling A.I., administered in each case by the State Department of Agriculture. Unfortunately the legislation is not uniform and, although the objects are the same in each case, the Acts and Regulations vary in their detail. Some, as in N.S.W., are very detailed, specifying minimum numbers of sperms per dose, breed identifying colours, etc., but others are far more general in nature.

The legislation is basically concerned with ensuring that bulls are thoroughly tested for disease before use in A.I., and practices are adopted to prevent the spread of disease, safeguard the identity of the semen despatched, ensure that centres, premises and inseminators are licensed and proper records are kept. Thus an inseminator, his unit or a bull centre, can be made to cease operations if they act contrary to the legislation.

The dairy breed societies recognise artificially bred stock and have prepared rules governing the registration of A.I. progeny, certificates required, etc. In the early days, before legislation was enacted, the societies desired to license inseminators and control other activities, but the need for this action by the breed societies has now passed. Control by legislation is more effective, as a negligent inseminator's activities can be stopped in all herds, not only in pure-bred ones. There have been differences in requirements between the breed societies but, following efforts to achieve uniformity, a great deal has been done to simplify procedures. There are still a few items to be settled but, with a firm basis of legislation, centres are now quite effective.

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Up to May, 1958, it was possible to import semen and cattle into Australia from a limited number of countries, but at the end of that month a complete ban was placed on their entry. Because of Australia's isolation and quarantine regulations, our cattle have remained free of such plagues as foot-and-mouth disease and rinderpest. The present ban was imposed, however, because of a fear of bluetongue being introduced and affecting the sheep industry. Semen can be exported from Australia and limited quantities have been sent to New Zealand, Barneo, New Caledonia, etc.

## **BULLS AND BULL SELECTION**

Most centres have bull selection committees, varying in composition, to assess the worth of bulls offered for A.I. It is difficult to obtain naturally proven bulls and, as the reliability of their proof is lower than in A.I. proved bulls, most States are adapting bull proving schemes. Young bulls are selected on production backing, being preferably by proven bulls, and free of anatomical defects and satisfactory for type. They are used in herds whose production is recorded and with the different bulls spread as widely as possible over the co-operating farms until sufficient inseminations are carried out to ensure an adequate proof. The bulls are then laid aside or used lightly until production records of their daughters are available.

**ARTIFICIAL BREEDING STATISTICS**

Item	N.S.W. 1962-63	QLD. 1961-62	S.A. 1962-63†	TAS. 1961-62	VIC. 1961-62	W.A. 1961-62	N.T. & A.C.T.
No. of bull centres	2 Both Milk Board	2 Both Dept. Agric.	1 A. Br. Broad	1 Dept. Agric.	2 1 Co-op., 1 private	1 Dept. Agric.	No figures available, but 1 inseminating unit exists in A.C.T.
No. of inseminating units	22 Milk Board	7 4 Co-op., 3 Dept. Agric.	4 (6) A. Br. Board	16 Co-op.	50 Dept. Agric.	8	
No. of bulls	71	37	0 (12)	11	79	19	
Breeds of bulls	7	4	0 (6)	1	6	6	
No. of cows inseminated	66,683 (excluding those done by vets.)	12,641	16,175 (18,839)	19,535	85,000	10,469	
No. of inseminations	98,575 (excluding those done by vets.)	* n.a.	26,718 (* n.a.)	30,751	* n.a.	* n.a.	
Non-return rate	** 65.4% (90-120 days)	62.0% (60-90 days)	55.0% (* n.a.) (90-120 days)	61.5% (90 days)	58.0% (60-90 days)	69.5% (30-60 days)	
Type of semen	39% frozen 61% chilled	Both chilled and frozen	All frozen (chilled & frozen)	Both chilled and frozen	All frozen	Practically all chilled	

† Figures in brackets — 1963-64; \* n.a. — not available; \*\* Average rate for all semen. (Frozen semen 60.6%, Chilled semen 68.3%.)

**TYPICAL EXPANSION:**

S.A. 1958-59 — 1,661  
1963-64 — 18,839

N.S.W. 1955-56 — 5,400  
1962-63 — 66,683

Different States have used different methods of assessing the worth of bulls, e.g., Queensland uses a contemporary comparison, N.S.W. now uses the English R.G.V. and Victoria uses an expectancy method. Bull-proving schemes will aid development of this work by enabling comparisons to be made, using many different systems and checking their validity when daughters are spread over many herds in different environments and management conditions. With natural mating, comparisons could not be so accurate as the number of daughters of each bull is small and they are usually spread over only one or two herds.

At least one State (Victoria) has adopted a contract mating scheme whereby breeders agree to mate a cow to a specific bull and the A.I. centre has an option on the male progeny at a pre-determined price. The use of deep-frozen semen has, of course, enabled the stud breeder to obtain the use of a wide variety of bulls, which would otherwise have been unavailable.

### TECHNIQUES

Due to the distances and hence time taken for chilled semen to reach its destination, its use has been limited because it maintains reasonable fertility for only two to three days. In some areas, e.g., Tasmania, Hunter Valley and South Coast of N.S.W., and Atherton Tablelands in Queensland, where cattle populations are high near the bull centres, chilled semen has been used with good results.

However, with few centres in use, deep-frozen semen has had to be widely used. This has presented some problems in that not all semen freezes satisfactorily; dry ice or some other cooling method has to be used to maintain the low temperatures needed and fertility is not as high as with chilled semen (e.g., in N.S.W., 1961-62, chilled 62.8% vs. deep-frozen 58.4%). Handling of semen must be extremely careful; carelessness affects fertility seriously, because rises in temperature above the critical point before use will injure some sperms.

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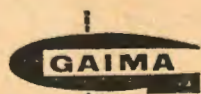
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At bull centres frozen semen is prepared in glass ampoules each holding sufficient for one cow. The ampoules are held at  $-79^{\circ}$  C., or lower, by various means, e.g.—

- (i) **Mechanical refrigerators.** These are costly and very temperamental when operating to maintain such low temperatures.
- (ii) **Dry ice or dry ice-alcohol mixtures in insulated cabinets or large vacuum flasks.** Whilst the equipment is not so expensive, cost of dry ice can be high. A temperature of  $-70^{\circ}$  C. is held with this equipment.
- (iii) **Liquid nitrogen.** This is a clear fluid at the very low temperature of  $-196^{\circ}$  C. One centre (Berry) has a large liquid nitrogen storage unit capable of holding 50,000 ampoules. Although equipment is costly to purchase, storage costs per ampoule are low, there is no need for replenishment of nitrogen at short intervals, and the safety margin is very high. If the unit is filled with liquid nitrogen it will maintain the semen at a safe temperature for three months without replenishment.

At the insemination units similar methods can be adopted but smaller units used. Whilst there are a few small liquid nitrogen units and mechanical refrigerators, practically all the semen is stored in these units with the aid of dry ice.

### PROBLEMS

Apart from an initial lack of interest and the difficulty of changing old ways, quite a few problems have arisen in the development of A.I. in Australia. The basic problems have occurred largely because of the vastness of the country, the scattered area where dairying is carried out, the inadequacy of our transport systems, the larger size of the herds and the seasonality of mating. Obtaining suitable bulls and proving young bulls have been made difficult by virtue of the small percentage of cows that are production-recorded. According to the Report of the Dairy Industry Committee of Inquiry (August, 1960), the 10.3% of cows recorded in Australia compares very poorly with 23.1% in England and Wales and 25.4% in New Zealand. When the individual States are compared, the 5.4% in Queensland and 6.2% in N.S.W. compare very badly with the 18.1% in Victoria. These low percentages naturally make bull-proving difficult in some States.

Economic conditions have also been important, with the butter industry, on which so much dairying relies, very depressed. At the same time herd-recording and particularly A.I. costs have been high, the latter more particularly because of the small numbers of cows inseminated, the high mileage costs involved, and the use of deep-frozen semen.

### PROGRESS

Research continues by organisations such as the C.S.I.R.O., Departments of Agriculture and various centres. In particular the work of the C.S.I.R.O., using A.I. to check whether introduction of blood from the exotic breeds improves our dairy herds in the hot northern areas, is of great interest.

Although progress was slow in the early years, A.I. has rapidly increased in popularity in the last few years and the number of bull centres and inseminating units has increased greatly. Bearing in mind that Australia's dairy cow population is over three million, it is obvious that there is still very considerable room for expansion.

## STOP PRESS:

Total Statistics for the Adelaide Milk Supply Area for the year 1963/64 are now to hand.

(Gallons)	1962/63	1963/64
Production .....	41,039,000	44,395,000
Consumption .....	18,928,000	19,646,000
Quota (%) .....	46.2	44.25

## MASTITIS CONTROL PAYS OFF

The experience of this N.S.W. Farmer is reprinted here for the information of our own members, many of whom have a similar problem.

It is interesting to note that one farmer who has kept some records on costs, etc., is now convinced that proper hygiene and milking methods are the answer in controlling mastitis.

Mr. D. J. Watt of Burrier, via Nowra, has been using the jet hose system, paper towels and sanitiser spray for eighteen months and results obtained to date are very encouraging. The herd on this farm had been a mastitis problem for some time and when Mr. Watt took over the property he was immediately confronted with an acute outbreak. During the first few months 20 cows out of the herd of 30 were badly affected, seriously reducing the financial return of the farm.

Mr. Watt sought the advice of the Milk Board's District Supervisor and following discussion, immediately installed the jet hose system, paper towels, sanitiser bottles and an iodine based sanitiser. The milking machines were checked and the veterinary surgeon treated all affected cows. Sensitivity tests were carried out and in this particular case it was found that Terramycin was the most effective antibiotic to use.

Records kept indicate approximately 30 cases of mastitis during the first few months. In all, only 20 cows were involved as some were recurring cases. Of these 20 cows, nine failed to respond to treatment and were disposed of. Five of the eleven remaining in the herd have had slight infections since.

The important point is that, after introducing 15 heifers and a number of new cows into the herd, not one new case had shown up in eighteen months on the control system. It is important because five doubtful cows are still in the herd and the problem has not spread at all.

During his first six months on this farm, the cost of veterinary treatment and antibiotics for infected cows alone amounted to £50, whereas the cost of the past fifteen months has been reduced to £5. This in itself is a saving, without taking into consideration the value of milk normally lost with this disease in a herd.

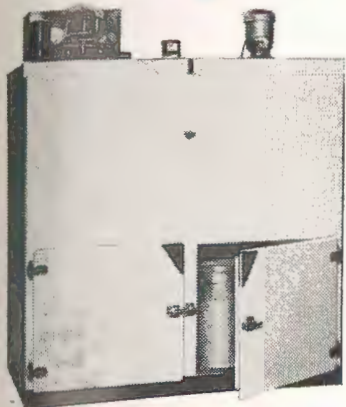
The initial cost of installing the water spray system and plastic bottles was only £4, as Mr. Watt carried out the work himself. The recurring costs of preventive measures taken over twelve months has been:—

52 rolls of paper towels at 4/- .....	£10 8 0
1 gallon of iodine base sanitiser .....	3 16 0
Replacement of plastic bottles .....	3 0
<b>Total .....</b>	<b>£14 7 0</b>

When asked for his opinion on the use of this system, Mr. Watt said, "I consider that I have beaten the mastitis problem and I base the whole of the control in my case on proper dairy hygiene—with emphasis on the use of running water for each cow, paper towels and the use of a good sanitiser. I feel sure that, if I had not adopted these measures, other stock introduced into the herd would have been affected in some way. As regards the time factor or extra time in milking, after getting into the routine I spend little more time in milking, because, in the past I spent some time in the treatment of infected cows."

*A vital need for dairymen!*

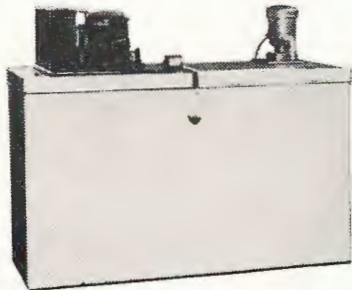
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THE SOUTH AUSTRALIAN

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# Journal

The Official Publication of the



Published Bi-monthly

Vol. 4, No. 1

Adelaide, JULY-AUGUST, 1964



—Photo by courtesy "The Chronicle"

HEMAFORD SUPERIOR BEAU

Reserve Junior Champion — Royal Adelaide Show, 1964

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Mr. E. J. Chinner, of "Gully Grove", Angle Vale, owner of this prize winner and of this year's top A.I.S. herd, with 427 lb. b.f. average says, "I am delighted with the results of Ellis Dairymeal".

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# 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

## General President's Annual Report For 1963-1964

The Association suffered a grievous and unexpected loss in the accidental death on 16th December, 1963, of Ivan Ross Elliott, O.B.E., General President of the South Australian Dairymen's Association and Chairman of Directors of the Metropolitan Milk Equalisation Committee Limited.

Mr. Elliott, who was a member of the Association from its inception, was elected General President in 1939, a position which he occupied continuously until his death. As President of the Association he took an active part in the introduction of the orderly marketing of milk in the Adelaide metropolitan area, and on the formation of the Metropolitan Milk Marketing Committee in 1941, he was appointed Chairman, again a post which he occupied until his death.

In January 1963, Mr. Elliott was admitted to the Order of the British Empire by Her Majesty the Queen for his services to the dairying industry, and was invested with the Order by the Queen herself during her visit in that year.

We record with regret also the death on 19th May, 1964, of Mr. E. E. Nettle, President of the Mt. Barker District, a delegate to this Central Council, and a member of the Artificial Breeding Study Group.

### PRODUCTION AND CONSUMPTION

The output of milk from licensed producers in the metropolitan supply area reached the record total of 44,395,000 gallons, and continued the run of record outputs that have been the pattern of production from this area since 1961. I am pleased to be able to record also that the consumption of liquid milk also reached a record total, and that, too, capped a sequence of record years, with a far greater proportional increase than had occurred in the last three years.

Nevertheless, the rate of increase in production has far outstripped the growth in consumption and the resultant fall to 44.25% in the proportion of milk sold as whole milk has had the effect of depressing the equalised return to a considerably lower figure than that prevailing in the years immediately preceding 1961.

### HEMAFORD SUPERIOR BEAU

Reserve Junior Champion Friesian Bull at the Royal Adelaide Show, 1964, is by GALAVIEW SUPERIORITY out of the high-testing dam LARATINGA KORNDYKE MARION. This bull, which was placed 3rd in the 1963 Adelaide Royal, has had other show success this year at Mt. Pleasant (1st), Mannum (2nd), and Gawler (2nd).

## MARKET DIFFICULTIES

At the beginning of the period under review the Australian dairying industry faced a crisis caused by large stocks of butter and cheese, held in cold store, in excess of domestic requirements and for which no commercial overseas outlets appeared to be available, and in an effort to avert disruption of the industry which could have culminated in complete breakdown of the Commonwealth Equalisation Scheme, the Australian Dairy Produce Board called for a substantial reduction in cheese production. Your Association, endeavouring to make contribution towards this goal, requested the Metropolitan Milk Board to cease issuing further licences for city milk production until consumption more nearly equated the production from current licencees, as an increase in the total number of licencees had become apparent in the last two years, due, the Association believed, to the higher price that resulted from the pooling of returns from liquid milk and cheese manufacturing, but having the effect only of adding to the already large volume of surplus milk. The Metropolitan Milk Board refused the request, but in the meantime the greatly reduced European production that had resulted from the previous severe Winter caused an increased demand that, within a very short period, entirely absorbed what had hitherto been a surplus. The Australian dairy industry is indeed fortunate that Europe's loss was our gain, but the threat of a recurrence of even greater surpluses in the near future must be kept constantly in mind.

## CONSUMPTION—DAIRY PRODUCE

Despite the continuous expenditure of a great amount of money on market research, promotion, and advertising, the domestic consumption of dairy produce is no more than stable, at figures considerably lower than those in some other Western Countries with comparable standards of living, a circumstance which, as regards cheese, with which this Association is mostly concerned, we believe may be due to haphazard marketing, in that continuous supplies of cheese of acceptable quality and maturity appear to be not readily available to the consumer. In an effort to correct this the Association has given considerable study to the possibility of grading cheese for the domestic market, a practice which is carried out in many cheese-producing countries overseas, and which is analogous to grading for export. The results of this study, and of our collaboration with acknowledged authorities in cheese technology, will shortly be presented to the Australian Dairy Produce Board.

This stricture, however, applies entirely to cheddar cheese, which forms by far the greatest proportion of our output. The consumption of fancy cheese is increasing at an extremely rapid rate, having more than doubled both in total and per head of population in the three years to 1962-63. It is therefore a cause for concern that the Australian production of these varieties appears to have done little more than remain stable during that period, a state of affairs which the Minister for Primary Industry described as "hardly satisfactory". An attempt to provide a more favourable economic situation for the production of fancy cheeses by increased tariff protection has so far met with little success because of the lack of adequate supporting data.

## PRICES AND RETURNS

The cost survey conducted by the Metropolitan Milk Board has shown very little variation in the average cost of production in recent years, and as a consequence, the price paid to the producer for whole milk has remained unchanged since 1961 at 42½d. gallon. However, this stability in an atmosphere of generally rising costs has been achieved only by the adoption of a high standard of husbandry which has had the effect of greatly increasing productivity per farm, and per cow, and has resulted in an unprecedented volume of milk for manufacture during a period when the price for such milk has been extremely low, and the depressing effect of these two factors simultaneously on the equalised price has been magnified. It is therefore fortunate to be able to report that

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**1939 AND NOW**

Conditions in 1939 may be regarded by some to be as remote as in 1066; however, others do have memories of this time which are crystal clear — tailored suits plus a spare set of trousers for £5; cigarettes at 10 for 6d.; a house for £700 but now worth £4,000 or more; a shotgun for £20, but now £100; the basic wage at £3/16/- per week, and £1,000 a princely sum.

It is worthwhile drawing such comparisons so that our present day thinking in business can be adjusted to suit present day inflation. For example, in one direction, do we have Superannuation or Life Assurance designed to suit conditions of 20 or 30 years ago? And do we have Insurance on our homes and business for a sum insured so low, as to be quite inadequate if a heavy loss occurs?

Over these years many new types of insurance cover have been made available; do we know of these and have we availed ourselves of them?

You do not know when a serious loss may occur, so a prompt review of both your life and general insurance could help avoid financial stress.

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the buoyant state of the London market which followed the imposition of quotas on butter and the voluntary arrangement on cheese have resulted in a slight improvement in overall returns, so that the year closes with an interim basic price of 39d. lb. butterfat and a forecast that the equalised price will not fall below the level prevailing since 1961.

### TECHNOLOGICAL PROGRESS

The technological changes which have enabled the recent spectacular increase in production to be achieved must surely, by now, give the lie to the label of "inefficient" so often applied to the dairying industry, and of these techniques artificial breeding is perhaps, one of the most spectacular in its effect. The Artificial Breeding Board of South Australia is now well established and has, during the past year, secured a number of bulls with blood lines that cannot but improve the productivity of the average herd. Although the incidence of infertility, the extent of which was probably hitherto unsuspected, has had a disappointingly depressing effect on non-return rates, the improvement in fertility which can only be achieved with artificial breeding, and the higher viability, as compared with deep frozen semen, of chilled semen from the Board's own bulls, should give for more satisfactory results in the near future, and enable the cost of the service to be maintained at its present level.

### UNITY OF PRIMARY PRODUCER ORGANISATIONS

At the Federal level the negotiation for an acceptable form of merger between the National Farmers' Union and the Australian Primary Producers' Union has continued to the point where the draft constitution of a proposed single organisation is now before each constituent organisation of both Federal bodies for study. Meanwhile, at State level, the Association has not been inactive, and a meeting of the Joint Liaison Committee between the Association and the Dairy Committee of the APPU (S.A. Division) has resulted in a programme whereby the full executive committees of the two organisations will meet at six-monthly intervals to formulate common policy for the intervening period, whilst, at the same time, each organisation is committed to preparing a study paper setting out suggested conditions for the ultimate unity of both organisations.

### THE FUTURE OUTLOOK

Certainly, as this report is presented, the outlook is less gloomy than it has been recently. Rises in the retail prices of butter and cheese, the first for many years, although undoubtedly to be accompanied by some degree of consumer resistance, will result in an improvement in the return from domestic sales. The buoyancy of the London market and the growth of Asian markets through the enterprise of the Australian Dairy Produce Board lead to optimism which is reflected, through the agency of the Federal Government's continued underwriting of the opening price, in an unprecedentedly high interim basic price of 43d. lb. for the coming season. At the same time the Association, following the presentation of a case for an increase of 4d. per gallon in the price paid to the producer for whole milk, waits confidently for an announcement from the Metropolitan Milk Board. But it would be foolish to assume that these conditions are more than temporary. A move into dairying by other primary producers, a good European season, or a drift in home consumption could accelerate the onset of a recurrence of the surplus problem which is, without some form of intervention, inevitable, and to which must be added, unless unforeseen factors intervene, the continuation for many years yet, of a low whole-milk quota for licensed producers. In view of these circumstances I believe that the industry as a whole will have to display a greater concern for promotion at every level and in every possible way of the produce of our dairyfarms and factories, not only in Australia but in profitable overseas markets.

**ACKNOWLEDGMENTS**

As your new General President I am grateful for the support that has been given me by the delegates to Central Council, the Executive Committee, and the Staff, and I express my thanks also to the Minister of Agriculture for his kind assurance and co-operation and assistance, and to the members and staff of the Metropolitan Milk Board, and officers of the Department of Agriculture. I am confident that with their help and your support we can cope with whatever eventualities may arise.

—H. E. LOECHEL, General President.

**Statistics****ADELAIDE METROPOLITAN MILK SUPPLY AREA****PRODUCTION (000 gallons)**

	For Month		Total since July 1		Total since Jan. 1	
	1963	1964	1962/63	1963/64	1963	1964
June .....	2,835	3,192	41,039	44,395	16,995	18,840
July .....	3,263	3,565	—	—	20,528	22,405

**SALES (000 gallons)**

	For Month		Total since July 1		Quota %		C.M.B.	
	1963	1964	1962/63	1963/64	1963	1964	1963	1964
June .....	1,572	1,644	18,928	19,646	55.0	51.0	2/7½	2/3½
July .....	1,644	1,712	—	—	40.0	48.0	2/4½	2/1

Moving Average Quota for 12 months ended 30/6/64, 44.2%; 31/7/64, 44.11%.

**INTERIM PRICES TO LICENSED SUPPLIERS**

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

1964	Basic C.M.B.		Total	3% 3.5% 4% 4.5% 5%				
	(per lb. butterfat)			(per gallon)				
June .....	3/6	2/3½	5/9½	1/9½	2/1	2/4¼	2/8¼	2/11¼
July .....	3/7	2/1	5/8	1/9	2/0½	2/4	2/7½	2/11

**LONDON PROVISION EXCHANGE QUOTATIONS**

	June		July	
	1963	1964	1963	1964
Butter—Choicest Australian .....	314/-	334/-	334/-	334/-
Cheese—First Grade Australian .....	225/-	238/-	226/-	238/-
Rindless Australian .....	230/-	247/-	232/-	247/-

**NEW MEMBER FOR MILK BOARD**

Mr. Ken Clarke, of Charleston, has been appointed as a member of the Metropolitan Milk Board in succession to Mr. Ken Bowen, who resigned on 30th June, 1964.

**WILL YOU BE THINKING  
THIS BEFORE NEXT WINTER?**

*"Wish I'd sown  
FODDER CROPS  
when I had the chance"*



### BETTER SOW NOW!

When paddocks are dry and bare it will be too late to think about sowing Fodder Crops. Now, when the soil is moist and workable, and the spring flush of growing is ahead, is the time to act!

Properly sown and managed, a couple of paddocks of Fodder Crops will give you a "cut and come again" of rich greenfeed **WHEN IT'S MOST NEEDED**. Protect yourself and your stock. If you're not sure what will do best in your area, contact Hodge's for advice on the Fodder Crops to sow within the next month or two.

#### SPRING'S THE TIME TO SOW:

- Chou Moellier ● Rape ● Sudax
- Sudan Grass ● Japanese Millet.
- Turnips and Swedes

**M. F. HODGE & SONS LTD.**

**128-134 GILBERT STREET, ADELAIDE - 51 5571**

## RIVER MURRAY FARMER USES BULK VAT

A "Way" Direct Expansion Bulk Milk Unit is now operating on the dairy farm of Mr. Harold Baker of Ponde.

The Way Unit is the only one of its type to have passed time tests carried out by the State Electricity Commission of Victoria, at the request of the Victorian Dairyfarmers' Association.

During these tests conclusive data was gathered which showed the low running cost of such a unit, and it can be safely anticipated by users of the equipment that running costs could be safely estimated at a farthing per gallon.

The Unit has become very popular in the northern areas of Victoria, due to its complete reliability in heatwave conditions, and the close resemblance in climate between that region and the Murray Swamps provide ample assurance of the Unit's efficiency under local conditions.

The bulk milk tank is cylindrical in shape and is fitted with refrigerant coils underneath and partly up the sides of the milk vessel. The liquid refrigerant container has provision for water cooling for maximum efficiency.

The tests carried out by the S.E.C.V. conform to the draft Australian Standards Specification which was drawn up at the request of the dairying industry to protect dairy farmers from the risk of purchasing under-powered or inefficient units.

The test engineers found that the time required to cool the milk to 40 degrees in an atmosphere of 90 degrees was below the specified maximum time of 3½ hours, and in subsequent overnight tests at 95 degrees with full vat the temperature of the milk was maintained at well below the specified maximum.

Electricity consumption during a full 95 degrees atmospheric test, to bring the full tank of milk down to temperature and hold it for 24 hours was estimated at 20.6 kwh., and on this basis it was calculated that about 0.82 kwh. would be required to cool 100 lb. milk.

However, even during the summer an atmospheric temperature of 90 degrees will not be maintained constantly, and the test figure of 0.82 kwh. can be expected to be considerably higher than would result from normal running over a full year. To get a more accurate measure of running costs Mr. Baker's unit has been fitted with a watt-hour meter, and at the conclusion of a full 12 months a practical cost will be calculated, which it is expected will be no more than a farthing per gallon.

The Way Unit, which is manufactured entirely in Australia, is made by A. G. Way & Co. Pty. Ltd., of 215-223 Franklin Street West, Melbourne.

### RELIEF MILKING SERVICE

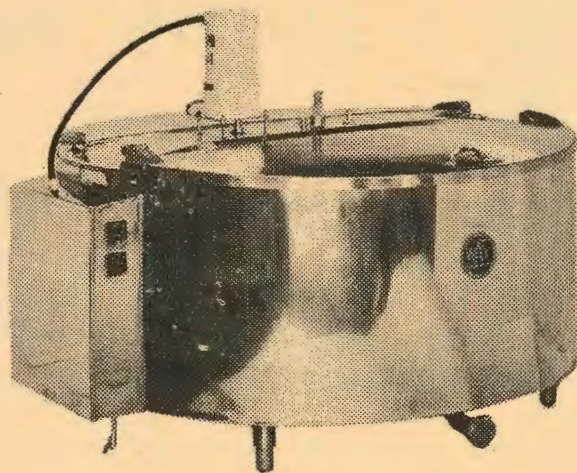
A relief milking service is now available in the city milk area for farmers wishing to take vacations, or in the case of sickness or accident.

The service will be conducted by Miss J. K. Blackett, who has conducted a similar service in England, and who holds a diploma from the Monmouthshire Institute of Agriculture, and who has had extensive practical experience in dairying.

The rates to be charged will depend on the number of cows to be milked, and the service will be available for any period, from one day to as many weeks as required.

Rates and conditions are available on application to this office, 'phone 51 3034.

# PROVEN PERFORMANCE!



## “WAY”

DIRECT EXPANSION  
**BULK MILK UNIT**

### THE ONLY ONE OF ITS TYPE

TO HAVE PASSED THE TIME TESTS OF THE  
STATE ELECTRICITY COMMISSION OF VICTORIA

*Manufactured entirely in Australia by*

**A. G. WAY & CO. PTY. LTD.**

215-223 FRANKLIN STREET WEST, MELBOURNE

P.O. BOX 2300 U

SUPPORT THE FIRMS THAT SUPPORT YOUR JOURNAL



# INCREASE MILK YIELD & BUTTERFAT CONTENT

WITH

# Meggitt's

SCIENTIFICALLY

FORMULATED

## DAIRY FEEDS

A cow's milk production is dependent on its energy and protein intake . . . the more nutrients fed the higher the milk yield and butterfat content.

Meggitt's Dairy Feeds are rich in these milk-producing nutrients in their most palatable form . . . energy-giving carbohydrates from crushed grain and vegetable protein from linseed meal, &c., PLUS minerals.

**HOW ABOUT COST?** Meggitt's employ today's most modern handling and processing methods and machinery . . . **PRICES ARE CUT TO BEDROCK.**

**A CHOICE OF 3 DAIRY FEEDS . . . Which is best suited to your needs?**

**LINMIX No. 3**—Lowest costing complete dairy feed in S.A.—a highly palatable dry-mix of linseed meal, oats and minerals blended with molasses. 15 per cent min. protein.

**HI-PROTEIN DAIRY MEAL**—a high protein and high energy feed for top producing cows and when a pasture is poor. 18 per cent. min. protein.

**LINSEED DAIRY MEAL**—a high energy and medium protein feed ideal for when pastures are in average condition. 14 per cent. min. protein.

Manufactured by:—

**MEGGITT LTD.**

**cnr. Leadenhall and Ship Streets, Port Adelaide • 4 1101**

**Available from your fodder supplier**

# Promotion and Research Story

## A REPORT BY THE AUSTRALIAN DAIRY PRODUCE BOARD

### What is the Board's Research and Promotion Programme?

By Act of Parliament in 1958 the Board was empowered to implement research and promotion on behalf of the industry. Under the **Research activities** the Board finances various scientific projects which are considered of use to the industry. Projects sponsored come under five broad categories, namely: Dairy Farm Research, Dairy Manufacturing Research, Marketing and Economic Research, Nutrition Research and Dairy Education.

The object of the Board's **Promotion activities** is, by means of all suitable avenues of advertising and sales promotion, to raise the consumption rate of butter and cheese in Australia.

Market and consumer research is also an important activity which enables the Board to assess the effectiveness of promotion and to plan future campaigns.

### Who Pays for Research and Promotion?

**Promotion** is financed by statutory levies of  $\frac{1}{4}$ d. per lb. on butter production and  $\frac{1}{16}$ d. per lb. on cheese production. This is paid by the dairy farmer; so that he and he alone finances the whole of the Board's promotion.

**Research** is financed by a statutory levy on the dairy farmer of  $\frac{1}{16}$ d. per lb. on butter production and  $\frac{1}{32}$ d. per lb. on cheese production. In this case the Commonwealth Government subsidises the amount levied on a pound for pound basis.

### How Much is Spent per Year?

Figures vary with production, but average amounts are between £250,000 and £300,000 on Research and the same amount for Promotion.

### Under What Circumstances was the Research and Promotion Act Brought into Being?

Following a disturbing world-wide trend the per capita consumption of butter in Australia fell at an alarming rate during the 1950's. The drop was from approximately 32 lbs. per head to 25 lbs. per head in 1958.

Cheese per capita consumption figures, although remaining constant were very much below those of other Western countries.

There were many reasons for this. The main ones being:

(a) Economic growth introduced new consumer goods and services at an unprecedented rate. Many of these held special attractions being time saving or effort saving and added a new dimension to the consumer market.

(b) A revolution in the traditional marketing and distribution system. especially with the advent of supermarkets and self-service stores meant that products had to sell themselves and impulse buying has come to the fore in significantly influencing consumer behaviour.

(c) Television brought a new form of advertising and increased competition.

(d) Greater credit facilities offered to the consumer, especially hire purchase, meant that buyers could allot a greater part of their budget to items hitherto considered as luxuries.

In short, more goods were competing for the buyers' money and new techniques made this competition more effective. In view of this it was obvious that if the industry was to continue to hold a substantial share of its most important market (i.e., the home market) some co-ordinated sales promotion was essential. Before 1958 the only advertising done for butter and cheese was that carried out by individual manufacturers. These manufacturers were naturally only concerned with acquiring a greater share of their own localised market and could not be expected to launch ambitious programmes which could increase the total market on a national level.

A logical step at the same time was to introduce some co-ordinated research which would enable the dairy farmer to help finance the more important and pressing projects.

### **Who Carries Out the Research Projects?**

Various bodies all over the Commonwealth including C.S.I.R.O., State Universities and Departments of Agriculture, Marketing and economic research is initiated by the Board and carried out by its own economists and specialist companies. Nutrition research is done by Dairy Foods Services and hospitals, whilst a certain amount is put aside for dairy education. This latter is distributed in the form of studentships awarded each year to students working on problems associated with the industry.

### **Who Administers the Promotion Programme?**

This is done by the Board. Specialist executives handle in association with outside organisations (e.g., Advertising Agencies and Marketing Consultants), national advertising, public relations, promotion campaigns and nutrition research.

### **What Has Been Done in the Field of National Advertising?**

Butter promotion has been directed almost exclusively at the housewife in her capacity as the prime purchaser and user, with strong emphasis given to butter in cooking. This is necessary because of the disturbing increase in sales of cooking margarine, the latest statistics indicating that for the eight months ended February, 1964, 22,807 tons of cooking margarine were produced compared with 19,062 tons in the same period in 1963.

It is essential, therefore, that the weight of the Board's butter promotion be directed towards the housewife's cooking activities. This is achieved through advertisements in national women's magazines such as "Women's Weekly" (circulation 800,000 copies per week) and "Woman's Day" (500,000 copies per week). Butter on and in food is also promoted in all States through the Board's part-sponsorship of "Disneyland" and "Pick-a-Box," both highly-rated television shows.

The Board is also active, wherever opportunities occur, in promoting butter in commercial catering fields and in exhibitions and shows. Its year-round association with White Wings Pty. Ltd., national flour distributors, in promoting the International Butter/White Wings Bake-Off, is also aimed at establishing butter's position as the best shortening for cooking.

In addition to creating nation-wide interest amongst women, the Bake-Off provides important promotional benefits at retail level, while 9,000,000 White Wings flour packs each year carry the prize-winning recipes, all of which feature a minimum of four ounces of butter.

The Board's association with the Bake-Off opened the way for sponsorship of the special £2,000 "Butter Box" prize which will be a feature of Bob Dyer's "Pick-a-Box" programme on national television and radio for eight weeks beginning in July.

# HIGHEST

## PRODUCER EVER OF BUTTERFAT IN AUSTRALIA

Australian allbreeds lifetime butterfat production record:  
9,219 lb. butterfat in 14 lactations—over 60 tons of milk at 6.4 B.F. test.



**VYNETTE GADGETS DAINTY:** One of the many high producing cows in M. R. & J. E. McKenzie's Vynette Stud at Tooperang . . . proof conclusive that FOR MAXIMUM PRODUCTION, GOOD BREEDING AND GOOD FEEDING GO HAND IN HAND.

**Your Herd deserves the Best!**  
Wholesale or Bulk . . . Stud or Commercial  
Orders . . . **Meggitt's is your Best Buy!**

Manufacturers of:—● LINMIX ● FOSTERMILK  
● HIGH PROTEIN DAIRY MEAL ● LINSEED DAIRY  
● MEAL ● LINSEED CALF MEAL AND PELLETS.

**"Leaders in Livestock Nutrition"**  
MEGGITT LTD., cnr. Ship and Leadenhall Sts.,  
Pt. Adelaide. ● 4 1101.

**Meggitt's**  
SCIENTIFICALLY FORMULATED

**DAIRY FEEDS**

Cheese is also promoted to housewives through national press, television spots and "Disneyland." However, more specific efforts are being made through the medium of direct mail campaigns in most States, aimed at commercial caterers, hotels, motels and restaurants. Sales of Australian made non-cheddar cheese in Victoria increased by 27.1% during the period of the direct mail campaign in Melbourne and the metropolitan area.

### And in Public Relations?

Through the Board's Public Relations activities the consuming public have been made aware of the industry's importance to the country's health and economy. For the first time accredited news media has a central source through which to obtain news of dairy foods and of the industry. Publications produced in association with other departments of the Board have made the dissemination of important news much easier.

Newspaper and magazine articles, radio and television interviews and personal contacts with influential groups such as women's organisations, business men's clubs and the like have all played their part in building up goodwill and a better appreciation of the industry and what it has to offer.

In particular through Public Relations effective answers to unfounded rumours on the association of dairy foods with heart disease and overweight have been collated and passed on.

Public Relations of this nature is important as consumers will only do business with industries and organisations to whom they are sympathetic and for whom they have respect and understanding. This is a lesson long since learnt by such highly successful companies as G.M.H., B.H.P., oil companies, etc.

In addition the P.R. department carries out liaison work with overseas customers by news and general article releases both direct and through the Department of Trade.

### What of Dairy Foods Services?

This is a vital part of the Board's promotion and research campaign. Dairy Foods Services, staffed by experts in the field of nutrition and home economy and equipped with library and modern kitchen facilities to do practical testing work, is responsible for finding new ways of enjoying dairy foods; for assessing the nutrient values of foods; for working in close liaison with medical, scientific and educational bodies. Literally, hundreds of recipes are created and tested every year and these are projected to the public through advertising and through the food editorial pages of newspapers and magazines. Pamphlets, booklets and broadsheets are constantly being produced and distributed to influential groups.

### What is the Role of Market Research?

Funds for market research are drawn mainly from the research budget, but the findings are an important influential factor in guiding promotion activities. Briefly, marketing consumer research covers the following areas:

(a) Estimation of actual sales and consumer level of butter and cheese by months, by States, by family sizes, by newly-settled and old-settled Australians plus other important socio-economic groups.

(b) Estimate of the proportional usage of butter and cheese for table purposes, for cooking, for baking; also proportional usage by households, by manufacturing industries and catering industries.

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# Davis & Co.

M.R.E.I.

## MOUNT COMPASS

Eighty acres, all cleared, heavily pastured, subdivided, 17 well fenced paddocks, watered nine dams, permanent creek, 35 in. rainfall, 6 rmd. homestead excellent order, fully equipped (C.M.L.) dairy. Hay shed, 40 ft. x 15 ft. Workshop, implement shed, other sheds, full working plant, extensive irrigation set up 52 head of choice dairy cattle.

Very reasonably priced at £17,000 W.I.W.O. Bank Finance of £5,750 available.

## NARRUNG

Lake frontage, 220 acres, all cleared sown lucerne, rye, clover, Rainfall 18 in. p.a. Property watered from lake, unlimited supply. Centrifugal pumping (18,000 g.p.h.). Good 5-roomed home, mod. convs. Implement shed (38 ft. x 20 ft.), hay shed (50 ft. x 20 ft.), old dairy easily modernised, carrying capacity 60-65 milkers, extensive plant, including fluming, tractor, etc.

Additional 40 acres leasehold £6 per acre for lot.

This property is excellently suited for irrigation. Price, £18,000. Terms to suit purchaser.

## LICENSED LAND AGENTS

**ASTON HOUSE, 13 LEIGH STREET, ADELAIDE**

After Hours — Meadows 41

(c) Establishment of factors which motivate purchase of butter and cheese and how consumption of these can increase in the light of consumer characteristics.

(d) Establishment of how the image of butter and cheese and of the dairy industry can be improved.

(e) Establishment of the effectiveness of the butter distribution system and any weaknesses provide competition with opportunities to exploit the market to the detriment of butter sales.

(f) Investigation of the attitude of retail outlets particularly with regard to Australian cheese varieties.

Research also is used to collate similar information regarding overseas markets.

### Does the Board's Promotion Supersede Manufacturers' Promotion?

No. The Board's campaign is national and is intended to widen the market. Manufacturers must still advertise so that they can consolidate the expanded market and create brand awareness and loyalty.

### Manufacturers' Promotions and Board Promotions be Co-ordinated?

Yes, to mutual advantage and all the Board's campaigns are planned with co-ordination in mind.

# DAIRYMASTER "Del Venturi"

## DAIRYMASTER "REVIEW"

A Factual, interesting and informative Brochure, this Review has been especially written—not only to describe and illustrate in detail the tremendous advantages and exclusive features of "Del Venturi" Milking Machines, but to give information of a nature which will correct any misconceptions the farmer may have due to misleading or incomplete information.

The "DEL VENTURI" machine is the world's FINEST MACHINE and it is just fact, that —

- No **other machine** has its features or equipment,
- No **other machine** has its export record,
- No **other machine** has such an export potential,
- No **other machine** has ever received the direct name of a Research Station renowned throughout the world — both East and West — for its complete investigation of the milking machine.

### DAIRYMASTER "DEL VENTURI" MILKING MACHINES PTY. LTD.

26-28 FURNESS AVENUE, EDWARDSTOWN, S.A.

Phone: 76 6193

No **other machine** installed in such States and

No **other machine** with a record of patented Milking Machine — been in Sta a

No **other Company** men

Commencing 1971 Introduction of the Del Venturi Review the fact component of the machine, its and automatic washing machine includes a number of "Choosing a Machine" almost immediate contribution forwarded to this on Company.

# ri" MILKING MACHINES

the record of being  
the most important Research  
in Australia and New Zealand

Company behind it  
the record of development and  
achievement in regard to the  
—all of which has  
been Certified.

and  
challenge these state-

production" the Dairy  
farmer through every  
gives complete speci-  
fications and comments on Auto-  
Systems, etc. And  
data a chapter on  
"the machine". It is ready for  
publication and will be  
sent on direct request to the

## Important Note

### DAIRYMASTER PULSATION

Dairymaster Del Venturi milking machines are the only machines having true **RUAKURA PULSATION**. This pulsation is NOT—under any circumstances—to be confused or compared, either by measurement or action, with types of pulsation commonly described as 70.30 rotio advertised or recommended by milking machine purveyors.

Dairymaster **EXCLUSIVELY** incorporates the **THREE PHASE PULSATION** developed from Ruakura Research and **CONCLUSIVE EVIDENCE** of the **SUPERIORITY** of this system has recently been published at the Ruakura Conference in 1963.

Please forward a copy of the **DAIRYMASTER REVIEW** to

Name .....

Address .....

Such campaigns range from the spectacular "Bake-Off" to small campaigns which feature advertisements in women's magazines or newspapers.

### What Can the Board do in Promotion that Manufacturers Cannot?

1. Advertise nationally (most manufacturers have localised markets).
2. Carry out work such as that done by Dairy Foods Services in liaising with medical, scientific and nutrition authorities, in making our products available to important and influential groups such as schools, home economic training establishments, etc.; projecting recipes to the public and engaging in nutritional research. (It would be uneconomical for individual manufacturers to do this.)
3. Implement public relations on behalf of the industry (not the manufacturers' job).
4. Make extensive market surveys and assess, from an overall position, national trends and the relationship of localised marketing phenomena to those trends.

### What Results Has the Promotion Had?

The objective was to arrest the downward trend in per capita consumption and eventually push it up again.

The following statistics show what has happened. Note that the trend has practically been halted in the past two years and note that for two years until the campaign got under way and made impact no visible results could be expected.

CHEESE—Australia			BUTTER—Australia		
	Total (tons)	Per Capita (lbs.)		Total (tons)	Per Capita (lbs.)
1938-39	13,370	4.4	1938-39	101,364	32.9
1960-61	29,817	6.4	1960-61	116,318	25.1
1961-62	30,700	6.5	1961-62	113,761	24.0
1962-63	31,938	6.6	1962-63	115,810	23.8

### How Does the Board's Promotion Budget Compare with Other Similar Budgets?

Unfavourably. The equalisation value of butter and cheese sold on the Australian market comes to approximately £60 million. Taking the top figure of £300,000 for promotion we find the percentage spent on advertising as related to gross value of sales equals 0.5%. The normal budget in private enterprises allocated by national advertisers is 2% gross value of sales. The following figures are also interesting in this regard:

Commodity	Percentage of Gross Sales Spent on Advertising
Dairy Products (U.S.A.)	1.44%
Food Products, general (U.S.A.)	5.26%
Food Products, general (Australia)	3.7%
Pharmaceuticals (Australia)	20.25%
Cosmetics (Australia)	20%
Soup (Australia)	4%
Electrical Appliances (Australia)	5%

### Isn't Approximately £250,000 enough to Spend on Dairy Foods Promotion?

It is not as much as it seems. When operating on a national level to the extent the Board now does the figure is almost immediately reduced to £100,000 when the costs of the operation of Dairy Foods Services, Public Relations and administrative expenses are deducted. In the case of the Board £50,000 of this £100,000 is put aside for its part sponsorship of "Disneyland" a highly

*The proof of the Pudding is in the eating . . .*

BUT . . .

The proof of "TRIPLE M" is in your Factory Returns and the Health of your Stock.

**Give "TRIPLE M" a fair trial in YOUR Herd.**

**£1/17/6 per 56 lb. Bag from your local Factory or Stock Agent.**

SUPPORT THE FIRMS THAT SUPPORT YOUR JOURNAL

rated show which cannot be given up as once off the programme the Board would never be able to get on again—the list of prospective sponsors is so great. From this remaining £50,000 must come the entire cost of essential advertising in women's magazines. This costs £2,000 for one colour page. Press advertising must also be included in this which can be as high as £5 per column inch.

It can readily be seen that there is little room for essential expansion of all facets of the Board's promotion activities especially as since 1958 advertising costs have inevitably increased and will continue to do so. Already this year sound plans have had to be put aside because of lack of finance.

#### **If the Board had More Money what would it do?**

It must be remembered that up to a point the more that is spent on advertising the more value per pound is gained. At present the industry is working on a level far below that optimum point.

1. Produce more publications and educational material, including films and other visual aids.
2. Subsidise concession prices to home economic schools and other educational authorities so that the young generation will have the opportunity to learn of the value of dairy foods. Margarine interests have been doing this for many years now.
3. Carry out more market research and gain a better understanding of prevailing climates and trends.
4. Accelerate results in terms of increasing per capita consumption of butter and cheese and thereby improve the financial return to the producer.

#### **Who Can Raise the Levy?**

The dairy farmer. If the great majority of dairy farmers in the Commonwealth want to pay more levy, legislation could be amended accordingly. If they do not, no increase is possible.

#### **What Will Increasing the Levy Mean in Terms of Cash to the Dairy Farmer?**

The dairy farmer producing 8,000 lb. of butterfat per year will find that he will pay, if his levy is doubled, an approximate extra £4 3/- per year. Against this it must be remembered that any increase in home sales (which yield over 40% more than sales on overseas markets) will raise the equalisation value of all butter and cheese produced in Australia. This will, of course, result in an increase in returns to the farmer.

## N.Z. BULK TANK IN S.A.

It is obvious that the development of bulk milk pick-ups in parts of South Australia, will play a large part in the future of the State's dairy industry, and in furtherance of this a unique farm bulk milk tank has been introduced to South Australia's Dairy Industry.

The home place of those interested in this phase of our country's primary industry is of course New Zealand, and Resco Pty. Ltd., who have for many years been engaged in the manufacture and supply of refrigerated milk coolers in this State, and as manufacturers have followed closely, overseas and interstate trends in the application of refrigeration in the dairy industry, have regularly sent their engineers to New Zealand to study this country's industry.

New developments and trends have been noted and the collected information and ideas have been applied to the present and future requirements of our dairy farmers.

Resulting from these visits Resco have been made the State's sole distributors for Truscotts, N.Z., with the first 320-gallon farm tank being installed at Mr. W. S. Polkinghorne's "Clair Roy" Friesian stud at Jervois. This 320-gallon "Milkoola" tank incorporates many new features as well as the special design to comply with the high standards required by Australia's Dairy Authorities.

The tank is of a vertical cylindrical design and the inner lining is manufactured from 14 gauge stainless steel. The bottom is of an oblique conical design that ensures rapid and maximum drainage.

The outer shell design ensures that milk spilled on the side of the tank does not run immediately under the tank in hard to clean areas. This outer shell is manufactured from 18 gauge stainless steel and to the inside of this outer shell is attached the support ring and fittings for the tubular adjustable legs.

Insulation of "Poly-urethane" expanding foam insulation is used between the vertical walls of the tank. Bottom insulation is fibre-glass wool tightly packed and covered with a moulded white fibre glass bottom.

Gentle, but thorough, agitation is achieved by a slow speed down-thrust agitator powered by a non-lubricating totally enclosed motor fitted with a safety clutch to allow the shaft to be turned from the output end without damage to the drive. This specially designed motor and slow-speed agitation ensures against fear of grease contaminating milk and the gentle rolling action ensures no danger from churning.

Refrigeration is by a unique recirculating system designed by Frigidaire Division of General Motors, New Zealand, Limited, incorporating a number of patented features.

Sterilization of the vat at high temperature with no increasing pressures within the system is possible with this arrangement and the whole structure is fully protected for long life against excessive strain or damage due to the washing or sterilization process. The patented refrigerant flow control system which automatically adjusts to any air or milk temperature or rate of flow of milk remains completely stable, giving maximum capacity.

Perhaps the most important feature of the refrigeration system is the considerable reduction of moving parts. This has resulted in a simpler system and is accompanied by lower running and maintenance costs.

A heavy duty 14 s.w.g type 304 stainless steel pressed bridge fits across the top of the tank and supports an agitator, lids, and the quick action, screw operated, internal outlet valve. The lids manufactured from 18 s.w.g. type 304 stainless steel are both vermin and dustproof and so hinged to lock in the open position, deflects any water into the bridge channel, and are readily removable.

The conception of the "milkoola," incorporating three different diameters to maintain the new low design, gives greater efficiency and ease of cleaning.

*For Positive Results*

# GAIMA

## DAIRY CLEANER IS A MUST

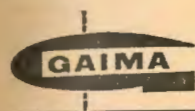
THE ONLY DAIRY CLEANER MADE AND  
FORMULATED IN SOUTH AUSTRALIA FOR  
LOCAL CONDITIONS

**Obtainable in 10 lb. or 28 lb packs from your dairy factory**

After Hours:

GRAHAM MILBANK: 53 4145

DAVID GAINER: 62 2277



**INDUSTRIES LIMITED**

188 MAIN NORTH ROAD,

Food industry Suppliers Phone 65 1235 PROSPECT, S.A.

## A.B. BOARD NEWSLETTER

### A.B. CENTRE FOR EDEN VALLEY DISTRICT

The safety factor alone weighed in favour of artificial breeding, said Mr. H. Hannam, of Mount Torrens, at a recent meeting convened at Eden Valley by the Spring Valley Branch of the S.A. Dairymen's Association to consider the extension of A.B. into that area. Mr. Hannam spoke of his experience with A.B. and praised the inseminators as "a very decent lot of chaps who would not attack a farmer as a bull does."

Mr. S. B. Denton, Chairman of the A.B. Board, and one of the three Board members who attended the meeting, endorsed Mr. Hannam's comments by stating that the Board's technical staff possessed a trait approaching missionary zeal in carrying out their duties, which they believed were for the good of the nations' dairying industry. The result of the meeting, which was presided over by Mr. R. A. Seeliger, and attended by the General President (Mr. Loechel) indicated a demand for A.B. in the area, with at least one thousand cows being offered initially from within the Hundreds of Moorooroo, Jutland and Jellicoe, and it is probable that artificial breeding will be available from a sub-centre in Eden Valley from the opening of the major breeding season in 1965.

The use of A.B. will not be restricted only to farmers who attended the meeting, and other interested farmers may apply.

### QUESTION ON BULL SUBSIDY

Of wide interest is the query put at the Eden Valley meeting concerning the position of a farmer who, buying a subsidy bull, sells it soon after.

The Department of Agriculture has advised that a farmer should inform the department of the sale of a subsidy bull within two years of purchase as a subsidy can only be received once in two years. . . . .

### NEW BULL FOR A.B. HERD

At the Subsidy Bull sale during Show week the Board topped the auction prices in paying 525 guineas for the yearling Friesian bull Glenjoy Sylvia Serenade from the Glenjoy Stud of M. R. and G. D. Rathjen, the most successful exhibitor of the breed. This bull is by G. Maid Serenade, now on a Naracoorte farm, out of the noted Royal Adelaide prize-winner G. Duke Sylvia, who produced 13,620 lb. milk, 604 lb. b.f. at 4.2% test as a J3, and is the daughter of the well-known Ettrick Josephine Duke, sire of 19 two-year-old daughters averaging 11,479 lb. milk, 522 lb. b.f. at 4.6% test, and one of the top-rated sires in S.A.

### CHILLED SEMEN USED

During August and September chilled semen supplies used by the Board came from the following sires:—

Franccliff Rapturous 2nd (502); Vynette Fondhope King (859); Athol Farm Superior Marty (861); Anama Mars Jasper (546); Vynette Gold Finder (66); Hampden Illuminator's Finest (507); Vale Royal Impact (521); Roslyn Vale 5th Milestone (597); Vynette Tulip Paxton (901).

A seven-day cover is in train with chilled semen. Collections are made on Friday and the outstanding samples used on Monday.

"Imported" semen from the Eastern States is still being used, but the ratio is altering in favour of the more economical and reliable chilled semen produced at the Northfield Bull Centre.

The Friesian bull, Strathaven Serenade Mitch has begun service and Yadnari Echo Captain is nearing readiness, while Hemafor Caddy Supreme and Glenjoy Sylvia Serenade proceed through regulation tests.

### PROGENY TESTING IN U.K.

May 1, 1964 has become a key date in the history of the English Milk Marketing Board programme for progeny-testing dairy sires. On that day a new pattern of co-operation between A.B. and National Milk Records (the near equivalent in S.A. is the herd testing system) was established. New contracts were signed under which the A.B. service will pay N.M.R. members directly for using young A.B. bulls and for milk-recording their daughters during at least one lactation.

The M.M.B. artificial breeding service is based on progeny-recorded sires whose daughters have already proved outstanding for production and conformation.

To maintain a plentiful supply of such sires demands a carefully planned progeny testing programme.

It means progeny-testing numbers of well-bred young bulls (only one in four purchased for progeny testing will, on average, be retained in the progeny recorded sire stud); it also means co-operation . . . co-operation above all among the users of the A.B. service who are also members of N.M.R.

Ayrshire, Friesian, Guernsey and Jersey herds are included, and the new scheme works in this way.

A contract is signed between the herd owner and the M.M.B. on a year-to-year basis. The M.M.B. undertakes to inseminate an agreed number of animals in each herd using semen of young bulls on test. The inseminations are free, and the young bulls, selected with the greatest possible care, are developed in teams at A.B. centres so that several young bulls will be used in each herd.

As each heifer's lactation is completed under the rules of N.M.R., the herd owner qualifies, under certain rules, for a payment of £5 even though she dries off. At least 12 heifers must be offered for A.B. during the contract year. They need not be named but once inseminated free must, if necessary, be made available for at least two repeat services by young sires, otherwise the normal fee must be paid.

As each heifer-calf is born, the owner must identify the calf to the milk recorder who will make arrangements for ear marking.

The owner is expected to rear at least one half of the heifers both, including daughters of at least two bulls, to make them available for inspection, and to milk them under the N.M.R. rules. There is no upper limit to the number of heifers to be retained and each recorded will qualify for £5.

Encouraging early response to the scheme is reported, involving 2,000 contracts and more than 50,000 cows for the first year. This is on the way to the target of testing 200 young bulls a year and at least 100 completed heifers.

The Director of the A.B. Board, Mr. W. K. Rose, had this to say about the U.K. progeny testing plan. "The scheme is very similar to the one operated by the New Zealand Dairy Board and the Victorian artificial breeding co-operative.

The fundamentals required are large numbers of dairy cattle and an adequate number of large herds for contemporary comparison of progeny of at least two bulls.

Satisfactory comparisons within herds require large numbers of daughters, e.g., ten by each of two bulls, in the same year and of approximately the same birth dates to give significantly comparable bases of production.

Although the average herd size in S.A. is nearly the same as that in England, the number of large herds is infinitesimal by comparison, as the total number of dairy cows in S.A. is less than in a single dairying county in England.

Methods of progeny testing have to be adapted to conditions in which they must be applied, and with total numbers of cows inseminated as small as they are here, it is incongruous to think of progeny testing by the means used in dairying countries with large cow numbers.

However, if we persist in seeking the best available bulls, have as many progeny identified and tested as possible, then rank the bulls according to progeny merit, I feel we will stay with the leaders as we are doing at present."

### FIELD DAY AT VYNETTE STUD

Vynette Stud, which has supplied three bulls to the A.B. Board is to be the venue of a Field Day on October 19 when members of the Tooperang Branch of the S.A.D.A. and the Finnis Branch of the Agricultural Bureau combine to conduct a pasture and fertiliser trial programme.

The Field Day is under the sponsorship of the Department of Agriculture, the Australian Dairy Produce Board, and Fertilizer Sales Ltd., and is due to begin at 2 p.m.

# Extracts from Central Council Minutes

## JUNE 12th, 1964

### MILK PRICES

In April the President and Secretary had presented to the Board a case for the setting of whole milk prices to cover assessed cost of consumption plus 10,000 gallons per day, this being the quantity which the Board stated in 1961 it was prepared to accept as a minimum margin.

The Secretary had since maintained close liaison with the Chairman and the Cost Officer on the matter, but no further detailed advice was expected until the Board had fully examined the recently completed 1963-64 cost survey. Although there would be some increase in the imputed labor costs brought about by the increase in wage rates and the increased annual leave under the V.D.F.W. Award, the increase in production would probably result in a found cost-of-production little, if any, different from the previous year.

The Secretary added that the N.S.W. Milk Board had always included a "surplus Milk Margin," which, until recently, aimed to return found cost on all production. However, the great increase in production in the last few years had resulted in the found cost being extended only over a margin of 10 per cent. of consumption. Nevertheless the N.S.W. producer was now being paid approximately 4.7d. above the assessed cost "to allow for future upward cost trends," and a similar provision had now been applied to the latest determination by the Victorian Milk Board.

The Original N.S.W. provision had been applied by the Commonwealth Prices Commissioner during the war, and as it was a Commonwealth ruling, it could be assumed that it had applied also in South Australia, but the S.A. Prices Commissioner had been unable to find any record of such ruling.

### COST SURVEY

Mr. Ross Schubert asked what was the basis of inclusion of farms in the cost survey?

The Secretary replied that the Cost Survey was spread in such a way that production of the survey farms in each region bore the same proportion to the total production of survey farms as the total production of the region bore to the overall total production and to make up wastage the Board always needed a panel of volunteer farmers in each region, so that this ratio could be maintained, and any volunteers are always welcome.

Mr. Warwick said that we should be concerned at the voluntary basis of the cost survey, as the farmer who volunteered was likely to be fairly efficient, and the average cost as assessed was not, therefore, a reflection of the average of all producers, both efficient and inefficient, as well as those who were unable to expand production to keep abreast of falling prices. In our approaches to the Board we would be on far firmer ground if we had a wider basis for our survey, and we should, perhaps, consider paying, say, two guineas a year to farmers contributing to the survey in order to break down the reluctance of the less efficient farmers.

The Secretary said that the sample was spread in a reasonably accurate fashion, any greater accuracy would require a stratified sample and this could only be carried out with some form of compulsion. He believed that although the criticism of the sampling might be valid, the spread of values for each component indicated that the Survey was sampling a great range of techniques and levels of efficiency, and he believed that such inaccuracies as might exist in the Survey were not so much in the sampling as in the items, such as farm valuation which had, by the operation of depreciation, probably fallen to an

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unrealistically low level. Labour also presented some problems, and at the request of the Executive he had examined the substitution of the State Basic Wage for the Victorian Award. However, apart from the method of sampling, and the imputed labor and valuation, all of which should be reviewed, the items were cash costs, and so inarguable.

Mr. Temby said that although farm input prices and consequently gross costs, had undoubtedly risen, greatly increased production had succeeded in keeping unit costs stable, but no recognition had been made of the increases in property values which should accompany the rise in productivity. This could be overcome by basing the valuation of the property on what was really the only reasonable basis, namely overall production, and the use of this figure, which could be say 30/- lb. butterfat should be investigated, in collaboration with Mr. Marceau. By using valuation on productivity we would overcome the problem of having too many above-average farmers in the survey, and at the same time would compensate for farmers who were getting high production on a small farm with purchased fodder.

Mr. Warwick said that this was one of our most urgent problems and he believed that each District should be required to submit the names of up to 20 people willing to participate; and each District should elect from these names those whom they believe to be representative, and these farmers should then be paid.

Mr. Turner said that we should realise that if even we could have cost surveys on different bases our sole aim was to arrive at a figure that fitted what we thought was right, and so long as that figure was less than we thought was reasonable in comparison with the rest of the economy we should continue to hammer at the survey to achieve this result, but at the same time we should realise that a soundly based survey had a better chance of being accepted by the authorities.

It was then resolved: "That the Executive Committee appoint a Sub-Committee to confer with the Cost Officer of the Milk Board on the subject of imputed valuations, costs and allowances."

### MILK BOARD

Mr. Lee asked whether any move had been made to amend the Milk Supply Act to allow for a representative of the producers to be on the Board, as the Honey Board Act had recently been amended to include this principle.

The President replied that for city milk, where the purpose of the Act was to regulate the supply rather than merely to market the product, such a move

could lead to pressure for direct representation from other sections of the industry and from the consumers.

Mr. Gormlie supported the President, saying that this principle had been closely examined when the Act was first drafted, and had been dropped in favour of the present scheme.

### CHEESE GRADING

The Secretary reported that although the Association had done much work in trying to find a way in which domestic consumption of cheese could be lifted by compulsory grading for quality, we had not been able to arrive at a satisfactory answer, and consequently he had written to Mr. Czulak, of C.S.I.R.O. asking for his opinions as to the means by which he thought this could be achieved, as the idea had originally come from Mr. Czulak in a letter he wrote to the Association nearly two years ago. A very encouraging reply had been received in which Mr. Czulak stated that although grading for export was only a forecast it had the effect of sorting out the obviously inferior from the potentially good, as inferior cheese at this stage was unlikely to mature into good quality. Although no single grading system could satisfy all consumers, and although it would be equally difficult to manufacture cheese to individual consumer preferences, a grading system for domestic consumption could sort out obviously inferior according to those attributes which were common in the preference of the great majority of consumers, and would go a long way to eliminate the bad cheese from the market or force it to a lower price where it rightly belonged.

Such a system was in operation in U.K., and Mr. Czulak believed it would be possible to devise for home consumed cheese a practical system of grading which would, by price differential, protect the consumer against buying obviously inferior cheese at the same price as good cheese. He believed also that with our existing knowledge it should be possible to reduce very substantially the quality of inferior cheese produced in Australia, in his opinion the most effective way being a financial incentive based on grading.

A letter had also been received from the Australian Dairy Produce Board stating that the Board was collecting information relating to differential payments to producers, according to grade, for milk and cream purchased for manufacture. The decision to collect this information originated following the Australian Dairy Farmers' Federation resolution, which the Board supported, with a request that the basic information be collected. The Federation had also resolved that the Agricultural Council be asked to convene a Federal Conference to consider the question of quality, and the advisability of a substantial increase in differential payments to producers according to grade for milk and cream purchased for manufacture.

The Executive Committee had now agreed that with the purpose of implementing action in the matter of the grading of cheese for domestic consumption the Secretary draft a letter to the A.D.P.B. for consideration and approval of the members of the Executive Committee.

Mr. Temby said that although we could assume that an improvement in quality could lead to increased domestic consumption, one of the factors limiting the production of matured cheese was the relatively low premium that could be obtained for the extra work involved, and if we wanted to increase consumption by putting more matured cheese on the market we should examine the price available for matured cheese.

Mr. Barclay said that the price of matured cheese was not under the factory's control, the prices were fixed to a certain extent and a factory would

prefer to get the full price for cheese a fortnight old rather than keeping it for six months and only getting the same price or a penny more. A factory was in the business to make money and as soon as it could get rid of the cheese at the best price it would do so.

The Secretary said he believed the prices for cheese were set by the Dairy Industry Council, and the premium for matured cheese was recommended by the industry.

In reply to a question by Mr. Warwick, Mr. Barclay said that cheese was considered mature at six to 12 months, depending on the cheese, and during that time the factory was paying cold storage, whilst the cheese was losing weight and, in the case of rinded cheese, required labor for continual turning during the maturing process.

### TARIFF ON IMPORTED CHEESES

The Secretary reported that he had written to the Australian Dairy Produce Board asking who was responsible for preparing the questionnaire relating to the case for increased tariff on imported cheeses, and had received the reply that the questionnaire had been drawn up by the tariff officers of the Associated Chamber of Manufacturers and the Department of Trade after consultation with representatives of the industry.

The A.D.P.B. had since advised also that "the position at the moment was that one manufacturer had submitted appropriate data and one had promised to do so . . . the two factories concerned are not in South Australia."

The Executive had then directed him to write to all members of the S.A. Cheese Manufacturers' Association "deploring the apathy of the manufacturers in preparing a case for increased protection."

One written reply and one telephoned reply had been received since this letter was written

The A.D.F.F. had encountered a similar attitude in other States and had written to the Minister for Primary Industry requesting him to arrange for an examination of the whole position with a view to finding an effective way of protecting Australian dairy farmers' returns. Mr. Aderman had replied that he would prefer to await the outcome of action by the manufacturers before giving consideration to the A.D.F.F. request.

The Executive had consequently resolved that no further action be taken at present.

The Deputy Chairman of the A.D.P.B. (Mr. Norton) had stated that he did not think there would be any further action by manufacturers, and we had, therefore, to assume that Mr. Aderman would never be in a position to give consideration to the A.D.F.F. request.

### DESIGN FOR DAIRY PREMISES

The Secretary reported that some time ago considerable work was done by one of our members in seeking to have the S.A. Housing Trust design a series of complete working drawings and specifications for dairy premises which would conform with Milk Board and Dept. of Agriculture requirements and be able to be given to a builder as a complete basis for construction. The Minister of Agriculture and the Milk Board were favourably interested at the time.

However it had been eventually reported that the matter had been dropped because of pressure of work on the Housing Trust.

The Milk Board had stated in a recent letter that its present position was "that the Housing Trust architects were far too busy to undertake such work, and that the Board had given further consideration to engaging private architects to do this work, but as the number of requests received for more detailed plans of milking sheds were very few, it was considered that the expense involved was not warranted."

However, Jervois District had now submitted a resolution calling for the subject to be reopened.

Mr. Temby formally moved the motion, saying that his own recent experience had convinced him of the desirability of being able to obtain fully detailed drawings and specifications of a sufficiently large range to cover most requirements. The existence of such plans would enable us to build a standard and acceptable design of premises at a cheaper cost. The Board's statement that it had very few requests was understandable, as no one would ask for something which we knew did not exist. As to the load of work on the Housing Trust, we might be more satisfied if the Board engaged a private architect, provided the Milk Board and the Department of Agriculture checked absolutely every detail. Their combined experience as to satisfactory design was immeasurably greater than that of any single dairy farmer or architect. The Board also knew better than the dairy farmer of the changes in standards and procedure that may take place in the future, and could accordingly make provision in the design.

Mr. Humphris seconded the motion, which he believed would have the support of the Lakes District. His own recent experience was similar to Mr. Temby's.

Mr. Easton said that if this submission was followed up energetically, the results would be satisfactory, but otherwise we could be disappointed. Whilst the plans needed to be fully detailed, there should be a clear understanding as to which details could be altered by the dairy farmer to adjust the plans to the special requirements of the site.

Mr. Whitford said that the project should be supervised by a committee comprised of the architects, the Milk Board, the Department of Agriculture and practical dairy farmers, to ensure that practical as well as theoretical and constructional aspects be given full consideration.

Mr. Warwick suggested that the Architect-in-Chief's Department would be a suitable source for the professional work.

It was accordingly resolved: "That in view of the fact that approximately one hundred new dairies are built each year, the Milk Board be asked to have prepared detailed plans and specifications for dairy premises, such plans and specifications to include:—

- (a) dairies of different types, e.g., herringbone, elevated and walk through.
- (b) different sizes.
- (c) provision for future developments, e.g., refrigeration, bulk milk, fly control.
- (d) yards, floors and drainage disposal.

and to be drawn up under the supervision of an advisory panel comprising the architects concerned, representatives of the Milk Board and the Department of Agriculture, and an advisory panel from this Association; that the Housing Trust be asked to let contracts for the actual building where desired by dairymen; that where dairymen wish to build independently of the Trust the plans and specifications be made available at a low cost on the same lines as the Small Homes Advisory Service."

## NOXIOUS WEEDS

The Secretary reported that the strong feelings of Central Council on this subject, and the actual cases mentioned were brought to the attention of the S.A. National Farmers' Union, and a deputation (including the Secretary) conferred with the Director of Agriculture seeking amendments to the Weeds Act which would throw the whole of the responsibility for the control of weeds on roadsides and on Crown or public authority lands onto the local Councils, or authorities, respectively, and which would require, in the case of Councils, for the cost of such weed control to be through the general rate.

## VETERINARY TRAINING

The Secretary reported that Mr. Len Faggotter had recently drawn attention to the fact that some years ago we were advised by the Director of Agriculture that certain moves were afoot to improve the position relating to veterinary practitioners, and that no further progress appeared to have been reported as we had assumed that satisfactory arrangements were being carried out. The Secretary had since written to the Minister of Agriculture asking for a report on the matter. The Minister's reply was as follows:—

"I refer to your letter of 12th March in reference to veterinary practitioners. Since you raised this matter earlier, three important developments have taken place. The Director of Agriculture has now set out the developments in the following terms:—

- "1. Several of the established country practitioners in South Australia have taken on assistants recruited from Interstate. This development has had the effect of providing an improved veterinary service in the areas concerned, giving a wider cover, providing better continuity of service, and reducing fatigue and wear. It has overcome, at least in part, the great problem of establishment to which attention was drawn in 1961.
  2. During recent years the Department has reduced its routine services (which have been gradually taken over by practitioners) and is concentrating on providing more specialised investigation and consultant services at a more senior level. This complementary role of departmental veterinary services to the practitioners should greatly strengthen the services as a whole to the State.
  3. A new cadetship system has been instituted in which cadets are required on graduation to serve in some veterinary capacity within the State for three years but are not bonded to serve within the Department. Two such cadets are now in second year and two in first year. This cadetship system should have satisfactory effects within the next five years.  
So far as the attitudes of interstate universities to South Australian students are concerned, we have recently been advised as follows:—
- (a) **Sydney**—At present the policy of the veterinary faculty is that the school is open to students from all States of the Commonwealth and no quotas are imposed on students from other States commencing at the Second Year.
  - (b) **Brisbane**—Although certain restrictions in respect of enrolments from outside Queensland have had to be instituted, there is no indication at the present time that quotas will apply to our departmental cadets.
  - (c) **Melbourne**—Although there were no vacancies for interstate students in Second Year this year, it is anticipated that vacancies will be available for interstate students in future years."

Mr. Faggotter said that contrary to the statement in the letter, in Hawkesbury and one other school in N.S.W., it had been announced that only students from N.S.W. Education Department schools would be admitted. But over and above this problem was the fact that farmers' sons and others from this State who wanted to study veterinary surgery had to go outside South Australia, and although a satisfactory scholarship scheme would overcome the financial problems, there were many other problems that would not be solved in this

way. The shortage of veterinary practitioners was still serious in this State, and we should not accept as satisfactory the state of things as they were at present.

Mr. Humphris supported Mr. Faggotter, from personal experience, concerning the desirability of a school of veterinary science in S.A., and said that we should now be working to achieve that end in a few years, but in the meantime we should press for the additional scholarships that we had thought would be forthcoming. It had been argued that there were not enough candidates offering, but of course many parents were reluctant for financial and other means, to send their sons interstate.

Mr. Temby said that after our first enquiry we had been told of the vast cost of setting up a Chair in this State, and had been promised an extension of the scholarship scheme, but any likely extension would come nowhere near the number of students who may wish to take the course, and we should instead press for a subsidy for all students rather than a scholarship scheme for selected ones.

It was then resolved that the Minister of Agriculture be requested to take action to establish a Chair of Veterinary Science in South Australia in the near future and until such is achieved, to request the Minister to subsidise the training of veterinary science students by making up the excess in cost above that which would apply in South Australia for students studying in interstate schools.

Mr. Faggotter added that although he supported the motion he felt that we should not be satisfied with a subsidy scheme, because in many cases parents were unwilling to send their sons interstate, and even if we were successful in gaining a subsidy, we should not lose sight of the desirability of a chair in this State.

## INTERNATIONAL DAIRY FEDERATION CONGRESS

The Chairman said that he had received a letter from the Dairy Industry Committee asking whether he would be prepared to accept membership of a State committee to raise funds toward the target of £200,000 which was estimated to be necessary to finance the convening in Australia of an International Congress of I.D.F. in 1970.

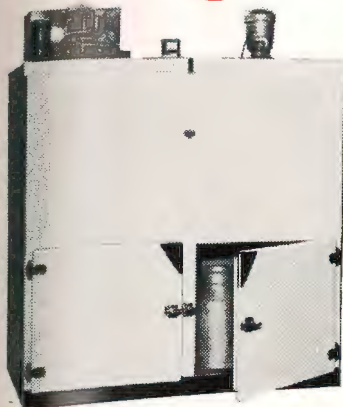
## LIAISON WITH A.P.P.U.

The Secretary reported that a meeting between the liaison committees of the A.P.P.U. and the S.A.D.A. had been held on 3rd June. After long discussion on a friendly and co-operative basis it was decided that the following action be recommended to the respective organisations:—

- (a) That a combined meeting of the A.P.P.U. Dairy Committee and the S.A.D.A. Executive be held during the early part of March and September each year to jointly consider policy and matters pertaining to the industry, or alternatively.
  - (b) If a meeting of the full committee and executive is deemed impracticable a meeting of the liaison committees be held at these times.  
(It was suggested that the September meeting be arranged by the S.A.D.A. and the March meeting by the A.P.P.U.)
  - (c) The liaison committees to remain active in further considering the question of complete unity between both organisations and to deal with industry matters needing urgent attention.
  - (d) Organisations to prepare a study paper setting out suggested conditions for the ultimate unity of both organisations.
  - (e) A cross membership check to be made.
- It was resolved that recommendations (a) (c) (d) and (e) be adopted.

# *A vital need for dairymen!*

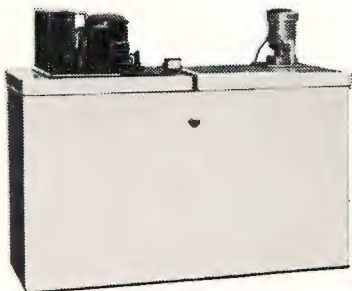
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Official Publication of the

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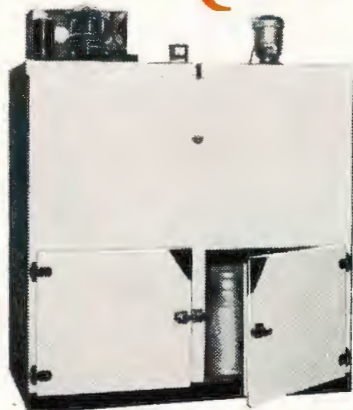
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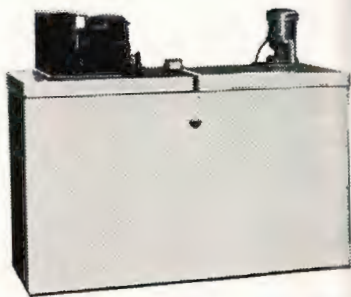
## MILK COOLING EQUIPMENT



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# THE SOUTH AUSTRALIAN DAIRYMEN'S JOURNAL



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## INCREASED CHEESE RETURN FORECAST

The Commonwealth Dairy Produce Equalisation Committee Limited has announced an increase in the interim value for cheese for 1963/64 of 4.46d. lb. butterfat, and has forecast that the final value for that year will approximate 254/- cwt. cheese, which means that producers will receive a final payment of approximately 1.27d. lb. butterfat some time after July 1965.

This value, as forecast, will result in the highest Basic and Equalised Prices for three years (see table).

	Basic Price	Equalised Price
	(d. per lb. butterfat)	
1963-64	53.35	73.42
1962-63	50.26	72.06
1961-62	50.28	72.88
1960-61	55.71	77.50
1959-60	54.60	76.94

Concerning the current year (1964-65) the Committee estimates that although production so far has been substantially in excess of output for the same period in preceding years, the general market outlook is such that there appeared little doubt that ultimate returns would show a considerable improvement, and consideration of an increase in values would be made early in February, 1965.

## RETROSPECTIVE PAYMENTS

The increased values for 1963-64 will result in a retrospective payment to licensed producers in the Adelaide milk supply area of 2½d. lb. b.f. (equalised), to be paid in December, 1964, and a final retrospective payment of about ¾d. lb. b.f. (equalised) some time after August, 1965.

## OUR COVER

*These outstanding Friesians secured First Prize as a group at the 1964 Adelaide Royal Show as well as winning awards as individuals. The group comprises HEMFORD WHITENOSE TAMMY (1st, aged cow, in milk), H. TULIP BONNEY (2nd, cow 4 to 6 years, in milk), and H. SUPERIOR ELNA (1st, cow 3 years, in milk). At the Gawler Show they were placed 1st as a group, all breeds, and each cow won its respective age class, with TAMMY being Champion Friesian Cow. To show that their production matches their looks, in the 24-hour production contest held in conjunction with the Kapunda Show, ELNA was 1st (91 lbs. milk, 4.7%, 4.2 lbs. b.f. per day), TAMMY was 2nd (86 lbs., 4.7%, 4.1 lbs.), and BONNEY was 3rd (67 lbs., 4.5%, 3.8 lbs.).*

## MILK PRICES INCREASED

Following a case put by this Association to the Metropolitan Milk Board new prices for liquid milk are now operating throughout the metropolitan area.

The price to the producer has been raised by 2½d. from 42¼d. to 44¾d. gallon, and the margins to the dairy factory have been increased by ½d. from 13¼d. to 13¾d. per gallon for loose milk, and from 19¼d. to 19¾d. per gallon for bottled milk.

The retail vendor's margins have been increased by 1d. from 18½d. to 19½d. per gallon in Zone 1, and from 19½d. to 20½d. per gallon in Zone 2 (Hills Area), to give the following retail prices:

	ZONE 1		ZONE 2	
	Pint	Half Pint	Pint	Half Pint
Loose .....	9¾	5¾	10	6
Bottle .....	10½	6¾	10¾	6¾

(Vendor's margins exclude 1/32d. levy payable to Milk Board.)

## Statistics

### ADELAIDE METROPOLITAN MILK SUPPLY AREA

#### PRODUCTION (000 gallons)

	For Month		Total since July 1		Total since Jan. 1	
	1963	1964	1963/64	1964/65	1963	1964
August .....	3,786	4,183	7,049	7,748	24,044	26,588
September .....	4,391	4,846	11,440	12,644	28,433	31,484

#### SALES (000 gallons)

	For Month		Total since July 1		Quota %		C.M.B.	
	1963	1964	1963/64	1964/65	1963	1964	1963	1964
August .....	1,630	1,673	3,274	3,385	43.0	40.0	2/1½	1/9½
September .....	1,538	1,608	4,812	4,933	35.0	33.0	1/8½	1/7½

Moving Average Quota for 12 months ended 31/8/64, 43.81%; 30/9/64, 43.48%.

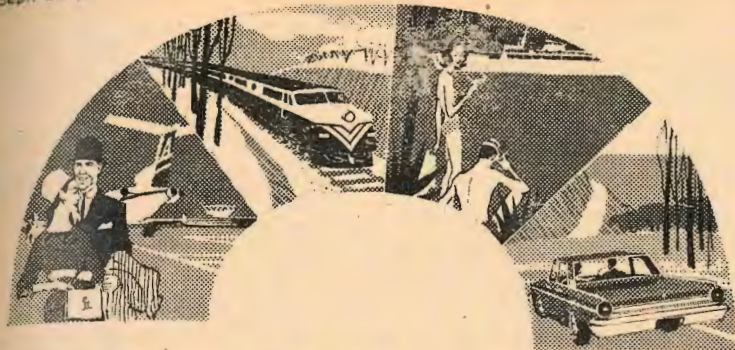
### INTERIM PRICES TO LICENSED SUPPLIERS

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

1964	Basic C.M.B.		Total	3%	3.5%	4%	4.5%	5%
	(per lb. butterfat)	(per gallon)						
August .....	3/7	1/9½	5/4½	1/8	1/11½	2/2½	2/6	2/9½
September .....	3/7	1/7½	2/5½	1/7½	1/10½	2/1½	2/5	2/8½

### LONDON PROVISION EXCHANGE QUOTATIONS

	Aug.		Sept.	
	1963	1964	1963	1964
Butter—Choicest Australian .....	334/-	334/-	334/-	334/-
Cheese—First Grade Australian .....	226/-	248/-	226/-	248/-
Rindless Australian .....	234/-	257/-	234/-	257/-



# TRAVELLING



## NATIONAL BANK TRAVEL SERVICE



Wherever in the whole wide world you decide to go, the National Bank's Travel Service can arrange everything — all you do is pack! Your holiday is no trouble when you use the National Bank Travel Service available to everyone — free.

When you travel always carry National Bank Travellers' Cheques — £2, £5, £10, £20, £50 . . . money only you can spend.




**THE NATIONAL BANK OF AUSTRALASIA LIMITED**

*the full service bank.*

ICI R.M.T. KIT, 'DISPEN' AND 'HIBITANE' DAIRY PRODUCTS

adopt the



**DAIRY HYGIENE**

**BEAT  
MASTITIS  
SAVE  
MONEY**

**PLAN**

... the simple, inexpensive three-step plan for SURE control of Mastitis.

Costs only pence per head, yet saves you pounds.

### 1. DETECTION

R.M.T. KIT



ICI's revolutionary new Rapid Mastitis Test Kit gives early and reliable detection of infection, even before visual or strip-cup detection is possible. It's so simple yet so positive.

### 2. TREATMENT

ICI 'DISPEN'



A Penicillin formulation that acts quickly and, more importantly, is rapidly eliminated from the udder, giving saleable milk 24 hours earlier.

### 3. CONTROL

'HIBITANE' PRODUCTS



'Hibitane' Udder Wash, the effective all-purpose disinfectant, gives protection against both 'Staph' and 'Strep' infections. 'Hibitane' Ointment rapidly destroys mastitis germs, which harbour in cracks and sores on teats of cows.

Don't let Mastitis cripple your dairy herds' production, waste your money—Adopt the ICI Three Step Dairy Hygiene Plan TODAY!

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## MASTITIS CONTROL AND MILKING MACHINE PERFORMANCE

In a recent article published in "Town Milk" (Journal of the New Zealand Milk Board), Mr. E. O. Brookbanks, Veterinary Advisory Officer, Department of Agriculture, Hamilton, writes as follows:—

"Mastitis is the number one problem in most New Zealand Dairy Herds. This is my opinion, and it is based on the results of tests on a large number of cows, during the course of a mastitis survey. I believe that this situation has arisen for the following reason: For the past fifteen years control of the disease has been limited to the treatment of clinical cases with antibiotics, and practically no attempt has been made to prevent mastitis by improved methods of hygiene and management."

While the position may not be precisely the same in South Australia, there is no doubt that the position is basically the same in this State in that more emphasis is placed on treatment with antibiotics than on milking management and in particular, hygiene as related to the preparation of the cow prior to milking, milking procedure and the use of efficient and correctly adjusted milking machines.

While it is not possible to place an exact figure on the loss of production caused by mastitis, there is no doubt that this represents a substantial monetary loss to producers each year. In addition, mastitis has an adverse effect on both the compositional and bacteriological quality of milk.

Realising that faulty milking machines are a major cause of mastitis, with consequent loss in production and deterioration in milk quality, the Board has provided each of its District Supervisors with milking machine testing equipment. The first air flow meter and vacuum recorder was purchased in 1955 and proved so useful in assisting producers that the Board subsequently purchased similar testing equipment for each District Supervisor.

Since 1955, the Board's Supervisors have tested 800 milking machines. The milking machines tested have been mainly those of producers who have not been satisfied with the performance of their machine, or who have been in trouble with mastitis in their herd and as a consequence have been advised by their veterinarian to have their milking machine tested.

A surprisingly large percentage of the milking machines were found to be defective, and although some of these required only minor adjustments, there were many machines which were in a very unsatisfactory condition, and in some cases part or complete replacement was necessary.

The most common faults found are shown by the following figures which have been extracted from the reports made on each machine tested. When these were summarised, it was found that of the 800 machines tested, 482 machines had relief valves which were not functioning correctly, 353 had incorrectly adjusted bail pulsators, 299 had inaccurate vacuum gauges, while 289 had insufficient reserve vacuum for stable operation of the machine.

Although the importance of correctly adjusted and efficient milking machines cannot be overstressed in the control of mastitis, this is, nevertheless only one aspect. This must be coupled with good shed management, correct stimulation of milk "let down" and a sound and hygienic routine for the preparation of the cow prior to milking. These factors are all important, but perhaps the most common serious fault is over-milking, caused by leaving the teat cups on after the flow of milk has ceased.

—W. J. TAYLOR, Chief Supervisor, Metropolitan Milk Board.

## FEDERATION INSURANCE HAS A SUCCESSFUL YEAR

Federation Insurance Limited, which already plays a leading role in rural and urban insurance in Australia, reports a further successful year with substantial increases in business.

We publish this report because of the close liaison between F.I.L. and the Association, a liaison which continues to grow in strength with the support that our members give to F.I.L. with their insurance business as they experience first hand the expert, speedy service that F.I.L. gives, and the premium discounts that are allowed to Association members.

Accounts for the year to June, 1964, disclose a lift in profit from £97,075 to £104,916 after tax down from £86,830 to £75,430.

Gross premium income at £4,589,290 shows an increase of £447,137 or 11.6% as compared with the previous year.

Investment income which moved up from £214,276 to £139,580 showed an increase of £15,304.

Reserve for unexpired risks was increased to £1,499,838 requiring a transfer of £168,228.

Dividend is increased by £2,500 to £27,500 and is being paid on capital increased during the year by an issue of 75,000 ordinary shares of £1 each at par.

Directors report that the continued rise in the incidence of cost of claims is at present a matter of concern to insurers generally, particularly in the Workers' Compensation and Motor Vehicle departments.

On the 1st April, 1964, the Company commenced writing Life Assurance business which necessitated the transfer of £50,000 to the Life Assurance Fund.

During the year a subsidiary, The Federation Retirement Limited, was formed for the specific purpose of extending the service of the Life Assurance Branch of the Company, to provide additional service in the form of retirement benefits.

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## HAMMER-MILLING CAN BE WASTEFUL

Although hammer-milling and chaffing are generally carried out to improve ease of handling, the N.S.W. Department of Agriculture warns that the feeding of chaffed or hammer-milled hay to dairy cows might not be warranted.

Chaffcutters or hammer-mills reduce the more obvious waste usually caused by spilling and trampling and cows usually eat most of any hay put through a chaffcutter or hammer-mill. But if the hay is cut or ground too finely it tends to pass through the intestines too quickly for proper digestion and consequently much food value is lost.

If hammer-mills are used, the coarsest screen should be fitted.

A better way of reducing the apparent wastage which occurs when long hay is fed is by using footboards or a wide, shallow trough below a rack.

Much arduous and dusty hammer-milling or chaffing can be avoided if this attachment is fitted to a hay rack into which the long hay is placed direct from the sheaf or bale.

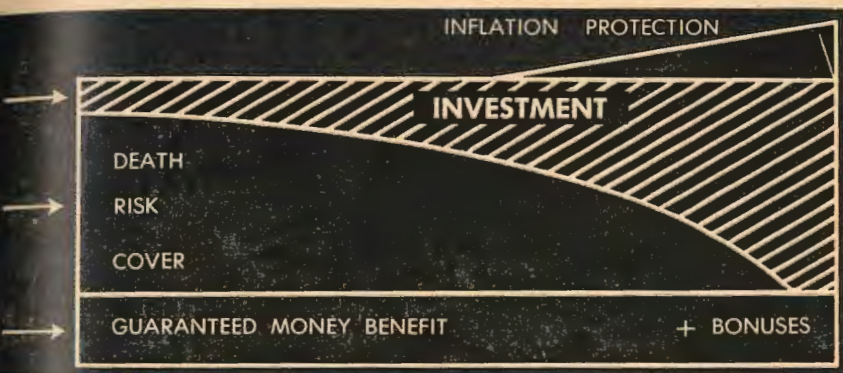
**PAUSE and CONSIDER**

**THE F.I.L.  
3 POINT PLAN**

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**PROBATE and**

**LIFE ASSURANCE**



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**The Federation Insurance Limited**

**(Inc. in Vic.)**

**63 WAYMOUTH STREET, ADELAIDE**

**or**

**Phone 51 3747**

## CANBERRA LEARNS ABOUT F & M

If there has been any change in the official attitude of the Federal Government to the dangers of the accidental introduction of foot-and-mouth disease, it has been slow, and we have yet to see the "tightened regulations" that were promised over a year ago.

It is therefore pleasing to record that Mr. Geoff O'Halloran Giles, who is a member, not only of the Federal Parliament, but also of the South Australian Dairymen's Association, recently gave the House of Representatives a brief but strongly-worded warning on the disaster that such an outbreak would bring to our livestock industries and to the Australian economy as a whole.

In his speech on the Appropriation Bill, Mr. Giles said:

*A vital danger to Australia is the possible introduction of exotic animal diseases. Only last year a rather elderly relative of mine died. She remembered the day when the trip from Great Britain to Australia took nine months. What is the position today? The trip takes a very short time indeed. What time will trips from places such as India and Africa to Australia take within a very few years when we have aircraft travelling at supersonic speeds? I regard the possible introduction of exotic diseases as one of the very great dangers facing Australia.*

*The first comment that I make is that £529,800 is little enough to appropriate for quarantine in order to protect the livestock industry in particular. I say "in particular" because quarantine measures are taken against human beings if they come from areas where there is smallpox, cholera, yellow fever or minor plagues. They are also taken against plants, which are quarantined for certain bacteriological, nodule and root type disorders. They are also taken against animals. In 1958 the Government, in its very great wisdom, prohibited the importation of all cattle. Since those days New Zealand has been asking us to lift that ban to enable the importation of all sorts of stock, but particularly pedigreed stock, from that country. Very rightly, in spite of that pressure, the Government has not relaxed the ban. By and large, the case put by New Zealand is that that country is as free from animal diseases as Australia is. Of course, that is quite so. But the big difference is that New Zealand has not applied a ban on the importation of cattle from the rest of the world. Therefore, responsibly, the Australian Government has taken the view that it will not risk infection of our very important animal flocks and herds by relaxing the ban, even in respect of New Zealand.*

*There are three main scourges that could come into Australia today. There are newer ones which, frankly, I do not know a great deal about. One of those threats is rabies, which has a very slow incubation period and therefore is difficult to trace if it gets into the country. Another is blue tongue, which is carried by cattle without many clinical symptoms and can be passed on to sheep. The figures suggest that it has a killing rate of up to 30 per cent. If 30 per cent of the Australian sheep population fell by the wayside, one could imagine the financial trouble in which Australia could find itself within a short time.*

*I am very strongly of the opinion that we must expand our exports over the years. Of course, that would be quite impossible if our present meat trade with the United States was hit, if our wool exports were hit, or if our other types of live stock were hit. I repeat that I regard the appropriation of about half a million pounds as little enough for the protection of the well being and economic future of Australia. At page 27 of the annual report of the Commonwealth Director General of Health there is a reference to two veterinarians being sent overseas with the last year to study exotic animal diseases. They have attended the annual exotic diseases course at the Grosse Ile experimental station in Quebec, Canada, and have visited the Plum Island Animal Disease Laboratory, New York. In so doing they have gained much information which they are now busy diffusing through the veterinary services in Australia. I suggest that more veterinarians be sent overseas*

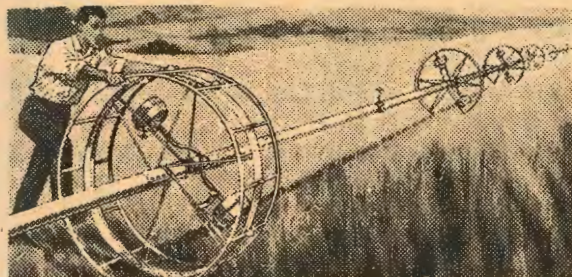
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it is considered necessary to study the type of eradication that may be necessary, because there is no doubt that if these diseases ever do come into Australia very swift action will be necessary to eliminate them.

It will be no new information to honorable members that foot and mouth disease in England is dealt with by slaughtering all livestock within a radius of about 10 to 20 miles from the place of the outbreak. Compensation is paid for the livestock slaughtered, certainly, but what compensation is that to the country, which incurs huge financial loss? This is one method of dealing with foot and mouth disease. It is a simple method and countries know about it. Blue tongue came to America from Spain in cattle, but the Americans knew nothing about it at the time. The first the Americans knew about having imported blue tongue was when it started to kill sheep through cross-infection from cattle. By the time the disease had killed the sheep the clues to the means of communication of the disease had become so tangled, so snarled, that the Americans were unable to trace the contact cattle that had caused the damage. I believe it can be seen quite easily that if Australia is to substantiate its growth, swell its amenities, get better social services and generally have a strong economic growth, we must have the support to substantiate these conditions. If we have export to substantiate this growth, I suggest that the Government must pay a very great deal of attention to the problem of the importation of exotic diseases, which today can come in on the heel of a tourist's boot or on an insect from inside an aircraft. All the time the distance from India, where most of these diseases are now quite apparent, and from Africa, where the diseases are rapidly going further south, is in effect becoming shorter because of the speed of modern transport, and the danger is increasing.

I congratulate the Government and the Department of Health, and in particular quarantine officers, for the grand job they have done in finding foot and mouth disease in imported German sausage sent to people in Australia by kind relatives overseas. This happens quite often. I congratulate them and I ask the Government and the Minister for Health in particular to look very closely at this problem because in his hands, in many ways, lies the future of Australia.

# Leonard

\* Refrigerated  
DAIRY COOLER

## BUILT FOR LASTING STRENGTH, EFFICIENT, ECONOMICAL OPERATION

★ It's essential for your milk to be delivered in tip-top condition! And this completely new Refrigerated Milk Cooler is designed and built to do the job perfectly . . . and do it for less! Save yourself a lot of worry by installing this evolutionary design. By doing a better job year after year, it will save you money in low running costs, light maintenance and long life . . . thus ensuring top net profits, with the self-satisfaction of not only providing a top grade product, but keeping it as such.

### THIS TEST PROVES LEONARD IS BEST!

During the period 12th February to 24th March, 1964. (41 days/82 milkings), R. E. Shankland & Sons, Dairymen, of Jervois, S.A., produced 7,462.2 galls. of milk in an average max. day temperature of 81.17° F. Milk came off the cooler at an average of 42.18° F. The unit ran 350.5 hours on night tariff (2.04d.), and 10 hours on day tariff (4.25d.), making running costs only £3/2/11!

The check meter installed by the Electricity Trust of S.A. showed that over the 13 weeks February 12th to May 14th, the total running cost was £5/11/6. Over the same period, Jervois Co-op. Dairying Society Ltd., received from Shanklands' Dairy, 14,193 galls. milk. This represents a cost of a little less than 10th d. per gallon . . . less than 9½d. per 10 gallons!

PRICES (within 75 road miles Adelaide):

- ½ h.p. 60- 80 galls. per day £253
- ¾ h.p. 60-200 galls. per day £305
- 1 h.p. 200-240 galls. per day £320
- ¾ h.p. 200-240 galls. per day £370
- 1 h.p. 240-300 galls. per day £410

FOR OTHER COUNTRY DISTRICTS APPROX.

10% HIGHER

### LOOK AT THESE FEATURES

- ★ All new! Features a new development of Coned Evaporation design Multi-Jet Spurge Pipe, Forced discharge, Baffle and Inner Cone.
- ★ Five year's warranty on hermetically sealed units. One year warranty on accessible sealed units. One year warranty on Thermostats, Overload Relays, and Ice Bank Control.
- ★ Brazed copper tanks and evaporators of "Anaconda" copper tubing giving lifetime protection against corrosion.
- ★ Top, Baffles and Cover of strong highly-compressed, everlasting, non-corrosive metal.
- ★ Condensing units last longer, because efficient design reduces running time—gives 40% to 50% longer life.
- ★ Less than half the floor space is required than that used by many other designs.
- ★ 3" high quality insulation completely surrounds inner copper storage, minimises heat infiltration.
- ★ High capacity pump of reputable make and quality supplied and included in price.
- ★ Full range available; ½ to 3 h.p.; 3 to 18 can capacity per milking . . . 20 to 360 galls. per day.

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\* Sole distributors for South Australia, Northern Territory and Broken Hill

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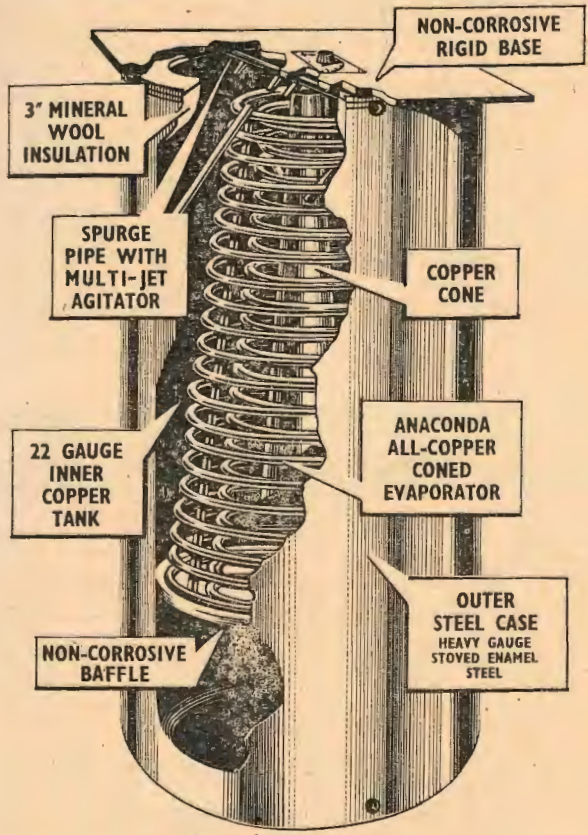
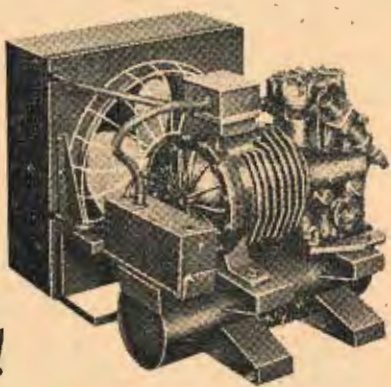
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**MILK PICK-UP!**  
 (suitable for ten-gallon cans)



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3" MINERAL WOOL INSULATION

SPURGE PIPE WITH MULTI-JET AGITATOR

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22 GAUGE INNER COPPER TANK

ANACONDA ALL-COPPER CONED EVAPORATOR

NON-CORROSIVE BAFFLE

OUTER STEEL CASE HEAVY GAUGE STOVED ENAMEL STEEL

# The Impact Of Australian Cheese In Japan

Japan is not the biggest market for our cheese, but is it certainly the most rapidly growing market, and, properly handled, it will become of major importance within the near future.

This report, by Mr. E. B. Gilbert, General Manager of the Australian Dairy Produce Board, reveals the steps that are being taken to develop and consolidate this most valuable outlet of our produce.

Practically everyone would surely agree that the Japanese market is exciting and challenging. Certainly from the dairy industry's point of view no market could be more exciting and full of challenge. Figures which I shall shortly point out to you speak for themselves and each year the speak a good deal louder. To examine the causes of our success in marketing cheese in Japan it is first necessary to realise that this country was orientated to dairy foods only in recent years.

If we take a five year average period based around 1958 we see that in terms of whole milk equivalent Japan consumed 1,461 tons of dairy foods. This, with her huge population, gave her the low per capita consumption rate of 35 lbs. per head. If we compared this with the 1,000 lbs. per head eaten in Australia we can readily see that Japan was not, by any means a nation of dairy food eaters. By the same token if you look at the rapid westernization taking place and visualise in the years ahead their per capita consumption increasing to a figure somewhere near ours we can realise the tremendous potential of this market. If the Japanese consumed 1,000 lbs. of dairy foods per head per year it would take—on present day population figures—all the major dairying countries of the world all their time to supply this huge market.

How about production figures in Japan? At this moment she produces over 90 per cent of all she consumed in the way of dairy foods, but there is an ever widening gap between home production and consumption. According to F.A.O. calculations Japanese consumption of dairy produce will have risen by 166 per cent over the average period we have been discussing by 1970 whilst the maximum production rise will not exceed 136 per cent. These calculations also predicted that the per capita consumption in Japan will be approximately 87 lbs. per head in 1970. It would appear however, that this figure will be reached long before this and economists have confidently predicted that it will reach 200 lbs. by 1980.

I might mention in passing that all the countries of South East Asia have a tremendous potential for the consumption of dairy foods, but in most cases we cannot hope that it will be anything like developed for many, many years to come. In the cases of Japan however, standards of living are rising rapidly it is way ahead of most other South East Asian countries in its industrial development and the market is consequently mushrooming before our very eyes.

## CHEESE CONSUMPTION

With this necessary background knowledge let us now take a closer look at the cheese situation. As is to be expected from my foregoing remarks very little cheese was eaten in Japan up to the late 50's. For example, in 1956 approximately 3,500 tons were consumed giving a per capita consumption which can simply be described as negligible. By 1962 the figure had increased to 12,000 tons, a 1/3rd of which was imported, whilst the figure for 1965 has been estimated at 15,000 to 20,000 tons. A big increase indeed, but even so, the per capita consumption is still negligible being but 1/50th of our own comparatively low (by world standard) 7 lbs. per head. It has been predicted that there should be no difficulty in increasing this per capita or figure to 1/10th of that of Australia. This of course would mean a tremendous increase in demand.

You'd  
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dirt,  
QUA  
are s





DON'T BUY

## A PIG IN A POKE!

You'd never buy a pig . . . or any other animal . . . without seeing first. You could be in for some nasty shocks. **Yet many farmers buy sacks of seeds without knowing what's inside.** They, too, receive nasty shocks. Most of their money goes on weed seeds, chaff, and other rubbish. It's far wiser to buy HODGE'S QUALITY SEEDS. They come from well-known growers . . . they are subject to strict Quality Control . . . every ounce is triply cleaned to eliminate all trash.

# HODGE'S

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128 Gilbert St., Adelaide.  
51 5571

How is Australia fareing in the battle for a slice of this market? Let us take a look at the figures. They can be expressed in two ways;

absolute—in tonnage.

relative—in percentage in companies or with others.

Year	Total Japanese Imports	Australian Cheese Exports to Japan	Australian Per Cent of Total Cheese Imports by Japan
	(Tons)	(Tons)	%
1959	500	44	8.8
1960	1,400	159	11.4
1961	3,200	494	15.4
1962	4,400	1,369	31.1
1963 (Approx.)	6,000	2,470	41.1

#### CHEESE EXPORTS TO JAPAN BY VARIOUS COUNTRIES

Country	Jan./Dec., 1962	Jan./Nov., 1963
	(Tons)	(Tons)
Holland	1,276	884
Denmark	215	691
Norway	781	1,119
Italy	116	93
Australia	989	1,902
New Zealand	990	1,095
Others	29	34

What are the important factors? They fall into eight main categories, namely:—

1. Selection of Agent.
2. Consideration of Political Aspects—National and Industry.
3. Market Research.
4. Quality Control.
5. Availability of Local Stocks
6. Promotion and Public Relations.
7. Acceptability of Products
8. Personal Contacts and Visits.

#### SELECTION OF AGENT

We were particularly fortunate in our choice of a representative who has his finger very much on the pulse of the market. He places emphasis on before sales service, in helping processors set up to use Australian cheese, and after sales service.

#### CONSIDERATION OF POLITICAL ASPECTS—NATIONAL AND INDUSTRY

As is the case in most Asian countries, national industrial political considerations must be kept in mind. When the idea of shipping substantial quantities of cheese to Japan was first mooted, ways and means had to be found whereby it could be done without draining away too much foreign exchange; without damaging the structure of the market for locally-produced cheese, and which would, if possible, provide scope for further development of their own processing industry. You will agree that this was something of a tall order but, nevertheless, after discussions with the Japanese, an arrangement satisfactory to all parties was worked out.

Under the arrangement, we ship unprocessed cheese to Japan where it is subsequently processed and jacked by the industry there. This naturally reduces the export price to them, stimulates local industry and enables the processors and packers to cater for local requirements. This method, too, lends a certain amount of versatility to the availability of any particular type of processed cheese or package size.

The import of cheese by some Japanese processors also enables the Japanese industry to use a proportion of their locally-produced high cost cheese and thus get it to the consumer at a more reasonable price. The effect of our imports, therefore, is not to price the local produce out of the market. Instead, it means that the local product can be marketed at a lower price whilst still yielding the same return as before to the industry.

## MARKET RESEARCH

No marketing campaign could possibly be effective without a solid basis of market research and market research has played an important role in this campaign. A special report on the Japanese cheese market gave us valuable information on five important aspects of the market.

**Part I** of the report dealt with **Cheese Consumption in Japan**. From it, we learnt the percentage of cheese consumers by occupation and income groups; the preferences of purchases for the various types of packaging; the actual ways in which cheese was eaten and the type of stores from which it was generally purchased. An analysis of the average household's food expenditure and the percentage which was spent on dairy foods was included in this section giving us valuable leads and reflecting the greatly increased standard of living.

**Part II** of the report covered **Cheese Production in Japan** itself. It was interesting to note that although between 1950 and 1961 production of dairy foods in Japan increased 27-fold there is an ever-widening gap between production and consumption. At present, only 60 per cent of total requirements is being locally produced and this percentage is declining. A breakdown of the main cheese producing centres and a report on the chief cheese producing season helped our planning.

**Part III** of the report covered the **Importation of Cheese into Japan** which we have already discussed.

The fourth part of the report analysed the performance and marketing policies of the three leading manufacturers of Japanese cheese, whilst the final portion covered their advertising activities with an interesting supplementary report on the advertising situation generally in Japan.

Fascinating information revealed included the facts that although newspaper advertising predominates overall, television advertising is rapidly catching up. Another surprising factor reported was that 60 per cent of all Japanese households and 80 per cent of households in urban areas have television sets—points well worth keeping in mind by those who are planning advertising campaigns. Although as we have seen newspaper advertising commands the biggest portion of the overall budget, 40 to 50 per cent of advertising expenditure on **foods** is being directed towards television.

Some details of advertising campaigns and methods used by the principal local cheese manufacturers gave ourselves and our agent valuable leads in planning our own advertising philosophy.

There has been only time to give the barest outline of our market research activities, but from it, I hope you can see the value and importance of such research. Without it, we would certainly be marketing in the dark—a degree of illumination not conducive of success in this highly competitive world.

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## QUALITY CONTROL

It has been the firm and fixed policy of the Board to supply raw material of the highest quality to this important market. The Japanese industry and trade is very quality conscious and we can only hope to keep and expand our share of this market by giving our best at all times. Consequently, very strict attention has been given to the question of quality. Consant checks are made by C.S.I.R.O., the Department of Primary Industry, and the Rindless Cheese Committee and the Board's purchases of cheese for export to Japan are only made from factories who can maintain the high quality and match up constantly to standard set.

## AVAILABILITY OF LOCAL STOCKS

New cold stores have been established in Japan. This means that we can stock pile to a very worthwhile degree. The fact that cheese is readily available to processors—that we can virtually offer "immediate delivery" at all times—is particularly useful when supplies run out quicker than anticipated—and in a mushrooming market, this sort of thing is likely to happen.

## PROMOTION

The Japanese processors and ourselves have joined forces in actively promoting the sale of the finished product. In the current year, over £40,000 is being spent on promotion of which £10,000 is being provided by the Board.

Australian cheese signs are a familiar sight in Japanese cities and in the countryside and our astute representative sees that the maximum benefit is squeezed out of every promotion yen.

## SCHOOL LUNCH PROGRAMME

Somewhat out of the area of straight promotion, but definitely in the field of public relations has been the industry's participation in the Japanese School Lunch Programme. You are doubtless aware of the fact that this is a programme sponsored by the Japanese Government to ensure that all children have an opportunity of enjoying a good lunch.

New Zealand and ourselves have both been participating in this scheme under which we have been sending cheese to Japan at very much concessional prices. The cheese is made available through normal distribution outlets to schools at far below commercial prices. As I said, that is a good public relations gesture and it also means, of course, that the growing Japanese generations are becoming familiarised with Australian cheese and, at the same time, a good image of the industry is being projected in Japan.

The School Lunch Programme has been widely publicised through all media and because we are associated with it, we enjoy the benefits of this publicity.

## ACCEPTABILITY OF PRODUCTS

Obviously, a knowledge of market requirements is essential before a venture of this type can be successfully undertaken. Consequently, in association with our agent, we investigated the eating habits and preferences of the Japanese people to find out what type of product would be most acceptable.

In past years, the very small minority which ate cheese favoured the European type Gouda (mainly because little else was available). Now the cheese habit is spreading and the market is becoming much more representative of a national taste, we find that our milk cheddar is preferred. In fact, it is safe to say that Australian type Cheddar cheese is rapidly becoming a firm favourite.

This, of course, is very fortunate for us because good promotion and marketing is much more effective naturally, when it is built upon a solid foundation of national preference. Link this with the self-evident fact that we can ship cheese to Japan in much less time than can our European competitors and you will readily see that we are in a very sound position indeed.



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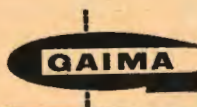
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## A.B. Board Newsletter

### THE CHALLENGE TO ARTIFICIAL BREEDING

**"One of the jobs confronting every organisation in cattle improvement through A.B. is bringing the service to more herds."**

This remark is taken from the U.S. publication, "The A.I. Digest", which states, "Simply selling semen and peddling bulls will not do the job on the broad front where there are still great challenges and opportunities for better cattle for better living. Our non-registered and scrub bull is still number one competitor in the A.I. program."

In Adelaide, the situation is akin to the American position but hardly a week goes by without pleasing reports coming in. Comparatively few as they are, the good reports outweigh the opposites.

### EXTENSIONS TO THE A.B. CENTRE

When the Minister of Agriculture, Mr. Brookman, opened the new bull housing in November at the Northfield Centre, he referred to the substantial buildings adding that nothing of shoddy nature was being accepted by the A.B. Board.

Its aim was to provide services from the best possible sires, to maintain standards of quality in the operation of the service and to keep costs to a reasonable basis. Such things in South Australia compared favorably with services in other countries.

He added a note on the usefulness of herd recording. This would enable staff at the Centre to use a means of assessment and eliminate guess-work in figures put up by the A.B.-bred stock.

Mr. Brookman said the chilled semen produced in this State was proving more successful than the deep-frozen semen which was all that was available in the days of the Department of Agriculture pilot scheme and in the early period of operation of the A.B. Board.

Total first inseminations for the year ended June 30, 1964, were 18,823, and the non-return rate was more than 60 per cent, which, when coupled with a rate of 60 per cent in second inseminations, means that 84 per cent of cows are in calf after the second insemination, and this is the standard by which every dairy farmer must judge his own herd.

Figures are familiar things to the farmer because of the nature of his calling and he will appreciate the A.B. Board's work when hearing of the total 1st, 2nd and 3rd inseminations for the past season being 31,082.

The latest figures show an increase of 2,400 first inseminations in the first four months of the new season compared with a similar period in the 1962/63 year. More than half of the A.B. in S.A. is done by chilled semen which is giving a higher non-return rate than imported deep frozen semen.

Chilled semen use for four months ended October 31, 1964, is recorded for the Board's sires as follows:

Francliff Rapturous 2nd, 942; Vynette Fondhope King, 1,425; Anama Mars Jasper, 1,200; Athol Farm Superior Marty, 1,598; Hampden Illuminator's Finest, 1,277; Vale Royal Impact, 913; Roslyn Vale Fifth Milestone, 1,127; Vynette Tulip Paxton, 1,650; and Strathaven Serenade Mitch, 287.

Deep frozen usage was 4,335 and chilled, 10,485.



Official guests at the opening of the new buildings.



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### FEES RISE IN U.K.

From England comes the report of increase in A.I. fees from October 1, 1964—the first such lift in rates since 1954 and an increase to bring the fee back to the level of 1945 when the Milk Board started the service.

In the past ten years, wages have risen 250 per cent. In 1946, value of milk from average cow was £54, in 1953 it was £107 and the near future reward is likely to be £120.

Fees are to rise from 20/- to 25/- (Sterling) and the nomination fee for each special ampoule of semen will be £2/10/-.

One reason given for the lift was the cost of the new progeny testing scheme but costs of stud stock have risen, too.

### SHORT BREEDING SEASON IN N.Z.

When two prominent figures in the nation's dairy industry, Mr. F. Sedgwick and Mr. B. Doyle, visited the new A.I. centre at Awahuri in New Zealand, they were impressed by the short breeding season—mostly about seven weeks—and the use of large numbers of bulls and extreme dilution rates for semen.

Semen produced on the centre is sent to herd improvement associations, all the year round if necessary, but mainly in the spring and early summer.

Of 200 bulls standing, 40 per cent are used in a season and the remainder await progeny testing.

The main objective is improvement in the productivity of the national herd.

### JUST WHAT IS THE VALUE OF A.B.?

The N.Z. farmer puts this slant on the value of an A.B. breeding service as:

- Extensive use of sires for breeding replacement stock of known high quality at reasonable cost.
- Freedom from worry of reproductive diseases in mating period.
- Removal of the dangerous adult bull from the farm. Only young bulls for heifers and tail-enders need to be kept if at all—giving lower fencing costs and allowing more milkers to be run.
- Insurance against disastrous failure during the mating which can occur under natural mating conditions when a "dud" bull is used.

### N.Z. STATISTICS FOR A.B.

In 1950 2,400 cows were inseminated (only 0.1 per cent of cows) and in 1962, the total was 570,000 or 30 per cent. As farmers are mating only 75 per cent of their herds by A.B. to obtain replacements, effectively 40 per cent of herds are using this system of breeding.

Conception rates (that is the rate at which cows get in calf to one insemination) of bulls have risen from 48 per cent in 1953 to 66 per cent in 1962—with this rate, about 80 per cent of cows are in calf at the end of the seven-week mating period.

Charges are £1 for standard service, £2/15/- for nominated service (N.Z. money).

### DEATH OF A.B. PIONEER

Most dairy farmers must have heard of Sir John Hammond, author among many writings of "Reproduction in the Cow", and most know of his death in England, at the age of 75, in August.

His studies in fertility and reproduction led to experiments in artificial insemination and he was to inspire the setting up of Britain's first A.I. Centre in 1942.

"It is with A.I.," an Englishman wrote recently, "that Sir John's name will always first be linked in farmers' minds. It was he who first realised the full potential of beef from the dairy herd."

His work led to vast increases in both milk and meat from British farms. He travelled the world advising on animal production: he did more for livestock improvement than any other man of his time.

### BREEDING VERSUS MANAGEMENT

In the September issue of the New Zealand Journal of Agriculture, an article on increasing dairy production—"Better cows can still be bred"—was an extract under the heading of nature versus nurture which can be quoted as topical for S.A. dairymen.

The problem is basically the age-old one of unravelling the effects of nature (dairy merit) and nurture (feeding and management).

It is the situation within a herd that is important to the individual farmer, in terms of culling selection; and only among animals which have similarly treated and managed (herd mates) is effective comparison possible.

Herd testing usually reveals an extreme range of yields within a herd even among contemporary animals apparently reared and managed the same. These differences are by no means entirely genetic in origin; they can be affected to a large extent by factors such as calving date, age, disease or accident at any earlier stage of life.

Studies throughout the world show that butterfat yield has a heritability of about 25 per cent; that is, one-quarter of variation in production among cows of the same age within a herd can be ascribed to differences in dairy merit.

This means that although environment differences are certainly more important—and provide scope for real improvement—genetic differences are sufficiently important to warrant attention.

These extracts lead on to the summary:

In breeding for profit, (1) the greatest scope lies in selection of the herd sire. In this, adequate proof is more important than pedigree, but failing such proof attention should be paid primarily to production pedigree; and under present conditions, A.B. offers the commercial producer the surest prospect of success.

(2) Herd replacements should be chosen on the basis of the proof of their sires and the production performance of their dams (or the production pedigree of young dams).

### IMPORTANT DATES IN 1965

Three dates in 1965 hold special appeal and interest for the A.B. user, dairy farmer, stud breeder and the public:

**January 18**—The Guernsey field day on Mr. Brian Saint's Florando property, near Meadows where the Chief Quarantine Officer and Deputy Chairman of the A.B. Board, Mr. Marshal Irving, is to speak and the Chairman of the Board, Mr. S. B. Denton plans to attend.

**March 10**—The Autumn Jersey Fair with private sale facilities at Wayville.

**March 24**—The Autumn Friesian Fair and auction sale at Wayville.

(Later, the Australian Illawarra Shorthorn members will conduct their special feature show.)

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## "Command Unit" Turns Irrigation Controls On And Off

Developed in California, a unique device for turning irrigation controls on or off is gaining a strong hold with United States farmers who use irrigation extensively in their crop program. Called a "Command Unit", it is basically a radio transmitter that picks up a tone signal and transmits it to a receiver at the electrically operated pump to turn the pump on or off. The farmer carries with him a small tuning fork and when he wants to activate or stop the pump, merely strikes the fork and holds it close to his "walkie-talkie" transmitter.

The receiver of the Command Unit is mounted on a pole near the pump and hooked into the electric circuit that operates the pump. The unit consumes less electricity than a 40 watt light bulb, but can receive a signal from more than three miles (five kilometers) away. With each unit activated by a different tone frequency, as many as 60 units can be operated simultaneously without interference. Stray radio signals cannot activate the units.

## EUROPEAN DAIRY OUTLOOK IMPROVES

The increase in consumption noticed in several countries could, in some cases, possibly be sustained by consumer reaction to higher incomes. After the completion of purchases of various types of durable goods, consumers may feel by now that they no longer have to buy margarine instead of butter in order to save money for other purchases. It will be difficult, however, to foresee whether and at what rate the demand for butter will continue to rise.

The influence of prices on this demand has again been proved by the development of the British market after the import restrictions were introduced, but whether it proved the elasticity rate so far assumed, is less certain.

The cheese market has, on the average, been steadier than the butter market and demand for cheese has continued to grow in many countries. Therefore, in countries with exportable supplies of dairy products, the tendency prevails to use a greater portion of the milk produced for cheese.

Prices of milk for liquid consumption have risen recently in quite a number of western European countries. Although changes in the retail price of milk did not greatly influence consumption in recent years, a large and sudden increase, as has occurred in Western Germany in 1963 after years of price stability, may have at least a temporary effect on consumption. A decrease in the price of milk in Norway in the spring of 1963 has been reported to have resulted in an increase in sales.

Total expenditure on milk by consumers has risen in a number of countries owing to increases in sales of light and heavy cream. These larger sales were, however, generally at the expense of those of ordinary milk.

There are indications that farmers have taken heed of the advice given to them to turn more to production of beef than to that of milk.

This may slow down the rate of increase in milk production or even bring it to a halt in one country or another unless productivity rises fast enough to offset such a tendency.



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## Butter Prices Are High In U.K.

It is unfortunate that whenever anyone outside the industry trots out the old question, "Why can't we sell butter here at 2/6 a pound, the same we do in England?", we never seem to have the exact figures to hand. If there is absolutely no doubt that the question would very soon cease to be asked.

Retail prices of butter in leading London chain stores have recently risen to high levels, and are at present:

Country of Origin	Price per lb. (Aust. Currency)
England	5/6½ to 5/10
Danish	5/1¼ to 5/2½
Dutch	Up to 5/7½
New Zealand	4/7 to 4/8¼
Australia	4/7
Blended	4/4½

Even higher prices apply in independent retail stores, particularly those sited away from principal shopping centres.

Margarine prices have also risen to 3/1½ for the 10% butterfat blend, and 2/3½ for straight margarine.



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## Rinderpest Outbreak In Cuba

To highlight the increasing danger of the possibility of exotic diseases being introduced into Australia, we report that Rinderpest, one of the worst of cattle diseases, has appeared in Cuba, and all American countries have been alerted the danger of contact with Cuban cattle. The disease is endemic in the Soviet Union, and it is believed that cattle imported from the U.S.S.R. have brought the disease with them. The Cuban outbreak is the first in the Western Hemisphere more than 40 years.

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within the lumen on the intima of the artery. This is the first stage of arteriosclerosis. At a later stage the deposit becomes fibrous and calcification occurs. The condition is known as arterio-sclerosis.

During the war, when food rationing was enforced and people could eat neither the quantity nor the rich type of food as they now do, there was a marked reduction in the incidence of cardio-vascular disease. Before the war it had been increasing with the standard of living and recommenced immediately afterwards. It is now an important cause of death in the United States, Britain and Australia, whereas in 1920 it was not very important. During the war the United States did not have food rationing and the incidence did not go down. This led people to think that general rationing of the diet and the poor availability of rich foods and in particular fat, had a direct effect on the incidence. A survey, made in the United States, where the number of television sets was compared to the mortality rate from heart disease, showed a direct correlation between the two. It linked the incidence of the disease with the wealth and well being of the population.

Australians live in a prosperous country and have plenty of money to spend on food. More and more people overeat and because of the standard of living take less exercise. There is also a marked difference in the incidence according to occupation. An astronomer has a greater chance of surviving without contracting cardiovascular disease than a stock-broker.

An idea then arose, that animal fats were directly responsible for causing circulatory disease, or were at least a great predisposing cause. The modern diet of the wealthy population is very rich in milk, eggs and meat, all of which contain fats. All these fats are relatively saturated and so have a low iodine value. Vegetable fats such as maize have a high iodine value and so are unsaturated. There is no doubt that saturated fats are associated with a high cholesterol level in the blood. In turn there is a relationship between the cholesterol level in the blood and the incidence of cardio-vascular disease. Maize oil is composed of over 50 per cent unsaturated fatty acids whereas the proportion in butterfat is low.

Butterfat has been accused as a cause of heart disease but there is no correlation between the death rate from heart disease and the consumption of butterfat. In the Republic of Ireland the consumption of butterfat per capita is four times greater than in the United States but the incidence of heart disease is far lower.

An interesting study between the United States and Ireland has been made comparing sets of brothers of whom one remained in Ireland, the other migrated to U.S.A. When examined after a number of years the Irish brothers had much lower cholesterol levels than their counterparts in America. Even though the brothers in Ireland ate more butter, they had a greatly reduced chance of contracting arterio-sclerosis. This was because they took far more exercise than their soft-living brothers in America.

Another example supporting this theory is that native tribes in Kenya, who live almost entirely on milk, drinking one to two gallons per day, were found to have a very low blood cholesterol level. These nomadic people, who were normal in every way, were also found to have a lower incidence of cardio-vascular disease than more sophisticated people. Exercise was again the big difference, the natives walking up to 30 miles per day behind their herds.

Over a period of 10 months a group of experimental rabbits was fed a ration composed of 20 per cent butterfat. During the test period regular exercise was given to the rabbits and on post mortem, perfectly normal arteries were

observed. There again it was concluded that exercise was the factor that negated the effects of a diet high in animal fat.

There is nothing wrong with butterfat or animal fat as such. They are a concentrated form of calories. We can go a long way to avoiding arteriosclerosis and heart disease by maintaining a reasonable intake of calories and making sufficient exercise. In addition to this, having a reasonable balance between the intake of unsaturated and saturated fats will help to some extent.

### MILK PROTEINS

As previously mentioned milk proteins are very important in the nutrition of the young as well as the adult. Protein shortage in the diet is the most important factor in underdeveloped countries.

It is now possible to produce synthetic vitamins which together with minerals can be used as a supplement to the diet. Although this can be of great value in the backward countries, protein is still the main deficiency and milk protein in particular can play a great part in this respect.

Proteins are composed of the so called building stones, amino acids. Out of the 20 or so amino acids, single stomach animals can synthesise only 11 or 12 and so depend on an outside supply for the remainder. In human nutrition the limiting amino acids are cystine and methionine. Lysine, one of the amino acids which is present in large quantities in milk protein is almost deficient in vegetable protein. Hence milk protein is ideal for balancing the lysine content of the diet and can be used for supplementing other proteins. The full benefit of milk can only be obtained when it is fed in combination with the staple food.

During World War II much work was done on the protein value of stored milk powder. One hundredweight of spray dried milk was used for the test and between April, 1941 and March, 1943 the protein availability went steadily down. Here the lysine had become combined with the lactose and was not available to man or animal. Illustrating this drop in available protein on storage, is the failure of spray dried skim milk to correct a protein deficiency among African children. The powdered milk fed in this case had been stored for a considerable time with the result that much of the essential amino acid in the protein had become useless. Even when fed in large quantities its effect was negligible.

### NEW HEAT TREATMENT FOR MILK

Recent development of Ultra High Temperature milk treatment has made possible the storage of liquid milk for considerable periods. In this process all micro-organisms are killed by subjecting the milk to a very high temperature for a short time.

Although this milk possessed excellent keeping quality poor results were obtained when it was used for calf feeding. Physically the milk was quite normal but certain changes in the soluble proteins and complete destruction of all antibodies had made it unsuitable as a calf food. The antibodies in cows' milk are of no importance to man as far as is known, but they do play an important part in the early disease resistance of the calf.

## B.A.E. Survey Completed In S.A.

Mr. L. McLennan, Officer-in-Charge of field operations in the Bureau of Agricultural Economics Survey into the dairying industry has expressed his gratitude for the co-operation given to him and his staff by dairyfarmers in this State during the survey.

## U.S. Scientists Study Artificially Induced Heats

How to raise the low conception rates of heifers that have been inseminated during artificially induced heat periods is receiving intensive study by scientists of the United States Department of Agriculture and the University of Kansas. Heat periods have been synchronized experimentally by injecting the sex hormone progesterone, an accomplishment that in itself has great potential value to livestock breeders.

It can readily be seen that a break-through in this problem, which is aimed at permitting insemination at a time determined by a farmer and not by the animal's heat-cycle, would be of incalculable value, technically and financially to the dairying industry.



**This top-priced bull at the 1964 Adelaide Royal Subsidy Bull Sale was purchased for the Artificial Breeding Board.**

### BEEF BREED SEMEN FOR DAIRY CATTLE

Dairy farmers may have heard of the large A.B. trial in beef herds on the Queensland Stations Ltd property, Bluff Downs, Charters Towers, which aims at inseminating 600 cows in two months. Although not directly concerned with the insemination of dairy cows, it is of interest because of the increasing use of beef-breed semen by dairy farmers.

The Director of the A.B. Centre, Northfield, Mr. W. K. Rose, had this to say about use of semen from beef bulls on dairy cows:

"The Board has been disappointed with the number of first inseminations with beef-breed semen. Of the total of 16,842 (first) inseminations in the first year of the Board's operation, 746 (4.4 per cent) were with Hereford semen, and of the dairy cows served in the first season 58 per cent conceived.

"Latest figures show that in U.K., 45 per cent of all inseminations were to beef bulls, and this practice is of increasing importance in S.A. where semen is available from four Poll Hereford sires, Dooke Fairlie, Pylara Taurus, Hawkesbury Taurus and Lingwen Roger Domino 4th."

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# Journal



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Vol. 4, No. 3

Adelaide, NOV.-DEC., 1964



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# THE SOUTH AUSTRALIAN DAIRYMEN'S JOURNAL

Published by  
**THE SOUTH AUSTRALIAN DAIRYMEN'S ASSOCIATION  
INCORPORATED**

**Aston House, 13 Leigh Street, Adelaide. 51 3034**

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General Secretary: DAVID J. HIGBED

Advertising Rates on application

## Commonwealth Dairy Produce Equalisation -- How It Works

**The Equalisation Scheme operated by the Commonwealth Dairy Produce Equalisation Committee Limited undoubtedly is one of the main factors contributing to the stabilisation of returns to dairyfarmers.**

Although the scheme has now been in existence for thirty years, its functions, as well as the circumstances surrounding its introduction, are still not clearly understood by many of those associated with the industry.

As its name indicates, the main purpose of the scheme is to effect an equalisation of values by ensuring to manufacturers as far as possible equal rates for returns for their butter, cheese or casein, irrespective of the market on which the product is sold. The machinery also permits the preservation of a local price related to the Australian economy and removed from the domination of world parity prices.

The scheme commenced to function for butter and cheese in 1934 and was later extended to casein, and followed a period of depressed export returns. These in turn were reflected in local market values due to the inability of any arrangement operating up to that time to effectively counter the impact on the domestic market of movements in export prices.

Prior to its introduction, steps taken by industry leaders for some form of legislative support for the dairying industry had culminated in the acceptance by Commonwealth and State Governments of quota legislation similar to that applying at the time to Dried Fruits.

Briefly, this legislation provided for the determination by State Governments of the quota or percentage of his output which each manufacturer was permitted to sell on the local (intrastate) market over a given period, whilst Commonwealth powers extended to export markets and required a manufacturer to observe an export quota (complementary to the State quota) before engaging in trade outside his State. The Commonwealth legislation relating to exports later was declared invalid but State legislation providing for local quotas continues to operate in all States.

The legislation contained provisions for exemption from the observance of quotas, such exemption being extended to any manufacturer who was a party to an approved arrangement for a pooling or equalisation of returns which virtually achieved the same end. This paved the way for the formation of the Commonwealth Dairy Produce Equalisation Committee Limited.

## MEMBERSHIP OF COMMITTEE

The Committee is a non-profit organisation incorporated in New South Wales, with 36 shareholders representative of all States of the Commonwealth. The Articles of Association provide for the division of shares into classes according to States, eight shares being held by each of the States of Queensland, New South Wales and Victoria, and four each by the three remaining States.

Because of the necessity for preserving the closest liaison between the committee and State Quota (or Dairy Products) Boards, the Articles further provide that the shares shall be held by persons who are members of the Quota Board in the particular State and are willing to be nominated for membership of the company. No person shall hold more than one share, and where available members of a Dairy Products Board in a particular State number less than the shareholding of that State the surplus shares must be allotted to the persons nominated by a majority of members of that State's Dairy Products Board. Special provision is made for the method of appointment of shareholders should the operations of a Dairy Products Board be discontinued in any State.

The management of the company is vested in a board of directors comprising a maximum of 18 members who are drawn from and nominated by the shareholders in each State, representation being on the basis of 50 per cent of the total number of shareholders of each State.

## SCHEME OPERATIONS

The committee takes its actual powers to equalise under a Deed of Agreement with individual manufacturers. This agreement provides, inter alia, for the submission of monthly returns by manufacturers and their agents indicating the production and markets of disposal of the particular commodity. As already indicated, the Equalisation Scheme embraces manufacturers of butter, cheese and casein, separate equalisations or pools being conducted for each commodity.

Each pool is in respect of disposals ex production over a specified period which, in terms of the Agreement, must not be less than one month or more than 12 months' duration. Latterly, the periods embraced have been for the full 12 months.

Immediately prior to the commencement of an equalisation period a forward assessment is made of the possible level of production that will obtain, anticipated markets of disposal of such production, returns therefore and marketing costs, and on this information an interim equalisation average value is established. This estimate necessarily must be on the conservative side as approximately 18 months elapses before the final position is known and from past experiences it is known that vast changes can occur over that time. The production estimate, therefore is based on the assumption that the most favourable seasonal conditions will prevail throughout the year, resulting in a particularly high output. In consequence, increased exportable surpluses must be anticipated, as with a more or less constant figure of local offtakes any increase in production generally is reflected in the level of exports. This immediately gives rise to the possibility of an over-supply on export markets and some reduction in returns. The ability of the pool to meet payments involved pending the receipt of monies from the higher priced markets is another major consideration. In the circumstances, the necessity for exercising extreme caution in establishing the initial interim equalisation average value should be apparent.

Having determined an initial interim equalisation (or pool) value, monthly adjustments are then effected with manufacturers on the basis of disposals on the various markets as indicated in the monthly returns submitted by

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**WOODSIDE.**—191 Acres F.H. undulating grazing or dairying, cleared, 11 paddocks sheep proof fencing. Bore equipped, squatter's tank. 2 steel sheds 40' x 20' fully enclosed. Concrete dairy equipped. Very old 4 roomed stone house. PRICE £16,000.

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**MYLOR.**—SMALL DAIRY: 19 acres F.H. undulated to rising land. All cleared. Pastured with clovers. Divided into 6 paddocks, fencing cyclone and plain wire, watered by bore equipped, dam and concrete tank. Carry 12 dairy cattle. Concrete dairy equipped C.M.L. and pick up. Shed 30 ft. x 20 ft. Giving in 11 dairy cows. 5-room concrete Home. Power and Phone connected. PRICE £6,500 o.n.o.

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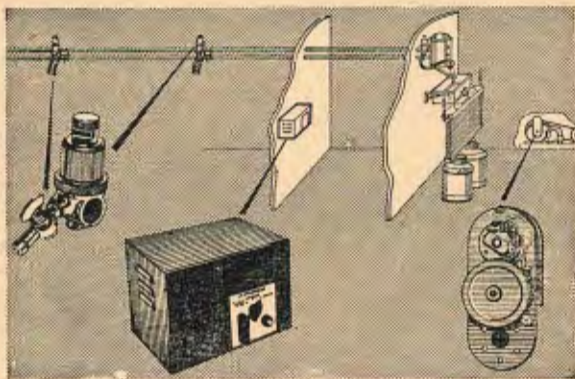
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1. Milk flow is quicker . . . in fact, the magnetic pulsator is the world's fastest which means time is reduced.
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manufacturers and their agents, according to the relationship the value fixed for the particular market bears to the average value. In other words, where the market realisation for equalisation purposes exceeds the average pool value the manufacturer is called upon to refund the difference, and where the return falls below the pool value the difference is met by payment from the pool to a manufacturer.

Broadly speaking, the markets of disposal come under three main headings, viz.: Sales for Consumption within the Commonwealth, Exports on account of the Australian Dairy Produce Board, and Other Exports, the basis of determination of values for these markets being:

1. Sales for Consumption within the Commonwealth: The local price fixed by the Australian Dairy Council—a body representative of the Australian Dairy Farmers' Federation, the Australian Dairy Produce Board and the Committee;
2. Exports on account of Australian Dairy Produce Board: Actual net return received by the Board upon disposal of the product on the particular export market;
3. Other Exports: The f.o.b. price fixed by the Board for the destination involved.

Values taken for equalisation purposes are those applying to the choicest quality product, discounts or grade losses which might be incurred being borne by the manufacturer. On the other hand, premiums or margins received in excess of the basic choicest value (such as for pat butter and matured cheese) are retained by the manufacturer.

In more recent years a system of financing has operated whereunder butter or cheese upon entry into cold store is subject to purchase by the Australian Dairy Produce Board, the Commonwealth Government providing funds for this purpose. The purchase price paid generally is a conservative figure which is later built up to the average equalisation value by a payment from the pool to the manufacturer. Upon ultimate disposal of cold stored stocks a further adjustment is then effected on the basis of the difference between the purchase price paid upon lodgment in cold store and the actual market return.

The average equalisation value is kept under constant review and if, as the pattern of production and market returns for a season unfolds, it becomes apparent that the final outcome will show a definite improvement on that initially envisaged, "step-ups" are made in the average value—these being governed by the extent of accumulated funds.

Upon ultimate disposal of the period's production, a final pool value is determined and an adjustment made with manufacturers at the difference between the final value and the last-determined interim average value for the period.

During the course of an equalisation period it may appear that the interim pool price which is being maintained is somewhat on the conservative side when compared to market trends and the likely final outcome. It should be borne in mind, however, that each pool is self-supporting and, as the committee carries only comparatively minor reserves, the current average value must be related to availability of pool funds.

The problems encountered here should be apparent when it is noted that in the case of butter approximately 60 per cent of the season's output is produced in the first six months of a period but over that time only 38 per cent of this quantity is disposed of on the local market, our most favourably

priced outlet. Practically the whole of the balance is placed in cold store pending export overseas or for subsequent use on the local market during periods of low production and is the subject of a substantial payment from the pool. Anything up to 12 to 18 months elapses before actual sales are completed and proceeds come to hand.

Whilst the position has been eased to some extent because of the arrangement for the financing of butter and cheese in cold store through the Australian Dairy Produce Board, there is a limit to which funds can be utilised from this source quite apart from the standpoint of interest costs, and even with this financial assistance bank accommodation also has to be utilised at intervals to meet payments to manufacturers. The knowledge of an improved market outlook does little to provide the wherewithal to increase the average return; the dominant factor is the actual receipt of funds upon disposal of the product.

### OTHER BENEFITS OF SCHEME

Apart from the apparent benefits offering through equalisation of returns the committee's machinery is being utilised to an ever-increasing extent in the overall plan for the orderly marketing of dairy products. It ensures maintenance of supply to meet domestic requirements of the Commonwealth throughout the year without additional cost to the consumer by absorbing cold storage charges and meeting transport costs to recognised centres of distribution. It facilitates arrangements for the withholding of exportable surpluses and subsequent planned shipments to the United Kingdom to ensure continuity of supply on that market by meeting cold storage and other costs involved. The financing of butter and cheese held in cold store, arrangements in regard to marketing in countries other than United Kingdom under a price agreement operated by the Australian and New Zealand Dairy Boards, and the distribution of bounty under the Commonwealth Government's Stabilisation Plan are also matters which are only made practicable because of the flexibility of the Equalisation Plan.

The vast changes which have taken place in the Dairying Industry over recent years, particularly in the field of marketing, have only served to emphasise the important role Equalisation plays in the stabilisation of returns to dairy farmers. It has become the virtual cornerstone for organised marketing and there is little doubt that unless replaced by an organisation with similar objectives, its removal would bring chaos to the industry.

**J. CLARK, General Manager, Commonwealth Dairy Produce Equalisation Committee Limited.**

# TUBE BILT

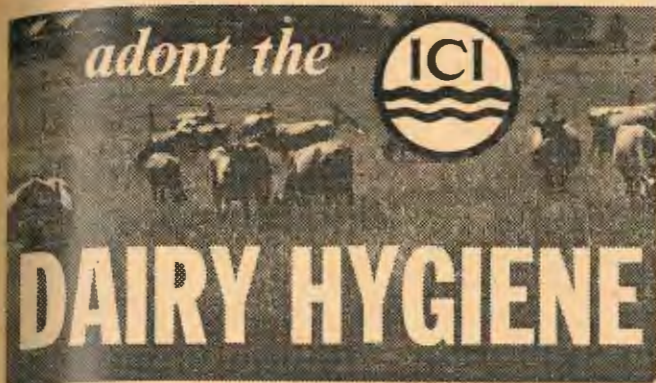
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Don't let Mastitis cripple your dairy herds' production, waste your money—Adopt the ICI Three Step Dairy Hygiene Plan TODAY!

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# Statistics

## ADELAIDE METROPOLITAN MILK SUPPLY AREA

### PRODUCTION (000 gallons)

	For Month		Total since July 1		Total since Jan. 1	
	1963	1964	1963/64	1964/65	1963	1964
October ... ..	5,087	5,479	16,527	18,123	33,522	36,963
November ... ..	4,756	5,373	21,283	23,496	38,278	42,336

### SALES (000 gallons)

	For Month		Total since July 1		Quota %		C.M.B.	
	1963	1964	1963/64	1964/65	1963	1964	1963	1964
October ... ..	1,649	1,679	6,461	6,672	32.4	30.6	1/7 $\frac{1}{2}$	1/6 $\frac{1}{2}$
November ... ..	1,625	1,653	8,086	8,325	34.2	30.8	1/8 $\frac{1}{2}$	1/6 $\frac{1}{2}$

Moving Average Quota for 12 months ended 31/10/64, 43.17% 30/11/64, 42.67%

### INTERIM PRICES TO LICENSED SUPPLIERS

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

1964	Basic C.M.B.		Total	Quota %				
	(per lb. butterfat)			3%	3.5%	4%	4.5%	5%
October ... ..	3/7	1/6 $\frac{1}{2}$	5/1 $\frac{1}{2}$	1/7 $\frac{1}{2}$	1/10 $\frac{1}{2}$	2/1 $\frac{1}{2}$	2/4 $\frac{1}{2}$	2/7 $\frac{1}{2}$
November ... ..	3/7	1/6 $\frac{1}{2}$	5/1 $\frac{1}{2}$	1/7 $\frac{1}{2}$	1/10 $\frac{1}{2}$	2/1 $\frac{1}{2}$	2/4 $\frac{1}{2}$	2/7 $\frac{1}{2}$

(per gallon)

### LONDON PROVISION EXCHANGE QUOTATIONS

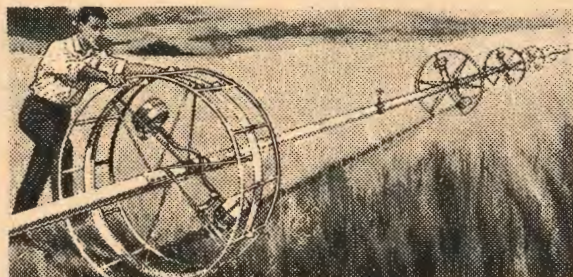
	October		November	
	1963	1964	1963	1964
Butter—Choicest Australian .....	334/-	334/-	334/-	350/-
Cheese—First Grade Australian .....	226/-	248/-	226/-	260/-
Rindless Australian .....	234/-	257/-	234/-	270/-

## YOU EAT WHAT YOU LIKE! I'LL STICK TO BUTTER, THANKS!

"The Advertiser" recently published an interesting report on "The Great Salad Oil Scandal", which described the attempt of a U.S. corporation to corner the market in vegetable oils, used, as the report says, "in the manufacture of salad cream, margarine, soap, paint and vitamin pills."

The report was not only interesting; to anyone with ideas about the morality of commerce and business it was also astounding; but what really appalled me was that one of the factors that almost helped the plot to come off was that measurement of the actual stocks of vegetable oils held by the company was impossible because the "tanks had such a crust of sludge and scum that no one could tell what was underneath." (The tanks referred to, in which the vegetable oils were stored, are those in the Bayonne Tank Farm, on the shores of the Hudson River, which, as far as we can ascertain, are used by companies who wish to store large volumes of oil in bulk, and, where again as far as we can ascertain, no one minds if a tank holds crude oil today, vegetable oil tomorrow.) With all that science can offer us in the way of pasteurisation, clarification and sterilisation, that "sludge and scum" bit doesn't sound too good to me. With all that we know can go wrong with butter, I still think I'll be safer if I swear off margarine for life, and keep sludge and scum right out of the menu.

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## CHEESE IMPORTS CLIMB

The volume of value of cheese imports coming into Australia continue to rise by about 30 per cent annually, the figures for 1963-64 being 2,890 tons (valued at £1,200,000), compared with 2,387 tons (£973,000) in the previous year.

The volume and value of each type of cheese is shown in the following table:—

### IMPORTS OF CHEESE: BY MAIN TYPES: AUSTRALIA 1963-64

Type	Quantity (tons)	Value (£A)
Processed cheese, cheese pastes, and spreads .....	292.3	125,440
Blue .....	316.3	158,821
Cheddar and Epicure Cheddar	252.4*	91,054
Edam and Gonda .....	362.6	104,639
Parmesan, including Parmigiano Regiono .....	122.1	90,686
Provolone .....	159.1	103,545
Other .....	1,385.1	525,357
<b>Total .....</b>	<b>2,889.8</b>	<b>1,199,542</b>

(\*Almost twice the total of 148 tons in 1962/63)

The main countries of origin (with the value of imported cheese shown in brackets) were: Italy (£319,377), Denmark (£312,370), Netherlands (£125,246), New Zealand (£116,030), Bulgaria (£96,224), Switzerland (£66,710) and Greece (£47,653).

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\* Refrigerated  
DAIRY COOLER

## BUILT FOR LASTING STRENGTH, EFFICIENT, ECONOMICAL OPERATION

★ It's essential for your milk to be delivered in tip-top condition! And this completely new Refrigerated Milk Cooler is designed and built to do the job perfectly . . . and do it for less! Save yourself a lot of worry by installing this revolutionary design. By doing a better job year after year, it will save you money in low running costs, light maintenance and long life . . . thus ensuring top nett profits, with the self-satisfaction of not only providing a top grade product, but keeping it as such.

### THIS TEST PROVES LEONARD IS BEST!

★ During the period 12th February to 24th March, 1964. (41 days/82 milkings), R. E. Shankland & Sons, Dairymen, of Jervois, S.A., produced 7,462.2 galls. of milk in an average max. day temperature of 81.17° F. **Milk came off the cooler at an average of 42.18° F.** The unit ran 350.5 hours on night tariff (2.04d.), and 10 hours on day tariff (4.25d.), making **running costs only £3/2/11!**

A check meter installed by the Electricity Trust of S.A. showed that over the 13 weeks February 12th to May 14th, the **total running cost was £5/11/6.** Over the same period, Jervois Co-op. Dairying Society Ltd., received from Shanklands' Dairy, 14,193 galls. milk. This represents a cost of a little less than 1/10th 1d. per gallon . . . **less than 9½d. per 100 gallons!**

**PRICES (within 75 road miles Adelaide):**

½ h.p. 60- 80 galls. per day **£253**

¾ h.p. 60-200 galls. per day **£305**

1 h.p. 200-240 galls. per day **£320**

¾ h.p. 200-240 galls. per day **£370**

1 h.p. 240-300 galls. per day **£410**

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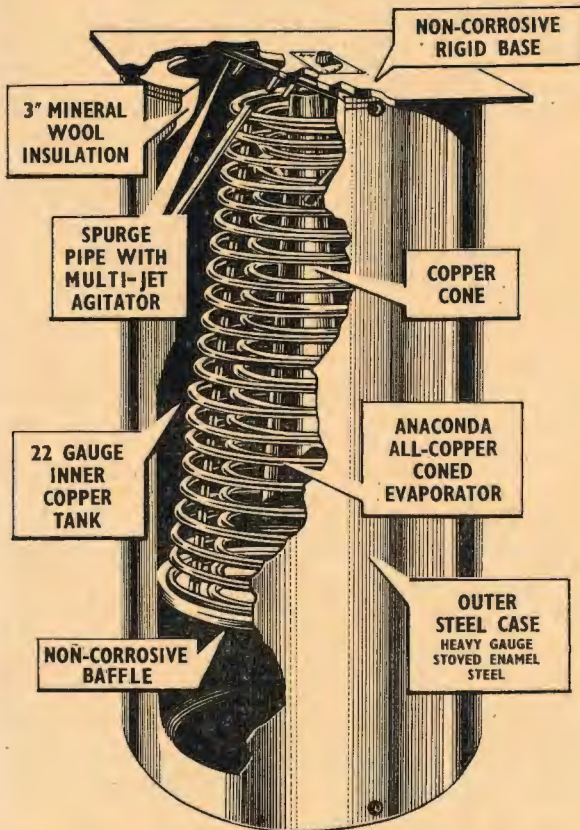
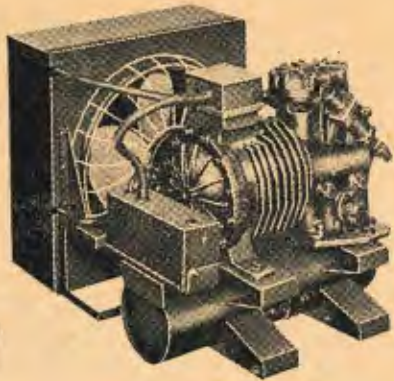
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... AND SPECIALLY  
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## BULK PICK-UP!

(Adaptable for ten-gallon cans)



## THE PROBLEM OF "WATER IN MILK"

The adulteration of milk with water is a practice of very long standing, and over 100 years ago a report on the milk supply to London stated that "much of the milk appeared to have come from the 'iron-tailed' cow (i.e., the water-pump)." Certainly where milk is paid for by volume there must be some temptation to increase production in such an easy way.

In the Adelaide city milk area, however, payment is made on butterfat and certainly the addition of water can have no effect on the total butterfat content, so that producers who have water in the milk they supply are obviously not being dishonest—it is far more likely that they are overlooking the ways in which water can accidentally come into the milk supply, either from a leaking cooler, by failure to pinch-off the vacuum in the milk-lines when dipping cups between cows, or by failure to ensure that milk-lines, releaser and vat have all drained thoroughly after the initial flush-through before milking. Lack of care in any of these ways can cause the unsuspected addition of water to the milk, and cause the farmer to run the risk of licence suspension, with consequent financial loss. For this reason it pays to be extra careful, particularly in checking up on coolers, which may be either leaking along the tubes or, more likely, at the hose connections.

One other source that may have to be considered is the practice, in some cases, of flushing the milking machine with water after milking to ensure that every drop of milk finds its way into the can. Of this it can be said that a properly installed machine should drain so well that the amount of milk still adhering to the walls of the tubing is so insignificant that it is certainly not worth the risk of losing one's licence for even the shortest period, and this is a real risk as a substantial amount of water must be put through the machine to wash out the residual milk.

When one considers that in the lean period (and, significantly, this is the time when the added-water problem is the greatest), the quantity of milk per milking on the average licensed dairy farm is less than two cans, one can realise that the flushing-through of even a half-gallon of water would adulterate the milk by 3%.

Farmers often ask whether other causes may give the same effect as added water. It is certainly true that the freezing point of milk, which is the method by which the presence of added water is detected, can be affected by weather, the protein content of the pasture, the stage of lactation, and other factors, but the most recent work done on this problem by the Queensland Department of Agriculture indicates that the effects of these factors are so slight as to cause negligible variations.

## High Producing Youngsters Do Not Burn Out

Precocious youngsters in the dairy world do not burn out in subsequent lactations according to recent research at Cornell University.

Experiments carried out with 26,000 Friesian cows reveal that, insofar as this breed is concerned, high heifer lactations are a good indication of high production in subsequent lactation. The experiments showed that Friesians with yields of 1,000 lb. milk above their herd mates on the first lactation could be expected to average from 500 to 600 lb. above herd mates in the second lactation. Similarly heifers with 1,000 lb. less than their herd mates on the first lactation could be expected to yield from 500 to 600 lb. less on the second lactations. This trend was evident over five lactations. The oft-propounded principle that a high first lactation means a short milking life can thus be regarded as a myth as far as the Friesian breed is concerned.



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With a Braemar Hot Water System you have ample hot water at the turn of a tap—when you need it—where you want it. And a Braemar Hot Water System is so economical, with a choice of electric, gas, L.P. gas, solid fuel or oil heating models. Braemar systems are made in South Australia especially for South Australian conditions.



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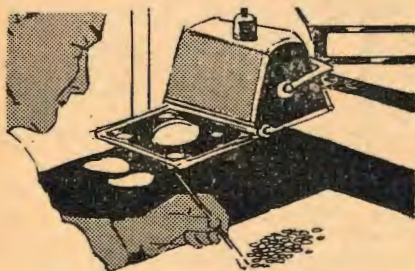
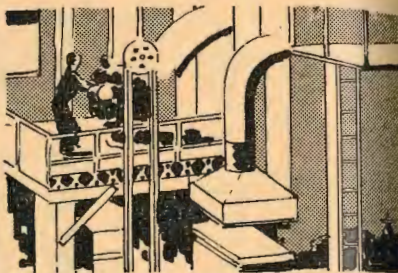
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# What Happens To Research And Promotion Funds?

In an earlier issue (July-August, 1964) we described how the money collected from farmers by the Australian Dairy Produce Board, for the purposes of promoting the sales of butter and cheese, was spent. This report shows the many uses to which the money levied from dairy farmers for research is put.

## RESEARCH ACTIVITIES

Research projects recommended by the Board and approved by the Minister were financed from funds raised by a levy of 1/16d. per lb. on butter production and 1/32d. per lb. on cheese production. An equal contribution towards expenditure on research was made by the Commonwealth Government. Full details of the Dairy Produce Research and Sales Promotion Act 1958-1964 under which levies are raised, are set out in the Annual Report for the year of 1958-59.

The Board is advised on its research recommendations by the Dairy Produce Research Committee, which has its own specialist Technical Sub-Committee to give preliminary consideration to detailed research proposals in the fields of production and manufacturing research.

To offset the effects of seasonal conditions on income from levy and to meet urgent industry problems which could arise in the future, a reserve is maintained in the Dairy Produce Research Trust Account.

Funds allocated for research projects approved by the Minister for 1963-64 totalled £311,170. The distribution of these funds to the main fields of research is set out in the following table.

Dairy Farm Research	£133,062
Dairy Manufacturing Research	£117,188
Marketing Research	£35,370
Nutrition Research	£3,000
Dairy Education	£9,550
Miscellaneous Research and Administration	£13,000
	<hr/>
	£311,170

## DAIRY FARM RESEARCH

Of the total allocation to this type of research £113,595 was for recurring expenditure, and £19,467 for non-recurring items. The projects approved were:

C.S.I.R.O.

- (a) Basic studies of the fermentation process in silage-making.
- (b) Biological control of black beetle by parasitic nematodes.
- (c) Control of endoparasites in dairy cattle.
- (d) Studies on virus diseases in dairy cattle.
- (e) Studies on infertility in dairy cattle.
- (f) Nutrition of dairy pastures in Western Australia.
- (g) Investigations to determine the most suitable pastures for coastal lands of Southern Queensland.

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**C.S.I.R.O.**

- (a) Cheese investigations—
  - (i) Studies on mechanisation
  - (ii) Studies related to fusion of salted curd
  - (iii) Studies of cheese bandage function
  - (iv) Selection of cheese starter cultures
  - (v) Appraisal of the utility of the hydrogen peroxide—catalase treatment for cheese milk
  - (vi) Effects on quality of different methods of packing and storing rindless cheese
  - (vii) Studies in milk proteins.
- (b) Butter investigations—
  - (i) Clarification of the effect of copper contamination
  - (ii) Studies on oxidation of butterfat
  - (iii) Tests on flavour of stored butter
  - (iv) Oxidative stability of butterfat in baked goods.
- (c) Development of new food forms—
  - (i) Butter powder for uses in baking and in other manufactured products
  - (ii) Improvement of technical qualities of recombined cream
  - (iii) Development of high-protein milk powder
  - (iv) Studies of dispersion properties of processed milk products
  - (v) Study of curd granules in cheese forming.
- (d) Investigations on casein and recombined products—
  - (i) Studies on viscosity and heat stability of recombined products
  - (ii) Studies on processing problems of recombined products
  - (iii) Development of process for manufacturing low viscosity casein
  - (iv) Studies on the use of low viscosity casein for paper-coating
  - (v) Studies on application of low viscosity casein in manufacture of caseinates.
- (e) Flavour chemistry investigations—
  - (i) Attractive butter flavours
  - (ii) Gluey flavour in casein
  - (iii) Studies on oxidation in dairy products
  - (iv) Studies on cheese flavours
  - (v) Infra-red spectra of dairy products.

**Department of Agriculture, South Australia**

- (a) Cheese investigations—
  - (i) Frozen starters for factory distribution
  - (ii) Soft curd milk
  - (iii) Casein/fat adjustment using skim milk concentrate.
- (b) Research liaison—accumulation and dissemination of technical and economic information relating to manufacture of dairy produce.

**Department of Agriculture, Victoria**

- (a) Use of dye-markers in antibiotic preparations.
- (b) Spreadability of butter.
- (c) Studies of the effect of size of curd particles in cheese-making.
- (d) Simplified coliform tests for butter.
- (e) High temperature preheating of cream for buttermaking.

**Department of Primary Industries, Brisbane**

- (a) Acid development in cheese.
- (b) Development of new dairy products—
  - (i) Flavoured milk drinks
  - (ii) Flavoured toppings
  - (iii) Recombined butter.

- (ii) Bovine mastitis and the lymphatic system
- (iii) Contribution for erection of Camden Park Laboratories.
- (c) Department of Veterinary Medicine  
Causes and economic importance of cattle diseases.
- (d) School of Agriculture  
Pasture investigations on the North Coast of New South Wales.
- (e) Department of Veterinary Physiology  
The biochemistry, dilution and storage of bull semen.

#### University of New England

Faculty of Agricultural Economics

Socio-economic investigations of the dairying industry on the far north coast of New South Wales (in co-operation with the Department of Agriculture, N.S.W.).

#### University of Queensland

- (a) Department of Veterinary Preventive Medicine  
Epidemiology control and treatment of bovine mastitis in South-East Queensland.
- (b) Department of Parasitology  
Pathogenesis of tick fever.
- (c) Department of Chemistry  
Equipment for weed taint studies.
- (d) Department of Animal Husbandry  
Investigations of ovarion hormones causing oestrus in the dairy cow, under various nutritional, climotic and hormonal stresses.
- (e) Department of Physiology  
Pharmacological investigation of plants poisonous to stock.

#### State Pasture Improvement Committees

Contributions were made to each State Committee in continuation of earlier Board policy of supporting research and extension work in pasture improvement.

#### DAIRY MANUFACTURING RESEARCH

In accordance with the procedure adopted in previous years, a Technical Sub-Committee, consisting of representatives of the various research organisations participating in the manufacturing research programme, met to review the progress made in all projects and to prepare a report for the guidance of the Research Committee.

During the year, the sub-committee was reconstituted as a smaller group for greater ease of administration. However, representatives of reseach organisations shall continue to meet at a seminar, preceding the meeting of the new sub-committee for discussion and interchange of ideas, so as to ensure the continuation of a well-planned co-operative effort in the manufacturing research programme.

Of the total allocation of £117,188 to this type of research for 1963-64, £97,653 was in respect of recurring expenditure, and £19,535 for non-recurring items.

The projects approved were:—

The effects of price on the relative usage of the different oils and fats and the special problems involved in achieving the more extensive use of butter by the food industry were investigated.

An Australia-wide survey was also undertaken to look into the consumer demand for cheese. Factors included attitudes to cheese, effects of price on the level of demand, factors motivating the purchase of cheese, the retailing and statistical aspects of the supply and demand.

A study was also conducted into the distribution systems for butter and margarine.

Overseas, a market survey of the sweetened condensed milk market of Malaysia was carried out. The information obtained from these surveys has been of considerable value to the dairy industry.

## **NUTRITION RESEARCH**

Research was initiated to test the medical and nutritional value of ghee. Clinical tests were carried out at the Prince Henry Hospital, Sydney, and the Royal Newcastle Hospital. Analyses of cooking fats were commenced in the Department of Biochemistry at the University of Melbourne.

## **DAIRY EDUCATION**

A number of awards in different fields of dairy education were made in January, 1964.

### **Post-graduate Studentships**

The Board is assisted by the Studentship Selection Sub-Committee of C.S.I.R.O. in the selection of students for awards to carry out post-graduate research. Studentships are available for research into problems associated with dairy farming dairy manufacturing and marketing of dairy produce.

Junior studentships are awarded to students in their first year of post-graduate study. Senior studentships are for graduates with more research experience to further their training at Australian Universities. Overseas studentships are primarily for advanced research.

Two Senior studentships and one Overseas studentship were taken up for studies in the fields of enzyme kinetics, milking machines and ruminant metabolism.

### **Study Grant**

A study grant was made to enable an experienced extension officer to undertake the one-year post-graduate Diploma Course in Agricultural Extension at the University of Queensland.

### **Dairy Industry Scholarships**

The Board made available scholarships for undergraduates in the Faculties of Agricultural Science, Science, Food Technology, Applied Science and Engineering to attract promising technologists to careers in the dairy industry.

It is hoped that this scholarship scheme will attract the co-operation of dairy companies throughout Australia who are being asked to sponsor students.

Two students are being directly sponsored by the Board to equip them for later service in overseas plants.

A Thai student, selected by Thai Dairy Industry Co. Ltd. to undertake the two-year Diploma Course in Dairy Technology at Hawkesbury Agricultural College, N.S.W., was awarded a scholarship for the course by the Board.

- (c) The alleviation of weed taint in butteroil.
- (d) The development of manufacture of hard and semi-hard varieties of cheese to suit Queensland conditions.
- (e) Methods of prevention of surface defects in cheese.
- (f) Lipases in cheddar cheese.
- (g) Improvement of butter quality in Queensland.
- (h) Survey of antibiotics in dairy products and development of rapid field tests for their detection.
- (i) The influence of residual milk on cheddar cheese flavour.

#### **Department of Agriculture, New South Wales**

- (a) Rapid methods for determining the composition of milk.
- (b) Bacteriophage antibiotic interactions among the lactic streptococci.

#### **University of Melbourne**

Department of Biochemistry  
Enzymology of cheese.

#### **University of Sydney**

Department of Biochemistry  
Heterogeneity of k-casein

#### **Butter Marketing Board, Brisbane**

- (a) Stability of butterfat.
- (b) Methods of storing butter to avoid surface deterioration.
- (c) The keeping quality of butter.

#### **Queensland Agricultural College, Lawes**

- (a) Spreadability of butter.
- (b) Investigations into temperature changes in butter granules during washing.

### **MARKETING RESEARCH**

The Marketing Research Section handles enquiries on the dairy industry and its products, marketing and distribution surveys and various statistical data pertaining to the domestic and overseas markets.

In 1963-64 much of the work of the section was in the direction of exploring avenues of marketing in order to expand the sales of dairy products both at home and overseas, in particular in certain Asian countries.

The Boards' Library handled an increasing number of enquiries from both staff and outside borrowers.

Owing to the Board's interest in South-East Asia, the Library is building up a collection of market surveys and statistical information relating to such countries as Thailand, Philippines Malaysia and Japan.

Quantitative data was obtained in Australia throughout 1963-64 in respect of household purchases of butter and cheese. A number of important differences in the demand by States for both butter and cheese and wide variations in the rate of expansion in cheese sales by types was again noted.

During the year a survey was conducted to determine the current and future market for edible oils and fats in the manufacturing sector of the food industry.

## A.B. BOARD NEWSLETTER

### A ROUND-UP OF WORLD COMMENT ON A.B.

By extending its services to the Eden Valley district the Artificial Breeding Board has added a substantial number of dairy farmers to the total of potential users of this modern technique, and to these newcomers in the Hills and the Barossa Valley areas this newsletter will take on a new meaning.

These farmers know that good management, husbandry and feeding still count for a lot, but the availability of artificial breeding will lead to more exciting results—the achieving of which is in the hands of the individual concerned.

To help these newcomers, and to keep the veteran A.B. users informed we publish a round-up of world comment, gathered during the year.

**VICTORIA:** In the December issue of the Victorian Department of Agriculture Journal is a good discussion on Herd Testing. One point of interest is the increasing herd size over recent years, to the present average of 40.2 cows.

Overall average production is 348 lb. fat, 7,139 lb. milk, at 4.9%—an increase of 3 lb. fat over last season.

Artificial breeding takes the credit for the champion cow in the 1963-64 season; Yarravale Glory 6th, a Jersey by Surrey Prestige by Fyan's Glory, bred by A.B. as the result of a mating carried out during the second year of the Stud Cattle A.B. Demonstration conducted by the Department of Agriculture in 1955. Glory 6th produced 1,025 lb. fat 16,830 lb. milk at 6.1%; to make a total of 4,713 lb. fat in six lactations. In the previous season she was Victorian reserve champion producer.

**GREAT BRITAIN:** In November Charolais breeders held their first British Charolais Cattle Society Show and Sale, where an average of £64 was gained for heifers. The judge of the Show was M. Jacques Pacaud, of France, a supplier of bulls to U.K. whose star bulls, Sacha Satin and Saumon are standing at A.B. studs.

At present imports to U.K. from France are suspended, but when suspension is lifted it is expected that a bull will cost about £730 and heifers, too, will be about the same price. France has a booming export market for this breed.

**NEW SOUTH WALES:** Joselyn Model Patch, a Friesian bred by A.B. and owned by Mr. W. Clifton of Singleton, has produced 1,013 lb. fat, 28,415 lb. milk at 3.6% in 365 days at the age of 7 years and 7 months. Patch is by the N.Z. sire Dalefield Sir Vrouka Model, whose survey covers 167 lactations and whose RGV (Relative Genetic Value, a form of evaluation used in U.K.) is milk—133, Butterfat—125, average fat—3.9%, weight—102.

**CANADA:** The reasons behind the proving of A.B. sires is revealed by A.B. co-operatives in Ontario. In assessing the bull's influence on the performance of his offspring, the results would be clouded by the effect of feeding and management if progeny were tested in only one herd. In sire surveys for A.B. the results come from many herds, under many variations of feeding and management.

**U.S.A.:** The programme for the artificial insemination of dairy cows began in U.S. in 1938 with the techniques already used successfully in Denmark since 1936. The period from 1938 to 1945 was one of trial, but there was never doubt that A.B. as a tool for stock betterment was scientifically and practically based.



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## AN ADEQUATE DIET FOR 5/- A DAY!

Omar Khayyam's recipe for happiness was brief enough—

" . . . a loaf of bread beneath the bough,  
 A flask of wine, a book of verse—and thou  
 Beside me singing in the wilderness . . . "

was all that he required, but modern nutritional science has demonstrated that if he substituted a quart of milk for the flask of wine he could have done without the book of verse and even his companion (of whom he gives no details) and still had an adequate diet.

Dr. Pennycuik reports that Dr. R. Harris, at a recent American Medical Association meeting claimed that a daily diet of a loaf of bread, 4 ozs. of butter, a quart of vitamin D enriched milk and 6 ozs. of orange juice gave adequate nourishment for a cost, in Australia, of about 5/- per day. So here we have another tribute to the contribution made by dairy produce to healthy economical living.

Dr. Harris warns, however, that one cannot live indefinitely on this diet alone. He says that it is psychologically desirable to eat a larger variety of food.

This, however, is no new discovery. Certainly it was well enough known in the days of the popular music hall song:

After 25 years, the annual total of cows artificially inseminated has now reached 7¾ million, about 41% of all dairy cows in the U.S.A., and during this whole period the total number serviced is over 85 million.

"This has been accomplished without government edict, by farmer co-operation, with competition between organisations, and with assistance and sympathy from appropriate government agencies, dairy and breed groups, and the veterinary profession."

From the question page of a U.S. journal come some answers similar to those often sought by S.A. dairy farmers: poor conception rates come from inability to identify heats, breeding too soon after calving, breeding a herd that won't settle to a bull, phosphorous deficiencies, genital infections, cantankerous ideas as to when during heat a cow should be bred, and malnutrition.

On difficulties encountered by the A.I. technician, one U.S. expert says it is no trouble to gain conception with a good cowman—too few are good cowmen. A man who likes cows and knows them has a better chance of a good conception rate than natural service ever offered. Do not think of the cow as a mechanical unit or rely on untrained men to watch the herd.

Another current problem arises in the U.S. where an owner asks the technician to diagnose pregnancy. "The A.I. technician should not be asked, because he attempts to offer services for which he has not been trained. He also tends to spend time away from his contacts using the A.I. service."

In the U.S. Hoard's Dairyman of November 10, 1964, is a bright article on "blaming the bull" and it is worthwhile adding for S.A. readers that the issue is kept—like many other publications—in the library of the Department of Agriculture.

"When things go wrong, it is a part of human nature to look for something or someone to blame. This is particularly true in breeding dairy cattle. The common scape-goat is the sire."

## ONE LEVY FOR DAIRY PRODUCE SOUGHT

At present the funds for the administration expenses of the Australian Dairy Produce Board and for the Board's research and promotion activities are obtained by two separate levies, the first, for administration, having been imposed by Commonwealth legislation when the Board was established in 1925, and the second, for research and promotion, by separate legislation in 1958.

The collection of these dual levies, and of levies for other primary products is creating administration difficulties in the Commonwealth Department of Primary Industries, and as all legislation dealing with levies will have to be amended sometime in 1965, before the introduction of decimal currency in February 1966, the Minister for Primary Industry has asked that the position be reviewed at this time with the object of bringing all the dairy levies under one heading.

The Minister explains that such an arrangement would not only streamline the accounting and administration of the levies, as far as his Department is concerned, but would also give the Board greater freedom to vary its budgeting within agreed limits without involving frequent changes in legislation.

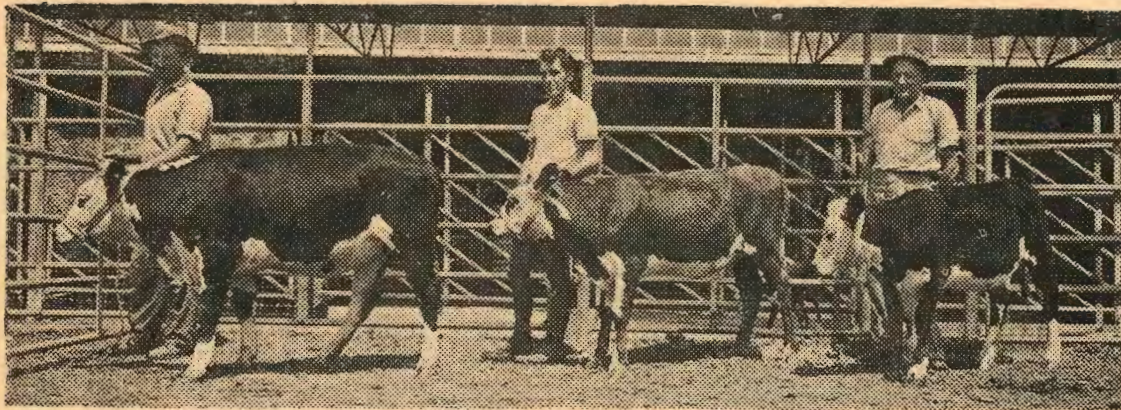
As the levies are paid by the farmers the matter is one for them to decide, as the factories play a part only in collecting the levies. The matter will therefore be discussed by the Executive of the Australian Dairyfarmers' Federation in February 1965.

## RAISING BEEF CALVES FROM DAIRY COWS

### SYDNEY UNIVERSITY EXPERIMENTS REVEAL EYE-OPENING DIFFERENCES

Almost unbelievable differences in the growth rate of calves were demonstrated recently by the University of Sydney during an investigation into the economics of raising beef calves from dairy cows, and result left absolutely no doubt as to the superiority of suckling against hand-rearing.

Research workers and dairyfarmers alike found it difficult to believe that the calves exhibited were of comparable ages and had all been about the same weight at the beginning of the experiment.



These three calves, raised by different techniques, were of comparable ages and weights when experimental rearing began.

Calves raised by suckling were incomparably larger and of better appearance than those raised on a whole-milk replacement ration, whilst calves raised on a skimmed milk diet were markedly inferior.

Dr. I. D. Wardrop, Officer-in-Charge of the M. C. Franklin Laboratory at the Animal Husbandry Farms of the Sydney University, claims that calves from dairy cows offer a very real potential for beef production, and has been investigating the most economic methods of "cashing in" on this potential.

The enormous increase in beef production in Britain, he said, had come mainly from crossbred beef from dairy herds.

**SITUATION VACANT**—Wanted urgently—young lad to help on dairy farm. For particulars and conditions phone Langhorne Creek 9.

"On Monday we had bread and dripping,  
 On Tuesday 'was dripping and bread,  
 On Wednesday and Thursday 'twas dripping on toast,  
 That's still only dripping on bread.  
 On Friday we called up the landlord  
 And asked for a change, so he said  
 'On Saturday and Sunday, by way of a change,  
 Have dripping without any bread'."

However, to return to a serious vein, if we compare Dr. Harris' diet with the recommended nutritive requirements of the average man we find that there is a very close correspondence. Assuming the "loaf of bread" to be a 1 lb. loaf, Dr. Harris' diet contains—72 grams protein and 2,800 calories, compared with the recommended allowances for the average 35 year-old man of 65 g. protein and 2,900 calories. The diet is also more than sufficient in all minerals and vitamins.

When we look at this diet in relation to the problem of feeding the starving millions we see that, although in our terms it barely qualifies as an "adequate" diet, it is very superior to the average diet of the people of, for example, India (and remember, these are **average** figures; many will have less than this) which contains less than 2,000 calories and less than 50 grams of protein.

This, more than anything, illustrates the immensity of the problem that confronts the world today—a barely "adequate" diet costing five shillings a day gives no hope of an easy solution to people whose income may not be even five shillings a week.

The one consolation that we may gain from Dr. Harris' statement is that, in any project to feed the world, dairy foods are going to play a major role.

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## IFAP MEETS IN N.Z.

At the Fourteenth General Conference of the International Federation of Agricultural Producers meeting in December at Rotarua, N.Z., national farmers' organisations in both industrialised and primary producing countries who comprise IFAP membership unanimously re-affirmed:

- the unique stake of primary producers in a speeded-up expansion of the world economy, especially in the less developed areas where low personal incomes are the cause of insufficient effective demand for the food needed to improve unsatisfactory diets.
- the continuing need for enlightened Governmental farm policies which should mitigate the effect of the many handicaps under which farmers must operate—weather hazards, uncontrollable fluctuations in production, lack of bargaining power—and facilitate the achievement of adequate levels of earnings by producers everywhere.
- farmers' concern of the steady deterioration in their relative income position compared to that of people engaged in non-farm pursuits and their determination to promote corrective action.
- the pressing need for greater confrontation and co-ordination of national farm policies through the medium of existing international agencies (especially FAO, GATT and OECD) as a prerequisite of the establishment of improved international trade relations in the field of agricultural products.
- their support for the current approaches to the negotiation of international commodity agreements or arrangements as part of the "Kennedy Round" of tariff and trade discussions undertaken in GATT.

In his Presidential Address, the President of IFAP, Mr. Herschel D. Newsom of the United States, said that the chronically low and inequitable income and purchasing power of world farmers was the greatest single factor retarding economic growth.

He said: "The low income status of farmers is the greatest trade barrier that has ever been invented or permitted to exist over any prolonged period in the history of the world.

"We must try to see that our fellow countrymen recognise the great significance of the fact that an increase in incomes does not always follow an increase in output or increase in efficiency.

"All too often an increase in agricultural output is quickly followed by a diminished income—not only the net income but the gross.

### COMPARABLE WAGE

"We must seek wide recognition of the fundamental fact that additional purchasing power would be developed in almost every facet of investment and employment in our respective countries, if we could succeed in boosting farm income to a level that would reflect a comparable wage and investment return from agriculture to that which prevails generally in other occupations.

"We would very substantially enhance not only the gross national product of our economy but we would improve the opportunity of all people by the improved balance in our respective economic structures."

Mr. Newsom said the opportunity to improve farm income appeared to be a very real possibility provided each country devised a means of achieving higher income out of its own market without violating the right of equitable and fair competition in the markets of the world.

### LIFE AND DEATH

"Many of us here," said Mr. Newsom, "are attempting to serve farmers whose very ability to produce has often been the difference between the adequate level of nutrition and hunger or between life and death.

"Yet many of our people view this productive capacity with fear—fear of serious economic aggression from without.

"If we are to approach the harmonious development of agricultural production, of marketing and of trade patterns that will effectively serve the interests of producers and consumers, we must take fuller cognisance of the need for intelligent and progressive co-operation."

"Under normal grazing conditions, calf liveweight gain to weaning is largely determined by milk intake," he said.

"Therefore, calves reared on dairy cows usually have a higher rate of gain than those reared on the relatively poorer milking beef cows.

"This is important when we realise that calves grazing improved pastures alone will not give high rates of gain without supplementary feed."

Dr. Wardrop pointed out that the dairy industry also offered a cheap source of potential beef in the form of the "bobby" calf.

### CALVES FROM FRIESIAN DAMS

About one million such calves were slaughtered each year, and at least a third of these, suitably managed, could be used for production of high quality veal, weaners, or yearling beef.

Use of beef bulls on certain classes of dairy cows, possibly through artificial insemination, could boost such production considerably.

Dr. Wardrop explained that investigations at the Animal Husbandry Farms included comparing various crosses of beef and dairy breeds with pure breeds to study beef production performance, and studying various methods of feeding these young calves up to market weight.

"Preliminary results to date indicate that for production of beef from young animals, calves from Friesian dams give significantly higher weaning weights, rates of live-weight gain, and take less time to reach slaughter age or weight, and are more efficient converters of feed to beef than calves from either Hereford or Jersey cows," said Dr. Wardrop.

"There appears to be no difference in the appearance or palatability characteristics of the meat between the various breeds and crosses.

"Overall, certain dairy breeds or their crosses with the beef breeds have a definite potential for producing high-quality beef.

"Because of heavy birth weights and high rates of liveweight gain, their pre-weaning performance is often better than the modern early maturing beef breeds.

### MULTISUCKLING PROFITABLE

Dr. Wardrop emphasised that although it was clear that dairy breeds or their crosses offered opportunities to reduce costs of production of young beef, this potential would not be fully realised until there was a better understanding of the nutrition of the calf before it took to grass, and pasture utilisation by young cattle.

Studies at the Animal Husbandry Farms are aimed at finding the most economic rearing methods for bringing these calves to marketable ages and weights.

Preliminary results indicate that multisuckling on dairy cows is a profitable method of rearing veal calves or weaners in the Australian cost-price structure.

Other points emerging from Dr. Wardrop's observations indicate that:—

- Conventional methods of rearing dairy replacements are not suitable for production of high quality veal, as they don't usually provide enough feed value for optimum growth.
- Low planes of nutrition during the "rearing" stage are detrimental to subsequent calf liveweight gain performance.
- Commercially available veal production rations, although giving satisfactory performance, tend to be too expensive on the present cost structure.

"Irrespective of the system of feeding and management, the most important factor controlling the price obtained for veal and weaners is the stage of condition at time of sale, and not liveweight or age," said Dr. Wardrop.

"It is in these classes of beef production that we see the greatest promise of beef production based on dairy herds."

**Department of Agriculture, South Australia**

- (a) Pasture appraisal in relation to milk production.
- (b) Drainage and irrigation investigations in relation to pasture production on the Lower Murray Swamps.

**Department of Agriculture, Victoria**

- (a) Control of bloat in dairy cattle.
- (b) Development and co-ordination of a systematic approach to herd infertility investigations.
- (c) Irrigation—the limitations and carrying capacities imposed by restricted watering on various soil types using various fertilisers.
- (d) Pasture investigations—the maintenance of improved pastures; efficiency in the use of fertilisers; and improved winter growth of pasture.
- (e) Artificial insemination techniques.
- (f) Investigations to determine the most practical and useful means of disposal dairy factory effluent.

**Department of Primary Industries, Queensland**

- (a) Investigations of mat grass infested pastures.
- (b) Leptospirosis investigations.
- (c) Farm aspects of weed taint prevention.
- (d) Dairy husbandry practices—investigations into resources and output on dairy farms.

**Department of Agriculture, New South Wales**

- (a) Socio-economic investigations of the dairying industry on the far north coast of New South Wales (in co-operation with the University of New England).
- (b) Research on summer-growing legume species to increase soil fertility and farm production.
- (c) Expansion of animal research and research into problems of existing pastures.
- (d) Relative efficiency of detergents and detergent sanitiser compounds used for milking machines.

**Department of Agriculture, Western Australia**

- (a) Nutrition of pastures and fodder crops.

**Department of Agriculture, Tasmania**

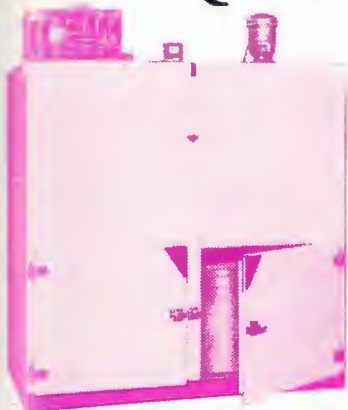
- (a) The effect of environmental temperature on the production, chemical composition and physicochemical properties of milk under controlled psychrometric and standard diet conditions.
- (b) Investigations into problems of contagious infertility diseases in conjunction with techniques associated with semen production and processing, artificial insemination, pregnancy diagnosis and treatment of infected cattle.

**University of Sydney**

- (a) Department of Animal Husbandry
  - Farm management and water conservation.
- (b) Dairy Husbandry Research Foundation
  - (i) Milking machine management—milk ejection; machine milking and mastitis; milking machine hygiene; and improvement of milking machine design

*A vital need for dairymen!*

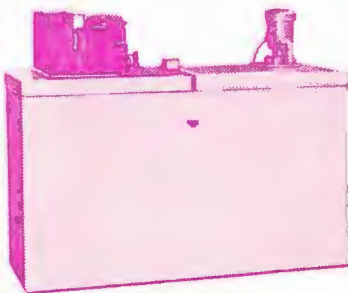
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